

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING ROAD EDGE
- EXISTING SHRUB LINE
- EXISTING WOODS EDGE
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- SOILS LINE
- CnB2 50' STREAM BUFFER
- 25' WETLAND BUFFER
- WETLAND LIMIT
- PROPOSED CONTOURS BY OTHERS
- CALCULATED 100-YEAR FLOODPLAIN
- STORMWATER MANAGEMENT EASEMENT
- STREAM CENTER LINE
- NOISE LINE
- FOREST CONSERVATION EASEMENT

SOILS CHART

TYPE	HYDROLOGIC SOIL GROUP
BeB2	C
BeC3	C
ChC2	B
CmB2	C
CnB2	C
GnB2	C
SIB2	B
SIC2	B
SFC2	B
SFB2	B
MpC2	B

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 LICENSE NO. 18863 EXPIRATION DATE: 10-8-16



APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

John W. ... 10/20/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Chris ... 10/21/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

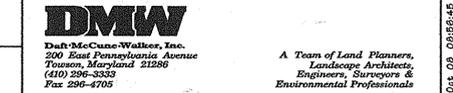
Charles ... 10/22/08
 DIRECTOR DATE

5/16/10 REVISION NO. 3
 2-10-14 CHANGED OWNER/DEVELOPER

Date	No.	Revision Description
5/16/10	3	REVISED TO EASEMENTS 'A' & 'L'
2-10-14	4	CHANGED OWNER/DEVELOPER

SITE DEVELOPMENT PLAN FOR MASS GRADING
EMERSON
 (KEY PROPERTY)
 SECTION 3 - AREA 6
 PARCEL A

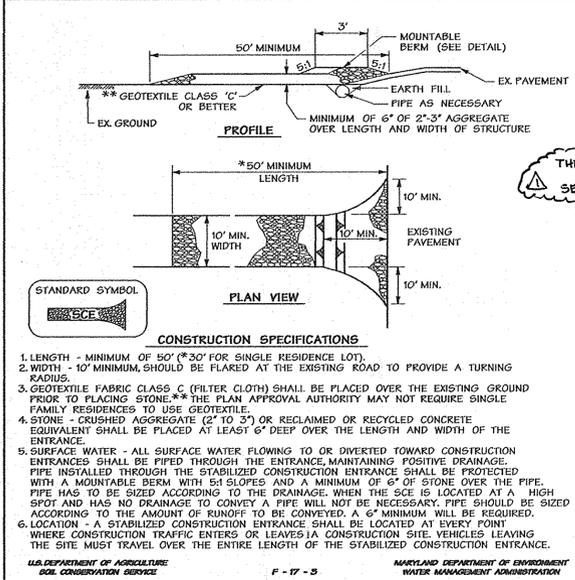
OWNER/DEVELOPER:
 EMERSON DEVELOPMENT XII LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 609-8000



SECTION NAME	SECTION/AREA	LOT/FRONT #
EMERSON	SEC.3 AREA 6	637
PLAT NO. 177052	TAX/ZONE MAP 47	SECTION TRACT 6069.03
WATER CODE N/A	SEWER CODE N/A	

SITE PLAN AND SOILS MAP

Des. By	RJD	Scale	1"=50'	Proj. No.	95054-Y
Drn. By	GMO	Date	10/07/08		
Chk. By	Approved				



Sediment Control General Notes

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (S-1859).

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THEREOF.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 A. SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1.
 B. FORTY EIGHT (48) DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE. NOT UNDER ACTIVE GRADING.

4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC.50), SOOPS (SEC.54), TEMPORARY SEEDING (SEC.50), AND MULCHING (SEC.52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

7. SITE ANALYSIS:
 TOTAL AREA OR SITE: 15.00 ACRES
 AREA DISTURBED: 11.69 ACRES
 AREA TO BE ROOFED OR PAVED: 0.00 ACRES
 AREA TO BE VEGETATIVELY STABILIZED: 11.69 ACRES
 TOTAL CUT: 20,975 CUBIC YARDS
 TOTAL FILL: 20,975 CUBIC YARDS
 OFF-SITE WASTE/POOR AREA LOCATION TO BE A SITE WITH AN ACTIVE GRADING PERMIT, APPROVED BY THE SEDIMENT CONTROL INSPECTOR.

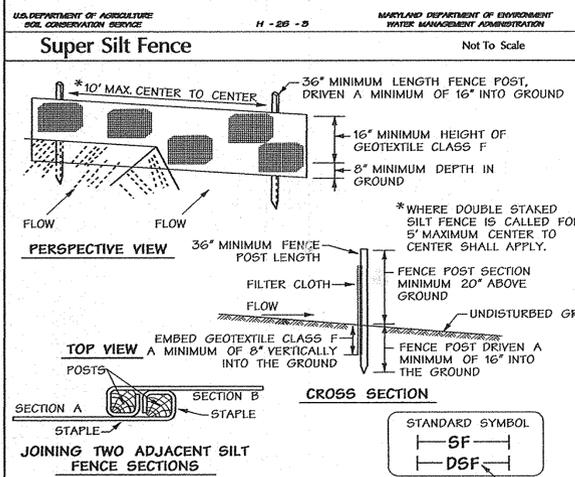
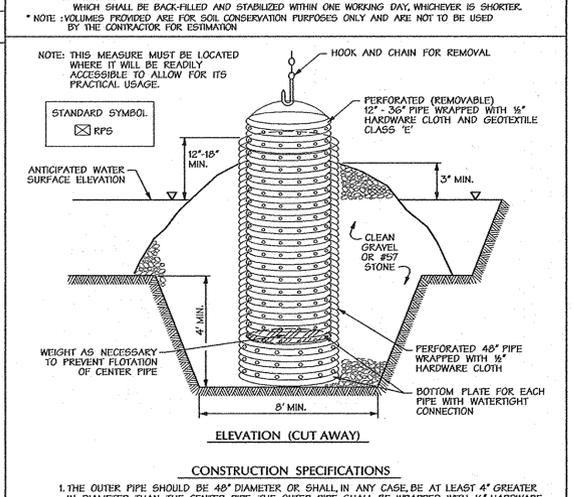
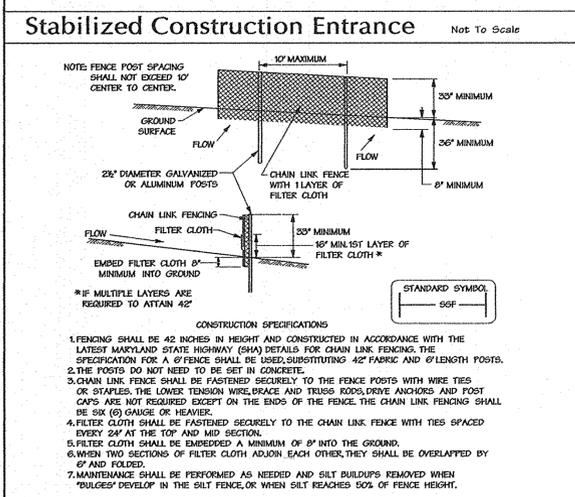
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE 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.

11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

* NOTE: VOLUMES PROVIDED ARE FOR SOIL CONSERVATION PURPOSES ONLY AND ARE NOT TO BE USED BY THE CONTRACTOR FOR ESTIMATION.



Removable Pumping Station

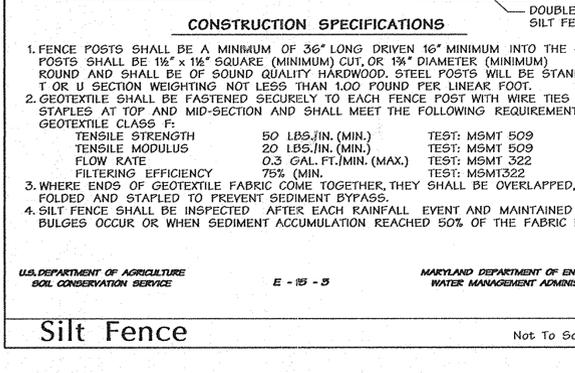
NOT TO SCALE

SILT FENCE DESIGN CRITERIA

SLOPE STEEPNESS	(MAXIMUM) SLOPE LENGTH	(MAXIMUM) SILT FENCE LENGTH
FLATTER THAN 50:1 (2%)	UNLIMITED	UNLIMITED
50:1 TO 10:1 (2-10%)	125 FEET	1,000 FEET
10:1 TO 5:1 (10-20%)	100 FEET	750 FEET
5:1 TO 3:1 (20-33%)	60 FEET	500 FEET
3:1 TO 2:1 (33-50%)	40 FEET	250 FEET
2:1 AND STEEPER (> 50%)	20 FEET	125 FEET

NOTE: IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE UNLIMITED. IN THESE AREAS A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL REQUIRED.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE E - 15 - 5A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



Silt Fence

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS
 1. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 1 1/2" x 1 1/2" SQUARE (MINIMUM) CUT OR 1 1/2" DIAMETER (MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHING NOT LESS THAN 1.00 POUND PER LINEAR FOOT.
 2. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:
 TENSILE STRENGTH 50 LBS./IN. (MIN.) TEST: MSMT 509
 TENSILE MODULUS 20 LBS./IN. (MIN.) TEST: MSMT 509
 FLOW RATE 0.3 GAL. FT./MIN. (MAX.) TEST: MSMT 322
 FILTERING EFFICIENCY 75% (MIN.) TEST: MSMT 322
 3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
 4. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN "BULGES" OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE E - 15 - 5 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Oct. 29, 2007 3:09PM Ha. Co. DPZ 410-313-3467 Fax No. 9781 P. 1

HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 3430 Courthouse Drive ■ Ellicott City, Maryland 21043 ■ 410-313-2350

Marsha S. McLaughlin, Director

www.howardcountymd.gov
 FAX 410-313-3467
 TDD 410-313-2323

October 29, 2007

The Howard Research & Development Corporation
 Attn: Paul Cavanaugh
 10275 Little Patuxent Parkway
 Columbia, Md. 21044

RE: WP-08-28, Emerson, (Key Property), Section 3, Area 6, P/O Parcel No. 837, (S-99-12, PB-338, PB-359)

Dear Mr. Cavanaugh:

The Director of the Department of Planning and Zoning considered your request for a waiver from the Howard County Subdivision and Land Development Regulations.

As of the date of this letter, the Planning Director approved your request to waive Section 16.146 which requires the submission of a preliminary plan for each phase of a phased project for the development of a planned "Employment Use" parcel of land, after approval of the sketch plan and prior to submission of a final plan.

Approval is subject to the following 5 conditions:

- Compliance with the enclosed comments dated October 24, 2007 from the Soil Conservation District.
- The applicant shall proceed with the submission of the final plan application for this site area within 9 months (on or before July 28, 2008) of the date of this waiver approval letter (9 month milestone date for non-residential subdivisions). Please be advised that a final road construction/SWM plan can be submitted for this project along with the final plat submission instead of processing a separate site development plan for mass grading.
- The applicant must address the forest conservation requirements with the processing of the final plan and/or the processing a site development plan for this site for mass grading, whichever, development plan is submitted first.
- The applicant must address the storm water management requirements for the proposed mass grading of this site as shown on the waiver petition plan exhibit with the processing of a site development plan and/or final road construction/SWM plan. Please note that the proposed SWM (10-FAP channel) located within the 50' stream buffer as shown on the waiver petition plan exhibit must be relocated from within the 50' stream buffer on any future development plans, unless a determination of essential or necessary disturbance per Section 16.116(c) of the Subdivision Regulations is made by the Soil Conservation District and the DPZ, Development Engineering Division.

Oct. 29, 2007 3:09PM Ha. Co. DPZ 410-313-3467 Fax No. 9781 P. 2

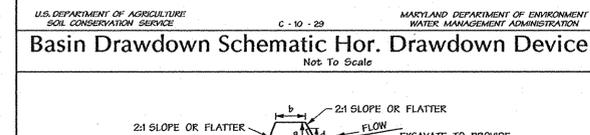
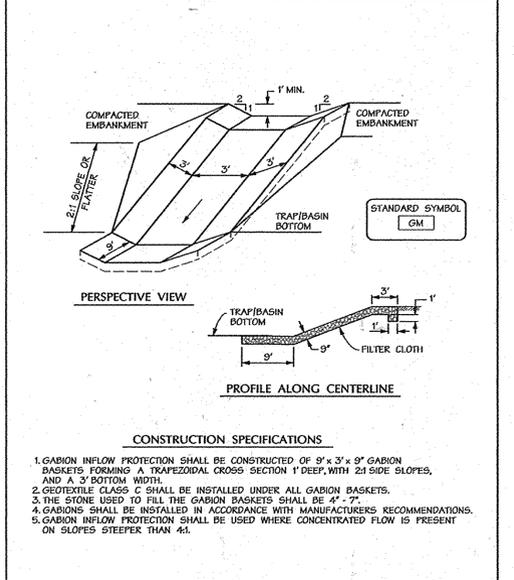
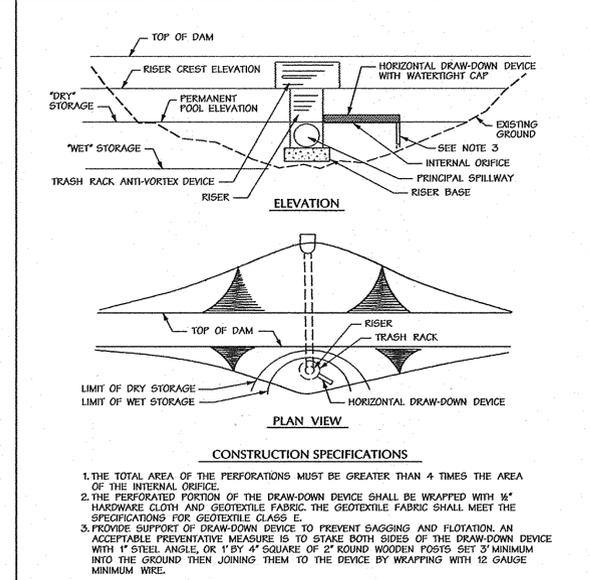
Page 2, WP-08-28, continued

Indicate this waiver petition file number, request, section of the regulations, action, conditions of approval, and date on all related zoning petitions, development plans, and site development plans, and building permits. This requested waiver will remain valid for 9 months from the date of this letter (on or before July 28, 2008) or as long as a subdivision or site development plan remains in active processing.

If you have any questions, please contact Kant Sheubrooks at (410) 313-2350 or by e-mail at kshubrooks@howardcountymd.gov.

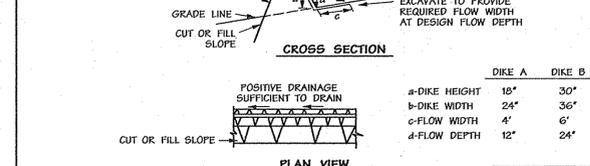
Sincerely,
Kant Sheubrooks
 Cindy Hamilton, Chief
 Division of Land Development

CH/LS/J/Letters/WP0828
 cc: Research, DED, SCD
 RMW



Sequence of Construction

- Obtain Grading permit. 1 Day
- Notify HCDPW Construction and Inspection Division (410-313-1800) at least 48 hours prior to the start of any work. All basin materials are to be on-site before work begins. 1 Day
- Clear and grub only that area necessary for the installation of SCE and SSB below basin and begin installation of basin and RPS. 30 Days
- When basin is complete, grade portion of site above basin, install earth dike and Rip Rap Inflow Protection to maintain positive flow to basin. 30 Days
- Install rip-rap channel below E-L to be started and completed (established) in one day. 1 Day
- Notify HCDPW Construction inspection, upon completion of said installation. 1 Day
- With the approval of sediment control inspector, clear and grub remainder of site. Mass grade site. Excavate and maintain dust control per dust control specifications. Adjust sediment control measures (ED) as grading progresses where noted on plans. 30 Days
- Permanently stabilize disturbed areas as soon as possible. 30 Days
- All trash, debris and other nonmaterial material shall be removed from floodplains, streams, wetlands and their buffers, open space, preservation parcels and forest conservation areas and disposed offsite prior to stabilization of the site. Install landscaping, including pond plantings. 4 Days
- With permission from the inspector, construct basin to SWM facility. Dewater and backfill basins, install and/or repair forebays and aeration per SWM plans. Convert Riser structures as necessary. Remove Basin Drawdown device and install 8" A36 Steel pipe per plan. Remove removable pumping station and stabilize disturbed areas in ponds. 14 Days
- Submit as-builts for all facilities within 30 days of completion.



APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

W. D. Damm
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 10/20/08

Cindy Hamilton
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 10/21/08

Paul D. Cagle
 DIRECTOR
 DATE: 10/21/08

2-10-14 CHANGED OWNER/DEVELOPER
 3-28-12 Update Sediment Control Notes

SITE DEVELOPMENT PLAN FOR MASS GRADING
EMERSON
 (KEY PROPERTY)
 SECTION 3 - AREA 6
 PARCEL A

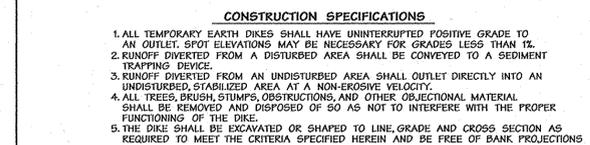
OWNER/DEVELOPER:
 EMERSON DEVELOPMENT XII LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 689-8000

Earth Dike Not To Scale

DESIGN CRITERIA

SLOPE	SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM)	SILT FENCE LENGTH (MAXIMUM)
0 - 10%	0 - 10:1	UNLIMITED	UNLIMITED
10 - 20%	10:1 - 5:1	200 FEET	1500 FEET
20 - 30%	5:1 - 3:1	100 FEET	1000 FEET
30 - 50%	3:1 - 2:1	100 FEET	500 FEET
50% +	2:1 +	50 FEET	250 FEET

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE H - 20 - 5A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



Super Silt Fence Not To Scale

DESIGN CRITERIA

SLOPE	SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM)	SILT FENCE LENGTH (MAXIMUM)
0 - 10%	0 - 10:1	UNLIMITED	UNLIMITED
10 - 20%	10:1 - 5:1	200 FEET	1500 FEET
20 - 30%	5:1 - 3:1	100 FEET	1000 FEET
30 - 50%	3:1 - 2:1	100 FEET	500 FEET
50% +	2:1 +	50 FEET	250 FEET

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE H - 20 - 5A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Developers Certificate:
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL EMPLOY A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE FOND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FOND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERSONS ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

John R. Robertson 6/18/13
 THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: *John R. Robertson* DATE: 10/16/08
 HOWARD SOIL CONSERVATION DISTRICT
 PLAN NUMBER: _____

Engineers Certificate:
 I HEREBY CERTIFY THAT THIS PLAN FOR FOND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTICED THE DEVELOPER THAT HE/SHE MUST EMPLOY A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE FOND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FOND WITHIN 30 DAYS OF COMPLETION.

Paul G. Cavanaugh 10/16/08
 SIGNATURE OF DEVELOPER
 PRINT NAME BELOW SIGNATURE
 Paul G. Cavanaugh

Paul G. Cavanaugh 10-28-08
 SIGNATURE OF ENGINEER
 PRINT NAME BELOW SIGNATURE
 Paul G. Cavanaugh

Professional Engr. No. 28770

DATE 10-28-08

Professional Engr. No. 28770

DATE 10-28-08

Professional Engr. No. 28770

DATE 10-28-08

SEDIMENT AND EROSION CONTROL DETAILS

Des. By: RJD Scale: NTS Proj. No.: 95054.V
 Dm. By: GMO Date: 10/07/08
 Chk. By: Approved 4 of 15

SDP-08-54

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- A. SITE PREPARATION**
- Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 - Schedule required soil test to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

- B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)**
- Soil test must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
 - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranties of the producer.
 - Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 90 - 100% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3 - 5 inches of soil by disking or other suitable means.

- C. SEEDBED PREPARATION**
- I. TEMPORARY SEEDING**
- A. Seedbed preparation** shall consist of loosening soil to a depth of 3 inches 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 should not be rolled or dragged smooth but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
- B. Apply fertilizer and lime** as prescribed on the plans.
- C. Incorporate lime and fertilizer** into the top 3 - 5 inches of soil by disking or other suitable means.

- II. PERMANENT SEEDING**
- A. Minimum soil conditions** required for permanent vegetative establishment:
- Soil pH shall be between 6.0 and 7.0.
 - Soluble salts shall be less than 500 parts per million (PPM).
 - The soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if Lovegrass or Sarcia Lespedeza is to be planted. Then a sandy soil (< 30% silt plus clay) would be acceptable.
 - Soil shall contain 1.5% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by the soils on site, adding topsoil is required in accordance with Section 21 - Standard and Specification for Topsoil.
- B. Areas previously graded** in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3 - 5 inches to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
- C. Apply soil amendments** as per soil test or as included on the plans.
- D. Mix soil amendments** into the top 3 - 5 inches of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1 - 3 inches of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

- D. SEED SPECIFICATIONS**
- All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
- Note: Seed tags shall be made available to the Inspector to verify type and rate of seed used.

- II. Inoculant** - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on 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 75-80 F. can weaken bacteria and make the inoculant less effective.

- E. METHODS OF SEEDING**
- Hydroseeding:** Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or cultipacker seeder.
 - If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following:
Nitrogen: maximum of 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.
 - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
 - Dry Seeding:** This includes use of conventional drop or broadcast spreaders.
 - Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the temporary or permanent seeding summaries or tables 25 or 26. The seeded area shall then be rolled with a weighed roller to provide good seed soil contact.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
 - 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 1/2 inch of soil covering.

- F. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)**
- Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weeds seeds as specified in the Maryland Seed Law.

- II. Wood cellulose fiber mulch (WCFM)**
- WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFM shall 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 shall contain no germination or growth inhibiting factors.
 - WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFM material shall contain no elements or compounds at concentration levels that will be phyto-toxic.
 - WCFM must conform to the following physical requirements:
Fiber length to approximately 10 mm., diameter approximately 1mm., pH range of 4.0 to 8.5, ash content of 16% maximum and water holding capacity of 90% minimum.
- Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

- G. MULCHING SEEDED AREAS** - Mulch shall be applied to all seeded areas immediately after seeding.
- If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
 - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons per acre. Mulch shall be applied in a uniform loose depth of between 1 1/2 and 2 inches. Mulch applied shall achieve a uniform distribution and depth so that the surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons per acre.
 - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 pounds per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

- H. SECURING STRAW MULCH** - Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
- A mulch anchoring tool is a tractor drawn implement design to punch and anchor mulch into the soil surface a minimum of two (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 be used on the contour if possible.
 - Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys or on crest of banks. The remainder of area should appear uniform after binder application. Synthetic binders - such as Acrylic DLR (agro-tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
 - 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.

SECTION II - TEMPORARY SEEDING

VEGETATION - Annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, permanent seeding is required.

Seed Mixture (Hardiness Zone 7A)				Fertilizer Rate (10-10-10)		Lime Rate
No.	Species	Application Rate (Lb./Ac.)	Seeding Dates	Seeding Depth		
1	Annual Ryegrass	50	2/1 - 4/30 8/15 - 1/11	1/4" - 1/2"	600 Lbs./Ac. (15 Lbs./1000 SF)	2 Tons/Ac. (100 Lbs./1000 SF)
2	Weeping Lovegrass	4	5/1 - 8/14	1/4" - 1/2"		

SECTION III - PERMANENT SEEDING

Seeding grass and legumes to establish ground cover for a minimum of one year on disturbed areas generally receiving low maintenance.

Seed Mixture No. 3 (Hardiness Zone 7A)				** Fertilizer Rate (10-20-20)			** Lime Rate
%	Species	Application Rate (Lb./Ac.)	Seeding Dates	Seeding Depth	N	P2O5	K2O
85	Rebel II Tall Fescue	125	3/1 - 5/15 8/15 - 1/15	1/4" - 1/2"	90	175	175
10	Pennfine Perennial Ryegrass	15			(2 Lb./1000 Sq.Ft.)	(4 Lb./1000 Sq.Ft.)	(4 Lb./1000 Sq.Ft.)
5	Kenblue Kentucky Bluegrass	10					

* For 5-16 through 8-14 add two (2) pounds of Weeping Lovegrass per acre or ten (10) pounds of Millet per acre to seed mixture (i.e. Mix #3 shown).

** At time of fine grading, fertilizer and lime rates will be based on soil test results; (see section 1.B.1). Copy of recommended rates to be supplied to the Sediment Control Inspector.

SECTION IV - SOD

- To provide quick cover on disturbed areas (2:1 grade or flatter)
- A. GENERAL SPECIFICATIONS**
- Class of turfgrass sod shall be Maryland or Virginia State certified or approved. Sod labels shall be made available to the job foreman and inspector.
 - Sod shall be machine cut at a uniform soil thickness of 3/4" plus or minus 1/8", at the time of cutting. Measurement for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the suppliers width length. Maximum allowable deviation from standard widths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable.

- Standard size sections of sod shall 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 shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
 - Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period shall be approved by an agronomist or soil scientist prior to its installation.
- B. SOD INSTALLATION**
- During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
 - The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered 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 air drying of the roots.
 - Wherever possible, sod shall be laid with the long edges parallel to the contour and with staggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between sod roots and the underlying soil surface.
 - Sod shall be watered immediately following rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for any piece of sod shall be completed within eight hours.

C. SOD MAINTENANCE

- In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4 inches. Watering should be done during the heat of the day to prevent wilting.
- After the first week, sod watering is required as necessary to maintain adequate moisture content.
- The first mowing of sod should be attempted until the sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2 inches and 3 inches unless otherwise specified.

SECTION V - TURFGRASS ESTABLISHMENT

Areas where turfgrass may be desired may include lawns, parks, playgrounds, and commercial sites which will receive a medium high level of maintenance. Areas to receive seed shall be tilled by disking or other approved methods to a depth of 2 to 4 inches, leveled and raked to prepare a proper seedbed. Stones and debris over 1/2 inches in diameter shall be removed. The resulting seedbed shall be in such condition that future mowing of grasses will pose no difficulty.

Note: Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

A. TURFGRASS MIXTURES

- 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. A minimum of three Bluegrass cultivars should be chosen ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.
- Kentucky Bluegrass/Perennial Rye - Full sun mixture** - For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass cultivars/certified Kentucky Bluegrass seeding rate: 2 pounds mixture per 1000 square feet. A minimum of 3 Kentucky Bluegrass cultivars must be chosen, with each cultivar ranging from 10% to 35% of the mixture by weight.
- Tall Fescue/Kentucky Bluegrass - Full sun mixture** - For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: certified Tall Fescue cultivars 95-100%, certified Kentucky Bluegrass cultivars 0 - 5%, seeding rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
- 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 30-40% and certified Fine Fescue and 60-70%. Seeding rate: 1 1/2 - 3 pounds per 1000 square feet. A minimum of 3 Kentucky Bluegrass cultivars must be chosen. With each cultivar ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.

Note: Turfgrass varieties should be selected from those listed in the most current University of Maryland publication, agronomy mimeo number 77, "Turfgrass Cultivar Recommendations for Maryland".

B. IDEAL TIMES OF SEEDING

Western Maryland: March 15 - June 1, August 1 - October 1 (hardiness zones - 5B, 6A).
Central Maryland: March 1 - May 15, August 15 - October 15 (hardiness zone - 6B).
Southern Maryland, Eastern Shore: March 1 - May 15, August 15 - October 15 (hardiness zones - 7A, 7B).

C. IRRIGATION

If soil moisture is different, supply new seedlings with adequate water for plant growth (1/2" - 1" every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

D. REPAIRS AND MAINTENANCE

- Inspect all seeded areas for failures and make necessary repairs, replacements, and reseeding within the planting season.
- Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.
 - If the stand provides less than 40% ground coverage, re-establish following original lime, fertilizer, seedbed preparation and seeding recommendations.
 - If the stand provides between 40% and 94% ground coverage, overseeding and fertilizing using half of the rates originally applied may be necessary.
 - Maintenance fertilizer rates for permanent seedings are shown in Table 24, for lawns and other medium high maintenance turfgrass areas, refer to the University of Maryland publication "Lawn Care in Maryland" bulletin number 171.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

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

PURPOSE

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

CONDITIONS WHERE PRACTICE APPLIES

- This practice 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 continuing supplies of moisture and plant nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
- For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

- Topsoil salvages from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textures and subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
 - For sites having disturbed areas under 5 acres:
 - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - Organic content of topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
 - Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
 - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

- II. Topsoil Application**
- When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
 - Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
 - Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

- VI. Alternative for Permanent Seeding** - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

- Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
 - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
 - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
 - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
 - Composted sludge shall be amended with a potassium fertilizer applied at a rate of 4 lb./1,000 square feet, and 1/5 the normal lime application rate.

References: Guidelines Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1975.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature] 10/08/08
DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 10/08/08
DATE

CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 1/12/09
DATE

DIRECTOR

2-10-14	Δ	CHANGED OWNER/DEVELOPER
Date	Δ	Revision Description

SITE DEVELOPMENT PLAN FOR MASS GRADING

EMERSON
(KEY PROPERTY)

SECTION 3 - AREA 6
PARCEL A

OWNER/DEVELOPER:
EMERSON DEVELOPMENT XII LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD 21083 (443) 687-8000

DMW
Dan McCaskey-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners,
Landscape Architects,
Engineers, Surveyors &
Environmental Professionals

10-08-08
Date

Professional Engr. No. 28770

DEVELOPERS CERTIFICATE:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE ENGAGE IN ADVANCEMENT WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I/WE HAVE NOTIFIED THE DEVELOPER THAT THESE ARE THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT TO SUPERSEDE FOND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FOND WITHIN 30 DAYS OF COMPLETION. I/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 10/08/08
DATE

SIGNATURE OF DEVELOPER
PRINT NAME BELOW SIGNATURE
Paul G. Connerman

ENGINEERS CERTIFICATE:

I CERTIFY THAT THIS PLAN FOR FOND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT THESE ARE THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT TO SUPERSEDE FOND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FOND WITHIN 30 DAYS OF COMPLETION.

[Signature] 10-08-08
DATE

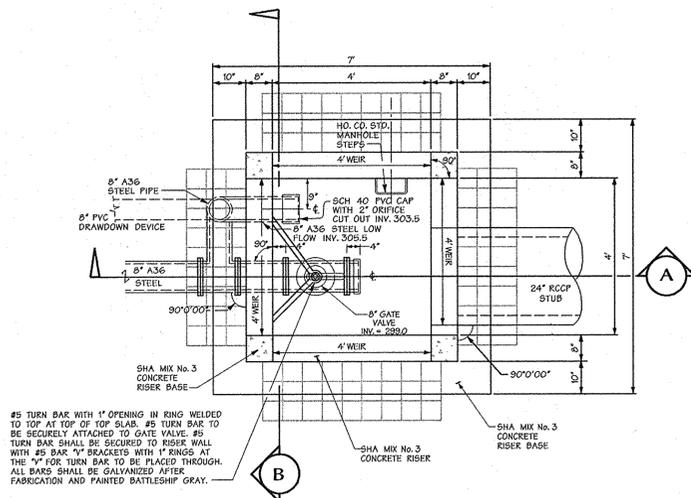
SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
ANNON T. BLAGAS

THESE PLANS FOR SMALL FOND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.

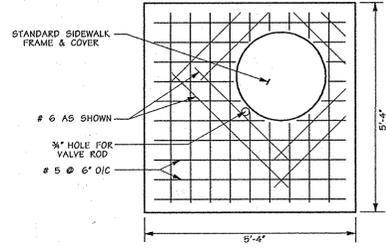
APPROVED: *[Signature]* 10/08/08
DATE

HOWARD SOIL CONSERVATION DISTRICT

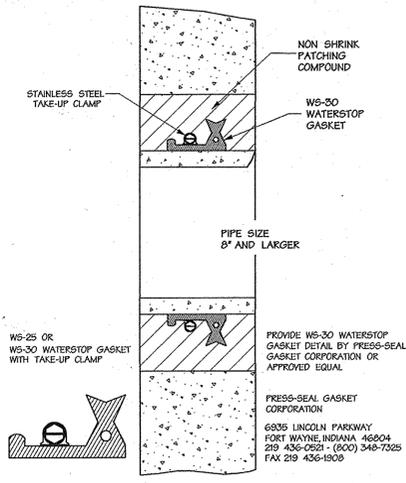
PLAN NUMBER



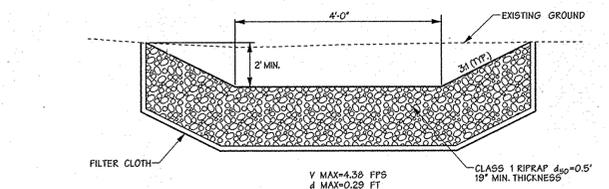
RISER PLAN (TOP SLAB REMOVED)
SCALE: 1" = 2'



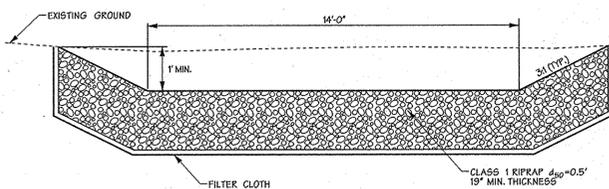
TOP SLAB
SCALE: 1" = 2'
CAST IN PLACE



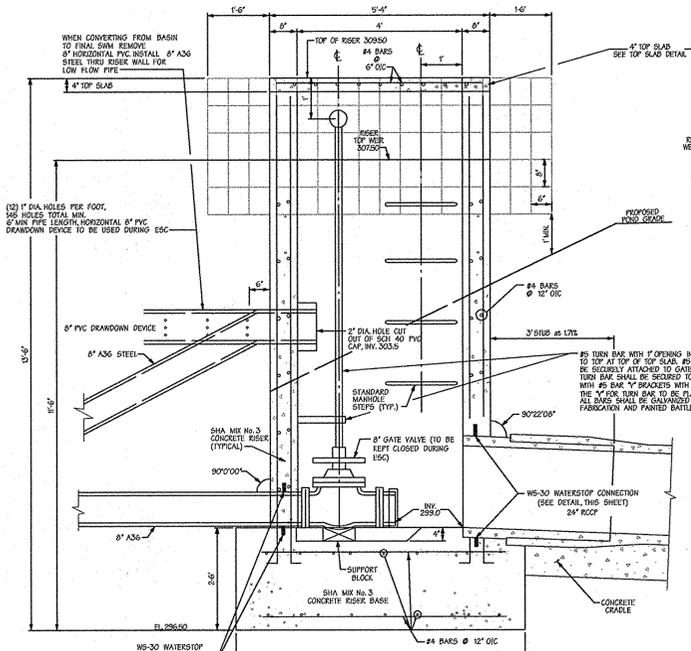
PIPE WATER STOP DETAIL
NOT TO SCALE



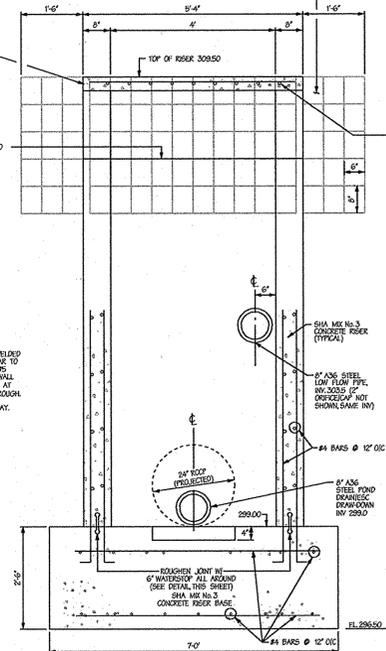
OUTLET CHANNEL TO STREAM BED
NOT TO SCALE



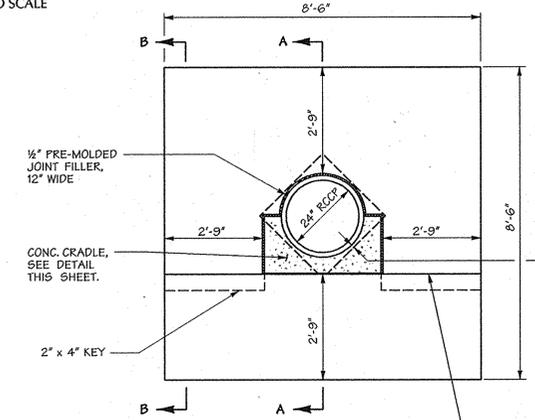
OUTLET CHANNEL DETAIL
10' X 14' OUTLET FROM SWM FACILITY
NOT TO SCALE



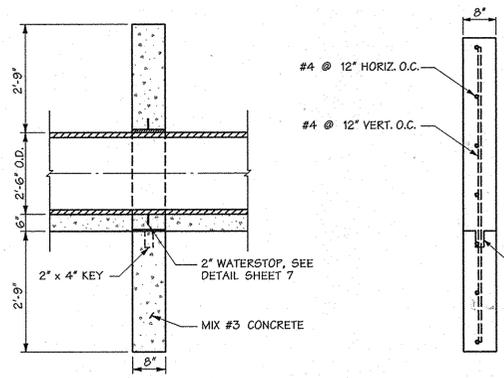
SECTION A-A
S-2A RISER DETAIL
SCALE: 1" = 2'
CAST IN PLACE



SECTION B-B



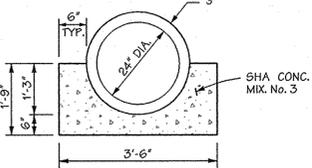
ANTI SEEP COLLAR
SCALE: 1" = 2'
CAST IN PLACE
NOT TO SCALE



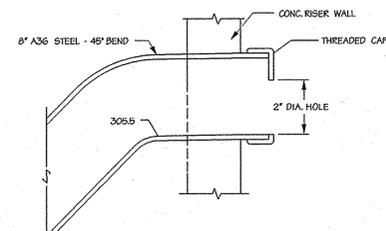
SECTION A-A
SECTION B-B
(SHOWING STEEL)

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5)

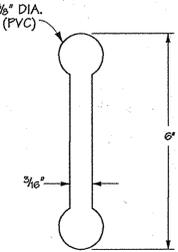
- Facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the pond is functioning properly.
 - Top and side slopes of the embankment shall be mowed a minimum of two (2) times per year, once in June and once in September. Other side slopes and maintenance access shall be mowed as needed.
 - Debris and litter shall be removed during regular operations and as needed.
 - Visible signs of erosion in the pond as well as the rip rap or gabion outlet area shall be repaired as soon as it is noticed.
- Non-Routine Maintenance:**
- Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon detection of any damage. The components shall be inspected during routine maintenance operations.
 - Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond, or forebay, is full of sediment, or when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.



CONCRETE CRADLE
NOT TO SCALE

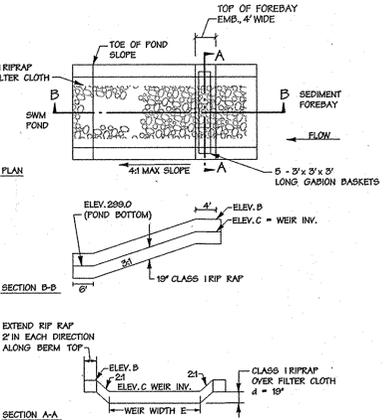


SWM LOW FLOW CONTROL PLATE DETAIL
NOT TO SCALE



6\"/>

VARIABLE	VALUE
B	307.50
C	307.00
D	19"
E	20"



SWM FOREBAY EMBANKMENT ARMORING DETAIL
NOT TO SCALE

DEVELOPERS CERTIFICATE:

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: *[Signature]* DATE: 10/16/08
HOWARD SOIL CONSERVATION DISTRICT

ENGINEERS CERTIFICATE:

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

APPROVED: *[Signature]* DATE: 10-03-08
Professional Engr. No. 28770



APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
[Signature] DATE: 10/20/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] DATE: 10/21/08
 CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] DATE: 10/21/08
 DIRECTOR

Date	No.	CHANGED OWNER/DEVELOPER	Revision Description
2-10-14	1	CHANGED OWNER/DEVELOPER	

SITE DEVELOPMENT PLAN FOR MASS GRADING
EMERSON
 (KEY PROPERTY)
 SECTION 3 - AREA 6
 PARCEL A

OWNER/DEVELOPER:
 EMERSON DEVELOPMENT XII LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONHUM, MD. 21093 (443) 689-8000

DMW
 Dan McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4705
 A Team of Land Planners,
 Landscape Architects,
 Engineers, Surveyors &
 Environmental Professionals

SUBMISSION NAME	SECTION/AREA	SEC 3 AREA 6	LOT/PARCEL #
EMERSON			837
PLAN ON LOT 960 # 1	ZONE	MDX-3	6TH
20234	9	MDX-3	6TH
WATER CODE	N/A	SEWER CODE	N/A

STORMWATER MANAGEMENT DETAILS

Des. By	RJD	Scale	AS SHOWN	Proj. No.	95054.V
Dim. By	GMO	Date	12/09/08		
Chk. By		Approved		8 of 15	

**STORMWATER MANAGEMENT POND
GENERAL CONSTRUCTION SPECIFICATIONS**

1. GENERAL
All stormwater management facilities shall be constructed in accordance with Baltimore County's "Standard Specifications and Details for Construction", (1985) and the N.R.C.S. Maryland "Standards and Specifications for Ponds", (MD-378, 2000).
These specifications are appropriate to all ponds within the scope of the standard practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

2. SITE PREPARATION
Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots, and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared. All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

3. EARTH FILL
MATERIAL - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the core of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 50% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

PLACEMENT - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

COMPACTION - Control the movement of the hauling equipment over the fill so that the entire surface of each lift is compacted to 95% of AASHTO Specification T-99 (or equivalent ASTM Specifications). Fill material must contain enough moisture to yield the required degree of compaction with the equipment used.

When required by the reviewing agency the minimum required density shall not be less than 95% of the maximum dry density with a moisture content within +/- 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

CUT OFF TRENCH - The cut off trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

EMBANKMENT CORE - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

4. STRUCTURE BACKFILL
Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed 4 inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. As equipment, the material needs to be placed in layers not to exceed 4 inches in thickness and compacted by hand tampers or other manually directed compaction equipment. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 6.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

5. REMOVAL AND REPLACEMENT OF DEFECTIVE FILL
Fill placed at densities lower than specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable fill. The bottoms of such excavations shall be finished flat or gently curving and at the sides of such excavations the adjacent soil fill shall be trimmed to a slope not steeper than 3 feet horizontally to 1 foot vertically extending from the bottom of the excavation to the fill surface.

6. PIPE CONDUITS
All pipes shall be circular in cross section. All perforated pipes shall have a minimum of 3.31 square inches of opening per square foot of pipe surface (ex. 30 3/8-inch holes per square foot). Perforations are to be uniformly spaced around the full periphery of the pipe. Any holes blocked or partially blocked by bituminous coating shall be opened prior to installation.

REINFORCED CONCRETE PIPE - All of the following criteria shall apply for reinforced concrete pipe:

- Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.
- Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural purposes, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.
- Laying Pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the pipe (etc.) to prevent floating the pipe. After joints are sealed for the entire length, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.
- Backfilling shall conform to "Structure Backfill".
- Connections - All connections (to anti-seep collars, riser, etc.) shall be watertight.
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

PLASTIC PIPE - All of the following criteria shall apply for plastic pipe:

- Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated high density polyethylene (HDPE) pipe, couplings and fittings shall conform to following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type 5, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type 5.

- Joints and connections to anti-seep collars shall be completely watertight.
- Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- Backfilling shall conform to "Structure Backfill".
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

7. CONCRETE
Concrete must meet minimum requirements set forth in Maryland State Highway Administration Standard Specifications for Construction and Materials, Section 902 (Portland Cement Concrete Mixtures). Mix Number 3. Reinforcing steel must be ASTM A615, Grade 60. Steel angles and anchor bars must be ASTM A36.

8. ROCK RIP-RAP
Rock rip-rap shall meet the requirements of the Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311. Geotextile shall be placed under all rip-rap and shall meet the requirements of the Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.03, Class SE Non-woven.

The rip-rap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the rip-rap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks.

9. CARE OF WATER DURING CONSTRUCTION
All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works, the contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation of maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to pumps from which the water shall be pumped.

10. STABILIZATION
All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

11. EROSION AND SEDIMENT CONTROL
Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

All disturbed areas shall be controlled by an erosion and sediment control plan which has been approved by the Baltimore County Soil Conservation District (B.C.S.C.D.).

- 12. SEEDING**
Seeding, fertilizing and mulching shall be as follows:
Seed Mix: 50% Kenblue Kentucky Bluegrass
40% Pennlawn Creeping Red Fescue
10% Straker Redtop
Applied at a rate of 150 pounds per acre.
(or)
Rebel II Tall Fescue (125 pounds per acre)
Pennlawn Creeping Red Fescue (125 pounds per acre)
10% Straker Redtop
Applied at a rate of 150 pounds per acre.
(or)
Pennlawn Creeping Red Fescue (70 pounds per acre)
Aurora Hard Fescue (50 pounds per acre)
Common White Clover (6 pounds per acre)
Winter Rye (45 pounds per acre)
- Lime: 2 tons per acre Dolomitic Limestone.
Fertilizer: 600 pounds per acre 10-10-10 fertilizer before seeding.
400 pounds per acre 30-0-0-Ureaform Fertilizer at time of seeding.
Mulch: Straw at 4,000 pounds per acre.
- Anchoring: Mulching tool or wood cellulose fiber binder at a net dry binder rate of 750 pounds per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water or at rates recommended by the manufacturer.

13. FILTER CLOTH
All filter cloth shall conform to the 1934 Maryland Standards and Specifications for soil erosion and sediment control, or the latest edition.

14. GABIONS
All gabions shall be PVC coated woven wire baskets. Stone size shall be 4 inches to 7 inches. (Class IV gabions)

15. FENCE
Split rail fencing:
Fencing shall be constructed in accordance with the details on these plans. The split rail fence shall be constructed of locust post and spruce rails, round side out, with post spaced 10 feet on center. The wire fabric shall be 4" x 2", 14 gauge, black vinyl coated welded wire mesh attached to the outside of the fence with stainless steel electrical staples 12 inches on center, each rail, and shall extend 6 inches below finished grade.

Chain link fencing:
Construct fencing in accordance with the State Highway Administration Standard details G90.01 and G90.02. Use specifications for a 6-foot fence, substituting 42" fabric and 6"-8" line posts. Construct the gate in accordance with SHS Standard Detail G92.01 with 42" fabric. The fabric used for the fence and gate must conform to AASHTO Designation M181-74.

16. CONSTRUCTION INSPECTION BY DESIGNATED ENGINEERS
The construction of the pond and embankment, and certification that the pond and embankment have been built in accordance with the plans shall be under the supervision of a Registered Professional Engineer. The engineer shall be notified sufficiently in advance of construction in order that arrangements can be made for (1) inspection of pipe trench and bedding, (2) inspection of riser and anti-seep collars and, (3) supervision of embankment construction and compaction testing. The engineer shall direct the handling of water during construction, minor changes not affecting the integrity of the dam in order to compensate for unusual soil conditions, and the removal and replacement of defective fill.

BORING LOG										BORING B-1									
The Robert B. Baller Company Geotechnical and Environmental Engineers Materials and Construction Inspection and Testing Telephone No. (410) 363-1555 www.ballero.com										PROJECT NAME Emerson Section 3, Area 6 PROJECT NUMBER 14892-0 MD PROJECT LOCATION Howard County, Maryland									
CLIENT General Growth Properties										RIG Truck CME 45 METHOD Hollow Stem Auger SAMPLER 2-in OD SS HAMMER 140# FALL: 30" AUTOT Yes									
DATE STARTED 10/15/07 COMPLETED 10/15/07										WATER LEVELS									
DRILLER Dan Brodesky HELPER Dan Brodesky, Sr.										DATE TIME ELAPSED CASING HOLE WATER WATER									
REVIEWED BY Kristopher Crist SITE DELAYS										10/15/07 12:10 pm 0 24 17.0 17.0 299.9									
LOCATION 5' East BULK SAMPLES 0-5'										LOCATION 11' East BULK SAMPLES 5-10'									
DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWN/FT OR RECIPIENT %	N VALUE OR CN RECIPIENT %	STRAIATION CHANGE DEPTH (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (pcf)	NMC %	#200	ATTERBERGS	REMARKS						
								SURFACE EL = 311.0											
1	S1 9-14-15-14	28	310.7	0.0		MH		Dry, Very Stiff, Tan Sandy Elastic SILT with Rock Fragments (Possible Fill)	10	51	29	50	21						
5	S2 10-14-13-13	27	4.0	307.0		SM		Moist, Very Stiff, Reddish Brown, Micaceous Silty SAND	14										
5	S3 6-10-11-11	21	6.0	305.0		SM		Moist, Very Stiff, Brown, Micaceous Silty SAND, minor relic rock structure	19										
5	S4 7-9-11-11	20	8.0	305.0		SM		Moist, Very Stiff, Brown, Micaceous Silty SAND, relic rock structure	17										
10	S5 8-10-23	28	10.0	301.0		SM		Moist, Hard, Brown-Gray, Micaceous Silty SAND, relic rock structure (Decomposed Rock)	16										
10	S6 11-23-27-29	50	10.0	301.0		SM		Moist, Hard, Brown-Gray, Micaceous Silty SAND, relic rock structure (Decomposed Rock)	13										
15	S7 13-18-23-34	41	17.0	294.0		SM		Moist, Hard, Red-Brown and Black, Micaceous Silty SAND, relic rock structure (Decomposed Rock)	16	38									
15	S8 9-17-31-36	48	20.0	291.0		SM		Moist, Hard, Red-Brown and Black, Micaceous Silty SAND, relic rock structure (Decomposed Rock)	11										
20	S9 14-15-22	37	20.0	291.0		SM		Terminated at 20.0 feet.	12	33									

BORING LOG										BORING B-3									
The Robert B. Baller Company Geotechnical and Environmental Engineers Materials and Construction Inspection and Testing Telephone No. (410) 363-1555 www.ballero.com										PROJECT NAME Emerson Section 3, Area 6 PROJECT NUMBER 14892-0 MD PROJECT LOCATION Howard County, Maryland									
CLIENT General Growth Properties										RIG Truck CME 45 METHOD Hollow Stem Auger SAMPLER 2-in OD SS HAMMER 140# FALL: 30" AUTOT Yes									
DATE STARTED 10/15/07 COMPLETED 10/15/07										WATER LEVELS									
DRILLER Dan Brodesky HELPER Dan Brodesky, Sr.										DATE TIME ELAPSED CASING HOLE WATER WATER									
REVIEWED BY Kristopher Crist SITE DELAYS										10/15/07 12:10 pm 0 24 17.0 16.7 289.9									
LOCATION As Shaded BULK SAMPLES 10-15'										LOCATION 11' East BULK SAMPLES 5-10'									
DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWN/FT OR RECIPIENT %	N VALUE OR CN RECIPIENT %	STRAIATION CHANGE DEPTH (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (pcf)	NMC %	#200	ATTERBERGS	REMARKS						
								SURFACE EL = 302.2											
1	S1 6-10-11-14	21	30.0	300.2		CL		Topsoil	10	68	22	40	18						
1	S2 8-14-13-12	27	4.0	300.2		ML		Moist, Very Stiff, Brown and Red-Brown Sandy SILT, micaceous (Possible Fill)	14										
5	S3 7-9-14-16	23	28.2	288.2		SM		Moist, Very Stiff to Hard, Red-Brown to Gray, Micaceous Silty SAND, relic rock structure	15										
5	S4 13-13-18-19	31	6.0	294.2		SM		Moist, Very Stiff, Dark Brown and Gray, Micaceous Silty SAND	14										
10	S5 8-11-13-18	24	10.0	292.2		SM		Moist, Hard, Gray-Brown, Micaceous Silty SAND, relic rock structure (Decomposed Rock)	15										
10	S6 18-25-35-37	60	14.0	288.2		SM		Moist, Hard, Gray, Micaceous Silty SAND, relic rock structure (Decomposed Rock)	15										
15	S7 10-31-50-4'	50-4'	14.0	288.2		SM		Moist, Hard, Gray, Micaceous Silty SAND, relic rock structure (Decomposed Rock)	15										
20	S8 24-31-45	78	20.0	288.2		SM		Terminated at 20.0 feet.	15										

REMARKS: (1) Proposed top of embankment = EL 311.5 (Fill=9.3 feet) (2) Proposed bottom of pond = EL 299.0

THESE PLANS FOR SMALL POND CONSTRUCTION SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT

APPROVED: *[Signature]* DATE 10/14/08

PLAN NUMBER

BORING LOG										BORING B-2									
The Robert B. Baller Company Geotechnical and Environmental Engineers Materials and Construction Inspection and Testing Telephone No. (410) 363-1555 www.ballero.com										PROJECT NAME Emerson Section 3, Area 6 PROJECT NUMBER 14892-0 MD PROJECT LOCATION Howard County, Maryland									
CLIENT General Growth Properties										RIG Truck CME 45 METHOD Hollow Stem Auger SAMPLER 2-in OD SS HAMMER 140# FALL: 30" AUTOT Yes									
DATE STARTED 10/16/07 COMPLETED 10/16/07										WATER LEVELS									
DRILLER Dennis Strawleman HELPER Maurice Hardy										DATE TIME ELAPSED CASING HOLE WATER WATER									
REVIEWED BY Kristopher Crist SITE DELAYS										10/16/07 9:07 am 0 24 17.0 17.0 294.3									
LOCATION 11' East BULK SAMPLES 5-10'										LOCATION 11' East BULK SAMPLES 5-10'									
DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWN/FT OR RECIPIENT %	N VALUE OR CN RECIPIENT %	STRAIATION CHANGE DEPTH (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (pcf)	NMC %	#200	ATTERBERGS	REMARKS						
								SURFACE EL = 308.7											
1	S1 4-8-11	16	0.0	308.4		ML		Topsoil											
1	S2 14-23-32-30	59	2.0	306.7		SM		Moist, Very Stiff, Brown Sandy SILT, trace organics (<1%)											
5	S3 9-13-16-14	29	6.0	302.7		SM		Moist, Hard to Very Stiff, Brown, Micaceous Silty SAND, relic rock structure (Decomposed Rock)	18	31	38	47	9						
5	S4 13-17-19-20	35	8.0	302.7		SM		Moist, Hard, Dark Brown to Brown, Silty SAND, slightly micaceous, relic rock structure (Decomposed Rock)											
10	S5 6-9-10-11	19	8.0	302.7		SM		Moist, Very Stiff, Gray, Micaceous Silty SAND, relic rock structure (Decomposed Rock)											
15	S6 25-32-48	81	12.0	296.7		SM		Moist, Hard, Gray-Green with Red Iron Staining, Micaceous Silty SAND, relic rock structure (Decomposed Rock)	12	28									
15	S7 50-4' 50-4'	19.3	20.0	289.4		SM		Terminated at 19.3 feet.											

REMARKS: (1) Proposed Bottom of Pond = EL 299.0

DEVELOPERS CERTIFICATE:
I, the undersigned, hereby certify that all development and/or construction will be done according to these plans and that any responsible personnel involved in the construction project will have a certificate of attendance at a department of environment approved training program for the control of erosion and sediment before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] DATE 10/16/08
[Signature] DATE 10/16/08

ENGINEERS CERTIFICATE:
I, the undersigned, hereby certify that I am a registered professional engineer and I have prepared these plans and specifications in accordance with the requirements of the HOWARD SOIL CONSERVATION DISTRICT. I have notified the developer that these plans and specifications shall be used for the construction of the pond and that the developer shall engage a registered professional engineer to supervise pond construction and provide the HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

[Signature] DATE 10/16/08
[Signature] DATE 10/16/08

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature] DATE 10/16/08
[Signature] DATE 10/16/08

Date	No.	CHANGED OWNER/DEVELOPER	Revision Description
2-10-14	1	CHANGED OWNER/DEVELOPER	

SITE DEVELOPMENT PLAN FOR MASS GRADING
EMERSON
(KEY PROPERTY)
SECTION 3 - AREA 6
PARCEL A

OWNER/DEVELOPER:
EMERSON DEVELOPMENT XII LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD 21093 (410) 680-8000

DMW
Dan McCaskey Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 256-4554
Fax 256-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

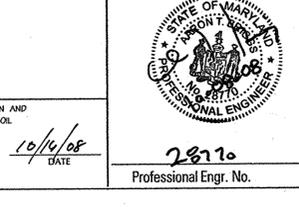
SECTION NAME	EMERSON	SECTION/AREA	SEC.3 AREA 6	DATE/ISSUE #	8/37
PLAN OR LISTING #	20224	DATE	10/16/07	REVISION	6111
DATE	9/20/07	SCALE	4" = 1'	STATUS	6069.03
WATER CODE	N/A	SEWER CODE	N/A		

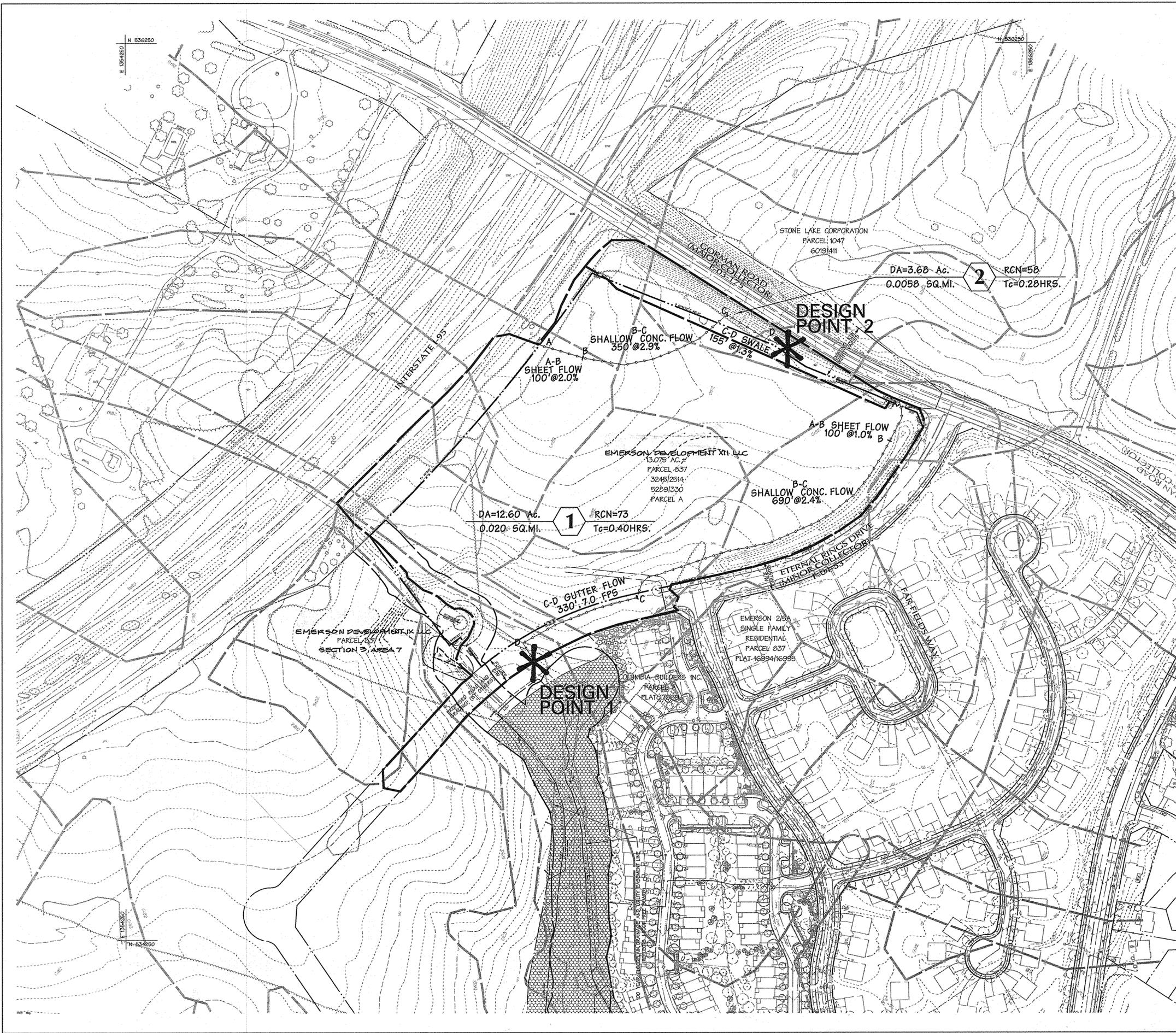
TITLE: **STORMWATER MANAGEMENT SPECIFICATIONS & SOIL BORING LOGS**

Des. By: RJD Scale: NTS Proj. No.: 95054.V
Dm. By: GMO Date: 10/07/08
Chk. By: Approved

9 of 15

SDP-08-54





LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING ROAD EDGE
- EXISTING SHRUB LINE
- EXISTING WOODS EDGE
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- SOILS LINE
- ChB2
- 50' STREAM BUFFER
- 25' WETLAND BUFFER
- WETLAND LIMIT
- PROPOSED CONTOURS BY OTHERS
- CALCULATED 100-YEAR FLOODPLAIN
- STREAM CENTER LINE
- EXISTING DRAINAGE AREA
- EXISTING Tc PATH

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Howard Dammann 10/20/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cathy Adams 10/21/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

David L. Caylor 1/22/09
 DIRECTOR DATE

2-10-14	Δ	CHANGED OWNER/DEVELOPER
Date	No.	Revision Description

SITE DEVELOPMENT PLAN FOR MASS GRADING

EMERSON
 (KEY PROPERTY)

SECTION 3 - AREA 6
 PARCEL A

OWNER/DEVELOPER:
 EMERSON DEVELOPMENT XII LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 607-8000

DMW
 Dick McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3388
 Fax 296-4705

A Team of Land Planners,
 Landscape Architects,
 Engineers, Surveyors &
 Environmental Professionals

10-08-08
 Date



28170
 Professional Engr. No.

SECTION NAME	EMERSON	SECTION/AREA	SEC.3 AREA 6	LOT/PARCEL #	837
PLAN OR LIST #	20234	DATE/ISSUE MAP	9 MXD-3	ISSUE DATE	06/11/08
WATER CODE	NIA	SEWER CODE	NIA	DESIGN SCALE	6069.03
TITLE STORMWATER MANAGEMENT EXISTING CONDITIONS DRAINAGE AREA MAP					
Des. By	RJD	Scale	1"=100'	Proj. No.	95054.Y
Dm. By	GMO	Date	10/07/08	10 of 15	
Chk. By	Approved				



LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING ROAD EDGE
- EXISTING SHRUB LINE
- EXISTING WOODS EDGE
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- SOILS LINE
- 50' STREAM BUFFER
- 25' WETLAND BUFFER
- WETLAND LIMIT
- PROPOSED CONTOURS BY OTHERS
- CALCULATED 100-YEAR FLOODPLAIN
- STREAM CENTER LINE
- PROPOSED DRAINAGE AREA
- PROPOSED Tc PATH
- PROPOSED MAJOR GRADE
- PROPOSED MINOR GRADE
- FOREST CONSERVATION EASEMENT

*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, License No. 18068, Expiration Date 2-18-16.

FOR REVISION NO. 3 ONLY

DATE: 5/16/16
 STATE OF MARYLAND
 LIBERTY UNIVERSITY
 PROFESSIONAL ENGINEER
 NO. 18865
 PROFESSIONAL ENGR. NO. 18068
 CENTRE ENGINEERING INC.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING	
<i>Calvin Dammery</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	10/21/08 DATE
<i>Candy Shultz</i> CHIEF, DIVISION OF LAND DEVELOPMENT	1/21/05 DATE
<i>Barbara Laugel</i> DIRECTOR	1/21/14 DATE
9-16-14	REMOVED FOREST CONSERVATION AREAS 'A' & 'D'
2-10-14	CHANGED OWNER/DEVELOPER
Date	No. Revision Description

SITE DEVELOPMENT PLAN FOR MASS GRADING
EMERSON
 (KEY PROPERTY)
 SECTION 3 - AREA 6
 PARCEL A

OWNER/DEVELOPER:
 EMERSON DEVELOPMENT XII LLC
 ONETEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 680-8000

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 Draft McCase-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3533
 Fax 296-4705

A Team of Land Planners,
 Landscape Architects,
 Engineers, Surveyors &
 Environmental Professionals

SECTION NAME EMERSON	SECTION/AREA SEC.3 AREA 6	LOT/PARCEL # 837
PLAT OR LOT OR SUBD # 22224-9	PAV/USE MAP MD-3	ELEC. DISTRICT 6111
WATER CODE N/A	SEWER CODE N/A	CHASSIS TRACT 6069.03

TITLE
**STORMWATER MANAGEMENT
 PROPOSED CONDITIONS
 DRAINAGE AREA MAP**

Des. By RJD	Scale 1"=100'	Proj. No. 95054.Y
Drn. By GMO	Date 10/07/08	
Chk. By	Approved	

10-08-08
 Date

STATE OF MARYLAND
 LIBERTY UNIVERSITY
 PROFESSIONAL ENGINEER
 NO. 28770

28770
 Professional Engr. No.

N:\95054\95054.Y\95054.Y\SDP-08-54.DWG 01-09 09:22:11 2008

SWM Plant List					
QTY	SYM	BOTANICAL NAME/COMMON NAME	SIZE	CONT	REMARKS
SHADE TREES					
11	AR	ACER RUBRUM 'RED SUNSET'	2 1/2" - 3" CAL	B & B	FULL HEAD
8	QP	RED SUNSET RED MAPLE	2 1/2" - 3" CAL	B & B	FULL HEAD
		QUERCUS PHELLOS PIN OAK			
EVERGREEN TREES					
19	CD	CEDRUS DEODARA DEODAR CEDAR	7'-8" HT.	B & B	
18	PS	PINUS STROBUS EASTERN WHITE PINE	6'-8" HT.	B & B	

**SCHEDULE D
STORMWATER MANAGEMENT
AREA LANDSCAPING**

FOOD #	1
LINEAR FT OF PERIMETER	1127 LF
NUMBER OF TREES REQUIRED	
SHADE TREES @ 140 LF.	19
EVERGREEN TREES @ 120 LF.	37
CREDIT FOR EXISTING VEGETATION	580
CREDIT FOR OTHER LANDSCAPING	NA
NUMBER OF TREES PROVIDED	
SHADE TREES	19
EVERGREEN TREES	37
SHRUBS	0

NOTE: NUMBER OF TREES REQUIRED BASED UPON EMERSON LANDSCAPE DESIGN CRITERIA.

**SCHEDULE A
PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROP.
LANDSCAPE TYPE "A"		F 3
LINEAR FEET OF PERIMETER		380 LF.
LANDSCAPE TYPE "B"	F 1	F 2
LINEAR FEET OF PERIMETER	784 LF.	1209 LF.
LANDSCAPE TYPE "C"		F 4
LINEAR FEET OF PERIMETER		764 LF.
CREDIT FOR EXISTING VEGETATION (DESCRIBE BELOW IF NEEDED)	70 LF.	87 LF.
CREDIT FOR BERM (DESCRIBE BELOW IF NEEDED)	N/A	N/A
NUMBER OF TREES PROVIDED		
SHADE TREES	DEFER TO FUTURE SDP	DEFER TO FUTURE SDP
EVERGREEN TREES	DEFER TO FUTURE SDP	DEFER TO FUTURE SDP
SHRUBS	DEFER TO FUTURE SDP	DEFER TO FUTURE SDP
NUMBER OF PLANTS PROVIDED		
SHADE TREES	DEFER TO FUTURE SDP	DEFER TO FUTURE SDP
EVERGREEN TREES	DEFER TO FUTURE SDP	DEFER TO FUTURE SDP
OTHER TREES (2:1 SUBSTITUTION)	DEFER TO FUTURE SDP	DEFER TO FUTURE SDP
SHRUBS (2:1 SUBSTITUTION)	DEFER TO FUTURE SDP	DEFER TO FUTURE SDP
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)		

NOTE: 1. THE DEVELOPER WILL PROVIDE ALL PERIMETER LANDSCAPE OBLIGATIONS UPON THE FUTURE DEVELOPMENT OF THE PARCEL.

SURETY NOTE: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 8624 OF THE HO.CC.CODE. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF \$12500 MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT (19 SHADE, 37 EVERGREENS).

LEGEND

PROPERTY LINE	EXISTING ROAD EDGE	REFORESTATION AREA
ADJACENT PROPERTY LINE	EXISTING SHRUB LINE	RETENTION AREA
EXISTING WOODS EDGE	EXISTING MAJOR CONTOURS	FOREST TO BE CLEARED
EXISTING MINOR CONTOURS	SOILS LINE	FOREST CONSERVATION EASEMENT
50' STREAM BUFFER	25' WETLAND BUFFER	PERMANENT PROTECTIVE SIGNAGE
WETLAND LIMIT	CALCULATED 100-YEAR FLOODPLAIN	TEMPORARY BLAZE ORANGE PROTECTIVE FENCE
STREAM CENTER LINE	PROPOSED MAJOR GRADE	
PROPOSED MINOR GRADE	PROPOSED TREE LINE	
PROPOSED SHADE TREE		
PROPOSED ORNAMENTAL TREE		
PROPOSED EVERGREEN TREE		

NOTE: TREES, SHRUBS, AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE INLET STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT.

Date	No.	Revision Description
10/20/08	1	ISSUED FOR PERMITS
10/20/08	2	CHANGED OWNER/DEVELOPER
10/20/08	3	CHANGED OWNER/DEVELOPER

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DIRECTOR

FOR REVISION NO. 3 ONLY



SITE DEVELOPMENT PLAN FOR MASS GRADING
EMERSON
 (KEY PROPERTY)
 SECTION 3 - AREA 6
 PARCEL A

OWNER/DEVELOPER:
 EMERSON DEVELOPMENT XII LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 689-8000

DMW
 Dan McQueen-Watson, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4705
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SECTION	AREA	DATE	NO.
EMERSON	SEC. 3 AREA 6	10/20/08	3

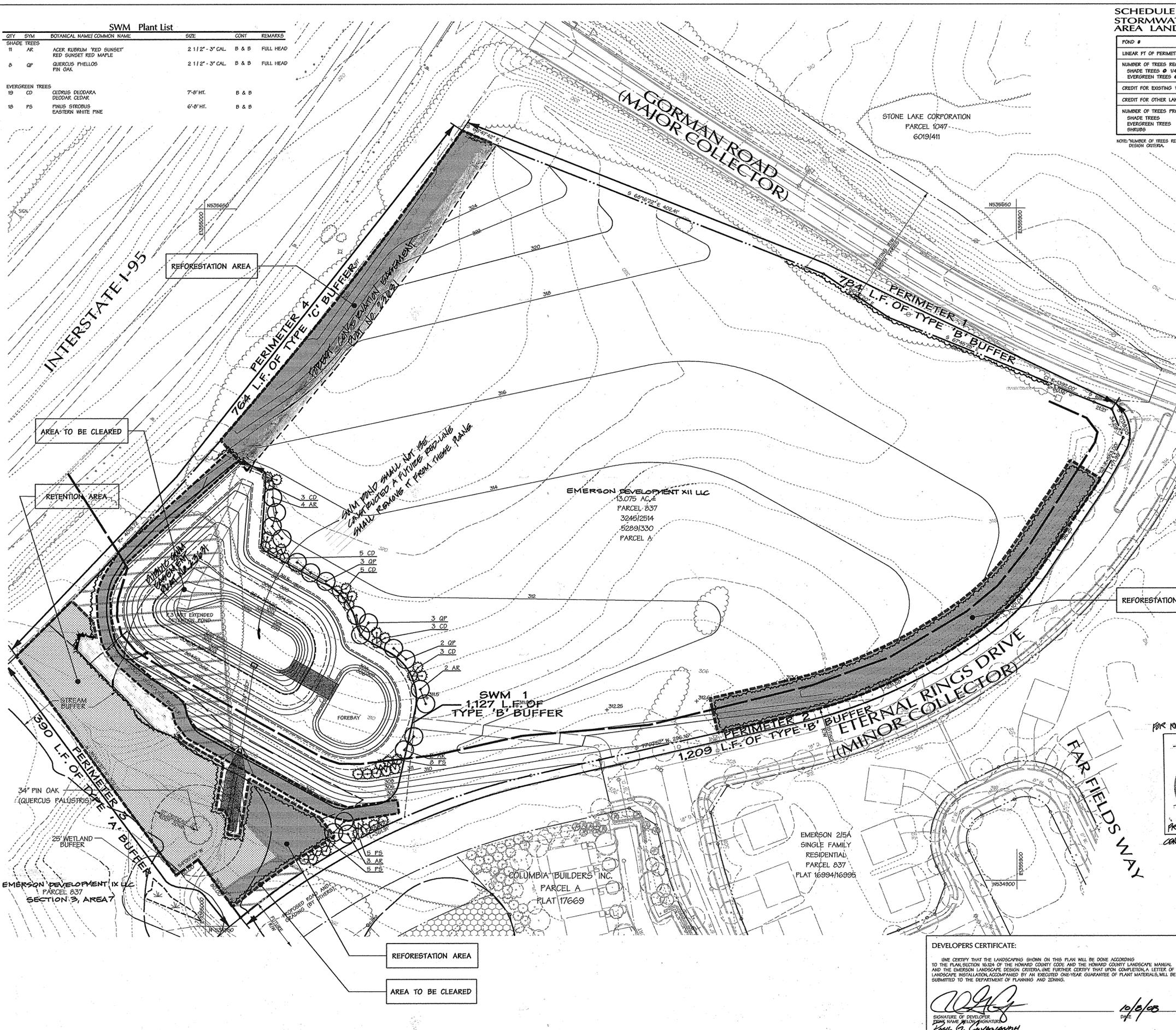
LANDSCAPE PLAN			
Des. By	SHH	Scale	1"=50'
Dim. By	GMO	Date	10/07/08
Chk. By	Approved	Proj. No.	95054.V

10/09/08
Date



Landscape Architect No. 3397

DEVELOPER'S CERTIFICATE:
 I HEREBY CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN SECTION 8624 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL, AND THE EMERSON LANDSCAPE DESIGN CRITERIA. I HEREBY CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXERCISED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
 SIGNATURE OF DEVELOPER: Paul G. Carver
 DATE: 10/20/08



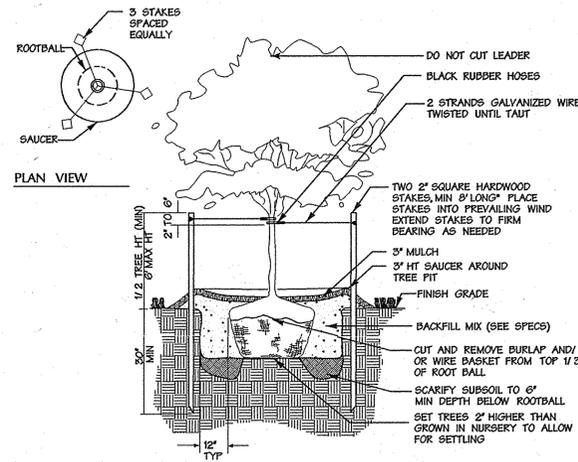
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Landscape Notes

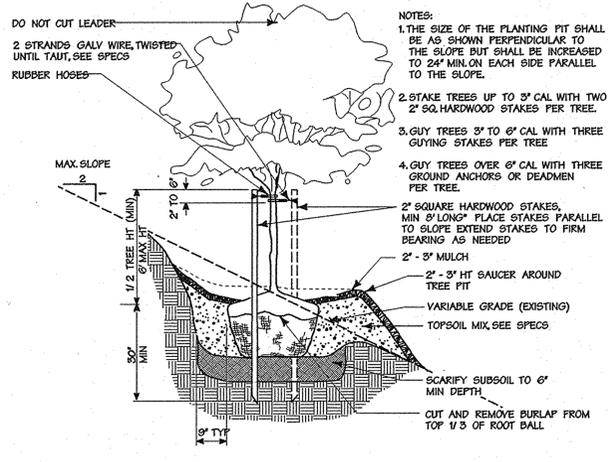
- Contractor shall notify Miss Utility 72 hours prior to construction.
- If utility lines are encountered in excavation of tree pits, other locations for trees shall be made by the contractor without additional compensation. No changes of location shall be made without approval of the landscape architect.
- Every possible safeguard shall be taken to protect building surfaces, equipment, and furnishing. The contractor shall be responsible for any damage or injury to person or property which may occur as a result of his negligence in the execution of the work.
- All equipment and tools shall be placed so as not to interfere or hinder the pedestrian and vehicular traffic flow. See Seasonal Plant List for planting times of bulbs and seasonal plants.
- The contractor shall review architectural/engineering plans to become thoroughly familiar with grading and surface utilities.
- The contractor is advised of the existence of underground utilities on the site. Their exact location shall be verified in the field with the owner or general contractor prior to the commencement of any digging operations. In the event they are uncovered, the contractor shall be held responsible for all damage to utilities and such damage shall not result in any additional expenses to the owner.
- The contractor shall dispose of stumps and major roots of all plants to be removed. Any depressions caused by removal operations shall be refilled with fertile, friable soil placed and compacted so as to reestablish proper grade for new planting and/or lawn areas.
- Landscape Contractor shall coordinate plant bed filling operations and plant material installation with General Contractor and Utilities Contractor. At the time of final inspection with acceptance, all electric, water, drainage, and fountain utilities, as well as all plant materials, shall remain undamaged. Likewise, Landscape Contractor and Utilities Contractor shall coordinate efforts to ensure that surface utilities are at the proper elevation relative to final grades.
- The contractor shall coordinate with lighting and irrigation contractors regarding timing of installation of plant material.
- The contractor shall insure that his work does not interrupt established or projected drainage patterns.
- The contractor is responsible for testing project soils. The contractor is to provide a certified soils report to the owner. The contractor shall verify that the soils on site are acceptable for the proper growth of the proposed plant material. Should the contractor find poor soil conditions, the contractor shall be required to provide soil amendments as necessary. These amendments shall include, but not be limited to, fertilizers, lime, and topsoil. Proper planting soils must be verified prior to planting of materials.
- Landscape Contractor to follow landscape specification guidelines for Baltimore Washington Metro area approved by LCAMM.

- Plants shall conform to current "American Standards for Nursery Stock" by American Association of Nurserymen (AAN), particularly with regard to size, growth, size of ball, and density of branch structure. Plant material shall be tagged at the source by the landscape architect unless this requirement is specifically waived.
- The contractor shall stake all material located on the site for review and/or adjustment by the landscape architect prior to planting. All locations are to be approved by the landscape architect before excavation.
- All plants (B&B or container) shall be properly identified by weather-proof labels securely attached thereto before delivery to project site. Labels shall identify plants by name, species, and size. Labels shall not be removed until the final inspection by the landscape architect or agent in charge.
- Any material and/or work may be rejected by the landscape architect if it does not meet the requirements of the specifications. All rejected materials shall be removed from the site by the contractor.
- No substitutions shall be made without written consent of the owner or landscape architect.
- The landscape architect or owner shall have the right, at any stage of the operations, to reject any and all work and material which, in his opinion, does not meet the requirements of these plans and specifications.
- During planting operations, excess waste materials shall be promptly and frequently removed from the site.
- In the event of variation between quantities shown on the plant list and the plans, the plans shall control. The contractor is responsible for verifying all plant quantities prior to the commencement of work. Sod quantity take-offs are the responsibility of the contractor. All discrepancies shall be reported to the landscape architect for clarification prior to bidding. The contractor shall furnish plant material in sizes as specified in plant list.
- Maintain positive drainage out of planting beds at a minimum 2% slope. All grades, dimensions, and existing conditions shall be verified by the contractor on site before construction begins. Any discrepancies shall be brought to the attention of the landscape architect or owner.
- All planting beds adjacent to lawn, sod, or seeded areas shall be spade edged.
- All proposed trees to be installed either entirely in or entirely out of planting beds. Planting bed lines are not to be obstructed. All shrubs and ground cover areas shall be planted in continuous prepared bed and top dressed with 3-inch shredded hardwood mulch. Mulch shall have been straddled within the last six months.
- The contractor shall be wholly responsible for stability and conditions of all trees and shrubs and shall be legally liable for any damage caused by instability of any plant materials.
- Maintenance shall begin after each plant has been installed and shall continue until 90 days after final acceptance by the architect or owner representative. Maintenance includes mowing of turf, watering, pruning, weeding, fertilizing, mulching, replacement of sick or dead plants, and any other care necessary for the proper growth of the plant material. The contractor must be able to provide continued maintenance if requested by the owner.

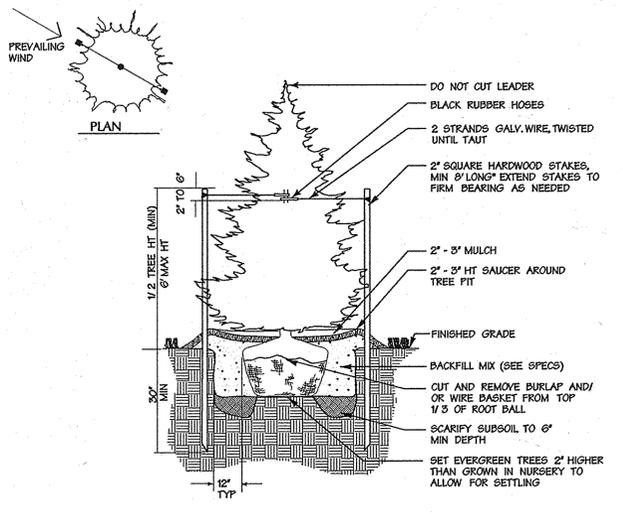
- Upon completion of all landscaping, an acceptance of the work shall be held. The contractor shall notify the landscape architect or owner for scheduling the inspection at least seven (7) days prior to the anticipated inspection date.
- All trees shall be guaranteed for 12 months from the date of acceptance. All shrubs and ground covers shall be guaranteed for 12 months from the date of acceptance.
- All disturbed areas on the site not planted with shrubs or ground cover shall be fine graded and seeded or sodded as noted on landscape plan.
- All sod shall be obtained from areas having growing conditions familiar to areas to be covered. Areas to be sodded shall be raked of stones and debris. Debris and stones over 1 inch in diameter shall be removed from the site. All damaged sod will be rejected. All sod must be placed with staggered joints, tightly butted, with no inequalities in grade. Place all sod in rows at right angles to slopes (where applicable).
- All planting procedures shall conform to Daft McCune Walker Inc. specifications.
 - PLANTING MIX:
 - Planting mix shall be prepared at approved on-site staging area using approved on-site existing soil. Mix minimum quantities of 20 cubic yards or sufficient mix for entire job if less than 20 cubic yards is required.
 - Thoroughly mixed in the following proportions for tree and shrub planting mix:
 - 5 cy existing soil
 - 2 cy sharp sand
 - 3 cy wood residuals
 - 4.5 lbs treble superphosphate
 - 5 lbs dolomite limestone (eliminate for acid loving plants)
 - For bed planting, shrubs and groundcover spaces 24 inches or closer, incorporate the following ingredients per 20 cf and incorporate into top 8 inches of existing soils by rototilling or similar method of incorporation.
 - 2 cy sharp sand
 - 3 cy organic material
 - 4.5 lbs treble superphosphate
 - 5 lbs dolomite limestone (eliminate for acid loving plants)
 - The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant materials 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 necessary, repaired or replaced.
 - As the time of plant installation, all shrubs and trees listed and approved on the Landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition to 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.



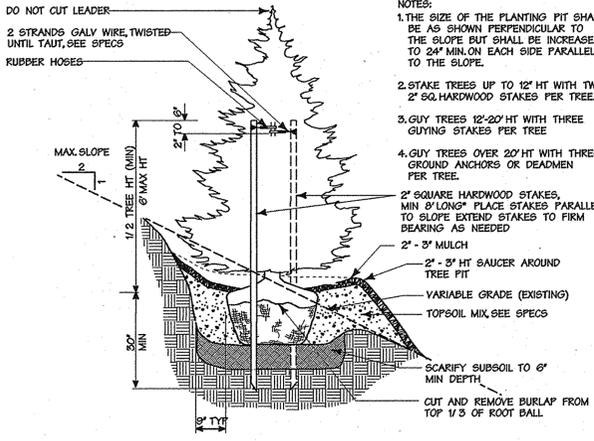
① Less Than 3" Cal. Tree Planting
Not To Scale



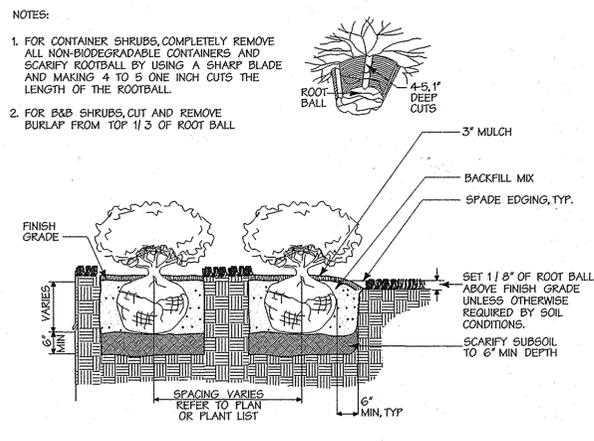
② Tree Planting on Slope
Not To Scale



③ Evergreen Tree Planting
Not To Scale



④ Evergreen Tree Planting on Slope
Not To Scale



⑤ Shrub Planting
Not To Scale

HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF DEVELOPMENT ENGINEERING DIVISION
CHIEF DIVISION OF LAND DEVELOPMENT
DIRECTOR

10/20/08 DATE
10/21/08 DATE
10/21/08 DATE

2-10-14	CHANGED OWNER/DEVELOPER
Date	No. Revision Description

SITE DEVELOPMENT PLAN FOR MASS GRADING
EMERSON
(KEY PROPERTY)
SECTION 3 - AREA 6
PARCEL A

OWNER/DEVELOPER:
EMERSON DEVELOPMENT XII LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD 21073 (443) 680-8000

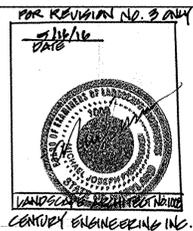
DMW
Daft McCune Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 298-3333
Fax 298-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SECTION NAME	EMERSON	SECTION/AREA	SEC.3 AREA 6	LOT/PARCEL #	837
PLAT OR LOT #	20234	ZONE	MD-3	TAX/DNA MAP	47
WATER CODE	N/A	SEWER CODE	N/A	GRID SHEET	6069.03

TITLE			
LANDSCAPE DETAILS			
Des. By	SHH	Scale	NTS
Drn. By	GMO	Date	10/07/08
Chk. By	Approved	Proj. No.	95054-Y
			13 of 15

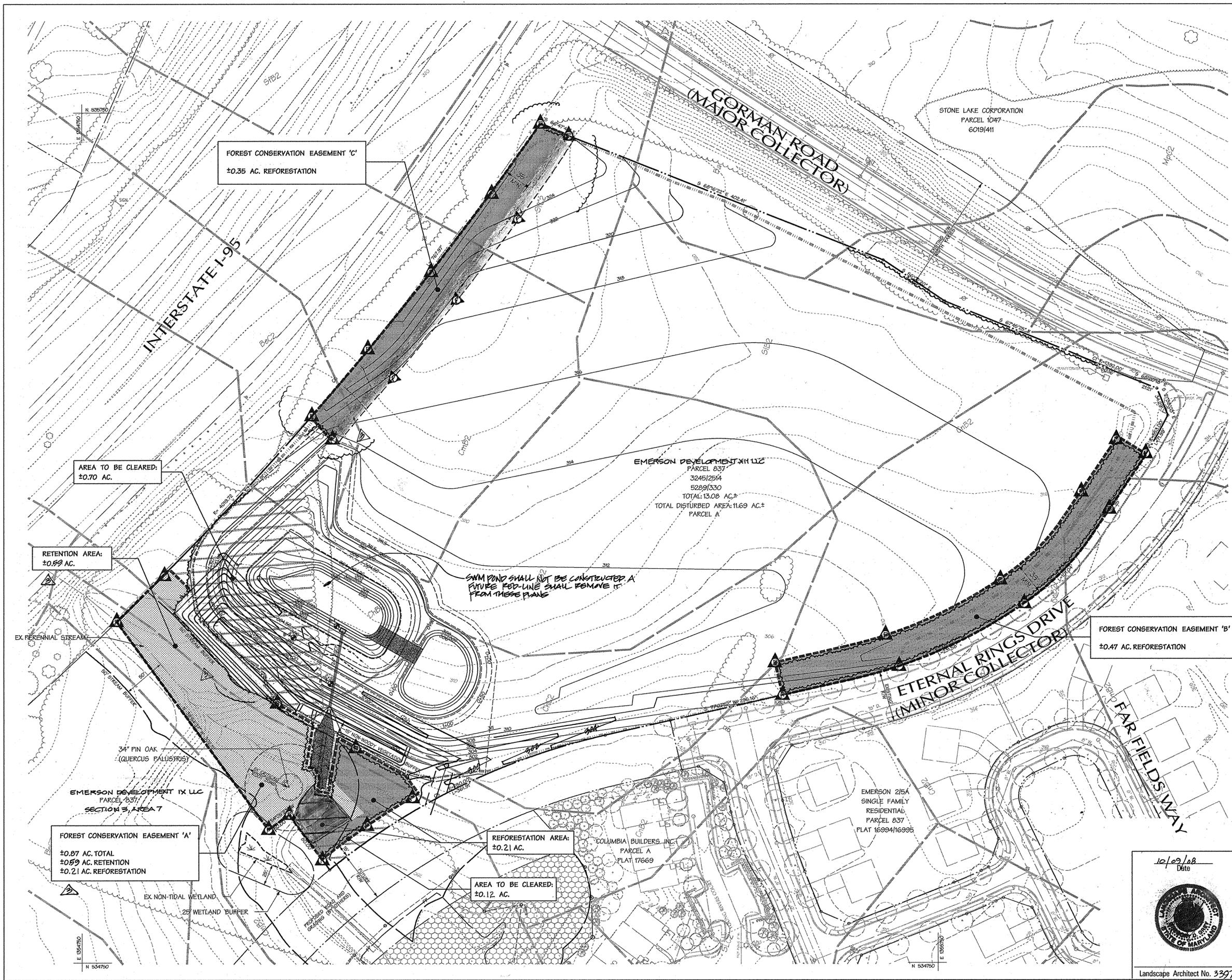
10/20/08
Date

Landscape Architect No. 3397



LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING ROAD EDGE
- LIMIT OF DISTURBANCE
- EXISTING SHRUB LINE
- EXISTING WOODS EDGE
- PROPOSED WOODS EDGE (OFFSET 5' FOR CLARITY)
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- SOILS LINE
- ChB2
- 50' STREAM BUFFER
- 25' WETLAND BUFFER
- WETLAND LIMIT
- PROPOSED CONTOURS BY OTHERS
- CALCULATED 100-YEAR FLOODPLAIN
- STREAM CENTER LINE
- REFORESTATION AREA
- RETENTION AREA
- FOREST TO BE CLEARED
- FOREST CONSERVATION EASEMENT
- PERMANENT PROTECTIVE SIGNAGE
- TEMPORARY BLAZE ORANGE PROTECTIVE FENCE



5/10/10 **REVISOR FOREST CONSERVATION EASEMENT, ESD**

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION *10/10/08* DATE

CHIEF, DIVISION OF LAND DEVELOPMENT *10/10/08* DATE

DIRECTOR *10/10/08* DATE

5-11-12 **REVISED PER CLEARING STREAM CROSSING ON 5-11-03G**

2-10-14 **CHANGED OWNER/DEVELOPER**

Date	No.	Revision Description
		SITE DEVELOPMENT PLAN FOR MASS GRADING
		EMERSON (KEY PROPERTY)
		SECTION 3 - AREA 6 PARCEL A

OWNER/DEVELOPER:
 EMERSON DEVELOPMENT XII LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 689-8000

DMW
 Dan McCase-Waters, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax: 296-4705

A Team of Land Planners,
 Landscape Architects,
 Engineers, Surveyors &
 Environmental Professionals

10/09/08
 Date

Landscape Architect No. 3397

SUBMISSION NAME	SECTION/AREA	SEC. 3 AREA 6	LOT/PARCEL #
EMERSON			837
PLAT OR 17/669	ZONE	132/DIRE MAP	SECTION
20234	9	MXD-3	47
WATER CODE	N/A	SEWER CODE	N/A
GROSS TRACT: 6069.03			

TITLE
 FOREST CONSERVATION PLAN

Des. By	CRH	Scale	1"=50'	Proj. No.	95054.Y
Dim. By	CRH	Date	10/07/08		
Chk. By	Approved				

14 of 15

SDP-08-54

FOREST CONSERVATION GOALS AND OBJECTIVES

The goals and objectives of this Forest Conservation Plan are to account for the retention of approximately 0.66 acres of existing forest, the clearing of approximately 0.82 acres, and the reforestation of approximately 1.03 acres. Reforestation species have been chosen to reflect and enhance the existing forest community, and were selected to tolerate the upland moisture regime in the designated planting areas.

- When calculated cumulatively with previous phases of this project, a total of 71.96 acres of forest will be cleared, and 56.24 acres will be retained. The total reforestation obligation is 15.00 acres, and 21.56 acres of reforestation have been provided. A surety in the amount of \$6,273,000 is required for forest retention (0.72 acres @ \$90,206/acre), and a surety in the amount of \$2,127,000 is required for reforestation (0.97 acres @ \$2,192,887/acre). The total Forest Conservation surety amount provided with the Developer's Agreement is equal to \$7,400,000.

PART 2 PRODUCTS

2.01 PLANTS

- A. Sound, healthy, vigorous, free from plant diseases, insect pests or their eggs.
- B. Plants cut back from larger sizes or pruned prior to delivery will not be accepted.
- C. It is anticipated that these plants will need to be obtained from a nursery source. These plant species are normally unavailable from standard landscape nursery sources.
- D. Shape and Form: Plant materials shall be symmetrical and typical for the variety and species.
- E. Containers: The soil/root masses shall be thoroughly moist upon delivery to the job site. Any dry and light weight plants shall be rejected. If not planted immediately after being delivered to the job site, the plants shall be stored out of direct exposure to the sun and wind and their root masses maintained moist, through periodic watering, until the time of planting.
- Until the removal of the plants from the containers, the soil/root masses shall be the size of the specified container size. If the soil/root masses are substantially smaller than the specified container size and loose soil exists on the bottom of the containers, the plants will be rejected since they have not been grown sufficiently long in the containers to root into the soils contained therein.
- The plants shall appear healthy with no leaf spots, leaf damage, leaf discolorations, leaf wilting, or evidence of insects on the leaves.
- The container size shall be at least as large as indicated in the specifications or shown in the plant tables/lists. Plants shall not be rejected if supplied in containers larger than specified.
- F. Fiber or Peat Pot: If not planted immediately after being delivered to the job site, the plants shall be stored out of direct exposure to the sun and wind and their pots and associated root masses maintained moist, through periodic watering, until the time of planting.
- The plants shall be well-rooted through the sides and bottoms of the pots and firmly contained therein. Should the plants be removed from the pots by holding them from their tops and gently pulling on the pots, the plants shall be rejected.
- If growing, the plants shall appear healthy with no foliar spots, discolorations, wilting, or other evidence of the presence of disease or insects.
- The pot size shall be at least as large as indicated in the specifications or shown in the plant tables/lists. Plants shall not be rejected if supplied in pots larger than specified.
- The number of plants, stems, or culms per pot as specified or shown in the plant tables/lists at least shall be present, on the average, or the plants shall be rejected.
- G. Dormant Propagule (Herbaceous): If not planted immediately after being delivered to the job site, the dormant propagules shall be stored out of direct exposure to the sun and wind, and they shall be protected by covering with straw, peat moss, compost, or other suitable materials and shall be maintained moist, through periodic watering, until the time of planting.
- The bodies and shoots associated with the propagules shall have turgor or be rigid to the touch. If the bodies and/or shoots associated with the propagules are soft or mushy or appear rotten or decomposed, the plant materials shall be rejected.
- Rhizome (stolon) sections shall provide a minimum of two shoots per section or Rhizome (stolon) sections containing at least a terminal shoot shall be a minimum of four inches in length (in order to ensure sufficient stored energy to support the new growth). Rhizome sections containing shoots that are soft or mushy or otherwise appear rotten shall not be accepted.
- Suckers shall contain a terminal shoot and be a minimum of four inches in length (in order to ensure sufficient stored energy to support the new growth).
- Growing Bare Root Plant (Herbaceous): The plants shall contain new roots that are clean and white in coloration.
- If not planted immediately after delivery to the job site, the plants shall be stored out of direct exposure to the sun and wind and the new roots shall be protected by the use of straw, peat moss, compost, or other suitable materials and shall be maintained moist, through periodic watering, until the time of planting.
- The plants shall appear healthy with no foliar spots, discolorations, wilting, or other evidence of the presence of disease or insects.

- 2.02 FERTILIZER
- A. Plant Fertilizer: Slow release fertilizer such as Osmocote 19-6-12 analysis (3-4 month release) or equal approved by the Landscape Architect.
- B. Slow release fertilizer shall be applied at the time of planting and at the following rate:
- All emergent plant material - planting pit application of 1 oz. per container or bare root plant.
- C. Pesticides, herbicides and fungicides will not be used unless judged necessary by the wetland landscaper. If applied, quantities recommended by the Department of Agriculture shall not be exceeded.
- D. Fertilizer shall be delivered to the site in the original unopened containers with formulas attached.

- 2.03 PLANTING PROCEDURES
- A. Set plants straight and plumb.
- B. Plant material shall be planted in existing soil with each planting pit excavated to size sufficient to contain the entire root stock or root mass without cramping.
- C. Where water is not available on-site, the Contractor shall furnish sufficient quantities to complete the work at no additional cost to the Owner.
- 2.04 CLEAN-UP
- A. During planting operations, excess and waste materials including discarded containers, shall be removed from the site on a daily basis.
- B. Repair turf areas and other existing conditions damaged during planting operations, including regrading, seed, mulch and fertilization to the satisfaction of the Owner.

- 3.05 MAINTENANCE
- A. Watering of plant material shall take place at the end of each for fourteen (14) consecutive days if necessary after planting has been completed. The watering shall completely saturate the soil and partially immerse the plant material.
- B. During maintenance period, on approximately the 1st and 15th of each month, the Contractor shall provide sufficient supervision, equipment, materials and manpower to:
 - Keep all plants in a healthy growing condition by watering, when necessary, removing dead or dying branches, controlling insect infestations, removing sprouts, weeding.
 - Remove and replace dead or damaged plant material. Where replacement is not possible due to season, remove dead material, etc. and level pits until planting is possible.
- C. Notify Owner for review of activities prior to initiating maintenance operations each month.

- Maintenance by the Contractor
- A. A 2-year Contractor's Maintenance and Monitoring Period shall be at mobilization. Seventy-five percent survivorship must be guaranteed for this period. The Site shall be inspected at the end of the two year period to ascertain survivorship and provide for replacement if necessary.
- B. The Contractor's maintenance of new planting shall consist of watering, cultivating, weeding (and spot spraying with an approved herbicide as needed to control multiflora rose), mulching, and removing invasive vegetation as necessary to insure survival. The Contractor shall maintain and protect plantings from herbivory using Kopel or other approved herbivore deterrent as necessary to ensure survival.
- C. Protect planting area and plants at all times against damage of all kinds for duration of maintenance period. Maintenance includes temporary protection barriers and signs as required for protection. If any plants become damaged or injured, because sufficient protection was not provided, treat or replace as directed by Landscape Architect at no additional cost to Owner.

- GUARANTEE: A MINIMUM SURVIVAL RATE OF 75% IS TO BE GUARANTEED BY THE CONTRACTOR AT THE END OF THE TWO YEAR MAINTENANCE PERIOD.

FOREST CONSERVATION TRACKING CHART

DTX FILE Number	Sectional Phase Number	Gross Area	Floodplain	Net Tract Area	Ex-Forest Area	Forest Cleared	Forest Retained	Reforest./Affor. Required	Reforest./Affor. Provided	Excess Reforest./Affor.	Future Forest Clearing	Future Reforest./Affor.	Comments
F-01-137	2 1A/B	106.30	3.50	102.70	24.70	7.93	16.77	0.61	5.00	4.39	4.48	3.41	See Note K
F-01-145	212	18.90	3.50	15.40	24.80	8.03	16.77	2.96	5.00	2.06	3.28	3.41	See Note A
F-02-55	213	137.35	4.00	133.35	34.40	12.53	21.87	1.27	5.00	3.73	2.18	3.91	See Note B
F-02-131	311	206.85	2.19	204.66	85.20	39.47	45.83	0.00	5.00	5.00	2.18	3.91	See Note C
F-02-178	312	220.27	2.27	218.00	87.50	41.67	45.83	0.00	5.00	5.00	2.18	3.91	See Note C
F-03-13	2 1A	254.81	26.57	228.24	98.59	47.15	91.03	0.00	5.00	5.00	2.49	5.24	See Note D
F-03-175	215/C	267.84	27.40	240.44	98.62	47.59	91.03	0.00	5.74	5.74	2.49	5.24	See Note D
F-04-68	216/A	277.75	27.40	250.35	98.62	47.59	91.03	0.00	5.74	5.74	2.49	5.24	See Note E
F-04-131	214	277.75	27.40	250.35	98.62	47.59	91.03	0.00	8.52	8.52	2.49	3.91	See Note E
F-04-53	215/A	306.83	27.51	279.32	98.66	47.63	91.03	2.79	8.71	5.92	2.49	3.91	See Note F
F-04-127	215/B	332.63	32.43	300.20	115.66	63.31	92.35	8.51	11.48	2.97	2.49	3.91	See Note F
F-05-19	217/B	332.63	32.43	300.20	115.66	61.73	92.35	6.93	13.26	6.23	0.49	1.84	See Note G
F-05-53	217	341.19	32.43	308.76	115.66	61.73	92.35	7.81	13.26	5.45	0.49	1.84	See Note G
F-05-89	216/B	347.46	32.43	315.03	121.26	67.33	93.93	10.15	13.49	3.34	0.49	1.84	See Note H
SOP-05-124	"FARM POND"	347.46	32.43	315.03	121.26	67.33	93.93	10.15	15.46	5.31	0.49	1.84	See Note I
F-07-141	218/B	372.80	32.75	340.05	125.82	71.41	94.66	14.27	16.03	1.76	0.49	1.84	See Note J
F-08-82	219	426.21	83.86	342.35	126.72	71.41	95.58	13.50	20.53	7.03	0.49	1.84	See Note J
SOP-08-94	316	439.29	83.86	355.03	128.20	72.03	96.17	15.00	21.63	5.87	0.49	1.84	See Note J

A. 150+ ACRES OF FUTURE FOREST CLEARING SHOWN ON F-01-137 WAS CLEARED FOR SWM ON OPEN SPACE LOT 174.
 B. 110+ ACRES OF FUTURE FOREST CLEARING SHOWN ON F-01-137 WAS CLEARED FOR SWM ON OPEN SPACE LOT 176.
 C. GROSS AREA INCLUDES 107+ ACRES FOR SANITARY SEWER EXTENSION AND CONTAINS 0.04+ ACRES OF FLOODPLAIN.
 D. GROSS AREA INCLUDES 0.38 ACRES FOR THE SANITARY SEWER SHOWN ON F-02-178. GROSS AREA ALSO INCLUDES 0.27 ACRES FOR AREA PREVIOUSLY ACCOUNTED FOR UNDER F-03-16.
 E. THIS LINE ITEM ACCOUNTS FOR REFORESTATION PROVIDED RETROSPECTIVELY ON A PHASE THAT PREVIOUSLY ADDED FOREST CONSERVATION. APPROXIMATELY 1.33 ACRES OF FUTURE REFORESTATION AREA WILL BE USED UNDER THIS REFORESTATION PLAN.
 F. GROSS AREA INCLUDES 0.82 ACRES FOR SANITARY SEWER SHOWN ON F-02-178. A GROSS AREA INCLUDES 2.37 ACRES FOR THE WETLAND MITIGATION SITE FLOODPLAIN INCLUDES 12 ACRES FOR THE MITIGATION AREA FLOODPLAIN.
 G. APPROXIMATELY 0.42 ACRES OF FUTURE CLEARING/REFORESTATION IS BEING CLEARED AND IS NOT BEING REFORESTED. APPROXIMATELY 1.59 ACRES OF FUTURE CLEARING/REFORESTATION IS BEING RETAINED. APPROXIMATELY 0.13 ACRES OF FUTURE REFORESTATION IS BEING REFORESTED.
 H. GROSS AREA INCLUDES 0.15 AC FOR SEWER SHOWN ON F-02-178. GROSS AREA ALSO INCLUDES 2.37 AC FOR WETLAND MITIGATION AREA COUNTED UNDER F-04-127. FLOODPLAIN EXCLUDES 1.20 AC FOR MITIGATION AREA FLOOD PLAN COUNTED UNDER F-04-127.
 I. NET TRACT AREA EXCLUDES 0.28 ACRES OUTSIDE THE FLOODPLAIN WITH IN THE BGE RESTRICTED AREA.
 J. APPROXIMATELY 0.16 ACRES OF EXCESS REFORESTATION/AFFORESTATION ARE ALLOCATED TO SATISFY A PORTION OF THE REFORESTATION REQUIREMENT PER F-01-137.

REFORESTATION PLANTING SCHEDULE

Forest Conservation Easement A - upland Plants required - 30 (200 1" caliper trees/acre x 0.15 acres)

Species name	Common name	Size	Spacing	Quantity	Tolerance	Indicator status
Acer rubrum	red maple	container grown 1" caliper	15' x 15'	9	full sun to part shade	FAC
Liquidambar styraciflua	sweet gum	container grown 1" caliper	15' x 15'	9	full sun	FAC
Liriodendron tulipifera	tulip poplar	container grown 1" caliper	15' x 15'	6	full sun	FACU
Quercus rubra	northern red oak	container grown 1" caliper	15' x 15'	6	full sun	FACU
TOTALS				30		

Forest Conservation Easement B - upland Plants required - 94 (200 1" caliper trees/acre x 0.47 acres)

Species name	Common name	Size	Spacing	Quantity	Tolerance	Indicator status
Amelanchier canadensis	serviceberry	container grown 1" caliper	15' x 15'	16	full sun to part shade	FAC
Cornus florida	flowering dogwood	container grown 1" caliper	15' x 15'	18	full sun	FACU-
Quercus coccinea	scarlett oak	container grown 1" caliper	15' x 15'	30	full sun	FACU
Quercus rubra	northern red oak	container grown 1" caliper	15' x 15'	30	full sun	FACU-
TOTALS				94		

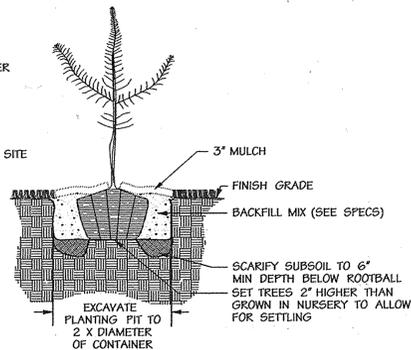
Forest Conservation Easement C - upland Plants required - 70 (200 1" caliper trees/acre x 0.35 acres)

Species name	Common name	Size	Spacing	Quantity	Tolerance	Indicator status
Liriodendron tulipifera	tulip poplar	container grown 1" caliper	15' x 15'	25	full sun to part shade	FACU
Prunus serotina	black cherry	container grown 1" caliper	15' x 15'	23	full sun	FACU
Robinia pseudoacacia	black locust	container grown 1" caliper	15' x 15'	22	full sun	FACU-
TOTALS				70		

Plantings should be installed in a curvilinear pattern to facilitate maintenance but avoid a grid appearance.

PLANTING PROCEDURES FOR ALL CONTAINER GROWN TREES AND SHRUBS:

- REMOVE THE PLANT EITHER BY CUTTING OR INVERTING THE CONTAINER
- GENTLY LOOSEN ROOTS FROM SOILS. ROOTS MAY NOT BE CUT OR TRIMMED ON SITE
- PLANT SHRUB OR TREE 1 TO 2 INCHES ABOVE THE EXISTING GRADE
- APPLY 2 TO 3 INCH THICK LAYER OF SHREDDED HARDWOOD MULCH

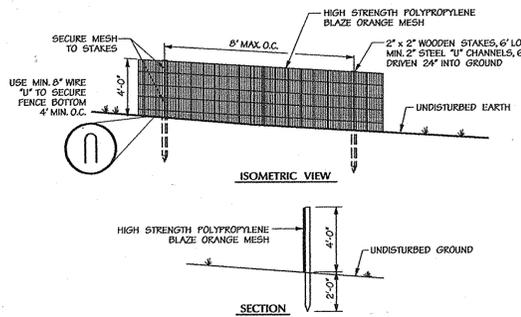


Typical Tree Planting (For container grown)

Not To Scale

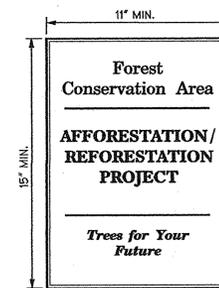
Forest Protection Fence

Not To Scale



- NOTES:
- THIS DETAIL IS FOR FOREST PROTECTION DEVICE ONLY.
 - FOREST RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 - BOUNDARIES OF FOREST RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING THE DEVICE.
 - ROOT DAMAGE SHALL BE AVOIDED.
 - PROTECTION SIGNAGE MAY ALSO BE USED.
 - FOREST PROTECTION FENCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
 - INSTALLATION OF FOREST PROTECTION FENCE MUST BE APPROVED BY BALTIMORE COUNTY EIR (940-897-3300) PRIOR TO ISSUANCE OF BUILDING OR GRADING PERMITS.

Not To Scale



SIGNS TO BE PLACED ON METAL POSTS 5" ABOVE FINISH GRADE PRIOR TO PLANTING. PLACE SIGNS EVERY 100' AROUND PERIMETER OF FOREST CONSERVATION AREA.

Permanent Signage

Not To Scale

CUMULATIVE FOREST CONSERVATION CALCULATIONS

BASIC SITE DATA	ACRES (1100)
GROSS SITE AREA	439.29
AREA WITHIN 100 YEAR FLOODPLAIN	83.88
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	N/A
NET TRACT AREA	355.03
LAND USE CATEGORY	CA1
INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	355.03
B. REFORESTATION THRESHOLD (15% x A)	53.25
C. AFFORESTATION MINIMUM (15% x A)	53.25
D. EXISTING FOREST ON NET TRACT AREA	128.20
E. FOREST AREAS TO BE CLEARED	72.03
F. FOREST AREAS TO BE RETAINED	96.17
REFORESTATION CALCULATIONS	
A. NET TRACT AREA	355.03
B. REFORESTATION THRESHOLD (15% x A)	53.25
C. EXISTING FOREST ON NET TRACT AREA	128.20
D. FOREST AREAS TO BE CLEARED	72.03
E. FOREST AREAS TO BE RETAINED	96.17
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	72.03
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	0.00
H. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	2.92
CLEARING ABOVE THE THRESHOLD	
IF FOREST AREAS TO BE RETAINED ARE LESS THAN THE REFORESTATION THRESHOLD (IF F IS GREATER THAN B), THE FOLLOWING CALCULATIONS APPLY:	
REFORESTATION FOR CLEARING ABOVE THRESHOLD	18.01
REFORESTATION FOR CLEARING BELOW THRESHOLD	0.00
TOTAL REFORESTATION REQUIRED (F+H) + (Gx2)	18.01
CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	
REFORESTATION REQUIRED	2.92 ACRES
REFORESTATION PROVIDED	21.63 ACRES

9/10/16 **REVISED FOREST CONSERVATION AREAS A/C**

2-10-18 **CHANGED OWNER/DEVELOPER**

DATE	NO.	REVISION DESCRIPTION CONT.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Howard D. Darr 10/28/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cindy Heath 10/21/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark A. Layle 11/22/08
 DIRECTOR DATE

8-24-11 **EXCESS REFORESTATION ALLOCATED TO F-01-204**

5-11-12 **REVISED FOR CLEARING STREAM CROSSING ON F-11-036**

Date No. Revision Description



SITE DEVELOPMENT PLAN FOR MASS GRADING

EMERSON
(KEY PROPERTY)

SECTION 3 - AREA 6
PARCEL A

OWNER/DEVELOPER:
EMERSON DEVELOPMENT XII LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD. 21093 (443) 687-8000

DMW
Darr-McCune-Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners,
Landscape Architects,
Engineers, Surveyors &
Environmental Professionals

SUBMISSION NAME	SECTION/AREA	SEC.3 AREA 6	LOT/PANEL #
EMERSON			837
DATE OR L.T. #	DATE	DATE	DATE
2/23/14	9	MXD-3	47
WATER CODE	REVISION CODE	6TH	6069.03

TITLE: **FOREST CONSERVATION DETAILS**

Des. By	CRH	Scale	NTS	Proj. No.	95054.V
Drn. By	CRH	Date	10/07/08		
Chk. By	Approved				15 of 15

Landscape Architect No. 3397

SDP-08-54