DESCRIPTION SEDIMENT CONTROL PLAN SEDIMENT AND EROSION CONTROL NOTES & DETAILS STORMWATER MANAGEMENT DETAILS & SOIL BORINGS DRAINAGE AREA & 501L5 MAF TORMWATER MANAGEMENT DETAILS - SAND FILTE TORMWATER MANAGEMENT NOTES - SAND FILTER FOREST CONSERVATION PLAN

-490--- EXISTING CONTOUR 10' INTERVAL -492- PROPOSED CONTOUR 2' INTERVAL -490--- PROPOSED CONTOUR 10' INTERVAL

SUPER SILT FENCE

- DRAINAGE LIMITS

EXISTING TREELINE

人人 | PROPOSED TREELINE

//// PLANTING AREA

LO.D. LIMIT OF DISTURBANCE PROPOSED TREES

SLOPES (25% OR GREATER)

FOREST CONSERVATION SIGN

FISHER, COLLINS & CARTER, INC.

FOREST CONSERVATION EASEMENT

SUPPLEMENTAL PLAN, LANDSCAPE, TOPOGRAPHY, AND STORMWATER MANAGEMENT PLAN

WINTER CREST

BUILDABLE LOTS 1 THRU 8 & OPEN SPACE LOT 9

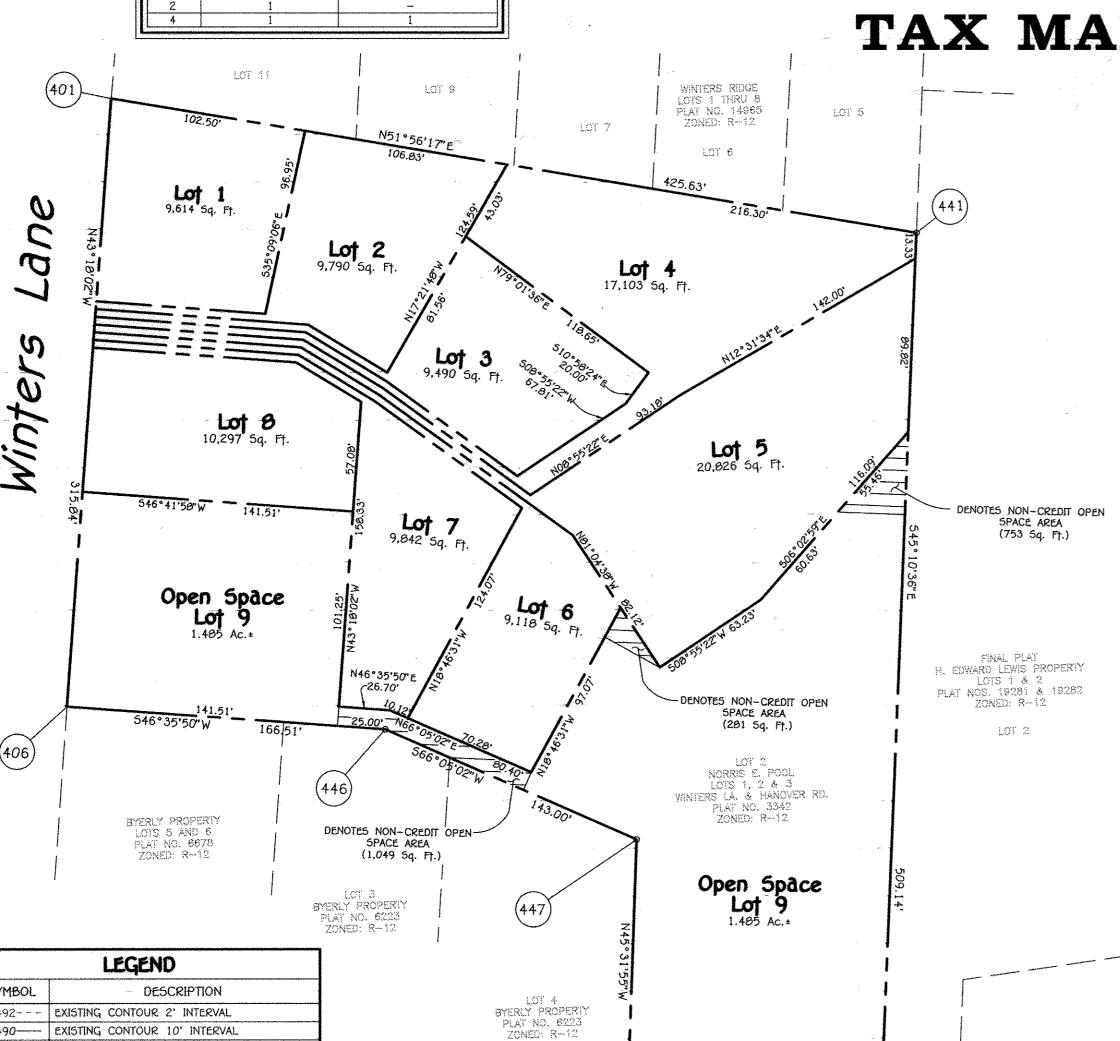
ROADWAY INFORMATION CHART EASEMENT WIDTH USE-IN-COMMON DRIVEWAY

STORMWATER MANAGEMENT PRACTICES

(Being A Resubdivision Of Lot 2, As Shown On A Plat Entitled "Norris E. Pool, Lots 1, 2 & 3, Winters La. & Hanover Rd." Recorded Among The Land Records Of Howard County, Maryland As Plat No. 3342)

ZONING: R-12

TAX MAP No. 38 GRID No. 15 PARCEL No. 868



and To Be Dedicated To

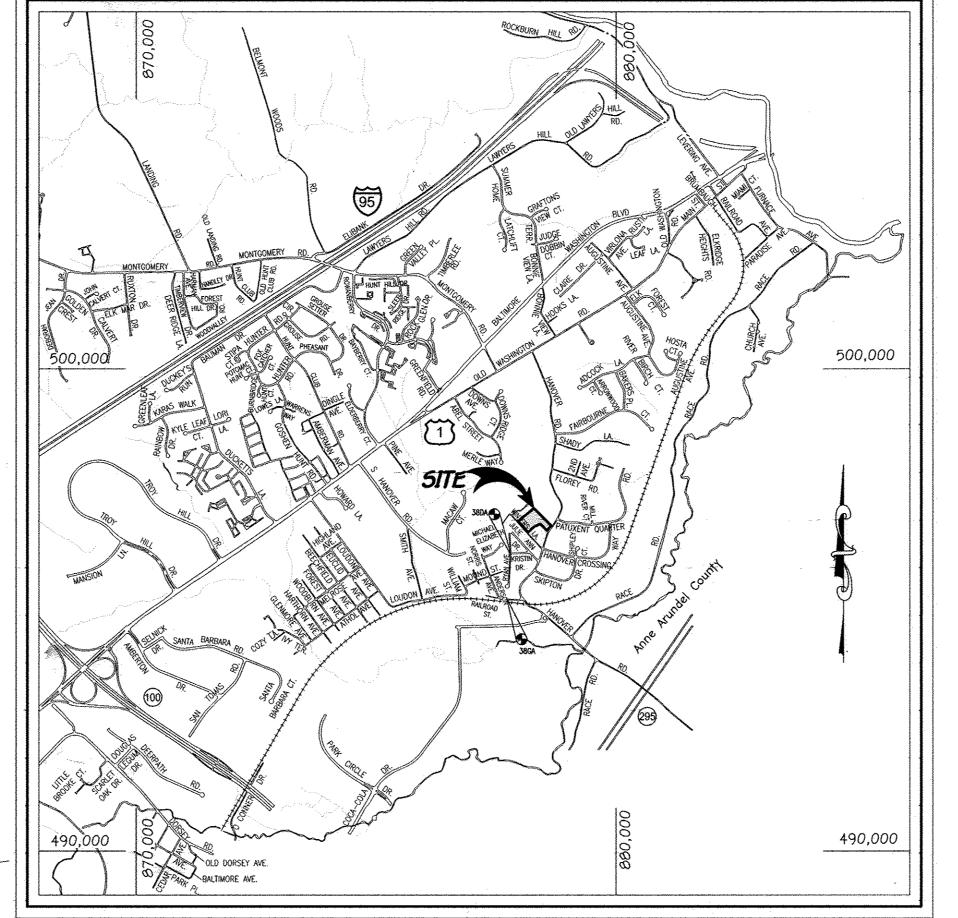
The Purpose Of A Public

Hanover Road

PLAN

SCALE: 1" = 50"

Howard County, Maryland For



VICINITY MAP SCALE: 1" = 2000"

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

	PRIVATE	WELL &	PRIVATE SEPTIC	SYSTEM C	CHART	
PARCEL NO. ADDRESS		ADDRESS	OWNER	ABANDON WELL	ABANDON SEPTIC	
868	6301 WINTERS LANE		WINTERS LANE INVESTMENTS, LLC C/O B JAMES GREENFIELD	N/A	YE5	

ADC MAP No. 17, H9

WATER METERS WILL NOT BE RELEASED BY HOWARD COUNTY TO ANY NEW BUILDING UNTIL THE EXISTING WELLS AND SEPTIC SYSTEMS HAVE BEEN ABANDONED IN ACCORDANCE WITH HOWARD COUNTY HEALTH DEPARTMENT REGULATIONS AND THE EXISTING BUILDINGS ARE CONNECTED TO THE PUBLIC

Owner/Developer Columbia, Maryland 21044

COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.

10/08/12

2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING

hief, Division Of Land Development

hief, Development Engineering Division

4. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF

5. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE

556,796.2929 ELEV. = 126.133

HOWARD COUNTY MONUMENT No. 30GA N 555,097.3157 ELEV. = 00.040 E. 1.390.132.1323

6. SUBJECT PROPERTY ZONED R-12 PER 02-02-04 COMPREHENSIVE ZONING PLAN AND "COMPLITE" AMENDMENTS EFFECTIVE ON 07-28-06

. PARCELS NO. 060 d. ZONING R-12

. GROSS AREA OF TRACT = 3.697 AC.

. NUMBER OF BUILDABLE LOTS: 8 NUMBER OF OPEN SPACE LOTS:

NUMBER OF NON-BUILDABLE BULK PARCELS:

. NUMBER OF NON-BUILDABLE PARCELS: I. AREA OF BUILDABLE LOTS: 2.206 AC+

m. AREA OF OPEN SPACE LOTS: 1.485 AC

. AREA OF ROADWAY TO BE DEDICATED: 0.006 A

PREVIOUS FILE NUMBERS: F-75-018, NORRIS POOL SUBDIVISION, SP-08-003 (APPROVED ON 4/10/08), WP-12-009 & F-12-033 t. AREA OF 25% OR GREATER SLOPES = 0.418 AC.

A). OPEN SPACE REQUIRED = (0,400 SQ.FT. OPTION) = 30% x 3.697 = 1.109 AC.

TOTAL OPEN SPACE PROVIDED = 1.485 AC. C). CREDITED OPEN SPACE PROVIDED = 1.437 AC

NON-CREDITED OPEN SPACE PROVIDED = 0.048 AC E). RECREATIONAL OPEN SPACE REQUIRED = N/A (LESS THAN 10 UNITS)

9. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95%

10. NO NOISE STUDY IS REQUIRED FOR THIS PROJECT 11. PUBLIC WATER AND SEWER SHALL BE UTILIZED WITHIN THIS DEVELOPMENT.

EXISTING UTILITIES ARE BASED ON CONT. Nos. 44-1937 & 10-3041. 12. SOILS INFORMATION TAKEN FROM SOIL MAP No. 34. SOIL SURVEY, HOWARD COUNTY

14. BOUNDARY OUTLINE BASED ON FIELD RUN SURVEY PREPARED BY

15. TOPOGRAPHIC CONTOURS BASED ON FIELD RUN TOPOGRAPHY PREPARED BY

16. 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.

17. STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MARYLAND 378 SPECIFICATIONS. RECHARGE VOLUME WILL BE PROVIDED THROUGH THE USE OF A SURFACE SAND FILTER. WATER QUALITY WILL BE PROVIDED VIA A SURFACE SAND FILTER, ONE (1) BIO-RETENTION FACILITY AND FOUR (4) DRYWELLS. CHANNEL PROTECTION IS NOT REQUIRED SINCE

THE ONE YEAR PEAK DISCHARGE IS LESS THAN 2 c.f.s. THESE FACILITIES ARE PRIVATELY OWNED

OPEN SPACE LOT 9 WILL BE RECORDED SIMULTANEOUSLY WITH THE RECORDATION OF THIS PLAT.

19. THERE ARE NO FLOODPLAIN AND NO WETLANDS LOCATED ON-SITE FOR THIS PROJEC

MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY PROVIDING 0.70 AC. OF ON-SITE RETENTION AND 0.32 AC. OF ON-SITE REFORESTATION. SURETY FOR THE ON-SITE REFORESTATION ◎ \$0.50/SQ.FT. FOR 13,939 SQ.FT. = \$6,970.00 IS REQUIRED. THE BALANCE OF 9.02 ACRES OF FOREST CONSERVATION REQUIRED WILL BE PROVIDED VIA A FEE-IN-LIEU PAYMENT IN THE

22. THE LANDSCAPE SURETY IN THE AMOUNT OF \$7,350.00 FOR PERIMETER LANDSCAPE REQUIREMENTS (10 SHADE TREES AND 13 EVERGREEN TREES) OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL IS POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION.

23. THE FOREST STAND DELINEATION AND WETLAND DELINEATION FOR THIS PROJECT WAS PREPARED BY ESA, INC. DATED JULY, 2007 AND APPROVED. UNDER SP-00-003.

25. 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 ORIVEWAY.

. 27. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED,

SQUARE TUBE SLEEVE (12 GAUGE) — 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST."

29. DRIVEWAY (5) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS: A) WIOTH - 12 FEET (16 FEET IF SERVING MORE THAN ONE RESIDENCE) B) SURFACE — SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING

) STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING)) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE

F) STRUCTURE CLEARANCES - MINIMUM 12 FEET G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE 30. DRIVEWAYS SHALL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-6.06 IN THE VOL. IV DESIGN MANUAL

31. THE OVERHEAD ELECTRIC LINES LOCATED ON OPEN SPACE LOT 9 WILL BE RELOCATED TO AN AREA OUTSIDE THE PROPOSED FOREST CONSERVATION EASEMENT.

PRIOR TO SUBMISSION OF FINAL PLAN ORIGINALS FOR SIGNATURE APPROVAL.

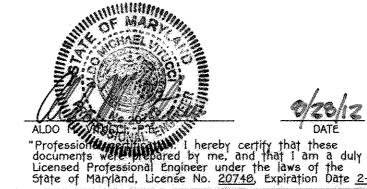
USE—IN—COMMON DRIVEWAY. EACH NUMBER SHALL BE A MINIMUM OF 3" PLAIN BLOCK LETTERING, IN ADDITION, THERE SHALL BE AN ADDRESS SIGN AT THE POINT WHERE EACH INDIVIDUAL DRIVEWAY INTERSECTS WITH THE USE—IN—COMMON DRIVEWAY. 35. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY GEO-TECHNOLOGY ASSOC., INC. DATED MARCH, 2007 AND

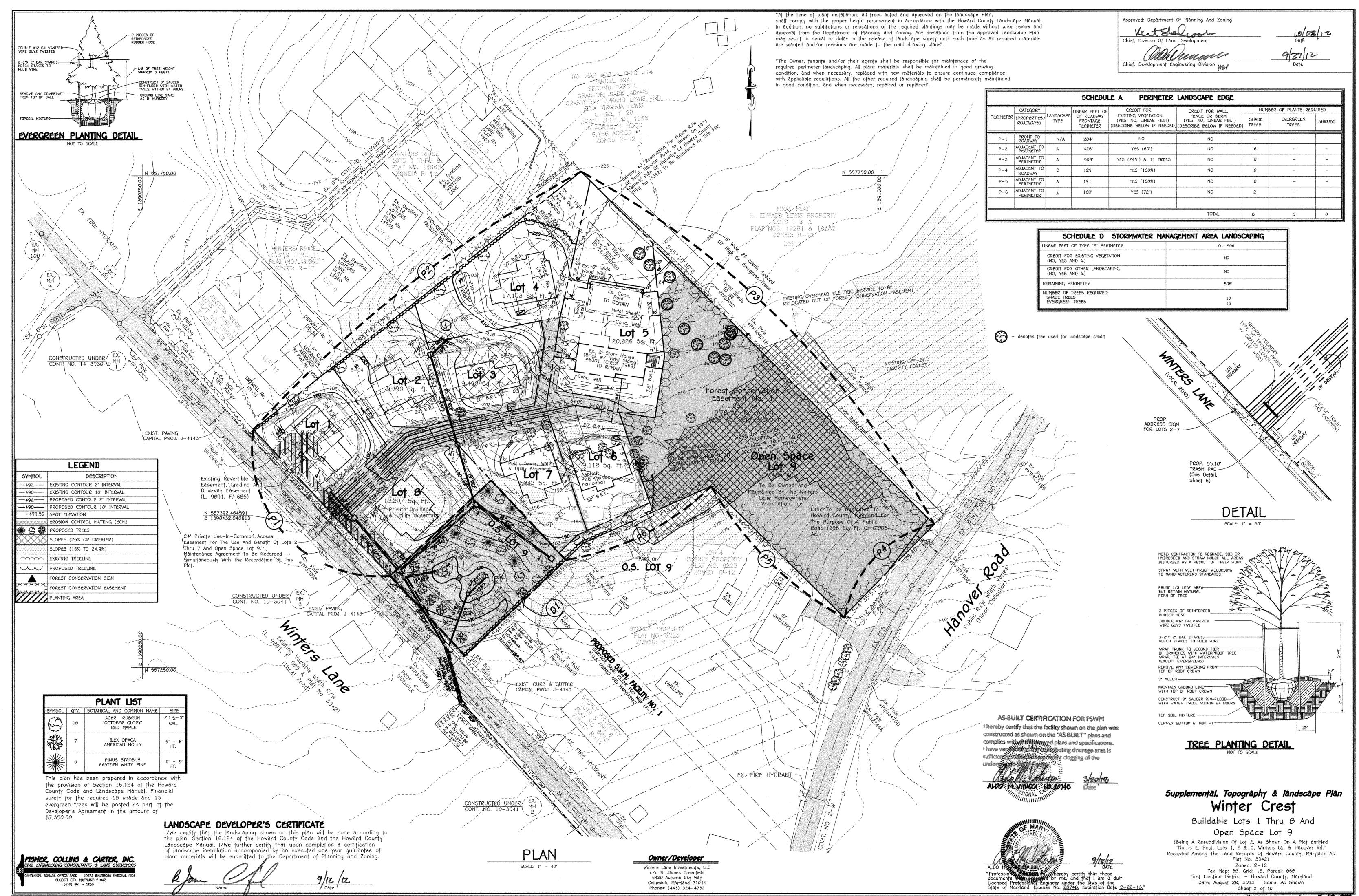
37. THE PRIVATE SEPTIC TO BE PROPERLY ABANDONED PRIOR TO SIGNATURE OF THE FINAL PLAT. THE SEPTIC WILL BE PUMPED COLLAPSED AND FILLED IN. AN AGREEMENT WILL BE RECORDED TO HOLD THE DEVELOPER RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF ALL SEPTIC EASEMENTS THAT EXCEED THE PROPOSED LOT LINE BOUNDARIES ONCE PUBLIC SEWER IS GRANTED.

> Winter Crest Buildable Lots 1 Thru 8 And

Open Space Lot 9 (Being A Resubdivision Of Lot 2, As Shown On A Plat Entitled "Norris E. Pool, Lots 1, 2 & 3, Winters La. & Hanover Rd." Recorded Among The Land Records Of Howard County, Maryland As Plat No. 3342)

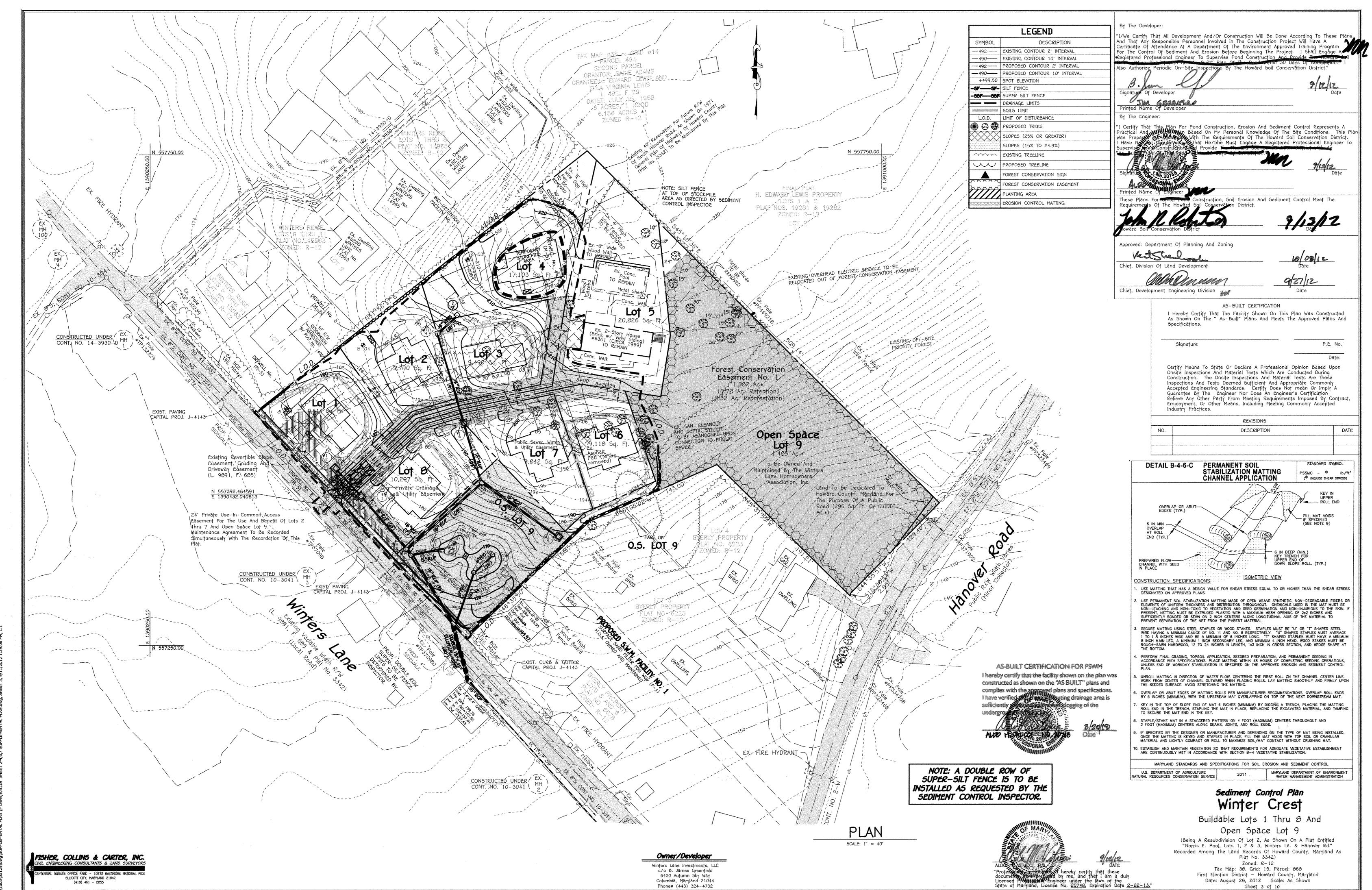
> Zoned: R-12 Tax Map: 38, Grid: 15, Parcel: 868 First Election District - Howard County, Maryland Date: August 28, 2012 Scale: As Shown





"AS-BUILT"

r-12-0



"AG-BUILT" F-12-076

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

- 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
- 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
- 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 results of a soil

e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

8. Topsoiling

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 aradation.

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 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 1 1/2 inches in diameter.

. 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 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 ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
- 4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.

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

PERMANENT SEEDING NOTES (B-4-5)

- A. Seed Mixtures
- 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 B.3) and based on the site condition or purpose found on Table 8.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.

b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or 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 Seeding Summary

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

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.
- Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
- iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

of grasses will pose no difficulty.

seasons, or on adverse sites.

- 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 quarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line
- Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1. August 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

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

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): __6b____ Fertilizer Rate (10-20-20) Lime Rate Seed Mixture (from Table B.3): _____8___

ľ	No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	X	P ₂ O ₅	K ₂ 0	
	B	TALL FESCUE	100	Mar. 1-May 15 Aug. 15-Oct. 15	1/4-1/2 in.	per acre	(2 lb/	90 lb/ac (2 lb/	(90 lb/
						(1.0 lb/ 1000 sf)	1000 sf)	1000 sf)	1000 sf)
		A A A A A A A A A A A A A A A A A A A				and the same of th			

SEDIMENT CONTROL NOTES

- 1) A MINIMUM OF 40 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1055).
- 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 MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL
- EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO. 3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- 5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50). AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. 5) SITE ANALYSIS:

3.697 ACRES

2.27 ACRE5

- TOTAL AREA OF SITE AREA DISTURBED AREA TO BE ROOFED OR PAVED AREA TO BE VEGETATIVELY STABILIZED
- 0.58 ACRES 1.69 ACRES 5.246 CU.Y05. TOTAL CUT TOTAL FILL 1.570 CU.YDS. OFFSITE WASTE/BORROW AREA LOCATION TBD 3,676 CU.YDS.
- 8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF
- 9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. 10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES. APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE
- OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL. APPROVAL BY THE INSPECTION AGENCY IS MADE. 11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING

SEQUENCE OF CONSTRUCTION

- OBTAIN A GRADING PERMIT.
- 2. NOTIFY MISS UTILITY AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 AT LEAST 24 HOURS BEFORE STARTING WORK.
- 3. INSTALL THE STABILIZED CONSTRUCTION ENTRANCE AND PERIMETER SILT FENCE AS SHOWN. (1' DAY)
- 4. UPON COMPLETION OF THE ABOVE WORK RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING.
- 5. CLEAR AND GRUB FOR THE REMAINDER OF THE WORK AREA. (1 DAY)
- 6. GRADE SITE TO PROPOSED SUBGRADE AND INSTALL THE STORM DRAIN SYSTEM ALONG WITH WATER AND SEWER MAINS. INSTALL SUPER-SILT FENCE AROUND I-1, I-3 & I-5 AND INSTALL INLET PROTECTION AT I-2, STABILIZE ALL SLOPES IMMEDIATELY UPON COMPLETION OF GRADING.
- 7. CONSTRUCT THE SURFACE SAND FILTER (S.W.M. FACILITY No. 1). (1 WEEK) BLOCK 12"D FROM M-1 TO 5-1 UNTIL CONTRIBUTING DRAINAGE AREA IS STABILIZED.
- 0. CONSTRUCT THE HOUSES ON LOTS 1-4, 6-0 (0 MONTHS). INSTALL THE PROPOSED BIO-RETENTION FACILITY ON LOT 4 & THE PROPOSED DRYWELLS ON LOTS 1, 2 & 4 AS SHOWN ON THE
- 9. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE SEDIMENT CONTROL DEVICES MAY BE REMOVED AND/OR BACKFILLED AND THE REMAINING AREAS BROUGHT TO FINAL GRADE. UNBLOCK M-1 AND STABILIZE ALL AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES.
- 10. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR FINAL INSPECTION OF THE
- NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON, AFTER EACH RAINFALL AND ON A DAILY BASIS.

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

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. Conditions Where Practice Applies

- 1. This practice 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 of furnish continuing supplies of moisture and plant nutrients.
- The original soil to be vegetated contains material toxic to plant growth . The soil is so acidic that treatment with limestone is not feasible. II. For the purpose of these Standards and Specifications, areas having slopes steeper than 21 require special consideration and design for adequate stabilization. Areas having slopes steeper than 21 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

- I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoll to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in
- cooperation with Maryland Agricultural Experimental Station. II. Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - I. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1172' in diameter
 - II. Topsoll must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson arass, nutsedge, polson lvy, thistle, or others as specified
- III. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tiliage operations as described in the following procedures.
- II. For sites having, disturbed areas under 5 acresi Place topsoll (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials,
- III. For sites having disturbed areas over 5 acres: I. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient line shall be prescribed to raise the pH to 6.5 or higher.
 - b. Organic content of topsoil shall be not less than 1.5 percent by weight.
 - c. Topsoll having soluble salt content greater than 500 parts per million shall not be used. d. No sod or seed shall be placed on soll which has been treated with soll sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of

phyto-toxic materials. Note: 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 tops

II. Place topsoil (If required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section V. Topsoll Application

> I. When top solling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

- II. Grades on the areas to be top solled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
- III. Topsoil shall be uniformly distributed in a 4' 8' layer and lightly compacted to a minimum thickness of 4'. Spreading shall 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 top solling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- iv. Topsoil shall not be placed while 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
- VI. Alternative for Permanent Seeding Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below: I. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5
 - acres shall conform to the following regulrements a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
 - b. Composted sludge shall contain at least I percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to
- iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet,

c. Composted sludge shall be applied at a rate of I ton/1,000 square feet.

References: Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub. #I, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

DUST CONTROL

DEFINITION CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.

PURPOSE

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCE ON AND OFF-SITE DAMAGE, HEALTH HAZARDS AND IMPROVE TRAFFIC SAFETY. CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

<u>SPECIFICATIONS</u>

TEMPORARY METHODS 1. MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING. 2. VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.

3. TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN

- EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF THE SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12" APART, SPRING-TOOTHED HARROWS AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT. 4. IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT, SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST, REPEAT AS NEEDED. AT NO
- TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW. 5. BARRIERS - SOLID BOARD FENCES SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALE DIKES AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN
- CONTROLLING SOIL BLOWING. 6. CALCIUM CHLORIDE - APPLY AT RATES THAT WILL KEEP SURFACE MOIST. MAY NEED

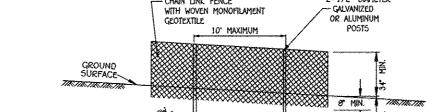
RETREATMENT. PERMANENT METHODS

- 1. PERMENENT VEGETATION SEE STANDARDS FOR PERMANENT VEGETATIVE COVER AND PERMANENT STABILIZATION WITH 50D. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE. 2. TOPSOILING - COVERING WITH LESS EROSIVE SOIL MATERIALS. SEE STANDARDS
- FOR TOPSOILING 3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL

Owner/Developer

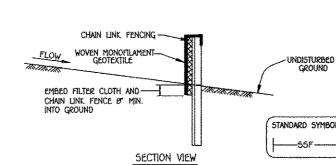
Winters Lane Investments, LLC

c/o B. James Greenfield 6420 Autumn 5ky Way Columbia, Maryland 21044 Phone# (443) 324-4732



2 3/8" DIA. GALVANIZED STEEL OR ALUMINUM FENCE POST

ROM



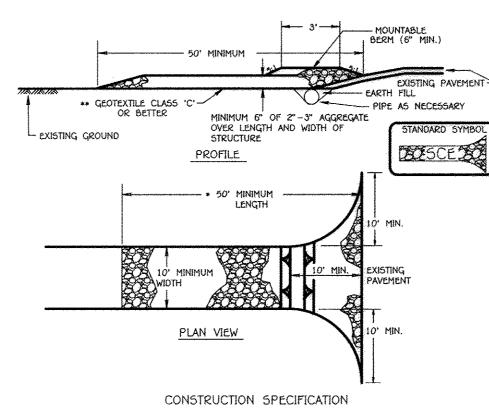
PERSPECTIVE VIEW

CONSTRUCTION SPECIFICATIONS . INSTALL 2 3/8" DIAMETER GALVANIZED STEEL OR ALUMINUM POSTS 51X FEET IN LENGTH, PLACED NO FURTHER THAN 10 FEET APART. DRIVE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND. riiniinum of 36 inches inio ine ground. . Fasten minimum 9 gauge Chain Link Fence (2 3/8° max. Diamond. 2 inches in Height Securely to the Fence Posts with wire ties FASTEN WOVEN MONOFILAMENT GEOTEXTILE AS SPECIFIED IN SECTION I-1 MATERIALS, SECURELY TO THE CHAIN LINK WITH TIES SPACED EVER 24 INCHES AT THE TOP AND MID SECTION, EMBED GEOTEXTILE AND CHAI LINK FENCE A MINIMUM OF & INCHES INTO THE GROUND.

4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BYPASS. S. REMOVE ACCUMULATED SEDIMENTS WHEN "BUILDES" DEVELOR IN THE SILT FENCE, OR WHEN SEDIMENTS REACH 25% OF THE FENCE HEIGHT. 6. EXTEND BOTH ENDS OF THE SUPER-SILT FENCE A MINIMUM OF 5 FEET runoff from going around the ends of the super-silt fence . PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS SET FORTH IN THE MATERIALS SPECIFICATION INSPECT AND PROVIDE NECESSARY MAINTENANCE PERIODICALLY AND



NOT TO SCALE



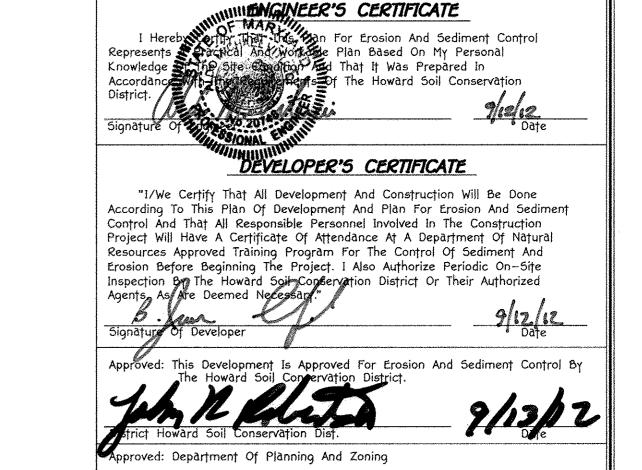
LENGTH - MINIMUM OF SO' (+30' FOR SINGLE RESIDENCE LOT) WIDTH - 10' MINIMUM, SHOULD BY FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING 4. STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE. 5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOLINITARIE BERM WITH 5-1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE, PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED. 6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE

STABILIZED CONSTRUCTION ENTRANCE

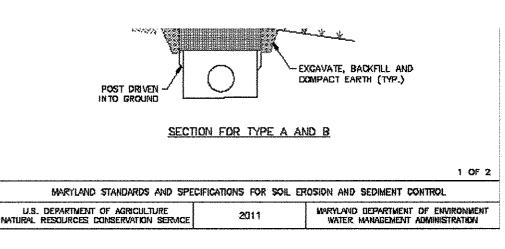
CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST

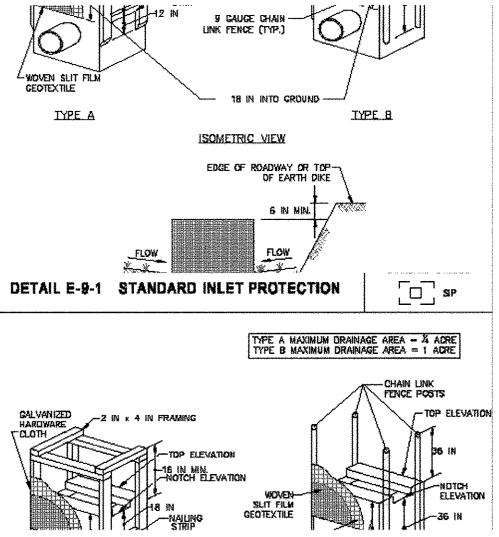
NOT TO SCALE

TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE



10/00/12







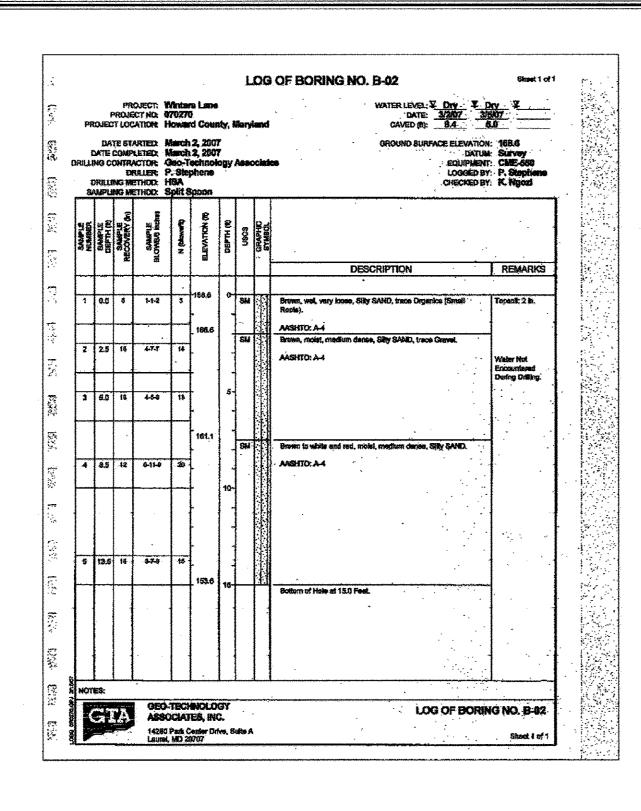
Licensed Professional Engineer under the laws of the State of Maryland, License No. 20740, Expiration Date 2-22-13.

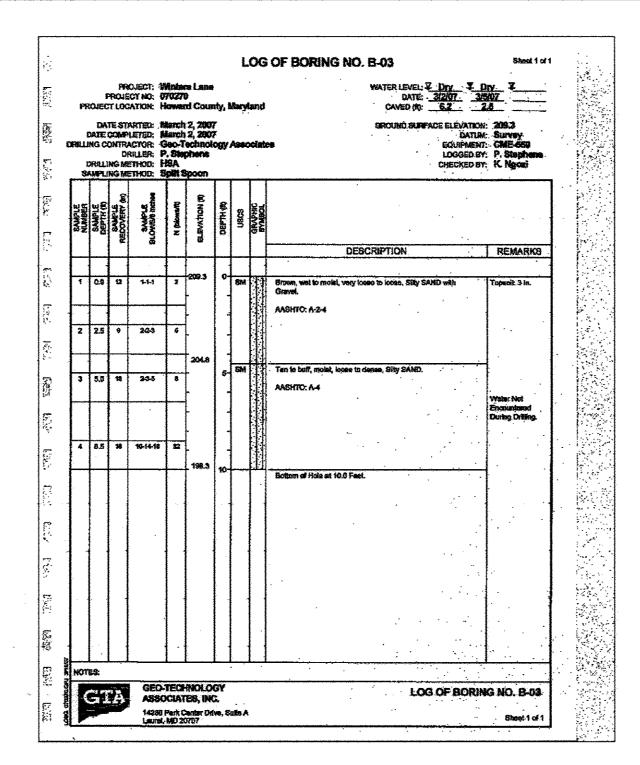


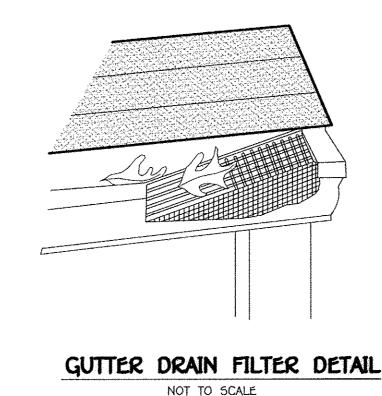
Buildable Lots 1 Thru 8 And Open Space Lot 9 (Being A Resubdivision Of Lot 2, As Shown On A Plat Entitled "Norris E. Pool, Lots 1, 2 & 3, Winters La. & Hanover Rd." Recorded Among The Land Records Of Howard County, Maryland As

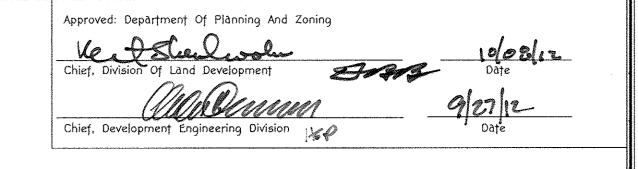
Zoned: R-12 Tax Map: 38. Grid: 15. Parcel: 868 First Election District - Howard County, Maryland Date: August 20, 2012 Scale: As Shown

Plat No. 3342)







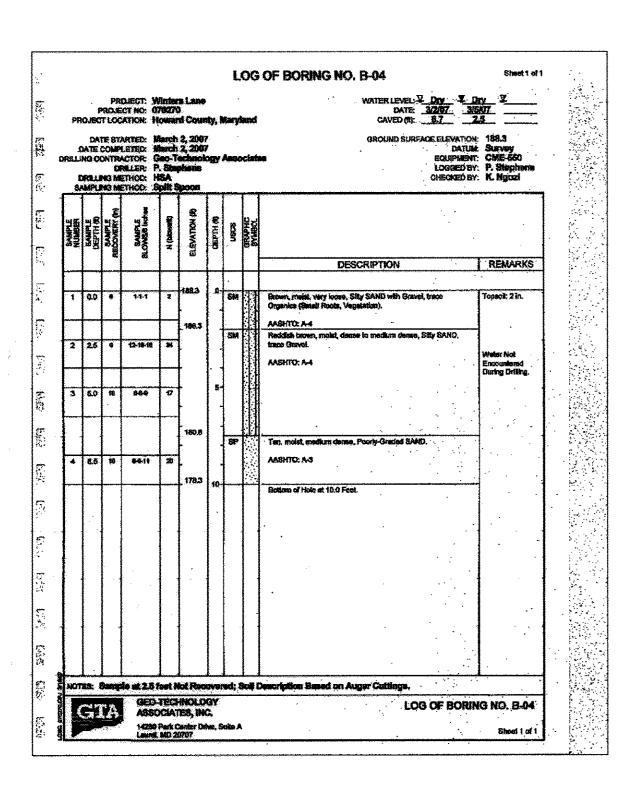


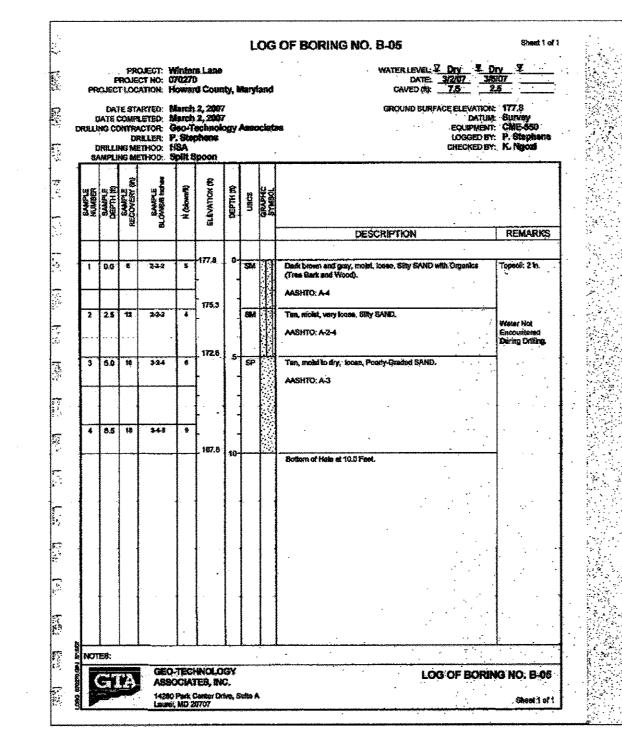
Operation and Maintenance Schedule for Drywells (M-5)

- a. The owner shall inspect the monitoring wells and structures on a quarterly basis and after every
- b. The owner shall record the water levels and sediment build up in the monitoring wells over a period
- c. The owner shall maintain a log book to determine the rate at which the facility drains.

of several days to insure trench drainage.

- d. When the facility becomes clogged so that it does not drain down within a seventy two (72) hour time period, corrective action shall be taken.
- e. The maintenance log book shall be available to Howard County for inspection to insure compliance
- with operation and maintenance criteria.
- f. 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.





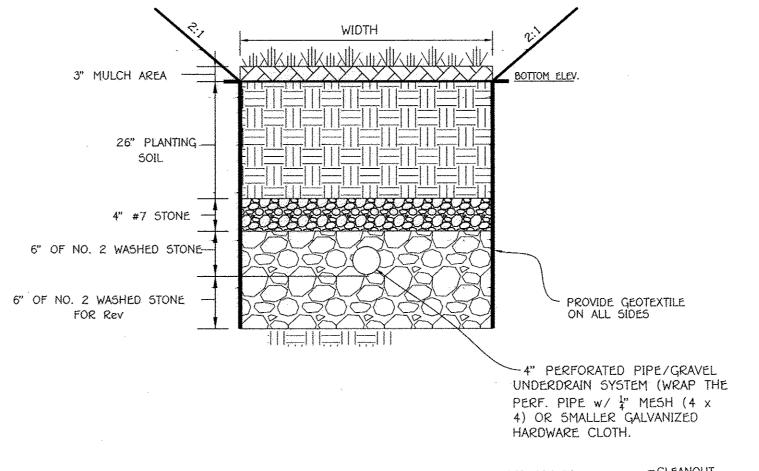
Operation and Maintenance Schedule for Micro Bio-Retention Areas (M-6)

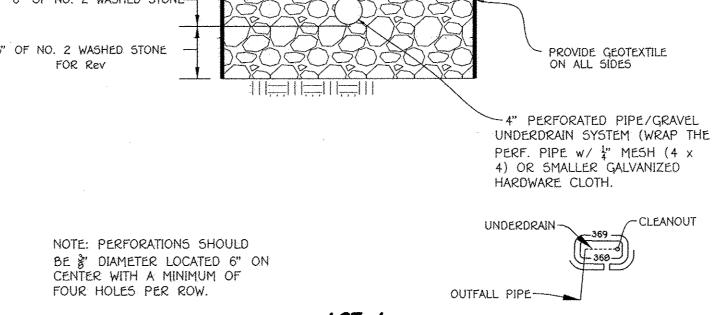
1. The owner shall maintain the plant material, mulch layer and soil layer annually. maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance 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 wires.

3. The owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.

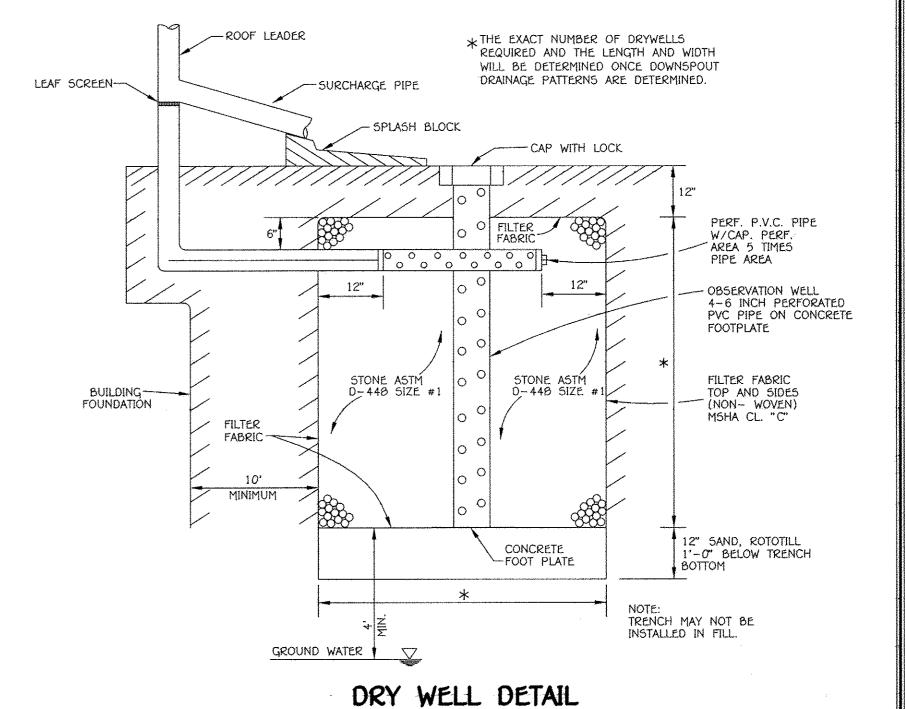
4. The owner shall correct soil erosion on an as needed basis, with a minimum of once per month





LOT 4 STD. SYMBOL MICRO BIO-RETENTION (M-6) DETAIL NO SCALE

	1	MILKU	PIO-	-Keien	ITION DATA	
LOT NO.	NO.	LENGTH	WIDTH	воттом	UNDERDRAIN INV.	OUTFALL INV.
D) NO.	110.	CLIGITI	110717	208.0	205.0	204.0



NOT TO SCALE

		DRY W	ELL CH	IART					
OT NO.	NO. OF DOWNSPOUTS	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	AREA OF STORAGE	AREA OF TREATMENT	NO. OF DRYWELLS	*0	L	W
LOT 1	4	424 SF, 423 SF, 491 SF, 222 SF	125 CF	100%	100%	2	6.5'	x 8'	x' 4'
LOT 2	2	410 SF, 420 SF	67 CF	100%	100%	1	6.5'	х <i>8</i> '	x 4'

STORMWATER MANAGEMENT NOTES

490 SF, 490 SF | 80 CF | 100% | 100% | 1 | 6.5' x 8' x 4'

- 1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE 2000 MARYLAND STORMWATER DESIGN MANUAL 2. CREDITS ARE GIVEN FOR DISCONNECTION OF IMPERVIOUS
- 3. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH
- DOWNSPOUT SHALL BE LESS THAN 500 SQ. FT. 4. DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE
- LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE FIGURE 5.2 OF THE MANUAL AND
- THE DETAIL SHOWN ON THIS SHEET. 5. FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN

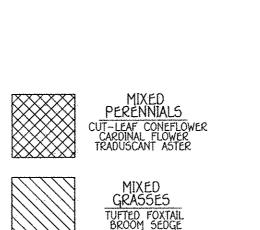


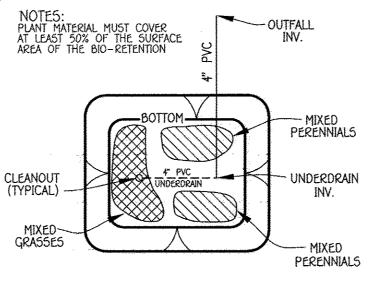
Stormwater Management Details & Soil Borings Winter Crest

Buildable Lots 1 Thru 8 And Open Space Lot 9

(Being A Resubdivision Of Lot 2, As Shown On A Plat Entitled "Norris E. Pool, Lots 1, 2 & 3, Winters La. & Hanover Rd." Recorded Among The Land Records Of Howard County, Maryland As Plat No. 3342)

Zoned: R-12 Tax Map: 38, Grid: 15, Parcel: 868 First Election District - Howard County, Maryland Date: August 28, 2012 Scale: As Shown





PLANT MATERIAL-BIO-RETENTION FILTER No. 1

MIXED PERENNIALS

MIXED GRASSES

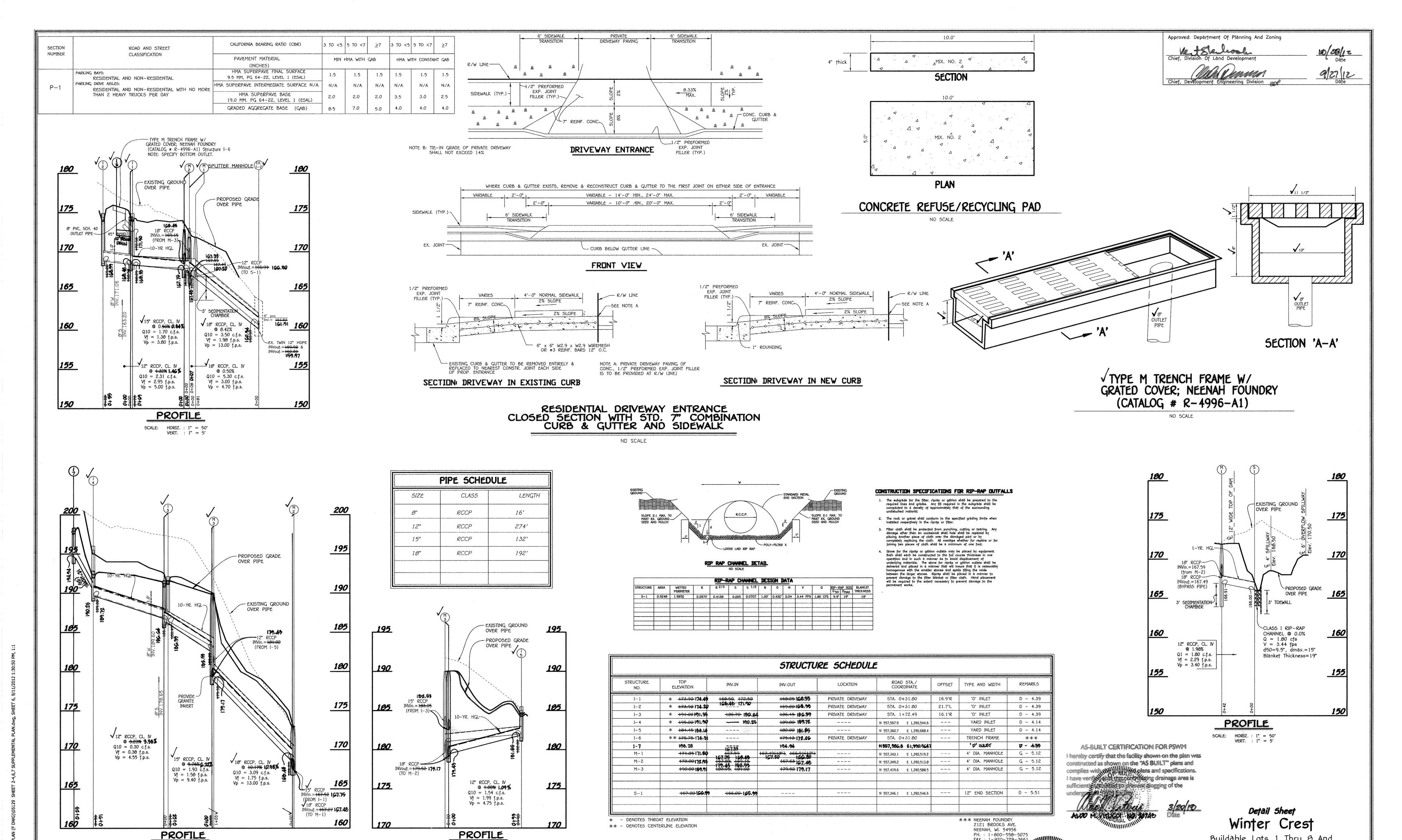
MAXIMUM SPACING (FT.)

1 FT.

BIO-RETENTION FILTER PLANTING DETAIL

Owner/Developer Winters Lane Investments, LLC c/o B. James-Greenfield 6420 Autumn Sky Way Columbia, Maryland 21044

Phone# (443) 324-4732



FISHER, COLLINS & CARTER, INC. VIL ENGINEERING CONSULTANTS & LAND SURVEYORS ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2855

SCALE: HORIZ. : 1" = 50"

VERT. : 1" = 5'

Owner/Developer Winters Lane Investments, LLC

6420 Autumn Sky Way

Columbia, Maryland 21044

Phone# (443) 324-4732

SCALE:

HORIZ. : 1" = 50"

VERT. : 1" = 5"

PH.: 1-800-558-5075

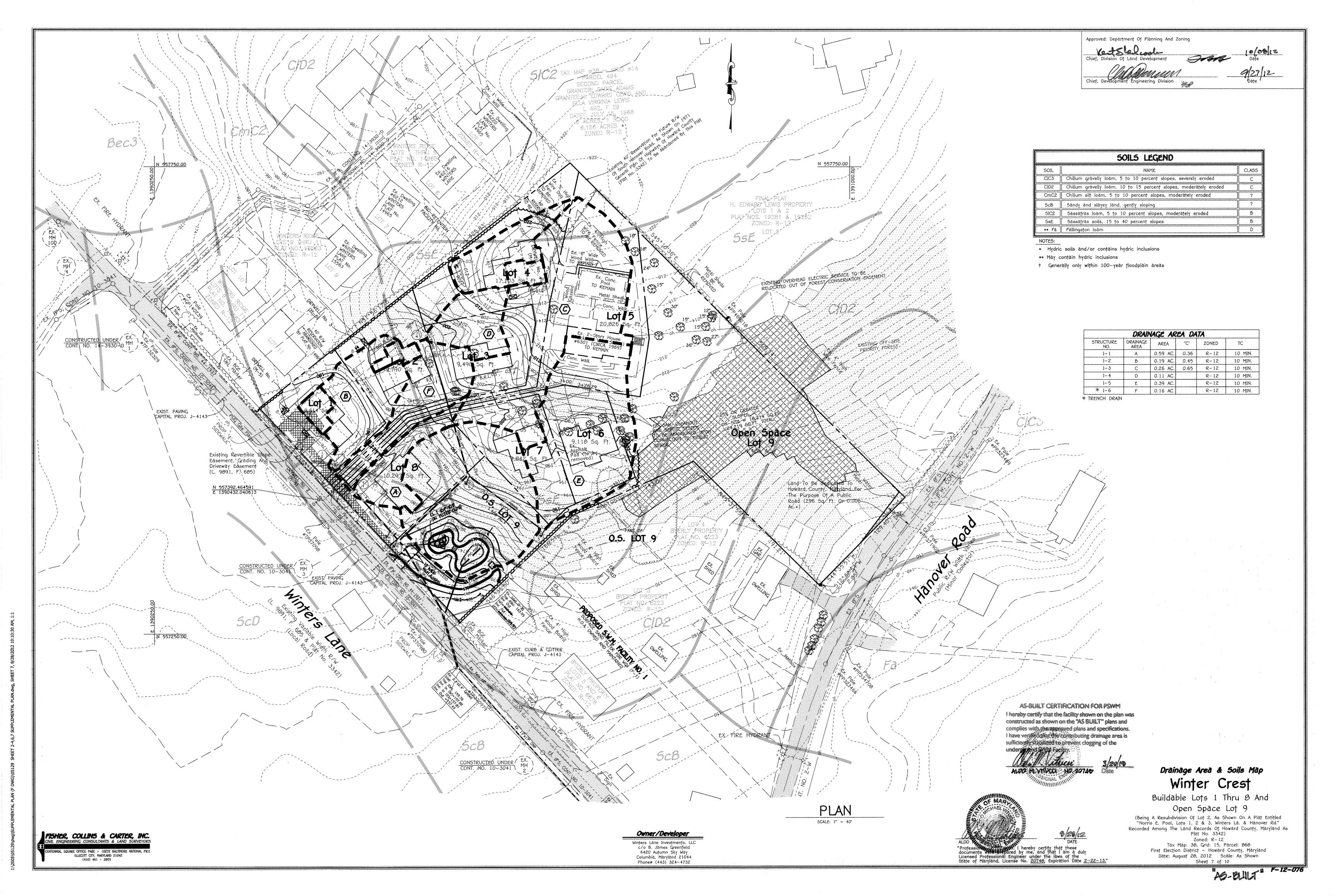
FAX: 1-920-729-3661

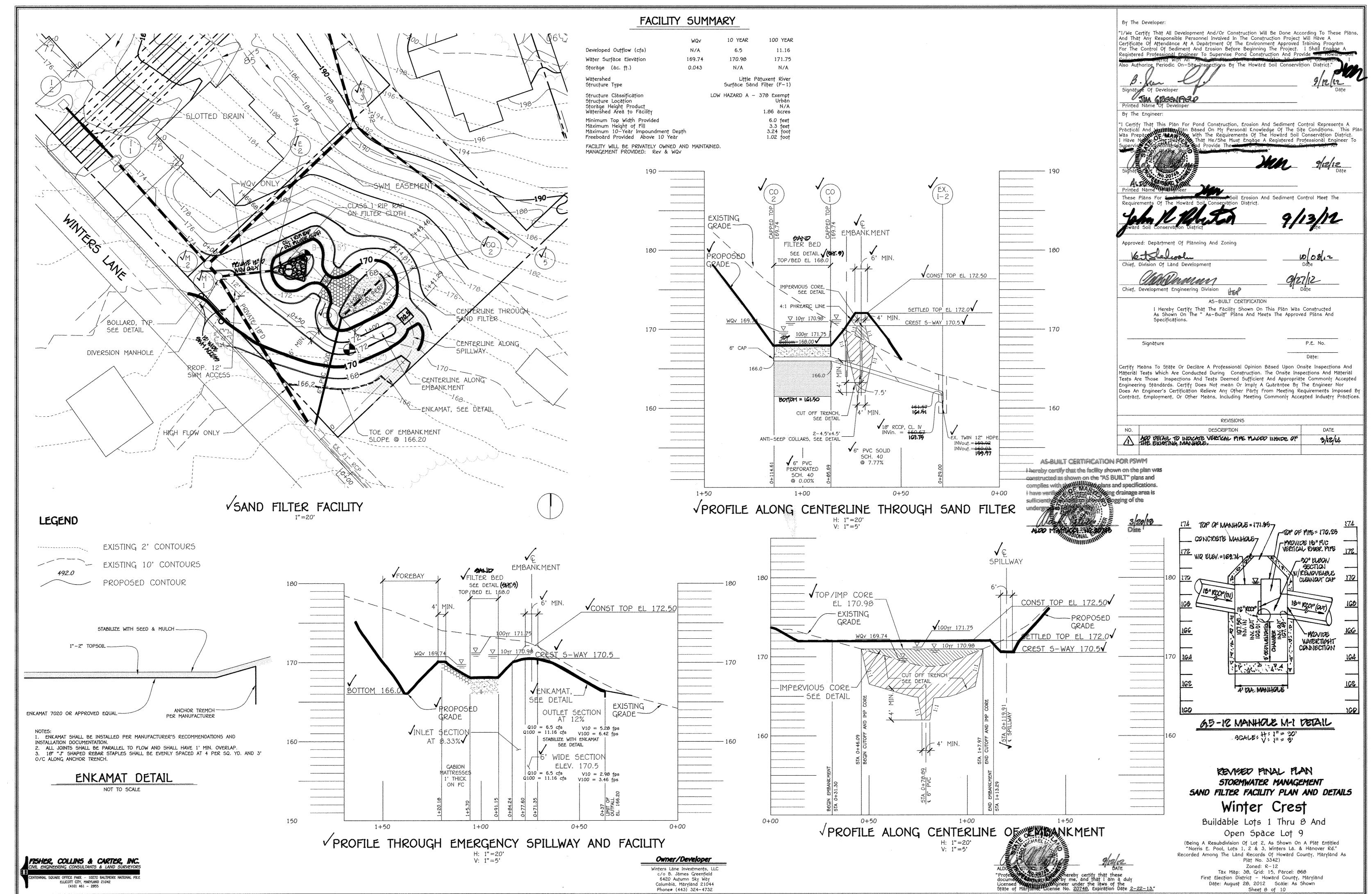
Licensed Professional Engineer under the laws of the State of Maryland, License No. 20740, Expiration Date 2-22-13.

Buildable Lots 1 Thru 8 And Open Space Lot 9 (Being A Resubdivision Of Lot 2, As Shown On A Plat Entitled "Norris E. Pool, Lots 1, 2 & 3, Winters La. & Hanover Rd." Recorded Among The Land Records Of Howard County, Maryland As Plat No. 3342) Zoned: R-12

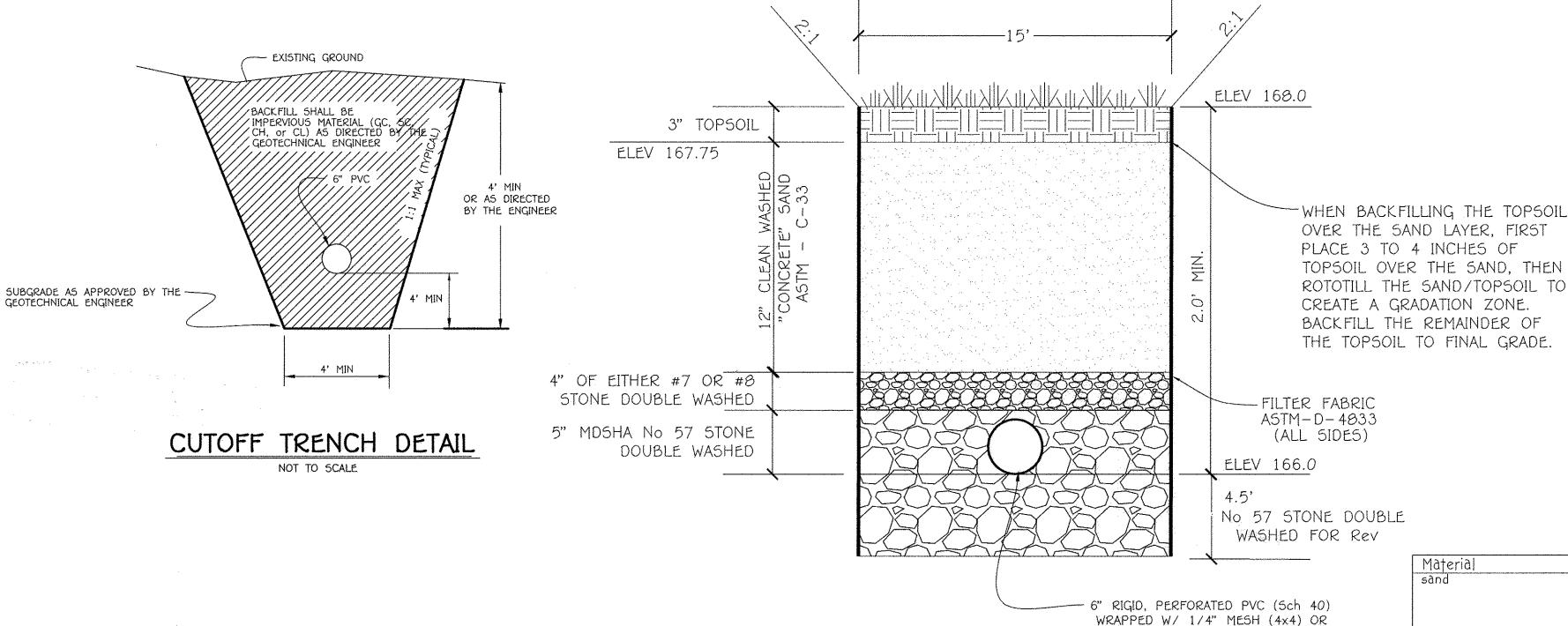
Tax Map: 38, Grid: 15, Parcel: 868 First Election District - Howard County, Maryland Date: August 28, 2012 Scale: As Shown

Sheet 6 of 10





"A6-BUILT" F-12-076



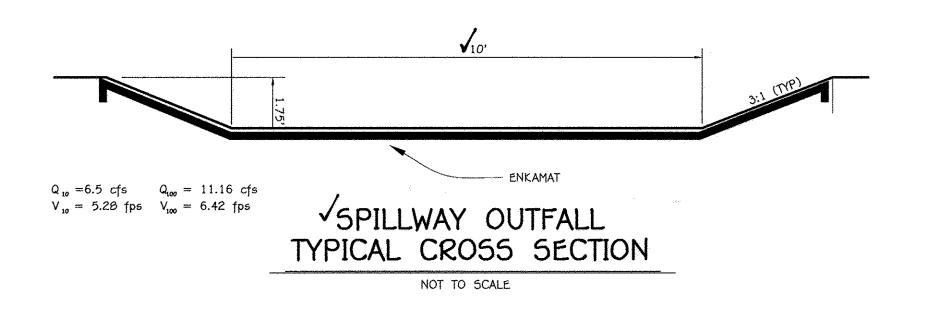
√4' MIN VARIES IMPERVIOUS MATERIAL (GC, SC, CH, or CL) AS DIRECTED BY THE GEOTECHNICAL ENGINEER EXISTING GROUND CUTOFF TRENCH -

VIMPERVIOUS CORE DETAIL

FISHER, COLLINS & CARTER, INC.

ELLICOTT CITY, MARYLAND 21042

NOT TO SCALE



10-Year Elev - 170.98

VOVERFLOW SPILLWAY

TYPICAL CROSS SECTION

NOT TO SCALE

VCREST ELEV 170.50

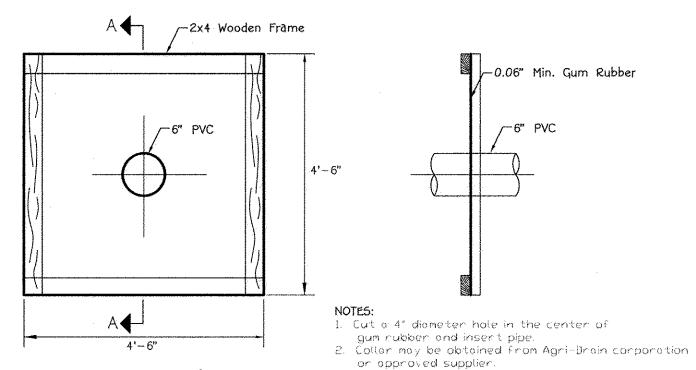
ENKAMAT

0.48' FLOW DEPTH

 $Q_{10} = 6.5 \text{ cfs}$ $Q_{100} = 11.16 \text{ cfs}$ $V_{10} = 2.99 \text{ fps} \quad V_{100} = 3.46 \text{ fps}$

Embankment and Cut-off Trench Construction

THE AREA OF THE PROPOSED SWM POND SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFOLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 370 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED 50IL CLASSIFICATION GC, 5C, CH, OR CL. IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE A FINE GRAINED SOIL, INCLUDING SILT (ML) WITH A PLASTICITY INDEX OF 10 OR MORE CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CORE TRENCH. BASED ON OUR VISUAL CLASSIFICATIONS IT APPEARS THAT SOME OF THE ON-SITE SOILS, ESPECIALLY THE NEAR SURFACE SOILS, WILL BE SUITABLE FOR USE AS CORE TRENCH MATERIAL. IT IS RECOMMENDED THAT ADDITIONAL EXPLORATION AND LABORATORY TESTING BE PERFORMED PRIOR TO POND CONSTRUCTION TO IDENTIFY AND QUANTIFY POTENTIAL BORROW AREAS FOR CORE TRENCH MATERIAL ALL FILL MATERIALS MUST BE PLACED AND COMPACTED WITH MD 5C5 378 SPECIFICATIONS.



SMALLER GALVANIZED HARDWARE CLOTH

PERFORATIONS: 3/8"DIA @ 6" O/C 4 HOLES PER ROW

SAND FILTER TYPICAL CROSS SECTION

NOT TO SCALE

VANTI-SEEP COLLAR DETAIL NOT TO SCALE

AS-BUILT CERTIFICATION FOR PSWM I hereby certify that the facility shown on the plan was constructed as shown on the "AS BUILT" plans and complies with the language plans and specifications.

I have verificated the contributing drainage area is sufficiently trabilized to prevent clogging of the



Sand Filter Specifications

1. Material Specifications for Sand Filters

The allowable materials for sand filter construction are detailed in Table B.3.1. 2. Sand Filter Testing Specifications

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

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

3. Sand Filter Construction Specifications

Provide sufficient maintenance access (i.e., 12-foot-wide road with legally recorded easement). Vegetated access slopes are to be a maximum of 10%; gravel slopes to 15%; paved slopes to

Absolutely no runoff is to enter the filter until all contributing drainage areas have been stabilized. Surface of filter bed is to be level.

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

Surface sand filters may be planted with appropriate grasses; see MAA Approved Species List.

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

Table B.3.1 Material Specifications for Sand filters

Mațerial	Specifications/Test Method	Size	Notes
sànd	clean AASHTO-M-6 of ASTM-Cconcrete sand	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone #10 are note acceptable. No calcium carbonated or dolomitic sand substitutions are: acceptable. No "rock dust" can be used for sand:
peat	ash content: < 15% pH range: 5.2 to 4.9 loose bulk density 0.12 to 0.15 g/cc	N/a	The material must be reed-sedge hemic peat, shredded, uncompacted, uniform, and clean.
leaf compost		N/a	
underdrain gravel	AA5HTO-M-43	0.375" to 0.75"	
geotextile fabric (if required)	ASTM-D-4833 (puncture strength lb.) ASTM-D-4632 (Tensile Strength lb.)	0.08" thick equivalent opening size of #80 sieve	Must maintain 125 gpm per sq. ft. flow rate. Note: a 4" pea gravel layer may be substituted for geotextiles meant to "separate" sand filter layers.
impermeable liner (if required)	ASTM-D-4033 (thickness) ASTM-D-412 (tensile strength 1,100 lb., elongation 200%) ASTM-D-624 (Tear resistance - 150 lb./in) ASTM-D-471 (water adsorption: +0 to -2% mass)	30 mil thickness	Liner to be ultraviolet resistant. A geotextile fabric should be used to protect the liner from puncture.
underdrain piping	F 750, Type P5 20 or AASHTO-M-270	4" — 6" rigid schedule 40 PVC or 5DR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
concrete (cast-in-place)	MSHA Standards and Specs. Section 902, Mix No. 3, f'c = 3500 psi, normal weight, air-entrained; reinforcing to meet ASTM-615-60	N/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or precast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland
concrete (pre-cast)	per pre-cast manufacturer	N/a	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	N/a	structural steel to be hot-dipped galvanized ASTM-A-123

Operation and Maintenance Schedule for Privately Owned and Maintained Surface Stormwater Filtration Systems

- 1. THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS
- 2. THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
- 3. FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
- 4. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
- 5. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- 6. REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY. 7. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP
- FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. THE OWNER MUST FOLLOW PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID.
- 8. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- 9. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE
- COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA. 10. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE

MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

> STORMWATER MANAGEMENT SPECIFICATIONS
> Winter Crest

Buildable Lots 1 Thru 8 And

Open Space Lot 9 (Being A Resubdivision Of Lot 2. As Shown On A Plat Entitled "Norris E. Pool, Lots 1, 2 & 3, Winters La. & Hanover Rd." Recorded Among The Land Records Of Howard County, Maryland As Plat No. 3342)

> Zoned: R-12 Tax Map: 38, Grid: 15, Parcel: 868 First Election District - Howard County, Maryland Date: August 28, 2012 Scale: As Shown Sheet 9 of 10

Owner/Developer Winters Lane Investments, LLO

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