GENERAL NOTES

THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410) 313-1880

AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK,

ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED. THE SUBJECT PROPERTY IS ZONED "R-20" IN ACCORDANCE WITH THE 10/06/2013 COMPREHENSIVE ZONING PLAN (SECTION 108.0 OF THE HOWARD COUNTY ZONING REGULATIONS) AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL

THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED IS BASED ON F-20-064, A TOPOGRAPHIC SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., PERFORMED IN JUNE, 2018 AND OFFSITE TOPOGRAPHY IS FROM HOWARD COUNTY GIS. THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED MAY, 2018.

THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NO. 17GA AND 17GB WERE USED FOR THIS PROJECT. THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION OF THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN.

ALTERNATIVE COMPLIANCE, OR BUILDING AND GRADING PERMITS. STORM WATER MANAGEMENT TO BE PROVIDED FOR THIS DEVELOPMENT BY ENVRIONMENTAL SITE DESIGN UTILIZING MICRO-BIORETENTION FACILITIES (M-6) AND DRY WELLS (M-5). ALL OF THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED WITH THE EXCEPTION OF MICRO-BIÒRETÉNTION FACILITY NUMBER 8, WHICH WILL BE OWNED BY HOWARD COUNTY AND JOINTLY MAINTAINED BY HOWARD COUNTY AND THE HOMEOWNERS ASSOCIATION.

THE PROPOSED UNITS SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE TO THE COUNTY'S RIGHTS-OF-WAY, PAVING, OR EXISTING UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

SHC ELEVATIONS ARE LOCATED AT THE PROPERTY LINE/EDGE OF EASEMENT. THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING

1-800-252-1133 BGE (EMERGENCY) 410-685-0123 BUREAU OF UTILITIES COLONIAL PIPELINE CO 410-795-1390 MISS UTILITY 1-800-257-777 410-531-5533 STATE HIGHWAY ADMINISTRATION VFRIZON -1-800-743-003

THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT. -THERE IS AN EXISTING HOME LOCATED ON PARCEL 0385

-THE HOME ON PARCEL 0385 (CA. 1955) WAS TO BE REMOVED, PLAT RECORDED. - IN ACCORDANCE WITH "SECTION 128.0.A.1." OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS. PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEFT INTO THE FRONT OR REAR YARD SETBACK DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE

WIDTH - 12 FEET (16 FEET IF SERVING MORE THAN ONE RESIDENCE)

SURFACE - 6" OF COMPACTED CRUSHER RUN BASE W/TAR AND CHIP COATING (1-1/2" MIN.) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE, AND MINIMUM 45 FOOT

STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD EVENTS WITH NO MORE

THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE

UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6.02 FOR THE USE-IN-COMMON DRIVEWAY ENTRANCE AND LOTS 1 AND 2 AT GERMAN ROAD. TRASH & RECYCLING COLLECTION WILL BE AT THE COUNTY ROADWAYS WITHIN FIVE FEET (5) OF THE COUNTY ROADWAY. FLAG AND PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.

-WATER PROVIDED FOR THIS PROJECT IS TO BE A PUBLIC EXTENSION OF CONTRACT NO. 71-W. (SEE CONTRACT 24-5092-D). -SEWER PROVIDED FOR THIS PROJECT IS TO BE A PUBLIC EXTENSION OF CONTRACT NO. 20-1067-D. (SEE CONTRACT 24-5092-D). WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122.B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME. ALL WATER HOUSE CONNECTIONS SHALL BE OUTSIDE METER SETTING UNLESS OTHERWISE NOTED ON THE PLANS OR IN SPECIFICATIONS. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THIS PROPERTY OR THE COUNTY'S

-GERMAN ROAD IS CLASSIFIED AS A PUBLIC LOCAL ROAD IMPROVED UNDER F-20-064 -LOTS 3-7 SHALL UTILIZE THE F-20-064 PRIVATE USE-IN-COMMON DRIVEWAY.

A USE-IN-COMMON MAINTENANCE AGREEMENT FOR THE SHARED DRIVEWAY WAS RECORDED AT L.20949 F.485. IN ACCORDANCE WITH SECTION 16.121(A)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE OPEN SPACE REQUIREMENTS FOR THIS R-20 PROJECT IS 10% OF THE GROSS AREA WHEN USING THE OPTIONAL MINIMUM LOT SIZE OF 18,000 SF. REFER TO F-20-064. OPEN SPACE REQUIRED 0.76 ACRES, OPEN SPACE PROVIDED 4.24 ACRES IN ACCORDANCE WITH SECTION 16.121.A.4.(i) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS RECREATION OPEN SPACE IS NOT

REQUIRED FOR "RIVER BIRCH MANOR"; RESIDENTIAL SUBDIVISIONS WITH LESS THAN 10 LOTS/UNITS. WETLANDS DELINEATION AND FOREST STAND DELINEATION REPORT PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. ON SEPTEMBER 10, 2018 -TWO PERENNIAL STREAMS ARE LOCATED ONSITE. THEIR BUFFERS DO NOT IMPACT THE DEVELOPMENT AREA.

-SIX (6) SPECIMEN TREES WERE FOUND ONSITE. THE PROPOSAL INCLUDES THE REMOVAL OF 4 TREES, REFER TO ALTERNATIVE COMPLIANCE WP-19-064. THE OBLIGATION HAS BEEN FULFILLED UNDER F-20-064. FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD

COUNTY FOREST CONSERVATION MANUAL -NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

- THE FOREST OBLIGATION HAS BEEN FULFILLED UNDER F-20-064 -THE ENVIRONMENTAL CONCEPT PLAN (ECP-19-010) WAS APPROVED ON NOVEMBER 21, 2018.

-THE SKETCH PLAN (S-19-003) WAS APPROVED ON MARCH 26 2019 -THE PRELIMINARY PLAN (P-20-001) WAS APPROVED ON DECEMBER 19, 2019.

-THE FINAL PLAN F-20-064 WAS APPROVED ON DECEMBER 14, 2020. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, INC., DATED AUGUST 9, 2018.

A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT CERTIFIED TEST PITS HAVE BEEN PROVIDED TO VERIFY THE LOCATIONS OF GROUNDWATER AND/OR ROCK OPEN TEST PITS WERE OBSERVED BY ROBERT

H. VOGEL ENGINEERING ON JUNE 27, 2019. THE PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT AT LINDEN HALL IN ELLICOTT CITY, MARYLAND ON SEPTEMBER 10, 2018. A LANDSCAPE PLAN WAS PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL AND APPROVED UNDER F-20-064

- THE FINANCIAL SURETY WAS POSTED AS PART OF THE F-20-064 DEVELOPER'S AGREEMENT. PUBLIC STREET TREES AND PERIMETER LANDSCAPING WAS PROVIDED FOR THIS PROJECT UNDER F-20-064 IN ACCORDANCE WITH SECTION 16.124(b)(1) AND (e)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. FINANCIAL SURETY WAS POSTED AS PART OF THE F-20-064 ENGINEERING

IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL - VOLUME 3, CHAPTER 2 - SECTION 2.9.B. AND THE HOWARD COUNTY ZONING REGULATIONS SECTION 133.0.D.2.a, OFF-STREET PARKING AND VISITOR PARKING IS REQUIRED. SEE TABULATION THIS SHEET SOIL TYPES SHOWN HEREON ARE IN ACCORDANCE WITH THE WEB SOIL SURVEY HOWARD COUNTY, MARYLAND.

-THE FLOODPLAIN SHOWN ON THE SUBJECT PROPERTY (LITTLE PATUXENT RIVER) IS PER HOWARD COUNTY DFIRM. -THE ONLY DISTURBANCE TO THE 100-YR FLOODPLAIN LOCATED ON-SITE IS THAT PREVIOUSLY APPROVED. SEE GENERAL NOTE 45. NO GRADING. REMOVAL OF VEGETATIVE COVER OR TREES. PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN. THERE ARE NO WETLANDS, STREAMS OR BUFFERS WITHIN THE LIMIT OF DISTURBANCE BESIDES THOSE APPROVED AS NECESSARY DISTURBANCES. SEE GENERAL NOTE 45.

STEEP SLOPES OVER 20,000 SF CONTIGUOUS ARE SHOWN HEREON. - IN ACCORDANCE WITH DESIGN MANUAL-VOLUME 3, CHAPTER 2 - SECTION 2.9.B. PARKING IS REQUIRED AT TWO (2) SPACES PER UNIT OFF STREET PARKING TO INCLUDE GARAGE SPACE, DRIVEWAY AND PARKING PADS. -REFER TO PARKING TABULATION

THE REMOVAL OF FOUR SPECIMEN TREES WAS APPROVED WITH WP-19-064 ON JANUARY 30, 2019. THIS IS AN ALTERNATIVE COMPLIANCE TO SECTION 16.1205(a)(7) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS: 1. THE REMOVAL OF THE FOUR SPECIMEN TREES (ST #1-4) IS PERMITTED AS SHOWN ON THE PLAN EXHIBIT. THE REMOVAL OF ANY ADDITIONAL SPECIMEN TREES IS NOT PERMITTED UNDER THIS ALTERNATIVE COMPLIANCE REQUEST UNLESS IT CAN BE SUFFICIENTLY DEMONSTRATED BY THE APPLICANT TO BE JUSTIFIED.

2. THE DEVELOPER SHALL PLANT EIGHT 3" MINIMUM-CALIPER NATIVE SHADE TREES IN ADDITION TO THE REQUIRED PERIMETER LANDSCAPING TO MITIGATE THE REMOVAL OF THE FOUR SPECIMEN TREES. IT IS RECOMMENDED THAT THE EIGHT TREES BE PLANTED WITHIN THE PROPOSED FOREST CONSERVATION EASEMENT ON OPEN SPACE LOT 8 TO ENSURE LONG-TERM PROTECTION. REFERENCE THE ADDITIONAL TREES ON S-19-003 AND INCLUDE PLANTING DETAILS ON ALL SUBSEQUENT SUBDIVISION AND DEVELOPMENT PLANS. THESE TREES WILL BE BONDED ALONG WITH THE REQUIRED PERIMETER LANDSCAPING AS PART OF THE FINAL SUBDIVISION PLAN. OBLIGATION HAS BEEN MET UNDER F-20-064.

IN ACCORDANCE WITH SECTION 16.116(c) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS A NECESSARY DISTURBANCE WAS SUBMITTED TO THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING ON DECEMBER 31, 2018 AND APPROVED IN A LETTER DATED FEBRUARY 4, 2019 AND APPROVED UNDER S-19-003. THIS NECESSARY DISTURBANCE ALLOWS MINOR DISTURBANCES TO THE STREAM BUFFER FOR THE CONTRUCTION OF THE STORM DRAIN OUTFALL AND SEWER CONNECTION FOR THE PROPOSED SUBDIVISION. THE PURPOSE OF THESE DISTURBANCES IS TO ALLOW GRAVITY SEWER SERVICE TO THE PROPOSED DWELLINGS AND TO OUTFALL THE STORM DRAIN ON SLOPES LESS THAN 10%. NECESSARY DISTURBANCE HAS BEEN COMPLETED UNDER F-20-064.

MODERATE INCOME HOUSING UNITS (MIHU) ARE REQUIRED FOR THIS PROJECT. -IN ACCORDANCE WITH SECTION 108.0.E OF THE 10/06/13 COMPREHENSIVE ZONING REGULATIONS, THIS SUBDIVISION IS SUBJECT TO MODERATE INCOME HOUSING UNITS. THE MIHU OBLIGATION FOR THIS DEVELOPMENT WILL BE PROVIDED BY A PAYMENT OF FEE-IN-LIEU TO THE HOWARD COUNTY HOUSING DEPARTMENT FOR EACH UNIT OR PORTION OF THE UNITS REQUIRED BY THE DEVELOPMENT. THE MIHU REQUIREMENTS FOR THIS SUBDIVISION WILL BE 1 UNIT (10% OF 7 UNITS). LOTS 1-7 WILL BE SUBJECT

- THE MIHU AGREEMENT WAS RECORDED IN THE LAND RECORDS OF HOWARD COUNTY AT LIBER 20949 FOLIO 490. ARTICLES OF INCORPORATION FOR THE HOMEOWNERS' ASSOCIATION WERE ACCEPTED BY THE STATE DEPARTMENT OF ASSESSMENT AND TAXATION ON AUGUST 17, 2020, DEPARTMENT REF# D20819447. ON MARCH 21, 2023, THE PLANS WERE CHANGED TO SHOW GENERIC BOX DESIGN AND THE SWM SHOWN IS ADEQUATELY SIZED. FINAL, STORMWATER DESIGN COMPUTATIONS WILL BE PROVIDED WITH EACH BUILDING PERMIT TO VERIFY ADEQUATE TREATMENT IS PROVIDED ON LOT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 4/27/2023 CHIEF, DEVELOPMENT ENGINEERING DIVISION 4/27/2023 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 5/1/2023

WATER NOTE

SITE DATA

STRUCTURES: F. FLOOR SPACE ON EACH LEVEL

AREA OF PLAN SUBMISSION:

PRESENT ZONING DESIGNATION:

PROPOSED USES FOR SITE AND

TOTAL NUMBER OF UNITS ALLOWED

MAXIMUM NUMBER OF EMPLOYEES.

J. NUMBER OF PARKING SPACES REQUIRED

BY HO.CO. ZONING REGULATIONS:

K. NUMBER OF PARKING SPACES PROVIDED

REQUIRED BY SUBDIVISION & LAND

H. TOTAL NUMBER OF UNITS PROPOSED

TENANTS ON SITE PER USE:

M. AREA OF RECREATION OPEN SPACE

DEVELOPMENT REGULATIONS:

O. APPLICABLE DPZ FILE REFERENCES:

P. ANY OTHER INFORMATION WHICH MAY

LIMIT OF DISTURBANCE

OF BUILDING PER USE:

IN THIS SUBMISSION:

OPEN SPACE ON SITE:

N. BUILDING COVERAGE OF SITE:

BE RELEVANT:

Q. FLOOR AREA RATIO:

3.03 AC = AREA OF BUILDABLE LOTS

SINGLE FAMILY DETACHED (SFD)

7 BUILDABLE LOTS (THIS SDP)

SEE PARKING TABULATION HEREON

S-19-003, P-20-001, F-20-064

TAX MAP 17, GRID 20, PARCEL 385

2ND ELECTION DISTRICT

7 TOTAL UNITS

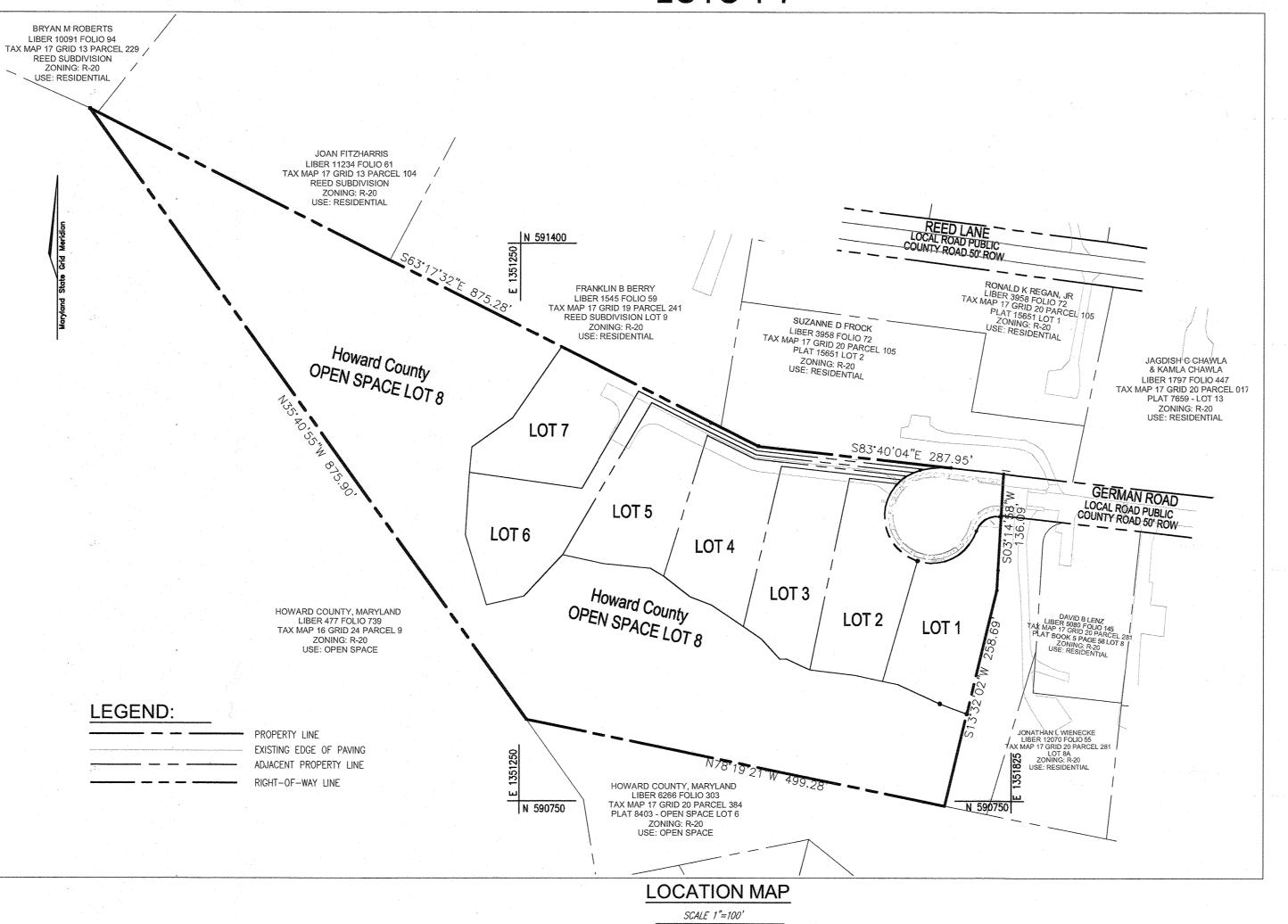
SEE NOTE 27

0.38 AC.

ALL WATER CONNECTIONS SHALL BE 1-1/2" WITH 1" OUTSIDE METER SETTINGS UNLESS OTHERWISE NOTED. REFER TO HOWARD COUNTY DETAILS W-3.28 OUTSIDE

SITE DEVELOPMENT PLAN RIVER BIRCH MANOR

HOWARD COUNTY, MD LOTS 1-7

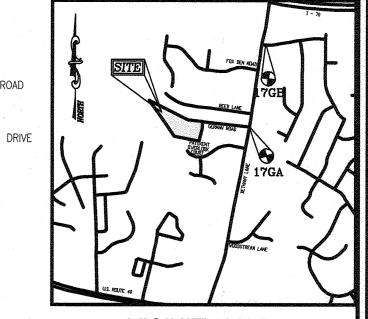


COORDINATE TABLE

BENCHMARKS

HOWARD COUNTY BENCHMARK - 17GA (CONC. MONUMENT) N 591048.52 E 1352732.11 LOCATION: NORTHWEST CORNER OF BETHANY LANE AND GERMAN ROAD HOWARD COUNTY BENCHMARK - 17GB (CONC. MONUMENT) N 592656.77 E 1353019.98

LOCATION: NORTHEAST CORNER OF BETHANY LAND AND POSTWICK DRIVE



VICINITY MAP

SHEET INDEX	
DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 9
LAYOUT PLAN	2 OF 9
GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN	3 OF 9
GRADING, SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	4 OF 9
GRADING, SOIL EROSION AND SEDIMENT CONTROL NOTES	5 OF 9
STORMWATER MANAGEMENT NOTES AND DETAILS	6 OF 9
STORMWATER MANAGEMENT MBR CONSTRUCTION PLAN AND DETAILS	7 OF 9
STORMWATER MANAGEMENT MBR PLANTING PLAN AND DETAILS,	8 OF 9
HOUSE TYPES	6 OF 9

	MINIMUI	M LOT SIZ	E CHA	RT
LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
3	18,297 SF	291 SF	18,006 SF	18,000 SF
4	18,722 SF	719 SF	18,003 SF	18,000 SF
5	19,273 SF	1,215 SF	18,058 SF	18,000 SF
6	19,672 SF	1,629 SF	18,043 SF	18,000 SF
7	19,987 SF	1,892 SF	18,095 SF	18,000 SF

MODERATE INCOME HOUSING UNITS (MIHU) ALL	OCATION EXEMPTIONS TRACKING
TOTAL NUMBER OF LOTS/UNITS PROPOSED	7
NUMBER OF MIHU REQUIRED	10% OR 1 UNIT
NUMBER OF MIHU PROVIDED ONSITE (EXEMPT FROM APFO ALLOCATIONS)	0
NUMBER OF APFO ALLOCATIONS REQUIRED (REMAINING LOTS/UNITS)	6 UNITS *
MIHU FEE-IN-LIEU (INDICATE LOT/UNIT NUMBERS)	LOTS 1-7

* ONE CREDIT FOR THE EXISTING HOUSE TO BE REMOVED

MIHU AGREEMENT

PLEASE NOTE THAT ALL NEW LOTS/RESIDENTIAL UNITS IN THIS SUBDIVISION (LOTS 1-7) ARE SUBJECT TO THE MIHU FEE-IN-LIEU REQUIREMENT THAT IS TO BE CALCULATED AND PAID TO THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT ISSUANCE BY THE PERMIT APPLICANT

> OWNER/DEVELOPER D.R. HORTON INC. 137 MITCHELLS CHANCE RD, SUITE 300 EDGEWATER, MD 21037 (301) 407-2600

REVISE THE HOUSE TYPE, SWM AND GRADING ON LOTS 1-7 DATE

REVISED SITE DEVELOPMENT PLAN

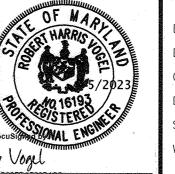
COVER SHEET

RIVER BIRCH MANOR

. 18205 / F. 247 TAX MAP: 17 GRID: 20 2ND ELECTION DISTRICT DPZ REFERENCE: SEE SITE DATA

HOWARD COUNTY, MARYLANI **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:	RH
DRAWN BY:	E
CHECKED BY:	RH
DATE:	MARCH 202
SCALE:	AS SHOW
W.O. NO.: _	41650

ROFESSIONAL CERTIFICATE SHEET

PARKING TABULATION TOTAL NUMBER OF DWELLING UNITS PROPOSED: SINGLE FAMILY DETACHED (SFD) = 7 LOTS

SPACES REQUIRED: 2 SPACES PER UNIT $7 \times 2 = 14$ SPACES REQUIRED PARKING SPACES PROVIDED:

SUMMARY OF FINDINGS FOR APFO TRAFFIC ANALYSIS:

REPORT SUBMITTED AS PART OF PLAN NUMBER: S-19-003

AND LABEL LOS FOR THE HORIZON YEAR OF EACH INTERSECTION:

PROVIDE STATEMENT THAT SCHOOLS WERE IN SESSION ON THAT DATE(S).

HOWARD COUNTY SCHOOLS WERE IN SESSION THE DAY OF THE TRAFFIC COUNTS.

LIST INTERSECTIONS STUDIED, IDENTIFY INTERSECTION AS STATE OR COUNTY JURISDICTION,

PROVIDE STATEMENT AS TO WHETHER MITIGATION IS REQUIRED AND EXPLAIN THE METHOD

DATE OF REPORT: AUGUST 9, 2018

DATE OF COUNT(S): JUNE 7, 2018

-MD 99 & BETHANY LANE/OLD MILL ROAD

-US 40 & BETHANY LANE/CENTENNIAL LANE

OF MITIGATION/IN LIEU FEE.

-NO MITIGATION REQUIRED.

3 SPACES IN GARAGE = 21 SPACES (FOR 7 UNITS) 3 SPACES ON DRIVENAY (LOTS 1-6)/2 SPACES ON DRIVENAY (LOT 7) = 20 SPACES (FOR 7 UNITS)

TOTAL PARKING PROVIDED = 41 SPACES OFF-STREET

SPACES REQUIRED: 0.5 SPACES PER SFD UNIT X 7 UNITS = 4 SPACES SPACES PROVIDED: TOTAL OVERFLOW PROVIDED = 27 SPACES (REFER TO OFF-STREET EXCESS)

	DIVISION NAMI VER BIRCH MA		SECTION N/		LOTS/PARCEL # 385		
PLAT # OR L/F	BLOCK NO.	ZONE	TAX MAP	ELECT. DIS	T. CENSUS TR		
25847-25850	20	R-20	R-20	17	2ND	602201	

DEDMIT INICODMATION OF ADT

Addresses and Stormwater Management Information Chart

Lot/Parcel Number | Facility Name & Number | Practice Type (Quantity) | Public | Private | HOA Maintain

M-5 Dry Well

M-6 MICRO-BIORETENTION YES YES

M-6 MICRO-BIORETENTION YES YES

M-6 MICRO-BIORETENTION NO YES

VI-6 MICRO-BIORETENTION NO YES

M-6 MICRO-BIORETENTION NO YES

M-6 MICRO-BIORETENTION NO YES

M-6 MICRO-BIORETENTION NO YES

M-6 MICRO-BIORETENTION NO YES

NO YES NO

NO YES NO

NO YES NO

NO YES

NO YES

NO YES

NO YES NO

YES

YES

Lot 1

Lot 2

10043 German Road

Lot 3

.0047 German Road

Lot 4

Lot 5

Lot 6

.0059 German Road

Lot 7

10063 German Road

055 German Road

51 German Road

DW 1A

DW 1B

DW 1C

MBR 8 (Public Facility

Joint Maintenance)

MBR 8 (Public Facility,

DW 2A

DW 2B

DW 20

MBR 3

MBR 4

DW 4A

DW 4B

DW 4C

DW 4D

MBR 5

DW 5A

DW 5B

DW 5C

DW 5D

MBR 6

DW 6D

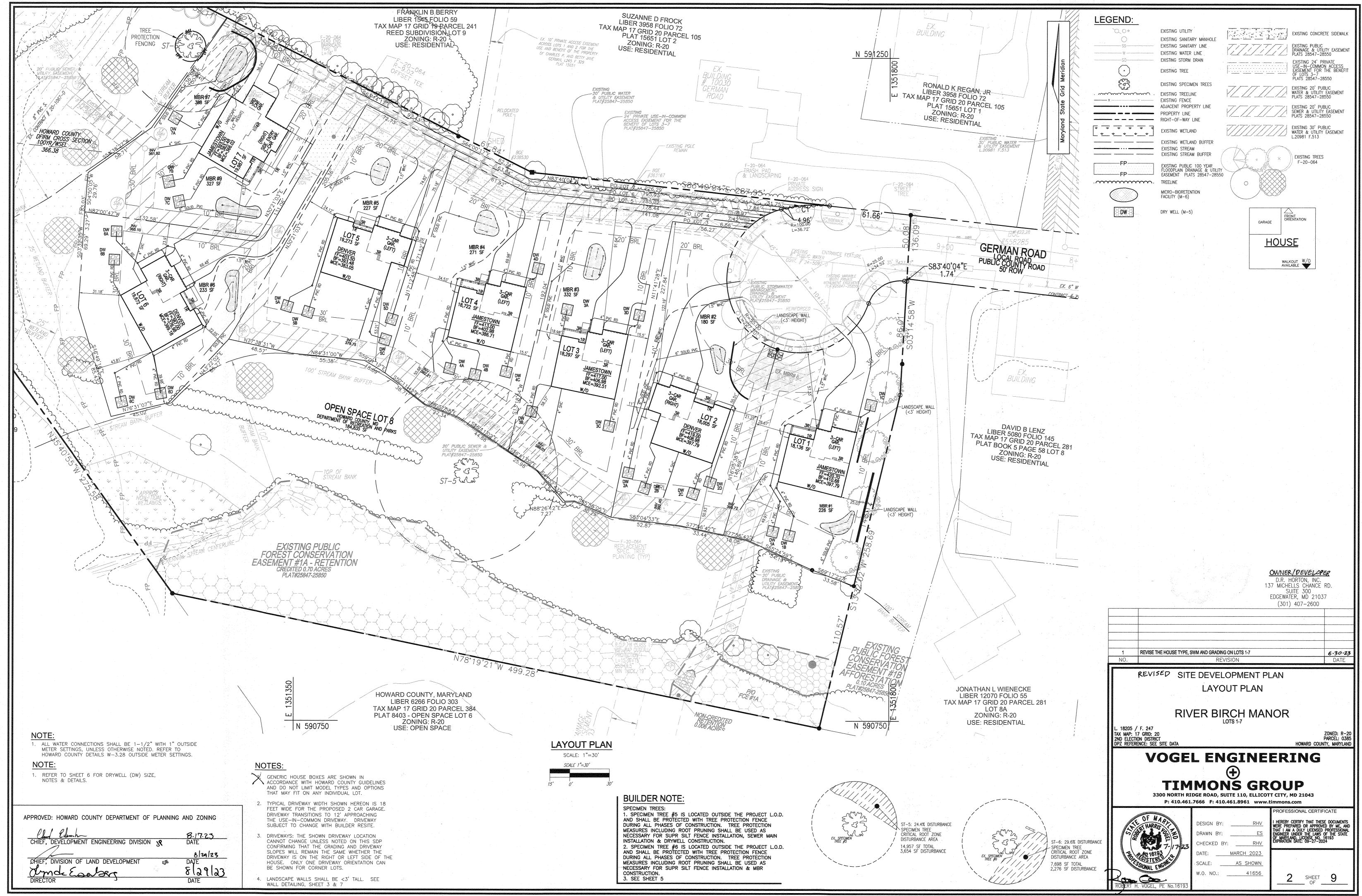
MBR 7

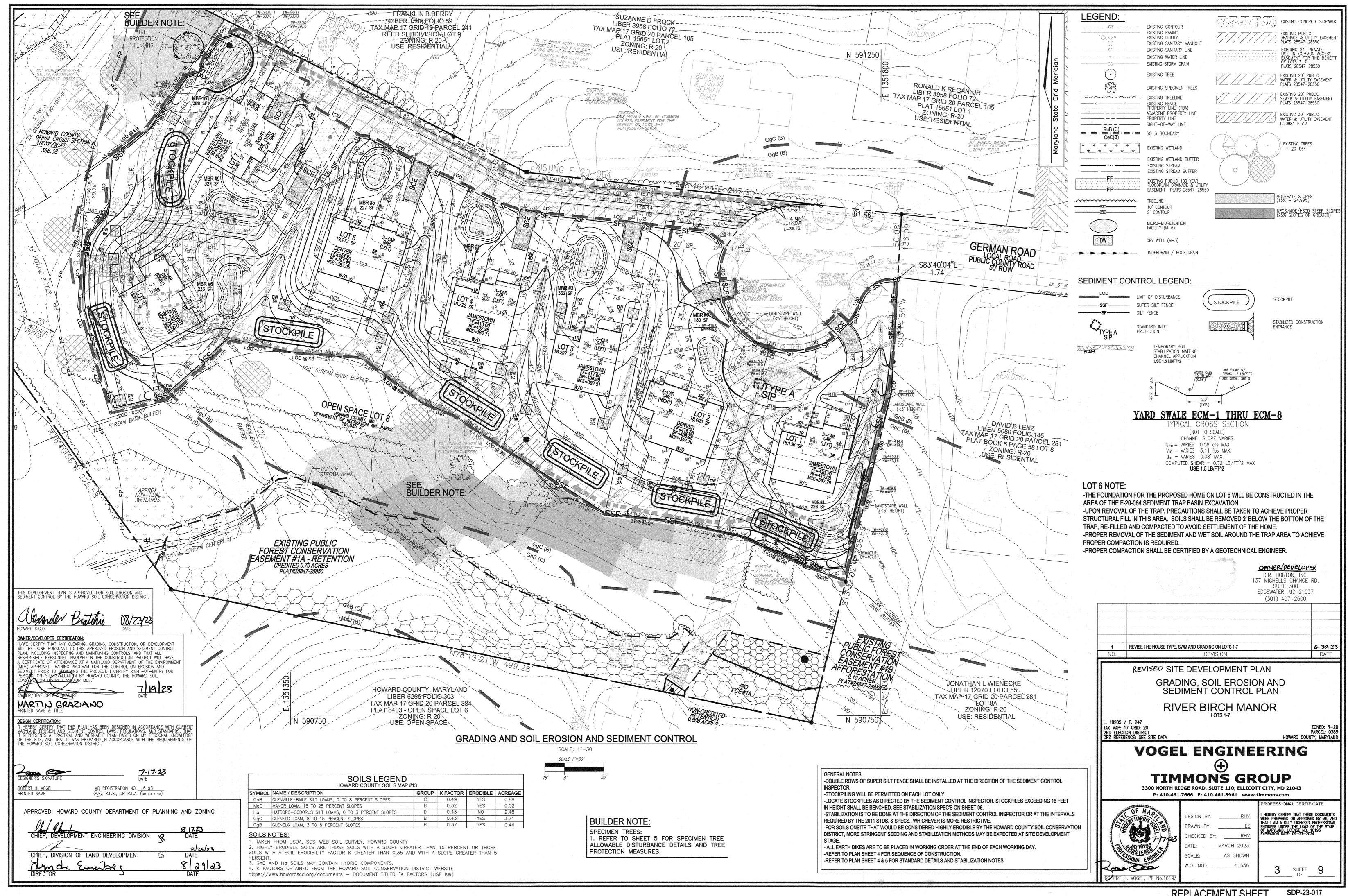
MBR 9

DW 7A

DW 7B

DW 7C





HOWARD SOIL CONSERVATION DISTRIC TANDARD SEDIMENT CONTROL NOTE

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER
- MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES: PRIOR TO THE START OF FARTH DISTURBAN UPON COMPLETION OF THE INSTALLATION OF PERIMETER FROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH STURBANCE OR GRADING

THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A

- PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
- PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTI THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STAT AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO

- 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 THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1): AND SEVEN (7) CALENDA DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), 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 DATES IF THE GROUND IS FROZEN, INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL, STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND
- HIGHLY FRODIRLE 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

ACRES

ACRES

CU. YDS. TOTAL

AREA DISTURBED AREA TO BE ROOFED OR PAVED. AREA TO BE VEGETATIVELY STABILIZED: OFFSITE WASTE/BORROW AREA LOCATION: F-20-064

TOTAL AREA OF SITE:

AVOID CONFLICTS WITH THIS PLAN.

(1) REFER TO ITEM 11 BELOW

SITE ANALYSIS

- 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 DEFMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE: INSPECTION DATE
 - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT) NAME AND TITLE OF INSPECTOR WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
 - EVIDENCE OF SEDIMENT DISCHAI 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 MONITORING/SAMPLING
- MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).
- 9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION
- MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE
- SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME, WORK MAY PROCEED TO A Subsequent grading unit when at least 50 percent of the disturbed area N 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 FOUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE. 13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO
- 14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY
- 2' IN ELEVATION. 5. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE): USE I AND IP MARCH 1 - JUNE 15
- USE III AND IIIP OCTOBER 1 APRIL 30 USE IV MARCH 1 - MAY 31 16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

REV. 8/2015

ITEM 11, REGARDING PROJECT DISTURBANCE IS NO LONGER A REQUIREMENT OF THE STATE OF MARYLAND, HOWEVER REMAINS A REQUIREMENT OF HOWARD COUNTY.

'HIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRIC'

Olexander Bratchie 4/28/2023

OWNER/DEVELOPER CERTIFICATION: "I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL LAN, 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."

Michael Pfau OWNER/DEVELOPER SIGNATURE Michael Pfau MATTHEW WINEMAN, VICE PRESIDENT

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

--- DocuSigned b Rob Vogel DESIGNER'S SIGNATURE

HOWARD S.C.D

4/5/2023

4/5/2023

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 4/27/2023 Paul ViMarco CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 4/27/2023 CHIEF, DIVISION OF LAND DEVELOPMEN DATE 5/1/2023

----989DB92F944F4CD

B-4-5 STANDARDS AND SPECIFICATIONS

PERMANENT STABILIZATION DEFINITION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND

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

A. SEED MIXTURES

I. GENERAL US 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. 3. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY. D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0)

AT 3-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT 2. TURFGRASS MIXTURFS

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 KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND FASTERN SHORE RECOMMENDED CERTIFIED KENTUCKY BLUECRASS CHILTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEFT, CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

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 FACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT

PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDILIM 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 TURE AREA MIXTURE INCLUDES: CERTIFIED KENTLICKY BLUEGRASS

CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT

SEEDING RATE: 11/2 TO 3 POUNDS PER 1000 SQUARE FEET. SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEE SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

WESTEM MD: MARCH 15 TO JUNE 1, AUGUST ITO 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

TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF ! TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 11/4 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY. 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.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER)

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

WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION. D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD. B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST FACH 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 ROOT WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE

THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT 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

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

ADEQUATE MOISTURE CONTENT. C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS EAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

PERMANENT SEEDING SUMMARY

DEPTHS

COOL SEASON T.F. 60 LB / AC MAR 1 TO MAY 15 1/4-1/2 IN. (1 LB PER (2 LB PER (2 LB PER (90 LB PER 1000 SE) 1000 SE)

FOR ALTERNATES, REFER TO THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS

APPLICATION SEEDING SEEDING

JUNE 15*

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

K.B. 40 LB / AC AUG 15 TO

SEED MIXTURE (FROM TABLE B.3):

NO SPECIES RATE (LB/AC) DATES

P.R. 20 LB / AC

WARM/COOL DT 15 LB / AC MAR 1 TO

SEASON CRF 20 LB / AC MAY 16 TO INF 15*

SITE.

CREEPING RED
FESCUE &
CANADA WILD
RYE

R-4-2 STANDARDS AND SPECIFICATIONS SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS

DEFINITION

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. CONDITIONS WHERE PRACTICE APPLIES WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

A. SOIL PREPARATION TEMPORARY STABILIZATION

THE RESULTS OF A SOIL TEST.

A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT AFTER THE SOIL IS LOOSENED IT MUST NOT BE ROLLED OR DRACCED SMOOTH BUT LEET IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

I. SOIL PH BETWEEN 6.0 AND 7.0. II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM). III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD RE 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 C. GRADED 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

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 IKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION, LOOSEN URFACE 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 TH SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR THE SLOPE, LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY

I. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH, SOILS OF CONCEM HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW I, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION. 2. 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 USDA-

5. 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 O SUPPORT PLANTS OR FLIRNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT

. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.). THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE. 4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER. B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED. C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED

AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL. 6. TOPSOIL APPLICATION A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING . 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 ORMATION OF DEPRESSIONS OR WATER POCKETS.

C. 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. C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS) I. 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 RE USED FOR CHEMICAL ANALYSES

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR CCURATE 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. 3 LIME MATERIALS MUST BE CROUND LIMESTONE (HYDRATED OR RURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND

TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE. 4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS 5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS. SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. B-4-4 STANDARDS AND SPECIFICATIONS

DEFINITION

CONDITIONS WHERE PRACTICE APPLIES

ON THE PLAN.

OR EQUAL

WARM SEASOI

MAINTAIN UNTIL THE NEXT SEEDING SEASON.

30 LB / AC

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

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

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION. CONDITIONS WHERE PRACTICE APPLIES

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE **CRITERIA**

A. SEEDING 1.SPECIFICATION

A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE 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

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 D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS

OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS. APPLICATION A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS. I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE 8.1. PERMANENT SEEDING TABLE 8.3. OR SITE-SPECIFIC SEEDING SUMMARIES II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING

RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT. B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING. II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

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

III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.

I. MULCH MATERIALS (IN ORDER OF PREFERENCE

IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

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. B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSI PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN PROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURR I. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS. I. 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

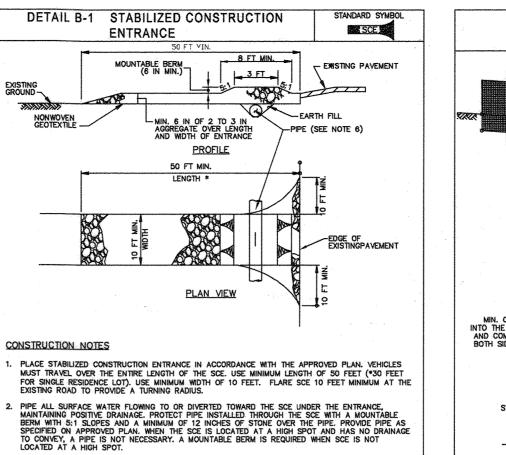
WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS. IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE 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.

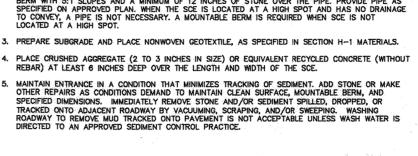
A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDIN B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING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

. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 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 HAZARI A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR. II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW, APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET

TERRA TAX II, TERRA TACK AR OR OTHER APPRÒVED 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 S STRICTLY PROHIBITED . LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET





MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL 2011 MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

GALVANIZED CHAIN LINK FENCE WITH WOVEN SLIT FILM GEOTEXTILE

ELEVATION

NSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX F ENOTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES

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.

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

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

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

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

2011

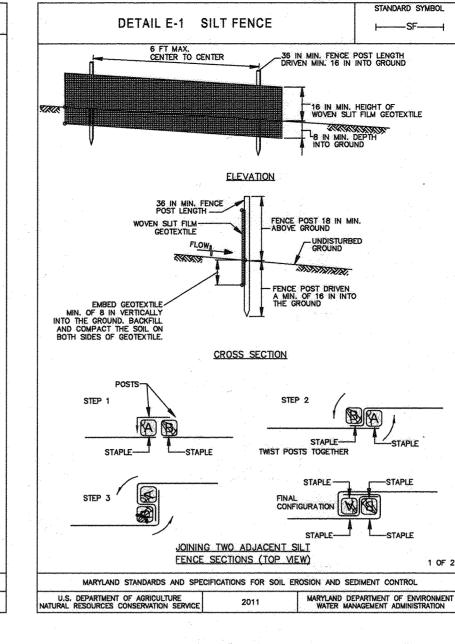
CROSS SECTION

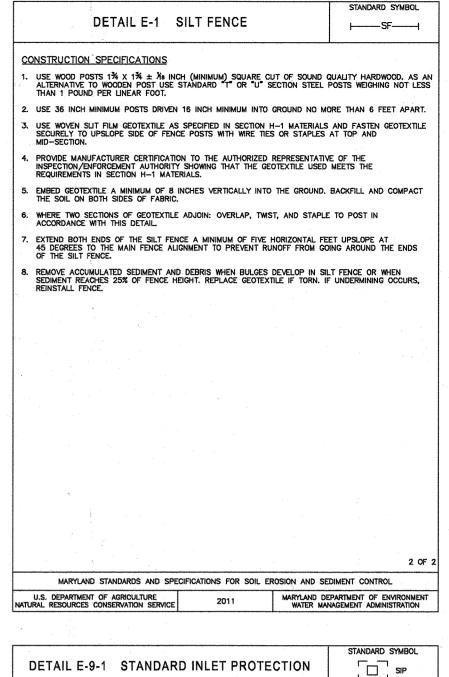
DETAIL E-3 SUPER SILT FENCE

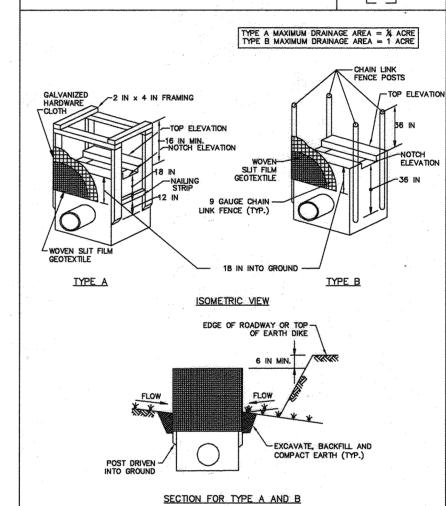
CHAIN LINK FENCING -

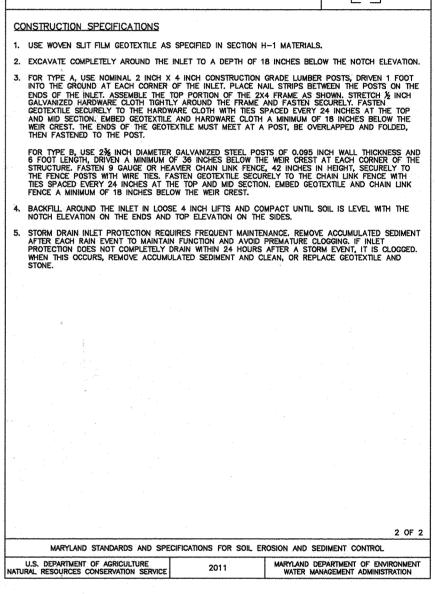
WOVEN SLIT FILM GEOTEXTILE-

TRANSTRUK









SEQUENCE OF CONSTRUCTION

A ORTAIN GRADING PERMIT - 1 DAY B. OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT - 1 DAY

STANDARD SYMBO

-----SSF-----

-36 IN MIN.

2. DEVELOPER / CONTRACTOR SHALL REQUEST A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO BEGINNING CONSTRUCTION. - 1 DAY 3. NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (410-313-1880) AT LEAST 24 HOURS BEFORE STARTING ANY

4. DRY UTILITIES (CABLE, GAS, ELECTRIC) MUST BE INSTALLED AFTER ROAD CONSTRUCTION AND PRIOR TO INSTALLATION OF THE

6. INSTALL STABILIZED CONSTRUCTION ENTRANCE AS SHOWN HEREON. -1 DAY

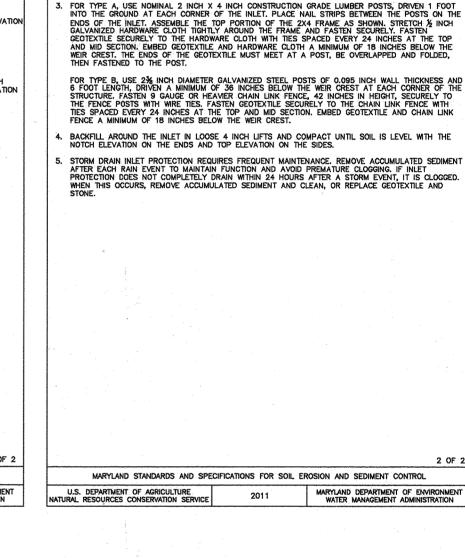
DRAINAGE AREA IS STABILIZED

7. INSTALL PERIMETER CONTROLS AT THE LIMIT OF DISTURBANCE, WHERE SHOWN OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. - 14 DAYS - EXISTING GRADES SHOWN HEREON ARE THE PROPOSED GRADES FROM F-20-064

F-20-064 SEDIMENT TRAP. LOTS ARE TO BE BUILT IN ORDER 1-7. - AS LOTS 1-4 ARE COMPLETE AND STABILIZED, THE F-20-064 SEDIMENT TRAP IS TO BE BACKFILLED AND ON-LOT CONTROLS

10. CONSTRUCT HOUSES. THE FIRST FLOOR ELEVATIONS CANNOT BE MORE THAN 1' HIGHER OR 0.2' LOWER THAN THE ELEVATIONS SHOWN ON THIS PLAN. - 6 MONTHS REMAINING FINE GRADING, INSTALL ON-LOT STORMWATER MANAGEMENT FACILITIES TO INCLUDE: DRYWELLS AND MICRO-BIORETENTION FACILITIES. INSTALL ROOF GUTTER DOWNSPOUTS TO DIRECT ROOFTOP RUNOFF AS DIRECTED. - 1 DAY

THE DISTURBED AREAS FROM AFOREMENTIONED DISTURBANCES WITH PERMENENT SEEDING MIXTURE AND STRAW MULCH. - 1 DAY



F-20-064 MICRO-BIORETENTION FACILITIES.

5. STAKEOUT LIMITS OF DISTURBANCE. - 3 DAYS

Martine relative resident relative rela

CONTRACTOR SHALL UTILIZE THE EXISTING CONTROLS INSTALLED UNDER F-20-064 AS SHOWN HEREON TO INCLUDE THE

LOT 6 NOTE: THE FOUNDATION FOR THE PROPOSED HOME ON LOT 6 WILL BE CONSTRUCTED IN THE AREA OF THE F-20-064 SEDIMENT TRAP BASIN EXCAVATION. UPON REMOVAL OF THE TRAP, PRECAUTIONS SHALL BE TAKEN TO ACHIEVE PROPER STRUCTURAL FILL IN THIS AREA. SOILS SHALL BE REMOVED 2' BELOW THE BOTTOM OF THE TRAP, RE-FILLED AND COMPACTED TO AVOID SETTLEMENT OF THE HOME PROPER REMOVAL OF THE SEDIMENT AND WET SOIL AROUND THE TRAP AREA TO ACHIEVE PROPER COMPACTION IS REQUIRED.

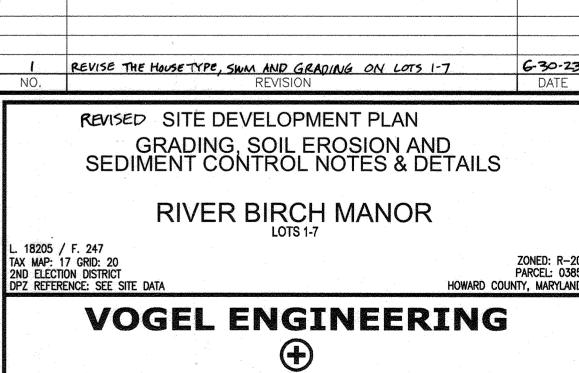
PROPER COMPACTION SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER. 8. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, ROUGH GRADE INDIVIDIAL LOT FOR HOUSE CONSTRUCTION. - 1 WEEK F-20-064 PROJECT STORMWATER ESD - AS PART OF THE F-20-064 WORK THE MICROBIORETENTION SYSTEMS MAY BE EXCAVATED TO AN ELEVATION AT LEAST 1 FOOT ABOVE ULTIMATE UNDERDRAIN PIPE INVERT ELEVATION ALLOWING THE THE SYSTEMS TO FUNCTION, AND PROVIDE POCKETS OF SEDIMENT STORAGE, - COMPLETION OF A PROJECT STORMWATER ESD - MICROBIORETENTION SYSTEMS SHALL OCCUR WHEN ITS CONTRIBUTING

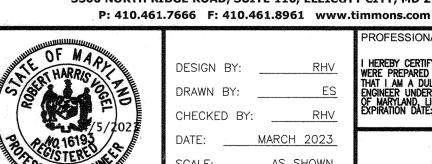
9. STOCKPILING SHALL BE LIMITED TO ONLOT OR AS SHOWN HEREON. STOCKPILES SHALL BE STABILIZED AS DETAILED HEREON. - 1

11. UPON COMPLETION OF HOME CONSTRUCTION AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, COMPLETE ANY

12. ADD TOPSOIL AND TSSMC (1.5LB/FT^2) PER THE DETAILS AND SPECIFICATIONS SHOWN HEREON. - 1 DAY 13. WITH ALL ON-LOT DISTURBANCES COMPLETED, STABILIZE WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH OR EQUAL

14. AFTER PERMISSION HAS BEEN GIVEN BY SEDIMENT CONTROL INSPECTOR, REMOVE ANY REMAINING E/S CONTROLS AND STABILIZE NOTE: ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.





____AS SHOWN SCALE: 41656 W.O. NO.:

PROFESSIONAL CERTIFICATE I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2024 SHEET OF _

NOTES

FOR SOIL EROSION AND SEDIMENT CONTROL - PAGES B.26 - B.32

DURING GRADING AND AFTER EACH RAINFALL, THE CONTRACTOR SHALL INSPECT AND PROVIDE THE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL MEASURES SHOWN HEREON.

(10-20-20)

1000 SF) 1000 SF) 1000 SF) 1000 SF

N $P_2 O_5$

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

A. 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES.

B. 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT

DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.

HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b FERTILIZER SEED MIXTURE (FROM TABLE B.1): LIME RATE SEEDING (10-20-20) SEEDING NO SPECIES RATE (LB/AC) COOL SEASON 436 LB/AC 2 TONS/AC MAY 15 1/2 IN. | (10 LB PER | (90 LB PER | 40 LB / AC AUG 1 TO OCT 15

FOR

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS.

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1

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

2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED

RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY

3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED

TEMPORARY SEEDING SUMMARY

AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND

IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES,

FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM

FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

TEMPORARY STABILIZATION

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

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

FOXTAIL MILLET OR EQUAL FOR ALTERNATES, REFER TO THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL PAGE B.20, TABLE B.1

MAY 16 TO 1/2 IN.

1000 SF) | 1000 SF)

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

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

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

THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT

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. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL. AN

STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD

CONTROL PRACTICE. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.

APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.

SHEETING.

CONDITIONS WHERE PRACTICE APPLIES

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

BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILE CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE

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: 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.

PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL FROSION AND SEDIMENT CONTROL

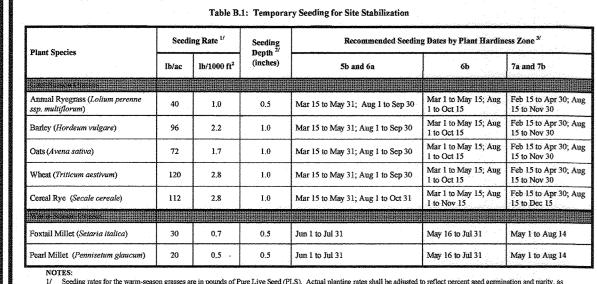
DETAIL E-9-1 STANDARD INLET PROTECTION

OWNER/DEVELOPER P.R. HORTON, INC 137 MITCHELLS CHANCE RD, SUITE 30 EDGEWATER, MD 21037 (301) 407-2600

PARCEL: 038 HOWARD COUNTY, MARYLAN

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

SDP-23-017



- 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, a tested. Adjustments are usually not needed for the cool-season grasses.
 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 rates listed above.
- Securing rates is sixed above are for temporary securings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate issee above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pear inilitet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent 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.

 Outs are the recommended nurse crop for warm-season grasses.
- For sandy soils, plant seeds at twice the depth listed above.
 The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

B.2

H-1 STANDARDS AND SPECIFICATIONS FOR MATERIALS

i	UI	MAILIN	ALJ		
Table	H.I:	Geotextile	Fabrics		

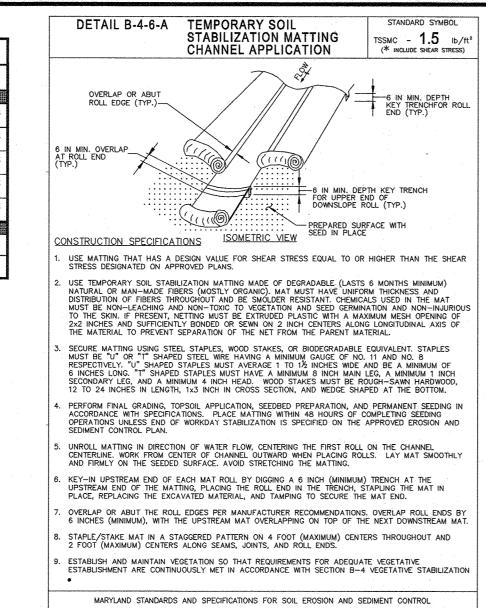
	lubic	11.1. 000	extile 1	UDITICS				
			WOVEN		WOVEN			
			SILT F	LM	MONOFI			
			GEOTE:	KTILE	GEOTEX	TILE	GEOTEX	TILE
			MINIMA	L AVER	AGE WO	RK VALI	JE (1)	
PROPERTY	TEST METH	OD	мD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM	D-4632	200lb	200lb	370lb	250lb	200lb	2001ь
Grab Tensile Elongation	ASTM	D-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTM	D-4533	75lb	75lb	100lb	60lb	80lb	80lb
Puncture Strength	ASTM	D-6241	450)lb	900)lb	45	olb dlo
		-	U.S. SI	EVE 30	U.S. SI	EVE 70	U.S. SI	EVE 70
Apparent Opening Size (2)	ASTM	D-4751	(0.59	mm)	(0.21	mm)	(0.21	mm)
Permittivity	ASTM	D-4491	0.05 s	ec^-1	0.28 s	ec^-1	1.10 s	ec^-1
Ultraviolet Resistance Retained at 500 Hours	ASTM	D-4355	70% S	trength	70% S	trength	70% S	trength

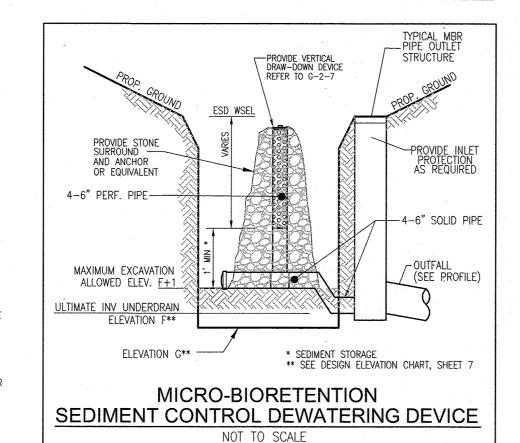
	TAE	BLE H.2: 5	STONE SIZI	Ε	:	
TYPE	SIZE RANGE	d50	d100	AASHTO	MIDSIZE WEIGHT (3)	
NUMBER 57(1)	$\frac{3}{8}$ in to $1-\frac{1}{2}$ in	½in	1 — 1 in	M-43	N/A	
NUMBER 1	2in to 3in	$2-\frac{1}{2}$ in	3in	M-43	N/A	
RIPRAP (2) (CLASS 0)	4in to 7in	5-½in	7in	N/A	N/A	
CLASS I	N/A	9- 1 in	15in	N/A	40lb	1
CLASS II	N/A	16in	24in	N/A	200lb	
CLASS III	N/A	23in	34in	N/A	600lb	

(1) THIS CLASSIFICATION IS TO BE USED ON THE UPSTREAM FACE OF STONE OUTLETS AND CHECK DAMS.
(2) THIS CLASSIFICATION IS TO BE USED FOR GABIONS.
(3) OPTIMUM GRADATION IS 50 PERCENT OF THE STONE BEING ABOVE AND 50 PERCENT BELOW

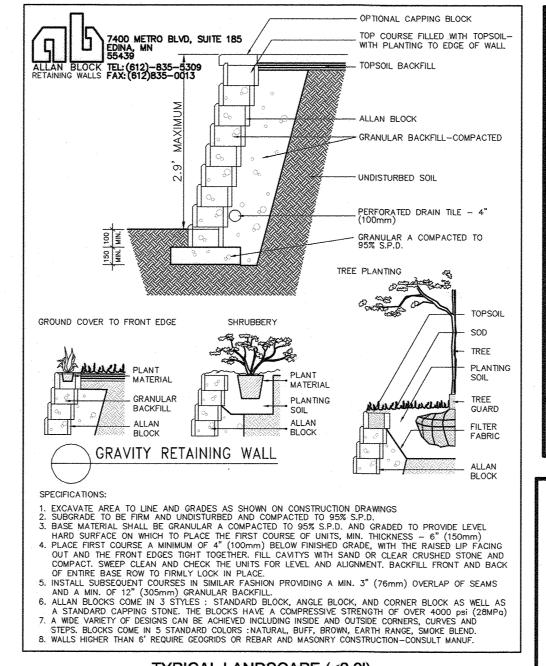
STONE MUST BE COMPOSED OF A WELL GRADED MIXTURE OF STONE SIZED SO THAT FIFTY (50) PERCENT OF THE PIECES BY WEIGHT ARE LARGER THAN THE SIZE DETERMINED BY USING THE CHARTS. A WELL GRADED MIXTURE, AS SED HEREIN, IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE IN SUCH A MIXTURE MUST NOT EXCEED THE RESPECTIVE D100 SELECTED FROM TABLE H.2. THE D50 REFERS TO THE MEDIAN DIAMETER OF THE STONE. THIS IS THE SIZE FOR WHICH 50 PERCENT, BY WEIGHT, WILL BE

NOTE: RECYCLED CONCRETE EQUIVALENT MAY BE SUBSTITUTED FOR ALL STONE CLASSIFICATIONS FOR TEMPORARY CONTROL MEASURES ONLY. CONCRETE BROKEN INTO THE SIZES MEETING THE APPROPRIATE CLASSIFICATION, CONTAINING NO STEEL REINFORCEMENT, AND HAVING A MINIMUM DENSITY OF 150 POUNDS PER CUBIC FOOT MAY BE USED AS AN EQUIVALENT.

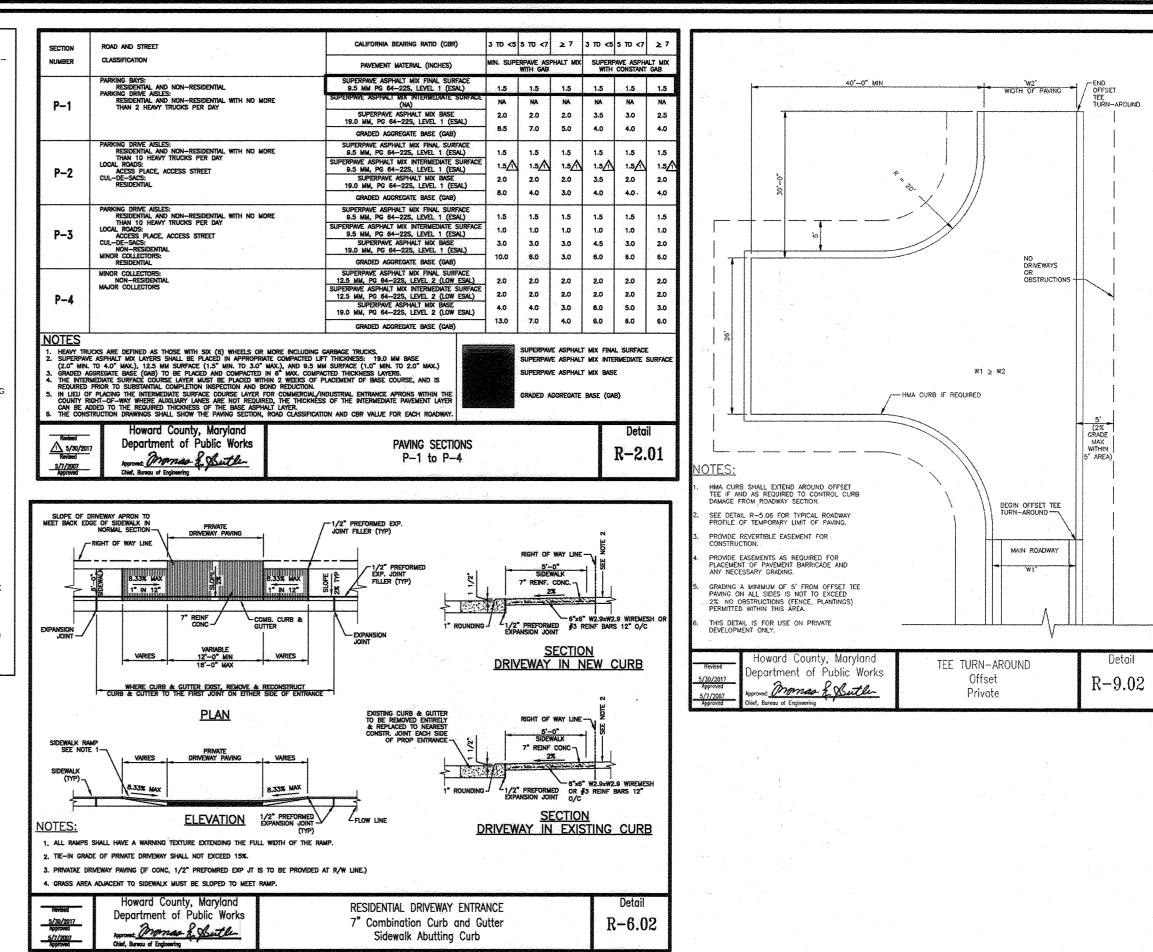


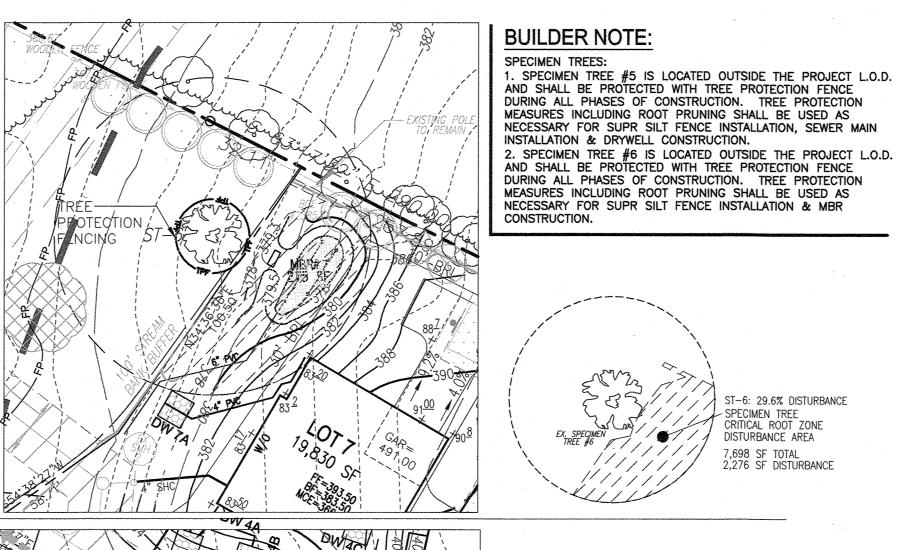


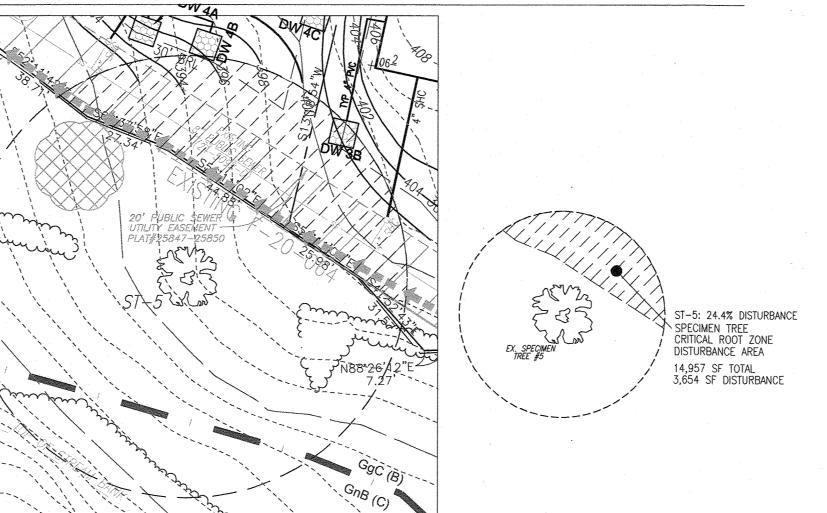
2011











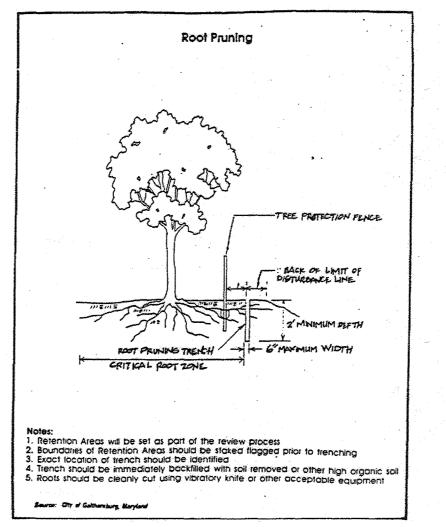
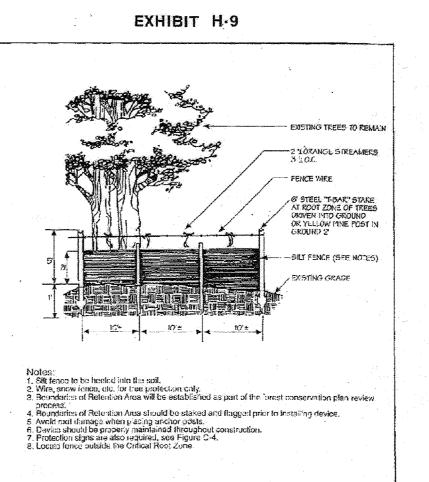
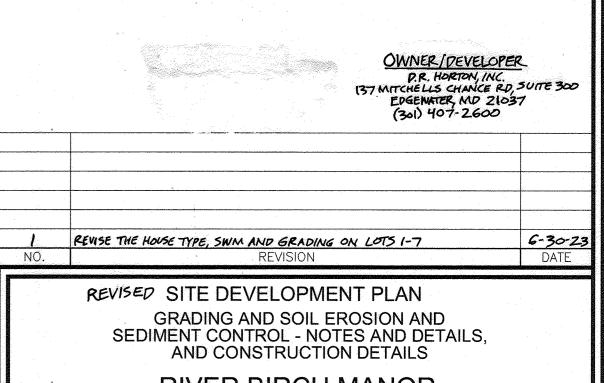


EXHIBIT G - 15





RIVER BIRCH MANOR

LOTS 1-7

L. 18205 / F. 247

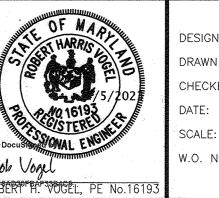
TAX MAP: 17 GRID: 20
2ND ELECTION DISTRICT
DPZ REFERENCE: SEE SITE DATA

VOGEL ENGINEERING

WARYLAND

TOTAL COUNTY, MARYLAND

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



		PROFESSION
N BY:	RHV_	I HEREBY CERTIF WERE PREPARED
N BY:	ES	THAT I AM A DU ENGINEER UNDER
KED BY:	RHV	OF MARYLAND, L EXPIRATION DATE
	MARCH 2023	
: <u></u>	AS SHOWN	
١٥.: _	41656	_
		. 3

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

SMALLER AND 50 PERCENT WILL BE LARGER.

Olexander Bratchie 4/28/2023

HOWARD S.C.D. DATE

OWNER/DEVELOPER CERTIFICATION:

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

MICHAEL Pfan. 4/5/2023

Michael Pfau 4/5/2023

OWNER/DEVELOPER SIGNATURE DATE

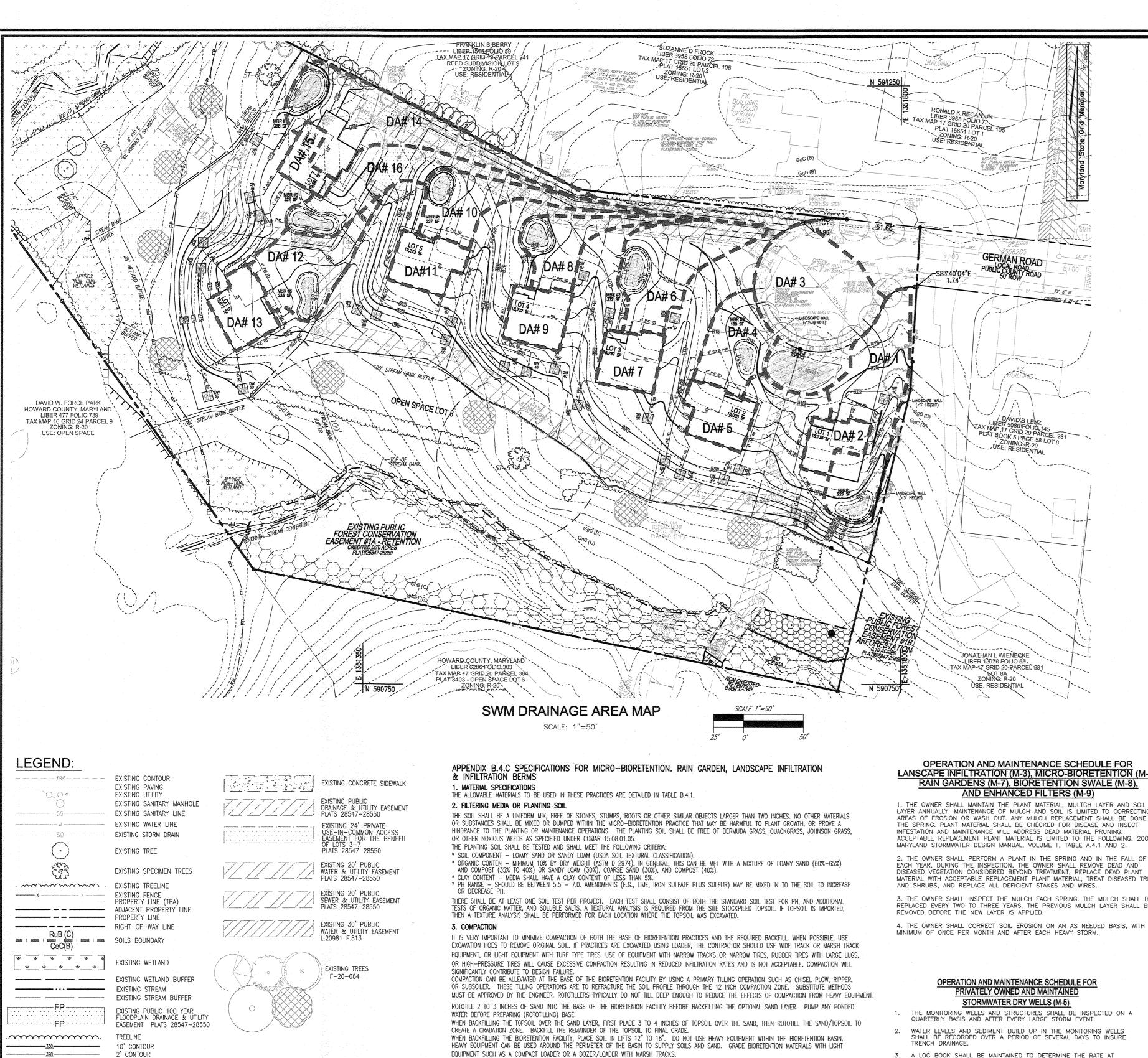
Michael Pfau

PRINTED NAME & TITLE

DESIGN CERTIFICATION:

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

(DocuSigned by:	PLANNING AND ZONING
· ·	Paul DiMarco	4/27/2023
CHIEF, DEVELOPMENT E	NGINEERING DIVISION	DATE
	1	4/27/2023
CHIEF, DIVISION OF LA		DATE
	DocuSigned by:	5/1/2023
DIRECTOR	989DB92F944F4CD	DATE



4. PLANT MATERIAL

5. PLANT INSTALLATION

6. UNDERDRAINS

ON THE OUTSIDE OF THE TREE BALL.

FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

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

AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2"

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

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW

IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA

DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE, THE PLANT ROOT BALL SHOULD BE PLANTED SO

GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED

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.

TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED

ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

* PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).

* PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4x4) GALVANIZED HARDWARE CLOTH.

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

* 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".

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).

1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.

" SHREDDED OR CHIPPED HARDWOOD MUI CH

MICRO-BIORETENTION

UNDERDRAIN / ROOF DRAIN

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION (Q

CHIÉF, DIVISION OF LAND DEVELOPMENT

dynde Eseber

FACILITY (M-6)

DRY WELL (M-5)

DW∃

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

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULTCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000

EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.

3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE

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

PRIVATELY OWNED AND MAINTAINED

- THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.
- A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN THE 72 HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

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LOT 1 DA# 1	26.04	0.2844	7788	0.18	185	480	297	300	2028	0.05	0.13	MICROSCALE MICRO-BIO RETENTION (M-6)
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LOT 1 DA# 2	100.00	0.9500	1756	0.04	139	361	165	230	1756	0.04	0.00	Drywell 3 @ 8'Wx8'Lx3'D
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LOT 2 DA#4	45.98	0.4638	3756	0.09	145	377	234	240	1727	0.04	0.05	MICROSCALE MICRO-BIO RETENTION (M-6)
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LOT 2 DA# 5	100.00	0.9500	2383	0.05	189	491	224	307	2383	0.05	0.00	Drywell 4@8'Wx8'Lx3'D
HOUSE		and the second s		1 0.00		ages attacked and a substitute and a second						307 76.8 CF EA
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LOT 3 DA# 6	48.38	0.4854	6122	0.14	248	644	399	436	2962	0.07	0.07	MICROSCALE MICRO-BIO RETENTION (M-6)
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LOT 3 DA# 7	100.00	0.9500	2313	0.05	183	476	218	307	2313	0.05	0.00	Drywell 4 @ 8'Wx8'Lx3'D
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LOT 4 DA#8	57.66	0.5689	3453	0.08	164	426	264	361	1991	0.05	0.03	MICROSCALE MICRO-BIO RETENTION (M-6)
DRIVEWAY						terrescondente de la compositione de la composition						361 271 SF MULCH AREA
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LOT 5 DA# 10	53.70	0.5333	3685	0.08	164	426	264	280	1979	0.05	0.04	MICROSCALE MICRO-BIO RETENTION (M-6)
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LOT 5 DA# 1:	100.00	0.9500	2383	0.05	189	491	224	307	2383	0.05	0.00	Drywell 4@8'Wx8'Lx3'[
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DRIVEWAY								to the same of the		The control of the co	·	307 230 SF MULCH AREA
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LOT 6 DA# 13	100.00	0.9500	2383	0.05	189	491	224	307	2383	0.05	0.00	Drywell 4 @ 8'Wx8'Lx3'D
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LOT 7 DA# 14	42.34	0.4311	8531	0.20	306	797	493	493	3612	0.08	0.11	MICROSCALE MICRO-BIO RETENTION (M-6)
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LOT 7 DA# 15	100.00	0.9500	1432	0.03	113	295	135	250	1432	0.03	0.00	Danual 1 @ Shakesheeth 2 @ Chike on 225
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LOT 7 DA# 16	39.24	0.4032	5288	0.12	178	462	286	435	2075	0.05	0.07	MICROSCALE MICRO-BIO RETENTION (M-6)
DRIVEWAY		j.,						e . Samuel and separate and second as			and the property of the second	435 326 SF MULCH AREA
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RIVER BIRCH MANOR - FINAL ESDV COMPUTATIONS

OWNER/PEVELOPER D.R. HORTON, INC. 137 MICHELLS CHANCE RD. EDGEWATER, MD 21037 (301) 407-2600

REVISE THE HOUSE TYPE, SWM AND GRADING ON LOTS 1-7 6-30-23 DATE

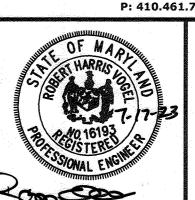
REVISED SITE DEVELOPMENT PLAN

STORMWATER MANAGEMENT DRAINAGE AREA MAP. NOTES AND DETAILS

RIVER BIRCH MANOR L 18205 / F. 247 TAX MAP: 17 GRID: 20 2ND ELECTION DISTRICT DPZ REFERENCE: SEE SITE DATA

VOGEL ENGINEERING

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



DESIGN BY: DRAWN BY: CHECKED BY: MARCH 2023 SCALE: W.O. NO.:

P: 410.461.7666 F: 410.461.8961 www.timmons.com 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: 09-27-2024 AS SHOWN

6

SHEET

HOWARD COUNTY, MARYLAND

SDP-23-017

ON-LOT DRYWELL - SIZING CHART STONE ESD NUMBER **SURFACE** SAND DEPTH LOT LOCATION OF DW'S SIZE DEPTH FT FT X FT FT DA-2 R&F 8.00 8.00 3 DA-5 R 4 8.00 8.00 DA-7 R & F 4 8.00 8.00 DA-9 R&F 8.00 8.00 4 4 DA-11 8.00 8.00 5 R 4 DA-13 8.00 8.00 4 6 DA-15 8.00 8.00 1 R DA-15 R 9.00 8.00 R=REAR OF LOT

69392 1.59

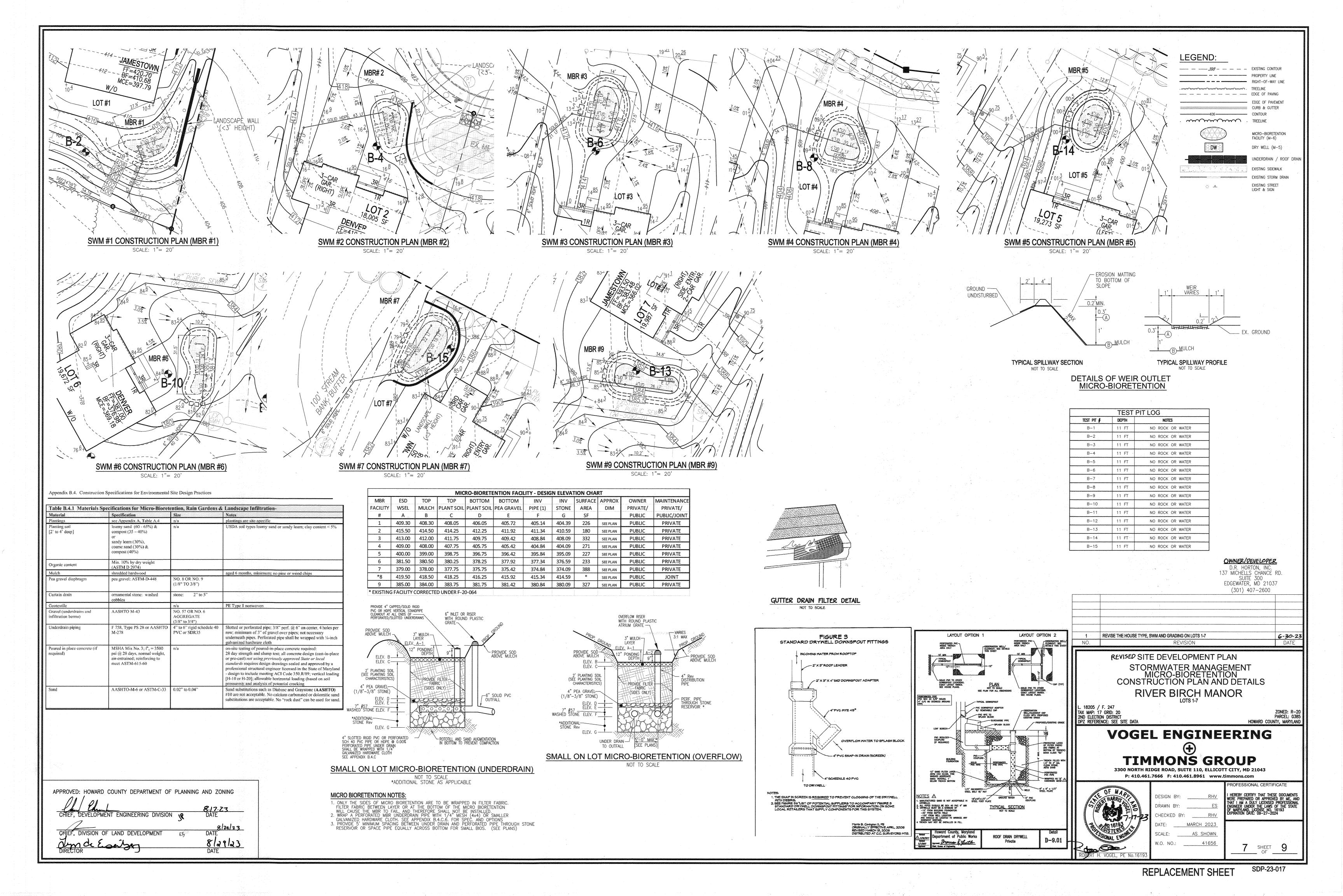
TOTALS

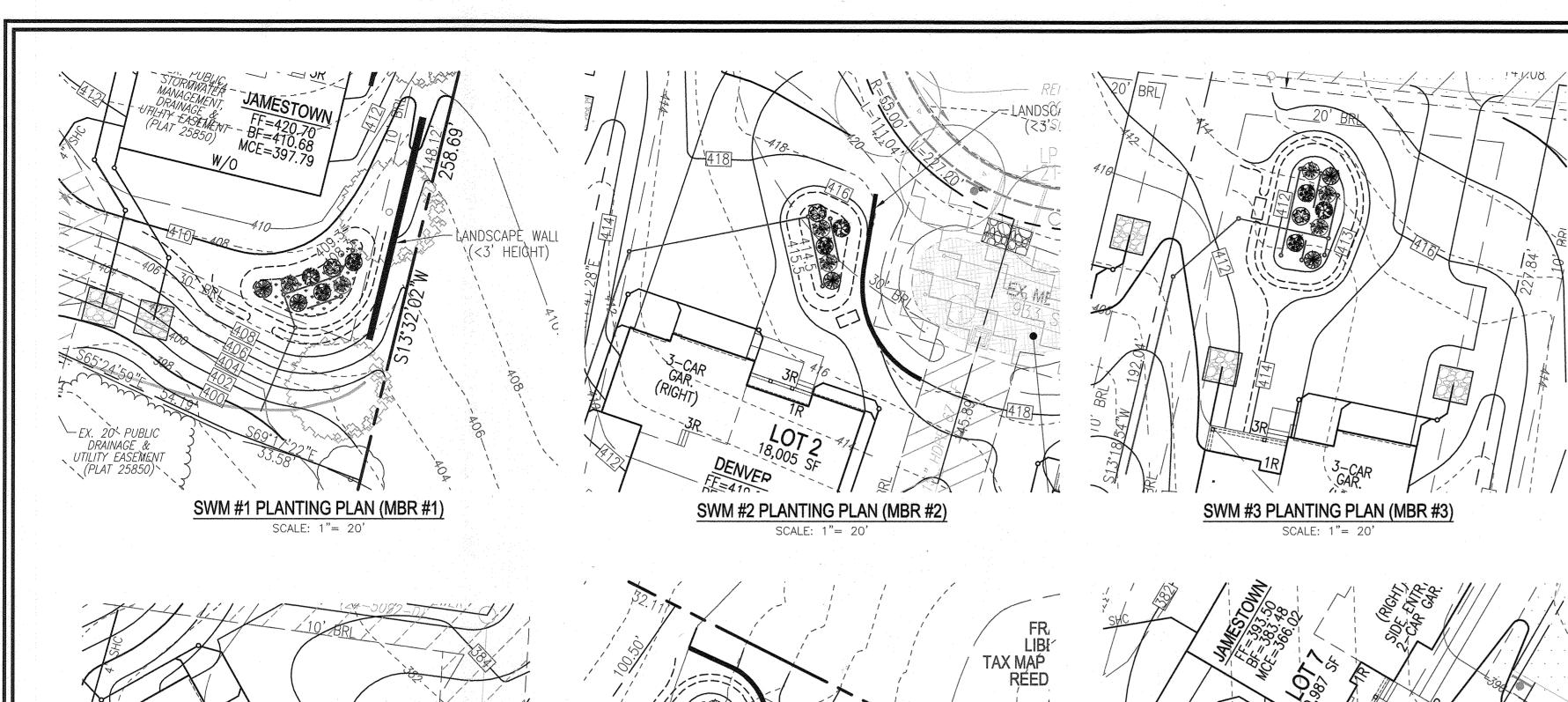
F=FRONT OF LOT

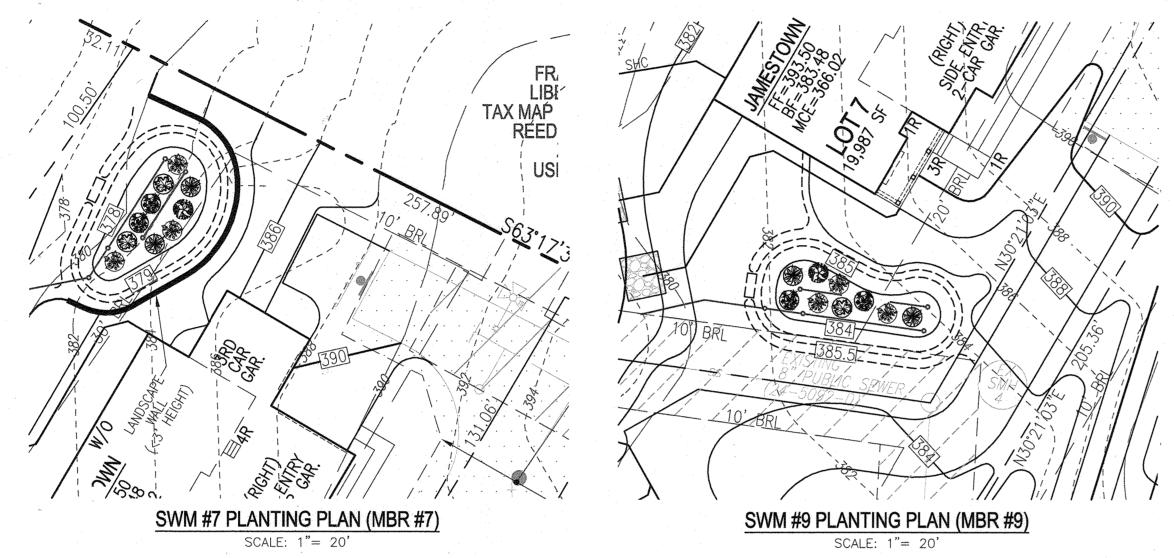
59.8

ROBJET H. VOGEL, PE No.1

6112 41477 0.95 0.64







MICRO-BIORETENTION PLANTING REQUIREMENTS				PLANT	PERRENIALS/GROUND COVER PROVIDED						
MBR#	AREA	STEMS REQUIRED (0.0299)	STEMS PROVIDED	IG	IV	HQ	LR	PV	ВА	AG	TOTAL
1	226	6	8	1	. 2	2	2	1	7	7	14
2	180	5	6	1	1	1	2	1	6	6	12
3	332	8	9	1	2	2	3	1	11	11	22
4	271	7	9	1	2	2	3	1	9	9	18
5	227	6	8	1	2	2	2	1	7	7	14
6	233	6	8	1	2	2	2	1	8	8	16
7	388	9	10	2	2	2	3	1	13	13	26
8	933	22	23	3	5	5	7	3	32	32	64
9	327	8	9	1	2	2	3	1	11	11	22
TOTALS:	3117	77	90	12	20	20	27	11	104	104	208

SWM #6 PLANTING PLAN (MBR #6)

SCALE: 1"= 20'

STEMS PER PLANTED ACRE (0.0229 STEMS

MICRO-BIORETENTION PLANTING SCHEDULE (SHRUBS/ORNIMENTAL GRASSES)

* REFER TO F-20-064

<u> </u>

	Pl	ERENN	NALS/GROUNDCOVER PLANTI	NG S	СН	EDULE		
LEGEND	KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZI	=	RE	MARKS	
		104	BAPTISIA AUSTRALIS FALSE INDIGO	4" P	4" POT AND BOMIX ALI NATURA		"O.C. FOR SIDES OTTOM OF MBR, L VARIETIES IN A LIZED RANDOM N THROUGHOUT, IN GROUPS OF STHAN 9 PLANTS UMP	
	·	104	ACORUS GRAMINEUS 'OGON' GOLDEN VARIEGATED SWEET FLAG	1 QT. PLANT NO LES		PLANT I		
BIOR	ETENT	ION PL	ANTING SCHEDULE (SHRUB/C	DRNI	MEN	ITAL GF	RASSES)	
LEGEND	KEY	QTY	BOTANICAL NAME/COMMON NAME	*		SIZE	REMARKS	
	IG	12	ILEX GLABRA 'SHAMROCK' INKBERRY HOLLEY		1 (GALLON	18" O.C.	
	IV ,	20	ITEA VIRGINICÀ 'HENRY'S GARNETT VIRGINIA SWEETSPIRE	,	1 (GALLON	18" O.C.	
	HQ	20	HYDRANGEA QUERCIFOLIA OAKLEAF HYDRANGEA		-1 (GALLON	30" O.C.	
	LR	27	LEUCOTHEO RACEMOSA FETTERBUSH		1	GAL.	30" O.C.	
	PV	11	PANICUM VIRGATUM SWITCHGRASS		1	GAL.	36" O.C.	
NOTE: WITH PER	MISSION FI	ROM HOWA	RD COUNTY, PLANTINGS SPECIFIED HEREON MA	Y BE SI	JBSTIT	UTED WITH	APPROVED	

SPECIES LISTED IN TABLE A-4 AS SHOWN HEREON.

MICRO-BIORETENTION PLANTING SCHEDULE NOTES

- 1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL,
- CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.

 2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO
- 3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- 4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN. 5. MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF
- 1000 STEMS PER PLANTED ACRE (.0229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDV SUMMARY.

 6. FILTER AREA SHALL BE 50% COVERED BY PLANTINGS AT FULL GROWTH

rees	Shrubs	Herbaceous Species
Acer rubrum	Aesculus pariviflora	Andropogon virginicus
Rei Maple	Bottlebrush Buckeye	Broomsedge
Benda nigra	Cephalanthus occidentalis	Eupatorium perpurea
River Birch	Buttonbush	Joe Pye Weed
Juniperus virginiana	Hamemelis virginiana	Scirpus pungens
Eastern Red Cedar	Witch Hazel	Three Square Bulrush
Chionanthus virginicus	Vaccinium corymbosum	Iris versicolor
Fringe-tree	Highbush Blueberry	Blue Flag
Nyssa sylvatica	Ilex glabra	Lobelia cardinalis
Black Gum	Inkberry	Cardinal Flower
Diospyros vi giriana	Ilex verticillata	Panicum virgatum
Persimmon	Winterberry	Switchgrass
Platanus occidentalis	Viburnum dentatum	Dichanthelium scoparium
Sycamore	Arrowwood	Broom Panic Grass
Quercus palustris	Lindera benzoin	Rudbeckia laciniata
Pin Oak	Spicebush	Tall Coneflower
Quercus pheilos	Myrica pennsylvanica	Scirpus cyperinus
Willow Oak	Bayberry	Woolgrass
alix nigra		Vernonia noveboracensis
Black willow	V	New York Ironweed

SWM #4 PLANTING PLAN (MBR #4)

SCALE: 1"= 20'

1. TABLE A.4 IS TAKEN FROM THE "2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II - APPENDIX A". 2. CONTRACTOR SHALL BE FAMILIAR WITH APPENDIX B.4.C. CONSTRUCTION SPECIFICATIONS AND TABLE B.4.1 MATERIAL SPECFICAITIONS. IN ADDITION THE "2000 MARYLAND STORMWATER DESIGN MANUAL - VOLUME II - APPENDIX A" OFFERS ADDITIONAL HELPFUL INFORMATION.
3. NO TREES SHALL BE PLANTED WITHIN A MICRO-BIORETENTION FACILITY. USE ONLY SHRUB OR HERBACEOUS SPECIES. 4. ABOVE TABLE A.4. IS FOR INFORMATIONAL PURPOSES ONLY.

LANDSCAPE CONTRACTOR SHALL INSTALL PLANTINGS SPECIFIED OR USE APPROVED EQUAL SPECIES WHICH ARE TOLERANT TO FLUCTUATING WATER LEVELS. 5. PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THIS SITE DEVELOPMENT PLAN.

LEGEND:

SWM #5 PLANTING PLAN (MBR #5)

SCALE: 1"= 20'

EDGE OF PAVING EDGE OF PAVEMENT TREELINE

MICRO-BIORETENTION FACILITY (M-6) DRY WELL (M-5)

EXISTING SIDEWALK EXISTING STREET LIGHT & SIGN

OWNER/DEVELOPER

D.R. HORTON, INC. 137 MICHELLS CHANCE RD. SUITE 300 EDGEWATER, MD 21037

SHEET __ OF ___

SDP-23-017

