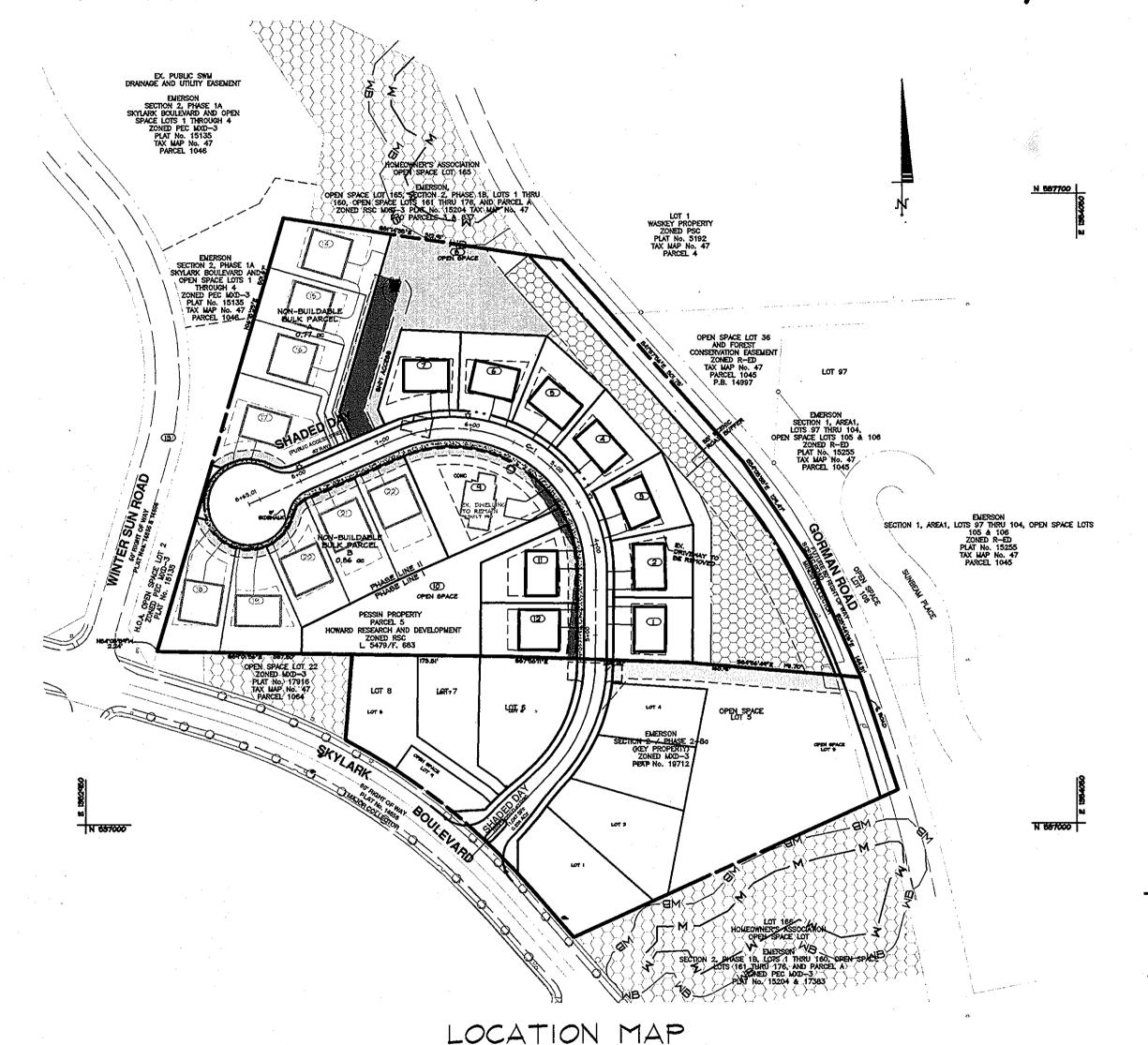
GENERAL NOTES Existing Zoning: RSC per April 2004 Comprehensive Zoning Plan effective 2/2/04 and per the Comp Lite Zoning Regulation Amendments effective on 7/28/06. Deed Reference: 5479/683 Plat Reference: N/A Gross Area of Tract: 5.9892 ac. Area of 100 Year Floodplain: N/A Area of Steep Slopes: 0.00 ac. Net Area of Tract: 5.9892 ac. Number of Proposed Lots/Parcels: 15 (9 Buildable Lats. 1 Existing Dwelling. 3 Open space lats. 8. Number of Proposed Lots/Parcels: 15 (9 Buildable Lots, 1 Existing Dwelling, 3 Open space lots, 2 Bulk parcels) 9. Area of Proposed Lots/Parcels: 5.016 ac. This project is in conformance with the latest Howard County Standards unless waivers have been approved. The existing topography shown hereon was provided by Daft, McCune and Walker Inc. The total forest conservation obligations for this site is 0.8934 acres. A total of .7092± acres of afforestation are proposed under this plan. As such, the required surety amount for the 0.3149 acres of afforestation is \$6,859.00 and the surety for the 0.3576 acres of supplemental planting is \$6,231.00 (\$0.40/s.f.). The forest conservation surety is \$13,090.00. The surety for the landscape material \$6,018.00 (\$0.75/s.f.) for 0.1842 acres of forestation will be paid separately. the landscape material \$6,018.00 (\$0.75/s.f.) for 0.1842 acres of forestation will be paid separately. 13. This plan has been prepared in accordance with the provisions of section 16.124 of HO.CO code financial surety for required landscaping in the amount of \$12,450.00 must be posted as part of the developer's agreement (35 shade trees, 13 evergreen trees). 14. The coordinates shown hereon are based upon the Howard County Geodetic Control, which is based upon the Maryland State Coordinate System. Howard County Monument No's 47DC \$ 47EB were used for this project. 15. This property is located in the Metropolitan District. 16. Stormwater management for this development will be provided by the following means: Recharge (Rev) will be provided by grass channels. These channels address Rev for this site and Emerson 2-8a to the immediate south. Water Quality (WQV) for the northern drainage area (Design Point 2) will be provided in a bioretention facility, to be privately owned by an HOA. WQV for the portion of this site that drains to the south (to DPI) will be provided in the SWM pond on the Emerson site (accounted for in Emerson 2-8a SWM design). Channel Protection (Cpv) is not required at DP2 because the 1-year storm is under 2 cfs. Cpv for DPI is provided and designed in the Emerson 2-8a SWM design. Neither the 10-year nor the 100-year storms are required to be managed at DP2. For treatment of these storms at DPI, see Emerson 2-8a SWM design. 17. Existing utilities shown hereon are based on field surveys and record drawings. 18. There is no floodplain onsite. 19. There are no wetlands onsite. 20. Traffic study prepared by Wells & Associates, Inc. dated February, 2006. 21. A noise study is not required for this project. 22. The geotechnical study for this project was prepared by Robert A. Balter Company dated March, 2006. 23. Project Background Information: a) Subdivision Name: The Grove at Emerson, Phase I b) Tax Map/Block/Parcel: 47/8/5 c) Zoning: RSC d) Election District: 6th e) Total (Gross) Tract Area: 5.9892 ac. f) Number of Proposed Lots: 15 (9 Buildable Lots, I Existing Dwelling, 3 Open space lots, 2 Bulk parcels) g) Applicable Department of Planning & Zoning File No's.: WP-07-57, SP-06-023 (Pessin Property), WP-08-45 24. The existing structure located on Lot 9 is to remain. All other structures on site are to be 24. The existing structure located on Lot 9 is to remain. All other structures on size are to be removed. 25. The proposed access street shall be public. 26. BRL denotes the Building Restriction Line. 27. Sediment and erosion control measures are provided in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control. 28. Street trees are provided on the access street in accordance with Section 16.124 of the Howard County Subdivision Regulations. 29. Sidewalks are provided in accordance with Section 16.134 of the Howard County Subdivision Regulations. 30. The open space lots are to be privately owned by the Emerson HOA. 31. Offsite grading is allowed since the adjacent property owners are the same as the subject property. property. 32. There are no historic structures or cemeteries located on the subject property. 33. No grading, removal of vegetative cover or trees, paying and new structures shall be permitted within the wetlands, stream or their required buffers, flood plain and forest conservation within the wetlands, stream or their required buffers, flood plain and forest conservation easement. 34. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable. 35. The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410)-313-1880 at least (5) working days prior to the start of work. 36. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done. 37. Traffic control devices, markings and signings shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD) All street and requiredry signs shall be in place prior to (MUTCD). All street and regulatory signs shall be in place prior to (MUTCD). All street and regulatory signs shall be in place prior to placement of any asphalt. 38. All sign posts used for traffic control signs installed in the County right-of-way shall be mounted on a 2" galvanized steel, perforated, square tube post (14 gauge) inserted into a 2-1/2" galvanized steel, perforated, square tube sleeve (12-gauge)-3'long. A galvanized steel pole cap shall be mounted an top of each post. 39. Water is public. Contract # 24-4387-D 40. Sewer is public. Contract # 24-4387-D 41. Public sewer service and public water service has been granted under the terms and provisions thereof effective, on which date Developer's Agreement No. 24-4387-D was executed. 42. Street light placement and the type of fixture and pole shall be in accordance with the Howard County Design Manual, Volume III (1993) and as modified by "Guidelines for Street Lights in Residential Developments (June 1993)." A minimum spacing of 20' shall be maintained between any streetlights and any tree. This plan is subject to MP-07-57 to waive sections 16.121(a)(4) and 16.121(a)(2) of the Howard County subdivision and land development regulations. The Planning Director approved your request for a waiver from Section 16.121(a)(4), "Recreational Open Space" which requires that all residential subdivisions with more than 10 dwelling units shall provide on-site recreational open space based on 300 square feet per unit for a single family detached subdivision in the "RSC" zoning district. The petitioner is requesting alternative compliance to satisfy their minimum recreational open space requirement by annexing the site into the existing Emerson HOA. Approval is subject to the following conditions: 1. Compliance with the SRC agency comments for SP-06-23. 2. The proposed "Emerson HOA" annexation documents for the subject property must be provided with the final plan submission and referenced on the final plat as alternative compliance for satisfying the 300 square foot per unit recreational open space requirement for this project. The Planning Director denied your request for a waiver from Section 16.121(a)(2), "Minimum Open Space" which requires a minimum on-site open space percentage for an "RSC" zoned subdivision calculated as 25% of the gross area of the proposed subdivision. 44. This plat is subject to WP-08-45 which was granted on December 18, 2007 for the following Section 16.144(k)(1) and Section 16.144(k)(3)(1) to allow a Final Plan subdivision design to deviate from the approved Preliminary Equivalent Sketch Plan, SP-06-23 and for a 60 day time extension of the Final Plan milestone date of December 3, 2007 for Phase 1 as established by the DPZ housing unit allocation letter dated August 3, 2007, subject to the 1. Compliance with comments dated December 13, 2007 from the Development Engineering Division. 2. The applicant shall proceed with the submission of the final plan application for Phase 1 of this project within 60 days (on or before February 16, 2008) of the date of Phase 1 of this project within 60 days (on or before February 16, 2008) of the date of this waiver approval letter. 3. All proposed residential building lots shall be designed to accommodate the footprint of anticipated house types of the potential builder(s) without requiring setback variances. The standard house footprint that should be used to design the building lots is 35'x50'. As a result of the required "RSC" bulk regulations (lot width and setbacks), pipestern lot design and public road orientation, etc., it appears that some lots such as Lot 4, 11 and 13 may need to be enlarged to accommodate the anticipated house types. A further evaluation of the subdivision lot design and sizes will be made at the final plan submission for this project. The Recreational Open Space area requirement for this subdivision will be fulfilled by the annexation into the Emerson HOA and through the use of Emerson recreational facilities per WP-07-57. 46. All fill shall be 95% compaction per AASHTO T-180 in fill areas. 47. The 20' of frontage for Open Space Lot 10 along proposed Shaded Day is considered an additional access point per Section 16.121(e) of the Subdivision and Land Development additional access point per Section 16.121(e) of the Subdivision and Land Development Regulations since the adjacent existing open space Lot 22 meets the required minimum 40' open space frontage on a public road(Skylark Boulevard). 48. This plan is subject to a Design Manual Waiver which was approved on June 4, 2008 which granted a waiver of Appendix "A" and Detait R-1.02 of Design Manual Volume III and IV, to permit a 40' right-of-way, subject to the following conditions: 1. The road pavement width shall meet the standard 24' requirement. 2. A public 10' street easement shall be located adjacent to 40' right of way section. 3. The proposed typical road section shall be an extension of the existing section. 4. A note must be added identifying the approval of this waiver, its date and any contingencies.

FINAL ROAD PLAN THE GROVE AT EMERSON PHASE

LOTS 1-7, 9, 11-12, OPEN SPACE LOTS 8, 10, 13 # NON-BUILDABLE BULK PARCELS A # B

A SUBDIVISION OF

TAX MAP 47, GRID 8, PARCEL 5 HOWARD COUNTY, MD 6TH ELECTION DISTRICT



SCALE: 1"=100"

CC	ORDINATE	TABLE
NO.	NORTHING	EASTING'
243	537674.9057	1353169.7247
244	537627.2671	1353478.9836
245	537401.7119	1353679.4678
246	537294.4519	1353751.9784
247	537162.3481	1353810.0642
248	537179.2317	1353619.0991
249	537186.3160	1353419.2046
250	537192.8660	1353031.4599
251	537193.0975	1353029.2321
252	537183.6161	1353495.3865
326	537182.1987	1353535.3797
327	537279.2826	1353535.8777
328	537445.1192	1353283.7442
329	537279.4878	1353495.8782
330	537408.4718	1353299.7744
331	537362.2292	1353194.0568
332	537345.0522	1353179.7406
333	537400.0233	1353155.6954
334	537398.8766	1353178.0266
338	537633.0098	1353441.7031
339	537534.1754	1353528.2777
340	537431.6059	1353620.6350
341	537354.9866	1353686.1798
342	537297.2589	1353724.9881
343	537244.3527	1353753.0087
344	537164.3120	1353787.8510

DRAWING LEGEND

_____ 682 ____ EXISTING MINOR CONTOUR (2' INTERVAL)

EX. BUILDING

. CYTYYYYYYY EXISTING TREELINE

PROPOSED TREELINE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING

EXISTING TREES

ADJACENT PROPERTY LINE

EXISTING PROPERTY BOUNDARY

EX. ROAD / EDGE OF PAVING

FOREST CONSERVATION EASEMENT

BENCHMARK

DESCRIPTION

536615.0157

47DC

354.296

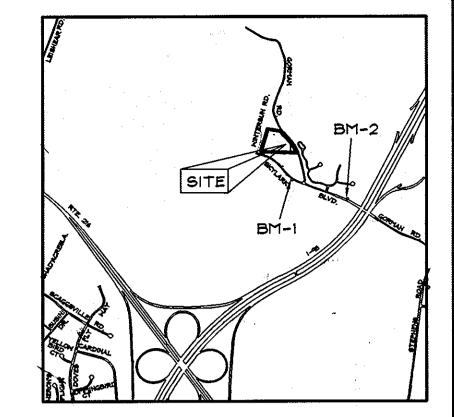
1353679,1226

536212.7456 1354833.6403

BENCHMARK #1

ELEV. 343.249 BENCHMARK #2

ELEV.



VICINITY MAP SCALE: 1"=2000"

DRAWING INDEX

_		
	SHEET	DESCRIPTION
	1	COVER SHEET
	2	ROAD CONSTRUCTION PLAN & PROFILE
	3	GRADING, SEDIMENT CONTROL AND SOILS PLAN
	4	SEDIMENT & EROSION CONTROL NOTES
_	5	SEDIMENT & EROSION CONTROL DETAILS
	6	STORMDRAIN DRAINAGE AREA MAP
	7	PROFILES MANAGEMENT NOTES, DETAILS &
	8	LANDSCAPE & STREET TREE PLAN
_	9	FINAL FOREST CONSERVATION PLAN
	10	FINAL FOREST CONSERVATION PLAN

DATA SOURCES:

TOPOGRAPHY SHOWN HEREON BASED ON A FIELD SURVEY PREPARED B DMW. BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED



Fax: (410) 386-0564

EXISTING MAJOR CONTOUR (10' INTERVAL) Westminster, MD 21157 http://www.demariddesign.us eMail: ddc@demariodesign.us OWNER: DEVELOPER: HOWARD RESEARCH & DVP. 10275 LITTLE PATUXENT PKWY COLUMBIA, MD 21044 GENERAL GROWTH PROPERTIES 10275 LITTLE PATUXENT PKWY COLUMBIA, MD 21044 400-992-6000 410-992-6000 PROPOSED MINOR CONTOUR (2' INTERVAL) PROPOSED MAJOR CONTOUR (10' INTERVAL) SITE ADDRESS: 9881 GORMÁN ROAD

LOTS 1-7, 9, 11-12 & OPEN SPACE LOTS 8,10,13 . EXISTING SHRUB/BRUSH LINE

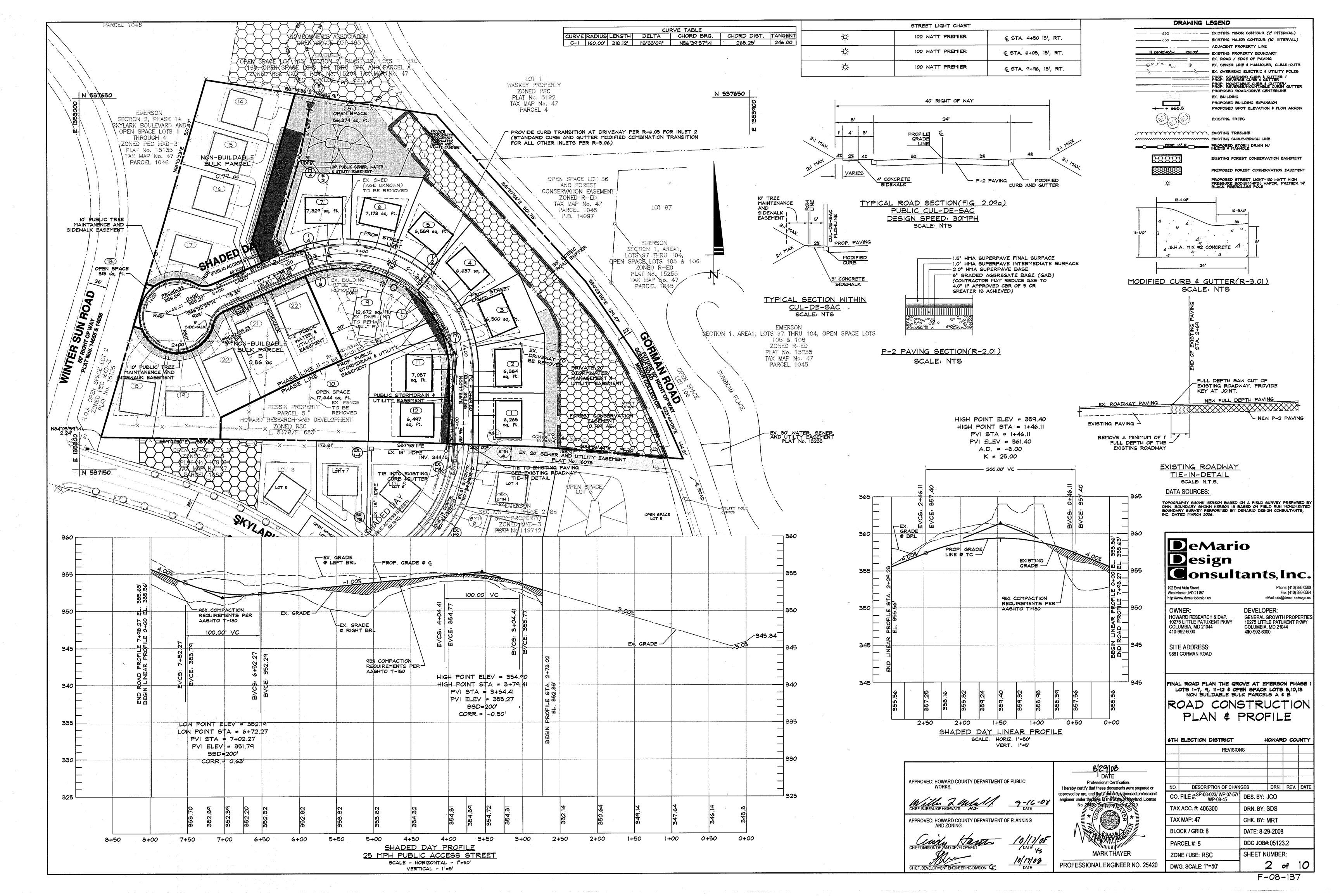
COVER SHEET

Final Road Plan the grove at emerson phase

Professional Certification. I hereby certify that these documents were prepared or MARK THAYER

approved by me, and that that the lay licensed professional engineer under the laws of the State of Maryland, License PROFESSIONAL ENGINEER NO. 25420

6TH ELECTION DISTRICT HOWARD COUNTY DESCRIPTION OF CHANGES DRN. REV. DATE DES. BY: JCO/WRD TAX **ACC: #: 4063**00 DRN. BY: JCO TAX MAR: 47 CHK. BY: MIRT Block / Offid > 8. DATE: 8-29-2008 PAROFL# 5 DDC JOB# 05123.2 SHEET NUMBER: ZONE JUSE RSC of C DWG. SCALE: 1-100 F-08-137



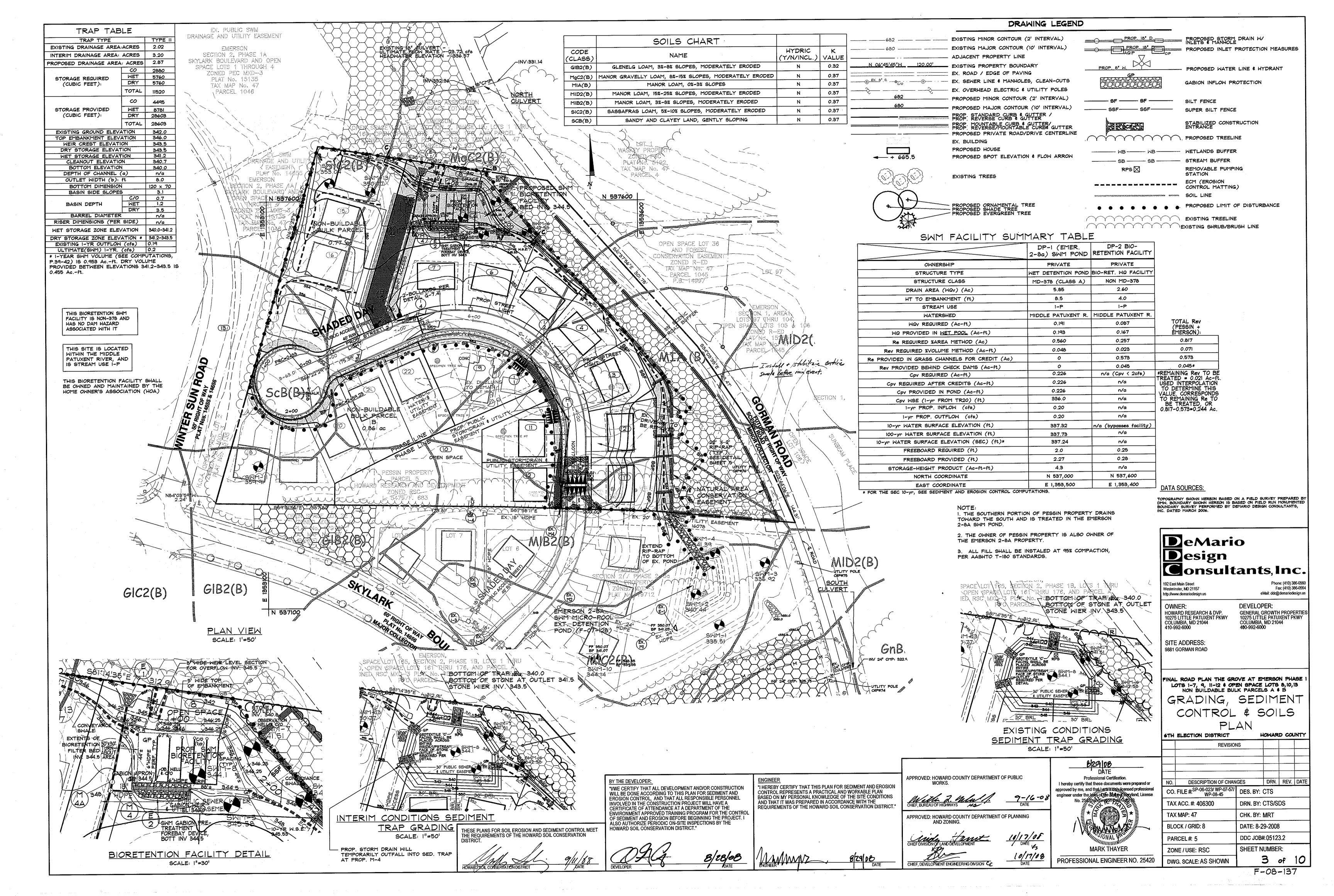


	TABLE	25: PEF		T SEEDING			MAINT	ENAN	CE A	REAS				
MIX	SEED MIX USE CERTIFIED MATERIAL	PLAN	TING	HARDINESS SITE	USDA HARDI—		3/15	5/16-	6/2-	8/1-	8/15-	8/15-		
	IF AVAILABLE TALL FESCUE (75%) CANADA BLUEGRASS (10%) KENTUCKY BLUEGRASS (10%) REDTOP (5%)	LBS/AC.	LBS/ 1000 SF 3.4	CONDITIONS MOIST TO DRY	ZONES 6b	5/15	-5/15	8/14	7/31	10/1	10/15	11/15	A	
2	KENTUCKY BLUEGRASS (50%) CREEPING RED FESCUE OR A HARD FESCUE (40%) REDTOP (10%)	150	3.4	MOIST TO MODERATELY DRY TO DRY	6b	X					X		В	
	TALL FESCUE (85%) PERENNIAL RYEGRASS (10% KENTUCKY BLUEGRASS (5%)	125 15 10	2.9 .34 .23	MOIST TO DRY	6Ь								С	
4	RED FESCUE OR CHEWING FESCUE (80%) PERENNIAL RYEGRASS (20%)	60 60 15	.92 .92 .34	MOIST TO DRY	6Ь	X			:		X	, ,	D	
5	TALL FESCUE (85%) OR, PERENNIAL RYEGRASS (50%) PLUS CROWNVETCH OR FLATPEA	110 20 20 20 20	2.5 .46 .46 .46	MOIST TO DRY	6Ь								m	
3	WEEPING LOVEGRASS (17%) SERECIA LESPEDEZA (83%)	4 20	.09 .46	DRY TO VERY DRY									ŀ	
7	TALL FESCUE (83%) WEEPING LOVEGRASS (2%) SERECIA LESPEDEZA(15%)	110 3 20	2.5 .07 .46	DRY TO VERY DRY	6Ь			X			X		G	
3	REEDY CANARYGRASS (75%) REDTOP (6%) PLUS BIRDSFOOT TREEFOIL (19%)	40 3 10	.92 .07 .23	WET TO MODERATELY DRY	6Ь						X		Н	
)	TALL FESCUE (86%) POA TRIVIALIZE (7%) BIRDSFOOT TREEFOIL (7%)	125 10 10	2.9 .23 .23	WET TO MODERATELY DRY	6b	X							1	
0	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3.4 .69	WET TO DRY	6b								J	
1	HARD FESCUE (100%)	.75	3.4	MOIST TO DRY	6b			·					K	K
NC	DITES: A/ USED BY SHA ON SLOPED B/ USED IN MEDIAN AREAS B C/ POPULAR MIX — PRODUCE D/ BEST USE ON SHADY SLO E/ USE ON LOW MAINTENANCY VETCH BEST FOR 5b, 6a, F/ SUITABLE FOR SEEDING IN G/ WEEPING LOVEGRASS MAY BEST SUITED FOR ZONES H/ USE ON POORLY DRAINED 5a, 6a ABOVE 2,000 FT. I/ USE IN AREAS OF MOIST S	Y SHA. S S PERMA PES NOT E, STEEP 6b. MIDSUMM BE SEED 7a & 7b SOILS —	HADE TOI NENT GRI ON POOI SLOPES. MER. ED WITH	LERANT OUNDCOVER RLY DRAINED USE TALL F TALL FESCUE OR WATERW	QUICKLY. CLAYS. ESCUE IN E IN MID-	BLUE N DRAU -SUMM DSFOO	GRASS JGHT (JER. SI T TREE	CONDITI	ons.	CROWN EDEZA	IS			

- J/ TALL FESCUE MAY BE SEEDED ALONE. THE HARD FESCUE PROVIDES BETTER SHADE TOLERANCE AND PRODUCES A BETTER STAND.
- K/ LOW FERTILITY GRASS. REQUIRES INFREQUENT MOWING. GOOD COMPANION FOR WILDFLOWERS

		-								
TABLE	26	TEMPORARY	SEEDING	RATES,	DEPTHS,	AND	<u>DATE</u> S	(HARDINESS	ZONE	6b)
		NACKIINAI O	A CEEDIN	C DI ANTI	NO					

SPECIES	MINIMUM S	PLANTING					
	RATE	S	DEPTH	6b			
3, 50,53	PER ACRE LBS/10		INCHES	3/1- 4/30		8/15- 11/15	
CHOOSE ONE:		2.22		.,		BY	
BARLEY	122 lbs	2.80	1-2	X	-	10/15	
OATS	96 lbs	2.21	1-2	X		-	
RYE	140 lbs	3.22	1-2	X		X	
BARLEY OR	150 lbs	3.45	1	Х	X	10/15	
RYE PLUS				Х	X	X	
FOXTAIL MILLET					· .	·	
WEEPING LOVEGRASS	4 lbs	.09	1/4-1/2		· X	. –	
ANNUAL RYEGRASS	50 lbs	1.15	1/4-1/2	X	-	11/1	
MILLET	50 lbs	1.15	1/2	_	l x	-	

Note: Select one or more of the species or mixtures listed on Table 26 for the appropriate plant hardiness zone.

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

BY THE DEVELOPER

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL NVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

DISTRICT.

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET

THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION Section I - Vegetative Stabilization Methods and Materials

- i. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
- ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding. iii. 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)
- i. 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 analyses.
- ii. 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 all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
- iii. 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 98 100% will pass through a #20 mesh sieve.
- iv. Incorporate lime and fertilizer into the top 3 5" 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" to 5" 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 counter of the slope.
 - b. Apply fertilizer and lime as prescribed on the plans.
 - c. Incorporate lime and fertilizer into the top 3 5" of soil by disking or other suitable
- ii. Permanent Seeding
 - a. Minimum soil conditions required for permanent vegetative establishment:
 - 1. Soil pH shall be between 6.0 and 7.0 2. Soluble saits shall be less than 500 parts per million (ppm).
 - 3. 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 serecia lespedeza is to be planted, then a sandy soil (30% silt plus clay) would be acceptable.
 - 4. Soil shall contain 1.5% minimum organic matter by weight.
 - 5. Soil must contain sufficient pore space to permit adequate root penetration. 6. 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" 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" 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" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.
- D. Seed Specifications
- i. 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
- . <u>Hydroseeding:</u> Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a cultipacker seeder. a. If fertilizer is being applied at the time of seeding, the application rates amounts will
 - not exceed the following: nitrogen; maximum of 100 lbs. per acre total nitrogen; P205 (phosphorous): 200 lbs/ac.; K20 (potassium): 200 lbs/ac.
- b. 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. c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
- ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders. a. 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 weighted roller to provide good seed soil contact.
- b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

- b. Where practical, seed should be applied in two directions perpendicular to each other.

 Apply half the seeding rate in each directions 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 weed seeds as specified in the Maryland Seed Law. ii. Wood Cellulose Fiber Mulch (WCFM)
- a. MCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous b. 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.
- c. WCFM, including dye, shall contain no germination or growth inhibiting factors. d. MCFM 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 seedings.
- e. MCFM material shall contain no elements or compounds at concentration levels that will f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
- Note: Only sterile straw much 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. i. 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.
- ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre. iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
- H. Securing Straw Mulch (Mulch Anchoring): 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: i. A mulch anchoring tool is a tractor drawn implement designed 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.
- ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/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
- iii. 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.
- iv. 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.
- Incremental Stabilization -- Cut Slopes -- See G-20-6 J. Incremental Stabilization -- Fill Slopes -- See G-20-7

21.0 STANDARDS & 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.
- I. This practice is limited to areas having 2:1 or flatter slopes where:
- a. The texture of the exposed subsoil/parent material is not adequate to
- b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients
- c. The original soil to be vegetated contains material toxic to plant growth d. The soil is so acidic that treatment with limestone is not feasible.
- II. 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

Conditions Where Practice Applies

- I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of 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.
- 11. Topsoil Specifications Soil to be used as topsoil must meet the following:
- i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/2" in diameter.
- ii. Topsoil must be free of plants or plant parts such as Bermuda grass, avack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
- iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square fed) 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.
- III. For sites having disturbed areas over 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:
 - a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - b. Organic content of topsoil shall be not less than 1.5 percent by weight.
- c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
- d. 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.
- ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization Section I Vegetative Stabilization Methods and Materials.
- i. 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.
- ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4"-8" higher in elevation.
- iii. Topsoil shall be uniformly distributed in a 4" 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
- VI. Alternative for Permanent Seeding Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied
- i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
- a. Composted sludge: shall be supplied by, or originate from, a person persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
- b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
- c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet i. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD-V A, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

SECTION IV - SOD

V. Topsoil Application

- To provide quick cover on disturbed areas (2:1 grade or flatter). A. General Specifications
 - i. 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.
 - ii. Sod shall be machine cut at a uniform soil thickness of 3/4", plus or minus 1/4", 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 and length. Maximum allowable deviation from standard widths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable. iii. 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.
 - iv. Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
- v. 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
- i. During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the ii. 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 would cause air drying of the roots. iii. 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.
- iv. 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 laying, tamping and irrigating for any piece of sod shall be completed within eight hours. Sod Maintenance
- i. 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". Watering should be done during the heat of the day to prevent wilting. ii. After the first week, sod watering is required as necessary to maintain adequate moisture content.
- iii. The first mowing of sod should not 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 2st and 3st unless otherwise specified.

<u> SECTION V - TURFGRASS ESTABLISHMENT</u>

Areas where turfgrass may be desired 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 1/2 inches in diameter shall be removed. The resulting seedbed should be in such condition that future mowing of grasses will pose no difficulty. should 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

- i. Kentucky Bluegrass Full sun mixture For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and eastern shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds/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.
- ii. Kentucky Bluegrass/Perennial Rye Full sun mixture For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding rate: 2 pounds mixture/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.
- iii. Tall Fescue/Kentucky Bluegrass Full sun mixture For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; certified Tall Fescue Cultivars 95 100%, certified Kentucky Bluegrass Cultivars 0 5%. Seeding rate: 5 to 8 lb/1000 sf. One or more cultivars may be blended. iv. Kentucky Bluegrass/Fine Fescue — Shade Mixture — For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; certified Kentucky Bluegrass Cultivars 30-40% and certified Fine Fescue and 60-70%. Seeding rate: 1 1/2 — 3 lbs/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 o Maryland Publication, Agronomy Mimeo #77, "Turfgrass Cultivar Recommendations for Maryland
- B. Ideal times of seeding: Western MD: March 15 - June 1, August 1 - October 1 (Hardiness Zones - 5b, 6a)
 Central MD: March 1 - May 15, August 15 - October 15 (Hardiness Zone - 6b)
 Southern MD, Eastern Shore: March 1 - May 15, August 15 - October 15 (Hardiness Zones - 7a, 7b)
- C. Irrigation
- If soil moisture is deficient, 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
- D. Repairs and Maintenance Inspect all seeded areas for failures and make necessary repairs, replacements, and reseedings within the planting season.
- i. Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized. ii. If the stand provides less than 40% ground coverage, reestablish following original lime, fertilizer, seedbed preparation and seeding recommendations
- iį. If the stand providės between 40% and 94% ground coverage, overseeding and fertilizing using half of the rates originally applied may be necessary.
- iv. 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 No. 171.

SEQUENCE OF CONSTRUCTION

HOURS BEFORE STARTING ANY WORK.

BIORETENTION FACILITY(2 WEEKS)

- I. OBTAIN A GRADING PERMIT. THIS PROJECT CANNOT BEGIN UNTIL BASIN IS CONSTRUCTED UNDER F-07-128
- 2. NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION DIVISION AT 410-313-1870 AT LEAST 24
- 3. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 DAY)
- 4. INSTALL PERIMETER SILT FENCE AND SUPER SILT FENCE AND CONSTRUCT TRAP REFURBISH EXISTING BASIN UNDER F-07-128 FOR EROSION CONTROL FOR THIS PLAN.
- 5. WITH SEDIMENT CONTROL DEVICES INSTALLED AND WITH INSPECTORS APPROVAL, CLEAR & GRADE SITE (I WEEK)
- 5. Fine grade area for the New Road and Install water, sewer \$ STORMDRAINS WITH EXCEPTION OF S.D. PIPE RUNS M4 TO EI AND M4 TO E2. (4 WEEKS)
- -NOTE- THAT THE S.D. WILL TEMPORARILY DRAIN TO SEDIMENT TRAP AT M.H. M-4. 7. BEGIN INSTALLATION OF CURB & GUTTER. (3 WEEKS)
- 8. WITH CURB & GUTTER IN PLACE PAVE ROAD AND INSTALL SIDEWALKS. (2 WEEKS)
- 9. FINE GRADE SITE AND STABILIZE ALL DISTURBED AREAS. (2 WEEKS) 10. INSTALL SITE L'ANDSCAPING & STREET TREES AND INSTALL STORM DRAIN RUNS M4 TO EI
- AND M4 TO E2. (2 WEEKS) 11. WITH ALL DISTURBED AREAS STABILIZED AND WITH THE INSPECTORS APPROVAL REMOVE SEDIMENT CONTROL DEVICES. ONCE SITE IS COMPLETELY STABILIZED, INSTALL BIORETENTION FACILITY. THERE MUST BE A CLEAR FORECAST PREDICTED, BY THE NATIONAL WEATHER SERVICE, FOR THE DURATION OF THE CONSTRUCTION OF THE
- 12. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION OF THE COMPLETED SITE. (2 DAYS)

DATA SOURCES:

TOPOGRAPHY SHOWN HEREON BASED ON A FIELD SURVEY PREPARED BY DMW. BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY DEMARIO DESIGN CONSULTANTS, INC. DATED MARCH 2006.



Fax: (410) 386-0564

eMail: ddo@demariodesign.us

HOWARD COUNTY

GENERAL GROWTH PROPERTIES 10275 LITTLE PATUXENT PKWY

DEVELOPER:

400-992-6000

COLUMBIA, MD 21044

http://www.demariodesign.us OWNER: HOWARD RESEARCH & DVP. 10275 LITTLE PATUXENT PKWY COLUMBIA, MD 21044

192 East Main Street

410-992-6000

SITE ADDRESS:

9881 GORMAN ROAD

Westminster, MD 21157

FINAL ROAD PLAN THE GROVE AT EMERSON PHASE LOTS 1-7, 9, 11-12 & OPEN SPACE LOTS 8,10,13
NON BUILDABLE BULK PARCELS A & B

SEDIMENT & EROSION CONTROL NOTES

REVISIONS

DATE Professional Certification I hereby certify that these documents were prepared o approved by me, and that vital is a lightly licensed professional engineer under the tables Of the Late (Maryland, License No. 2012) Expitation Pater 1100.

THE PROPERTY OF THE PROPERTY O MARK THAYER

DESCRIPTION OF CHANGES DRN. REV. DATE CO. FILE #. SP-06-023/ WP-07-57/ DES. BY: JCO/MRT TAX ACC. #: 406300 DRN. BY: SDS TAX MAP: 47 CHK. BY: MRT BLOCK / GRID: 8 DATE: 8-29-2008 DDC JOB# 05123.2 PARCEL# 5 SHEET NUMBER: ZONE / USE: RSC PROFESSIONAL ENGINEER NO. 25420 4 of 10 DWG. SCALE: AS SHOWN

6TH ELECTION DISTRICT

F-08-137

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF DIVISION OF LAND DEVELOPMENT

10/17/08

CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the State Highway Administration Standard Specifications for scope of the 2000 Standard for practice MD-378. All Construction and Materials. Section 313 as modified. The references to ASTM and AASHTO specifications apply to mixture shall have a 100-200 psi; 28 day unconfined the most recent version.

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable sides of the pipe. It only needs to extend up to the spring shall be sloped to no steeper than 1:1. All trees shall be to assure flowability of the material. Adequate measures cleared and grubbed within 15 feet of the toe of the

Areas to be covered by the reservoir will be cleared of all in horizontal layers not to exceed four inches in thickness trees, brush, logs, fences, rubbish and other objectionable and compacted by hand tampers or other manually directed brush, and stumps shall be cut approximately level with the all voids adjacent to the flowable fill zone. At no time ground surface. For dry stormwater management ponds, a during the backfilling operation shall driven equipment be minimum of a 25-foot radius around the inlet structure

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 type and quality conforming to that specified for the core in a suitable location for use on the embankment and other of the embankment or other embankment materials. designated areas.

Earth Fill Material - The fill material shall be taken from approved wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified

designated borrow areas. It shall be free of roots, stumps. Soil Classification GC, SC, CH, or CL and must have at least 30% 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

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.

<u>Compaction</u> - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of 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

Cut Off Trench - The cutoff 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 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 enterline 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 I 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

BY THE DEVELOPER:

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 four 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. 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 concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION

BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS

REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

"IWE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND

EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL

ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL

OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I

NVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A

ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE

HOWARD SOIL CONSERVATION DISTRICT."

CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE

CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN

AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation

compressive strength. The flowable fill shall have a minimum pH of 4.0 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 (bed-ding), over and, on the material shall be removed. Channel banks and sharp breaks line for rigid conduits. Average slump of the fill shall be 7" 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

material unless otherwise designated on the plans. Trees, compaction equipment. The material shall completely fill 2. Bedding - Reinforced concrete pipe conduits shall 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

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall

1. Materials - (Polymer Coated steel pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per equirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dire

2. Coupling bands, anti-seep collars, end sections, etc.. must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimila materials with use of rubber or plastic insulating

materials at least 24 mils in thickness.

galvanized bolts may be used for connections. The

pH of the surrounding soils shall be between 4 and 9.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collar shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gaske

when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations meet the requirements of Maryland Department of to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap cell circular neoprene gasket; and a 12-inch wide hugger type band with 0- ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell

gaskets the full width of the flange is also acceptable. Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

-HOOK AND CHAIN FOR REMOVAL 0 0 0 000 ANTICIPATED WATER SURFACE ELEV. 0000 2002 8000 Re 0 0 0 9 2000 (0000) 0000 Re 0 0 0 9 R 0 0 0 0 Re 0 0 00 Re 2 2 2 9 0000 0000 . GEDTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIDE TO PLACING STONE. ***THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.

accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, 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.

4. Backfilling shall conform to "Structure Backfill" 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

1. Bedding - The pipe shall be firmly and uniformly

bedded throughout its entire length. Where rock or

such material shall be removed and replaced with

2. Backfilling shall conform to "Structure Backfill"

as shown on the drawings.

or exceed ASTM C-361

3. Other details (anti-seep collars, valves, etc.) shall be

Reinforced Concrete Pipe - All of the following

riteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell

and spigot joints with rubber gaskets and shall equal

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 reasons, flowable

fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is

with the beil end upstream. Joints shall be made in

3. Laying pipe - Bell and spigot pipe shall be placed

soft, spongy or other unstable soil is encountered, all

suitable earth compacted to provide adequate support.

Plastic Pipe - The following criteria shall apply for

1. 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 the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. 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.

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

4. Backfilling shall conform to "Structure Backfill".

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No.3.

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section

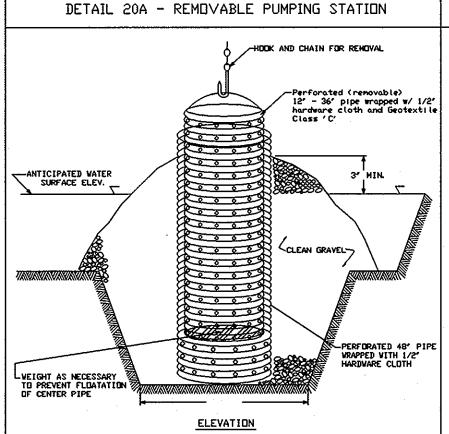
type band with 12-inch wide by 3/8-inch thick closed All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to he contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from 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 and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the way with the operation or maintenance of the structure can be passed through the permanent works. The removal of water from the required excavation and the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow

During the placing and compacting of material in

All borrow areas shall be graded to provide proper

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

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION

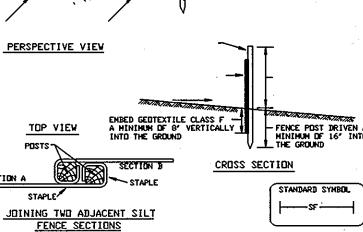


Construction Specifications

1. The outer pipe should be 48° dia. or shall, in any case, be at least 4' great in diameter than the center pipe. The outer pipe shall be wrapped with 1/2° hards cloth to prevent backfill naterial from entering the perforations. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel. 3. The inside stand pipe (center pipe) should be constructed by perforating a corrupated or PVC pipe between 12° and 36° in diameter. The perforations shall be 1/2° x 6° slits or 1° diameter holes 6° on center. The center pipe shall be wrapped with 1/2° hardware cloth first, then wrapped again with Geotextile Class.

4. The center pipe should extend 12' to 18' above the anticipated water surface elevation or riser crest elevation when dewatering a basin. U.S. DEPARTMENT OF AGRICULTURE PAGE MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE D - 12 - 5 VATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE



1. Fence posts shall be a minimum of 36' long driven 16' minimum into the ground. Wood posts shall be 11/2' x 11/2' square (ninimum) cut, or 13/4' diameter (ninimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot 2. Geotextile shall be fastened securely to each fence post with wire ties

Tensile Strength Tensile Modulus 50 lbs/in (min.) 20 lbs/in (min.) 0.3 gal ft^e/ minute (max.) Test MSNT 322 75% (min.) Test MSNT 322 Filtering Efficiency

bulges occur or when sediment accumulation reached 50% of the fabric height.

DETAIL 9 - STONE OUTLET SEDIMENT TRAP - ST II

Where ends of gentextile fabric come folded and stapled to prevent sediment bypass 4. Silt Fence shall be inspected after each rainfall event and maintained whe

921.09. Class C.

Care of Water during Construction protect the areas to be occupied by the permanent works temporary protective works shall be removed or leveled spillway or outlet works and so as not to interfere in any Stream diversions shall be maintained until the full flow foundation shall be accomplished in a manner and to the

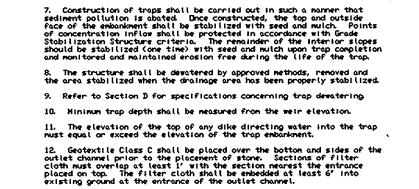
satisfactory performance of all construction operations. required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be

Stabilization

drainage and left in a sightly 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.

Erosion and Sediment Control

plans shall detail crosion and sediment control measures.



U.S. DEPARTMENT OF AGRICULTURE PAGE MARYLAND DEPARTMENT OF ENVIRONMENT F - 17 - 3 VATER MANAGEMENT ADMINISTRATION DETAIL 6 - GABION INFLOW PROTECTION 2: 1 SLOPE D STANDARD SYMBOL GH PERSPECTIVE VIEW PROFILE ALONG CENTERLINE Construction Specifications 1. Gabion inflow protection shall be constructed of 9^{\prime} x 3^{\prime} x 9^{\prime} gabion

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

PROFILE

PLAN VIEW

LENGTH - MINIMUM OF SO' (#30' FOR SINGLE RESIDENCE LOT)

CONSTRUCTION SPECIFICATION

. VIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING

4. STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE

EQUIVALENT SHALL BE PLACED AT LEAST 6' DEEP OVER THE LENGTH AND VIDTH OF THE

5. SURFACE WATER - ALL SURFACE WATER FLOWING TO DR DIVERTED TOWARD CONSTRUCTION

INTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE

INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A HOUNTABLE BERN WITH 5 I SLOPES AND A MINIMUM OF 6' OF STONE OVER THE PIPE. PIPE HAS

TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED

6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE

COORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6' MINIMUM WILL BE REQUIRED.

MINIMUM 6' OF 2'-3' AGGREGATE OVER LENGTH AND WIDTH OF STRUCTURE

** GEDTEXTILE CLASS 'C'--

OR BETTER

-EXISTING GROUND

SCE

EXISTING PAVEMENT

EARTH FILL

PIPE AS NECESSARY

baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.

2. Geotextile Class C shall be installed under all gabion baskets

on slopes steeper than 4: I.

SUIL CONSERVATION SERVICE

3. The stone used to fill the gabion baskets shall be 4' - 7'. 4. Gabions shall be installed in accordance with nanufacturers recommendations

5. Gabian Inflow Protection shall be used where concentrated flow is present

DEHYZ CRACHATZ PERSPECTIVE VIEW CROSS SECTION Construction Specifications

DETAIL 33 - SUPER SILT FENCE

CONSTRUCTION SPECIFICATION

I, FENCING SHALL BE 42' IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE

4. FILTER CLOTH SHALL BE ENBEDDED A MINIMUM OF 8' INTO THE GROUND.

LATEST MARYLAND STATE HIGHNAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42' FABRIC AND 6' LENGTH

2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT

3. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED

5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED

6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT

7. FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OF

STAPLES AT TOP AND MID SECTION AND SHALL HEET THE FOLLOVING REQUIREMENTS FOR

50 LBS/IN (MIN.)

SO TBS/IN (HIN')

DETAIL 5 - RIP-RAP INFLOW PROTECTION

0. 3 GAL/FT*/MINUTE (MAX.)

IF MULTIPLE LAYERS AR REQUIRED TO ATTAIN 42

EVERY 24" AT THE TOP AND HID SECTION.

GEDTEXTILE CLASS F:

TENSILE STRENGTH

TENSILE MODULUS

SUIL CONSERVATION SERVICE

tining criteria.

SOIL CONSERVATION SERVICE

FILTERING EFFICIENCY 75% (MIN.)

FLOV

1. Rip-rap lined inflow channels shall be I' in depth, have a trapezoidal cross section with 2:1 or flatter side stopes and 3' (nin.) bottom width. The channel shall be lived with 4' or 10'. channel shall be lined with 4° to 12' rip- rap to a depth of 18'. 2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.

3. Entrance and exit sections shall be installed as shown on the detail

4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stornwater management

6. Rip-rap should blend into existing ground 7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale

5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow

PAGE MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE
H - 26 - 3 VATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE PAGE MARYLAND DEPARTMENT OF ENVIRONMENT
G - 22 - 2 VATER MANAGEMENT ADMINISTRATION EROSION CONTROL MATTING ROCK DUTLET PROTECTION III Construction Specifications 1. Key-in the matting by placing the top ends of the matting in a l. The subgrade for the filter, rip-rap, or gabion shall be narrow trench, 6' in depth. Backfill the trench and tamp firmly to prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of conform to the channel cross-section. Secure with a row of staples about 4° down slope from the trench. Spacing between staples is 6° approximately that of the surrounding undisturbed material. 2. The rock or gravel shall conform to the specified 2. Staple the 4' overlap in the channel center using an 18' spacing . Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil. . Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center. 5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4°, shiblab fashion. Reinforce the overlap with a double row of staples spaced 6' apart in a staggered pattern on either side.

MARYLAND DEPARTMENT OF ENVIRONMENT VATER MANAGEMENT ADMINISTRATION

TYPICAL STAPLES NO. 11 GAUGE WIRE

6. The discharge end of the matting liner should be similarly

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING

AND ZONING.

DETAIL 30 - EROSION CONTROL MATTING

CROSS-SECTION

STAPLE DUTSIDE --EDGE OF MATTING
DN 2' CENTERS

grading limits when installed respectively in the rip-rap 3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one 4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the void between

Construction Specifications

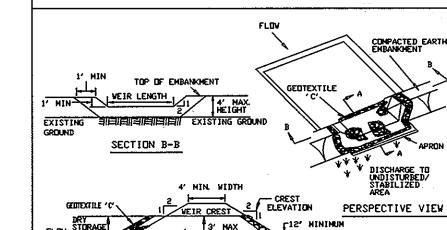
DETAIL 27 - ROCK DUTLET PROTECTION III

the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to 5. The stone shall be placed so that it blends in with the

existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

S. DEPARTMENT OF AGRICULTURE PAGE MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE F - 18 - 104 WATER MANAGEMENT ADMINISTRATION DATA SOURCES:

TOPOGRAPHY SHOWN HEREON BASED ON A FIELD SURVEY PREPARED BOMW. BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED Boundary survey performed by Demario Design Consultants, INC. DATED MARCH 2006



Construction Specifications 1. Area under embankment shall be cleared, grubbed and stripped of any vecetation and root mat. The pool area shall be cleared 2. The fill material for the embankment shall be free of roots and

naterial or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being 3. All cut and fill slopes shall be 2:1 or flatter. 4. The stone used in the outlet shall be small rip-rap 4' to 7' in on the upstream face of the outlet. Stone facing shall be as necessary to prevent clogging. Geotextile Class C shall be substituted for the stone facing by placing it on the inside face

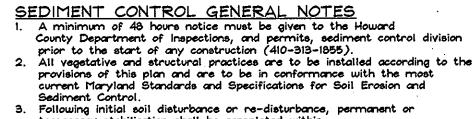
other woody vegetation as well as over-sized stones, rocks, organic

of the stone outlet. 5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

U.S. DEPARTMENT OF AGRICULTURE PAGE MARYLAND DEPARTMENT OF ENVIRONMENT C - 9 - 10 VATER MANAGEMENT ADMINISTRATION SDIL CONSERVATION SERVICE STONE DUTLET SEDIMENT TRAP - ST II

6. The structure shall be inspected periodically, and after each rain, and repairs made as needed.

 Dutlet - An outlet shall be provided, including a means of conveying the discharge in an erosion free manner to an existing stable channel. U.S. DEPARTMENT OF AGRICULTURE PAGE HARYLAND DEPARTMENT OF ENVIRONMENT SDIL, CONSERVATION SERVICE C - 9 - 10A VATER NANAGEMENT ADMINISTRATION



HARYLAND DEPARTMENT OF ENVIRONMENT

VATER MANAGEMENT ADMINISTRATION

temporary stabilization shall be completed within: Seven calendar days for all perimeter sediment control structures, dikes, perimeter slope and all slopes steeper than 3:1. B. Fourteen days as to all other disturbed or graded areas on the project 4. All sediment traps/basins shown must be fenced and warning signs posted

around their perimeter in accordance with vol. 1. chapter 12, of the "Howard County Design Manual", storm drainage 5. All disturbed area 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 seediness (sec. 51), sods (sec. 54), temporary seeding (sec. 50), and mulching (sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates

do not allow for proper germination and establishment of grasses 6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

Total area of site = 3.43 acres Area disturbed Area to be roofed or paved 0.96 acres Area to be vegetatively stabilized = 2.4 acres = 1,520 cu yd Total cut - 4,180 cu yd Waste/borrow area = 2.660 cv yd (Location to be determined by

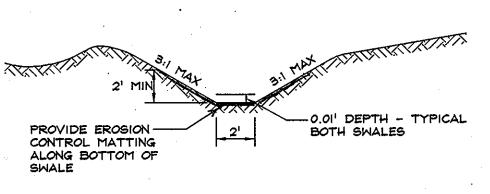
grading permit.)

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance. Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
 On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of

approvals may not be authorized until this initial approval by the inspection agency is made. Trenches for the construction of utilities is limited to three pipe lenaths or that which shall be back-filled and stabilized. The contractor shall inspect and provide necessary maintenance on the sediment and erosion control devices shown on the plan. The inspection

shall be on a daily basis and after each rainfall.

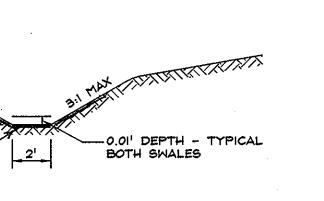
perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection

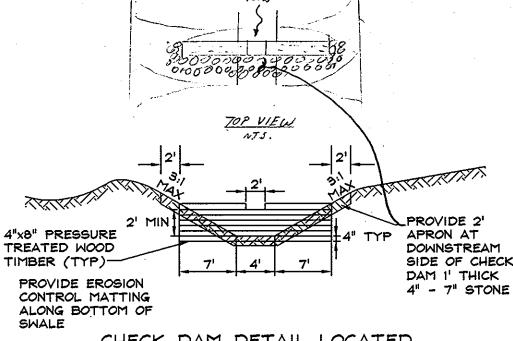


TYPICAL SECTION OF SWALES

BEHIND LOT 14 AND LOTS 5 \$

SCALE: NTS





CHECK DAM DETAIL LOCATED IN SWALE BEHIND LOTS 1-5 SCALE: NTS

TIM	BER CHECK DAM LOCATION
DAM NO.	LOCATION
1	N 537,356.4192 E 1,353,627.4599
2	N 537,282.0764 E 1,353,633.3508
3	N 537,205.6362 E 1,353,633.2044

DeMario Design Consultants, Inc. 92 East Main Street Vestminster, MD 21157 Fax: (410) 386-0564

http://www.demariodesign.us eMail: ddc@demariodesign.us OWNER: DEVELOPER: IOWARD RESEARCH & DVP. **GENERAL GROWTH PROPERTIES** 0275 LITTLE PATUXENT PKWY 10275 LITTLE PATUXENT PKWY COLUMBIA, MD 21044 COLUMBIA, MD 21044 410-992-6000 400-992-6000

SITE ADDRESS: 9881 GORMAN ROAD

> FINAL ROAD PLAN THE GROVE AT EMERSON PHASE LOTS 1-7, 9, 11-12 & OPEN SPACE LOTS 8,10,13
> NON BUILDABLE BULK PARCELS A & B

SEDIMENT & EROSION CONTROL DETAILS

		REVISION	VS						
8/29/00									
DATE									
Professional Certification. rtify that these documents were prepared or	NO.	DESCRIPTION OF CHAN	GES	DRN.	REV				
me, and that what targuly, licensed professional ler the value of the state of Maryland, License	CO.	FILE #; SP-06-023/ WP-07-57/ WP-08-45	DES. BY: JCO/MRT						
28730 Experiment 9369 7808.	TAX	(ACC. #. 406300	DRN. BY:	SDS					
()	TAX	(MAP: 47	CHK. BY:	MRT					
* W	BLC	OCK / GRID: 8	DATE: 8-29-2008						
NAT WHITE	PAF	RCEL# 5	DDC JOB	± 05123	3.2				
MADE THAVED		JE 1110E DOG	CHEETA	LINADEZ	٦.				

6TH ELECTION DISTRICT

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE BIORETENTION FACILITY SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, NRCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE BIORETENTION FACILITY OWNER(S) AND ANY HEIRS, SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF IT AND ITS CONTINUED OPERATION SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE FACILITY OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

I hereby cert approved by m engineer unde MARK THAYER

ZONE / USE: RSC PROFESSIONAL ENGINEER NO. 25420

SHEET NUMBER: DWG. SCALE: AS SHOWN

F-08-137

HOWARD COUNTY

/. DATE

