

**GENERAL NOTES**

- Existing Zoning, RSC per April 2004 Comprehensive Zoning Plan effective 2/2/04 and per the Comp. Use Zoning Regulation Amendments effective on 7/28/06.
- Deed Reference: 5474/683
- Plan Reference: N/A
- Gross Area of Tract: 5.9892 ac.
- Area of 100 Year Floodplain: N/A
- Area of Steep Slopes: 0.00 ac
- Net Area of Tract: 5.9892 ac.
- Number of Proposed Lots/Parcels: 15 (9 Buildable Lots, 1 Existing Dwelling, 3 Open space lots, 2 Bulk parcels)
- Area of Proposed Lots/Parcels: 5.016 ac.
  - a) Area of Proposed Lots: 4.796 ac.
  - b) Area of Proposed Parcels: 1.62 ac.
  - c) Area of Proposed Open Space: 1.71 ac.
  - Open Space Provided: 1.71 ac.
  - Creative Recreational Open Space Provided: 1.65 Ac. (27.6%)
  - Recreational Open Space Required: 3000sqft
  - Recreational Open Space Provided: N/A (WP-07-57)
  - d) Area of Proposed Public Road Dedication: 0.98 ac.

- This project is in conformance with the latest Howard County Standards unless waivers have been approved.
- The existing topography shown hereon was provided by Daft, McCune and Walker, Inc.
- The total forest conservation obligations for this site is 0.8484 acres. A total of 7092± acres of offset/retention are proposed under this plan. As such, the required acreage for the 0.3576 acres of supplemental planting is \$6,231.00 (\$0.40/s.f.). The forest conservation acreage is \$19,090.00. The surty for the landscape material \$6,018.00 (\$0.75/s.f.) for 0.1842 acres of forestation will be paid separately.
- This plan has been prepared in accordance with the provisions of section 16.124 of HOC code financial surty for required landscaping in the amount of \$12,450.00 must be posted as part of the developer's agreement (35 shade trees, 15 evergreen trees).
- The coordinates shown hereon are based upon the Howard County Geodetic Control, which is based upon the Maryland State Coordinate System, Howard County Monument No. 47DC & 47EB were used for this project.
- This property is located in the Metropolitan District.
- Stormwater management for this development will be provided by the following means:

Recharge (Rev) will be provided by grass channels. These channels address Rev for this site and Emerson 2-Ba to the immediate south. Water Quality (WQV) for the northern drainage area (Design Point 2) will be provided in a bioretention facility, to be privately owned by an HOA. WQV for the portion of this site that drains to the south (to DFI) will be provided in the SWM pond on the Emerson site (accounted for in Emerson 2-Ba SWM design). Channel Protection (CpV) is not required at DP2 because the 1-year storm is under 2 cfs. CpV for DFI is provided and designed in Emerson 2-Ba SWM design. Neither the 10-year nor the 100-year storms are required to be managed at DP2. For treatment of these storms at DFI, see Emerson 2-Ba SWM design.

- Existing utilities shown hereon are based on field surveys and record drawings.
- There is no floodplain onsite.
- There are no wetlands onsite.
- Traffic study prepared by Hella & Associates, Inc. dated February, 2006.
- A noise study is not required for this project.
- The geotechnical study for this project was prepared by Robert A. Baltzer Company dated March, 2006.
- Project Background Information:

- Subdivision Name: The Grove at Emerson, Phase 1
- Tax Map/Block/Parcel: 47/8/5
  - a) Zoning: RSC
  - b) Election District: 6th
  - c) Total (Gross) Tract Area: 5.9892 ac.
  - d) Number of Proposed Lots: 15 (9 Buildable Lots, 1 Existing Dwelling, 3 Open space lots, 2 Bulk parcels)
  - e) Applicable Department of Planning & Zoning File No.'s: WP-07-57, SP-06-023 (Pesain Property), WP-08-45

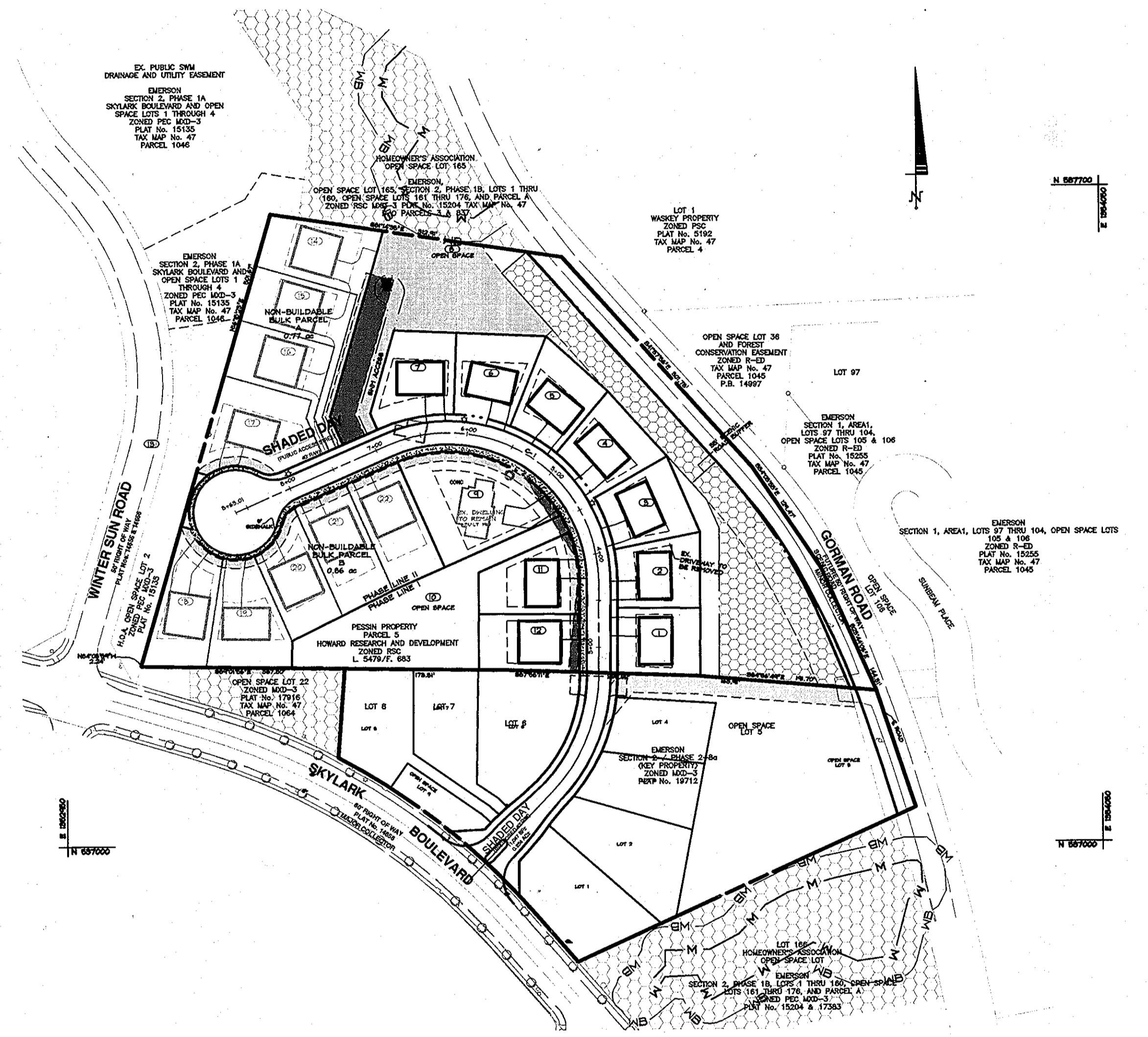
- The existing structure located on Lot 9 is to remain. All other structures on site are to be removed.
- The proposed access street shall be public.
- EM denotes the Building Easement Line.
- Sediment and erosion control measures are provided in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control.
- Street trees are provided on the access streets in accordance with Section 16.124 of the Howard County Subdivision Regulations.
- Sidewalks are provided in accordance with Section 16.134 of the Howard County Subdivision Regulations.
- The open space lots are to be privately owned by the Emerson HOA.
- Off-site grading is allowed since the adjacent property owners are the same as the subject property.
- There are no historic structures or cemeteries located on the subject property.
- No grading or removal of vegetation or trees is permitted and new structures shall be permitted within the wetlands, stream or their required buffers, flood plain and forest conservation easement.
- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410)-318-1800 at least (5) working days prior to the start of work.
- The contractor shall notify "Hella Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
- Traffic control devices, markings and signs shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices.
- All street and regulatory signs shall be in place prior to placement of any asphalt.
- All sign posts used for traffic control signs installed in the County right-of-way shall be mounted on a 2" galvanized steel, perforated, square tube post (14 gauge) inserted into a 2-1/2" galvanized steel, perforated, square tube sleeve (12-gauge)-3" long. A galvanized steel cap shall be mounted on top of each post.
- Water is public. Contract # 24-4387-D
- Public sewer service and public water service has been granted under the terms and provisions thereof effective, on which date Developer's Agreement No. 24-4387-D was executed.
- Street light placement and the type of fixture and pole shall be in accordance with the Howard County Design Manual, Volume III (1993), and as modified by "Guidelines for Street Lights in Residential Developments (June 1988)". A minimum spacing of 20' shall be maintained between any streetlights and any trees.

- This plan is subject to WP-07-57 to waive sections 16.121(a)(4) and 16.121(a)(2) of the Howard County subdivision and land development regulations. The Planning Director approved your request for a waiver from Section 16.121(a)(4), "Recreational Open Space" which requires that all residential subdivisions with more than 10 dwelling units shall provide on-site recreational open space based on 300 square feet per unit for a single family detached subdivision in the "RSC" zoning district. The petitioner is requesting alternative compliance to satisfy their minimum recreational open space requirement by annexing the site into the existing Emerson HOA.
- Approval is subject to the following conditions:
- Compliance with the SRC agency comments for SP-06-23.
  - The proposed Emerson HOA annexation documents for the subject property must be provided with the final plan submission and referenced on the final plot as alternative compliance for satisfying the 300 square foot per unit recreational open space requirement for this project.
- The Planning Director denied your request for a waiver from Section 16.121(a)(2), "Minimum Open Space" which requires a minimum on-site open space percentage for an "RSC" zoned subdivision calculated as 25% of the gross area of the proposed subdivision.
- This plan is subject to WP-08-45 which was granted on December 19, 2007 for the following sections:
    - Section 16.144(k)(1) and Section 16.144(k)(3)(1) to allow a Final Plan subdivision design to deviate from the approved Preliminary Equivalent Sketch Plan, SP-06-23 and for a 60 day time extension of the Final Plan milestones date of December 3, 2007 for Phase 1 as established by the DP1 housing unit allocation letter dated August 3, 2007, subject to the following conditions:
      - Compliance with comments dated December 13, 2007 from the Development Engineering Division.
      - The applicant shall proceed with the submission of the final plan application for Phase 1 of this project within 60 days (on or before February 16, 2008) of the date of this waiver approval letter.
      - All proposed residential building lots shall be designed to accommodate the footprint of anticipated house types of the potential building(s) without requiring setback variances. The standard house footprint that should be used to design the building lots is 35'x50'. As a result of the required "RSC" bulk regulations (lot width and setback), the eastern lot design and design road orientation, etc., it appears that some lots such as Lot 4, 11 and 13 may need to be enlarged to accommodate the anticipated house types. A further evaluation of the subdivision lot design and sizes will be made at the final plan submission for this project.
    - The Recreational Open Space area requirement for this subdivision will be fulfilled by the annexation into the Emerson HOA and through the use of Emerson recreational facilities per WP-07-57.
    - All fill shall be 95% compaction per AASHTO T-180 in fill areas.
    - The 20' of frontage for Open Space Lot 10 along proposed Shaded Way is considered an additional access point per Section 16.121(e) of the Subdivision and Land Development Regulations since the adjacent existing open space Lot 22 meets the required minimum 40' open space frontage on a public road (Skylark Boulevard).
    - This plan is subject to a Design Manual Waiver which was approved on June 4, 2008 which granted a waiver of Appendix "A" and Detail R-102 of Design Manual Volume III and IV, to permit a 40' right-of-way, subject to the following conditions:
      - The road pavement width shall meet the standard 24' requirement.
      - A public 10' street easement shall be located adjacent to 40' right of way section.
      - The proposed typical road section shall be an extension of the existing section.
      - A note must be added identifying the approval of this waiver, its date and any contingencies.

# FINAL ROAD PLAN for THE GROVE AT EMERSON PHASE I

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

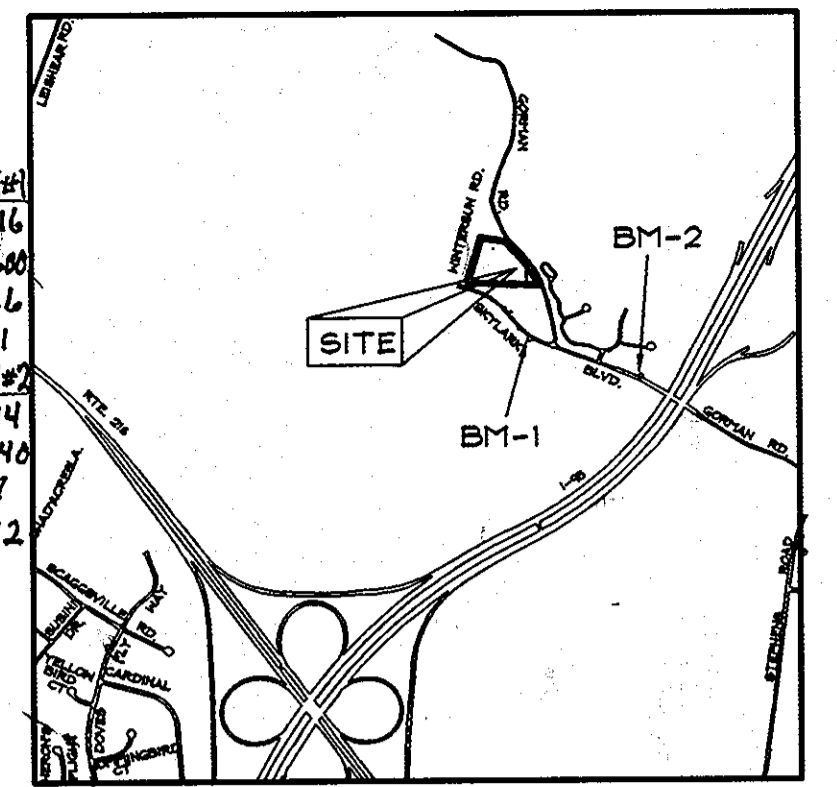
### A SUBDIVISION OF TAX MAP 47, GRID 8, PARCEL 5 6TH ELECTION DISTRICT HOWARD COUNTY, MD



**LOCATION MAP**  
SCALE: 1"=100'

**BENCHMARK**

DESCRIPTION	BENCHMARK #	BENCHMARK
BENCHMARK #1	N 536618.0157	N 537172.816
E	1985679.1226	E 1358008.400
B.M. ELEV.	47DC	B.M. CUT# 1
	948.249	ELEV. 391.91
BENCHMARK #2	536618.0157	537172.816
E	1985679.1226	E 1358008.400
B.M. ELEV.	47EB	B.M. CUT# 7
	354.296	ELEV. 362.72



**COORDINATE TABLE**

NO.	NORTHING	EASTING
243	537674.9287	1953162.7247
244	537627.2671	195378.9836
245	537401.7119	1953679.4678
246	537294.4519	1953751.4784
247	537162.5481	1953810.0642
248	537179.2817	1953619.0991
249	537186.3160	1953419.2046
250	537192.8640	1953391.4549
251	537193.0175	1953229.2321
252	537183.6161	1953495.3865
326	537182.1487	1953595.3797
327	537274.2826	1953595.8777
328	537445.1192	1953283.7442
329	537274.4878	1953426.8782
330	537408.4718	1953294.7744
331	537362.2292	1953194.0568
332	537345.0522	1953179.7406
333	537400.0233	1953195.6454
334	537398.8766	1953178.0266
335	537633.0098	1953441.7081
336	537534.1754	1953528.2777
340	537491.6294	1953220.6350
341	537354.9866	1953686.1798
342	537247.2899	1953724.9881
343	537244.3527	1953753.0087
344	537164.3120	1953787.8510

**DRAWING INDEX**

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

**DATA SOURCES:**

TOPOGRAPHY SHOWN HEREON BASED ON A FIELD SURVEY PREPARED BY DP1. BOUNDARY SHOWN HEREON IS BASED ON FIELD SURVEY MONUMENTED BOUNDARY SURVEY PERFORMED BY DEMARIO DESIGN CONSULTANTS, INC. DATED MARCH 2006.

**DRAWING LEGEND**

---	EXISTING MINOR CONTOUR (2' INTERVAL)
---	EXISTING MAJOR CONTOUR (10' INTERVAL)
---	ADJACENT PROPERTY LINE
---	EXISTING PROPERTY BOUNDARY
---	EX. ROAD / EDGE OF PAVING
---	EX. SEWER LINE & MANHOLES, CLEAN-OUTS
---	EX. OVERHEAD ELECTRIC & UTILITY POLES
---	PROPOSED MINOR CONTOUR (2' INTERVAL)
---	PROPOSED MAJOR CONTOUR (10' INTERVAL)
---	EX. BUILDING
---	EXISTING TREES
---	EXISTING TREELINE
---	EXISTING SHRUB/BRUSH LINE
---	FOREST CONSERVATION EASEMENT LIMIT LINE
---	FOREST CONSERVATION EASEMENT
---	PROPOSED TREELINE

**DeMario Design Consultants, Inc.**  
192 East Main Street  
Westminster, MD 21157  
Phone: (410) 388-0560  
Fax: (410) 388-0564  
www.demarioinc.com  
eMail: dm@demarioinc.com

**OWNER:** HOWARD RESEARCH & DVP  
10275 LITTLE PATENT PKWY  
COLUMBIA, MD 21044  
410-992-6000

**DEVELOPER:** GENERAL GROWTH PROPERTIES  
10275 LITTLE PATENT PKWY  
COLUMBIA, MD 21044  
410-992-6000

**SITE ADDRESS:**  
3881 GORMAN ROAD

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

**COVER SHEET**

6TH ELECTION DISTRICT		HOWARD COUNTY	
REVISIONS			
NO.	DESCRIPTION OF CHANGES	DRN.	REV. DATE
CO. FILE #:	SP-06-023/WP-07-57 WP-08-45	DES. BY:	JCO/WRD
TAX ACC #:	4066300	DRN. BY:	JCO
TAX MAP #:	47	CHK. BY:	MRT
BLOCK / GRID:	47/8	DATE:	8-28-2008
PARCEL #:	5	DDC JOB #:	05123.2
ZONE USE:	RSC	SHEET NUMBER:	
DWG. SCALE:	1"=400'		1 of 10

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Michelle Adams* 9-16-08  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Chris Hunt* 10/12/08  
CHIEF DIVISION OF LAND DEVELOPMENT

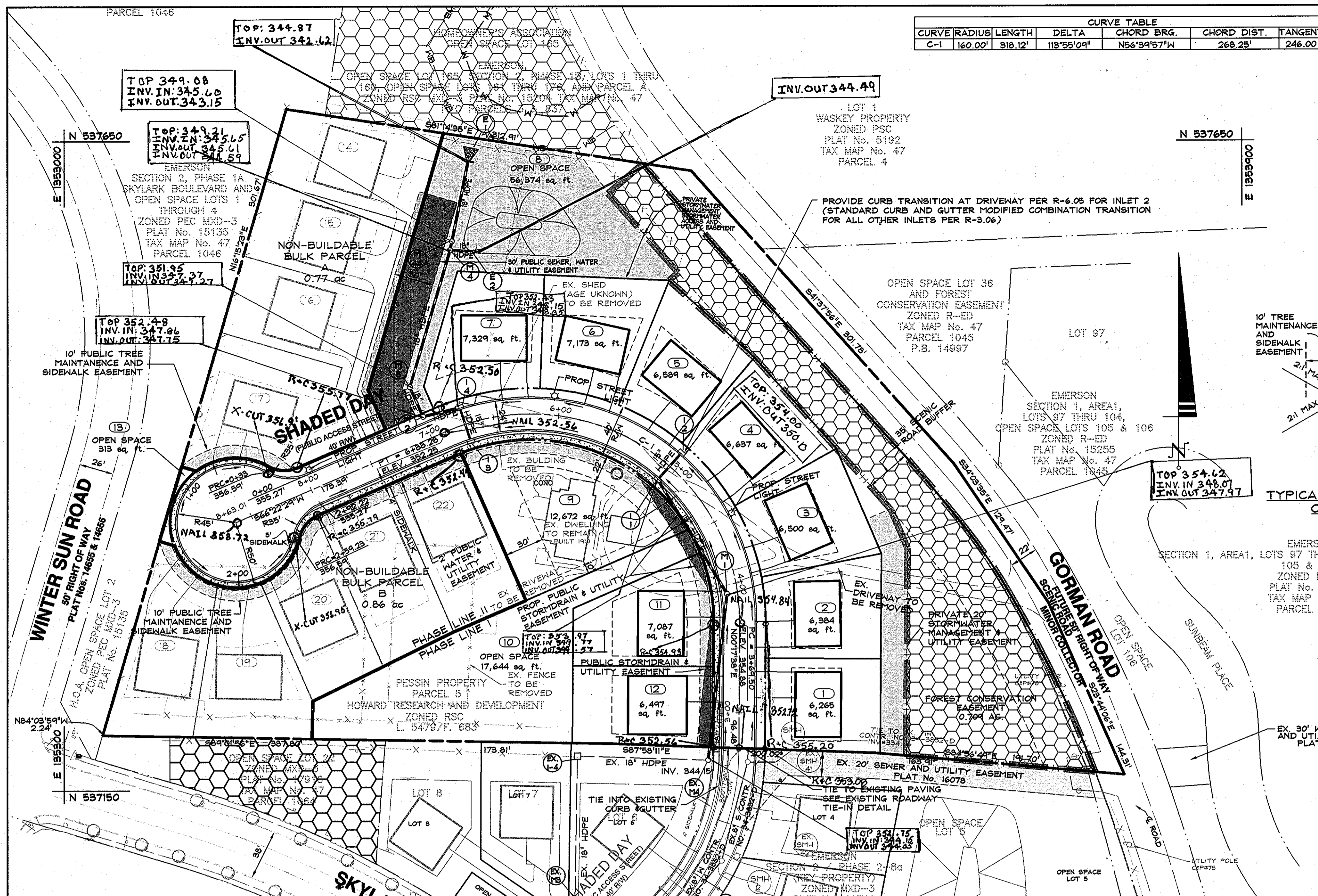
*Rob* 10/17/08  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE: 8/29/08  
Professional Certification  
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 25420  
**MARK THAYER**  
PROFESSIONAL ENGINEER NO. 25420

**NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET**

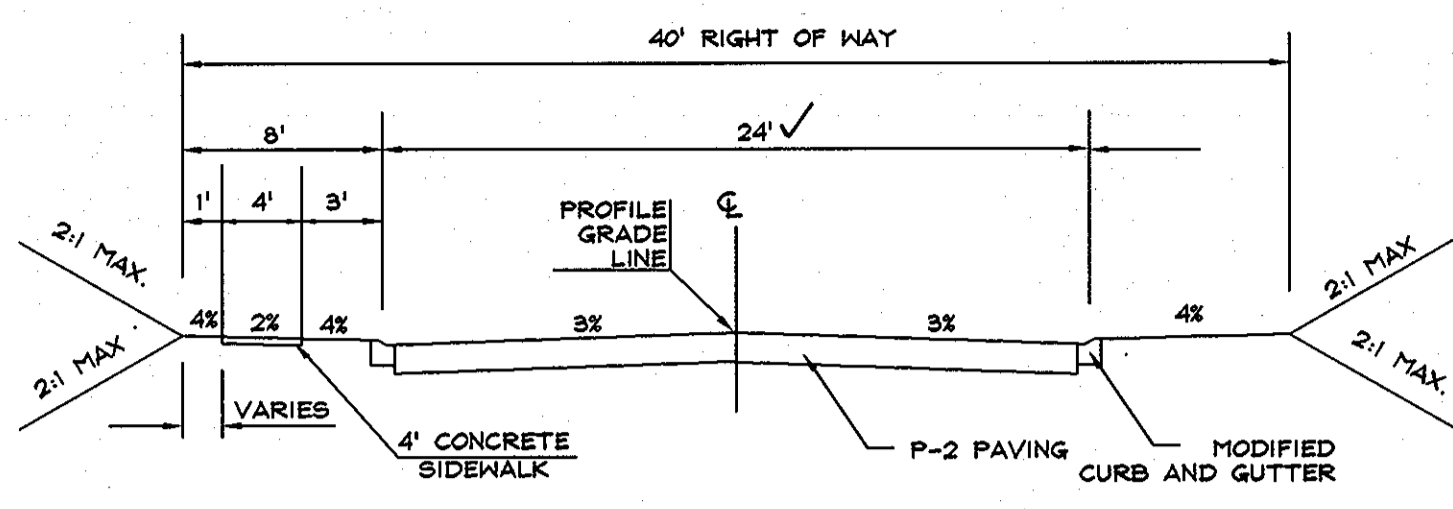
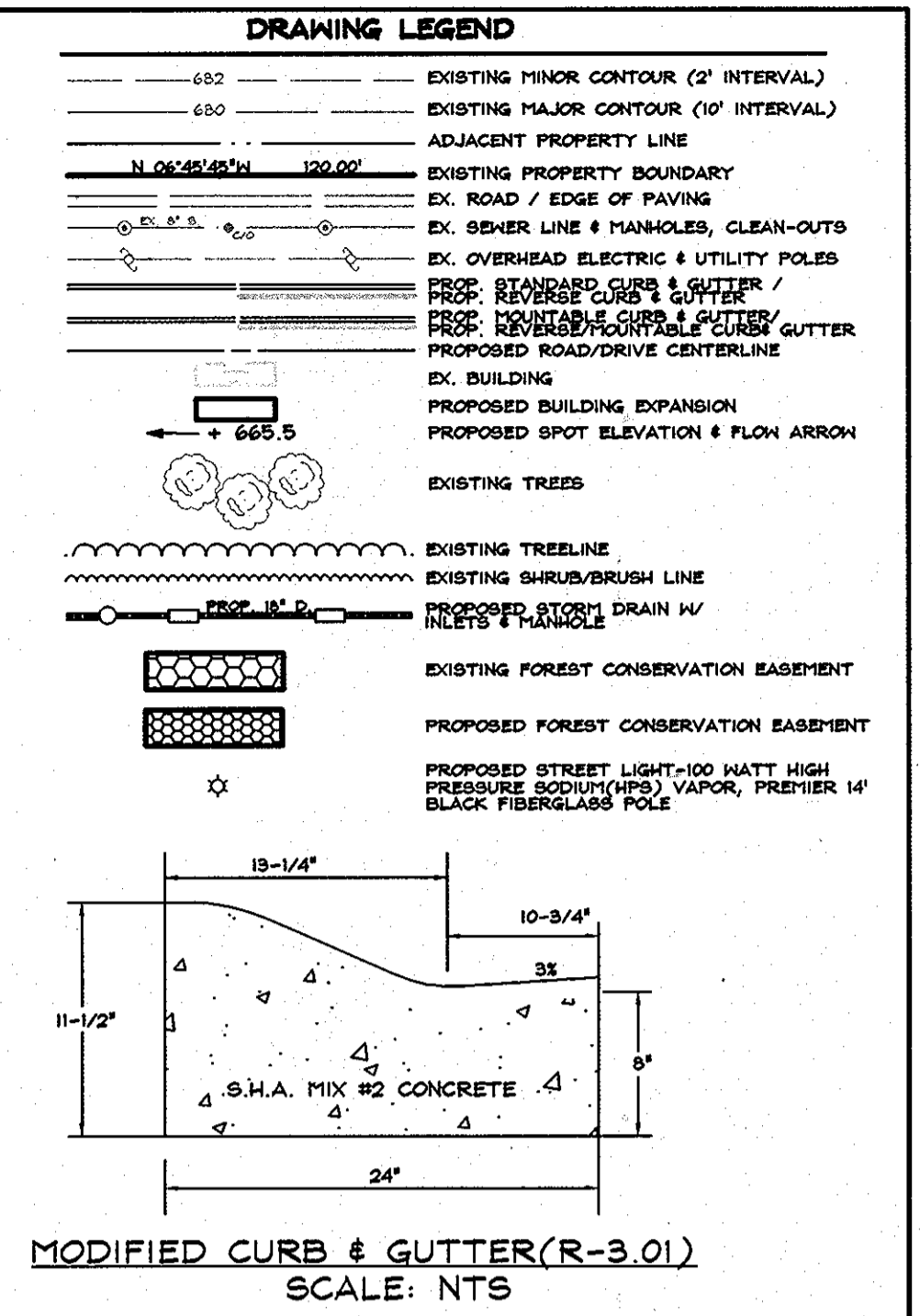
**AS-BUILT**  
*Scott Shanaberger*  
SURVEY DATES: 10/25-11/14/2007, 10/1/2013

STATE OF MARYLAND  
**SCOTT SHANABERGER**  
SHANABERGER & LANE  
PROFESSIONAL LAND SURVEYORS  
L.C. EXP. DATE: 4/2/2014

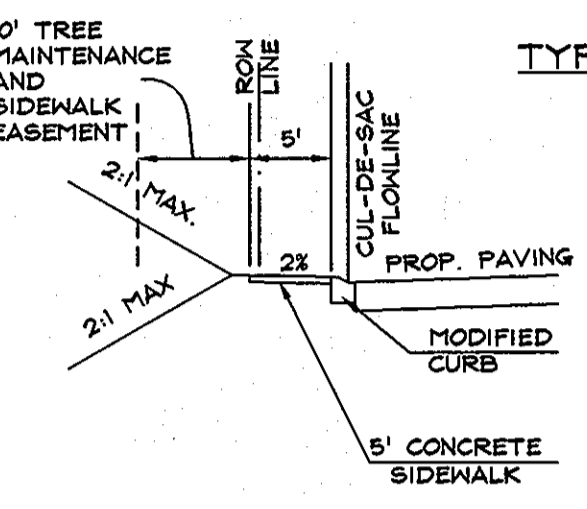


CURVE TABLE					
CURVE	RADIUS	LENGTH	DELTA	CHORD BRG.	TANGENT
C-1	160.00'	318.12'	118°55'04"	N66°39'57"W	268.23'

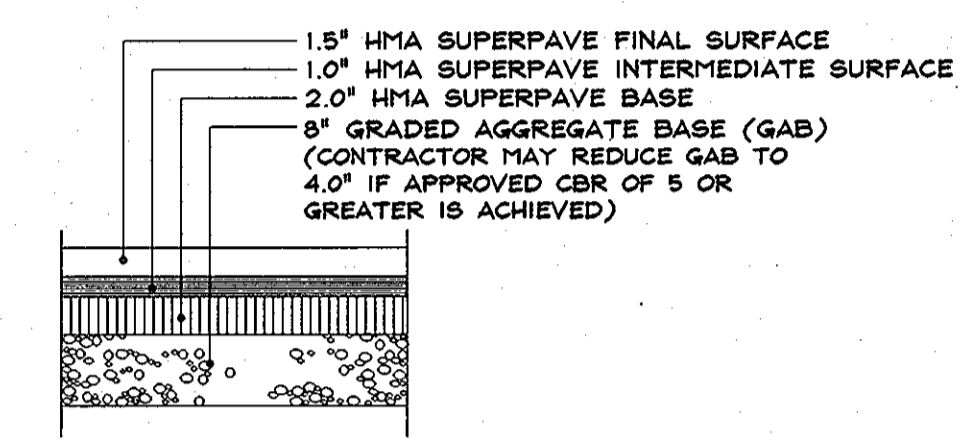
STREET LIGHT CHART		
☼	100 WATT PREMIER	☉ STA. 4+50 15', RT.
☼	100 WATT PREMIER	☉ STA. 6+05 15', RT.
☼	100 WATT PREMIER	☉ STA. 9+46 15', RT.



TYPICAL ROAD SECTION (FIG. 2.09a)  
PUBLIC CUL-DE-SAC  
DESIGN SPEED: 30MPH  
SCALE: NTS



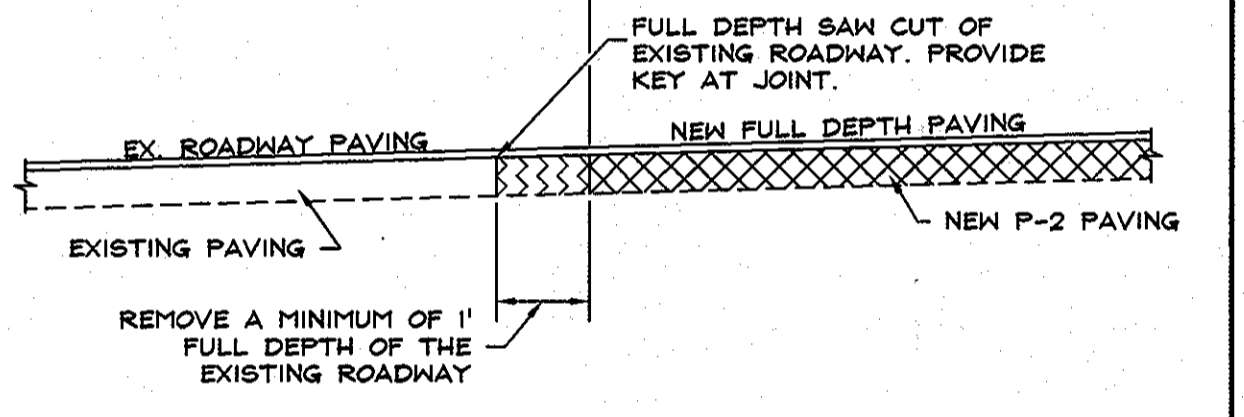
TYPICAL SECTION WITHIN CUL-DE-SAC  
SCALE: NTS



P-2 PAVING SECTION (R-2.01)  
SCALE: NTS

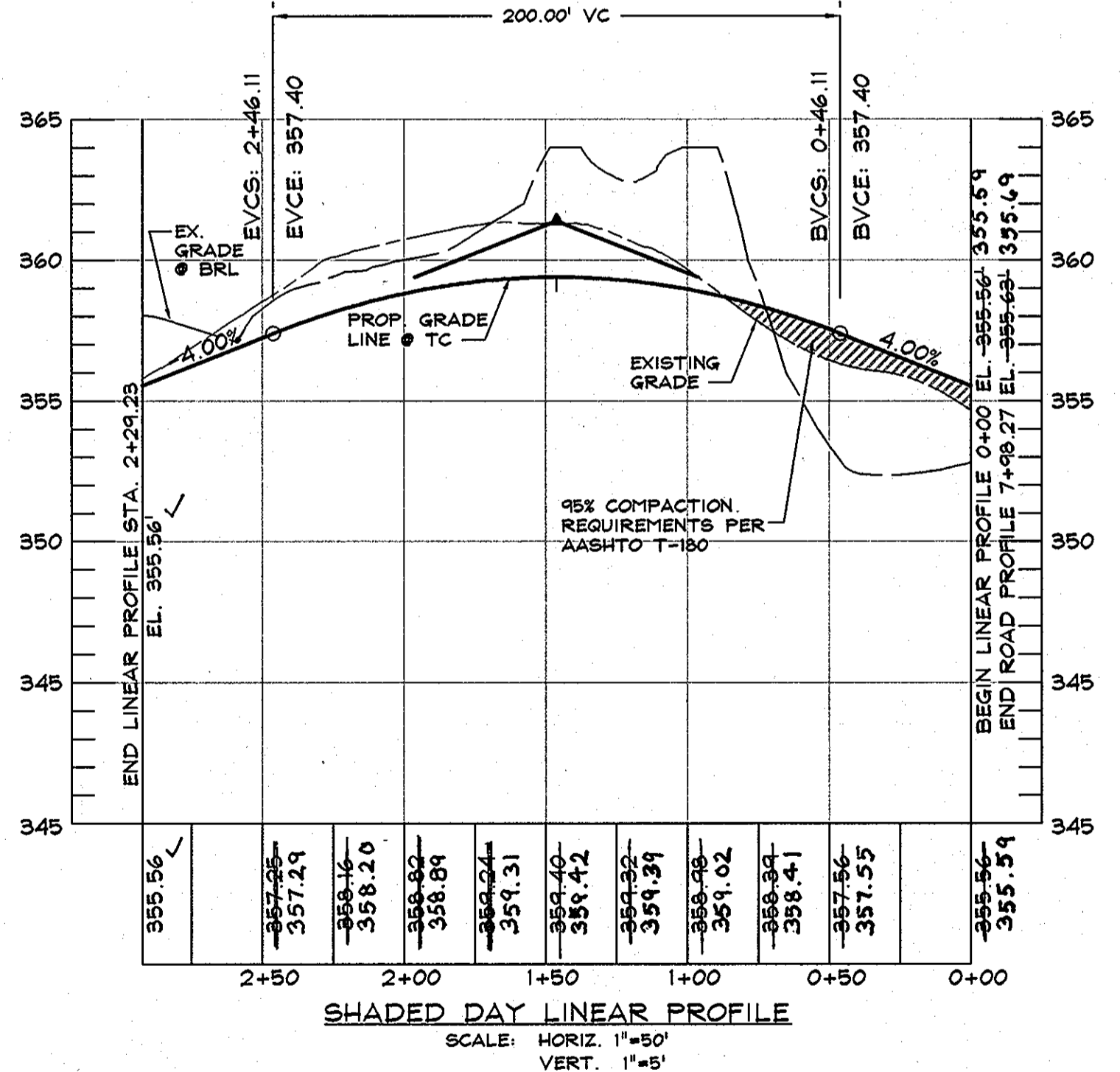
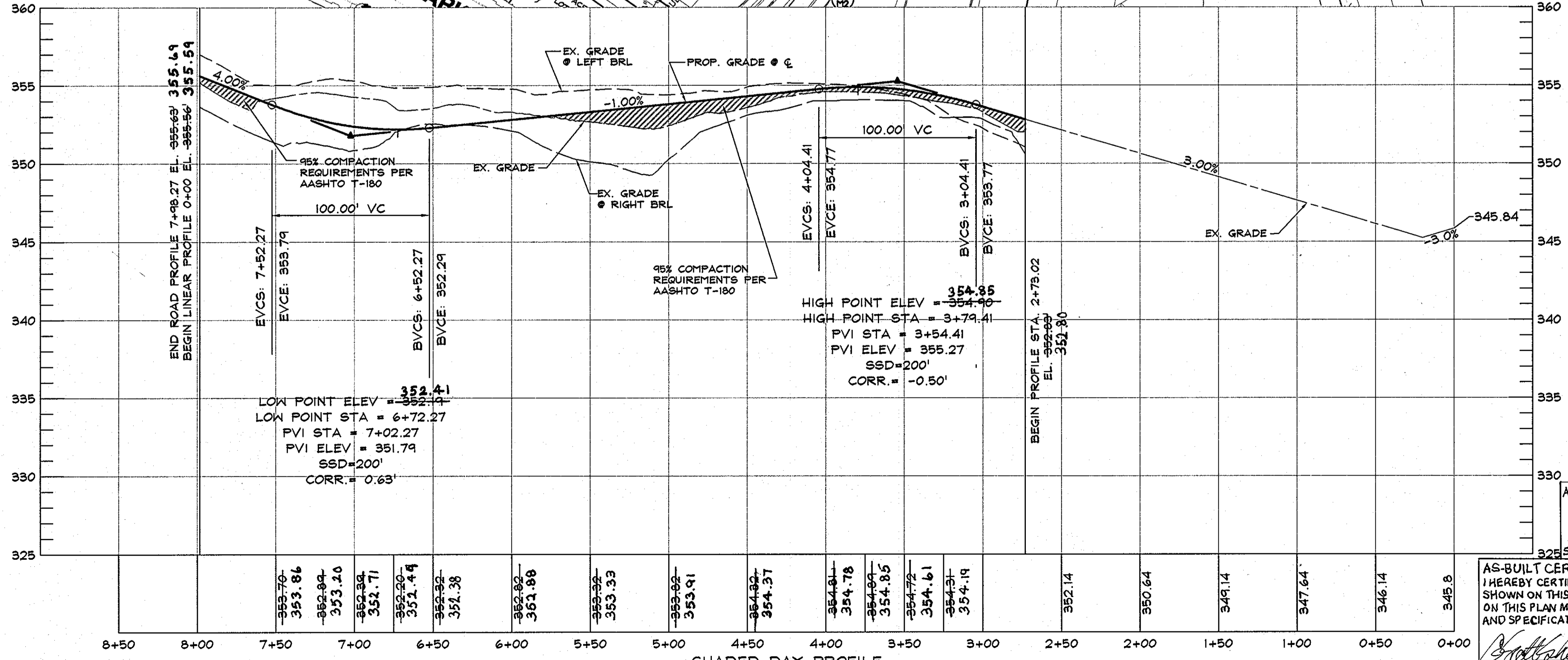
MODIFIED CURB & GUTTER (R-3.01)  
SCALE: NTS

HIGH POINT ELEV = 359.43  
HIGH POINT STA = 1+46.11  
PVI STA = 1+46.11  
PVI ELEV = 361.40  
A.D. = -8.00  
K = 25.00



EXISTING ROADWAY TIE-IN-DETAIL  
SCALE: N.T.S.

DATA SOURCES:  
TOPOGRAPHY SHOWN HEREON BASED ON A FIELD SURVEY PREPARED BY DPM. BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY DETARIO DESIGN CONSULTANTS, INC. DATED MARCH 2006.



SHADED DAY LINEAR PROFILE  
SCALE: HORIZ. 1"=50'  
VERT. 1"=5'

**DeMario Design Consultants, Inc.**  
102 East Main Street, Westminster, MD 21157  
Phone: (410) 385-0580, Fax: (410) 385-0564  
eMail: ddc@demariodesign.com

OWNER: HOWARD RESEARCH & DVP, 10275 LITTLE PATUXENT PKWY, COLUMBIA, MD 21044, 410-992-6000  
DEVELOPER: GENERAL GROWTH PROPERTIES, 10275 LITTLE PATUXENT PKWY, COLUMBIA, MD 21044, 400-992-6000

SITE ADDRESS: 9881 GORMAN ROAD

FINAL ROAD PLAN THE GROVE AT EMERSON PHASE I  
LOTS 1-7, 9, 11-12 & OPEN SPACE LOTS 8, 10, 15  
NON-BUILDABLE BULK PARCELS A & B  
**ROAD CONSTRUCTION PLAN & PROFILE**

6TH ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE
CO. FILE #	SP-06-023/ WP-07-57/ WP-08-45	DES. BY:	JCO	
TAX ACC. #	406300	DRN. BY:	SDS	
TAX MAP:	47	CHK. BY:	MRT	
BLOCK / GRID:	8	DATE:	8-29-2008	
PARCEL #:	5	DDC JOB#:	05123.2	
ZONE / USE:	RSC	SHEET NUMBER:		
DWG. SCALE:	1"=50'		2 of 10	

AS-BUILT CERTIFICATION  
I HEREBY CERTIFY, BY SEAL, THAT THE INFORMATION SHOWN ON THIS PLAN WAS OBTAINED AS SHOWN ON THIS PLAN MEET THE CURRENT APPROVED PLANS AND SPECIFICATIONS.  
G. SCOTT SHANBERGER  
PROFESSIONAL L.S. #10849  
SHANBERGER & LANE  
LICENSE EXPIRATION DATE 4/2/2014

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
W. J. Ruffell  
CHIEF, BUREAU OF HIGHWAYS  
9-16-08  
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
C. H. Hester  
CHIEF DIVISION OF LAND DEVELOPMENT  
10/12/08  
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
M. Thayer  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
10/17/08

8/29/08 DATE  
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10849.  
MARK THAYER  
PROFESSIONAL ENGINEER NO. 25420

**TRAP TABLE**

TRAP TYPE	TYPE II
EXISTING DRAINAGE AREA ACRES	2.02
INTERIM DRAINAGE AREA ACRES	3.20
PROPOSED DRAINAGE AREA ACRES	2.87
<b>STORAGE REQUIRED (CUBIC FEET):</b>	
CO	2880
WET	5760
DRY	5760
TOTAL	11520
<b>STORAGE PROVIDED (CUBIC FEET):</b>	
CO	4495
WET	8791
DRY	28608
TOTAL	28608
<b>EXISTING GROUND ELEVATION</b>	
TOP EMBANKMENT ELEVATION	342.0
NEIR CREST ELEVATION	343.5
DRY STORAGE ELEVATION	343.5
WET STORAGE ELEVATION	341.2
CLEANOUT ELEVATION	340.7
BOTTOM ELEVATION	340.0
DEPTH OF CHANNEL (d)	n/a
OUTLET WIDTH (b): ft	6.0
BOTTOM DIMENSION	120 x 70
BASIN SIDE SLOPES	3:1
<b>BASIN DEPTH</b>	
WET	1.2
DRY	3.5
RISER DIMENSIONS (PER SIDE)	n/a
NET STORAGE ZONE ELEVATION	340.0-341.2
DRY STORAGE ZONE ELEVATION	341.2-343.5
EXISTING 1-YR OUTFLOW (cfs)	0.15
ULTIMATE(SM) 1-YR (cfs)	0.2
* 1-YEAR SWM VOLUME (SEE COMPUTATIONS, P.34-42) IS 0.983 Ac.-ft. DRY VOLUME PROVIDED BETWEEN ELEVATIONS 341.2-343.5 IS 0.455 Ac.-ft.	

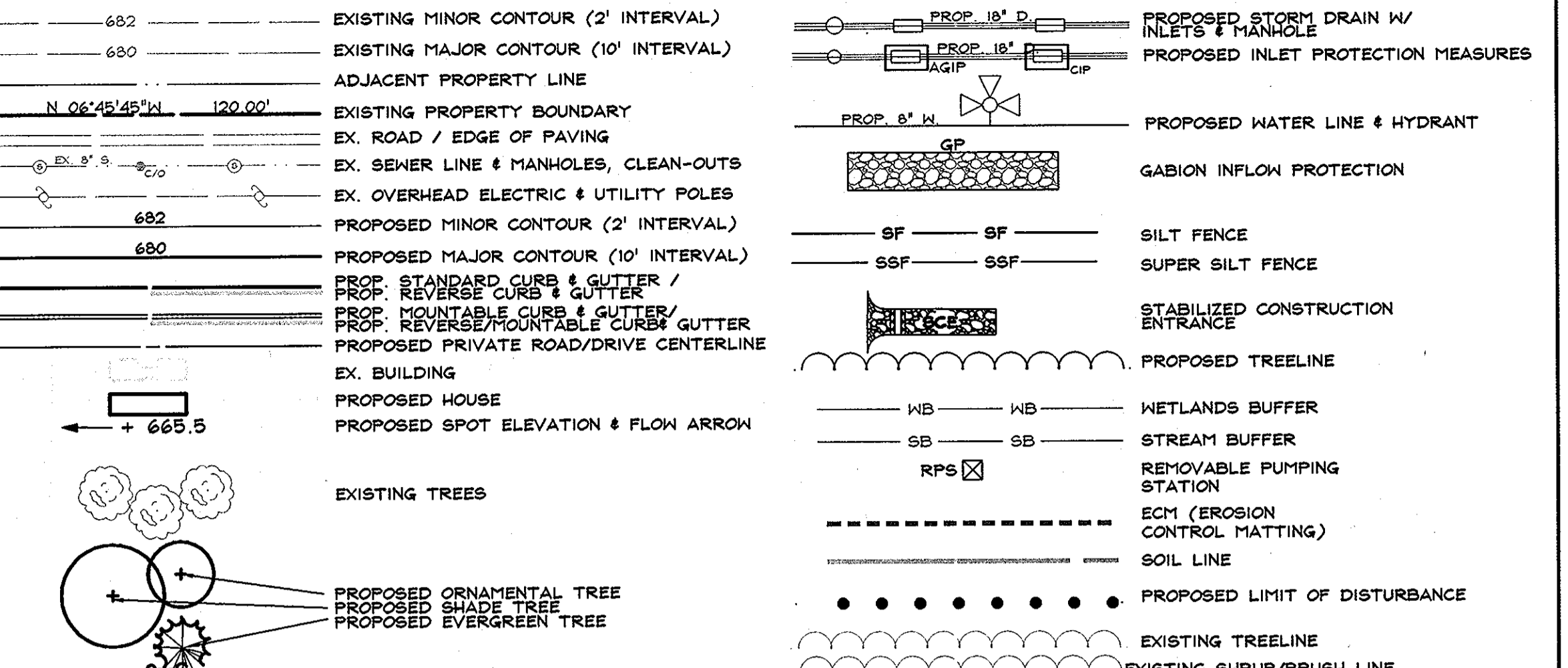
EX. PUBLIC SWM DRAINAGE AND UTILITY EASEMENT

EMERSON SECTION 2, PHASE 1A SKYLARK BOULEVARD AND OPEN SPACE LOTS 1 THROUGH 4 ZONED PDC MXD-3 PLAT No. 15135 TAX MAP No. 47 PARCEL 1046

**SOILS CHART**

CODE (CLASS)	NAME	HYDRIC (Y/N/INCL.)	K VALUE
GIB2(B)	GLENELG LOAM, 3%-8% SLOPES, MODERATELY ERODED	N	0.32
MgC2(B)	MANOR GRAVELLY LOAM, 8%-15% SLOPES, MODERATELY ERODED	N	0.37
MIA(B)	MANOR LOAM, 0%-3% SLOPES	N	0.37
MID2(B)	MANOR LOAM, 15%-25% SLOPES, MODERATELY ERODED	N	0.37
MIB2(B)	MANOR LOAM, 3%-8% SLOPES, MODERATELY ERODED	N	0.37
SIC2(B)	SASSAFRAS LOAM, 5%-10% SLOPES, MODERATELY ERODED	N	0.37
SCB(B)	SANDY AND CLAYEY LAND, GENTLY SLOPING	N	0.37

**DRAWING LEGEND**



**SWM FACILITY SUMMARY TABLE**

OWNERSHIP	DP-1 (EMER. 2-8a) SWIM POND	DP-2 BIO-RETENTION FACILITY
PRIVATE	PRIVATE	PRIVATE
STRUCTURE TYPE	WET DETENTION POND	BIO-RET. WQ FACILITY
STRUCTURE CLASS	MD-378 (CLASS A)	NON MD-378
DRAIN AREA (HQV) (Ac)	5.85	2.60
HT TO EMBANKMENT (ft)	0.5	4.0
STREAM USE	I-P	I-P
WATERSHED	MIDDLE PATUXENT R.	MIDDLE PATUXENT R.
WQV REQUIRED (Ac-ft)	0.191	0.087
HQ PROVIDED IN WET POOL (Ac-ft)	0.193	0.167
Re REQUIRED %AREA METHOD (Ac)	0.560	0.257
Rev REQUIRED %VOLUME METHOD (Ac-ft)	0.048	0.023
Re PROVIDED IN GRASS CHANNELS FOR CREDIT (Ac)	0	0.573
Rev PROVIDED BEHIND CHECK DAMS (Ac-ft)	0	0.045
Cpv REQUIRED (Ac-ft)	0.226	n/a (Cpv < 2cfs)
Cpv PROVIDED AFTER CREDITS (Ac-ft)	0.226	n/a
Cpv PROVIDED IN POND (Ac-ft)	0.226	n/a
Cpv MSE (1-yr FROM TR20) (ft)	336.0	n/a
1-yr PROP. INFLOW (cfs)	0.20	n/a
1-yr PROP. OUTFLOW (cfs)	0.20	n/a
10-yr WATER SURFACE ELEVATION (ft)	337.32	n/a (bypasses facility)
100-yr WATER SURFACE ELEVATION (ft)	337.73	n/a
10-yr WATER SURFACE ELEVATION (SEC) (ft)*	337.24	n/a
FREEBOARD REQUIRED (ft)	2.0	0.25
FREEBOARD PROVIDED (ft)	2.27	0.28
STORAGE-HEIGHT PRODUCT (Ac-ft-ft)	4.3	n/a
NORTH COORDINATE	N 537,000	N 537,600
EAST COORDINATE	E 1,953,500	E 1,953,400
* FOR THE SEC 10-yr, SEE SEDIMENT AND EROSION CONTROL COMPUTATIONS.		

TOTAL REV (PESIN + EMERSON): 0.817

0.071

0.573

0.045\*

\*REMAINING REV TO BE TREATED = 0.021 Ac-ft. USED INTERPOLATION TO DETERMINE THIS VALUE CORRESPONDS TO REMAINING Re TO BE TREATED OR 0.817-0.573=0.244 Ac.

**DATA SOURCES:**

- NOTE:**
1. THE SOUTHERN PORTION OF PESIN PROPERTY DRAINS TOWARD THE SOUTH AND IS TREATED IN THE EMERSON 2-8A SWIM POND.
  2. THE OWNER OF PESIN PROPERTY IS ALSO OWNER OF THE EMERSON 2-8A PROPERTY.
  3. ALL FILL SHALL BE INSTALLED AT 95% COMPACTION, PER AASHTO T-180 STANDARDS.

TOPOGRAPHY SHOWN HEREON BASED ON A FIELD SURVEY PREPARED BY DWG. BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN NON-PORTABLE SURVEY PERFORMED BY DEMARIO DESIGN CONSULTANTS, INC. DATED MARCH 2006.

**DeMario Design Consultants, Inc.**

1502 East Main Street, Westminister, MD 21157

Phone: (410) 386-0260, Fax: (410) 386-0264, Email: dm@demariodesign.com

**OWNER:** HOWARD RESEARCH & DEV. 10275 LITTLE PATUXENT PKWY COLUMBIA, MD 21044 410-992-9000

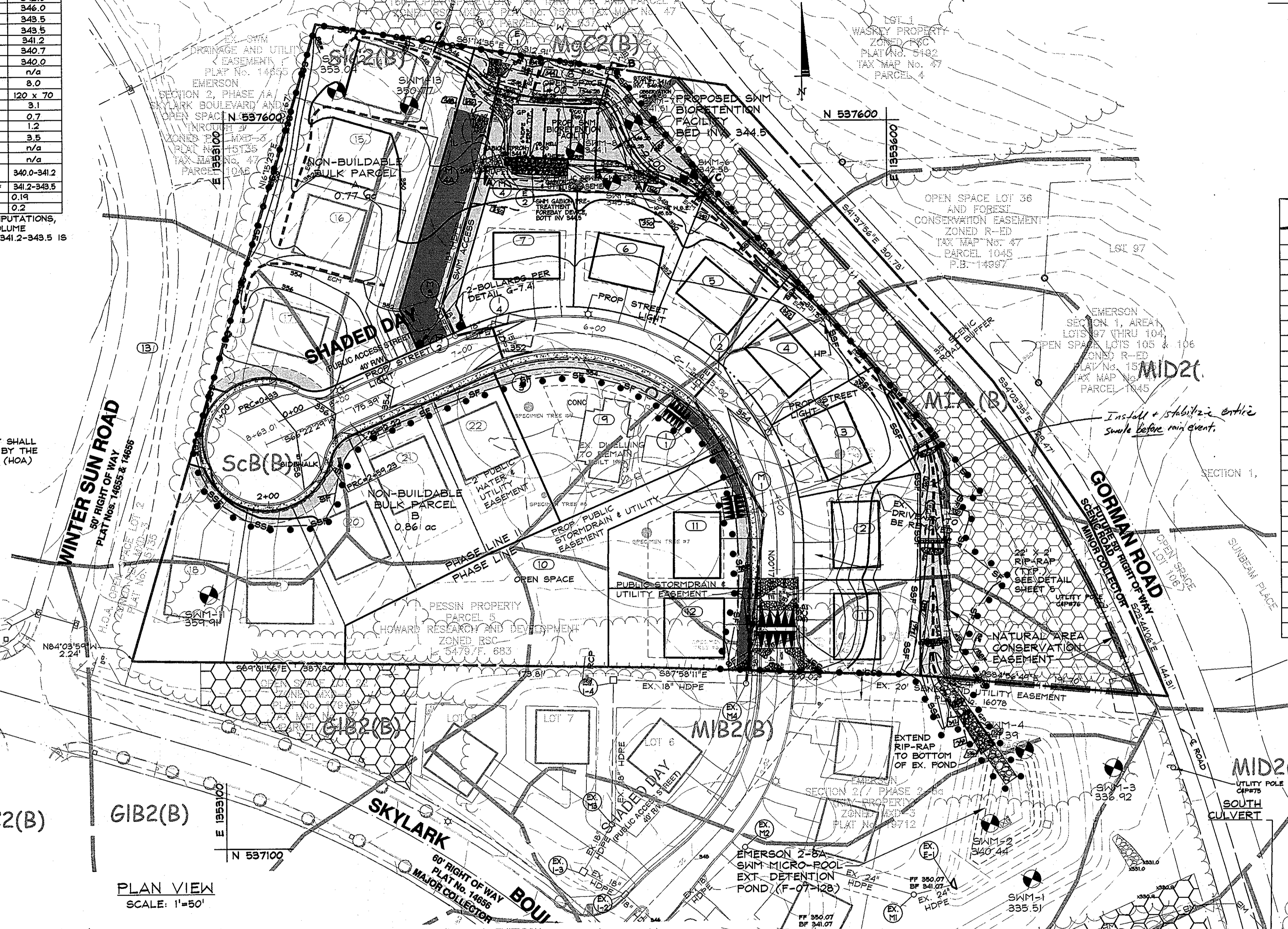
**DEVELOPER:** GENERAL GROWTH PROPERTIES 10275 LITTLE PATUXENT PKWY COLUMBIA, MD 21044 400-992-6000

**SITE ADDRESS:** 8881 GORMAN ROAD

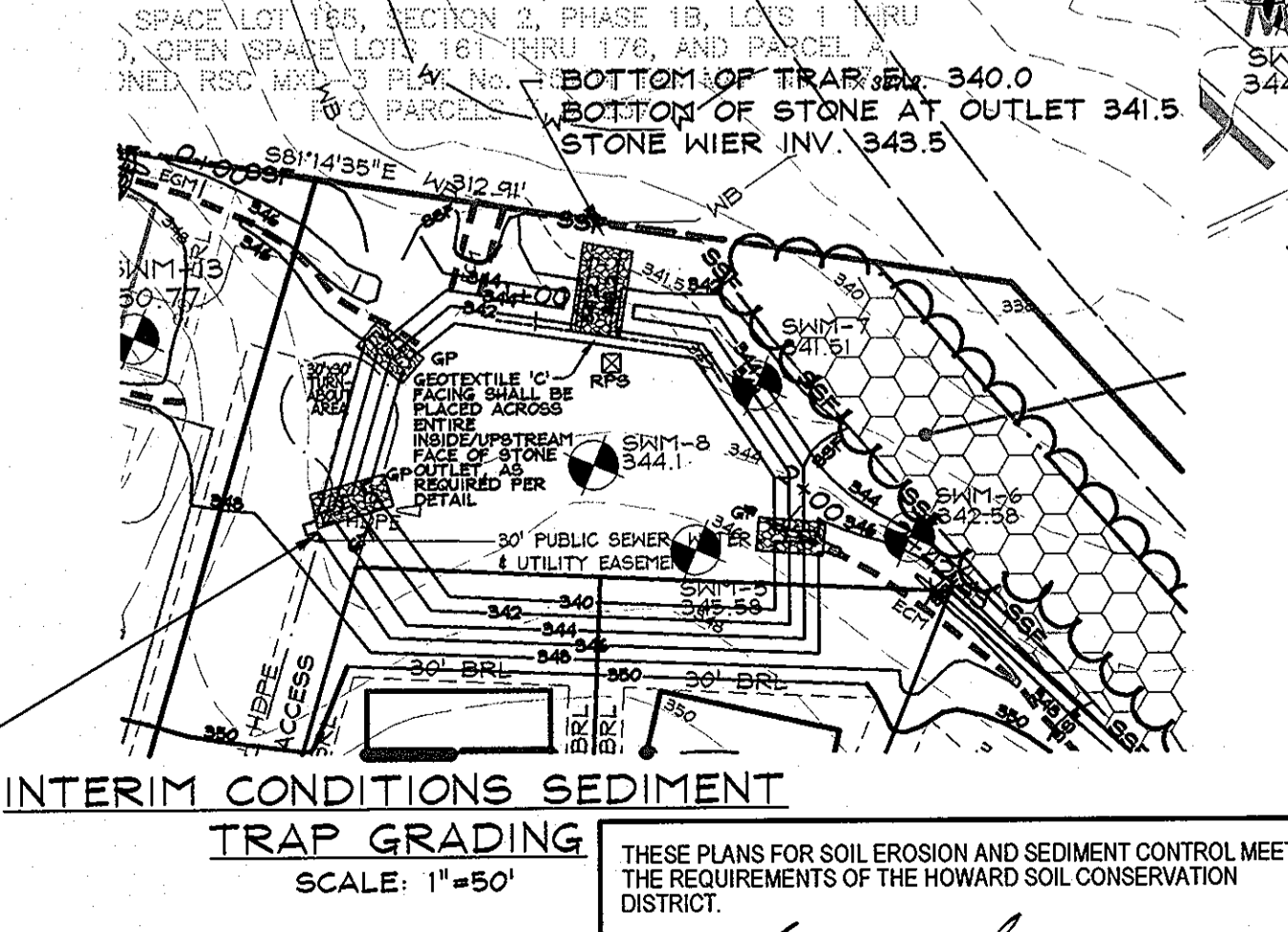
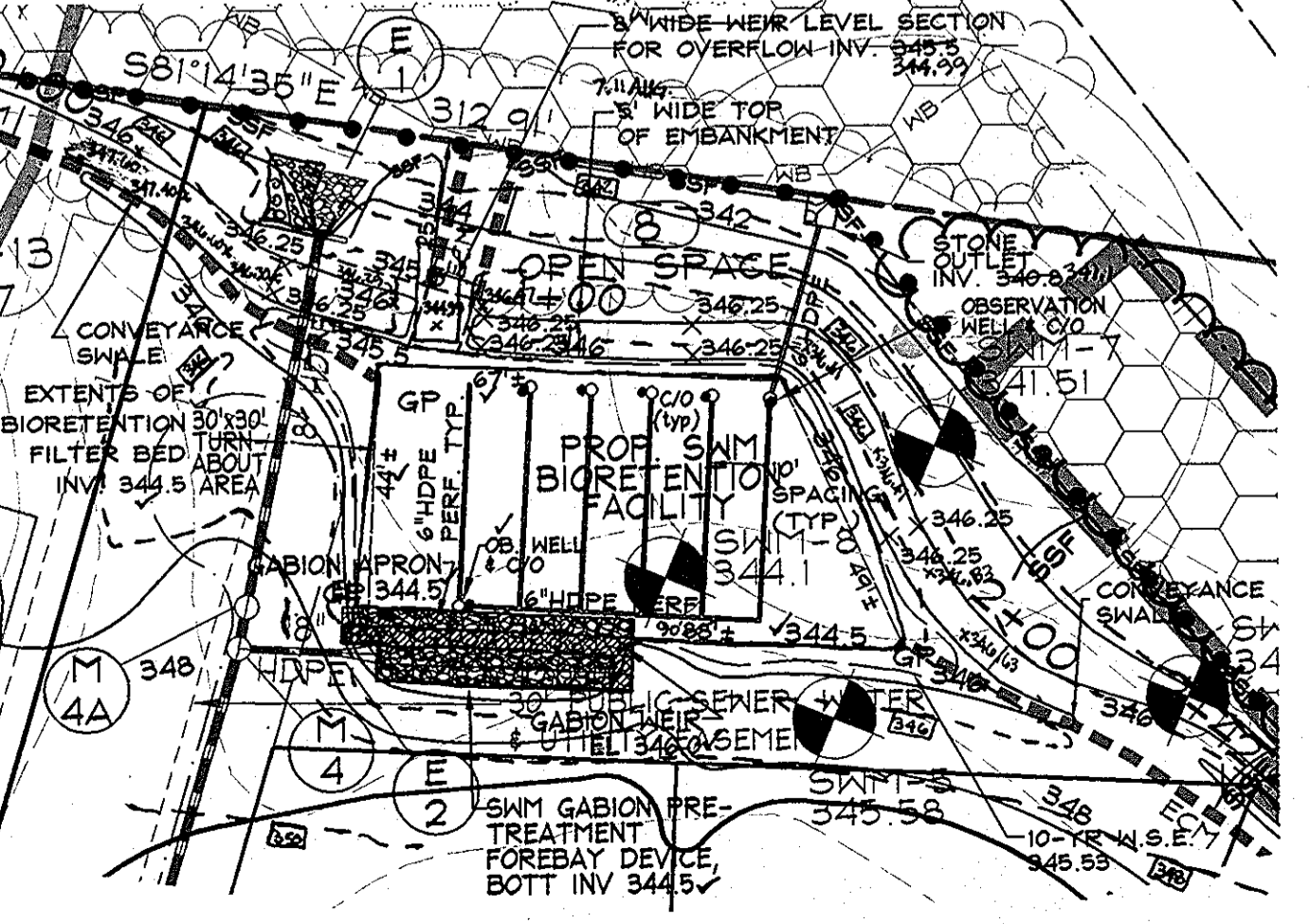
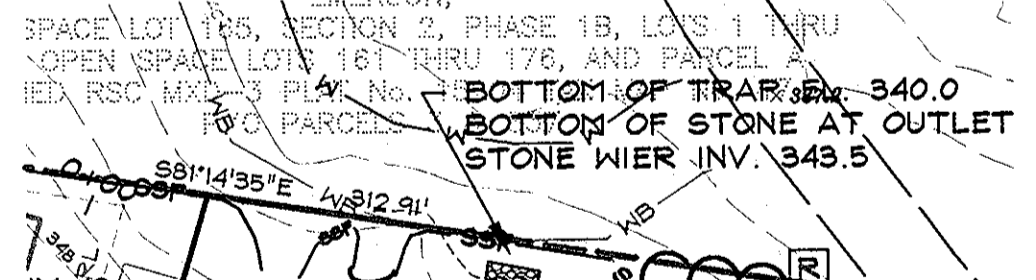
**FINAL ROAD PLAN THE GROVE AT EMERSON PHASE 1 LOTS 1-7, 9, 11-12 & OPEN SPACE LOTS 9, 10, 15 NON-BUILDABLE & BULK PARCELS A & B GRADING, SEDIMENT CONTROL & SOILS PLAN**

6th ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE
CO. FILE #	SP-06-0231 (WP-07-57) WP-08-45	DES. BY:	CTS	
TAX ACC. #	406300	DRN. BY:	CTS/SDS	
TAX MAP:	47	CHK. BY:	MRT	
BLOCK / GRID:	8	DATE:	8-29-2008	
PARCEL #:	5	DDC JOB#:	05123.2	
ZONE / USE:	RSC	SHEET NUMBER:	3 of 10	
DWG. SCALE:	AS SHOWN			



PLAN VIEW SCALE: 1"=50'



AS-BUILT CERTIFICATION  
I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET THE CURRENTLY APPLICABLE STANDARDS AND SPECIFICATIONS.

*Scott Shanaberger*  
G SCOTT SHANABERGER  
PROFESSIONAL L.S. # 10249  
SHANABERGER & LANE  
LICENSE EXPIRATION DATE 4/31/2014

**BY THE DEVELOPER:**

"I WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL. AND THAT ALL RESPONSIBLE PERSONNEL 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

*DAQ*  
DEVELOPER

*3/28/08*  
DATE

**BY THE ENGINEER:**

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

*Mark Thayer*  
ENGINEER

*8/29/08*  
DATE

**APPROVED:** HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Wanda Z. White*  
CHIEF, BUREAU OF HIGHWAYS  
9-16-08  
DATE

**APPROVED:** HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Wanda Z. White*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
10/17/08  
DATE

*Mark Thayer*  
PROFESSIONAL ENGINEER NO. 25420

TABLE 25: PERMANENT SEEDING FOR LOW MAINTENANCE AREAS HARDINESS ZONE 6b. Table with 11 rows of seed mixtures (e.g., Tall Fescue, Kentucky Bluegrass, Weeping Lovegrass) and columns for planting rates, site conditions, and USDA Hardiness Zones.

NOTES: A/ USED BY SHA ON SLOPED AREAS. ADD A LEGUME FOR SLOPES > THAN 3:1. B/ USED IN MEDIAN AREAS BY SHA. SHADE TOLERANT. C/ POPULAR MIX - PRODUCES PERMANENT GROUNDCOVER QUICKLY. BLUEGRASS QUICKENS STAND.

TABLE 26 TEMPORARY SEEDING RATES, DEPTHS, AND DATES (HARDINESS ZONE 6b). Table with 2 columns: SPECIES and PLANTING DEPTH. Rows include CHOOSER ONE (Barley, Oats, Rye), WEEPING LOVEGRASS, ANNUAL RYEGRASS, and MILLET.

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

Professional Engineer/Engineer certification section. Includes fields for Engineer name, date, and signature, and a section for the Developer to certify the plan.

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION Section I - Vegetative Stabilization Methods and Materials. A. Site Preparation. i. Install erosion and sediment control structures... ii. Perform all grading operations at right angles to the slope...

C. Seedbed Preparation. i. Temporary Seeding. a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 6"... ii. Permanent Seeding. a. Minimum soil conditions required for permanent vegetative establishment: 1. Soil pH shall be between 6.0 and 7.0...

F. Mulch Specifications. i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, uniformly bright in color... ii. Wood Cellulose Fiber Mulch (WCFM). a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state...

2.0 STANDARDS & SPECIFICATIONS FOR TOPSOIL Definition - Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation. Purpose - To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

V. Topsoil Application. i. When topsoiling, maintain needed erosion and sediment control practices such as ditches, 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 at least 4" higher in elevation.

SECTION IV - SOD To provide quick cover on disturbed areas (2:1 grade or flatter). A. General Specifications. i. Class of turfgrass sod shall be Maryland or Virginia State Certified or Approved. Sod labels shall be made available to the job foreman and inspector.

SECTION V - TURFGRASS ESTABLISHMENT Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which require a medium to high level of maintenance... I. Kentucky Bluegrass - Full sun mixture - For use in areas that receive intensive management...

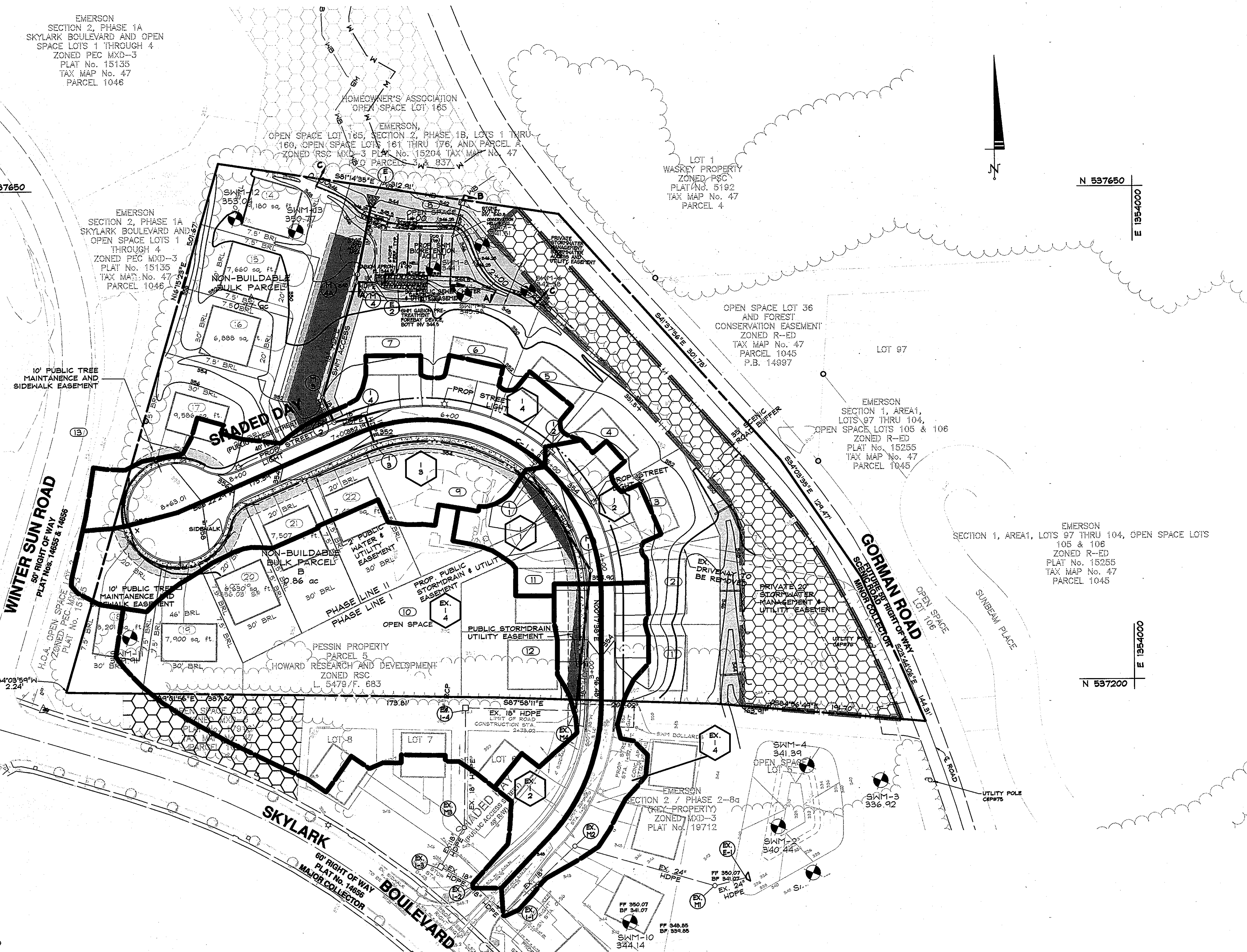
SEQUENCE OF CONSTRUCTION 1. OBTAIN A GRADING PERMIT. THIS PROJECT CANNOT BEGIN UNTIL BASIN IS CONSTRUCTED UNDER F-07-12B. 2. NOTIFY "MIS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT I-800-257-7777.

DeMario Design Consultants, Inc. logo and contact information. Includes address (192 East Main Street, Westminster, MD 21157), phone (410) 386-0590, and website (http://www.demariodesign.com).

SEDIMENT & EROSION CONTROL NOTES. Table with columns for NO., DESCRIPTION OF CHANGES, DRN., REV., DATE. Includes AS-BUILT drawings, professional stamps, and notes regarding construction dates and site inspections.



DRAINAGE AREA COMPS			
D.A.	"C" FACTOR	% IMPERVIOUS	ACRES
I-1	0.404	48%	0.21
I-2	0.395	44%	0.16
I-3	0.455	56%	0.66
I-4	0.453	52%	0.50
EX. I-1	0.474	54%	0.26
EX. I-2	0.541	65%	0.26
EX. I-4	0.290	38%	1.68



EMERSON  
SECTION 2, PHASE 1A  
SKYLARK BOULEVARD AND OPEN  
SPACE LOTS 1 THROUGH 4  
ZONED PEC MXD-3  
PLAT No. 15135  
TAX MAP No. 47  
PARCEL 1048

HOMEOWNER'S ASSOCIATION  
OPEN SPACE LOT 165  
EMERSON,  
OPEN SPACE LOTS 165, SECTION 2, PHASE 1B, LOTS 1 THRU  
168, OPEN SPACE LOTS 161 THRU 176, AND PARCEL A  
ZONED RSC MXD-3 PLAT No. 15204 TAX MAP No. 47  
PARCEL 1049

LOT 1  
WASKY PROPERTY  
ZONED R-ED  
PLAT No. 5192  
TAX MAP No. 47  
PARCEL 4

OPEN SPACE LOT 36  
AND FOREST  
CONSERVATION EASEMENT  
ZONED R-ED  
TAX MAP No. 47  
PARCEL 1045  
P.B. 14897

EMERSON  
SECTION 1, AREA 1,  
LOTS 97 THRU 104,  
OPEN SPACE LOTS 105 & 106  
ZONED R-ED  
PLAT No. 15255  
TAX MAP No. 47  
PARCEL 1045

EMERSON  
SECTION 1, AREA 1, LOTS 97 THRU 104, OPEN SPACE LOTS  
105 & 106  
ZONED R-ED  
PLAT No. 15255  
TAX MAP No. 47  
PARCEL 1045

PESSIN PROPERTY  
PARCEL 5  
HOWARD RESEARCH AND DEVELOPMENT  
ZONED RSC  
L. 5479/F. 683

EMERSON  
SECTION 2, PHASE 2-8a  
(NEW PROPERTY)  
ZONED MXD-3  
PLAT No. 19712

DATA SOURCES:  
TOPOGRAPHY SHOWN HEREON BASED ON A FIELD SURVEY PREPARED BY  
DPA. BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED  
BOUNDARY SURVEY PERFORMED BY DEHARJO DESIGN CONSULTANTS,  
INC. DATED MARCH 2006.

**DeMario  
Design  
Consultants, Inc.**

192 East Main Street  
Westminster, MD 21157  
Phone: (410) 388-0560  
Fax: (410) 388-0564  
http://www.demariodesign.com  
e-mail: dco@demariodesign.com

**OWNER:**  
HOWARD RESEARCH & DVP,  
10275 LITTLE PATUXENT PKWY  
COLUMBIA, MD 21044  
410-952-6000

**DEVELOPER:**  
GENERAL GROWTH PROPERTIES  
10275 LITTLE PATUXENT PKWY  
COLUMBIA, MD 21044  
410-952-6000

**SITE ADDRESS:**  
9881 GORMAN ROAD

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

**STORM DRAIN  
DRAINAGE AREA MAP**

**6TH ELECTION DISTRICT HOWARD COUNTY**

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE
CO. FILE #	SP-05-023 WP-07-57 / WP-08-45		DES. BY: JCO	
TAX ACC. #	406300		DRN. BY: SDS	
TAX MAP:	47		CHK. BY: MRT	
BLOCK / GRID:	8		DATE: 8-29-2008	
PARCEL #:	5		DDC JOB#: 05123.2	
ZONE / USE:	RSC		SHEET NUMBER:	
DWG. SCALE:	1"=100'			6 of 10

**NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET**

**AS-BUILT**  
SURVEY DATES: 10/23-11/14/2012, 10/17/2013

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
DATE: 9-16-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
DATE: 10/17/08

PROFESSIONAL ENGINEER NO. 25420  
DATE: 10/17/08

**DRAWING LEGEND**

- EXISTING MINOR CONTOUR (2' INTERVAL)
- EXISTING MAJOR CONTOUR (10' INTERVAL)
- ADJACENT PROPERTY LINE
- EXISTING PROPERTY BOUNDARY
- EX. ROAD / EDGE OF PAVING
- EX. SEWER LINE & MANHOLES, CLEAN-OUTS
- EX. OVERHEAD ELECTRIC & UTILITY POLES
- PROPOSED MINOR CONTOUR (2' INTERVAL)
- PROPOSED MAJOR CONTOUR (10' INTERVAL)
- PROP. STORM DRAIN WITH GUTTER / UTILITY EASEMENT
- PROP. REVISION ON LOT CENTERLINE
- PROP. PRIVATE ROAD/DRIVE CENTERLINE
- PROP. BUILDING EXPANSION
- PROP. SPOT ELEVATION & FLOH ARROW
- EXISTING TREES
- PROP. ORNAMENTAL TREE
- PROP. SHADE TREE
- PROP. EVERGREEN TREE
- EXISTING TREELINE
- EXISTING SHRUB/BURSH LINE
- PROP. STORM DRAIN W/ NLETS / INLET
- PROP. INLET PROTECTION MEASURES
- PROP. WATER LINE & HYDRANT
- PROP. SEWER AND MANHOLES
- PROP. ELECTRIC TRANSFORMER
- PROP. ELECTRIC METER
- EXISTING FOREST CONSERVATION EASEMENT
- PROP. FOREST CONSERVATION EASEMENT



### DRAWING LEGEND

- 602 --- EXISTING MINOR CONTOUR (2' INTERVAL)
- 600 --- EXISTING MAJOR CONTOUR (10' INTERVAL)
- ADJACENT PROPERTY LINE
- N 08°58'52" 120.00' --- EXISTING PROPERTY BOUNDARY
- EX. ROAD / EDGE OF PAVING
- EX. SENEER LINE & MANHOLES, CLEAN-OUTS
- EX. OVERHEAD ELECTRIC & UTILITY POLES
- 602 --- PROPOSED MINOR CONTOUR (2' INTERVAL)
- 600 --- PROPOSED MAJOR CONTOUR (10' INTERVAL)
- PROP. REINFORCED CONCRETE GUTTER
- PROP. REINFORCED CONCRETE GUTTER
- PROP. PRIVATE ROAD/DRIVE CENTERLINE
- EX. BUILDING
- PROPOSED BUILDING EXPANSION
- PROPOSED SPOT ELEVATION & FLOW ARROW
- PROPOSED FOREST CONSERVATION EASEMENT
- PROPOSED ORNAMENTAL TREE
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- EXISTING TREELINE
- EXISTING SHRUBS/BUSH LINE
- TPF --- TREE PROTECTION FENCING

### PLANT LIST (INCLUDING BIORETENTION FACILITY)

QTY	SYM	BOTANICAL NAME/ COMMON NAME	SIZE	REMARKS
<b>LARGE TREES</b>				
31	AR	ACER RUBRUM 'OCTOBER GLORY'	2 1/2 -3" CAL.	B # B
10	LS	OCTOBER GLORY MAPLE	2 1/2 -3" CAL.	B # B
4	QC	LIQUIDAMBAR STRACIFLUA SHEETGUM	2 1/2 -3" CAL.	B # B
10	GP	QUERCUS COCCINEA SCARLET OAK	2 1/2 -3" CAL.	B # B
6	PA	QUERCUS PALustris PIN OAK	2 1/2 -3" CAL.	B # B
<b>EVERGREEN TREES</b>				
3	PS	FICEA ASIES NORWAY SPRUCE	6' HT.	B # B
19	GG	PINUS STROBUS EASTERN WHITE PINE	6' HT.	B # B
14	CS	THUJA X 'GREEN GIANT'	18" HT.	B # B
17	IG	ITEA VIRGINICA 'HENRY'S GARNET'	18" HT.	B # B
10	IV	HENRY'S GARNET SHEETSPIRE	18" HT.	B # B
<b>SHRUBS</b>				
175	AA	CORNUS SERICEA REDOBIEB DOGWOOD	1 QT, 24" O.C.	
520	TS	ACORUS AMERICANUS SHEET FLAG	1 QT, 24" O.C.	
180	VN	CAREX STRICTA TUSsock SEDGE	1 QT, 24" O.C.	
		VERNONIA NOVEBORACENSIS NEW YORK IRONWEED		
<b>HERBACEOUS EMERGENT PLANTS</b>				

PERIMETER LANDSCAPE EDGE: SCHEDULE A

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES					TOTAL
	P4 'B'	P1 'A'	P2 'A'	P3 'A'	P5 'A'		
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	588 L.F.	468 L.F.	502 L.F.	275 L.F.	248 L.F.		
CREDIT FOR EXISTING VEGETATION (DESCRIBE BELOW IF NEEDED)	YES 588 L.F.	NA	NA	YES 105 L.F.	NA		
CREDIT FOR BERM (DESCRIBE BELOW IF NEEDED)	NA	NA	NA	NA	NA		
NUMBER OF PLANTS REQUIRED							
SHADE TREES	0	8	9	3	4	24	
EVERGREEN TREES	0	0	0	0	0	0	
SHRUBS	0	0	0	0	0	0	
NUMBER OF PLANTS PROVIDED							
SHADE TREES	0	8	3	1*	2*	14	
EVERGREEN TREES	0	0	12	4	4	20	
OTHER TREES (2:1 SUBSTITUTION)	0	0	0	0	0	0	
SHRUBS	0	0	0	0	0	0	
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)							

CREDIT FOR EXISTING VEGETATION TO REMAIN WAS REQUESTED FOR BOTH PERIMETERS 3 AND 4, THE VEGETATION MEETS THE REQUIREMENTS OF LANDSCAPE MANUAL.  
 \*\*\* FOUR EVERGREEN TREES WERE SUBSTITUTED FOR TWO SHADE TREES.

SCHEDULE D

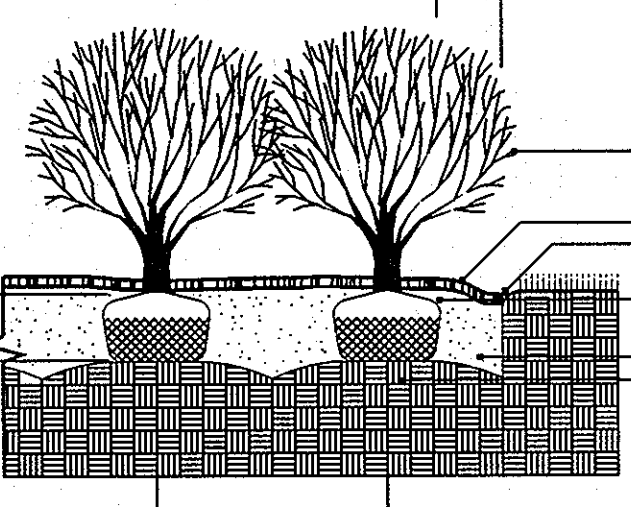
STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	534 L.F.
NUMBER OF PLANTS REQUIRED	
SHADE TREES	11
EVERGREEN TREES	13
CREDIT FOR EXISTING VEGETATION (DESCRIBE BELOW IF NEEDED)	YES #
CREDIT FOR BERM (DESCRIBE BELOW IF NEEDED)	NA
NUMBER OF PLANTS PROVIDED	
SHADE TREES	7*
EVERGREEN TREES	8*
OTHER TREES (2:1 SUBSTITUTION)	0
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	

\*EIGHT EVERGREEN TREES HAVE BEEN SUBSTITUTED FOR FOUR SHADE TREES, AND FORTY ONE SHRUBS AND EXISTING MATURE VEGETATION TO REMAIN ADJACENT TO THE FACILITY HAVE BEEN SUBSTITUTED FOR THIRTEEN EVERGREEN TREES WITHIN AND AROUND THE BIORETENTION BASIN. THIS REQUEST IS MADE PER PAGE 30 OF THE HOWARD COUNTY LANDSCAPE MANUAL DUE TO THE GRADUAL SLOPE OF THE FACILITY WHICH DO NOT REQUIRE A PHYSICAL BUFFER, AND THE DESIRE TO PROVIDE AESTHETIC ENHANCEMENT TO THE INFILTRATION FIELD OF THE BIORETENTION FACILITY THROUGH THE INCORPORATION OF NATIVE PLANTS.

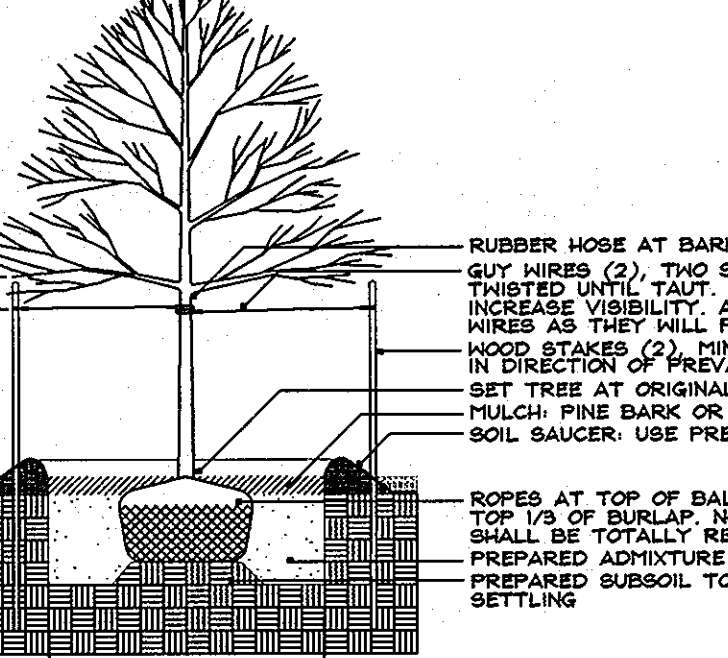
NOTES:

- SPACING BETWEEN SHRUBS IN BEDS MAY VARY. REFER TO PLAN OR PLANT LIST FOR DISTANCES.
- CONTAINER GROWN SHRUBS SHOULD BE REMOVED FROM CONTAINER AND ROOT BALL SHOULD BE SCARIFIED WITH 4" X 1" DEEP VERTICAL CUTS.
- BIODEGRADABLE POTS SHOULD BE SLIT IN THREE PLACES.
- THIN BRANCHES BY 1/3 RETAINING NORMAL PLANT SHAPE.
- BARK MULCH 2" - 3" TYP.
- SEE PLANTING PLANS AND/OR NOTES FOR EDGE TREATMENT.
- ROPES AT TOP OF BALL SHALL BE CUT. REMOVE TOP 1/3 OF BURLAP. NON-BIODEGRADABLE MATERIAL SHALL BE TOTALLY REMOVED.
- GENTLY COMPACTED BACKFILL MIXTURE.
- SCARIFY SUBSOIL TO A DEPTH OF 4"



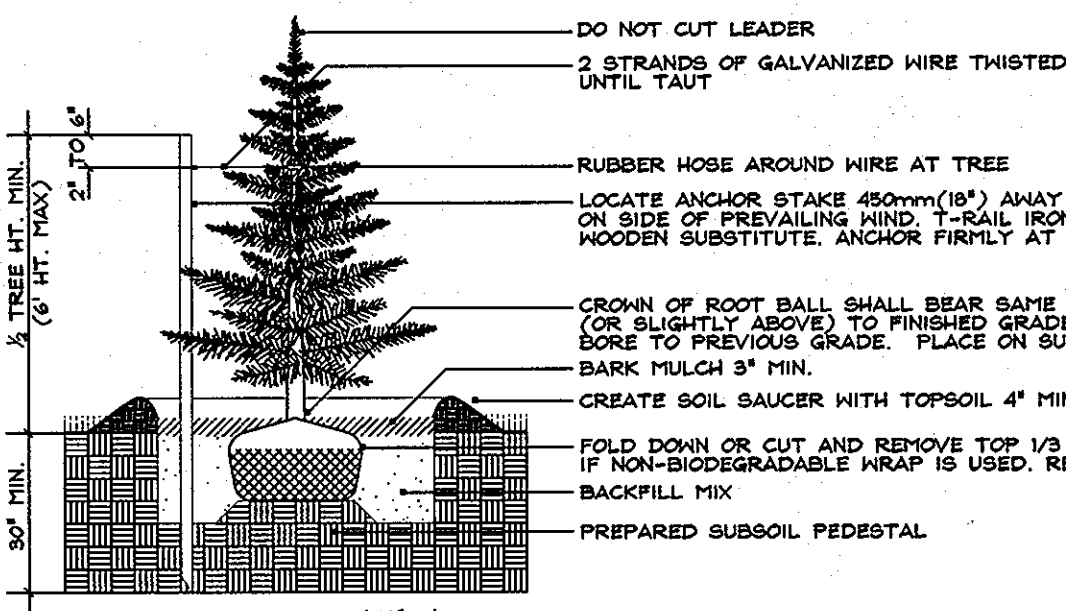
SHRUB PLANTING - CONTINUOUS BED

N.T.S. DO NOT CUT LEADER



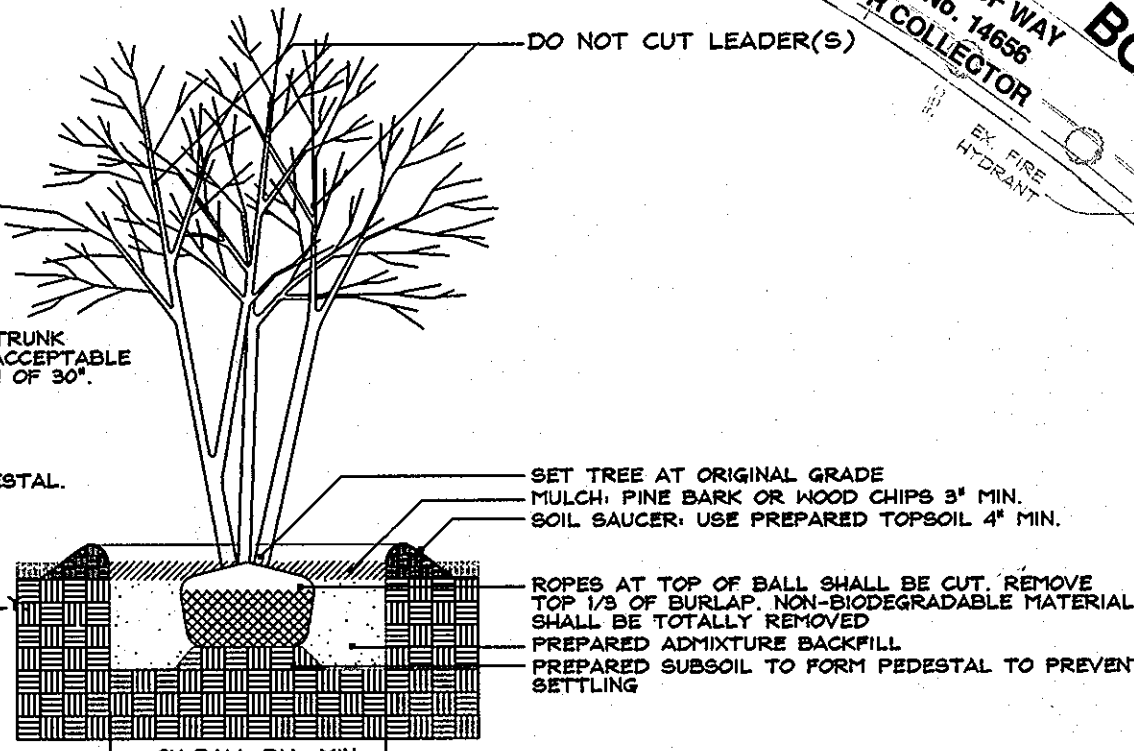
DECIDUOUS TREE PLANTING (LESS THAN 3" CAL.)

N.T.S.



EVERGREEN TREE PLANTING

N.T.S.



DECIDUOUS MULTI-STEM TREE PLANTING

N.T.S.

STREET TREE TABULATION  
 STREET TREES REQUIRED: 34 TOTAL  
 1950 L.F. @ 1 TREE/40 L.F. (INTERIOR ROADWAY - SHADED DAY)  
 STREET TREES PROVIDED: 34 TOTAL

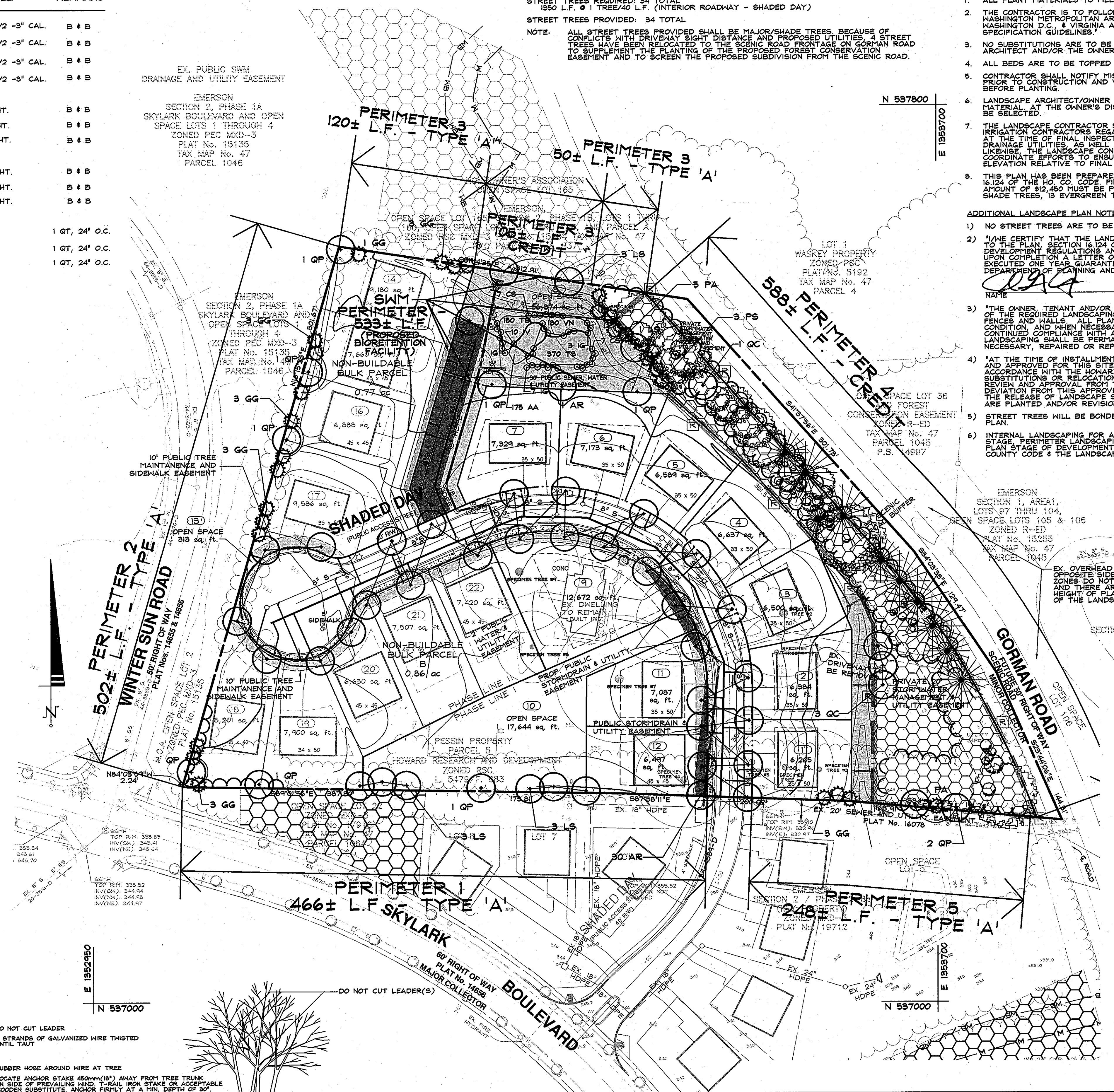
NOTE: ALL STREET TREES PROVIDED SHALL BE MAJOR SHADE TREES, BECAUSE OF CONFLICTS WITH DRIVEWAY SIGHT DISTANCE AND PROPOSED UTILITIES. STREET TREES HAVE BEEN RELOCATED TO THE SCENIC ROAD FRONTAGE ON GORMAN ROAD TO SUPPLEMENT THE PLANTING OF THE PROPOSED FOREST CONSERVATION EASEMENT AND TO SCREEN THE PROPOSED SUBDIVISION FROM THE SCENIC ROAD.

GENERAL PLANTING NOTES

- ALL PLANT MATERIALS TO MEET A.N.L.A. STANDARDS.
- THE CONTRACTOR IS TO FOLLOW SPECIFICATION GUIDELINES FOR BALTIMORE & WASHINGTON METROPOLITAN AREA AS APPROVED BY THE L.C.A. OF MARYLAND, WASHINGTON, D.C. & VIRGINIA AND DESCRIBED IN THE LATEST EDITION OF "LANDSCAPE SPECIFICATION GUIDELINES".
- NO SUBSTITUTIONS ARE TO BE MADE WITHOUT THE CONSENT OF THE LANDSCAPE ARCHITECT AND/OR THE OWNER.
- ALL BEDS ARE TO BE TOPPED WITH THREE (3) INCHES OF HARDWOOD MULCH.
- CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1 (800) 257-7777, AT LEAST 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY THE LOCATION OF ALL UTILITIES WITH THE OWNER BEFORE PLANTING.
- LANDSCAPE ARCHITECT/OWNER SHALL SELECT, VERIFY AND/OR APPROVE ALL PLANT MATERIALS. THE OWNER'S DISCRETION, SPECIMEN AND OTHER PLANT MATERIAL MAY BE SELECTED.
- THE LANDSCAPE CONTRACTOR SHALL COORDINATE WITH THE GENERAL LIGHTING & IRRIGATION CONTRACTORS REGARDING TIMING AND INSTALLATION OF PLANT MATERIAL. AT THE TIME OF FINAL INSPECTION WITH ACCEPTANCE, ALL ELECTRIC, WATER & DRAINAGE UTILITIES, AS WELL AS PLANT MATERIAL, SHALL REMAIN UNDAMAGED. LIKEWISE, THE LANDSCAPE CONTRACTOR AND UTILITIES CONTRACTORS SHALL COORDINATE EFFORTS TO ENSURE THAT SURFACE UTILITIES ARE AT THE PROPER ELEVATION RELATIVE TO FINAL GRADES.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF \$12,480 MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT (35 SHADE TREES, 13 EVERGREEN TREES).

ADDITIONAL LANDSCAPE PLAN NOTES:

- NO STREET TREES ARE TO BE PLACED WITHIN 10' OF A PROPOSED DRIVEWAY.
- THE CONTRACTOR SHALL CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE SPECIFICATIONS OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. THE CONTRACTOR SHALL FURTHER CERTIFY THAT UPON COMPLETION OF THE LANDSCAPE INSTALLATION, ALL ELECTRIC, WATER & DRAINAGE UTILITIES, AS WELL AS PLANT MATERIAL, SHALL REMAIN UNDAMAGED. LIKEWISE, THE LANDSCAPE CONTRACTOR AND UTILITIES CONTRACTORS SHALL COORDINATE EFFORTS TO ENSURE THAT SURFACE UTILITIES ARE AT THE PROPER ELEVATION RELATIVE TO FINAL GRADES.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS. FENCES AND WALLS ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUOUS COMPLIANCE WITH APPLICABLE REGULATIONS. OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION AND WHEN NECESSARY, REPAIRED OR REPLACED.
- AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DESIGN PROFESSIONAL. ANY SUCH DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVIEWED AND APPROVED AS APPLICABLE PLANS AND CERTIFICATES.
- STREET TREES WILL BE BONDED WITH A DPW DEVELOPER'S AGREEMENT WITH THIS FINAL PLAN.
- INTERNAL LANDSCAPING FOR ALL UNITS WILL BE ADDRESSED AT THE SITE DEVELOPMENT STAGE. PERIMETER LANDSCAPING AND STREET TREES WILL BE PROVIDED AT THE FINAL PLAN DEVELOPMENT STAGE IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE & THE LANDSCAPE MANUAL.



**DeMario Design Consultants, Inc.**  
 192 East Main Street  
 Westminster, MD 21157  
 Phone: (410) 386-0500  
 Fax: (410) 386-0504  
 http://www.demariodesign.com  
 eMail: ddc@demariodesign.com

OWNER: HOWARD RESEARCH & DVP  
 10275 LITTLE PATIENT PKWY  
 COLUMBIA, MD 21044  
 410-992-6000

DEVELOPER: GENERAL GROWTH PROPERTIES  
 10275 LITTLE PATIENT PKWY  
 COLUMBIA, MD 21044  
 410-992-6000

SITE ADDRESS:  
 9881 GORMAN ROAD

LANDSCAPE & STREET TREE PLAN  
 6TH ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

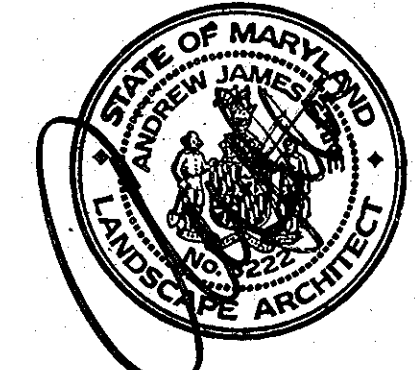
CO. FILE #	SP-06-023 WP-07-07/ WP-08-45	DES. BY:	AJS
TAX ACC. #	406300	DRN. BY:	AJS
TAX MAP:	47	CHK. BY:	AJS
BLOCK / GRID:	8	DATE:	8-29-2008
PARCEL #:	5	DDC JOB#:	05123.2
ZONE / USE:	RSC	SHEET NUMBER:	
DWG. SCALE:	1"=50'		

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 9-16-08  
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 10/17/08  
 DATE

LANDSCAPE ARCHITECT NO. 3222  
 ANDREW J. STINE

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET  
 G. SCOTT SHANBERGER  
 SHANBERGER & LANE  
 PROFESSIONAL L.S. # 10849  
 LICENSE EXP. DATE: 4/12/2014





The General Contractor shall stake the Limit of Disturbance (LOD) prior to installation of tree protection measures. In any locations where Super Silt Fence or other Sediment and Erosion Control measures sufficient to protect the critical root zones of trees to be preserved throughout construction, tree protection fencing that complies with the details contained on the Final Forest Conservation Plan shall be installed. Tree protection fences and other structures shall be constructed and maintained clear from contact with equipment materials and activities, (2) to preserve roots and soil condition in an intact and non-compacted state and (3) to identify the Tree Protection Zone in which no soil disturbance is permitted or restricted, unless otherwise approved by the landscape architect or an ISA Certified arborist or licensed forester. Removal of tree protection fence, even temporarily to allow deliveries, is prohibited.

**Forest Edge Treatment**  
 The contractor shall employ the services of an ISA Certified arborist and/or professional forester to ascertain the condition of trees that will, in the case of forest clearing or selective clearing and supplemental planting, establish a new forest. Trees that will be evaluated for susceptibility to windthrow and branches that may present a direct impediment to construction activities or hazards to health safety and welfare. Exotic or invasive species located near the forest edge shall be removed by mechanical means where possible or treated with approved herbicides.

Any trees inadvertently damaged through construction shall be treated if survival is expected. If it is determined that any part of a tree is in an unsafe or dangerous condition, then that part of the tree shall be removed. If the entire tree is affected, it shall be removed in its entirety. The hazardous condition is questionable, the contractor shall acquire the services of an ISA Certified arborist or professional forester who shall inspect the tree and certify that the condition of the tree is not a hazard and is not expected to be a hazard in the foreseeable future. Trees damaged by the contractor that must be removed shall be replaced by the contractor at no additional expense to the owner. In order to protect trees, super silt fence shall be provided in any area where the LOD comes within 50' of any environmental feature (including wetlands, slopes 25%+, stream buffer, floodplain, etc.) or an approved forest conservation easement area.

**Protective Signage**  
 Protective signs shall be installed around the perimeter of retention easements and afforestation and reforestation planting areas. Signs shall comply with the details included on the Final Forest Conservation Plan. Signs shall be spaced, height, and content. Signs shall be mounted on metal posts at an approximate height of 5' above finished grade and shall be maintained in perpetuity. SIGNS MAY NOT BE ATTACHED TO TREES UNDER ANY CONDITION.

**Materials and Vehicle Storage**  
 The storage, disposal or placement of construction materials and operating or storing construction machinery, or driving or parking of vehicles in the Tree Protection Zone is strictly prohibited unless otherwise approved by the landscape architect or an ISA Certified arborist or professional forester. The use of tree trunks as backdrops, which supports, anchorages, temporary power poles, sign posts or other functions is also strictly prohibited. Cutting of tree roots in the Tree Protection Zone for utility trenching, foundation digging, placement of curbs and trenches or other miscellaneous excavations shall be preceded by root pruning conducted with a sharp saw that cuts roots cleanly, to sound wood, flush with the trench or excavation site.

Construction vehicle wash-out operations shall not be conducted where water from this work can drain into a forest retention easement or a designated afforestation or reforestation planting area. No grading work shall be conducted that results in the construction of an excessive drainage into a forest retention easement or a designated afforestation or reforestation planting area.

**Activities Permitted within the Tree Protection Zone**  
 The following activities may be conducted within the Tree Protection Zone in an effort to restore or enhance suitability for forest habitat:

- Mulch may be spread within the Tree Protection Zone to a four to six inch depth, leaving the trunks of existing trees clear of mulch. Mulch shall be unpurified, untreated shredded wood or other material approved by the landscape architect or an ISA Certified arborist or professional forester.
- Aeration, fertilization and applications of mycorrhizae or other beneficial practices may be conducted within the Tree Protection Zone. Fertilization treatments shall be preceded by a soil analysis by a soil lab certified to perform such work. Natural amendments such as organic mulch, leaf mold or compost tea are preferred sources of fertilization.
- Irrigation is the single most important treatment for trees within the Tree Protection Zone. The contractor shall designate an irrigation schedule to wet in the Tree Protection Zone to the depth of the root zone and replace the water if it is depleted. Light frequent irrigation should be avoided.
- In periods of extended drought, wind or grading, trunks, limbs and foliage should be sprayed with water to remove accumulated construction dust.
- The removal of exotic or invasive plant material is a high priority within the tree protection zone. Invasive material should be removed by mechanical means where possible. Herbicides may be used where they will not negatively affect adjacent plant material.
- Selective pruning or thinning to remove dead or diseased plant material.
- Planting in stream or wetland buffers should be preceded by the correction of any existing erosion problems and the use of chemical fertilizers and herbicides should be minimized or eliminated.

**Qualified Professional**  
 The Contractor shall retain the services of an ISA Certified Arborist or professional forester for monitoring the Tree Protection Zone, performing any necessary construction period management, stress reduction, watering or other corrective activities during construction and during Post Construction (Guarantee Period) Management.

**Timing of Afforestation and Reforestation Planting**  
 Planting shall occur between September 15 and May 31, plant materials shall not be installed while ground is frozen. Planting of Proposed Forest Conservation Easement 'D' shall be delayed until the planting season after grading for the proposed public street is completed. All other easements have sufficient grading from construction activities to allow for planting, when possible, between the dates indicated above.

**Certification of Completion**  
 At the end of the construction period, the landscape architect, ISA Certified Arborist or professional forester retained by the Contractor shall prepare a report of Planning and Zoning Department of Planning and Zoning certifying that all forest retention areas have been preserved, all afforestation and reforestation plantings have been installed as required by the forest conservation plan, and that all protection measures required by the construction period protection program have been put in place. A sample certification can be found in Appendix A of the Howard County Forest Conservation Manual.

**Post-Construction (Guarantee Period) Management Program**  
 The Contractor shall be responsible for the following post-construction activities for the full length of the Guarantee Period (minimum of 2 growing seasons per the Howard County Forest Conservation Manual):

- Regular mowing of afforestation and reforestation planting areas shall be conducted through the Guarantee Period to suppress growth of weeds and remove habitat for mice, voles or other rodents that prey on newly planted trees. Mowing equipment shall have pneumatic tires and shall not be of sufficient size to cause excessive soil compaction.
- Maintaining on site measures including fences and signs to prevent undesirable intrusion into the Tree Protection Zone.
- Periodic inspection for continued compliance with this Construction Period Maintenance Program.
- Education of new occupants of the development to avoid activities that could destroy or degrade protected forest resources.
- Periodic thinning, watering, fertilizing or other measures to ensure survival and growth in the Tree Protection Zone and/or afforestation or reforestation planting areas.
- Removal and replacement of dead afforestation and reforestation such that a 75% survival rating is achieved by the end of the second growing season.
- Removal and/or control of competing or exotic vegetation.
- Final inspection and certification that the survival rates have been met at the end of the Post Construction Management Period.

ACCEPTED FOR THE PROVISION OF THE SERVICES DETAILED ABOVE

NAME	DATE
COMPANY NAME	
COMPANY ADDRESS	
PHONE	

**HOWARD COUNTY FOREST CONSERVATION WORKSHEET**

**BASIC SITE DATA**

GROSS SITE AREA	5.9892AC
AREA WITHIN 100 YEAR FLOODPLAIN	0.0000AC
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	0.0000AC
NET TRACT AREA	5.9892AC
LAND USE CATEGORY	HDR

**INFORMATION FOR CALCULATIONS**

A. NET TRACT AREA	5.9892AC
B. CONSERVATION THRESHOLD (20% X A)	1.1978AC
C. AFFORESTATION MINIMUM (15% X A)	0.8984AC
D. EXISTING FOREST ON NET TRACT AREA	0.0000AC
E. FOREST AREAS TO BE CLEARED	0.0000AC
F. FOREST AREAS TO BE RETAINED	0.0000AC

**AFFORESTATION CALCULATIONS**

A. NET TRACT AREA	5.9892AC
B. AFFORESTATION MINIMUM (15% X A)	0.8984AC
C. EXISTING FOREST ON NET TRACT AREA	0.0000AC
D. FOREST TO BE CLEARED	0.0000AC
E. FOREST TO BE RETAINED	0.0000AC

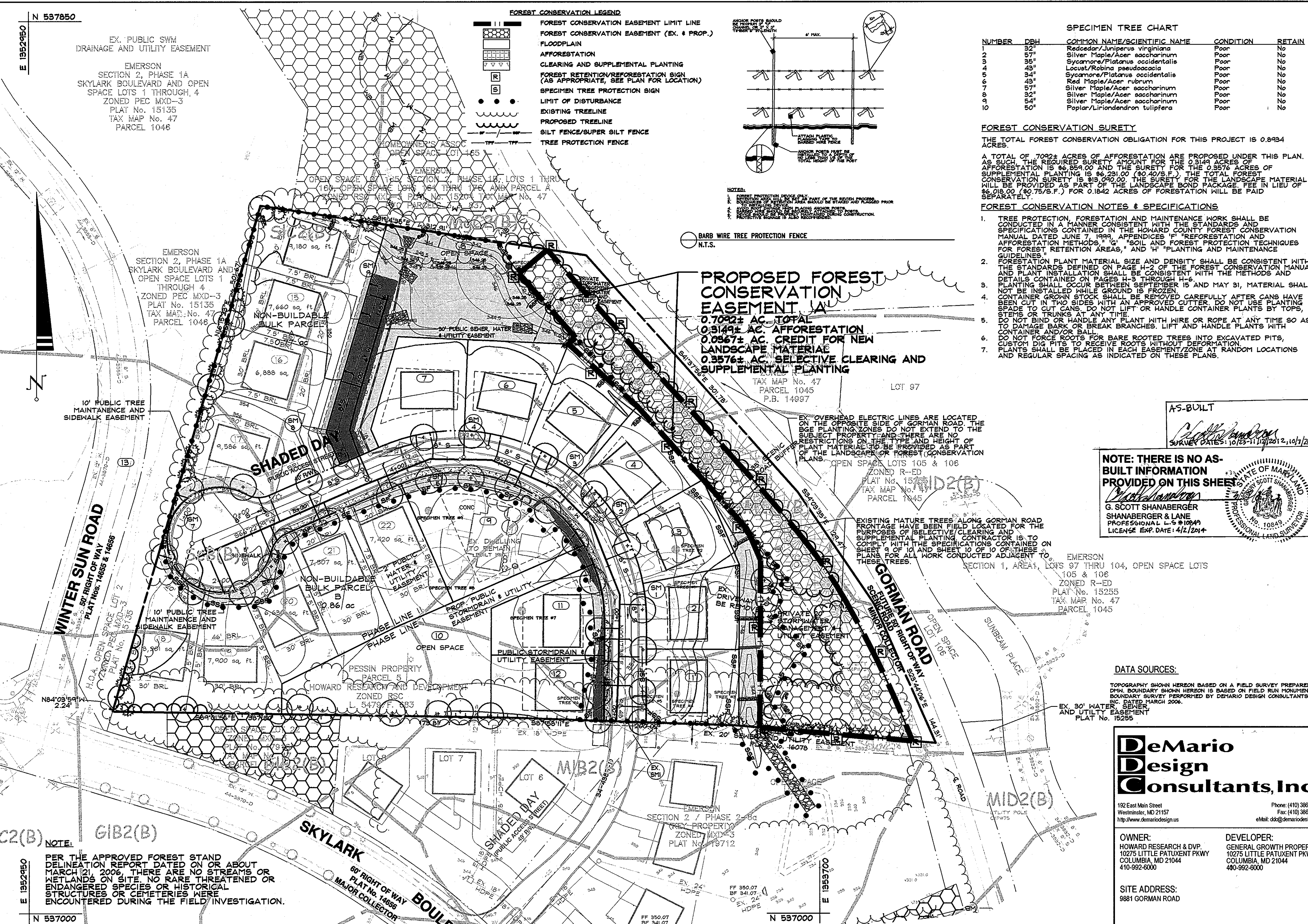
**PLANTING REQUIREMENTS:**

A. REAFFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD.....	0.0000AC
B. REAFFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD.....	0.0000AC
C. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD.....	0.0000AC
D. TOTAL REAFFORESTATION REQUIRED.....	0.0000AC
E. TOTAL AFFORESTATION REQUIRED.....	0.8984AC
F. CREDIT FOR LANDSCAPING (may not exceed 20% of "D").....	0.0000AC
G. TOTAL AFFORESTATION AND AFFORESTATION REQUIRED.....	0.8984AC

0.7092 AC AFFORESTATION CREDIT PROVIDED IN EASEMENT ON-SITE. A FEE-IN-LIEU FOR THE REMAINING 0.1842 AC WILL BE PAID IN THE AMOUNT OF \$6,018.00

THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.



**NOTE:** PER THE APPROVED FOREST STAND DELINEATION REPORT DATED 03/02/06, THERE ARE NO STREAMS OR WETLANDS ON SITE. NO RARE THREATENED OR ENDANGERED SPECIES OR HISTORICAL STRUCTURES OR CULTURES WERE ENCOUNTERED DURING THE FIELD INVESTIGATION.

**SOILS CHART**

CODE(CLASS)	NAME	HYDRIC (Y/N/INCL.)	K VALUE
G1B2(B)	GLENELG LOAM, 3%-8% SLOPES, MODERATELY ERODED	N	0.32
M1C2(B)	MANOR GRAVELLY LOAM, 8%-15% SLOPES, MODERATELY ERODED	N	0.37
M1A(B)	MANOR LOAM, 0%-3% SLOPES	N	0.37
M1D2(B)	MANOR LOAM, 15%-25% SLOPES, MODERATELY ERODED	N	0.37
M1B2(B)	MANOR LOAM, 3%-8% SLOPES, MODERATELY ERODED	N	0.37
S1C2(B)	SASSAFRAS LOAM, 5%-10% SLOPES, MODERATELY ERODED	N	0.37
SCB(B)	SANDY AND CLAYEY LAND, GENTLY SLOPING	N	0.37

**FOREST CONSERVATION EASEMENT TABLE**

LINE/ARC	BRG.-DIST. OR CURVE L & R.
FC1	L 62.728' R 1318.848'
FC2	S23°03'48"E-32.832'
FC3	S02°17'38"E-159.233'
FC4	S84°56'51"W-144.953'
FC5	L 87.3331' R 886.5'
FC6	L 59.876' R 1100.23'
FC7	L 69.630' R 448.63'
FC8	L 102.854' R 1318.23'
FC9	L 138.026' R 5620.98'
FC10	N41°13'01"W-131.320'
FC11	N48°47'29"W-35.0004'
FC12	S41°13'01"E-81.329'
FC13	S48°16'19"W-9.1417'
FC14	S47°43'21"E-88.192'
FC15	S41°41'53"E-93.80'

**SUBWATERSHED NO: 2113105**

**FOREST CONSERVATION GOALS AND OBJECTIVES**

THE GOALS AND OBJECTIVES OF THIS FOREST CONSERVATION PLAN ARE TO ASSIGN AFFORESTATION AREAS ON-SITE WHERE POSSIBLE, TO FULFILL FOREST CONSERVATION OBLIGATIONS FOR CURRENTLY PROPOSED DEVELOPMENT AND TO UTILIZE FEE-IN-LIEU TO FULFILL ANY FURTHER OBLIGATIONS THAT CANNOT BE MET ON THIS SITE.

APPROXIMATELY 0.7092 ACRES OF AFFORESTATION PLANTING ARE TO BE PROVIDED THROUGH A COMBINATION OF AFFORESTATION PLANTING, LANDSCAPING AND SELECTIVE CLEARING AND SUPPLEMENTAL PLANTING WITHIN A SINGLE EASEMENT ALONG GORMAN ROAD. PLANTING IN THIS EASEMENT HAVE BEEN SELECTED TO REFLECT THE EXISTING HYDROLOGIC CONDITIONS.

THE REMAINING 0.1842 ACRES OF FOREST CONSERVATION OBLIGATIONS WILL BE OFFSET THROUGH THE PAYMENT OF FEE-IN-LIEU FOR AFFORESTATION PLANTING BECAUSE OF THE PROVISION OF THE IMPROVED FACILITIES AND REQUIRED OPEN SPACE FOR THE REMAINING FOREST CONSERVATION OBLIGATION TO BE MET ON SITE.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. DATE: 9-16-09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. DATE: 10/17/08

DATE: 02.28.2008

ANDREW J. STINE  
 LANDSCAPE ARCHITECT NO. 3222

**DeMario Design Consultants, Inc.**

192 East Main Street  
 Westminster, MD 21157  
 Phone: (410) 386-0500  
 Fax: (410) 386-0504  
 Email: ddc@demariodesign.com

**OWNER:** HOWARD RESEARCH & DWP  
 10275 LITTLE PATRICK PKWY  
 COLUMBIA, MD 21044  
 410-992-6000

**DEVELOPER:** GENERAL GROWTH PROPERTIES  
 10275 LITTLE PATRICK PKWY  
 COLUMBIA, MD 21044  
 410-992-6000

**SITE ADDRESS:** 9881 GORMAN ROAD

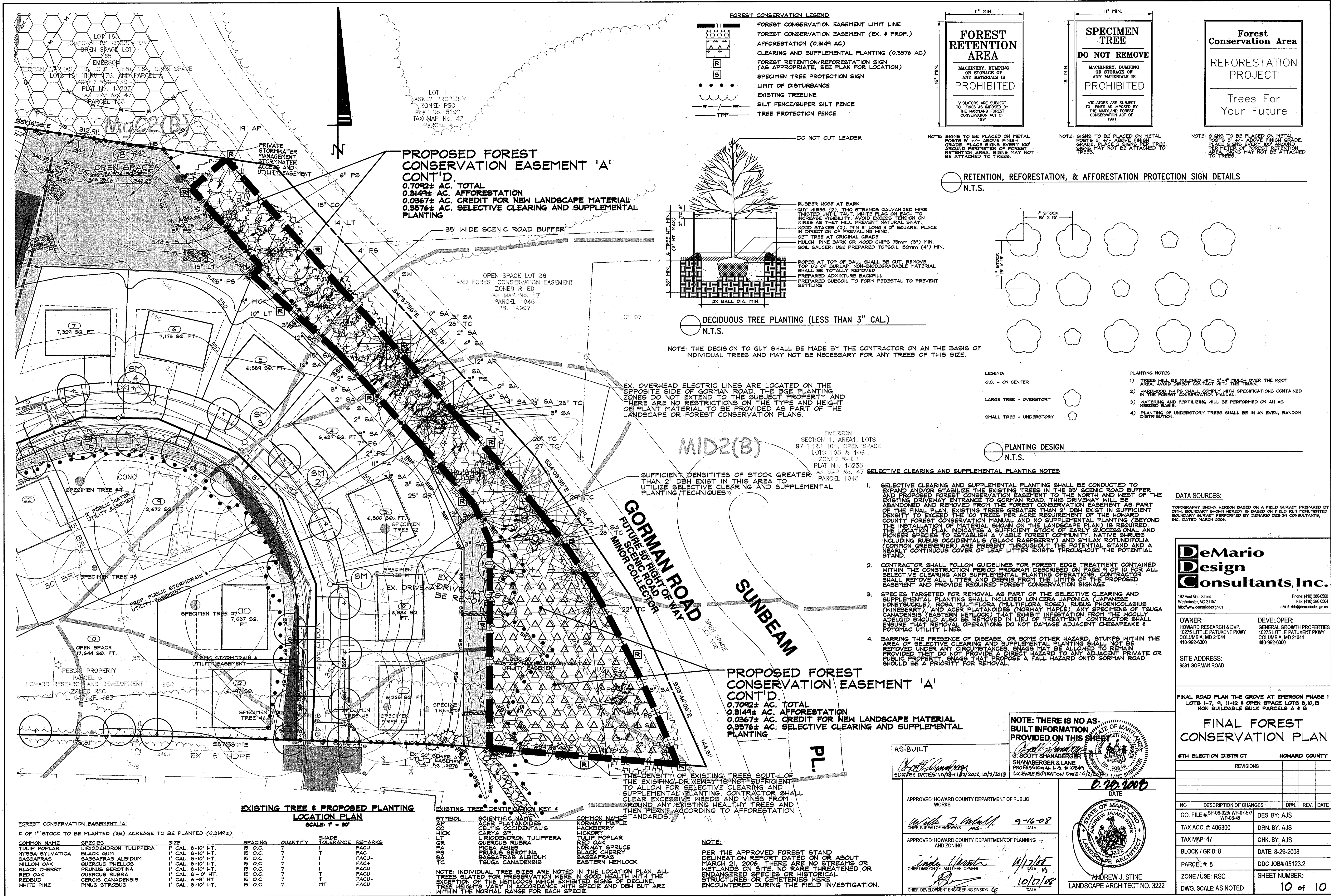
**FINAL ROAD PLAN THE GROVE AT EMERSON PHASE 1 LOTS 1-7, 9, 11-12 & OPEN SPACE LOTS 10, 13 NON-BUILDABLE BULK PARCELS A & B**

**FINAL FOREST CONSERVATION PLAN**

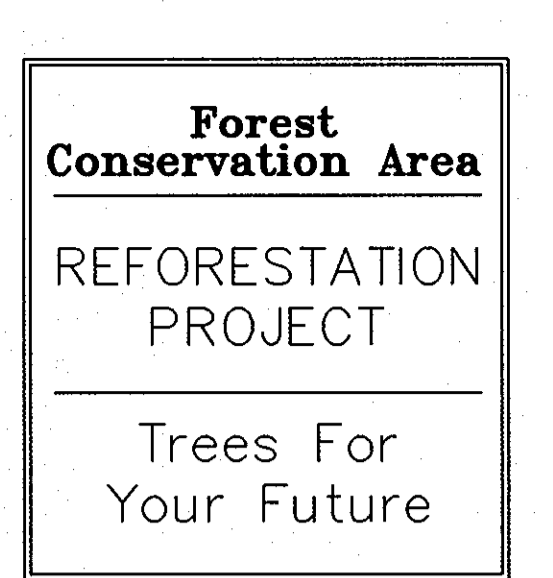
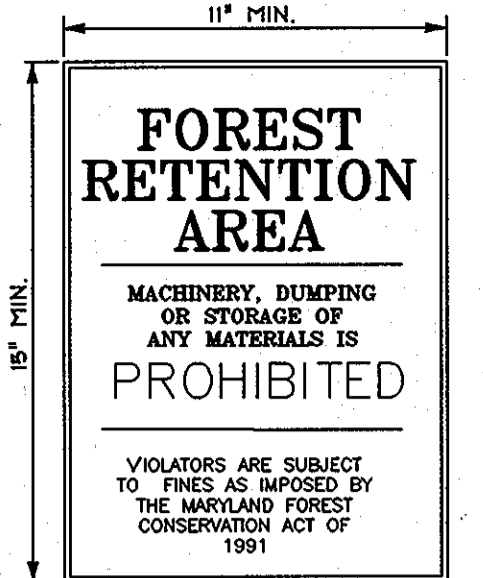
6TH ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN	REV.	DATE
CO. FILE #	SP-06-0231 WP-07-57 WP-08-45			
TAX ACC. #	406300	DRN. BY:	AJS	
TAX MAP:	47	CHK. BY:	AJS	
BLOCK / GRID:	8	DATE:	8-29-2008	
PARCEL #	5	DDC JOB#:	05123.2	
ZONE / USE:	RSC	SHEET NUMBER:		
DWG. SCALE:	1"=50'			

9 of 10

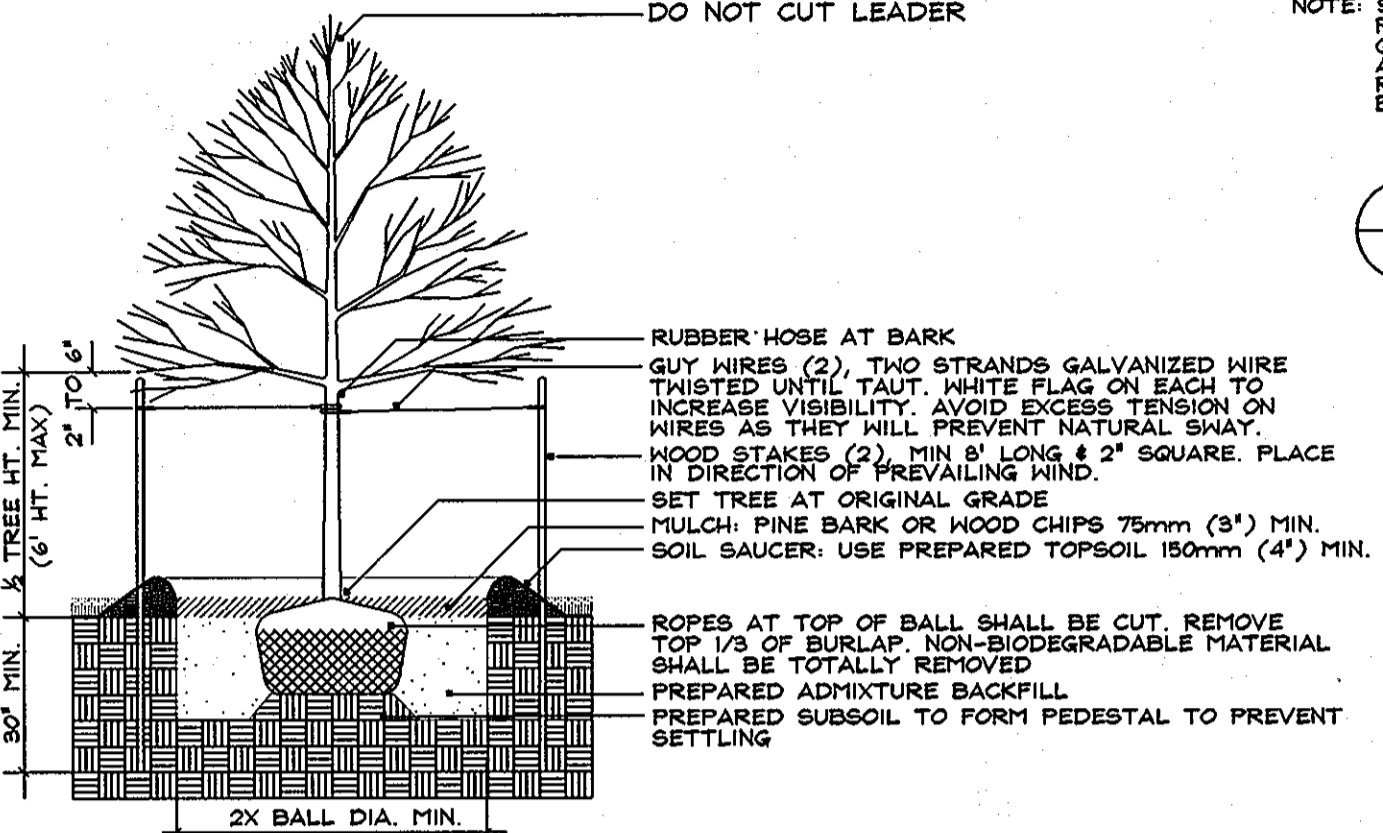


- FOREST CONSERVATION LEGEND**
- FOREST CONSERVATION EASEMENT LIMIT LINE
  - FOREST CONSERVATION EASEMENT (EX. & PROP.)
  - AFFORESTATION (0.3149 AC)
  - CLEARING AND SUPPLEMENTAL PLANTING (0.3576 AC)
  - FOREST RETENTION/REFORESTATION SIGN (AS APPROPRIATE, SEE PLAN FOR LOCATION)
  - SPECIMEN TREE PROTECTION SIGN
  - LIMIT OF DISTURBANCE
  - EXISTING TREELINE
  - SILT FENCE/SUPER SILT FENCE
  - TREE PROTECTION FENCE



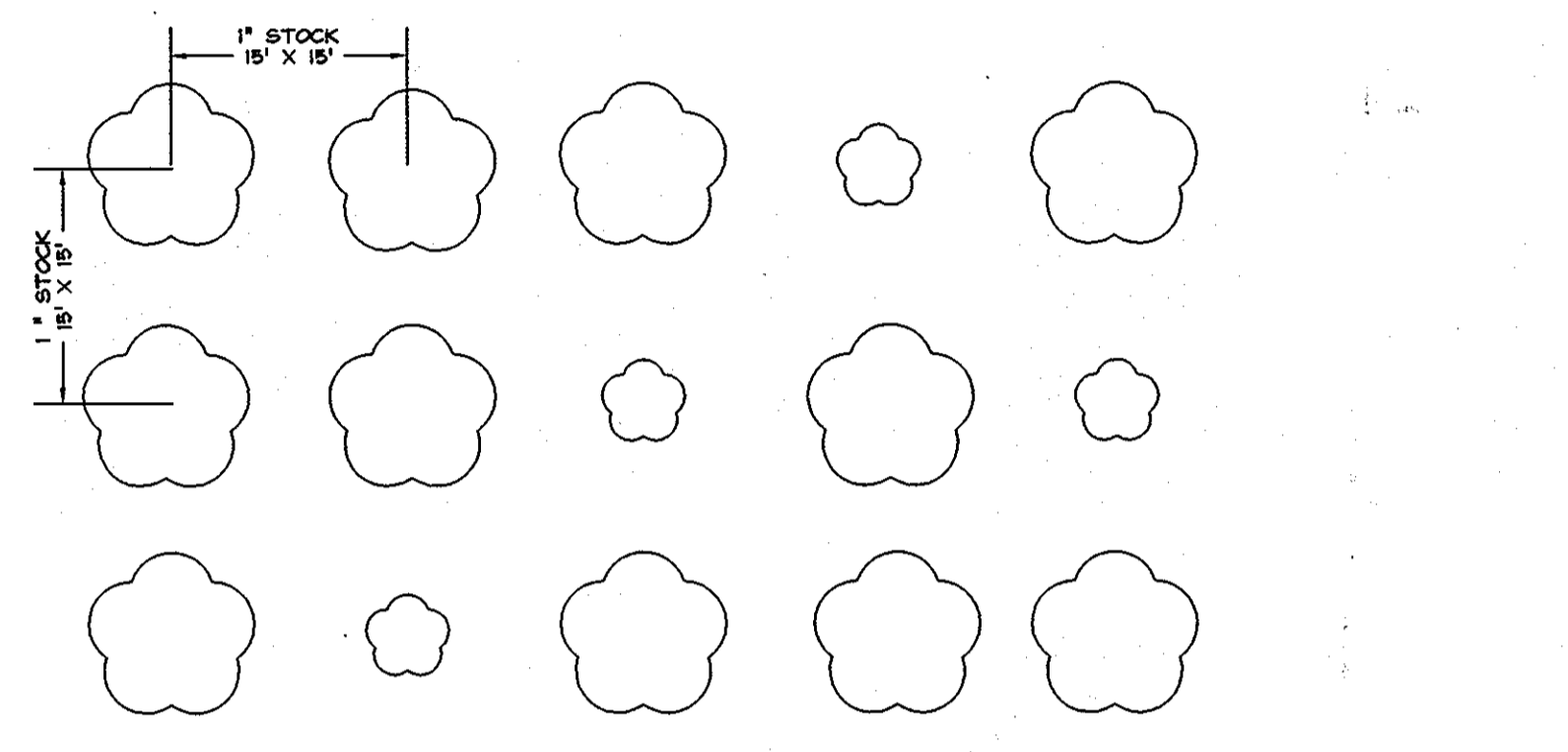
NOTE: SIGNS TO BE PLACED ON METAL POSTS 1/2" ABOVE FINISH GRADE. PLACE SIGNS EVERY 100' AROUND PERIMETER OF FOREST RETENTION AREA. SIGNS MAY NOT BE ATTACHED TO TREES.

**PROPOSED FOREST CONSERVATION EASEMENT 'A' CONT'D.**  
 0.7042± AC. TOTAL  
 0.3149± AC. AFFORESTATION  
 0.0367± AC. CREDIT FOR NEW LANDSCAPE MATERIAL  
 0.3576± AC. SELECTIVE CLEARING AND SUPPLEMENTAL PLANTING



NOTE: THE DECISION TO GUY SHALL BE MADE BY THE CONTRACTOR ON AN THE BASIS OF INDIVIDUAL TREES AND MAY NOT BE NECESSARY FOR ANY TREES OF THIS SIZE.

RETENTION, REFORESTATION, & AFFORESTATION PROTECTION SIGN DETAILS N.T.S.



- LEGEND:**  
 O.C. - ON CENTER  
 LARGE TREE - OVERSTORY  
 SMALL TREE - UNDERSTORY
- PLANTING NOTES:**
- TREES WILL BE MULCHED WITH 2"-4" MULCH OVER THE ROOT AREA. AVOID DIRECT CONTACT WITH THE TRUNK.
  - HARDWOOD WHIPS SHALL COMPLY WITH SPECIFICATIONS CONTAINED IN THE FOREST CONSERVATION MANUAL.
  - WATERING AND FERTILIZING WILL BE PERFORMED ON AN AS NEEDED BASIS.
  - PLANTING OF UNDERSTORY TREES SHALL BE IN AN EVEN, RANDOM DISTRIBUTION.

PLANTING DESIGN N.T.S.

EX. OVERHEAD ELECTRIC LINES ARE LOCATED ON THE OPPOSITE SIDE OF GORMAN ROAD. THE BIGE PLANTING ZONES DO NOT EXTEND TO THE SUBJECT PROPERTY AND THERE ARE NO RESTRICTIONS ON THE TYPE AND HEIGHT OF PLANT MATERIAL TO BE PROVIDED AS PART OF THE LANDSCAPE OR FOREST CONSERVATION PLANS.

SUFFICIENT DENSITIES OF STOCK GREATER THAN 2" DBH EXIST IN THIS AREA TO UTILIZE SELECTIVE CLEARING AND SUPPLEMENTAL PLANTING TECHNIQUES.

**SELECTIVE CLEARING AND SUPPLEMENTAL PLANTING NOTES**

- SELECTIVE CLEARING AND SUPPLEMENTAL PLANTING SHALL BE CONDUCTED TO EXPAND AND/OR STABILIZE THE EXISTING TREES IN THE 35' SCENIC ROAD BUFFER AND PROPOSED FOREST CONSERVATION EASEMENT TO THE NORTH AND WEST OF THE EXISTING DRIVEWAY ENTRANCE TO GORMAN ROAD. THIS DRIVEWAY WILL BE ABANDONED AND REMOVED FROM THE FOREST CONSERVATION EASEMENT AS PART OF THE FINAL PLAN. EXISTING TREES GREATER THAN 2" DBH EXIST IN SUFFICIENT DENSITY TO EXCEED THE 100 TREES PER ACRE REQUIREMENT OF THE COUNTY FOREST CONSERVATION MANUAL AND NO SUPPLEMENTAL PLANTING (BEYOND THE INSTALLATION OF MATERIAL SHOWN ON THE LANDSCAPE PLAN) IS REQUIRED. THE LOCATION PLAN INDICATES A SUFFICIENT STOCK OF EARLY SUCCESSIONAL AND PIONEER SPECIES TO ESTABLISH A VIABLE FOREST COMMUNITY. NATIVE SHRUBS INCLUDING RUBUS OCCIDENTALIS (BLACK RASPBERRY) AND SMILAX ROTUNDIFOLIA (COMMON GREENBRIER) ARE PRESENT THROUGHOUT THE POTENTIAL STAND AND A NEARLY CONTINUOUS COVER OF LEAF LITTER EXISTS THROUGHOUT THE POTENTIAL STAND.
- CONTRACTOR SHALL FOLLOW GUIDELINES FOR FOREST EDGE TREATMENT CONTAINED WITHIN THE CONSTRUCTION PERIOD PROGRAM DESCRIBED ON PAGE 9 OF 10 FOR ALL SELECTIVE CLEARING AND SUPPLEMENTAL PLANTING OPERATIONS. CONTRACTOR SHALL REMOVE ALL LITTER AND DEBRIS FROM THE LIMITS OF THE PROPOSED EASEMENT AND PROVIDE REQUIRED FOREST CONSERVATION SIGNAGE.
- SPECIES TARGETED FOR REMOVAL AS PART OF THE SELECTIVE CLEARING AND SUPPLEMENTAL PLANTING SHALL INCLUDE LONICERA JAPONICA (JAPANESE HONEYSUCKLER), ROSA MULTIFLORA (MULTIFLORA ROSE), RUBUS PHOENICOLASIS (KINNEBERRY) AND ACER PLATANOIDES (NORWAY MAPLE). ANY SPECIMENS OF TSUGA CANADENSIS (EASTERN HEMLOCK) THAT EXHIBIT INFESTATION FROM THE WOOLLY ADELPHID SHALL ALSO BE REMOVED. THE METHOD OF TREATMENT CONTRACTOR SHALL ENSURE THAT REMOVAL OPERATIONS DO NOT DAMAGE ADJACENT CHESAPEAKE & POTOMAC UTILITY LINES.
- BARRING THE PRESENCE OF DISEASE, OR SOME OTHER HAZARD, STUMPS WITHIN THE AREA OF SELECTIVE CLEARING AND SUPPLEMENTAL PLANTING SHALL NOT BE REMOVED UNDER ANY CIRCUMSTANCES UNLESS THEY REMAIN IN THE STAND PROVIDED THEY DO NOT PROVIDE A DIRECT HAZARD TO ANY ADJACENT PRIVATE OR PUBLIC PROPERTY. SNAGS THAT PROPOSE A FALL HAZARD ONTO GORMAN ROAD SHOULD BE A PRIORITY FOR REMOVAL.

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

**DeMario Design Consultants, Inc.**  
 102 East Main Street Westminister, MD 21157  
 Phone: (410) 386-0690 Fax: (410) 386-0694  
 http://www.demariodesign.com eMail: dco@demariodesign.com

**OWNER:**  
 HOWARD RESEARCH & DEV.  
 10275 LITTLE PATENT PKWY  
 COLUMBIA, MD 21044  
 410-992-6000

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

**FINAL FOREST CONSERVATION PLAN**

6TH ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE
CO. FILE #	SP-06-023/WP-07-57/WP-08-45			
TAX ACC. #	406300	DRN. BY:	AJS	
TAX MAP:	47	CHK. BY:	AJS	
BLOCK / GRID:	8	DATE:	8-29-2008	
PARCEL #:	5	DDC JOB#:	05123.2	
ZONE / USE:	RSC	SHEET NUMBER:		
DWG. SCALE:	AS NOTED			10 OF 10

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

AS-BUILT  
 SURVEY DATES: 10/23-11/21/2012, 10/17/2013

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
 DATE: 9-16-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
 DATE: 10/17/08

DATE: 8.29.2008  
 LANDSCAPE ARCHITECT NO. 3222

**EXISTING TREE & PROPOSED PLANTING LOCATION PLAN**  
 SCALE: 1" = 30'

COMMON NAME	SPECIES	SIZE	SPACING	QUANTITY	SHADE TOLERANCE	REMARKS
TULIP POPLAR	LIRIODENDRON TULIPIFERA	1" CAL. 8-10' HT.	15' O.C.	7	I	FACU
NYSSA SYLVATICA	BLACK GUM	1" CAL. 8-10' HT.	15' O.C.	7	I	FACU
SASSAFRAS	SASSAFRAS ALBIDUM	1" CAL. 8-10' HT.	15' O.C.	7	I	FACU
WILLOW OAK	QUERCUS PHELLOS	1" CAL. 8-10' HT.	15' O.C.	7	I	FACU
BLACK CHERRY	PRUNUS SEROTINA	1" CAL. 8-10' HT.	15' O.C.	7	I	FACU
RED OAK	QUERCUS RUBRA	1" CAL. 8-10' HT.	15' O.C.	7	I	FACU
REDBUD	CERCIS CANADENSIS	1" CAL. 6'-8' HT.	15' O.C.	7	T	FACU
WHITE PINE	PINUS STROBUS	1" CAL. 8-10' HT.	15' O.C.	7	T	FACU

**EXISTING TREE IDENTIFICATION KEY**

SYMBOL	SCIENTIFIC NAME	COMMON NAME
AR	ACER SPICATOIDES	NORWAY SPRUCE
CO	CELTIS OCCIDENTALIS	HACKBERRY
HICK	LIRIODENDRON TULIPIFERA	HICKORY
GR	QUERCUS RUBRA	RED OAK
PA	PRUNUS SEROTINA	NORWAY SPRUCE
PS	SASSAFRAS ALBIDUM	BLACK CHERRY
SA	SASSAFRAS ALBIDUM	SASSAFRAS
TC	TSUGA CANADENSIS	EASTERN HEMLOCK

NOTE: INDIVIDUAL TREE SIZES ARE NOTED IN THE LOCATION PLAN. ALL TREES SLATED FOR PRESERVATION WERE IN GOOD HEALTH WITH THE EXCEPT OF THE HEMLOCK WHICH EXHIBITED SIGNS OF DECAY. TREE HEIGHTS VARY IN ACCORDANCE WITH SPECIES AND DBH BUT ARE WITHIN THE NORMAL RANGE FOR EACH SPECIE.

**NOTE:**  
 PER THE APPROVED FOREST STAND DELINEATION REPORT DATED ON OR ABOUT MARCH 21, 2006, THERE ARE NO STREAMS OR WETLANDS ON THE SITE. NO BARE THREATENED OR ENDANGERED SPECIES OR HISTORICAL STRUCTURES OR CEMETERIES WERE ENCOUNTERED DURING THE FIELD INVESTIGATION.