## **GENERAL NOTES** ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY STANDARDS AND SPECIFICATIONS. ALL WORK ND MATERIALS SHALL COMPLY WITH O.S.H.A. STANDARDS. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK. THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS: MISS UTILITY: VERIZON: 1-800-743-0033 BUREAU OF UTILITIES: 410-313-4900 AT&T: 1-800-252-1133 B.G.&E. (CONSTRUCTION SERVICES): B.G.&E. (EMERGENCY): STATE HIGHWAY ADMINISTRATION: COLONIAL PIPELINE CO .: AREA OF PARCEL: 1.79 AC. PRESENT ZONING: R-A-15 USE OF STRUCTURE: RESIDENTIAL, STACKED MULTI-FAMILY APARTMENT DWELLINGS NUMBER OF UNITS: 26 APARTMENT UNITS TOTAL BUILDING FLOOR AREAS: 62,563 S.F. BUILDING #1: 19,257 SF 1ST FLOOR = 4,854 S 2ND FLOOR = 4,801 3RD FLOOR = 4,801 4TH FLOOR = 4,801 SBUILDING #2: 19,257 SF 1ST FLOOR = 4,854 S 2ND FLOOR = 4,801 S 3RD FLOOR = 4,801 S 4TH FLOOR = 4,801 S BUILDING #3: 24,049 SF 1ST FLOOR = 6,052 4TH FLOOR = 5,999TOTAL BUILDING COVERAGE: 15,760 SF (0.36 AC. OR 20.21% OF GROSS) BUILDING #1 FOOTPRINT AREA: 4,854 SF BUILDING #2 FOOTPRINT AREA: 4,854 SF BUILDING #3 FOOTPRINT AREA: 6,052 SF BUILDING #3 FOOTPRINT AREA: 6,052 SF TOTAL PAVED AREA (ROAD, PARKING LOT, DRIVEWAYS, SIDEWALK): 21,605 SF (0.495 AC. OR 27.65% OF GROSS AREA) AREA OF LANDSCAPE ISLAND: 40,293 SF (0.925 AC. OR 51.67% OF GROSS AREA) AREA OF GREEN SPACE: 40,293 SF (0.925 AC. OR 51.67% OF GROSS AREA) LIMIT OF DISTURBED AREA: 1.96 AC CUT: 3122 CY FILL: 982 CY WETLANDS WITHIN LOD: 0,000 AC. WETLANDS WITHIN LOD: 0,000 AC. WETLANDS WITHIN LOD: 0.00 AC. WETLAND BUFFERS WITHIN LOD: 0.00 AC. STREAMS AND THEIR BUFFERS WITHIN LOD: 0.00 AC AREA OF ON—SITE 100 YEAR FLOODPLAIN WITHIN LOD: 0.00 AC AREA OF EXISTING FOREST WITHIN LOD: 0.00 AC. AREA OF ON—SITE NRCS/MDE/HSCD STEEP SLOPES (20% OR GREATER): 0.00 AC AREA OF ON—SITE STEEP SLOPES (25% OR GREATER): 0.00 AC AREA OF ERODIBLE SOILS: 0.00 AC. AREA OF ERODIBLE SOILS: 0.00 AC. AREA MANAGED BY ESDV (THIS PLAN): 1.79 AC IMPERVIOUS AREA (MANAGED BY ESDV): 0.89 AC GREEN AREA (MANAGED BY ESDV): 0.90 AC. PROJECT BACKGROUND: LOCATION: ELKRIDGE, MD., TAX MAP 43, GRID 4, PARCEL 644 SUBDIVISION: OAKS AT WATERS EDGE, PHASE III (PLAT M.D.R. NO. 16228) SECTION/AREA : PARCEL A SITE AREA : 1.79 AC. DEED/PLAT REFERENCES: L.4393/F.343, F-04-044 (PLAT 16228), F-22-027 (PLAT 25990) DPZ REFERENCES: SDP-74-124, SDP-79-170 (NOT BUILT AS APPROVED AND EXPIRED), SDP-05-078, \*SDP-05-131, ZB1028M, S-18-008, ECP-18-059, AA-18-018, WP-19-057, WP-21-143. 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. 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, AND THE MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE. 3. 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. 10. ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3,500 P.S.I. 11. TRAFFIC CONTROL DEVICES: 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 DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC D. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED IN TO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST. 2. ESTIMATES OF EARTHWORK QUANTITIES ARE PROVIDED SOLELY FOR THE PURPOSE OF CALCULATING FEES. 3. SOIL COMPACTION SPECIFICATIONS, REQUIREMENTS, METHODS AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER. GEOTECHNICAL ENGINEER TO CONSTRUCTION. COORDINATES AND ELEVATIONS ARE BASED ON MARYLAND COORDINATE SYSTEM - NAD83(1991) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS COORDINATES AND ELEVATIONS ARE BASED ON MARYLAND COORDINATE SYSTEM — NAD83(1991) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 43B2 AND 43B6. THE PROPERTY LINES SHOWN HEREON IS BASED ON AN AERIAL PHOTOGRAMETRIC SURVEY PERFORMED BY POTOMAC AERIAL SURVEY, DATED MARCH, 1998 AND FIELD RUN TOPO SURVEY WITH TWO FOOT CONTOUR INTERVAL BY ROBERT H. VOGEL ENGINEERING + TIMMONS GROUP, DATED MAY 2018. OFFSITE TOPOGRAPHY FROM HOWARD COUNTY GIS. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT. ALL PAVING TO BE MINIMUM HOWARD COUNTY STANDARD DETAIL P-2 UNLESS OTHERWISE NOTED. THE GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION PRIOR TO CONSTRUCTION. ALL CURB AND GUTTER TO BE HOWARD COUNTY STANDARD DETAIL 3.01 UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR CONSTRUCTING ALL HANDICAP RAMPS AND HANDICAP ACCESS IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS. WHERE DRAINAGE FLOWS AWAY FROM CURB, CONTRACTOR TO REVERSE THE GUTTER PAN. ALL ELEVATIONS ARE TO FLOW UNE FROTTOM OF CURB, UNITESS OTHERWISE NOTED. 1. ALL ELEVATIONS ARE TO FLOWLINE/BOTTOM OF CURB UNLESS OTHERWISE NOTED. 2. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED. 3. PUBLIC WATER AND SEWER ARE PROVIDED BY CONTRACT 645 W&S. HIS PROPERTY IS LOCATED IN THE PATAPSCO WATERSHED. STORMWATER MANAGEMENT FOR THIS PROJECT IS PROVIDED BY THREE MICRO-BIORETENTION FACILITIES (M-6). THESE FACILITIES WILL MANAGE THE 1-INCH RUNOFF SWM FACILITIES TO BE PRIVATELY OWNED AND MAINTAINED. SWM FACILITIES TO BE PRIVATELY OWNED AND MAINTAINED. 5. AN UNDERGROUND SWM DETENTION FACILITY IS PROPOSED TO MANAGE THE 10 & 100-YR. STORM EVENT. ALL OTHER STORM EVENTS WILL BE MANAGED BY THE EXISTING POND AS APPROVED IN SDP-05-078. 7. ALL EXTERIOR LIGHTING TO CONFORM TO SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS. ALL LIGHTING SHALL BE DIRECTED DOWNWARD AND AWAY FROM THE NEIGHBORING PROPERTIES. LIGHT TRESPASS ONTO A PROPERTY IN THE R-MH, CE-CLI-CR, CAC-CLI ZONING DISTRICT SHALL BE LIMITED TO 0.5 FOOT CANDLES. 28. A TEST PIT STUDY WAS PERFORMED ON JULY 16, 2019. 29. ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR. 30. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. 31. THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY. 2. TRAFFIC IMPACT STUDY PREPARED BY THE TRAFFIC GROUP DATED 6/27/18, APPROVED ON 10/15/2019. 3. ALL STORMDRAIN PIPE BEDDING IS TO BE CLASS 'C', AS REQUIRED BY AASHTO-180. 4. BUILDING TO HAVE INSIDE WATER METER SETTING. 5. THE FOREST CONSERVATION OBLIGATION FOR THIS PROJECT IS 0.3 ACRES OF AFFORESTATION WHICH HAS BEEN SATISFIED BY THE OFFSITE MITIGATION AT THE REGAN PROPERTY (SDP-16-015) SITE. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S), OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS. . THERE ARE NO WETLAND OR FLOODPLAINS ON SITE. THERE ARE NO STEEP SLOPES (25% OR GREATER) ON SITE PER LETTER FROM ECO-SCIENCE PROFESSIONALS 38. THE SUBJECT PROPERTY IS ZONED R-A-15 PER THE 10/6/2013 COMPREHENSIVE ZONING PLAN. 39. THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. 40. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES 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. 41. THERE ARE NO SPECIMEN OR CHAMPION TREES WITHIN THE LOD. 42. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPERS AGREEMENT WITH THIS PLAN, IN THE AMOUNT OF \$11,430.00 FOR THE REQUIRED 32 SHADE TREES, 10 EVERGREEN TREES, AND 11 SHRUBS. 43. FINANCIAL SURETY FOR THE REQUIRED STREET TREE PLANTING FOR THIS PROJECT HAS BEEN POSTED AS PART OF THE DEVELOPERS AGREEMENT WITH THIS PLAN, IN THE AMOUNT OF \$2,700.00 FOR THE REQUIRED 9 SHADE TREES. THE PUBLIC SURETY WILL BE INCLUDED IN THE DED'S COST ESTIMATE. HEALTH DEPARTMENT APPROVAL OF THIS SITE DEVELOPMENT PLAN (SDP) DOES NOT ENSURE APPROVAL OF BUILDING PERMIT APPRICATIONS ASSOCIATED WITH THIS PLAN. PERMIT PLANS FOR CERTAIN FACILITIES TO BE CONSTRUCTED WITHIN THE LIMITS DESCRIBED BY THIS SDP WILL REQUIRE REVIEW AND APPROVAL BY THE HEALTH DEPARTMENT. SUCH FACILITIES MAY INCLUDE, BUT ARE NOT LIMITED TO, THOSE WHICH HAVE SWIMMING POOLS, OR THAT SELL PREPARED OR PACKAGED FOODS, OR THAT MAY HAVE EQUIPMENT THAT EMITS RADIATION. ALL PROPOSED BUILDINGS WILL HAVE HAVE AN INSIDE METER SETTING. THE BUILDINGS WILL ALSO HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEMS. A COMMUNITY MEETING WAS HELD FOR THIS PROJECT AT BLUE STREAM BROMPTON HOUSE CLUBHOUSE, 7691 MANDRAKE COURT, ELKRIDGE, MD 21075 AT 6:00PM ON JUNE 29, 2018. THIS PROJECT IS NOT LOCATED ON A SCENIC ROAD. PORT CAPITAL DRIVE IS CLASSIFIED AS A LOCAL PUBLIC ROAD. THE PROPOSED INTERIOR STREETS ARE CLASSIFIED AS A 26' PRIVATE ROAD, AND A 20' PRIVATE ALLEY. THERE ARE NO HISTORIC STRUCTURES ON THIS PROPERTY. THIS PROPERTY IS NOT LOCATED WITHIN A HISTORIC DISTRICT. THERE ARE NO CEMETERIES LOCATED ON THIS PROPERTY. THIS PROJECT IS LOCATED WITHIN THE METROPOLITAN DISTRICT. EF. AA-18-018, APPROVED ON APRIL 8TH, 2019; ADMINISTRATIVE ADJUSTMENT SECTION 112.0.D.4.c(2)(a) TO REDUCE THE REQUIRED 50' APARTMENT DWELLING SETBACK TO 40.7' FROM CE-CLI-CR, SECTION 112.0.D.4.c(2)(a) REDUCE THE 50' APARTMENT DWELLING SETBACK FROM THE R-MH TO 40' FOR BUILDING #3, AND SECTION 112.0.D.5.d TO REDUCE THE MINIMUM DISTANCE BETWEEN MULTI-FAMILY BUILDING (REAR TO REAR) FROM 60' TO 56' BETWEEN BUILDINGS #1 AND" #3. REFERENCE WP-19-057, APPROVED 01/17/2019, TO SECTION 16.144(d)(2) SUBMISSION OF SKETCH PLAN, APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS: A. THE DEADLINE FOR RESUBMISSION OF S-18-008 IS EXTENDED 120 DAYS AS REQUESTED. THE NEW DEADLINE IS APRIL 16, 2019. PROVIDE A COPY OF ACTION LETTER ESTABLISHING THE DEADLINE WHEN RE-SUBMITTING THE SKETCH PLAN. B. IN THE EVENT THE ADMINISTRATIVE ADJUSTMENT (AA-18-018) TO THE STRUCTURE SETBACKS IS DENIED, THE APPLLICANT WILL HAVE UNTIL APRIL 16, 2019 TO RE-SUBMIT PLANS WITH AN ALTERNATIVE DESIGN THAT MEETS THE REGULATIONS. IF THE PLANS ARE NOT RESUBMITTED BY APRIL 16, 2019, S-18-008, RE-SUBMIT PLANS WITH AN ALTERNATIVE DESIGN THAT MEETS THE REGULATIONS. IF THE PLANS ARE INCL. RESUDMITTED BY AFRIC. 10, 2019, 3-10-000, POTTERS PLACE WILL BE VOID. C. ADD TO THE GENERAL NOTES ON SHEET 1 OF S-18-008, THE FILE NUMBER WP-19-057, DATE OF THE DECISION, AND THE CONDITIONS OF APPROVAL. D. ADD TO THE GENERAL NOTES, CASE NUMBER AA-18-018, THE DECISION DATE, AND CONDITIONS OF APPROVAL. 4. A PRIVATE ROAD STREET NAME SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNER'S EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430. FOR DETAILS AND COST ESTIMATES. 5. A PVC CONDUIT NEEDS TO BE INSTALLED 24" BELOW THE SURFACE FOR THE EXISTING STREET LIGHT CABLE. THE CONDUIT SHALL BE A MINIMUM 3"(INSIDE DIMENSION). WITH PULL STRING AND MARKED AT BOTH ENDS FOR BGE TO LOCATE. BEFORE CONSTRUCTION OF NEW ROAD BEGINS, CONTACT HOWARD COUNTY TRAFFIC AT 410-313-2430 TO COORDINATE DISCONECTING THE POWER TO THE EXISTING STREET LIGHTS IN THE AREA. 5. DEVELOPER SHOULD CONTACT HOWARD COUNTY TRAFFIC AT 410-313-2430 PRIOR TO BEGINING CONSTRUCTION TO COORDINATE EXISTING LIGHT RELOCATION. 7. REFERENCE WP-21-143, APPROVED 08/30/2021, TO SECTION 16.156(m) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS TO EXTEND THE DEADLINES TO PROCESS SDP-20-004. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS: A. THE DEADLINE TO COMPLETE THE DEVELOPERS AGREEMENT AND PAYMENT OF FEES SHALL BE 12/01/2021. B. THE DEADLINE TO COMPLETE ALL ITEMS OUTLINED IN THE TECHNICALLY COMPLETE LETTER OF 04/07/2020 AND SUBMIT ORIGINAL MYLARS FOR SIGNATURE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

3-17-22

PROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

WARD COUNTY HEALTH DEPARTMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION

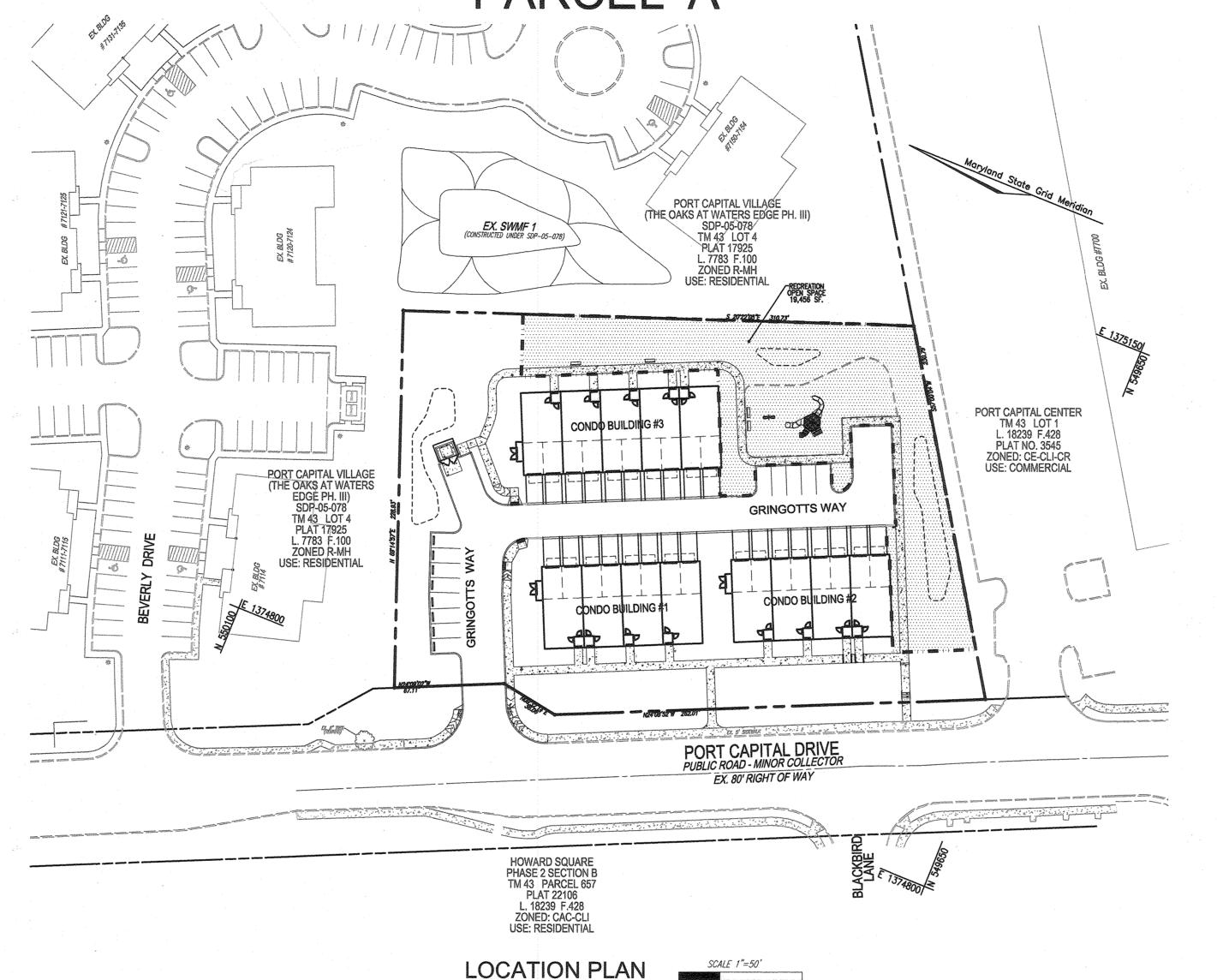
CHIEF, DIVISION OF LAND DEVELOPMENT,

Am Jona

410-637-8713

# SITE DEVELOPMENT PLAN PORT CAPITAL

THE OAKS AT WATERS EDGE PHASE III PARCEL 'A'



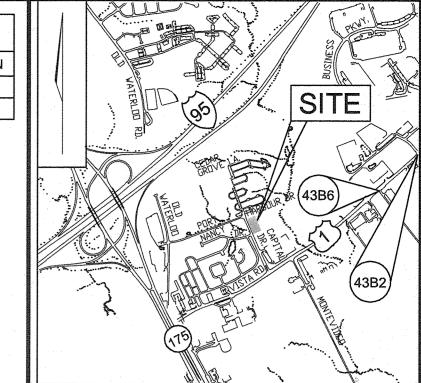
SCALE 1"=50'

	BEN	CHMARKS	
NO.	NORTHING	EASTING	ELEVATION
43B2	551,654.993	1,378,176.951	209.601
43B6	550,601.597	1,376,866.072	210.559

# **LEGEND**

PROPERTY LINE RIGHT-OF-WAY LINE 至 经存款法 5' CONCRETE SIDEWALK

RECREATION OPEN SPACE



VICINITY MAP

ADDRESS CHART

**BUILDING #1** 

SPRINKLER ROOM 7740 PORT CAPITAL DI

SCALE: 1"=2000' ADC MAP = PAGE 34 E6

7738-A PORT CAPITAL DI

7738-B PORT CAPITAL DR

7736-A PORT CAPITAL DI

7736-B PORT CAPITAL DE

7734-A PORT CAPITAL D

7734-B PORT CAPITAL D

7732-A PORT CAPITAL DE

7728-A PORT CAPITAL DR

7728-B PORT CAPITAL DR

726-A PORT CAPITAL DE

7726-B PORT CAPITAL DI 7724-A PORT CAPITAL DE

7724-B PORT CAPITAL D

7722-A PORT CAPITAL D

7722-B PORT CAPITAL DR

7201-A GRINGOTTS WAY

7201-B GRINGOTTS WAY

7203-A GRINGOTTS WAY 7203-B GRINGOTTS WAY

7205-A GRINGOTTS WAY

7205-B GRINGOTTS WAY

7207-A GRINGOTTS WAY 7207-B GRINGOTTS WAY

7209-A GRINGOTTS WAY 7209-B GRINGOTTS WAY

8 7732-B PORT CAPITAL DR.

**BUILDING #2** UNIT STREET ADDRESS

SPRINKLER ROOM 7730 PORT CAPITAL DR

**BUILDING #3** 

UNIT STREET ADDRESS

SPRINKLER ROOM 7199 | GRINGOTTS WAY

SHEET INDEX					
SHEETN	IUMBER				
1	OF 11				
2	OF 11				
3	OF 11				
4	OF 11				
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5	OF 11				
6	OF 11				
7	OF 11				
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9	OF 11				
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11	OF 11				
	1 2 3 4 5 6 7 8 9				

#### PARKING TABULATION:

TOTAL NUMBER OF DWELLING UNITS PROPOSED : 26 UNITS

PARKING SPACES REQUIRED: 26 UNITS x 2 SPACES PER UNIT = 52 SPACES

MULTI-FAMILY (1 GARAGE/1 DRIVEWAY) 1 SPACE IN GARAGE = 26 SPACES (FOR 26 UNITS) 1 SPACES ON DRIVEWAY = 26 SPACES (FOR 26 UNITS)

\* VISITORS PARKING SPACES REQUIRED: 0.3 SPACES X 26 UNITS = 8 SPACES REQUIRED VISITORS PARKING SPACES PROVIDED = 13 SPACES

\* STACKED TOWNHOUSE/CONDOS ARE CONSIDERED MULTI-FAMILY STRUCTURES.

### OPEN SPACE TABULATION:

ACCORDING TO THE SUBDIVISION REGULATIONS SECTION 16.121(a)(2) A MINIMUM OF 25% OF THE GROSS AREAS SHALL BE PROVIDED AS OPEN SPACE. OPEN SPACE REQUIRED = 25% GROSS AREA

= 1.79 ACRES X 25% = 0.447 AC. (19,493 S.F.)

OPEN SPACE PROVIDED = 0.656 AC. (28,568 S.F.)

ACCORDING TO THE SUBDIVISION REGULATIONS SECTION 16.121(a)(4)(vi) RECREATION OPEN SPACE IN R-A-15 ZONING SHALL BE 400 SF PER UNIT. ACCORDING TO SECTION 112.0(E) OF THE ZONING REGULATIONS, SINGLE FAMILY ATTACHED UNITS SHALL HAVE A USABLE OUTDOOR SPACE EQUAL TO A 15' DEEP YARD. ALTERNATLEY, THE RECREATION OPEN SPACE REQUIREMENT SHALL BE INCREASED BY 300 SF PER UNIT.

RECREATION OPEN SPACE REQUIRED = 400 S.F. X 26 UNITS + 300 S.F. X 26 UNITS

= 10,400 S.F. + 7,800 S.F. = 18,200 S.F.

RECREATION OPEN SPACE PROVIDED = 19,456 S.F. + 4 BENCHES (@ 200 EA.) + 1 PLAY EQUIPMENT (2,000 S.F.) = 22,256 S.F.

FOREST CONSERVATION REQUIRED = 0.3 AC. OF AFFORESTATION FOREST CONSERVATION PROVIDED = 0.3 AC. OF AFFORESTATION (SEE NOTE #35) OWNER/DEVELOPER ) MATTHEW S. WINEMAN

7035 ALBERT EINSTEIN DRIVE COLUMBIA, MD 21046 410-423-0407

	STORMWATER MANAGEMENT REQUIREMENTS							
AREA 1.79 AC.	REQUIREMENT	VOLUME REQUIREMENT	VOLUME PROVIDED	NOTES				
1	WATER QUALITY VOLUME (WQv)	3.307 CF	3,357 CF	MICRO-BIORETENTION				
2	RECHARGE VOLUME (REv)	860 CF	860 CF	MICRO-BIORETENTION				
3	EXTREME FLOOD VOLUME (Q <sub>100</sub> P)	4,474 CF	4,474 CF	SWMF.#1				

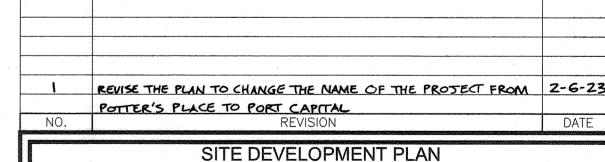
STORMWATER MANAGEMENT INFORMATION						
LOT/PARCEL#	FACILITY NAME & NUMBER	PRACTICE TYPE (QUANTITY)	PUBLIC	PRIVATE	MAINTENANCE BY	NOTES
Parcel 644, Parcel A	MBR #1	M-6 Micro-Bioretention		Х	Owner	Proposed
Parcel 644, Parcel A	MBR #2	M-6 Micro-Bioretention		Х	Owner	Proposed
Parcel 644, Parcel A	MBR #3	M-6 Micro-Bioretention		Х	Owner	Proposed
Parcel 644, Parcel A	MBR #4	M-6 Micro-Bioretention		Х	Owner	Proposed
Parcel 644, Parcel A	SWMF#1	Underground Detention (Pipe)		Х	Owner	Proposed

WATER CODE: B01

MODERATE INCOME HOUSING UNITS (MIHU) ALLOCATION EXEMPTIONS TRACKING					
TOTAL NUMBER OF LOTS/UNITS PROPOSED	26 UNITS				
NUMBER OF MIHU REQUIRED	3 UNITS (10% OF 26 UNITS)				
NUMBER OF MIGH PROVIDED ON-SITE (EXEMPT FROM APFO ALLOCATIONS)	3 UNITS				
NUMBER OF APFO ALLOCATIONS REQUIRED (REMAINING LOTS/UNITS)	23 UNITS				
MIHU FEE-IN-LIEU (INDICATE LOT/UNIT NUMBERS)	N/A				

PE	RMIT IN	FORMA	TION C	HAF	RT	: -	
SUBDIVISION N OAKS AT WATERS EDG			SECTION/A	REA	LOTS PA	/PARCEL # RCEL 644	
PLAT # OR L/F	BLOCK NO.	ZONE	TAX MAP	ELEC	T. DIST.	CENSUS TR.	
PLAT 16228 PLAT 25990	4	R-A-15	43		1ST	601203	Ц

SEWER CODE: 2420000



**COVER SHEET** 

PORT CAPITAL

THE OAKS AT WATERS EDGE PHASE III

TAX MAP 43 GRID 4 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

# **VOGEL ENGINEERING**

TIMMONS GROUP 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043

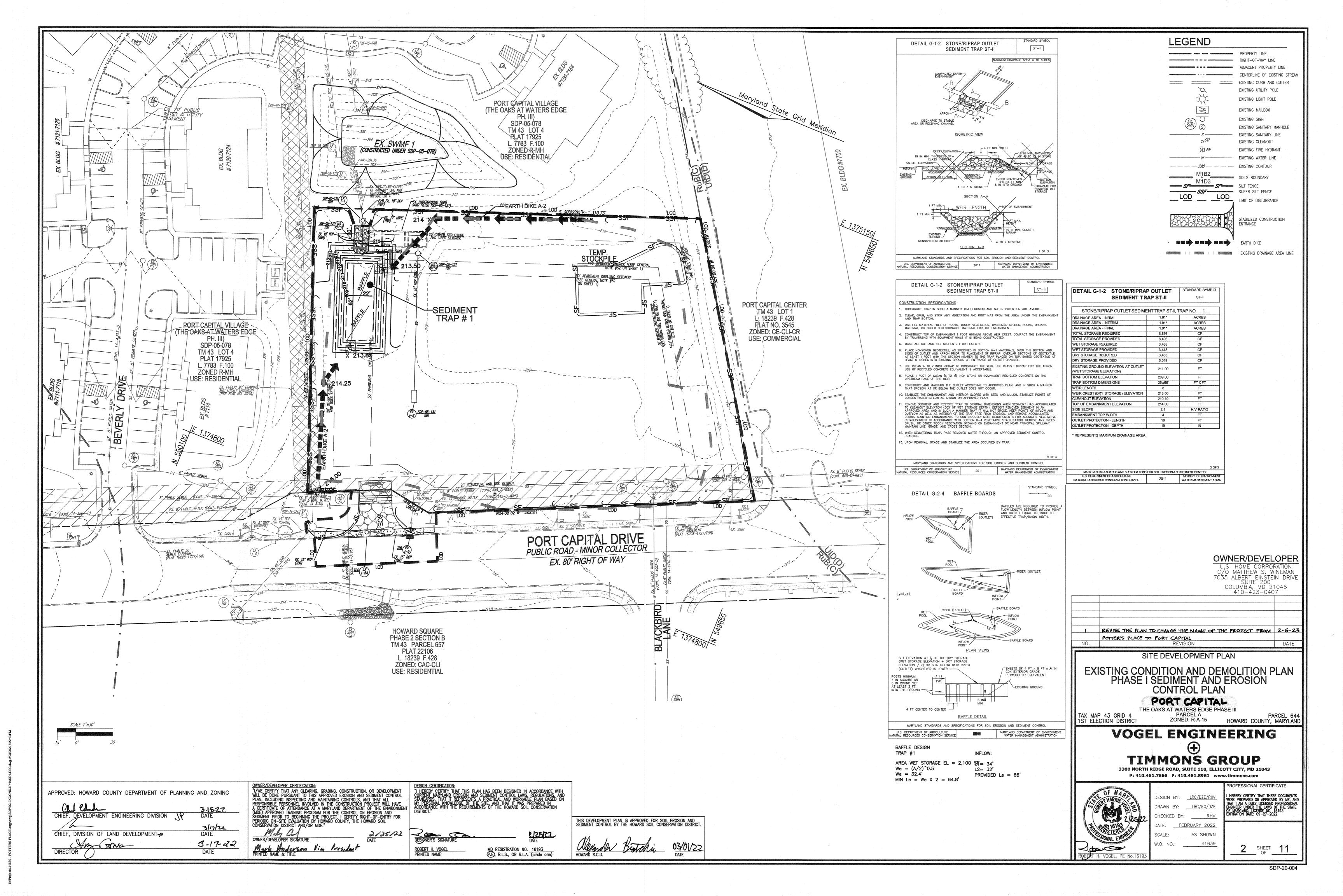
P: 410.461.7666 F: 410.461.8961 www.timmons.com

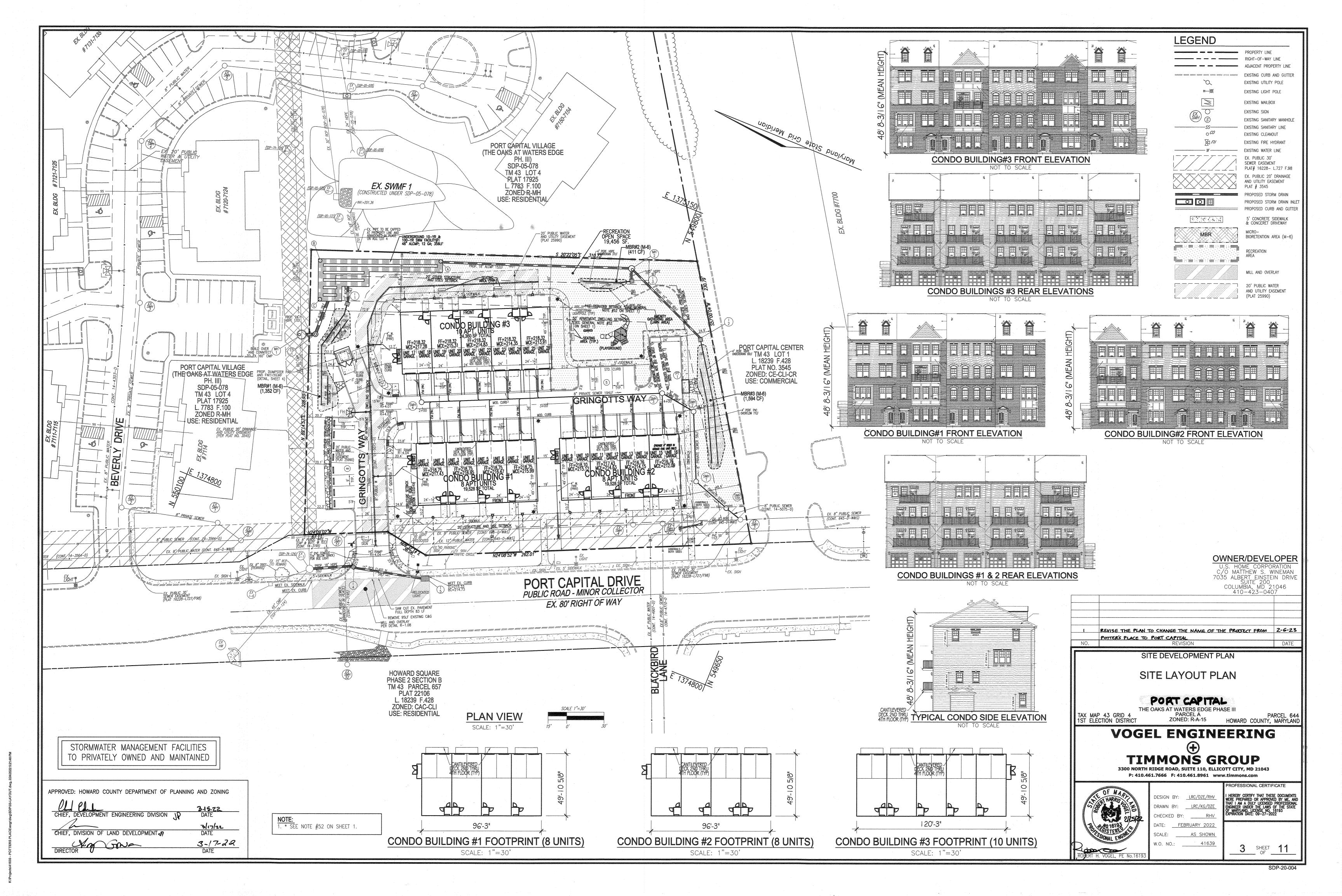


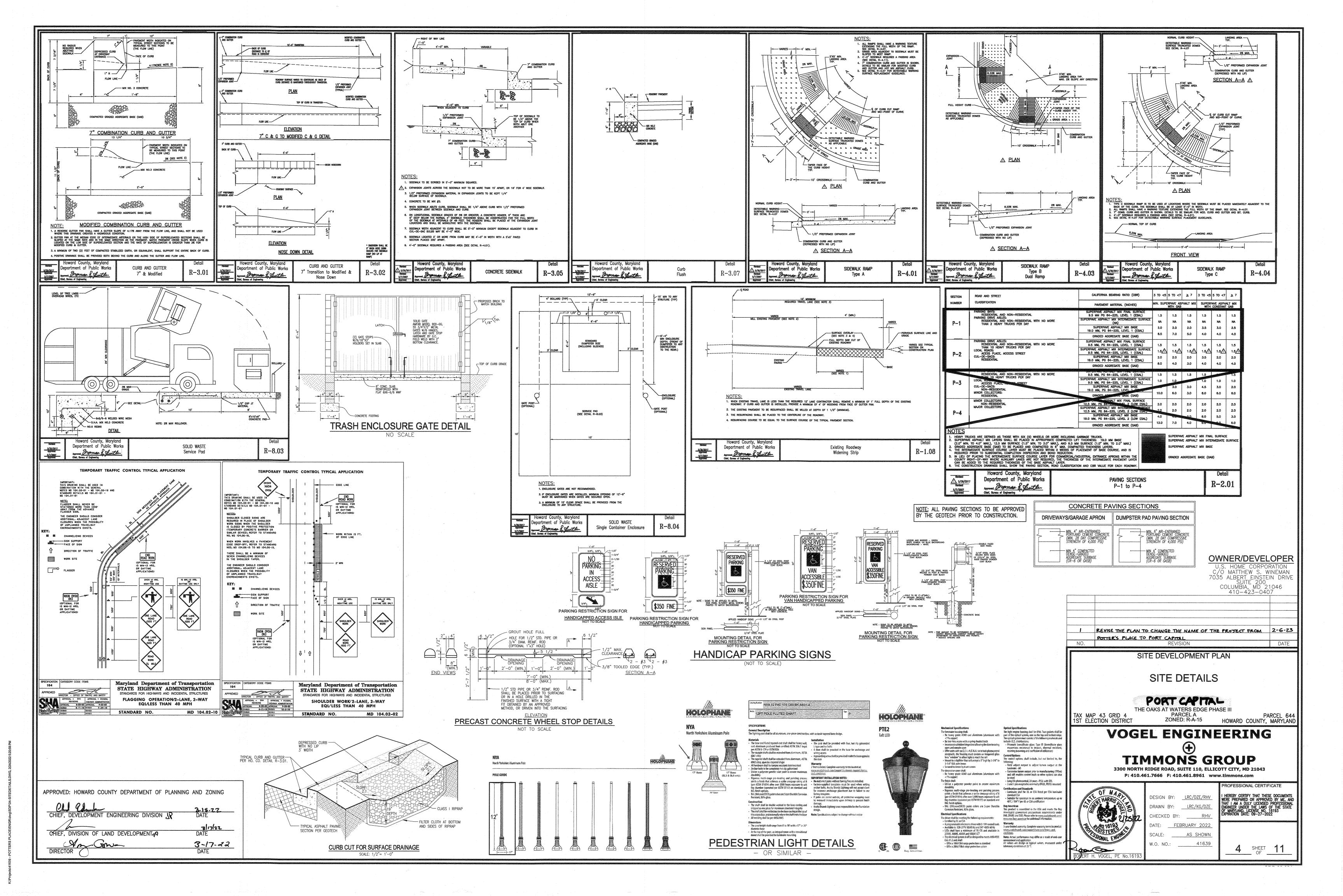
DESIGN BY: <u>LRC/DZE/RHV</u> DRAWN BY: LRC/KG/DZE DATE: FEBRUARY 2022

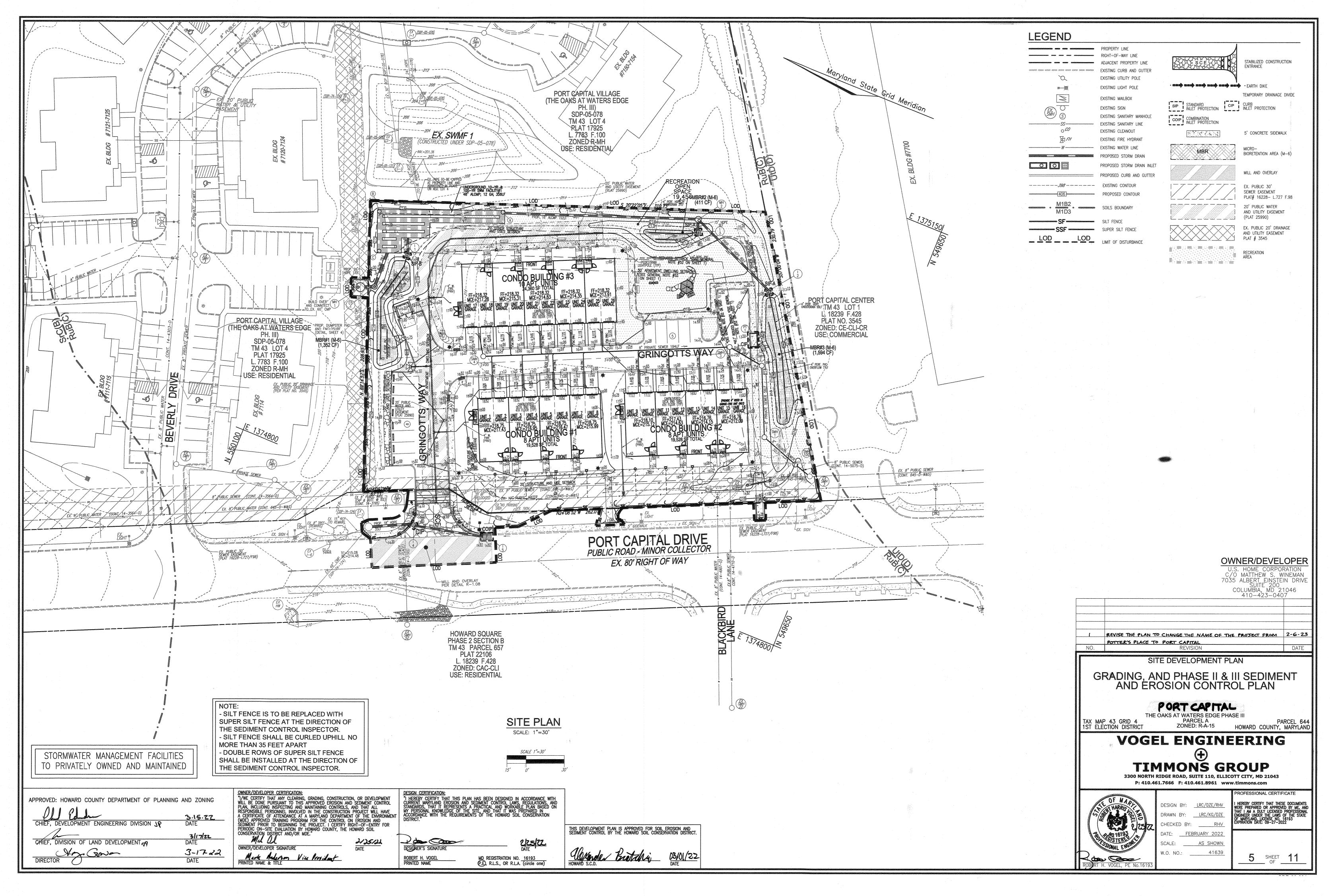
SHEET 11

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: 09-27-2022









339 - POTTERS PLACE/ENGRIdwgiSDP/05-GRADING&SEDCON 4wg, 2/24/2022 5/20-16 PM

TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

DIAMETER.

B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF MATIRAL TOPSOIL

OPSOIL APPLICATION

L. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.

J. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM
THICKNESS OF 4 INCHES, SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR
SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY
IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE
CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

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.

AMENIMENTS (SEPTILIZER AND LIME SPECIFICATIONS)

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.

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

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

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

HOWARD SOIL CONSERVATION DISTRICT (HSCD)

TANDARD SEDIMENT CONTROL NOTES

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

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 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 STABILIZATION IS REQUIRED WITHIN THERE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS DIKES SWALES DITCHES

TIVE GRADING.

L DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE

1011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. 3-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING.

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

OFFSITE WASTE/BORROW AREA LOCATION:

APPROVED OFF-SITE 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

• WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED

PRECUPITATION)

• 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

• HONTORIAND (CAUDI NO.)

MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
 OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH

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.

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.

SEDIMENT CONTROLS INTERRUPTED BY THE INSTALLATION OF STORM DRAINS

2. A DOUBLE ROW OF "SUPER" SILT FENCE IS TO BE INSTALLED AT THE

AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, WHICHEVER IS MORE STRINGENT.

. SILT FENCE SHALL BE CURLED UPHILL WHEREVER IT RUNS DOWNHILL. . EITHER TEMPORARY OR PERMANENT SEEDING AND STABILIZATION IS TO BE

PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE INTERVALS PROVIDED IN THE 2011 MARYLAND STANDARDS

STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED.

DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

SEDIMENT CONTROL NOTES:

ARE TO BE REPAIRED IMMEDIATELY

INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
 NAME AND TITLE OF INSPECTOR

DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE

BENCHED WITH STABLE OUTCET. 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.

SITE ANALYSIS:

TOTAL AREA OF SITE:

AREA DISTURBED:

AREA DISTURBED:

AREA TO BE ROOFED OR PAVED:

AREA TO BE VEGETATIVELY STABILIZED:

TOTAL CITY

3.122 CIL YDS

3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES,

SPECIFICATIONS

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

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

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

D. SOO 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. PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON—SITE SOILS DO NOT MEET THE ABOVE CONDITIONS. A PPLICATION

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

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

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

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY HALF THE SEEDING RATE IN EACH DIRECTION, ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT. CONDITIONS.

CRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.

APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF 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 A A SOIL TEST.

E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED ARFAS. LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE. IL 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. POSITION OF 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 SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY

MULCH MATERIALS (IN ORDER OF PREFERENCE)

A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY.

NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED. 3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FLIRNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND.
OTHER SOILS MAY BE USED IF RECOMMENDED BY AN ACRONOMIST 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. GRAVET. STICKS. ROOTS. TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

1. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.

II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.

III. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER—LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.

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

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

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

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

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

**<u>DEFINITION</u>**THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER

APPLICATION

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

B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE. TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.

C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. 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:

1. 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.

11. 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. MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET,

TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION
RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE
HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF
BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.

IV. LICHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER
RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO
3,000 FEET LONG.

OBTAIN HOWARD COUNTY GRADING PERMIT. (1 DAY)
NOTIFY HOWARD COUNTY BUREAU OF ENGINEERING, CONSTRUCTION INSPECTION DIVISION
(410-313-1880) AT LEAST 24 HRS BEFORE STARTING WORK. (1 DAY)
CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE. (1 DAY)
STAKE OUT LIMITS OF DISTURBANCE. (1 DAY) STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM. (1 DAY)
PERIMETER CONTROLS INCLUDING SILT FENCE AND SUPER SILT FENCE. INSTALL INLET PROTECTION FOR EXISTING INLETS. (2 DAYS WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB SITE. (3 DAYS) REMOVE EXISTING SWM UNDERGROUND SAND FILTER AND SD SYSTEM. (1 WEEK) INSTALL SEDIMENT TRAP AND EARTH DIKES. (1 WEEK) BEGIN SITE GRADING. (1 WEEK)
BEGIN CONSTRUCTION OF ON-SITE UTILITIES. (4 WEEKS)

BEGIN ROAD FRONTAGE IMPROVEMENTS AND UTILITY CONSTRUCTION. (1 WEEK)
BEGIN INSTALLATION OF SWM FACILITIES INCLUDING MICRO-BIORETENTIONS, AND UNDERGROUND CRO\_BIORETENTION CONSTRUCTION: CONSTRUCT STORM DRAIN STSTEM INCLUDING MICRUBIORETENTION UNDERDRAINS AND #57 STONE COVER STONE WITH POLY SHEET PLASTIC TO
C.
PREVENT CONTAMINATION, AND TEMPORARILY BACKFILL.
PROJECT IS BROUGHT TO SUBGRADE AND UTILITIES HAVE PROGRESSED SUFFICENTLY, AND WITH INSPECTOR'S APPROVAL, BEGIN INSTALLATION OF CONCRETE CURB AND GUTTER AND BASE PAVING. ON-SITE AND PORT CAPITAL DRIVE) (2 WEEKS) BEGIN BUILDING CONSTRUCTION. THIS MAY BE CONCURRENT WITH OR AFTER ITEM NUMBER 12 & 13 COMPLETE INSTALLATION OF MICRO-BIORETENTION FACILITIES. (2 WEEKS)

A. MICROBIORETENTION CONSTRUCTION: WITH SITE CONSTRUCTION COMPLETE, REMOVE TEMPORARY FILL
IN MICRO-BIORETENTION FACILITIES 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.

INSTALL PAVING SURFACE COURSE. (1 WEEK)
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 OF THE PLANTING SOIL. INSTALL PLAYGROUND AND AMENITY BENCHES. (2 WEEKS)
INSTALL STREET TREES AND OTHER LANDSCAPING. (1 WEEK)
FLUSH STORM DRAIN SYSTEM AND REMOVE SEDIMENT CONTROLS AFTER RECIEVING APPROVAL FROM
THE SEDIMENT CONTROL INSPECTOR. AFTER PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR REMOVE ANY REMAINING CONTROLS AND STABILIZE ALL REMAINING DISTURBED AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW AND MULCH. (1 WEEK.)
REMOVE ALL TRASH JUNK AND DEBRIS FROM THE LIMIT OF DISTURBANCE. (3 WEEKS)

A THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND B. SEVEN (7) CALENDAR DAYS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

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

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION DEFINITION TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE
10 USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED

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

SELD MIXTURES

A.SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE 8.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR RESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 — CRITICAL AREA PLANTING.

C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.

D. FOR ARPAS RECEIVING LOW MAINTENANCE APPLY LIPEA FORM FERTILIZER (46-0-0) AT 3-1/2 POLINDS. 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 SECONDS SHOWN IN THE PERMANENT SEEDING SUMMARY.

SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL
SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS
OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT
SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT.
IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTEN 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.

II KENTUCKY BLUEGRASS CYPERNINIAL RYE FULL SIJN MIXTURE FOR USE IN FILL SIJN AREAS WHERE II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY

III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED. IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 11/2 TO 3 POUNDS PER 1000 SQUARE FEET. MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND".

CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY.

THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

WESTEM MD: MARCH 15 TO JUNE 1, AUGUST 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)

D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY. MOVING 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.

							LIME RATE	
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	. N	P <sub>2</sub> 0 <sub>5</sub>	K <sub>2</sub> 0	
1	& KENTUCKY	T.F. 60 LB / AC K.B. 40 LB / AC	MAY 15	1/4-1/2 IN.	(1 LB PER	(2 LB PER	(2 LB PER	2 TONS/AC (90 LB PER 1000 SF )

SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).
GENERAL SPECIFICATIONS
A. CLASS OF TUREGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR. B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TOM OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

D. SOD MUST NOT BE HAPVESTED OF TRANSPIANTED WHEN HOSTERS CONTEST (SUCCESSION OF SOIL OF THE NOTE 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 INSTALL ATTION. TO ITS INSTALLATION.

TO ITS INSTALLATION.

2. SOD INSTALLATION.

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

B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SUIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS. 3. SOD MAINTENANCE
A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND
SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING
THE HEAT OF THE DAY TO PREVENT WILTING.
B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE
CONTROL 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.

STANDARDS AND SPECIFICATIONS FOR DUST CONTROL <u>DEFINITION</u>
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

ULCHES: 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. AFTER PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR REMOVE ANY REMAINING CONTROLS AND STABILIZE ALL REMAINING DISTURBED AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW AND MULCH. (1 WEEK.)

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

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

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

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND B. SEVEN (7) CALENDAR DAYS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE

MULCH MUST BE ANCHORED TO PREVENT BLOWING.

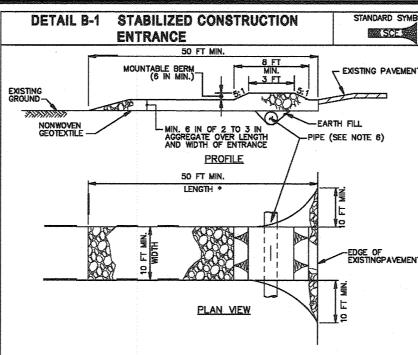
2. VEGETATIVE COVER: SEE SECTION B-4-4 TEMPORARY STABILIZATION.

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, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL ARR CURRENTS AND SOIL BLOWING.

6. CHEMICAL TREATMENT: USE OF CHEMICAL TREATMENT REQUIRES APPROVAL BY THE APPROPRIATE PLAN REVIEW AUTHORITY.



. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (\*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE, PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE, PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.

PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

2011 B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA A MOUND OR PILE OF SOIL PROTECTION BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL

PURPOSE
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL

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OF THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL THAT CO CONDITIONS WHERE PRACTICE APPLIES
STOCKPILE AREAS ARE UTILILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE. CRITERIA

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED 2. THE FOOTBUT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE SLOPE THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE. 4. 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.

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

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

**DEFINITION**TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS. PURPOSE TO LISE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES

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

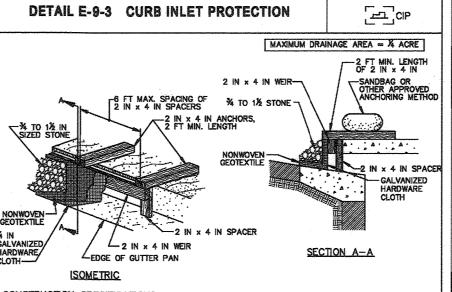
T. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1 FOR THE APPROPRIATI PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON

THE PLAN.

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

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

TEMPORARY SEEDING SUMMARY							
	ONE (FROM FIGURE E (FROM TABLE B.	FELIZER RATE	LIME RATE				
SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	(10-20-20)	2002 1002		
COOL SEASON ANNUAL RYEGRASS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	0.5 IN.	436 LB/AC (10 LB PER	2 TONS/AC (90 LB PER		
WARM SEASON FOXTAIL MILLET OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	0.5 IN.	1000 SF)	1000 SF)		



CONSTRUCTION SPECIFICATIONS 1. USE NOMINAL 2 INCH x 4 INCH LUMBER

2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. 3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).

4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.

5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.

INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN % TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL DETAIL E-9-2 AT-GRADE INLET PROTECTION AGIP DETAIL E-9-1 STANDARD INLET PROTECTION

—¾ TO 1½ IN STONE NONWOVEN GEOTEXTILE

FOR TYPE B, USE 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE, FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE WITH WITE TIES, FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. PLAN / CUT AWAY VIEW S. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND DETAIL E-1 SILT FENCE

CONSTRUCTION SPECIFICATIONS

. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.

2. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.

3. FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN. STRETCH ½ INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WER CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.

. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.

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

REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

---INLET GRATE CONSTRUCTION SPECIFICATIONS 1. Use wood posts 1% x 1%  $\pm$  %6 inch (minimum) square cut of sound quality hardwood, as an alternative to wooden post use standard "t" or "u" section steel posts weighing no less than 1 pound per linear foot.

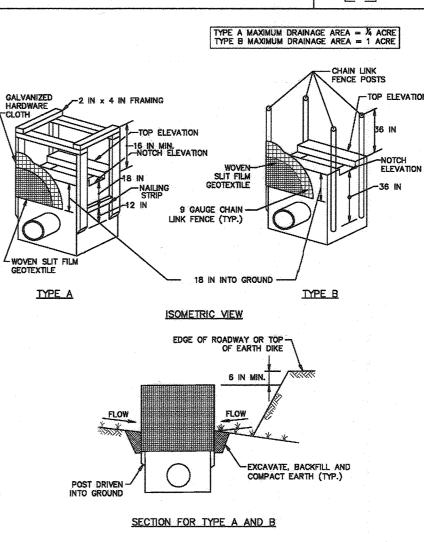
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART. CROSS SECTION 3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND

USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.

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PLACE CLEAN % TO 1% INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING, IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND DEPARTMENT OF ENVIRONMENT MANAGEMENT ADMINISTRATION



DETAIL E-9-1 STANDARD INLET PROTECTION

CONSTRUCTION SPECIFICATIONS INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX F LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPENING) 42
 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS. 5. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND. . WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS. 5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL 2011

DETAIL C-1 EARTH DIKE

DETAIL E-3 SUPER SILT FENCE

CHAIN LINK FENCING-

WOVEN SLIT FILM GEOTEXTILE-

FLOW \_\_\_

----SSF-----I

-36 IN MIN

GALVANIZED CHAIN LINK FENCE WITH WOVEN SLIT FILM GEOTEXTILE

**ELEVATION** 

A-1

PLACE DESIGNATION (e.g. A-1)
ON FLOW CHANNEL SIDE OF DIN b \_\_\_\_\_2:1 SLOPE OR FLATTER 2:1 SLOPE OR FLATTER-DIKE TYPE a - DIKE HEIGHT 18 IN MIN. 30 IN MIN. b - DIKE WIDTH 24 IN MIN. 36 IN MIN. c - FLOW WIDTH 4 FT MIN. 6 FT MIN. d - FLOW DEPTH 12 IN MIN. 24 IN MIN. PLAN VIEW

A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.

CONSTRUCTION SPECIFICATIONS REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.

CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.

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. . EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.

. 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.

OWNER/DEVELOPER HOME CORPORATION MATTHEW S. WINEMAN 7035 ALB<u>ert einst</u>ein drive

# COLUMBIA, MD

#### Seeding Rate 17 lb/ac lb/1000 ft<sup>2</sup> 7a and 7b Annual Ryegrass (Lolium peren Feb 15 to Apr 30; Au 5 to Nov 30 DISTORBANCE SHALL NOT OCCUR OUTSIDE THE LO.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, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON—SITE FOR REDIT FOR REDIT ONTO FINAL GRADE. Feb 15 to Apr 30; Aug (10-20-20 Mar 15 to May 31; Aug 1 to Sep 3 ar 1 to May 15; Ar Feb 15 to Apr 30; Aug Oats (Avena sativa) Mar 15 to May 31; Aug 1 to Sep 3 5 to Nov 30 Feb 15 to Apr 30; Aug | (10 LB PER | (90 LB PER Mar 1 to May 15: A Wheat (Triticum aestivum MINIMON INTERVALS, WITH LOWER LODG COLLEGE OFFIILE BY Z IN ELEVATION. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE): USE I AND IP MARCH 1 — JUNE 15 USE III AND IIP OCTOBER 1 — APRIL 30 USE IV MARCH 1 — MAY 31 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. 5 to Nov 30 ar 1 to May 15; At Feb 15 to Apr 30; Aug Cereal Rye (Secale cereale) Mar 15 to May 31; Aug 1 to Oct 3 to Nov 15 15 to Dec 15 0.5 Jun 1 to Jul 3 fay 1 to Aug 14

Table B.1: Temporary Seeding for Site Stabilization

Recommended Seeding Dates by Plant Hardiness Zone

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

Jun 1 to Jul 3

0.5

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2X4 ANCHORS (MINIMUM 2 FOOT LENGTHS OF 2x4 INCH TO THE TOP OF THE WEIR AT SPACER LOCATIONS). EXTEND 2X4 ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND BOTH ENDS OF THE THROAT OPENING. FORM THE % Inch hardware cloth and the geotextile to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean % to 1% inch stone or equivalent recycled concrete over the hardware cloth and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile. D. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND

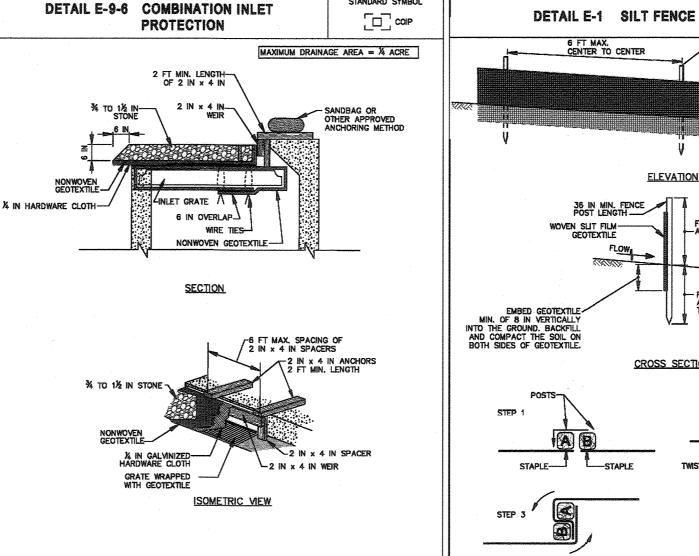
ATTACH A CONTINUOUS PIECE OF 1/2 INCH GALVANIZED HARDWARE CLOTH WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2X4 WEIR, EXTENDING 2 FEET BEYOND THROAT ON EACH SIDE.

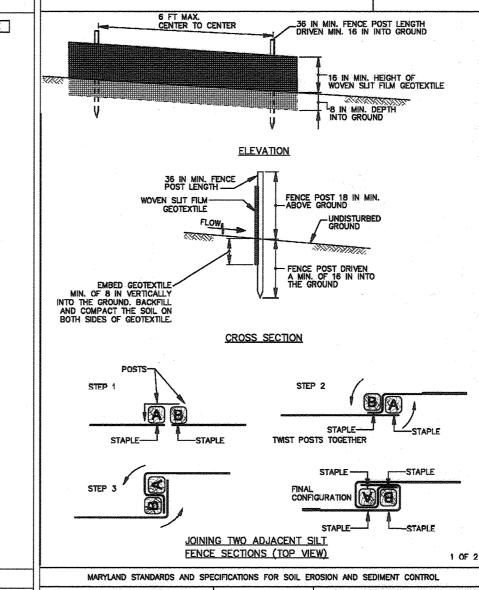
DETAIL E-9-6 COMBINATION INLET

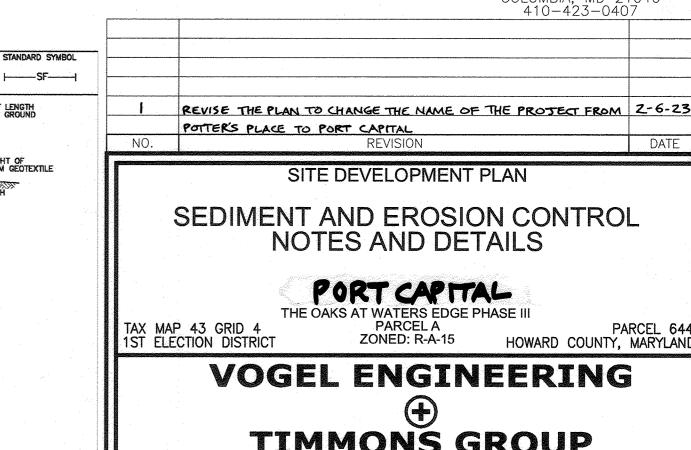
USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.

CONSTRUCTION SPECIFICATIONS

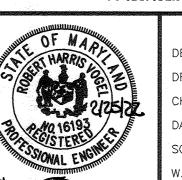
USE NOMINAL 2 INCH x 4 INCH LUMBER











DESIGN BY: <u>LRC/DZE/RHV</u> DRAWN BY: LRC/KG/DZE RHV CHECKED BY: DATE: FEBRUARY 2022

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: 09-27-2022 SHEET 11

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION 10 3/17/22 CHIEF, DIVISION OF LAND DEVELOPMENT 3-17-22

Pearl Millet (Pennisetum glaucum)

PRINTED NAME & TITLE

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION

y 1 to Aug 14

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. NAIL THE 2X4 WEIR TO THE TOP OF A 9 INCH LONG VERTICAL SPACER TO BE LOCATED BETWEEN TI WEIR AND THE INLET FACE (MAXIMUM 4 FEET APART).

2011

DIRECTOR DIRECTOR

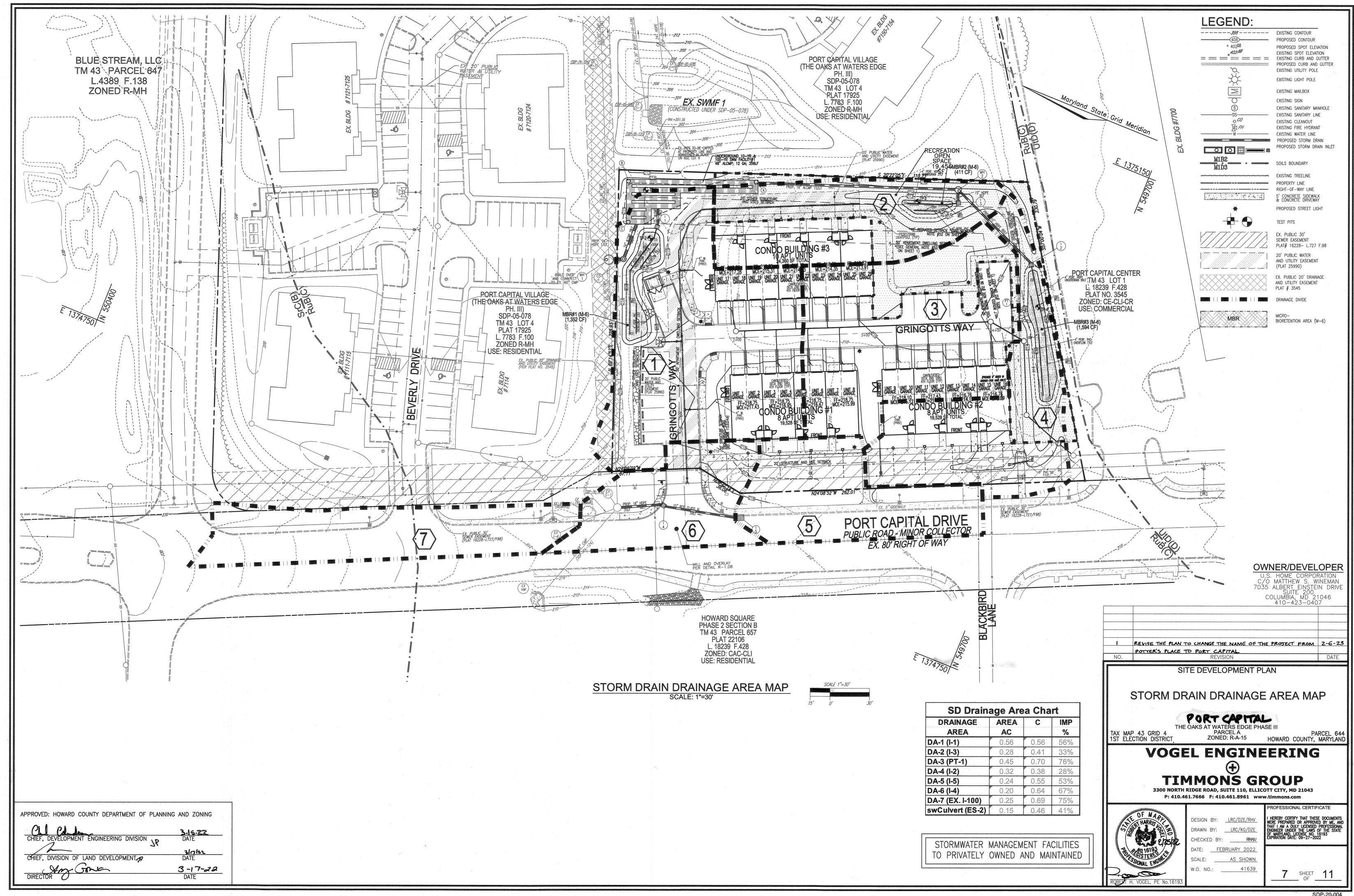
OWNER/DEVELOPER CERTIFICATION:

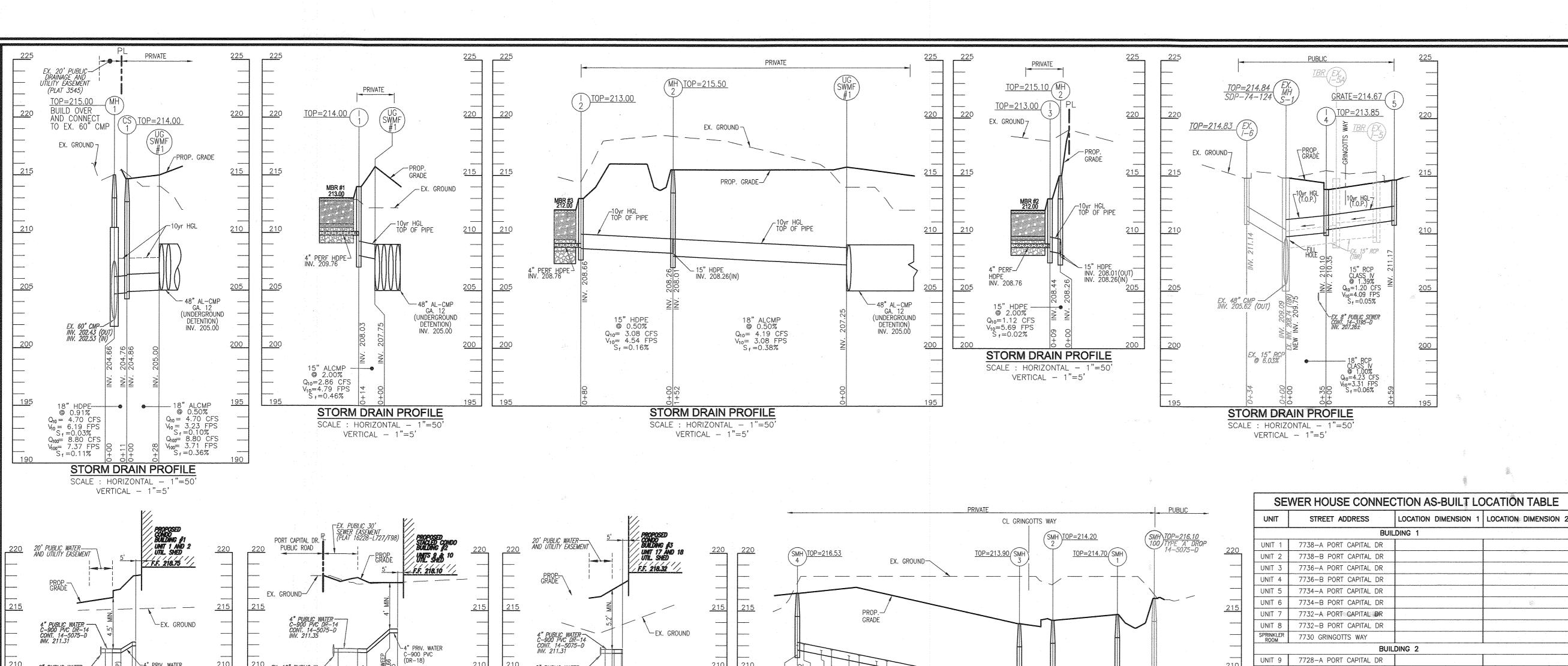
"I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT—OF—ENTRY FOR PERIODIC ON—SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE." OWNER/DEVELOPER SIGNATURE

DESIGNER'S SIGNATURE MD REGISTRATION NO. 16193 (P.E), R.L.S., OR R.L.A. (circle one)

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

(Ober Care)





PRIVATE SHC CHART

213.33

212.85

212.37

207.81 25.60 **208.32** 208.49 209.99

211.70 15.50 212.01 212.18 213.68 213.68

211.28 | 15.50 | 211.59 | 211.76 | 213.26 |

210.32 | 15.50 | 210.63 | 210.80

209.83 | 15.70 | 210.14 | 210.31 | 211.81

21 SHC 22 SHC

NOTE: ALL SLOPES ARE 2%

54.89

54.89

54.89

54.89

54.89

214.78

212.86

212.38

211.90

211.41

217.43

215.99

215.12

214.63

214.15

212.09

**217.28** 218.32

**215.36** 218.32

**214.88** 218.32

214.40 218.32

218.32

216.95 218.75

216.47 218.75

218.75

218.75

218.10

217.43

216.76

216.76

mananara a mananara	FEX. PUBLIC 30'		CL GRINGOTTS WAY
220 20' PUBLIC WATER— UNT 1 AND 2 UNT 1 AND 2 UNIL SHED	PORT CAPITAL DR. P. (PLAT 16228-L727/F98)	20' PUBLIC WATER 5' PROPOSED  220 220 AND UTILITY EASEMENT UNIT 17 AND 18 220 220 SMH	SMH TOP=214.20 SMH TOP=216.10 100 TYPE A' DROP 14-5075-D 220
220 20' PUBLIC WATER— AND UTILITY EASEMENT  5' F.F. 218.75	BROP   VAITS 9 10 10   5' - F.F. 218.10	220 220 AND SHELL EASEMENT 17 AND 18 220 220 SMH 4	TOP=216.53  EX. GROUND  TOP=213.90 SMH  TOP=214.70 SMH  TOP=214.70 SMH  TOP=214.70 SMH
	5 F.F. 218.16 //	PROP. GRADE \	
PROP - GRADE	EX. GROUND		
215	215 215	215 215 215 215 215	PROP.—GRADE
4" PUBLIC WATER — ∑ C-900 PVC DR-14 CONT. 14-5075-D INV. 211.31  EX. GROUND	4" PUBLIC WATER— C-900 FVC DR-14 CONT. 14-5075-D INV. 211.35	4" PUBLIC WATER — EX. GROUND	GRADE
LONI. 14-30/3-0 INV. 211.31		## PUBLIC WATER— EX. GROUND ——	
210 8" PUBLIC WATER	210 210 FX 12" PUBLIC W 4" PRIV. WATER C-900 PVC (DR-18)		210
210 8" PUBLIC WATER C-900 PVC (DR-18)	210   210 EX. 12" PUBLIC W	210   210 8" PUBLIC WATER   210   21	14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
H. BEND 211.31		$\frac{1}{\sqrt{N}} = \frac{1}{\sqrt{N}} = 1$	8.8.1.
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<u>-</u> N≥	205 205	200   200	987.23 987.23
(dn :	— C S.	0 EX. SOT5—D INTRESS. NUTIRESS. SOHO	6" SHC (6" SHC (7" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 1+8" 5" 14" 14" 15" 15" 15" 15" 15" 15" 15" 15" 15" 15
END(3.	# PUBIL		
200 H BENDO	200 200	200 200 STATE MATER PROFILE (UNITO 47 00)	8" PVC  8" PVC  8" PVC  8" PVC  90 2.00%  8" PVC  14-5075-D
WATER S5075-D 1/8 S17A INV	WATER S075-D UTTRESS	PRIVATE WATER PROFILE (UNITS 17-26)  SCALE: HORIZONTAL - 1"=50" VERTICAL - 1"=5"	8" PVC
ECT TO BLIC W 33 11.31 ND BUT 11.91	ECT TO UBLIC W UBLIC W NDE 4" AND BUT	VERTICAL - 1"=5"	PUBLIC   PUBLIC   \(\frac{\pi}{2}\)
195 CAP PUNE 101 CAP PUNE 101 CAP PUNE 101 CAP PUNE 101 CAP PUNE 102 CAP PUNE 103 CAP PUNE 104 CAP PUNE 105 CAP PUNE 106 CAP PUNE 107 CAP PUNE 10	195 195 05,400 06 EN VI		# 00 00 00 00 00 00 00 00 00 00 00 00 00
PRIVATE WATER PROFILE (UNITS 1-8			PRIVATE SEWER PROFILE
SCALE: HORIZONTAL - 1"=50' VERTICAL - 1"=5'	SCALE : HORIZONTAL - 1"=50' VERTICAL - 1"=5'		SCALE: HORIZONTAL - 1"=50' VERTICAL - 1"=5'

	SMH\TOP=216.10			BUIL	DING 1	
	100) TYPE 'A' DROP 14-5075-D	220	UNIT 1	7738-A PORT CAPITAL DR		
SMH)	14-30/3-0	220	UNIT 2	7738-B PORT CAPITAL DR		
$\forall$	Commission and Commission Commiss	-	UNIT 3	7736-A PORT CAPITAL DR		
			UNIT 4	7736-B PORT CAPITAL DR		
	The state of the s		UNIT 5	7734-A PORT CAPITAL DR		
		215	UNIT 6	7734-B PORT CAPITAL DR		
_	And a second sec	215	UNIT 7	7732-A PORT CAPITAL DR		
			UNIT 8	7732-B PORT CAPITAL DR		
H	Assetsioning care transportation and the state of the sta	. —	SPRINKLER ROOM	7730 GRINGOTTS WAY		
	insilipeussaade proposite proposite	-		BUIL	DING 2	
	ed contract and activities activit	210	UNIT 9	7728-A PORT CAPITAL DR		
	receipment and control of the contro	210	UNIT 10	7728-B PORT CAPITAL DR		
	no Anna Bantralia.	V	UNIT 11	7726-A PORT CAPITAL DR		
	Producing despite the control of the	-	UNIT 12	7726-B PORT CAPITAL DR		
#	en e		UNIT 13	7724-A PORT CAPITAL DR		
	maria discontrastas	205	UNIT 14	7724-B PORT CAPITAL DR		
4 4	A CALL CONTROL OF THE	200	UNIT 15	7722-A PORT CAPITAL DR		
5.7	2.8,		UNIT 16	7722-B PORT CAPITAL DR		
205.74	Technology (Control of Control of		SPRINKLER ROOM	7720 GRINGOTTS WAY		
<u>≥</u> <u>≥</u>	The state of the s			BUIL	DING 3	
	J	200	UNIT 17	7201-A GRINGOTTS WAY		
	EX. 8" SEWER 90 14-5075-D 0 2.00%	7 200	UNIT 18	7201-B GRINGOTTS WAY		
	© 2.00% INV. 201.54(0	3(17)	UNIT 19	7203-A GRINGOTTS WAY		
	N. 201,04(0	,01)	UNIT 20	7203-B GRINGOTTS WAY	_	
222	NI 20101(0		UNIT 21	7205-A GRINGOTTS WAY		
0+00	0+0	195	UNIT 22	7205-B GRINGOTTS WAY		
<u> </u>			UNIT 23	7207-A GRINGOTTS WAY		
			UNIT 24	7207-B GRINGOTTS WAY		
			UNIT 25	7209-A GRINGOTTS WAY		
			UNIT 26	7209-B GRINGOTTS WAY		
			SPRINKLER ROOM	7199 GRINGOTTS WAY		<u> </u>
ELEV. @	-	USE				
OF H	OUSE MCE F.F. ELE	VATION				

OWNER/DEVELOPER
U.S. HOME CORPORATION C/O MATTHEW S. WINEMAN
7035 ALBERT EINSTEIN DRIVE SUITE 200
COLUMBIA, MD 21046 410-423-0407

REVISE THE PLAN TO CHANGE THE NAME OF THE PROJECT FROM 2-6-23 POTTER'S PLACE TO PORT CAPITAL REVISION

SITE DEVELOPMENT PLAN

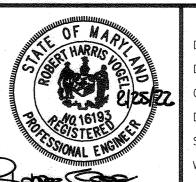
STORM DRAIN AND UTILITY PROFILES

PORT CAPITAL
THE OAKS AT WATERS EDGE PHASE III

PARCEL A PARCEL 644
ZONED: R-A-15 HOWARD COUNTY, MARYLAND TAX MAP 43 GRID 4 1ST ELECTION DISTRICT

**VOGEL ENGINEERING** 

**TIMMONS GROUP** 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com



Ł	DESIGN BY:	_LRC/DZI
	DRAWN BY:	LRC/K
<b>1</b> 22.	CHECKED BY	
	DATE:FE	BRUARY
	SCALE:	AS SH
	W.O. NO.:	4

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: 09-27-2022 KG/DZE RHV 2022 <u>NWOH</u> 41639 8 SHEET 11

STORMWATER MANAGEMENT FACILITIES TO PRIVATELY OWNED AND MAINTAINED

<del></del>	*·····································	*							
PIPE SCHEDULE - PRIVATE									
SIZE	TYPE LE								
4"	PERFORATED HDPE (SWM)	222 LF							
4"	PERFORATED PVC (SWM)	140 LF							
4"	C-900 PVC DR-14 (WATER)	64 LF							
4"	PVC SCH. 40 (SEWER)	75 LF							
6"	PVC SCH. 40 (SEWER)	291 LF							
8"	PVC SCH. 40 (SEWER)	311 LF							
15"	HDPE	89 LF							
18"	HDPE	11 LF							
15"	ALCMP	14 LF							

PIPE SCHEDULE - PUBLIC

RCP CLASS IV (SD)

RCP CLASS IV (SD)

18" ALCMP

48" ALCMP (SWM)

LENGTH

59 LF

35 LF

180 LF

356 LF

1								1 .									
		STRUCTURE SCH	HEDUL	E						6" INV. @	DIST	6" INV.	4" INV.	4" INV. @ HOUSE	DIST TO BACK OF	ELEV. @ BACK	T
NO	TVDF	LOGATION	TOP	INV.	INV.	00041451150	MAINTENANCE	UNIT NO.	TYPE	MAIN/MH	то со	@ CO	@ co	(5FT OFFSET)	HOUSE	OF HOUSE	М
NO.	TYPE	LOCATION	ELEV.	IN	OUT	COMMENTS	RESPONSIBILITY	1	SHC	211.58	25.60	212.09	212.26	212.31	54.89	214.93	217
1-1	TYPE 'S' INLET	N 550032.06 E 1374975.32	214.00	209.76	208.03	HO. CO. STD D-4.24	PRIVATE	2	SHC	Z33,30	25.00	212.09	213.76	213.83	34.69	214.93	21/
1-2	TYPE 'S' INLET	N 549757.80 E 1375055.44	213.00	208.76	208.66	HO. CO. STD D-4.24	PRIVATE	3	SHC	211.10	25.60	211.61	211.78	211.83	54.89	214.45	216
1-3	TYPE 'S' INLET	N 549826.77 E 1375078.24	213.00	208.76	208.44	HO. CO. STD D-4.24	PRIVATE	4	SHC	211.10	23.00	211.01	213.28		34.63	214.40	2.10
1-4	TYPE 'S' INLET	N 549944.94 E 1374779.58	213.85	210.35	210.10	HO. CO. STD D-4.24	PUBLIC	5	SHC	210.62	75 60	211.13	211.30	211.35	54.89	213.97	216
1-5	TYPE DOUBLE 'WR' INLET	N 549891.41 E 1374795.58	214.67	Ī	211.17	HO. CO. STD D-4.31	PUBLIC	6	SHC	220.02	23,00	211.13	212.80	212.87	34.63	213.37	210
PT-1	10' FLOW THROUGH INLET	N 549757.52 E 1375014.90	214.10		213.00	HO. CO. STD D-4.35	PRIVATE	7	SHC	210.14	25.60	210.65	210.82	210.87	54.89	213.49	210
CS-1	4'-0" STANDARD PRECAST MANHOLE	N 550046.64 E 1374943.06	214.66	204.86	204.76	MD 384.01; SEE DETAIL, SHEET 10	PUBLIC	8	SHC	2.13.17	25.00	210.03	212.32	212.39	34.00	213.43	
MH-1	84" DIAM. PRECAST MANHOLE	N 550056.83 E 1374938.50	215.00	202.53	202.43	MD 384.07	PUBLIC	9	SHC	209.27	25,60	209.78	209.95	210.00	54.89	212.62	215
MH-2	5'-0" STANDARD PRECAST MANHOLE	N 549830.64 E 1375087.44					PRIVATE	10	SHC	203.23	23,00	203.70	211.45	211.52	54,05	212.02	
SMH-1	STD 4' PRECAST MANHOLE	N 549718.20 E 1374948.57					PRIVATE	11	SHC	208.78	25.60	209.29	209.46		54.89	212.13	214
SMH-2	STD 4' PRECAST MANHOLE	N 549741.23 E 1374999.82					PRIVATE	12	SHC				210.96		¥ ,,,,,		
SMH-3	STD 4' PRECAST MANHOLE	N 549770.14 E 1375003.97					PRIVATE	13	SHC	208.30	25.60	208.81	208.98	17	54.89	211.65	214
SMH-4	STD 4' PRECAST MANHOLE		<del></del>	<del></del>	<del></del>	HO. CO. STD S-1.31 (TERMINAL MANHOLE)		14	SHC	200.00			210.48	<del> </del>		231.05	
STRUCTURE N			1	1-111	1= 110=	The second of the first that the second of t		15	SHC	207.81	25.60	208.32	208.49		54.89	209.59	212
	The state of the s							16	CHC	1		1	200 00	210.00		1	

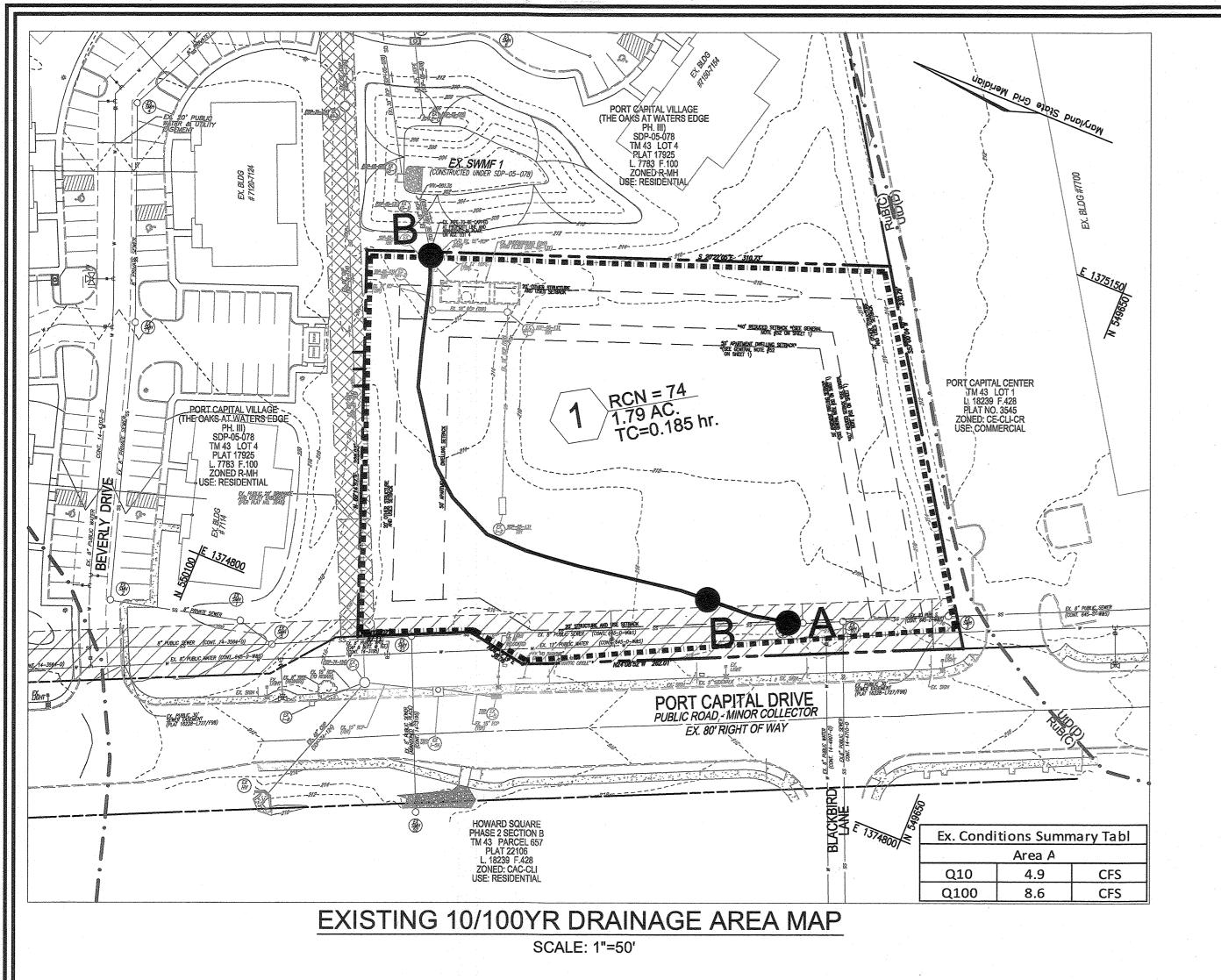
1. TOP ELEVATIONS ARE AT CENTER TOP OF HEADPIECE FOR PT-1, AT CENTER OF GRATE FOR TYPE 'S' AND 'WR' INLETS, AND TOP OF MANHOLE COVER FOR PRECAST MANHOLES. 2. FOR TOP SLAB SLOPES SEE GRADING PLAN.

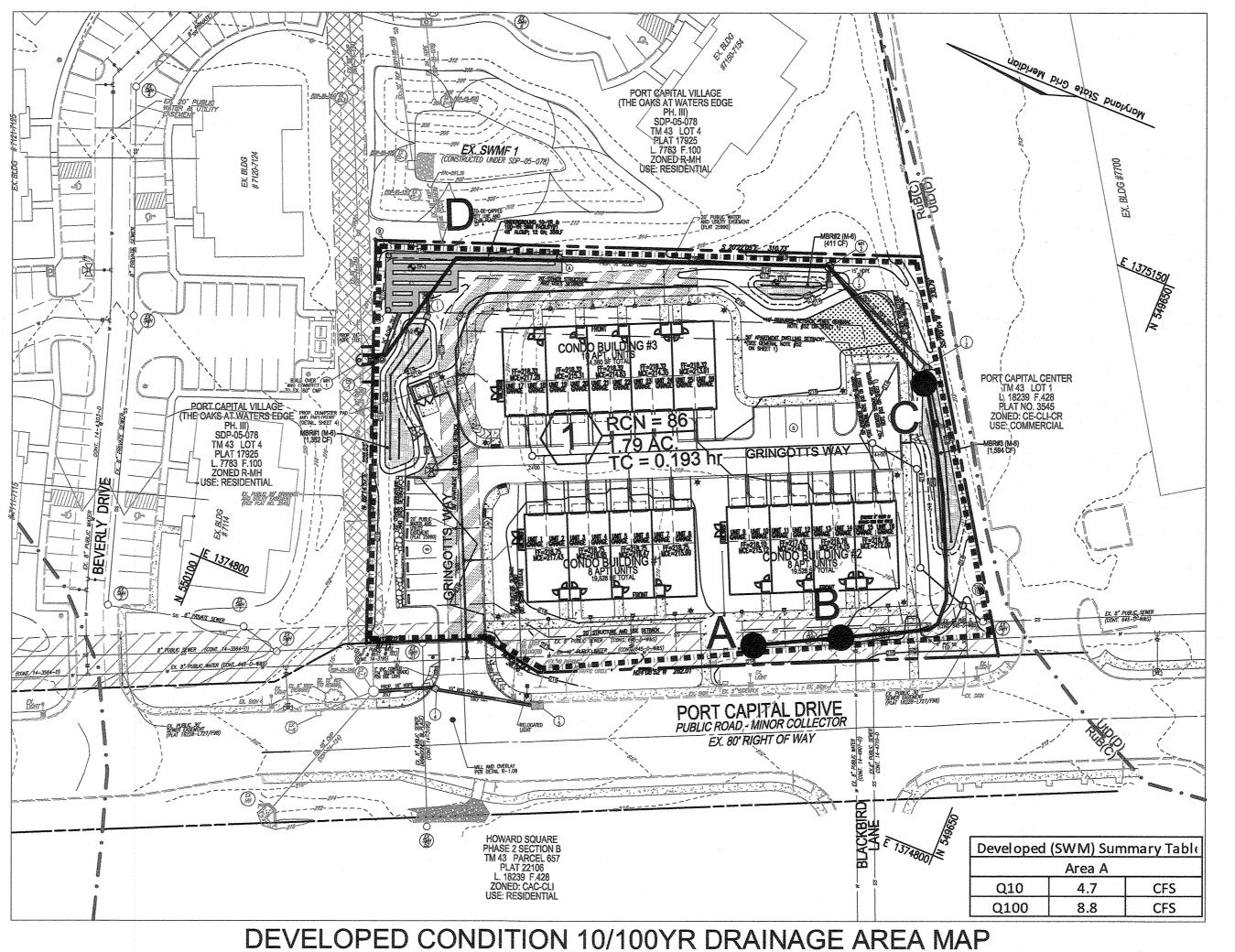
3. SEE ARCHITECTURAL PLANS FOR ROOF DRAIN DETAILS. 5. THIS FACILITY PROVIDES 10-YR AND 100-YR SWM AS REQUIRED FOR DEEP-RUN WATERSHED.

4. ALL CUSTOM AND NON-STANDARD STRUCTURES TO BE DESIGNED BY A QUALIFIED STRUCTURAL ENGINEER.

						·	
ROVED: HOWARD	COUNTY	DEPARTMENT	OF	PLANNING	AND	ZONING	
Old Colm					3.15	5.2.2	

CHIEF, DEVELOPMENT ENGINEERING DIVISION JP CHIEF, DIVISION OF LAND DEVELOPMENT DIRECTOR DIRECTOR 3-17-22 CONTRACTOR TO TESTPIT FOR EXISTING UTILITIES
TO VERIFY INVERT ELEVATIONS AT ALL TIE-IN
AND POSSIBLE CROSSING LOCATIONS WELL IN
ADVANCE OF CONSTRUCTION

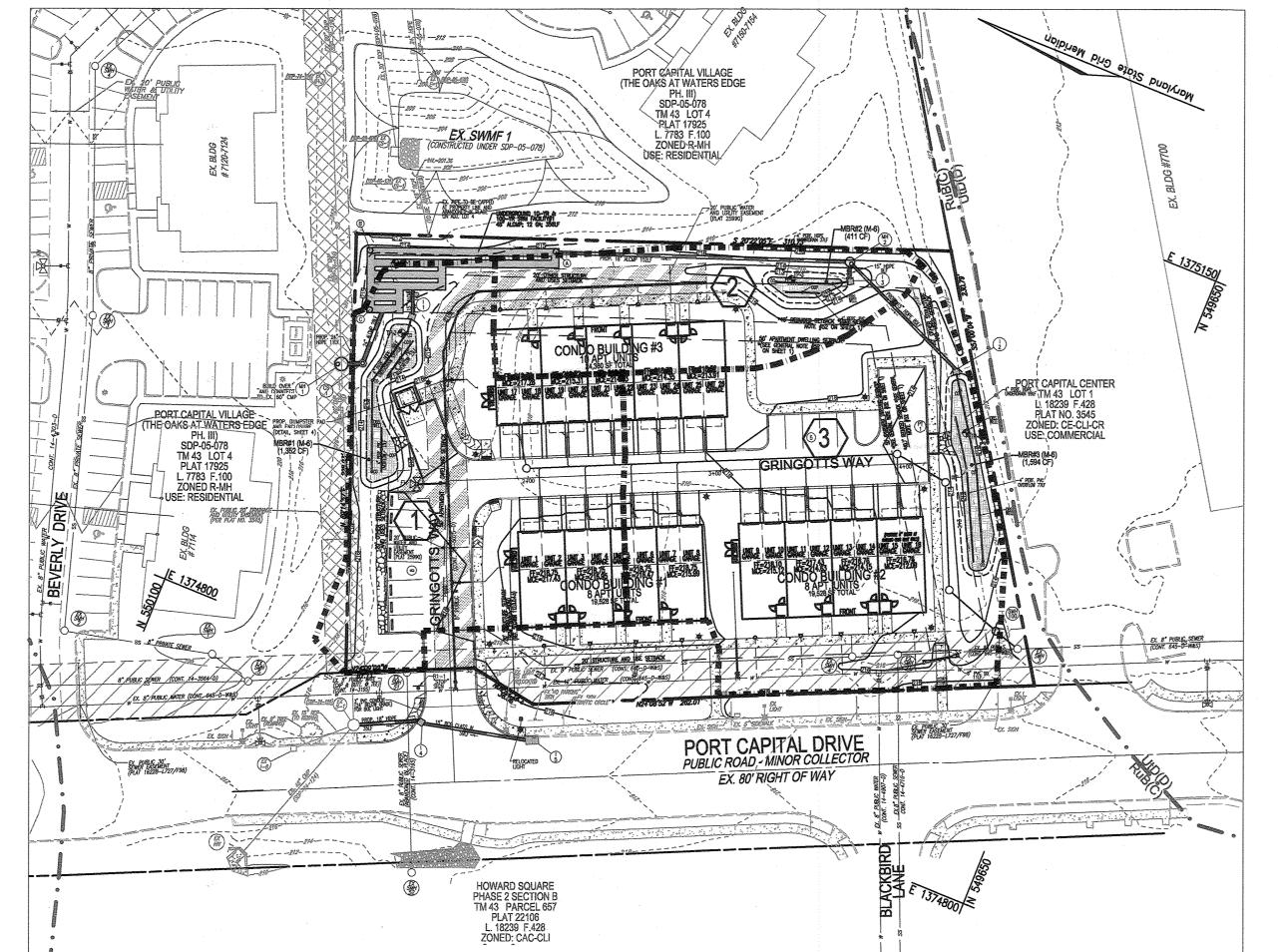




EXISTING UTILITY POLE EXISTING LIGHT POLE EXISTING MAILBOX EXISTING SANITARY MANHOLE EXISTING SANITARY LINE EXISTING CLEANOUT 5' CONCRETE SIDEWALK & CONCERET DRIVEWAY MICRO-BIORETENTION (M-6) SEWER EASEMENT 20' PUBLIC WATER AND UTILITY EASEMENT AND UTILITY EASEMENT

LEGEND:

SCALE: 1"=50'



SOILS LEGEND SYMBOL NAME / DESCRIPTION GROUP | K VALUE RUSSETT AND BELTSVILLE LOAM, 2 TO 5 PERCENT SLOPES, MODERATELY WELL DRAINED C 0.0 - 0.06

NOTE: SWM CPv PROVIDED BY A MICROPOOL EXTENDED DETENTION POND IN ADJACENT LOT 4 (ECP-16-031). THIS SITE PROVIDES REQUIRED WQv AND REv FOR 1" RUNOFF.

OWNER/DEVELOPER

C/O MATTHEW S. WINEMAN 7035 ALBERT EINSTEIN DRIVE SUITE 200 COLUMBIA, MD 21046 410-423-0407

REVISE THE PLAN TO CHANGE THE NAME OF THE PROJECT FROM 2-6-23

SITE DEVELOPMENT PLAN

EXISTING AND PROPOSED DRAINAGE AREA MAP

PORT CAPITAL
THE OAKS AT WATERS EDGE PHASE III

TAX MAP 43 GRID 4 1ST ELECTION DISTRICT ZONED: R-A-15

POTTER'S PLACE TO PORT CAPITAL

PARCEL 644 HOWARD COUNTY, MARYLAND **VOGEL ENGINEERING** 

**TIMMONS GROUP** 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com

DATE: FEBRUARY 2022

\_\_\_\_AS SHOWN W.O. NO.: 41639 SHEET 11

CHIEF, DEVELOPMENT ENGINEERING DIVISION 19 3/17/22 DATE CHIEF, DIVISION OF LAND DEVELOPMENT DIRECTOR DIRECTOR 3-17-22 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

ESDv SWM DRAINAGE AREA MAP SCALE: 1"=50'

STORMWATER MANAGEMENT FACILITIES

TO PRIVATELY OWNED AND MAINTAINED

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.

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, THEN ROTOTILL THE TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS. 4. PLANT MATERIAL RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

5. PLANT INSTALLATION
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR CCEPTANCE. THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE

. UNDERDRAINS

NDERDRAINS 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 4×4) GALVANIZED HARDWARE CLOTH.

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

\* THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.

\* A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,0000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

\* A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24". PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%.

OBSERVATION WELLS AND/OR CLEAN—OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

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

MICRO-BIORETENTION PLANTING REQUIREMENTS					PLANTINGS PROVIDED					PERRENIALS/GROUND COVER PROVIDED			
MBR#	LF	AREA	STEMS REQUIRED (0.0229)	STEMS PROVIDED	IG	IV	HQ	LR	PV	ВА	AG	TOTAL	
1	197	1014	24	24	3	3	6	6	6	35	35	70	
2	86	308	8	8	1	1	2	2	2	10	10	20	
3	213	1131	26	26	4	4	6	6	6	39	39	78	
TOTALS :	496	2453	58	58	8	8	14	14	14	84	84	168	

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

PERENNIALS/GROUNDCOVER PLANTING SCHEDULE										
LEGEND	QTY	BOTANICAL NAME/COMMON NAME   SIZE   REMARKS								
	84	BAPTISIA AUSTRALIS FALSE INDIGO	4" F	POT BOTTOM VARIETIES RANDOM		POT BOTTOM OF N VARIETIES IN RANDOM PATI		O.C. FOR SIDES AND DF MBR, MIX ALL IN A NATURALIZED PATTERN THROUGHOUT,		
	84	ACORUS GRAMINEUS 'OGON' GOLDEN VARIEGATED SWEET FLAG	1 QT. PLAI		PLANT IN THAN 9 I	GROUPS OF NO LESS PLANTS PER CLUMP				
BIORETENTION PLANTING SCHEDULE (SHRUB/ORNIMENTAL GRASSES)										
LEGEND/KEY	QTY	BOTANICAL NAME/COMMON NAME	REMARKS							
₩ IG	IG 8 ILEX GLABRA 'SHAMROCK' 1 (				GALLON	18" O.C.				
<b>₩</b> IV	IV 8 ITEA VIRGINICA 'HENRY'S GARNETT' 1 GALLO					18" O.C.				
HQ	14	HYDRANGEA QUERCIFOLIA OAKLEAF HYDRANGEA  1 GALLON				30" O.C.				
LR	14	LEUCOTHEO RACEMOSA FETTERBUSH	1 GAL.		30" O.C.					
PV	14	PANICUM VIRGATUM SWITCHGRASS		1	GAL.	36" O.C.				

NOTE: WITH PERMISSION FROM HOWARD COUNTY, PLANTINGS SPECIFIED HEREON MAY BE SUBSTITUTED WITH APPROVED SPECIES LISTED IN TABLE A-4 AS SHOWN HEREON.

#### 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)**

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

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

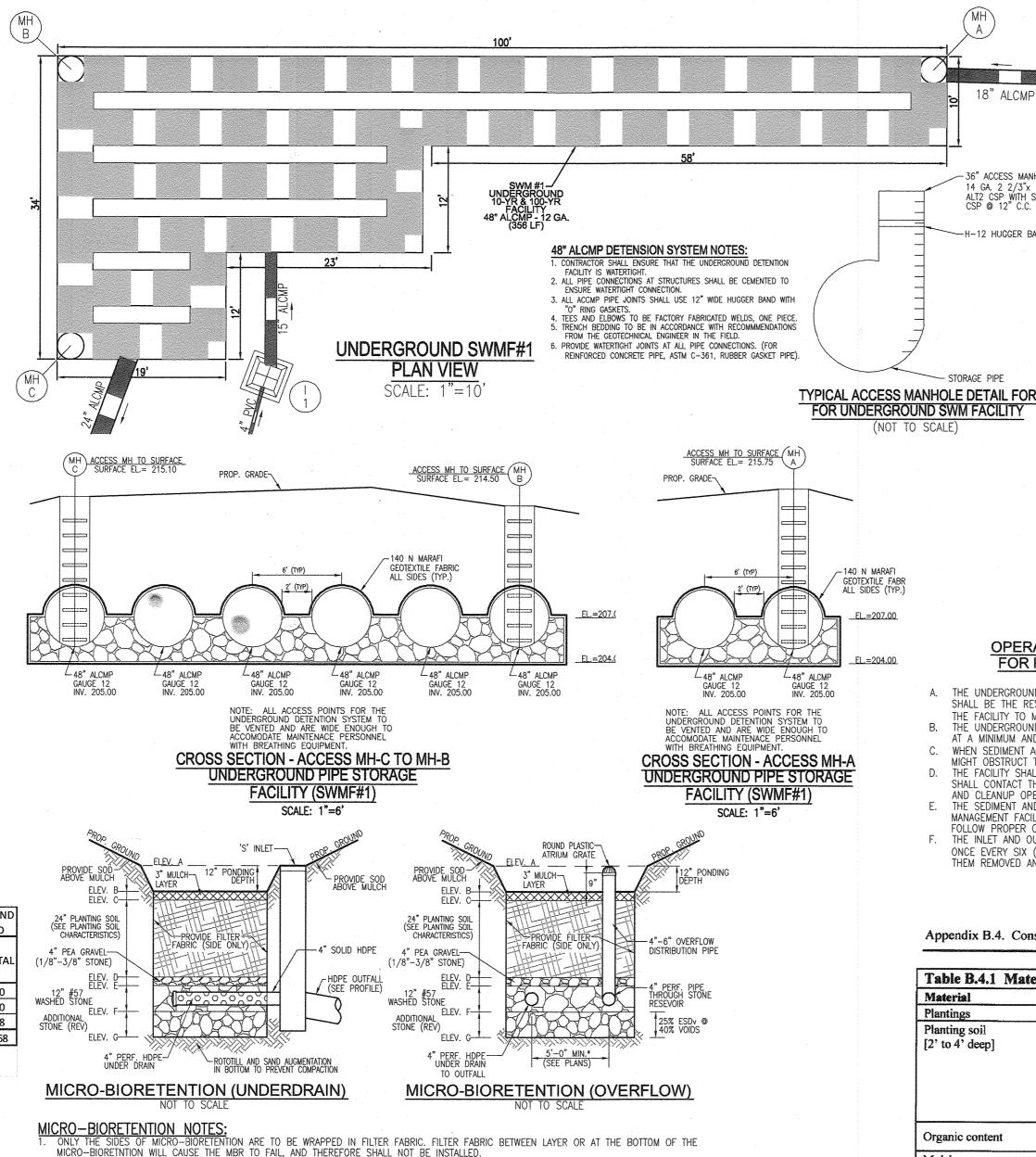
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION

3/17/22 CHIEF, DIVISION OF LAND DEVELOPMENT 3-17-22 An Gove

STORMWATER MANAGEMENT FACILITIES TO PRIVATELY OWNED AND MAINTAINED

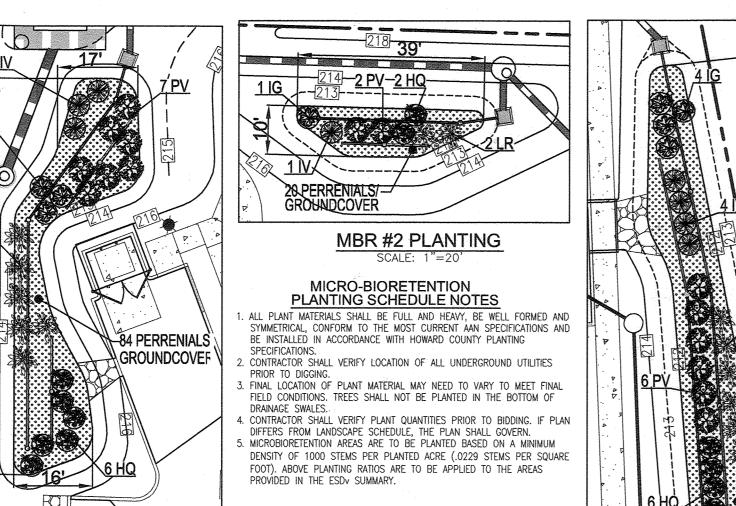
MBR #1 PLANTING

BOTTOM FOR SMALL BIOS. (SEE PLANS)



MICRO-BIORETNTION WILL CAUSE THE MBR TO FAIL, AND THEREFORE SHALL NOT BE INSTALLED. WRAP THE PERFORATED MBR UNDER DRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH. PROVIDE 5' MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS

	MICRO-BIORETENTION DATA CHART											
MBR Facility	Ponding Elevation	Pondina	Mulch	Bottom of Mulch	Depth of Plant Mix	Bottom of Plant Mix	Bottom of Pea Gravel	Depth of	Invert of 4" Underdrain	Bottom of Stone	, ,	Bottom of REV Stone
racinty	ELEV. A	Depui (ii)	ELEV. B	ELEV. C	(ft.)	ELEV. D	ELEV. E	Stone (it.)	/Overflow	ELEV. F	Plus any Added Stone (30% Voids)	ELEV. G
SWMF #1	214.00	1.00	213.00	212.75	2.00	210.75	210.42	1.00	209.76	209.42	0.83	208.59
SWMF #2	213.00	1.00	212.00	211.75	2.00	209.75	209.42	1.00	208.76	208.42	0.83	207.59
SWMF #3	213.00	1.00	212.00	211.75	2.00	209.75	209.42	1.00	208.76	208.42	1.08	207.34



Site Target P<sub>E</sub>= Target Site ESDv = ESDv=(PexRvxA)/12 Rv=0.05+0.009x1 GROUNDCOVER MBR #3 PLANTING

FRAME A COVER SEE STC. MD-383.31 & MD-383.32 SEE STD. MD-384.02 0000 FLAT SLAB TOP للر مهم الل 3" 0/C (4 ROWS) -1/2 18" ALCMP TRASH RACK RISER UNIT ALL METAL SURFACES OF TRASH RACK TO BE GALVANIZED AND PAINTED WITH 2 COATS OF BATTLESHIP GRAY PAINT OR EQUIVALENT. LADDER RUNGS **CONTROL STRUCTURE (CS-1)** SEE NOTE 6 -TRASH RACK DETAIL SCALE: 1" = 2'-TOP OF CONC. WALL TOP OF WEIR AND 100-YR Cpv WSE 208.98 (SEE DETAIL, THIS SHEET) BASE UNIT TOP EL. 209.00 -3'x3'x1' CONCRETE COLLAR 4' DIAM. 10-YR WSE=207.80 WALL REINFOR. TRASH RACK ¬ -MAKE WATER TIGHT WITH SEE NOTE 3 (SEE DETAIL, THIS SHEET) BITUMINOUS SEALANT 24" ALCMP (28LF) 24" ALCMP TO MH-1 MAKE WATER TIGHT WITH BITUMINOUS SEALANT BASE BASE & BASE REINFORCING -15" PVC w/ 15" CAP PROVIDE 6" MIN. BEDDING OF NO. 57— AGGREGATE ON FIRM SUBGRADE

OPERATION AND MAINTAINANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED

18" ALCMP

-H-12 HUGGER BAND

3,307 c.f.

Note: Each individual practice ESDv provided must be between the minimum of 1" rainfall and up to the maximum of 2.6" rainfall (1-year rainfall)

36" ACCESS MANHOLE TO BE:

14 GA. 2 2/3"x 1/2" CORRUGATION ALT2 CSP WITH STEPS WELDED TO CSP @ 12" C.C.

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 AT A MINIMUM AND AFTER ESPECIALLY SEVERE STORM EVENTS. C. 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

E. THE SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND STORMWATER MANAGEMENT FACILITY BY VACUUM TRUCK OR OTHER MANUAL MEANS, THE OWNER SHALL FOLLOW PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIAL AND LIQUID. F. THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX (6) MONTHS. IF OBSTRUCTIONS ARE FOUND, THE OWNER SHALL HAVE THEM REMOVED AND PROPERLY DISPOSED OF.

PRECAST MANHOLE (CS-1) SWM CONTROL STRUCTURE MD SHA STD. 384.01 (48" MH DIAMETER)

SCALE: 1"=2'

FLAT SLAB TOP 4'-10" DIAM. 

SECTION A-A

CONTROL STRUCTURE NOTES:
1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.

RETE SHALL BE MIX NO. 6 (4500 P.S.I.)
REINFORCEMENT FOR BASE UNITS AND RISER UNITS SHALL BE REINFORCEMENT

4. BASE REINFORCEMENT TO BE REINFORCEMENT BARS OR WELDED WIRE FABERIC WITH A BARS OR WELDED WIRE FABERIC WITH A MINIMUM AREA OF 0.2 sq.in./ft FOR THE 84" DIAMETER MANHOLES. WELDED WIRE FABERIC SHALL CONFORM TO ASTM A 185 AND A 82.

5. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN MINIMUM AREA OF 0.27 in./ft. THE BASE SHALL BE CAST MONOLITHIC WITH THE BASE UNIT OR JOINTED PER MANUFACTURERS DESIGN.

6. LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING (WHERE APPLICABLE) MORTAR. RUBBER O—RING GASKETS MEETING ASTM C361 AND C 443 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M\_198 TYPE B.

GASKETS MEETING ASTM C361 AND C 443 OR FLEXIBLE PLASTIC GASKETS
MEETING AASHTO M 198 TYPE B.

7. WHEN THE DISTANCE BETWEEN MULTIPLE PIPE OPENINGS IN THE BASE UNIT
OR ANY RISER UNIT RUNG TYPES SHALL BE IN ACCORDANCE WITH
STANDARDS MD-383.91 OR MD-383.92. LADDER

8. LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR
HANDLING. RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.

9. MIX NO. 2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD
AND SHALL SLOPE IS LESS THEN 6" ADDITIONAL NO. 3 BARS ARE REQUIRED
AROUND OPENINGS.

10. THE DRIP STONE LANDING SHALL BE LISED ONLY WHEN THERE ARE PIPES

LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES 11. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 10'-1" MEASURED FROM THE BOTTOM OF THE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER. RISER UNITS. SEE STD.MD-384.13 FOR DETAILS. BASE UNIT TO THE TOP OF THE MANHOLE COVER. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 10'-1" THE COST OF THE DRIP STONE LANDING, NO. 57 AGGREGATE GROUT, SEALENT, AND ALL NESSASARY APPURTENANCES SHALL BE INCIDENTAL TO THE PRICE BID.

2. MANHOLE HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

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

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

Vmin 1yr rainfall = 1" (1.0x0.95xA)/12 Vmax 1yr rainfall = 2.6" PRACTICE PRACTICE IMPERV IMPERV PERV PERV PRACTICE PRACTICE MIN PRACTICE TARGET ESDV MAX PRACTICE TOTAL PRACTICE (SF) AREA % IMPERV RV VOLUME (1") PF VOLUME (1.0") VOLUME (2.6") VOLUME PROVIDED CF SWMF#1 0.56 | 13.559 | 0.31 | 10.831 | 0.25 | MICROSCALE MICRO-BIO RETENTION (M-6) MBR (M-6 1,014 1,014 Surface Area of MBR @ 1.0 ponding (75% above) PE Provided: 1,014 Stone Below Underdrain 0.83 x 0.4 1.21 (\*includes REV requirement) 1,014 ADDITIONAL STONE 0.00 x 0.3 0.09 | 8.277 | 0.19 | 411 MICROSCALE MICRO-BIO RETENTION (M-6) MBR (M-6) 308 Surface Area of MBR @ 1.0 ponding (75% above) PE Provided: 308 Stone Below Underdrair 0.83 x 0.4 (\*includes REV requirement) ADDITIONAL STONE 0.00 x 0.3 0.75 MICROSCALE MICRO-BIO RETENTION (M-6) 4,023 1,594 MBR (M-6) 1,132 Surface Area of MBR @ 1.0 ponding (75% above) 1,132 Stone Below Underdrair 0.83 x 0.4 (\*includes REV requirement) 1,132 ADDITIONAL STONE 0.25 x 0.3 
 TOTALS
 69,648
 1.60
 36,483
 0.84
 33,165
 0.76
 TOTALS ESDV PROVIDED: 3.357

EL. 209.00 00000

CONTROL STRUCTURE CONCRETE

- #4 BARS 12" O.C.

OVERLAP ONE WAY 24"

WELDED WIRE FABRIC WITH A MIN. AREA OF 0.21 in./ft WELDED WIRE FABRIC. WALL SHALL BE CAST—IN—PLACE, POURED MONOLITHIC USING FORMS. IN LIEU OF MONOLITHIC POUR, WALL SHALL BE CONNECTED BY OVERLAPPING BARS ONE WAY 24", AND SEALED WITH GREEN STREAK WATERSTOP (OR APPROVED

**CONTROL STRUCTURE (CS-1)** CONCRETE WALL DETAIL

OWNER/DEVELOPER . HOME CORPORATION

C/O MATTHEW S. WINEMAN 7035 ALBERT EINSTEIN DRIVE COLUMBIA, MD 21046 410-423-0407

REVISE THE PLAN TO CHANGE THE NAME OF THE PROJECT FROM 2-6-23 POTTER'S PLACE TO PORT CAPITAL

SITE DEVELOPMENT PLAN

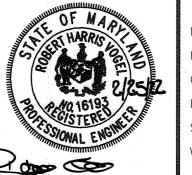
STORMWATER MANAGEMENT **NOTES AND DETAILS** 

PORT CAPITAL

TAX MAP 43 GRID 4 1ST ELECTION DISTRICT ZONED: R-A-15 HOWARD COUNTY, MARYLAND

# **VOGEL ENGINEERING**

**TIMMONS GROUP** 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com



DESIGN BY: LRC/DZE/RHV DRAWN BY: LRC/KG/DZE CHECKED BY: DATE: FEBRUARY 2022 SCALE: 41639 W.O. NO.:

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: 09-27-2022

10 SHEET 11

