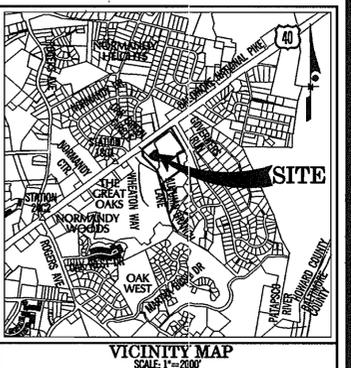


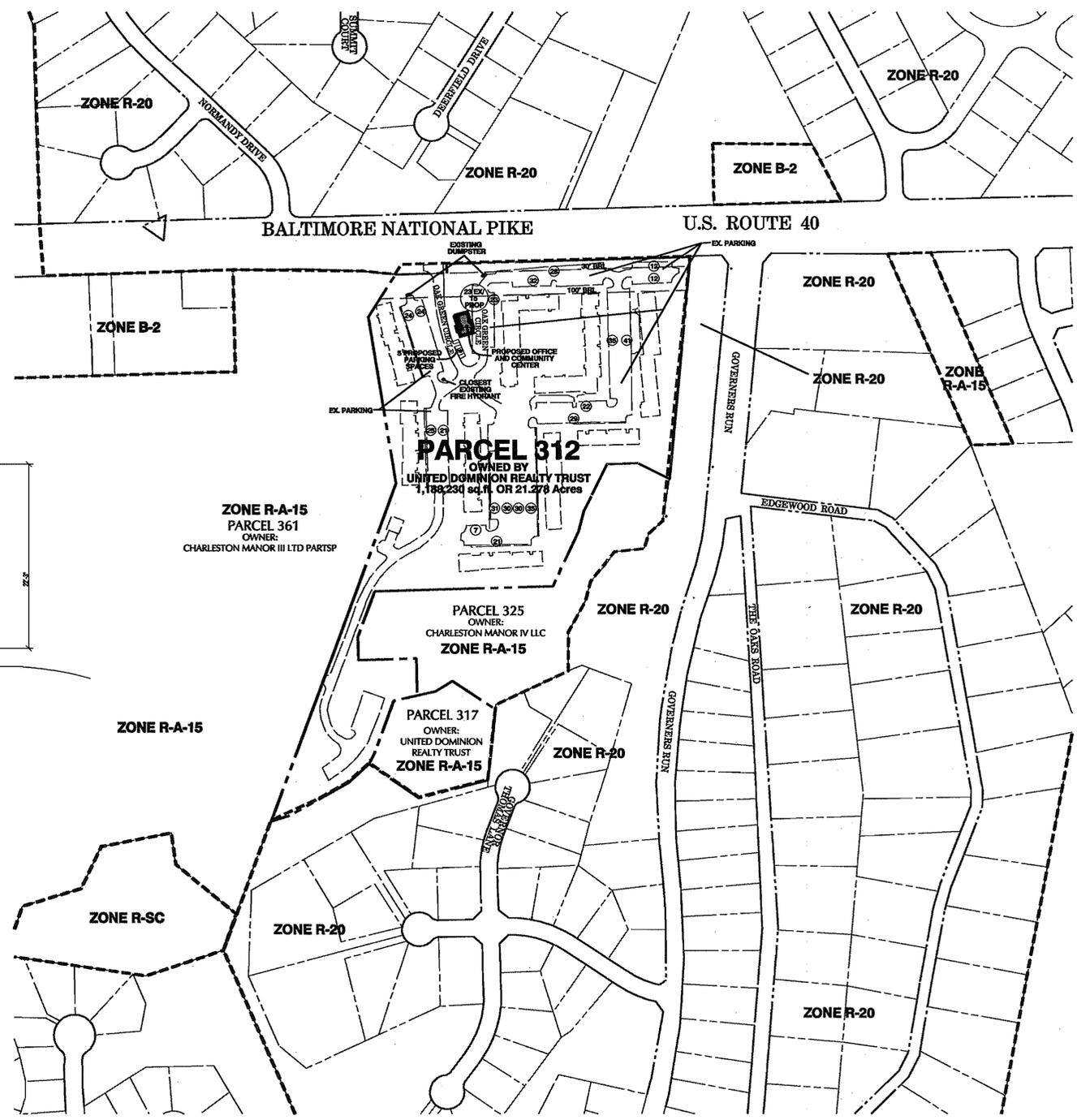
# Site Development Plan Dominion Great Oaks' OFFICE AND COMMUNITY CENTER HOWARD COUNTY, MARYLAND

LEGEND	EXISTING	PROPOSED
FEATURE NAME		
PROPERTY LINES	---	---
LOT LINES	---	---
RIGHTS-OF-WAY	---	---
EASEMENTS	---	---
BUILDING RESTRICTION LINES	---	---
CENTERLINES	---	---
CURBS AND GUTTER	---	---
SIDEWALKS	---	---
PAVEMENT	---	---
BUILDINGS	---	---
SPOT ELEVATIONS	---	---
BENCH MARKS	---	---
CONTOURS	---	---
STREAMS	---	---

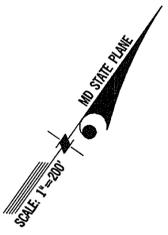


- SHEET INDEX**
1. LOCATION PLAN
  2. SITE DEVELOPMENT PLAN
  3. SEDIMENT CONTROL/STORMWATER MANAGEMENT PLAN
  4. SEDIMENT CONTROL AND STORMWATER MANAGEMENT DETAILS
  5. LANDSCAPE PLAN
  6. RETAINING WALL PLAN
  7. RETAINING WALL PLAN
  8. RETAINING WALL PLAN
  9. FOREST STAND DELINEATION/CONSERVATION PLAN

**VERTICAL DATUM NOTE:**  
PLAN ELEVATIONS SHOWN HEREON - 117.82 = HOWARD COUNTY VERTICAL DATUM (NAVD88)



**SCHEMATIC PROFILE OF BUILDING**  
SCALE = 1/4" = 1'  
Information based on plans provided by architects



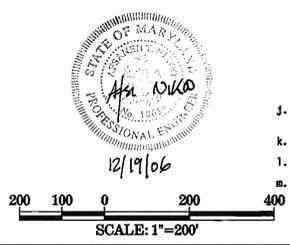
- GENERAL NOTES**
1. The subject property is zoned R-A-15 as per the February 2, 2004 Rezoning Plan.
  2. Boundary and 2' topographic information by Desberry & Davis and supplemented by a field survey by Greenhorne & O'Mara July 2005.
  3. Forest Conservation obligations in accordance with Section 16.1202 of the Howard County Code and Forest Conservation Manual are fulfilled by 2.30 acres of forest retention easement detailed in Plat of Forest Conservation Easement. The retention survey in the amount of \$20,037.60 posted with Developer's Agreement. Delineation information is on file with this Site Development Plan.
  4. Landscaping in accordance with Section 16.124 of the Howard County Code and Landscape Manual shall be provided by the planting of 9 shade trees, 0 evergreens, and 15 shrubs. Survey in the amount of \$3,140 shall be posted with the Developer's Agreement for this project.
  5. All plan dimensions are to face of curb unless otherwise noted.
  6. Stormwater management will be provided by a Manhole Stormfilter in conjunction with a grassed channel, and will be owned and maintained by the facility owner.
  7. Vertical Datum: Plan Elevations shown hereon - 117.82 = Howard County Datum (NAVD 88). Horizontal Datum is NAD 83.
  8. Water and Sewer are both private.
  9. There is no floodplain on this site.
  10. There are no wetlands on this site.
  11. A traffic study has been completed stating that there is no need for mitigation due to this development proposal. This study references the Carmax-Elliott City traffic study that was recently completed. The referenced study is included on file with this Site Development Plan.
  12. The site is within the Lower Patapsco River Watershed and the Sucker Branch Subwatershed.
  13. All existing trees noted on plan are in generally good condition.
  14. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSA standards and specifications if applicable.
  15. The contractor shall notify the department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313.1880 at least five (5) working days prior to the start of work.
  16. The contractor shall notify "Miss Utility" at 1.800.257.7777 at least 48 hours prior to any excavation work being done.
  17. For fire suppression system details and building signage details see Architectural Drawings.

**SITE ANALYSIS DATA CHART**

- a. Total Project Area: 1,118,230 S.F. (21.28 acres). File Reference SDP 06-093/Forest Conservation Plat of Easement
- b. Area of Plan Submission (Club House): 30,000 S.F. (0.69 acres).
- c. Limit of Disturbance Area: 14,314/- S.F. (0.33 acres).
- d. Proposed building to be used as one-story office/community center for existing residential community. Uses include Manager/Leasing Office, Fitness Room, and Community Center.
- e. Proposed floor space: 2,002 S.F. (1 Level)-Multi-use. Uses include Manager/Leasing Office, Fitness Room, and Community Center.
- f/g. 0 new residential units proposed. Existing conditions: 299 residential units on site. 1 unit used as Manager/Leasing office is to be converted back to residential use, for a total of 300 residential units as approved on SDP #71-69.
- h/1. Parking Calculations - Existing apartments: 1.5 spaces (per SDP #1-69)/du @ 300 units = 450 spaces required  
Proposed office/community center: 6 spaces/1000 sq.ft @ 2002 sq.ft = 12 spaces required = 505 spaces  
8 spaces to be removed  
5 spaces proposed  
Net Loss = 3 spaces

TOTAL SPACES REQUIRED: 462  
TOTAL SPACES PROVIDED: 502

- j. 2.005 acres of recreation space as recorded in the plat Community Recreation Area for The Great Oaks Plat #72-49. Parcel #317 (Real Property #02232995).
- k. Building coverage including new building is 107,996 square feet, or 12.9% of the lot.
- l. DPZ File References: F71-63, F72-49, SDP #71-69, SDP #06-93/FC Plat of Easement, 01/04/12/75c
- m. This site development plan is for a portion of the same property as SDP #71-69.



BEFORE BEGINNING CONSTRUCTION CONTACT  
**"MISS UTILITY"**  
AT  
**1-800-257-7777**  
AT LEAST 48 HOURS PRIOR TO EXCAVATION

SDP-06-093			
ADDRESS CHART			
LOT/PARCEL NUMBER	STREET ADDRESS		
312	3005 OAK GREEN CIRCLE		
PERMIT INFORMATION CHART			
Subdivision Name	DOMINION GREAT OAKS	Section/Area	Lot/Parcel Number
Plat # or L.F.	P.B. 21, L. 09	Grid #	18
Zoning	R-A-15	Elect. Distr.	2
Tax Map No.	18	Census Tract	602900
Water Code		Sewer Code	

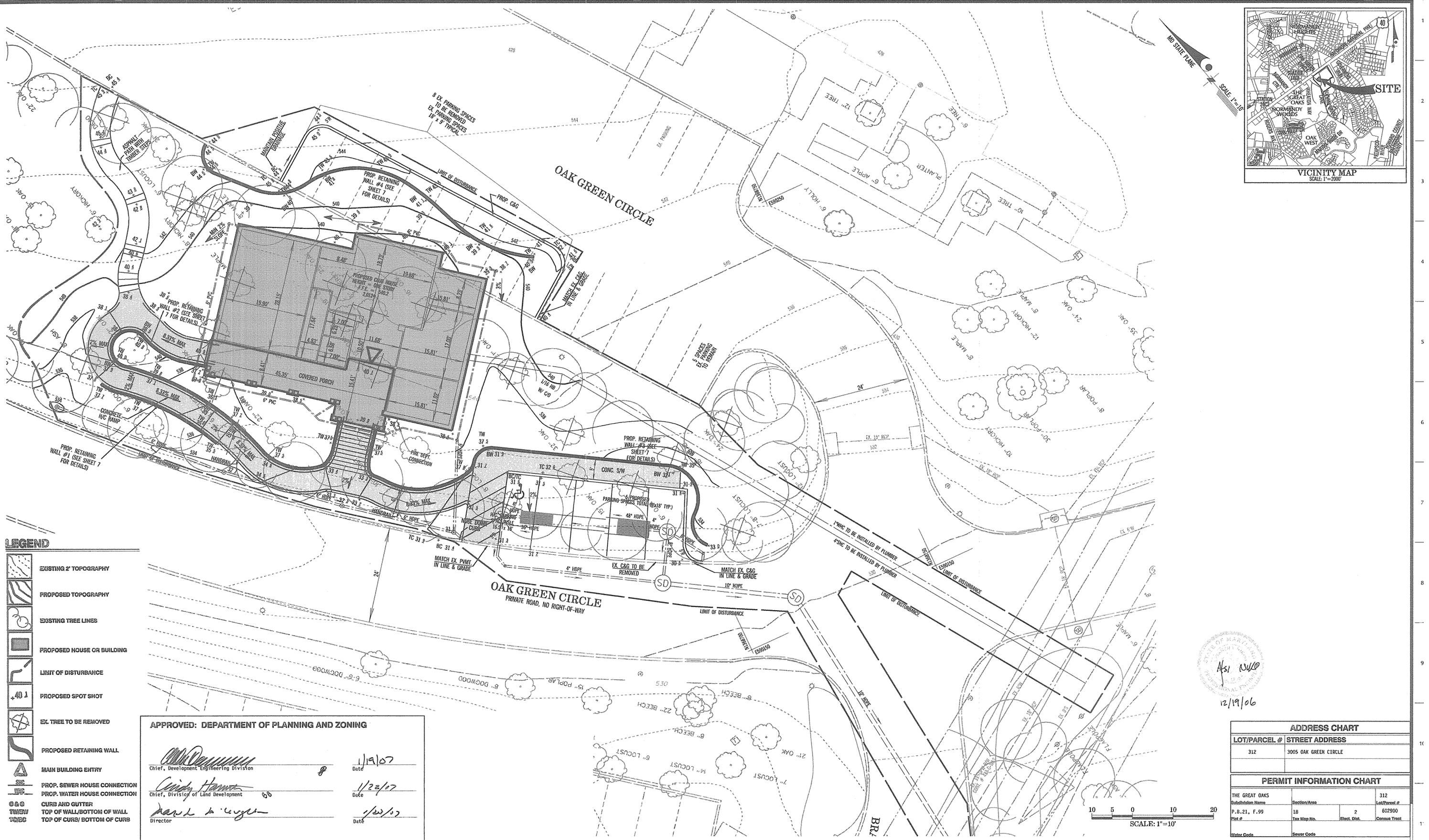
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>[Signature]</i> Chief, Development Engineering Division	Date: 1/19/07
<i>[Signature]</i> Chief, Division of Land Development	Date: 1/22/07
<i>[Signature]</i> Director	Date: 1/22/07
APPROVED: FOR PUBLIC OR PRIVATE WATER AND PUBLIC OR PRIVATE SEWERAGE SYSTEMS	
County Health Officer Howard County Health Department	Date:

No.	REVISION	DATE	BY

**GREENHORNE & O'MARA**  
CONSULTING ENGINEERS  
20410 CENTURY BOULEVARD., SUITE 200, GERMANTOWN, MARYLAND 20874  
PHONE: (301) 444-8282 FAX: (301) 444-8181  
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© LATEST DATE HEREON

LOCATION PLAN  
DOMINION GREAT OAKS'  
**OFFICE AND COMMUNITY CENTER**  
ONE STORY  
TAX MAP 18, GRID 19  
PARCEL 312, 317  
2nd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

HLR/IS	DESIGN	SCALE	1" = 200'
MAD	DRAWN	1	OF 9
CHECKED	SHEET	OCT. 2005	SDP#06-093/ PROJ No. 071134
DATE	FILE No.		



**LEGEND**

- EXISTING 2' TOPOGRAPHY
- PROPOSED TOPOGRAPHY
- EXISTING TREE LINES
- PROPOSED HOUSE OR BUILDING
- LIMIT OF DISTURBANCE
- PROPOSED SPOT SHOT
- EX. TREE TO BE REMOVED
- PROPOSED RETAINING WALL
- MAIN BUILDING ENTRY
- PROP. SEWER HOUSE CONNECTION
- PROP. WATER HOUSE CONNECTION
- CURB AND GUTTER
- TOP OF WALL/BOTTOM OF WALL
- TOP OF CURB/BOTTOM OF CURB

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

*[Signature]* 1/19/07  
 Chief, Development Engineering Division Date

*[Signature]* 1/23/07  
 Chief, Division of Land Development Date

*[Signature]* 1/23/07  
 Director Date

AS1 12/19/06

ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
312	3005 OAK GREEN CIRCLE

PERMIT INFORMATION CHART			
THE GREAT OAKS	Section/Area	312	Lot/Block #
Subdivision Name			
P. B. 21, F. 99	18	2	602900
Plot #	Tax Map No.	Elect. Dist.	Census Tract
Water Code	Sewer Code		

SCALE: 1"=10'

**PREPARED FOR:**  
 UNITED DOMINION REALTY TRUST  
 400 EAST CARY STREET  
 RICHMOND, VA 23219  
 CONTACT: MR. BRENT EPPS  
 PHONE: (804) 780.2691 x1218  
 FAX: (804) 788.0635

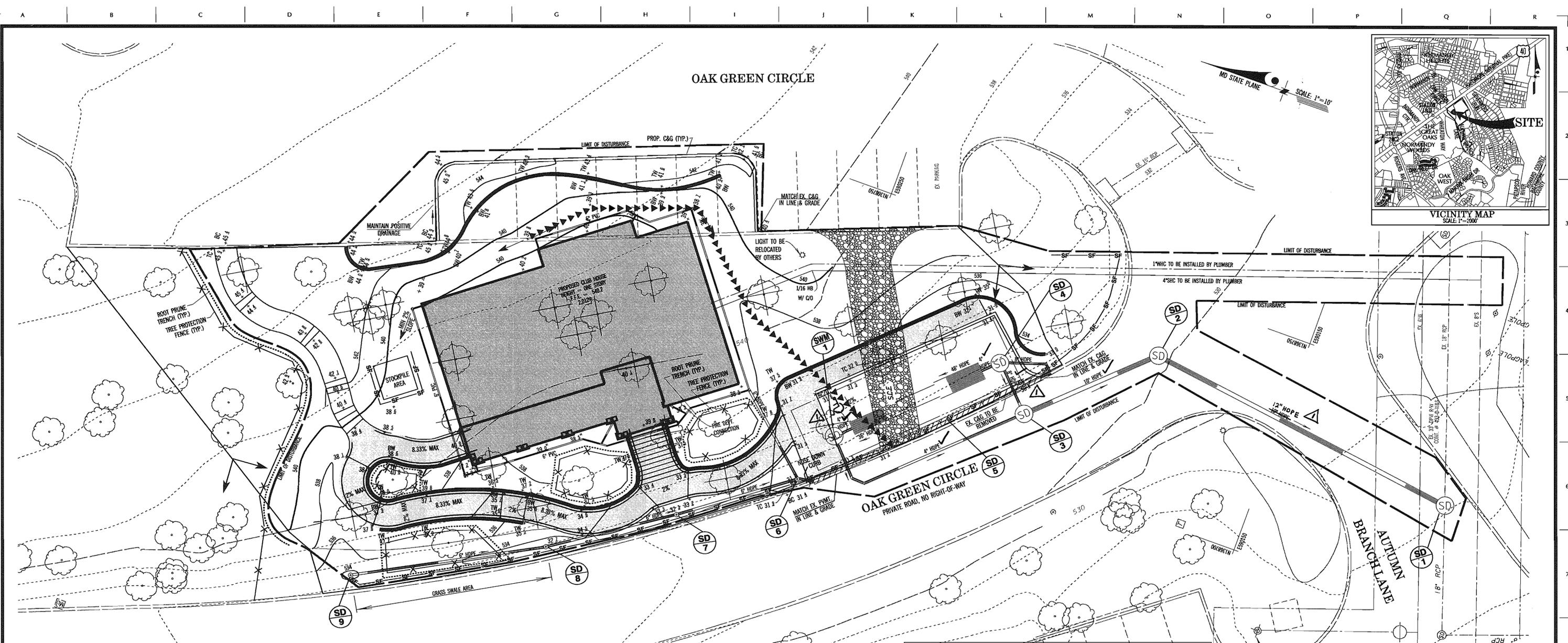
No.	REVISION	DATE	BY



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**SITE DEVELOPMENT PLAN**  
 DOMINION GREAT OAKS'  
**OFFICE AND COMMUNITY CENTER**  
 ONE-STORY  
 TAX MAP 18, GRID 19  
 PARCEL 312, 317  
 2nd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

HLR/S	SCALE	1" = 10'
DESIGN		
HLR		
DRAWN		
CHECKED		
SHEET		
JAN. 2006	SDP/06-093/	R-387-X
DATE	PROJ No. 071134	FILE No.

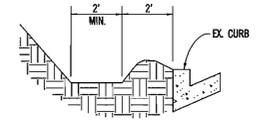


**OPERATION AND MAINTENANCE FOR PRIVATELY OWNED UNDERGROUND FACILITIES**

- The underground stormwater management facility is privately owned and it shall be the responsibility of the owner to inspect and clean the facility to maintain its operation and function.
- The underground stormwater management facility shall be inspected yearly at a minimum and after especially severe storm events.
- When sediment accumulation of more than 2" is observed or any debris that might obstruct the outfall is observed, the facility shall be cleaned.
- The facility shall be cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies notifying them of the spill and cleanup operation.
- The sediment and debris shall be removed from the underground stormwater management facility by vacuum truck or other manual means. The owner shall follow proper cleaning and disposal of the removal material and liquid.
- The inlet and outlet pipes shall be checked for any obstructions at least once every six (6) months. If obstructions are found, the owner shall have them removed and properly disposed of.

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

*Chief, Development Engineering Division* 8/19/07  
*Chief, Division of Land Development* 8/23/07  
*Director* 8/23/07

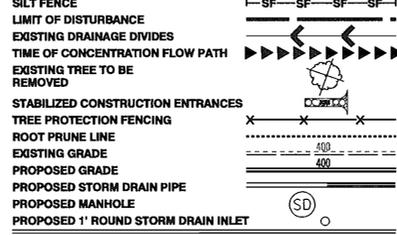


**GRASS SWALE DETAIL**

**SEQUENCE OF CONSTRUCTION**

- Notify Howard DPW, Sediment Control Inspector 24 hours prior to start of construction at (410) 489-7987. (1 day)
  - Install sediment control devices per approved plan, including construction entrance and silt fence. (3 days)
  - Contact the Howard DPW, Sediment Control Inspector to inspect installation of all sediment controls before proceeding with any additional construction. (1 day)
  - Commence grading for building and parking construction. Demolish existing curb and gutter as shown on approved plan. All unwanted material to be hauled offsite must go to a Sediment and Erosion Controlled stockpile or site. (1 week)
  - Commence building construction. (5 months)
  - Commence excavation for utility & storm drain construction. Install water & sewer connections. Install roof drain and Storm Water Management facility per plan. (3 weeks)
  - Stabilize all disturbed areas. Remove all sediment control devices and stabilize any areas disturbed by their removal. (1 week)
- Total construction time: 6 months, 2 weeks

**LEGEND**



**STORMWATER MANAGEMENT**

DRAINAGE AREA TO STORMFILTER = 14,400 SF  
 CN = 74  
 SOIL TYPE = B  
 WQv = 416 CF  
 Rev = 108 CF  
 Cpv - NOT REQUIRED, Q1-YR LESS THAN 2.0 CFS

**SILT FENCE TO BE REPLACED BY "SUPER" SILT FENCE AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR**

**DESIGN CERTIFICATION**

"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: *AFSI T. NIKOO* DATE: 8/14/06  
 PRINTED NAME AND TITLE: AFSI T. NIKOO, P. E. MD. REG. #18659 REGISTRATION NUMBER

**DEVELOPER 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."

DATE: 9/14/06  
 Signature: *Gregory N. Deegan, J.P.*  
 PRINTED NAME AND TITLE: GREGORY N. DEEGAN, J.P.

BEFORE BEGINNING CONSTRUCTION CONTACT  
**"MISS UTILITY"**  
 AT  
**1-800-257-7777**  
 AT LEAST 48 HOURS PRIOR TO EXCAVATION

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Signature: *Jim Myers* DATE: 1/17/07  
 Signature: *John R. Robertson* DATE: 1/17/07

PREPARED FOR:  
 UNITED DOMINION REALTY TRUST  
 400 EAST CARY STREET  
 RICHMOND, VA 23219  
 CONTACT: MR. BRENT EPPS  
 PHONE: (804) 780.2691 x1218  
 FAX: (804) 788.0635

No.	REVISION	DATE	BY
1	ADD AS-BUILT INFO	5/27/08	DL3



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SEDIMENT CONTROL/STORMWATER MANAGEMENT PLAN  
 DOMINION GREAT OAKS'  
**OFFICE AND COMMUNITY CENTER**  
 ONE-STORY  
 TAX MAP 18, GRID 19  
 PARCEL 312, 317  
 2nd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

KWC	DESIGN	SCALE	1" = 10'
KWC	DRAWN		
CHECKED	SHEET		3 OF 9
DATE	OCT. 2005	071134	R-3890-X
		PROJ No.	FILE No.

### STANDARD SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).
- 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: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins must be fenced and warning signs posted around their perimeter in accordance with Vol 1, Chapter 12 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

7. Site Analysis:

Total Area of Site	21.28 Acres
Area Disturbed	0.33 Acres
Area to be roofed or paved	0.18 Acres
Area to be vegetatively stabilized	0.15 Acres
Total Cut	608 Cu. Yds.
Total Fill	4 Cu. Yds.
Offsite waste/borrow area location:	N/A

- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized by the end of each work day, whichever is shorter.

### PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

- Preferred -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.)
- Acceptable -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding -- For the periods March 1 -- April 30, and August 1 -- October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 -- July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 -- February 28, protect site by:

- Option 1 -- Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring.
- Option 2 -- Use sod. Option 3 -- Seed with 60 lbs/acre Kentucky 30 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching -- Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Maintenance -- Inspect all seeding areas and make needed repairs, replacements and reseedings.

### TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

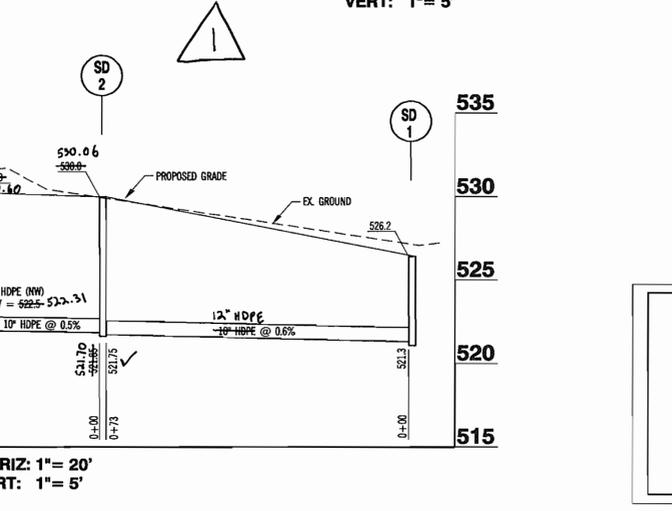
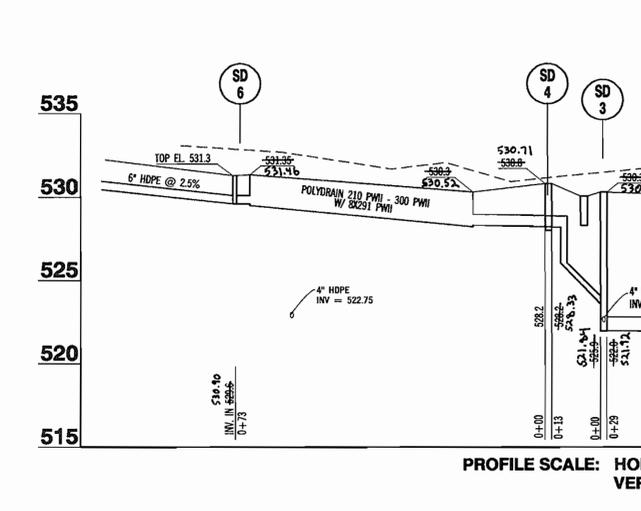
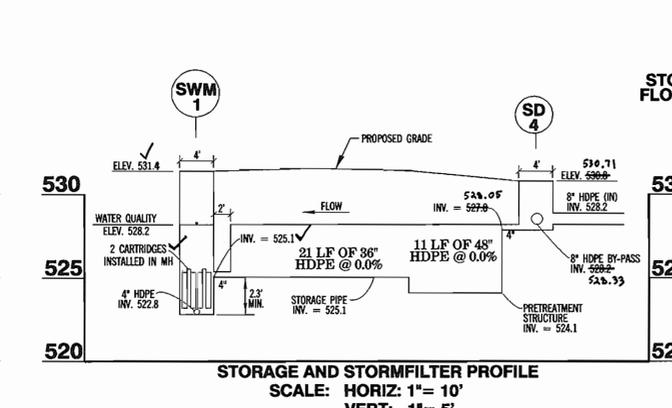
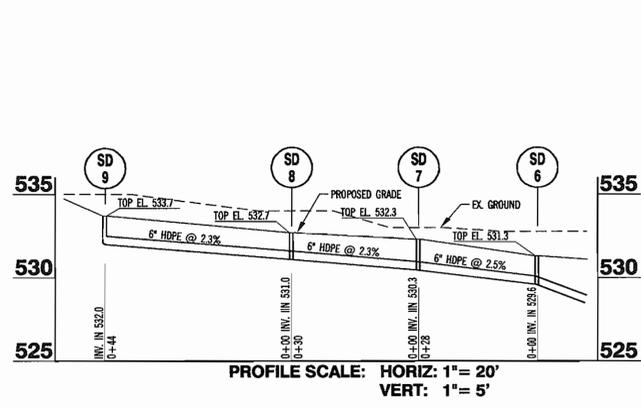
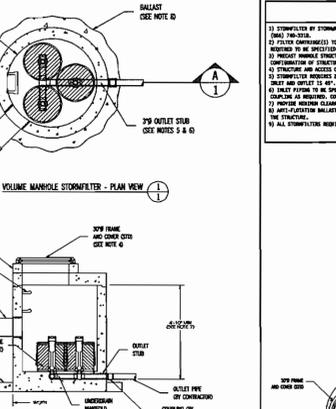
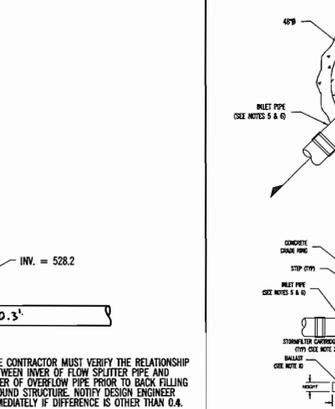
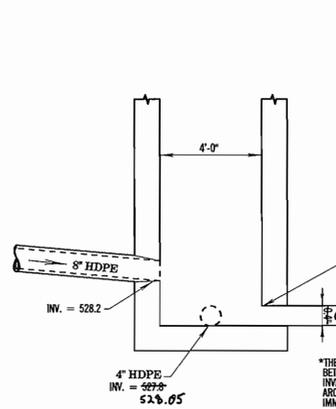
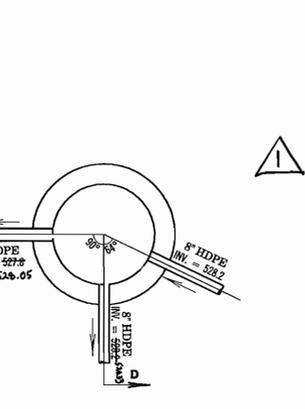
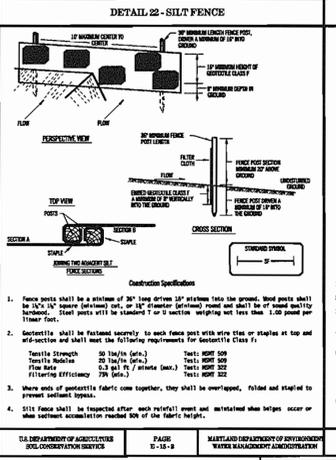
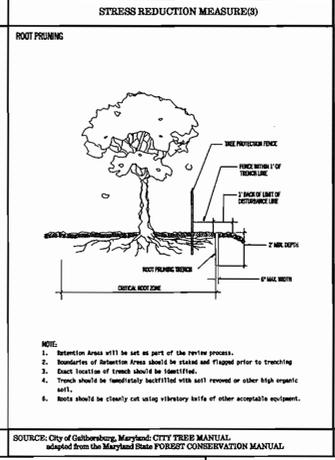
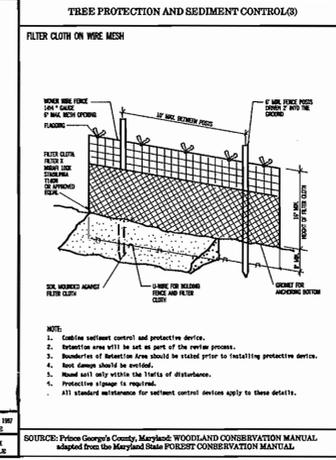
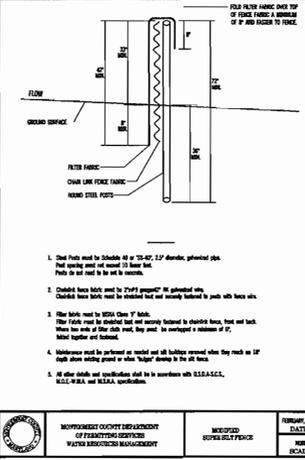
Seedbed preparation: -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

Seeding: -- For periods March 1 -- April 30 and from August 15 -- October 15, seed with 2-1/2 bushel per acre of annual ryegrass (3.2 lbs/1000 sq. ft.). For the period May 1 -- August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 -- February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 ft. or higher, use 348 gal. per acre (8 gal/1000 sq. ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.



**STORMWATER MANAGEMENT FLOW SPLITTER MANHOLE SD 4**  
NOT TO SCALE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

*Jim Myers*  
USDA NATURAL RESOURCES CONSERVATION SERVICE  
DATE: 1/17/07

*John R. Robertson*  
HOWARD SCD  
DATE: 1/17/07

SIZE	TYPE	LENGTH
4"	HDPE*	260 L.F.
6"	HDPE*	126 L.F.
8"	HDPE*	26 L.F.
10"	HDPE*	100 L.F.
36"	HDPE*	21 L.F.
48"	HDPE*	11 L.F.

\* - HIGH DENSITY POLYETHYLENE PIPE (HDPE)

BEFORE BEGINNING CONSTRUCTION CONTACT

**"MISS UTILITY"**

AT

**1-800-257-7777**

AT LEAST 48 HOURS PRIOR TO EXCAVATION

STR. NO.	TYPE	TOP ELEVATION	INVERT IN	INVERT OUT	HOWARD COUNTY STANDARDS	REMARKS
SD1	STORM DRAIN PRECAST MANHOLE MATCH EX.	526.2	521.3	521.2	65.12 D=48"	BUILD MANHOLE OVER EX. 18" RCP
SD2	STORM DRAIN PRECAST MANHOLE MATCH EX.	526.2	521.3	521.2	65.12 D=48"	
SD3	STORM DRAIN PRECAST MANHOLE MATCH EX.	526.2	521.3	521.2	65.12 D=48"	
SD4	SHALLOW MANHOLE FLOW SPLITTER	526.2	522.2	522.2	65.12 D=48"	FLOW SPLITTER. SEE DETAILS THIS SHEET.
SD5	TRENCH DRAIN	531.35/530.3	527.4	528.35		POLYDRAIN SECTIONS 210PWI, 300PWI AND 8X291 PWI WITH INLET END PLATE 209 AND OUTLET PLATE 309. SEE MANUFACTURER.
SD6	GRADE INLET	531.3	529.6	529.6		NYLOPLAST 10" DRAIN BASIN. SEE MANUFACTURER
SD7	GRADE INLET	532.3	530.3	530.3		NYLOPLAST 10" DRAIN BASIN. SEE MANUFACTURER
SD8	GRADE INLET	532.7	531.0	531.0		NYLOPLAST 10" DRAIN BASIN. SEE MANUFACTURER
SD9	GRADE INLET	533.7	532.0	532.0		NYLOPLAST 10" DRAIN BASIN. SEE MANUFACTURER
SM	STORM FILTER	531.4	525.1	522.8	D=48"	STORM FILTER MANHOLE. SEE DETAIL THIS SHEET.

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

*John Williams*  
Chief, Development Engineering Division  
DATE: 1/19/07

*Andy Hunter*  
Chief, Division of Land Development  
DATE: 1/24/07

*Derek Houghton*  
Director  
DATE: 1/25/07

**DESIGN CERTIFICATION**

"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"

*John Williams*  
SIGNATURE  
DATE: 8/14/06

AFSI T. NIKOOD, P. E.  
PRINTED NAME AND TITLE  
MD. REG. #18659  
REGISTRATION NUMBER

**DEVELOPER 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."

DATE: 8/14/06  
OWNER/DEVELOPER  
*Gregory M. Ducca, V.P.*  
PRINTED NAME AND TITLE

PREPARED FOR:  
UNITED DOMINION REALTY TRUST  
400 EAST CARY STREET  
RICHMOND, VA 23219  
CONTACT: MR. BRENT EPPS  
PHONE: (804) 780.2691 x1218  
FAX: (804) 788.0635

No.	REVISION	DATE	BY
1	ADD AS-BUILT INFO	5/27/06	DLS

**GREENHORNE & O'MARA**  
CONSULTING ENGINEERS  
20410 CENTURY BOULEVARD, SUITE 200, CERMANTOWN, MARYLAND 20874  
PHONE: (301) 444-8282 FAX: (301) 444-8181  
www.g-and-o.com  
FLORIDA • GEORGIA • MARYLAND • NORTH CAROLINA • PENNSYLVANIA • VIRGINIA • WEST VIRGINIA

SEDIMENT CONTROL AND STORMWATER MANAGEMENT DETAILS  
DOMINION GREAT OAKS'  
**OFFICE AND COMMUNITY CENTER**  
ONE-STORY  
TAX MAP 18, GRID 19  
PARCEL 312, 317  
2nd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

AMA DESIGN SCALE 1" = 10'  
AMA DRAWN 4 OF 9  
CHECKED SHEET  
OCT. 2005 DATE 071134 PROJ. NO. R-3890-X FILE NO.  
DATE 071134 PROJ. NO. R-3890-X FILE NO.

**DEVELOPER'S/OWNER'S CERTIFICATE**

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

GREGORY M. DUGGAN, V.P. 9/26/06 DATE

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

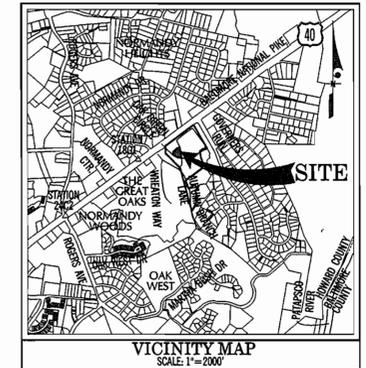
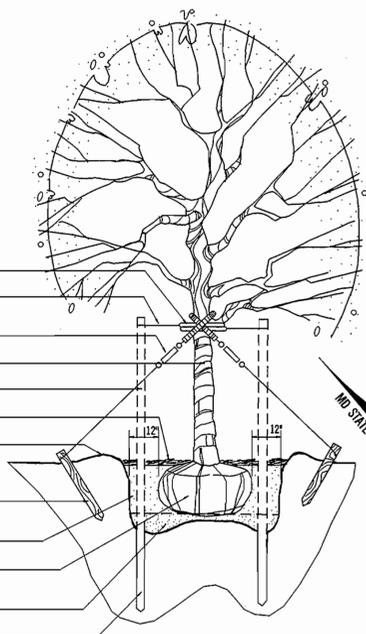
Chief, Development Engineering Division Date 1/19/07  
 Chief, Division of Land Development Date 1/22/07  
 Director Date 1/23/07

**SCHEDULE A**

Category	Adj. to Roadways	Adj. to Perimeter Properties
Landscape type	Light Buffer	N/A
Linear Ft. Roadway	420'	N/A
Perimeter		
Credit for Existing vegetation	NO	NO
Credit for fence, wall, berm	NO	NO
Number of plants Required		
- Shade Trees	7	0
- Evergreen Trees	0	0
- Shrubs	0	0
Number of Plants Provided		
- Shade Trees	9	0
- Small Trees	2	0
- Evergreen Trees	0	0
- Shrubs	13	0

NOTE: STAKE TREES UNDER 4" CALIBER GUY TREES OVER 4" CALIBER PRUNE TREES JUST AFTER DIGGING TO REDUCE CROWN +30%. DO NOT CUT MAIN LEADER. IF SIDE BRANCHES ARE CUT TO BALANCE TREE, MAKE CUTS FLUSH WITH A LATERAL BRANCH.

- REINFORCED RUBBER HOSE
- #12 GALV. WIRE (2 STRANDS TWISTED)
- 3" GALV. TURNBUCKLE
- APPROVED TREE WRAP
- 3" DIA. x 4" CEDAR STAKE(S)
- 2" MULCH MATERIAL
- MOUNDED EARTH SAUCER
- 2" x 4" 30" GUY STAKE (3 REQUIRED)
- PLANTING MIXTURE
- REMOVE BURGLAP FROM TOP 1/3 OF EARTH BALL
- SETTING BED (COMPACTED)
- STAKES 18" BELOW TREE PIT IN UNDISTURBED SOIL



BEFORE BEGINNING CONSTRUCTION CONTACT  
**"MISS UTILITY"**  
 AT  
**1-800-257-7777**  
 AT LEAST 48 HOURS PRIOR TO EXCAVATION

SCALE: 1"=10'

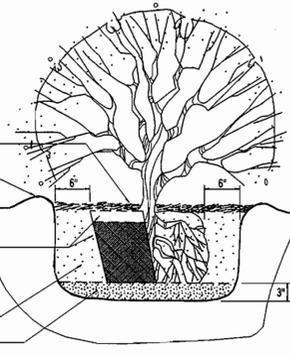
**LEGEND**

- EXISTING 2' TOPOGRAPHY
- PROPOSED TOPOGRAPHY
- PROPOSED HOUSE OR BUILDING
- LIMIT OF DISTURBANCE
- PROPOSED SPOT SHOT
- EX. TREE TO BE REMOVED
- EXISTING TREE TO BE PRESERVED
- PROPOSED SHADE TREE
- PROPOSED SMALL TREE
- PROPOSED SHRUB
- PROPOSED RETAINING WALL

**PLANTING DETAIL/DECIDUOUS TREES NOT TO SCALE**

NOTE: SHRUB SHALL BEAR SAME RELATION TO FINISH GRADE AS IT DID TO ITS NURSERY FIELD GROWN GRADE.

- 2" MULCH - AS SPECIFIED
- MOUNDED EARTH SAUCER
- REMOVE COLLAR FROM FIBER POT & PUNCTURE TO ALLOW ROOT GROWTH, ALL OTHER CONTAINERS REMOVED PRIOR TO PLANTING
- PLANTING MIXTURE
- SCARIFY TO 3" DEPTH



**PLANTING DETAIL/SHRUBS NOT TO SCALE**

**PLANTING NOTES**

- Plant Identification: All plants shall be properly marked for identification.
- List of Plant Material: The Contractor will verify the plant quantities prior to bidding and any discrepancies shall be brought to the attention of the Landscape Architect.
- Plant Quality: All shrubs shall be dense, heavy to the ground, and well grown, showing evidence of having been sheared regularly, and shall be sound, free of plant disease or insect eggs and shall have a healthy normal root system.
- Soil Mix: Soil mix will be 2/3 existing soil, 1/3 leafmold or equal organic material, thoroughly mixed and homogenized.
- Excavation: Holes for all plants shall be 18" larger in diameter than size of ball or container and shall have vertical sides.
- Planting: Backfilling shall be done with soil mix, reasonably free of stones, subsoil, clay lumps, stumps, roots, weeds, Bermuda grass, litter, toxic substances, or any other material which may be harmful to plant growth.
- Maintenance: The Contractor shall be responsible during the contract and up to the time of acceptance, for keeping the planting and work incidental thereto in good conditions.
- Fertilizer: Fertilizer shall be a slow release type contained in polyethylene perforated bags with micro-pore holes for controlled feeding such as Easy Grow as manufactured by Specialty Fertilizer Inc.
- Guarantee and Replacement: All materials shall be unconditionally guaranteed for one year.
- Plant Spacing: Plant spacing is generally to scale on plan. No plants except vine ground covers or espaliered material shall be closer than 30" to building.
- Schedule and Approvals: The landscape contractor shall submit a written schedule of operations and written requests for approvals.

NOTE: HAND RAIL TO BE INSTALLED PER SECTION 4.8.5 OF THE UNIFORM FEDERAL ACCESSIBILITY STANDARDS

**PLANT SCHEDULE**

Symbol	Qty	Scientific Name	Common Name	Size	Condition
QA	2	Quercus alba	White Oak	2.5-3' cal.	B&B
QP	2	Quercus phellos	Willow Oak	2.5-3' cal.	B&B
QR	3	Quercus rubra	Northern Red Oak	2.5-3' cal.	B&B
LI	2	Lagerflora indica	Crape Myrtle	12-14' ht.	B&B
LN	1	Ilex verticillata	Blue Holly	18-24' ht.	Container

**STANDARDS AND SPECIFICATIONS FOR TOPSOIL**

Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Topsoil Specifications - Soil to be used as topsoil must meet the following: 1. Topsoil shall be 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 DPS. Regardless, topsoil shall not be a mixture of contrasting textured subsoils, and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter. The subsoil shall be tilled to a minimum depth of 6 inches before placement of topsoil. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 lbs per 1000 sq. ft.) prior to the placement of topsoil. Line shall be distributed uniformly over designated areas and worked into the soil. Topsoil shall be tested and amended as per soil test recommendations.

**PLANT SCHEDULE**

Symbol	Qty.	Scientific Name	Common Name	Size	Condition
AC	2	Amelanchier canadensis	Shadblow serviceberry	8-10' ht.	B & B
AG	3	Abelia x grandifolia	Glossy Abelia	2.5-3' ht.	Container
FG	2	Fagus grandifolia	American Beech	2.5-3' cal.	B & B
SJ	10	Spiraea japonica	Shirobana spiraea	18-24" ht.	Container
QA	2	Quercus alba	White Oak	2.5-3' cal.	B & B
QP	2	Quercus phellos	Willow Oak	2.5-3' cal.	B & B
QR	3	Quercus rubra	Northern Red Oak	2.5-3' cal.	B & B

**GENERAL NOTES**

- The subject property is zoned R-A-15 as per the February 2, 2004 Rezoning Plan.
- Boundary and 2' topographic information by Dewberry & Davis and supplemented by a field survey by Greenhorne & O'Mara July 2005.
- This project is in accordance with Section 16.124 of the Howard County Code and the Landscape Manual by providing 9 shade trees, 0 evergreens, and 15 shrubs. Surety in the amount of \$3,140.00 shall be provided with the developer's agreement.
- Owner's name and address: United Dominion Realty Trust, 400 East Cary Street, Richmond, VA 23219
- All existing trees noted on plan are in generally good condition.
- All trees to remain will be protected during construction as per the Sediment Control Plan.
- There is no floodplain on this site.
- There are no wetlands on this site.
- The site is within the Lower Patapsco River Watershed and the Sucker Branch Subwatershed.
- All construction shall be in accordance with the latest standards and specifications of Howard County plus HSHA standards and specifications if applicable.
- The contractor shall notify the department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313.1880 at least five (5) working days prior to the start of work.

PREPARED FOR:  
 UNITED DOMINION REALTY TRUST  
 400 EAST CARY STREET  
 RICHMOND, VA 23219  
 CONTACT: MR. BRENT EPPS  
 PHONE: (804) 780.2691 x1218  
 FAX: (804) 788.0635

No.	REVISION	DATE	BY
1	REVISED AS PER HOWARD COUNTY COMMENTS	5-22-06	HLR
2	REVISED AS PER HOWARD COUNTY COMMENTS	5-22-06	HLR
3	REVISED ADDITION OF 2 SHRUB TREES & 6 SHRUBS	9/19/06	DATE



**GREENHORNE & O'MARA**  
 CONSULTING ENGINEERS  
 20410 CENTURY BOULEVARD, SUITE 200, CERMANTOWN, MARYLAND 20874  
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LANDSCAPE PLAN  
 DOMINION GREAT OAKS  
**OFFICE AND COMMUNITY CENTER**  
 ONE-STORY  
 TAX MAP 18, GRID 19  
 PARCEL 312, 317  
 2nd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

HLR DESIGN	SCALE	1" = 10'
HLR DRAWN		
CHECKED	SHEET	5 OF 9
JAN 2006 DATE	SDP#06-093/ PROJ#071134	R-3894-N

**SEGMENTAL RETAINING WALL SPECIFICATIONS**

**PART 1 - GENERAL**

**1.1 WORK INCLUDES**

FURNISHING AND INSTALLING SEGMENTAL RETAINING WALL UNITS, GEGRID REINFORCEMENT, WALL FILL, AND BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS AND AS SPECIFIED HEREIN. THE CONTRACT ALSO INCLUDES THE FURNISHING AND INSTALLING ALL APPURTENANT MATERIALS, EQUIPMENT, AND LABOR REQUIRED FOR CONSTRUCTION OF THE GEGRID REINFORCED, SEGMENTAL RETAINING WALL. ALL EXISTING AND PROPOSED CONSTRUCTION AND SITE GRADING INFORMATION WAS REFERENCED FROM THE SPECIFIC DESIGN PLANS FOR DOMINION GREAT OAKS CLUBHOUSE FACILITY, PREPARED BY GREENHORNE & O'NEAL, INC., DATED OCTOBER 2005. PER THE REQUEST OF THE CLIENT, THESE WALLS HAVE BEEN DESIGNED FOR THE ABBEY BLEND EUROPA COLLECTION OF ALLAN BLOCK RETAINING WALL UNITS.

**1.2 REFERENCE STANDARDS**

- A. ASTM C90-75 (1981 REV) - HOLLOW LOAD BEARING MASONRY UNITS.
- B. ASTM C140-75 (1981 REV) - SAMPLING AND TESTING CONCRETE MASONRY UNITS.
- C. ASTM C145-75 (1981 REV) - SOLID LOAD BEARING CONCRETE MASONRY UNITS.
- D. GEOSYNTHETIC RESEARCH INSTITUTE (GRI), GRI-GG4 - DETERMINATION OF LONG TERM DESIGN STRENGTH OF GEORGRIDS.
- E. ASTM D 638 - TEST METHOD FOR TENSILE PROPERTIES OF PLASTIC.
- F. ASTM D 1248 - SPECIFICATION OF POLYETHYLENE PLASTICS HOLDING AND EXTRUSION MATERIALS.
- G. ASTM D 4218 - TEST METHOD FOR CARBON BLACK CONTENT IN POLYETHYLENE COMPOUNDS BY THE MUFFLE FURNACE TECHNIQUE.
- H. ASTM D 3034 - SPECIFICATION FOR POLYVINYL CHLORIDE (PVC) PIPE.
- I. ASTM C 1372 - SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.

**1.3 DELIVERY, STORAGE AND HANDLING**

- A. CONTRACTOR SHOULD CHECK THE MATERIALS UPON DELIVERY TO ASSURE THAT PROPER MATERIAL HAS BEEN RECEIVED.
- B. CONTRACTOR SHOULD PREVENT EXCESSIVE MUD, WET CEMENT, EPOXY, AND LIKE MATERIALS WHICH MAY AFFIX THEMSELVES, FROM COMING IN CONTACT WITH THE MATERIALS.
- C. GEORGRIDS SHOULD BE STORED ABOVE -20° F.
- D. CONTRACTOR SHOULD PROTECT THE MATERIALS FROM DAMAGE. DAMAGED MATERIAL SHOULD NOT BE INCORPORATED INTO THE REINFORCED RETAINING WALL.

**1.4 SUBMITTALS/CERTIFICATION**

THE CONTRACTOR SHALL SUBMIT A MANUFACTURER'S CERTIFICATION, PRIOR TO THE START OF THE WORK, THAT THE RETAINING WALL SYSTEM COMPONENTS MEET THE REQUIREMENTS OF ASTM C 1372 AND OTHER REQUIREMENTS SPECIFIED HEREIN. THIS CERTIFICATION SHOULD BE PROVIDED TO THE GEOTECHNICAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO WALL CONSTRUCTION.

**PART 2 - PRODUCTS**

**2.1 DEFINITIONS**

- A. GEGRID IS A HIGH DENSITY POLYETHYLENE, POLYESTER, OR POLYPROPYLENE GRID, SPECIFICALLY FABRICATED FOR USE AS A SOIL REINFORCEMENT.
- B. CONCRETE RETAINING WALL UNITS ARE AS DETAILED ON THE DRAWINGS AND AS SPECIFIED HEREIN.
- C. GEOSYNTHETIC DRAINAGE COMPOSITES ARE POLYETHYLENE NET STRUCTURE WITH NON-WOVEN GEOTEXTILES BONDED TO BOTH SIDES.
- D. EROSION CONTROL BLANKETS CONSIST OF A WEB OF POLYOLEFIN FIBERS SECURELY BOUNDED BY POLYOLEFIN THREADS BETWEEN TWO HIGH STRENGTH POLYOLEFIN NETS.
- E. BACKFILL IS THE SOIL WHICH IS USED AS FILL FOR THE REINFORCED SOIL MASS.
- F. FOUNDATION SOIL IS THE IN-SITU SOIL OR CONTROLLED COMPACTED FILL PLACED BELOW THE BOTTOM OF THE RETAINING WALL AND GEGRID ZONE.

**2.2 MATERIALS**

THE CONTRACTOR SHOULD SUBMIT MANUFACTURER'S CATALOG AND SAMPLES OF THE PROPOSED MATERIALS FOR APPROVAL BY THE PROJECT GEOTECHNICAL ENGINEER A MINIMUM OF SEVEN DAYS BEFORE THE START OF CONSTRUCTION. MATERIALS SHOULD BE TRANSPORTED TO THE SITE ONLY AFTER APPROVAL OF THE PROPOSED MATERIALS BY THE PROJECT GEOTECHNICAL ENGINEER.

**A. CONCRETE UNITS**

- 1. MASONRY UNITS SHOULD BE ABBEY BLEND, EUROPA COLLECTION UNITS SUPPLIED BY ALLAN BLOCK CORPORATION OR ITS AUTHORIZED MANUFACTURER. THE COLOR OF THE UNITS AND THE PATTERN TO BE USED SHOULD BE APPROVED BY THE OWNER.
- 2. CONCRETE WALL UNITS SHOULD HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI, IN ACCORDANCE WITH ASTM C-90. THE CONCRETE SHOULD HAVE ADEQUATE FREEZE/THAW PROTECTION WITH A MAXIMUM MOISTURE ABSORPTION OF 6 PERCENT.
- 3. MODULAR CONCRETE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 1372 - STANDARD SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.
- 4. THE UNITS SHALL PASS 100 FREEZE/THAW CYCLES IN WATER WITH LESS THAN 1% WEIGHT LOSS IN ACCORDANCE WITH ASTM C 1372.
- 5. EXTERIOR DIMENSIONS MAY VARY.
- 6. UNITS SHOULD HAVE ANGLED SIDES AND BE CAPABLE OF ATTAINING CONCAVE AND CONVEX ALIGNMENT CURVES IN ACCORDANCE UNITS SHOULD BE INTERLOCKED WITH NON-CORROSIVE REINFORCED FIBERGLASS PINS.
- 7. UNITS SHOULD BE INTERLOCKED AS TO PROVIDE A 6 DEGREES OF SETBACK PER BLOCK, WHERE REQUIRED.

**B. LEVELING PAD**

MATERIAL FOR LEVELING PAD/FOOTING SHOULD CONSIST OF COMPACTED FREE-DRAINING COARSE AGGREGATES MEETING THE REQUIREMENTS OF ASTM #57 STONE OR GRADED AGGREGATE BASE (GAB) PER MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS. A MINIMUM OF 6 INCHES DEEP AND 22.5 INCHES WIDE, COMPACTED LEVELING PAD IS REQUIRED.

**C. GEGRID**

GEGRID SHOULD BE MIRAGRID O3XT, OR EQUIVALENT AS APPROVED BY THE GEOTECHNICAL ENGINEER. THE GEGRID SHOULD HAVE AN ALLOWABLE STRENGTH OF 1,000 POUNDS PER FOOT. THE ALLOWABLE STRENGTH IS DEFINED AS THE ULTIMATE STRENGTH DIVIDED BY REDUCTION FACTORS FOR CREEP, DURABILITY, INSTALLATION DAMAGE AND AN OVERALL FACTOR OF SAFETY.

**D. REINFORCED BACKFILL**

REINFORCED BACKFILL SOILS SHOULD BE NON-PLASTIC, CONTROLLED FILL MEETING THE REQUIREMENTS OF AASHTO A-2-4, OR MORE GRANULAR, BASED ON THE AVAILABLE SUBSURFACE INFORMATION. SUITABLE MATERIALS MAY BE AVAILABLE FROM ON-SITE EXCAVATIONS. HOWEVER, SEGREGATION AND STOCKPIILING OF SUITABLE MATERIALS WILL BE REQUIRED, IF ADEQUATE QUANTITIES OF THIS MATERIAL ARE NOT AVAILABLE ON-SITE, IMPORTED BACKFILL SHOULD MEET THE ABOVE REQUIREMENTS AND SHOULD BE APPROVED BY THE GEOTECHNICAL ENGINEER.

**E. CONTROLLED FILL**

CONTROLLED FILL SOILS TO BE PLACED OUTSIDE THE REINFORCED BACKFILL AREA AND WHERE SPECIFIED SHOULD CONSIST OF ON-SITE OR BORROW SOILS MEETING THE REQUIREMENTS OF AASHTO A-4 OR MORE GRANULAR. ALL FILL MATERIALS PROPOSED TO BE PLACED BEHIND THE REINFORCED BACKFILL SHOULD BE PLACED AS CONTROLLED FILL COMPACTED TO 90 PERCENT OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE MODIFIED PROCTOR, ASTM D-1557. NOTE THAT ELASTIC SILT (USCS MH) MATERIALS WERE ENCOUNTERED AT SEVERAL OF THE BORING LOCATIONS. SUCH SOILS ARE NOT CONSIDERED SUITABLE FOR USE AS CONTROLLED FILL OR REINFORCED BACKFILL.

**F. LOW-PERMEABILITY SOIL**

LOW-PERMEABILITY SOILS TO BE PLACED AT THE TOP OF THE WALL WHERE SPECIFIED SHOULD CONSIST OF SANDY, SILTY OR CLAYEY SOILS MEETING THE REQUIREMENTS OF ML, CL, SM, OR SC WITH A MINIMUM OF 25% PASSING THE #200 SIEVE.

**G. UNIT CORE/DRAINAGE FILL**

THE OPEN-GRADED, FREE-DRAINING MATERIALS TO BE PLACED WITHIN THE VOIDS OF THE CONCRETE UNITS AND WITHIN THE DRAINAGE AREA 12" BEHIND THE UNITS. THIS FILL SHOULD CONSIST OF ASTM #57 STONE.

**H. DRAINAGE PIPE**

THE DRAINAGE PIPES SHOULD BE PERFORATED OR SLOTTED PVC PIPE MANUFACTURED IN ACCORDANCE WITH ASTM D-3034.

**I. FILTER FABRIC**

FILTER FABRIC SHOULD BE NON-WOVEN, POLYPROPYLENE GEOTEXTILE, 140 N MANUFACTURED BY NICOLON MIRAFI GROUP OR APPROVED EQUIVALENT.

**PART 3 - EXECUTION**

**A. EXCAVATION**

- 1. THE CONTRACTOR SHOULD EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. UNDER NO CIRCUMSTANCES SHOULD THE EXCAVATION LINES AND GRADES BE EXCEEDED, EXCEPT WITH OWNER'S APPROVAL. THE CONTRACTOR SHOULD PROTECT THE EXCAVATION FROM SLOUGHING BY PLACING A MEMBRANE OVER THE FACE OF THE EXCAVATION.
- 2. PRIOR TO RETAINING WALL CONSTRUCTION AND THE PLACEMENT OF FILL, ALL TOPSOIL SHOULD BE STRIPPED AND REMOVED FROM THE SITE.
- 3. EXCAVATIONS SHOULD BE SLOPED OR OTHERWISE SUPPORTED IN ACCORDANCE WITH OCCUPATION SAFETY AND HEALTH ADMINISTRATION (OSHA) AND OTHER LOCAL AND STATE REGULATIONS.

**B. FOUNDATION SUBGRADE PREPARATION**

- 1. FOUNDATION SOIL SHOULD BE EXCAVATED AS REQUIRED FOR INSTALLATION OF LEVELING PAD, GEGRID AND OTHER ELEMENTS AND AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- 2. FOUNDATION SOIL SHOULD BE EXAMINED BY THE ENGINEER TO ASSURE THAT THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS ASSUMED DESIGN STRENGTH. SOILS NOT MEETING REQUIRED STRENGTH SHOULD BE REMOVED AND REPLACED WITH CONTROLLED, COMPACTED MATERIAL.
- 3. OVER-EXCAVATED AREAS SHOULD BE FILLED WITH SELECT AND APPROVED MATERIAL AND COMPACTED TO 90 PERCENT OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE MODIFIED PROCTOR, ASTM D-1557.
- 4. ALLOWABLE BEARING PRESSURE FOR NATURAL AND CONTROLLED, COMPACTED FILL SOILS SHOULD BE AS SPECIFIED IN PART 5.
- 5. THE EXPOSED FOUNDATION SUBGRADE SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK. ANY SOFT OR UNSTABLE AREAS IDENTIFIED DURING PROOFROLLING SHOULD BE OVEREXCAVATED AND BACKFILLED WITH CONTROLLED FILL.
- 6. ANY FILLS REQUIRED TO ESTABLISH SLOPING SURFACES IN FRONT OF THE WALLS SHOULD CONSIST OF CONTROLLED FILL AND SHOULD BE PLACED, COMPACTED AND FIELD TESTED IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED HEREIN.
- 7. ELASTIC SILTS (USCS MH) WERE ENCOUNTERED IN SEVERAL OF THE TEST BORINGS, PARTICULARLY IN THE VICINITY OF RETAINING WALL #4 AND PORTIONS OF RETAINING WALL #2. IF ENCOUNTERED AT THE FOUNDATION SUBGRADE, THESE SOILS MAY REQUIRE SOME UNDERCUTS OF 12 INCHES AND REPLACEMENT WITH SUITABLE MATERIALS APPROVED BY THE GEOTECHNICAL ENGINEER. THESE SOILS SHOULD NOT BE USED AS RETAINING WALL BACKFILL.

**C. LEVELING PAD**

- 1. THE LEVELING PAD SHOULD BE PLACED AS SHOWN ON THE CONSTRUCTION DRAWINGS WITH A MINIMUM THICKNESS OF 6 INCHES.
- 2. LEVELING PAD MATERIALS SHOULD BE INSTALLED UPON UNDISTURBED IN-SITU SOILS OR CONTROLLED, COMPACTED BACKFILL.
- 3. LEVELING PAD SHOULD BE PREPARED TO INSURE COMPLETE CONTACT OF RETAINING WALL UNIT WITH BASE. GAPS SHOULD NOT BE ALLOWED.

**D. UNIT INSTALLATION**

- 1. THE FIRST COURSE OF WALL UNITS SHALL BE PLACED ON THE PREPARED BASE WITH THE RAISED LIP FACING OUT AND THE FRONT EDGES TIGHT TOGETHER. THE UNITS SHALL BE CHECKED FOR LEVEL AND ALIGNMENT AS THEY ARE PLACED.
- 2. INSURE THAT UNITS ARE IN FULL CONTACT WITH BASE. PROPER CARE SHALL BE TAKEN TO DEVELOP STRAIGHT LINES AND SMOOTH CURVES ON BASE COURSE AS PER WALL LAYOUT.
- 3. ALL CAVITIES IN AND AROUND THE BASE ROW SHALL BE FILLED WITH BASE MATERIALS AND COMPACTED. BACKFILL FRONT AND BACK OF ENTIRE BASE ROW TO FIRMLY LOCK IN PLACE. CHECK AGAIN FOR LEVEL AND ALIGNMENT. ALL EXCESS MATERIAL SHALL BE SWEEPED FROM TOP OF UNITS.
- 4. INSTALL NEXT COURSE OF WALL UNITS ON TOP OF BASE ROW. POSITION BLOCKS TO BE OFFSET FROM SEAMS OF BLOCKS BELOW. PERFECT "RUNNING BOND" IS NOT ESSENTIAL, BUT A 3 INCHES MINIMUM OFFSET IS RECOMMENDED. CHECK EACH BLOCK FOR PROPER ALIGNMENT AND LEVEL. FILL ALL CAVITIES IN AND AROUND WALL UNITS AND TO A 12 INCH DEPTH BEHIND BLOCK WITH DRAINAGE MATERIAL. SPREAD BACKFILL IN UNIFORM LIFTS NOT EXCEEDING 8 INCHES. EMPLOY METHODS USING LIGHTWEIGHT COMPACTION EQUIPMENT THAT WILL NOT DISRUPT THE STABILITY OR BATTER OF THE WALL. HAND-OPERATED PLATE COMPACTION EQUIPMENT SHALL BE USED ON THE BLOCK AND WITHIN 3 FEET OF WALL TO ACHIEVE CONSOLIDATION.
- 5. INSTALL EACH SUBSEQUENT COURSE IN LIKE MANNER. REPEAT PROCEDURE TO THE EXTENT OF WALL HEIGHT.
- 6. ALLOWABLE CONSTRUCTION TOLERANCE AT THE WALL FACE IS 2 DEGREES VERTICALLY AND 1 INCH IN 10 FEET HORIZONTALLY.

**E. GEGRID INSTALLATION**

- 1. ALL UTILITIES IN THE VICINITY OF ANY RETAINING WALL OR GEGRID REINFORCEMENT MUST BE INSTALLED AND PROPERLY BACKFILLED PRIOR TO PLACING THE GEGRID SOIL REINFORCEMENT OR CONSTRUCTING THE WALL.
- 2. THE GEGRID SOIL REINFORCEMENT SHOULD BE LAID HORIZONTALLY ON COMPACTED BACKFILL, CONNECTED TO THE CONCRETE WALL UNITS. PULL TAUT, AND ANCHOR BEFORE BACKFILL IS PLACED ON THE GEGRID.
- 3. SLACK IN THE GEGRID AT THE WALL UNIT CONNECTIONS SHOULD BE REMOVED IN A MANNER, AND TO SUCH A DEGREE, AS APPROVED BY THE ENGINEER.
- 4. GEGRID SHOULD BE LAID AT THE PROPER ELEVATION AND ORIENTATION AS SHOWN ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE ENGINEER.
- 5. CORRECT ORIENTATION (ROLL DIRECTION) OF THE GEGRID SHOULD BE VERIFIED BY THE CONTRACTOR.
- 6. GEGRID SHOULD BE SECURED IN-PLACE WITH STAPLES, PINS, SAND BAGS, OR BACKFILL AS REQUIRED BY FILL PROPERTIES, FILL PLACEMENT PROCEDURES, OR WEATHER CONDITIONS, OR AS DIRECTED BY THE ENGINEER.
- 7. OVERLAPS:
  - a. UNIAXIAL GEGRID DOES NOT NEED TO BE OVERLAPPED IN THE ACROSS THE ROLL DIRECTION, EXCEPT TO CONTAIN THE FILL AT THE SLOPE FACE WHEN WRAP-AROUND FACING IS USED. UNIAXIAL GRID SHOULD BE OVERLAPPED 48" IN THE ROLLED DIRECTION.
  - b. A LAYER OF SOIL A MINIMUM OF 4 INCHES IN THICKNESS SHOULD BE SPREAD BETWEEN UNIAXIAL GEGRID LAYERS IN THE AREA TO BE OVERLAPPED, OR AS DIRECTED.

**F. FILL PLACEMENT**

- 1. WALL BACKFILL MATERIAL SHOULD BE PLACED IN NO MORE THAN 8-INCH LIFTS AND COMPACTED TO 90 PERCENT OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE MODIFIED PROCTOR (ASTM D-1557).
- 2. BACKFILL SHOULD BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF WRINKLES IN AND/OR MOVEMENT OF THE GEGRID.
- 3. ONLY HAND-OPERATED COMPACTION EQUIPMENT SHOULD BE ALLOWED WITHIN 4 FEET OF THE WALL FACE.
- 4. BACKFILL SHOULD BE PLACED FROM THE WALL OUTWARD TO INSURE THAT THE GEGRID REMAINS TAUT.
- 5. TRACKED CONSTRUCTION EQUIPMENT SHOULD NOT BE OPERATED BEHIND OR ABOVE THE WALL.
- 6. RUBBER-TIRED EQUIPMENT MAY PASS OVER THE GEGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND SHARP TURNING SHOULD BE AVOIDED.
- 7. PLACE FILTER FABRIC BETWEEN THE UNIT CORE FILL AND THE REINFORCED BACKFILL AS SHOWN ON PLANS. THE FILTER FABRIC SHOULD BE EMBEDDED A MINIMUM OF TWO FEET INTO THE REINFORCED FILL.
- 8. THE FINISHED SLOPING SURFACE ON THE TOE SIDE OF RETAINING WALLS SHOULD BE PROTECTED BY INSTALLING THE PERMANENT EROSION CONTROL BLANKET AND LOAMING AND SEEDING IN ACCORDANCE WITH PROJECT REQUIREMENTS.

**G. DRAINAGE**

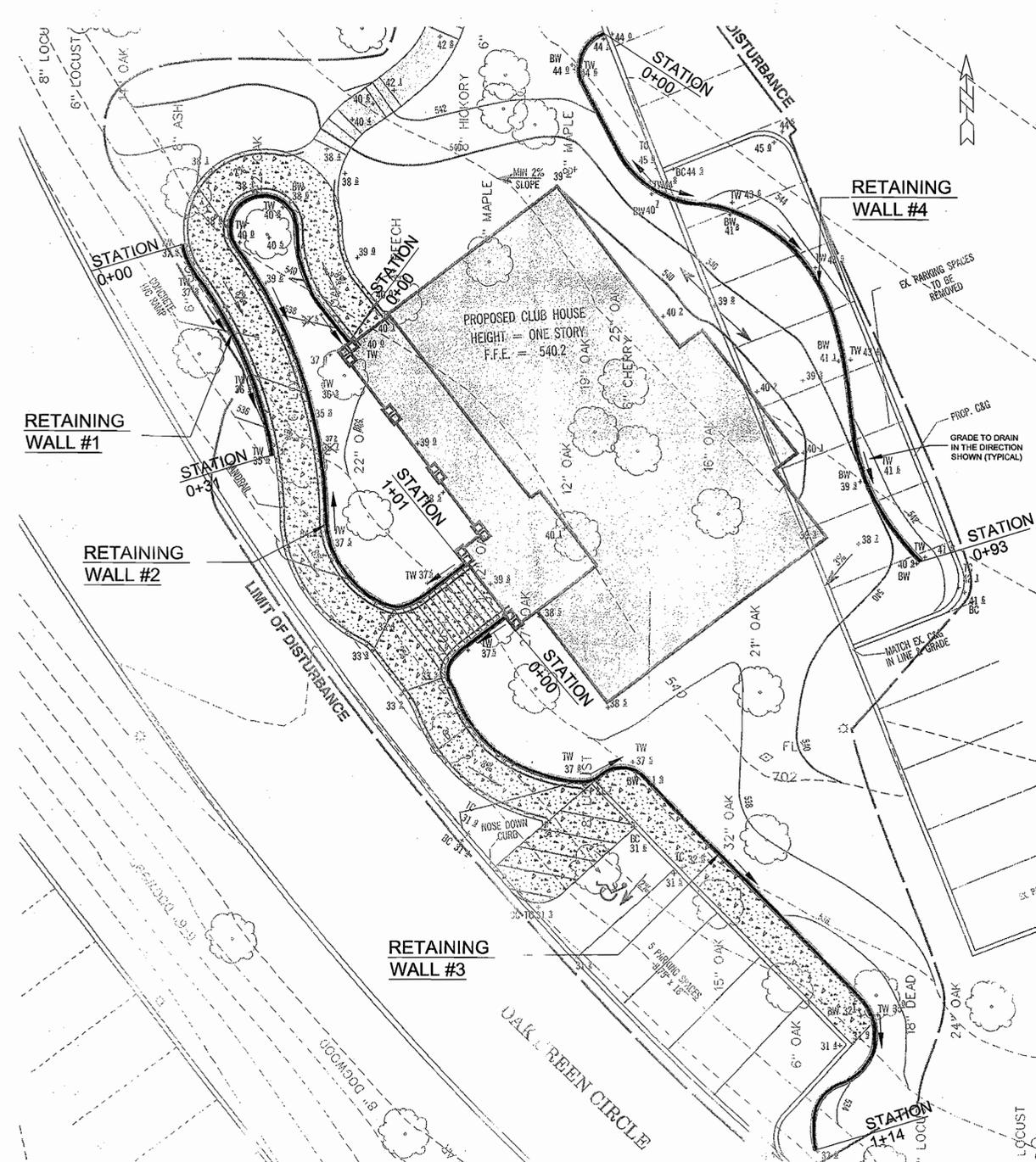
- 1. DRAINAGE FILL SHOULD BE PLACED BEHIND THE WALL TO THE LIMITS SHOWN. THE DRAINAGE FILL SHOULD BE A MINIMUM OF 12-INCHES THICK. THE DRAINAGE FILL SHOULD BE ASTM #57 STONE. THE DRAINAGE FILL SHOULD BE WRAPPED IN FILTER FABRIC (MIRAFI 140N OR EQUAL) AS SHOWN ON THE DRAWINGS.
- 2. POSITIVE DRAINAGE SHOULD BE MAINTAINED DURING AND AFTER CONSTRUCTION. SOILS WITHIN THE REINFORCED ZONE THAT BECOME WET DURING CONSTRUCTION SHOULD BE DRIED TO OPTIMUM MOISTURE OR REMOVED.
- 3. INSTALL THE PERFORATED DRAINAGE PIPES AND LATERAL DRAINAGE PIPES INCREMENTALLY ALONG WITH THE INSTALLATION OF CONCRETE UNITS AND PLACEMENT OF FILL.

**PART 4 - CONSTRUCTION OBSERVATION AND TESTING**

- A. RETAINING WALLS SHOULD ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A CERTIFIED (NICET, WACEL, OR EQUIVALENT) SOILS TECHNICIAN.
- B. THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHOULD BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION MUST BE PROVIDED TO THE GEOTECHNICAL ENGINEER PRIOR TO THE START OF WALL CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE THE DYNAMIC CONE PENETROMETER (DCP) TEST ASTM STP-399.
- C. THE SUITABILITY OF FILL MATERIAL SHOULD BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN.

**PART 5 - DESIGN CRITERIA**

- 1. REQUIRED MINIMUM ALLOWABLE FOUNDATION BEARING PRESSURE IS 2,000 PSF.
- 2. DESIGN INTERNAL FRICTION ANGLE FOR REINFORCED SOIL = 30 DEGREES.
- 3. DESIGN MOIST UNIT WEIGHT FOR REINFORCED SOIL = 120 PCF.
- 4. FOUNDATION AND RETAINED SOIL INTERNAL FRICTION ANGLE = 28 DEGREES AND COHESION = 0 PSF.
- 5. FOUNDATION AND RETAINED SOIL DESIGN MOIST UNIT WEIGHT = 125 PCF.
- 6. RETAINING WALLS ARE NOT DESIGNED TO RESIST HYDROSTATIC PRESSURE.



**RETAINING WALL LOCATION PLAN**  
APPROX. SCALE: 1" = 10'

THE LOCATION PLAN WAS ADOPTED FROM THE SPECIFIC DESIGN PLAN FOR DOMINION GREAT OAKS CLUBHOUSE FACILITY, DATED 10/05, AND PREPARED BY GREENHORNE & O'NEAL, INC.

**RW-1**

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

*[Signature]* 1/19/07  
Chief, Department Engineering Division

*[Signature]* 1/20/07  
Chief, Division of Land Development

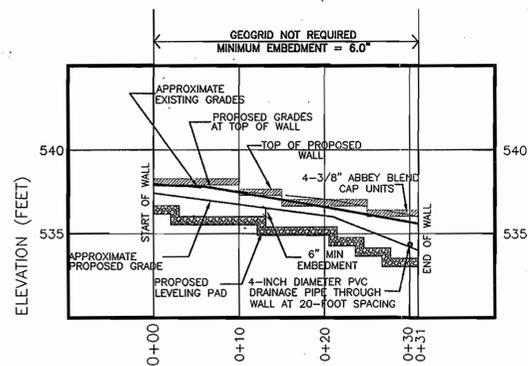
*[Signature]* 1/20/07  
Director

**GEO-TECHNOLOGY ASSOCIATES, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS  
14280 PARK CENTER DRIVE, SUITE A  
LAUREL, MARYLAND 20707  
(410) 792-9792 or (301) 776-1690  
FAX: (410) 792-7395  
WWW.MRAGTA.COM

**DOMINION GREAT OAKS**  
RETAINING WALL  
PLAN AND GENERAL NOTES  
HOWARD COUNTY, MARYLAND

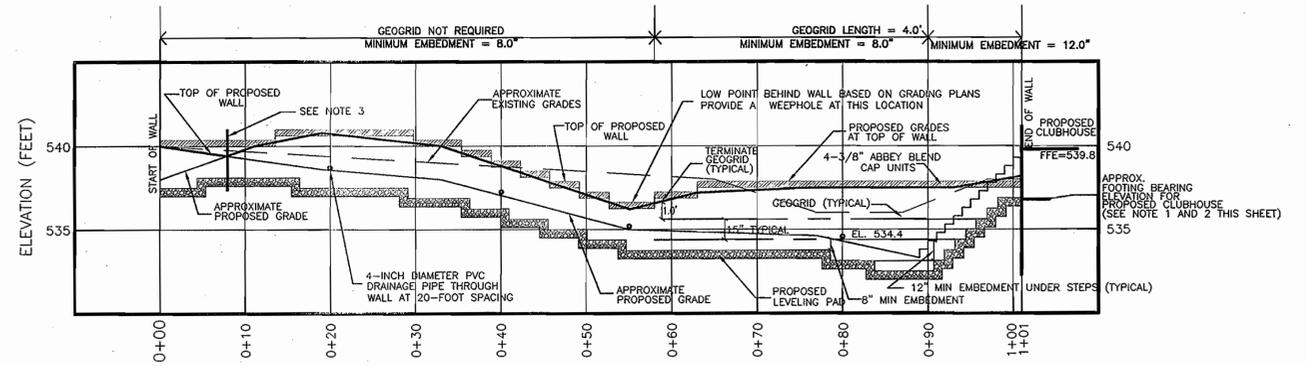
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		DATE: 11/04/05
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		DESIGN BY: BTD
		REVIEW BY: RPM
		SHEET: 6 OF 9

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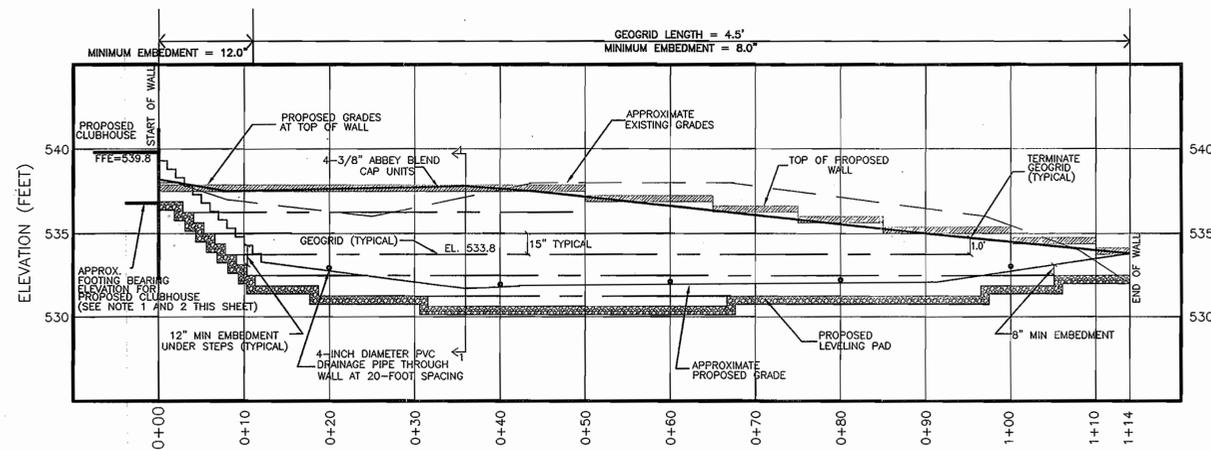
**RETAINING WALL PROFILE #1**

HORIZONTAL SCALE: 1" = 10'  
VERTICAL SCALE: 1" = 5'



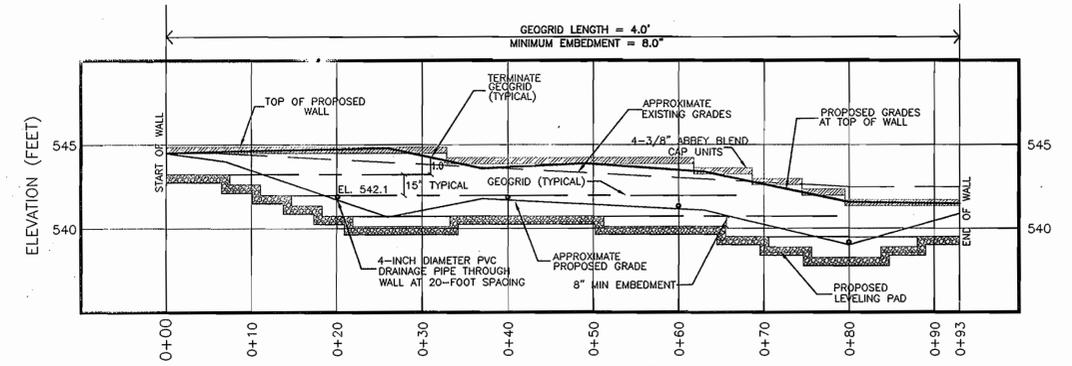
**RETAINING WALL PROFILE #2**

HORIZONTAL SCALE: 1" = 10'  
VERTICAL SCALE: 1" = 5'



**RETAINING WALL PROFILE #3**

HORIZONTAL SCALE: 1" = 10'  
VERTICAL SCALE: 1" = 5'



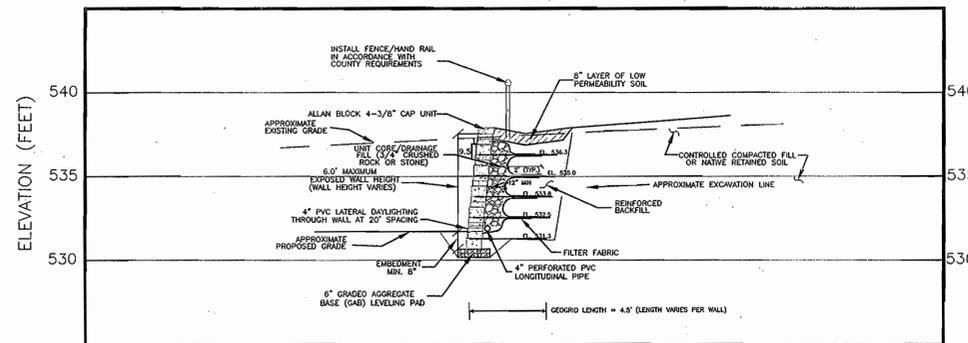
**RETAINING WALL PROFILE #4**

HORIZONTAL SCALE: 1" = 10'  
VERTICAL SCALE: 1" = 5'

**NOTE 1:** THE END OF RETAINING WALL #2 AND BEGINNING OF RETAINING WALL #3 WILL TIE INTO THE WALL OF THE PROPOSED CLUBHOUSE BUILDING. THE JOINT BETWEEN THE ALLAN BLOCK WALL AND THE EXTERIOR WALL OF THE BUILDING SHOULD BE SEALED WITH A SILICON BASED, LOW MODULUS, FLEXIBLE, ELASTOMERIC SEALANT APPROVED BY THE GEOTECHNICAL ENGINEER. IN ADDITION, FILL REQUIRED ALONG THE EXTERIOR WALL OF THE BUILDING SHOULD BE PLACED IN A CONTROLLED, COMPACTED MANNER TO MINIMIZE THE POTENTIAL FOR SETTLEMENT OF THE RETAINING WALL.

**NOTE 2:** THE FOUNDATIONS FOR CLUB HOUSE FEATURES LOCATED IN THE VICINITY OF WALLS #2 AND #3 SHOULD BE CONSTRUCTED AND BACKFILLED PRIOR TO CONSTRUCTING THE RETAINING WALLS.

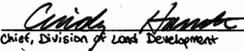
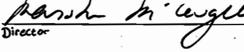
**NOTE 3:** AT APPROXIMATE STATION 0+08 FOR RETAINING WALL #2, THE PROPOSED GRADES AT TOP AND BOTTOM OF THE WALL INTERSECT. FROM THIS POINT TO THE END OF THE WALL, THE BACKFILL SIDE OF THE WALL FLIPS. SOME CUTTING AND/OR OVERLAP OF THE WALL UNITS MAY BE REQUIRED TO PROPERLY TRANSITION THE SWITCH IN THE BACKFILL SIDE OF WALL.



**TYPICAL RETAINING WALL SECTION  
RETAINING WALL #3 (APPROXIMATE STATION 0+36)**

HORIZONTAL SCALE: 1" = 5'  
VERTICAL SCALE: 1" = 5'

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

 1/19/07  
 Chief, Development Engineering Division  
 1/23/07  
 Chief, Division of Land Development  
 1/23/07  
 Director



**RW-2**  
**GEO-TECHNOLOGY ASSOCIATES, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

14280 PARK CENTER DRIVE, SUITE A  
LAUREL, MARYLAND 20707  
(410) 792-9792 OR (301) 776-1690  
FAX: (410) 792-7395

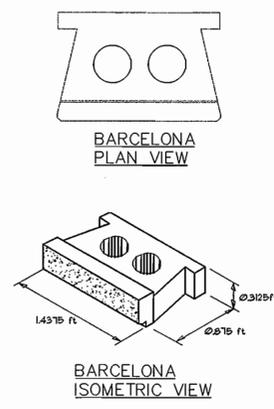
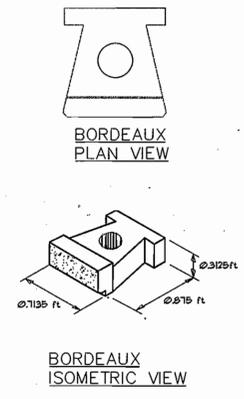
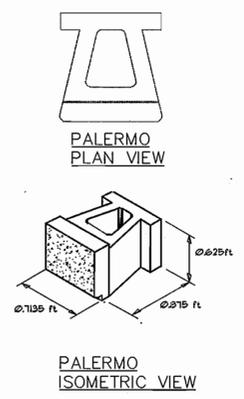
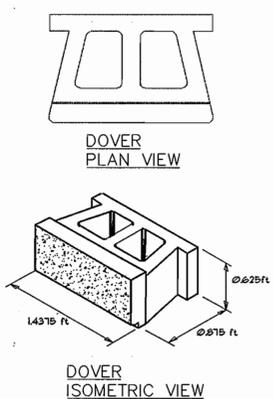
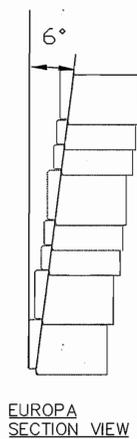
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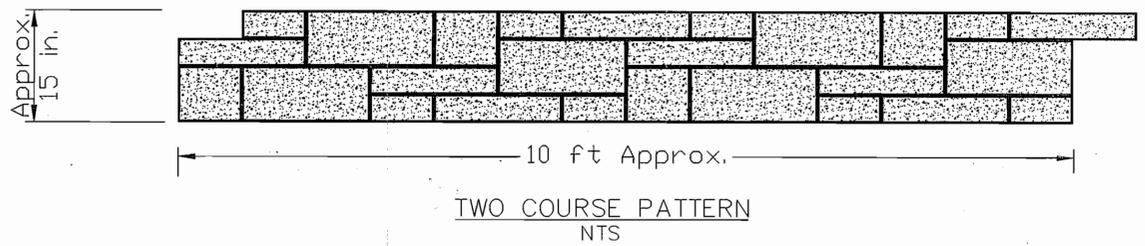
DOMINION GREAT OAKS  
RETAINING WALL  
PROFILES AND TYPICAL SECTION

HOWARD COUNTY, MARYLAND

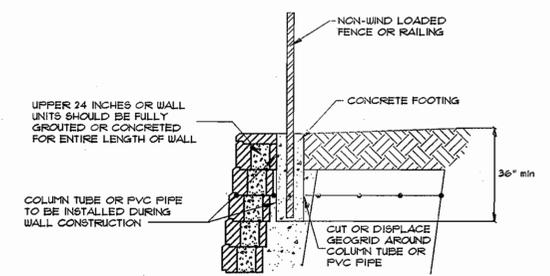
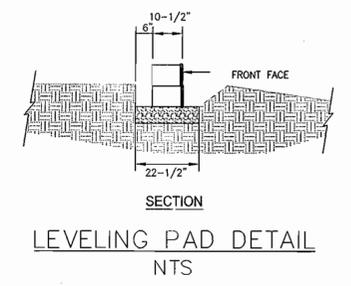
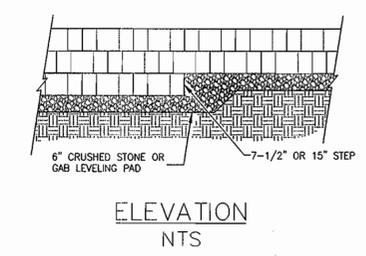
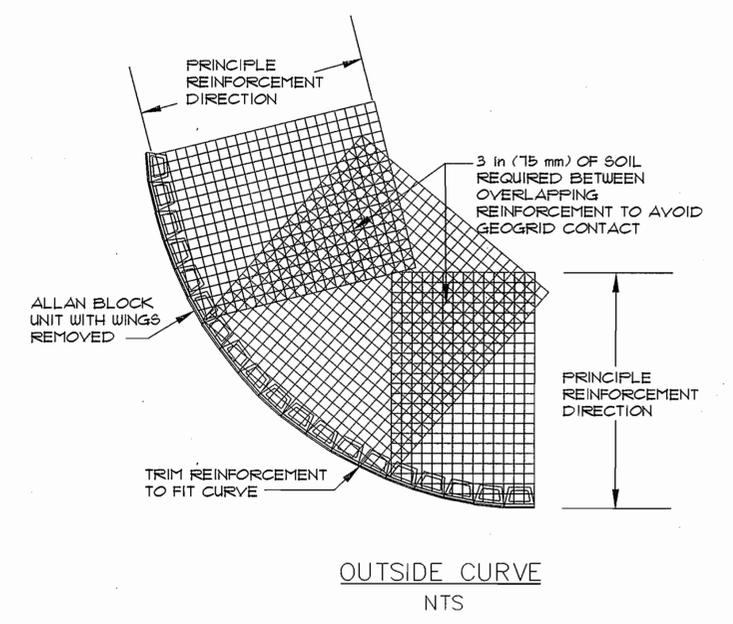
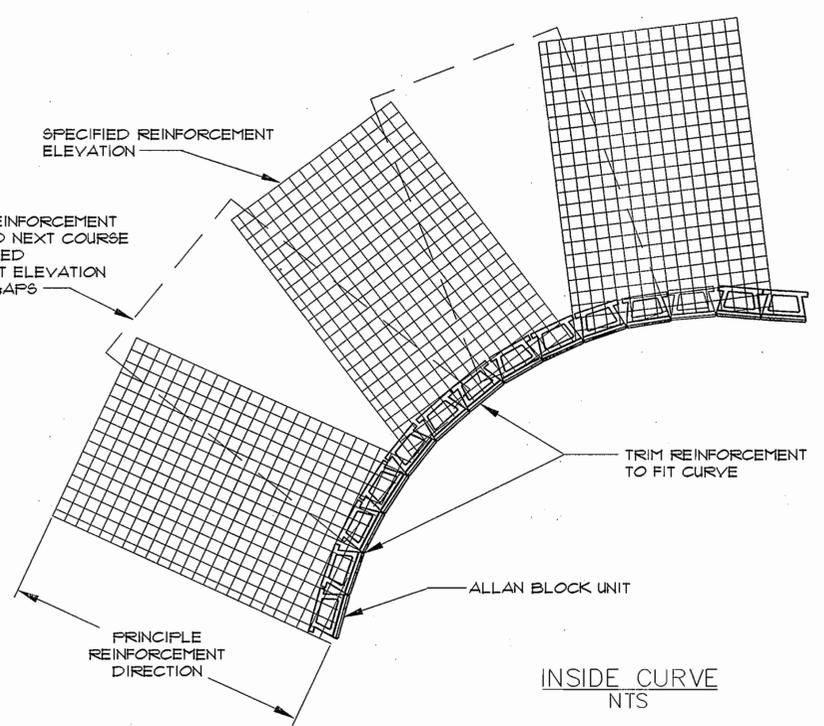
DATE	REVISIONS	JOB NO.:
6/5/06	REVISED SHEET NUMBERS	051281
		SCALE: AS SHOWN
		DATE: 11/04/05
		DRAWN BY: JEFL
		DESIGN BY: BTD
		REVIEW BY: RPM
		SHEET: 7 OF 9



ALLAN BLOCK ABBEY BLEND - BLOCK PROFILES  
NTS



Note: The Abbey Blend, two-course pattern is to be used for the construction of the wall. Any changes to the proposed pattern should be approved by GTA and the owner.



Note: A safety railing should be provided near the top of the wall where exposed height of the wall exceeds 30 inches. The required limits and location of the safety railing should be determined and shown on plans by the project civil engineer.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division *[Signature]* 1/19/07  
 Chief, Division of Land Development *[Signature]* 1/23/07  
 Director *[Signature]* 1/23/07

**RW-3**

**GTA**  
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14280 PARK CENTER DRIVE, SUITE A  
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STATE OF MARYLAND  
PROFESSIONAL ENGINEER

DOMINION GREAT OAKS  
RETAINING WALL  
DETAILS  
HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
6/5/06	REVISED SHEET NUMBERS	051281
		SCALE: AS SHOWN
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		SHEET: 8 OF 9

**SOIL DETAILS**

Symbol	Soil Name	Slope (%)	Native Vegetation	Woodland Suitability Group	K Factor
GmD	Glennville sil loam	3-8	Water tolerant hardwoods	12	0.27
LcC	Lagrange sil loam	8-15	Mixed hardwoods, mostly white oak	12	0.27
LcE	Lagrange sil loam, urban land disposal	8-15	Virginia pine has invaded in some areas	39	0.25
LcF	Lagrange sil loam, gravelly loam, very stony	25-35	Virginia pine has invaded in some areas	39	0.25
MaC	Manor loam	8-15	Mixed upland hardwoods, mainly oaks	43	0.26
MaD	Manor loam	15-25	Mixed upland hardwoods, mainly oaks	43	0.26
UaB	Urban land/Urban waste complex	0-8	Virginia pine has invaded in some areas	0.26	0.26

**FOREST CONSERVATION EASEMENT TABLE**

LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE
L1	S81°34'48"W	103.17'	L16	N86°36'44"W	35.00'	L31	N14°55'54"W	53.63'
L2	N06°10'48"W	187.62'	L17	N17°43'59"E	167.06'	L32	N83°10'10"W	76.07'
L3	N34°33'00"W	283.39'	L18	N52°23'39"E	66.99'	L33	S43°09'09"E	19.35'
L4	N01°23'15"W	53.69'	L19	S26°39'47"E	72.69'	L34	S61°19'39"E	63.32'
L5	N04°22'15"W	85.02'	L20	S49°18'20"E	69.31'	L35	N89°28'18"E	102.80'
L6	S29°47'28"E	622.79'	L21	S42°17'48"W	69.81'	L36	S42°57'46"E	35.02'
L7	S53°23'16"W	39.67'	L22	S15°04'06"E	83.63'	L37	S42°13'11"W	144.46'
L8	N10°21'58"W	197.40'	L23	S67°56'44"W	21.33'	L38	S74°34'59"W	32.51'
L9	N20°19'58"W	54.38'	L24	N14°45'36"W	92.15'	L39	S38°46'34"W	106.94'
L10	N09°25'24"W	116.70'	L25	S75°41'37"W	145.28'	L40	S76°50'01"W	15.70'
L11	N80°53'27"E	35.00'	L26	N13°57'58"W	58.88'	L41	N15°04'06"W	83.63'
L12	S09°06'34"E	110.18'	L27	N53°23'16"E	197.30'	L42	N42°17'48"E	124.00'
L13	S19°51'34"E	60.00'	L28	S36°36'44"E	109.16'	L43	N22°52'03"E	57.50'
L14	S10°36'34"E	180.00'	L29	S25°19'13"W	78.63'			
L15	S53°23'16"W	205.86'	L30	N60°52'02"W	116.22'			

**GENERAL NOTES**

- The subject property is zoned R-A-15 as per the February 2, 2004 Rezoning Plan.
- Boundary and 2' topographic information is from the Howard County GIS Data CD.
- The net tract area is 6.57 acres, see Forest Conservation Worksheet for details.
- There is no 100-year floodplain on this site as per FEMA Panel 240044 0018 B.
- There are no wetlands observed on this site.
- The site is within the Lower Patuxent River Watershed and the Sucker Branch Subwatershed.
- Significant trees (larger than 30" DBH and in good health) have been marked on the map but not surveyed at this time.
- Existing forest on site totals 6.26 acres. Forest Stand Analysis and details are on file with this site plan.
- Forest Conservation obligations are met by the creation of 2.30 acres of retention easements to be recorded in a Plat of Forest Conservation Easement. The required retention acreage is 2.30 acres, 0.00 acres of off-site acreage is required at a 2:1 ratio. A permit for the retention area was submitted to the State on 4-14-2004.
- There is a perennial stream running northeast to southwest adjacent to the property. The stream crosses the southern portion of the property.
- There are no known rare, threatened, or endangered species observed on site at this time. An environmental review was submitted to the State on 4-14-2004.
- There are no known historic features, scenic views, or historic buildings on site.
- Field work for this NRI/FSD was performed 4-10-05.

**FOREST CONSERVATION WORKSHEET  
VERSION 1.0  
(Enter in Yellow Cells)**

NET TRACT AREA:

A. Total tract area.....	21.28
B. Area within 100 year floodplain.....	14.71
C. Area to remain in agricultural production.....	0.00
D. Net tract area.....	6.57

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)

Input the number "1" under the appropriate land use zoning, and limit to only one entry.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

E. Afforestation Threshold.....	15% x D =	0.99
F. Conservation Threshold.....	20% x D =	1.31

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain).....	6.26
H. Area of forest above afforestation threshold.....	5.27
I. Area of forest above conservation threshold.....	4.95

BREAK EVEN POINT:

L. Total area of forest to be cleared.....	2.30
M. Total area of forest to be retained.....	3.98

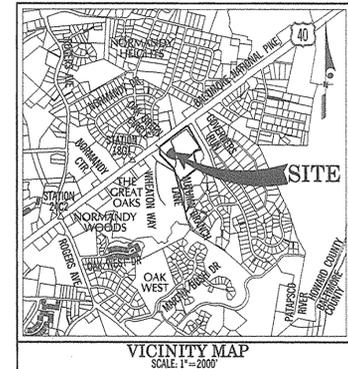
PROPOSED FOREST CLEARING:

L. Total area of forest to be cleared.....	0.18
M. Total area of forest to be retained.....	6.08

PLANTING REQUIREMENTS:

N. Reforestation for clearing above conservation threshold.....	0.06
P. Reforestation for clearing below conservation threshold.....	0.00
Q. Credit for retention above conservation threshold.....	4.77
R. Total reforestation required.....	0.00
S. Total afforestation required.....	0.00
T. Total reforestation and afforestation required.....	0.00

\* THE 14.71 ACRES REFERRED IN SECTION B REPRESENTS THE PREVIOUS AREA OF DEVELOPMENT UNDER ZONING 71-89 FOR THIS SITE. THE NET TRACT AREA IS THEREFORE THE REMAINING 6.57 ACRES.



**LEGEND** SCALE: 1"=60'

- EXISTING 2' TOPOGRAPHY
- EXISTING STREAM
- EXISTING TREE LINES
- STREAM VALLEY BUFFER
- SOILS
- STEEP SLOPES (≥ 25%)
- STEEP SLOPES (≥ 15%)
- TREE STANDS
- SIGNIFICANT TREES (> 30")
- FOREST RETENTION AREA SIGNAGE (SPACING 100' TYP)

I hereby certify that this Forest Stand Delineation Map has been prepared in accordance with the Maryland Forest Conservation Act of 1991 and the Howard County Forest Conservation Manual, effective January 1993.

Signature: *John Sekerek, Jr.* 12/19/06  
John Sekerek, Jr., RLA  
Registered Landscape Architect, No. 950

**FOREST RETENTION AREA**

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS PROHIBITED

VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991

**FOREST CONSERVATION EASEMENT AREA TABULATION**

EASEMENT AREA	SQUARE FEET	ACRES
AREA 'A'	24,692	0.5668
AREA 'B'	12,587	0.2890
AREA 'C'	19,696	0.4522
AREA 'D'	22,150	0.5085
AREA 'E'	10,032	0.2303
AREA 'F' (2:1)	11,096	0.2547
TOTAL	100,282	2.3015

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

*Mark W. Gyle* 1/19/07  
Chief, Development Engineering Division Date

*Wanda Hamstra* 1/23/07  
Chief, Division of Land Development Date

*Mark W. Gyle* 1/23/07  
Director Date

PREPARED FOR:  
**UNITED DOMINION REALTY TRUST**  
408 EAST CARY STREET  
RICHMOND, VA 23219  
CONTACT: MR. BRENT EPPE  
PHONE: (804) 780-2691 x1210  
FAX: (804) 786-0695

No.	REVISION	DATE	BY
1	REVISED AS PER HOWARD COUNTY COMMENTS	11.20.06	H.C.R.

**GREENHORNE & O'MARA**  
CONSULTING ENGINEERS  
20410 CENTURY BOULEVARD, SUITE 200, GERMANTOWN, MARYLAND 20874  
PHONE: (301) 444-8282 FAX: (301) 444-8181  
www.gand-o.com  
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FOREST STAND DELINEATION/FOREST CONSERVATION PLAN  
DOMINION GREAT OAKS'  
**OFFICE AND COMMUNITY CENTER**  
ONE-STORY  
TAX MAP 18, GRID 19  
PARCEL 312, 317  
2nd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

DESIGN SCALE 1" = 60'

HLR  
DRAWN 9 OF 9

CHECKED SHEET

APRIL 2006 SDP#06-093/ R-3911-X  
DATE PROJ No. 071134 FILE No.