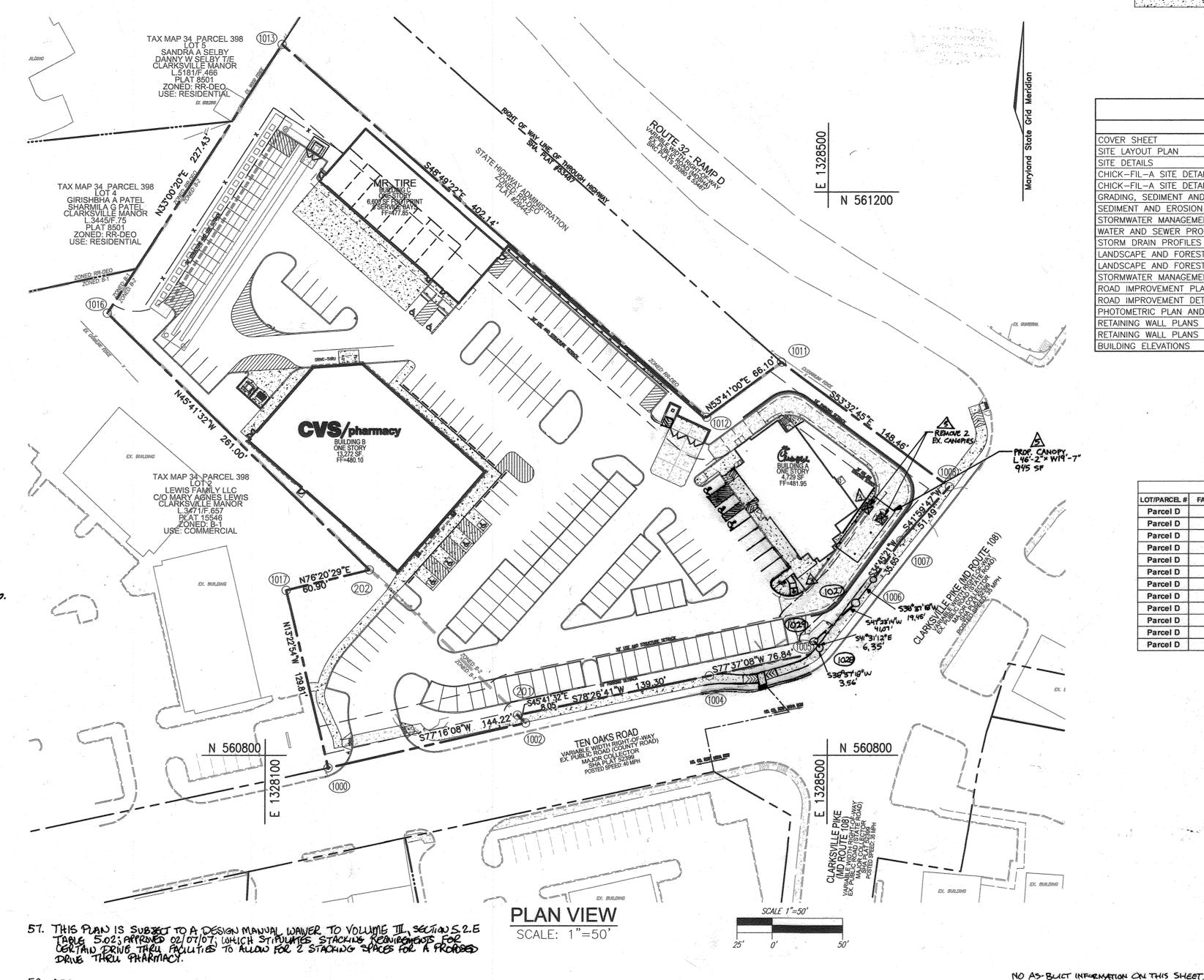
GENERAL NOTES ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY STANDARDS AND SPECIFICATIONS AND MARYLAND STATE HIGHWAY ADMINISTRATION STANDARDS AND SPECIFICATIONS AS APPLICABLE ALL WORK AND MATERIALS SHALL COMPLY WITH O.S.H.A. THE CONTRACTOR SHALL 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 THESE DRAWINGS: 1-800-257-7777 1-800-743-0033 VERIZON: BUREAU OF UTILITIES: 410-313-4900 B.G.&E. (CONSTRUCTION SERVICES): B.G.&E. (EMERGENCY): STATE HIGHWAY ADMINISTRATION: COLONIAL PIPELINE CO.: . SITE ANALYSIS: TOTAL PROJECT AREA: 3.34 AC PRESENT ZONING: B-1 / B-2 USE OF STRUCTURE: FAST FOOD, RETAIL AND AUTO SERVICE TOTAL BUILDING COVERAGE (FOOTPRINT AREA): 24,601 SF (0.565 AC. OR 16.85% OF GROSS AREA) FAST FOOD: 4,729 SF (0.11 AC.) RETAIL: 13,272 SF (0.30 AC.) AUTO SERV.: 6,600 SF (0.15 AC.) PAVED PARKING LOT/AREA ON SITE: 44,097 SF (1.01 AC. OR 30.06% OF GROSS AREA) AREA OF LANDSCAPÉ ISLAND: 5,391 SF (0.12 AC. OR 3.57% OF GROSS AREA) AREA OF STEEP SLOPES: 0.0 AC. AREA OF FLOODPLAIN: 0.0 AC LIMIT OF DISTURBED AREA: 3.78 11,293 CY FILL: 11,293 CY (SUBJECT TO CONTRACTOR CONFIRMATION) LOCATION : CLARKSVILLE, MD.; TAX MAP 34, BLOCK 12, PARCEL 35, PARCEL 161 & P/O PARCEL 36; PARCEL D ZONING: B-1 / B-2 SUBDIVISION: ANTWERPEN PROPERTIES SECTION/AREA: N/A DPZ REFERENCES: F-76-01, SDP-03-097, F-03-173, SDP-01-40, F-06-192, SDP-06-006, ECP-15-065, BA-14-027V, PLAT 241, 5 WP-17-047 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. 7. ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. 3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. 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 R1-1 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 (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES. C. ALL TRAFFIC CONTROL DÉVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE XXX MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES XXX(MdMUTCD) D. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEE 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 FOST. 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 COORDINATES AND ELEVATIONS ARE BASED ON MARYLAND COORDINATE SYSTEM - NAD83(1991) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL THE PROPERTY LINES SHOWN HEREON IS BASED ON A FIELD-RUN BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC., DATED S. EXISTING TOPOGRAPHY SHOWN HEREON IS TAKEN FROM A FIELD RUN TOPOGRAPHIC SURVEY WITH ONE FOOT CONTOUR INTERVALS WAS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC.; DATED MARCH 2015. ALTA/ACSM SURVEY PREPARED BY BOHLER ENGINEERING DATED JANUARY 2015, AND AVAILABLE RECORD DRAWINGS. OFFSITE TOPOGRAPHY IS FROM HOWARD COUNTY GIS. 7. GEOTECHNICAL TEST—PIT REPORT PREPARED BY ROBERT H. VOGEL ENGINEERING, INC.; DATED OCTOBER 16, 2015. GEOTECHNICAL REPORT FOR MR. TIRE AND SITE PAVING PREPARED BY REULING ASSOCIATES, INC.; DATED MARCH 2016. 8. THE GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION PRIOR TO CONSTRUCTION (SEE DETAILS, SHEET 3 9. ALL CURB AND GUTTER TO BE HOWARD COUNTY STANDARD DETAIL 3.01 UNLESS OTHERWISE NOTED (SEE DETAIL ON SHEET 3). CURBS AND GUTTERS ADJACENT TO THE CHICK-FIL-A AND ITS DRIVE-THRU LANE, FROM CROSSWALK AT THE SOUTH TO DUMPSTER ENCLOSURE, TO BE CFA STANDARD CURB DETAILS (SHOWN ON SHEET 5). O. 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. 3. CONTRACTOR RESPONSIBLE FOR CONSTRUCTING ALL HANDICAP RAMPS AND HANDICAP ACCESS IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS. 4. ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3500 P.S.I. 5. ALL STORMDRAIN PIPE BEDDING IS TO BE CLASS 'C', AS REQUIRED BY AASHTO—180. E PROPOSED BUILDINGS TO HAVE ROOF LEADERS WHICH EMPTY INTO THE STORMWATER MANAGEMENT FACILITES, WHICH ULTIMATELY COLLECT INTO THE 7. PUBLIC SEWER AVAILABLE THROUGH CONT. 30-3370 AND WATER AVAILABLE THROUGH CONT. 44-3483. 28. APFO TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP, DATED AUGUST 28, 2015; APPROVED 04/01/16. 29. THE SUBJECT PROPERTY IS ZONED B-1 / B-2 IN ACCORDANCE WITH THE 10/06/13 COMPREHENSIVE ZONING PLAN. 30. 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 CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING/GRADING PERMIT APPLICATIONS. 31. THE EXISTING TEN OAKS ROAD AND CLARKSVILLE PIKE ARE CLASSIFIED AS MAJOR COLLECTORS. 32. THE ENVIRONMENTAL LETTER WAS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED APRIL 27, 2015. 33. THERE ARE NO STEEP SLOPES, WETLANDS, STREAMS, THEIR BUFFERS, AND 100-YEAR FLOODPLAIN LOCATED ON—SITE. 34. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE, AND THE LANDSCAPE MANUAL. 35. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSED AS PART OF THE DEVELOPER'S AGREEMENT FOR THIS SITE DEVELOPMENT PLAN IN THE AMOUNT OF \$2,700.00 HAS BEEN POSTED AS PART OF THE ENGINEERING COST ESTIMATE FOR THIS SITE DEVELOPMENT PLAN FOR THE REQUIRED 9 STREET TREES. SEE NOTE \$56. 36. THE FOREST CONSERVATION OBLIGATION FOR PARCEL 361 (PARCELS A, B-1 ANC C-1) HAVE BEEN PREVIOUSLY ADDRESSED UNDER SDP-03-097 AS A FEE—IN-LIEU PAYMENT IN THE AMOUNT OF \$2,395.80. THE FOREST CONSERVATION OF \$2,395.80. THE FOREST CONSERVATION FOR PARCEL 161 HAS BEEN STEED BY A FEE—IN-LIEU PAYMENT IN THE AMOUNT OF \$2,395.80. THE FOREST CONSERVATION FOR PARCEL 161 HAS BEEN STEED BY A FEE—IN-LIEU PAYMENT IN THE AMOUNT OF \$2,395.80. THE FOREST CONSERVATION FOR PARCEL 161 HAS BEEN STEED BY A FEE—IN-LIEU PAYMENT IN THE AMOUNT OF \$2,395.80. THE FOREST CONSERVATION FOR PARCEL 161 HAS BEEN STEED BY A FEE—IN-LIEU PAYMENT IN THE AMOUNT OF \$2,395.80. THE FOREST CONSERVATION FOR PARCEL 161 HAS BEEN STEED BY A FEE—IN-LIEU PAYMENT IN THE AMOUNT OF \$2,395.80. THE FOREST CONSERVATION FOR PARCEL 161 HAS BEEN STEED BY A FEE—IN-LIEU PAYMENT IN THE AMOUNT OF \$2,395.80. THE FOREST CONSERVATION FOR PARCEL 161 HAS BEEN STEED BY A FEE—IN-LIEU PAYMENT IN THE AMOUNT OF \$2,395.80. THE FOREST CONSERVATION FOR PARCEL 161 HAS BEEN STEED BY A FEE—IN-LIEU PAYMENT IN THE AMOUNT OF \$2,395.80. THE FOREST CONSERVATION FO CONSERVATION OBLIGATION FOR PARCEL 161 HAS BEEN SATISFIED BY A FEE-IN-LIEU PAYMENT IN THE AMOUNT OF \$1,306.80 (0.04 AC x 43560SF x 0.75) 7. THERE ARE NO SPECIMEN TREES WITHIN THE LOD. 8. ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR. 9. THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THIS PROPERTY. 0. THERE ARE NO HISTORIC STRUCTURE LOCATED ON THIS PROPERTY. INCORPORATED IN TO THE METROPOLITAN DISTRICT. ALL OTHER PARCELS OF THIS PROPERTY ARE WITHIN THE METROPOLITAN THE PROPOSED BUILDINGS WILL HAVE INSIDE METER SETTINGS. THE BUILDINGS WILL ALSO HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM. 43. A KNOX BOX IS REQUIRED TO BE PLACED ON THE FRONT OF EACH BUILDING. THEY SHALL BE PLACED TO THE RIGHT OF THE MAIN ENTRANCE AT A RANGE OF 4-5' IN HEIGHT AND NO MORE THAN 6' LATERALLY FROMTHE DOOR. THE LOCATIONS ARE SHOWN ON THESE PLANS. THE BOXES SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT THEY ARE BEING ACCESSED (INTEGRATED WITH THE FIRE ALARM SYSTEM). LANDSCAPING NOT PERMITTED WITHIN 7-1/2' OF EACH SIDE OF THE FIRE DEPARTMENT CONNECTION. PROVIDE A CLEAR UNOBSTRUCTED ACCESS PATH TO THE FIRE LANES HAVE BEEN PROVIDED IN THIS SITE TO ALLOW EMERGENCY VEHICLE ACCESS. EITHER FIRE LANE SIGNAGE SHOULD BE INSTALLED, OR THE CURBS SHOULD BE PAINTED IN RED AND STENCILED TO IDENTIFY THE ROAD AS A FIRE LANE. SIGNAGE SHALL BE PROVIDED ON EACH BUILDING IDENTIFYING THE BUILDING ADDRESS. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE. LL EXTERIOR LIGHTING TO COMPLY WITH THE REQUIREMENTS FOUND IN ZONING SECTION 134.0 OF THE HOWARD COUNTY ZONING REGULATIONS. LIGHT TRESPASS ONTO PROPERTY IN THE RR ZONING DISTRICT SHALL BE LIMITED TO 0.10 FOOT CANDLES. TRASH COLLECTION AND RECYCLABLES TO BE PRIVATE. 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—BIORETENTIONS AND PERVIOUS CONCRETE. THESE FACILITIES SHALL BE PRIVATELY OWNED AND THE COMMUNITY MEETING FOR THIS PROJECT WAS CONDUCTED ON 08/04/15 AT THE MEETING ROOM IN RIVER HILL. THE TOTAL ACREAGE OF THIS PROJECT IS 3.36 AC, WHICH INCLUCES PARCEL 35 (0.66 AC.), PARCEL 161 (0.33 AC.), PRACEL 361, LOT B-1 (0.39 AC.) AND PARCEL 361, LOT C-1 (1.98 AC.) 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 OF PACKAGED FOODS, OR THAT MAY HAVE EQUIPMENT THAT EMITS RADIATION. THIS PLAN IS SUBJECT TO BA-15-032V; APPROVED 12/02/15; TO PERMIT THE FOLLOWING VARIANCES: A1. REDUCE THE REQUIRED 30' STRUCTURE AND USE SETBACK TO 10.82' FOR THE PUPOSE OF A DRIVE-THRU LANE ADJACENT TO MD ROUTE 108. A2. REDUCE THE REQUIRED 30' STRUCTURE AND USE SETBACK TO 10.77' FOR THE PURPOSE OF A DRIVE THRU LANE ADJACENT TO MD ROUTE 32 ADJACENT TO A RESIDENTIAL ZONE (MD SHA). B4. REDUCE THE REQUIRED 30' STRUCTURE AND USE SETBACK TO 5.66' FOR THE PURPOSE OF A BUILDING ADJACENT TO A RESIDENTIAL ZONE (MD A. THE DECISION AND ORDER SUPERSEDED BOA CASE NO. 14-027C, DECIDED JANUARY 5, 2015. B. THE VARIANCES SHALL APPLY ONLY TO THE USES AND STRUCTURES AS DESCRIBED IN THE PETITION AND IAS DEPICTED ON THE SEPTEMBER 10, 2015. VARIANCE PLAN, INCLUDING THE LOCATION OF THE PROPOSED INGRESS/ EGRESS, AND NOT TO ANY OTHER ACTIVITIES, USES, STRUCTURES, OR ADDITIONAL PETITIONER SHALL INSTALL A SIX-FOOT NOISE WALL/ FENCE PER HOWARD COUNTY DESIGN MANUAL, VOL. IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, DETAIL R-9.05, ALONG THE COMMON LOT LINE WITH THE SHELBY PROPERTY, IN THE APPROPRIATE LOCATION. PETITIONER SHALL OBTAIN ALL REQUIRED PERMITS, INCLUDING ALL STATE HIGHWAY ADMINISTRATION PERMITS. THIS PLAN IS SUBJECT TO A DPW DESIGN MANUAL WAIVER TO SEWER SECTION 4.3.B.3; APPROVED 05/12/16; TO PERMIT THE USE OF A PRIVATE LOW PRESSURE SEWER SYSTEM ON—SITE. APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS: A. SMH-100 SHALL BE A PUBLIC MANHOLE WITH A 20'x10' PUBLIC SEWER AND UTILITY EASEMENT PROVIDED ON THE SUBJECT PROPERTY. B. SMH-2 SHALL BE A GRAVITY TRANSITION MANHOLE PER HOWARD COUNTY STANDARD DETAILS S-4.14 AND S-4.15 (UPDATE STRUCTURE SCHEDULE C. THE 6" GRAVITY SHC FROM CHICK—FIL—A SHALL DISCHARGE INTO PROPOSED PRIVATE SMH—1 (IT CANNOT DISCHARGE INTO THE TRANSITION MANHOLE THERE SHALL BE ONLY ONE 8" PRIVATE SEWER DISCHARGING INTO PROPOSED PUBLIC SMH+100 (AS SHOWN) CORRECT THE CONTRACT NO. REFERENCE ON THE EXISTING SEWER IN TEN OAKS ROAD IN CEARKS VIEWE PIKE! T. A NOTE MUST BE ADDED TO THE SITE DEVELOPMENT PLAN AND THE PUBLIC WATER/SEWER PLAN THAT GRAVITY SEWER SERVICE IS NOT PROVIDED TO 56. NOTE FROM GENERAL NOTE 35 ABOVE: THE 15 ORNAMENTAL TREES WERE ERRONEOUSLY EXCLUDED FROM THE INMAL SURETY AMOUNT. DPZ WILL NOT REQUIRE ADDITIONAL POSTING, HOWEVER, ALL LANDSCAPING AS SHOWN ON THE PURN MUST BE COMPLETED PRIOR TO RELEASE OF LANDSCAPING SURETY APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION

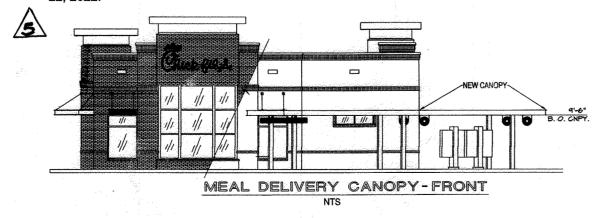
SITE DEVELOPMENT PLAN ANTWERPEN PROPERTIES - PARCEL D

TEN OAKS ROAD AND MD ROUTE 108 RETAIL, FAST FOOD AND AUTOMOTIVE MAINTENANCE



58. ADDITIONAL PLANTINGS ADDED PER REVISION 3 TO CHICK-FIL-A LANDSCAPE ARE NOT REQUIRED PER LANDSCAPING REGULATIONS 3 THEREFORE THESE PLANTINGS DO NOT REQUIRE SURETIES OR

59. A VARIANCE PETITION REQUEST, CASE #BA-22-003V, TO DECREASE THE STRUCTURE SETBACK FROM A PUBLIC STREET RIGHT-OF-WAY FROM 30' TO 14'-10" IN ORDER TO CONSTRUCT A 46'x20' OPEN SIDED FREE-STANDING CANOPY WAS GRANTED IN AUGUST 22, 2022.



APPROVED: FOR PUBLIC WATER AND PUBLIC SAWERAGE SYSTEMS

DATE MAD

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT

-3-15-17

I, ANDREW G. STINE, HEREBY CERTIFY THAT THESE DOLUMENTS WERE PREPARED OR AFFROVED BY ME AND THAT I AM A DULY LICENSED professional embineer under the LAWS OF THE STATE OF MARYLAND LICENSE NO: 37607 EXP: This 19

FOR REVISION 3 ONLY ANDREW G STINE

PATE

REUSE THE PLAN TO THE ADJUSTMENT OF THE MSHARIGHT-OF-WAY 12-

ACCOMMODATE ATRAFAC SIGNAL POLE REVISION

		A THE STATE OF THE	ADDRESS	S CH	ART		i ali pipaneni jeri denira izrad		
	BUILDING NO.	STREET	ADDRESS			ni ayan jami ili ka			
	BUILDING A	6395 TE	6395 TEN OAKS ROAD						
	BUILDING B	6383 TE	N OAKS RO	DAD					
	BUILDING C	6389 TE	N OAKS RO	DAD					
			PERMIT I	NFOR	MATIC	ON C	HART		and the second second to the second
	SUBDIVI ANTWERP	SECTION/AREA N/A				LOT/PARCEL PARCELS PARCELS 35,			
	PLAT OR L/F	GRID NO.	ZONING	TAX	MAP	NO.	ELEC	r. dist.	CENSUS
o4-18	L.18588 F.18589 (PLAT 24 11 5)	12	B-1/B-2 COMMERCIAL		34	;	5	ТН	60510

PARKING TABULATION

14 SPACES PER 1000 SF

5 SPACES PER 1000 SF

5 SPACES PER 1000 SF

WATER CODE: 1-11

BUILDING A (4,729 SF - FAST FOOD)

BUILDING C (6,600 SF - SERVICE STATION)

BUILDING B (13,272 SF - RETAIL)

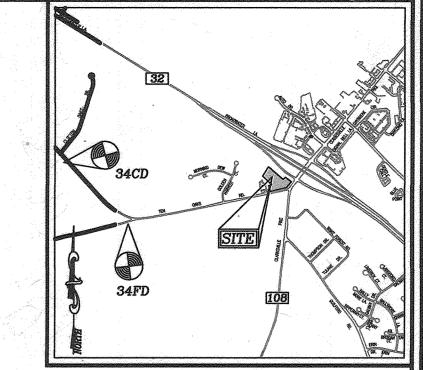
TOTAL PARKING SPACES REQUIRED

TOTAL PARKING SPACES PROVIDED:

BENCHMARKS HOWARD COUNTY BENCHMARK 34CD N 561,461.630 E 1,323,850.413 ELEV.: 491.282'

HOWARD COUNTY BENCHMARK 34FD N 560,162.580 E 1,325,180.368 ELEV.: 437.493' _EGEND

PROPERTY LINE RIGHT-OF-WAY LINE ADJACENT PROPERTY LINE PROPOSED CURB AND GUTTER



VICINITY MAP

SCALE: 1"=2000" ADC MAP COORDINATES: 31/D1

SHEET INDEX	
DESCRIPTION	SHEET NO.
/ER SHEET	1 OF 19
LAYOUT PLAN	2 OF 19
DETAILS	3 OF 19
CK-FIL-A SITE DETAILS	4 OF 19
CK-FIL-A SITE DETAILS	5 OF 19
DING, SEDIMENT AND EROSION CONTROL PLAN; SOILS MAP	6 OF 19
DIMENT AND EROSION CONTROL NOTES AND DETAILS	7 OF 19
RMWATER MANAGEMENT AND STORM DRAIN DRAINAGE AREA MAP	8 OF 19
ER AND SEWER PROFILES	9 OF 19
RM DRAIN PROFILES	10 OF 19
DSCAPE AND FOREST CONSERVATION PLAN	11 OF 19
DSCAPE AND FOREST CONSERVATION NOTES AND DETAILS	12 OF 19
RMWATER MANAGEMENT NOTES AND DETAILS; UTILITY PROFILES	13 OF 19
D IMPROVEMENT PLAN	14 OF 19
D IMPROVEMENT DETAILS	15 OF 19
DTOMETRIC PLAN AND SITE LIGHTING DETAILS	16 OF 19
AINING WALL PLANS	17 OF 19
AINING WALL PLANS	18 OF 19
LDING ELEVATIONS	19 OF 19

Januari da Jangara		
C	OORDINA	ATE TABLE
N0.	NORTH	EAST
201	560828.42	1328279.68
202	560931.68	1328173.90
1000	560791.02	1328144.77
1002	560822.80	1328285.44
1004	560856.33	1328416.16
1005	560872.81	1328491.22
1006	560923.34	1328531.59
1007	560952.63	1328551.91
1008	560990.89	1328586.36
1011	561079.10	1328466.95
1012	561039.95	1328413.69
1013	561304.72	1328111.01
1016	561114.00	1327987.13
1017	560917.30	1328114.73
1009	560903.01	1328227.88
203	560834.50	1328309.43
1027	560908.15	1328519.45
1028	560875,59	1328493,44
1029	560880.35	1328489.23

FOR BUILDING FOOTPRINTS AND **ELEVATIONS, SEE SHEET 19.**

		STORMWATER MANAGE	MENT INFO	DRMATION		
OT/PARCEL#	FACILITY NAME & NUMBER	PRACTICE TYPE (QUANTITY)	PUBIC	PRIVATE	MAINTAINANCEBY	MISC.
Parcel D	PERV. CONC. #1	A-2 Permeable Pavement		Х	Owner	
Parcel D	PERV. CONC. #2A	A-2 Permeable Pavement		Х	Owner	
Parcel D	PERV. CONC. #2B	A-2 Permeable Pavement		Х	Owner	
Parcel D	PERV. CONC. #3	A-2 Permeable Pavement		X	Owner	
Parcel D	PERV. CONC. #4	A-2 Permeable Pavement		х	Owner	
Parcel D	PERV. CONC. #5	A-2 Permeable Pavement		Х	Owner	
Parcel D	SAND FILTER #1	F-1 Sand Filter		Х	Owner	
Parcel D	MBR #1	M-6 Micro-Bioretention		Х	Owner	
Parcel D	MBR #2	M-6 Micro-Bioretention		X	Owner	
Parcel D	MBR #3	M-6 Micro-Bioretention		Х	Owner .	
Parcel D	MBR #4	M-6 Micro-Bioretention		х	Owner	
Parcel D	DW#1	M-5 Doy Well	1	v	Owner	

AS-BUILT CERTIFICATION FOR PSWM

EMEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" FLANS AND CUBIPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. TRAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SMEFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE

UNDERGROUND SWM FACILITY.



DEVELOPER/OWNER

JA TEN OAKS LLC C/O ANTWERPEN AUTOMOTIVE 6440 BALTIMORE NATIONAL PIKE BALTIMORE MD 21228

41.0-938-5000)
REVISE TO ADD OPEN-SIDED FREE-STANDING CANOPY AND REVISE LANDSCAPING	04/19/23
REVISE SIDEWALK AND LANDSCAPING	03/02/18
REVISE PLAN TO ACCOMODATE CHANGES REQUIRED BY CHICK-FIL-A. CVS AND MR. TIRE:	06/28/17
REVISE INHIC FROM 6"TO 8"; INCORPORATE MSHA CHANGES WITHIN THE RTE, 108 ROW	
REVISION	DATE
	REVISE PLAN TO ACCOMODATE CHANGES REQUIRED BY CHICK-FIL-A, CVS AND MR. TIRE; REVISE INHC FROM 6"TO 8"; INCORPORATE MSHA CHANGES WITHIN THE RITE. 108 ROW

SITE DEVELOPMENT PLAN

COVER SHEET

ANTWERPEN PROPERTIES - PARCEL D

TEN OAKS ROAD AND MD ROUTE 108 ZONED B-1 & B-2 TAX MAP 34 GRID 12

5TH ELECTION DISTRICT

REQUIRED:

67 SPACES

67 SPACES

33 SPACES

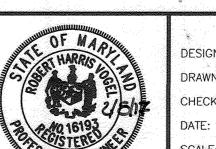
167 SPACES

167 SPACES

INCLUDING 9 HANDICAP SPACES

SEWER CODE: 6653000

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



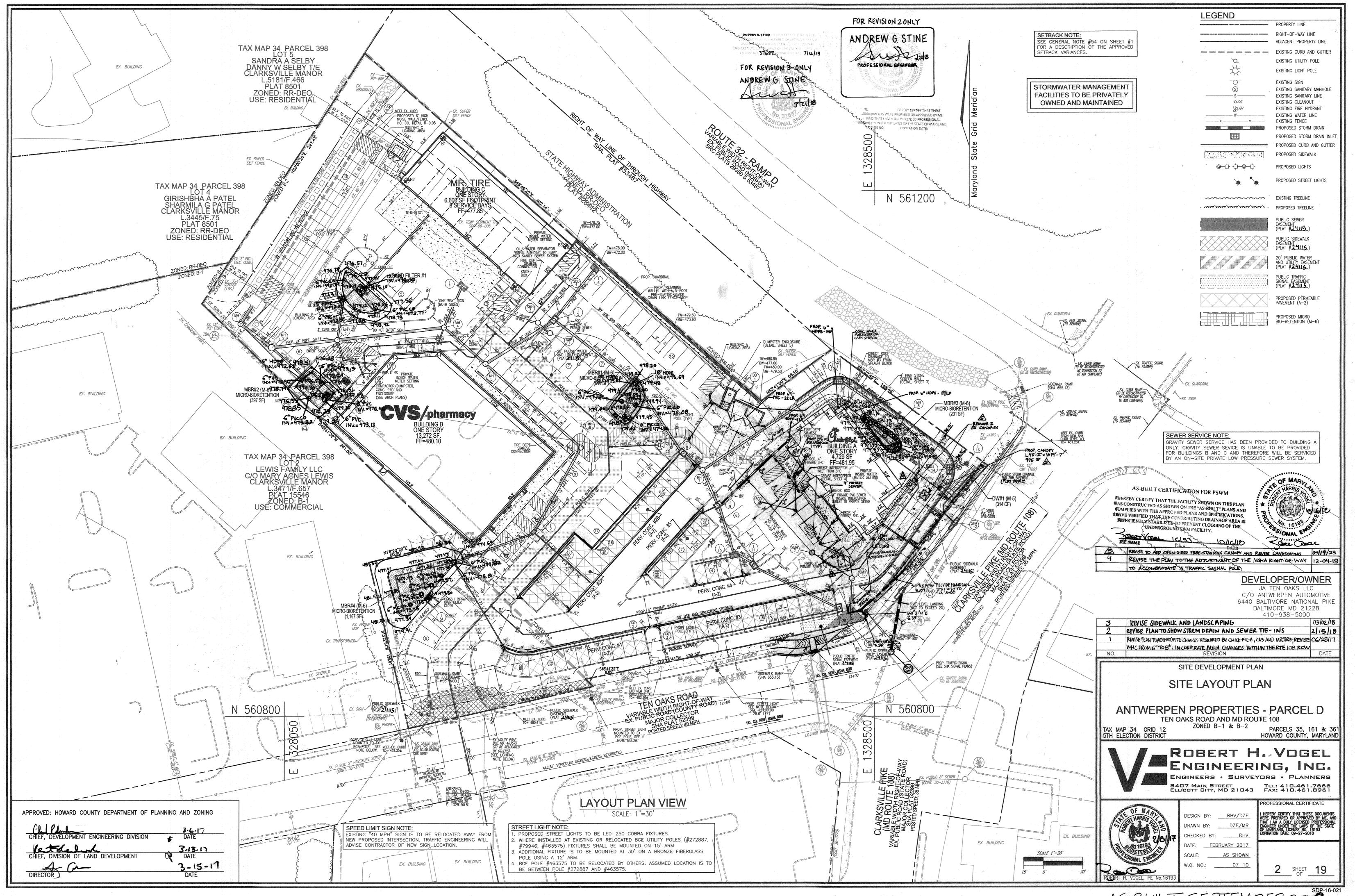
DZE/MR AS SHOWN

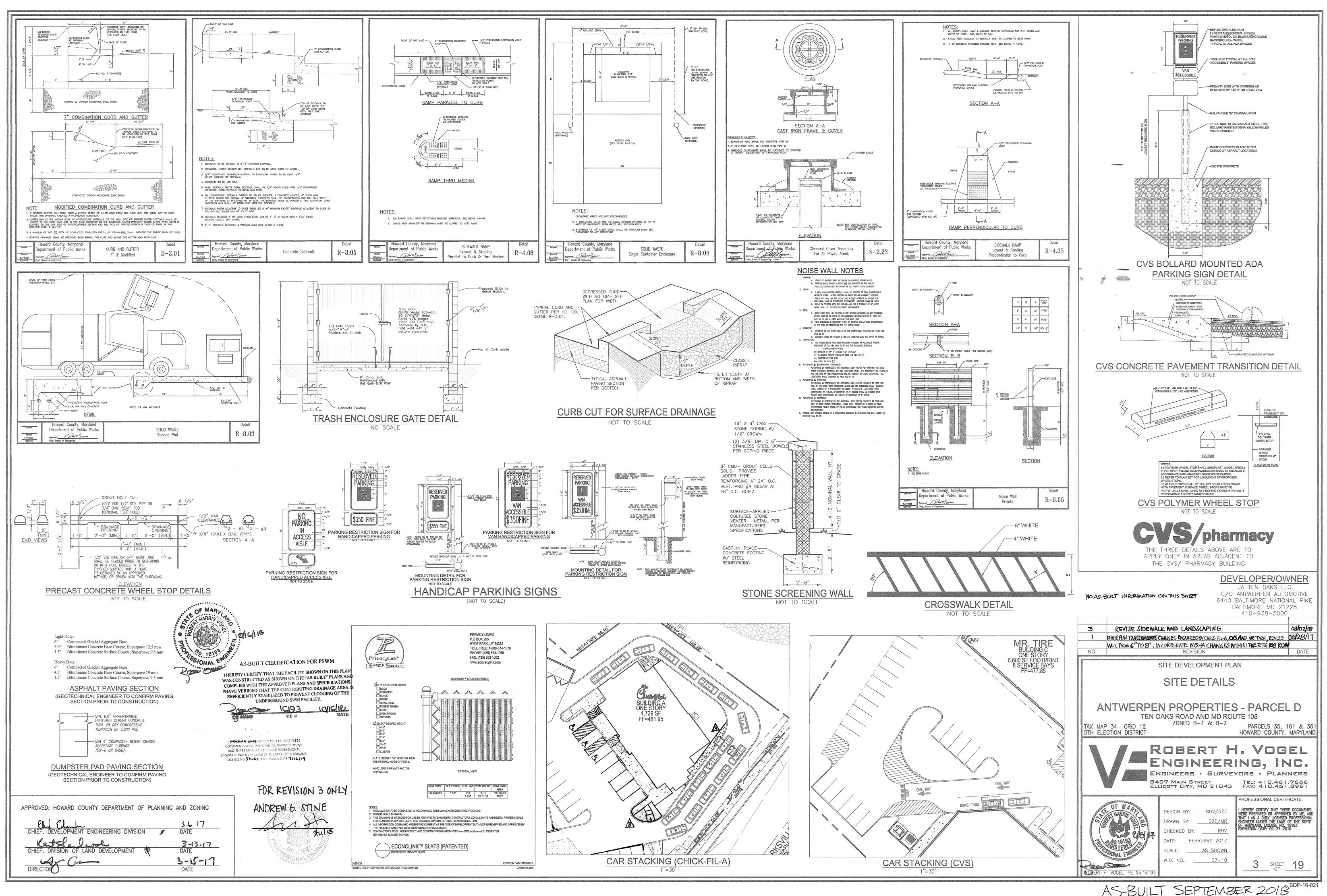
HEREBY CERTIFY THAT THESE DOCUMENTS VERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYAND, LICENSE 27, 2018

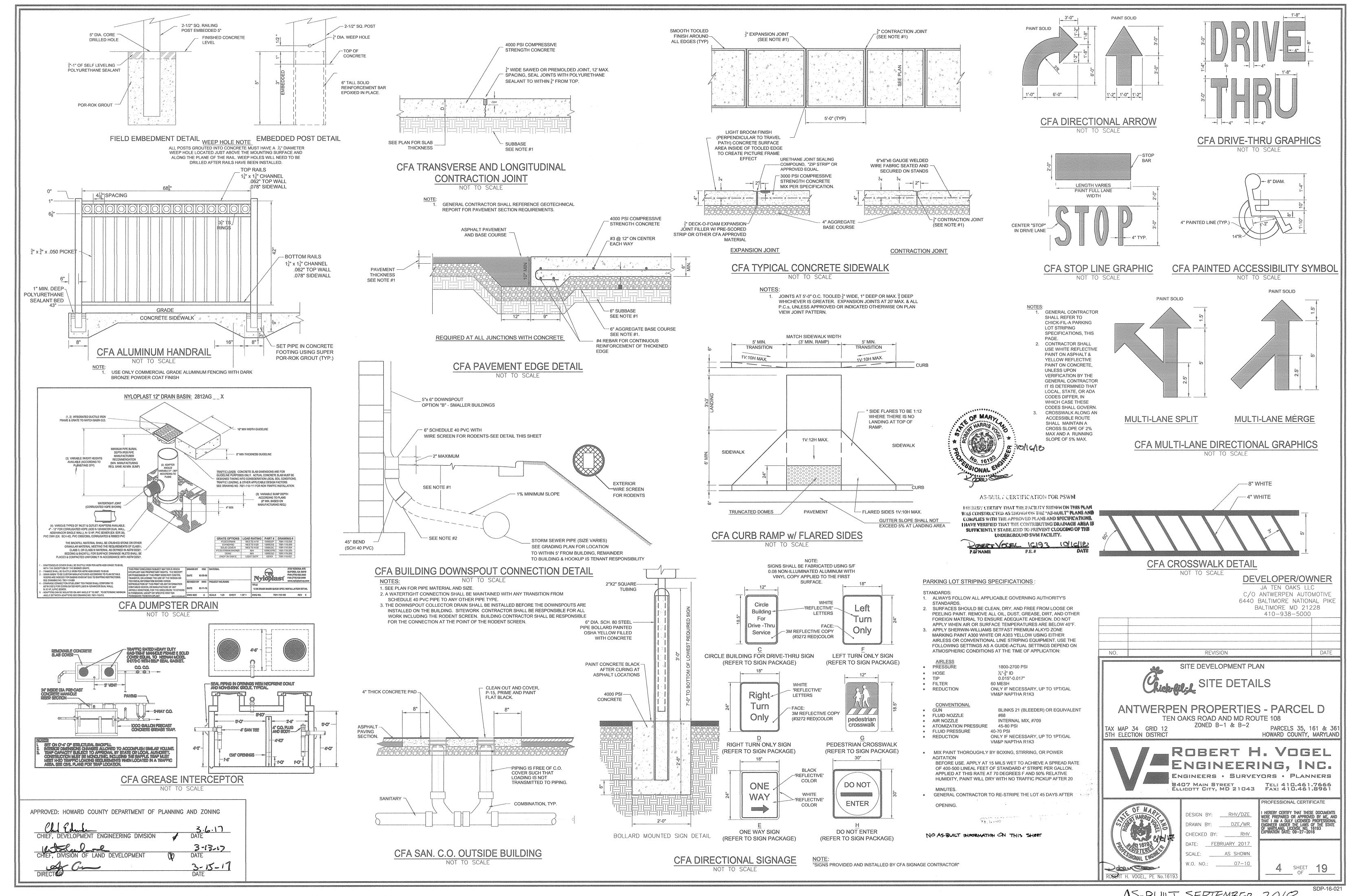
SHEET 19

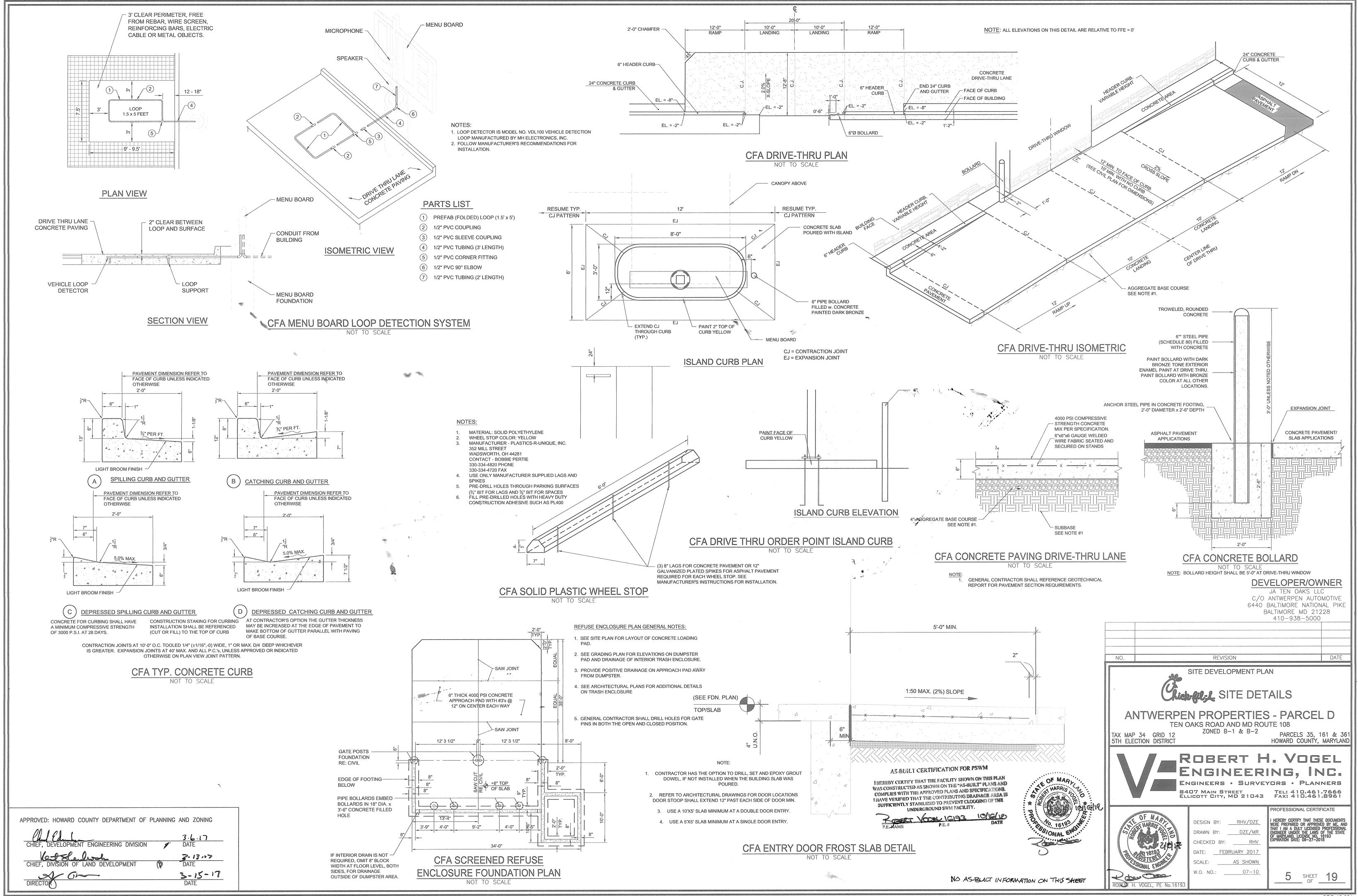
PARCELS 35, 161 & 36

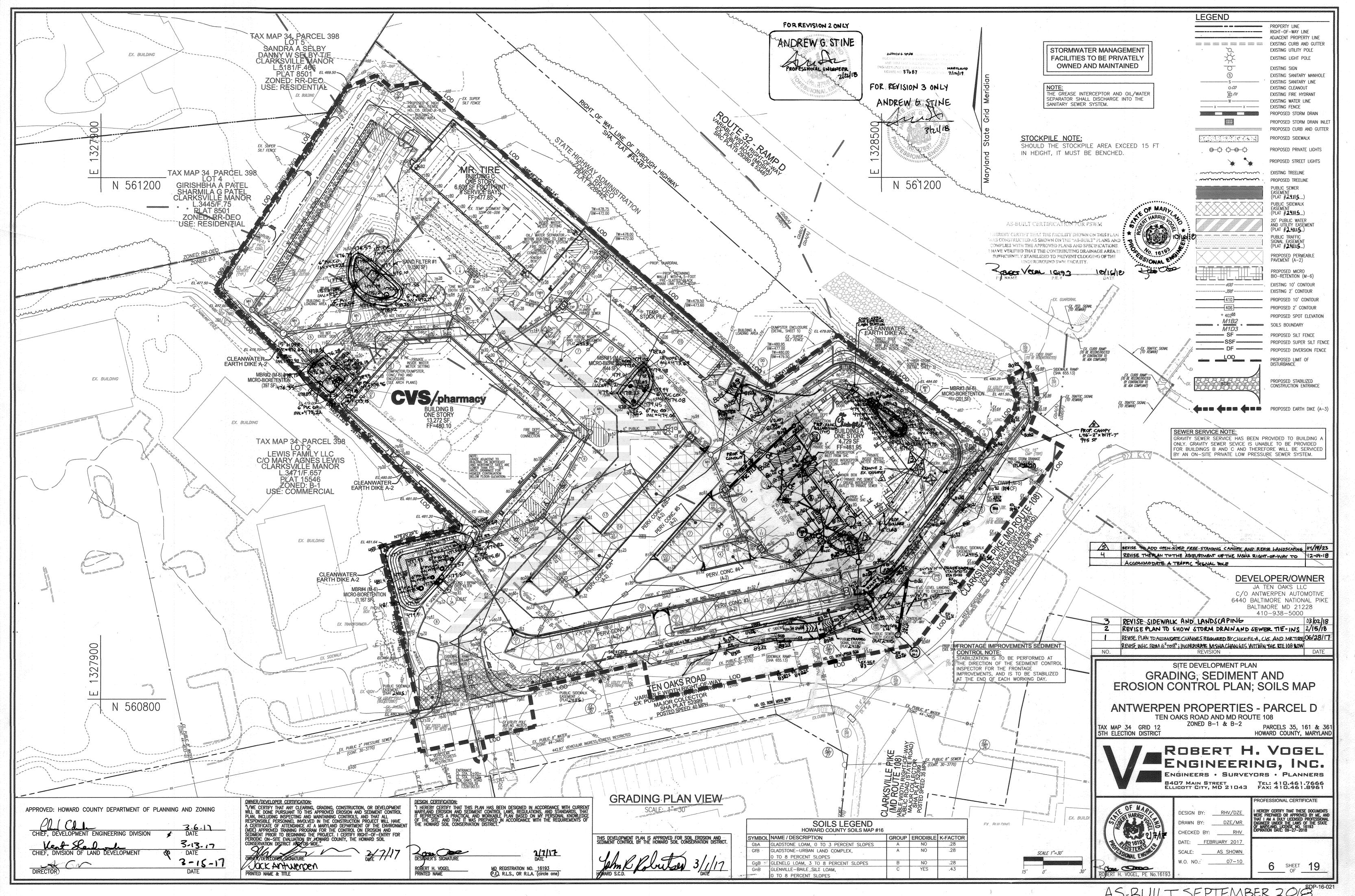
HOWARD COUNTY, MARYLAND

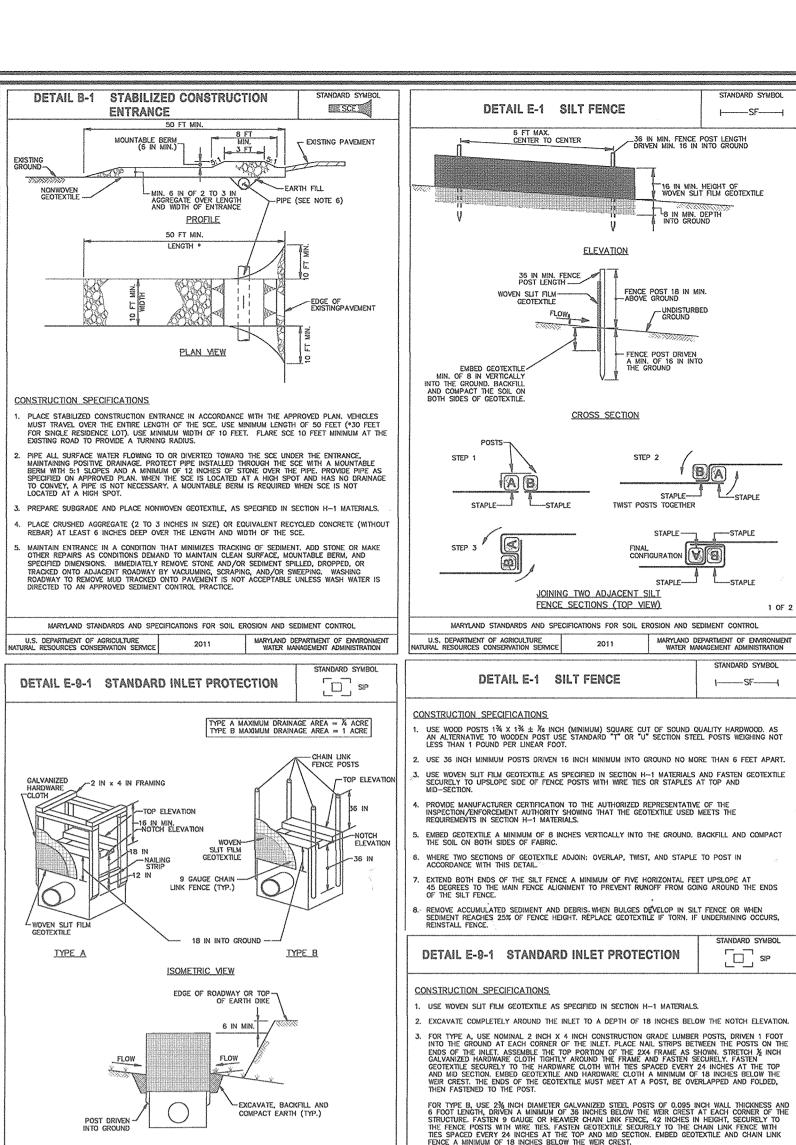


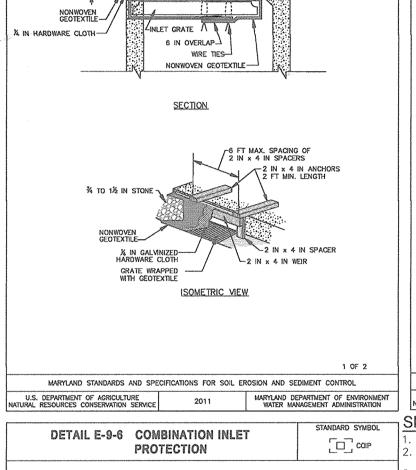












DETAIL E-9-2 AT-GRADE INLET PROTECTION

PLAN / CUT AWAY VIEW

-4 IN HARDWARE CLOTH

6 IN OVERLAP

CROSS SECTION

LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.

PLACE CLEAN 1/4 TO 11/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE

SCHIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING, IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED, WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

2011

. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.

¼ IN GALVANIZED----HARDWARE CLOTH

NONWOVEN GEOTEXTILE

CONSTRUCTION SPECIFICATIONS

AGIP

MAXIMUM DRAINAGE AREA = 1 ACR

—¾ TO 1½ IN STONE

- ¾ TO 1½ IN STONE

STANDARD SYMBOL

-INLET GRATE

DETAIL E-3 SUPER SILT FENCE

GROUND SURFACE

CONSTRUCTION SPECIFICATIONS

2:1 SLOPE OR FLATTER-

CONTINUOUS GRADE 0.5% MIN. TO 10% MAX. SLOPE

10 FT MAX.

ELEVATION

CHAIN LINK FENCING

CROSS SECTION

INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOC LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.

. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO TI UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.

WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.

EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.

PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.

2:1 SLOPE OR FLATTER

DETAIL C-1 EARTH DIKE

CROSS SECTION

SILT FENCE. (3 DAYS) REMOVE EXISTING CURBS AND STORM DRAIN TO THE LIMITS INDICATED ON THE

PLANS. EXISTING PIPE STORATE SYSTEM AND SANDFILTER TO REMAIN. (1 WEEK) WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB ROUGH

MICROBIORETENTION FACILITIES). PROVIDE INLET PROTECTION AS SHOWN ON THESE

PREVENT CONTAMINATION, AND TEMPORARILY BACKFILL.

D. BEGIN CONSTRUCTION OF BUILDINGS A AND B.

WITH INSPECTOR'S APPROVAL AND WHEN UTILITIES AND SITE ARE BROUGHT TO APPROPRIATE GRADES AND WITH CONTRIBUTING DRAINAGE AREAS STABILIZED, FILL EXISTING SEDIMENT TRAP.

3. WITH INSPECTOR'S APPROVAL, BEGIN INSTALLATION OF ROAD BASE PAVING AND

CURB. (3 WEEKS)
WHEN UTILITIES AND SITE IS BROUGHT TO APPROPRIATE GRADES, BEGIN
INSTALLATION OF MICRO—BIORETENTION FACILITIES AND PERVIOUS CONCRETE

15. COMPLETE RETAINING WALL CONSTRUCTION AND GRADING OPERATION. (1 WEEK)
16. INSTALL PAVING SURFACE COURSE AND REMOVE PLASTIC FROM PERVIOUS

18. WITH INSPECTOR'S APPROVAL, FINE GRADE AND STABILIZE ALL AREAS OF PARCEL INCLUDING ANY EXPOSED EARTH AREAS OUTSIDE THE LOD. REMOVE ALL TRASH

JUNK AND DEBRIS FROM THE LIMIT OF DISTURBANCE. (3 WEEKS)

19. WHEN ALL CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED, REMOVE SILT FENCE AROUND MICROBIORETENTION FACILITY. PLACE MULCH AND INSTALL PLANTINGS. ANY COMPACTION OF THE PLANTING SOIL WILL REQUIRE REPLACEMENT

20. FUSH STORM DRAIN SYSTEM AND REMOVE SEDIMENT CONTROLS AFTER RECIEVING APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR.

NOTES:

1. DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS

A. THREE (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3

21. INSTALL SITE LANDSCAPING. (1 WEEK)
22. AFTER PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR REMOVE ANY REMAINING CONTROLS AND STABILIZE ALL REMAININIG DISTURBED AREAS WITH

2. FOLLOWING INITIAL SOIL DISTURBANCES OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:

PERMANENT SEEDING MIXTURE AND STRAW AND MULCH (1 WEEK.)

HORIZONTAL TO 1 VERTICAL (3:1); AND

SECTIONS. PROTECT PERVIOUS CONCRETE WITH PLASTIC. (1 MONTH)

A. MICROBIORETENTION CONSTRUCTION:
CONSTRUCT STORM DRAIN SYSTEM INCLUDING MICROBIORETENTION
UNDERDRAINS AND #57 STONE. COVER STONE WITH POLY SHEET PLASTIC TO
PREVENT CONTAMINATION, AND TEMPORARILY BACKFILL.

A. MICROBIORETENTION CONSTRUCTION:
WITH SITE CONSTRUCTION COMPLETE, REMOVE TEMPORARY FILL IN MICROBIORETENTION FACILITES AND CAREFULLY REMOVE POLY SHEET PLASTIC

AND INSTALL FILTER FABRIC (SIDES ONLY), PEA GRAVEL AND PLANTING SOIL. CONTRACTOR TO PROVIDE PLANTING SOIL CERTIFICATION. IMMEDIATELY PROTECT FACILITY WITH SILT FENCE.

GRADE SITE, UTILIZING EXISTING TRAP IF REQUIRED. (2 WEEKS)
AS SITE IS BROUGHT TO PROPOSED GRADE, BEGIN CONSTRUCTION OF SITE

BEGIN INSTALLATION OF SITE UTILITIES (STORM DRAIN, WATER, AND

RETAINING WALL. (2 WEEKS)

CONCRETE. (1 WEEK)

17. INSTALL SIDÈWALKS. (1 MONTH)

BEGIN CONSTRUCTION OF BUILDING C.

2011 MARYLAND DEPARTMENT OF ENVIRONME
WATER MANAGEMENT ADMINISTRATION

PLACE DESIGNATION (A.g. A-1)

DIKE TYPE

WOVEN SLIT FILM GEOTEXTILE-

EMBED GEOTEXTILE AND — CHAIN LINK FENCE 8 IN MIN. INTO GROUND

FLOW _

GALVANIZED CHAIN LINK FENCE WITH WOVEN SLIT FILM GEOTEXTILE

-36 IN MIN.

DETAIL E-9-6 COMBINATION INLET PROTECTION	COIP	
2 FT MIN. LENGTH OF 2 IN x 4 IN STONE NONWOVEN GEOTEXTILE IN HARDWARE CLOTH IN OVERLAP WIRE TIES NONWOVEN GEOTEXTILE SECTION		E
% TO 1½ IN STONE NONWOVEN GEOTEXTILE % IN GALVINIZED	MAX. SPACING OF x 4 IN SPACERS 2 IN x 4 IN ANCHORS 2 IN x 4 IN LENGTH 2.3. 4. 2 IN x 4 IN SPACER 2 IN x 4 IN WEIR 6. 7.	
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL ER U.S. DEPARTMENT OF AGRICULTURE STURAL RESOURCES CONSERVATION SERVICE 2011	MARYLAND DEPARTMENT OF ENVIRONMENT	
DETAIL E-9-6 COMBINATION INLET	COIP 2. C	0100
CONSTRUCTION SPECIFICATIONS 1. USE NOMINAL 2 INCH x 4 INCH LUMBER.	S 2. N	1

NONWOVEN GEOTEXTILE VA IN HARDWARE CLOTH 6 IN OVERLAP. WIRE TIES NONWOVEN GEOTEXTILE	DIKE HEIGHT 18 IN MIN. 30 IN MIN.	CINDERS MATERIA B. TOPSOI QUACK C. TOPSOI SCIENTIS NATURAI 6. TOPSOIL
SECTION 6 FT MAX. SPACING OF 2 IN x 4 IN SPACERS 2 IN x 4 IN ANCHORS 2 FT MIN. LENGTH	A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.) A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD. A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND. CONSTRUCTION SPECIFICATIONS 1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE. 2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.	A. EROSIO B. UNIFOR THICKNE OR SEEI IRREGUL CORREC C. TOPSOII CONDITIC BE DETF C. SOIL AMEND 1. SOIL TEST
NONWOVEN GEOTEXTILE ½ IN GALVINIZED HARDWARE CLOTH 2 IN x 4 IN WEIR GRATE WRAPPED WITH GEOTEXTILE ISOMETRIC VIEW 1 OF 2	3. COMPACT FILL. 4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE. 5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN. 6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION. 7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. 8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.	BOTH LIME ANALYSIS SAMPLES FERTILIZE APPLICATION PRIOR APPLICATION PRIOR APPLICATION PRIOR APPLICATION PRIOR APPLICATION PRIOR POLITION POR POLITION POR POLITION POR POLITION PRIOR
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	PRIOR TO
U.S. DEPARTMENT OF AGRICULTURE ATURAL RESOURCES CONSERVATION SERVICE 2011 WATER MANAGEMENT ADMINISTRATION	U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	
DETAIL E-9-6 COMBINATION INLET PROTECTION STANDARD SYMBOL	SEQUENCE OF CONSTRUCTION 1. OBTAIN GRADING PERMIT (1 DAY) 2. DEVELOPER/CONTRACTOR SHALL CONDUCT A PRE—CONSTRUCTION MEETIN SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE. (1 DAY)	
CONSTRUCTION_SPECIFICATIONS	2. NOTIFY HOWARD COUNTY BUREAU OF ENGINEERING, CONSTRUCTION INSPE	ECTION

CONSTRUCTI 1. USE WOVEN 2. EXCAVATE 3. FOR TYPE INTO THE C ENDS OF T GALVANIZEI GEOTEXTILE AND MID SI WEIR CRES: THEN FAST FOR TYPE I 6 FOOT LEE STRUCTURE THE FENCE HE FENCE HE SPACE FENCE A M 4. BACKFILL A NOTCH ELE	ON SPECIFICATIONS A SLIT FILM GEOTEXTILE AS S COMPLETELY AROUND THE IN A, USE NOMINAL 2 INCH X 4 GROUND AT EACH CORNER OF HE INLET. ASSEMBLE THE TO D HARDWARE CLOTH TIGHTLY SECURELY TO THE HARDWAI ECTION. EMBED GEOTEXTILE A T. THE ENDS OF THE GEOTEX ENED TO THE POST. B, USE 2% INCH DIAMETER G NOTH, DRIVEN A MINIMUM OF T. FASTEN 9 GAUGE OR HEAV POSTS WITH WIRE TIES, FAS ED EVERY 24 INCHES AT THE INMIMUM OF 18 INCHES BELOW AROUND THE INLET IN LOOSE VATION ON THE ENDS AND T	PECIFIED IN SECTION H—1 MATERIA LET TO A DEPTH OF 18 INCHES BE INCH CONSTRUCTION GRADE LUMB THE INLET. PLACE NAIL STRIPS B P PORTION OF THE 2X4 FRAME AS AROUND THE FRAME AND FASTEN RE CLOTH WITH TIES SPACED EVER IND HARDWARE CLOTH A MINIMUM TILLE MUST MEET AT A POST, BE O STALVANIZED STEEL POSTS OF 0.095 36 INCHES BELOW THE WER CRES 36 INCHES BELOW THE WER CRES IER CHAIN LINK FENCE, 42 INCHES TEN GEOTEXTILE SECURELY TO THE TOP AND MID SECTION. EMBED GE 7 THE WEIR CREST. 4 INCH LIFTS AND COMPACT UNTIL OP PELEVATION ON THE SIDES. RES FREQUENT MAINTENANCE. REM	ELOW THE NOTCH ELEVATION. BER POSTS, DRIVEN 1 FOOT BETWEEN THE POSTS ON THE S SHOWN. STRETCH ½ INCH SECURELY. FASTEN Y 24 INCHES AT THE TOP OF 18 INCHES BELOW THE DVERLAPPED AND FOLDED, S INCH WALL THICKNESS AND ST AT EACH CORNER OF THE IN HEIGHT, SECURELY TO C CHAIN LINK FENCE WITH COTEXTILE AND CHAIN LINK L SOIL IS LEVEL WITH THE	NONWOVEN GEOTEXTILE X IN GALMNIZI HARDWARE CLO GRATE WRAPPI WITH GEOTEXTI	2 IN	MAX. SPACING X 4 IN SPACER 2 IN x 4 IP 2 FT MIN. I	S N ANCHORS LENGTH N SPACER	1. REMOVE A MATERIAL 2. EXCAVATE PROJECTE 3. COMPACT 4. CONSTRUDUE TO F 5. PROVIDE 6. STABILIZE WATER DI 7. MAINTAIN MONTHING SECTION 8. UPON REI	E OR SHAPE EARTH DIMONS OR OTHER IRREGUI FILL. CT FLOW CHANNEL ON FIELD CONDITIONS AS N OUTLET PROTECTION AS E EARTH DIME WITHIN TO IVERSION WITHIN 24 HO LINE, GRADE, AND CRC POSITIVE DRAINAGE. K JUSLY MEET REQUIREME B-4 VEGETATIVE STABIL MOVAL OF EARTH DIME, STABILIZE DISTURBED	REES, BRUSH, STUMPS, OR FERE WITH PROPER FUNCTI (E TO LINE, GRADE, AND C LARITIES ARE NOT ALLOWE AN UNINTERRUPTED, CONT IECESSARY TO MAINTAIN PO S REQUIRED ON APPROVED HREE DAYS OF INSTALLATION. OSS SECTION. REMOVE ACC EEP EARTH DIKE AND POIN TIST FOR ADEQUATE VEGET	ON OF EARTHDIKE. PROSS SECTION AS SPECIAL INUOUS GRADE, ADJUSTIC OSITIVE DRAINAGE. PLAN. ON. STABILIZE FLOW CHA CUMULATED SEDIMENT AN UT OF DISCHARGE FREE OF TATIVE ESTABLISHMENT IN	IFIED. BANK ING THE LOCATION INNEL FOR CLEAR ID DEBRIS, AND OF EROSION, AND N ACCORDANCE WITH THIN 24 HOURS OF	CORF C. TOP CONIC BE C. C. SOIL AM 1. SOIL I BOTH I. ANALYS SAMPLE 2. FERTIL APPLIC. PRIOR DELIVER NAME, 3. LIME M EXCEPT OXIDE 50 PEF THROUG INCORP 5. WHERE
AFTER EAC PROTECTION	H RAIN EVENT TO MAINTAIN N DOES NOT COMPLETELY DR	FUNCTION AND AVOID PREMATURE AIN WITHIN 24 HOURS AFTER A ST ATED SEDIMENT AND CLEAN, OR RE	CLOGGING. IF INLET ORM EVENT, IT IS CLOGGED.	MARYLAND STANDARDS AND SPECIFI	MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL				T CONTROL	LIMESTO PRIOR			
STONE.	Occord, Namora Rocomoas	THE SERVICE THE SECTION, ST. NO.	TOTAL SECTION NEW MADE	U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011		PARTMENT OF ENVIRONMENT AGEMENT ADMINISTRATION		RTMENT OF AGRICULTURE URCES CONSERVATION SET			IENT OF ENVIRONMENT ENT ADMINISTRATION	
Stabilization				DETAIL E-9-6 COMBI		r I	STANDARD SYMBOL	1. OBTAIN C	GRADING PERMIT	· · · /		DUCTION MEETIN	NO WITH TH
ommended Seedi	ing Dates by Plant Hardin	ress Zone ^M 7a and 7b		CONSTRUCTION SPECIFICATIONS 1. USE NOMINAL 2 INCH x 4 INCH LUMBER.		ATERIALS.		SEDIMENT 2. NOTIFY H DIVISION 3. INSTALL	F CONTROL INSF HOWARD COUNT (410–313–188 STABILIZED CON	R SHALL CONDUC' PECTOR PRIOR TO Y BUREAU OF ENI (0) AT LEAST 24 ISTRUCTION ENTRA THE INSTALLATION	ANY LAND DIST GINEERING, CONS HRS BEFORE ST ANCE WITH MOUN	TURBANCE. (1 D STRUCTION INSP ARTING WORK. (NTABLE BERM. (DAY) PECTION (1 DAY) (1 DAY)
			2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. 3. LIFT GRATE, AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS, THEN SET						4. CLEAR AND GRUB FOR THE INSTALLATION OF ALL PERIMETER CONTI 5. INSTALL PERIMETER CONTROLS INCLUDING EARTH DIKES, SILT FENCE				

	<u> </u>			PROTECTION	COIP					
ess Zone 3/			CON	CONSTRUCTION SPECIFICATIONS						
7a and 7b				USE NOMINAL 2 INCH x 4 INCH LUMBER.						
/a and /0			2.	USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.						
		······································		LIFT GRATE, AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER GRATE BACK IN PLACE.	ALL OPENINGS, THEN SET					
Feb 15 to Apr 30; Aug 15 to Nov 30	FERTILIZER RATE	LIME RATE	-	ATTACH A CONTINUOUS PIECE OF ½ INCH GALVANIZED HARDWARE CLOTH WI 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT						
Feb 15 to Apr 30; Aug 15 to Nov 30	(10-20-20)		5.	WEIR, EXTENDING 2 FEET BEYOND THROAT ON EACH SIDE. 5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH IT TO THE WEIR.						
Feb 15 to Apr 30; Aug 15 to Nov 30			6.	NAIL THE 2X4 WEIR TO THE TOP OF A 9 INCH LONG VERTICAL SPACER TO E WEIR AND THE INLET FACE (MAXIMUM 4 FEET APART).						
Feb 15 to Apr 30; Aug 15 to Nov 30	436 LB/AC (10 LB PER	2 TONS/AC (90 LB PER 1000 SF)	(90 LB PER		PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2X4 ANCHO LENGTHS OF 2x4 INCH TO THE TOP OF THE WEIR AT SPACER LOCATIONS). E ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPR	XTEND 2X4 ANCHORS				
Feb 15 to Apr 30; Aug 15 to Dec 15	1000 SF)		1	METHOD. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND BOTH ENDS OF THE 1	THROAT OPENING.					
			9.	9. FORM THE 14 INCH HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND						
May 1 to Aug 14				THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN % T CQUIVALENT RECYCLED CONCRETE OVER THE HARDWARE CLOTH AND GEOTEX TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEO	TILE IN SUCH A MANNER					
May I to Aug 14				AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT B BYPASS.	ERM TO PREVENT INLET					
nation and purity, as	ä			STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CL PROTECTION DOES NOT COMPLETELY DRAIN MITHIN 24 HOURS AFTER A STOR WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPL STONE.	OGGING. IF INLET M EVENT, IT IS CLOGGED.					

for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal tye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal tye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA DEFINITION A MOUND OR PILE OF SOIL PROTECTION BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL

Mar 1 to May 15: Aug 🖺 Feb 15 to Ap

far I to May 15; Au

far I to May 15; Au

r I to May 15;

far I to May 15: At

May 16 to Jul 31

May 16 to Jul 31

WITHOUT TREATMENT.

OWNER/DEVELOPER CERTIFICATION:

DOCK POTTUE DEAD

I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL

PERIODIC ON—SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

Recommended Seeding Dates by Plant Hardiness Zone

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

CONDITIONS WHERE PRACTICE APPLIES

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

Table B.1: Temporary Seeding for Site Stabilization

Mar 15 to May 31; Aug 1 to Sep

Mar 15 to May 31; Aug 1 to Sep 3

Mar 15 to May 31; Aug 1 to Sep 3

Mar 15 to May 31; Aug 1 to Oct 3

1.0 Mar 15 to May 31; Aug 1 to Sep 3

0.5 Jun 1 to Jul 31

0.5 Jun 1 to Jul 31

1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity

SECTION FOR TYPE A AND B

2011

Plant Species

ssp. multiflorum)

Oats (Avena sativa)

Barl<mark>c</mark>y (*Hordeum vulgare*)

Wheat (Triticum aestivum)

Warm-Scason Grasses

Cereal Rye (Secale cereale)

Foxtail Millet (Setaria italica)

Pearl Millet (Pennisetum glaucum)

Annual Ryegrass (Lolium perenne

Seeding Rate 1/

lb/1000 ft²

1.0

0.7

CRITERIA

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.

HE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE

AND BASED ON A SIDE SLUPE KAILO NO STEEFEN THOU Z.T. BELIGIOUS.

WITH SECTION B-3 LAND GRADING.

RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.

ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.

CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER. 6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE. 7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.

8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DEVELOPMENT ENGINEERING DIVISION

HIEF, DIVISION OF LAND DEVELOPMENT

STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH

STANDARDS AND SPECIFICATIONS FOR DUST CONTROL DEFINITION CONTROLLING THE SUSPENSION OF DUST PARTICLES FROM CONSTRUCTION ACTIVITIES. PURPOSE
TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES TO REDUCE ON AND OFF-SITE DAMAGE INCLUDING HEALTH AND TRAFFIC HAZARDS.

CONDITIONS WHERE PRACTICE APPLIES
SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY

WITHOUT TREATMENT.

SPECIFICATIONS

1. MULCHES: SEE SECTION B-4-2 SOIL PREPARATION, TOPSOILING, AND SOIL
AMENDMENTS, SECTION B-4-3 SEEDING AND MULCHING, AND SECTION B-4-4
TEMPORARY STABILIZATION. MULCH MUST BE ANCHORED TO PREVENT BLOWING.

2. VEGETATIVE COVER: SEE SECTION B-4-4 TEMPORARY STABILIZATION.

3. TILLAGE: TILL TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. BEGIN
PLOWING ON WINDWARD SIDE OF SITE. CHISEL—TYPE PLOWS SPACED ABOUT 12 INCHES
APART, SPRING—TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT
THAT MAY PRODUCE THE DESIRED EFFECT.

4. IRRIGATION: SPRINKLE SITE WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS
NEEDED. THE SITE MUST NOT BE IRRIGATED TO THE POINT THAT RUNOFF OCCURS.

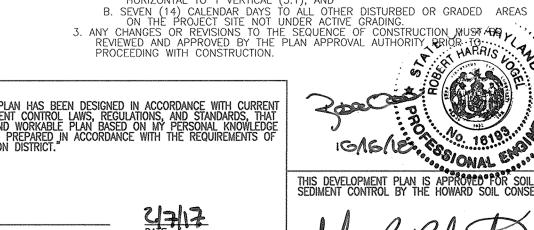
5. BARRIERS: SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW
BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL
BLOWING.

6. CHEMICAL TREATMENT: USE OF CHEMICAL TREATMENT REQUIRES APPROVAL BY THE

DESIGN CERTIFICATION: "I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURREN 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 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
(MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND
SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT—OF—ENTRY FOR

MD REGISTRATION NO. 16193

(P.E), R.L.S., OR R.L.A. (circle one)



B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, HE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

SPECIFICATIONS

A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE ACRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISCHARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO 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: SOIL PH BETWEEN 6.0 AND 7.0. II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL

TOPSOILING AND SOIL AMENDMENTS

CONDITIONS WHERE PRACTICE APPLIES
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

PREPARATION

URPOSE O PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

(GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE. V. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT. V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

3. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON—SITE SOILS DO NOT MEET THE ABOVE CONDITIONS GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THI APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.

D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST. . MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLI MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCEM HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS B. MULCHING SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A 1. MULCH M. MULCH M.

GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE: . THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FLIRNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.

B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS,
QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR S

SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF

5. TOPSOIL APPLICATION EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL . ENCOSION AND SEDIMENT CONTROL PRACTICES MOST LE MAINTAINE WILL ATTEND OF A MINIMUM THICKNESS OF 4 INCHES, SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURAT APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE. 4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

3. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND

LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

B-4-4 STANDARDS AND SPECIFICATIONS FOR

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

O USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED

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

CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN

TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE

PLAN.

2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

NO SPECIES RATE (LB/AC) DATES DEPTHS RATE (10-20-20)

AUG 1 TO OCT 15

FELIZER RATE

LIME RATE

HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b

SEED MIXTURE (FROM TABLE B.1):

40 LB / AC

ANNUAL RYEGRASS OR EQUAL

TABLE 8.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN

TEMPORARY STABILIZATION

<u>DEFINITION</u>
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER. PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE

1. SPECIFICATIONS

A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE—TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING DATES.

B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.

C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER. THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

2. APPLICATION

A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE

8.1, PERMANENT SEEDING TABLE 8.3, OR SITE—SPECIFIC SEEDING SUMMARIES.

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING

BATE IN SACH DIRECTION ROLL THE SEFDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE. II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION. IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

 MULCH MATERIALS (IN ORDER OF PREFERENCE)
 A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRÁW MULCH IN AREÁS WHERE ONE SPECIES OF GRASS IS DESIRED. B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE. I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY. II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS
III. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.

IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO—TOXIC.

V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT

A. APPLY MOUCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD: I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.

II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO—TACK), DCA—70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED. V 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

HOWARD SOIL CONSERVATION DISTRICT (HSCD) 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 LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:

A. PRIOR TO THE START OF EARTH DISTURBANCE,
B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS,
BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING,
C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER

A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING

STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER

SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS

6. SITE ANALYSIS: TOTAL AREA OF SITE: AREA DISTURBED: 0.5 IN. 436 LB/AC ____ (10 LB PER (90 LB PER 1000 SF) 1000 SF) 30 LB / AC MAY 16 TO 0.5 IN.

In general, the near surface soils encountered on this site are moisture sensitive. This can be seen in he California bearing ratio test, which produced a low CBR value of 3.7 at 95 percent compaction. The sample was taken from the near surface soil at P1 and P2.

Prior to pavement construction, the subgrade should be proofrolled with a loaded, tandem-axle dump truck under the observation of a geotechnical engineer. Proofrolling will help identify loose or soft areas that may require undercutting and/or stabilizing. For design purposes, we have assumed traffic of 3 tractor/trailer type trucks, 10 - 12 ton trucks and

Using the above listed assumed daily traffic loads, an assumed CBR of 3.5, and the AASHTO Method of Flexible Pavement Design, our calculations indicate that the following proposed

500 cars per day. We have assumed traffic of 10-12 ton trucks, and 500 cars per day for areas that

6" Compacted Graded Aggregate Base 3.0" Bituminous Concrete Base Course, Superpave 12.5 mm 1.5" Bituminous Concrete Surface Course, Superpave 9.5 mm

Compacted Graded Aggregate Base 4.5" Bituminous Concrete Base Course, Superpave 19 mm 1.5" Bituminous Concrete Surface Course, Superpave 9.5 mm

Because the existing soils are moisture sensitive, and because of the potential for wet soils, some indercutting and/or stabilization of the parking areas may be required during subgrade preparation.

The recommended paving sections are not intended to support the heavy traffic loads associated with building construction. If the asphalt base course is placed before the building is constructed, base course repairs prior to surface course placement should be expected TION FOR PSWM

> I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. BHAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY. for the 16193 larging

C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,

C. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY 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 THERETO.

FOLLOWING INITIAL SOIL DISTURBANCE OR RE—DISTURBANCE, PERMANENT OR TEMPORARY STARLY ATTOM IS PROVIDED WITHIN THERE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR 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 SEDINING (SEC. B-4-5), TEMPORARY STANDARDS SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEDINING (SEC. B-4-5), TEMPORARY

FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).

ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.

AREA TO BE ROOFED OR PAVED: AREA TO BE VEGETATIVELY STABILIZED:

MONITORING/SAMPLING

OFFSITE WASTE/BORROW AREA LOCATION:

OFFSITE WASTE/BORROW AREA LOCATION:

ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT 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

• INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
• NAME AND TITLE OF INSPECTOR • WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED • BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT

ACTIVITIES

• EVIDENCE OF SEDIMENT DISCHARGES
• IDENTIFICATION OF PLAN DEFICIENCIES
• IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
• IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
• COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS

PHOTOGRAPHS

 MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
 OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER. SHORTER.

10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.

11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT

GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT)
AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF
THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY
THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID. UNDER THAN 30 ACRES
CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE
TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.

13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON—SITE FOR REDISTRIBUTION ONTO FINAL GRADE.

14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON—THE—CONTOUR, AND BE IMBRICATED

AT 25' MINIMUM INTERVALS WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.

15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):

• USE I AND IP MARCH 1 — JUNE 15

• USE III AND IIIP OCTOBER 1 — APRIL 30

• USE IV MARCH 1 — MAY 31

16. A COPY OF THIS PLAN, 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. * ESTIMATE ONLY. CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION.

** TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, WITH AN APPROVED AND ACTIVE GRADING PERMIT.

NO AS BUILT INFORMATION ON THIS SHEET

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANEN STABILIZATION

DEFINITION TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

ONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON

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

A.SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE 8.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY. D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

LAREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35PERCENT OF THE TOTAL MIXTURE BY WEIGHT. I. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY
BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM
OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT
OF THE TOTAL MIXTURE BY WEIGHT.

II. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED. IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 11/2 TO 3 POUNDS PER 1000 SQUARE FEET.

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

IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

WESTEM MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A) CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) SOUTHERN MD. EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 HARDINESS ZONES: 7A, 7B) L AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING SUMMARY

HARDINES SEED MI	1	LIME RATE						
NO SPECI	APPLICATI S RATE (LB		SEEDING DATES	SEEDING DEPTHS	N	P ₂ O ₅	K ₂ 0	
COOL SEA TALL FES & KENTU BLUEGRAS OR EQU	CUE 1.F. 60 LE CKY K.B. 40 LE	2 / 40	MAR 1 TO MAY 15 AUG 15 TO OCT 15	1/4-1/2 IN.	(1 LB PER	(2 LB PER	90 LB/AC (2 LB PER 1000 SF)	

COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

A CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR. B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/4 INCH, AT THE TIME OF CUTTING, MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TOM OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE

UPPER 10 PERCENT OF THE SECTION D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

E. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL,
LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.

B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL
TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE
UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE

UNDERLYING SOIL SURFACE.

D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS. SOD MAINTENANCE A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN

AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING. B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT. C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

DEVELOPER/OWNER

JA TEN OAKS LLC C/O ANTWERPEN AUTOMOTIVE 6440 BALTIMORE NATIONAL PIKE BALTIMORE MD 21228 410-938-5000

REVISION DATE SITE DEVELOPMENT PLAN

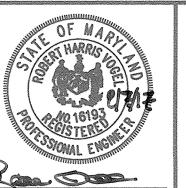
SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

ANTWERPEN PROPERTIES - PARCEL D TEN OAKS ROAD AND MD ROUTE 108

ZONED B-1 & B-2 PARCELS 35, 161 & 361 TAX MAP 34 GRID 12 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SOD INSTALLATION

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

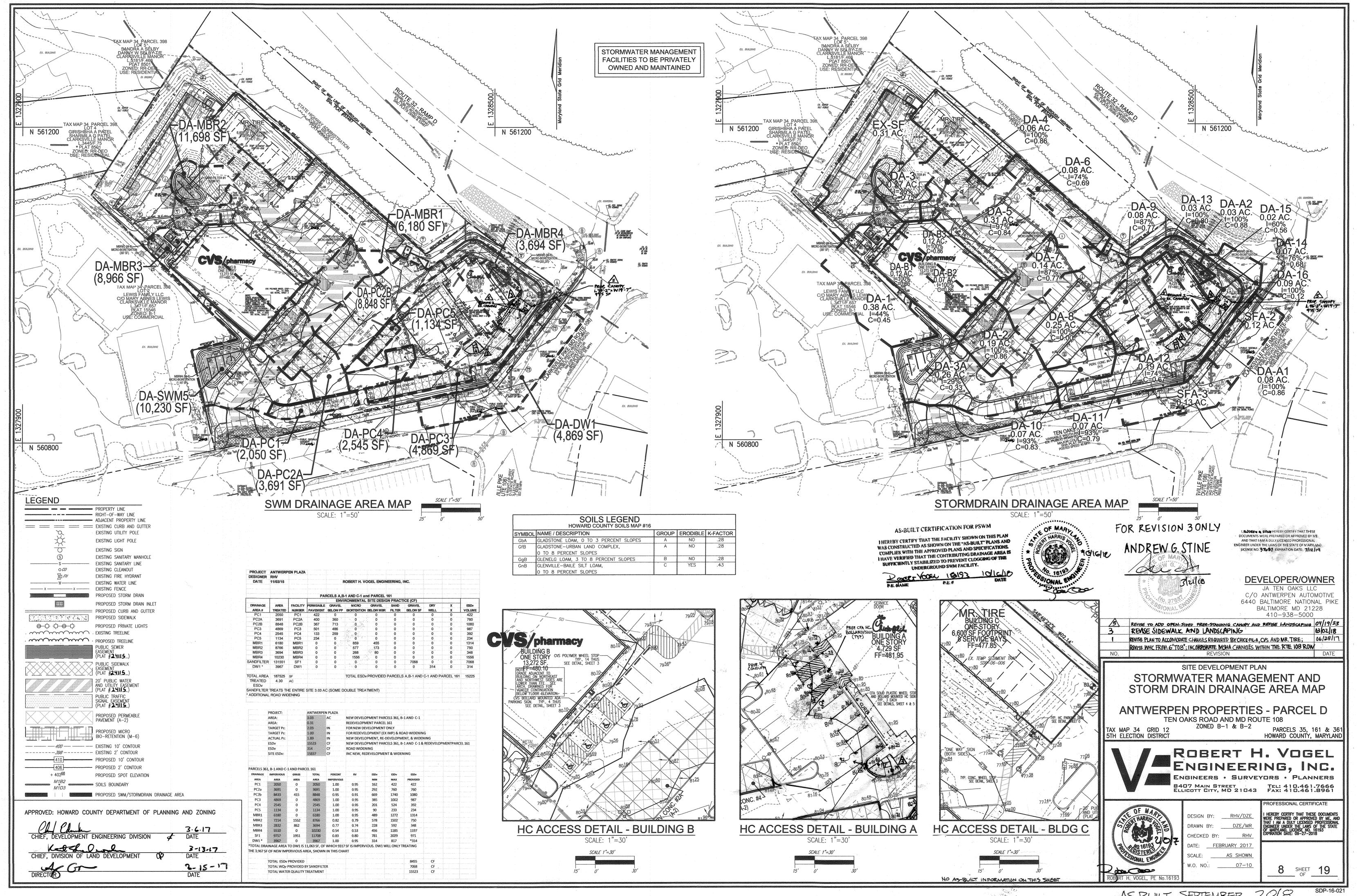


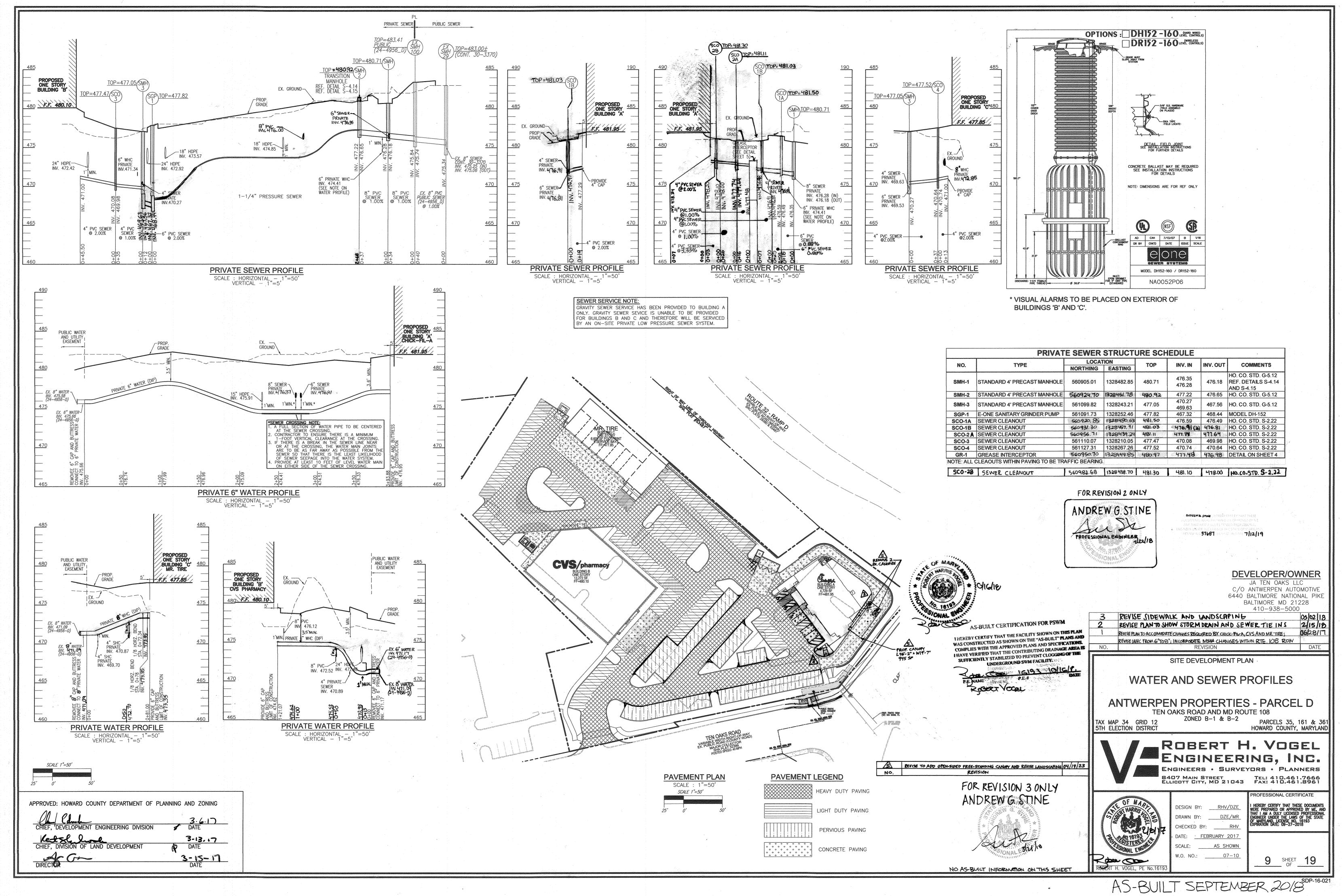
DESIGN BY: RHV/DZE DRAWN BY: DZE/MR CHECKED BY: RHV DATE: FEBRUARY 2017 SCALE:

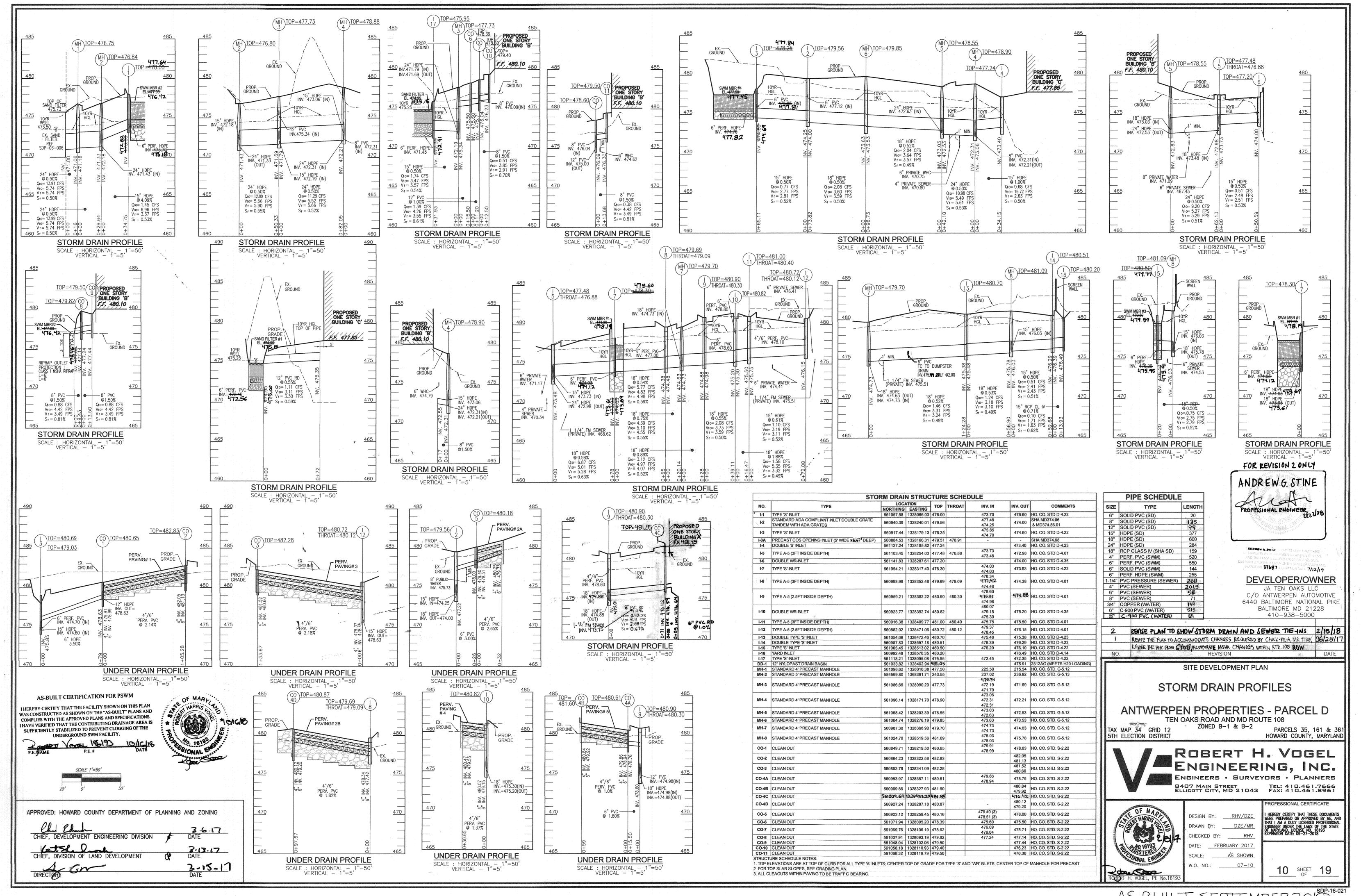
HEREBY CERTIFY THAT THESE DOCUMENTS ERE PREPARED OR APPROVED BY ME, AND AS SHOWN W.O. NO.: 07-10

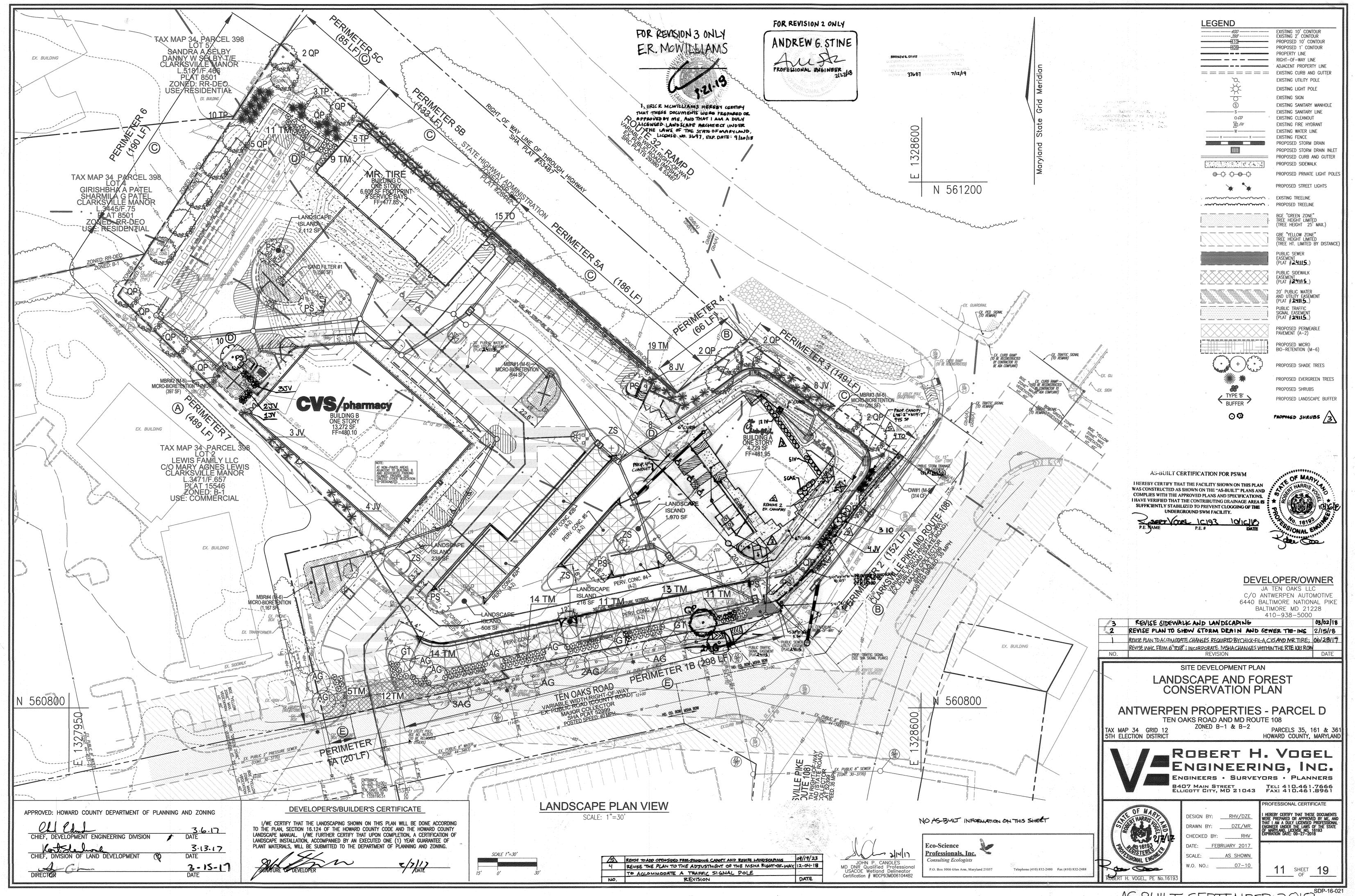
SHEET 19

PROFESSIONAL CERTIFICATE









					بتحنيك أوتوج تثاث	DSCAP								
CATEGORY				PEF		ENT TO PROPER	RTIES					JACENT DUMPST		
PERIMETER/FRONTAGE DESIGNATION	1A	1B	2	3	4	5A	5B	5C	6	7	8	9	10	
LANDSCAPE TYPE	. E	E	В	С	В	С	С	С	С	А	D	D	D	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	20'	298'	152'	149'	66'	186'	133'	85'	190'	489'	60'	42'	42'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	
CREDIT FOR WALL, FENCE OR BERM YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED)	NO	NO	NO***	NO***	NO	YES* 186'	NO	NO	NO	NO	NO	NO	NO	TOTAL
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	20' 1:40 1 - 1:4 5	298' 1:40 8 - 1:4 75	152' 1:50 4 1:40 4		66' 1:50 2 1:40 2		133' 1:40 4 1:20 7	85' 1:40 3 1:20 5	190' 1:40 5 1:20 10 -	489' 1:60 9 — —		42' 1:60 1 1:10 5		43 47 99
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION) DESCRIBE PLANT SUBSTITUTION CREDITS SELOW IF NEEDED)	0 - 2 5	4 4*** 75	4 4 —	4 8 - -	2 2 - -	- - 19	 15** 	3 5 - -	5 10 - -	4 8** - -	1 6 - -	1 3 - 20	1 5 - -	29 66 6 119

** REQUIRED TREES HAVE BEEN PROVIDED AS EVERGREEN AT 2:1 SUBSTITUTION.

**** AUTERNATIVE COMPLIANCE FOR 1:1 SUBSTITUTION RATIO PUE TO BGE OVEHBAD LINES. LANDSCAPE NOTES

- I. 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
- 2. THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR
- 3. SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT. SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND
- INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL. 4. PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE FINAL PLAN.
- LANDSCAPE SCHEDULE NOTE: I. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN

SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING SPECIFICATIONS.

CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING. S. 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

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 THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE
- 2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSED AS PART OF THE DEVELOPER'S AGREEMENT FOR THIS SITE DEVELOPMENT PLAN IN THE AMOUNT OF \$24370.00 FOR THE REQUIRED 38 SHADE TREES, 66 EVERGREEN TREES, AND 119 SHRUBS.

 3. FINANCIAL SURETY IN THE AMOUNT OF \$2,700.00 HAS BEEN POSTED AS PART OF THE ENGINEERING COST ESTIMATE FOR THIS SITE DEVELOPMENT PLAN FOR THE REQUIRED 9 STREET TREES.
- 4. 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.

 5. THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
- 6. NO LANDSCAPING TO BE INSTALLED WITHIN ANY PUBLIC EASEMENT FOR WATER, SEWER, OR STORMDRAIN.
- . ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR. 8. LANDSCAPING IS NOT PERMITTED WITHIN 7.5' ON EACH SIDE OF THE FIRE DEPARTMENT CONNECTION. PROVIDE A CLEAR, UNOBSTRUCTED ACCESS PATH TO THE FIRE DEPARTMENT CONNECTION. NFPA-1 13.1.4
- 9. NOTE: THE ORNAMENTAL TREES WERE ERRONEOUSLY EXCLUDED FROM THE INITIAL SURETY AMOUNT. DPZ WILL NOT REQUIRE ADDITIONAL POSTING; HONBYER ALL LANDSCAPING AS SHOWN ON THE PLAN MUST BE COMPLETED PRIOR TO RELEASE OF THE LANDSCAPING SURETY.

SHA LANDSCAPE NOTES:

MATERIALS SHALL CONFORM TO SECTION 920.

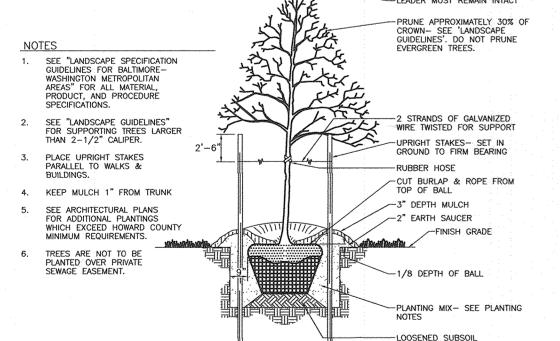
- 1. LANDSCAPE CONSTRUCTION AND MATERIALS INSTALLED WITHIN THE MARYLAND STATE HIGHWAY ADMINISTRATION RIGHT OF WAY SHALL CONFORM TO SHA 2008 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, WHICH SHALL SUPERSEDE ALL OTHER SPECIFICATIONS APPROVED FOR THE PROJECT WITHIN THE SHA RIGHT OF WAY. LANDSCAPE CONSTRUCTION SHALL CONFORM TO SECTIONS 701 THRU 716, AND LANDSCAPE
- 2. SOIL DISTURBANCE SUCH AS GRADING, EXCAVATION, SOIL PLACEMENT OR OTHER ACTIVITIES THAT INVOLVE SOIL DISTURBANCE WITHIN THE SHA RIGHT OF WAY SHALL BE SUPERVISED BY AN EROSION AND SEDIMENT CONTROL MANAGER WITH A VALID SHA 'YELLOW CARD' IN CONFORMANCE
- WITH SHA 2008 SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS AND ANY APPLICABLE EROSION AND SEDIMENT CONTROL PERMIT 3. AREAS OF EXCAVATION OR DRILLING IN LANDSCAPED AREAS OF THE SHA RIGHT OF WAY SHALL REMOVE EXCAVATED MATERIALS AND DEBRIS, AND RESTORE THE SUBGRADE WITH APPROVED SUBSOIL. A LAYER OF APPROVED TOPSOIL AT LEAST 4 INCH DEPTH SHALL BE PLACED ON ALL
- DISTURBED AREAS PRIOR TO SEEDING, SODDING OR OTHER LANDSCAPING. SUBSOIL AND TOPSOIL SHALL BE PLACED IN CONFORMANCE WITH SECTION 701 OF THE SHA STANDARD SPECIFICATIONS. 4. TURFGRASS SOD ESTABLISHMENT SHALL BE PERFORMED IN ALL DISTURBED AREAS OF THE SHA RIGHT OF WAY, OR WITHIN THE AREAS INDICATED

3-13-17

3-15-17

LEADER MUST REMAIN INTACT

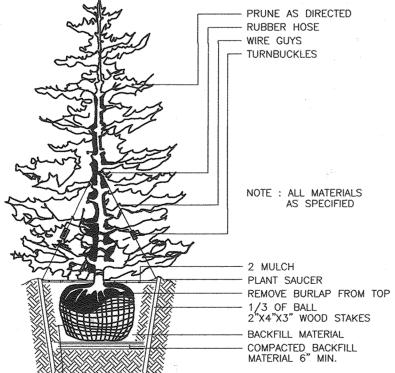
IN THE PLANS, IN CONFORMANCE WITH SECTION 708 OF THE SHA STANDARD SPECIFICATIONS.



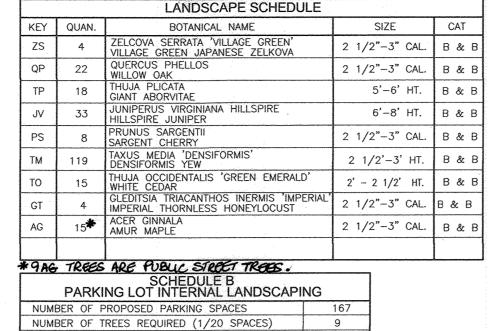
TREE PLANTING AND STAKING DECIDUOUS TREES UP TO 2-1/2" CALIPER NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION



TYPICAL EVERGREEN TREE PLANTING DETAIL NOT TO SCALE



OTHER TREES (2:1 SUBSTITUTI	ON) -									
STREET TREE CALCULATIONS											
TREET NAME	LINEAR FEET	NO. REQUIRED (1/30LF)	NO. PROVIDED								
EN OAKS ROAD	250	9	9								

MICRO-BIORETENTION PLANTING REQUIREMENTS

BIORETENTION AREAS ARE TO BE PLANTED BASED ON

CAL.

2-3'

24-30"

A MINIMUM DENSITY OF 1000 STEMS PER PLANTED

ACRE (0.0227 STEMS PER SQUARE FOOT).

AREA REQUIRED

PROVIDED

CONT.

B+ B

#5 CAN

4 144 1168 35 37 4 6 6 9 12 40 40 80

TOTALS: 494 2416 75 84 9 14 14 20 27 83 83 166

NUMBER OF TREES PROVIDED

QTY BOTHNICAL NAME

22

SUBTOTAL

5 CORNUS ALBA'ELEGANTISSIM

ITEA VIRGINICA 'HENRY'S

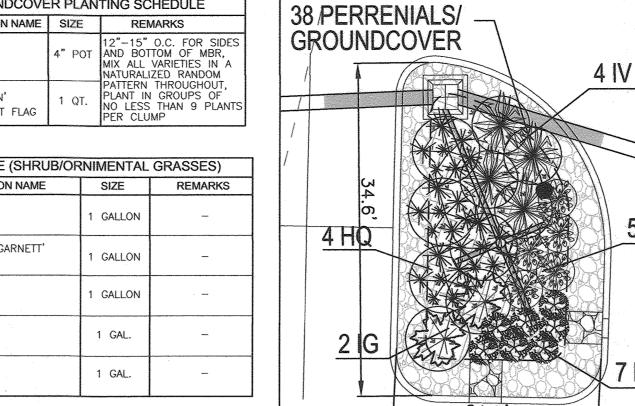
LEGEND	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
****	101	BAPTISIA AUSTRALIS FALSE INDIGO	4" POT	12"-15" O.C. FOR SIDE AND BOTTOM OF MBR, MIX ALL VARIETIES IN A NATURALIZED RANDOM
	101	ACORUS GRAMINEUS 'OGON' GOLDEN VARIEGATED SWEET FLAG	1 QT.	PATTERN THROUGHOUT, PLANT IN GROUPS OF NO LESS THAN 9 PLAN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

BIORETENTION PLANTING SCHEDULE (SHRUB/ORNIMENTAL GRASSES)					
EGEND/KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
G G	9	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	19	LEUCOTHEO RACEMOSA FETTERBUSH	1 GAL.	-	
PV	26	PANICUM VIRGATUM SWITCHGRASS	1 GAL.		

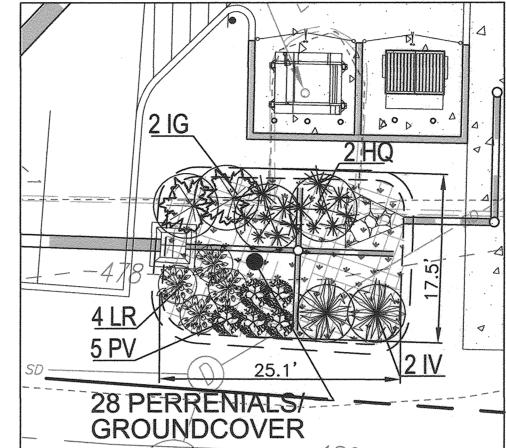
PLANTINGS PROVIDED

PERRENIALS/GROUND

COVER PROVIDED



MBR (SWM#1) PLANTING



MBR (SWM#2) PLANTING

Input the number "1" under the appropriate land use

HDR

zoning, and limit to only one entry

IDA

Afforestation Threshold (Net Tract Area x 15%

Conservation Threshold (Net Tract Area x 15%

Existing Forest Cover within the Net Tract Area

Area of Forest Above Conservation Threshold

Forest Clearing Permitted Without Mitigation

Reforestation for Clearing Above the Conservation Threshold

Reforestation for Clearing Below the Conservation Threshold

THE FOREST CONSERVATION OBLIGATION FOR PARCEL 361 (PARCELS A, B-1 ANC C-1) HAVE BEEN PREVIOUSLY ADDRESSED UNDER SDP-03-097 AS A FEE-IN-LIEU PAYMENT IN THE AMOUNT OF \$7,840.40, AND UNDER SDP-06-006 AS A FEE-IN-LIEU PAYMENT IN

USACOE Wetland Delineator Certification # WDCP93MD061044B2

THE AMOUNT OF \$2,395.80. THE FOREST CONSERVATION OBLIGATION FOR PARCEL 161 HAS BEEN SATISFIED BY A FEE-IN-LIEU PAYMENT IN THE AMOUNT OF \$1,306.80 (0.04

Credit for Retention above the Conservation Threshold

Total Area of Forest to be Cleared

Total Reforestation Required

Total Afforestation Required

Total Planting Requirement

Eco-Science

Professionals, Inc.

Consulting Ecologists

P.O. Box 5006 Glen Arm, Maryland 21057

Total Area of Forest to be Retained

Forest Conservation Worksheet 2.2

Total Tract Area

Break Even Point

Proposed Forest Clearing

Planting Requirements

AC \times 43560SF \times 0.75).

Deductions

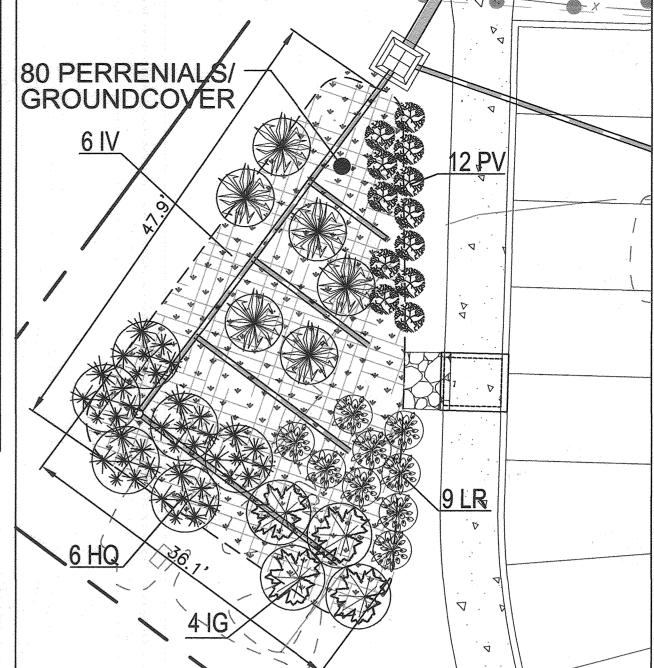
Net Tract Area

Net Tract Area

Land Use Category

Existing Forest Cover

Break Even Point



MBR (SWM#4) PLANTING

MBR (SWM#3) PLANTING



AS-BUILT CERTIFICATION FOR PSWM I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS.

HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA 45 STATEMENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

B = 0.00

C = 0.29

D = 0.04

E = 0.04

F = 0.00

G = 0.00

H = 0.00

1 = 0.00

J = -0.00

K = 0.00

L = 0.00

M = 0.00

N = 0.00

P = 0.00

Q = 0.04

R = 0.04

Telephone (410) 832-2480 Fax (410) 832-2488

NO AS-BUILT INFORMATION ON THIS SHEET

DEVELOPER/OWNER JA TEN OAKS LLC C/O ANTWERPEN AUTOMOTIVE

6440 BALTIMORE NATIONAL PIKE BALTIMORE MD 21228 410-938-5000

REVISE TO ADD OPEN-SIDED FREE-STANDING CAMOPY AND REVISE LANDSCAPING 04/19/23
REVISE SIDEWALK AND LANDSCAPING
08/02/18 03/02/18 NO.

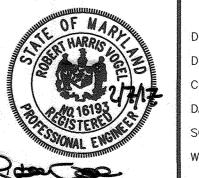
SITE DEVELOPMENT PLAN

LANDSCAPE AND FOREST

CONSERVATION NOTES AND DETAILS ANTWERPEN PROPERTIES - PARCEL D

TEN OAKS ROAD AND MD ROUTE 108 ZONED B-1 & B-2 PARCELS 35, 161 & 361 TAX MAP 34 GRID 12 HOWARD COUNTY, MARYLAND 5TH ELECTION DISTRICT

ROBERT H. VOGEL ENGINEERING, INC. ENGINEERS · SURVEYORS · PLANNERS 8407 MAIN STREET TEL: 410.461.7666 ELLICOTT CITY, MD 21043 FAX: 410.461.8961 3407 MAIN STREET



DESIGN BY: RHV/DZE DRAWN BY: CHECKED BY: FEBRUARY 2017 SCALE: W.O. NO.:

SHEET 19

ROFESSIONAL CERTIFICATE

LANDSCAPE SCHEDULE ILEX OPACA, AMERICAN HOLLY 2 1/2'-3' HGT. | B & B 2 1/2'-3' HGT. B & B

LANDSCAPE SCHEDULE

COMMON NAME

VARISGATED RED TWIG

DOPMOOD

GARNET SWEETSPIRE

- BACKFILL WITH TOPSOIL AND PEAT MOSS, 3:1 RATIO. BACKFILL IN 6" LIFTS 6" FOR PLANTS UP TO 4' HEIGHT MIN. 8" FOR PLANTS OVER 4' HEIGHT MIN. TO TWICE

SHRUB PLANTING DETAIL NOT TO SCALE

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. 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.

E.R. MCWILLIAMS

FOR REVISION 3 ONLY

I, ERIC R. MCWILLIAMS, HEREBY CORTY THAT THESE DOCUMENTS WERE PROPARED OR

APPROVED BY ME, AND THAT I AM A DULY ではないだけが 自己にいいているとう はっていま はってん 自じたい りん

THE LAWS OF THE STATE OF MARYLAND, LI CENSE NO. 3697, EXP. DATE: 9/20/18

AS-BUILT SEPTEMBER 2018

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

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

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

 SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION) * ORGANIC CONTEN — MINIMUM 10% BY DRY WEIGHT (ASTM D. 2974). IN GENERAL THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%). * CLAY CONTENT — MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.

* PH RANGE — SHOULD BE BETWEEN 5.5 — 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH. THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED. 3. COMPACTION

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUCS, 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 ALLEWATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION 70NF. SUBSTITUTE METHADS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT. ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE. WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFUL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

WHEN BACKFULING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN.

HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS. 4. PLANT MATERIAL

RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3. 5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE. ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT RALL SHOULD BE PLANTED SI 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DUMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DUMETER 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 SPECIFICATION THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA: * PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE). PERFORATIONS — IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4x4) GALVANIZED HARDWARE CLOTH.

GRAVEL — THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.

AIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE. D. NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,0000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR " A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24". THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

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

6. UNDERDRAINS

B.4.B SPECIFICATIONS FOR PERMEABLE PAVEMENTS & REINFORCED TURF THESE SPECIFICATIONS INCLUDE INFORMATION ON ACCEPTABLE MATERIALS FOR TYPICAL APPLICATIONS AND ARE NOT EXCLUSIVE OR LIMITING. THE DESIGNER IS RESPONSIBLE FOR DEVELOPING SPECIFICATIONS FOR INDIVIDUAL PROJECTS AND SPECIFIC CONDITIONS.

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

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.

MIX & INSTALLATION - TRADITIONAL PORTLAND CEMENTS (ASTM C 150, C 1157) MAY BE

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

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

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

OPERATION AND MAINTENANCE SCHEDULE FOR LANSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8),

AND ENHANCED FILTERS (M-9) 1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULTCH 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.

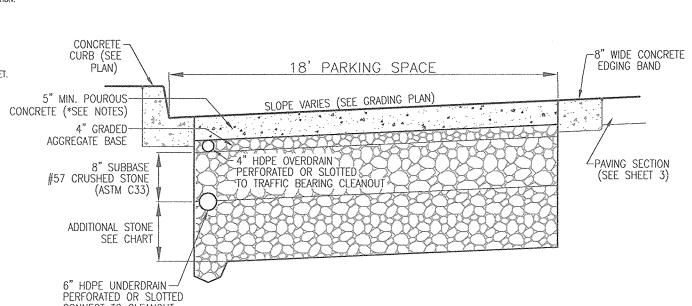
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING, THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.

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

RATION AND MAINTAINANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED

- **UNDERGROUND FACILITIES** A. THE UNDERGROUND STORMWATER MANAGEMENT FACILITY IS PRIVATELY OWNED AND IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO PERIODICALLY INSPECT AND CLEAN THE FACILITY TO MAINTAIN IT'S OPERATION AND
- FUNCTION. B. THE UNDERGROUND STORMWATER MANAGEMENT FACILITY SHALL BE INSPECTED YEARLY AT A MINIMUM AND AFTER ESPECIALLY SEVERE STORM EVENTS. . WHEN SEDIMENT ACCUMULATION OF MORE THAN 2" IS OBSERVED OR ANY
- DEBRIS THAT MIGHT OBSTRUCT THE OUTFALL IS OBSERVED, THE FACILITY SHALL BE CLEANED D. THE FACILITY SHALL BE CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE
- OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES NOTIFYING THEM OF THE SPILL AND CLEANUP OPERATION. . 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 ONCE EVERY SIX (6) MONTHS. IF OBSTRUCTIONS ARE FOUND, THE OWNER SHALL HAVE THEM REMOVED AND PROPERLY DISPOSED OF.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING DEVELOPMENT ENGINEERING DIVISION 3-13-17 Appendix B.4. Construction Specifications for Environmental Site Design Practices Table B.4.1 Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration see Appendix A, Table A. plantings are site-specific loamy sand (60 - 65%) & compost (35 - 40%) sandy loam (30%), compost (40%) Min. 10% by dry weight Organic content (ASTM D 2974) shredded hardwood aged 6 months, minimum; no pine or wood chips Pea gravel diaphragm pea gravel: ASTM-D-448 (1/8" TO 3/8") Curtain drain ornamental stone: washed E Type I nonwoven AASHTO M-43 Gravel (underdrains and NO. 57 OR NO. infiltration berms) GGREGATE F 758, Type PS 28 or AASHTO 4" to 6" rigid schedule 40 PVC or SDR35 Inderdrain piping Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary erneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth Poured in place concrete (i MSHA Mix No. 3; $\Gamma_c = 3500$ on-site testing of poured-in-place concrete required: psi @ 28 days, normal weight 28 day strength and slump test; all concrete design (cast-in-place air-entrained; reinforcing to or pre-cast) not using previously approved State or local meet ASTM-615-60 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 substitutions such as Diabase and Graystone (AASHTO) AASHTO-M-6 or ASTM-C-33 | 0.02" to 0.04" #10 are not acceptable. No calcium carbonated or dolomitic sand bstitutions are acceptable. No "rock dust" can be used for sand



PERMEABLE CONCRETE PARKING SPACES (FOR ELEVATIONS AND INVERTS, SEE PROFILES)

- NOT TO SCALE 1. PAVEMENT CROSS SECTION TO BE CONFIRMED BY GEOTECHNICAL ENGINEER . POROUS CONCRETE SECTION TO CONFORM TO APPENDIX B.4.B (SPECIFICATIONS FOR PERMEABLE PAVEMENTS) AND DESIGNED BY THE PROJECT GEOTECHNICAL
- 3. UNDERDRAINS/OVERDRAINS SHALL CONNECT INTO A TRAFFIC BEARING CLEANOUT AS SHOWN ON THE PLANS.

PERMEABLE CONCRETE SECTION				
PC NO.	ADDITIONAL STONE DEPTH			
1	N/A			
2A	0.46'			
2B	1.0'			
3	0.5'			
4	1.0'			

WIDTH VARIES (SEE PLAN) ELEV. A 3" MULCH T PONDING DEPTH ELEV. C 2' PLANTING SOI (SEE PLANTING SOI -PROVIDE FILTER FABRIC (SIDE ONLY) CHARACTERISTIC: (1/8"-3/8" STONE)ELEV F

MICRO-BIORETENTION (SWM #2, 3, & 4)

WIDTH VARIES (SEE PLAN) TYPE 'S' INLET -ELEV. A 3" MULCH T PONDING DEPTH ELEV. C 2' PLANTING SO (SEE PLANTING SO PROVIDE FILTER FABRIC (SIDE ONLY) (1/8"-3/8" STONE)ELEV F

MICRO-BIORETENTION (SWM #1)

. ONLY THE SIDES OF MICROBIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICROBIORETNTION WILL CAUSE THE MBR TO FAIL, AND THERFORE SHALL NOT BE INSTALLED.

2. WRAP THE PERFORATED MBR UNDERDRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.

		MI	CRO-BIO	RETENTI	ON DATA	\ CHART		
MBR NO.	ELEV A	ELEV 478.19	ELEV C	ELEV D	ELEV E	ELEV F	6" PERF. HDPE INV. ELEV. G	INVERT ADDITIONAL STONE STORAGE
1	478.30	1 7777700	477.05	475.05	474.72	473.72	474.03 47	1.12 471.45
2	478.00	H76.42	476.75	474.75	474.42	473.42	473.70- 식 기	3,18 472.12
3	480.50	479,59	479.25	477.25	476.92	475.92	476.20 47	5,95 474.92
4	478.25	477.50	477.25	475.75	475.42	474.42	474.7047	7.82 NA
		477.45						

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

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

2. THE OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE EDGE DRAINS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE 3. THE OWNER SHALL USE DEICERS IN MODERATION. DEICERS SHOULD BE NON-TOXIC AND BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS

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

Table B.3.1 Material Specifications for Sand Filters

	10 15 11 57 135 13	Tar	The contract of the contract o
Material	Specification/Test Method	Size	Notes
sand	clean AASHTO-M-6 or ASTM-C- 33 concrete sand	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.
peat .	ash content: < 15% pH range: 5,2 to 4.9 loose bulk density 0.12 to 0.15 g/cc	n/a	The material must be reed-sedge hemic peat, shredded, uncompacted, uniform, and clean.
leaf compost		n/a	
underdrain gravel	AASHTO-M-43	0.375" to 0.75"	
geotextile fabric (if required)	ASTM-D-4833 (puncture strength - 125 lb.) ASTM-D-4632 (Tensile Strength - 300 lb.)	0.08" thick equivalent opening size of #80 sieve	Must maintain 125 gpm per sq. ft. flow rate. Note: a 4" pca gravel layer may be substituted for geotextiles meant to "separate" sand filter layers.
impermeable liner (if required)	ASTM-D-4833 (thickness) ASTM-D-412 (tensile strength 1,100 lb., elongation 200%) ASTM-D-624 (Tear resistance - 150 lb./in) ASTM-D-471 (water adsorption: +8 to -2% mass)	30 mil thickness	Liner to be ultraviolet resistant. A geotextile fabric should be used to protect the liner from puncture.
underdrain piping	F 758, Type PS 28 or AASHTO-M- 278	4" - 6" rigid schedule 40 PVC or SDR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
concrete (cast-in-place)	MSHA Standards and Specs. Section 902, Mix No. 3, $\Gamma_c = 3500$ psi, normal weight, air-entrained; re-inforcing 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
concrete (pre-cast)	per pre-cast manufacturer	n/a	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	n/a	structural steel to be hot-dipped galvanized ASTM-A-123

- 1. THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
- 2. THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A
- 3. FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF
- OPERATIONS AND AS NEEDED.
- THE FACILITY DRAINS. 9. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA
- 10. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE

STORMWATER MANAGEMENT

FACILITIES TO BE PRIVATELY

OWNED AND MAINTAINED

Material	Specification/Test Method	Size	Notes
sand	clean AASHTO-M-6 or ASTM-C- 33 concrete sand	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.
peat .	ash content: < 15% pH range: 5.2 to 4.9 loose bulk density 0.12 to 0.15 g/cc	n/a	The material must be reed-sedge hemic peat, shredded, uncompacted, uniform, and clean.
leaf compost		n/a	
underdrain gravel	AASHTO-M-43	0.375" to 0.75"	
geotextile fabric (if required)	ASTM-D-4833 (puncture strength - 125 lb.) ASTM-D-4632 (Tensile Strength - 300 lb.)	0.08" thick equivalent opening size of #80 sieve	Must maintain 125 gpm per sq. ft. flow rate. Note: a 4" pea gravel layer may be substituted for geotextiles meant to "separate" sand filter layers.
impermeable liner (if required)	ASTM-D-4833 (thickness) ASTM-D-412 (tensile strength 1,100 lb., elongation 200%) ASTM-D-624 (Tear resistance - 150 lb./in) ASTM-D-471 (water adsorption: +8 to -2% mass)	30 mil thickness	Liner to be ultraviolet resistant. A geotextile fabric should be used to protect the liner from puncture.
underdrain piping	F 758, Type PS 28 or AASHTO-M- 278	4" - 6" rigid schedule 40 PVC or SDR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
concrete (cast-in-place)	MSHA Standards and Spees. Section 902, Mix No. 3, f _c = 3500 psi, normal weight, air-entrained; re-inforcing 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
concrete (pre-cast)	per pre-cast manufacturer	n/a	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	n/a	structural steel to be hot-dipped galvanized ASTM-A-123

OPERATION AND MAINTAINANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1, F-4, AND F-5)

- MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
- THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS
- HEIGHT OF LESS THAN 12 INCHES. 4. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING
- 5. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON
- AS IT IS NOTICED. 6. REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY. 7. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. PROPER CLEANING AND DISPOSAL THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE
- 8. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH

Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels

B.3.A Sand Filter Specifications

1. Material Specifications for Sand Filters The allowable materials for sand filter construction are detailed in Table B.3.1.

2. Sand Filter Testing Specifications

Underground sand filters, facilities within sensitive groundwater aquifers, and filters designed to serve urban hot spots are to be tested for water tightness prior to placement of filter media. Entrances and exits should be plugged and the system completely filled with water to demonstrate water tightness. Water tightness means no leakage for a period of 8 hours.

All overflow weirs, multiple orifices and flow distribution slots are to be field-tested to verify adequate distribution of flows.

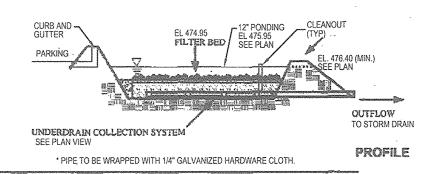
3. Sand Filter Construction Specifications

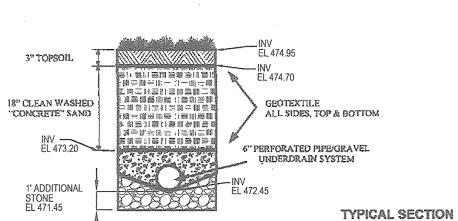
Provide sufficient maintenance access (i.e., 12-foot-wide road with legally recorded easement). Vegetated access slopes are to be a maximum of 10%; gravel slopes to 15%; paved slopes to 25%. Absolutely no runoff is to enter the filter until all contributing drainage areas have been stabilized. Surface of filter bed is to be level.

All underground sand filters should be clearly delineated with signs so that they may be located when maintenance is due.

Surface sand filters may be planted with appropriate grasses; see Appendix A.

"Pocket" sand filters (and residential bioretention facilities treating areas larger than an acre) shall be sized with a stone "window" that covers approximately 10% of the filter area. This "window" shall be filled pea gravel (3/4 inch stone).

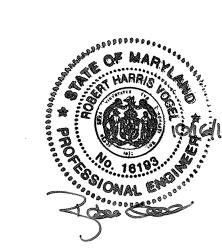




* 4" OF #7 OR #8 STON **PIPE TO BE WRAPPED WITH 1/4" GALVANIZED HARDWARE CLOTH.

TYPICAL SAND FILTER DETAILS SCALE : HORIZONTAL - N.T.S.

SAND FILTER PLANTINGS SHALL CONSIST OF A MIXTURE: REED CANARY GRASS - PHALARIS ARUNDINACEA CREEPING BENTGRASS - AGROSTIS PALUSTRIS OR EQUAL COMBINATION OF COOL / __ _ON GRASSES TOLERANT OF FREQUENT INUNDATION



AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

DEVELOPER/OWNER

JA TEN OAKS LLC C/O ANTWERPEN AUTOMOTIVE 6440 BALTIMORE NATIONAL PIKE BALTIMORE MD 21228 410-938-5000

DATE

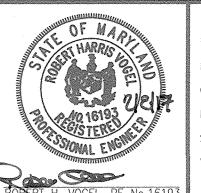
REVISION SITE DEVELOPMENT PLAN SWM NOTES AND DETAILS;

ANTWERPEN PROPERTIES - PARCEL D TEN OAKS ROAD AND MD ROUTE 108

UTILITY PROFILES

ZONED B-1 & B-2 PARCELS 35, 161 & 361 TAX MAP 34 GRID 12 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

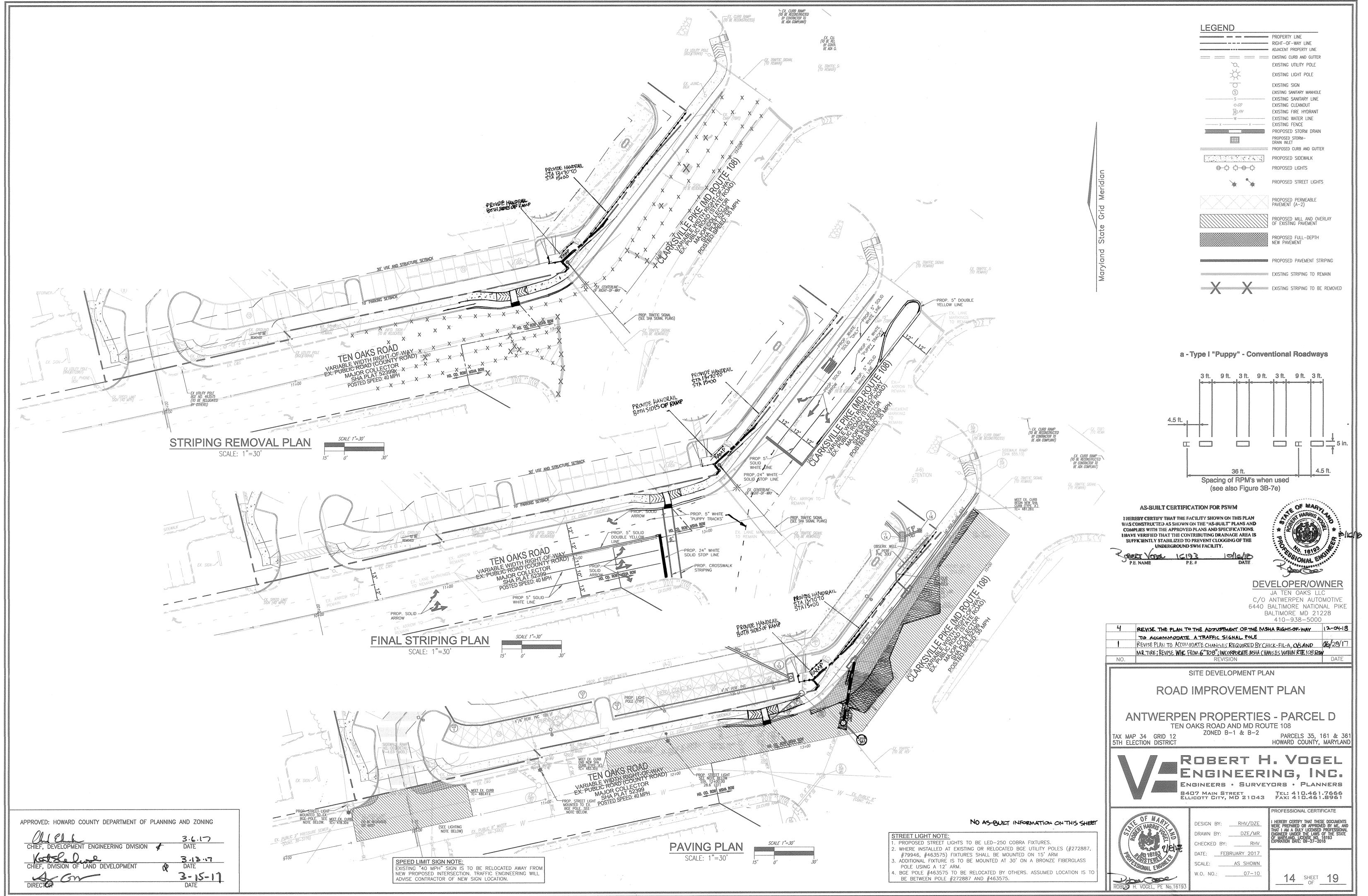


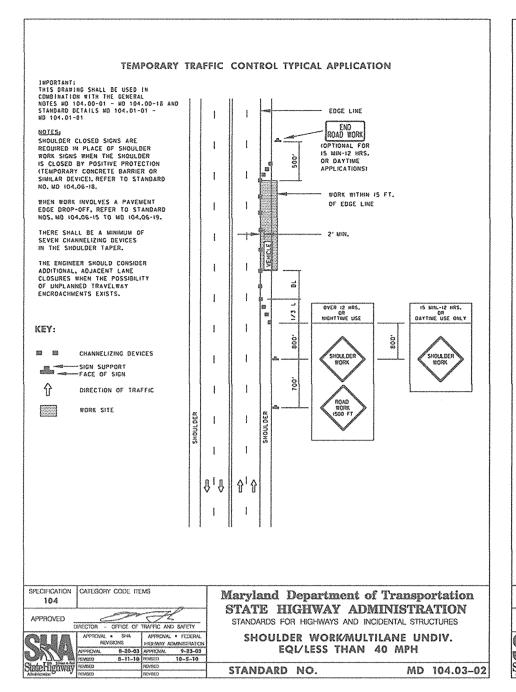
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W.O. NO.: 07-10

13 SHEET 19

AS-BUILT SEPTEMBER 2018





S'-0" OR AS DIRECTED TITP-

① SLOPE GUTTER PAN '2" PER FOOT TOWARD FLOW LINE ON ALL ROADWAYS INCLUDING SUPERELEVATED SECTIONS. EXCEPT INTERCHANGE RAMPS.

. MAXIMUM JOINT SPACING FOR CONCRETE CURB AND COMBINATION CURB & GUTTER IS 10'. SEE SPECIFICATION FOR LOCATIONS AND DESCRIPTION OF TREATMENT FOR THE TYPES OF JOINTS USED.

TYPE A DR B COMBINATION CURB AND GUTTER SHALL DE USED FOR ALL APPLICABLE NEW CONSTRUCTION AND IN THOSE AREAS WHERE THE COMBINATION CURB AND GUTTER IS TO BE REPLACED IN KIND.). TYPE A OR & CURB SHALL BE USED FOR THE REPLACEMENT OF LIKE KIND OF CURB ONLY. NOT TO BE USED FOR NEW CONSTRUCTION EXCEPT WHERE INDICATED ON APPROPRIATE INLET STANDARDS.

APPROVED

KALE, MECLE

STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARD FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARD FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARD FOR HIGHWAY ADMINISTRATION

STANDARD FOR HIGHWAY ADMINISTRATION

STANDARD TYPES A & B CONCRETE CURB AND

COMBINATION CONCRETE CURB & GUTTER

STANDARD NO. MD 620.02

Maryland Department of Transportation

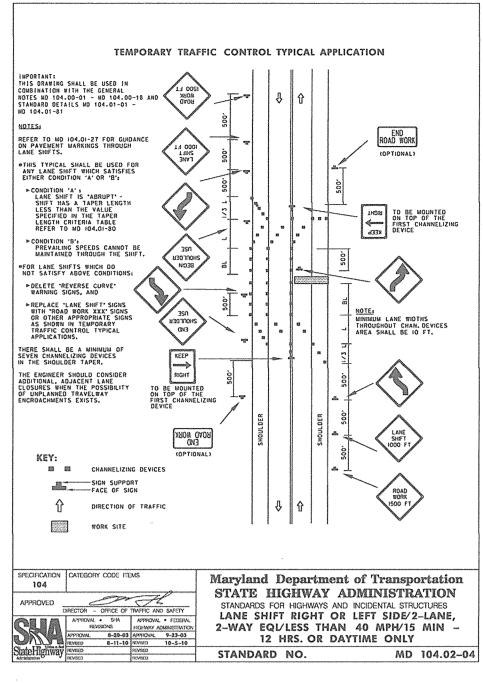
STATE HIGHWAY ADMINISTRATION

COMBINATION CURS & GUITER DESIGN SPEED 50 MPH

PROVIDE KEY AND LONGITUDINAL TIE BAR AS REQUIRED; SEE NOTE A

(S) LONGITUDINAL TIE DEVICE "J" BAR MODIFIED (S) FLOW LINE (S) ROADWAY PAVEMENT SLOPE

TYPE 'B'



1. THIS STANDARD TO BE USED WITH TYPE A COMBINATION CURS AND GUITER ONLY. CURB OPENING SHALL NOT ENCROACH ON CROSSWALK AREAS. CONCRETE TO BE MIX NO.6 (4500 PSI) FOR PRECAST UNITS AND CONCRETE MIX NO.3 (3500 PSI) FOR STRUCTURES CAST IN PLACE

ANGLE IRON AND SHEAR STUD CONNECTORS SHALL BE GALVANIZED AFTER WELDING IN ACCORDANCE WITH ASTM A 123. SEE SIDS. NO 374.55 & 374.64.

G. GRADE AND SLOPE AGJUSTMENTS SHALL BE COMPLETED IN THE FIELD USING PRECAST ADJUSTMENT COLLAR AND MORTAR.

T. A CONCRETE OR BRICK CHANNEL WHICH SLOPES AT LEAST 2 IN./FT. TOWARD DUTLET SHALL BE PROVIDED IN THE FIELD.

10. SLOPED TROUGH FLOOR TO BE CONSTRUCTED IN THE FIELD USING BRICK OR CONCRETE AND USED ONLY WHEN ROAD GRADE IS 1.5% OR LESS. WHEN SLOPED TROUGH FLOOR IS USED. ROUGHEN PRECAST TROUGH FLOOR.

12. INLET SLAB HOT REQUIRED FOR 16" DIAMETER INLET. TROUGH SITS DIRECTLY ON THE TOP OF THE CIRCULAR UNIT. MORTAR AREA BETWEEN THE OUTSIDE WALLS OF THE TROUGH AND THE UNIT WALL.

LAP SPLICE REINFORCEMENT 1'(TYP. I ARDUND DUTSIDE CORNER
AS SHOWN, (MONOLITHIC BASE OM
SECTION B-B
(SHOWN PRECAST)

14. BASE UNIT WALLS TAPER PER MANUFACTURER'S DESIGN.

DEPRESSED GUTTER PAN-

INLET SLAB SEE STO.

MO 374-55 NOT REQUIRED /
FOR 36" DIAMETER UNIT
SEE NOTE 12

SEE NOTE 4-

Maryland Department of Transportation

STATE HIGHWAY ADMINISTRATION

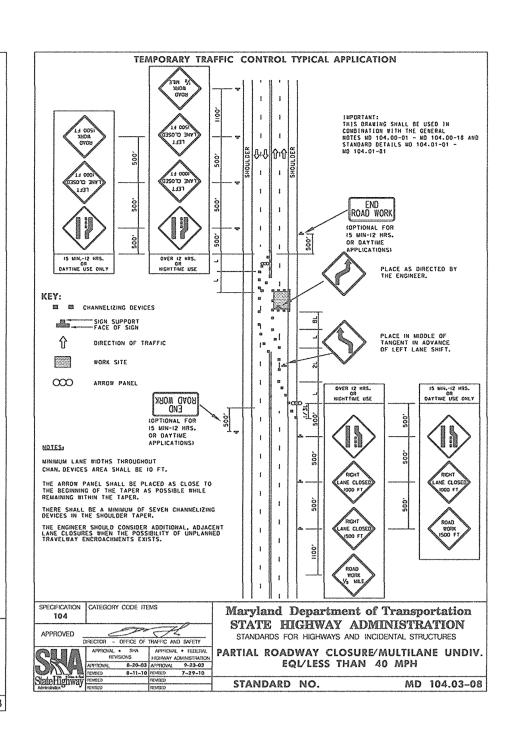
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
*PRECAST OR CAST IN PLACE CIRCULAR COS INLETS 5', 10', 15, & 20'

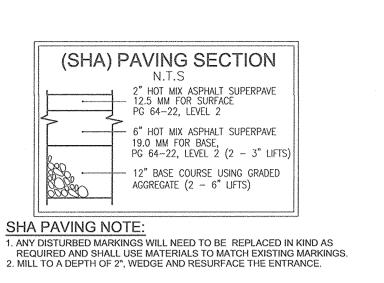
ANGLE IRON-

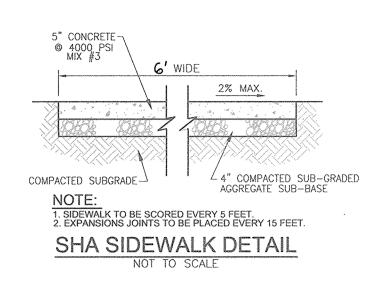
PRECAST CONCRETE TROUGH SLAB

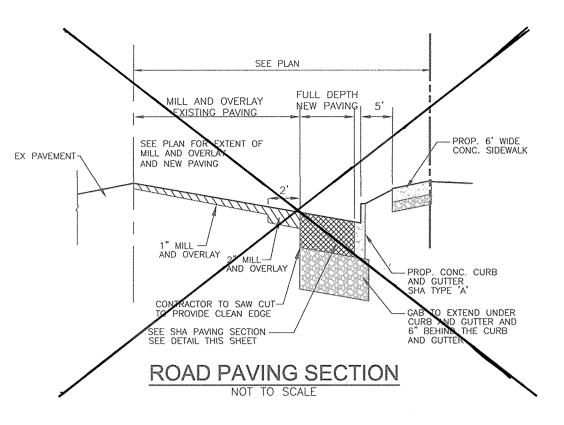
PLAN

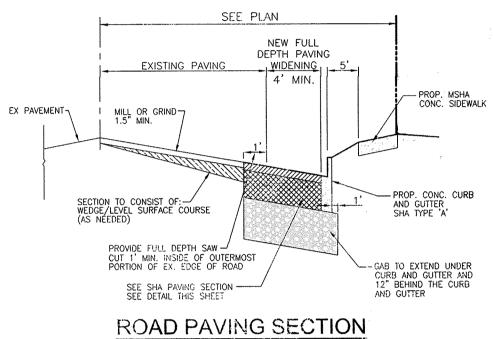
ASE UNIT SECTION A-A











	STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	TOP ELEV.	THROAT ELEV.	INV. IN	INV. OUT	COMMENTS
SHA I-2	PRECAST CIRCULAR COG INLET	N 560945.55 E 1328561.93	481.38	48071	476.49 475.89	476.39	MD 374.62
SHA I-3	PRECAST CIRCULAR COS INLET				477.26	477.16	MD 374.63
SHA M-1	SHA STANDARD MANHOLE	N 560848, 39 (E 1328512, 23)	48272	-	479,84	417,74	MD 383.01

PIPE SCHEDULE				
SIZE	TYPE	LENGTH		
18"	RCP CLASS CI IV	214 LF		
6"	SOLID PVC (SWM)	23 LF		
6"	PERF. PVC (SWM)	34 LF		



I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.



DEVELOPER/OWNER JA TEN OAKS LLC

C/O ANTWERPEN AUTOMOTIVE 6440 BALTIMORE NATIONAL PIKE BALTIMORE MD 21228 410-938-5000

REVISE PLANTO ACCOMODATE CHANGES REQUIRED BY CHICK-FIL-A, CVS AND MRTIRE; REVISE 06/28/17 INHCFROM 6"TO8"; INCORPORATE MSHA CHANGES WITHIN THE RTE. 108 ROW

SITE DEVELOPMENT PLAN

ROAD IMPROVEMENT DETAILS

ANTWERPEN PROPERTIES - PARCEL D

TEN OAKS ROAD AND MD ROUTE 108

ZONED B-1 & B-2 TAX MAP 34 GRID 12

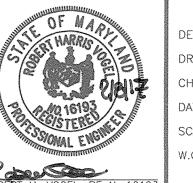
PARCELS 35, 161 & 361 HOWARD COUNTY, MARYLAND



5TH ELECTION DISTRICT

ROBERT H. VOGEL ENGINEERING, INC. ENGINEERS · SURVEYORS · PLANNERS

8407 Main Street Tel: 410.461.7666 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

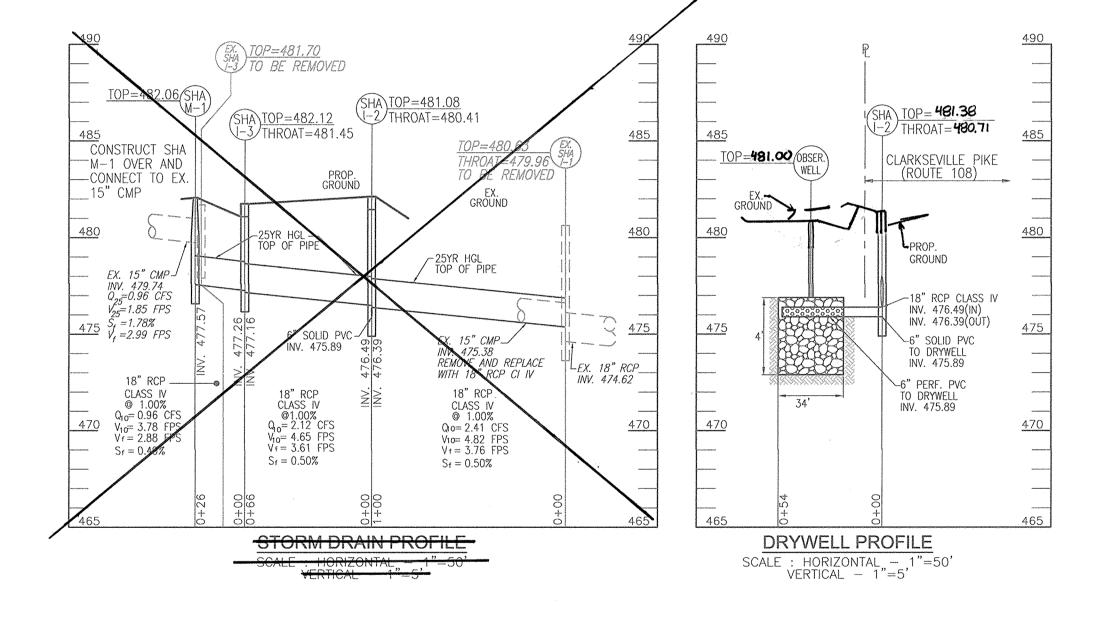


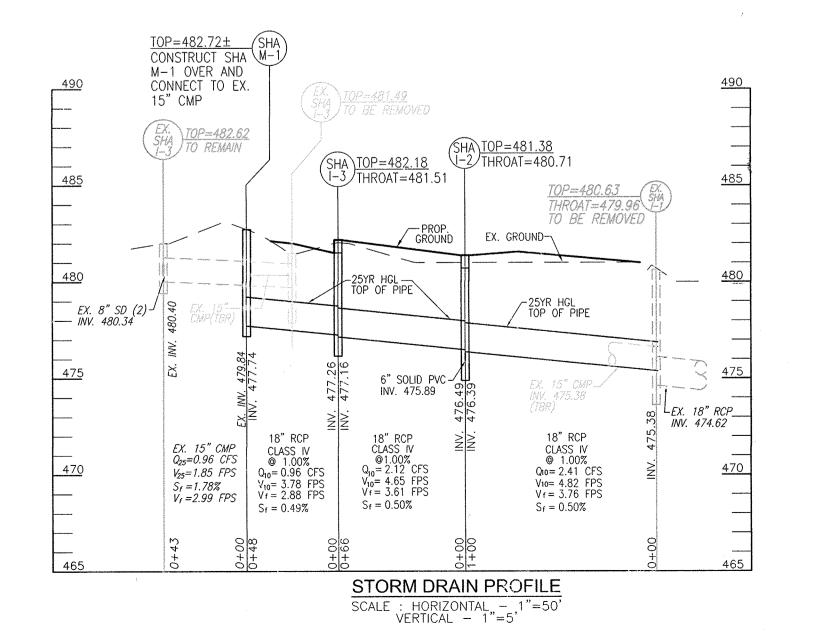
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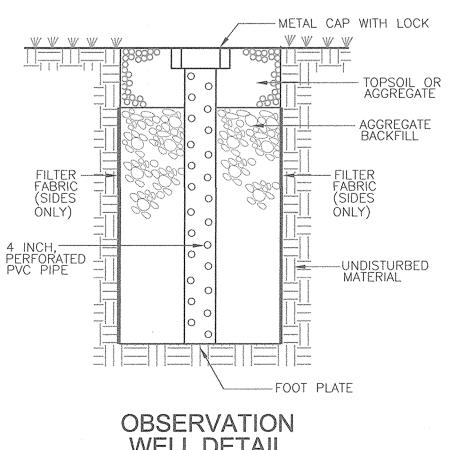
15 SHEET 19

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





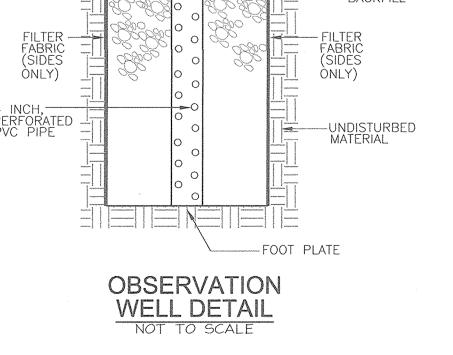


OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION TRENCHES (I-1) AND DRYWELLS (M-5)

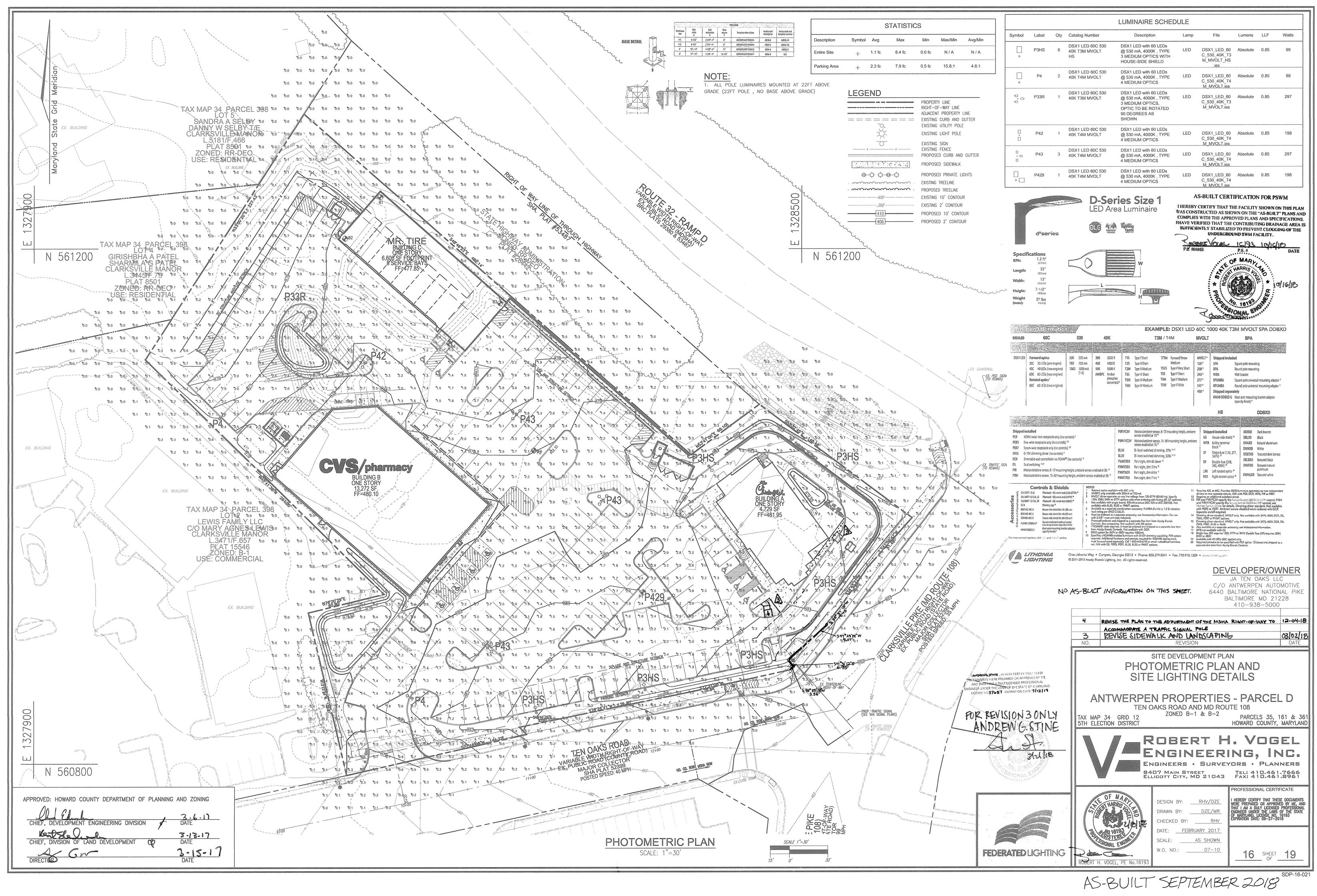
1. THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT. 2. WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE. 3. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS. 4. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN THE XXX HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN. 5. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE 6. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

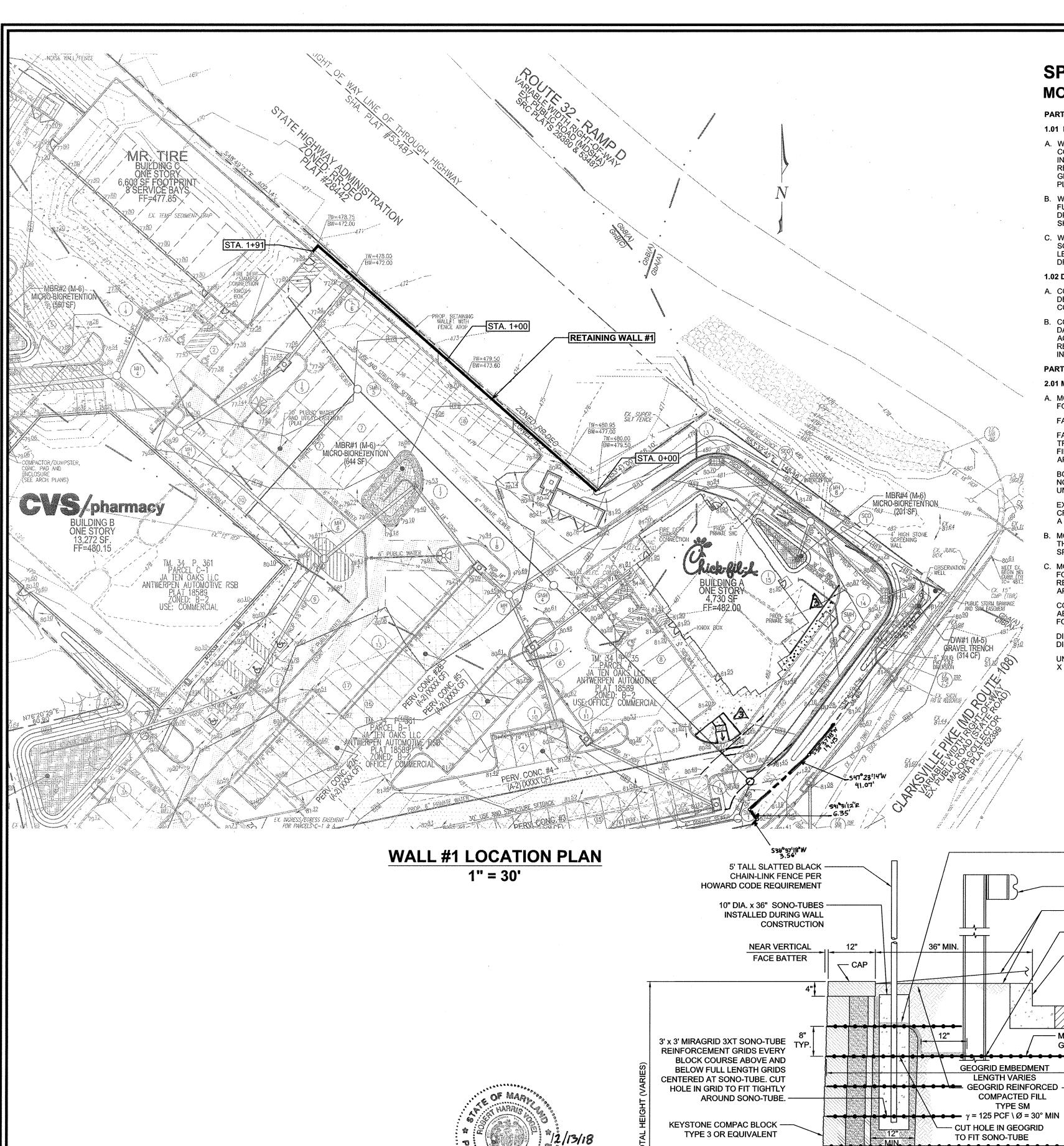
> STORMWATER MANAGEMENT FACILITIES TO BE PRIVATELY OWNED AND MAINTAINED

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION



NO AS-BUILT INFORMATION ON THIS SHEET





APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

SPECIFICATIONS MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

1.01 DESCRIPTION

- A. WORK SHALL CONSIST OF FURNISHING AND CONSTRUCTION OF A MODULAR RETAINING WALL SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN, AND DIMENSIONS SHOWN ON THE
- B. WORK INCLUDES PREPARING FOUNDATION SOIL, FURNISHING AND INSTALLING LEVELING PAD, UNIT DRAINAGE FILL AND BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS.
- C. WORK INCLUDES FURNISHING AND INSTALLING GEOGRID SOIL REINFORCEMENT OF THE TYPE, SIZE, LOCATION, AND LENGTHS DESIGNATED ON THE CONSTRUCTION

1.02 DELIVERY, STORAGE AND HANDLING

- A. CONTRACTOR SHALL CHECK ALL MATERIALS UPON DELIVERY TO ASSURE THAT THE PROPER TYPE, GRADE, COLOR, AND CERTIFICATION HAS BEEN RECEIVED.
- B. CONTRACTOR SHALL PROTECT ALL MATERIALS FROM DAMAGE DUE TO JOB SITE CONDITIONS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DAMAGED MATERIALS SHALL NOT BE INCORPORATED INTO THE WORK.

PART 2: PRODUCTS

2.01 MODULAR CONCRETE RETAINING WALL UNITS

- . MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING ARCHITECTURAL REQUIREMENTS:
- FACE COLOR COLOR MAY BE SPECIFIED BY THE OWNER FACE FINISH SCULPTURED ROCK FACE IN ANGULAR TRI-PLANER OR FLAT CONFIGURATION. OTHER FACE FINISHES WILL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL OF OWNER.
- BOND CONFIGURATION RUNNING WITH BONDS NOMINALLY LOCATED AT MIDPOINT VERTICALLY ADJACENT UNITS, IN BOTH STRAIGHT AND CURVED ALIGNMENTS.

 EXPOSED SURFACES OF UNITS SHALL BE FREE OF CHIPS, CRACKS OR OTHER IMPERFECTIONS WHEN VIEWED FROM
- B. MODULAR CONCRETE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1372 STANDARD SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.

A DISTANCE OF 10 FEET UNDER DIFFUSED LIGHTING.

- C. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING STRUCTURAL AND GEOMETRIC REQUIREMENTS MEASURED IN ACCORDANCE WITH APPROPRIATE REFERENCES:
- APPROPRIATE REFERENCES:

 COMPRESSIVE STRENGTH = 3000 PSI MINIMUM;
 ABSORPTION = 8% MAXIMUM (6% IN NORTHERN STATES)

FOR STANDARD WEIGHT AGGREGATES;

DIMENSIONAL TOLERANCES = $\pm 1/8$ " FROM NOMINAL UNIT DIMENSIONS NOT INCLUDING ROUGH SPLIT FACE, $\pm 1/16$ " UNIT HEIGHT - TOP AND BOTTOM PLANES; UNIT SIZE - 8" (H) X 18" (W) X 12" (D) MINIMUM;

CONTINUOUS FILTER

FABRIC OVER #57 STONE

ABOVE TOP GRID LAYER

VEHICLAR GUARD RAIL WHERE APPLICABLE

TOP GRADE

GEOGRID

- MIRAGRID 3XT |

GEOGRID

4" HDPE DRAIN PIPE WRAPPED

IN FILTER FABRIC WITH 2" PVC

WEEP @ 20' O.C.

#57 CRUSHED STONE

SUBGRADE APPROVED ~

FOR 2000 PSF BEARING

— BOTTOM GRADE

MIN. 2 BLOCKS BURRIED

(SEE ELEV.)

(SLOPE VARIES) 6"

57 CRUSHED -

TYPICAL WALL SECTION

N.T.S.

STONE BASE

(SLOPE VARIES)

PUNCH POST THRU

- TOP OF PAVEMENT

- STANDARD CURB & GUTTER

UNIT WEIGHT - 75 LBS/UNIT MINIMUM FOR STANDARD

- WEIGHT AGGREGATES; INTER-UNIT SHEAR STRENGTH - 1000 PLF MINIMUM AT 2 PSI
- NORMAL PRESSURE; AT 2 PSI NORMAL FORCE.

 GEOGRID/UNIT PEAK CONNECTION STRENGTH 1000 PLF
- D. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING CONSTRUCTABILITY REQUIREMENTS: (IF APPLICABLE)

 VERTICAL SETBACK = 1/8"± PER COURSE (NEAR VERTICAL)
- GRID POSITIONING MECHANISM FIBERGLASS PINS, TWO PER UNIT MINIMUM;

MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE - 1/2 INCH.

OR 1"+ PER COURSE PER THE DESIGN; ALIGNMENT AND

- A. SHEAR CONNECTORS SHALL BE 1/2 INCH DIAMETER
 THERMOSET ISOPTHALIC POLYESTER RESIN-PROTRUDED
 FIBERGLASS REINFORCEMENT RODS OR EQUIVALENT TO
 PROVIDE CONNECTION BETWEEN VERTICALLY AND
 HORIZONTALLY ADJACENT UNITS. STRENGTH OF SHEAR
 CONNECTORS BETWEEN VERTICAL ADJACENT UNITS
 SHALL BE APPLICABLE OVER A DESIGN TEMPERATURE OF
 10 DEGREES F TO + 100 DEGREES F. B. SHEAR
 CONNECTORS SHALL BE CAPABLE OF HOLDING THE
- GEOGRID IN THE PROPER DESIGN POSITION DURING GRID PRE-TENSIONING AND BACKFILLING.

2.03 BASE LEVELING PAD MATERIAL

2.02 SHEAR CONNECTORS (IF APPLICABLE)

A. MATERIAL SHALL CONSIST OF A COMPACTED #57 CRUSHED STONE BASE AS SHOWN ON THE CONSTRUCTION

2.04 UNIT DRAINAGE FILL

A. UNIT DRAINAGE FILL SHALL CONSIST OF #57CRUSHED STONE

2.05 REINFORCED BACKFILL

A. REINFORCED BACKFILL SHALL TYPE SM, BE FREE OF DEBRIS AND MEET THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM D-422 AND MEET OTHER

SIEVE SIZE	PERCENT PASSING
2 INCH	100-75
3/4 INCH	100-75
NO. 40	0-60
NO. 200	0-35

- PLASTICITY INDEX (PI) <10 AND LIQUID LIMIT <35 PER ASTM D-4318.
- B. MATERIAL CAN BE SITE EXCAVATED SOILS WHERE THE ABOVE REQUIREMENTS CAN BE MET. UNSUITABLE SOILS FOR BACKFILL (HIGH PLASTIC CLAYS OR ORGANIC SOILS) SHALL NOT BE USED IN THE REINFORCED SOIL MASS.

2.06 GEOGRID SOIL REINFORCEMENT A. GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF

PROPERTIES SHOWN ON THE PLAN:

GEOGRIDS MANUFACTURED SPECIFICALLY FOR SOIL

REINFORCEMENT APPLICATIONS AND SHALL BE MANUFACTURED FROM HIGH TENACITY POLYESTER YARN.

2.07 DRAINAGE PIPE

A. THE DRAINAGE PIPE SHALL BE PERFORATED CORRUGATED HDPE PIPE MANUFACTURED IN ACCORDANCE WITH ASTM

D-1248. PART 3 EXECUTION

3.01 EXCAVATION A. CONTRACTOR SHALL EXCAVATE TO THE LINES AND

GRADES SHOWN ON THE CONSTRUCTION DRAWINGS.
OWNER'S REPRESENTATIVE SHALL BE RESPONSIBLE FOR
INSPECTING AND APPROVING THE EXCAVATION PRIOR TO
PLACEMENT OF LEVELING MATERIAL OR FILL SOILS.

3.02 BASE LEVELING PAD

- A. LEVELING PAD MATERIAL SHALL BE PLACED TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS, TO A MINIMUM THICKNESS OF 6 INCHES AND EXTEND LATERALLY A MINIMUM OF 6" IN FRONT AND BEHIND THE MODULAR WALL UNIT.
- B. LEVELING PAD SHALL BE PREPARED TO INSURE FULL CONTACT TO THE BASE SURFACE OF THE CONCRETE

3.03 MODULAR UNIT INSTALLATION

- A. FIRST COURSE OF UNITS SHALL BE PLACED ON THE LEVELING PAD AT THE APPROPRIATE LINE AND GRADE. ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL DIRECTIONS AND INSURE THAT ALL UNITS ARE IN FULL CONTACT WITH THE BASE AND PROPERLY SEATED.
- B. PLACE THE FRONT OF UNITS SIDE-BY-SIDE. DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS. LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- C. INSTALL SHEAR/CONNECTING DEVICES PER MANUFACTURER'S RECOMMENDATIONS.
- D. PLACE AND COMPACT DRAINAGE FILL WITHIN AND BEHIND WALL UNITS. PLACE AND COMPACT BACKFILL SOIL BEHIND DRAINAGE FILL. FOLLOW WALL ERECTION AND DRAINAGE FILL CLOSELY WITH STRUCTURE BACKFILL.
- E. MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS, PRIOR TO UNIT DRAINAGE FILL AND BACKFILL PLACEMENT AND COMPACTION, SHALL NOT EXCEED THREE COURSES.

3.04 STRUCTURAL GEOGRID INSTALLATION

- A. GEOGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE WALL ALIGNMENT.
- B. GEOGRID REINFORCEMENT SHALL BE PLACED AT THE STRENGTHS, LENGTHS, AND ELEVATIONS SHOWN ON THE CONSTRUCTION DESIGN DRAWINGS OR AS DIRECTED BY THE ENGINEER.
- C. THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL AND ATTACHED TO THE MODULAR WALL UNITS. PLACE THE NEXT COURSE OF MODULAR CONCRETE UNITS OVER THE GEOGRID. THE GEOGRID SHALL BE PULLED TAUT, AND ANCHORED PRIOR TO BACKFILL PLACEMENT ON THE GEOGRID.

D. GEOGRID REINFORCEMENTS SHALL BE CONTINUOUS
THROUGHOUT THEIR EMBEDMENT LENGTHS AND PLACED
SIDE-BY-SIDE TO PROVIDE 100% COVERAGE AT EACH
LEVEL. SPLICED CONNECTIONS BETWEEN SHORTER
PIECES OF GEOGRID OR GAPS BETWEEN ADJACENT

3.05 REINFORCED BACKFILL PLACEMENT

SHALL BE + 3% TO - 3% OF OPTIMUM.

PIECES OF GEOGRID ARE NOT PERMITTED.

- A. REINFORCED BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOGRID AND INSTALLATION DAMAGE.
- REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES WHERE HAND COMPACTION IS USED, OR 8 10 INCHES WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.
- REINFORCED BACKFILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D698. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND
- D. ONLY LIGHTWEIGHT HAND-OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET FROM THE TAIL OF THE MODULAR CONCRETE UNIT.
- E. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOGRID REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEOGRID.
- RUBBER TIRED EQUIPMENT MAY PASS OVER GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND SHARP TURNING SHALL BE
- G. AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCED BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION SITE.

3.06 CAP INSTALLATION

A. CAP UNITS SHALL BE GLUED TO UNDERLYING UNITS WITH AN ALL-WEATHER ADHESIVE RECOMMENDED BY THE MANUFACTURER

3.07 FIELD QUALITY CONTROL

- A. THE OWNER SHALL ENGAGE INSPECTION AND TESTING SERVICES, INCLUDING INDEPENDENT LABORATORIES, TO PROVIDE QUALITY ASSURANCE AND TESTING SERVICES DURING CONSTRUCTION.
- B. AS A MINIMUM, QUALITY ASSURANCE TESTING SHOULD INCLUDE FOUNDATION SOIL INSPECTION, SOIL AND BACKFILL TESTING, VERIFICATION OF DESIGN PARAMETERS, AND OBSERVATION OF CONSTRUCTION FOR GENERAL COMPLIANCE WITH DESIGN DRAWINGS AND SPECIFICATIONS.

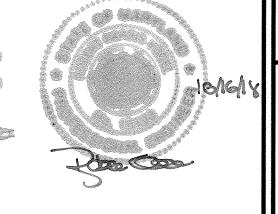
HOWARD COUNTY NOTES:

- 1. NO TREES SHALL BE PLANTED WITHIN 10 FEET OF THE TOP OF THE RETAINING WALL.
- 2. RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN:
- 3. ONE SOIL BORING SHALL BE REQUIRED EVERY ONE HUNDRED FEET ALONG THE ENTIRE LENGTH OF THE WALL COPIES OF ALL BORING REPORTS SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION.
- 4. THE REQUIRED BEARING PRESSURE BENEATH THE WALL SYSTEM SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION MUST BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO START OF CONSTRUCTION. THE REQUIRED BEARING TEST SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM STP-399.
- 5. THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN. EACH 8" LIFT MUST BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
- 6. WALLS SHALL NOT BE CONSTRUCTED ON UNCERTIFIED FILL MATERIALS.
- WALLS SHALL NOT BE CONSTRUCTED WITHIN A HOWARD COUNTY RIGHT-OF-WAY OR EASEMENT.

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FOR REVISION 3 ONLY ANDREW 6. STINE



A CONTRACTOR OF THE PROPERTY O

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DEVELOPER/OWNER JA TEN OAKS LLC

C/O ANTWERPEN AUTOMOTIVE 6440 BALTIMORE NATIONAL PIKE BALTIMORE MD 21228 410-938-5000

REVISE THE PLAN TO THE ADDUSTMENT OF THE MOHA RIGHT-OF-WAYTO 12-04-18

ACCOMMODITE A TRAFFIC SIGNAL POLE

BEVISE SIDEWALK AND LANDS (APING)

REVISION

DATE

RETAINING WALL #1 LOCATION PLAN & CONSTRUCTION DETAILS

TEN OAKS ROAD AND MD ROUTE 108

CONSTRUCTION DETAILS

ANTWERPEN PROPERTIES - PARCEL D

AX MAP 34 GRID 12

5TH ELECTION DISTRICT

ZONED B-1 & B-2

PARCELS 35, 161 & 361

HOWARD COUNTY, MARYLAND

HILLIS-CARNES

ENGINEERING ASSOCIATES 10975 Guilford Road, Suite A Annapolis Junction, Maryland

(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098



DESIGN BY: HM

DRAWN BY: HM

CHECKED BY: RWS

DATE: FEBRUARY 2017

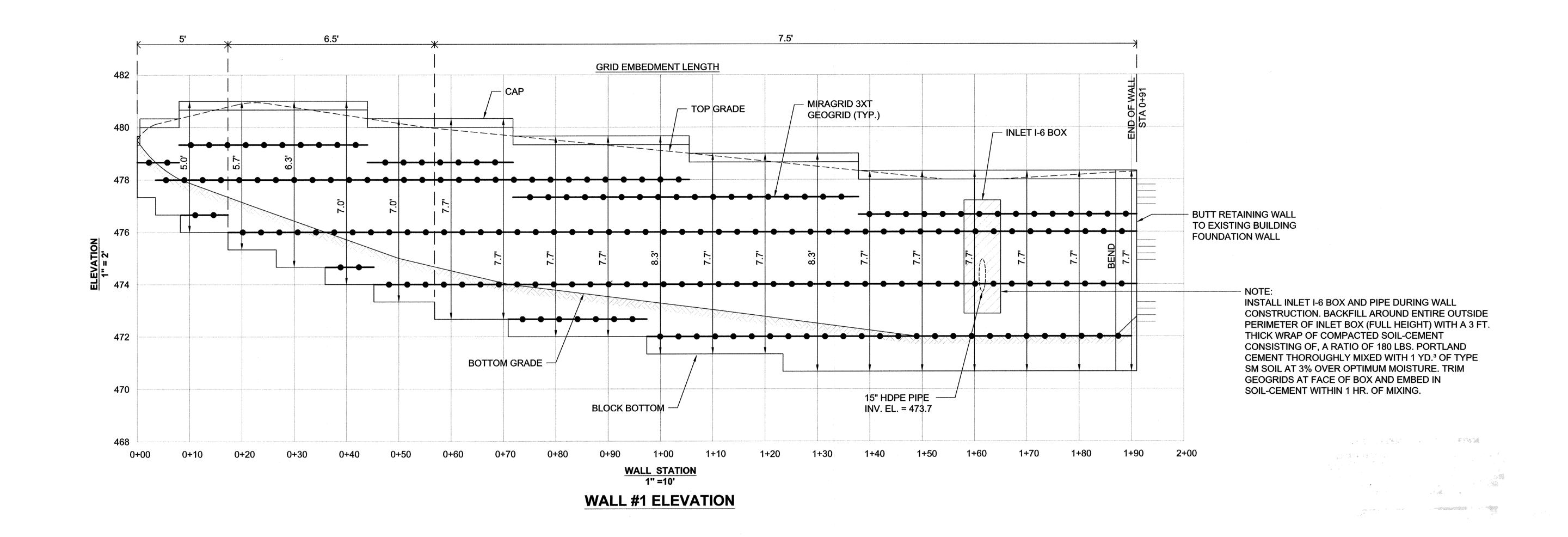
SCALE: AS SHOWN

JOB NO.: 15488-A

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMERE PREPARED OR APPROVED BY METHAT I AM A DULY LICENSED PROFESE ENGINEER UNDER THE LAWS OF THE OF MARYLAND, LICENSE NO. 14434 EXPIRATION DATE: 05/13/17

17 SHEET 19



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

ASOLAY CENTEKATEN KATUM

NO AS-BUILT INFORMATION ON THIS SHEET

BALTIMORE MD 21228 410-938-5000 REVISION **RETAINING WALL #1 ELEVATION** ANTWERPEN PROPERTIES - PARCEL D TEN OAKS ROAD AND MD ROUTE 108
ZONED B-1 & B-2 TAX MAP 34 GRID 12 5TH ELECTION DISTRICT PARCELS 35, 161 & 361 HOWARD COUNTY, MARYLAND **ENGINEERING ASSOCIATES** 10975 Guilford Road, Suite A Annapolis Junction, Maryland (410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098 ROFESSIONAL CERTIFICATE CHECKED BY: RWS DATE: FEBRUARY 2017

DEVELOPER/OWNER

JA TEN OAKS LLC C/O ANTWERPEN AUTOMOTIVE 6440 BALTIMORE NATIONAL PIKE

18 SHEET 19

SCALE: AS SHOWN JOB NO.: <u>15488-A</u>

