

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.
- Dead Reference: 5474/683
- Plat Reference: N/A
- Gross Area of Tract: 5.9842 ac.
- Area of 100 Year Floodplain: N/A
- Area of Steep Slopes: 0.00 ac.
- Net Area of Tract: 5.9842 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.
 - Area of Proposed Lot 1: 1.71 ac.
 - Area of Proposed Parcel 1: 1.71 ac.
 - Area of Open Space: 1.17 ac.
 - Open Space Required: 25% / 1.50 ac
 - Open Space Provided: 1.71 ac.
 - Credited Open Space Provided: 1.65 ac. (27.6%)
 - Recreational Open Space Required: 3000sqft
 - Recreational Open Space Provided: N/A (WP-07-57)

- This project is in conformance with the latest Howard County Standards unless waivers have been approved.
- The existing topography shown hereon was provided by Deft, McCune and Walker Inc.
- The total forest conservation obligations for this site is 0.8484 acres. A total of .7092 acres of forestation are proposed under this plan. As such, the required surety amount for the 0.1392 acres of forestation is \$6,959.00 and the surety for the 0.3576 acres of supplemental planting is \$6,231.00 (\$0.40/s.f.). The forest conservation surety is \$13,090.00. The surety for the landscape material \$6,018.00 (\$0.75/s.f.) for 0.1842 acres of forestation will be paid separately.
- This plan has been prepared in accordance with the provisions of section 16.124 of HOCO 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, 13 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's 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 (Revs) will be provided by grass channels. These channels address Rev for this site and Emerson 2-3a to the immediate south. Water quality (WQV) for the northern drainage area (Design Point 2) will be provided in a bioretention facility, to be privately owned by an HOA. WQV for the portion of this site that drains to the south (to DPI) will be provided in the storm pond on the Emerson site (accounted for in Emerson 2-3a SWM design). Channel Protection (Cp) is not required at DPI because the 1-year storm is under 2 cfs. CpV for DPI is provided and designed in the Emerson 2-3a SWM design. Neither the 10-year nor the 25-year storms are required to be managed at DPI. For treatment of these storms at DPI, see Emerson 2-3a SWM design.

- Existing utilities shown hereon are based on field surveys and record drawings.
- There is no floodplain on-site.
- There are no wetlands on-site.
- Traffic study prepared by Hella & Associates, Inc. dated February, 2006.
- A noise study not required for this project.
- The geotechnical study for this project was prepared by Robert A. Bolter Company dated March, 2006.
- Project Background Information:
 - Subdivision Name: The Grove at Emerson, Phase 1
 - Tax Map/Block/Parcel: 47/8/5
 - Zoning: RSC
 - Election District: 6th
 - Total (Gross) Tract Area: 5.9842 ac.
 - Number of Proposed Lots: 15 (9 Buildable Lots, 1 Existing Dwelling, 3 Open space lots, 2 Bulk parcels)
 - Applicable Department of Planning & Zoning File No.s: WP-07-57, SP-06-02B (Pessin 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.
- BRL denotes the Building Restriction 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 street 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.
- Offsite 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, removal of vegetative cover or trees, paving 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)-518-1800 at least (5) working days prior to the start of work.
- The contractor shall notify "Miss 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 ("MUTCD"). 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, square tube sleeve (12-gauge)-3" long. A galvanized steel pole cap shall be mounted on top of each post.
- Water is public. Contract # 24-4387-D
- Sanitary 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 (1998) and as modified by "Guidelines for Street Lights in Residential Developments (June 1995)". 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 plat as alternative compliance for satisfying the 300 square foot per unit recreational open space requirement for this project.

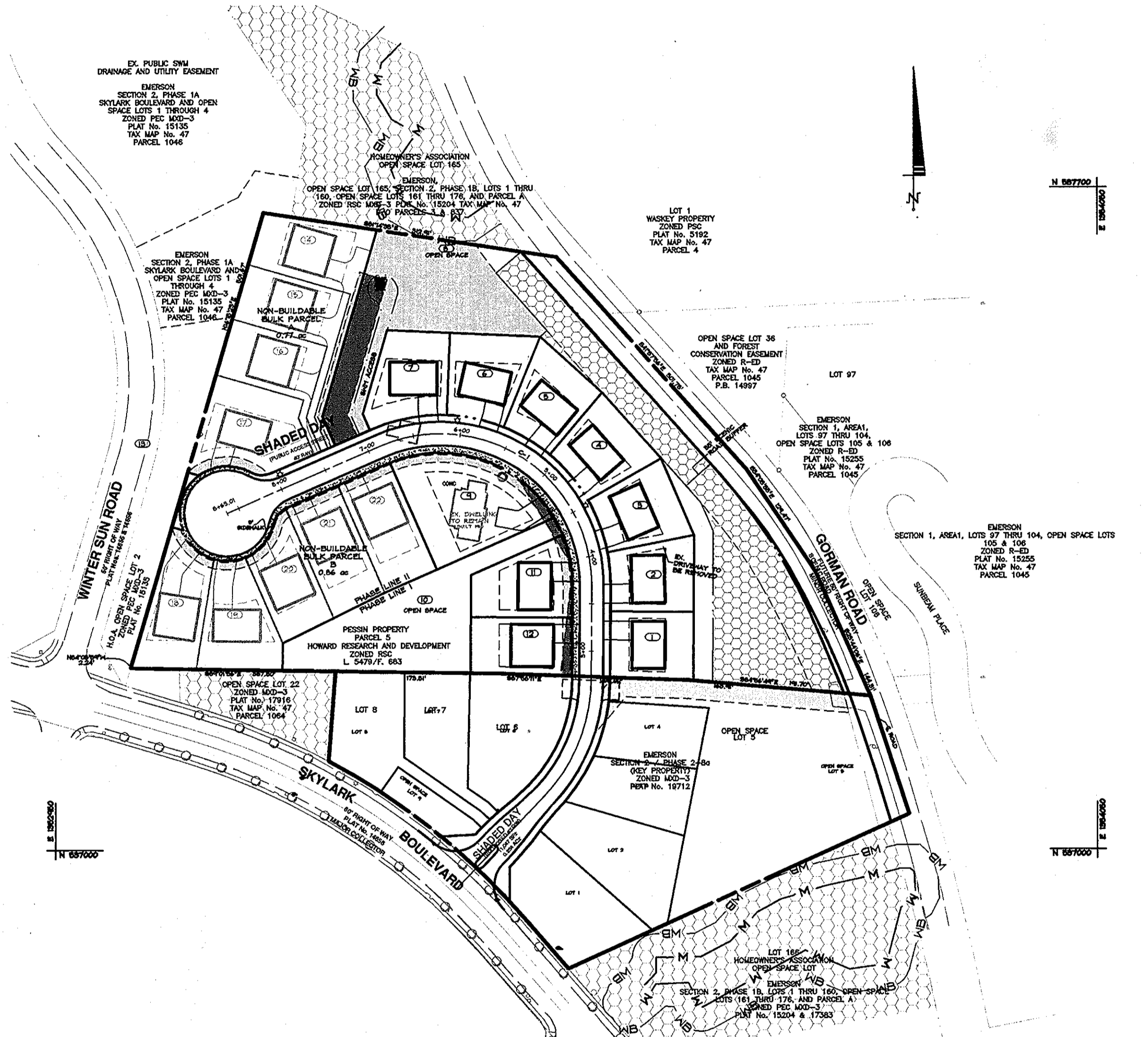
The Planning Director denied your request for a waiver from Section 16.121(a)(2), "Minimum Open Space" which requires a minimum on-site open space percentage for an "RSC" zoned subdivision calculated as 25% of the gross area of the proposed subdivision.

This plan is subject to WP-08-45 which was granted on December 18, 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 18, 2007 for Phase 1 as established by the DPZ 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 builder(s) without requiring setback variances. The standard house footprint line should be used to design the building lots as 35'x50'. As a result of the required "RSC" bulk regulations (lot width and setbacks), pipestem lot design and public road orientation, etc., it appears that some lots such as Lot 4, 11 and 13 may need to be enlarged to accommodate the anticipated house types. A further evaluation of the subdivision lot design and sizes will be made at the final plan submission for this project.
- The Recreational Open Space area requirement for this subdivision will be fulfilled by the annexation into the Emerson HOA and through the use of Emerson recreational facilities per WP-07-57.
- All fill shall be 95% compaction per AASHTO T-190 in fill areas.
- The 20' of frontage for Open Space Lot 10 along proposed Shaded Day is considered an additional access point per Section 16.121(e) of the Subdivision and Land Development Regulations since the adjacent existing open space Lot 22 meets the required minimum 40' open space frontage on a public road (Skiyark 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-1.02 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

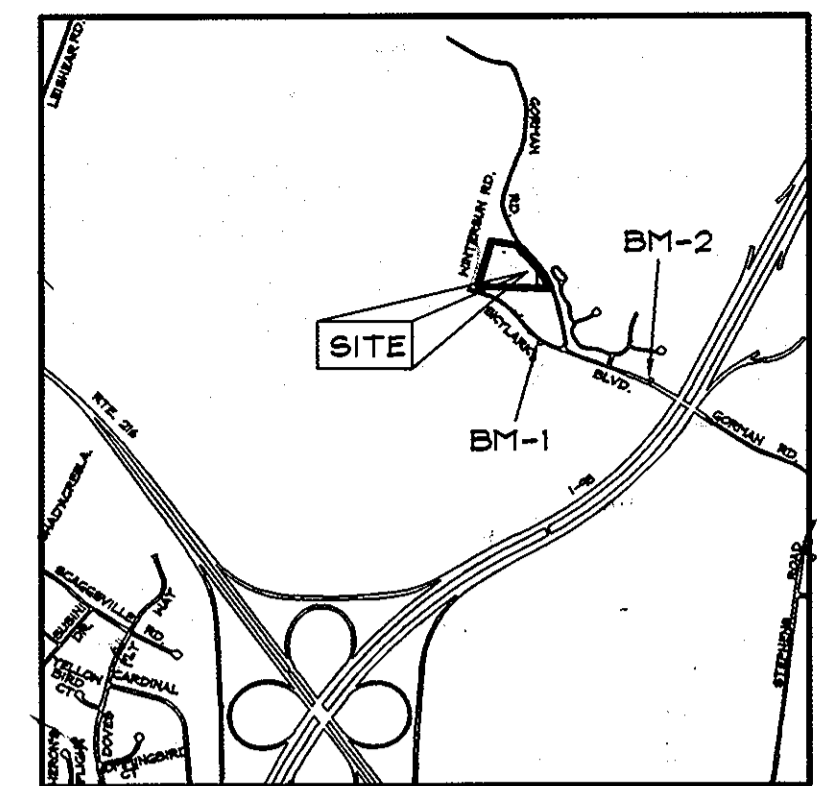


LOCATION MAP
SCALE: 1"=100'

BENCHMARK

DESCRIPTION

BENCHMARK #1	N. 536615.0157	E. 1353479.1226
	B.M.	47DC
	ELEV.	343.249
BENCHMARK #2	N. 536212.7456	E. 1354833.6403
	B.M.	47EB
	ELEV.	354.296



VICINITY MAP
SCALE: 1"=2000'

COORDINATE TABLE

NO.	NORTHING	EASTING
243	537674.9057	1353169.7247
244	537627.2671	1353478.9836
245	537401.7119	1353679.4678
246	537294.4519	1353751.4784
247	537162.3481	1353910.0642
248	537174.2317	1353619.0491
249	537186.3160	1353419.2046
250	537192.8660	1353081.4599
251	537198.0478	1353029.2325
252	537183.6161	1353498.3065
326	537182.1987	1353595.3797
327	537279.2826	1353595.8777
328	537445.1192	1353283.7442
329	537279.4878	1353498.8782
330	537408.4718	1353299.7744
331	537362.2242	1353194.0568
332	537345.0222	1353174.7406
333	537400.0233	1353155.6954
334	537398.8766	1353178.0266
335	537693.0048	1353441.7081
339	537534.1784	1353283.2177
340	537481.6058	1353620.6950
341	537354.4866	1353686.1798
342	537247.2589	1353724.9881
343	537244.3527	1353753.0087
344	537164.3120	1353787.8510

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 DPM. BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY DEPM/D 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) 386-0550
Fax: (410) 386-0564
http://www.demariodesign.com
eMail: dm@demariodesign.com

OWNER:
HOWARD RESEARCH & DVP
10275 LITTLE PATUMENT PKWY
COLUMBIA, MD 21044
410-992-9000

DEVELOPER:
GENERAL GROWTH PROPERTIES
10275 LITTLE PATUMENT PKWY
COLUMBIA, MD 21044
400-992-9000

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, 13
& NON-BUILDABLE BULK PARCELS A & B**

COVER SHEET

6TH ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Wish Z. Mahall 9-16-08
CHIEF, BUREAU OF HIGHWAYS

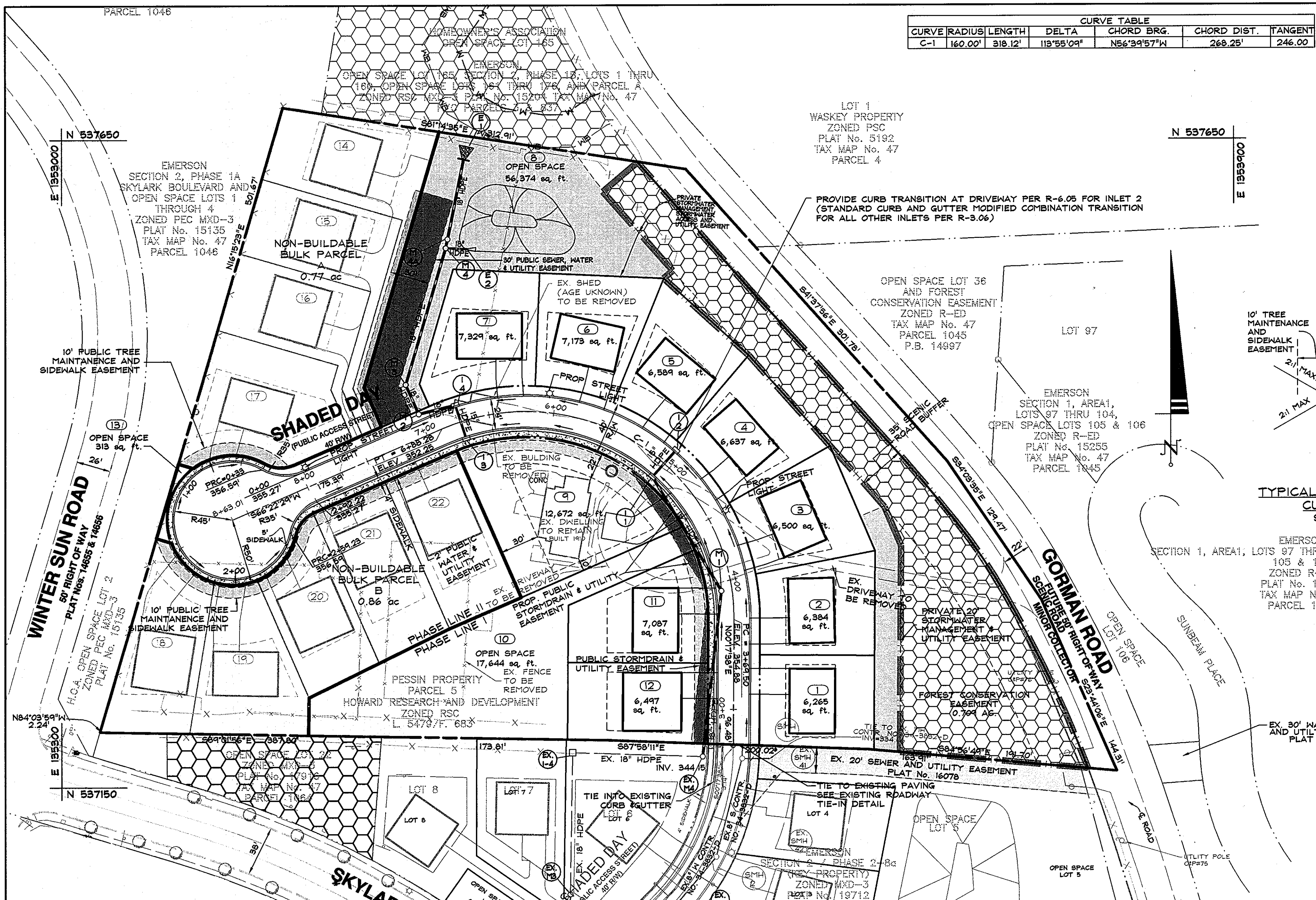
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Christa Hunt 10/17/08
CHIEF, DIVISION OF LAND DEVELOPMENT

Ru 11/11/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION

8/29/08 DATE
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. 15420.
MARK THAYER
PROFESSIONAL ENGINEER NO. 25420

CO. FILE # SP-06-023/WR-07-57/ WP-08-45
TAX ACC # 406300
BLOCK / GRID
PARCEL # 5
ZONE / USE RSC
DWG. SCALE 1"=100'

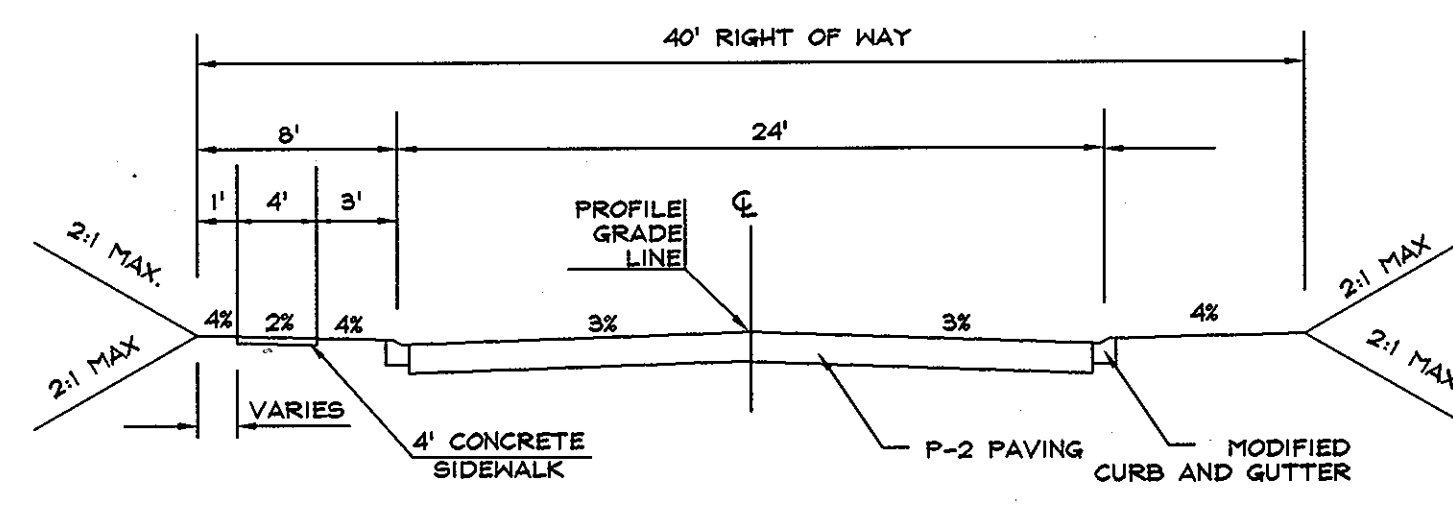
DES. BY: JCO/WRD
DRN. BY: JCO
CHK. BY: WRT
DATE: 8-29-2008
DDC JOB# 05123.2
SHEET NUMBER
1 of 10



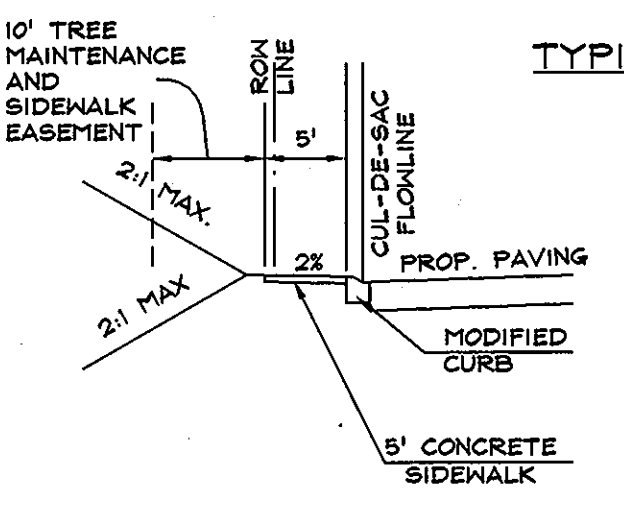
CURVE TABLE					
CURVE	RADIUS	LENGTH	DELTA	CHORD BRG.	TANGENT
C-1	160.00'	318.12'	119°55'09"	N56°39'57"W	268.25'
					246.00'

STREET LIGHT CHART		
	100 WATT PREMIER	☉ STA. 4+50 15', RT.
	100 WATT PREMIER	☉ STA. 6+05 15', RT.
	100 WATT PREMIER	☉ STA. 9+96 15', RT.

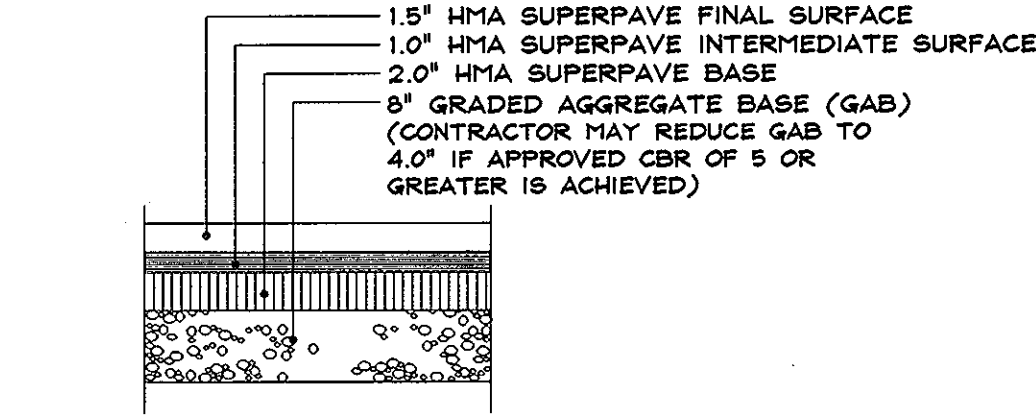
DRAWING LEGEND	
	EXISTING MINOR CONTOUR (2' INTERVAL)
	EXISTING MAJOR CONTOUR (10' INTERVAL)
	ADJACENT PROPERTY LINE
	EXISTING PROPERTY BOUNDARY
	EX. ROAD / EDGE OF PAVING
	EX. OTHER LINE & MANHOLES, CLEAN-OUTS
	EX. OVERHEAD ELECTRIC & UTILITY POLES
	PROP. REVERSE CURB & GUTTER
	PROP. REVERSE CURB & GUTTER
	PROP. REVERSE CURB & GUTTER
	PROP. ROAD/DRIVE CENTERLINE
	EX. BUILDING
	PROPOSED BUILDING EXPANSION
	PROPOSED SPOT ELEVATION & FLOW ARROW
	EXISTING TREES
	EXISTING TREELINE
	EXISTING SHRUB/BURSH LINE
	PROPOSED STORM DRAIN W/ INLETS & MANHOLE
	EXISTING FOREST CONSERVATION EASEMENT
	PROPOSED FOREST CONSERVATION EASEMENT
	PROPOSED STREET LIGHT-100 WATT HIGH PRESSURE SODIUM(VAPOR) PREMIER 14" BLACK FIBERGLASS POLE



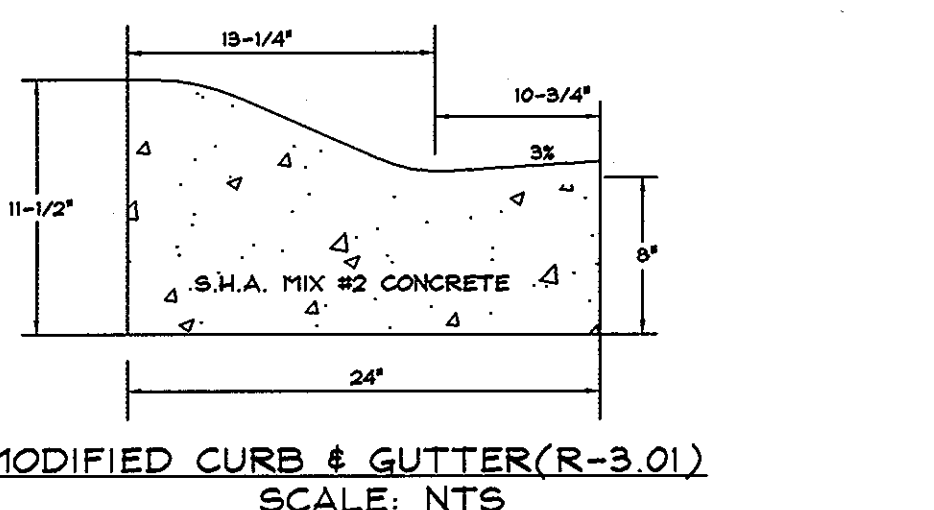
TYPICAL ROAD SECTION (FIG. 2.09a)
PUBLIC CUL-DE-SAC
DESIGN SPEED: 30MPH
SCALE: NTS



TYPICAL SECTION WITHIN CUL-DE-SAC
SCALE: NTS

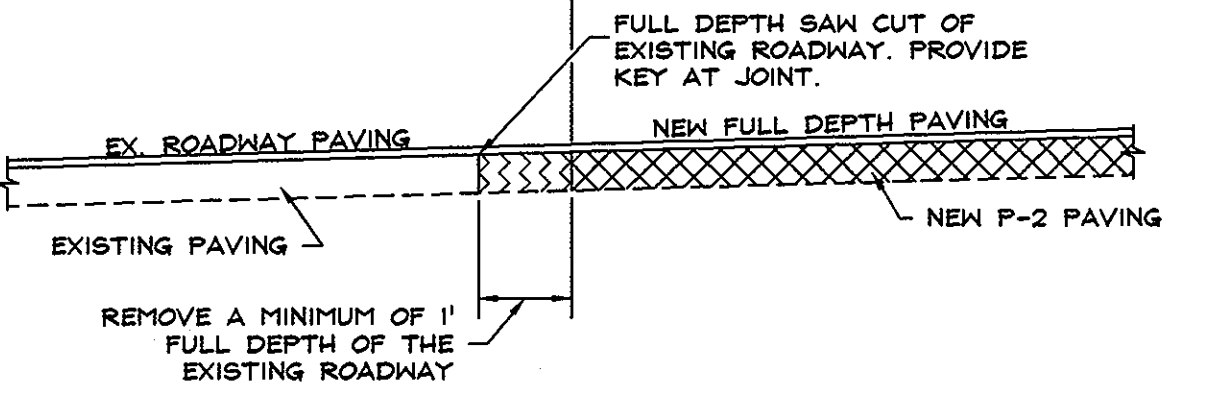


P-2 PAVING SECTION (R-2.01)
SCALE: NTS



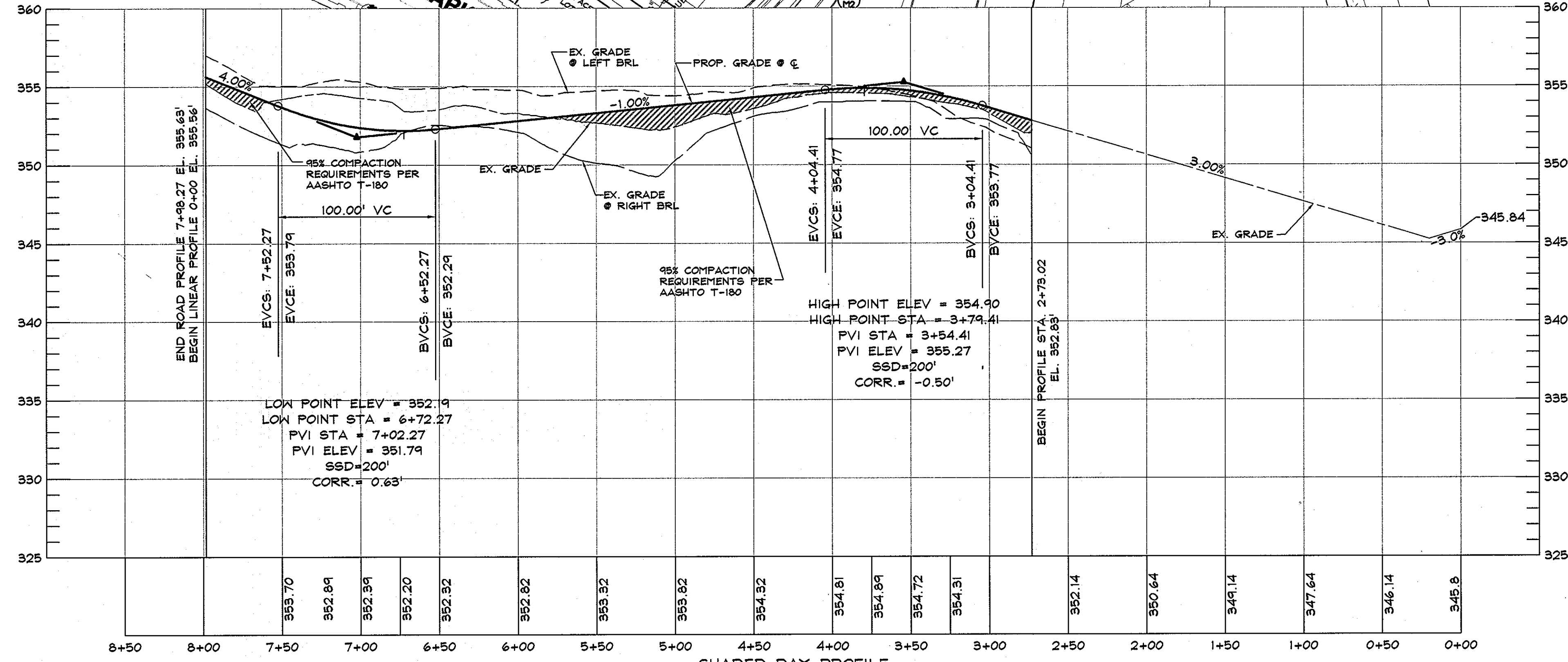
MODIFIED CURB & GUTTER (R-3.01)
SCALE: NTS

HIGH POINT ELEV = 359.40
HIGH POINT STA = 1+46.11
PVI STA = 1+46.11
PVI ELEV = 361.40
A.D. = -8.00
K = 25.00

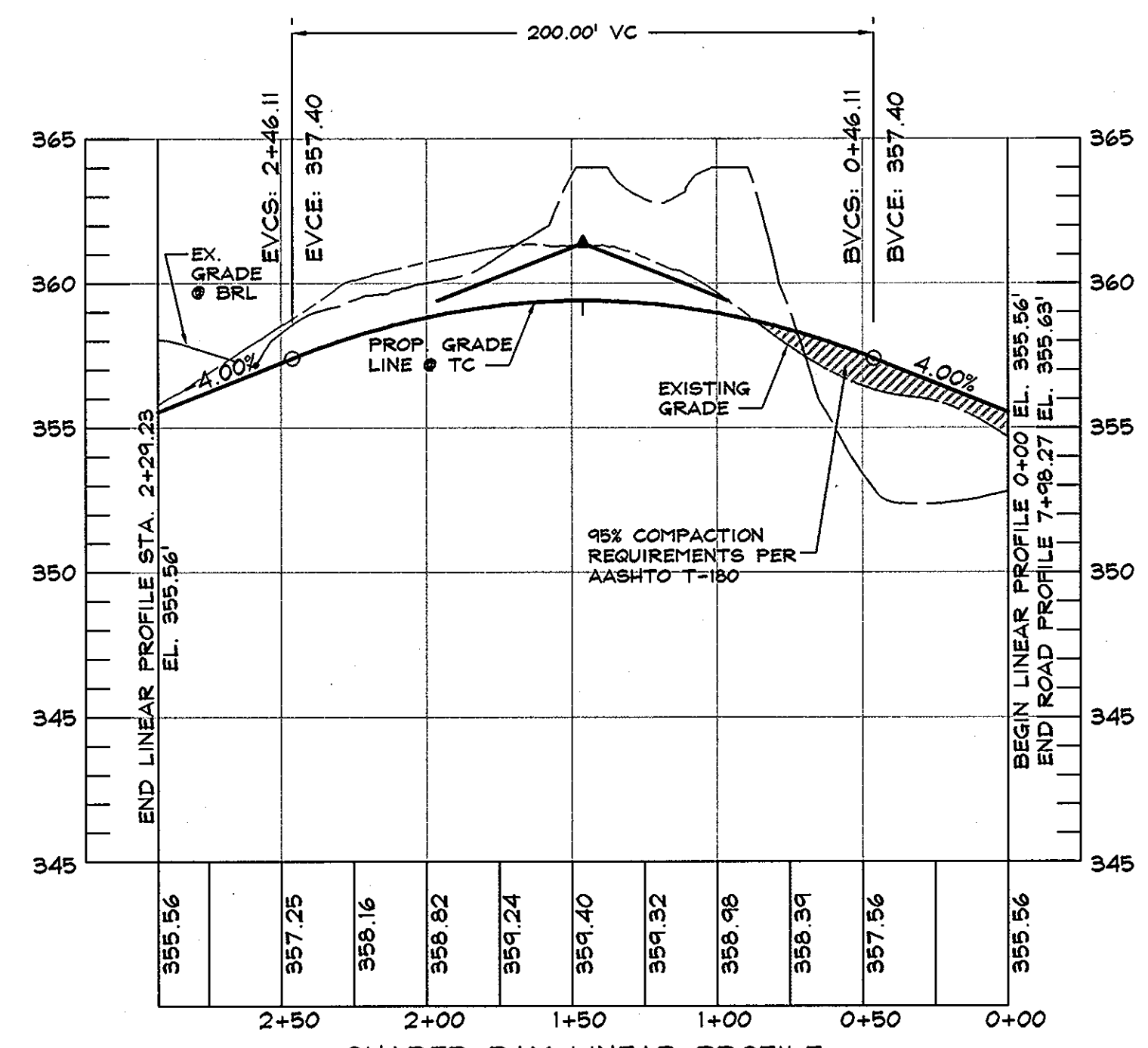


EXISTING ROADWAY TIE-IN-DETAIL
SCALE: N.T.S.

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



SHADED DAY PROFILE
25 MPH PUBLIC ACCESS STREET
SCALE - HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Walter J. ...
CHIEF, BUREAU OF HIGHWAYS
DATE: 9-16-08

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

6/29/08 DATE
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
MARK THAYER
PROFESSIONAL ENGINEER NO. 25420

DeMario Design Consultants, Inc.
192 East Main Street
Westminster, MD 21157
http://www.demariodesign.com
Phone: (410) 386-6560
Fax: (410) 386-6564
eMail: dco@demariodesign.com

OWNER: HOWARD RESEARCH & DEV. 10275 LITTLE PATIENT PKWY COLUMBIA, MD 21044 410-992-6000
DEVELOPER: GENERAL GROWTH PROPERTIES 10275 LITTLE PATIENT PKWY COLUMBIA, MD 21044 490-992-6000

SITE ADDRESS: 9881 GORMAN ROAD

FINAL ROAD PLAN THE GROVE AT EMERSON PHASE I LOTS 1-7, 9, 11-12 & OPEN SPACE LOTS 6, 10, 13 NON-BUILDABLE BULK PARCELS A & B
ROAD CONSTRUCTION PLAN & PROFILE

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

6TH ELECTION DISTRICT HOWARD COUNTY

TRAP TABLE		
TRAP TYPE	TYPE II	
EXISTING DRAINAGE AREA: ACRES	2.02	
INTERIM DRAINAGE AREA: ACRES	3.20	
PROPOSED DRAINAGE AREA: ACRES	2.87	
STORAGE REQUIRED (CUBIC FEET):	CO	2880
	WET	5760
	DRY	5760
	TOTAL	11520
STORAGE PROVIDED (CUBIC FEET):	CO	4495
	WET	8791
	DRY	28603
	TOTAL	28603
EXISTING GROUND ELEVATION	342.0	
TOP EMBANKMENT ELEVATION	346.0	
WEIR 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 (c)	n/a	
OUTLET WIDTH (b) (ft)	8.0	
BOTTOM DIMENSION	120 x 70	
BASIN SIDE SLOPES	3:1	
BASIN DEPTH	C/O	0.7
	WET	1.2
BARREL DIAMETER	WET	3.5
	DRY	n/a
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)	0.19	
ULTIMATE (5MM) 1-YR. (cfs)	0.2	
* 1-YEAR SWM VOLUME (SEE COMPUTATIONS, P.34-42) IS 0.455 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 POC 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
MIC2(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)	SASSAPRAS LOAM, 5%-10% SLOPES, MODERATELY ERODED	N	0.37
SCB(B)	SANDY AND CLAYEY LAND, GENTLY SLOPING	N	0.37

DRAWING LEGEND

--- 682 ---	EXISTING MINOR CONTOUR (2' INTERVAL)	--- PROP. 18" D ---	PROPOSED STORM DRAIN W/ INLETS & MANHOLE
--- 680 ---	EXISTING MAJOR CONTOUR (10' INTERVAL)	--- PROP. 18" D ---	PROPOSED INLET PROTECTION MEASURES
---	ADJACENT PROPERTY LINE	--- PROP. 8" N ---	PROPOSED WATER LINE & HYDRANT
---	EXISTING PROPERTY BOUNDARY	GP	GABION INFLOW PROTECTION
---	EX. ROAD / EDGE OF PAVING	--- SF --- SF ---	SILT FENCE
---	EX. SEWER LINE & MANHOLES, CLEAN-OUTS	--- SSF --- SSF ---	SUPER SILT FENCE
---	EX. OVERHEAD ELECTRIC & UTILITY POLES	---	STABILIZED CONSTRUCTION ENTRANCE
--- 682 ---	PROPOSED MINOR CONTOUR (2' INTERVAL)	---	PROPOSED TREELINE
--- 680 ---	PROPOSED MAJOR CONTOUR (10' INTERVAL)	---	WETLANDS BUFFER
---	PROP. STANDARD CURB & GUTTER / PROP. REVERSIBLE CURB & GUTTER / PROP. MOUNTABLE CURB & GUTTER / PROP. REVERSE MOUNTABLE CURB & GUTTER	---	STREAM BUFFER
---	PROPOSED PRIVATE ROAD/DRIVE CENTERLINE	---	REMOVABLE PUMPING STATION
---	EX. BUILDING	---	ECM (EROSION CONTROL MATTING)
---	PROPOSED HOUSE	---	SOIL LINE
---	PROPOSED SPOT ELEVATION & FLOW ARROW	---	EXISTING LIMIT OF DISTURBANCE
---	EXISTING TREES	---	EXISTING TREELINE
---	PROPOSED ORNAMENTAL TREE	---	EXISTING SHRUB/BRUSH LINE
---	PROPOSED EVERGREEN TREE	---	

SWM FACILITY SUMMARY TABLE

	DP-1 (EMER. 2-8a) SWM POND	DP-2 BIO-RETENTION FACILITY	
OWNERSHIP	PRIVATE	PRIVATE	
STRUCTURE TYPE	WET DETENTION POND	BIO-RET. WQ FACILITY	
STRUCTURE CLASS	MD-378 (CLASS A)	NON MD-378	
DRAIN AREA (WQ) (Ac)	5.85	2.60	
HT TO EMBANKMENT (ft)	8.5	4.0	
STREAM USE	I-P	I-P	
WATERSHED	MIDDLE PATUXENT R.	MIDDLE PATUXENT R.	
WQV REQUIRED (Ac-ft)	0.191	0.087	
WQ PROVIDED IN WET POOL (Ac-ft)	0.193	0.167	
Re REQUIRED XAREA METHOD (Ac)	0.560	0.257	
Re PROVIDED XVOLUME METHOD (Ac-ft)	0.048	0.023	
Re PROVIDED IN GRASS CHANNELS FOR CREDIT (Ac)	0	0.573	
Re 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)	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 597,000	N 597,600	
EAST COORDINATE	E 1,953,500	E 1,953,400	

TOTAL Rev (PESSIN + EMERSON): 0.817

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

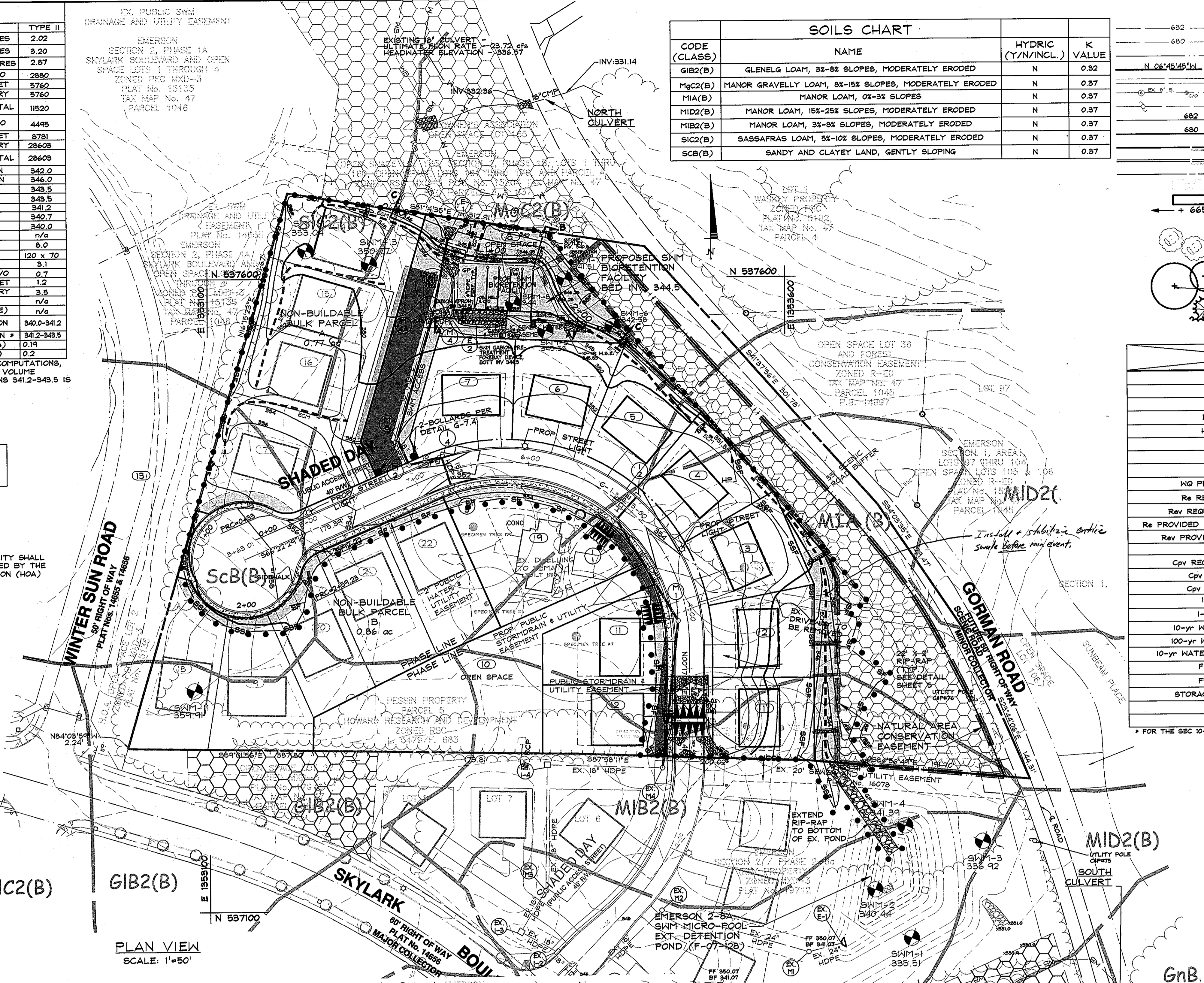
DATA SOURCES: TOPOGRAPHY SHOWN HEREON BASED ON A FIELD SURVEY PREPARED BY OPEN BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN UNCOMPENSATED BOUNDARY SURVEY PERFORMED BY DEMARIO DESIGN CONSULTANTS, INC. DATED MARCH 2006.

THIS BIOTRETENTION SWM FACILITY IS NON-378 AND HAS NO DAM HAZARD ASSOCIATED WITH IT

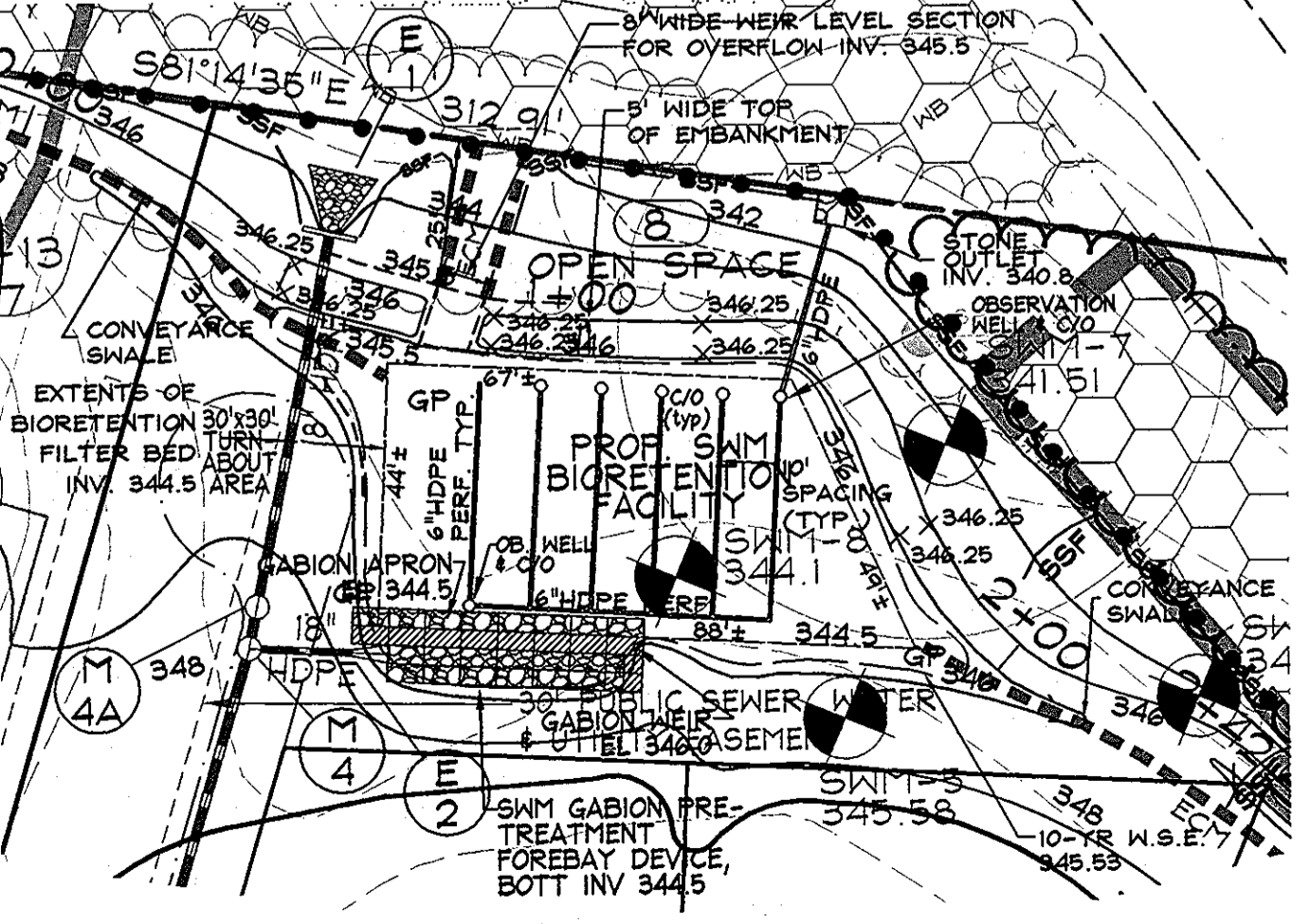
THIS SITE IS LOCATED WITHIN THE MIDDLE PATUXENT RIVER, AND IS STREAM USE I-P

THIS BIOTRETENTION FACILITY SHALL BE OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION (HOA)

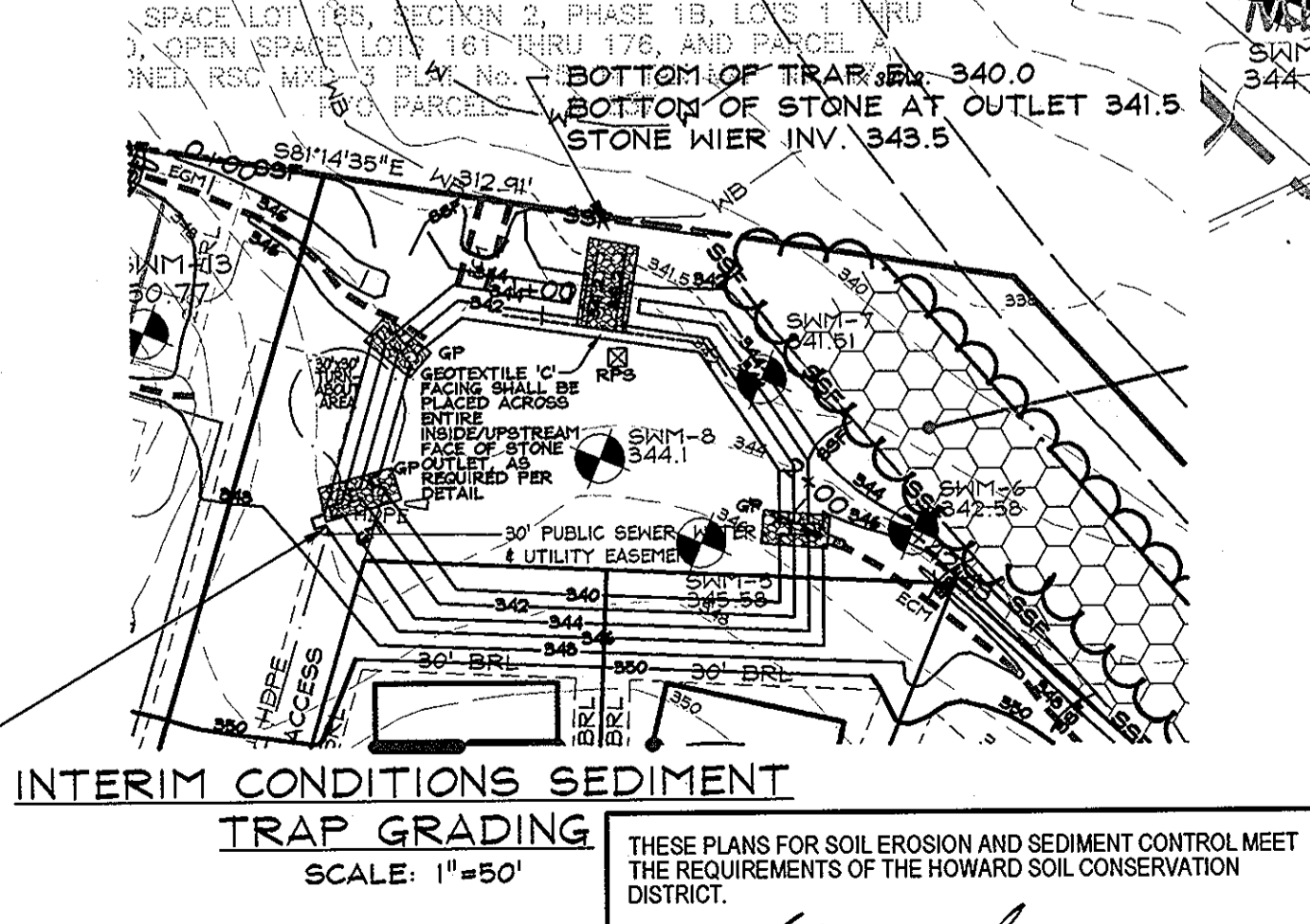
- NOTE:
- THE SOUTHERN PORTION OF PESSIN PROPERTY DRAINS TOWARD THE SOUTH AND IS TREATED IN THE EMERSON 2-8A SWM POND.
 - THE OWNER OF PESSIN PROPERTY IS ALSO OWNER OF THE EMERSON 2-8A PROPERTY.
 - ALL FILL SHALL BE INSTALLED AT 95% COMPACTION, PER AASHTO T-100 STANDARDS.



PLAN VIEW SCALE: 1"=50'



BIOTRETENTION FACILITY DETAIL SCALE: 1"=30'



INTERIM CONDITIONS SEDIMENT TRAP GRADING SCALE: 1"=50'

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."

DEVELOPER: [Signature] DATE: 8/28/08

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."

ENGINEER: [Signature] DATE: 8/29/08

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

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

DATE: 8/29/08
 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

DeMario Design Consultants, Inc.
 192 East Main Street Westminister, MD 21157
 Phone: (410) 386-0550 Fax: (410) 386-0554
 http://www.demariodesign.com Email: dcs@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 410-992-6000

SITE ADDRESS: 8881 GORMAN ROAD

FINAL ROAD PLAN THE GROVE AT EMERSON PHASE 1 LOTS 1-7, 9, 11-12 & OPEN SPACE LOTS 8, 10, 13 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-06-023/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	DCG JOB#:	05123.2	
ZONE / USE:	RSC	SHEET NUMBER:	3 of 10	
DWG. SCALE:	AS SHOWN			

CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the 2000 Standard for Practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

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

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6" (from other objectionable materials). Fill material for the center of the embankment, and cut of trench shall conform to Unified Soil Classification (SC, CH, or CL) and must contain at least 30% passing the #20 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

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

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

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

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

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

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

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manual directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driving equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

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Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi, 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 1,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bed-ding) over and on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driving equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for polypropylene metal pipe: 1. Materials - (Aluminum Coated Steel Pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. The pH of the surrounding soils shall be between 4 and 9, necessary to obtain that density, and it to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Coupling bands, anti-seep collars, and sections, etc. must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 inches in thickness.

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

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Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soil, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support. Backfilling shall conform to "Structure Backfill".

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

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe: 1. Materials - Reinforced concrete pipe shall be bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361. 2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe to at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

Backfilling shall conform to "Structure Backfill".

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

Plastic Pipe - The following criteria shall apply for plastic pipe: 1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following 4" - 10" minimum requirements of AASHTO Specification M-150 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soil, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support. Backfilling shall conform to "Structure Backfill".

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

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

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

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

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

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

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

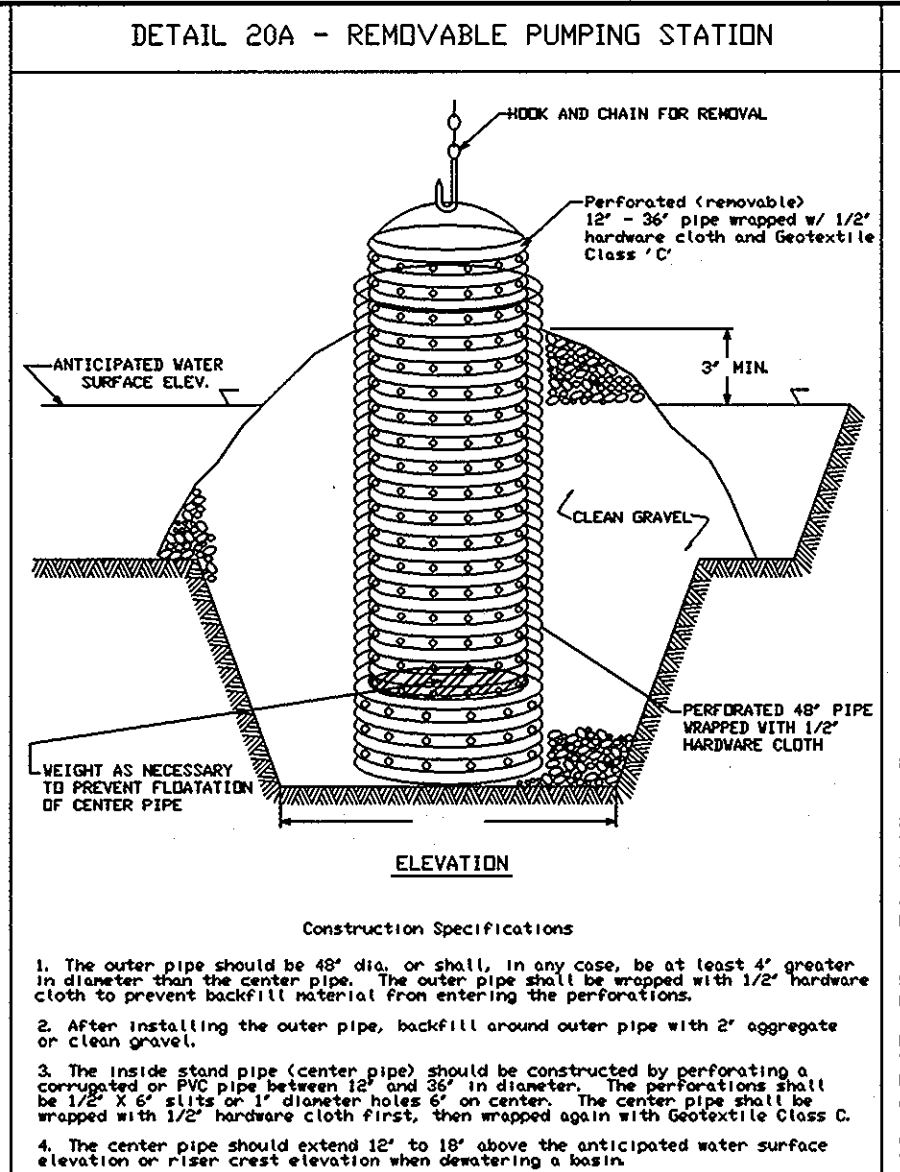
Erosion and Sediment Control Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

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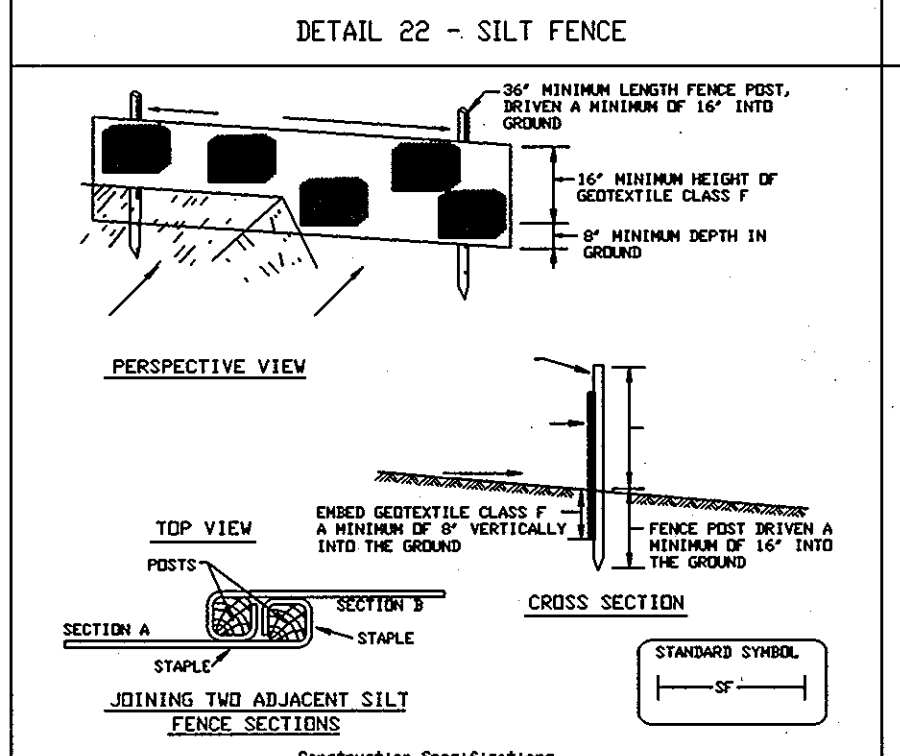
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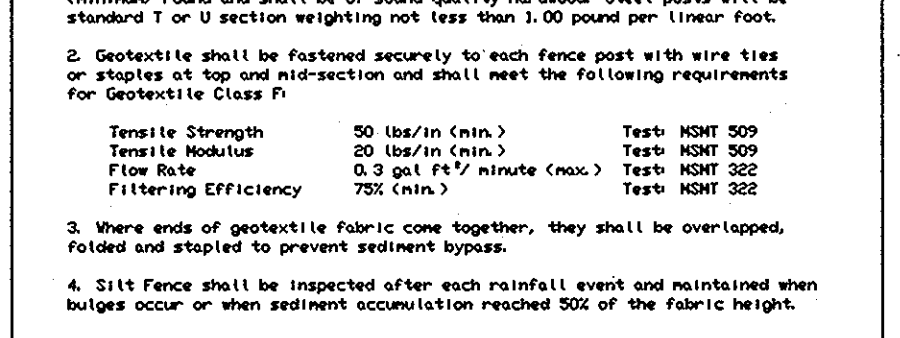
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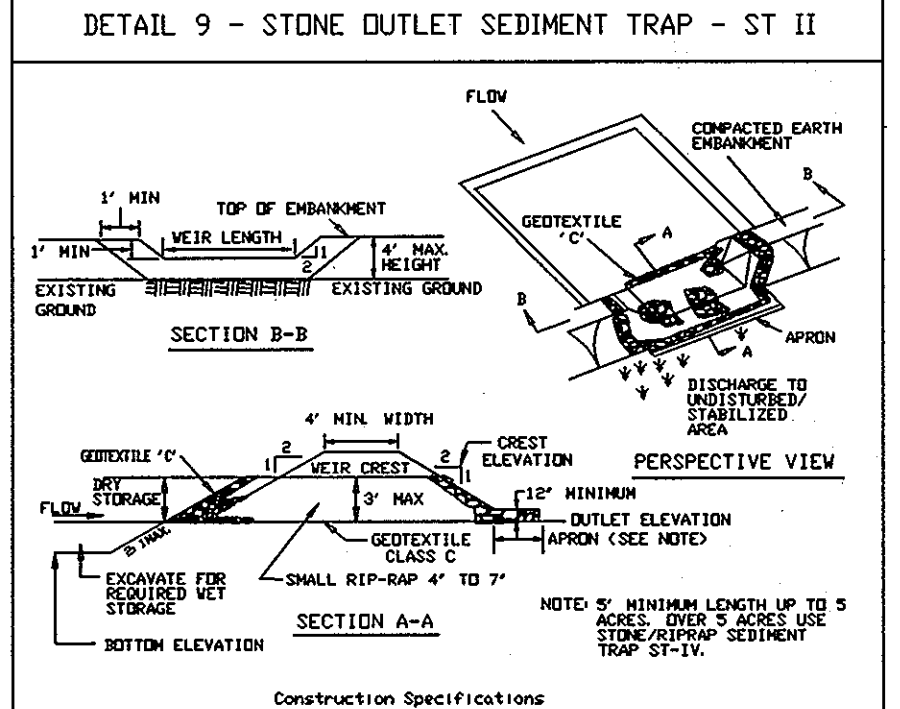
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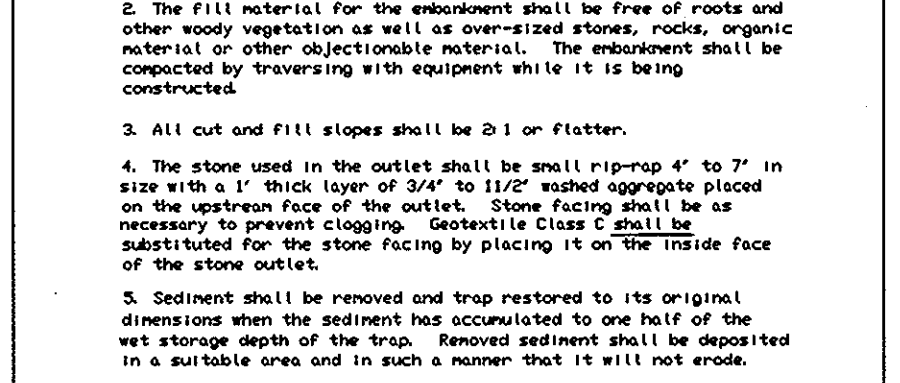
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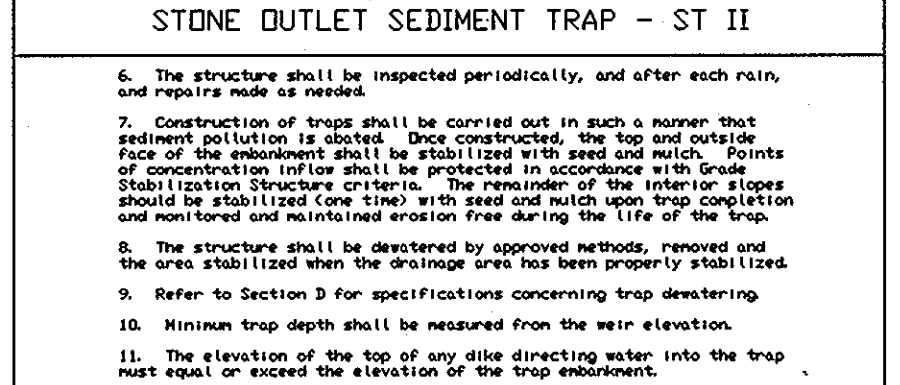
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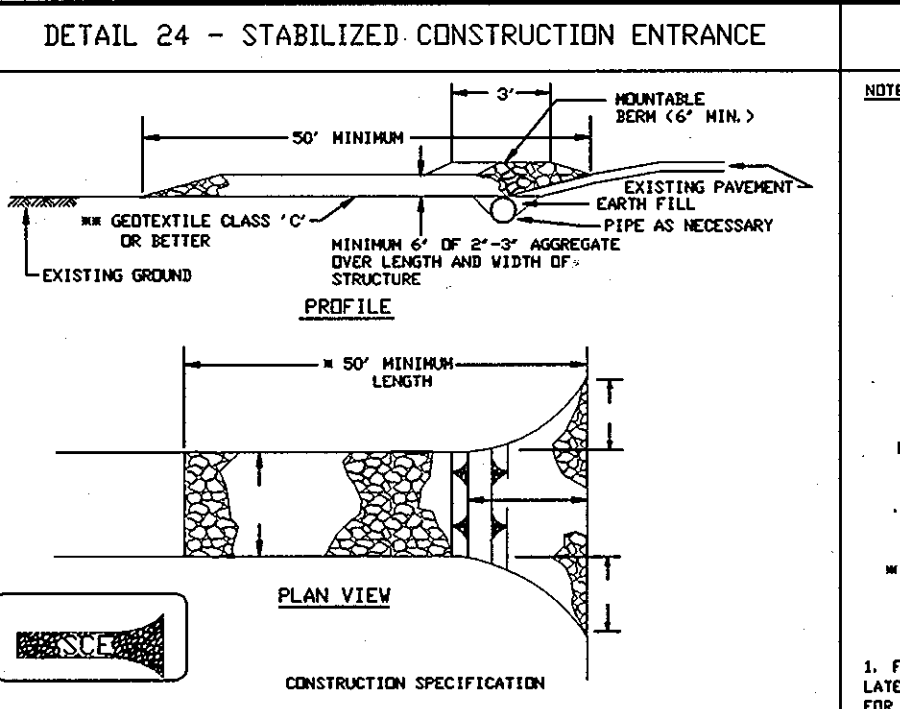
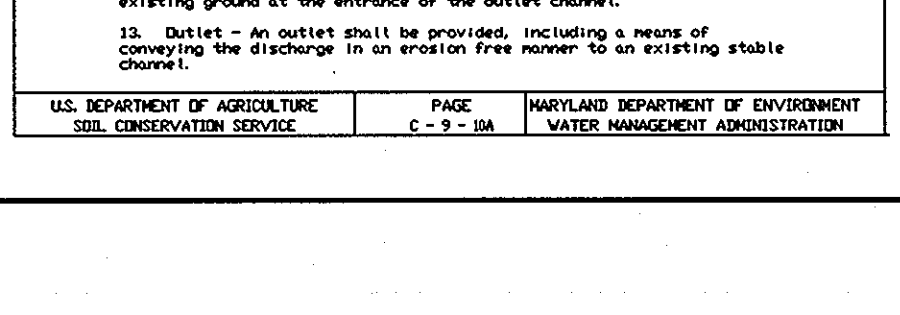
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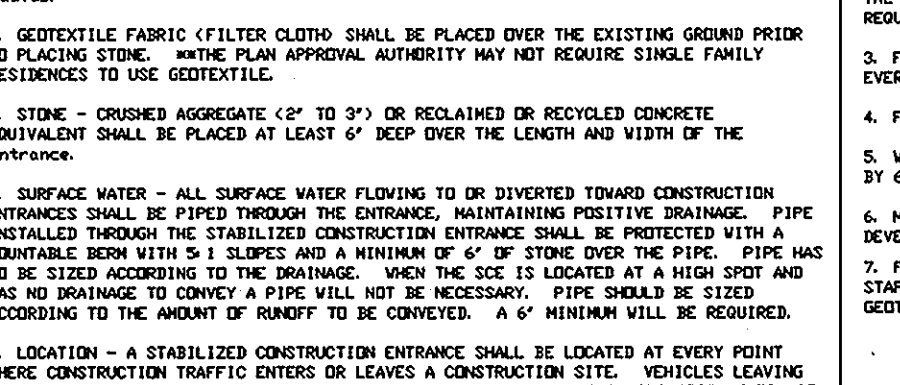
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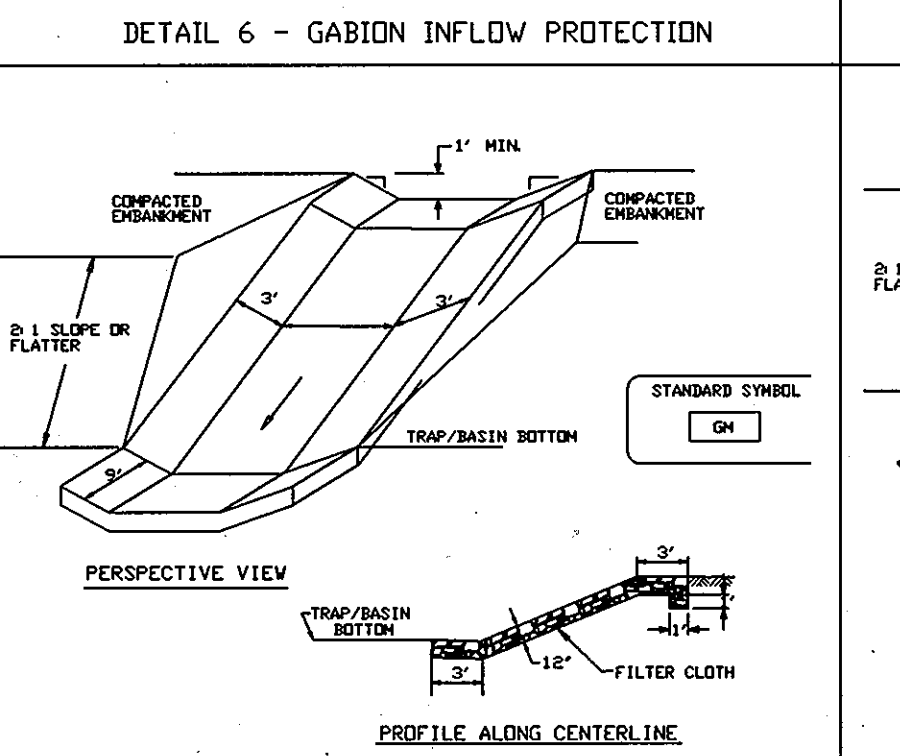
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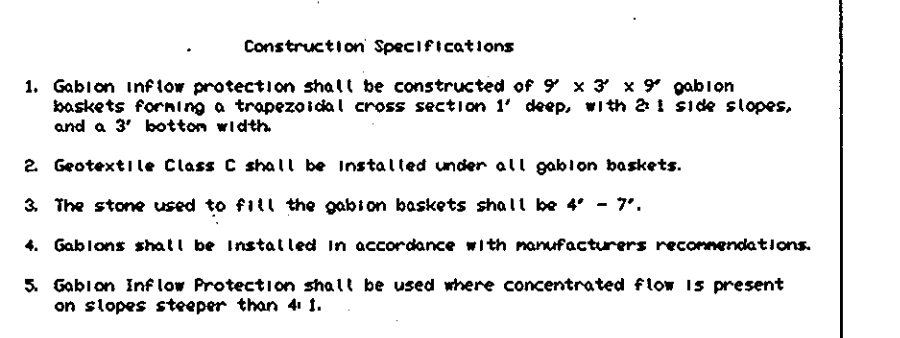
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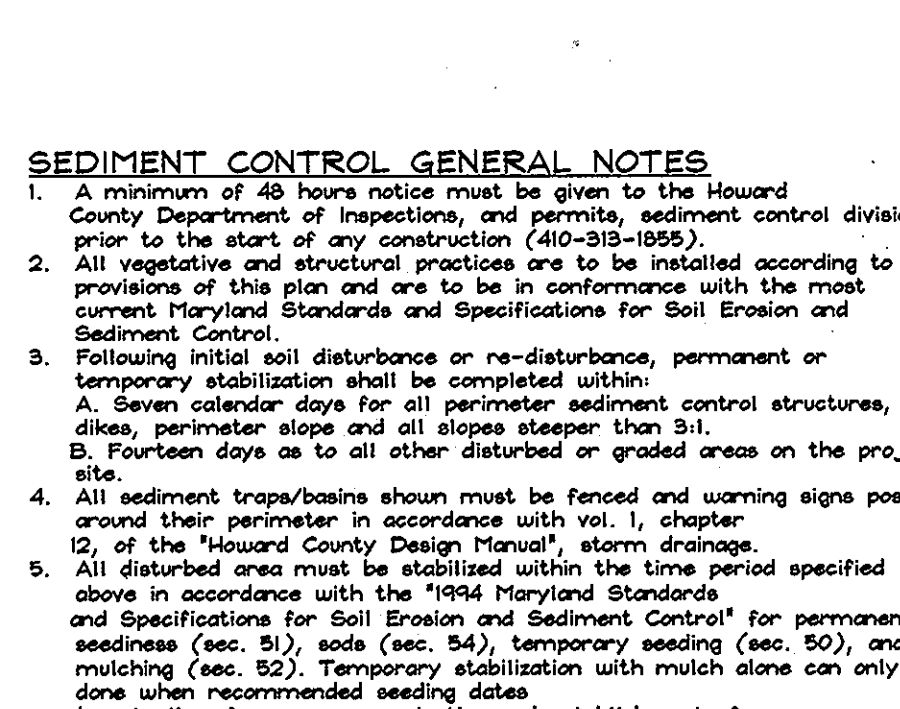
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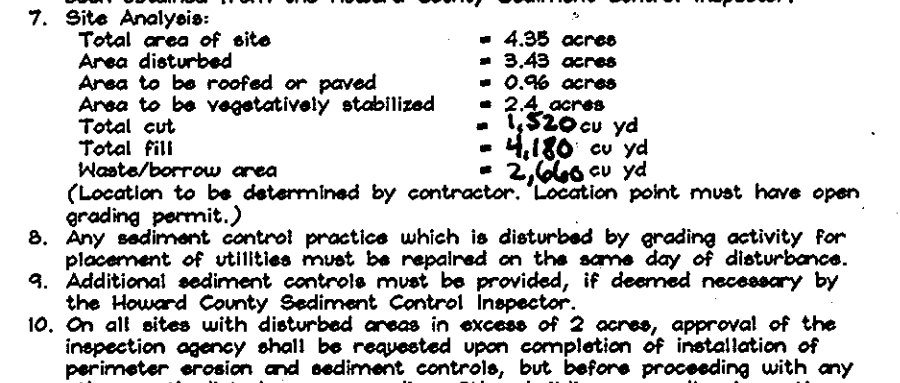
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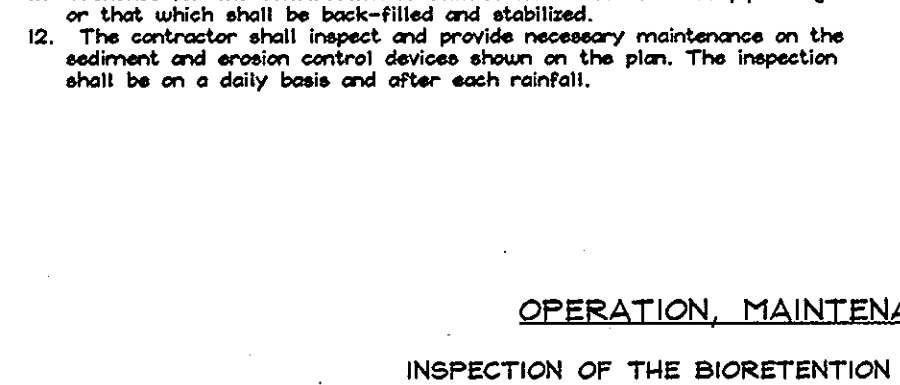
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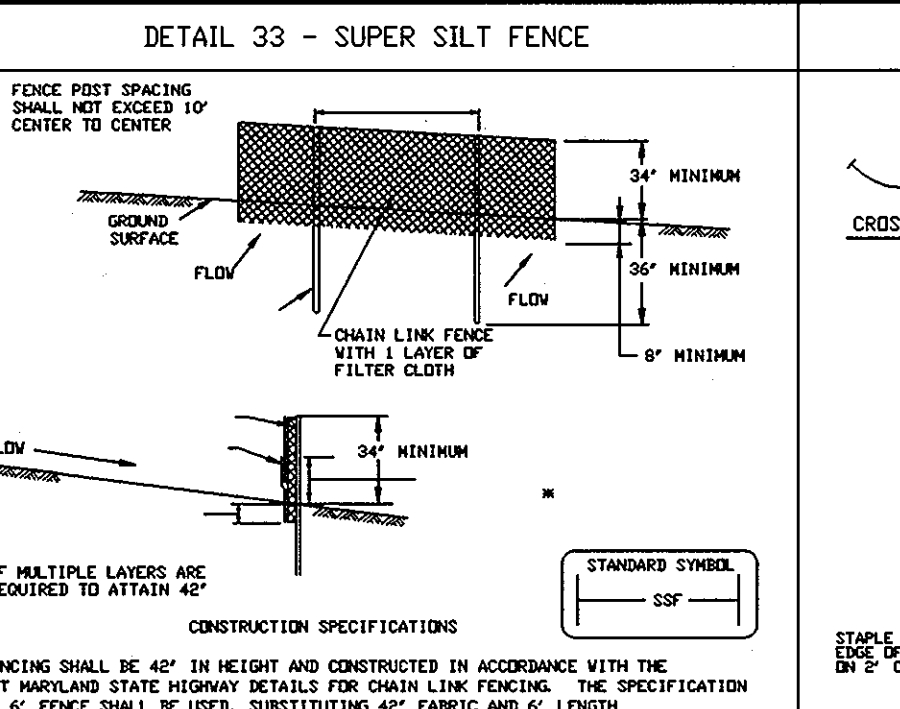
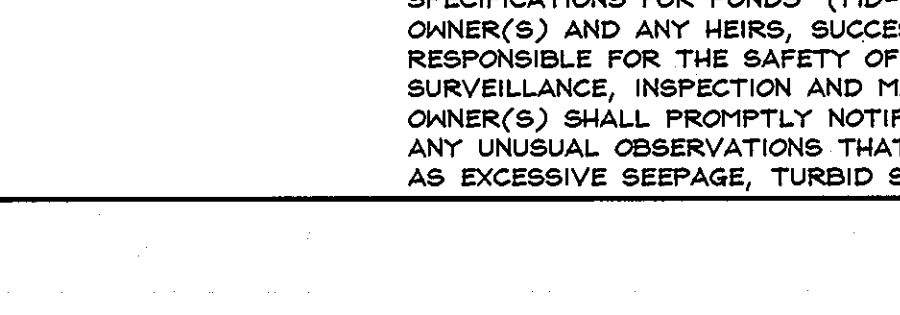
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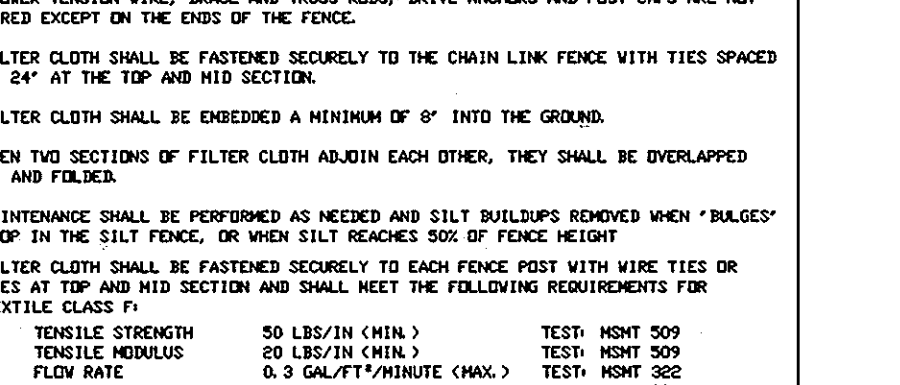
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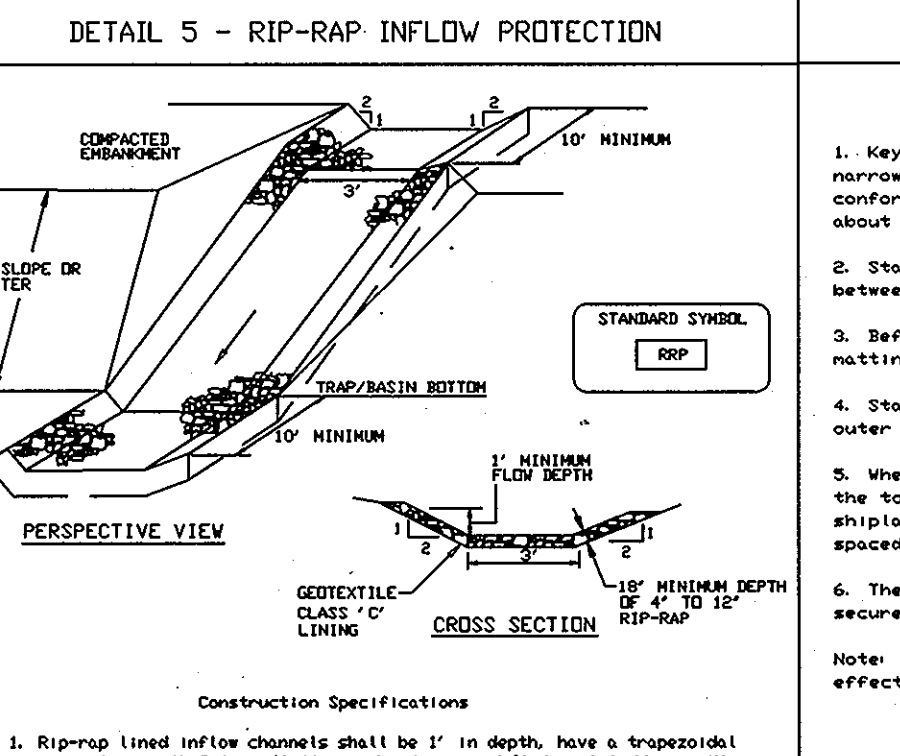
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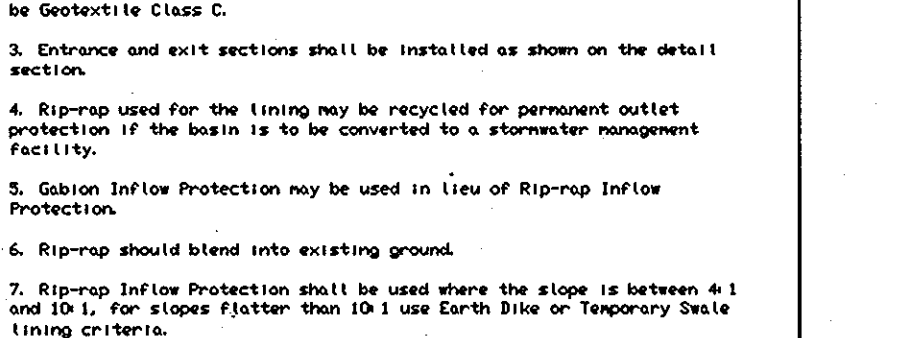
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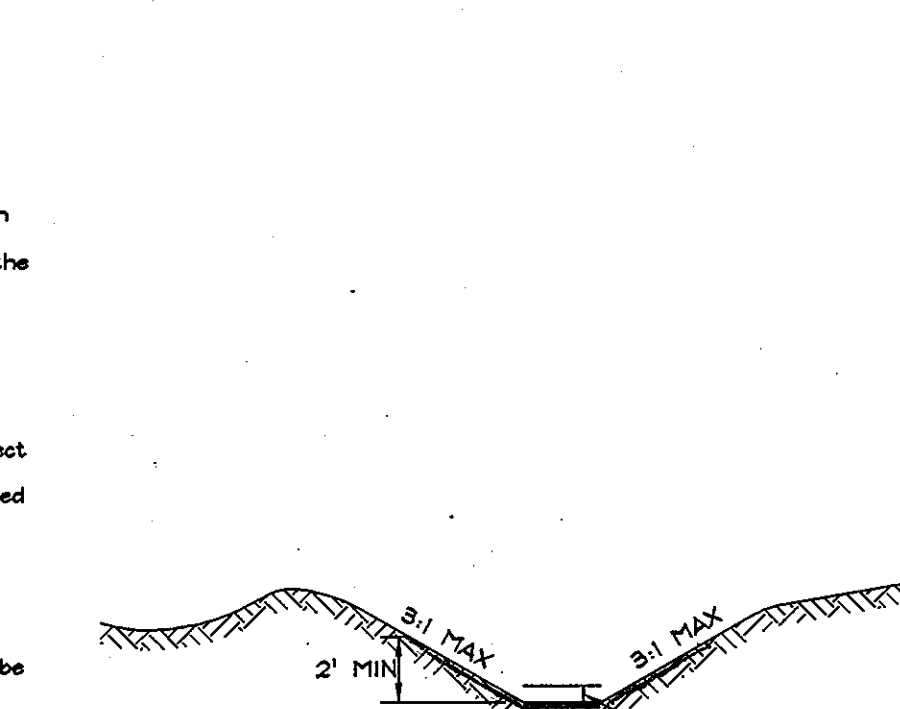
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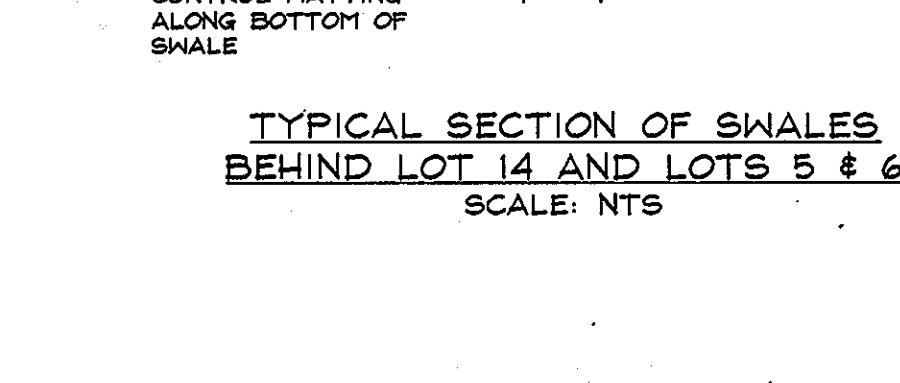
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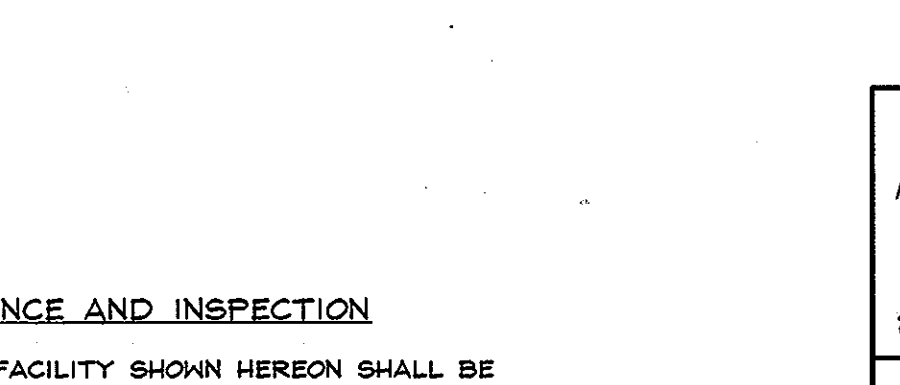
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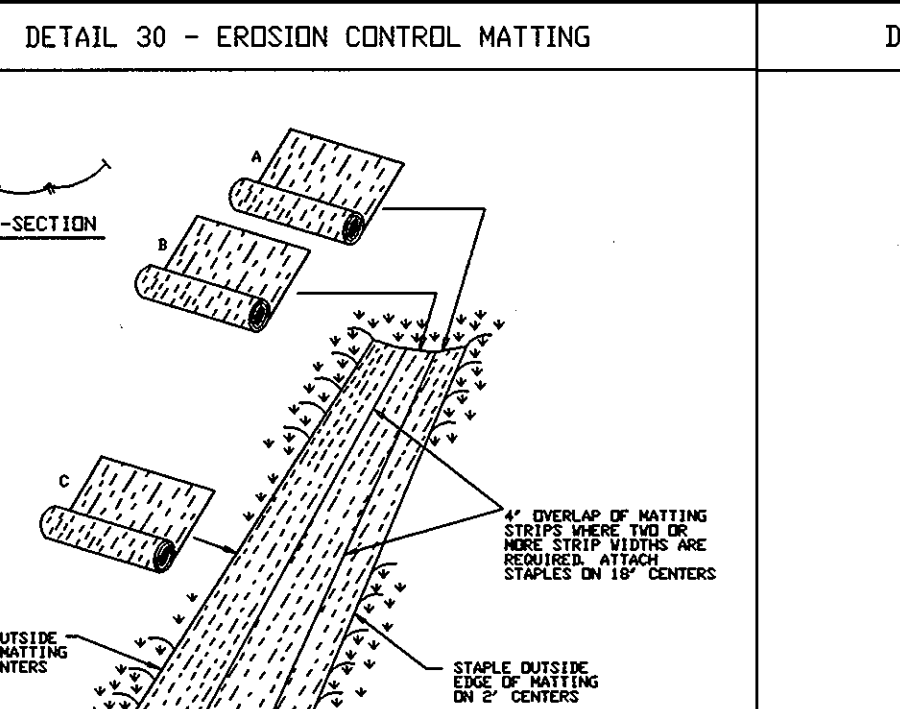
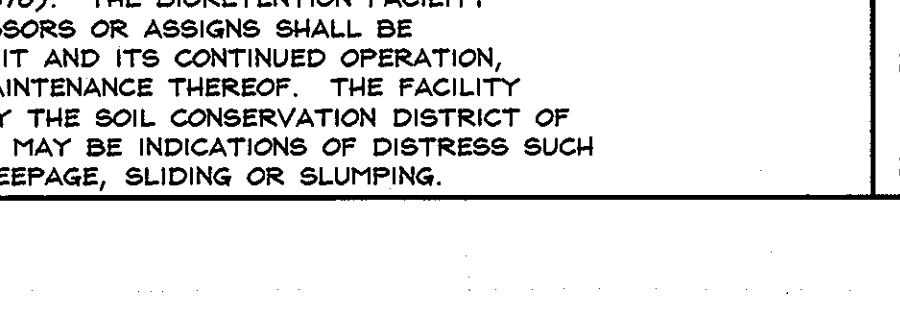
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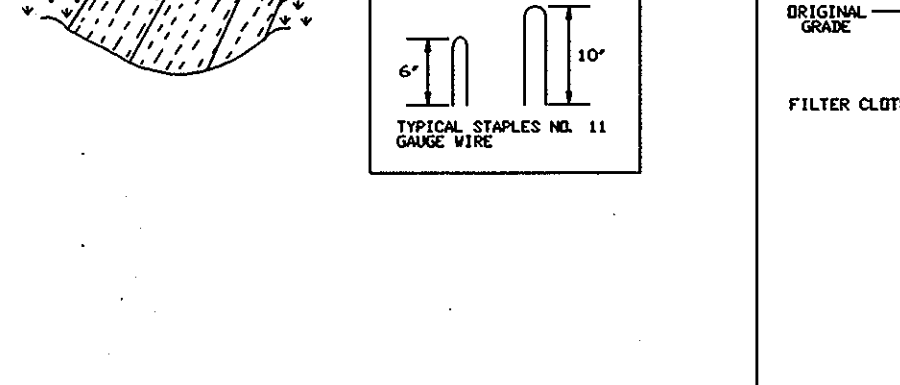
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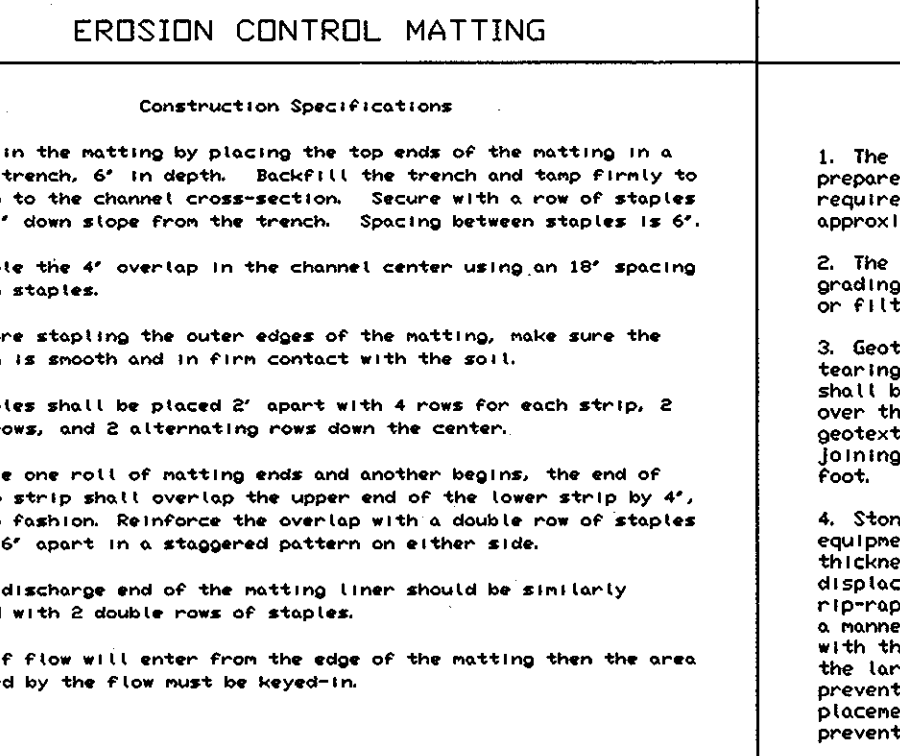
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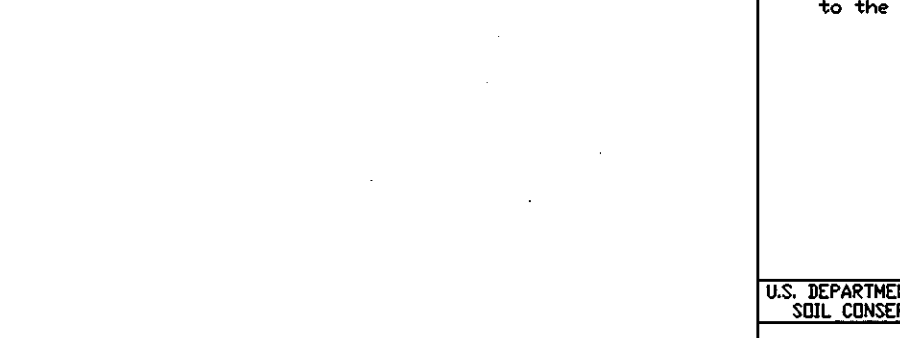
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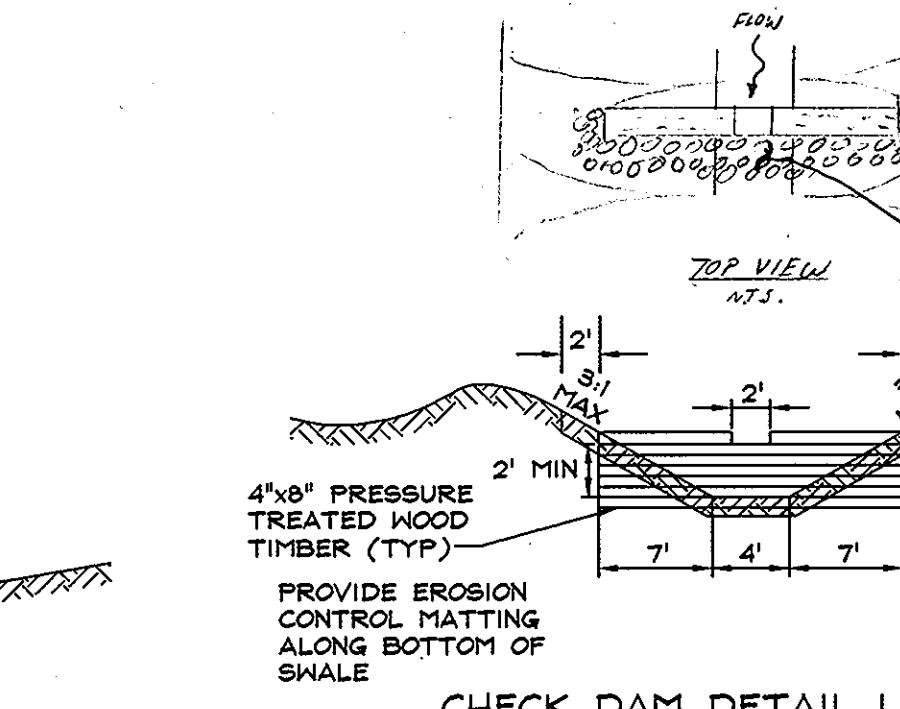
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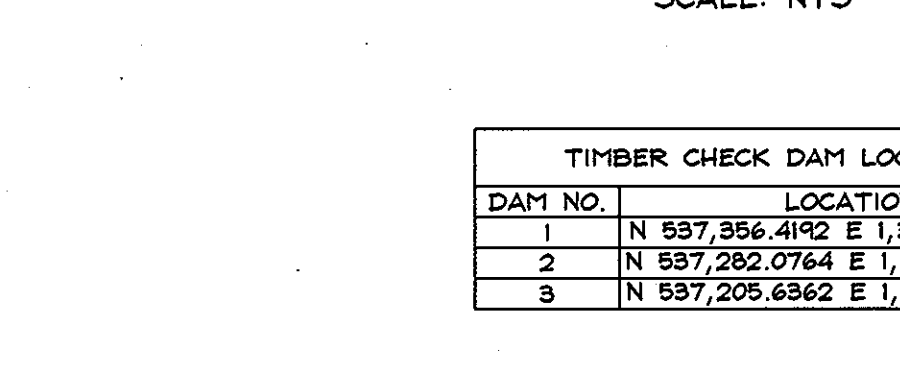
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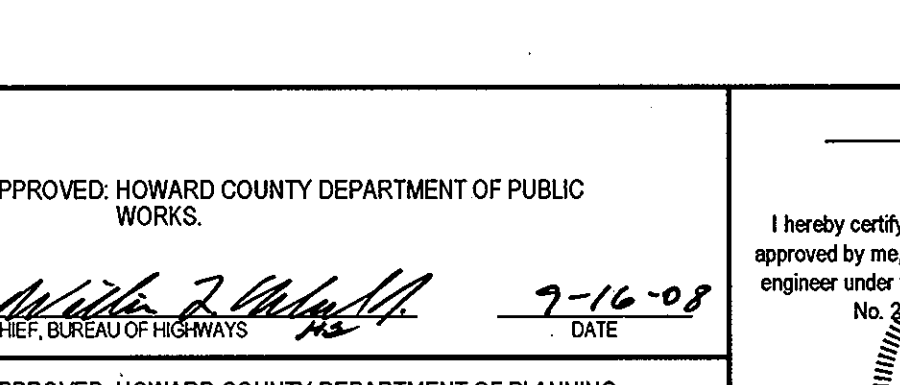
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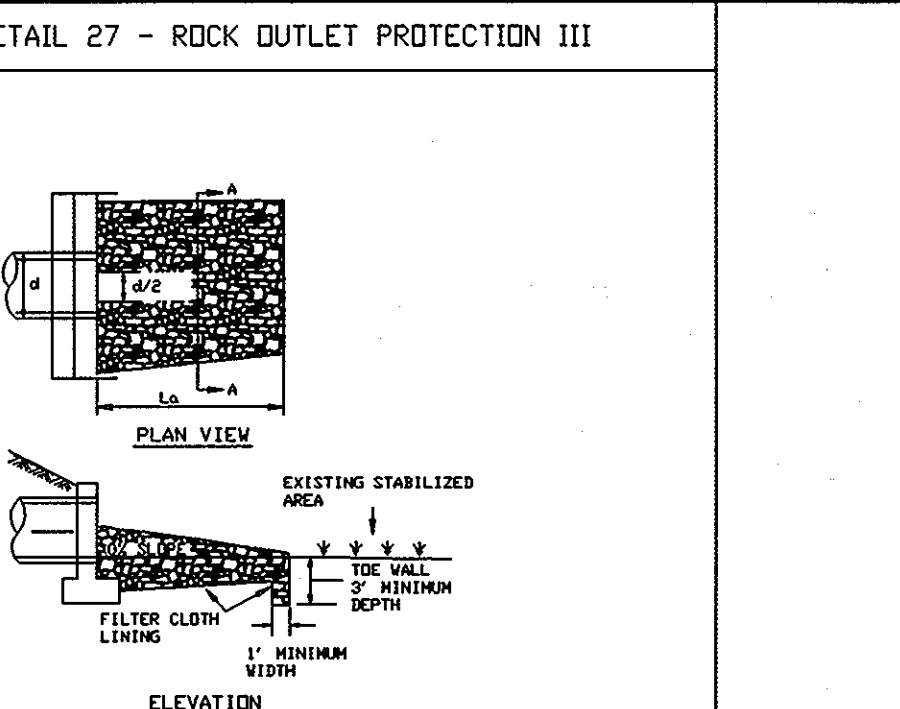
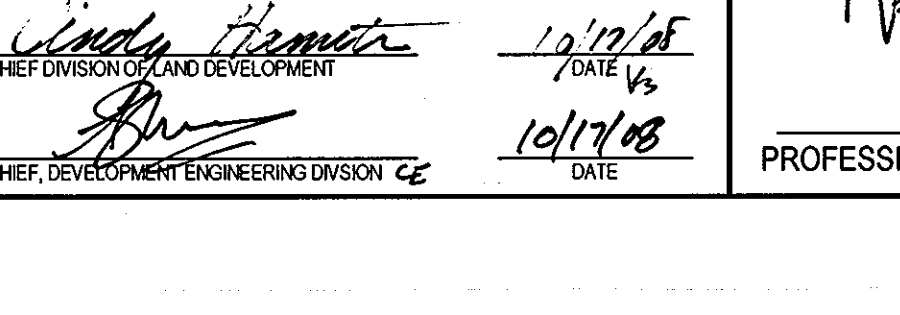
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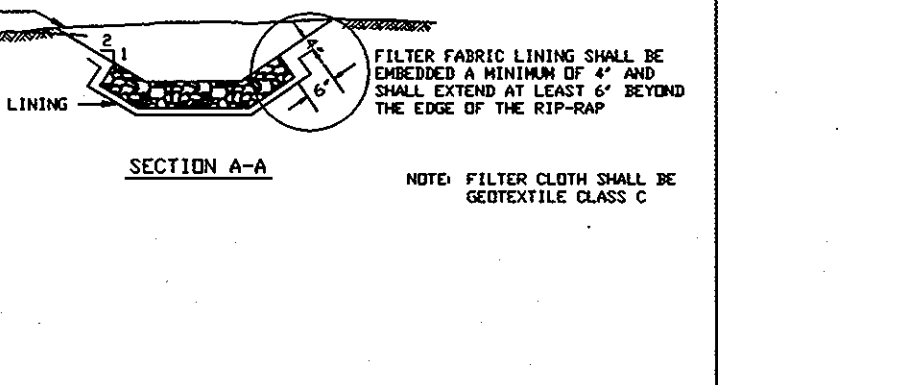
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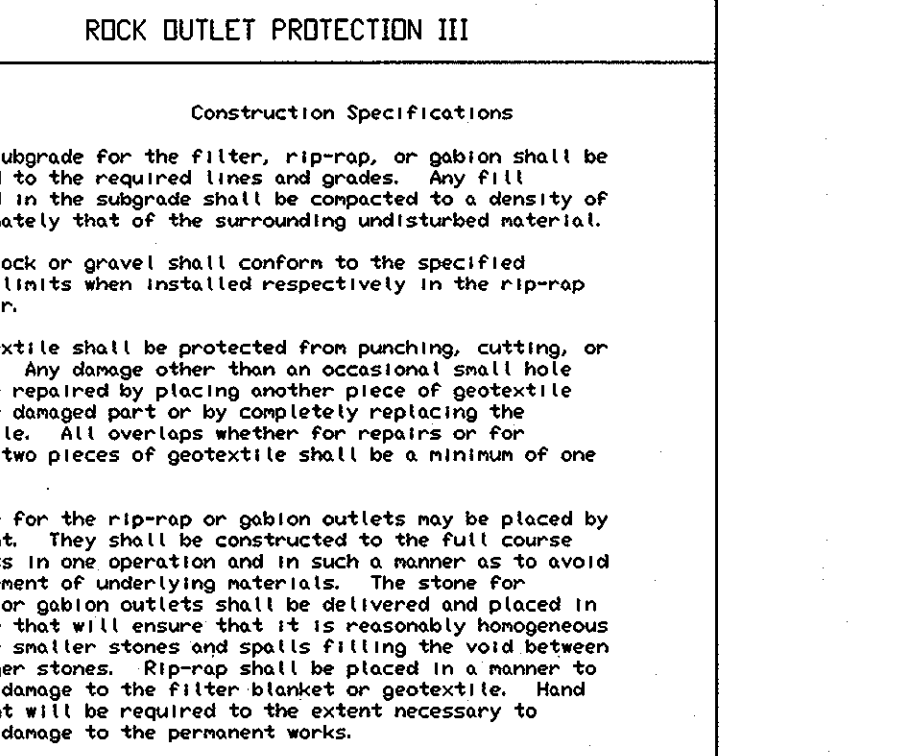
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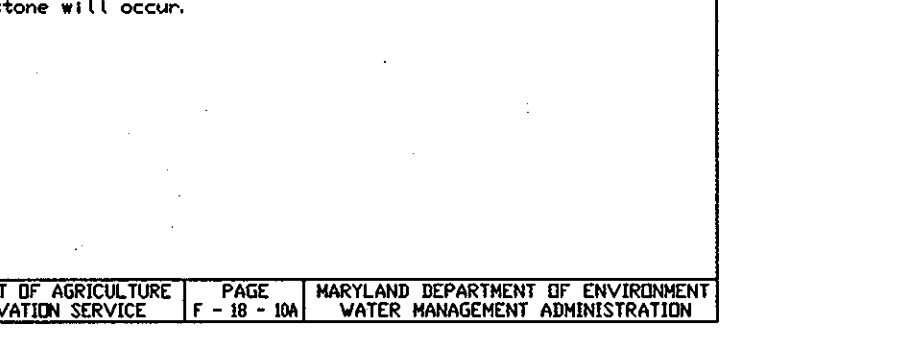
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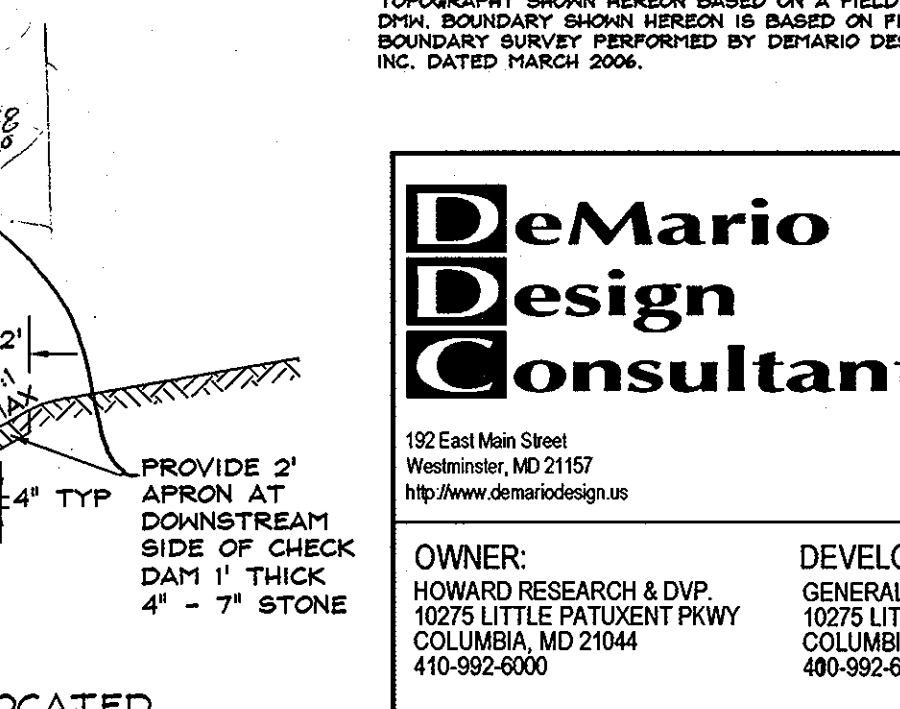
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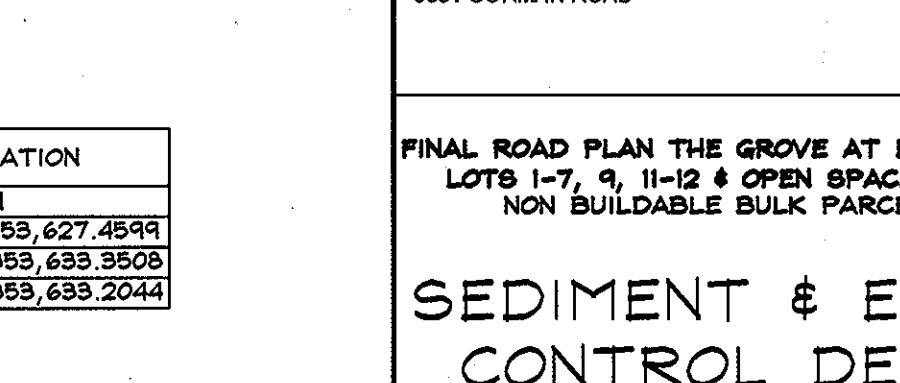
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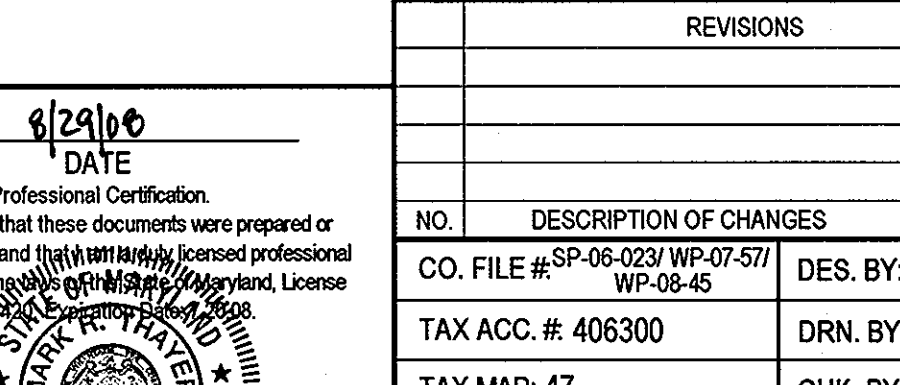
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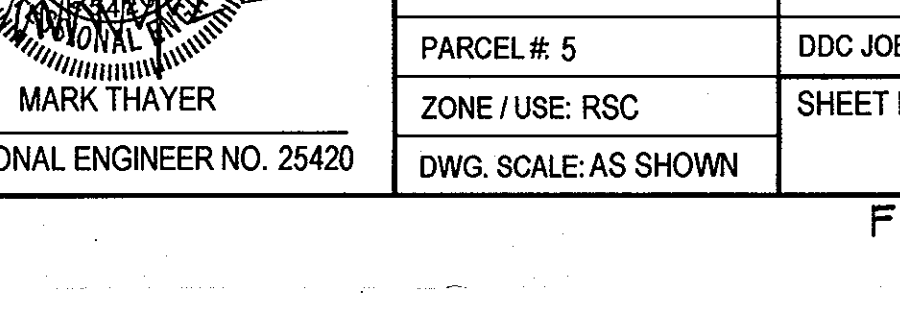
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U.S. DEPARTMENT OF AGRICULTURE, MARLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION



SEDIMENT CONTROL GENERAL NOTES

- 1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, and permit, sediment control division prior to the start of any construction (410-313-1055).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in accordance with the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within:
A. Seven calendar days for all permanent sediment control structures, dikes, perimeter slope and all slopes steeper than 3:1.
B. Fourteen days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with vol. 1, chapter 12, of the "Howard County Design Manual", storm drainage.
5. All disturbed 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 seedness (sec. 51), seeds (sec. 54), temporary seedings (sec. 50), and mulching (sec. 52). Temporary stabilization with mulch alone can only be used when recommended seeding data is not available.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permittee or their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:
Total area of site = 4.35 acres
Area disturbed = 3.45 acres
Area to be seeded or paved = 0.95 acres
Area to be vegetatively stabilized = 2.4 acres
Total fill = 4,180 cu yd
Waste/borrow area = 2,060 cu yd
(Location to be determined by contractor. Location point must have open grading permit.)
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the spot day of disturbance.
9. Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of the sediment control structures and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be initiated until this initial approval by the inspection agency is made.
11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized.
12. The contractor shall inspect and provide necessary maintenance on the sediment control structures in accordance with the plan. The inspection shall be on a daily basis and after each rainfall.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE BIORET

Delimitation of The Limit of Disturbance (LOD)

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 are not installed, no tree protection fence shall be installed in areas where insufficient protection for the 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 fence shall be installed from contact by 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 and activities are restricted, unless otherwise approved on ISA Certified Arborist or professional forester, 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 canopy. The contractor shall establish a new canopy by thinning 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. If 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 properly installed on the Final Forest Conservation Plan with respect to spacing, height, and content, shall be evaluated for susceptibility to windthrow and branches that may present a direct impediment to construction activities or hazards to health safety and welfare. 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 sawhorses, which supports, anchorages, temporary power poles, sign posts or other functions is also strictly prohibited. Cutting of tree roots in or near 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 stem 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 runoff or 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 unpainted, 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 and applications shall be preceded by a soils analysis by a soils 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 should designate an irrigation schedule to wet in the Tree Protection Zone to the depth of the root zone and replace that water once it is depleted. Light frequent irrigation should be avoided.
 - In periods of extreme drought, wind or grading, trunks, limbs and foliage should be sprayed with water to remove accumulated construction dust.
 - The removal of 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 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 separation 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 complete the Certification of Completion of Planning and a certification 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 for the post construction period have been put in place. A sample certification can be found in Appendix J 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.
 - Containing 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.
 - Evaluation of new occurrences 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 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	5.9842AC
AREA WITHIN 100 YEAR FLOODPLAIN	0.0000AC
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	0.0000AC
NET TRACT AREA	5.9842AC
LAND USE CATEGORY	HDR
INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	5.9842AC
B. CONSERVATION THRESHOLD (20% X A)	1.1978AC
C. AFFORESTATION MINIMUM (15% X A)	0.8976AC
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	5.9842AC
B. AFFORESTATION MINIMUM (15% X A)	0.8976AC
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. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD.....	0.0000AC
B. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD.....	0.0000AC
C. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD.....	0.0000AC
D. TOTAL REFORESTATION REQUIRED.....	0.0000AC
E. TOTAL AFFORESTATION REQUIRED.....	0.8976AC
F. CREDIT FOR LANDSCAPING (max. not exceed 20% of D).....	0.0000AC
G. TOTAL REFORESTATION AND AFFORESTATION REQUIRED.....	0.8976AC

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 16.120 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.

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E 1529250

EX. PUBLIC SWM DRAINAGE AND UTILITY EASEMENT

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

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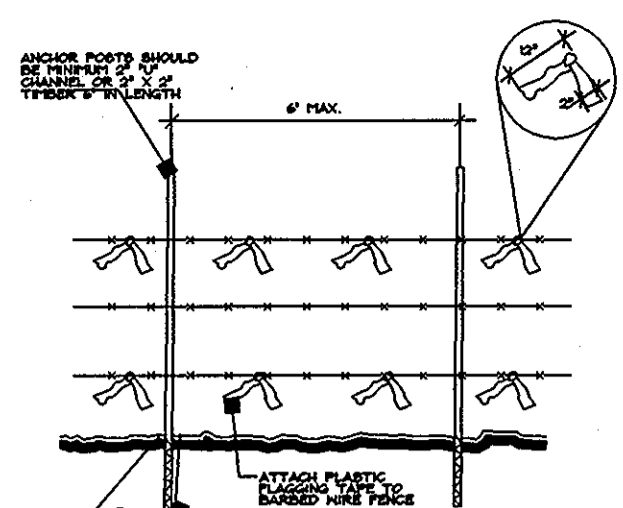
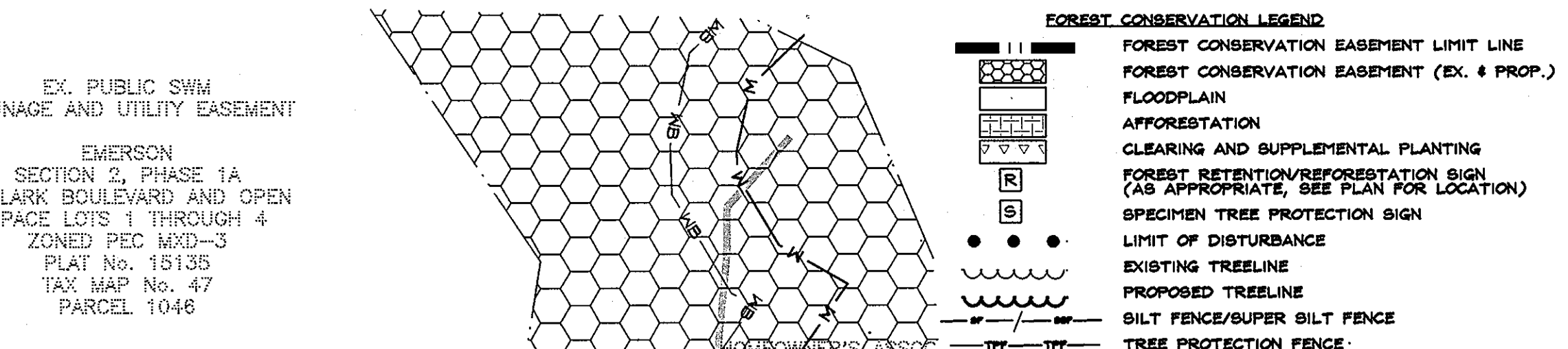
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NOTES:
1. ALL TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
2. ALL TREE PROTECTION FENCES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
3. ALL TREE PROTECTION FENCES SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION.
4. ALL TREE PROTECTION FENCES SHALL BE REPAIRED IMMEDIATELY UPON DAMAGE.
5. ALL TREE PROTECTION FENCES SHALL BE INSTALLED AT THE PERIMETER OF THE TREE PROTECTION ZONE.
6. ALL TREE PROTECTION FENCES SHALL BE INSTALLED AT THE PERIMETER OF THE TREE PROTECTION ZONE.
7. ALL TREE PROTECTION FENCES SHALL BE INSTALLED AT THE PERIMETER OF THE TREE PROTECTION ZONE.

SPECIMEN TREE CHART

NUMBER	DBH	COMMON NAME/SCIENTIFIC NAME	CONDITION	RETAIN
1	32"	Redcedar/Juniperus virginiana	Poor	No
2	47"	Silver Maple/Acer saccharinum	Poor	No
3	38"	Sycamore/Platanus occidentalis	Poor	No
4	37"	Locust/Robinia pseudoacacia	Poor	No
5	43"	Sycamore/Platanus occidentalis	Poor	No
6	34"	Red Maple/Acer rubrum	Poor	No
7	37"	Silver Maple/Acer saccharinum	Poor	No
8	32"	Silver Maple/Acer saccharinum	Poor	No
9	54"	Silver Maple/Acer saccharinum	Poor	No
10	50"	Poplar/Liriodendron tulipifera	Poor	No

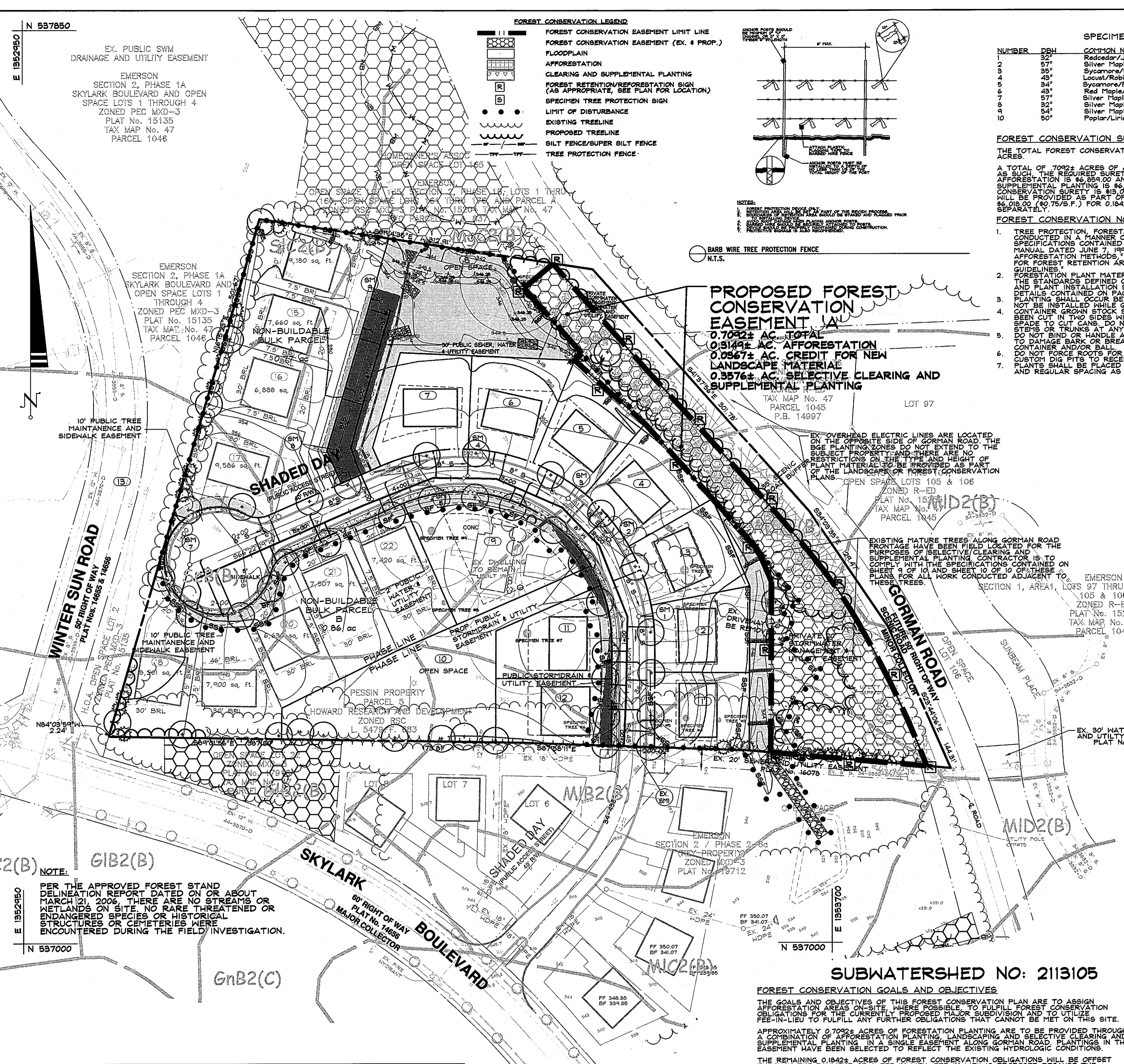
FOREST CONSERVATION SURETY

THE TOTAL FOREST CONSERVATION OBLIGATION FOR THIS PROJECT IS 0.9342 ACRES.
A TOTAL OF 7092± ACRES OF AFFORESTATION ARE PROPOSED UNDER THIS PLAN. SUCH THE REQUIRED SURETY AMOUNT FOR THE 0.9342 ACRES OF AFFORESTATION IS \$6,894.00 AND THE SURETY FOR THE 0.9342 ACRES OF SUPPLEMENTAL PLANTING IS \$6,018.00. THE TOTAL FOREST CONSERVATION SURETY IS \$12,912.00. THE SURETY FOR THE LANDSCAPE MATERIAL WILL BE PROVIDED AS PART OF THE LANDSCAPE BOND PACKAGE. FEE IN LIEU OF SURETY IS \$60.75/S.F. FOR 0.1842 ACRES OF FORESTATION WILL BE PAID SEPARATELY.

FOREST CONSERVATION NOTES & SPECIFICATIONS

- TREE PROTECTION, FORESTATION AND MAINTENANCE WORK SHALL BE CONDUCTED IN A MANNER CONSISTENT WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE HOWARD COUNTY FOREST CONSERVATION MANUAL DATED JUNE 7, 1998, APPENDICES 'F' (FORESTATION AND AFFORESTATION METHODS), 'G' (SOIL AND FOREST PROTECTION TECHNIQUES FOR FOREST RETENTION AREAS), AND 'H' (PLANTING AND MAINTENANCE GUIDELINES).
- THE STANDARDS PLANT MATERIAL SIZE AND DENSITY SHALL BE CONSISTENT WITH THE STANDARDS DEFINED ON PAGE H-2 OF THE FOREST CONSERVATION MANUAL AND PLANT INSTALLATION SHALL BE CONSISTENT WITH THE METHODS AND DETAILS CONTAINED ON PAGES H-3 THROUGH H-5.
- PLANTING SHALL OCCUR BETWEEN SEPTEMBER 15 AND MAY 31. MATERIAL SHALL NOT BE INSTALLED PRIOR TO SEPTEMBER 15.
- CONTAINER GROWN STOCK SHALL BE REMOVED CAREFULLY AFTER CANS HAVE BEEN CUT. TWO SIDES WITH AN APPROVED CUTTER. DO NOT USE PLANTING STEPS OR TRUNKS AT ANY TIME.
- DO NOT BIND OR HANDLE ANY PLANT WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE BARK OR BREAK BRANCHES. LIFT AND HANDLE PLANTS WITH CONTAINERS AND/OR ROOTS.
- CUSTOM DIG PITS TO RECEIVE ROOTS WITHOUT DEFORMATION. PLANTS SHALL BE PLACED IN FOREST CONSERVATION ZONE AT RANDOM LOCATIONS AND REGULAR SPACING AS INDICATED ON THESE PLANS.

PROPOSED FOREST CONSERVATION EASEMENT 'A'
0.7092± AC TOTAL
0.5144± AC AFFORESTATION
0.0567± AC CREDIT FOR NEW LANDSCAPE MATERIAL
0.9376± AC SELECTIVE CLEARING AND SUPPLEMENTAL PLANTING



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

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

FOREST CONSERVATION EASEMENT TABLE

LINE/ARC	BRG.-DIST. OR CURVE L & R.
FC1	L 62.728' R 1318.848'
FC2	S23.0348'E-52.832'
FC3	S30.1738'E-159.233'
FC4	S84.5651'W-144.953'
FC5	L 87.3331' R 886.5'
FC6	L 58.878' R 1100.73'
FC7	L 68.630' R 448.7'
FC8	L 100.654' R 1335.29'
FC9	L 138.026' R 5670.98'
FC10	N41.13'01"W-131.390'
FC11	N48.47'29"W-35.0004'
FC12	S41.13'01"E-81.129'
FC13	S45.48'10"W-9.147'
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 CURRENTLY PROPOSED BY SUBDIVISION TO UTILIZE A FEE-IN-LIEU TO FULFILL ANY FURTHER OBLIGATIONS THAT CANNOT BE MET ON THIS SITE.

APPROXIMATELY 0.7092± ACRES OF FORESTATION PLANTING ARE TO BE PROVIDED THROUGH A COMBINATION OF AFFORESTATION PLANTING, LANDSCAPING AND SELECTIVE CLEARING AND SUPPLEMENTAL PLANTING 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 A FEE-IN-LIEU. FEE-IN-LIEU IS PROPOSED TO FULFILL FOREST CONSERVATION OBLIGATIONS CURRENTLY PROPOSED BY SUBDIVISION TO UTILIZE A FEE-IN-LIEU TO FULFILL ANY FURTHER OBLIGATIONS THAT CANNOT BE MET ON THIS SITE.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Wanda R. Adams 9-16-09
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Andrew J. Stine 10/17/08
CHIEF DIVISION OF LAND DEVELOPMENT

DATE: 10/17/08

ANDREW J. STINE
LANDSCAPE ARCHITECT No. 3222

DATA SOURCES:
TOPOGRAPHY SHOWN HEREON BASED ON A FIELD SURVEY PREPARED BY DPW. BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY DEMARIO DESIGN CONSULTANTS, INC. DATED MARCH 2006.
EX. 30' WATER AND UTILITY EASEMENT PLAT No. 15255

DeMario Design Consultants, Inc.
192 East Main Street
Westminster, MD 21157
http://www.demarioinc.com
Phone: (410) 386-6560
Fax: (410) 386-6564
eMail: ddc@demarioinc.com

OWNER: HOWARD RESEARCH & DEV. 10775 LITTLE PATUXENT PKWY COLUMBIA, MD 21044 410-992-8000
DEVELOPER: GENERAL GROWTH INDUSTRIES 10775 LITTLE PATUXENT PKWY COLUMBIA, MD 21044 480-992-8000

SITE ADDRESS: 9881 GORMAN ROAD

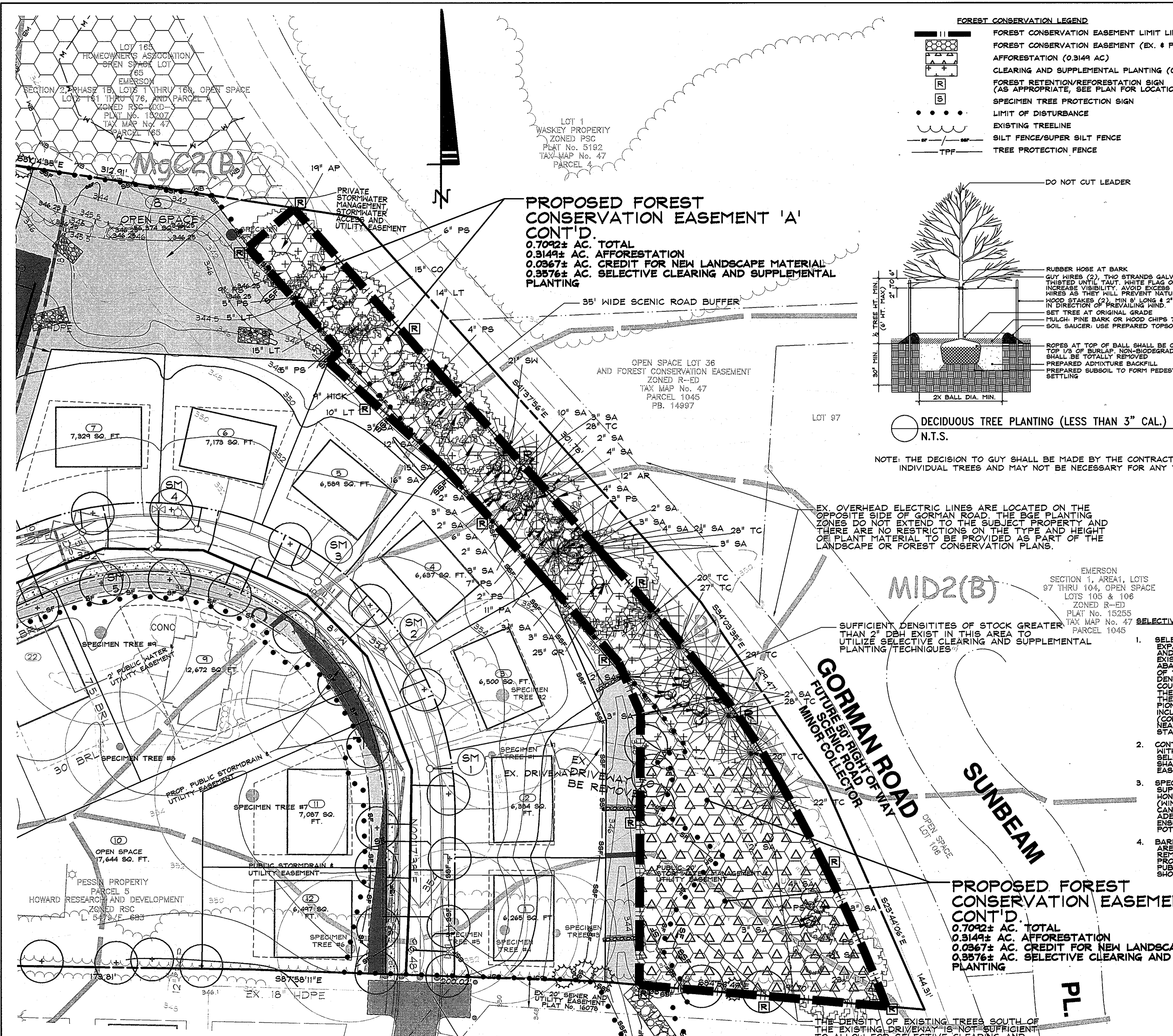
FINAL ROAD PLAN THE GROVE AT EMERSON PHASE 1 LOTS 1-7, 9, 11-12 & OPEN SPACE LOTS 6, 10, 13 NON BULIDABLE BULK PARCELS A & B

FINAL FOREST CONSERVATION PLAN

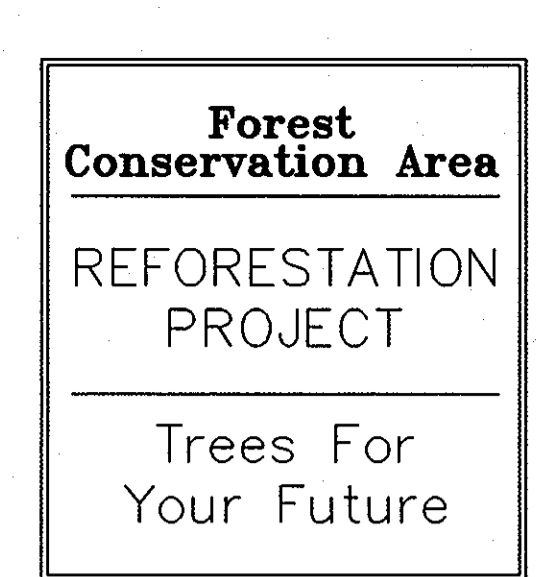
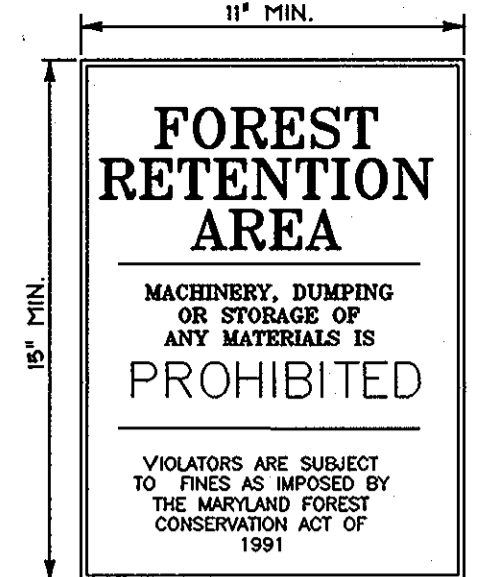
6TH ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV. DATE
CO. FILE #	SP-06-0231 (WP-07-57) WP-08-45	DES. BY: JCO	
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

F-08-137



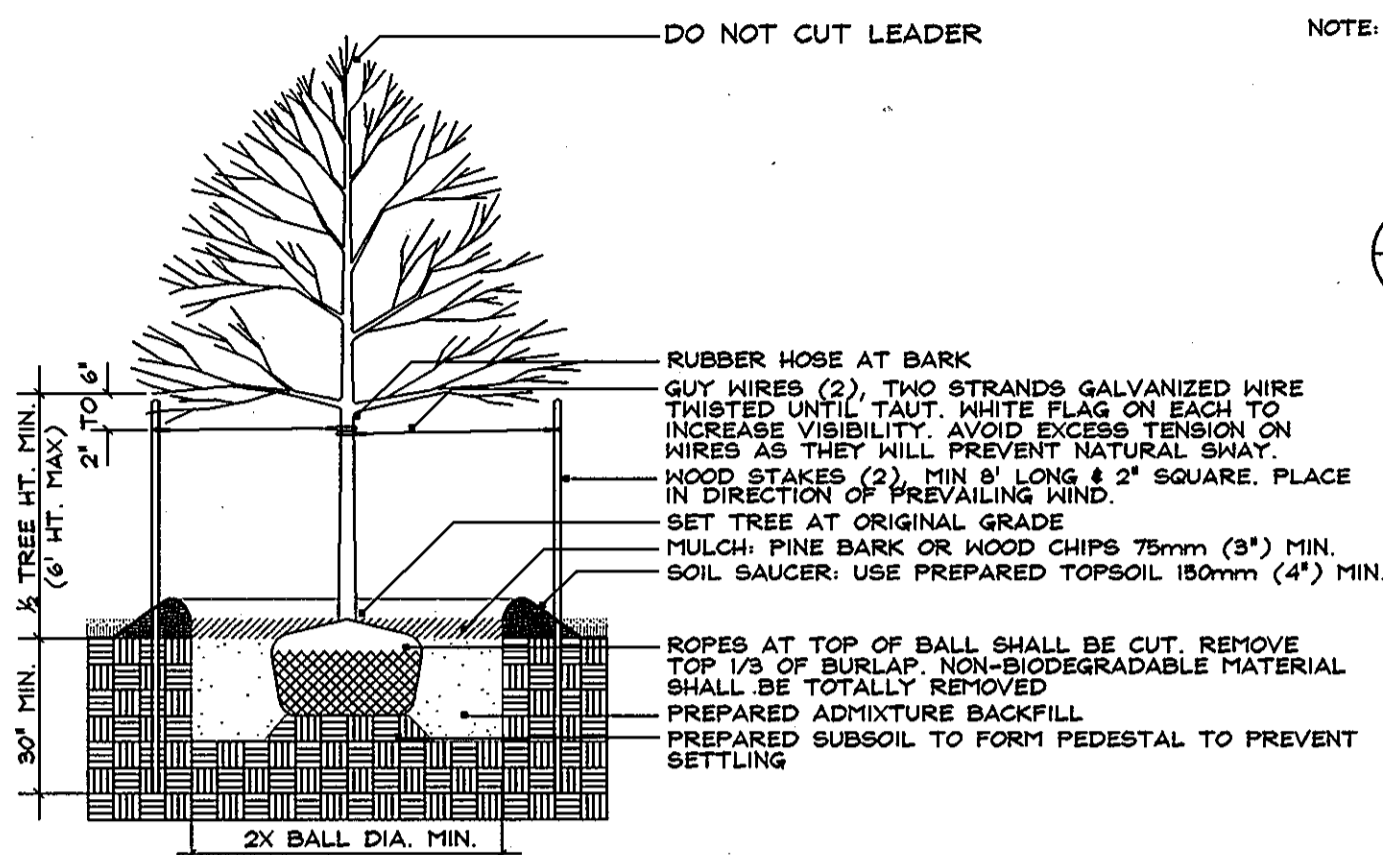
- FOREST CONSERVATION LEGEND**
- FOREST CONSERVATION EASEMENT LIMIT LINE
 - FOREST CONSERVATION EASEMENT (EX. & PROP.) AFFORESTATION (0.3149 AC)
 - CLEARING AND SUPPLEMENTAL PLANTING (0.3576 AC)
 - FOREST RETENTION/AFFORESTATION (AS APPROPRIATE, SEE PLAN FOR LOCATION)
 - SPECIMEN TREE PROTECTION SIGN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



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

NOTE: SIGNS TO BE PLACED ON METAL POSTS 2" ABOVE FINISH GRADE. PLACE 2 SIGNS PER TREE. SIGNS MAY NOT BE ATTACHED TO TREES.

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



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.

EX. OVERHEAD ELECTRIC LINES ARE LOCATED ON THE OPPOSITE SIDE OF GORMAN ROAD. THE EDGE 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

1. 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 HOWARD 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 HEAVY CONTINUOUS COVER OF LEAF LITTER EXISTS THROUGHOUT THE POTENTIAL STAND.
2. 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.
3. SPECIES TARGETED FOR REMOVAL AS PART OF THE SELECTIVE CLEARING AND SUPPLEMENTAL PLANTING SHALL INCLUDE LONICERA JAPONICA (JAPANESE HONEYSUCKLE), ROSA MULTIFLORA (MULTIFLORA ROSE), RUBUS PHOENICOLASIUS (WINEBERRY), AND ACER PLATANOIDES (NORWAY MAPLE). ANY SPECIMENS OF TSUGA CANADENSIS (EASTERN HEMLOCK) THAT EXHIBIT INFESTATION FROM THE WOOLLY ADELGID SHOULD ALSO BE REMOVED IN LIEU OF TREATMENT. CONTRACTOR SHALL ENSURE THAT REMOVAL OPERATIONS DO NOT DAMAGE ADJACENT CHEESAPEAKE & POTOMAC UTILITY LINES.
4. 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. SNAGS MAY BE ALLOWED TO REMAIN 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.

LEGEND:
O.C. - ON CENTER
LARGE TREE - OVERSTORY
SMALL TREE - UNDERSTORY

PLANTING DESIGN
N.T.S.

PLANTING NOTES:
1) TREES WILL BE MULCHED WITH 2" - 4" MULCH OVER THE ROOT AREA. AVOID DIRECT CONTACT WITH THE TRUNK.
2) HARDWOOD MULCH SHALL CONFORM WITH SPECIFICATIONS CONTAINED IN THE FOREST CONSERVATION MANUAL.
3) WATERING AND FERTILIZING WILL BE PERFORMED ON AN AS NEEDED BASIS.
4) PLANTING OF UNDERSTORY TREES SHALL BE IN AN EVEN, RANDOM DISTRIBUTION.

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 DEHARDO DESIGN CONSULTANTS, INC. DATED MARCH 2006.

DeMario Design Consultants, Inc.
192 East Main Street
Westminster, MD 21157
http://www.demariodesign.com
Phone: (410) 365-6520
Fax: (410) 365-6564
eMail: ddc@demariodesign.com

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

DEVELOPER:
GENERAL GROWTH PROPERTIES
10275 LITTLE PATUXENT PKWY
COLUMBIA, MD 21044
490-992-6000

SITE ADDRESS:
9881 GORMAN ROAD

FINAL ROAD PLAN THE GROVE AT EMERSON PHASE I
LOTS 1-7, 9, 11-12 & OPEN SPACE LOTS 6, 10, 15
NON BUILDBLE 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	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:	AS NOTED			10 OF 10

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
W. J. [Signature] 9-16-08
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
[Signature] 11/16/08
CHIEF DIVISION OF LAND DEVELOPMENT

APPROVED: *[Signature]* 10/22/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE: 8-29-2008
LANDSCAPE ARCHITECT NO. 3222
ANDREW J. STINE

EXISTING TREE & PROPOSED PLANTING LOCATION PLAN
SCALE: 1" = 50'

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	T	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	MT	FACU

EXISTING TREE IDENTIFICATION KEY

SYMBOL	SCIENTIFIC NAME	COMMON NAME
AR	ACER PLATANOIDES	NORWAY MAPLE
CO	CELTIS OCCIDENTALIS	HICKORY
LI	LIRIODENDRON TULIPIFERA	TULIP POPLAR
QR	QUERCUS RUBRA	RED OAK
PS	PICEA ABIES	NORWAY SPRUCE
PR	PRUNUS SEROTINA	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 EXCEPTION OF THE HEMLOCKS WHICH EXHIBITED SIGNS OF DECLINE. TREE HEIGHTS VARY IN ACCORDANCE WITH SPECIE 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 SITE. NO RARE THREATENED OR ENDANGERED SPECIES OR HISTORICAL STRUCTURES OR CEMETERIES WERE ENCOUNTERED DURING THE FIELD INVESTIGATION.