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MASS GRADING PLAN

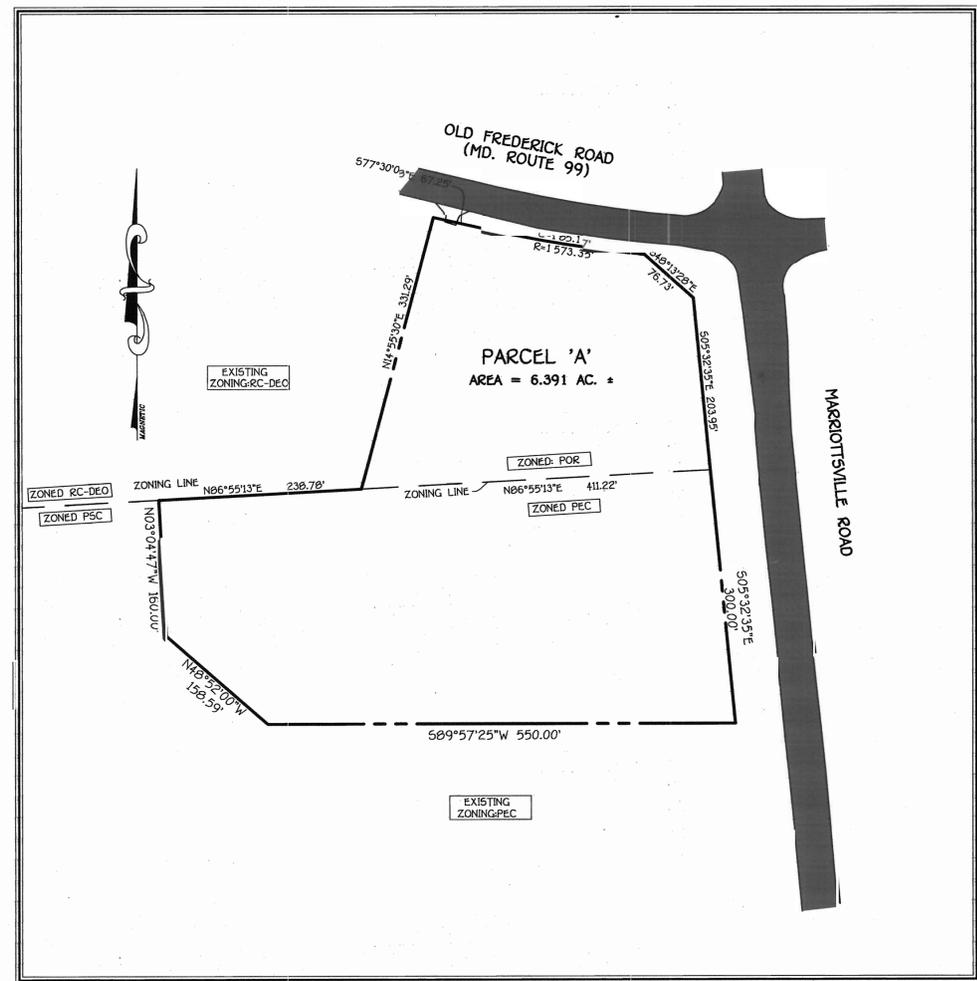
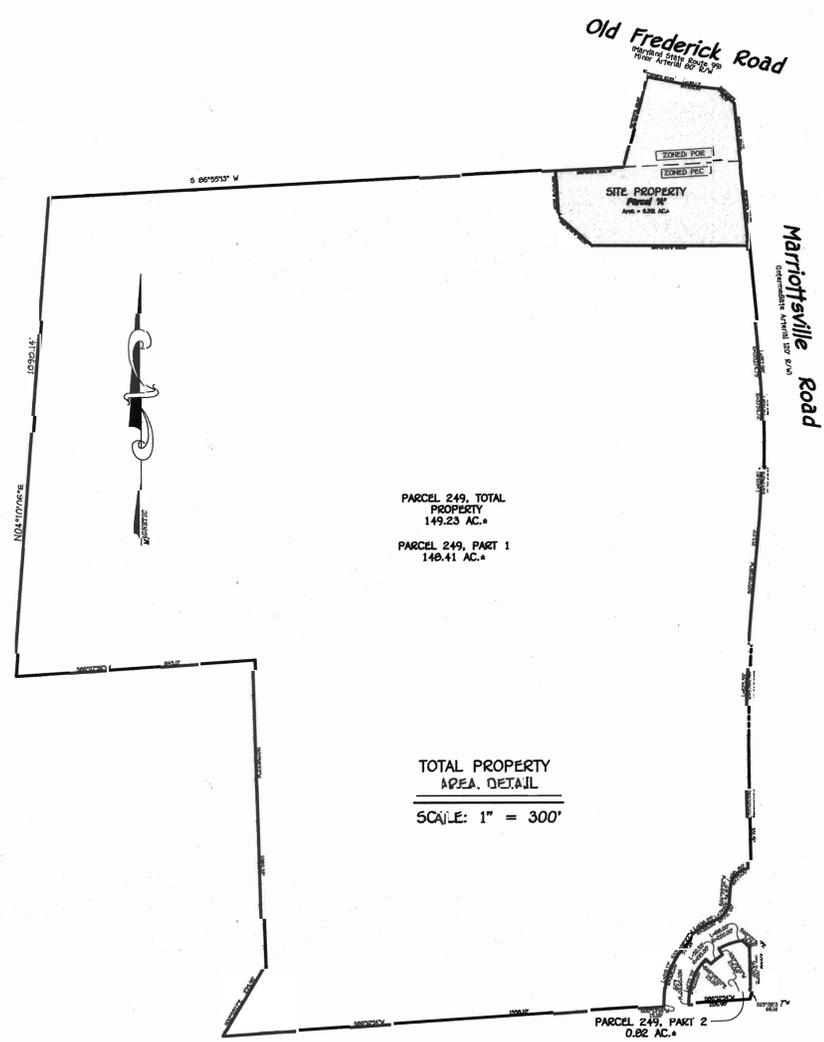
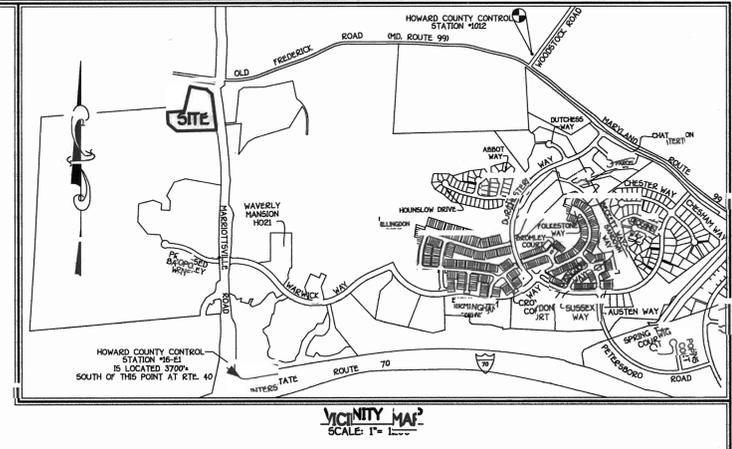
WAVERLY CORPORATE CENTER

PARCEL 'A', PLAT NOS. 17415 THRU 17417

TAX MAP No. 10 PARCEL Nos. 324, 325 AND 327

TAX MAP No. 16 PART OF PARCEL No. 249

THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND



- ### General Notes
- The intended use for this site is condominium office buildings.
 - All construction shall be accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
 - The contractor shall notify the Bureau of Engineering/Construction Inspection Division at 410-313-1000 at least five working days prior to start of work.
 - The contractor shall notify Miss Utility at 1-800-257-7777 at least 48 hours prior to any digging and excavation work.
 - Project Background:**
Location: Tax Map Nos. 10 & 16, Grids 22 & B, Parcel 327 & P/O PARCEL 249
Zoning: This project is zoned POR and PEC per the 2/2/04 comprehensive zoning plan.
Election District: Third
Gross Area: Parcel 'A' & ROAD R/W DEDICATION AREA, F 05-5D: 6.681 AC.
Site Area (Parcel 'A'): SDP 04-126: 6.391 AC.
Existing Floodplain Located Onsite = 1.0 AC.
 - All plan dimensions are to the face of curb or face of building unless otherwise noted. Dimensions are measured perpendicular or radial between items unless otherwise noted.
 - Existing topography and features were derived from survey by Fisher, Collins and Carter Inc. and Harford Aerial Surveys Inc. Dated July 6, 2001.
 - Coordinates are based on NAD 83 Maryland Coordinates System as projected by Howard County Geodetic Control Stations.
 - No water and sewer is to be utilized for this project at this time.
 - The existing utilities shown hereon were derived from available public records. The contractor must dig test pits by hand at all utility crossings and connection points to verify the exact location.
 - Any damage to County and or State owned right-of-way to be corrected at the contractor's expense.
 - There are no known grave sites or cemeteries on this site.
 - Other topics related to this site:
Soils Analysis prepared by: Hillis-Carnes Engineering Assoc., Inc., Dated February 5, 2004.
 - There are no wetlands within the limits of disturbance per a signed and sealed wetlands certification prepared by Eco-Science Professionals, Inc., dated March 31, 2004.
 - This plan is subject to Zoning Board Case No. ZB-929-M which was approved on March 22, 1993 a request to re-zone 682.10 acres of rural land into mixed use areas.
 - This property is located within the Metropolitan District.
 - The Forest Conservation Requirements For This Plan Have Been Met By The Creation Of An On-site 117 Acre Retention Forest Conservation Easement And A Fee Payment Of \$48,980.40 To The Howard County Forest Conservation Fund For 0.78 Acre Of Reforestation Surety In The Amount Of \$10,193.04 For The 117 Acre On-site Retention Forest Conservation Easement Has Been Posted As Part Of The Developer's Agreement.
 - Previous DPZ file numbers: S 94-07, F 05-51 & WP 05-32.
WP 05-32 Requested To Waive Sections 16.102 (c) (2) To Not Be Required To Plat The Residue Of Parcel 249 and 16.144 (f) To Not Be Required To Submit And Obtain Approval Of Sketch And Preliminary Plans For A Major (Non-Residential) Subdivision (F 05-51). WP 05-32 Was Approved On November 22, 2004.
 - Property Deed References: 4708/203 & 448/661.
 - WP 05-32 Requested To Waive Sections 16.102 (c) (2) To Not Be Required To Plat The Residue Of Parcel 249 and 16.144 (f) To Not Be Required To Submit And Obtain Approval Of Sketch And Preliminary Plans For A Major (Non-Residential) Subdivision (F 05-51). WP 05-32 Was Approved On November 22, 2004.
 - The horizontal and vertical datum shown are based on the following NAD '83 Howard County Control Stations:
Howard County Monument No. 1012 N 60°05'21.777\"/>

DESIGN BY: KAI
DRAWN BY: JCL/RAI
CHECKED BY: CJC

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CONTINENTAL SQUARE, OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 481-2295

DATE	DESCRIPTION	REVISION BLOCK

ENGINEER'S CERTIFICATE
I 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.
Signature: *[Signature]* Date: 3-4-05

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
Signature of Developer: *[Signature]* Date: 3-4-05

Reviewed for HOWARD SCD and meets Technical Requirements.
Signature: *[Signature]* Date: 5/19/05
U.S.E.A. - Natural Resources Conservation Service
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
Signature: *[Signature]* Date: 5/19/05
Howard SCD

OWNERS
GTW Joint Venture & DRBT, L.L.C.
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042

DEVELOPER
DRBT, L.L.C.
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: *[Signature]* Date: 5/19/05
Director, Department of Planning and Zoning
Signature: *[Signature]* Date: 5/19/05
Chief, Division of Land Development
Signature: *[Signature]* Date: 5/19/05

SUBDIVISION	SECTION/AREA	PARCEL
317WS WAVERLY WOODS	N/A	'A'
PLAT REF.	BLOCK NO.	TAX MAP
17415-17417	22 & B	10 & 16
WATER CODE	SEWER CODE	ELEC. DIST.
N/A	N/A	THIRD
		CENSUS TR.
		6030.00

Address Chart

Parcel Number	Street Address
Parcel 'A'	#204B Marriottsville Road - For Grading Permit Only

TITLE SHEET
MASS GRADING PLAN

WAVERLY CORPORATE CENTER
PARCEL 'A', PLAT No.

TAX MAP No. 10 PARCEL Nos. 324, 325 and 327
TAX MAP No. 16 P/O PARCEL No. 249
3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY 25 2005
SHEET 1 OF 12 SDP 04-126

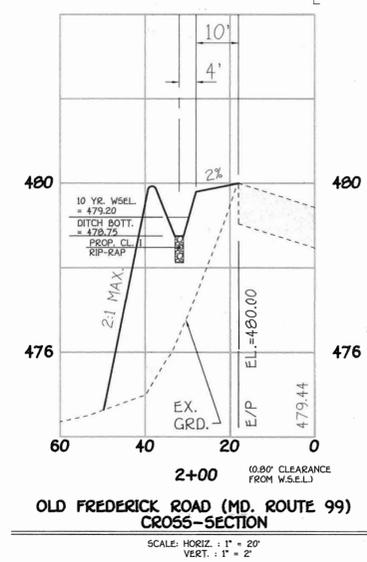
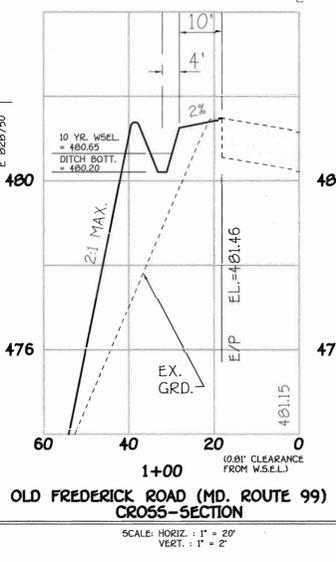
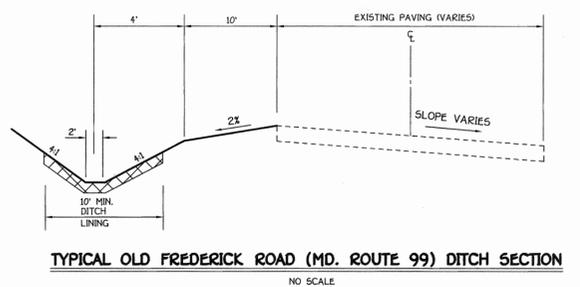
STRUCTURE SCHEDULE							
STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	NORTH	EAST	TYPE	REMARKS
E-1	465.80	465.30	---	N 539710.7723	E 828070.2082	MITERED 6" PVC	---

SWM FACILITY #1
 TYPE OF FACILITY: EXTENDED DETENTION
 IMPERVIOUS AREA OF SHA RUNOFF: 0.31 AC.
 LOCATION AT THE CENTER OF BMP:
 N 539768.75
 E 828092.23
 OWNERS: G.T.W. JOINT VENTURE & DRBT, L.L.C.
 MAINTAINED BY: OWNERS

PIPE SCHEDULE		
SIZE	CLASS	LENGTH
6"	P.V.C. SCH. 40	48'
15"	(TEMP.) RCP	35'

FOREST CONSERVATION EASEMENT TABLE		
LINE	LENGTH	BEARING
FCE1	22.82'	N11°27'23"E
FCE2	12.39'	N41°31'45"E
FCE3	42.47'	S85°48'08"E
FCE4	93.64'	S89°53'37"E
FCE5	57.37'	N35°03'23"E
FCE6	70.02'	N24°42'37"E
FCE7	46.36'	S81°51'57"E
FCE8	46.48'	S70°00'17"E
FCE9	60.83'	S10°46'43"E
FCE10	61.07'	S43°07'24"E
FCE11	49.73'	N68°48'27"E
FCE12	125.14'	S05°32'35"E
FCE13	221.28'	S89°57'25"W
FCE14	72.90'	N48°52'27"W
FCE15	69.43'	N64°04'56"W
FCE16	66.45'	N78°32'37"W
FCE17	8.87'	N70°16'55"W

100 Year Floodplain, Drainage & Utility Easement	
SYM	LENGTH
FP-1	569°12'08"E 10.85'
FP-2	563°41'06"E 79.53'
FP-3	522°14'50"E 49.17'
FP-4	568°43'41"E 82.53'
FP-5	583°04'45"E 31.94'
FP-6	570°16'55"E 46.57'
FP-7	578°32'37"E 66.45'
FP-8	564°04'56"E 69.43'
FP-9	548°52'27"E 72.90'



WETLAND METES AND BOUNDS TABLE		
LINE	LENGTH	BEARING
W1	40.30	N67°26'24"E
W2	29.95	N81°47'53"E
W3	18.33	S38°24'30"E
W4	32.24	S39°19'00"W
W5	20.80	S44°09'04"W
W6	27.12	S27°28'11"E
W7	27.67	S09°07'35"W
W8	29.26	S27°13'05"W
W9	43.45	S23°58'53"E
W10	38.43	S49°58'51"E
W11	48.33	S78°37'59"E
W12	38.73	N32°29'35"E
W13	32.47	N51°22'33"W
W14	33.47	N29°49'11"E
W15	39.90	N36°39'45"E
W16	34.38	S88°09'00"E
W17	33.40	S85°08'54"E
W18	25.05	N83°10'06"E
W19	31.55	N41°31'45"E
W20	31.00	S85°58'08"E
W21	22.04	S89°53'37"E
W22	43.37	S29°26'47"W
W23	23.83	S48°01'58"E
W24	38.67	S44°12'55"E
W25	35.76	N39°17'55"E
W26	41.75	N34°02'28"E
W27	47.05	N35°35'54"E
W28	51.55	N35°00'19"E
W29	53.63	N24°42'37"E
W30	29.12	S81°59'17"E
W31	29.67	S70°00'17"E
W32	43.66	S10°46'43"E
W33	31.55	S18°55'25"E
W34	13.85	S15°44'27"E
W35	23.14	S24°13'56"E
W36	50.14	S59°30'14"E
W37	12.76	S79°05'54"E
W38	14.82	S05°21'56"E
W39	36.11	S01°53'36"E

FLOODPLAIN TABULATION DATA	
X-SECTION	ELEVATION
39	464.82
39.5	465.56
40	466.03
41	466.98
42	467.15
43	467.81
44	468.39

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
+	SPOT ELEVATION
-SF	SILT FENCE
-SF	SUPER SILT FENCE
FF	FIRST FLOOR ELEVATION
BE	BASEMENT ELEVATION
⊙	SOIL BORING
---	EARTH DIKE
-X-X-	TREE PROTECTION
---	EXISTING TREE LINE
L.O.D.	LIMIT OF DISTURBANCE
()	EXISTING STREET TREE F-

NOTE:
 LANDSCAPING IS PROPOSED FOR THE SWM FACILITY AT THIS TIME FOR THIS SITE. WHEN THIS SITE IS DEVELOPED AND A FINAL SITE DEVELOPMENT PLAN IS SUBMITTED, A LANDSCAPE PLAN WILL ACCOMPANY THE SITE DEVELOPMENT PLAN SUBMISSION FOR THE PERIMETER AND PARKING LOCATED WITHIN THE SITE.

DESIGN BY: RAI
 DRAWN BY: JCL/RAI
 CHECKED BY: CJC

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK • 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 4101 461 - 2895

DATE	DESCRIPTION	REVISION BLOCK

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 I 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.
 Signature: *[Signature]* Date: **3-4-05**

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 Signature of Developer: *[Signature]* Date: **3-4-05**

Reviewed for HOWARD SCD and meets Technical Requirements.
 U.S.D.A.-Natural Resources Conservation Service Date: _____
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 Howard SCD Date: _____

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 Suite 102
 Ellicott City, Maryland 21042

DEVELOPER
 DRBT, L.L.C.
 5300 Dorsey Hall Drive
 Suite 102
 Ellicott City, Maryland 21042

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Director: *[Signature]* Date: **6/1/05**
 Chief, Department of Planning and Zoning: *[Signature]* Date: **6/1/05**
 Chief, Development Engineering Division: *[Signature]* Date: **5/23/05**

SUBDIVISION: GTW'S WAVERLY WOODS SECTION/AREA: N/A PARCEL: 'A'
 PLAT REF.: BLOCK NO. 22 & 8 ZONE: RC-DEO & PSC TAX MAP 10 & 16 ELEC. DIST. THIRD CENSUS TR. 6030.00
 WATER CODE: N/A SEWER CODE: N/A

SITE DEVELOPMENT PLAN
 MASS GRADING PLAN, STORMDRAIN PROFILES & X-SECTIONS

WAVERLY CORPORATE CENTER
 PARCEL 'A', PLAT No.

TAX MAP No. 10 PARCEL Nos. 324, 325 and 327
 TAX MAP No. 16 P/O PARCEL No. 249
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JANUARY 25, 2005

SHEET 2 OF 12 SDP 04-126

LINE	LENGTH	BEARING
W1	13.22	N67°26'24"E
W2	29.95	N01°47'53"E
W3	18.33	S36°24'30"E
W4	32.24	S35°19'00"W
W5	20.80	S44°09'08"W
W6	27.12	S27°28'11"E
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W8	29.26	S27°13'05"W
W9	43.45	S23°58'53"E
W10	38.43	S49°58'21"E
W11	48.33	S78°37'59"E
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W13	32.47	N51°22'33"W
W14	33.47	N29°49'11"E
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W17	33.40	S85°08'54"E
W18	25.05	N03°10'06"E
W19	31.55	N41°31'45"E
W20	31.00	S85°58'08"E
W21	22.04	S89°53'37"E
W22	43.37	S29°26'47"W
W23	25.83	S46°01'58"E
W24	38.67	S44°12'55"E
W25	35.76	N39°17'55"E
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W30	25.12	S01°51'57"E
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100 Year Floodplain, Drainage & Utility Easement

SYM	LENGTH
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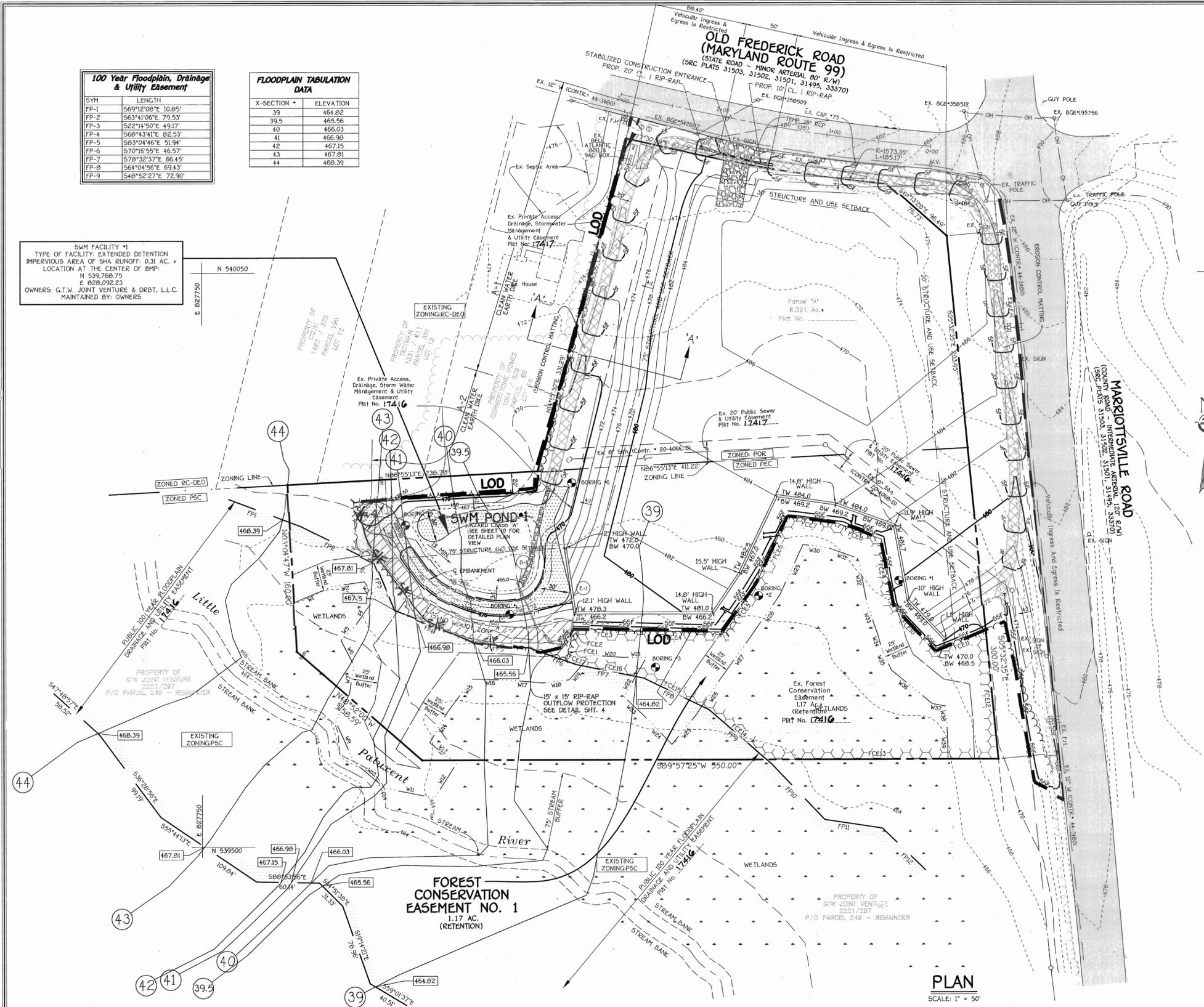
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SWM FACILITY
 TYPE OF FACILITY: EXTENDED DETENTION IMPERVIOUS AREA OF 5HA RUNOFF: 0.31 AC. LOCATION AT THE CENTER OF BMP. N 539,768.75 E 828,092.23 OWNERS: G.T.W. JOINT VENTURE & DRBT, L.L.C. MAINTAINED BY: OWNERS

Private Access, Drainage, Stormwater Management & Utility Easement

SYM	LENGTH	SYM	LENGTH
SD-1	S77°30'08"E 47.03'	SD-11	S30°39'34"W 21.26'
SD-2	R=1573.35' L=61.50'	SD-12	S76°42'00"W 23.24'
SD-3	S10°15'30"W 20.00'	SD-13	N70°16'55"W 9.69'
SD-4	R=1593.35' L=62.20'	SD-14	N83°04'46"W 51.94'
SD-5	S77°30'08"E 27.87'	SD-15	N68°43'41"W 82.53'
SD-6	S14°57'11"W 299.96'	SD-16	N22°14'50"W 49.17'
SD-7	S14°57'11"W 67.68'	SD-17	N45°56'09"W 22.37'
SD-8	S05°06'36"E 10.72'	SD-18	N06°04'15"W 42.96'
SD-9	S08°11'19"E 63.65'	SD-19	N86°55'13"E 191.58'
SD-10	S00°02'50"W 12.30'	SD-20	N14°57'11"E 21.04'
		SD-21	N14°57'11"E 325.64'



PLAN
SCALE: 1" = 50'

S.W.M. EASEMENT METES AND BOUNDS
SCALE: 1" = 50'

LEGEND

SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
• 624	SPOT ELEVATION
-SF-SF-	SILT FENCE
-SF-SF-	SUPER SILT FENCE
FF	FIRST FLOOR ELEVATION
BE	BASEMENT ELEVATION
⊙	SOIL BORING
---	EARTH DIKE
-X-X-	TREE PROTECTION
---	EXISTING TREE LINE
L.O.D.	LIMIT OF DISTURBANCE
(X)	EXISTING STREET TREE F-

DESIGN BY: RAI
 DRAWN BY: JCL/RAI
 CHECKED BY: CJC

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 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2955

DATE	DESCRIPTION	REVISION BLOCK

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 Signature: *[Signature]* Date: 3-4-05

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 Signature of Developer: *[Signature]* Date: 3-4-05

Reviewed for HOWARD SCD and meets Technical Requirements.
 Signature: *[Signature]* Date: 3/19/05
 U.S.D.A. - Natural Resources Conservation Service
 Signature: *[Signature]* Date: 3/19/05
 HOWARD SOIL CONSERVATION DISTRICT
 Signature: *[Signature]* Date: 3/19/05
 HOWARD SCD

OWNERS
 GTW Joint Venture & DRBT, L.L.C.
 5300 Dorsey Hall Drive, Suite 102
 Ellicott City, Maryland 21042

DEVELOPER
 DRBT, L.L.C.
 5300 Dorsey Hall Drive, Suite 102
 Ellicott City, Maryland 21042

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *[Signature]* Date: 3/19/05
 Signature: *[Signature]* Date: 3/19/05
 Signature: *[Signature]* Date: 3/19/05

SUBDIVISION: GTW'S WAVERLY WOODS
 SECTION/AREA: N/A
 PARCEL: 'A'
 PLAT REF: 17415-17417
 BLOCK NO.: 22 & B
 ZONE: FOR & PEC
 TAX MAP 10 & 16
 ELEC. DIST.: THIRD
 CENSUS TR.: 6030.00
 WATER CODE: N/A
 SEWER CODE: N/A

SITE DEVELOPMENT PLAN
SEDIMENT CONTROL PLAN
WAVERLY CORPORATE CENTER
 PARCEL 'A', PLAT No.
 TAX MAP No. 10 PARCEL Nos. 324, 325 and 327
 TAX MAP No. 16 P/O PARCEL No. 249
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JANUARY 25, 2005
 SHEET 3 OF 12 SDP 04-126

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION
Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE
Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and improving visual resources.

CONDITIONS WHERE PRACTICE APPLIES
This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into temporary seeding to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil exposures, cleared areas, bare soil between construction phases, earth dikes, etc. and for Permanent Seeding are bare areas, cut and fill slopes and other areas of erosion, former stockpiles and logging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY
Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Vegetation over time will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

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

B. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas 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.
2. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Fertilizers 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 manufacturer of the producer.
3. Lime materials shall be ground limestone (hydrated or burnt lime) to 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.

C. Seeded Preparation
1. Temporary Seeding
a. Seeded 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 raked or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be graded 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" to 5" of soil by disking or other suitable means.
2. Permanent Seeding
a. Minimum soil conditions required for permanent vegetative establishment:
1. Soil pH shall be between 6.0 and 7.0.
2. Soluble salts shall be less than 500 parts per million (ppm).
3. The soil shall contain less than 40% clay, but enough fine grained material (silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is low organic or silt/clay soils to be planted, then a sandy soil (50% 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 soils on site, adding topsoil is required in accordance with Section 2.1 Standards and Specifications 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" to 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. Soil amendments into the top 3" to 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 seeding and application. Fertilizer and lime shall not be applied until the seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to ready the surface. Seed slopes (steeper than 3:1) should be graded by a drier leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 3" to 5" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

D. Seed Specifications
1. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to seed viability testing. Seed viability testing shall be conducted within the 6 months immediately preceding the date of sowing such material on this job.
2. Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
3. Incubation - The incubation for testing legume seeds in the seed moisture shall be a core culture of nitrogen-fixing bacteria prepared specifically for the species. Incubants shall not be used later than the date indicated on the container. Add fresh incubant as directed on package. Use four times the recommended rate when hydroseeding. Note: In a very important keep incubant as cool as possible until used. Temperature above 70°F or 21°C can weaken incubant and make the incubant less effective.
4. Methods of Seeding
a. Hydroseeding: Apply seed uniformly with hydroseeder slurry includes seed and fertilizer, broadcast or drop seeded, or a cutlifter seeder.
b. 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 of soluble nitrogen. P2O5 (phosphorus) 200 lbs/acre. K2O (potassium) 200 lbs/acre.
c. Lime - Use only ground agricultural limestone, 0.10 to 3.0 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.
d. Seed and lime should be mixed on site and applied immediately and without interruption.
5. Dry Seeding
a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the drawings. Fertilizer and lime shall be applied to the subsoil at the rates prescribed on the drawings. Fertilizer and lime shall be applied to the subsoil at the rates prescribed on the drawings. Fertilizer and lime shall be applied to the subsoil at the rates prescribed on the drawings.
b. Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
c. Where practical, seed should be sown in two directions perpendicular to each other. Apply half the seeding rate in each direction.
6. Mulch Specifications (in order of preference)
i. Straw shall consist of thoroughly threshed wheat, rice or oat straw, reasonably bright in color, and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
ii. Wood Cellulose Fiber - Much cellulose fiber shall consist of specially prepared wood cellulose processed into a uniform fibrous physical sheet.
a. WCM shall be stored green or contain a green dye in the package that will provide adequate color to facilitate visual inspection of the uniform spread slurry.
b. WCM including dye shall contain no germination or growth inhibiting factors.
c. WCM 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 batter-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.
e. WCM material shall contain no elements or compounds at concentrations levels that will be phytotoxic.
f. WCM must conform to the following physical requirements: fiber length to approximately 10 mm (dieters approximation) 1 mm, dry weight of 6.0 to 8.5, ash content of 10% maximum and water holding capacity of 40% minimum.
7. 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 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". Much 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.
8. Securing Straw 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 to a minimum of two (2) inches. The practice is to use a mulch anchoring tool. This practice should be used on the contour if possible.
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SECTION 2 - TEMPORARY SEEDING
Vegetation - annual grass or perennials used to provide cover on a disturbed area for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed mixtures - Temporary Seeding
1. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardness Zone (from Figure 5) and enter them in the Temporary Seeding summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans.
2. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depth	Fertilizer Rate (lb/100-10)	Lime Rate (ton/acre)
1	BARLEY	2.0 LBS. - 1000 SQT./1/15-3/15, BY 10/1	1-2 IN.	1 N.	0.05 lb/acre	2 ton/acre
2	ANNUAL RYEGRASS	50 LBS. PER ACRE	3/15-10/31	1 IN.	0.05 lb/acre	0.00 lb/1000sqft
3	ANNUAL RYEGRASS	50 LBS. PER ACRE	1/15-10/31, 6/15-10/15	1/4-1/2 IN.	0.05 lb/acre	0.00 lb/1000sqft

STANDARDS 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, infertile soils, and/or unacceptably soil gradations.

Conditions Where Practice Applies
1. This practice is limited to areas having 2:1 or flatter slopes where:
a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or for furnishing 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.

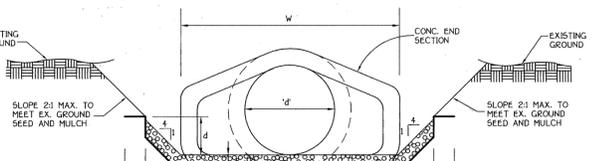
2. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special construction and care for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications
1. 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 green soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
2. 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 subsides and shall contain less than 2% 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, quackgrass, Johnson grass, nutcase, 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 4.0 tons/acre (1000-1000 pounds per 1000 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:
a. For sites having disturbed areas under 5 acres:
1. Place topsoil (if required) and apply soil amendments as specified in 2.0. Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
2. 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 soil 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 (30 days min) to permit dissipation of phytotoxic materials.
3. 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.
b. For sites having disturbed areas over 5 acres:
i. Place topsoil (if required) and apply soil amendments as specified in 2.0. Vegetative Stabilization - Section 1 - 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.
ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, about 4" - 6" higher in elevation.
iii. Topsoil shall be uniformly distributed in a 4" - 6" 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 seeded preparation.
v. 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:
a. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall conform to the following requirements:
1. 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.
2. 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.
3. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
4. 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.

SEED MIXTURE HARDNESS ZONE (A)

1. TOTAL AREA OF SITE: 640 ACRES
2. AREA DISTURBED: 51 ACRES
3. AREA TO BE ROOFED OR PAVED: 0.00 ACRES
4. AREA TO BE VEGETATIVELY STABILIZED: 51 ACRES
5. TOTAL CUT: 121 CUYD.S.
6. TOTAL FILL: 75,510 CUYD.S.
7. OFFSITE WASTE/BOSSON AREA LOCATION GTWS WAVERLY WOODS, SECTION 13, 75,397 CUYD.S.(FLL)

8. ANY SEGMENT STABILIZATION PRACTICE WHICH IS NOT NECESSARY FOR THE PROPOSED ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REMOVED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEEDMENT 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 PERMITS EXOSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THE 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.

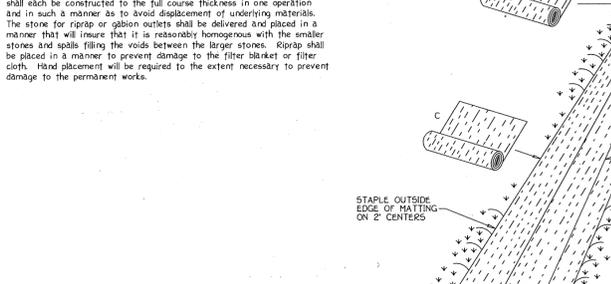


RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA	WETTED PERCENT	R	R 2/3	S	5 1/2'	W	d	N	V1 (FLL)	Q1 (FLL)	Q2 (FLL)	Q3 (FLL)	BLANKET THICKNESS
E-1 SWM	0.20	2.40	0.0933	0.1992	.005	.0707	2.0'	0.09'	.04	0.49	0.09	5.5'	7'	15"
S-1	2.31	7.38	0.3130	0.4592	.005	.0707	4.0'	1.25'	.04	1.21	2.80	9.5'	15'	19"
S-2	2.31	7.38	0.3130	0.4592	.005	.0707	4.0'	1.25'	.04	1.21	2.80	9.5'	15'	19"

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

- The subgrade for the filter, riprap or gblion shall be prepared to the required limits and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
- Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional shell hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- Stone for the riprap or gblion outlets may be placed by equipment. Both shall each 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 riprap or gblion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.



ENGINEER'S CERTIFICATE
I certify that the plan, 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.
Date: 3-4-05

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic onsite inspection by the Howard Soil Conservation District.
Date: 3-4-05

OWNERS
GTW Joint Venture & DRBT, L.L.C.
5300 Dorsey Hall Drive
Suite 102
Elicott City, Maryland 21042

DEVELOPER
DRBT, L.L.C.
5300 Dorsey Hall Drive
Suite 102
Elicott City, Maryland 21042

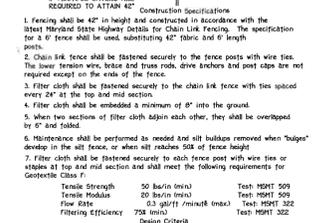
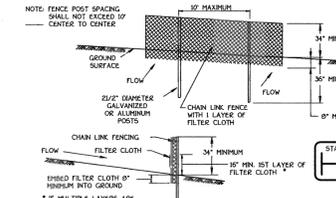
DESIGN BY: RAI
DRAWN BY: JCL/RAI
CHECKED BY: JCL

DATE: _____ DESCRIPTION: _____ REVISION BLOCK: _____

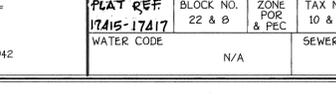
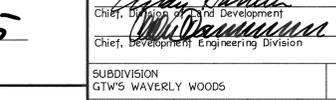
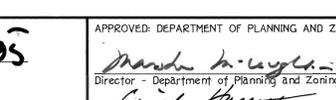
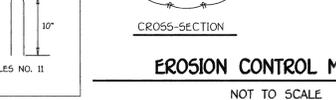
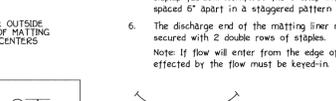
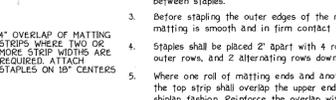
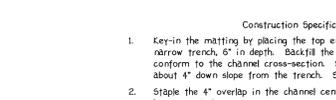
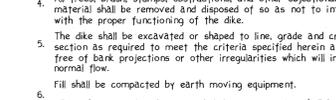
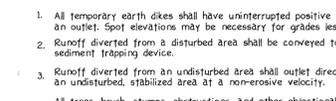
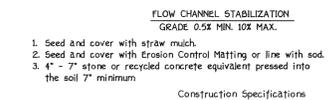
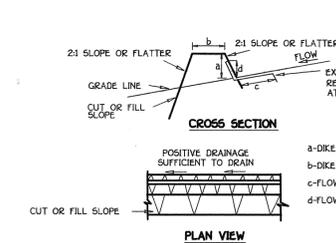
SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSING AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1959).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THE PREVIOUS CALENDAR DAYS FOR ALL PERMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 BY 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PREVIOUS SPECIFIED ABOVE. IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, FOR PERMANENT SEEDING (SEC. 501, 500 (SEC. 541, TEMPORARY SEEDING (SEC. 500, AND MULCHING (SEC. 520, TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL THE PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
TOTAL AREA OF SITE: 640 ACRES
AREA DISTURBED: 51 ACRES
AREA TO BE ROOFED OR PAVED: 0.00 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 51 ACRES
TOTAL CUT: 121 CUYD.S.
TOTAL FILL: 75,510 CUYD.S.
OFFSITE WASTE/BOSSON AREA LOCATION GTWS WAVERLY WOODS, SECTION 13, 75,397 CUYD.S.(FLL)
- ANY SEGMENT STABILIZATION PRACTICE WHICH IS NOT NECESSARY FOR THE PROPOSED ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REMOVED 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 PERMITS EXOSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THE INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- 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.

SUPER SILT FENCE

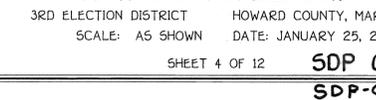
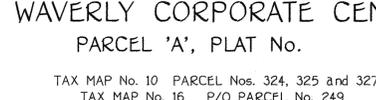
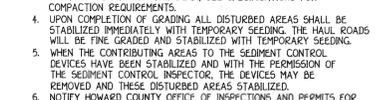
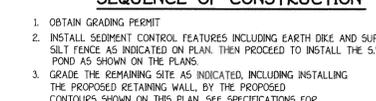
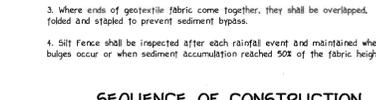
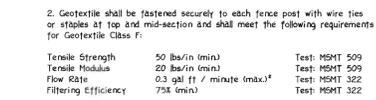
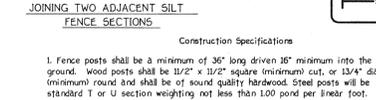
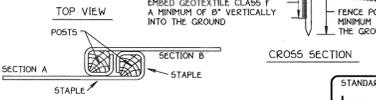
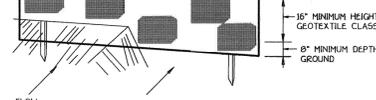
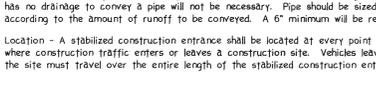
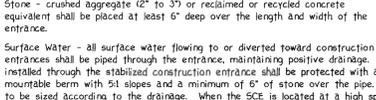
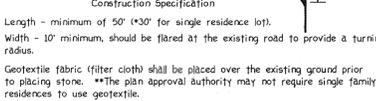
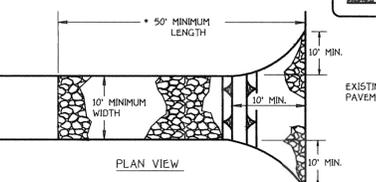
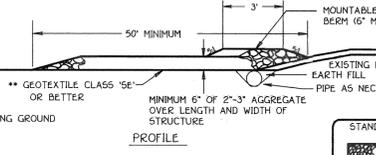


Slope	Slope Steepness	Silt Fence Length (Minimum)	Silt Fence Length (Maximum)
3:1	33%	100 feet	1500 feet
4:1	25%	100 feet	1000 feet
5:1	20%	100 feet	500 feet
6:1	17%	100 feet	250 feet



STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT: 1 DAY
- INSTALL SEDIMENT CONTROL FEATURES INCLUDING EARTH DIKE AND SUPER SILT FENCE AS INDICATED ON PLAN. THEN PROCEED TO INSTALL THE SWM POND AS SHOWN ON THE PLANS: 21 DAYS
- GRADE THE REMAINING SITE AS INDICATED, INCLUDING INSTALLING THE PROPOSED RETAINING WALL, BY THE PROPOSED CONTOURS SHOWN ON THIS PLAN, SEE SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS: 21 DAYS
- UPON COMPLETION OF GRADING ALL DISTURBED AREAS SHALL BE STABILIZED IMMEDIATELY WITH TEMPORARY SEEDING. THE HAUL ROADS WILL BE FIRM GRADED AND STABILIZED WITH TEMPORARY SEEDING: 2 DAYS
- WHEN THE CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE DEVICES MAY BE REMOVED AND THESE DISTURBED AREAS STABILIZED: 2 DAYS
- NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR FINAL INSPECTION: 1 DAY

SEDIMENT CONTROL NOTES AND DETAILS

WAVERLY CORPORATE CENTER

BORING B-1

HILLS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Page 1 of 2

Project Name: DBRT Property Retaining Wall
Location: Howard County, Maryland

Boring Number: B-1
Job #: 02138C

Date Started: 07-29-04

Soil Sampler: Hammer Wt. 140 Lbs., Hole Diameter 30 inches, Rock Core Dia. 2.0 inches, Boring Method HSA

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE	0.0						
	Dark brown, moist, loose, silty clayey sand, trace gravel (SMSC)							
3.0		3.0		I	3-4-5	1	10'	Groundwater encountered at 13.7' while drilling
	Light brown, moist to wet, very soft to medium stiff, sandy micaceous silt, trace clay, trace quartz gravel fragments, trace mica (ML)			I	4-4-5	2	10'	
				I	2-1-2	3	10'	
				D	1-2-2	4	10'	Caved in at 10.7' at Completion
12.0		12.0		I	1-2-3	5	10'	
	Light brown to reddish brown, moist to wet, very soft to soft, micaceous silty clay, trace sand (CLML)			I	1-2-3	6	10'	

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. SAMPLE CONDITIONS: D-DISINTEGRATED, H-HAFT, U-UNDISTURBED, L-LOST. GROUND WATER DEPTH: AT COMPLETION 7.0 FT. BORING METHOD: HSA-HOLLOW STEM AUGERS, CFA-CENT. FLIGHT AUGERS, DC-DRIVING CASING, MC-MUD DRILLING.

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

BORING B-2

HILLS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Page 1 of 2

Project Name: DBRT Property Retaining Wall
Location: Howard County, Maryland

Boring Number: B-2
Job #: 02138C

Date Started: 07-29-04

Soil Sampler: Hammer Wt. 140 Lbs., Hole Diameter 30 inches, Rock Core Dia. 2.0 inches, Boring Method HSA

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE	0.0						
	Dark brown, moist, loose to medium dense, silty clayey sand, trace gravel (SMSC)							
				I	3-3-4	1	10'	Groundwater encountered at 18.2' while drilling
				I	10-13-13	2	10'	
	Very light gray, moist, soft, silty sand, trace mica (ML)			I	2-2-3	3	10'	
				I	2-2-3	4	10'	Caved in at 8.5' at Completion
12.0		12.0		I	1-1-2	5	10'	
	Dark brown, moist, very soft to soft, sandy silty clay, trace mica (MLCL)			I	2-2-5	6	10'	

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. SAMPLE CONDITIONS: D-DISINTEGRATED, H-HAFT, U-UNDISTURBED, L-LOST. GROUND WATER DEPTH: AT COMPLETION 4.0 FT. BORING METHOD: HSA-HOLLOW STEM AUGERS, CFA-CENT. FLIGHT AUGERS, DC-DRIVING CASING, MC-MUD DRILLING.

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

BORING B-3

HILLS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Page 1 of 2

Project Name: DBRT Property Retaining Wall
Location: Howard County, Maryland

Boring Number: B-3
Job #: 02138C

Date Started: 07-29-04

Soil Sampler: Hammer Wt. 140 Lbs., Hole Diameter 30 inches, Rock Core Dia. 2.0 inches, Boring Method HSA

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE	0.0						
	Dark brown, moist, medium stiff, sandy silty clay, trace mica (CLML)			I	4-4-5	1	10'	Groundwater encountered at 8.2' while drilling
				I	4-5-6	2	10'	
	Light gray, moist, medium dense, silty micaceous sand, trace gravel, trace mica (SM)			D	4-8-18	3	12'	
				D	10-9-9	4	13'	Caved in at 10.0' at Completion
12.0		12.0		I	5-11-13	5	10'	
	Light brown, wet, medium dense, silty micaceous sandy/silty micaceous gravel, trace clay, trace mica fragments (SMGM)			I	2-8-13	6	10'	
				D	2-8-13	6	10'	

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. SAMPLE CONDITIONS: D-DISINTEGRATED, H-HAFT, U-UNDISTURBED, L-LOST. GROUND WATER DEPTH: AT COMPLETION 4.0 FT. BORING METHOD: HSA-HOLLOW STEM AUGERS, CFA-CENT. FLIGHT AUGERS, DC-DRIVING CASING, MC-MUD DRILLING.

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

BORING B-4

HILLS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: DBRT Property Retaining Wall
Location: Howard County, Maryland

Boring Number: B-4
Job #: 02138C

Date Started: 07-21-04

Soil Sampler: Hammer Wt. 140 Lbs., Hole Diameter 30 inches, Rock Core Dia. 2.0 inches, Boring Method HSA

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE	0.0						
	Dark brown, moist, silty clayey, trace gravel (CLML)			I	2-6-7	1	10'	Groundwater encountered at 7.5' while drilling
				I	6-8-8	2	12'	
	Light brown, wet, medium dense, silty coarse sand, trace gravel, trace mica (SMSC)			D	6-8-10	3	12'	Caved in at 7.0' at Completion
				D	6-14-11	4	10'	
12.0		12.0		I	5-10-11	5	10'	
	Dark brown, wet, loose to medium dense, silty coarse sand, trace gravel and rock fragments (SMSC)			D	4-7-0	6	10'	

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. SAMPLE CONDITIONS: D-DISINTEGRATED, H-HAFT, U-UNDISTURBED, L-LOST. GROUND WATER DEPTH: AT COMPLETION 4.0 FT. BORING METHOD: HSA-HOLLOW STEM AUGERS, CFA-CENT. FLIGHT AUGERS, DC-DRIVING CASING, MC-MUD DRILLING.

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

BORING B-6

HILLS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: DBRT Property Retaining Wall
Location: Howard County, Maryland

Boring Number: B-6
Job #: 02138C

Date Started: 07-21-04

Soil Sampler: Hammer Wt. 140 Lbs., Hole Diameter 30 inches, Rock Core Dia. 2.0 inches, Boring Method HSA

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE	0.0						
	Dark brown, moist, sandy silty clayey, trace mica (CLML)			I	2-3-3	1	12'	Groundwater encountered at 18.0' while drilling
				I	7-0-12	2	10'	
	Light gray, moist, medium dense to dense, silty coarse sand, trace gravel (SM)			I	9-14-18	3	10'	Caved in at 8.5' at Completion
				I	12-14-14	4	10'	
12.0		12.0		I	1-2-3	5	10'	
	Dark brown, wet, loose to medium dense, silty coarse sand, trace gravel and rock fragments (SMSC)			D	4-7-0	6	10'	

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. SAMPLE CONDITIONS: D-DISINTEGRATED, H-HAFT, U-UNDISTURBED, L-LOST. GROUND WATER DEPTH: AT COMPLETION 4.0 FT. BORING METHOD: HSA-HOLLOW STEM AUGERS, CFA-CENT. FLIGHT AUGERS, DC-DRIVING CASING, MC-MUD DRILLING.

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

BORING B-1 CONTINUED

HILLS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Page 2 of 2

Project Name: DBRT Property Retaining Wall
Location: Howard County, Maryland

Boring Number: B-1
Job #: 02138C

Date Started: 07-29-04

Soil Sampler: Hammer Wt. 140 Lbs., Hole Diameter 30 inches, Rock Core Dia. 2.0 inches, Boring Method HSA

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
	Light brown to reddish brown, moist to wet, very soft to soft, micaceous silty clay, trace sand (CLML)			I	1-1-2	7	10'	
25.0		25.0		I	1-1-2	7	10'	Bottom of Test Hole at 25.0'
30.0		30.0						
35.0		35.0						
40.0		40.0						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. SAMPLE CONDITIONS: D-DISINTEGRATED, H-HAFT, U-UNDISTURBED, L-LOST. GROUND WATER DEPTH: AT COMPLETION 7.0 FT. BORING METHOD: HSA-HOLLOW STEM AUGERS, CFA-CENT. FLIGHT AUGERS, DC-DRIVING CASING, MC-MUD DRILLING.

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

BORING B-2 CONTINUED

HILLS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Page 2 of 2

Project Name: DBRT Property Retaining Wall
Location: Howard County, Maryland

Boring Number: B-2
Job #: 02138C

Date Started: 07-29-04

Soil Sampler: Hammer Wt. 140 Lbs., Hole Diameter 30 inches, Rock Core Dia. 2.0 inches, Boring Method HSA

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
	Dark brown, moist, very soft to soft, sandy silty clay, trace mica (MLCL)			I	1-1-3	7	10'	
20.0		20.0		I	1-1-3	7	10'	Bottom of Test Hole at 20.0'
30.0		30.0		I	1-1-3	8	0'	

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. SAMPLE CONDITIONS: D-DISINTEGRATED, H-HAFT, U-UNDISTURBED, L-LOST. GROUND WATER DEPTH: AT COMPLETION 4.0 FT. BORING METHOD: HSA-HOLLOW STEM AUGERS, CFA-CENT. FLIGHT AUGERS, DC-DRIVING CASING, MC-MUD DRILLING.

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

BORING B-3 CONTINUED

HILLS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Page 2 of 2

Project Name: DBRT Property Retaining Wall
Location: Howard County, Maryland

Boring Number: B-3
Job #: 02138C

Date Started: 07-29-04

Soil Sampler: Hammer Wt. 140 Lbs., Hole Diameter 30 inches, Rock Core Dia. 2.0 inches, Boring Method HSA

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
	Light gray, wet, medium dense, silty micaceous sand, trace clay, trace mica (SM)			I	19-21-16	7	0'	
22.0		22.0		I	19-21-16	7	0'	Bottom of Test Hole at 25.0'
25.0		25.0		D	19-21-16	7	0'	
30.0		30.0						
35.0		35.0						
40.0		40.0						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. SAMPLE CONDITIONS: D-DISINTEGRATED, H-HAFT, U-UNDISTURBED, L-LOST. GROUND WATER DEPTH: AT COMPLETION 5.0 FT. BORING METHOD: HSA-HOLLOW STEM AUGERS, CFA-CENT. FLIGHT AUGERS, DC-DRIVING CASING, MC-MUD DRILLING.

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

BORING B-5

HILLS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: DBRT Property Retaining Wall
Location: Howard County, Maryland

Boring Number: B-5
Job #: 02138C

Date Started: 07-21-04

Soil Sampler: Hammer Wt. 140 Lbs., Hole Diameter 30 inches, Rock Core Dia. 2.0 inches, Boring Method HSA

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
	Dark brown, moist, medium stiff, sandy silt and clay, trace gravel (CLML)			I	3-4-5	1	10'	Groundwater encountered at 10.7' while drilling
				I	4-3-4	2	10'	
	Dark brown, moist, medium dense silty coarse sand, trace clay, trace gravel (SM)			I	4-10-20	3	10'	
	Dark reddish brown, moist, medium soft to stiff, silty clayey/silty silty sand, trace gravel, trace mica (CLML)			I	2-5-5	4	10'	Caved in at 9.0' at Completion
				I	6-8-8	5	14'	
15.0		15.0		I	6-8-8	5	14'	Bottom of Test Hole at 15.0'

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. SAMPLE CONDITIONS: D-DISINTEGRATED, H-HAFT, U-UNDISTURBED, L-LOST. GROUND WATER DEPTH: AT COMPLETION 8.5 FT. BORING METHOD: HSA-HOLLOW STEM AUGERS, CFA-CENT. FLIGHT AUGERS, DC-DRIVING CASING, MC-MUD DRILLING.

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

DESIGN BY: JCL/RAI
DRAWN BY: JCL/RAI
CHECKED BY: CJC

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 3072 BALDUZZE NATIONAL PIKE
ELLIOTT CITY, MARYLAND 20622
410 461 - 2255

DATE	DESCRIPTION	REVISION BLOCK

ENGINEER'S CERTIFICATE

I 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.

Signature: *[Signature]* Date: 3-4-05

DEVELOPER'S CERTIFICATE

I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic site inspection by the Howard Soil Conservation District.

Signature of Developer: *[Signature]* Date: 3-4-05

Approved for HOWARD SCD and meets Technical Requirements.

U.S.D.A. Natural Resources Conservation Service
This development plan is approved for sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SCD

OWNERS
GTW Joint Venture & DRBT, L.L.C.
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042

DEVELOPER
DRBT, L.L.C.
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning
Chief, Development Engineering Division

DATE: 6/6/05
DATE: 6/6/05
DATE: 5/20/05

SUBDIVISION: GTW'S WAVERLY WOODS
SECTION/AREA: N/A
PARCEL: 'A'

TAX MAP No. 10 PARCEL Nos. 324, 325 and 327
TAX MAP No. 16 P/O PARCEL No. 249
3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY 25, 2005

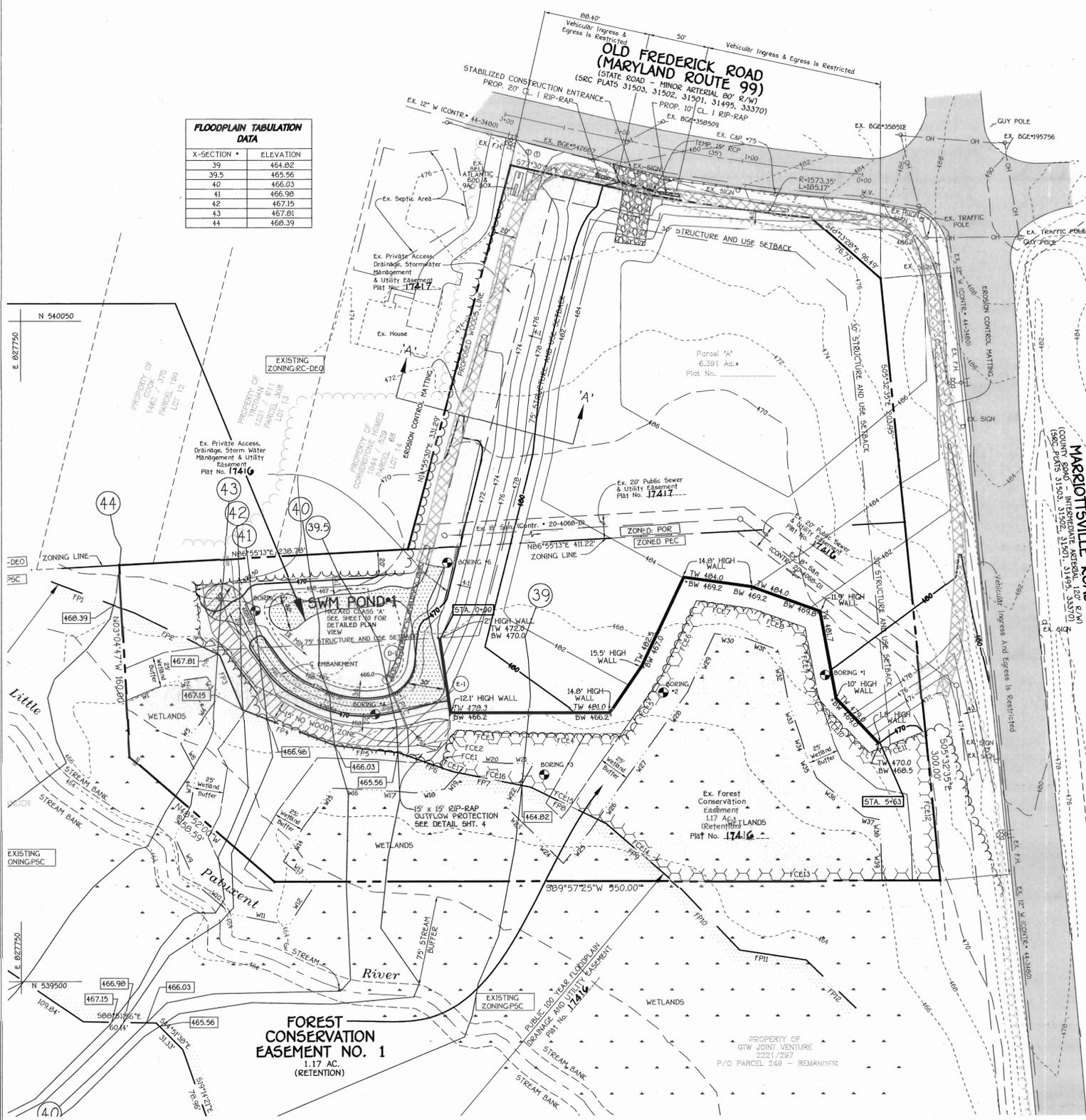
SEWER CODE: N/A

SOIL BORING LOGS

WAVERLY CORPORATE CENTER
PARCEL 'A', PLAT No.

SHEET 6 OF 12
SDP 04-126
SDP-04-12.6

FLOODPLAIN TABULATION DATA	X-SECTION	ELEVATION
	39	464.82
	39.5	465.56
	40	466.03
	41	466.98
	42	467.15
	43	467.81
	44	468.39



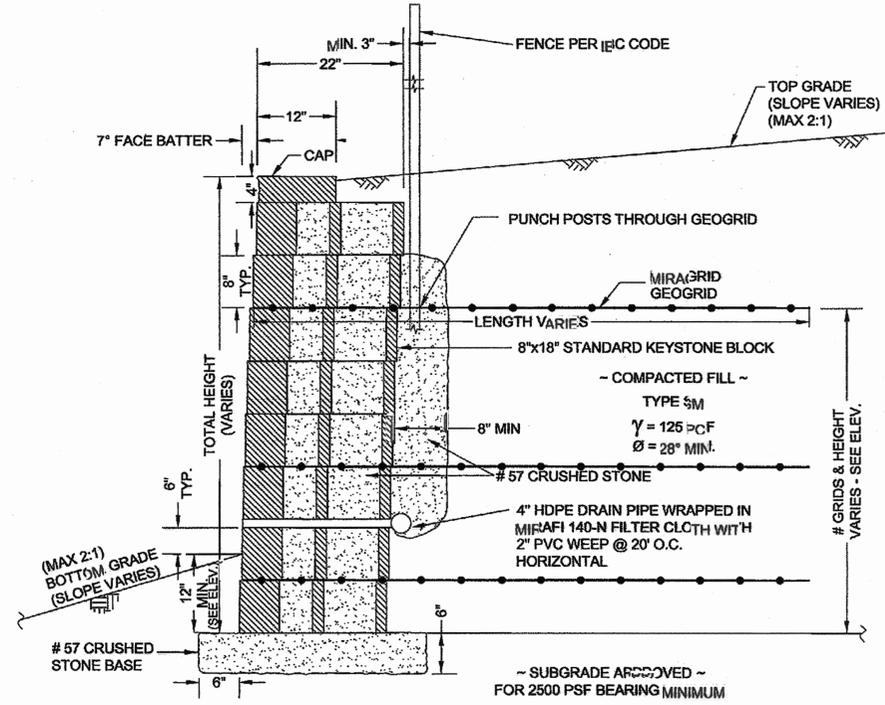
SPECIFICATIONS

KEYSTONE MODULAR CONCRETE BLOCK RETAINING WALL

- PART 1: GENERAL**
- 1.01 Description**
 A. Work shall consist of furnishing and construction of a KEYSTONE Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.
 B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.
 C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.
- 1.02 Delivery, Storage and Handling**
 A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.
 B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.
- PART 2: PRODUCTS**
- 2.01 Modular Concrete Retaining Wall Units**
 A. Modular concrete units shall conform to the following architectural requirements:
 face color - concrete gray - standard manufacturers' color may be specified by the Owner.
 face finish - sculptured rock face in angular tri-planer configuration. Other face finishes will not be allowed without written approval of Owner.
 bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
 exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.
 B. Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.
 C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:
 compressive strength = 3000 psi minimum;
 absorption = 8% maximum (8% in northern states) for standard weight aggregates.
 dimensional tolerances = ± 1/8" from nominal unit dimensions - not including rough split face, 4 1/16" unit height - top and bottom planes;
 unit size - 8" (H) x 18" (W) x 22" (D) minimum;
 unit weight - 100 lbs/unit minimum for standard weight aggregate;
- 2.02 Shear Connectors**
 A. Shear connectors shall be 1/2 inch diameter thermoset isophthalic polyester resin-protected fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units.
 Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F.
 B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid tensioning and backfilling.
- 2.03 Base Leveling Pad Material**
 A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.
- 2.04 Unit Drainage Fill**
 A. Unit drainage fill shall consist of #57 crushed stone.
 B. One cubic foot, minimum, of drainage fill shall be used for each square foot of wall face. Drainage fill shall be placed within cores of, between, and behind units to meet this requirement.
- 2.05 Reinforced Backfill**
 A. Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and most other properties shown on the plan:
- | Sieve Size | Percent Passing |
|------------|-----------------|
| 2 inch | 100-75 |
| 3/4 inch | 100-75 |
| No. 40 | 0-60 |
| No. 200 | 0-35 |
- Plasticity Index (PI) < 15 and Liquid Limit < 40 per ASTM D-4318.
 B. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.
- 2.06 Geogrid Soil Reinforcement**

- A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn.**
- 2.07 Drainage Pipe**
 A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.
- PART 3: EXECUTION**
- 3.01 Excavation**
 A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.
- 3.02 Base Leveling Pad**
 A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the modular wall unit.
 B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.
- 3.03 Modular Unit Installation**
 A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.
 B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.
 C. Install shear/connecting devices per manufacturer's recommendations.
 D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.
 E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.
- 3.04 Structural Geogrid Installation**
 A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
 B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.
 C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.
 D. Geogrid reinforcements shall be continuous through-out their embankment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between short pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.
 E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
 F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.
 G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.
 H. Cap Installation
 A. Cap units shall be placed to underlying units with an all-weather adhesive recommended by the manufacturer.
 I. Field Quality Control
 A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.
 B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.

- NOTES:**
- No trees shall be planted within 10 feet of the top of the retaining wall.
 - Retaining walls shall only be constructed under the observation of a registered professional engineer and a (NICET, WACEL, or equiv.) certified soils technician.
 - The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.
 - The suitability of fill material shall be confirmed by the on-site soils technician. Each 8" lift must be compacted to a minimum 95% standard proctor density and the testing report shall be made available to the Howard County Inspector upon completion of construction.



TYPICAL WALL SECTION
N.T.S.

HILLIS-CARNES ENGINEERING ASSOCIATES, INC.
 12011 Guilford Road, Suite 100, Annapolis, MD 21401
 410-293-8800 FAX 410-293-8801
 HILLIS-CARNES ENGINEERING ASSOCIATES, INC. DESIGNED BY: RVS DRAWN BY: ANCHORCHD BY: RHM

DATE	DESCRIPTION	REVISION BLOCK

ENGINEER'S CERTIFICATE
 I 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.
 Signature: *[Signature]* Date: 3-4-05

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to this plan for sediment and erosion control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic inspection by the Howard Soil Conservation District.
 Signature of Developer: *[Signature]* Date: 3-4-05

Reviewed for HOWARD SCD and meets Technical Requirements.
 U.S.D.A.-Natural Resources Conservation Service
 This development plan is approved for soil erosion control by the HOWARD SOIL CONSERVATION DISTRICT.
 Date: *[Signature]*

Howard SCD Date: *[Signature]*

OWNER:
 GTW Joint Venture & DRBT, L.L.C.
 5300 Dorsey Hill Drive, Suite 102, Ellicott City, Maryland 21042

DEVELOPER:
 DRBT, L.L.C.
 5300 Dorsey Hill Drive, Suite 102, Ellicott City, Maryland 21042

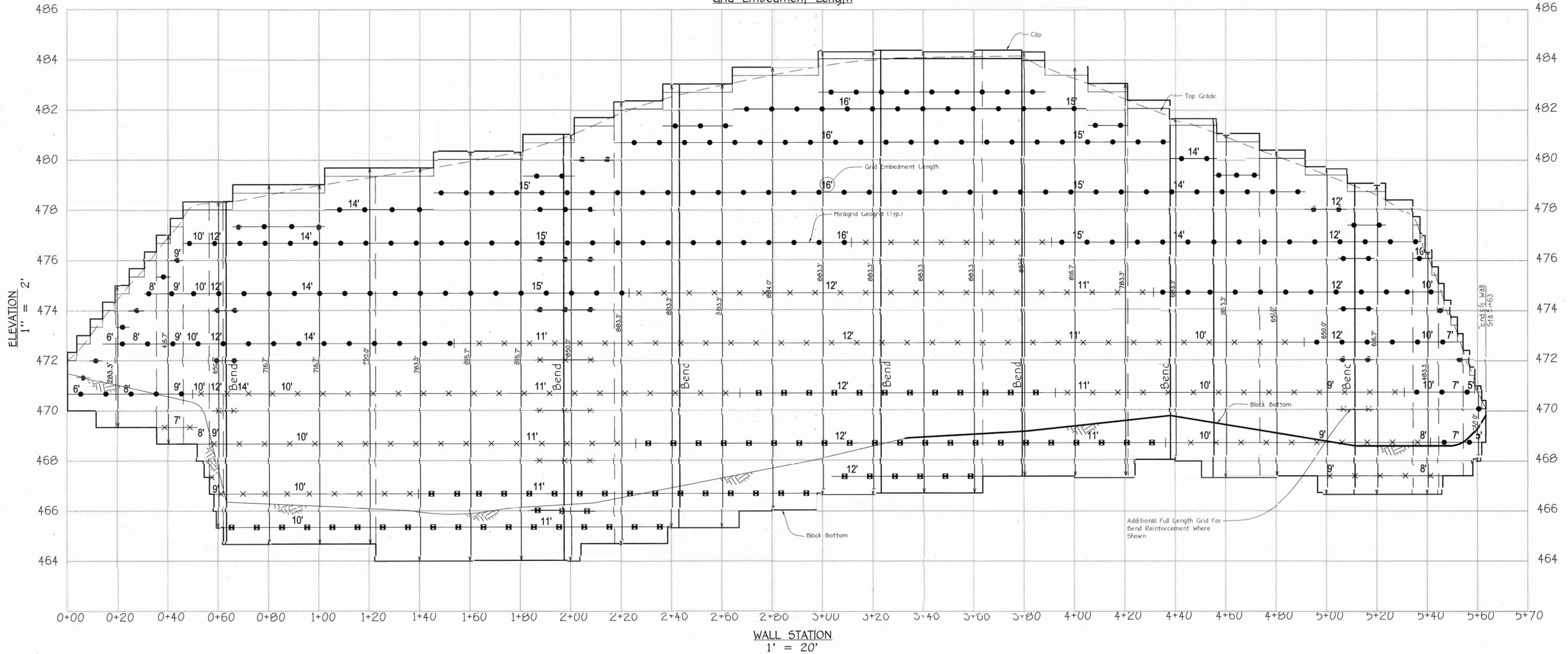
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Director: *[Signature]* Date: *[Signature]*
 Chief, Department of Planning and Zoning
 Chief, Development Engineering Division

SUBDIVISION	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
GTWS WAVERLY WOODS <td>22 & B <td>FOR & PEC <td>10 & 16 <td>THIRD <td>6030.00 </td></td></td></td></td>	22 & B <td>FOR & PEC <td>10 & 16 <td>THIRD <td>6030.00 </td></td></td></td>	FOR & PEC <td>10 & 16 <td>THIRD <td>6030.00 </td></td></td>	10 & 16 <td>THIRD <td>6030.00 </td></td>	THIRD <td>6030.00 </td>	6030.00

PLAT REF: 17415-17417
 WATER CODE: N/A
 SEWER CODE: N/A

RETAINING WALL PLAN AND DETAILS
 WAVERLY CORPORATE CENTER
 PARCEL 'A', PLAT No.
 TAX MAP No. 10 PARCEL Nos. 324, 325 and 327
 TAX MAP No. 16 P/O PARCEL No. 249
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JANUARY 25, 2005
 SHEET 7 OF 12 SDP 04-126

Miragrid 5XT Layers 6' 8' 9' 10' 12' 14' 15' 16' 15' 14' 12' 10' 7' 5'
 Loer Grid Layers - - 7' 8' 9' 10' 11' 12' 11' 10' 9' 8' - -



Geogrid Key:
 ●●● Miragrid 5XT Geogrid
 ××× Miragrid 7XT Geogrid
 ■■■ Miragrid 8XT Geogrid

HILLIS-CARNES
 ENGINEERING ASSOCIATES, INC.
 12011 Guilford Road, Suite 105, Annapolis Junction, Maryland 20701
 (410) 432-8541 or fax (410) 432-4539 FAX (410) 432-1428
 HGE#R-04189-A (DESIGNED BY: RHW) (DRAWN BY: AM) (CHECKED BY: RHW)

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 277 EASTERN AVENUE, SUITE 101, OFFICE PARK - 10272, BAITHEOR, NATIONAL FREE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-1200

DATE	DESCRIPTION

ENGINEER'S CERTIFICATE
 I 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.
 Signature: *[Signature]* Date: **3-4-05**

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize the local site inspection by the Howard Soil Conservation District.
 Signature of Developer: *[Signature]* Date: **3-4-05**

Reviewed for HOWARD SCD and meets Technical Requirements.
 U.S.D.A.-Natural Resources Conservation Service Date: _____
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT. *[Signature]*
 Howard SCD Date: _____

OWNERS
 GTW Joint Venture & DRBT, L.L.C.
 5300 Dorsey Hall Drive, Suite 102, Ellicott City, Maryland 21042

DEVELOPER
 DRBT, L.L.C.
 5300 Dorsey Hall Drive, Suite 102, Ellicott City, Maryland 21042

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 6/14/05
 Director - Department of Planning and Zoning
[Signature] 6/8/05
 Chief, Division of Land Development
[Signature] 5/21/05
 Chief, Department of Planning and Zoning

SUBDIVISION: GTW'S WAVERLY WOODS SECTION/AREA: N/A PARCEL: 'A'
 BLOCK NO.: 22 & B ZONE: FOF & PEC TAX MAP: 10 & 16 ELEC. DIST.: THRD CENSUS TR.: 6030.00
 PLAT REF.: 17415-17417 WATER CODE: N/A SEWER CODE: N/A

RETAINING WALL ELEVATION

WAVERLY CORPORATE CENTER
 PARCEL 'A', PLAT No.

TAX MAP No. 10 PARCEL Nos. 324, 325 and 327
 TAX MAP No. 16 P/O PARCEL No. 249
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JANUARY 25, 2005

SHEET 8 OF 12 **SDP 04-126**

FOREST CONSERVATION WORKSHEET (PARCEL A)

BASIC SITE DATA:

A. TOTAL TRACT AREA	6.68
B. AREA WITHIN 100 YEAR FLOODPLAIN	1.0
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.0
D. NET TRACT AREA	5.68

LAND USE CATEGORY: CIA

INFORMATION FOR CALCULATIONS:

E. AFForestation THRESHOLD	15% x D = 0.85
F. FOREST CONSERVATION THRESHOLD	15% x D = 0.85

EXISTING FOREST COVER:

G. EXISTING FOREST COVER ON NTA	5.55
H. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	4.70
I. BREAK EVEN POINT	1.79

PROPOSED FOREST CLEARING:

J. TOTAL AREA OF FOREST TO BE CLEARED	4.30
K. TOTAL AREA OF FOREST TO BE RETAINED	1.17

AFForestation REQUIREMENTS:

L. NO FOREST CLEARING AFForestation threshold - existing forest	0.0
M. FOREST CLEARING (diff. thresh. - ex. forest) / (forest) to be cleared x 21.0	0.0

REFORESTATION REQUIREMENTS:

N. FOREST CLEARED ABOVE THRESHOLD: 4.2 x 1/4 = 1.05 ACRES	
O. FOREST RETAINED ABOVE THRESHOLD: 0.32 ACRES	
REFORESTATION REQUIRED (N - O)	0.78

CLEARING BELOW THRESHOLD:

P. FOREST CLEARED ABOVE THRESHOLD: 0.0 x 1/4 = 0.0 ACRES	
Q. FOREST RETAINED ABOVE THRESHOLD: 0.0 ACRES	
REFORESTATION REQUIRED (P + Q)	0.0

THE REFORESTATION OBLIGATION OF 0.78 AC. FOR THIS PLAN HAS BEEN MET BY A FEE-IN-LIEU PAYMENT OF \$16,980.40 TO THE HOWARD COUNTY FOREST CONSERVATION FUND.

ON-SITE SIGNAGE

FOREST CONSERVATION EASEMENT

UNAUTHORIZED DISTURBANCE OF VEGETATION IS PROHIBITED. VIOLATIONS SUBJECT TO PENALTIES UNDER THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1996.

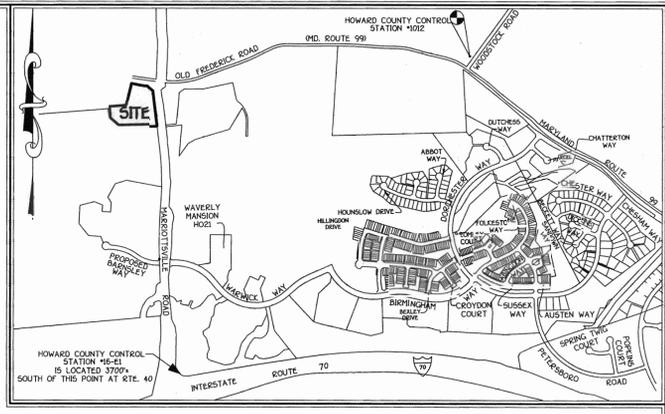
TREES FOR YOUR FUTURE

FOREST CONSERVATION EASEMENT TABLE

LINE	LENGTH	BEARING
FCE1	22.82'	N11°27'23"E
FCE2	12.39'	N41°31'45"E
FCE3	42.47'	S89°58'08"E
FCE4	93.64'	S89°53'37"E
FCE5	57.37'	N35°03'23"E
FCE6	70.02'	N24°42'37"E
FCE7	46.36'	S81°51'57"E
FCE8	45.48'	S70°00'17"E
FCE9	60.83'	S10°46'43"E
FCE10	61.07'	S43°07'24"E
FCE11	49.73'	N68°48'27"E
FCE12	125.14'	S05°32'35"E
FCE13	221.28'	S89°57'25"W
FCE14	72.90'	N48°52'27"W
FCE15	69.43'	N64°04'56"W
FCE16	66.45'	N78°32'37"W
FCE17	8.87'	N70°16'55"W

FLOODPLAIN TABULATION DATA

X-SECTION	ELEVATION
39	464.82
39.5	465.56
40	466.03
41	466.98
42	467.15
43	467.81
44	468.39

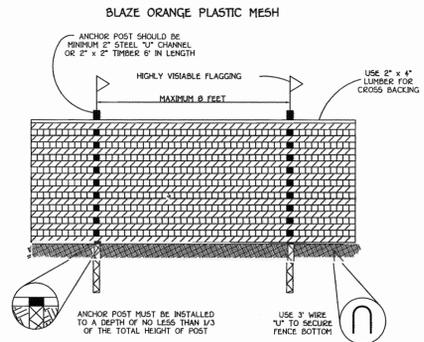


VICINITY MAP
SCALE: 1" = 1200'

FOREST STAND DATA (PARCEL 'A')

KEY	COMMUNITY TYPE	ACREAGE	DOMINANT VEGETATION	GENERAL CONDITION	PRIORITY ACREAGE (NTA)
F1	SUCCESIONAL	5.5 (NTA)	FRAXINUS PENNSYLANICA, ACER RUBRUM, LIRIODENDRON TULIPIFERA, QUERCUS PALUSTRIS, QUERCUS RUBRA, ROSA MULTIFLORA	FAIR	*1.0 + FLOODPLAIN 0.7 + WETLANDS 0.4 + WETLAND BUFFER

- NOTES:
- NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THE PROPERTY.
 - SURROUNDING LAND USE IS PRIMARILY MEDIUM DENSITY RESIDENTIAL.
 - ALL FOREST ON THE SITE IS WITHIN STAND F1.
- *AREA INCLUDES WETLANDS, STREAM BUFFER & WETLAND BUFFER LOCATED WITHIN THE FLOODPLAIN.



- NOTES:
- FOREST PROTECTION DEVICE ONLY.
 - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 - ROOT DAMAGE SHOULD BE AVOIDED.
 - PROTECTIVE SIGNAGE MAY ALSO BE USED.
 - DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

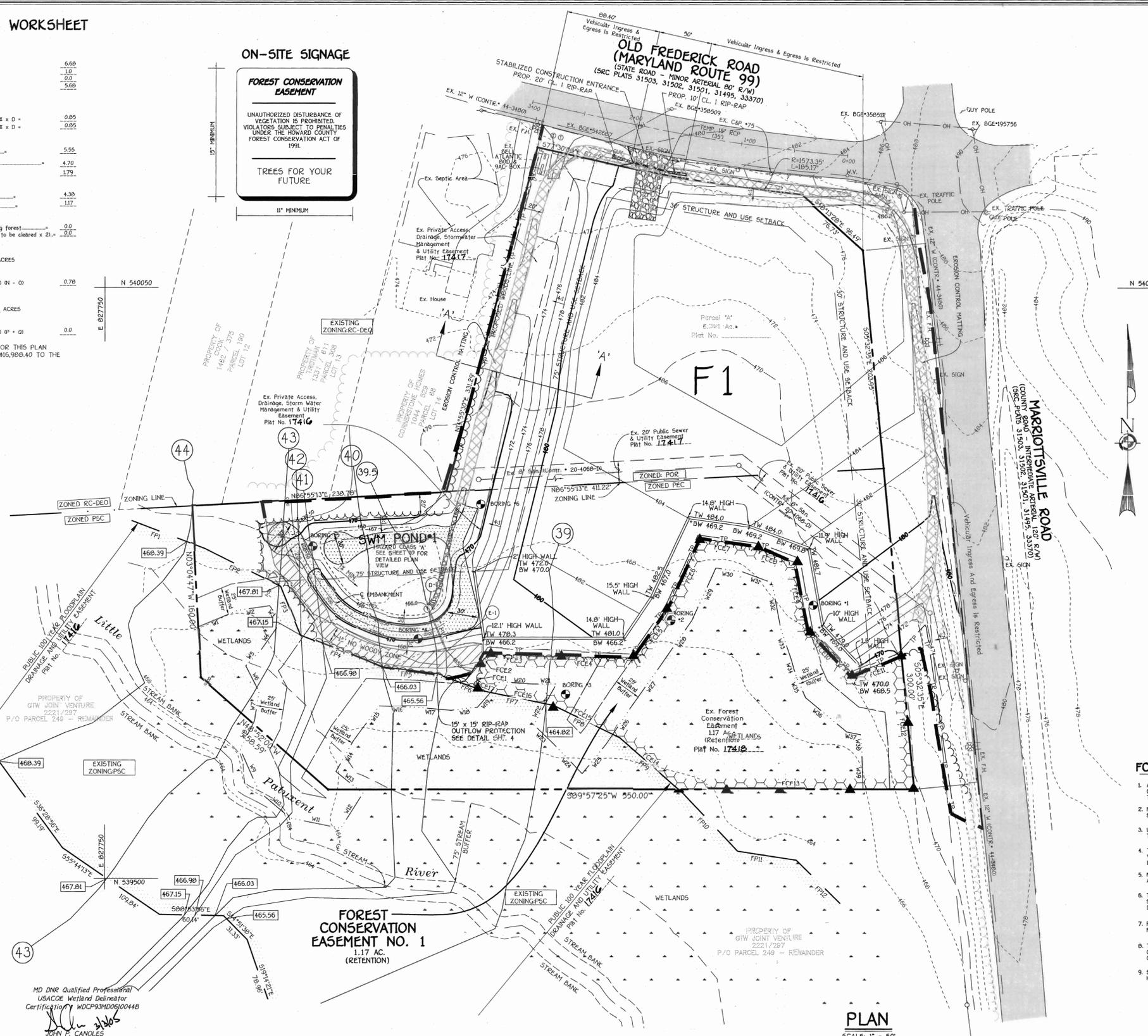
TREE PROTECTION DETAIL
NOT TO SCALE

FCP NOTES

- ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
- FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.
- LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
- THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
- NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
- TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE BOUNDARIES WHICH OCCUR WITHIN 50 FEET OF THE PROPOSED LIMITS OF DISTURBANCE.
- PERMANENT SIGNAGE SHALL BE PLACED 50' - 100' APART ALONG BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS.
- THE FOREST CONSERVATION REQUIREMENTS FOR THIS PLAN HAVE BEEN MET BY THE CREATION OF AN ON-SITE 1.17 ACRE RETENTION FOREST CONSERVATION EASEMENT AND A FEE-IN-LIEU PAYMENT OF \$16,980.40 TO THE HOWARD COUNTY FOREST CONSERVATION FUND FOR 0.78 ACRE OF REFORESTATION.
- SURETY IN THE AMOUNT OF \$10,933.04 FOR THE 1.17 ACRE ON-SITE RETENTION FOREST CONSERVATION EASEMENT HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT.

LEGEND

SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	EXISTING FOREST
---	PROPOSED FOREST
---	WETLANDS
---	WETLAND BUFFER
---	TEMPORARY PROTECTIVE FENCING
---	PERMANENT PROTECTIVE SIGNAGE
---	L.O.D. LIMIT OF DISTURBANCE



FOREST CONSERVATION EASEMENT NO. 1
1.17 AC. (RETENTION)

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification WDCP93MD06100448
JOHN P. CANOLES

ENGINEER'S CERTIFICATE

I 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.

Signature: *[Signature]* Date: 3-4-05

DEVELOPER'S CERTIFICATE

I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize the inspection by the Howard Soil Conservation District.

Signature of Developer: *[Signature]* Date: 3-4-05

Approved for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resource Conservation Service
This development plan is approved for soil erosion control by the HOWARD SOIL CONSERVATION DISTRICT.

Signature: *[Signature]* Date: *[Date]*

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Director - Department of Planning and Zoning
Chief, Planning and Development
Chief, Development Engineering Division

Signature: *[Signature]* Date: 6/8/05
Signature: *[Signature]* Date: 6/8/05
Signature: *[Signature]* Date: 5/21/05

OWNERS	DEVELOPER
GTW Joint Venture & DRBT, L.L.C. 5300 Dorsey Hall Drive Suite 102 Ellicott City, Maryland 21042	DRBT, L.L.C. 5300 Dorsey Hall Drive Suite 102 Ellicott City, Maryland 21042

SUBDIVISION	SECTION/AREA	PARCEL
GTW'S WAVERLY WOODS	N/A	'A'
PLAT REF. 17415-17417	BLOCK NO. 22 & B	TAX MAP 10 & 16
WATER CODE	ZONE POR & PEC	ELEC. DIST. THIRD
		CENSUS TR. 6030.00
	SEWER CODE	

FOREST STAND DELINEATION & FOREST CONSERVATION PLAN

WAVERLY CORPORATE CENTER
PARCEL 'A', PLAT No.

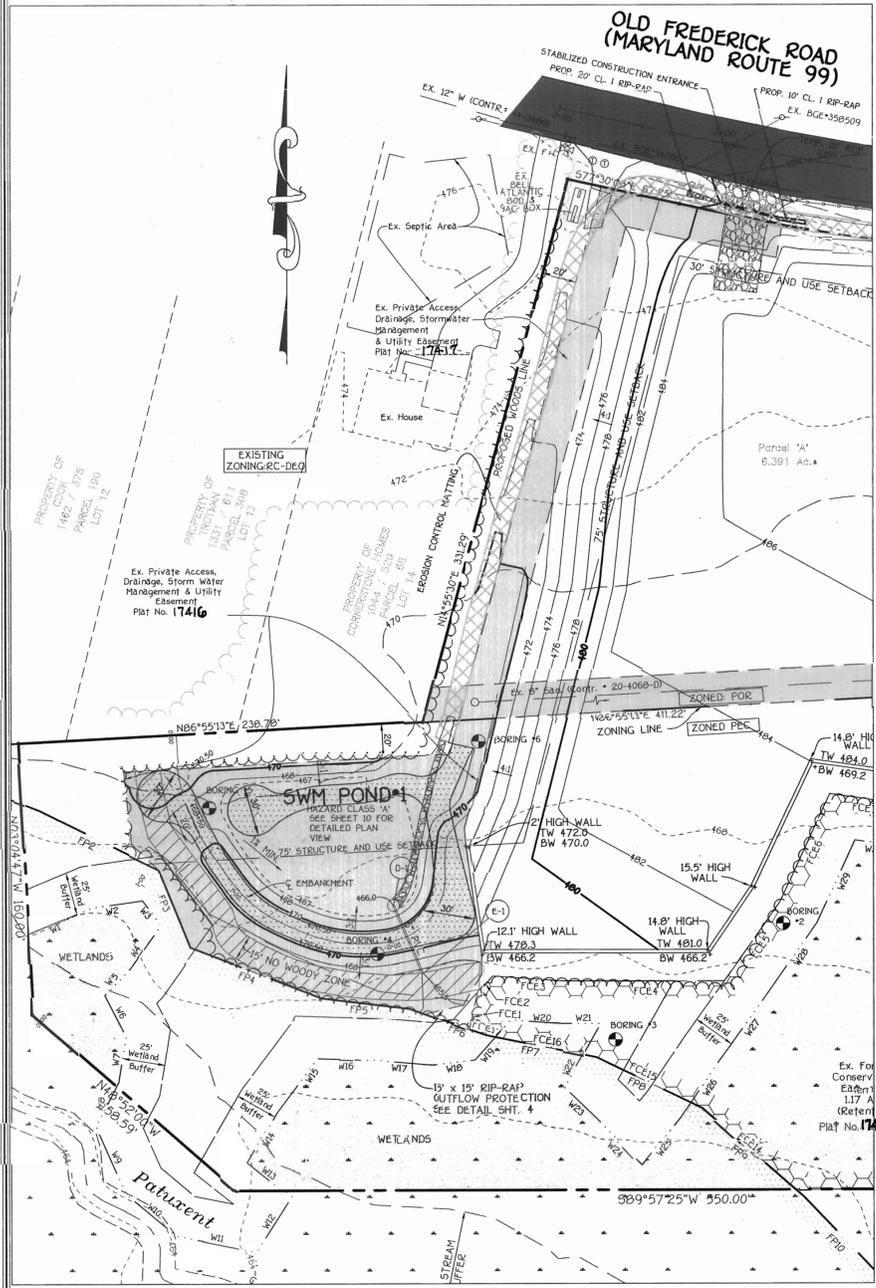
TAX MAP No. 10 PARCEL Nos. 324, 325 and 327
TAX MAP No. 16 P/O PARCEL No. 249
3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY 25, 2005

SHEET 9 OF 12 SCIP 04-126

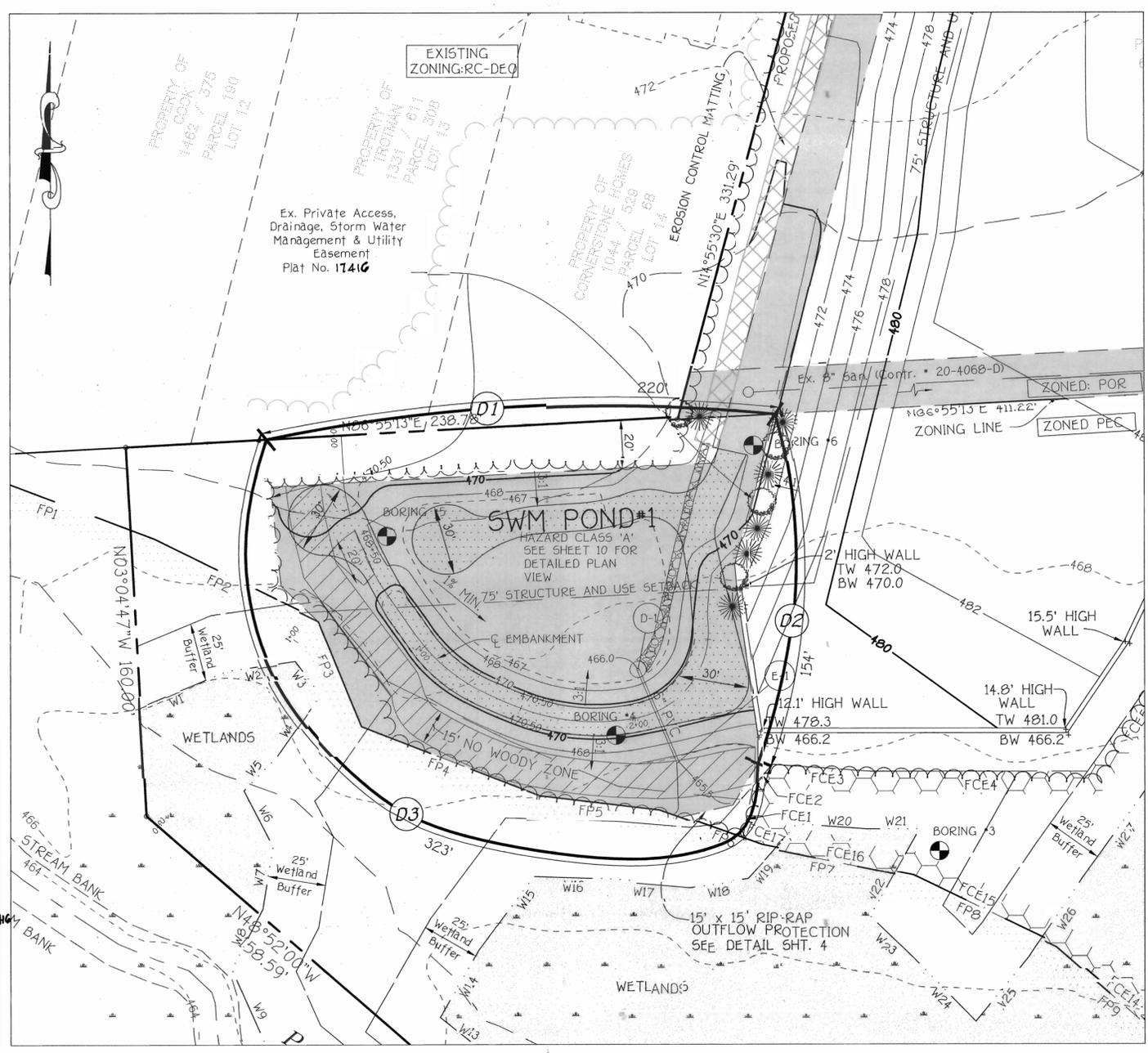
DESIGN BY: JPC
DRAWN BY: JCL/RAI
CHECKED BY: JPC

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
4100 W6 - 2095

DATE	DESCRIPTION	REVISION BLOCK



OVERALL PLAN
SCALE: 1" = 50'

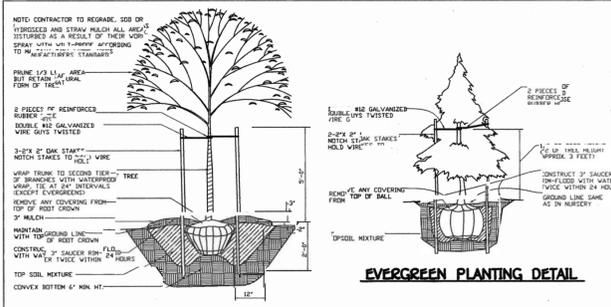


PLAN VIEW
SCALE: 1" = 30'

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING				
LINEAR FEET OF PERIMETER	D-1 220' TYPE 'C'	D-2 154' TYPE 'B'	D-3 323' TYPE 'B'	
CREDIT FOR EXISTING VEGETATION (NO, YES AND #)	YES (179) EX. TREES	NO	NO	YES (323) F.C.E.
CREDIT FOR OTHER LANDSCAPING (NO, YES AND #)	NO	NO	NO	
NUMBER OF TREES REQUIRED:				
SHADE TREES	1	3	4	0
EVERGREEN TREES	2	4	0	0
NUMBER OF TREES PROVIDED:				
SHADE TREES	1	3	4	0
EVERGREEN TREES	2	4	0	0

S.W.M. LANDSCAPING PLANT LIST			
QTY.	KEY	NAME	SIZE
4	☉	ACER RUBRUM 'OCTOBER GLORY' (OCTOBER RED MAPLE)	2 1/2" - 3" CALIPER FULL CROWN, B&B
6	☀	PINUS STROBUS EASTERN WHITE PINE	6' - 8' HT.

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.12 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL LIABILITY FOR THE REQUIRED LANDSCAPE TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$2,000.00.



PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein. All plant material, unless otherwise specified, shall be nursery grown, locally sourced, have a vigorous root system, and shall conform to the specifications of the American Society of Landscape Architects (ASLA) and the American Nursery Association (ANA). Plant material shall be healthy, appropriate to the site, and shall be delivered to the site in a timely manner. All plants shall be delivered to the site in a timely manner. All plants shall be delivered to the site in a timely manner. All plants shall be delivered to the site in a timely manner.

FACILITY SUMMARY

	1-YEAR	10 YEAR	100 YEAR
Developed Outflow (cfs)	0.09	11.6	36.4
Water Surface Elevation	468.11	468.06	469.17
Storage (ac. ft.)	0.325	0.543	0.633
Watershed Structure Type	Little Patuxent Extended Detention Dry Pond		
Structure Classification	LOW HAZARD A - Non-370		
Structure Location	Urban		
Storage Height	3.42 ft		
Watershed Area to Facility	7.36 Ac.		
Minimum Top Width Provided	12.0 feet		
Maximum Height of Fill	3.91 feet		
Freeboard Required	1 foot		
Freeboard Provided	Above 10 Year		
	1.64 foot		

FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED. MANAGEMENT PROVIDED: Cpv / 1-Year NO IMPERVIOUS SURFACES PROPOSED AT THIS TIME. THEREFORE, NO Rcv or WQV required.

DESIGN BY: tes
DRAWN BY: TSA
CHECKED BY: CJC

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
100 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2955

T. E. SCOTT & ASSOCIATES, INC.
118 COCKEYVILLE ROAD, SUITE 300
HIGHT VALLEY, MARYLAND 21090
(410) 288-2016

DATE	DESCRIPTION	REVISION BLOCK

ENGINEER'S CERTIFICATE
I Certify that this Plan for Pond Construction, Erosion and Sediment Control Represents a Practicable and Feasible 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 Reviewed the Construction Plans, Hereto Must Engage A Registered Professional Engineer To Supervise the Construction and provide the Howard Soil Conservation District with an "As-Built" plan of the Pond within 30 Days of Completion.

Signature: *[Signature]* Date: 3-4-05

DEVELOPER'S CERTIFICATE
I/We Certify that the Development and/or Construction will be Done According to These Plans, and that all responsible Personnel Involved in the Construction Project will Have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion Before Beginning the Project. I 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 the Howard Soil Conservation District Inspections by the Howard Soil Conservation District.

Signature: *[Signature]* Date: 3-4-05

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Signature: *[Signature]* Date: _____

Howard SCD

OWNERS
GTW Joint Venture & DRBT, L.L.C.
5300 Dorsey Hill Drive
Suite 182
Ellicott City, Maryland 21042

DEVELOPER
DRBT, L.L.C.
5300 Dorsey Hill Drive
Suite 102
Ellicott City, Maryland 21042

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: *[Signature]* Date: 6/6/05

Signature: *[Signature]* Date: 6/6/05

Signature: *[Signature]* Date: 5/20/05

SUBDIVISION	GTW'S WAVERLY WOODS	SECTION/AREA	N/A	PARCEL	'A'
PLAT REF.	17415-17417	BLOCK NO.	22 & 8	ZONE FOR & PEC	22 & 8
TAX MAP	10 & 16	ELEC. DIST.	THIRD	CENSUS TR.	6030.00
WATER CODE	N/A	SEWER CODE	N/A		

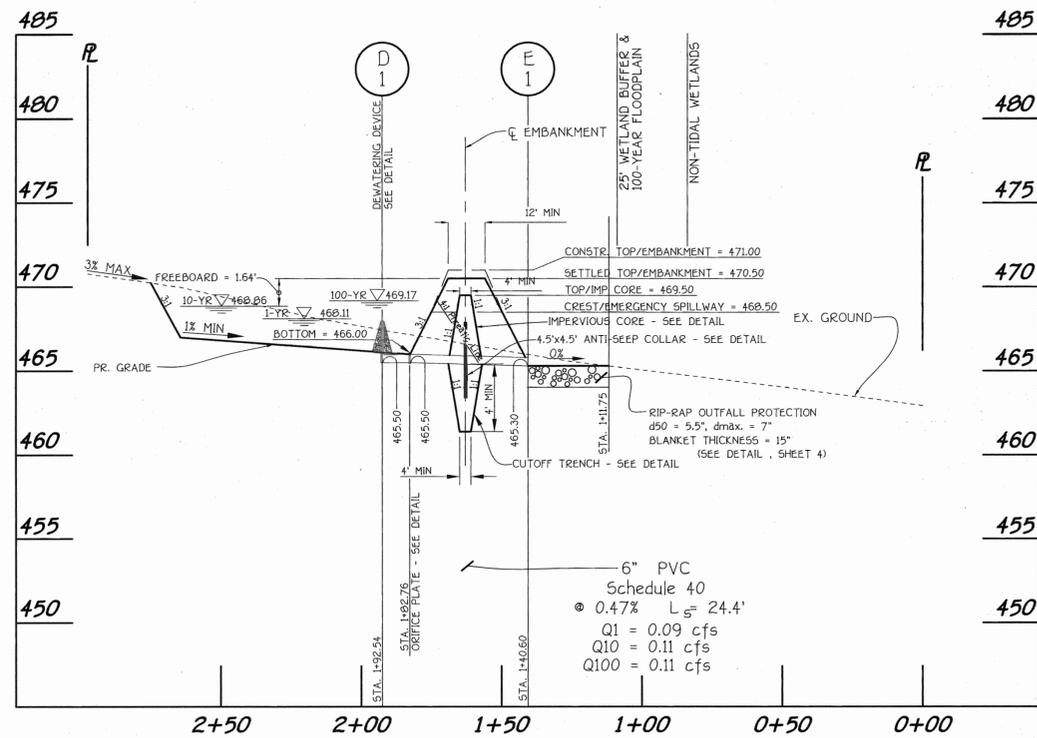
SITE DEVELOPMENT PLAN
SWM PLAN & LANDSCAPING

WAVERLY CORPORATE CENTER
PARCEL 'A', PLAT No.

TAX MAP No. 10 PARCEL Nos. 324, 325 and 327
TAX MAP No. 16 P/O PARCEL No. 249
3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY 25, 2005

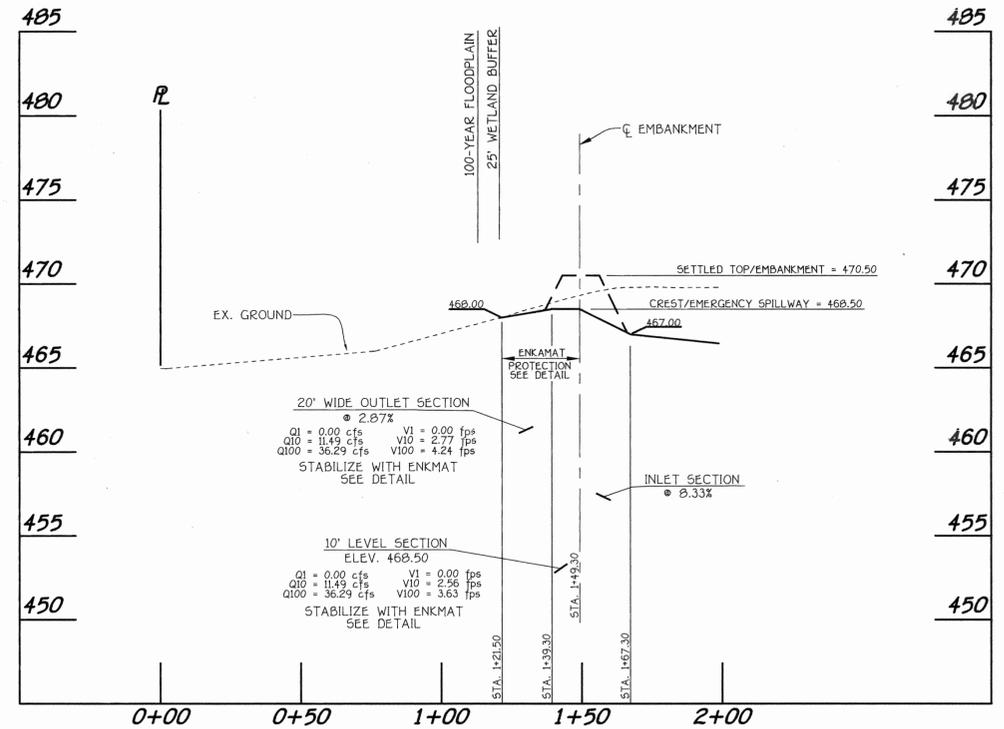
SHEET 10 OF 12 **SDP-04-126**

SDP-04-126



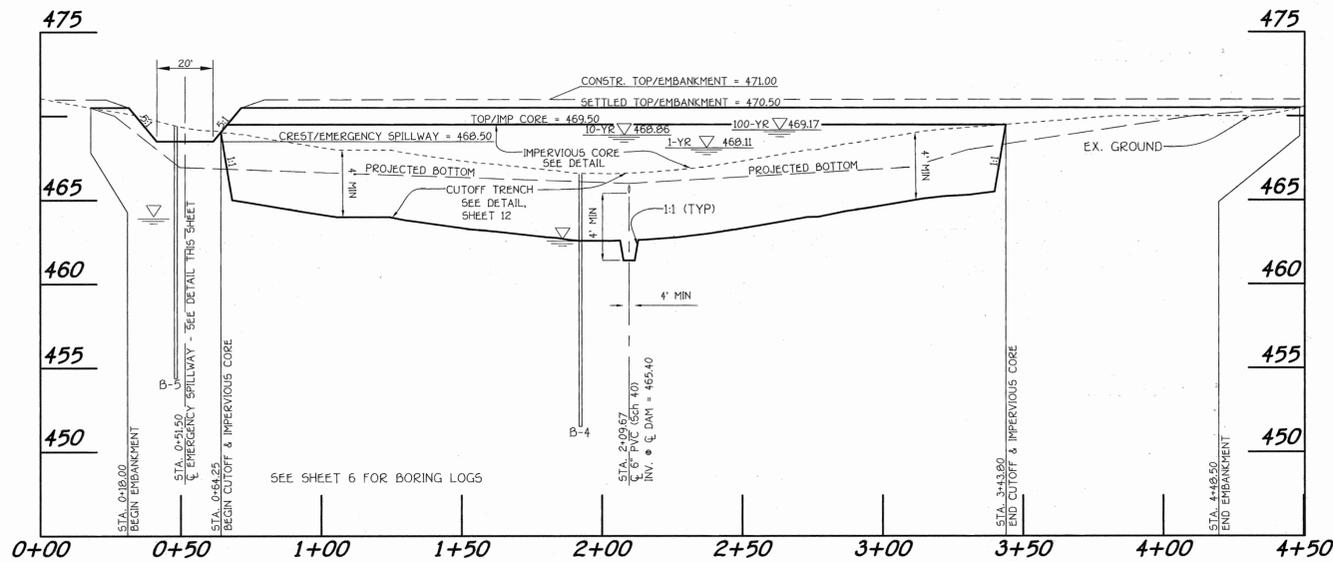
PROFILE THRU DEWATERING DEVICE

SCALE: H: 1" = 30'
V: 1" = 5'



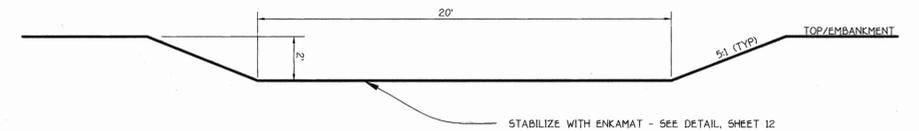
PROFILE THRU EMERGENCY SPILLWAY

SCALE: H: 1" = 30'
V: 1" = 5'



PROFILE ALONG CENTERLINE EMBANKMENT

SCALE: H: 1" = 30'
V: 1" = 5'



EMERGENCY SPILLWAY TYPICAL CROSS SECTION

SCALE: H: 1" = 30'
V: 1" = 5'

DESIGN BY: IES
DRAWN BY: TSA
CHECKED BY: CJC

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
410.462.2955

T. E. SCOTT & ASSOCIATES, INC.
128 COCKEYSVILLE ROAD SUITE 300
HUNT VALLEY, MARYLAND 21036
410.489.0218

DATE	DESCRIPTION	REVISION BLOCK

ENGINEER'S CERTIFICATE
I Certify that the SWM Plan for Pond Construction, Erosion and Sediment Control Represents A Practical and Feasible 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 Reviewed the Developer's Plans and I Certify that the Plans Meet the Requirements of the District. I Authorize Professional Engineers 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: *[Signature]* Date: 3-4-05

DEVELOPER'S 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 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 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 Office Inspections by the Howard Soil Conservation District.

Signature of Developer: *[Signature]* Date: 3-4-05

Reviewed for HOWARD SCD and meets Technical Requirements.
Signature: *[Signature]* Date: 5/19/05
Signature: *[Signature]* Date: 5/19/05

OWNERS
GTW Joint Venture & DRBT, LLC.
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042

DEVELOPER
DRBT, LLC.
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: *[Signature]* Date: 4/19/05
Signature: *[Signature]* Date: 4/18/05
Signature: *[Signature]* Date: 5/25/05

SUBDIVISION	SECTION/AREA	PARCEL
GTWS WAVERLY WOODS	N/A	'A'
PLAT REF: 17415-17417	BLOCK NO. 22 & B	ZONE FOR & PEC
WATER CODE	TAX MAP 10 & 16	ELEC. DIST. THRD
N/A	SEWER CODE	CENSUS TR. 6030.00

SITE DEVELOPMENT PLAN
SWM PROFILES

WAVERLY CORPORATE CENTER
PARCEL 'A', PLAT No.

TAX MAP No. 10 PARCEL Nos. 324, 325 and 327
TAX MAP No. 16 P/O PARCEL No. 249
3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY 25, 2005

SHEET 11 OF 12 SDP 04-126

STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-370. All references to ASTM and AASHTO specifications apply to the most recent version.

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 abutment 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 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.

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 center of the embankment, and cut-off trench shall conform to Unified 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 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 - 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, 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 Practice).

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 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.

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 completed 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 921.09, Class C.

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 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 temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree. Whenever the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or 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 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 sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, soil 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

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.

OPERATION AND MAINTENANCE

An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs shall be retained in a file. The issuance of a Maintenance and Repair Permit for any repairs or maintenance that involves the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.

PIPE CONDUITS

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

- Materials - Galvanized 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-190 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 requirements 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 dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.
- Coupling bands, anti-seep collars, and sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.
- 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 collars shall be connected to the pipe in such a manner as to be completely watertight. Double collars are not considered to be watertight.

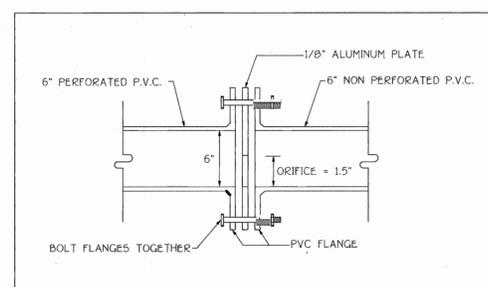
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITIES

ROUTINE MAINTENANCE

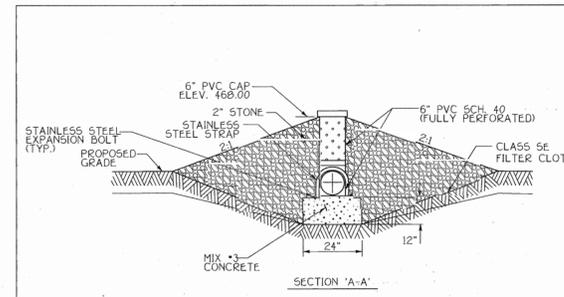
- Facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the pond is functioning properly.
- Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access roads be mowed as needed.
- Debris and litter shall be removed during regular mowing 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

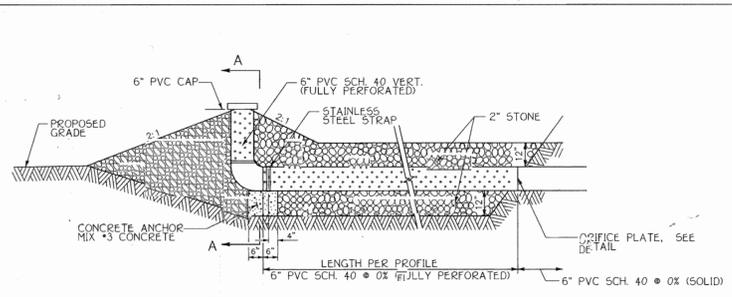
- Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
- Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond or forebay, is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.



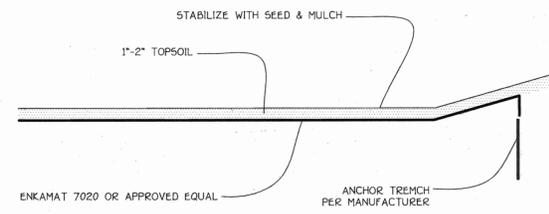
ORIFICE PLATE DETAIL
NOT TO SCALE



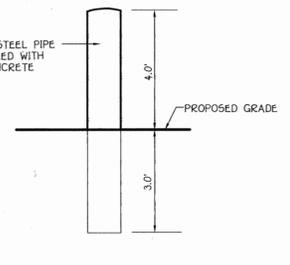
DEWATERING DEVICE DETAIL
NOT TO SCALE



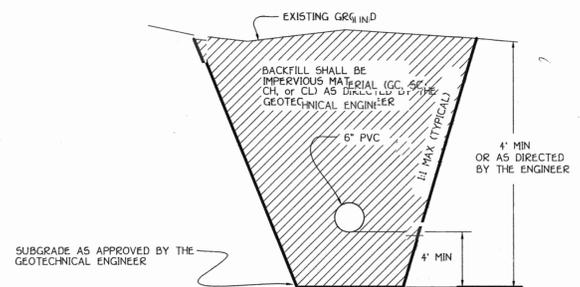
IMPERVIOUS CORE DETAIL
NOT TO SCALE



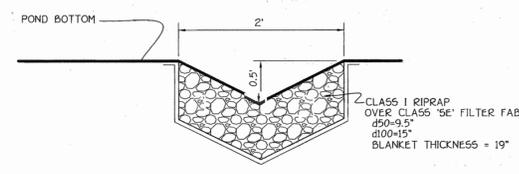
ENKAMAT DETAIL
NOT TO SCALE



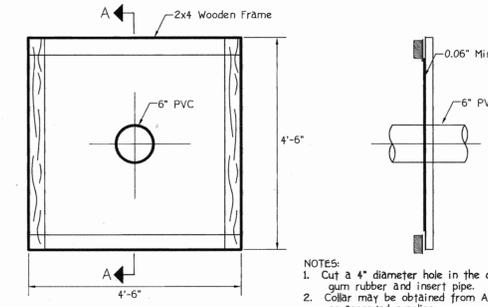
BOLLARD DETAIL
NOT TO SCALE



CUTOFF TRENCH DETAIL
NOT TO SCALE



PILOT CHANNEL DETAIL
NOT TO SCALE



ANTI-SEEP COLLAR DETAIL
NOT TO SCALE

DESIGN BY: tes
DRAWN BY: TSA
CHECKED BY: CJC

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS, LAND SURVEYORS
CONTINENTAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
410.481.2095

T. E. SCOTT & ASSOCIATES, INC.
158 COCKEYVILLE ROAD, SUITE 300
HIGHTS VALLEY, MARYLAND 21030
410.289.0276

DATE	DESCRIPTION	REVISION BLOCK

ENGINEER'S CERTIFICATE

I, *John R. Robertson*, PE, a Professional Engineer in the State of Maryland, do hereby certify that the design and construction of the above project complies with the requirements of the Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

Signature: *John R. Robertson* Date: **3-4-05**

DEVELOPER'S CERTIFICATE

I, *John R. Robertson*, do 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 the Environment Approved Training Program for Pollution Prevention, Erosion and Sediment Control, and Stormwater Management. I shall employ a Registered Professional Engineer to Supervise Pond Construction and Provide the Howard Soil Conservation District with a copy of the approved plan and a copy of the inspection report within 30 days of completion.

Signature: *John R. Robertson* Date: **3-4-05**

Reviewed for HOWARD SCD and meets Technical Requirements.

Jim Meyer Date: **5/19/05**

John R. Robertson Date: **5/19/05**

OWNERS
GTW Joint Venture & DRBT, L.L.C.
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042

DEVELOPER
DRBT, L.L.C.
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Mark A. Leys Date: **6/16/05**

Director - Department of Planning and Zoning

David Kamnitz Date: **6/16/05**

Chief, Division of Development

William J. ... Date: **5/24/05**

Chief, Division of Engineering Division

SUBDIVISION	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
GTW'S WAVERLY WOODS	22 & B	POK & PEC	10 & 16	THIRD	6030.00

SECTION/AREA: N/A
PARCEL: 'A'

PLAT REF: 17A15-17A17
WATER CODE: N/A
SEWER CODE: N/A

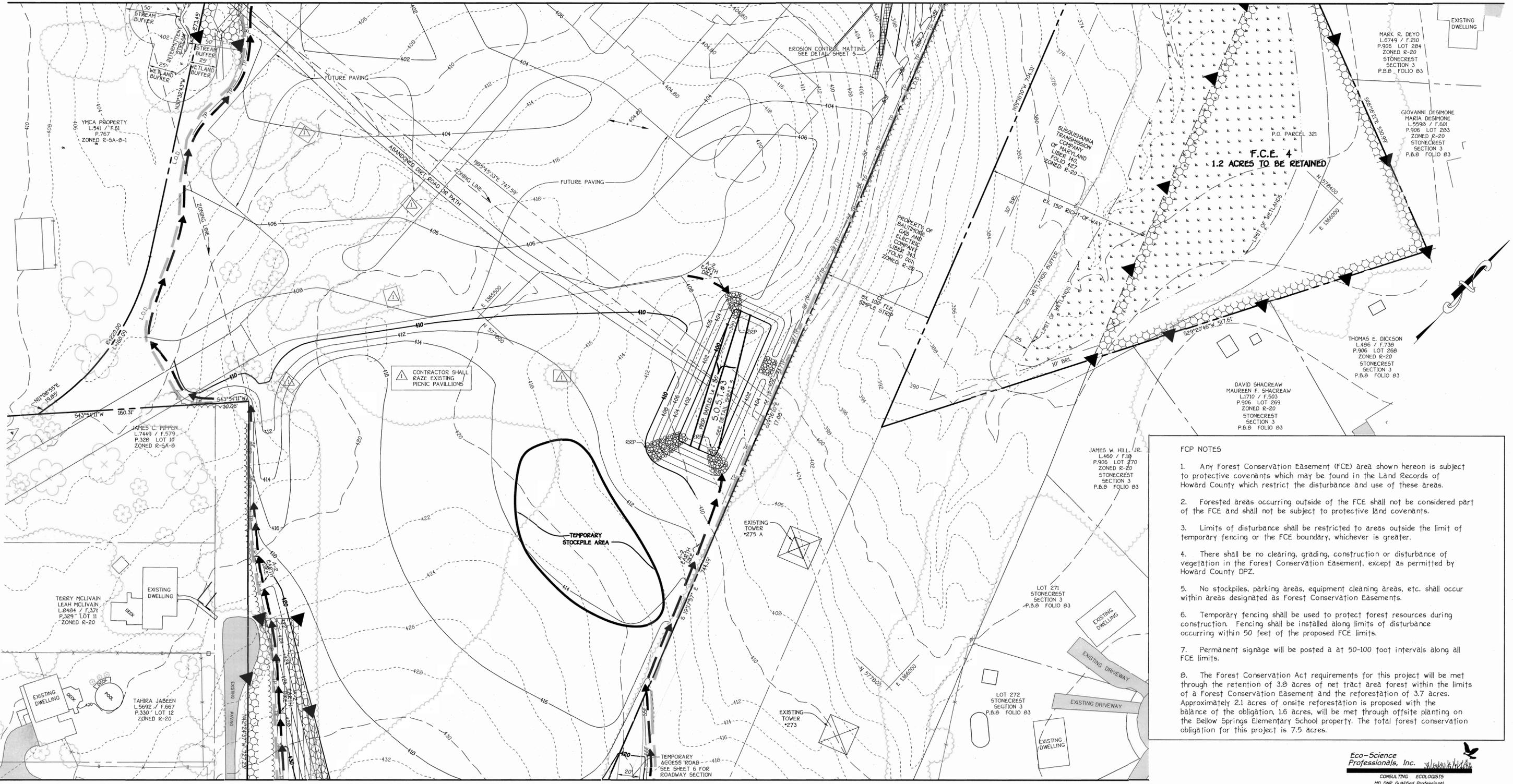
SITE DEVELOPMENT PLAN
SWM NOTES & DETAILS

WAVERLY CORPORATE CENTER
PARCEL 'A', PLAT No.

TAX MAP No. 10 PARCEL Nos. 324, 325 and 327
TAX MAP No. 16 P/O PARCEL No. 249
3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY 25, 2005

SHEET 12 OF 12 **SDP 04-126**
SDP-04-126

MATCH LINE SEE SHEET 12



MATCH LINE SEE SHEET 10

PLAN
SCALE: 1" = 40'

- FCP NOTES**
- Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
 - Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants.
 - Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.
 - There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
 - No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.
 - Temporary fencing shall be used to protect forest resources during construction. Fencing shall be installed along limits of disturbance occurring within 50 feet of the proposed FCE limits.
 - Permanent signage will be posted at a 50-100 foot intervals along all FCE limits.
 - The Forest Conservation Act requirements for this project will be met through the retention of 3.8 acres of net tract area forest within the limits of a Forest Conservation Easement and the reforestation of 3.7 acres. Approximately 2.1 acres of onsite reforestation is proposed with the balance of the obligation, 1.6 acres, will be met through offsite planting on the Below Springs Elementary School property. The total forest conservation obligation for this project is 7.5 acres.

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS
MD DNR Qualified Professional
USDA/ACEC Watershed Delimitator
Certification: WDCP94MD060044B
JOHN P. CANOLES

ENGINEER'S CERTIFICATE
I hereby certify that this Plan for Erosion and Sediment Control represents an additional and workable plan based on my personal knowledge of the conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
Signature: Jim Meyer
Date: 6/11/05
U.S.D.A. - Natural Resources Conservation Service

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to this Plan of Development and Plan for Erosion and Sediment Control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources approved training program for the control of sediment and erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.
Signature: John R. Polster
Date: 6/11/05
District: Howard Soil Conservation District

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: Mark A. Langley 6/8/05
Director - Department of Planning and Zoning
Signature: Cindy Gantner 6/8/05
Chief, Division of Land Development
Signature: [Signature] 4/10/05
Chief, Development Engineering Division

PREPARED FOR:
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention: Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-8700

Address Chart	
Parcel Number	Street Address
P.O. 321	VFW LA OFF COLUMBIA PIKE
P.O. 767	4443 MONTGOMERY ROAD

PROJECT	FUTURE	SECTION/AREA	P.O. PARCEL
NORTHEASTERN ELEMENTARY SCH.	N/A	321 & 767	
DEED REF.	BLOCK NO.	ZONE	TAX/ZONE
9030/201, 9030/437 & 9030/445	24	R-20 R-SA-β-1 R-SC-1	24
WATER CODE	SEWER CODE	ELEC. DIST.	CENSUS TR.
F04	5750615	SECOND	6028.00

FOREST CONSERVATION PLAN
MASS GRADING PLAN FOR FUTURE NORTHEASTERN ELEMENTARY SCHOOL
TAX MAP No: 24 GRID No: 24 P.O. PARCEL Nos: 321 & 767
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: MAY 19, 2005
SHEET 11 OF 13 SDP-05-109

K:\SDSPROJ\40386\Mass Grading\40386 FOR-CON PLAN (SHEETS 10,11,12).dwg, 5/19/2005 4:17:05 PM

**OFFSITE REFORESTATION FCE#8
NORTHEASTERN ELEMENTARY SCHOOL**

Planting units required: 1120
Planting units proposed: 1125

Qty	Species	Size	Spacing	Total Units
10	Liriodendron tulipifera - Tulip poplar	1" cal.	15' o.c.	105
10	Quercus alba - White oak	1" cal.	15' o.c.	
10	Quercus rubra - Red oak	1" cal.	15' o.c.	
30	Total 1" caliper trees (3.5 planting units per tree)	FCA unit credit		
90	Acer rubrum - Red maple	2-3' whip	11' o.c.	1020
55	Cornus florida - Flowering dogwood	2-3' whip	11' o.c.	
100	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
100	Quercus alba - White oak	2-3' whip	11' o.c.	
90	Prunus serotina - Black cherry	2-3' whip	11' o.c.	
75	Viburnum prunifolium - Blackhaw	2-3' whip	11' o.c.	
510	Total whip plantings (2 planting unit per tree)	FCA unit credit		
Total Unit Credit				1125

- Planting Notes/Key:
- One inch caliper trees shall be planted along the outer edge of the FCE along. The species may be randomly placed.
 - Whip plantings should be installed in a curvilinear pattern to facilitate maintenance but avoid a grid appearance. Tree shelters should be installed on all whip plantings.

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.

All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, larvae and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug, no holes-in-plants from cold storage will be accepted.

Unless otherwise specified, all general conditions, planting operations, details and planting specifications shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Area" (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects, latest edition, including all addenda.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.

Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of construction of site construction.

Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.

Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence.

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans.

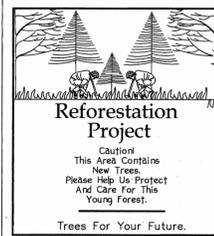
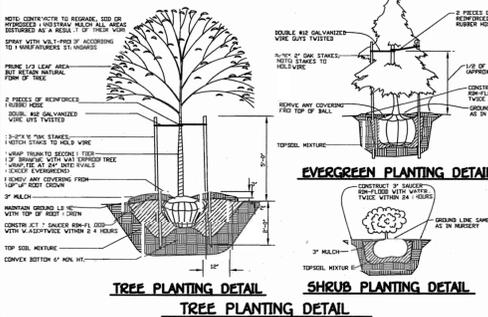
Positive drainage shall be maintained in planting beds 2 percent slope.

Planting mix shall be as follows: deciduous plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen plants - Two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.

Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its compatibility to the specific ground cover to be treated.

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.

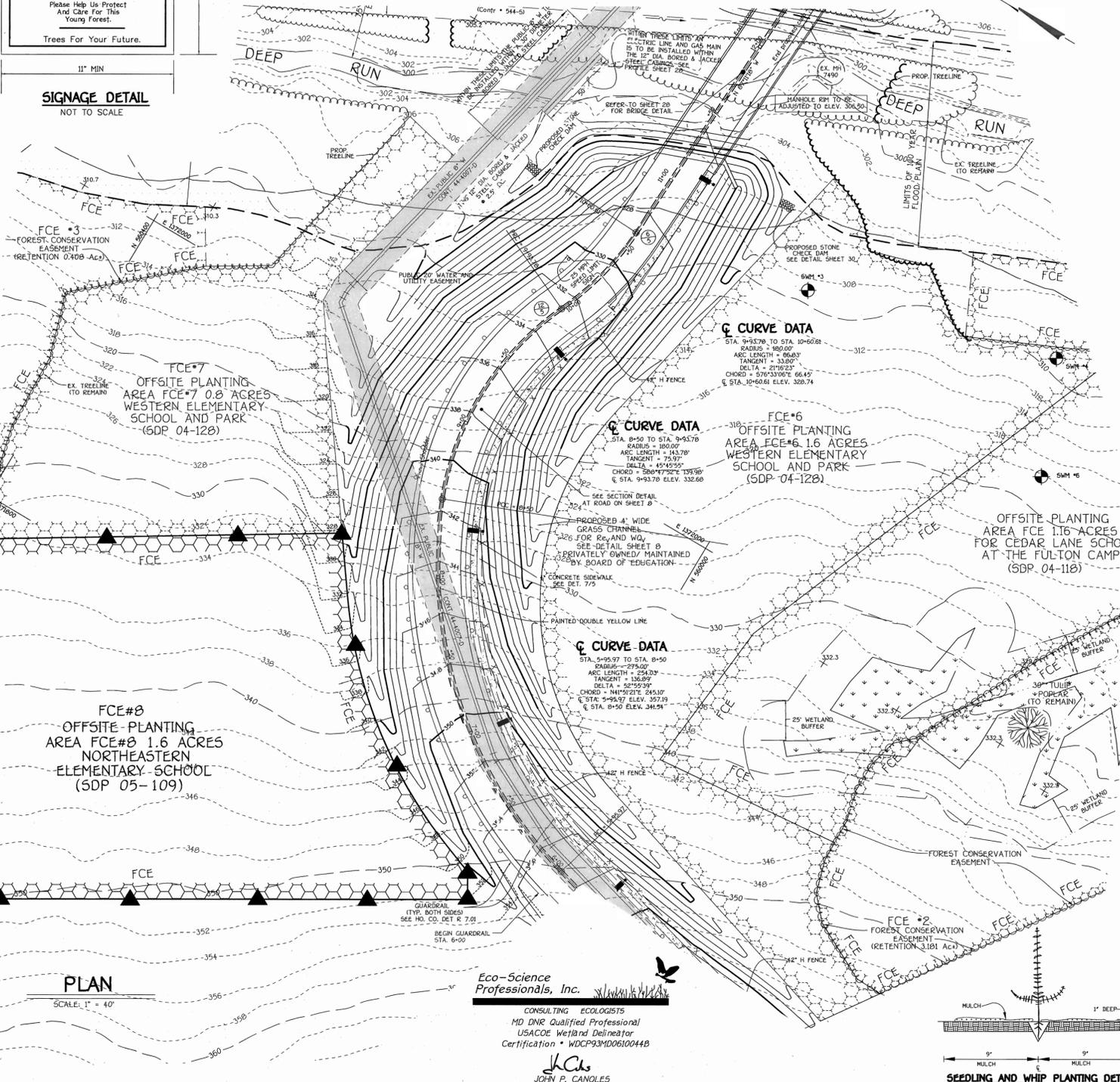
This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.



THIS PLAN IS FOR FOREST PLANTING ONLY

FCE LEGEND

- Denotes Public Forest Conservation Easement.
- Permanently signed location spaced at 100' intervals (maximum) and at every angle break.

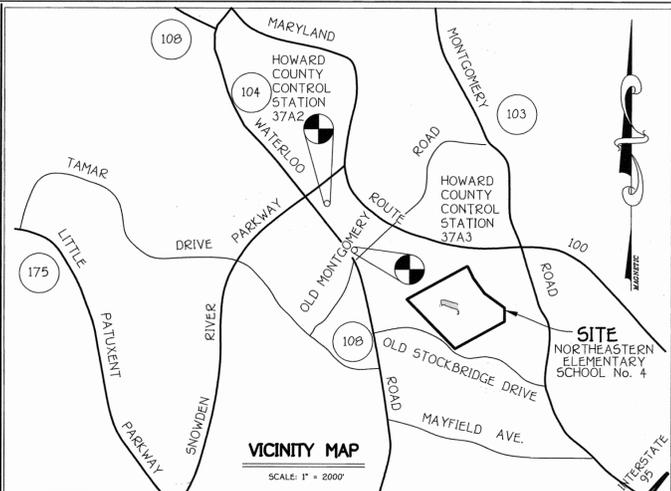


PLAN

SCALE: 1" = 40'

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS
MD DNR Qualified Professional
USACE Wetland Delineator
Certification # WDCP93M00610044B

J.P.C.
JOHN P. CANOLES



Planting/Soil Specifications

- Installation of bareroot plant stock shall take place between March 15 - April 20; b&b/container stock March 15 - May 30 or September 15 - November 15. Fall planting of B&B stock is not recommended.
- Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
- Bareroot plants shall be installed so that the top of root mass is level with the top of existing grade. Roots shall be dipped in an anti-desiccant gel prior to planting. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or equivalent.
- Fertilizer shall consist of Agriform 22-8-2, or equivalent, applied as per manufacturer's specifications, for woody plants. Herbaceous plants shall be fertilized with Osmocote 6-6-12.
- Plant material shall be transported to the site in a tarped or covered truck. Plants shall be kept moist prior to planting.
- All non-organic debris associated with the planting operation shall be removed from the site by the contractor.

Sequence of Construction

- Sediment control shall be installed in accordance with general construction plan for site.
- Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the project.
- Upon completion of the planting, signage shall be installed as shown.
- Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.

Maintenance of Plantings

- Maintenance of plantings shall last for a period of 2 years.
- Plantings must receive 2 gallons of water, either through precipitation or watering, weekly during the 1st growing season, as needed. During second growing season, once a month during May-September, if needed.
- Invasive exotics and noxious weeds will be removed, as required, from planting areas mechanically and/or with limited herbicide application (see groundcover note where appropriate). Old field successional species will be retained.
- Plants will be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.
- Dead branches will be pruned from plantings.

Guarantee Requirements

- A 75 percent survival rate of forestation plantings will be required at the end of 2 growing seasons. All plant material below the 75 percent threshold will be replaced at the beginning of the next growing season. Wild trees arising from natural regeneration may be counted up to 50 percent towards the total survival number if they are healthy, native species at least 12 inches tall.

Surety for Forestation

- The developer shall post a surety bond (letter of credit) to ensure that forestation plantings are completed.

Planting Notes

When possible, plants shall be installed within 24 hours of delivery. If installation cannot be performed within this time frame, plant stock shall be watered and protected from desiccation.

Application of herbicide, Round-up or equivalent, may be used to reduce plant competition from old field successional growth at the time of installation. Mowing, re-application of herbicide, or a combination thereof, may be used to control unwanted competing vegetation.

Planting shall be installed within one year or two growing seasons of subdivision approval. Plantings shall be installed in accordance with the time schedule included in Note 1 of the planting/seeding specifications.

Multiflora Rose Control Note

Multiflora rose is prevalent in certain areas to be afforested. Prior to planting all multiflora rose shall be removed. Removal of the rose may be performed with mowing and herbicide treatments. Physical removal of all too growth following by a periodic herbicide treatment of stump sprouts is recommended. Native tree and shrub species occurring within the rose thickets should be retained wherever possible. Herbicides treatments shall occur on 2 month intervals during the first growing season and once each in the spring and fall for subsequent years. Herbicide used shall be made specifically to address woody plant material and shall be applied as per manufacturer's specifications. Care should be taken not to spray planted trees or naturally occurring native tree/shrub seedlings. It is recommended that initiation of rose removal begin at least six months prior to planting.

NOTE: THE 1.6 AC. OF FOREST PLANTING AT NORTHEASTERN ELEMENTARY SCHOOL #4 SDP 02-36 IS TO SATISFY THE REQUIRED FOREST PLANTING THAT IS REQUIRED TO FULFILL THE FORESTATION REQUIREMENTS OF THE FUTURE NEW NORTHEASTERN ELEMENTARY SCHOOL SITE. SDP 05-109.

ENGINEER'S CERTIFICATE

I hereby certify that this Plan for Erosion and Sediment Control Represents the Best and Feasible Plan Based on My Personal Knowledge and Experience and that I was Prepared in Accordance With the Requirements of the Howard Soil Conservation District.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21114
410-461-2955

John M. Fisher
Professional Engineer
Date: 5-23-05

DEVELOPER'S CERTIFICATE

"I/We Certify that All Development and Construction Will Be Done According to This Plan of Development and Plan for Erosion and Sediment Control and That All Responsible Personnel Involved in the Construction Project Will Have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion Before Beginning the Project. I Also Authorize Periodic On-Site Inspection by the Howard Soil Conservation District or Their Authorized Agents, As Are Deemed Necessary."

John P. Canoles
Signature of Developer
Date: 5-23-05

Approved: This Development is Approved for Erosion and Sediment Control by the Howard Soil Conservation District.
John B. Rector
District Howard Soil Conservation Dist.
Date: 6/1/05

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Mark J. Leyle
Director - Department of Planning and Zoning
Date: 6/1/05

Clara Harwitz
Chief, Division of Land Development
Date: 6/1/05

John P. Canoles
Chief, Development Engineering Division
Date: 6/1/05

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-8700

Address Chart

Parcel Number	Street Address
P.O. 321	VFW LA OFF COLUMBIA PIKE
P.O. 767	4443 MONTGOMERY ROAD

PROJECT	FUTURE	SECTION/AREA	P.O. PARCEL
NORTHEASTERN ELEMENTARY SCH.	N/A	321 & 767	
DEED REF.	BLOCK NO.	ZONE	TAX/ZONE
9030/201	24	R-20	24
9030/437 & 9030/445		R-5A-B-1 R-5C-1	
WATER CODE	F04	SEWER CODE	5750615

OFF-SITE FOREST PLANTING PLAN AT NORTHEASTERN ELEMENTARY SCHOOL SDP02-36

MASS GRADING PLAN FOR FUTURE NORTHEASTERN ELEMENTARY SCHOOL

TAX MAP NO: 24 GRID NO: 24 P.O. PARCEL Nos: 321 & 767
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY 19, 2005

SHEET 13 OF 13
SDP-05-109