

Specifications for Micro-Bioretention. Rain Gardens, Landscape Infiltration & Infiltration Berms

1. MATERIAL SPECIFICATIONS

The allowable materials to be used in these practices are detailed in Table B.4.1.

2. PLANTING SOILS

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR

The planting soil shall be tested and shall meet the following criteria: Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)

Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%). Clay Content — Media shall have a clay content of less than 5%.

pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was

### COMPACTION

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base. When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh

### 4. PLANT MATERIAL

Recommended plant material for micro-bioretention practices can be found in Appendix A, Section A.2.3 SWM Design Manual.

### 5. PLANT INSTALLATION

Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

### 6. UNDERDRAINS

HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT

Pipe — Should be 4"to 6" diameter, slotted or perforated rigid plastic pipe (ASTMF 758, Type PS28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).

Perforations - If perforated pipe is used, perforations should be 38" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a ¼" (No.4 or 4x4) galvanized hardware

Gravel - The gravel layer (No.57 stone preferred) shall be at least 3" thick above and below the

The main collector pipe shall be at a minimum 0.5% slope.

A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.

A 4" layer of pea gravel (%" to 3%" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when

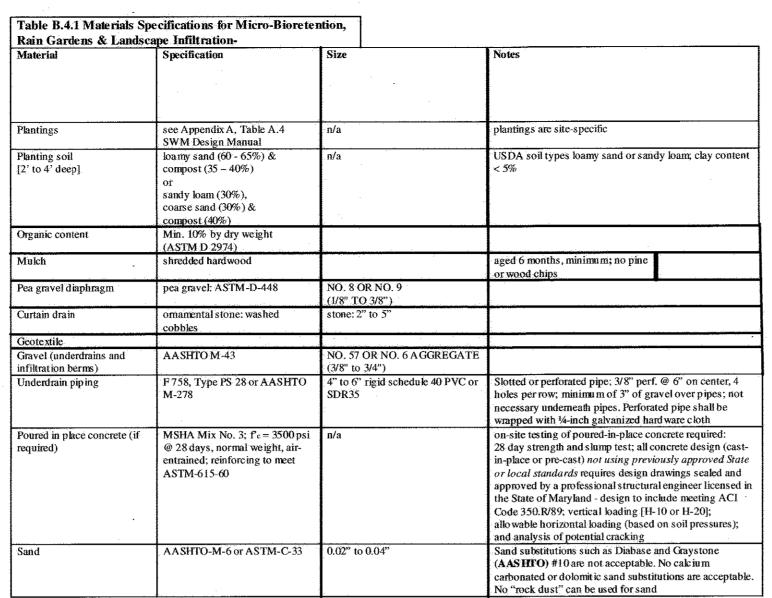
The main collector pipe for underdrain systems shall be constructed at minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

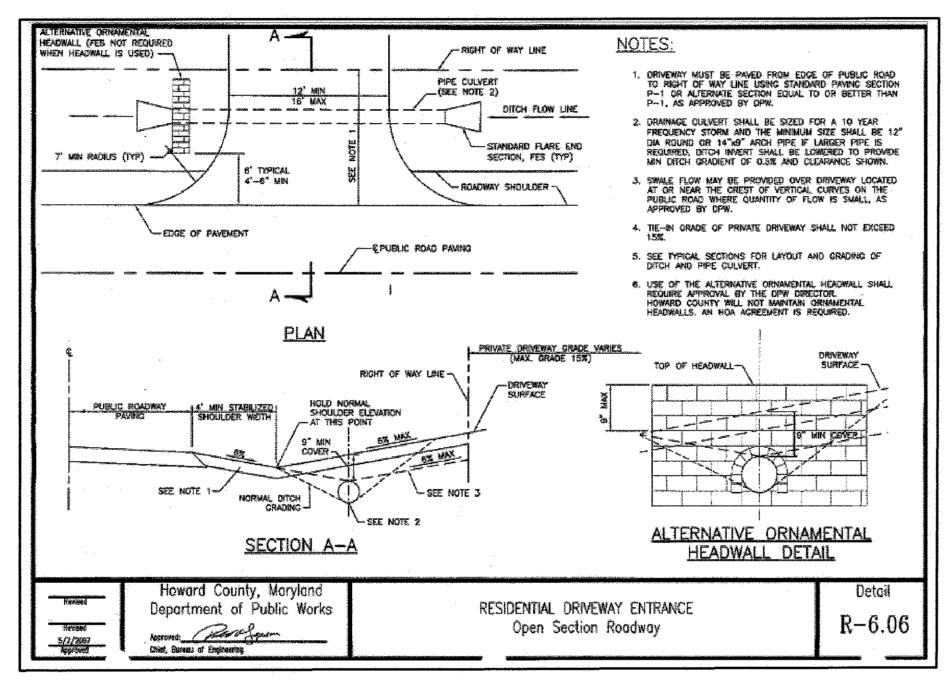
These practices may not be constructed until all contributing drainage area has been stabilized.

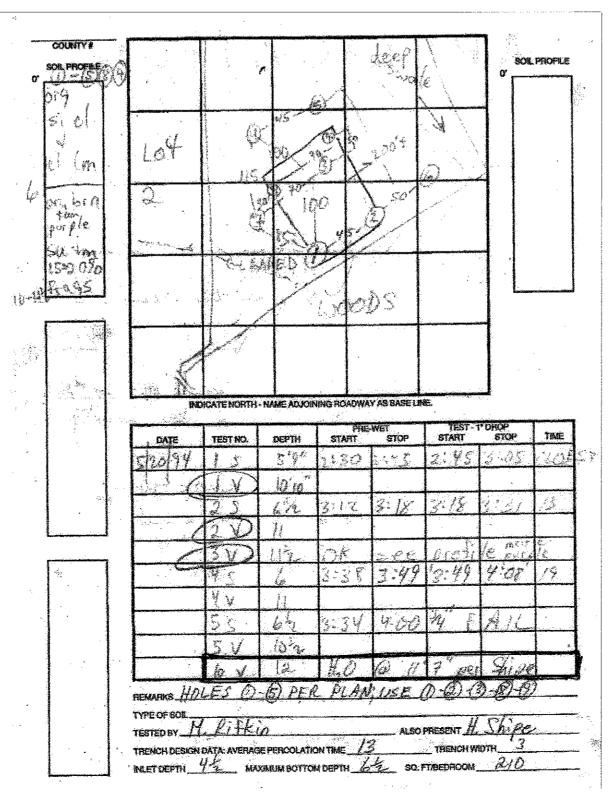
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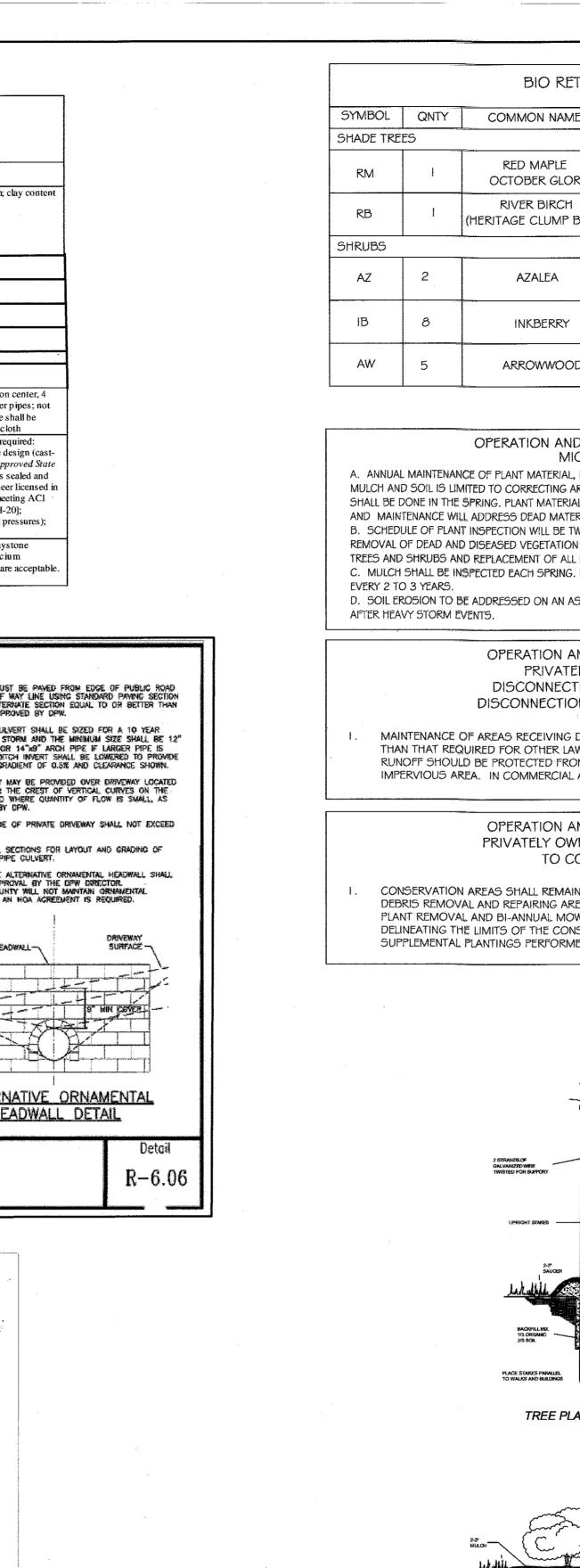
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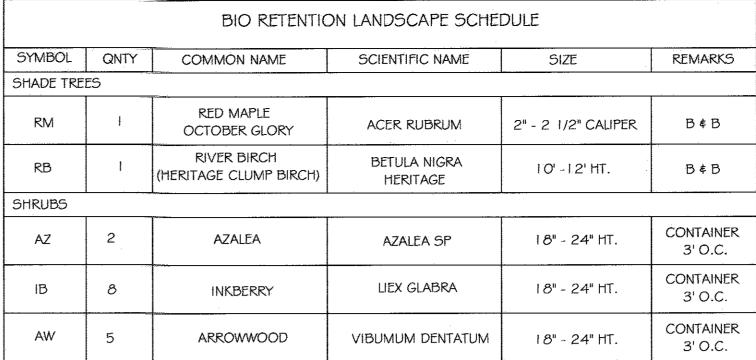
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# OPERATION AND MAINTENANCE SCHEDULE FOR

MICRO-BIORETENTION

A. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. 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.

B. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.

C. MULCH SHALL BE INSPECTED EACH SPRING, REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER

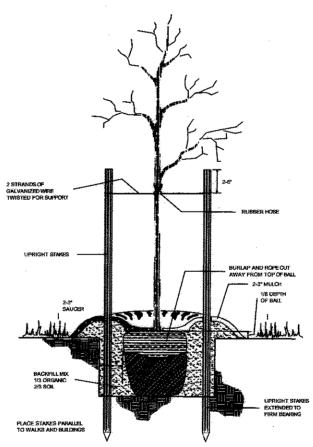
D. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS. WITH A MINIMUM OF ONCE PER MONTH AND

### OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

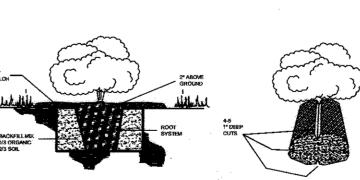
MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREA, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

### OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SHEETFLOW TO CONSERVATION AREA (N-3)

CONSERVATION AREAS SHALL REMAIN UNDISTURBED AND UNMANAGED OTHER THAN ROUTINE DEBRIS REMOVAL AND REPAIRING AREAS OF CONCENTRATED FLOW. INVASIVE AND NOXIOUS PLANT REMOVAL AND BI-ANNUAL MOWING FOR MEADOW AREAS MAY BE NEEDED. SIGNS DELINEATING THE LIMITS OF THE CONSERVATION AREA SHOULD BE MAINTAINED AND SUPPLEMENTAL PLANTINGS PERFORMED AS NEEDED.



TREE PLANTING/ STAKING DETAIL (N.T.S)



TYPICAL CONTAINER-GROWN PLANTING DETAIL

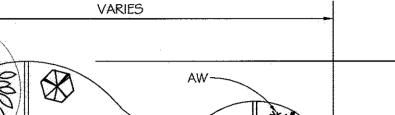
PLOTESSIANL CERTIFICATION I herety certify that these documents have prepared or approved by mo, and that I aim a duly licensed landocape or united under the laws of the State of Mayland License No. 569, Beprotion Date: 08-16-2017. Deve a Comm 10/17/10.

101746

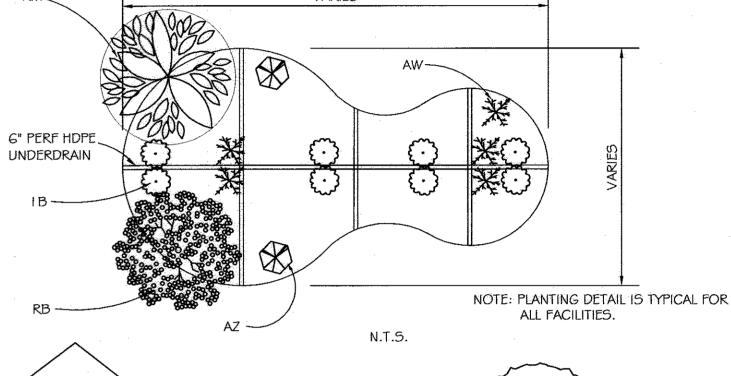
### ELEV. (591.25) 2 INFLOW SIDES 9" PONDING 3" MULCH FILTER FABRIC FILTER FABRIC (SIDE OF TRENCH (SIDE OF TRENCH ONLY) 24" PLANTING SOIL 6" SLOTTED PIPE OR -2" MIN. TO 6" PERFORATED PIPE -TOP OF WRAPPED WITH 1/4" MESH PIPE (4 X 4) OR SMALLER GALVANIZED HARDWARE CLOTH. - UNDERDRAIN GRAVEL ELEV. (588.33) # 57 AGGREGATE

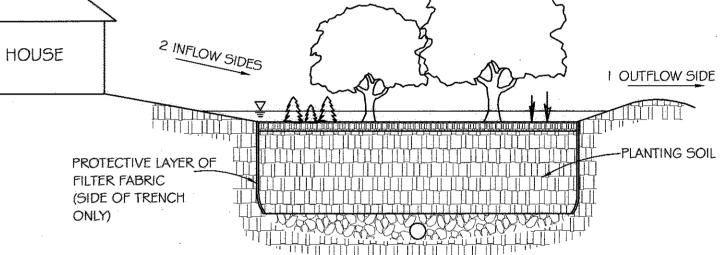
I OUTFLOW SIDE

TYPICAL SECTION FOR PROPOSED PRIVATE BIORETENTION FACLITIES N.T.S.

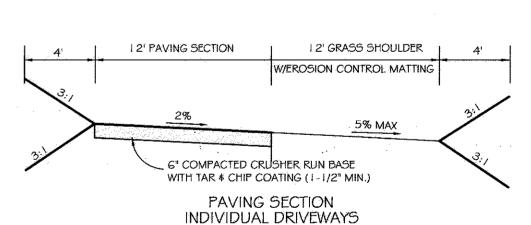


BIORETENTION PLANTING DETAIL

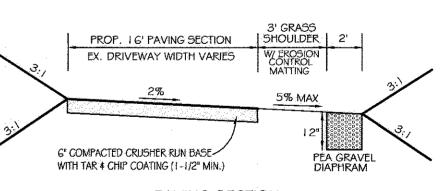




TYPICAL SECTION **BIORETENTION PLANTING** N.T.S.

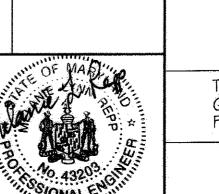


NOT TO SCALE



PAVING SECTION USE-IN-COMMON DRIVEWAY NOT TO SCALE

THE RUXPOSE OF THIS PLAN OF REVISION IS TO REMOVE 522 ST FROM THE RECORDED FOREST CONSERVATION EASEMENT.



"SUPPLEMENTAL PLAN OF REVISION STORMWATER MANAGEMENT/CONSTRUCTION NOTES AND DETAILS LOTS + THRU 3 HARRY N. SHIPE PROPERTY

TAX MAP: 12 GRID: 17

ELECTION DISTRICT: No. 4 HOWARD COUNTY, MARYLAND PARCEL NO: 75 EX. ZONING: RC-DEO

ASSOCIATES, INC.

(301) 829 2890 (301)831 5015 (410) 549 2751

SCALE: NOT TO SCALE DATE: OCTOBER, 2013 SHEET 2 OF 6

F-13-115

NOTE: SEE THIS SHEET FOR

INDIVIDUAL BIORETENTION

FACILITY TYPICAL SECTION.

and that I am a duly licenced professional engineer under the laws of the

OWNER/DEVELOPER HOWARD HORSE, LLC c/o JOHN CONGEDO

ACCIDENT, MD 21520

163 CARRIAGE HOUSE WAY

443-463-2717 State of Maryland, License No. 43203, Expiration Date: 12-20-14

PROFESSIONAL CERTIFICATION I hereby certify that these documents were prepared or approved by me,

JOB NO.B2-5328

Engineers Surveyors Planners 310 South Main Street P.O. box 328 Mount Airy, Maryland 21771

### SEQUENCE OF CONSTRUCTION

- OBTAIN ALL REQUIRED GRADING, MDE PERMITS, APPROVALS AND LICENSES FROM APPROPRIATE AGENCIES. (APPROXIMATE TIME-ONE
- NOTIFY SEDIMENT CONTROL INSPECTOR AT LEAST THREE (3) WORKING DAYS PRIOR TO STARTING WORK FOR THE PURPOSE OF A PRE-CONSTRUCTION MEETING. (APPROXIMATE TIME-ONE WEEK)
- CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF PERIMETER CONTROLS (STABILIZED CONSTRUCTION ENTRANCE AND SUPER SILT FENCE). (APPROXIMATE TIME-ONE WEEK)
- INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SUPER SILT FENCE AS SHOWN IN THE SEDIMENT CONTROL PLAN. STABILIZE DISTURBED AREAS. (APPROXIMATE TIME-ONE WEEK)
- CLEARING AND GRUBBING AS NECESSARY OF REMAINING AREA WITHIN INSTALLED PERIMETER CONTROLS. (APPROXIMATE TIME-ONE
- GRADE AND CONSTRUCT USE-IN-COMMON DRIVEWAY. (APPROXIMATE TIME-TWO WEEKS)
- CONSTRUCT INDIVIDUAL DRIVWAYS AND HOUSES. (APPROXIMATE TIME-NINE MONTHS)
- FINAL GRADING, LANDSCAPING AND STABILIZATION OF ALL DISTURBED AREAS. (APPROXIMATE TIME-ONE MONTH)
- INSTALL MICRO-BIORETENTION FACILITY AS SHOWN ON THE PLANS. (APPROXIMATE TIME-ONE WEEK)
- 10. UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR; REMOVE ALL TEMPORARY SEDIMENT CONTROL DEVICES. FILL ALL DISTURBED AREAS AND STABILIZE AREAS IN ACCORDANCE WITH THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. (APPROXIMATE TIME-ONE WEEK)
- II. NOTIFY INSPECTOR FOR FINAL INSPECTION OF COMPLETED PROJECT. (APPROXIMATE TIME-ONE WEEK)

## MATERIALS SPECIFICATIONS

CLASS	APPARENT OPENING SIZE MM. MAX.	GRAB TENSILE STRENGTH LB. MIN.	BURST STRENGTH PSI. MIN.
A	0.30	250	500
В	0.60	200	320
. C	0.30	200	320
D'	0.60	90	145
E	0.30	90	145
F (SILT FENCE)	0.40-0.80*	90	190

- THE PROPERTIES SHALL BE DETERMINED IN ACCORDANCE WITH THE FOLLOWING PROCEDURES: -APPARENT OPENING SIZE MST323 -GRAB TENSILE STRENGTH ASTM D. 1682:4X8" SPECIMEN. 1X2" CLAMPS
- 12"/MIN. STRAIN RATE IN BOTH PRINCIPAL DIRECTIONS OF GEOTEXTILE FABRIC. -BURST STRENGTH ASTM D 3786
- THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS, AND WILL BE ROT AND MILDEW RESISTANT. IT SHALL BE MANUFACTURED FROM FIBERS CONSISTING OF HONG CHAIN SYNTHETIC POLYMERS. AND COMPOSED OF A MINIMUM OF 85% BY WEIGHT OF POLYOLEPHINS. POLYOLESTERS, OR POLYAMIDES. THE GEOTEXTILE FABRIC SHALL RESIST DETERIORATION FROM ULTRAVIOLITE EXPOSURE.

IN ADDITION, CLASSES A THROUGH E SHALL HAVE A O.O.I. CM/SEC. MINIMUM PERMEABILITY WHEN TESTED IN ACCORDANCE WITH MSMT 507, AND APPARENT MINIMUM ELONGATION OF 20 PERCENT (20%) WHEN TESTED IN ACCORDANCE WITH THE GRAB TENSILE STRENGTH REQUIREMENTS LISTED

NOTE: RECYCLED CONCRETE EQUIVALENT MAY BE SUBSTITUTED FOR LL STONE CLASSIFICATIONS. RECYCLED CONCRETE EQUIVALEN SHALL BE BROKEN INTO SIZES MEETING THE APROPRIATE CLASSIFICATION, SHALL CONTAIN NO STEEL REINFORCEMENT, AND SHALL HAVE A DENSITY OF 150 POUNDS PER CUBIC FOOT.

# FOR UTILITY WORK ONLY OR FOR OFF-SITE UTILITY WORK

- CAN NOT EXCEED 5,000 SQUARE FEET PLACE ALL EXCAVATED MATERIAL ON HIGH SIDE OF TRENCH ONLY DO AS MUCH WORK AS CAN BE DONE IN ONE DAY SO BACKFILLING,
- FINAL GRADING SEEDEING AND MULCHING CAN OCCUR. ANY SEDIMENT CONTROL MEASURES DISTURBED BY CONSTRUCTION WILL BE REPAIRED THE SAME DAY.

# STOCKPILE NOTES:

NO STOCKPILING ALLOWED ON ASPHALT. ALL STOCKPILES LEFT AT THE END OF THE NEXT DAY NEED TO BE STABILIZED UNTIL THE NEXT REDISTURBANCE

- EARTHWORK CUT AND FILL QUANTITIES AND AREA OF DISTURBANCE INDICATED ON THIS PLAN ARE SHOWN FOR PURPOSE OF OBTAINING SEDIMENT CONTROL PLAN APPROVAL AND ARE NOT TO BE USED FOR
- CONTRACTUAL OBLIGATION. TABLE - STONE SIZE

SIZE	RANGE	D <sub>50</sub>	D100	AASHTO	WEIGHT
NUMBER 57*	3/8"-1 1/2"	1/2"	1 1/2"	M-43	N/A
NUMBER I	2" - 3"	2 1/2"	3"	M-43	N/A
RIP-RAP**	4" - 7"	2 1/2"	7"	N/A	N/A
CLAS5 I	N/A	9 1/2"	15"	N/A	150 LB MAX
CLASS II	N/A	16"	24"	N/A	700 LB MAX
CLASS III	N/A	23 <sup>s</sup>	34"	N/A	2000 LB MAX

THIS CLASSIFICATION IS TO BE USED ON THE INSIDE FACE OF STONE

OUTLETS AND CHECK DAMS. \*\* THIS CLASSIFICATION IS TO BE USED WHENEVER SMALL RIP-RAP IS REQUIRED. THE STATE HIGHWAY ADMINISTRATION DDESIGNATION FOR THIS STONE IS STONE FOR GABIONS (905.01.04)

CLASS F GEOTEXTILE FABRICS FOR SILT FENCE SHALL HAVE A 50 LB/IN. MINIMUM TENSILE STRENGTH AND A 20 LB/IN. MINIMUM TENSILE MODULES WHEN TESTED IN ACCORDANCE WITH MSMT 609. THE MATERIAL SHALL ALSO HAVE A 0.3 GAL/FT2/MIN. FLOW RATE AND SEVENTY-FIVE PERCENT (75%) MINIMUM FILTERING EFFICIENCY WHEN TESTED IN ACCORDANCE WITH MSMT 322.

GEOTEXTILE FABRICS USED IN THE CONSTRUCTION OF SILT FENCE SHALL RESIST DETERIORATION FROM ULTRAVIOLET EXPOSURE. THE FABRIC SHALL CONTAIN SUFFICENT AMOUNTS OF ULTRAVIOLET RAY INHIBTORS AND STABILIZATIONS TO PROVIDE A MINIMUM OF 12 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120 DEGREES F.

11-26-17

11/24/13

DATE

# STONE FOR GABION BASKETS

IICKNESS	SIZE OF IND	IVIDUAL STONES
MM	INCHES	
150	3 - 5	75 - 125
225	4 - 7	100 - 175
300	4-7	100 - 175
460	4 - 7	100 - 175
910	4-12	100 - 300
	150	MM INCHES  150 3 - 5  225 4 - 7  300 4 - 7  460 4 - 7

HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF. DEVELOPMENT ENGINEERING DIVISION P DATE

### B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

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.

- Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan
- and completed, then Table B. I 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.I.b and maintain until the next seeding season.

		rdiness Zone (from Figure B.3): ed Mixture (from Table B.1):			Fertilizer Rate	Lime Rate
No.	<b>Species</b>	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	(10-20-20)	Line Nate
					436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/ 1000 sf)

### Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate <sup>1</sup>		Seeding Depth 2	Recommended Seeding Dates by Plant Hardiness Zone *			
Paul Species	lb/ac lb/1000 ft <sup>2</sup>		(inches)	5b and 6a	6b	7a and 7b	
Cool-Season Grasses				J		<u> </u>	
Annual Ryegrass (Lolium perenne ssp. mn(tiflorum)	40	1.0	9.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	
Batley (Hordeum vulgare)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	
Oats (Avena sativa)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15: Aug 1 to Oct 15	Feb 15 to Apr 30; Aus 15 to Nev 30	
Wheat (Triticum aestivum)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	
Cereal Rye (Secale cereale)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15	
Warm-Season Grasses					27 (Pr. 1967)		
Foxtail Millet (Setaria italica)	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May I to Aug 14	
Pearl Millet (Ponnisetum glaucum)	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14	

- Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as
- Seeding rates listed above are for temporary seedings, when planted atone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (animal ryegrass, pearl millet, foxful millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal tye generally should not be used as a nurse crop unless planning will occur in very late fall beyond the seeding dates for other temporary seedings. ereal tye has allesopathic properties that inhibit the germination and growth of other plants. If it must be used as a nume crop, seed at 1/3 of the rate listed abov Oats are the recommended nurse crop for warm-season grasses
- For sandy soils, plant seeds at twice the depth listed above. The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone

### VEGETATIVE SPECIFICATIONS AND NOTES

- I. DISTURB AS SMALL AN AREA OF THE PRESENT COVER AS POSSIBLE WHILE PERFORMING GRADING
- 2. LIMIT DURATION OF EXPOSURE OF BARE EARTH FROM GRADING OPERATION TO 7 DAYS BY THE ESTABLISHMENT OF TEMPORARY VEGETATION (OR MULCHING IF APPROPRIATE) OR BY COMPLETING PERMANENT SEEDING WITHIN 14 DAYS.
- 3. ESTABLISH PERMANENT VEGETATIVE COVER IMMEDIATELY AFTER FINAL GRADING IS COMPLETED. (THIS INCLUDES ALL GRADING ON OR OFF THIS SITE THAT IS AFFECTED BY THIS CONSTRUCTION.) IF FINAL GRADING IS COMPLETED AT A TIME OTHER THAN THE SEEDING SEASON, A TEMPORARY GROUND COVER SUCH AS MULCHING WILL BE USED TO STABILIZE THE
- 4. RECOMMENDED TEMPORARY SEED MIXTURE: BALBOA RYE AT 150 LBS. PER ACRE 2 TONS GROUND LIMESTONE PER ACRE 10-10-10 AT 1,000 LBS. PER ACRE FFRTI117FR MULCH: STRAW AT 1.5 TONS PER ACRE 55-1 OR EQUIVALENT AT 200 GAL. PER ACRE ASPHALT:
- 5. RECOMMENDED PERMANENT SEED MIXTURE: KY-31 FESCUE AT GO LBS. PER ACRE LIME: 2 TONS GROUND LIMESTONE PER ACRE 10-10-10 AT 1,000 LBS, PER ACRE MULCH: STRAW AT 1.5 TONS PER ACRE 55-1 OR EQUIVALENT AT 200 GAL. PER ACRE ASPHALT:
- 6. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS SHALL BE PROTECTED BY 50 FT. (LINEAR) OF CRUSHED STONE TO PREVENT TRACKING OF MUD ONTO PUBLIC ROADS.
- 7. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION (SPECIFIED ON PLANS) SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROL, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 8. 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 PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OF GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. APPROVAL SHALL BE REQUESTED UPON FINAL STABILIZATION OF ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES BEFORE REMOVAL OF SEDIMENT CONTROLS.

DATE: 12/20/2014

# DUST CONTROL

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT

DATE

CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

DUST CONTROL METHOD FOR THIS SITE TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES: CALCIUM CHLORIDE SHALL BE APPLIED TO EXPOSED SURFACES AT A RATE THAT WILL KEEP SURFACE MOIST UNTIL SOIL IS STABILIZED ACCORDING TO VEGETATIVE SPECS. FOR THIS SITE AND AREAS TO BE PAVED ARE COMPLETED.

### B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

Conditions Where Practice Applies:

Criteria

### To stabilize disturbed soils with permanent vegetation.

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Exposed soils where ground cover is needed for 6 months or more.

### A. Seed Mixtures

General Use

- 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 B.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.
- 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 ½ 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. Turfarass 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. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the
  - Permanent Seeding Summary. The summary is to be placed on the plan. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and 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
- Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where B.22 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 1:00 percent. Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
- iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 11/2 to 3 pounds per 1000 savare feet.

### Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland" Choose certified material. Certified material is the best 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

- c. Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August I to October I (Hardiness Zones: 5b, Ga) Central MD: March I to May 15, August 15 to October 15 (Hardmess Zone: Gb) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
- 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 11/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
- If soil moisture is deficient, supply new seedings with adequate water for plant growth (1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

		Hardiness Zone (from Seed Mixture (from Ta		<del></del>		ertilizer Rate (10-20-20)		Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P2O5	K20	Line race
				1/4-1/2 m	45 pounds	90 lb/ac (2	90 lb/ac (90	2 tons/ac
				1/4-1/2 m	per acre	(fe 0001/dl	lb/1000 sf)	(90 lb/ 1000 sf)
				1/4-1/2 in	1000 sf)			1000 51)

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

- General Specifications a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available
- to the job foreman and inspector. Sod must be machine cut at a uniform soil thickness of 34 inch, plus or minus 1/4 inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable
- Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
- Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not
- transplanted within this period must be approved by an agronomist or soil scientist prior to its installation

# 2. Sod Installation

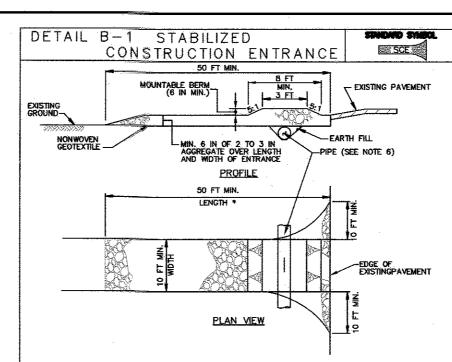
- During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
- Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
- Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
- d. Water the sod immediately following rolling and tamping until the underside of the ne

- a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the to prevent wilting
- After the first week, sod watering is required as necessary to maintain adequate moisture
- Do not mow until the sod is firmly rooted. No more than [] of the grass leaf must be removed by the mitial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

	SOIL L	EGEND		-	
MAP SYMBOL	MAPPING UNIT	HYDROLOGIC SOIL GROUP	HYDRIC COMPONENTS	Kw	SLOPE
BrC, BrD, BtF	Brinklow	В	NO	0.20	8-15%,15-25%,25-65%
GgB, GgC	GLENELG loam	В	NO	.28	3-15%
GmB	GLENVILLE silt loam	C	NO	.32	3-8%
OcC	Occoquan	В	NO	0.20	8-15%
HOWARD COUNT	Y SOILS MAP NO. 8	<u> </u>			

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED TEMPORARY STOCKPILE NOTE BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 43203, EXPIRATION

SITE EARTHWORK HAS BEEN BALANCED SUCH THAT A TEMPORARY STOCKPUT SHOULD NOT BE NECESSARY SHOULD CONTRACTOR DECIDE TO USE A STOCKPILE, CONTRACTOR SHALL PLACE STOCKPILE ON SUITABLE AREA OF THE SITE AND FOLLOW TEMPORARY STABILIZATION NOTES



### CONSTRUCTION SPECIFICATIONS

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

- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5.1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE, PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN, WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY, A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS. . PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAYEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

U.S. DEPARTMENT OF AGRICULTURE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT NATURAL RESOURCES CONSERVATION SERVICE 2011	MARYLAND STANDARDS AND SPE	CIFICATIONS FOR SOIL ER	OSION AND SEDIMENT CONTROL
TOTAL	U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

# HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- 1) A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction, (313-1855).
- 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 "MARYI AND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
- ) Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 3 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 7 days as to all other disturbed or graded areas on the project site.
- 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 permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- 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.
- 6) Site Analysis: 10.64 Acres Total Area of Site 2.87 Acres Area Disturbed Area to be roofed or paved Acres Area to be vegetatively stabilized 2.43 Acres Total Cut Total Fill Cu. Yds. Offsite waste/borrow area location
- 7) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of
- 8) Additional sediment control must be provided, if deemed necessary
- by the Howard County Sediment Control Inspector. 9) 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 proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by
- the inspection agency is made. 10) Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within on working day,
- whichever is shorter Anv changes or revisions to the sequence of construction must be reviewed and approved by the plan approval authority prior to proceeding
- 2) 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 enforcement authority. Unless otherwise specified and approved by the approval authority, no more than 30 acres cumulatively may be disturbed at a given time.

# HOWARD SOIL CONSERVATION DISTRICT ADDITIONAL PROJECT SPECIFIC SEDIMENT CONTROL NOTES

with construction

- 13) A double row of super silt fence is to be installed at the direction of of the sediment control inspector
- 14) Seeding and stabilization is to be performed at the direction of the the sediment control inspector or at the minimum intervals required
- by the standard notes, whichever is more restrictive. 15) Temporary or permanent stabilization is to be provided at the direction

# of the sediment control inspector or within the time frame required by the 2011 Maryland Standards \$ Specifications, whichever is more

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 | VERTICAL (3:1); AND 3. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER

DISTURBED OR GRADED AREAS ON THE PROJECT

STANDARD STABILIZATION NOTE

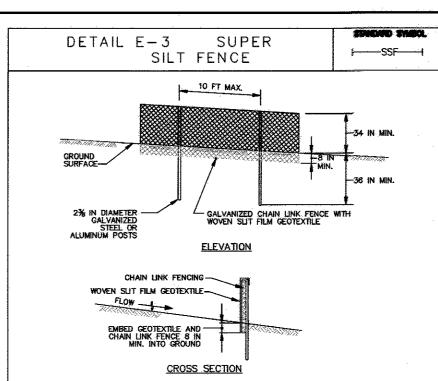
SITE NOT UNDER ACTIVE GRADING

# PROFESSIONAL CENTIFICATION I have certify that those documents were prepared or approved by me, and that I am a duly licensed landscape architect moder the jour of the State of Maryland, License No. 569, the protoco Dole: 08-10-2011. Description of Colombian 10/17/16

OWNER/DEVELOPER: HOWARD HORSE, LLC c/o JOHN CONGEDO 163 CARRIAGE HOUSE WAY ACCIDENT, MD 21520 443-463-2717

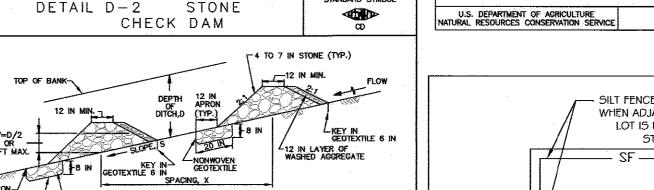
I hereby certify that these documents were prepared or approved by me and that I am a duly licenced professional engineer under the laws of the State of Maryland, License No. 43203, Expiration Date: 12-20-14

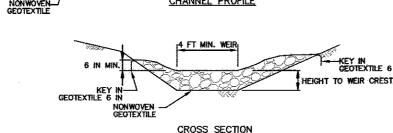
PROFESSIONAL CERTIFICATION



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

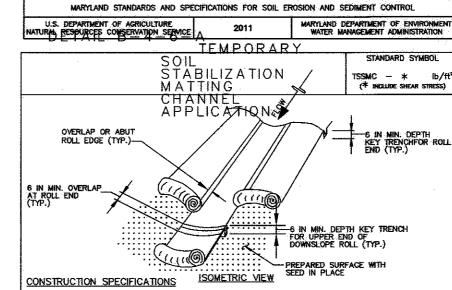
- FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO TH UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
- EXTEND BOTH ENDS OF THE SUPER SLT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND DEPARTMENT OF ENVIRONMENT
  WATER MANAGEMENT ADMINISTRATION 2011





4 TO 7 IN STONE

- PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND SIDES OF THE DAM PRIOR TO PLACEMENT OF STONE. CONSTRUCT THE CHECK DAM WITH WASHED 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) WITH SIDE SLOPES OF 2:1 OR FLATTER AND A MININUM TOP WIDTH OF 12 INCHES, PLACE THE STONE SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL AND CHANNEL BANKS. FORM THE WEIR SO THAT TOP OF THE OUTLET CREST IS APPROXIMATELY 6 INCHES LOWER THAN THE OUTER EDGES. LINE THE UPSTREAM FACE OF THE DAM WITH A 1 FOOT THICK LAYER OF WASHED AGGREGATE (¾ TO 1½ INCH).
- REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE—HALF OF THE HEIGHT OF THE WEIR CREST. MAINTAIN LINE, GRADE, AND CROSS SECTION:



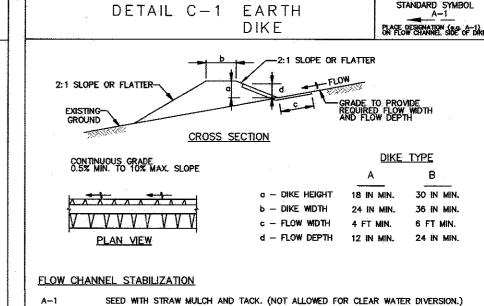
USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 8 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOILDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOU TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.

STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

ATE | REVISIONS

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



4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND. CONSTRUCTION SPECIFICATIONS

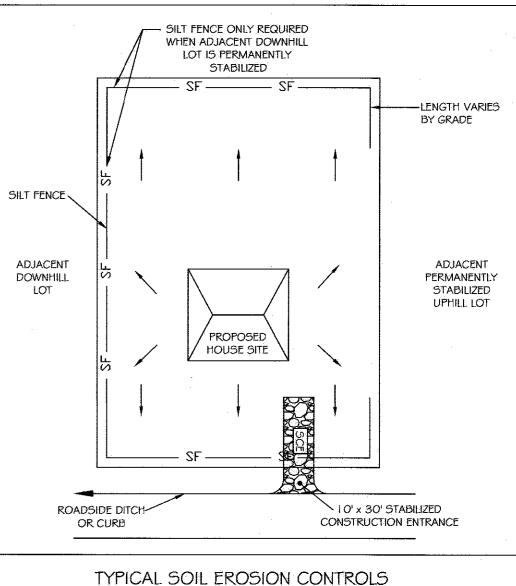
SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.

. COMPACT FILL.

A-3/B-3

- CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
- STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION, STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
- UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL 2011



FOR HOUSE CONSTRUCTION NOT TO SCALE

A THE PURPOSE OF THIS PLAN OF RENSION IS TO REMOVE 522 SF FROM THE RECORDED FOREST CONSERVATION ESSEMENT

# DEVELOPER'S CERTIFICATE:

"IWE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL. AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-

SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT." Aug Villeto (Managing Member) ! 16/13

ENGINEER'S CERTIFICATE: 'I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL

KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

SUPPLEMENTAL PLAN OF REVISION SEDIMENT AND EROSION CONTROL NOTES # DETAILS LOTS + THRU 3

HARRY N. SHIPE PROPERT

TAX MAP: 12

ELECTION DISTRICT: No. 4 HOWARD COUNTY, MARYLAND PARCEL NO: 75 EX. ZONING: RC-DEO

SCALE: NOT TO SCALE DATE: OCTOBER, 2013 SHEET 3 OF 6 F-13-115



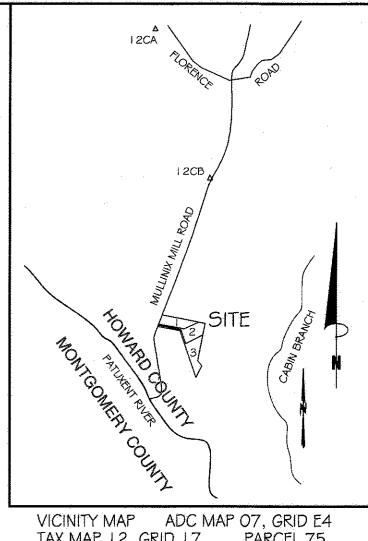
JOB NO.B2-5328

2.432V SIONALE

GRID: 17

### FOREST STAND DELINEATION REPORT

- 1. 1.18 ACRE OF HARDWOOD FOREST EXISTS ON THE SUBJECT PROPERTY.
- 2. THE FOREST CONDITION IS FAIR TO POOR. THE UNDERSTORY IS POORLY DEVELOPED AND THE LIMITED RANGE OF MATURE TREES INDICATES THAT THE FOREST WAS PREVIOUSLY FENCED FOR CATTLE.
- 3. TWO SPECIMEN OAKS EXIST WITHIN THE STAND. ONE IS IN SEVERE DECLINE WITH A 48" BASE THAT IS LARGELY DECAYED AND OPEN TO THE GROUND. THE OTHER IS A 30 " OAK OF FAIR CONDITION. NO DISTURBANCE IS PROPOSED IN THE AREA OF THE FOREST.
- 4. THE FOREST IS MADE UP OF A MIX OF HARDWOODS INCLUDING OAK VARITIES, SYCAMORE, AND RED MAPLE. SIZE CLASS RANGES FROM 6"-12" DBH. CANOPY CLOSURE IS 70%.

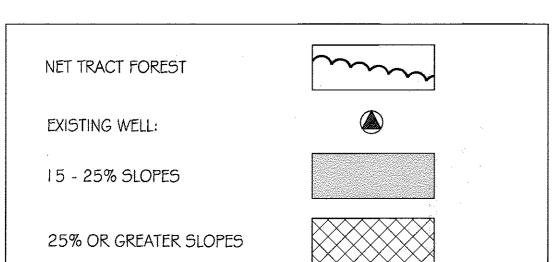


TAX MAP 12, GRID 17 PARCEL 75 SCALE: 1 "= 2,000'

### GENERAL NOTES:

- OWNER: HOWARD HORSE, LLC DEED REFERENCE: LIBER 14475, FOLIO 376 DATE: NOVEMBER 15, 2012 GRANTOR: HARRY N. SHIPE & BARBARA SHIPE
- 2. TAX MAP: 12 GRID: 17 PARCEL: 75
- 3. NEAREST POTABLE WATER SUPPLY: MT. AIRY DISTANCE: 7.0 MILES ±.
- THE SUBJECT PROPERTY IS LOCATED IN ZONE C (AREA OF MINIMAL FLOODING) AS PLOTTED BY SCALE ON NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 240044 0012B, DATED 12/4/86.
- TOPOGRAPHY & PLANIMETRIC FEATURES SHOWN HEREON TAKEN FROM COPYRIGHTED GIS DATA FROM HOWARD COUNTY, SUPPLEMENTED WITH FIELD LOCATIONS BY VANMAR ASSOCIATES, INC. CONTOUR INTERVAL IS 2 FEET. VERTICAL DATUM IS
- THE BASIS OF BEARINGS FOR THIS PLAN IS THE MARYLAND COORDINATE SYSTEM (NAD83/07) PER HOWARD COUNTY SURVEY CONTROL STATIONS SHOWN BELOW. DISTANCES SHOWN HEREON ARE GROUND DISTANCES. 12CA NGOO,463.8221 E1,271,900.228 5FT
- 12CB N597,303.8690 E1,272,860.5753 sFT
- THERE ARE NO WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THE PROPERTY BOUNDARY UNLESS OTHERWISE SHOWN HEREON.
- THE EXISTING WELLS SHOWN ON THIS PLAN HAVE BEEN FIELD LOCATED BY
- SOIL TYPE: BRINKLOW (BrC, BrD, BtF), GLENELG (GgB, GgC), GLENVILLE (GmB), OCCOQUAN (OcC). HOWARD COUNTY SOILS MAP GRID NO. 334.
- 10. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 02/02/04 COMPREHENSIVE ZONING PLAN AND PER THE "COMP LITE" ZONING AMENDMENTS EFFECTIVE ON 07/28/06. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE APRIL
- 11. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREAS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- 12. THERE ARE NO HISTORIC SITES OR CEMETERIES ON THIS PROPERTY,
- 13. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH SUBDIVISION AND LAND DEVELPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE APRIL 3, 2004.
- 14. NO ENVIRONMENTAL FEATURES EXIST WITHIN THE LOD.
- 15. NO SPECIMEN TREES ARE PROPOSED FOR REMOVAL.
- 16. FOREST CONSERVATION OBLIGATIONS WILL BE MET BY PROVIDING MITIGATION OF INCOR. 1-18 ACRES OF ON-SITE RETENTION, AND 0.95 AC OFF-SITE AFFORESTATION AT AN APPROVED FOREST BANK. TOTAL MITIGATION 2.13 AC±.

# LEGEND



APPROVED

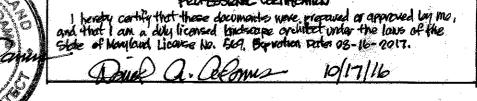
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION PDATE

11-26-13 CHIEF, DIVISION OF LAND DEVELOPMENT 11/2/13

OWNER/DEVELOPER: HOWARD HORSE, LLC c/o JOHN CONGEDO 163 CARRIAGE HOUSE WAY ACCIDENT, MD 21520 443-463-2717

PROFESSIONAL CERTIFICATION I hereby certify that these documents were prepared or approved by me, and that I am a duly licenced landscape architect under the laws of the State of Maryland, License No. 569, Expiration Date: 08—16—15.



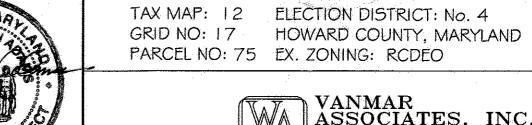
A THE PURPOSE OF THIS FLAN OF REVISION IS TO REMOVE
522 SE FROM THE RECORDED FOREST CONSERVATION EASEMENT.

DATE REVISIONS

10/17/16 A

FOREST STAND DELINEATION PLAN OF REVISION LOTS 1. THRU 3

HARRY N. SHIPE PROPERTY



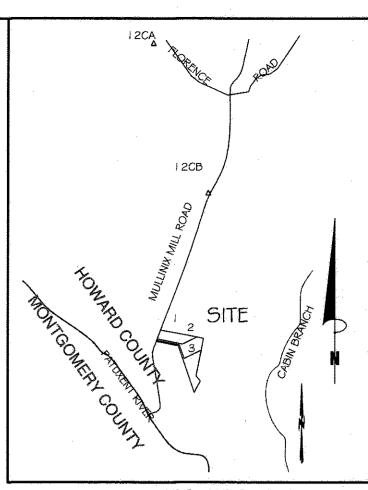
DATE: OCT 2013 SHEET: 4 OF 6

VANMAR
ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street P.O. box 328 Mount Airy, Maryland 21771
(301) 829 2890 (301)831 5015 (410) 549 2751

F-13-115

SCALE: | "=100"





VICINITY MAP ADC MAP 07 GRID E4 TAX MAP 12, GRID 17 PARCEL 75 SCALE: 1 "= 2,000

GENERAL NOTES:

OWNER: HOWARD HORSE, LLC DEED REFERENCE: LIBER 14475, FOLIO 376 DATE: NOVEMBER 15, 2012 GRANTOR: HARRY N. SHIPE & BARBARA SHIPE

TAX MAP: 12 GRID: 17 PARCEL: 75

NEAREST POTABLE WATER SUPPLY: MT. AIRY DISTANCE: 7.0 MILES ±.

THE SUBJECT PROPERTY IS LOCATED IN ZONE C (AREA OF MINIMAL FLOODING) AS PLOTTED BY SCALE ON NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 240044 0012B, DATED 12/4/86.

TOPOGRAPHY & PLANIMETRIC FEATURES SHOWN HEREON TAKEN FROM COPYRIGHTED GIS DATA FROM HOWARD COUNTY, SUPPLEMENTED WITH FIELD LOCATIONS BY VANMAR ASSOCIATES, INC. CONTOUR INTERVAL IS 2 FEET. VERTICAL DATUM IS NAVD88.

THE BASIS OF BEARINGS FOR THIS PLAN IS THE MARYLAND COORDINATE SYSTEM (NAD83/07) PER HOWARD COUNTY SURVEY CONTROL STATIONS SHOWN BELOW.

DISTANCES SHOWN HEREON ARE GROUND DISTANCES. 12CA N600,463.8221 E1,271,900.228 5FT 12CB N597,303.8690 E1,272,860.5753 sFT

THERE ARE NO WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THE PROPERTY BOUNDARY UNLESS OTHERWISE SHOWN HEREON.

THE EXISTING WELLS SHOWN ON THIS PLAN HAVE BEEN FIELD LOCATED BY

VANMAR ASSOCIATES AND ACCURATELY SHOWN.

SOIL TYPE: BRINKLOW (BrC, BrD, BtF), GLENELG (GgB, GgC), GLENVILLE

OCCOQUAN (OcC). HOWARD COUNTY SOILS MAP GRID NO. 334. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 02/02/04

COMPREHENSIVE ZONING PLAN AND PER THE "COMP LITE" ZONING AMENDMENTS EFFECTIVE ON 07/28/06. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE APRIL 13, 2004.

THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREAS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.

12. THERE ARE NO HISTORIC SITES OR CEMETERIES ON THIS PROPERTY.

NO ENVIRONMENTAL FEATURES EXIST WITHIN THE LOD.

14. NO SPECIMEN TREES ARE PROPOSED FOR REMOVAL.

BY APPROVAL OF WAIVER WP 13-191, FOREST CONSERVATION 1.1680 OBLIGATIONS WILL BE MET BY PROVIDING MITIGATION OF 1.18 ACRES OF ON-SITE RETENTION AND 0.95 AC OF OFF-SITE PLANTING OBLIGATION AT THE QUARTZ HILL III FOREST MITIGATION BANK UNDER F-13-070. TOTAL MITIGATION 2.13 AC±.

I hardy cartify-that those documents more proposed by approved by me, and that I am a duly licensed bodscope arbitrat under the laws of the State of Nowyhold, because No. 549, Bapprotus Tules 08-16-2017. Die a almi 10/17/16

A THE PURPOSE OF THE PLAN OF REVISION IS TO REMOVE 522 S.F. TROM THE RECORDED FOREST CONSEKVATION EASEMENT.

I hereby certify that these documents were prepared or approved by me,

OWNER/DEVELOPER: HOWARD HORSE, LLC c/o JOHN CONGEDO 163 CARRIAGE HOUSE WAY ACCIDENT, MD 21520 443-463-2717

FINAL FOREST CONSERVATION PLAN & REVIOUS

HARRY N. SHIPE PROPERTY

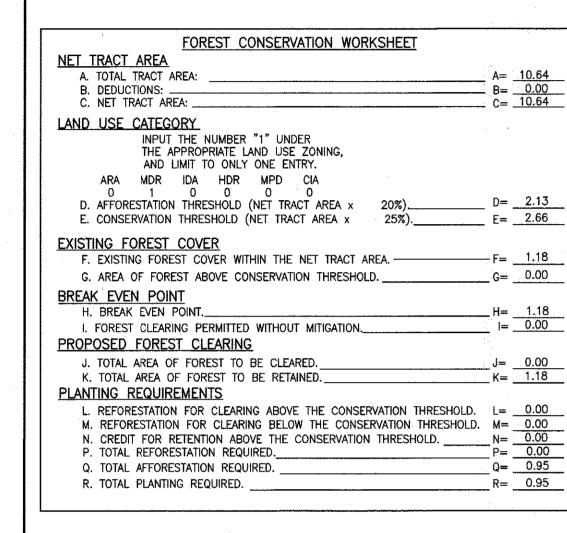
TAX MAP: 12 ELECTION DISTRICT: No. 4 GRID NO: 17 HOWARD COUNTY, MARYLAND PARCEL NO: 75 EX. ZONING: RCDEO

PROFESSIONAL CERTIFICATION

and that I am a duly licenced landscape architect under the laws of the State of Maryland, License No. <u>569</u>, Expiration Date: <u>08-16-2015</u>.

SCALE: AS SHOWN DATE: OCT 2013 SHEET 5 OF 6

	OTTEST O OF O
VANMAR ASSOCIATES, II Engineers Surveyor 310 South Main Street P.O. box 33 (301) 829 2890 (301)831 5015 (4	s Planners 28 Mount Airy,Maryland 21771



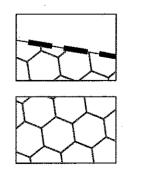
LEGEND PROPOSED SEPTIC SYSTEM **EXISTING WELL:** PROPOSED HOUSE SITE: PROPOSED WELL SITE: 15 - 25% SLOPES 25% OR GREATER SLOPES

EXISTING TREE LINE

FOREST CONSERVATION SIGN

FOREST EASEMENT

FOREST RETENTION



The thinks



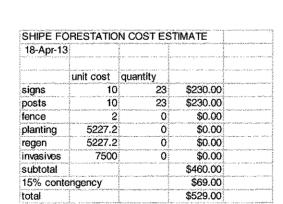
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT

11/4/13 CHIEF, DEVELOPMENT ENGINEERING DIVISION A DATE

11-26-13 DATE

K = Existing Forest Cover (F) - Forest to be Cleared (J) If the Total Area of Forest to be Retaoned (K) is at or above the Breakeven Point (H), no planting is required and no further calculations are necessary (L=0, M=0, N=O, P=O); Otherwise, calculate the planting requirement(s) as follows: Reforestation for Clearing Above the Conservation Threshold (1) If the Total Area of Forest to be Retained (K) is greater than the Conservation Threshold (E), then L = the Area of Forest to be Cleared (J) \* 0.25; (2) If the Forest to be Retained (K) is less than or equal to the Conservation Threshold (E), then L = Area of Forest Above Conservation Threshold (G) \* 0.25 Reforestation for Clearing Below the Conservation Threshold (1) If Existing Forest Cover (F) is greater than the Conservation Threshold (E) and the Forest to be Retained (K) is less than or equal to the Conservation Threshold (E), then M = 2.0 \* (Conservation Threshold [E] - Forest to be Retained [K]) (2) If Existing Forest Cover (F) is less than or equal to the Conservation Threshold (E), then M = 2.0 \* Forest to be Cleared (J) If the Area of Forest to be Retained (K) is greater than the Conservation Threshold (E), then N = K - E Total Reforestation Required P=L+M-N Q. Total Afforestation Required If Existing Forest Cover (F) is less than the Afforestation Threshold (D), then Q = Afforestation threshold (D) - Existing Forest Cover (F) R. Total Planting Requirement R=P+Q SHIPE FORESTATION COST ESTIMATE



Note: Use 0 for all negative numbers that result from the calculations

D. Afforestation Threshold (Net Tract Area [C] 20 %)

Existing Forest Cover within the Net Tract Area

G. Area of Forest Above Conservation Threshold

Conservation Threshold (E);

H = Existing Forest Cover (F)

Total Area of Forest to be Cleared

C. Total Area of Forest to be Retained

Forest Clearing Permitted Without Mitigation

I = Existing Forest Cover (F) - Breakeven Point (H)

G = F - E; Otherwise G = 0.

Deductions (Critical Area, area restricted by local ordinance or program)

If the Existing Forest Cover (F) is greater than the Conservation Threshold (E), then

H = (0.2 \* the Area of Forest Above Conservation Threshold (G) + the

Breakeven Point (Amount of forest that must be retained so that no mitigation is required)

(1) If the Area of Forest Above the Conservation Threshold (G) is greater than 0, then

(2) If the Area of Forest Above the Conservation Threshold (G) is equal to 0, then

Net Tract Area Net Tract Area = Total Tract (A) - Deductions (B)

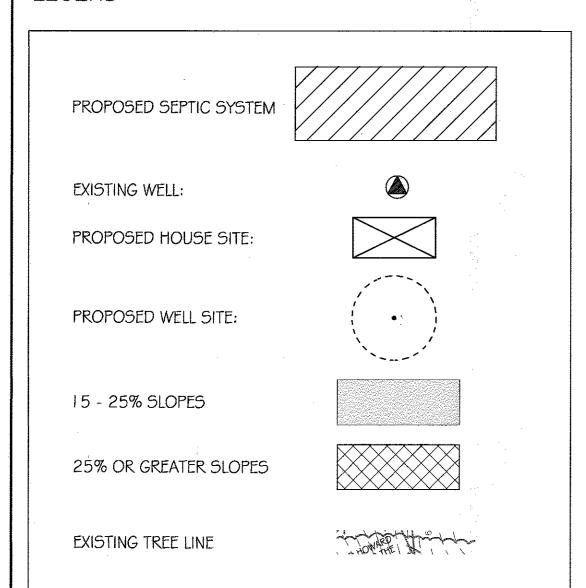
. Total Tract Area

Land Use Category:

SEPTIC AREA-SCALE: 1"=100' LANDSCAPE EDGE "A" = 1 SHADE TREE/60"

r		PLANTING SCHEDUL	.E		
SYMBOL	QTY.	BOTANICAL NAME COMMON NAME	SIZE	CONDITION	SPACING
(1M)	6	Acer rubrum 'October Glory' October Glory Red Maple	2.5-3" CAL.	B&B	AS SHOWN
(1S)	16	Platanus occidentalis Americam Sycamore	2.5-3" CAL.	B&B	AS SHOWN

# LEGEND



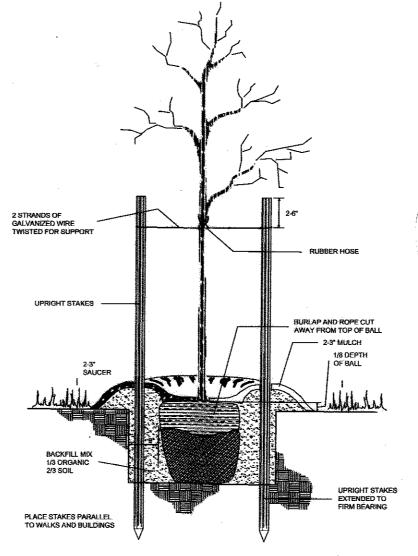


HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

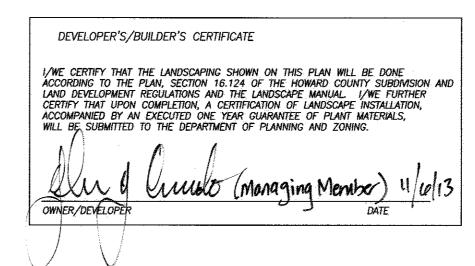
11-26-13 CHIEF, DIVISION OF LAND DEVELOPMENT

11/12/13 CHIÉF, DEVELOPMENT ENGINEERING DIVISION DATE





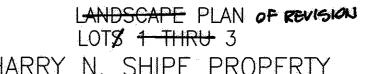
PLANTING INSTALLATION DETAIL



10/17/14 THE PURPOSE OF THIS PLAN OF REVISION IS TO REMOVE 522 SE FROM THE RECORDED FOREST CONSERVATION EASEMENT.

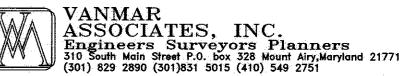
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DATE | REVISIONS

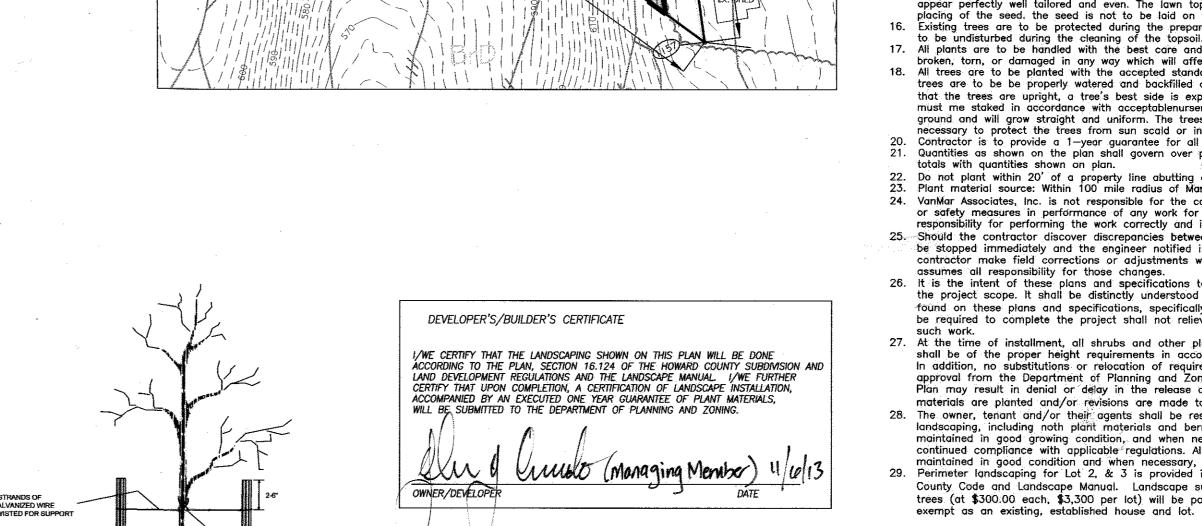


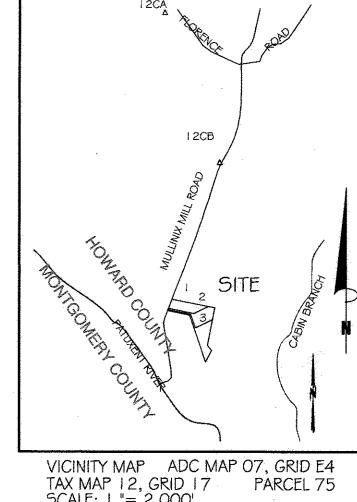
HARRY N. SHIPE PROPERTY

TAX MAP: 12 ELECTION DISTRICT: No. 4 SCALE: AS SHOWN GRID NO: 17 HOWARD COUNTY, MARYLAND DATE: OCT 2013 PARCEL NO: 75 EX. ZONING: RCDEO SHEET 6 OF 6



F-13-115





TAX MAP 12, GRID 17 PARCEL 75 SCALE: 1 "= 2,000"

LANDSCAPING NOTES: Plants shall conform to current American Standards for Nursery Stock by American Association of Nurserymen (AAN), particularly with regards to site, growth, and size of ball and density of branch structure. Contractor to ensure conformance to national and local buildings codes and ordinances.

All plants (B&B or container) shall be properly identified by weatherproof labels securely attached hereto before delivery to the project site. Labels shall identify plants by name, species, and size. Labels shall not be removed until the final inspection by the owners representative. Any material and/or work may be rejected by the owners representative if it does not meet the requirements

of the specifications, the contractor shall remove all rejected materials from the site. The contractor shall furnish all plants in quantities and sizes to complete the work as specified in plant schedule. The landscape contractor shall be responsible to verify all plant quantities on the plans prior to commencement of work. Quantities in the plant schedule are for the contractors convenience only and do not constitute the final count.

Substitutions in plant species or size shall not be permitted except with the written approval of the owners

Plants shall be located as shown on the drawings and by scaling or as designated in the field by the owners representative. Tree locations to be field adjusted as required to maintain 10' minimum clearance from all utilities, street lights, and driveways. All locations are to be approved by the owners representative before excavation. The contractor shall note that in the case of a discrepancy between the scaled and figured dimensions shown on these plans, the figured dimension shall govern.

The location of existing utilities shown hereon are approximate only. Contractor shall excavate to verify the existence, location, and depth of any utilities (constructed and existing) and shall notify the engineer of any discrepancies prior to the beginning of all work, excavation, grading, landscaping, etc. Contractor shall locate and mark all underground utility lines and irrigation systems prior to excavating plant beds or pits. All utility easement areas where no planting shall take place shall also be marked on the site,

prior to locating and digging the tree pits. If utility lines are encountered in excavation of tree pits, other locations for the trees shall be selected by the owners representative. Such changes shall be made by the contractor without additional compensation. No changes of location shall be made without the approval of the owners representative. Any utility (whether shown or not) damaged due to construction shall be repaired immediately. The contractor shall be responsible for removing or replacing any existing fences, driveways, etc., damaged or removed by the contractor during construction. All offsite disturbed areas shall be returned to their original condition.

All equipment and tools shall be placed so as not to interfere or hinder pedestrian and vehicular traffic

10. During planting operations, excess and waste materials shall be promptly and frequently removed from 11. All tree pits are to be excavated to a minimum depth to allow the tree root ball to be a minimum of 4" higher than finish grade. the tree root bal is to rest on undisturbed soil, or a compacted bed must be prepared for the tree root ball to rest on which will not subside causing the tree to sink below finish grade. All tree pits are to be a minimum of 12" larger on every side of the trees root ball,

a maximum of 2/3 existing topsoil from the site, which is cleaned and free of clay, a minimum of 1/3 organic material. These materials are to be mixed prior to backfilling when planting. The contractor is responsible to ensure that all tree pits are well drained. The landscape contractor,

12. The topsoil to be used to fill the tree pits is to be plant specific. The topsoil for trees shall consist of

without cost to the owner, will replace all plant material which is affected by poor drainage.

15. All lawn areas are to be tiled to a depth of 6" and all foreign material removed which will inhibit the healthy growth of the lawn. All old grass and grass roots are to be removed from the site. New topsoil of a minimum 4" is to be placed over the areas to be seeded. The grass areas are to be fine graded to ensure that no undulations occur on the lawn. The lawns are to be graded in such a way as to appear perfectly well tailored and even. The lawn topsoil is to be rolled and lightly irrigated prior to placing of the seed, the seed is not to be laid on frozen or soaked soil.

16. Existing trees are to be protected during the preparation of the lawn areas. The roots of the trees are to be undisturbed during the cleaning of the topsoil.17. All plants are to be handled with the best care and attention to ensure that the plants are not bruised broken, torn, or damaged in any way which will affect the plants general appearance and well being. 18. All trees are to be planted with the accepted standards of the American Association of Nurserymen. T trees are to be be properly watered and backfilled during planting. All care must be taken to ensure that the trees are upright, a tree's best side is exposed to the point of greatest visibility. 19. The trees must me staked in accordance with acceptablenursery practice to ensure that they are secure in the ground and will grow straight and uniform. The trees are to be wrapped if the contractor deems it

necessary to protect the trees from sun scald or insect attack. 20. Contractor is to provide a 1-year guarantee for all plant material and other work done on site. Quantities as shown on the plan shall govern over plant list quantities. Contractor to verify plant list

totals with quantities shown on plan. 22. Do not plant within 20' of a property line abutting and agricultural use.
23. Plant material source: Within 100 mile radius of Maryland if possible.

24. VanMar Associates, Inc. is not responsible for the contractor's utilization of men, materials, equipment or safety measures in performance of any work for this construction. The contractor assumes all responsibility for performing the work correctly and in conformance with all code requirements. 25. Should the contractor discover discrepancies between the plans and field conditions, the work shall be stopped immediately and the engineer notified immediately to resolve the situation. Should the contractor make field corrections or adjustments without notifying the engineer, then the contractor

assumes all responsibility for those changes.

26. It is the intent of these plans and specifications to provide 100% completed work and this shall be the project scope. It shall be distinctly understood that failure to notify the engineer of discrepancie found on these plans and specifications, specifically and work which would naturally and/or normally be required to complete the project shall not relieve the contractor of his responsibility to perform

such work. 27. At the time of installment, all shrubs and other plantings herewith listed and approved for this site shall be of the proper height requirements in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocation of required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from this approved Landscape

Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to applicable plans and certificates. 28. The owner, tenant and/or their agents shall be responsible for maintenance of the required

landscaping, including noth plant materials and berms, fences and walls. All plant material shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition and when percentage are replaced. maintained in good condition and when necessary, repaired or replaced. . Perimeter landscaping for Lot 2, & 3 is provided in accordance with Section 16.124 of the Howard County Code and Landscape Manual. Landscape surety in the amount of \$6600.00 for 22 shade trees (at \$300.00 each, \$3,300 per lot) will be posted with the builder's grading permit. Lot 1 is