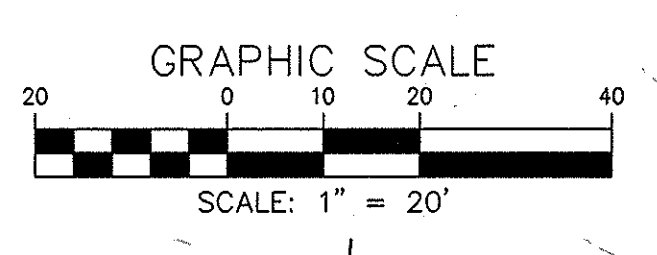


STORMWATER MANAGEMENT PRACTICES																
LOT No.	ADDRESS	GREEN ROOF A-1 (Y/N)	PERMEABLE PAVING A-2 (Y/N)	REINFORCED TURF A-3 (Y/N)	DISCONNECTION OF ROOFTOP RUNOFF N-1 (Y/N)	DISCONNECTION OF NON-ROOFTOP RUNOFF N-2 (Y/N)	SHEET FLOW TO CONSERVATION AREAS N-3 (Y/N)	RAINWATER HARVESTING M-1 (NUMBER)	SUBMERGED GRAVEL WETLANDS M-2 (NUMBER)	LANDSCAPE INFILTRATION M-3 (NUMBER)	INFILTRATION BERM M-4 (NUMBER)	DRY WELLS M-5 (NUMBER)	MICRO BIO-RETENTION M-6 (NUMBER)	RAIN GARDENS M-7 (NUMBER)	SWALES M-8 (NUMBER)	ENHANCED FILTER M-9 (NUMBER)
2	5510 WATERLOO ROAD															

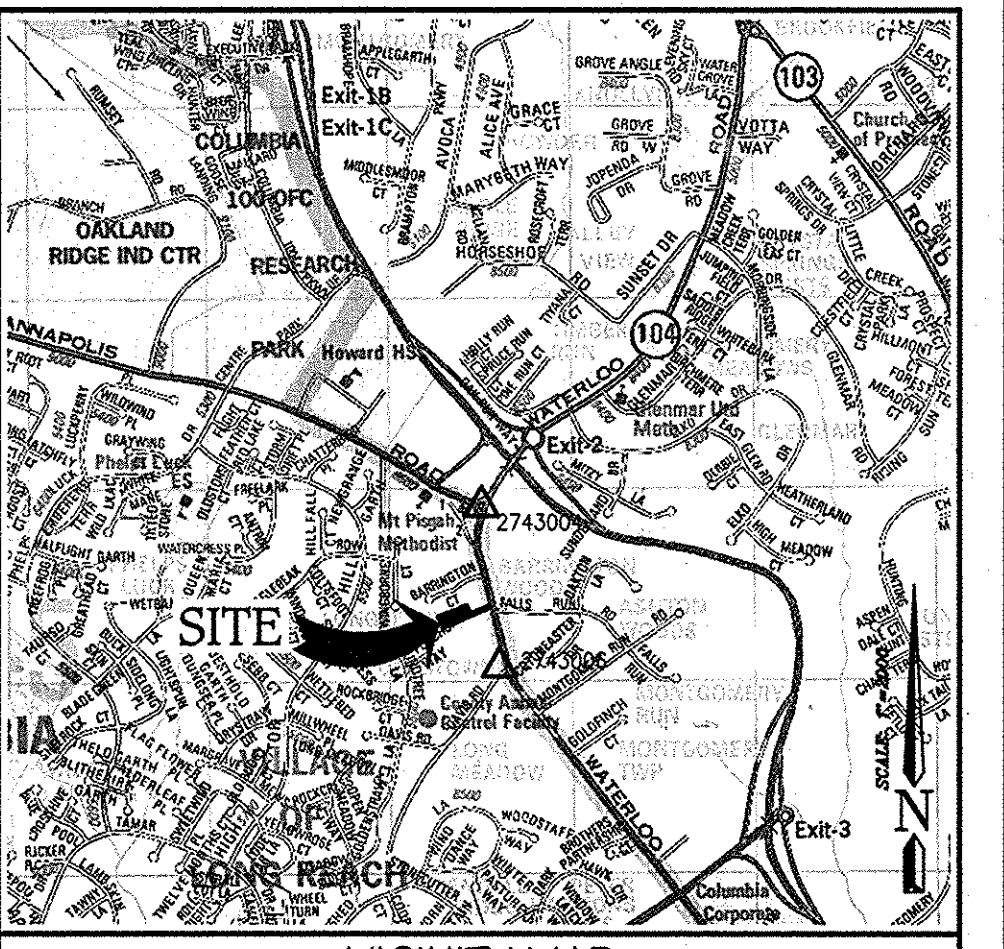
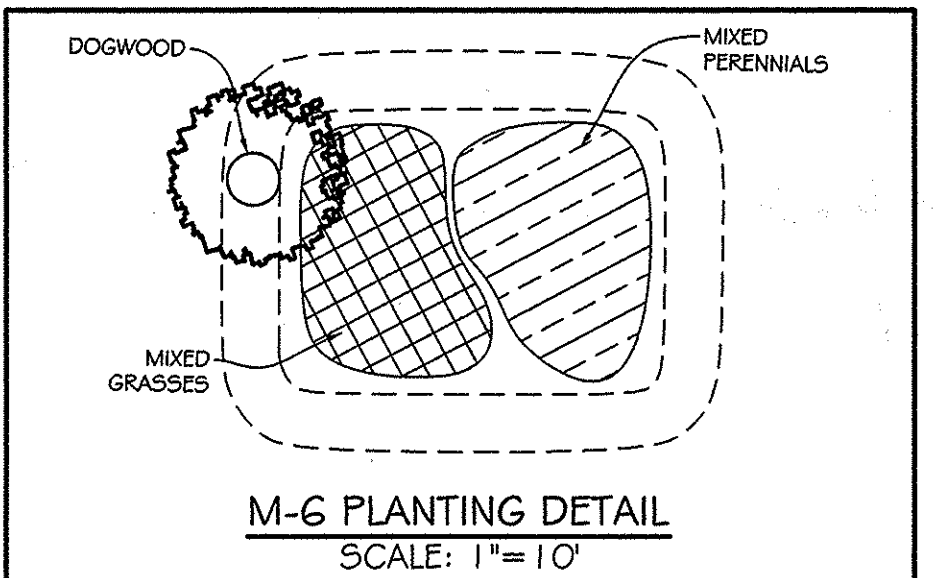
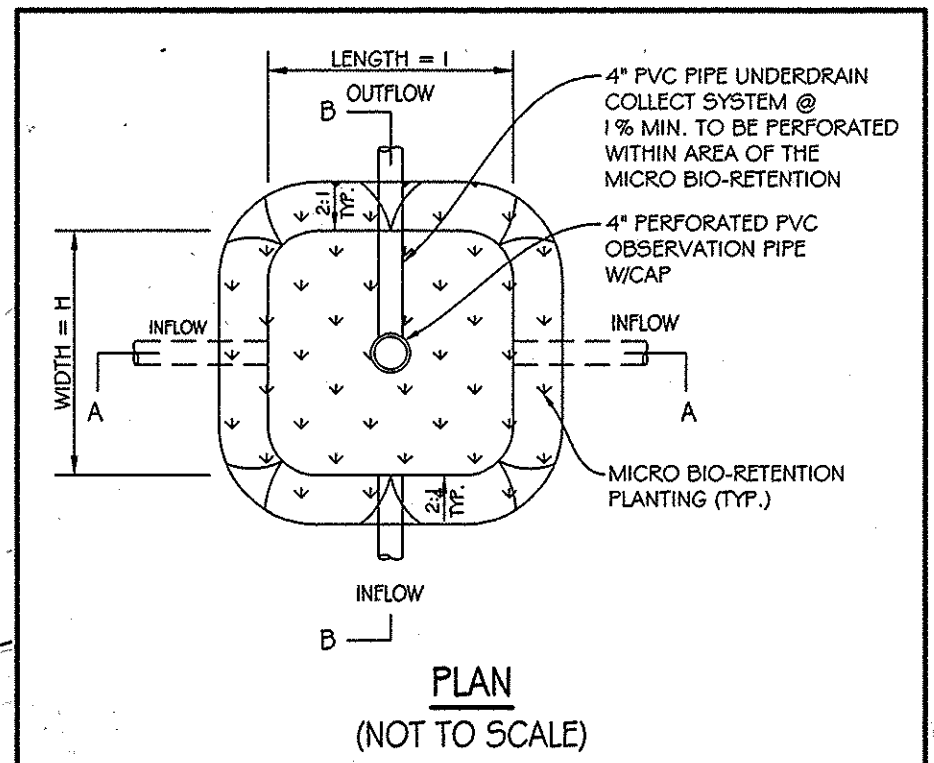
STRUCTURE SCHEDULE						
No	Type	Coordinates	Top Elevation		Base Diameter	Remarks
			Upper	Lower		
20	In-Line Catch Basin	N 1366610.60 E 565549.40	GRATE =	507.60	8"	Nyloplast 8" In-Line Drain w/Standard grate (or equivalent)
10	Drain Basin	N 1366551.36 E 565539.02	GRATE =	506.95	15"	Nyloplast 15" Drain Basin w/Standard grate (or equivalent)

SOILS LEGEND		
SOILS	NAME	CLASS
UcB	Urban land - Chillum-Beltsville complex, 0 to 5 percent slopes	D
UsD	Urban land - Sassafras-Beltsville complex, 5 to 15 percent slopes	D



M-6										
BIO RETENTION FILTER	A	B	C	D	E	F	G	H	I	J
I	506.6	506.6	505.1	504.85	503.85	503.18	503.00	15'	20'	502.18

M-6 PLANT MATERIAL		
QUANTITY	NAME	MAX. SPACING (FT.)
40	MIXED PERENNIALS	1 FT
40	MIXED GRASSES	1 FT
1	SILKY DOGWOOD	PLANT AWAY INFLOW LOCATION

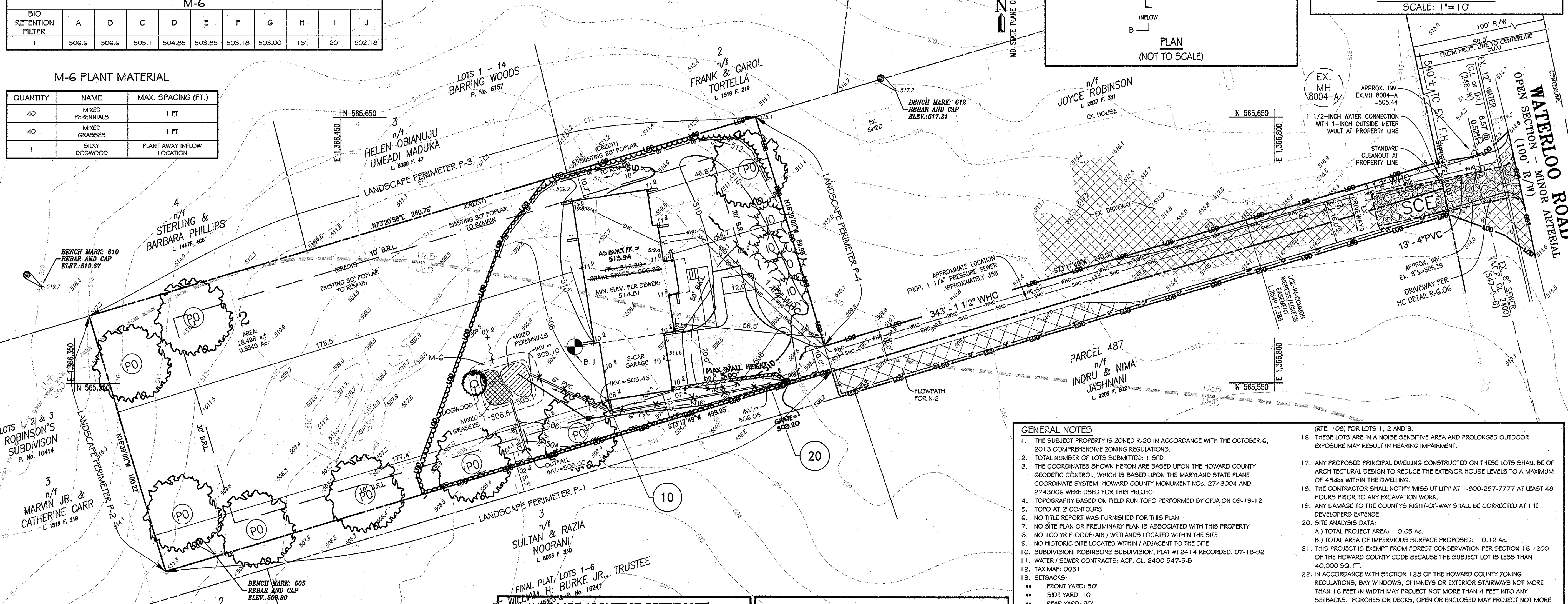


VICINITY MAP
HOWARD COUNTY
MAP PAGE 16 - GRID E5
SCALE: 1" = 2000'
MAP COPYRIGHT © KAPPA MAP GROUP, LLC (800) 829-6277 (USED WITH PERMISSION)

INDEX CHART	
SHEET	DESCRIPTION
1	SITE / SEDIMENT, EROSION CONTROL PLAN
2	SITE / SEDIMENT, EROSION CONTROL NOTES AND DETAILS
3	SITE / SEDIMENT, EROSION CONTROL NOTES AND DETAILS

ADDRESS CHART	
LOT NUMBER	STREET ADDRESS
2	5510 WATERLOO ROAD

LEGEND	
EXISTING 2' CONTOURS	LIMIT OF DISTURBANCE
EXISTING 10' CONTOURS	SILT FENCE
EXISTING SPOT GRADE ELEVATION	STABILIZED CONSTRUCTION ENTRANCE
EXISTING TREES	SOIL LINES AND TYPES
EXISTING TREE LINE	PROPOSED DRAINAGE DIVIDE
PROPOSED CONTOURS	PROPOSED ROOF DRAIN
PROPOSED SPOT GRADE ELEVATION	PROPOSED CLEANOUT
PROPOSED TREES	PROPOSED DOWNSPOUT
PROPOSED TREE LINE	



GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED R-20 IN ACCORDANCE WITH THE OCTOBER 6, 2013 COMPREHENSIVE ZONING REGULATIONS.
- TOTAL NUMBER OF LOTS SUBMITTED: 1 SFD
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM, HOWARD COUNTY MONUMENT NOS. 2743004 AND 2743006 WERE USED FOR THIS PROJECT
- TOPOGRAPHY BASED ON FIELD RUN TOPO PERFORMED BY CFJA ON 09-19-12
- TOPO AT 2' CONTOURS
- NO TITLE REPORT WAS FURNISHED FOR THIS PLAN
- NO SITE PLAN OR PRELIMINARY PLAN IS ASSOCIATED WITH THIS PROPERTY
- NO 100 YR FLOODPLAIN / WETLANDS LOCATED WITHIN THE SITE
- NO HISTORIC SITE LOCATED WITHIN / ADJACENT TO THE SITE
- SUBDIVISION: ROBINSONS SUBDIVISION, PLAT #12414 RECORDED: 07-18-92
- WATER / SEWER CONTRACTS: ACP. CL. 2400 547-5-B
- TAX MAP: 0031
- SETBACKS:
 - FRONT YARD: 50'
 - SIDE YARD: 10'
 - REAR YARD: 30'
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - A.) WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE)
 - B.) SURFACE - 6" OF COMPACTED CRUSHER RUN BASE W/ TAR AND CHIP COATING (1 - 1/2" MIN.)
 - C.) GEOMETRY - MAX. 15% GRADE, MAX 10% GRADE CHANGE, MIN. 45' TURNING RADIUS
 - D.) STRUCTURES - (BRIDGES / CULVERTS) CAPABLE OF SUPPORTING 25 GROSS TONS (#25-LOADING)
 - E.) DRAINAGE ELEMENTS CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
 - F.) STRUCTURE CLEARANCES - MIN. 12'
 - G.) MAINTENANCE SUFFICIENT TO INSURE ALL WEATHER USE.
- A DESIGN MANUAL WAIVER WAS APPROVED ON 11-5-2013 REDUCING THE REQUIRED DRIVEWAY WIDTH FROM 12' TO 10'. SEE SHEET 3 FOR LETTER.
- VP 87-31 IS AN APPROVED WAIVER FROM SECTIONS 16.115.B.2; 16.115.C.4 FOR A REDUCTION OF THE RECD MINIMUM PUBLIC ROAD FRONTAGE OF 20' TO 10' FOR LOTS 2 & 3, AND TO ALLOW DIRECT ACCESS TO A MINOR ARTERIAL HIGHWAY (RTE. 108) FOR LOTS 1, 2 AND 3.
- THESE LOTS ARE IN A NOISE SENSITIVE AREA AND PROLONGED OUTDOOR EXPOSURE MAY RESULT IN HEARING IMPAIRMENT.
- ANY PROPOSED PRINCIPAL DWELLING CONSTRUCTED ON THESE LOTS SHALL BE OF ARCHITECTURAL DESIGN TO REDUCE THE EXTERIOR HOUSE LEVELS TO A MAXIMUM OF 45.5ft WITHIN THE DWELLING.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION, OR THEIR BUFFERS, 100 YEAR FLOODPLAIN, STEEP SLOPES OR FOREST CONSERVATION EASEMENTS EXIST ON-SITE.
- THERE ARE NO CEMETERIES ON-SITE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- STORMWATER MANAGEMENT WAS DESIGNED FOR ESD TO THE MEP. SIMPLIFIED ENVIRONMENTAL CONCEPT PLAN #15-088 APPROVED 9/28/2011
- EXISTING UTILITIES ARE BASED ON EXISTING HOWARD COUNTY PLANS 246-W AND 547-5B.
- SHC ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE.
- FOR DRIVEWAY ENTRANCE DETAILS REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6.06.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED 8 TREES IN THE AMOUNT OF \$2,400 IS PART OF THE BUILDER'S GRADING PERMIT APPLICATION FOR THIS LOT #2.
- ESD FACILITIES OWNED AND MAINTAINED BY THE PROPERTY OWNER.

LANDSCAPE ARCHITECT CERTIFICATE
I HEREBY CERTIFY THAT THE INFORMATION SHOWN HEREON IS CORRECT AND TAKEN FROM AVAILABLE PLANS AND RECORDS.
LES POWELL
REGISTERED LANDSCAPE ARCHITECT
DATE: 8/31/15
EXP. DATE:

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
DAVID M. O'BRYEN
PROFESSIONAL ENGINEER
MD #14752
DATE: 1/14/16
EXP. DATE:

LANDSCAPE ARCHITECT CERTIFICATE
I HEREBY CERTIFY THAT THE INFORMATION SHOWN HEREON IS CORRECT AND TAKEN FROM AVAILABLE PLANS AND RECORDS.
SALLIE P. STEWART
REGISTERED LANDSCAPE ARCHITECT
MD #612
DATE: 1/23/14
EXP. DATE: 9/8/15
Seal not valid without signature

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
ALAN BARNEY
PROFESSIONAL ENGINEER
MD #29891
DATE: 1/23/14
EXP. DATE: 1/14/16
Seal not valid without signature

BENCH MARKS

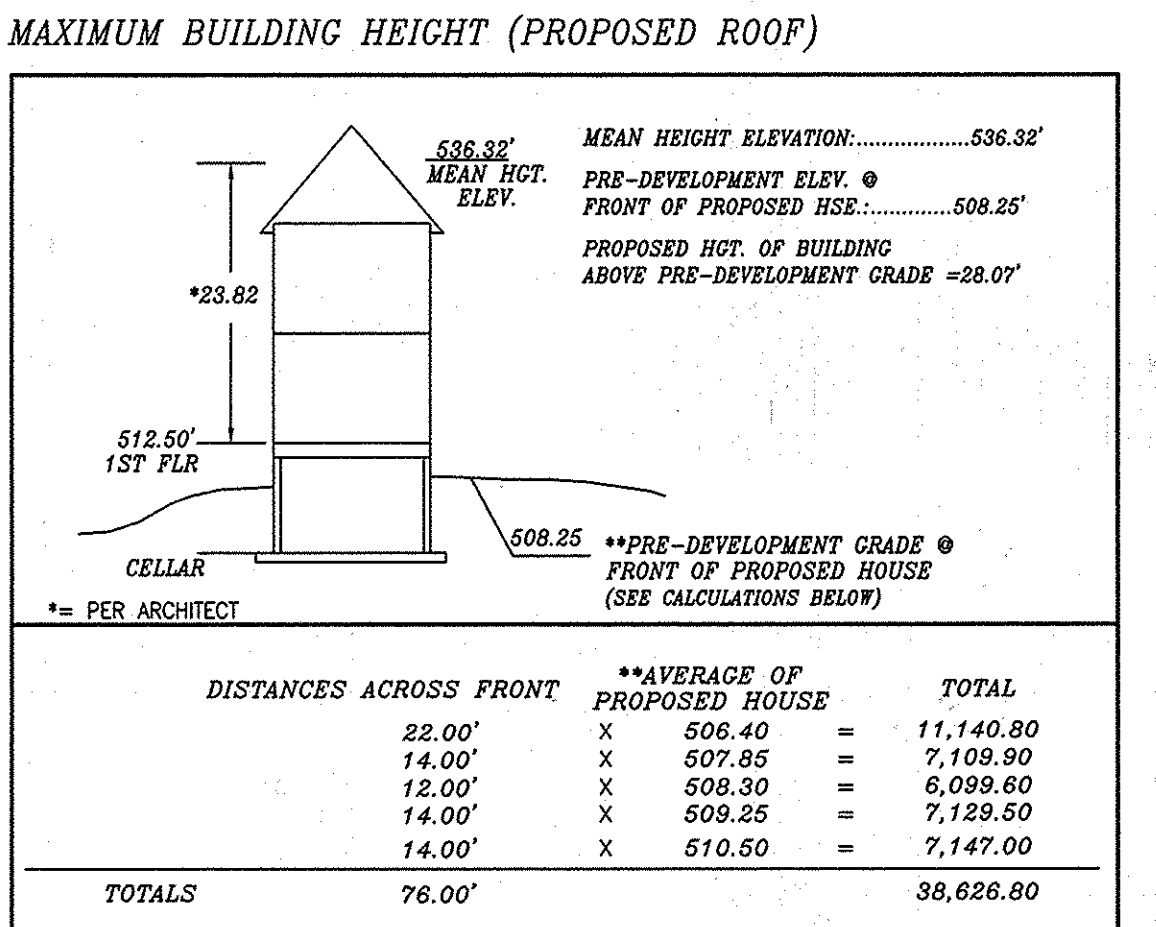
No. 605
N. 565486.18
E. 366402.39
LOC. SOUTHERN REAR CORNER OF LOT 2

No. 612
N. 565660.13
E. 136657.77
LOC. LOT 1

ELEV. 509.90
ELEV. 517.21

IMPERVIOUS AREA

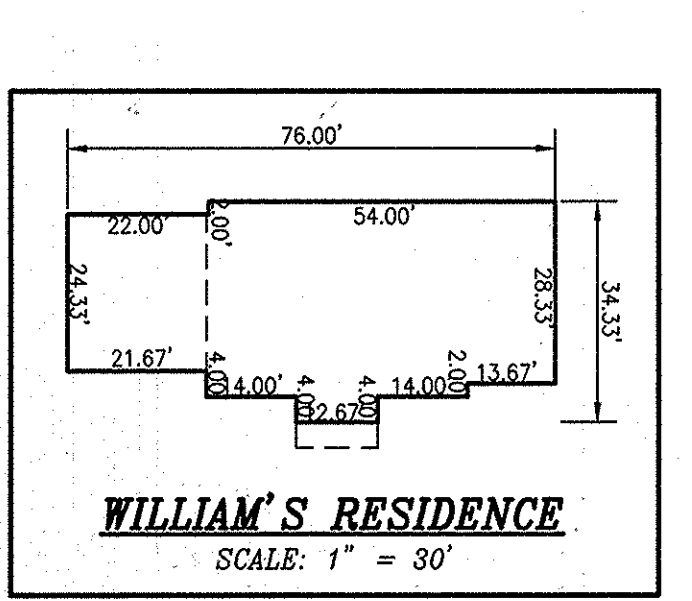
HOUSE	2,169 sf
NEW DRIVEWAY AND WALKWAY	3,295 sf
TOTAL	5,463 sf



AVERAGE GRADE AT FRONT OF HOUSE: 508.85

****FOR THE PURPOSE OF DETERMINING BUILDING HEIGHT, AT NO POINT MUST THE FINISHED GRADE BE HIGHER THAN THE PRE-DEVELOPMENT GRADE. THE GRADE USED IS THE LOWER OF EITHER FINISHED GRADE OR PRE-DEVELOPMENT GRADE ALONG THE OUTSIDE WALL.**

DISTANCES ACROSS FRONT	AVERAGE OF PROPOSED HOUSE	TOTAL
22.00'	X 506.40	= 11,140.80
14.00'	X 507.85	= 7,109.90
12.00'	X 508.30	= 6,099.60
14.00'	X 509.25	= 7,129.50
14.00'	X 510.50	= 7,147.00
TOTALS	78.00'	38,626.80



NO.	REVISION	DATE
1	HOUSE RAISED 1.44' DUE TO GROUNDWATER FRONT DRIVEWAY TURNAROUND SHIFTED TOWARDS HOUSE FOR DRAINAGE FRONT YARD GRADINGS REVISED RETAINING WALL @ DRIVEWAY EXTENDED INLET LOCATION REVISED TO COLLECT DRAINAGE	5-11-15

ENGINEER'S CERTIFICATE
I 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 COUNTY CONSERVATION DISTRICT.
ALAN BARNEY
SIGNATURE OF ENGINEER
DATE: 1/23/14

DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 INSPECTION BY THE HOWARD COUNTY CONSERVATION DISTRICT.
Jeffery & Sylvie Williams
SIGNATURE OF DEVELOPER
DATE: 1/24/14

OWNER / DEVELOPER
JEFFERY & SYLVIE WILLIAMS
7230 DARBY DOWN, UNIT D
ELK RIDGE, MD 21075
PHONE: 410-265-4511

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Walter J. ...
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 2/07/14

David ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 2-6-14

David ...
DIRECTOR - DEPARTMENT OF PLANNING AND ZONING
DATE: 2/2/14

SUBDIVISION	SECTION	LOT NO. / PARCEL			
ROBINSONS SUBDIVISION	2	249			
PLAT NO.	GRID NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
10414	19	R-20	0031	2	6066.05
WATER CODE	SEWER CODE				

RED-LINE REVISION

SITE DEVELOPMENT & SEDIMENT, EROSION CONTROL PLAN
5510 WATERLOO ROAD - LOT 2
SINGLE FAMILY RESIDENTIAL
TAX MAP - 0031 GRID - 0019 PARCEL - 249
ROBINSONS SUBDIVISION
ELLCOTT CITY (6th) ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

CPJ Charles P. Johnson & Associates, Inc.
Civil and Environmental Engineers • Planners • Landscape Architects • Surveyors
1751 Elton Rd., Ste. 300 Silver Spring, MD 20903 301-434-7000 Fax: 301-434-9394
www.cpja.com • Silver Spring, MD • Gaithersburg, MD • College Park, MD • Frederick, MD • Fairfax, VA

CLIENT:	PRELIMINARY PLAN NO.	SITE PLAN NO.
JEFF & SYLVIE WILLIAMS C/O. NDI HOMES@MARYLAND 134 HOLIDAY COURT SUITE 300 ANNAPOLIS, MD 21403 PHONE: (410) 265-4511 ATTN: MS. JONIRAY		
DESIGN	RFI	SHEET
DRAFT	RFI	1 OF 3
DATE	SCALE	FILE NO.:
OCT. 2012	AS SHOWN	42-156-21

B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Definition
Using vegetation as cover to protect exposed soil from erosion.

Purpose
To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies
On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity
Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

- Adequate vegetative stabilization requires 95 percent groundcover.
- If an area has less than 40 percent groundcover, reestablish following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
- If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
- Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition
The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose
To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies
Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation

- Temporary Stabilization**
 - Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disk or other suitable means.
- Permanent Stabilization**
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soluble salts less than 500 parts per million (ppm).
 - 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 loesslike soils will be planted, then a sandy soil with less than 30 percent silt plus clay would be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - 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.
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - Mix soil amendments into the top 3 to 5 inches of soil by disk or other suitable means. Rate 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.

B. Topsoiling

- To provide a stable 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, excessive toxic to plants, and/or unacceptable soil texture.
- 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 advanced for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
- Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish confining 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.
- Areas having slopes steeper than 2:1 require special consideration and design.
- Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - 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.
 - 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.
- Topsoil Application**
 - Erosion and sediment control practices must be maintained when applying topsoil.
 - Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
- Soil Amendments (Fertilizer and Lime Specifications)**
 - 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.
 - Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
 - Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total calcium oxide (calcium plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 90 to 100 percent will pass through a #20 mesh sieve.
 - Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disk or other suitable means.
 - Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 6 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

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

Definition
The application of seed and mulch to establish vegetative cover.

Purpose
To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

A. Seeding

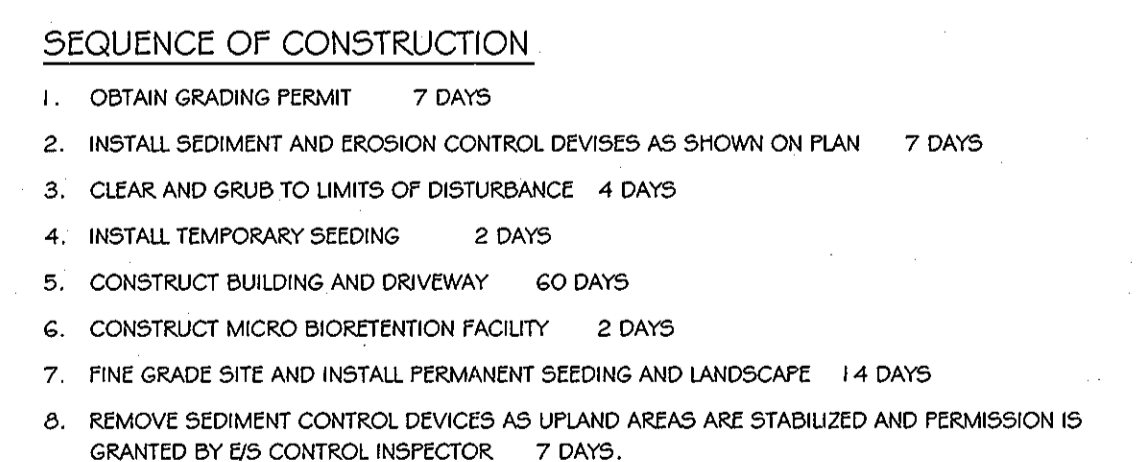
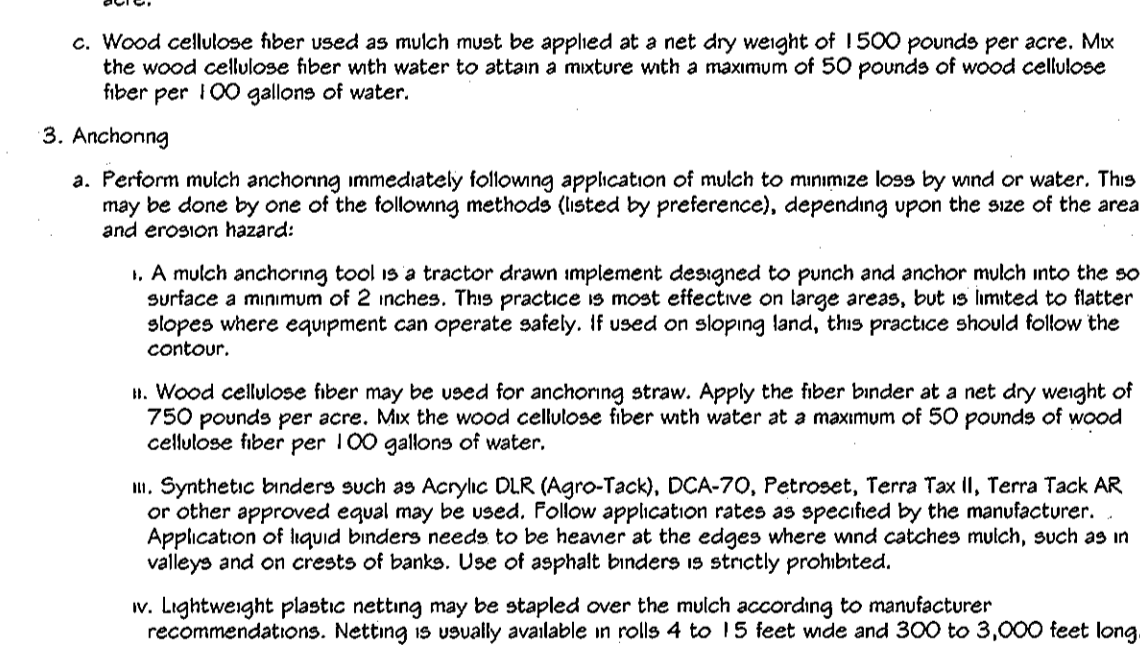
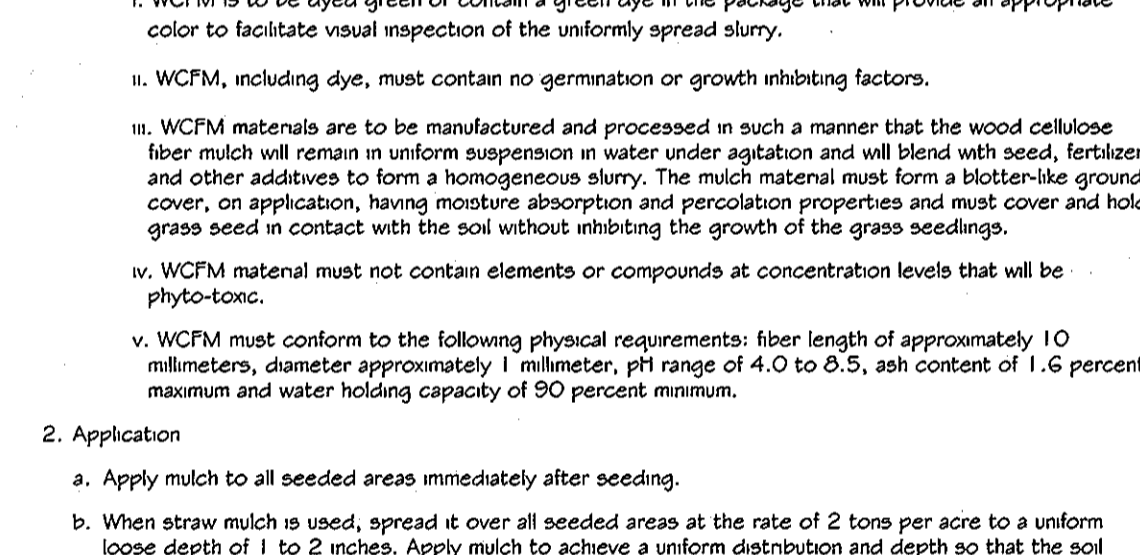
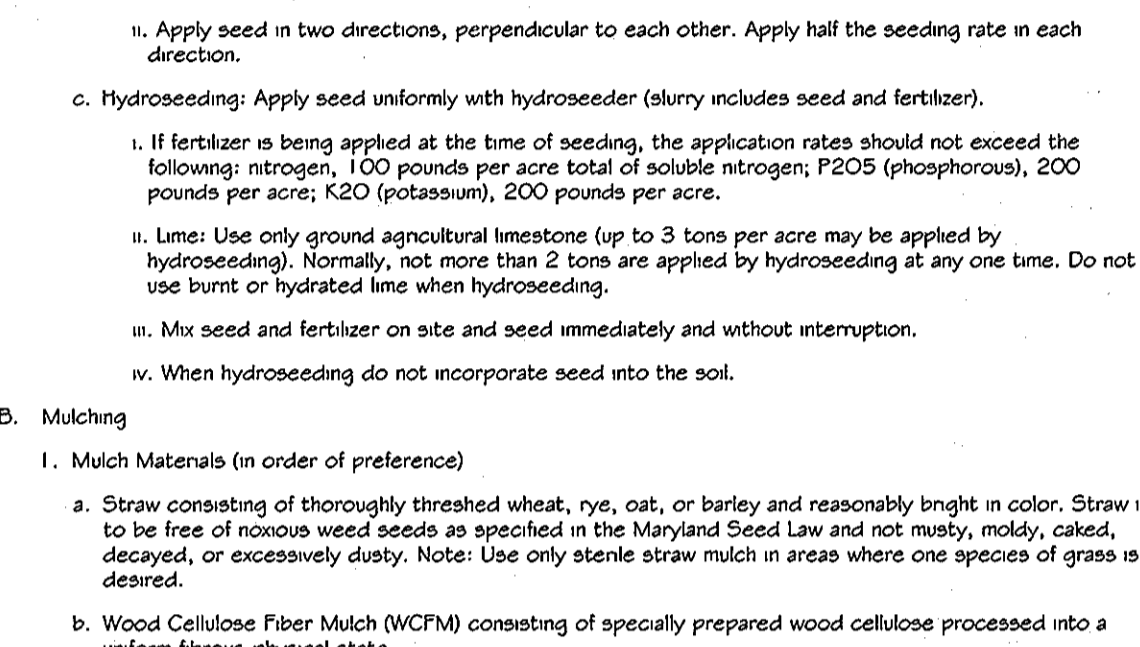
- Specifications**
 - All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rates.
 - Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
 - Inoculants for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
 - Soil or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min) to permit dissipation of phytotoxic materials.
- Application**
 - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
 - Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
 - Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
 - Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
 - If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
 - Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - Mix seed and fertilizer on site and seed immediately and without interruption.
 - When hydroseeding do not incorporate seed into the soil.

B. Mulching

- Mulch Materials (in order of preference)**
 - Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
 - Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFM, including dye, must contain no germination or growth inhibiting factors.
 - WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seeds, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a biodegradable ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without whitening of the grass seedings.
 - WCFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
 - WCFM must conform to the following physical requirements: fiber length of approximately 1.0 millimeter, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, wet content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
- Application**
 - Apply mulch to all seeded areas immediately after seeding.
 - When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
 - Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

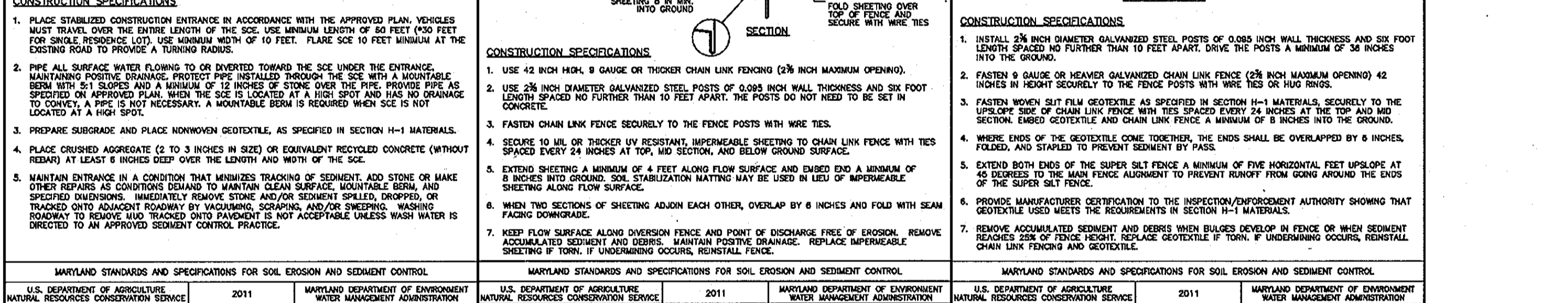
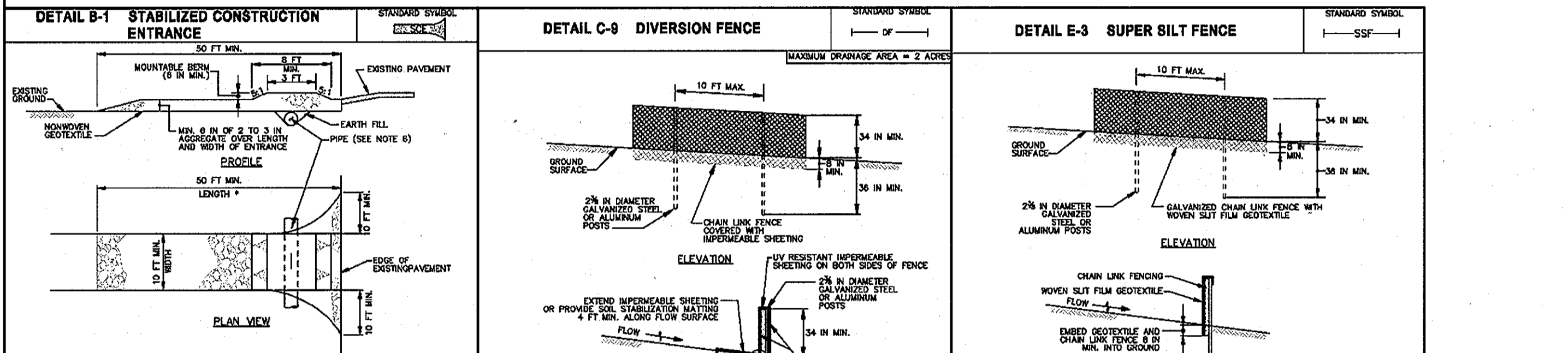
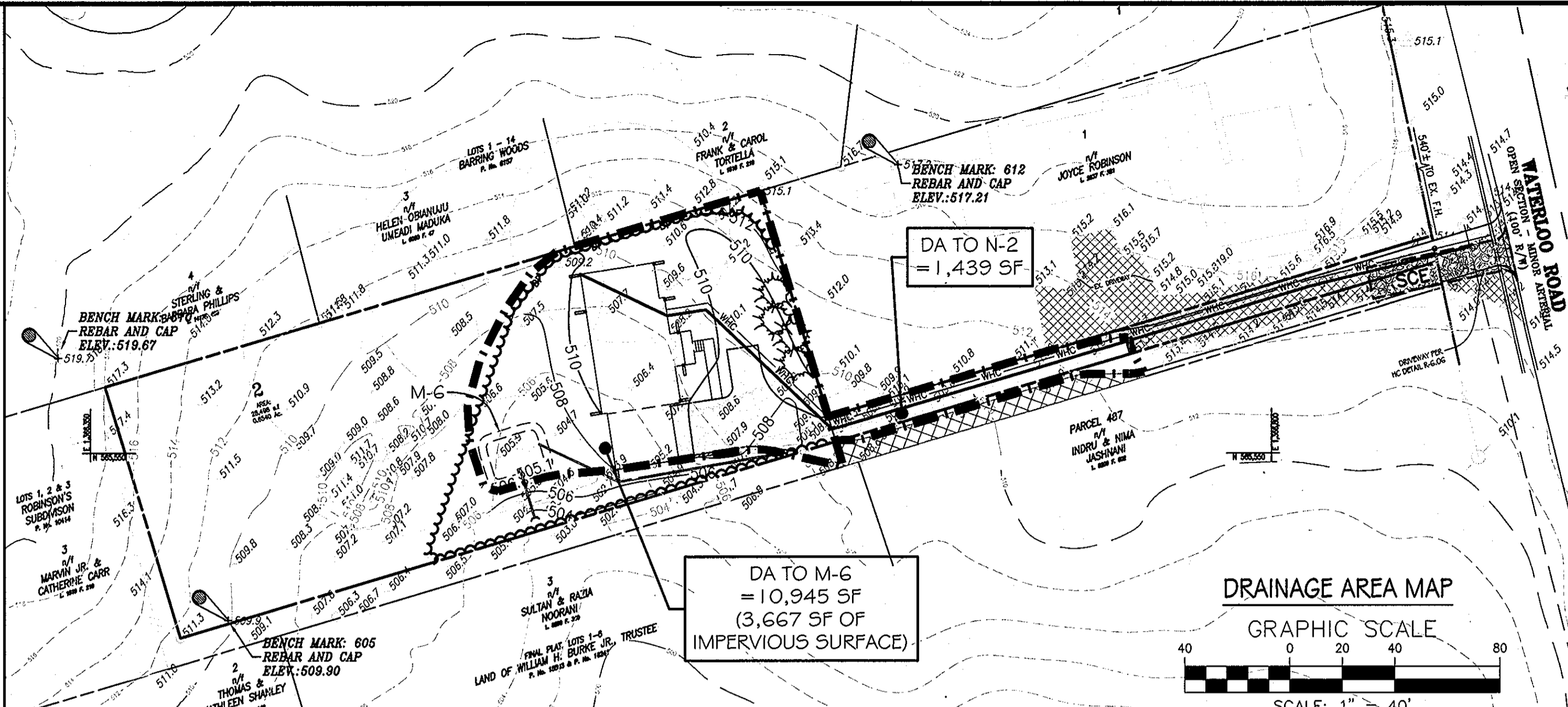
3. Anchoring

- Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
 - A mulch anchoring tool is a tractor draw implement designed to punch and anchor mulch into the soil surface at a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
 - Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petrosel, Terra Tax II, Terra Tack AR, or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.



ENGINEER'S CERTIFICATE
I 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.
SIGNATURE OF ENGINEER: ALAN BARNEY DATE: 1/23/14

DEVELOPER'S CERTIFICATE
I, WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
SIGNATURE OF DEVELOPER: JEFFERY & SYLVIE WILLIAMS DATE: 1/24/14



PERMANENT SEEDING SUMMARY		Fertilizer Rate (10-20-20)		Lime Rate			
Hardness Zone (from Figure B.3):	GB						
Seed Mixture (from Table B.3):	9						
NO.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P2O5	K2O
3	Tall fescue	60 lbs	Mar. 1 - May 15 and Aug. 1 - Sept. 30	1/4 - 1/2 in.			
3	Perennial Ryegrass	20 lbs	Mar. 1 - May 15 and Aug. 1 - Sept. 30	1/4 - 1/2 in.	45 pounds per acre (1 000/1000 st)	90 lb/ac (20/1000 st)	2 tons/ac (200/1000 st)
3	Kentucky Bluegrass	40 lbs	Mar. 1 - May 15 and Aug. 1 - Sept. 30	1/4 - 1/2 in.			

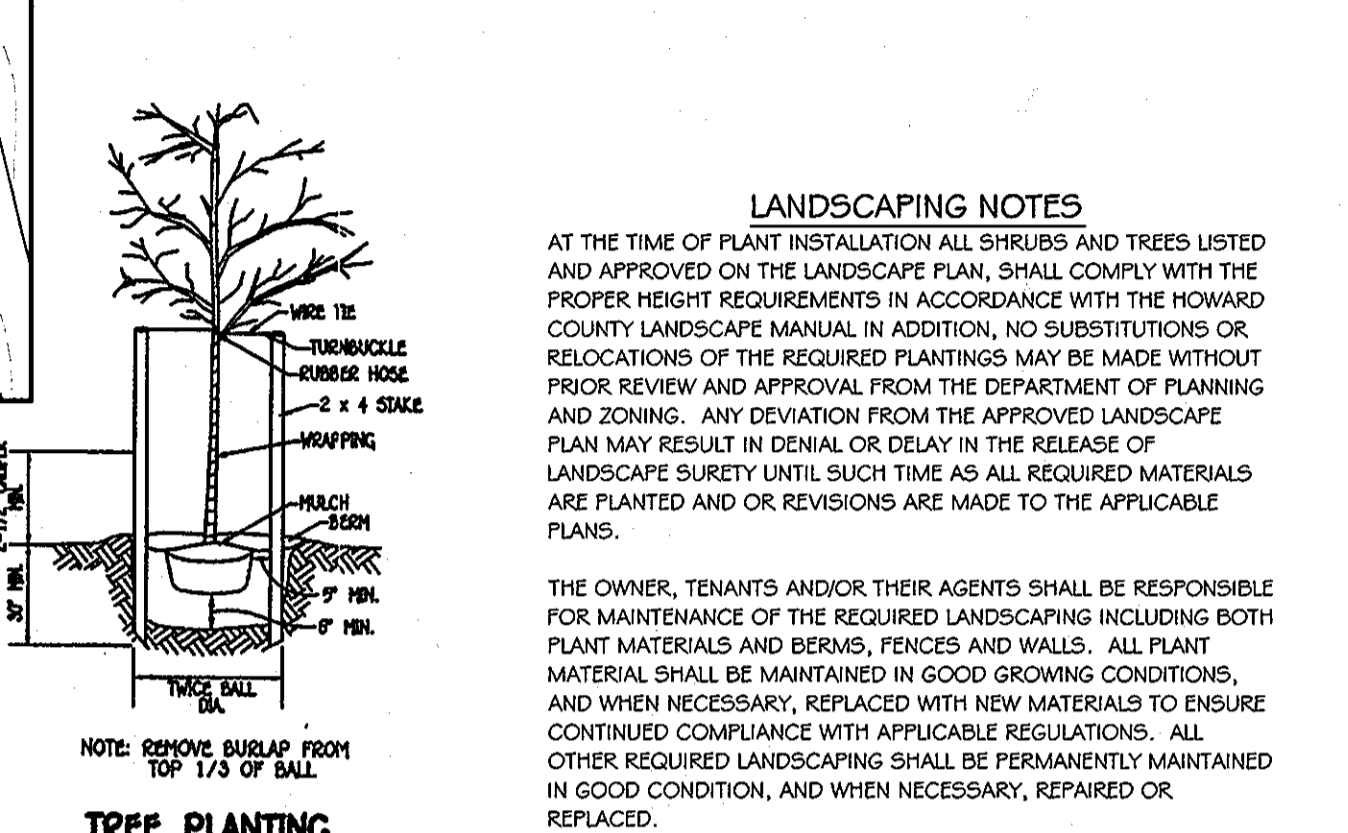
TEMPORARY SEEDING SUMMARY		Fertilizer Rate (10-10-20)		Lime Rate			
Hardness Zone (from Figure B.3):	GB						
Seed Mixture (from Table B.1):							
NO.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P2O5	K2O
	Barley	96 lbs	Mar. 1 - May 15 and Aug. 1 - Sept. 30	1 in.			
	Rye (Foxtail millet)	30 lbs	Mar. 1 - May 15 and Aug. 1 - Sept. 30	0.5 in.			

SCHEDULE A - PERIMETER LANDSCAPE EDGE

PERIMETER CATEGORY	P-1 ADJACENT TO PERIMETER PROP.	P-2 ADJACENT TO PERIMETER PROP.	P-3 ADJACENT TO PERIMETER PROP.	P-4 ADJACENT TO PERIMETER PROP.	TOTAL
LANDSCAPE TYPE	A	A	A	A	
LINEAR FEET OF PERIMETER	260.76 LF.	100.22 LF.	260.76 LF.	89.99 LF.	
NUMBER OF PLANTS REQUIRED					
SHADE TREES	260.76 / 4 = 65.19	100.22 / 2 = 50.11	260.76 / 4 = 65.19	89.99 / 1 = 89.99	
EVERGREEN TREES	0	0	0	0	
CREDIT FOR WALL, FENCE OR BURN	N/A	N/A	N/A	N/A	
CREDIT FOR EXISTING VEGETATION	NO	NO	YES	NO	
SHADE TREES	0	0	3	0	
EVERGREEN TREES	0	0	0	0	
NUMBER OF PLANTS PROVIDED					
SHADE TREES	4	2	1	1	8
EVERGREEN TREES	0	0	0	0	0

FINANCIAL SURETY FOR THE REQUIRED 6 TREES IN THE AMOUNT OF \$2,400 IS PART OF THE BUILDERS GRADING PERMIT APPLICATION FOR THIS LOT #2. THE ADDITIONAL 4 EVERGREENS ALONG PAR 4 ARE NOT REQUIRED BUT BEING PROVIDED FOR ADDITIONAL SCREENING AS RECOMMENDED BY STAFF.

QTY.	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE
4	IO	Ilex opaca	American Holly	6'-8" B&B
8	PO	Platanus occidentalis	Sycamore	2 1/2" cal. B&B



LANDSCAPING NOTES
AT THE TIME OF PLANT INSTALLATION ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE 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 THE APPLICABLE PLANS.

THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERRIES, FENCES AND WALLS. ALL PLANT MATERIAL SHALL BE MAINTAINED IN GOOD GROWING CONDITIONS, 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 NECESSARY, REPAIRED OR REPLACED.

DEVELOPER'S / BUILDERS CERTIFICATE
I, WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO SECTION 16.1.2.4 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I, WE FURTHER CERTIFY THAT UPON COMPLETION OF CERTIFICATION OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXERCISED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME: S. STEWART DATE: 1/24/14

LANDSCAPE ARCHITECT CERTIFICATE
I HEREBY CERTIFY THAT THE INFORMATION SHOWN HEREON IS CORRECT AND TAKEN FROM AVAILABLE PLANS AND RECORDS.
SALLIE P. STEWART REGISTERED LANDSCAPE ARCHITECT MD. #612
DATE: 1/23/14 EXP. DATE: 9/8/15
Seal not valid without signature.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
ALAN BARNEY PROFESSIONAL ENGINEER MD. #29891
DATE: 1/23/14 EXP. DATE: 1/14/18
Seal not valid without signature.

SITE/SEDIMENT, EROSION CONTROL NOTES AND DETAILS
5510 WATERLOO ROAD - LOT 2
SINGLE FAMILY RESIDENTIAL
TAX MAP - 0031 GRID - 0019 PARCEL - 249
ROBINSONS SUBDIVISION
ELLICOTT CITY (6th) ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

CPI Charles P. Johnson & Associates, Inc.
Civil and Environmental Engineers • Planners • Landscape Architects • Surveyors
1751 Elton Rd., Ste. 300 Silver Spring, MD 20903 301-434-7000 Fax: 301-434-9394
www.cpi.com • Silver Spring, MD • Gaithersburg, MD • College Park, MD • Frederick, MD • Fairfax, VA

CLIENT:	PRELIMINARY PLAN NO.	SITE PLAN NO.
JEFF & SYLVIE WILLIAMS C/O NDI HOMES&MARYLAND 154 HOLIDAY COURT, SUITE 300 ANNAPOLIS, MD 21401 PHONE: (410) 265-4501 ATTN: MS.JONRAY		
DESIGN RPI	SHEET 2	OF 3
DRAWN RPI		
DATE OCT. 2012		
SCALE AS SHOWN	FILE NO:	
		42-156-21

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

Base Course - The base course shall be AASHTO No. 3 or 4-course aggregate with an assumed open pore space of 30% (n = 0.30).

3. Reinforced Turf

Reinforced Grass Pavement (RGP) Whether used with grass or gravel, the RGP thickness shall be at least 1 1/2" thick with a load capacity capable of supporting the traffic and vehicle types that will be carried.

B.4.C Specifications for Micro-Bioretenation, 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. Filtering Media or Planting Soil

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretenation practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:

- Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
- Organic 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 excavated.

3. 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

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

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 contribute to design failure.

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 restructure 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 tracks.

4. Plant Material

Recommended plant material for micro-bioretenation practices can be found in Appendix A, Section A.2.3.

5. Plant Installation

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

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted to 1/8" 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.

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

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, nutrients, 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

Underdrains should meet the following criteria:

- Pipe - Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 758, Type PS 28, 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 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with 3/4" (No. 4 or 4x4) galvanized hardware cloth.
- Gravel - The gravel layer (No. 57 stone pre-treated) shall be at least 3" thick above and below the underdrain.
- The main collector pipe shall be at a minimum 0.5% slope.
- A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.
- A 4" layer of pea gravel (3/8" to 3/4" 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 bed thickness exceeds 24".

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

7. Miscellaneous

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

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

Table B.4.1 Materials Specifications for Micro-Bioretenation, Rain Gardens & Landscape Infiltration-

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

Supp. 1

B.4.4

Supp. 1

B.4.5

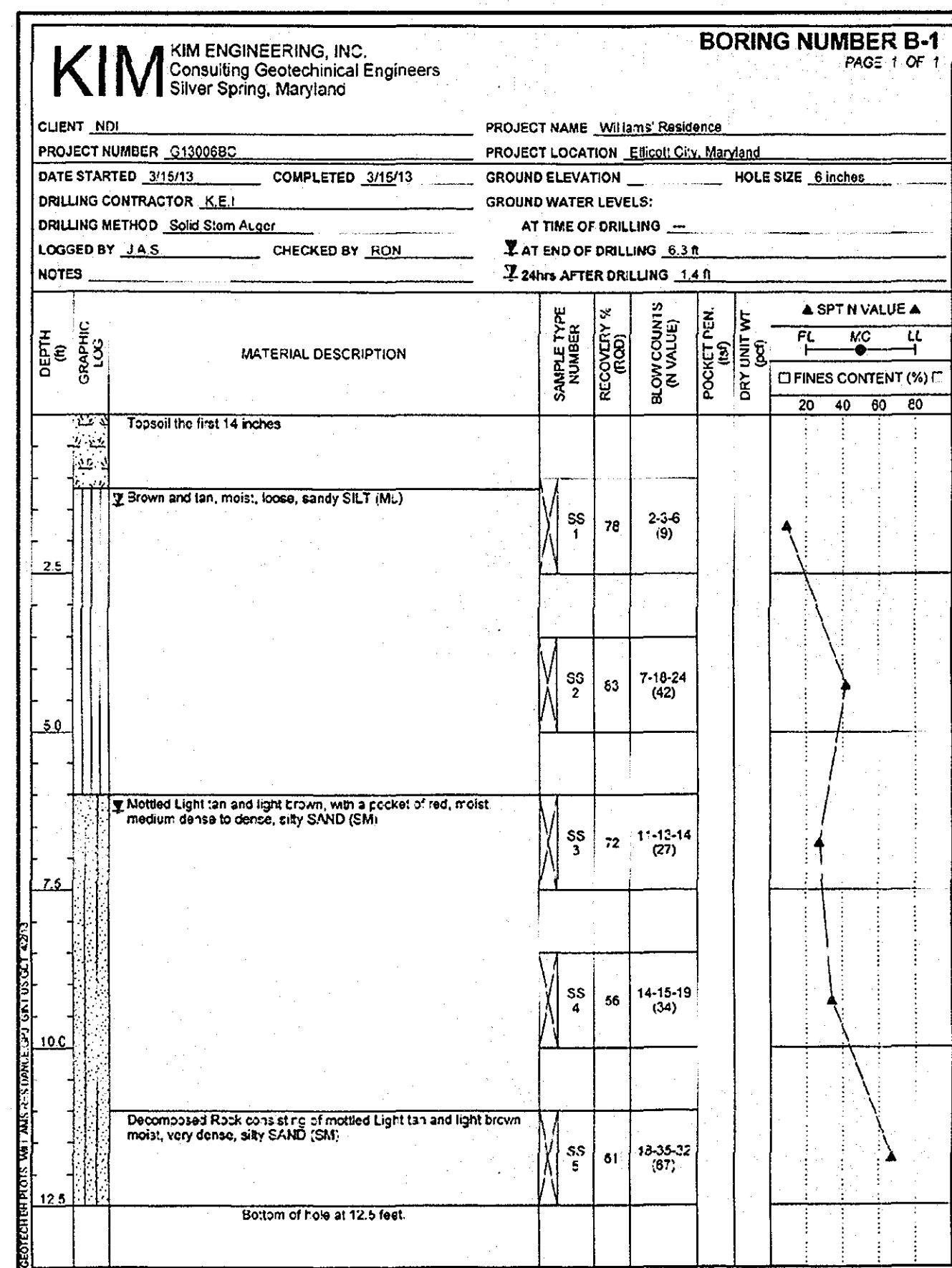
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Supp. 1

B.4.6

B.4.7

Supp. 1



OPERATION & MAINTENANCE SCHEDULE FOR MICRO BIO-RETENTION (M-G)

- 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.
- 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 AND SHRUBS AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- 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.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OR 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 AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- 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 (313-1835).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in accordance with the most current MARYLAND 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 permanent sediment control structures, ditches, perimeter slopes and all slopes greater than 2:1, 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. 11-4-5), temporary seeding (Sec. 11-4-4) and mulching (Sec. 11-4-3). Temporary stabilization with mulch alone can only be done when recommended seeding does 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.
- Site Analysis:
Total Area of Site: 0.85 Acres
Area Disturbed: 0.42 Acres
Area to be seeded or paved: 0.13 Acres
Area to be vegetatively stabilized: 0.25 Acres
Total Cut: 535 Cu. Yds.
Total Fill: 273 Cu. Yds.
Offsite waste/borrow are location: N/A
- Any sediment control practice that is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- 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.
- Trucks for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized by the end of each workday, whichever is shorter.
- Any changes or revisions to the sequence of construction must be reviewed and approved by the plan approval authority prior to proceeding with construction.
- 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 COUNTY DEPARTMENT OF PLANNING AND ZONING
3430 Courthouse Drive • Ellicott City, Maryland 21048 • 410-313-2350

November 5, 2013

Mr. Alan Barney, P.E.,
Charles P. Johnson & Associates, Inc.
1721 Elton Road
Silver Spring, Maryland 20903

Re: Robinsons Subdivision, Lot 2
Design Manual Waiver
SDP-13-088

Election District - 2
Tax Map - 21
Parcel - 249

Dear Mr. Barney:

I am writing in reference to your letter dated November 4, 2013, requesting a waiver from Design Manual Volume III, Section 2.6.B, which requires that a single use driveway be 12' to allow the width to be reduced to 10' where it leaves the use-in-common access easement and enters onto Lot 2 from the access easement.

This Division has decided to APPROVE the request based primarily on the fact that the there is no adverse impacts to existing or proposed County infrastructure and the supporting justification provided in the submittal is sufficient.

Please contact Mr. Philip M. Thompson or me at 410-313-2420 if you have any questions regarding this matter.

Very truly yours,
Chad Edmondson, P.E., Acting Chief
Development Engineering Division

CFD/pmt
cc: Thomas F. Butler, Deputy Director, Department of Public Works
Ken Shoubrooka, Department of Planning and Zoning
Bob Enser, Howard Soil Conservation District

LANDSCAPE ARCHITECT CERTIFICATE

I HEREBY CERTIFY THAT THE INFORMATION SHOWN HEREON IS CORRECT AND TAKEN FROM AVAILABLE PLANS AND RECORDS.

SALLIE P. STEWART
REGISTERED LANDSCAPE ARCHITECT
MD. #612

1/23/14 DATE 9/8/15 EXP. DATE

Seal not valid without signature

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

ALAN BARNEY
PROFESSIONAL ENGINEER
MD. #29891

1/23/14 DATE 1/14/16 EXP. DATE

Seal not valid without signature

SITE/SEDIMENT, EROSION CONTROL NOTES AND DETAILS
5510 WATERLOO ROAD - LOT 2
SINGLE FAMILY RESIDENTIAL
TAX MAP - 0031 GRID - 0019 PARCEL - 249
ROBINSONS SUBDIVISION
ELICOTT CITY (6th) ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

NO.	REVISION	DATE

ENGINEER'S CERTIFICATE

I 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.

ALAN BARNEY 1/23/14 DATE

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

1/24/14 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

2/07/14 DATE

2-6-14 DATE

2/7/14 DATE

SUBDIVISION: ROBINSONS SUBDIVISION

SECTION: 2

LOT NO. / PARCEL: 249

PLAT NO.	GRID NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
10414	19	R-20	0031	6	6066.05

WATER CODE: _____ SEWER CODE: _____

OWNER / DEVELOPER: JEFFERY & SYLVIE WILLIAMS, 7230 DARBY DOWN, UNIT D, ELK RIDGE, MD 21075, PHONE: 410-265-4511

CLIENT: JEFF & SYLVIE WILLIAMS
C/O NDI HOMES OF MARYLAND
154 HOLIDAY COURT SUITE 300
ANNAPOLIS, MD 21404
PHONE: (410) 265-4511
ATTN: MS. JONI RAY

PRELIMINARY PLAN NO.: _____ SITE PLAN NO.: _____

DESIGN	RPI	SHEET	OF
DRAFT	RPI	3	3

DATE: OCT. 2012 FILE NO.: _____

SCALE: AS SHOWN 42-156-21