	SHEET INDEX	
SHEET NO.	DESCRIPTION	
1	TITLE SHEET	
2	EXISTING CONDITIONS AND DEMOLITION PLAN	
3	SUPPLEMENTAL & STORMWATER MANAGEMENT PLAN	
4	NOTES AND SWM DETAILS	
5	50ILS MAP AND SWM DRAINAGE AREA MAP	
6	SUPPLEMENTAL GRADING & SEDIMENT CONTROL PLAN	
7	SEDIMENT CONTROL NOTES AND DETAILS	
8	SEDIMENT CONTROL NOTES AND DETAILS	

NOTE: THE SWING GATE MUST BE SE

FISHER. COLLINS & CARTER. INC.

ENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE

(410) 461 - 2855

BACK 25 FEET FROM THE EDGE OF

PAVING OF FOLLY QUARTER ROAD.

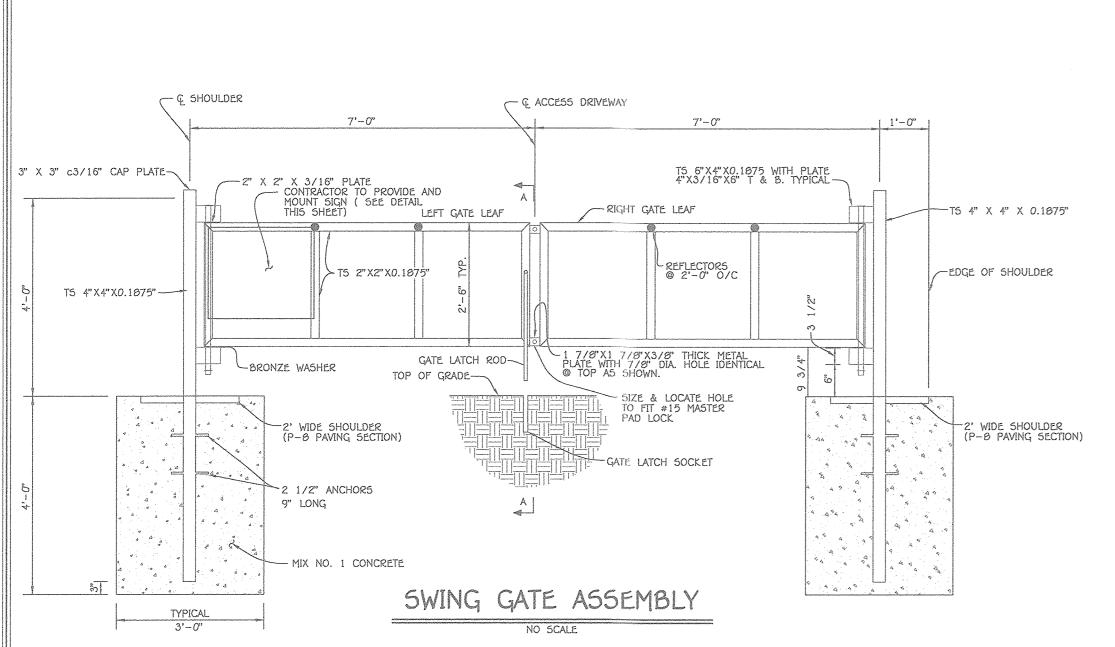
SUPPLEMENTAL, STORMWATER MANAGEMENT, SOILS, GRADING & SEDIMENT CONTROL PLAN

# 

# NON-BUILDABLE PRESERVATION PARCEL 'A'

ZONING: RC-DEO

TAX MAP No. 23 GRID No. 9 PARCEL No. 112



A. GATE FRAMES: 2" x2" SQUARE x 0.1875" THICK GALVANIZED STEEL WELDED CONSTRUCTION

B. GATE POSTS: 4" x4" x 0.1875" THICK GALVANIZED STEEL GATE HOLDBACK POSTS: 2"x4" x 0.1875" THICK GALVANIZED STEEL D. <u>GATE HARDWARE & POST CAPS</u>: GALVANIZED STEEL E. <u>MANUFACTURER</u>: LONG FENCE COMPANY



# THIRD BLECTION DISTRICT HOWARD COUNTY, MARYLAND

# ──── T5 4" X2" X0.1075" 10'-3" TO 10'-6" (TYPICAL) 11.5" 二二 5" HOLE 11.5" 5" HOLE CONCRETE PACKED (TYPICAL) DETAIL: SPLIT RAIL FENCE

A. TOTAL AREA OF THIS SUBMISSION = 5.463 ac. ±. LIMIT OF DEVELOPABLE AREA = 0.27 AC. + (PRIVATE DRIVEWAY ONLY) LIMIT OF DISTURBED AREA = 165,092 Sq. Ft. or 3.79 Ac\*. PRESENT ZONING DESIGNATION = RC-DEO (PER 10/06/13 COMPREHENSIVE ZONING PLAN). PROPOSED USE: SHARED SEPTIC FACILITY OPEN SPACE REQUIRED ON SITE: NONE RECREATIONAL AREA REQUIRED: NONE BUILDING COVERAGE OF SITE: NONE, PREVIOUS HOWARD COUNTY FILES: 50-4980-D, WP-16-011, WP-19-015 AND ECP-18-044. TOTAL AREA OF FLOODPLAIN: 0.00 Ac. TOTAL AREA OF SLOPES: 25% or GREATER = 0.03 Ac. 15%-24.99% = 0.20 Ac.

NET TRACT AREA = 5.433 Ac± (TOTAL SITE AREA - FLOODPLAIN - STEEP SLOPES AREA) TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 Ac\* TOTAL AREA OF STREAMS (INCLUDING BUFFER) = 0.00 Ac\* TOTAL AREA OF FOREST = 3.35 Ac. ±

SITE ANALYSIS DATA CHART

TOTAL GREEN OPEN AREA = 3.50 Ac. ± O. TOTAL IMPERVIOUS AREA = 0.24 Ac. ± R. AREA OF ERODIBLE SOILS = 0.91 Ac. ± (WITHIN AREA OF DEVELOPMENT) APPROVED: DEPARTMENT OF PLANNING AND ZONING CHIEF, DIVISION OF LAND DEVELOPMENT **REVISIONS** DATE DESCRIPTION

# GENERAL NOTES

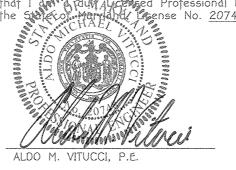
- 1. THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AS AMENDED ON OCTOBER, 2003.
- 2. SUBJECT PROPERTY ZONED RC-DEO PER 10/06/13 COMPREHENSIVE ZONING PLAN.
- 3. a. GROSS AREA OF TRACT = 5.463 AC.±
- b. AREA OF FLOODPLAIN = 0.00 AC. ± c. AREA OF 25% OR GREATER SLOPES = 0.03 AC. \*
- d. NET AREA OF TRACT = 5.433 AC.±
- 4. AREA OF PUBLIC ROAD R/W = 0.011 AC.±
- 5. a. AREA OF PROPOSED BUILDABLE LOTS = 0.00 AC. ± b. AREA OF PROPOSED NON-BUILDABLE PRESERVATION PARCEL 'A' = 5.463 AC.\* c. TOTAL LOT AREA (BUILDABLE AND NON-BUILDABLE) = 5.463 AC.±
- 6. TOTAL NUMBER OF PROPOSED LOTS AND PARCELS: 1
- a. BUILDABLE LOTS = 0b. NON-BUILDABLE PRESERVATION PARCELS = 1
- 7. HOWARD COUNTY PROJECT NUMBERS FOR THIS SITE: 50-4980-D, WP-16-011, ECP-10-044 & WP-19-015
- 6. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS ALTERNATIVE COMPLIANCE REQUESTS HAVE BEEN APPROVED.
- 9. NO NOISE STUDY IS REQUIRED FOR THIS PROJECT.
- 10. SOILS INFORMATION TAKEN FROM SOIL SURVEY MAP NUMBER 18, HOWARD COUNTY, MARYLAND.
- 11. BOUNDARY OUTLINE BASED ON A FIELD SURVEY THAT WAS PERFORMED BY FISHER, COLLINS AND CARTER, INC. DATED 01/11/2016.
- 12. THERE IS NO EXISTING OR PROPOSED RESIDENTIAL DWELLINGS LOCATED ON TAX PARCEL #112, MAP #23 ALL SHEDS ARE TO BE REMOVED.
- 13. TOPOGRAPHIC CONTOURS BASED ON FIELD RUN TOPOGRAPHY BY FISHER, COLLINS AND CARTER DATED 01/11/2016.
- 14. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL NAD 83 WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 0019

AND 0040 WERE USED FOR THIS PROJECT. HOWARD COUNTY STATION 0019 HOWARD COUNTY STATION 0040 N 577,270.584 FEET N 580,468.128 FEET E 1.332.002.575 FEET F 1.333.675.518 FFFT ELEVATION: 385.842 ELEVATION: 365.305

- 15. THERE ARE AREAS OF STEEP SLOPES LOCATED ON THIS PROPERTY AS DEFINED BY THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116.b
- 16. STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MARYLAND 378 SPECIFICATIONS. RECHARGE VOLUME WILL BE PROVIDED THROUGH THE USE OF A STONE RESERVOIR LOCATED BENEATH THE PROPOSED MICRO BIO-RETENTION AREA. THE SINGLE (1) MICRO BIO-RETENTION FACILITY WILL PROVIDE THE REQUIRED WATER QUALITY VOLUMES FOR ROAD IMPROVEMENTS PROPOSED. THE DESIGN IS IN COMPLIANCE WITH MDE CHAPTER 5. OVERBANK FLOOD PROTECTION VOLUME AND EXTREME FLOOD VOLUMES ARE NOT REQUIRED FOR THIS SITE. THE SINGLE (1) MICRO BIO-RETENTION FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED BY HOWARD COUNTY. THE H.Q.A. THE PROPOSED 2' GRAVEL DIAPHRAGM AND PROPOSED GRASS SWALE CREDIT AREA ARE PRIVATELY OWNED AND MAINTAINED
- 17. THERE IS NO FLOODPLAIN WITHIN NON-BUILDABLE PRESERVATION PARCEL 'A'.
- 16. THIS PLAN IS EXEMPT FROM FOREST CONSERVATION IN ACCORDANCE WITH SECTION 16.1202(b)(1)(vii) OF THE HOWARD COUNTY CODE ALLOWING "RESUBDIVISIONS, THAT DO NOT CREATE ADDITIONAL LOTS, EXEMPT SUBDIVISIONS AND PLAT CORRECTIONS AS PROVIDED FOR IN SECTION 16.102 AND 16.103 OF THIS TITLE"
- 19. THIS PROPERTY IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT.
- 20 FOR FLAG OR PIPESTEM LOTS REFUSE COLLECTION SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD R/W LINE AND NOT THE PIPESTEM LOT DRIVEWAY
- 21. NO CEMETERIES OR HISTORIC STRUCTURES EXIST WITHIN THIS SUBDIVISION.
- 22. A SCENIC ROADS REPORT OR RECREATIONAL OPEN SPACE ARE NOT REQUIRED BECAUSE WE ARE NOT RECORDING ANY BUILDABLE LOTS.
- 23. THE PURPOSE OF THIS PLAN IS TO ESTABLISH A PRESERVATION PARCEL FOR THE EXCLUSIVE DRIVEWAY TO SERVE TAX PARCEL #112 AND SHARED SEPTIC SYSTEM TO SERVE TAX PARCELS 20, 100, 110, 111 AND 140.
- 24. THERE ARE NO WETLANDS ON THIS SITE.
- 25. NO TRAFFIC STUDY IS REQUIRED FOR THIS PLAN SINCE NO RESIDENTIAL DEVELOPMENT IS PROPOSED.
- 26. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENTS.
- 27. LANDSCAPING IS NOT REQUIRED SINCE THIS PLAN DOES NOT PROPOSE ANY RESIDENTIAL DEVELOPMENT. NON-BUILDABLE PRESERVATION PARCEL 'A' SOLE PURPOSE IS TO CREATE A SHARED COMMUNITY SYSTEM.
- 26. THIS PLAN IS SUBJECT TO WP-19-015 WHICH ON SEPTEMBER 19, 2010 THE PLANNING DIRECTOR APPROVED A REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.120(C)(2)(I) WHICH REQUIRES THAT PRESERVATION PARCELS WHICH CANNOT BE FURTHER DIVIDED UNDER CURRENT ZONING MUST HAVE A MINIMUM OF 20' OF PUBLIC ROAD FRONTAGE. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS: 1. THE FRONTAGE ONTO FOLLY QUARTER ROAD FOR THE PIPESTEM SERVING NON-BUILDABLE PRESERVATION PARCEL 'A' MAY NOT BE LESS THAN 16.60 FEET IN WIDTH, AS SHOWN ON THE EXHIBIT SUBMITTED WITH WP-19-015.
- 29. THIS PLAN IS SUBJECT TO WP-16-111 WHICH ON AUGUST 12, 2016 THE PLANNING DIRECTOR APPROVED A RECONSIDERATION FOR ALTERNATIVE COMPLIANCE TO SECTION 16.102 AND SECTION 16.147 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH REQUIRES ANY DIVISION OF LAND BE PLATTED AND RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY VIA THE FINAL SUBDIVISION PLAT PROCESS. THE APPLICANT IS REQUESTING TO REVISE A COMMON PROPERTY LINE VIA THE ADJOINER DEED PROCESS. APPROVAL IS SUBJECT TO THE FOLLOWING
- 1. THE ADJOINER DEED SHALL BE RECORDED IN THE LAND RECORDS OFFICE OF HOWARD COUNTY, MARYLAND WITHIN 60-DAYS FROM THE PREVIOUS APPROVAL DATE OF AUGUST 19, 2016 (ON OR BEFORE OCTOBER 18, 2016). THE ALTERNATIVE COMPLIANCE PETITION EXHIBIT MUST BE AN EXHIBIT ATTACHED TO THE RECORDED DEED. PREVIOUS APPROVAL CONDITIONS 2 THRU 11 REMAIN UNCHANGED FROM THE JUNE 20, 2016 DECISION LETTER.
- 2. RECORDED COPIES OF THE ADJOINER DEED SHALL BE SUBMITTED TO THIS DEPARTMENT FOR FILE RETENTION PURPOSES WITHIN 30-DAYS OF RECORDATION. 3. THE ADJOINER DEED SHALL REFERENCE THE ALTERNATIVE COMPLIANCE PETITION FILE NUMBER (WP-16-111). 4. THE STRUCTURES ON THE ALTERNATIVE COMPLIANCE PETITION EXHIBIT INDICATED "TO BE REMOVED" SHALL BE REMOVED PRIOR TO THE
- RECORDATION OF THE ADJOINER DEED. PROOF OF DEMOLITION SHALL BE PROVIDED TO THIS DEPARTMENT PRIOR TO RECORDATION OF THE DEED. 5. THE TWO PARCELS RECONFIGURED BY THE ADJOINDER DEED SHALL COMPLY WITH THE RC-DEO ZONING REGULATIONS, INCLUDING BUT NOT LIMITED TO THE BUILDING SETBACKS AND ACCESSORY STRUCTURE USES.
- 6. APPROVAL OF THIS ALTERNATIVE COMPLIANCE PETITION IS TO ADJUST THE COMMON PARCEL BOUNDARY BETWEEN PARCELS 112 & 113 (TAX MAP 23). NO OTHER LOTS ARE BEING LEGALLY ENDORSED. NO ADDITIONAL LOTS ARE BEING CREATED AND NO NEW DEVELOPMENT, CONSTRUCTION OR IMPROVEMENTS ARE PERMITTED UNDER THIS REQUEST.
- 7. AS SHOWN ON THE ALTERNATIVE COMPLIANCE PETITION EXHIBIT, RIGHT-OF-WAY ALONG FOLLY QUARTER ROAD SHALL BE DEDICATED TO THE COUNTY FOR THE PIPESTEM FRONTAGES OF PARCELS 67, 113 & 112. THE RIGHT-OF-WAY DEDICATION AREA SHALL MEET THE STANDARDS OF THE DESIGN MANUAL REGULATIONS. 8. PARCEL 112 SHALL BE A NON-BUILDABLE PRESERVATION PARCEL ONCE IT IS ENCUMBERED WITH THE COMMUNITY SHARED SEPTIC FIELD.
- 9. DEVELOPMENT OF THE BUILDABLE PARCELS AND ESTABLISHMENT OF THE COMMUNITY SHARED SEPTIC FIELD ON PARCEL 112 WILL REQUIRE AN ENVIRONMENTAL CONCEPT PLAN (ECP). A NATURAL RESOURCE INVENTORY SHALL BE SUBMITTED WITH THE ECP'S TO VERIFY THE PRESENCE OF ALL ENVIRONMENTAL FEATURES AND FORESTED AREA.
- 10. COMPLIANCE WITH THE HEALTH DEPARTMENT COMMENT DATED MARCH 29, 2016-THE HEALTH DEPARTMENT HAS REVIEWED THE REFERENCED ALTERNATIVE COMPLIANCE PETITION AND HAS NO OBJECTION TO THE ALTERNATIVE COMPLIANCE WITH THE CONDITION THAT THE NEW LOT DIMENSIONS MATCH THE MOST RECENTLY APPROVED PERC CERTIFICATION PLAN.
- 11. COMPLIANCE WITH THE DEVELOPMENT ENGINEERING COMMENT DATED APRIL 6, 2016-ACCESS WIDTH (FOR PARCEL 112) PIPESTEM WILL NEED TO ACCOMMODATE A SEPARATE DRIVEWAY FOR THE SHARED SEPTIC SYSTEM AND A USE-IN-COMMON DRIVEWAY FOR RESIDENTIAL LOTS.
- 30. DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS-FOXLEIGH RECORDED IN LIBER 18340, FOLIO 150.

PROFESSIONAL CERTIFICATION

cartification these documents were prepared by me. and Arduly Alicensed Professional Engineer under the laws of Maryland/Lisense No. 20748, Expiration Date 2-22-19."



NON-BUILDABLE PRESERVATION PARCEL 'A'

ZONED: RC-DEO TAX MAP: #23 GRID: #9 PARCEL: #112 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JANUARY 23, 2019

LAWRENCE R. HYMAN AND LOIS W. HYMAN 3681 FOLLY QUARTER ROAD ELLICOTT CITY, MARYLAND 21042

8318 FORREST STREET SUITE 200 ELLICOTT CITY, MD 21043 ATT: DON REUWER

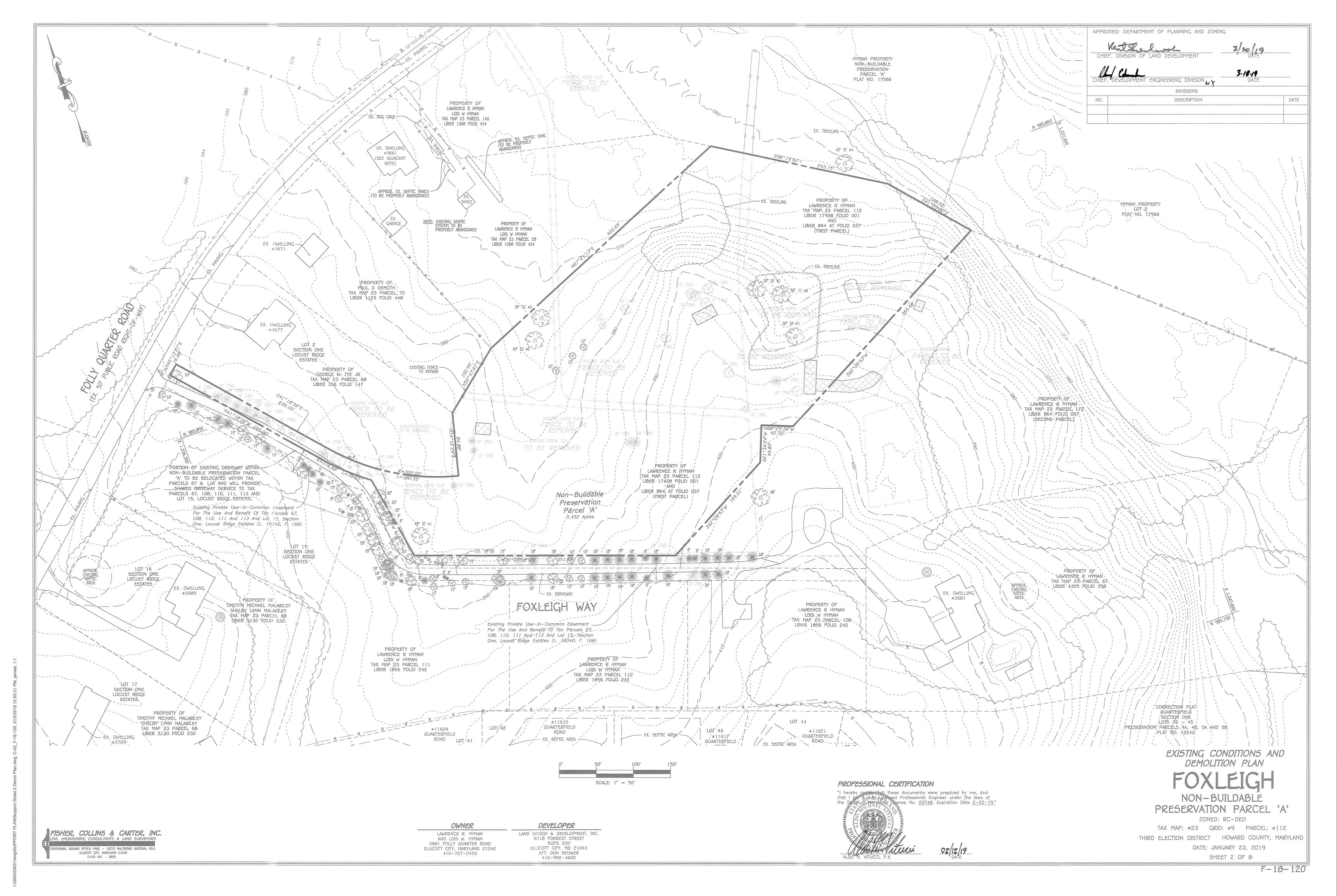
LAND DESIGN & DEVELOPMENT, INC.

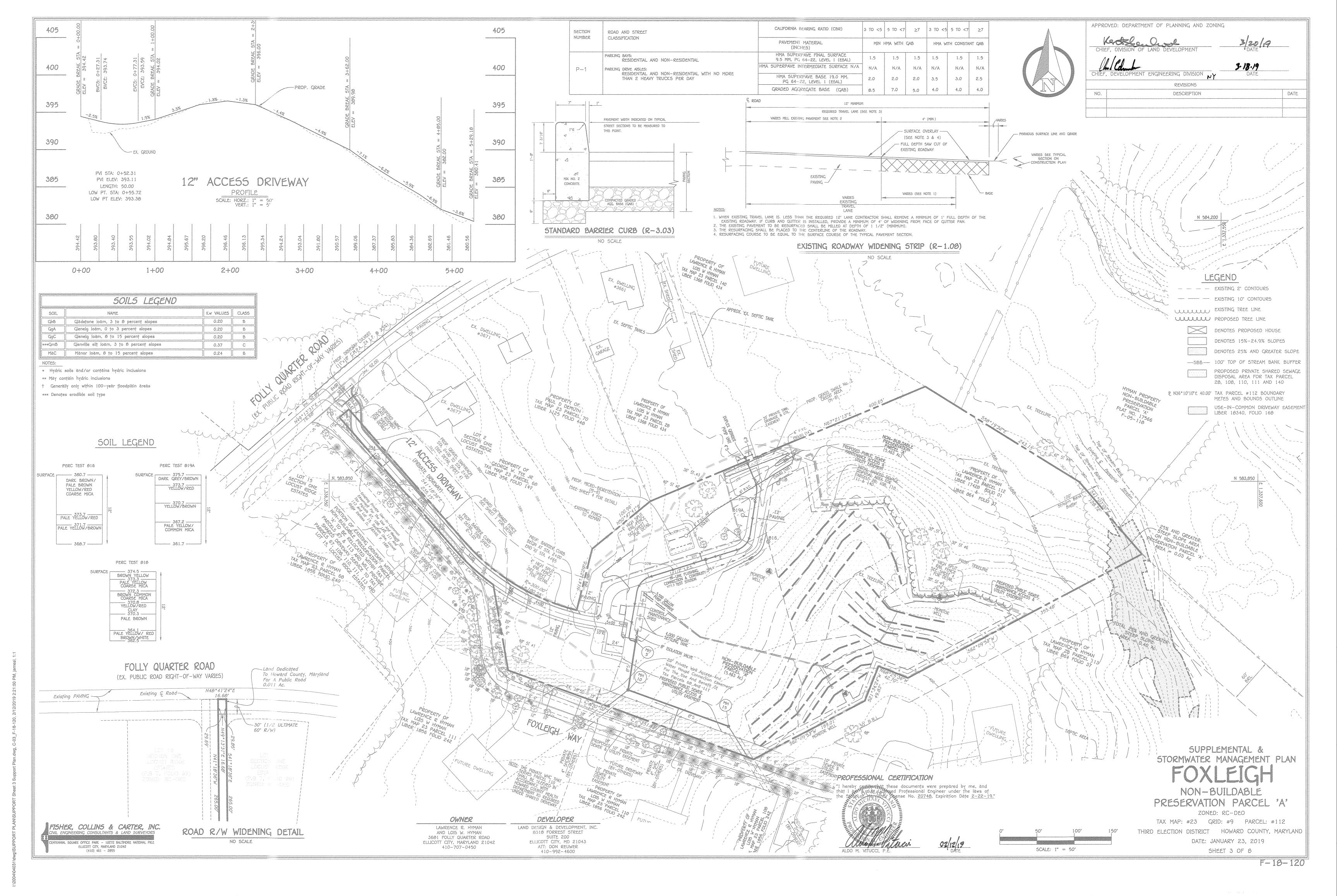
DEVELOPER

OWNER

410-992-4600

F-18-120





When properly planted, vegetation will thrive and enhance the functioning of these systems. For example, pre-treatment buffers will trap sediments that often are bound with phosphorous and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide arteries for stormwater to permeate soil for groundwater recharge. Finally, successful plantings provide desthetic value and wildlife habitat making these

Design Constraints:

facilities more desirable to the public.

> Planting buffer strips of at least 20 feet will cause sediments to settle out before reaching the facility, thereby reducing the possibility of clogging. > Determine areas that will be saturated with water and water table depth so that

appropriate plants may be selected (hydrology will be similar to bioretention facilities, see figure A.5 and Table A.4 for planting material guidance). > Plants known to send down deep taproots should be avoided in systems where filter fabric is

used as part of facility design. > Test soil conditions to determine if soil amendments are necessary.

> Plants shall be located so that access is possible for structure maintenance. > Stabilize heavy flow areas with erosion control mats or sod. > Temporarily divert flows from seeded areas until vegetation is established. > See Table A.5 for additional design considerations.

Bio-retention

Soil Bed Characteristics The characteristics of the soil for the bioretention facility are perhaps as important as the facility location, size, and treatment volume. The soil must be permeable enough to allow runoff to filter through the media, while having characteristics suitable to promote and sustain a robust vegetative cover crop. In addition, much of the nutrient pollutant uptake (nitrogen and phosphorus) is accomplished through absorption and microbial activity within the soil profile. Therefore, soils must balance their chemical and physical properties to support biotic communities above and below ground.

The planting soil should be a sandy loam, loamy sand, loam (USDA), or a loam/sand mix (should contain a minimum 35 to 60% sand, by volume). The clay content for these soils should be less than 25% by volume [Environmental Quality Resources (EQR), 1996; Engineering Technology Inc. and Biohabitats, Inc. (ETAB), 1993]. Soils should fall within the SM, ML, SC classifications or the Unified Soil Classification System (USCS). A permeability of at least 1.0 feet per day (0.5"/hr) is required (a conservative value of 0.5 feet per day is used for design). The soil should be free of stones, stumps, roots, or other woody material over 1" in diameter. Brush or seeds from noxious weeds (e.g., Johnson Grass, Mugwort, Nutsedge, and Canada Thistle or other noxious weeds as specified under COMAR 15.08.01.05.) should not be present in the soils. Placement of the planting soil should be in 12 to 10 lifts that are loosely compacted (tamped lightly with a backhoe bucket or traversed by dozer tracks). The specific characteristics are presented in Table A.3.

### Table A.3 Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate — P205)	75 lbs. per acre, minimum
Potassium (potash -1(K20)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	10 †o 25 %
5ilt	30 to 55 %
Sand	35 †o 60%

The mulch layer plays an important role in the performance of the bioretention system. The mulch läyer helps mäintäin soil moisture änd ävoids surfäce seäling, which reduces permeäbilit Mulch helps prevent erosion, and provides a microenvironment suitable for soil biota at the mulch/soil interface. It also serves as a pretreatment layer, trapping the finer sediments, which remain suspended after the primary pretreatment.

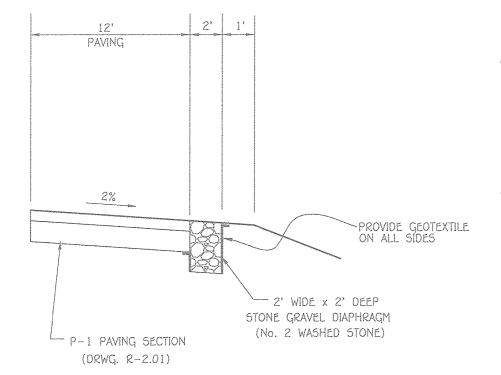
The mulch layer should be standard landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (stockpiled or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to a maximum depth of three inches. Grass clippings should not be used as a mulch material.

# Plantina Guidance

Plant material selection should be based on the goal of simulating a terrestrial forested community of native species. Bioretention simulates an upland-species ecosystem. The community should be dominated by trees, but have a distinct community of understory trees, shrubs and herbaceous materials. By creating a diverse, dense plant cover, a bioretention facility will be able to treat stormwater runoff and withstand urban stresses from insects,

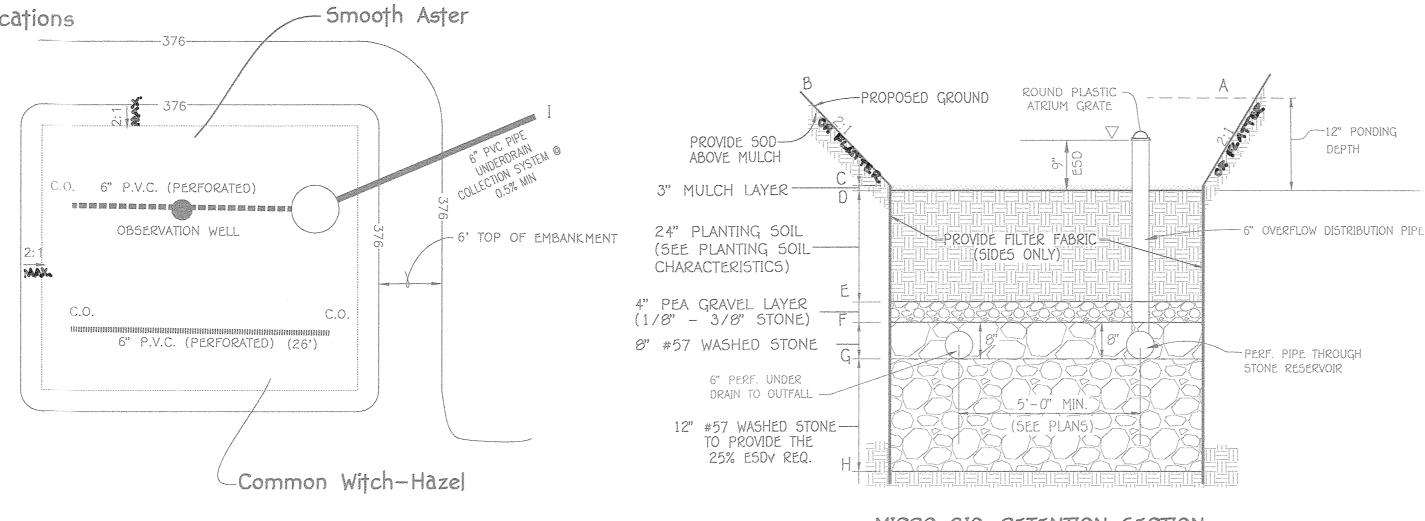
disease, drought, temperature, wind, and exposure. The proper selection and installation of plant materials is key to a successful system. There are essentially three zones within a bioretention facility (Figure A.5). The lowest elevation supports plant species adapted to standing and fluctuating water levels. The middle elevation supports plants that like drier soil conditions, but can still tolerate occasional inundation by

is the highest elevation and generally supports plants adapted to dryer conditions. A sample of appropriate plant materials for bioretention facilities are included in Table A.4. The layout of plant material should be flexible, but should follow the general principals described in Table A.S. The objective is to have a system, which resembles a random, and natural plant layout, while maintaining optimal conditions for plant establishment and growth. For a more extensive bioretention plan, consult ETAB, 1993 or Claytor and Schueler, 1997.



TYPICAL DRIVEWAY SECTION (STA. 0+00 TO STA. 2+00)

FISHER, COLLINS & CARTER, INC. NNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2055



MICRO BIO-RETENTION SECTION WITH 6" OVERFLOW DISTRIBUTION PIPE

INLET (15" NYLOPLAST BASIN) TOP=375.75

). 6" P.V.C. (PERFORATED) (21'.

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.

8318 FORREST STREET

ELLICOTT CITY, MD 21043

ATT: DON REUWER

410-992-4600

OBSERVATION WELL

INV. EL. 372.00

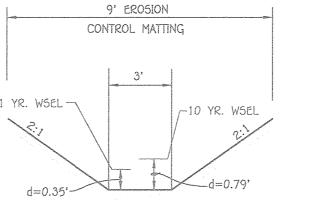
TOP=375.75 INV. EL. 372.00 NO SCALE

MICRO BIO-RETENTION PLANT MATERIAL BOTANICAL NAME QTY. CONT. REMARKS COMMON NAME Aster laevis 'Bluebird' 50 Cont. 18" O.C. 5mooth Aster Hamamelis virginiana 36" O.C. 25 24"-30" ht. Common Witch-Hazel

APPROVED: DEPARTMENT OF PLANNING AND ZONING

REVISIONS DATE DESCRIPTION

MICRO BIO-RETENTION DATA 376.00 376.00 375.25 375.00 373.00 372.67 372.00 371.00 371.5 9' EROSION



 $Q1 = 0.51 \text{ cfs} \quad V = 0.47 \text{ fps}$  $Q10 = 2.19 \text{ cfs} \quad V = 0.75 \text{ fps}$ 

TYPICAL GRASS SWALE SECTION

Operation And Maintenance Schedule For Privately Owned And Maintained

Open Channel Systems Grass Swales And Wet Swales. (M-8)

1. The open channel system shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the facility is functioning properly.

2. The open channel shall be moved a minimum of as needed during the growing season to maintain a maximum grass height of less than 6 inches.

3. Debris and litter shall be removed during regular moving operations and as needed.

4. Visible signs of erosion in the open channel system shall be repaired as soon as it is noticed.

5. Remove silt in the open channel system when it exceeds 25% of the original WQV.

6. Inspect check dams twice a year for structural integrity. Restore check dams to original condition

Operation And Maintenance Schedule For Bio-retention Areas (M-6)

MICRO BIO-RETENTION PLANTING

<u>OETAIL</u>

NOT TO SCALE

each heavy storm.

PAUL D DEMUTH

TAX MAP 23 PARCEL 70

LIBER 1125 FOLIO 448

1. The owner shall maintain the plant material, mulch layer and soil layer annually. maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland stormwater design manual volume II, table A.4.1 and 2.

2. The owner shall perform a plant in the spring and in the fall 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 ans 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 layer is applied. 4. The owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after

C.O.

OWNER

LAWRENCE R. HYMAN

AND LOIS W. HYMAN 3681 FOLLY QUARTER ROAD

ELLICOTT CITY, MARYLAND 21042 410-707-0450

TOP EL. 375.75

INV. EL. 372.10

PROPERTY OF LAWRENCE R HYMAN

6' TOP OF EMBANKMENT

M-6 MICRO BIO-RETENTION DETAIL

INV. EL. 371.4

PROFESSIONAL CERTIFICATION

ese documents were prepared by me, and

ed Professional Engineer under the laws of sense No. 20748, Expiration Date 2-22-19."

LOIS W HYMAN TAX MAP 23 PARCEL 28 LIBER 1368 FOLIO 434 \_\_\_X11\_\_ X --- X --- X →70.8 X -+70.8 DRAINAGE & UTIL. EASEMENT M-8 GRASS SWALE DETAIL TOP EL. 374.00

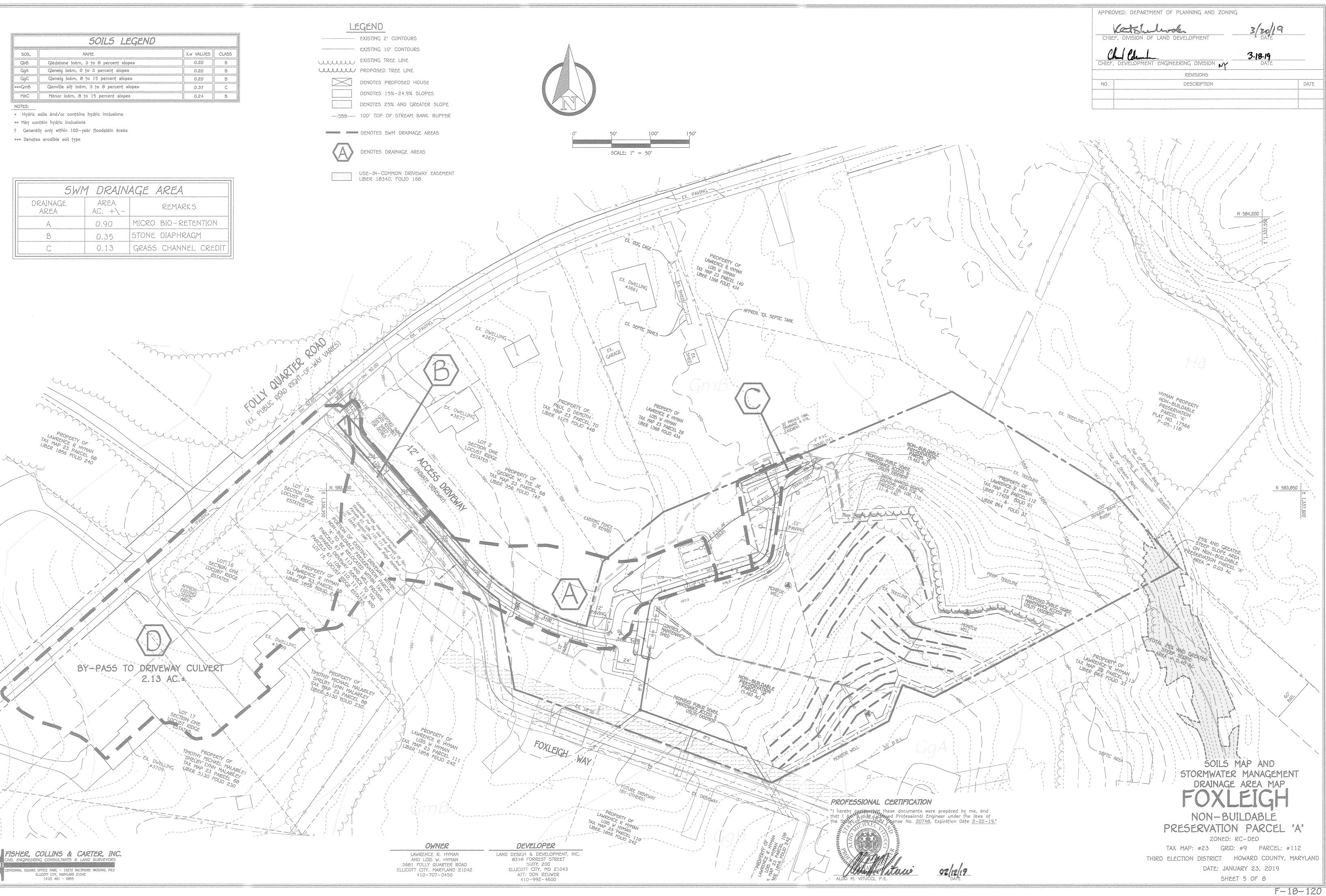
STORMWATER MANAGEMENT NOTES & DETAILS

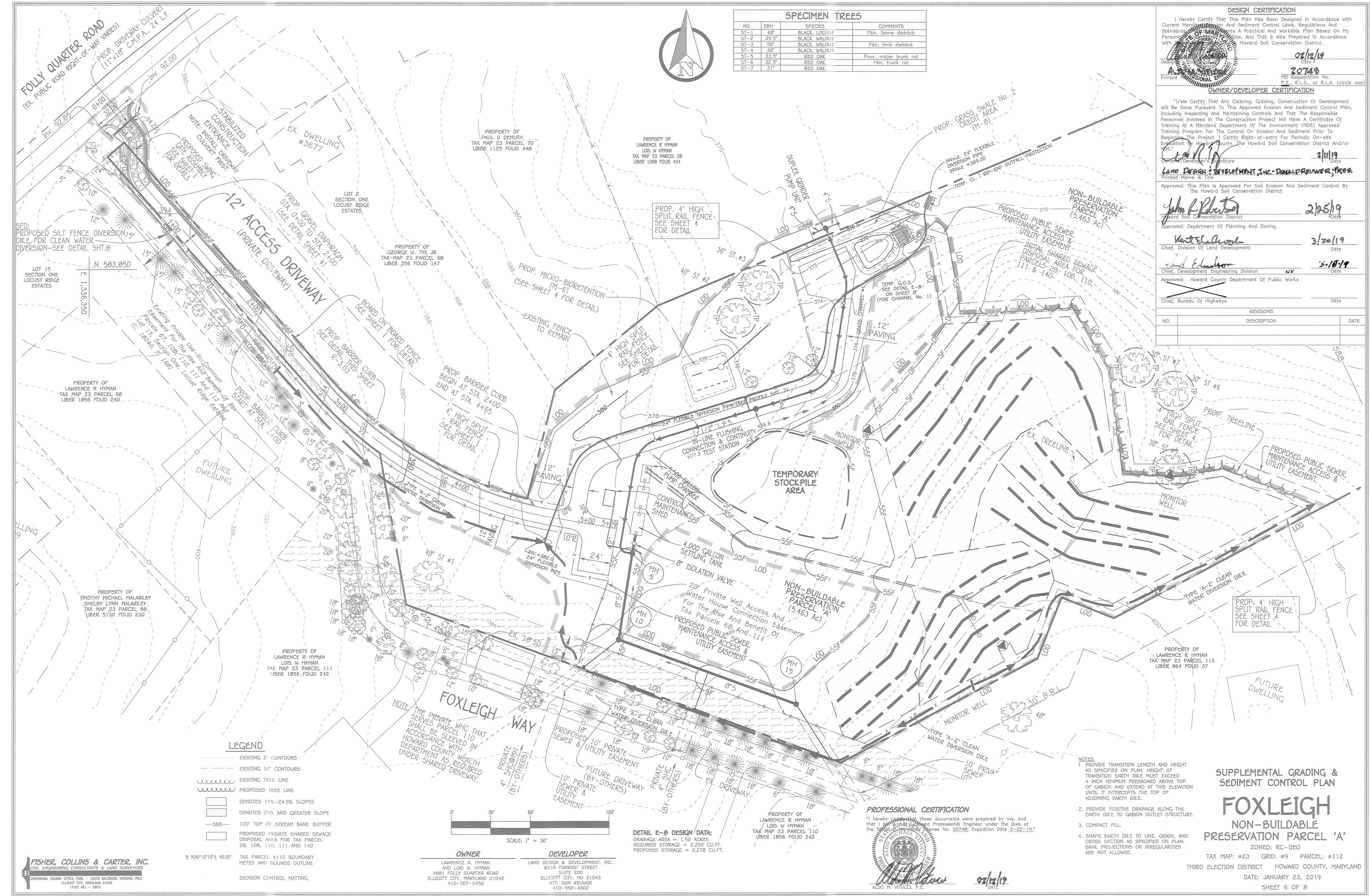
NON-BUILDABLE

PRESERVATION PARCEL 'A' ZONED: RC-DEO

TAX MAP: #23 GRID: #9 PARCEL: #112 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: JANUARY 23, 2019

SHEET 4 OF 8





F-18-120

1. TEMPORARY STABILIZATION

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 DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE

B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER 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 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

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

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

## 8. TOPSOILING

MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

1. 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 CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH. 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-NRCS.

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 FURNISH 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 LOAM) 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 1 1/2 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.

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

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)

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 PPLICATION 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 COOLING LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 90 TO 100 PERCENT WILL PASS THROUGH

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)

STANDARD STABILIZATION NOTE

PRIOR TO THE PLACEMENT OF TOPSOIL.

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST 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

B.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

# PERMANENT SEEDING NOTES (B-4-5)

1. GENERAL USE

A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.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(5), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE

B. 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

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 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 EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 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 EACH 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 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.

N 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: 1 1/2 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

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

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES WESTERN 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 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

NO.5 REBAR-QTY.2

<u>TEMP. 24" FLEX PIPE ANCHOR DETAIL</u>

24" FLEX-PIPE

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.

			rermanent seed	aing summ	ary			
Hardiness Zone (from Figure B.3): <u>6b</u> Seed Mixture (from Table B.3): <u>8</u>			Fertilizer Rate (10-20-20)			Lime Rațe		
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> 0	
8	TALL FESCUE	100	Mar. 1-May 15 Aug. 15-Oct. 15	1/4-1/2 in.	45 lbs. per acre		(2 lb/	(90 lb/
		No. of the control of			(1.0 lb/ 1000 sf)	1000 sf)	1000 sf)	1000 sf)
	Average Averag	d a colored factor		***				

360

# TEMPORARY SEEDING NOTES (B-4-4)

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

TO USE 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.

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B. I FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3). 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 B.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

		Temporary Seedin	g Summary		
	e (from Figure B. from Table B.1):	Fertilizer Rate (10-20-20)	Lime Rațe		
Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
BARLEY	96	3/1 - 5/15.	1"	436  b/ac	2 tons/ac
OAT5	72	8/15 - 10/15	1"	(10 lb/ 1000 sf)	(90 lb/ 1000 sf)
RYE	112		1"		

# B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

MEASURES.

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

# PURPOSE

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS. CONDITIONS WHERE PRACTICE APPLIES STOCKPILE AREAS ARE UTILIZED 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 ON THE EROSION AND SEDIMENT CONTROL PLAN.

2. 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 8-3 LAND GRADING. 3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.

4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE. 5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER

6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE. 7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. 6. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE 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 8-3 LAND

PROPOSED GROUND

### HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1055 after the future LOD and protected areas are marked clearly in the field. A minimum of 40 hour notice to CID must be given at the following stages: a. Prior to the start of earth

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, d. 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.

2. 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 MACYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.

3. 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) calendar days as to all other disturbed areas on the project site except for those areas under active grading. 4. 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-4-0) in excess of 20 ft, must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. 8-4-6).

5. 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.

6. Site Analysis: Total Area of Site: \_\_\_\_\_5.463\_\_\_ Acres \_\_\_\_3.49\_\_\_\_ Acres Area Disturbed: Area to be roofed or paved: \_\_\_\_\_\_ Acres Area to be vegetatively stabilized: 2.47 Acres

Total Cut:

\_\_\_\_3,000\_\_\_ Cu. Yds. Total Fill: Offsite waste/borrow area location: N/A 7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired

on the same day of disturbance. 8. Additional sediment control must be provided, it deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:

\_\_\_\_3,000 Cu. Yds.

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 discharges

 Identification of plan deficiencies
 Identification of sediment controls that require maintenance identification of missing or improperty 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 Stormwäter Associated with Construction Activities (NPDES, MDE). I. 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. 10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by

the HSCD prior to proceeding with construction. Minor revisions may allowed by the HSCD per the list of H5CD-approved field changes. 11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD. Unless otherwise specified and approved by the HSCD, no more than 30 acres cumulatively may be disturbed at a given time.

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.

13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade. 14. All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curied uphill by 2' in elevation 15. Stream channels must not be disturbed during the following restricted time periods

 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 ONTROL, and associated permits shall be on-site and available when the site is active

I Hereby Certify That This Plan Has Been Designed In Accordance With Standards.

Current Maryland Thin, And Sediment Control Laws, Regulations And Represented A Practical And Workable Plan Based On My least to the And That It Was Prepared In Accordance And That It Was Prepared In Accidental Conservation District. 92/12/19

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

WNER/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 The Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Training At A Maryland Department Of The Environment (MDE) Approved Training Broggam For The Control On Erosion And Sediment Prior To Beginning The Project I Certify Right-of-entry For Periodic On-site Evaluation By Howard Dougly, The Howard Soil Conservation District And/or

DESIGN CERTIFICATION

LAND DESIGN & DEVELOPMENT, THE DONALD REUWER PRES. Approved: This Plan Is Approved For Soil Erosion And Sediment Control By The Howard Soil Conservation District.

oproved: Department Of Planning And Zoning

Approved: Howard County Department Of Public Works

Date Chief, Bureau Of Highways **REVISIONS** 

DESCRIPTION DATE

# SEQUENCE OF CONSTRUCTION 1. OBTAIN GRADING PERMIT. (7 DAYS)

AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 48 HOURS BEFORE 3. REQUEST FOR A PRE-CONSTRUCTION MEETING WITH THE

2. NOTIFY 'MISS UTILITY' AT 48 HOURS BEFORE BEGINNING ANY WORK

APPROPRIATE ENFORCEMENT AUTHORITY. (1 DAY)

4. CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF THE SEWER MAINS, LOW PRESSURE SEWER SYSTEM & WASTEWATER TREATMENT SYSTEM. (2 DAYS)

5. INSTALL ALL SEDIMENT CONTROLS PRIOR TO GRADING.

6. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SEDIMENT CONTROLS AS INDICATED ON SHEET 6. INSTALL 24" FLEXIBLE DIVERSION PIPE AS SHOWN ON SHEETS 6 AND 7. PERFORM THE NECESSARY MAINTENANCE FOR THE 24" PIPE ON A DAILY BASIS, ESPECIALLY AFTER A RAINFALL EVENT. THE CONTRACTOR SHALL INSPECT AND PROVIDE THE NECESSARY MAINTENANCE ON ALL SEDIMENT CONTROL DEVICES/PRACTICES ON A DAILY BASIS AND IMMEDIATELY AFTER A RAINFALL. (7 DAY)

7. INSTALL REMAINING PERIMETER CONTROL MEASURES AND INSTALL TEMPORARY SEEDING AS REQUIRED. (1 DAY)

8. CONSTRUCT SEWER MAINS, LOW PRESSURE SEWER SYSTEM, CONNECTIONS & WASTEWATER TREATMENT FACILITIES.

10. APPROVAL OF THE APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO REMOVAL OF SEDIMENT CONTROLS. (1 DAYS)

9. GRADE REMAINDER OF SITE TO GRADING AS SHOWN ON THESE PLANS. (2 DAYS)

11. REMOVAL OF CONTROLS AND STABILIZATION OF AREAS THAT

ARE DISTURBED BY REMOVAL OF SEDIMENT CONTROLS. (7 DAYS)

SEDIMENT CONTROL NOTES & DETAILS

NON-BUILDABLE

PRESERVATION PARCEL 'A' ZONED: RC-DEO

TAX MAP: #23 GRID: #9 PARCEL: #112 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: JANUARY 23, 2019

> SHEET 7 OF 8 F-18-120

FISHER, COLLINS & CARTER, INC. ENGINEERING CONSULTANTS & LAND SURVEYOR INIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2855

OWNER DEVELOPER LAND DESIGN & DEVELOPMENT, INC. LAWRENCE R. HYMAN 8318 FORREST STREET AND LOIS W. HYMAN 3681 FOLLY QUARTER ROAD **SUITE 200** ELLICOTT CITY, MARYLAND 21042 ELLICOTT CITY, MD 21043 ATT: DON REUWER 410-707-0450 410-992-4600

-NO.5 REBAR-QTY.2

-PROPOSED METAI

BAND W/ REBAR

EXISTING GROUND-

PLACED IN FILL AREA

(SEE DETAIL THIS SHEET)

-PROPOSED GROUND

24" TEMPORARY FLEXIBLE PIPE

@ 2.90%

Q10 = 31.40 C.F.S.

V10 = 13.25 C.F.S.

24" FLEXIBLE PIPE PROFILE SCALE: HORZ. 1" = 50"VERT. 1" = 5"

> PROFESSIONAL CERTIFICATION "I hereby continue that these documents were prepared by me, and

385

380

375

370

365

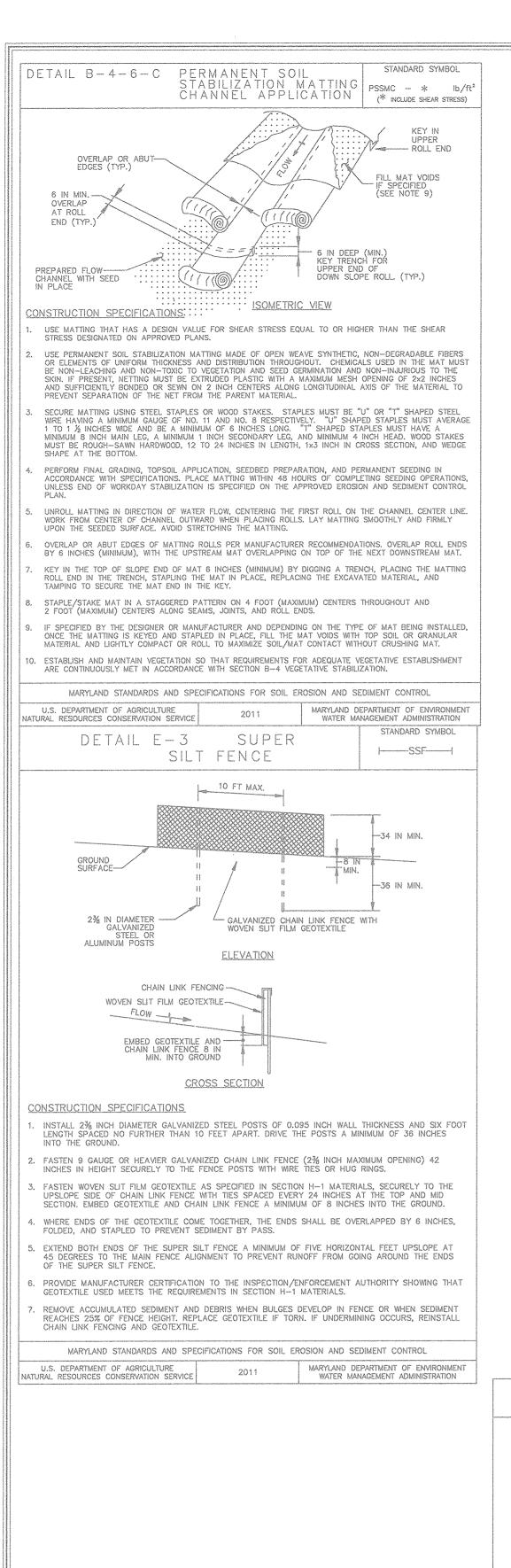
360

ASTA.O' TOW WALL

10' RIP-RAP CHANNEL CL. I

@ 0.00%

and the laws of Marylahd Leense No. 20748, Expiration Date 2-22-19.

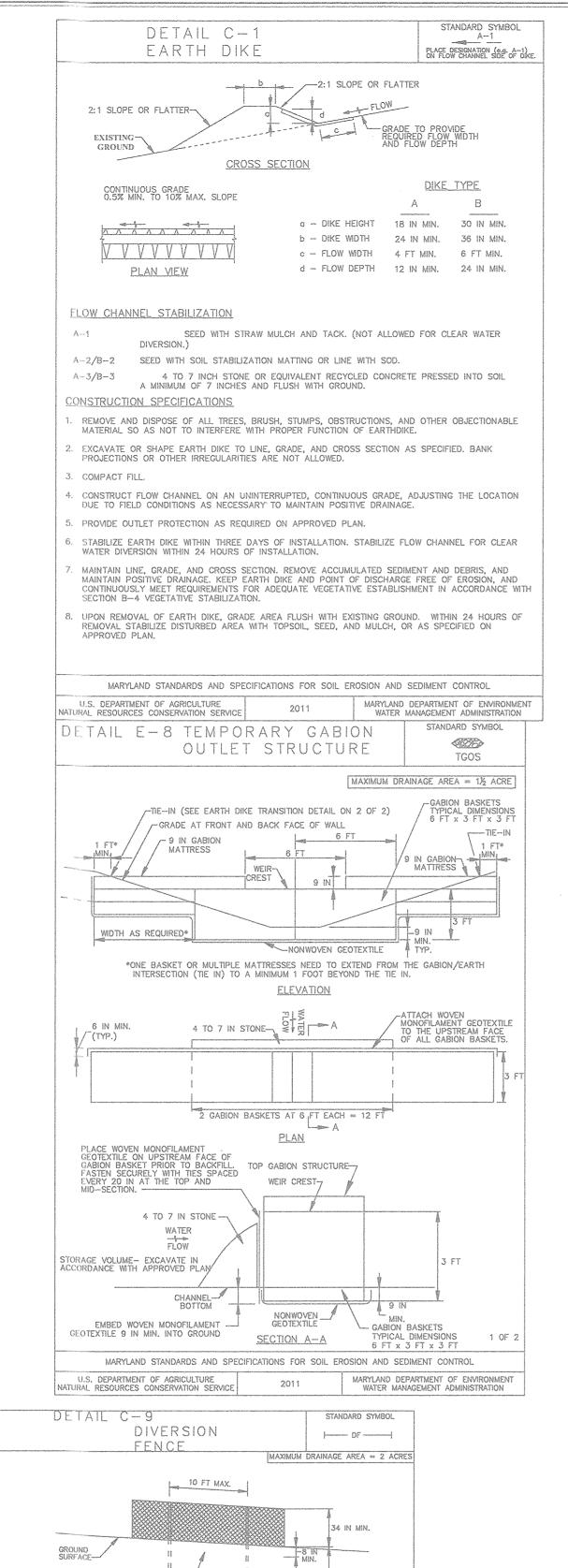


FISHER, COLLINS & CARTER, INC.

ENGINEERING CONSULTANTS & LAND SURVEYORS

NNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE

ELLICOTT CITY, MARYLAND 21042



. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2% INCH MAXIMUM OPENING).

. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.

U.S. DEPARTMENT OF AGRICULTURE JURAL RESOURCES CONSERVATION SERVICE

. USE 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.

SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.

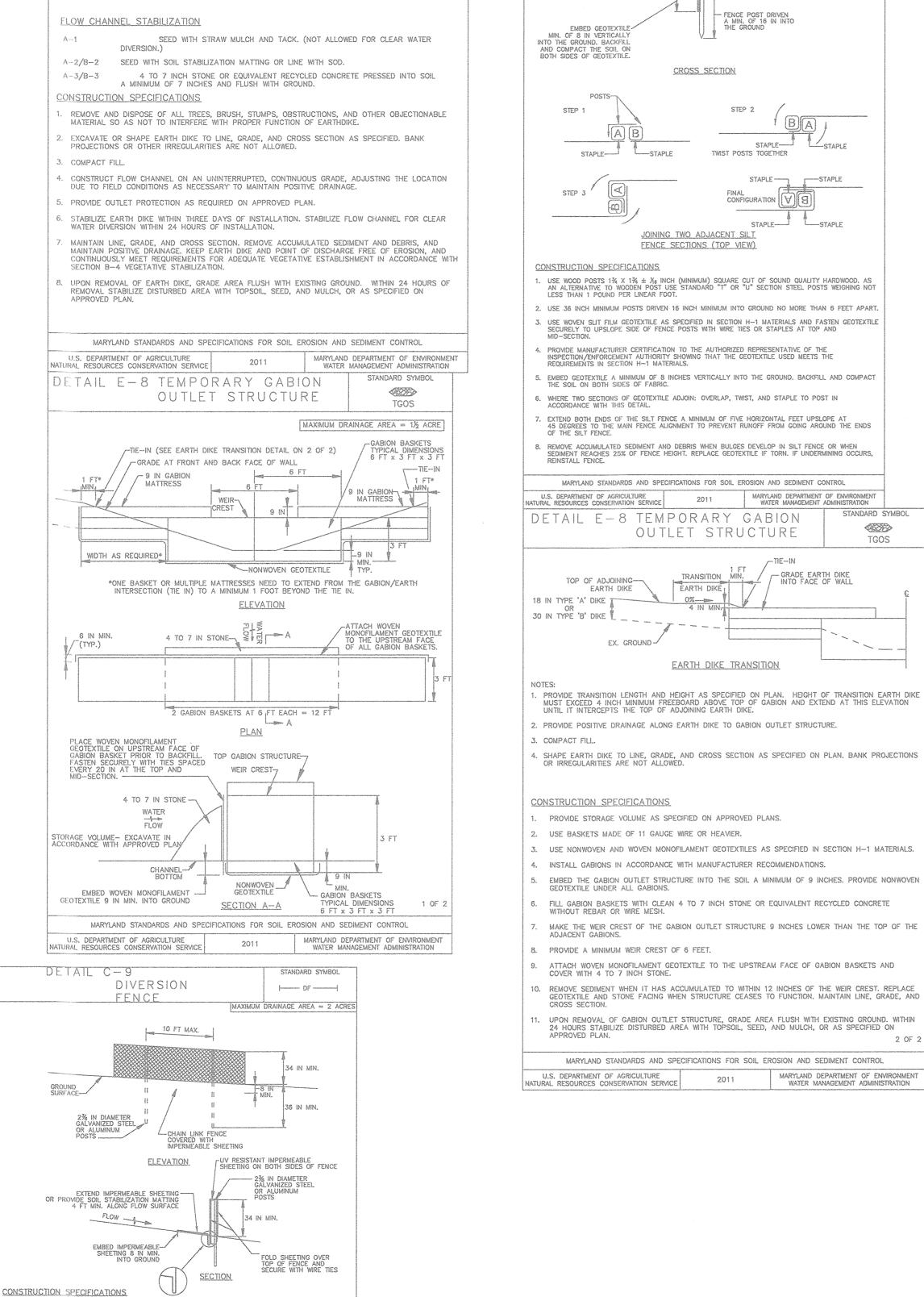
. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.

KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

2011

5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO CROUND, SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.



OWNER

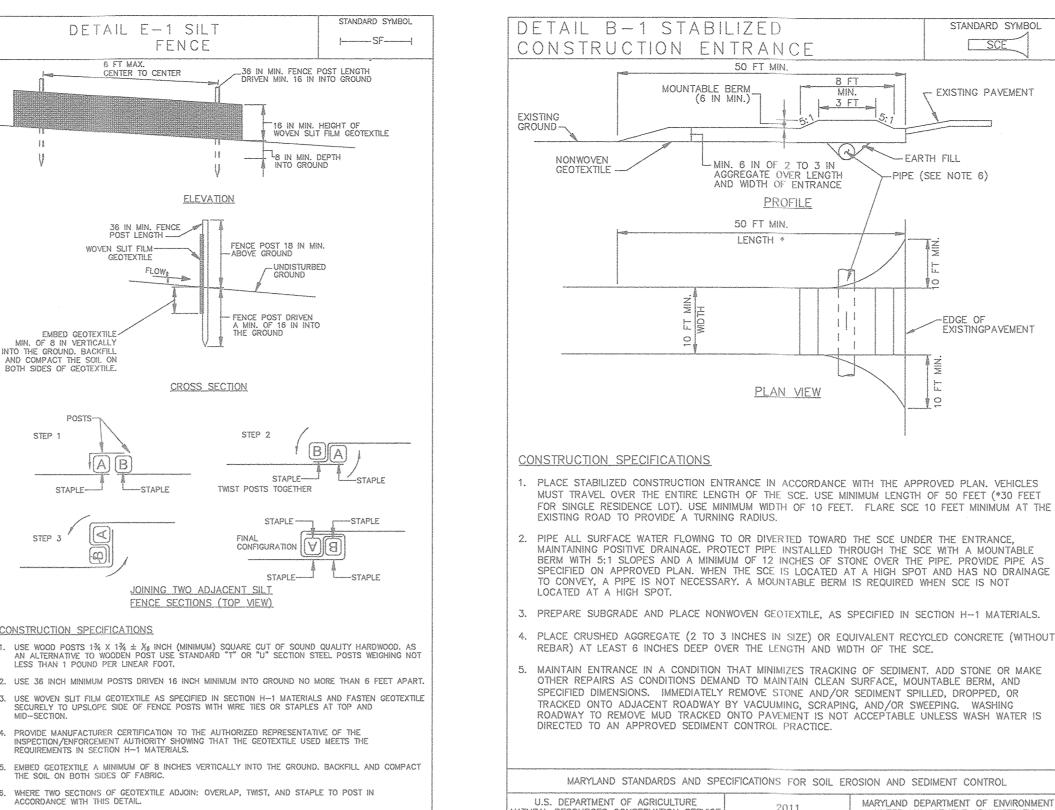
LAWRENCE R. HYMAN

AND LOIS W. HYMAN

410-707-0450

3681 FOLLY QUARTER ROAD

ELLICOTT CITY, MARYLAND 21042



STANDARD SYMBOL

**₹** 

TGOS

2 OF 2

DEVELOPER

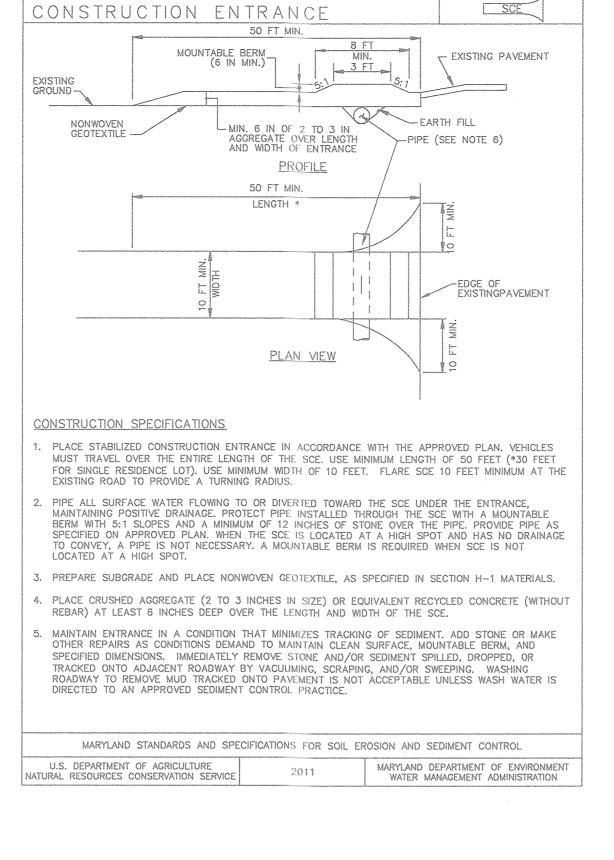
LAND DESIGN & DEVELOPMENT, INC.

8318 FORREST STREET

ELLICOTT CITY, MD 21043

ATT: DON REUWER

410-992-4600



PIPE SLOPE DRAIN

ANCHORS (USE

MANUFACTURERS

AND SPACING)

Table 6 Design Criteria for Pipe Slope Drain

Diameter (D) in

SPECIFICATIONS FOR TYPE

HEIGHT = PIPE DIAMETER X 2 (MAX 4')

NOTE: PIPE SIZE DESIGNATION IS:

Maximum Drainage

0.5

2.5

Ared (Acres)

PSD 12 = PIPE SLOPE DRAIN

WITH A 12" DIAMETER PIPE

- FILTER CLOTH

KEYED-IN

DISCHARGE INTO A

STABILIZED WATER

COURSE, SEDIMENT TRAPPING DEVICE, OF

INTO A STABILIZED ARE AT A NON- EROSIVE

VELOCITY. REF: 18.0 ROCK OUTLET PROTECTION

4' MINIMUM LENGTH AT

LESS THAN 1% SLOPE

P5D-12

P50-18

P50-21

P5D-24 P5D-24 (2) NOT TO SCALE

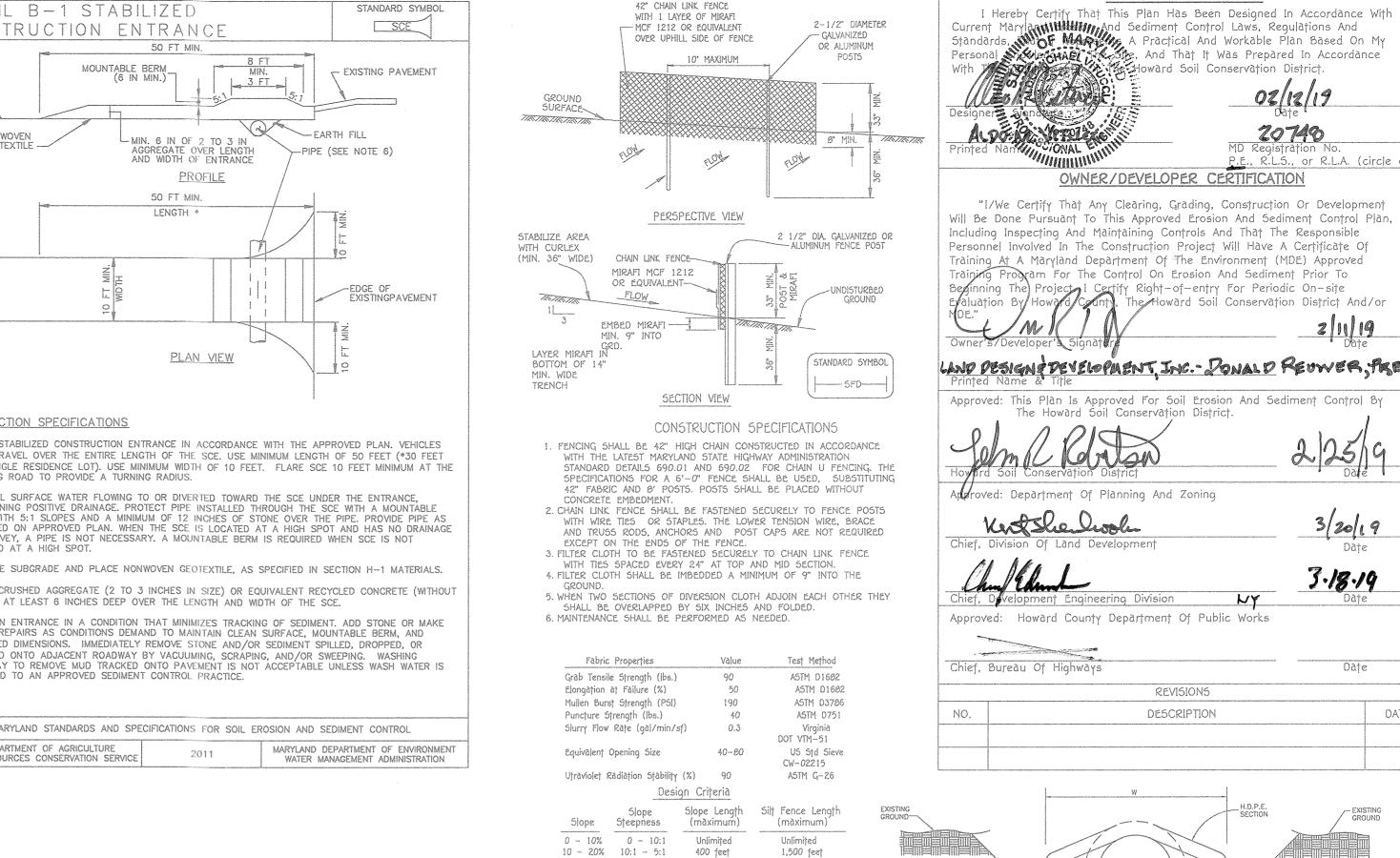
- STANDARD FLARED

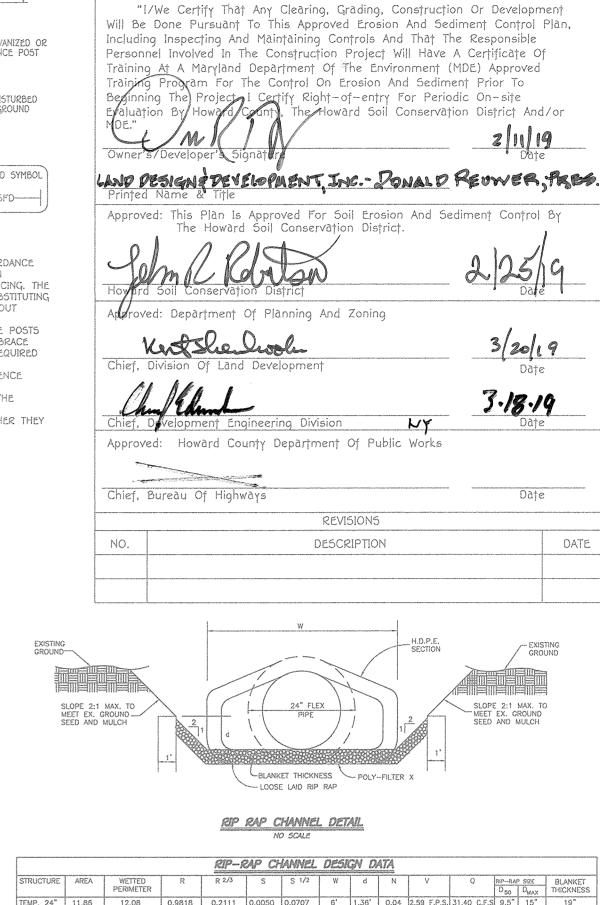
ENTRANCE SECTION

EARTH DIKE

STANDARD SYMBOL

P5D - 12

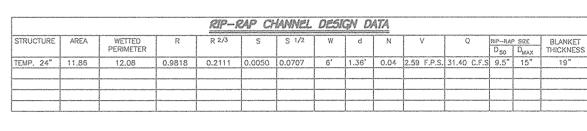




DESIGN CERTIFICATION

20749

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



CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

The rock or gravel shall conform to the specified grading limits when installed respectively in the riprop or filter.

# PIPE SLOPE · DRAIN

Construction Specifications - Pipe Slope Drain

20 - 33% 5:1 - 3:1

50% +

33 - 50% 3:1 - 2:1 200 feet

2:1 +

300 feet

100 feet

NOT TO SCALE

1.000 feet

500 feet

250 feet

1. The Pipe Slope Drain (PSD) shall have a slope of 3 percent

2. The top of the earth dike over the inlet pipe shall be at least 2 times the pipe diameter measured at the invert of the

3. Flexible tubing is preferred. However, corrugated metal pipe or equivalent PVC pipe can be used. All connections

shall be watertight. 4. A flared end section shall be attached to the inlet end of pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall

extend out 5' from the inlet. The filter cloth shall be "keyed in" on all sides. 5. The Pipe Slope Drain shall be securely anchored to the slope by staking at the grommets provided. Spacing for anchors shall be as provided by manufacturer's specification

In no case shall less than two (2) anchors be provided, equally spaced along the length of pipe. These details should be provided by pipe suppliers.

6. The soil around and under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth dike. 7. All pipe connections shall be watertight.

8. Whenever possible where a PSD drains an unstabilized area. it shall outlet into a sediment trap or basin. If this is not possible then the slope drain will discharge into a stable conveyence that leads to a sediment trap or basin. When discharging into a trap or basin the PSD shall discharge at the same elevation as the wet pool elevation. The discharge from the PSD must be as far away from the sediment control outlet às possible.

9. When the drainage area is stabilized, the PSD shall discharge onto a stabilized area at a non-erosive velocity. 10. Inspection and any required maintenance shall be performed periodically and after each rain event. 11. The inlet must be kept open at all times.

3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional shall hale shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot. 4. Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogenous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

SEDIMENT CONTROL

NON-BUILDABLE PRESERVATION PARCEL 'A'

ZONED: RC-DEO TAX MAP: #23 GRID: #9 PARCEL: #112 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: JANUARY 23, 2019

SHEET 8 OF 8

PROFESSIONAL CERTIFICATION



these documents were prepared by me, and A duly Alicensed Professional Engineer under the laws of License No. 20748, Expiration Date 2-22-19.