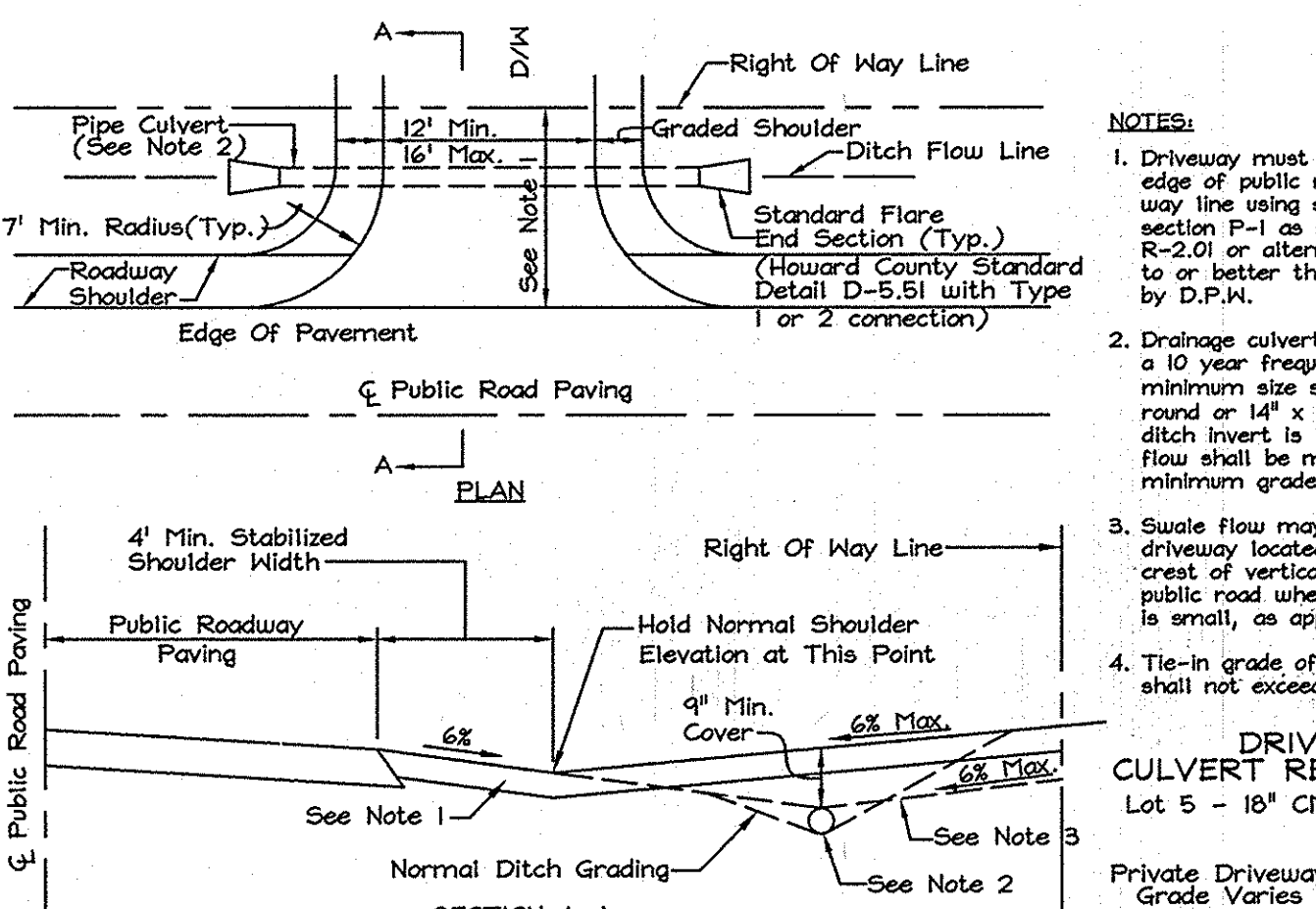


GENERAL NOTES

- Subject property Zoned "RC-DEO" per 02/02/04 Comprehensive Zoning Plan and per the "Comp. Lite" Zoning Regulation Amendments effective 7/28/06.
- Public water for all buildable lots and parcels, public sewer for lots 1 thru 5 and private sewer for lots 6 thru 9 and Buildable Preservation Parcel 'C' will be used within this site.
- Total area of property = 20,098 ac.
- Area of proposed public R/W: 0.955 ac.
- Number of proposed buildable lots: 1
- Area of proposed buildable lots: 4.213 ac.
- Number of proposed non-buildable preservation parcels: 3
- Area of proposed non-buildable preservation parcels: 9.076 ac.
- Number of proposed buildable preservation parcels: 1
- Area of proposed buildable preservation parcels: 2.254 Ac.
- Density calculations:
 - Number of lots based on own density: 20,098ac / 4.25 = 4,729, therefore 4 units
 - Net Tract Area: 20,098ac / 0.000001 (yr. floodplain) = 0.000001 (yr. floodplain) = 20,098ac
 - Maximum number of lots allowed based on DEO option: 20,098ac / 2 = 10,024 = 10 units
 - Total number of Buildable Lots/Parcels proposed: 10
 - Total number of DEO units required: 10 - 4 = 6 units
 - 6 DEO units have been transferred under RE-04-06R plat # 18164.
- The lots shown herein comply with the minimum setbacks, width and lot area requirements of the Maryland State Department of the Environment.
- ██████ This area designates a private sewage easement of at least 10,000 square feet (or 10,000 square feet per lot for shared drain fields associated with a shared sewage disposal facility) as required by the Maryland State Department of the Environment for individual sewage disposal (COMAR 26.04.03). Improvements of any nature in this area are restricted until public sewerage is available. These easements shall become null and void upon connection to a public sewerage system. The County Health Officer shall have the authority to grant adjustments to the private sewage easement. Recordation of a modified sewage easement shall not be necessary.
- The septic fields are located on soil types CH2, CH2C, G1C2 and M1C2, per the soil survey of Howard County, Soil Map # 15, 2008 under SP-04-11.
- All percolation test holes and their elevations have been field located by FSH Associates.
- On-site topography and existing utilities based on a Field Run Topographic Survey prepared by FSH Associates in July, 2005 with two foot contours. Off-site topography based on Howard County 1988 Aerial Topographic Surveys with five foot contours.
- The existing house is proposed to remain on Buildable Preservation Parcel 'C'. The existing house on proposed Lot 4 to be removed.
- A.P.F.O. traffic study prepared by Street Traffic Studies on 3/22/04 and amended on 11/23/04 and was approved under SP-04-11.
- Wetlands delineation and report and Forest Stand delineation prepared by Exploration Research Inc. and was approved under SP-04-11.
- The project is in conformance with the latest Howard County Standards unless waivers have been approved.
- The coordinates shown herein are based on the Howard County geodetic control which is based on the Maryland State Plane Coordinate system. Howard County monument numbers 16E1 and 16H3 were used for this project.
- No clearing, grading or construction is permitted within wetlands, streams or their required buffers unless approved by Howard County.
- For flag or pipe stem lots, refuse collection, snow removal and road maintenance are provided to the junction of the flag or pipe stem and road right-of-way line and onto the pipe stem lot driveway.
- There are no Floodplains or Cemeteries on-site.
- The forest will be retained in two easements. Easement #1 on Parcel 'B' includes a 0.24 Ac area of Reforestation and 4.94 Ac of Retention. Easement #2 on Parcel 'A' contains 0.34 Ac of retention. For the remaining 0.01 Ac of mitigation required, use are requesting payment of a fee-in-lieu in the amount of \$327.00 (45¢ s.f. @ \$0.75/s.f.). The total mitigation obligation met on this site is 0.34 Ac of retention with a total forest conservation surety amount of \$51,880.30 (\$45,563.80 for retention of 5.23 Ac @ 227.84 s.f. @ \$ 0.20/s.f. and \$6,316.50 for 0.29 Ac @ 12,639 s.f. @ \$ 0.50/s.f.).
- This plan is subject to the April 13, 2004 Zoning Regulations and the Amended 5th Edition Subdivision and Land Development Regulations.
- The existing house to be razed was built in 1941.
- Preservation Parcels 'B', 'C' & 'D' shall be privately owned and maintained with HOA and Howard County as easement holders. Preservation Parcel 'A' shall be Howard County owned and maintained, with HOA as Easement holder.
- Lots 1 thru 5 are utilizing a Public Shared Septic System, owned and maintained by Howard County, Maryland. Lots 1 - 5 of this sewage disposal facility are connected to the shared sewage disposal facility governed by Section 16.1200 et seq. of the Howard County Code. The developer is obligated to construct the Facility under the provisions of the Developer Agreement Number 50-4301-D.
- Lot 5 may not be issued until the construction of the Facility is completed. Activity on these lots is restricted and is subject to the Declaration of Covenants, Conditions, Right-of-Entry, and Restrictions for Shared Sewage Disposal Facility intended to be recorded among the Record Books of Howard County, Maryland. Lots 1 thru 5 shall be assessed Shared Sewage Disposal Facilities Charges and Assessments pursuant to Sections 20.800 et seq. of the Howard County Code.
- This plan is subject to Waiver Petition Wp-04-145. On July 22, 2004, the Planning Director Denied a waiver from section 16.114(f)(3) to allow 2 Access Points onto a Restricted Access Road (MD Route 144).
- On June 27, 2007 the Planning Director approved Waiver Petition Wp-07-90 from Section 16.114(j) of the subdivision and Land Development regulations which requires the submission of a final plat for all divisions of land situated within Howard County in accordance with Section 16.147. The purpose of this waiver approval is to allow recording of an easement deed to reconfigure two (2) existing parcels of land in lieu of preparing a final subdivision plat.
- Willow Ridge Lane is a Public Access Place, design speed: 25 mph.
- Preliminary Plan was approved July 15, 2008 under SP-04-11.
- Recordation of Planning and Zoning reference Nos. 1) WP-04-145, SP-04-11, WP-07-90, RE 06-04R, RE-06-04B and Contract #54-4301-D.
- Any damages to the Howard County right of way shall be corrected at the Developers expense.



RESIDENTIAL DRIVEWAY ENTRANCE
CONNECTION TO OPEN SECTION ROADWAY (HOWARD COUNTY DETAIL R6.06)
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Walter J. M... 8-7-07
CHIEF, BUREAU OF HIGHWAYS

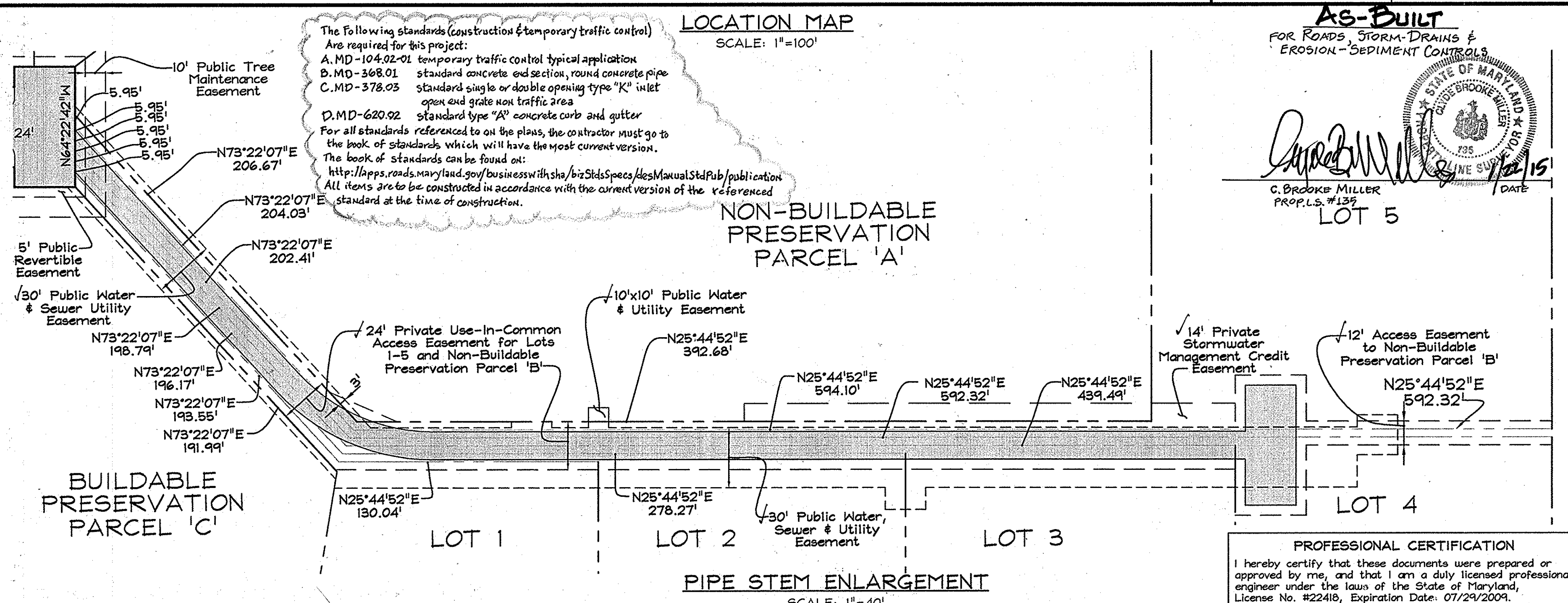
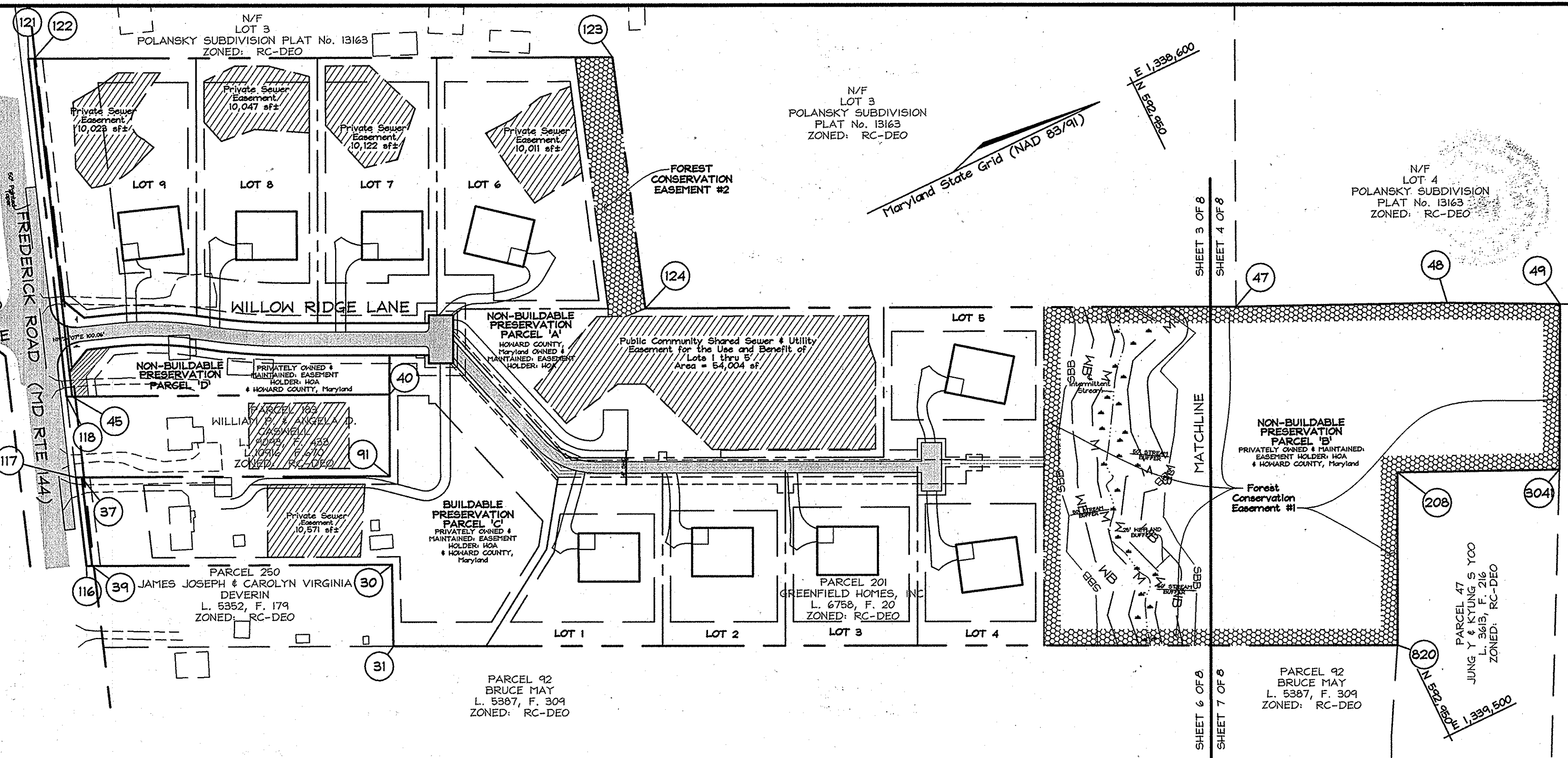
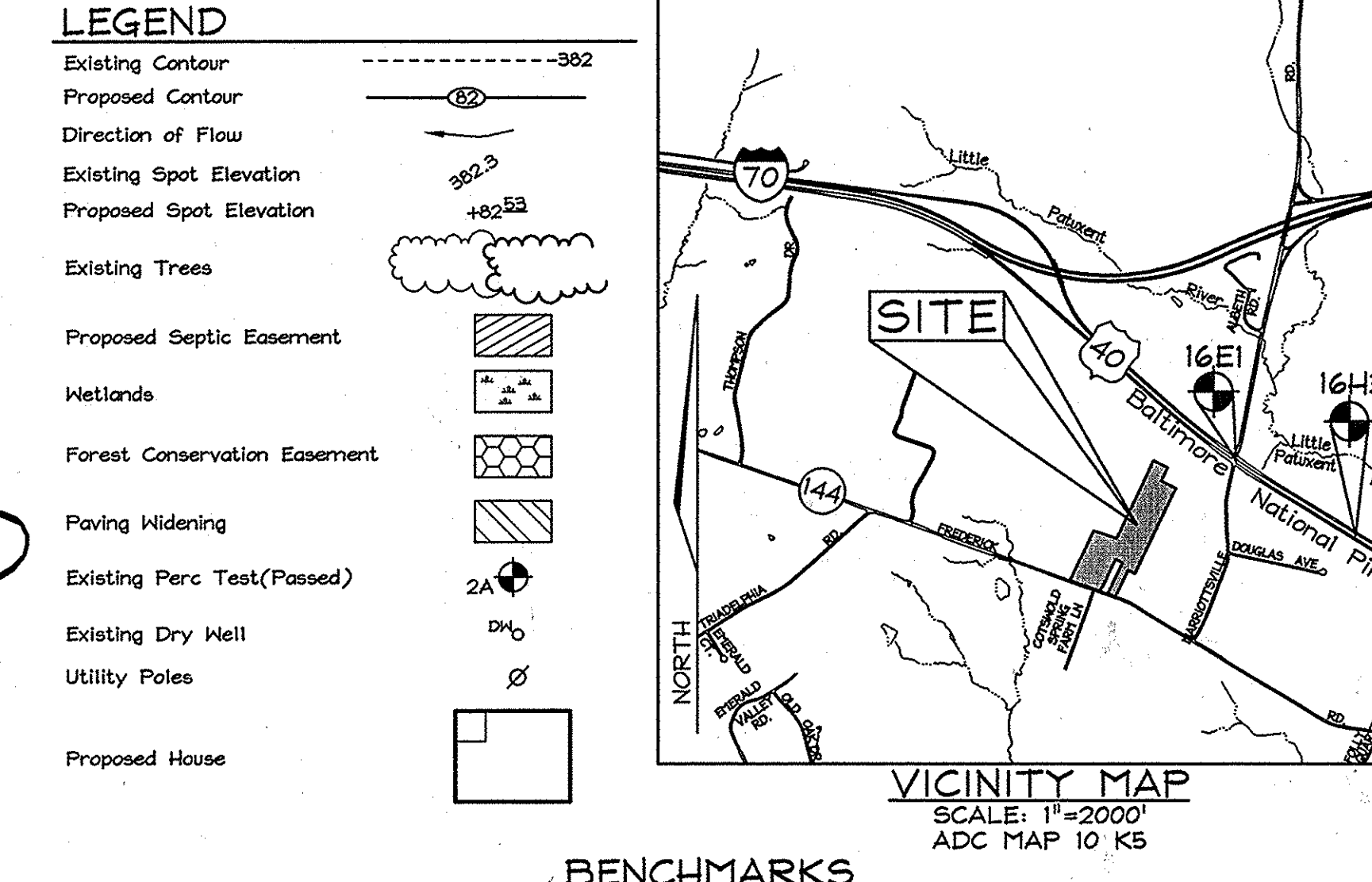
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kent... 8/1/08
CHIEF, DIVISION OF LAND DEVELOPMENT

...
CHIEF, DEVELOPMENT ENGINEERING DIVISION

FINAL ROAD CONSTRUCTION PLANS

WILLOW RIDGE

LOTS 1 THRU 9, NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' & 'D' AND BUILDABLE PRESERVATION PARCEL 'C' HOWARD COUNTY, MARYLAND



BENCHMARKS
Coordinates based on NAD'83, Maryland coordinate system as projected by Howard County geodetic control stations no. 16E1 and no. 16H3 denotes approximate location (see vicinity map).

Sta. 16E1 N 549,250.9638 E 1,340,192.7010 El.: 463.893
Sta. 16H3 N 542,408.0425 E 1,341,523.9677 El.: 464.712

COVER SHEET	DESCRIPTION	SHEET No.
1 of 8	Road Plan and Profiles Willow Ridge Lane	2 of 8
2 of 8	Final Grading, Sediment and Erosion Control Plan	3 of 8
3 of 8	Final Grading Plan & SHA Sediment & Erosion Control Details	4 of 8
4 of 8	Final SWM Summary Table and Culvert Drainage Area Map	5 of 8
5 of 8	Forest Conservation, Landscaping and Street Tree Plan	6 of 8
6 of 8	Forest Conservation, Landscaping and Street Tree Plan	7 of 8
7 of 8	SHA Widening Plan for Frederick Road Sections & Details	8 of 8

MINIMUM LOT SIZE CHART

LOT NUMBER	GROSS AREA (SF)	PIPE STEM LOT SIZE (SF)	MINIMUM LOT SIZE (±)
1	36,223±	765±	34,458±
2	34,414±	1,286±	33,128±
3	30,072±	1,900±	30,172±
4	37,891±	2,555±	35,336±
5	39,948±	2,598±	37,350±

COORDINATE TABLE

POINT	NORTHING	EASTING
30	591,865.8225	1,338,740.8951
31	591,823.5681	1,338,832.7133
37	591,567.7753	1,338,476.4754
39	591,531.5381	1,338,581.0763
40	591,955.0756	1,338,569.3026
41	591,911.0510	1,338,528.4340
42	591,895.3830	1,338,561.1020
43	591,761.9370	1,338,497.1020
44	591,745.3260	1,338,449.8760
45	591,600.7340	1,338,381.3370
47	592,945.8896	1,338,906.4158
48	593,180.5680	1,339,015.6620
49	593,305.2210	1,339,077.8540
91	591,911.3168	1,338,640.5407
116	591,525.1826	1,338,578.0377
117	591,561.4188	1,338,473.4397
118	591,594.3742	1,338,378.3224
121	591,734.8449	1,337,979.3693
122	591,741.1932	1,337,982.4164
123	592,395.2679	1,338,291.5638
124	592,285.9096	1,338,590.5247
208	593,033.9881	1,339,178.1569
820	592,940.9339	1,339,371.6101
3041	593,215.5629	1,339,262.0100

AS-BUILT
FOR ROADS, STORM DRAINS & EROSION-SEDIMENT CONTROLS

C. Brooke Miller
PROF. #139

NON-BUILDABLE PRESERVATION PARCEL 'B'

OWNER
GREENFIELD HOMES, Inc.
PARCELS 91, p/o 183, 201
6656 LUSTER DRIVE
HIGHLAND, MARYLAND 20777
(410) 781-6782

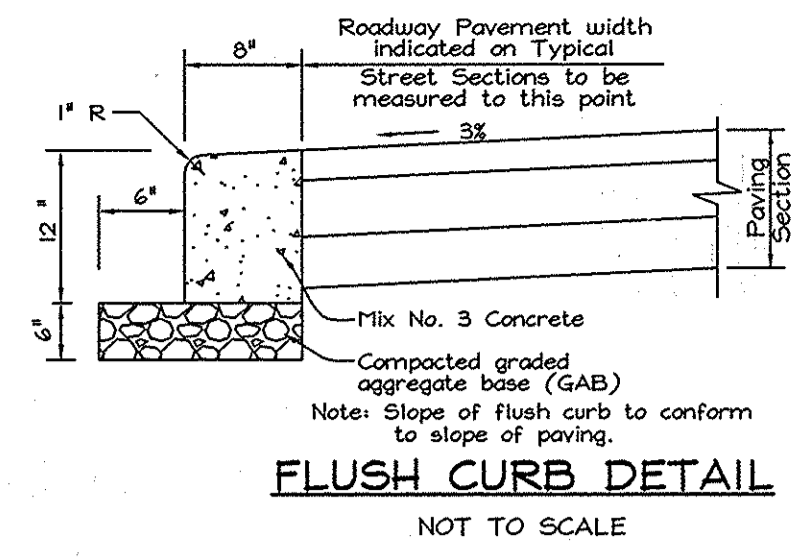
DEVELOPER
GREENFIELD HOMES, Inc.
PARCEL 89
6656 LUSTER DRIVE
HIGHLAND, MARYLAND 20777
(410) 781-6782

COVER SHEET
WILLOW RIDGE
LOTS 1 THRU 9, NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'D' AND BUILDABLE PRESERVATION PARCEL 'C'.
1418 FREDERICK ROAD
TAX MAP 16 GRID 15
3RD ELECTION DISTRICT
PARCELS 89, 91 & 201
HOWARD COUNTY, MARYLAND

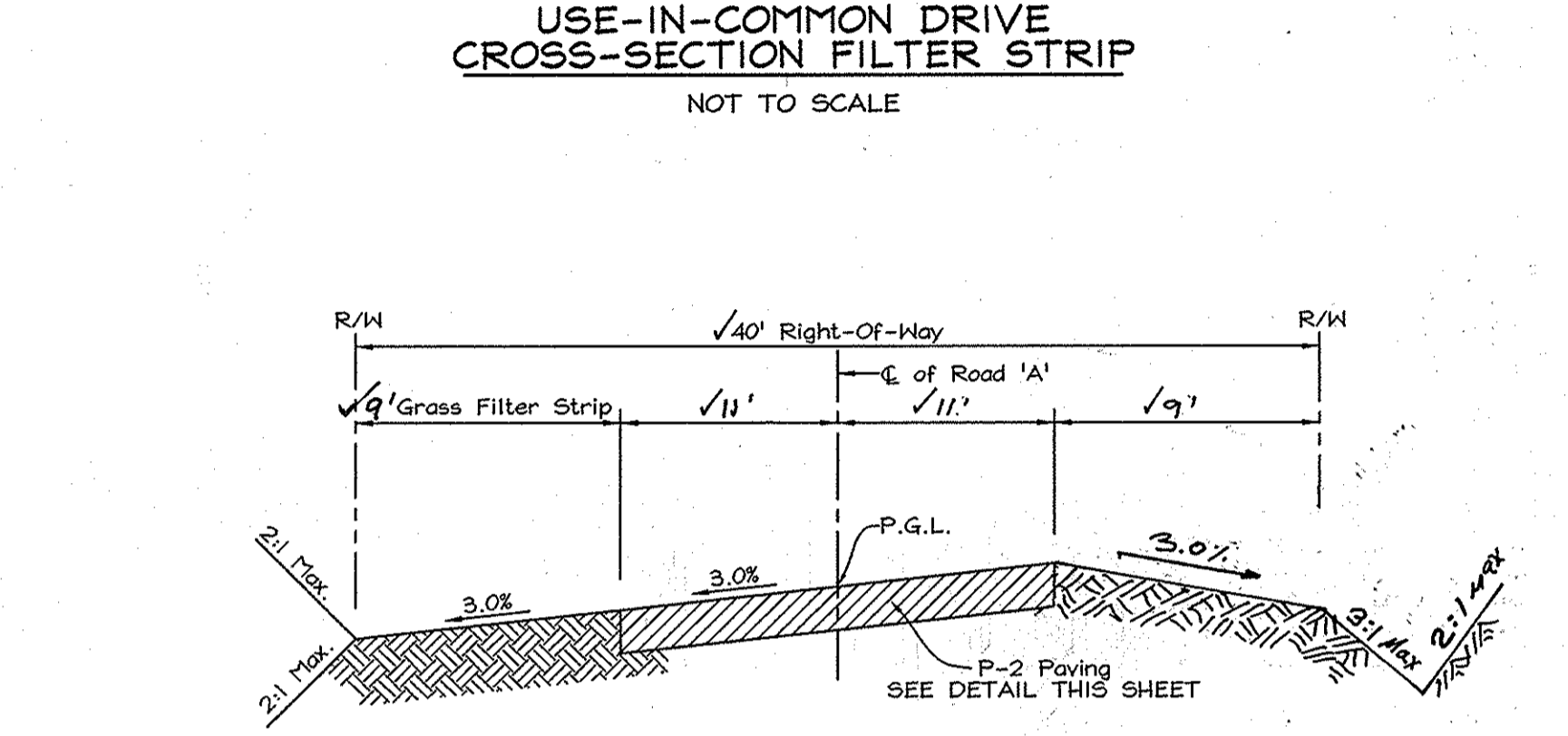
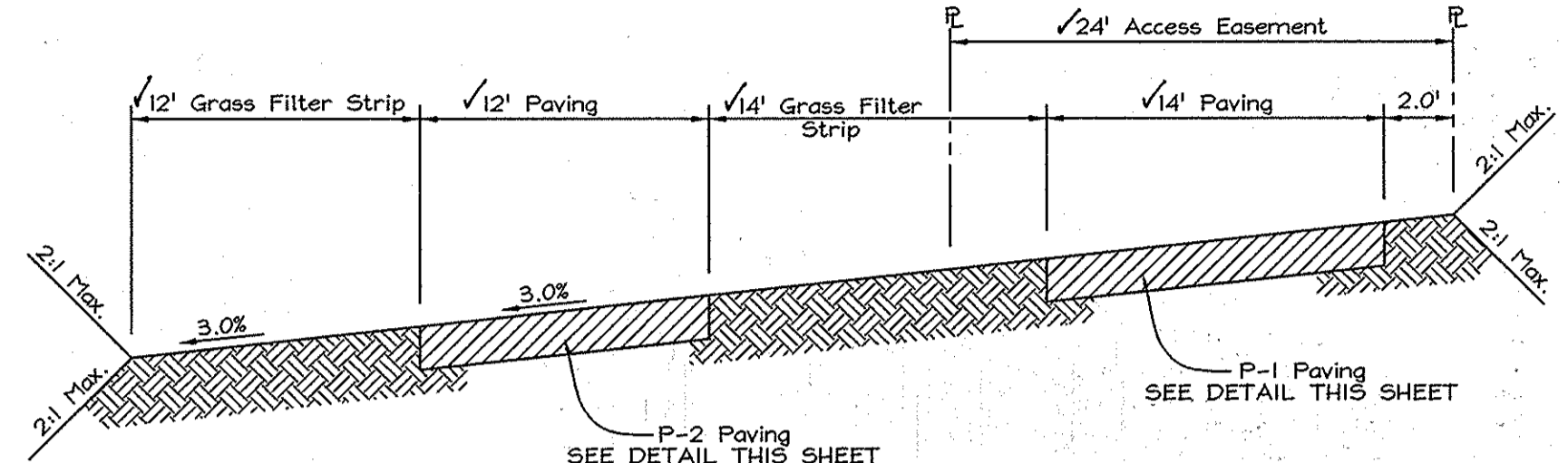
PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. #22418, Expiration Date: 07/24/2009.

FSH Associates
Engineers Planners Surveyors
8339 Howard Lane, Elkridge, MD 21075
Tel: 410-587-5200 Fax: 410-798-1562
E-mail: info@fsh.com

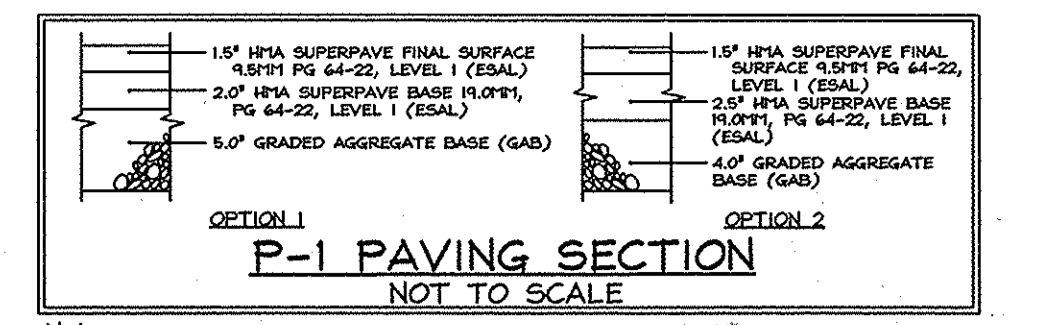
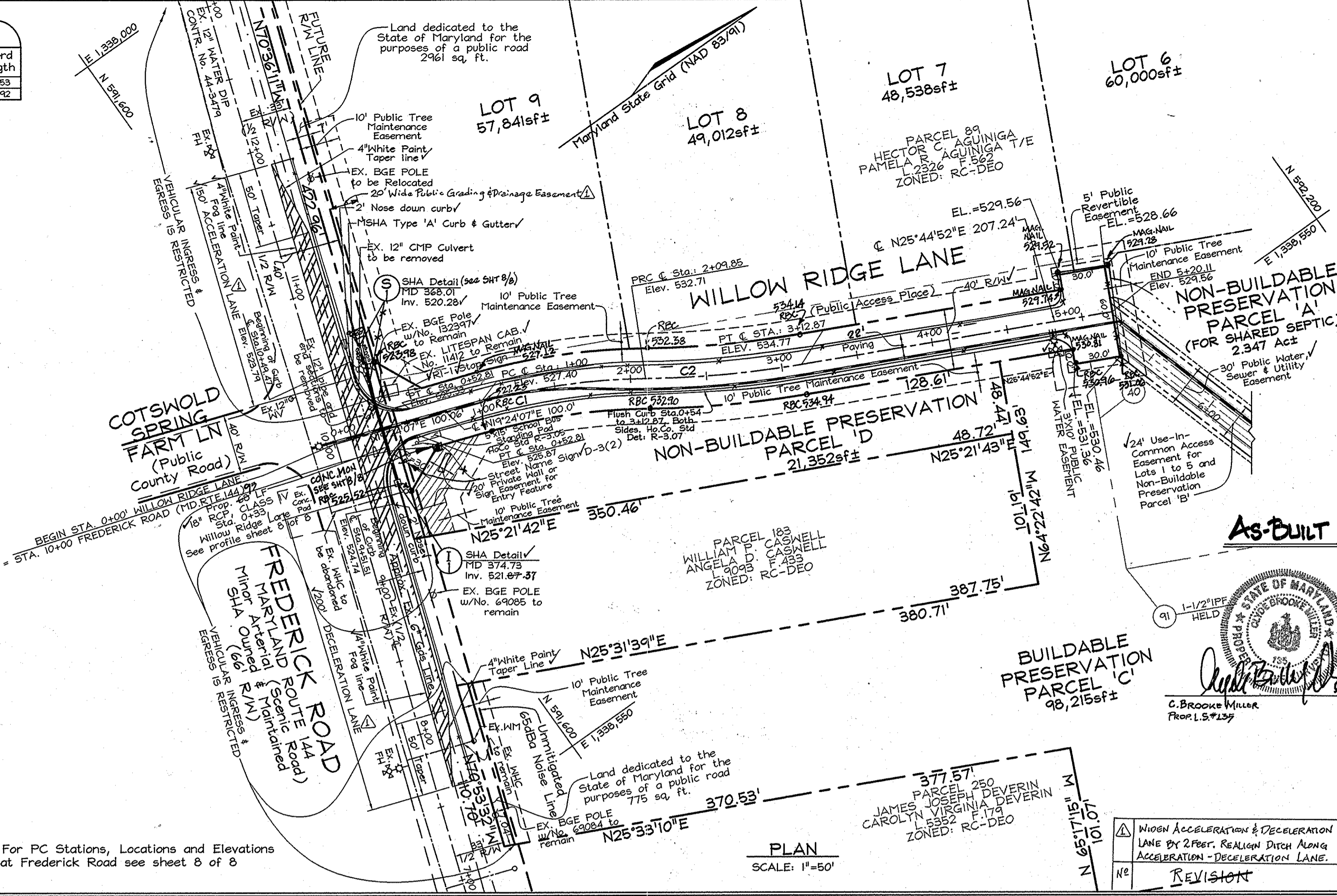
DESIGN BY: APS-D
DRAWN BY: MSY-A
CHECKED BY: ZYF
SCALE: As Shown
DATE: June 26, 2008
P.L.O. No.: 3093
SHEET No.: 1 OF 8



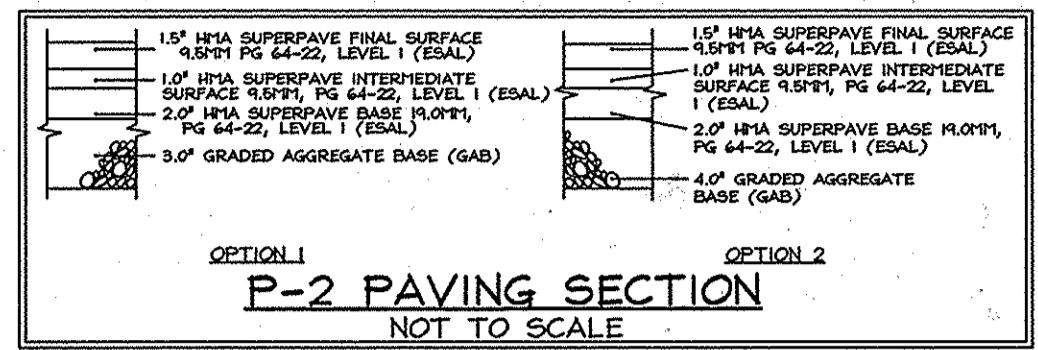
CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	Chord Bearing	Chord Length
C1	104.85	408.00	15°25'34"	55.17	N27°06'56"W	104.53
C2	103.02	650.00	9°04'54"	51.62	N80°17'19"E	102.42



NOTE: For PC Stations, Locations and Elevations at Frederick Road see sheet 8 of 8



Notes: Paving sections shown are based on a California Bearing Ratio (CBR) of greater than or equal to 7. Actual CBR tests may result in modifications to the paving sections. For other CBR values go to the Howard County Volume IV Design Manual, standard detail R-2.01, for associated P-1 Paving Sections.



Notes: Paving sections shown are based on a California Bearing Ratio (CBR) of greater than or equal to 7. Actual CBR tests may result in modifications to the paving sections. For other CBR values go to the Howard County Volume IV Design Manual, standard detail R-2.01, for associated P-1 Paving Sections.

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. #22418, Expiration Date: 07/29/2009.

OWNER
GREENFIELD HOMES, Inc.
PARCELS 89, 91 & 201
6656 LUSTER DRIVE
HIGHLAND, MARYLAND 20777
(410) 781-6782

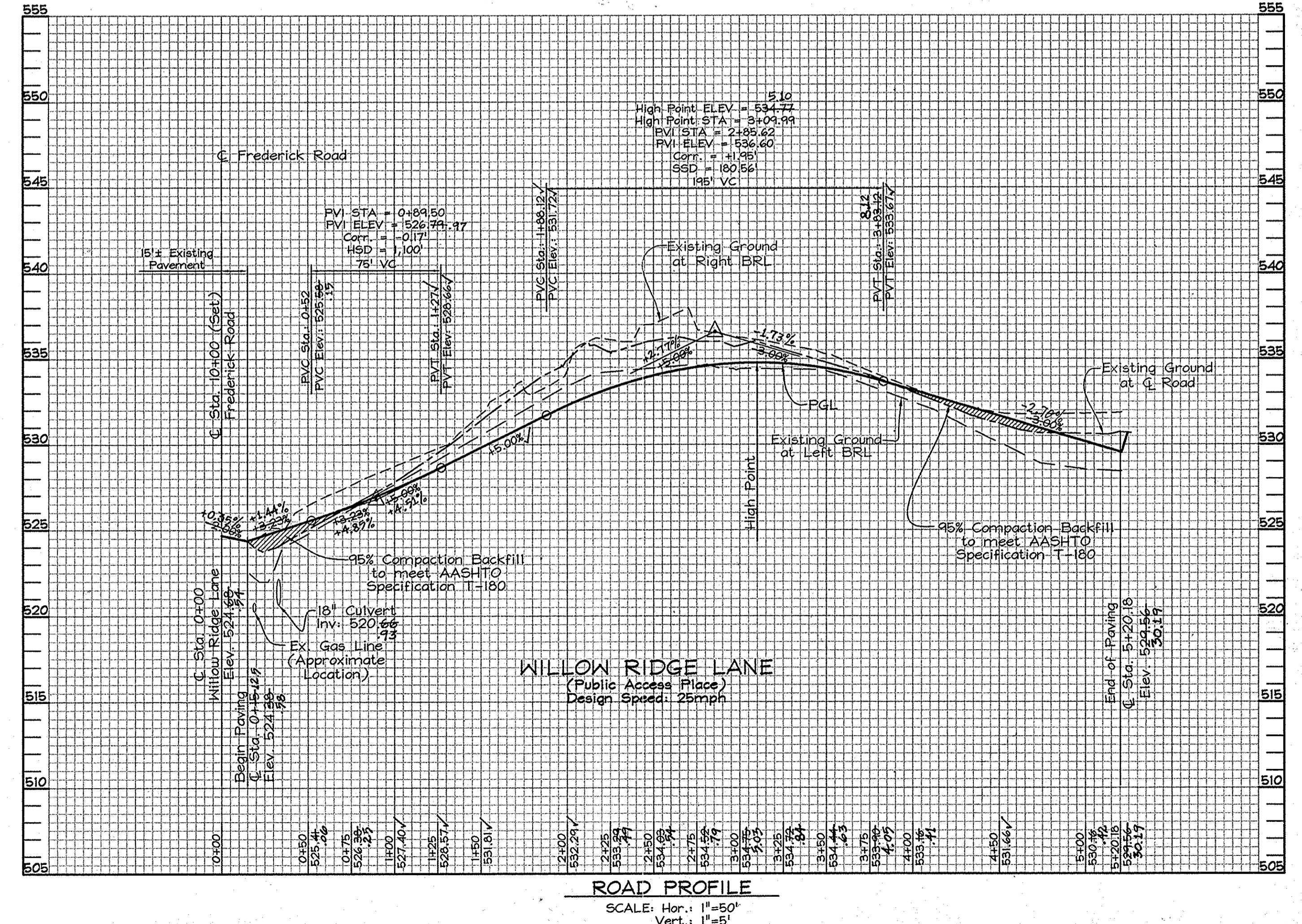
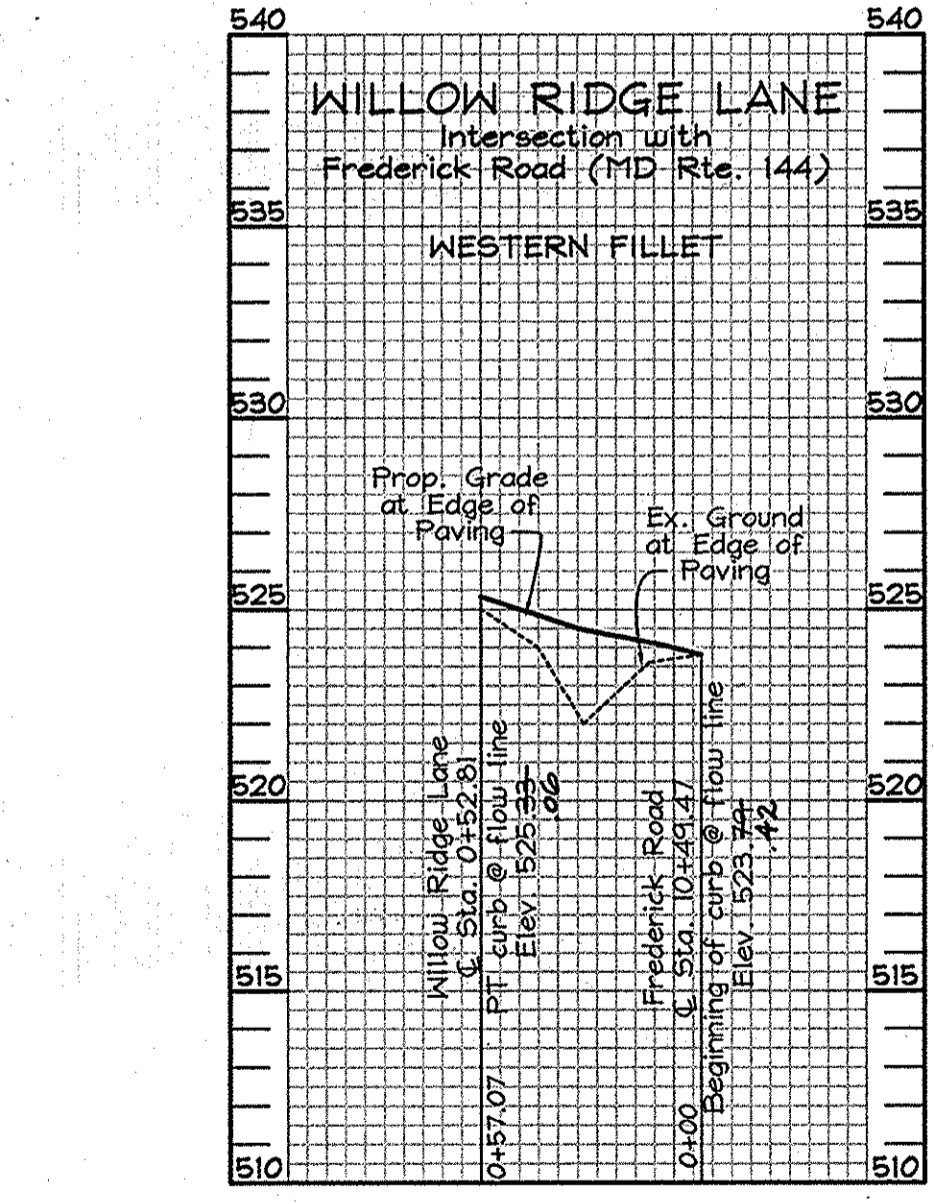
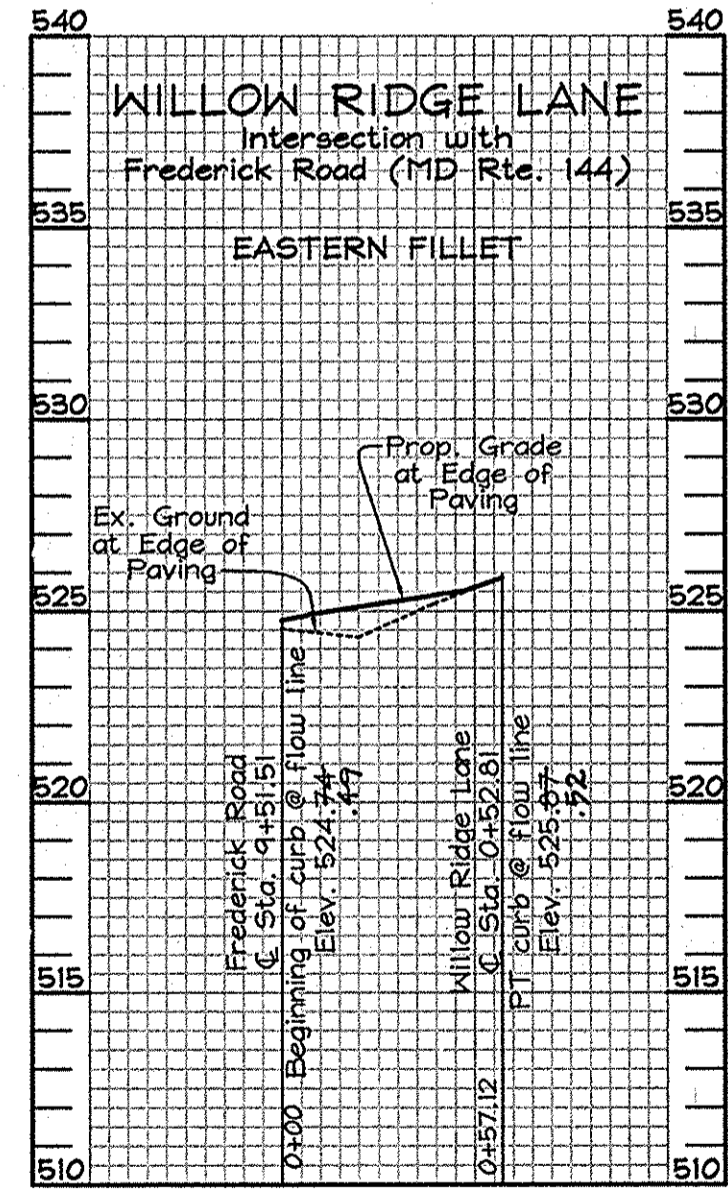
DEVELOPER
GREENFIELD HOMES, Inc.
6656 LUSTER DRIVE
HIGHLAND, MARYLAND 20777
(410) 781-6782

As-BUILT

ROAD PLAN AND PROFILES
WILLOW RIDGE LANE
LOTS 1 THRU 9, NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'D' AND BUILDABLE PRESERVATION PARCEL 'C'.
11418 FREDERICK ROAD
PARCELS 89, 91 & 201
3RD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DESIGN BY: APG-D
DRAWN BY: PS
CHECKED BY: ZYI
SCALE: As Shown
DATE: June 26, 2008
W.O. No.: 3033
SHEET No.: 2 OF 8

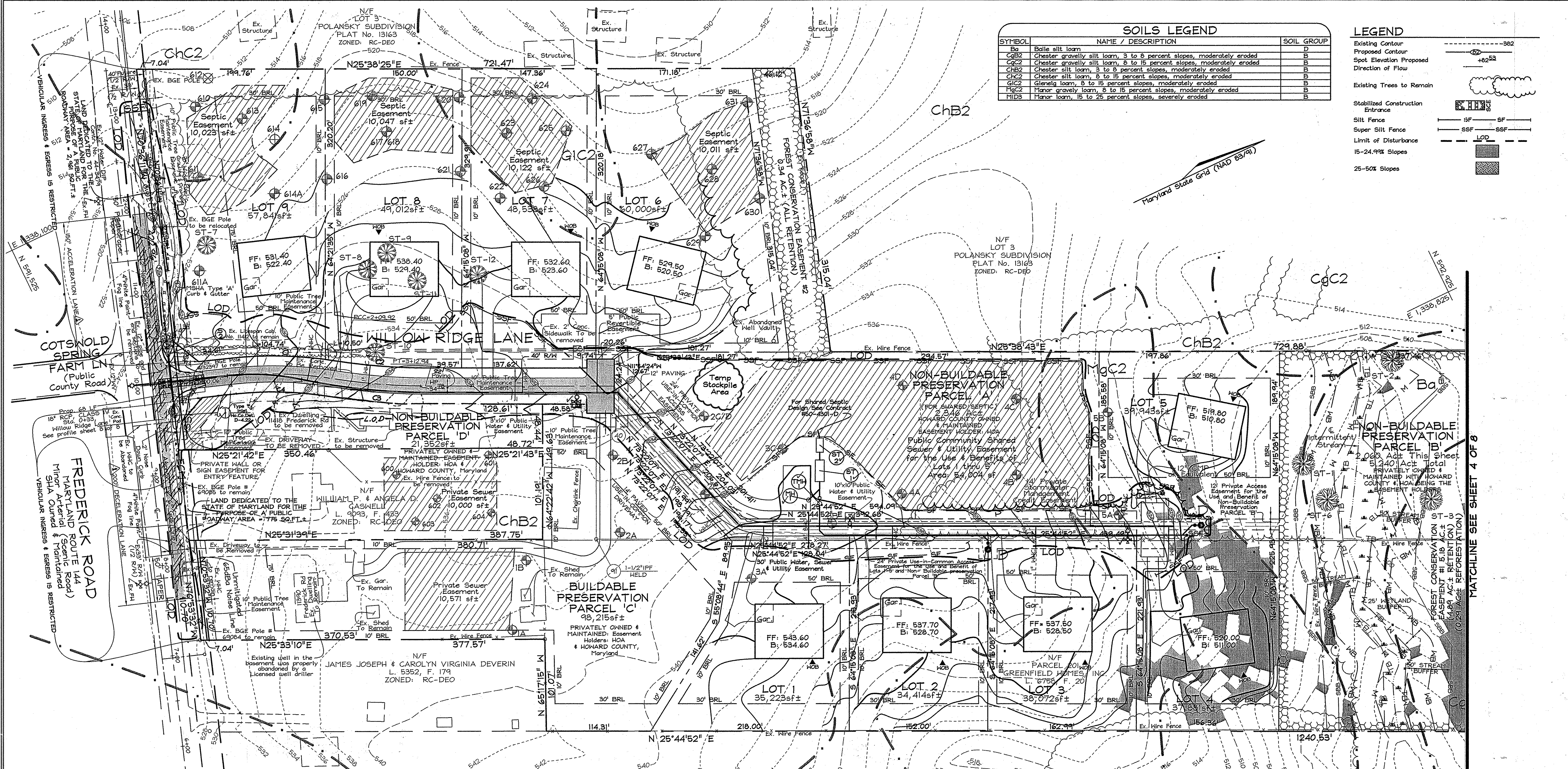
FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fsher.com



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Willie R. Marshall 8-7-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kat Shindler 8/14/08
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William 8/10/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



SYMBOL	NAME / DESCRIPTION	SOIL GROUP
Ba	Balle silt loam	D
CgB2	Chester gravelly silt loam, 3 to 8 percent slopes, moderately eroded	B
ChC2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	B
ChB2	Chester silt loam, 8 to 15 percent slopes, moderately eroded	B
ChC2	Chester silt loam, 8 to 15 percent slopes, moderately eroded	B
GIC2	Glenns loam, 8 to 15 percent slopes, moderately eroded	B
MgC2	Major gravelly loam, 8 to 15 percent slopes, moderately eroded	B
MID3	Major loam, 15 to 25 percent slopes, severely eroded	B

LEGEND	
Existing Contour	---382
Proposed Contour	---+8253
Spot Elevation Proposed	•
Direction of Flow	→
Existing Trees to Remain	(Tree symbol)
Stabilized Construction Entrance	(Hatched box)
Silt Fence	---SF
Super Silt Fence	---SSF
Limit of Disturbance	---LOD
15-24.9% Slopes	(Hatched box)
25-50% Slopes	(Hatched box)

MATCHLINE SEE SHEET 4 OF 8

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kent Shenlewock /for CH 8/11/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
William R. McMillan 8/11/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION YR DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
William R. McMillan 8-7-08
 CHIEF, BUREAU OF HIGHWAYS ME DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
John R. Robertson 1/22/13
John R. Robertson 7/2/08
 HOWARD SCD DATE

DEVELOPER'S CERTIFICATE
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
Wayne Greenfield 6/25/08
 SIGNATURE OF DEVELOPER DATE

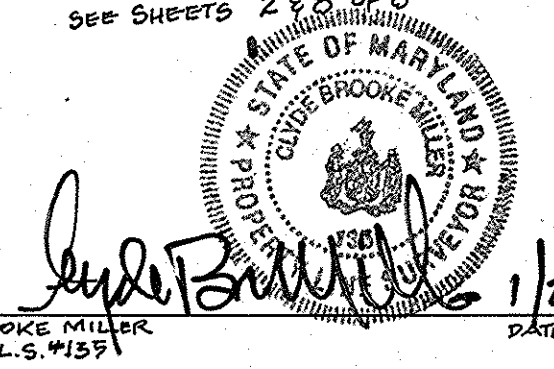
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 DIRECTOR DATE

ENGINEERS CERTIFICATE
 "I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
Zacharia Y. Fisch 6/25/08
 SIGNATURE OF ENGINEER DATE
 ZACHARIA Y. FISCH

Note: Lot grading is shown for information only. It is not part of work under this Contract.

Note: Contractor to install Erosion Control Matting on all graded areas beyond and to the side of the Proposed T-Turnaround at the end of Willow Ridge Lane

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. #22418, Expiration Date: 07/29/2009.



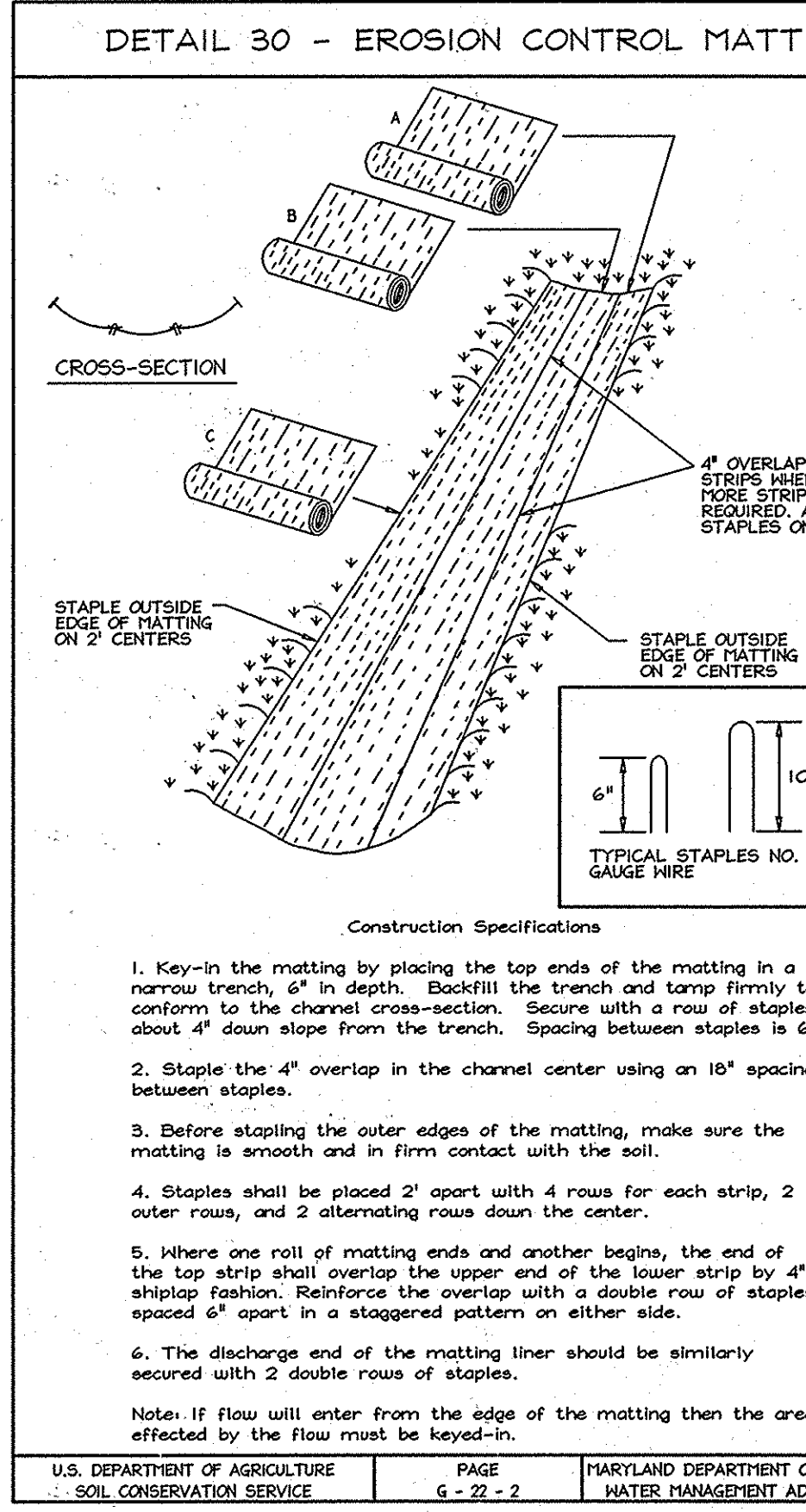
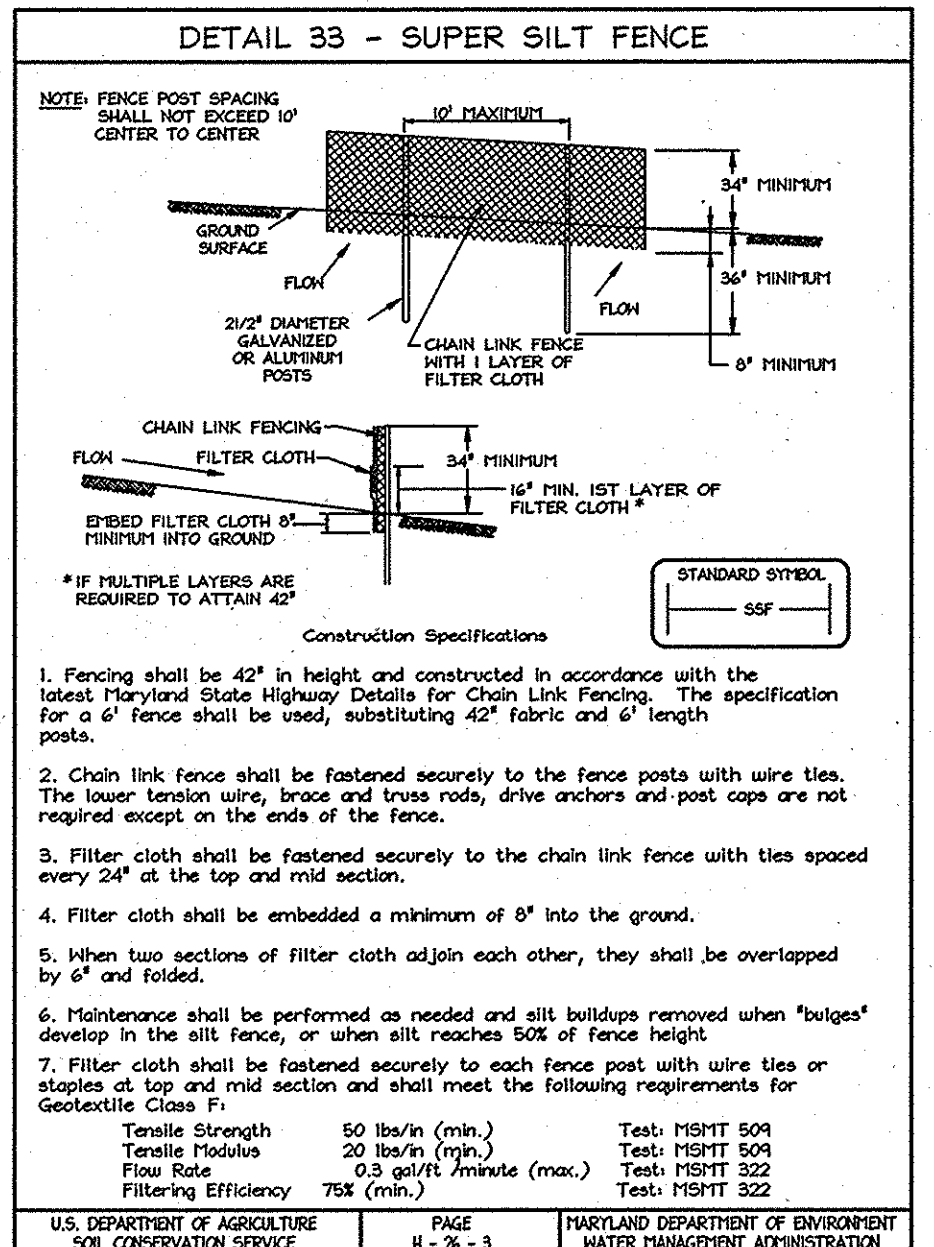
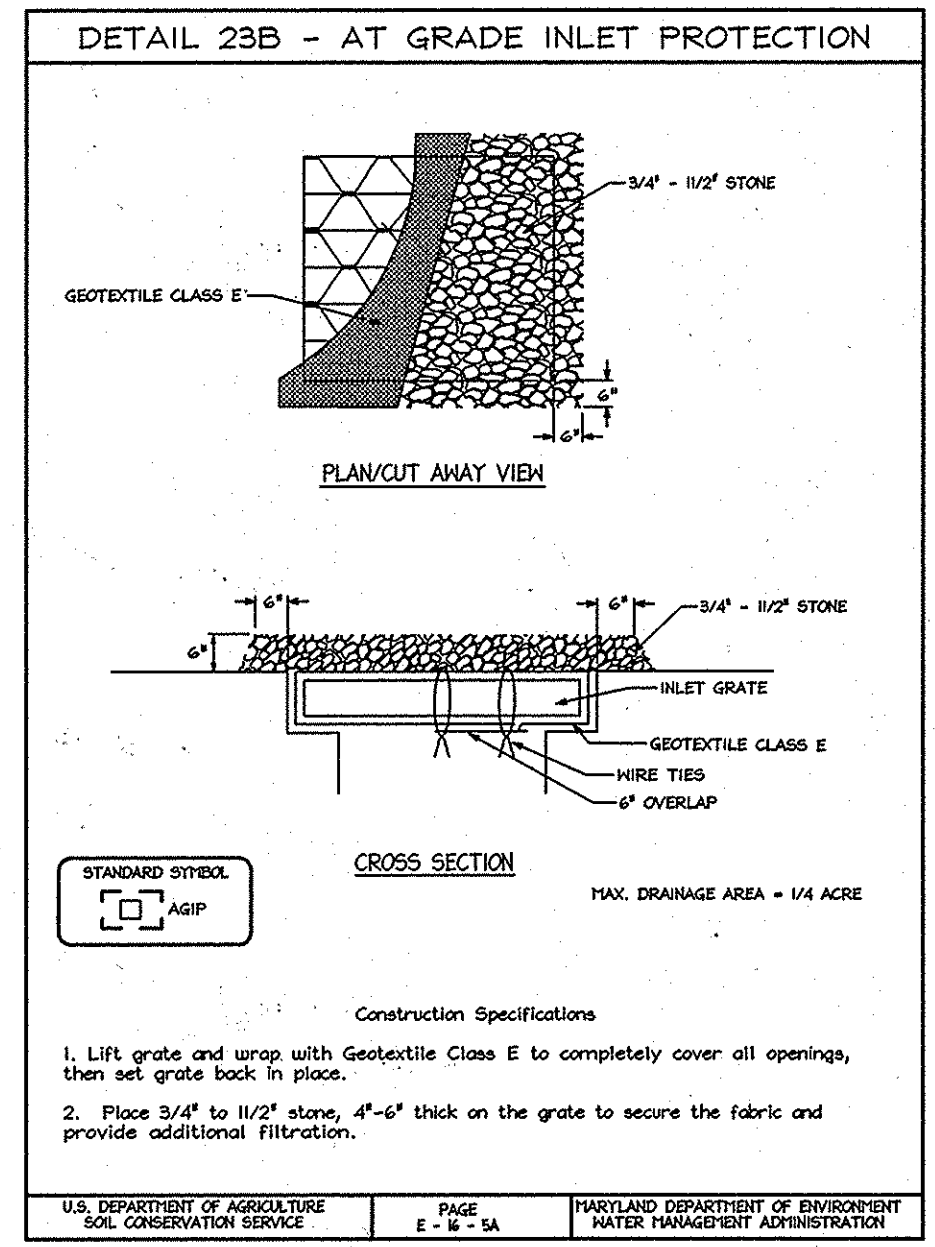
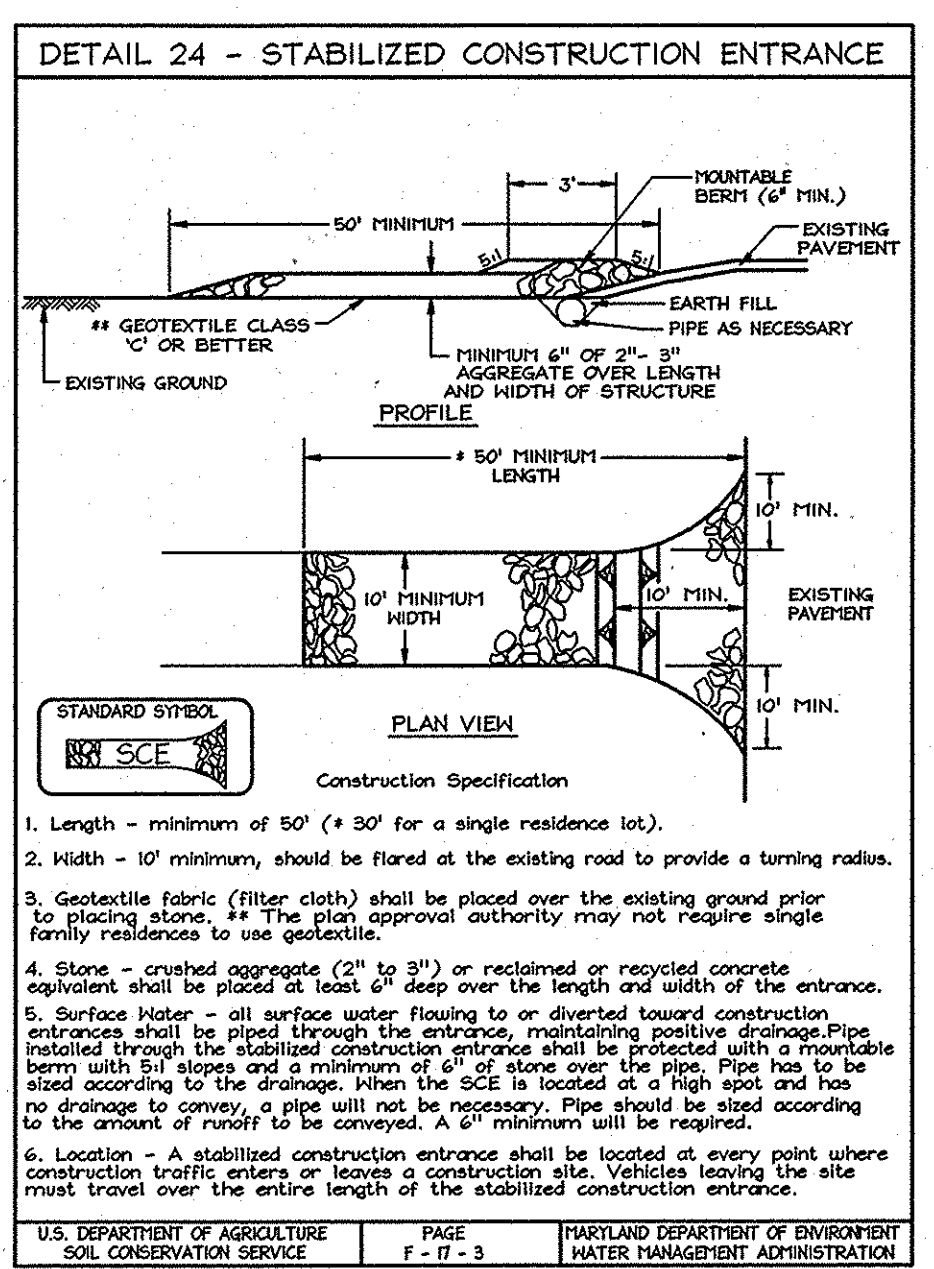
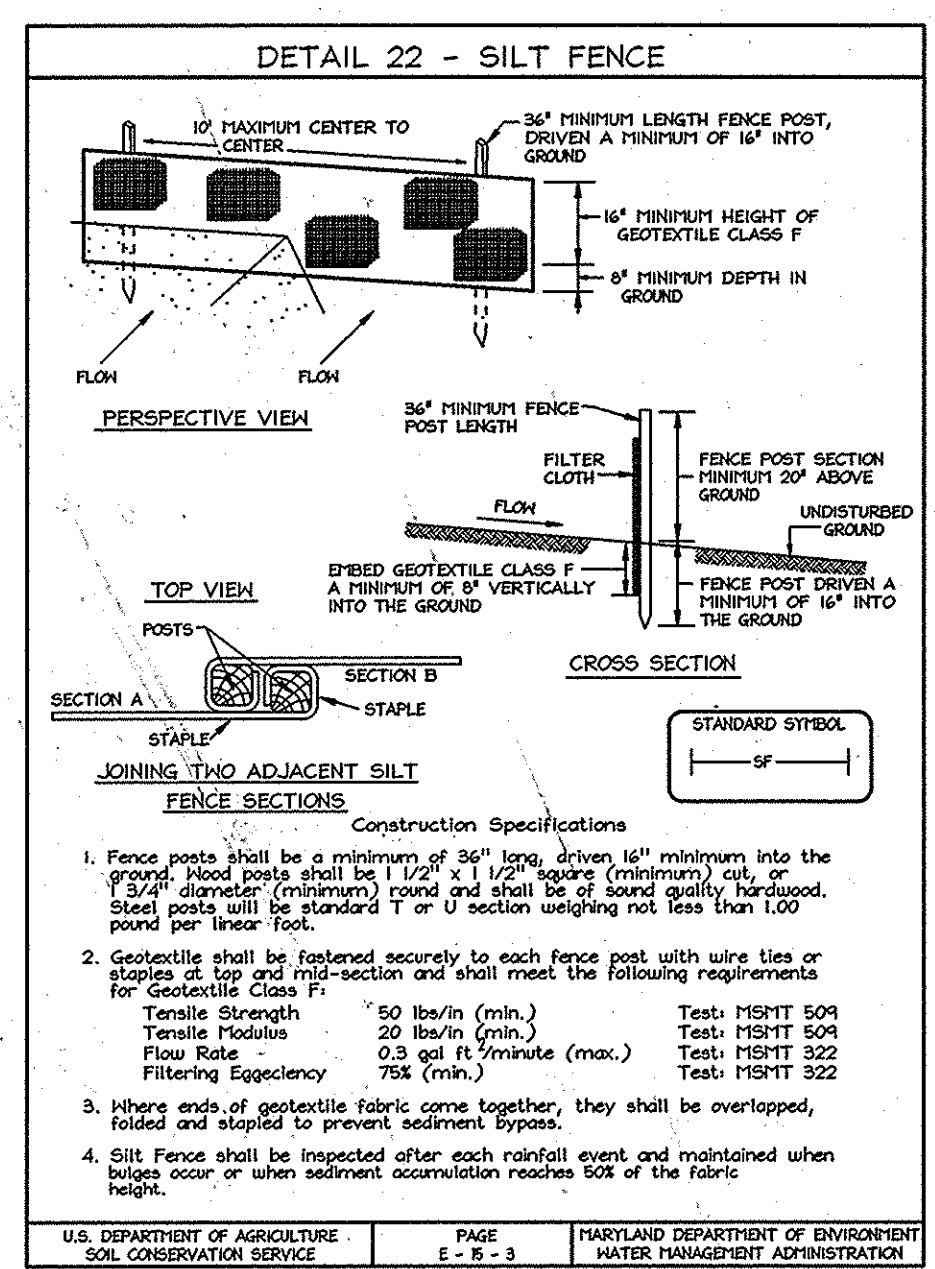
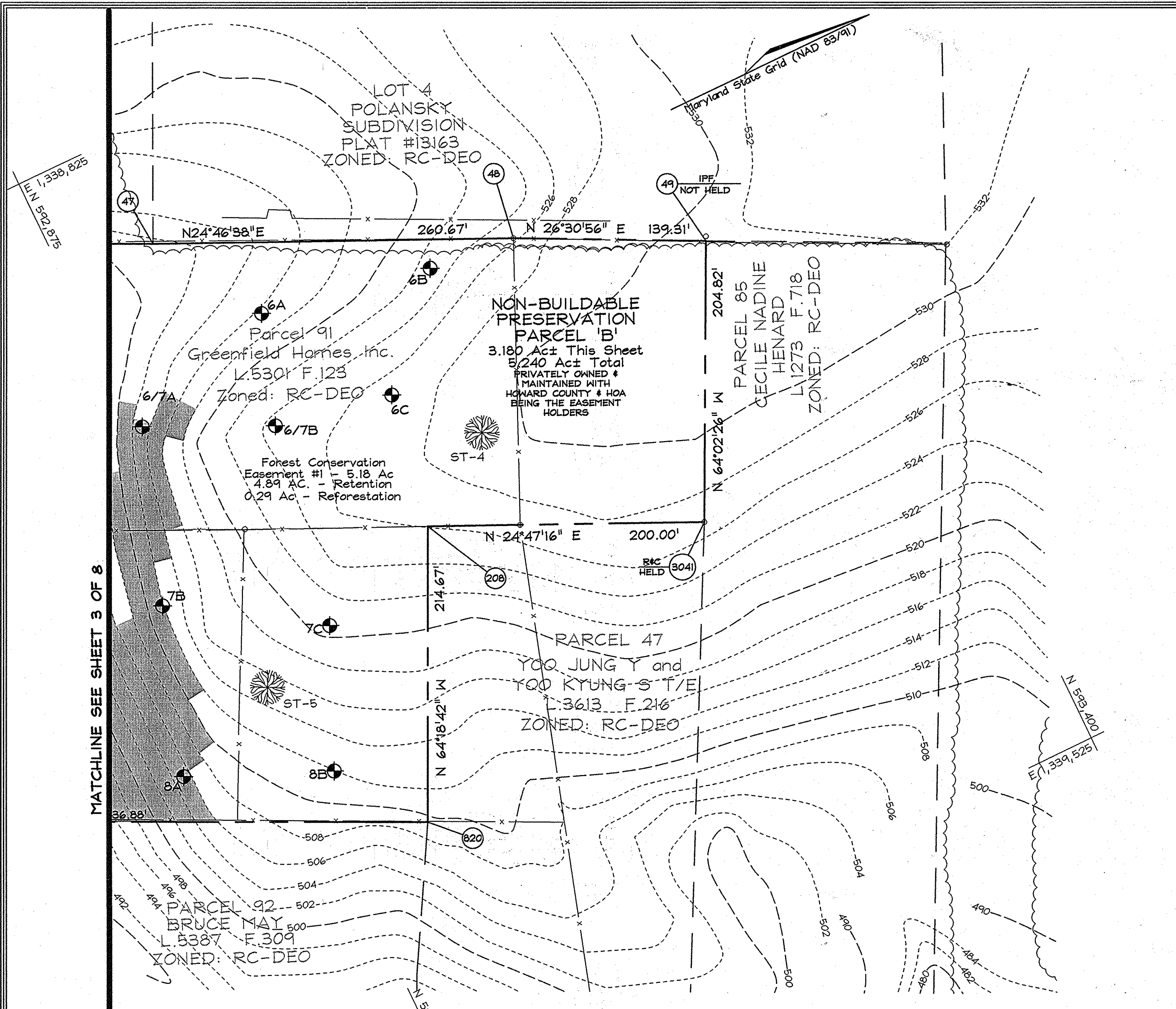
OWNER
 GREENFIELD HOMES, Inc.
 PARCELS 91, p/s 183, 201
 6656 LUSTER DRIVE
 HIGHLAND, MARYLAND 20777
 (410) 781-6782
 and
 WILLOW BROOK, LLC
 PARCEL 89
 6656 LUSTER DRIVE
 HIGHLAND, MARYLAND 20777
 (410) 781-6782

DEVELOPER
 GREENFIELD HOMES, Inc.
 6656 LUSTER DRIVE
 HIGHLAND, MARYLAND 20777
 (410) 781-6782

FINAL GRADING, SEDIMENT AND EROSION CONTROL PLAN
 WILLOW RIDGE
 LOTS 1 THRU 9, NON-BUILDABLE PRESERVATION PARCELS 'A', 'B', AND 'D', AND BUILDABLE PRESERVATION PARCEL 'C'.
 11418 FREDERICK ROAD
 PARCELS 89, 91 & 201
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DESIGN BY: PE
 DRAWN BY: MS & MT
 CHECKED BY: ZTF
 SCALE: 1" = 50'
 DATE: June 26, 2008
 P.L.O. No.: 3039
 SHEET No.: 3 OF 8

FSH Associates
 Engineers Planners Surveyors
 6339 Howard Lane, Elkridge, MD 21075
 Tel: 410-587-5200 Fax: 410-798-1562
 E-mail: info@fsher.com



SEQUENCE OF CONSTRUCTION

- Obtain Grading permit and contact Howard County Sediment Control Inspector (SCI) at 410-313-1880 to arrange a pre-construction meeting. (1 Day)
- Install Stabilized Construction Entrance at the Entrance to Willow Ridge Lane. (1 Day)
- Clear and grub as necessary for installation of sediment control features: silt fence (SF), silt fence (SF), earth dikes.
- With the Sediment Control Inspector (SCI) approval clear and grub for installation of the roads and storm drains (1 week).
- Install Storm drains, Water line, Sewer line and shared septic tank, pipes and trenches. Grade roads to subgrade and install road sub-base.
- Fine grade roads; pave roads and vegetatively stabilize all disturbed areas w/ permanent seeding. (1 week).
- During grading and after each rainfall, contractor will inspect and provide necessary maintenance to the sediment control measures on this plan.
- Upon stabilization of all disturbed areas and with the permission of the Sediment Control Inspector, remove all sediment control measures and stabilize any remaining disturbed area. (1 week)

Note: For new and revised Traffic Control Signaling and Striping Measures along Maryland Route 144 see "MD 144 (Frederick Road) and Willow Ridge Lane", Plans (Sheet 8-8), prepared by Street Traffic Studies, LTD.

Note: Only the grading required for installation of Willow Ridge Lane and the Storm Drain is proposed under this contract.

Note: All grading beyond the grading required for the installation of Willow Ridge Lane and the Storm Drains will be done in the future under a private plot plan for the lots.

Note: Contractor to install Erosion Control Matting on all graded areas beyond and to the side of the Proposed T-Turnaround at the end of Willow Ridge Lane

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

John R. Roberts 7/2/08 DATE
HOWARD SCD

Engineers Certificate

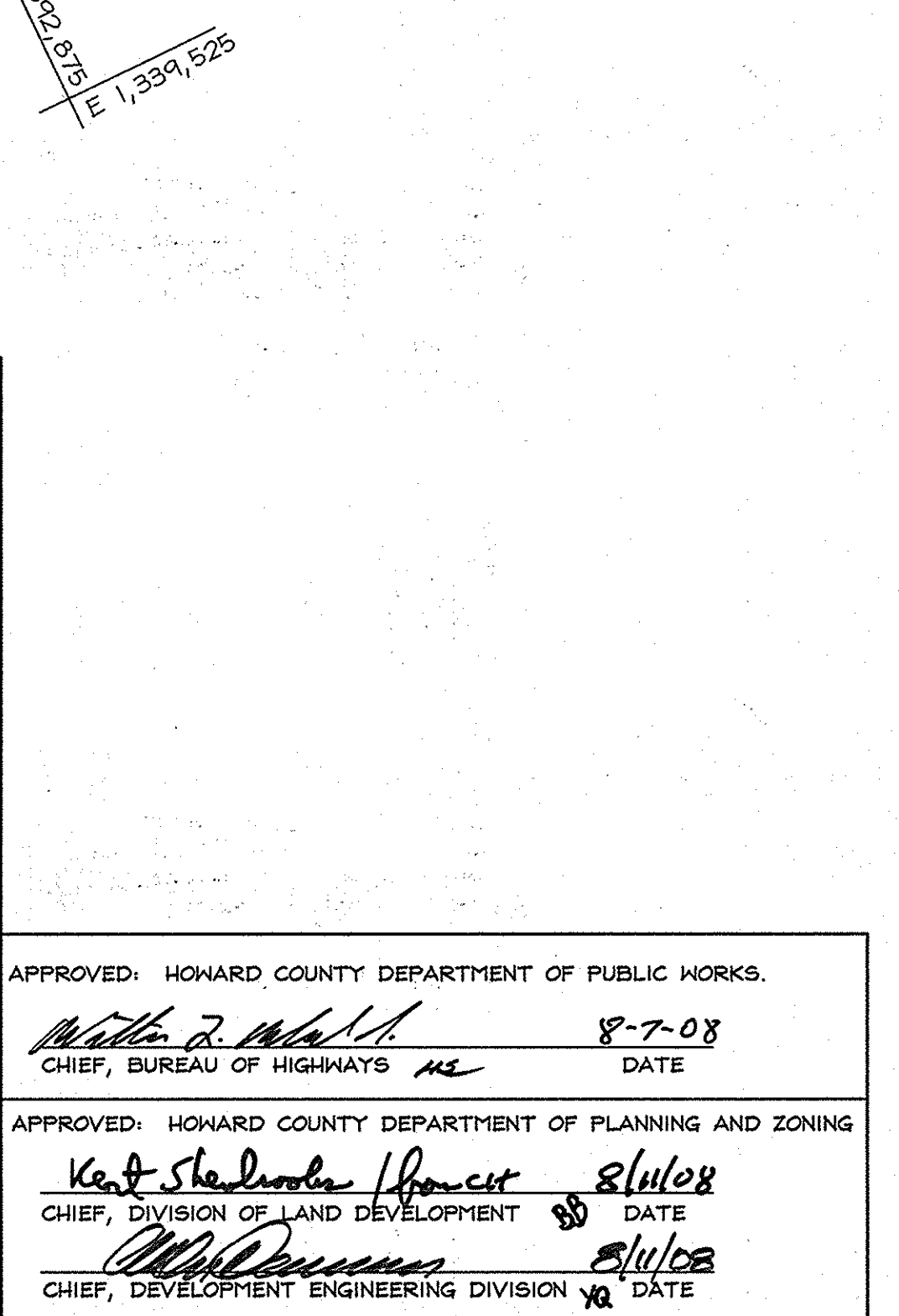
"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Zacharia Y. Fish 6/25/08 DATE
SIGNATURE OF ENGINEER
ZACHARIA Y. FISCH

Developer's Certificate

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

Wayne Greenfield 6/25/08 DATE
SIGNATURE OF DEVELOPER



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter R. White 8-7-08 DATE
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Ken S. Shallock 8/10/08 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT

W. Williams 8/10/08 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION

STANDARD NO. MD 104-02-01

SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspection, License and Permits Sediment Control Division prior to the start of any construction (410-313-1885).
- All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: (a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes, and all slopes greater than 3:1, (b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shall be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, soil, temporary seeding, and mulching (Sec. G). Temporary stabilization with mulch alone shall be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:

Total Area	20,096 Acres
Area Disturbed	4,055 Acres
Area to be seeded or paved	0,703 Acres
Area to be vegetatively stabilized	3,352 Acres
Total Fill	1,024 CU
Offsite waste/borrow area location	#1
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.
- Earthwork quantities are solely for the purpose of calculating fees. Contractor to verify all quantities prior to the start of construction.
- To be determined by contractor, with pre-approval of the Sediment Control Inspector with an approved and active grading permit.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE AND PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

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

SOIL AMENDMENTS: In lieu of soil test recommendations, use the following schedule: Apply 2 tons per acre dolomitic limestone (52 lbs/1000 s.f.) and 400 lbs. / acre (20.7 lbs./1000s.f.) of 10-20-20 before seeding. Harrow or disc into upper 3 in. of soil.

SEEDING: Apply a mixture of Turf Type Tall Fescue (80%) and Hard Fescue (20%) in accordance with seeding dates and rates shown in the Permanent Seeding Summary shown on this sheet. For stabilization outside of the seeding dates, apply straw mulch at rates and methods specified below and apply permanent seeding within permanent seeding dates.

MULCHING: Immediately following seeding, apply a uniform 1-2 in. Deep layer of un-rotted small grain straw at a rate of 2 tons/acre. (Apply 2.5 Tons/acre if a mulch anchoring tool is used). Straw may be anchored with wood cellulose fiber at a rate of 750 lbs. / acre mixed at a ratio of 50 lbs. Of wood fibre/ 100 gal. of water. Synthetic liquid binders such as Terra Tax II, Acrylic DLR (Agra-Tack), DCA-70, Petrosol and other approved equals may be used at rates recommended by the manufacturers.

Permanent Seeding Summary

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)			Lime Rate
					N	P205	K20	
10	Tall Fescue (80%) Hard Fescue (20%)	120 30	3/1-5/15 8/15-11/15	0.5 in.	90lb/ac (2.0lb/1000s.f.)	175lb/ac (4lb/1000s.f.)	175lb/ac (4lb/1000s.f.)	2tons/ac (100lb/1000s.f.)

TEMPORARY SEEDING NOTES

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

SOIL AMENDMENTS: In lieu of soil test recommendations, use the following schedule: Apply 2 tons per acre dolomitic limestone (52 lbs/1000 s.f.) and 600 lbs. / acre (30 lbs./1000s.f.) of 10-20-20 before seeding. Harrow or disc into upper 3 in. of soil.

SEEDING: Apply the seed mixture of Barley or Rye plus Foxtail Millet, in accordance with seeding dates and rates shown in the Temporary Seeding Summary shown on this sheet. For stabilization outside of the seeding dates, apply straw mulch at rates and methods specified below.

MULCHING: Immediately following seeding, apply a uniform 1-2 in. Deep layer of un-rotted small grain straw at a rate of 2 tons/acre. (Apply 2.5 Tons/acre if a mulch anchoring tool is used). Straw may be anchored with wood cellulose fiber at a rate of 750 lbs. / acre mixed at a ratio of 50 lbs. Of wood fibre/ 100 gal. of water. Synthetic liquid binders such as Terra Tax II, Acrylic DLR (Agra-Tack), DCA-70, Petrosol and other approved equals may be used at rates recommended by the manufacturers.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

Temporary Seeding Summary

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-10-10)			Lime Rate
					N	P205	K20	
2	Barley or Rye plus Foxtail Millet	150 lbs (3.5lb/1000sqf)	2/1-11/30 (7a) 3/15-10/31 (6a)	1/4 in - 1/2 in	600 lb/ac (5lb/1000sf)	600 lb/ac (5lb/1000sf)	2 tons/ac (100lb/1000sf)	

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
Ba	Belle silt loam	D
Ce2	Chester gravelly silt loam, 3 to 8 percent slopes, moderately eroded	B
Cc2	Chester gravelly silt loam, 8 to 15 percent slopes, moderately eroded	B
Ch2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	B
Ch2	Chester silt loam, 8 to 15 percent slopes, moderately eroded	B
Gl2	Glenn silt loam, 8 to 15 percent slopes, moderately eroded	B
Hg2	Hager gravelly loam, 8 to 15 percent slopes, moderately eroded	B
Md3	Manor loam, 15 to 25 percent slopes, severely eroded	B

OWNER

GREENFIELD HOMES, Inc.
PARCELS 91, 92, 183, 201
6666 LUSTER DRIVE
HIGHLAND, MARYLAND 20777
(410) 781-6782

DEVELOPER

GREENFIELD HOMES, Inc.
6666 LUSTER DRIVE
HIGHLAND, MARYLAND 20777
(410) 781-6782

OWNER

WILLOW BROOK, LLC
6666 LUSTER DRIVE
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(410) 781-6782

FINAL GRADING PLAN AND SHA SEDIMENT & EROSION CONTROL DETAILS

WILLOW RIDGE

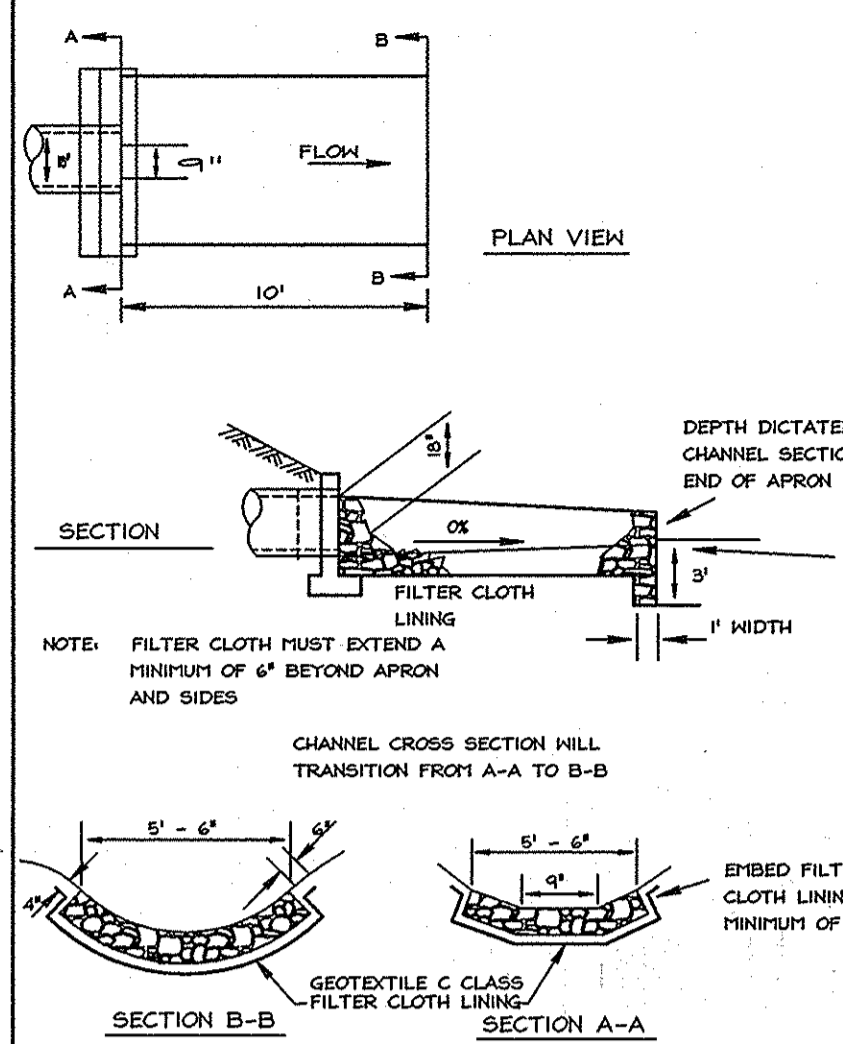
LOTS 1 THRU 4 NON-BUILDABLE PRESERVATION PARCELS 'A', 'B', AND 'D' AND BUILDABLE PRESERVATION PARCEL 'C'.
11418 FREDERICK ROAD

TAX MAP 16 GRID 15 PARCELS 89, 91 & 201
3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkrigde, MD 21075
Tel: 410-567-5200 Fax: 410-798-1582
E-mail: info@fsh.com

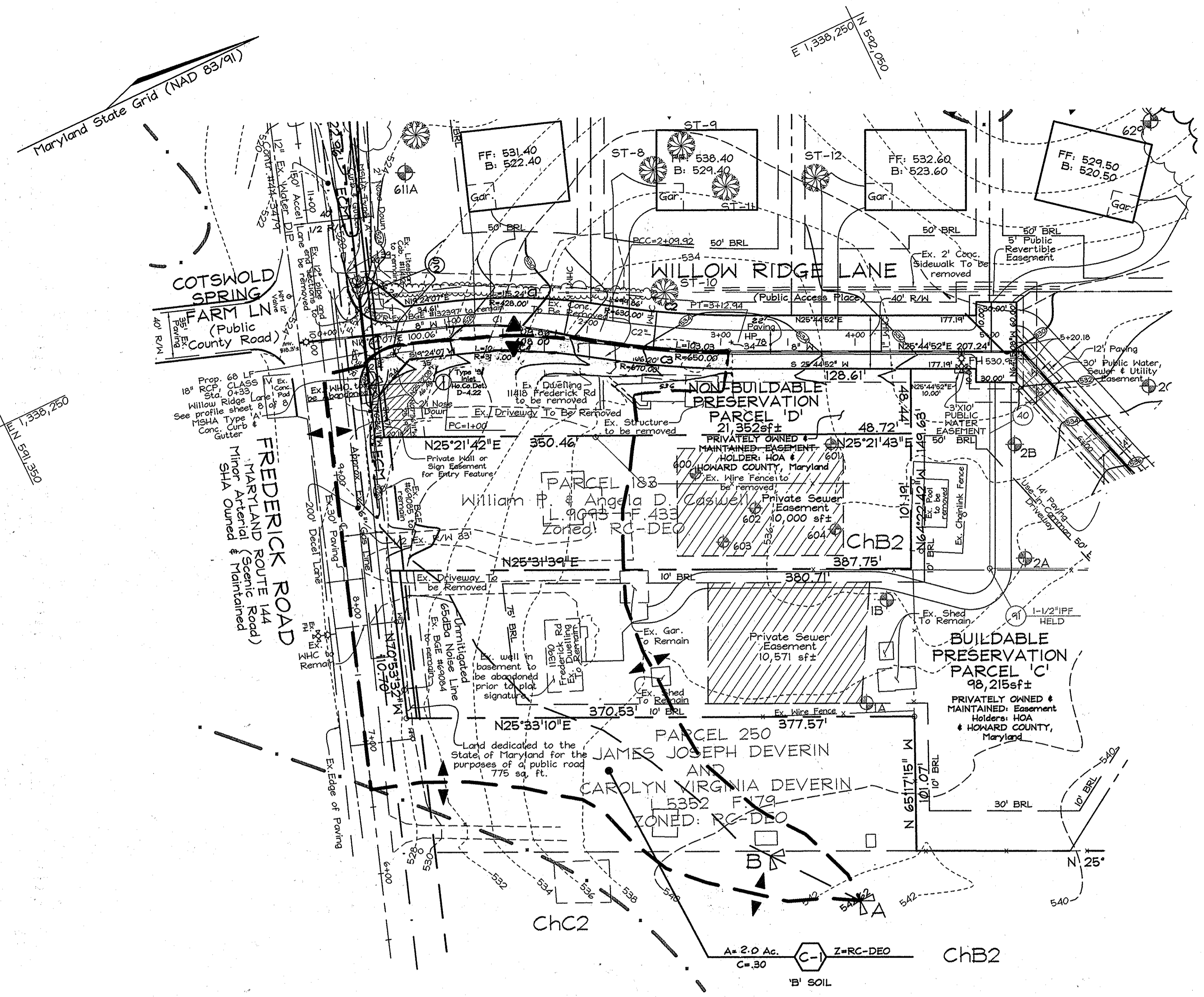
DESIGN BY: PS
DRAWN BY: MS & MT
CHECKED BY: ZYF
SCALE: 1" = 50'
DATE: June 26, 2008
M.O. No.: 8033
SHEET No.: 4 OF 8

DETAIL 25 - ROCK OUTLET PROTECTION I



- Construction Specifications**
- The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
 - The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
 - Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
 - Stones for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spots filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
 - The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-18-B MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



STORMWATER MANAGEMENT SUMMARY TABLE

CATEGORY	DA-1 THRU 6 (20.10 Ac.)	COMMENTS
Channel Protection Volume (Cpv)	N/A	Not required < 2 CFS
Water Quality Volume (WQv)	0.33 Ac. Ft.	Sheet flow to buffer/impervious area disconnect
Recharge Volume/Area (Rev./Rea)	0.069 Ac. Ft./0.64 Ac.	Sheet flow to buffer/impervious area disconnect
Overbank Flood Storage (Op)	N/A	Not required
Extreme Flood Volume (Gf)	N/A	Not required

- Notes:**
 Water quality (WQv) obligations were computed for the 20.10 Ac. site.
 Treatment for water quality will be provided as follows:
 1.) The water quality obligation generated by lots 1 thru 3, 6 thru 9 and preservation Parcels 'A' and 'C' will be treated by rooftop and non-rooftop disconnects.
 2.) Lots 4 & most of 5 will be treated by sheet flow to buffer with a level spreading device used to compensate for slopes over 5%.
 3.) The 14 ft. wide shared driveway, Willow Ridge Lane, and the paved access to Parcel 'A' will be treated by grass filter strips.
 4.) The existing house on Buildable preservation Parcel 'C' is existing and exempt from treatment.
 5.) Recharge volume is met through the "Area Equivalent Method". The 14 ft. wide shared driveway, Willow Ridge Lane, and the paved access to Parcel 'A' will be treated by grass filter strips (0.54 ac. treated), the treatment of the remaining (0.10 Ac.) is by rooftop and non-rooftop disconnects.
 6.) Overbank and extreme flood storage volume is not required for this site.

Water Quality Volume (WQv)

$$WQ_v = \frac{(P)(R_v)(A)}{12}$$

Site Area = 20.10 Ac.
 $R_v = 0.05 + 0.009(1)$
 $I = (20\%)(9.02 \text{ Ac. Lots 1, 2, 3, 4, 5, 6, 7, 8, 9}) + (10\% \text{ of lot 2.1 Ac. Parcel 'C'}) + 0.56 \text{ Ac. roadway including Road 'A', shared driveway, and Parcel A access} / 20.10 \text{ Ac.} = 2.57 \text{ Ac. Imperv.} / 20.10 \text{ Ac.} = 12.8\%$
 $R_v = 0.05 + 0.009(12.8) = 0.165$
 $WQ_v = \frac{(1.0)(0.165)(20.10)}{12} = 0.28 \text{ Ac. Ft.}$
 Min. $WQ_v = (0.2^3)(20.10)/12 = 0.33 \text{ Ac. Ft.} > 0.28 \text{ Ac. Ft.}$

Recharge Requirements (Re, Rea)

Percent Volume Method:
 $Re_v = \frac{(S)(R_v)(A)}{12}$ Site Area = 20.10 Ac.
 $Re_v = \frac{(0.25)(0.165)(20.10)}{12}$ $S_v = \frac{(19 \text{ Ac.})(0.26) + (1.1 \text{ Ac.})(0.07)}{20.10}$
 $Re_v = 0.069 \text{ Ac. Ft.}$ $S_v = 0.25$
 $S = 0.25$ (drainage area is 19 Ac 'B' soil, and 1.1 Ac 'D' soil)
 Percent Area Method:
 $Re_a = \frac{(S)(A)}{12} = (0.25)(2.57 \text{ Ac.})$
 $Re_a = 0.64 \text{ Ac.}$

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Walter J. ... 8-7-02
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kat ... 8/1/02
 CHIEF, DIVISION OF LAND DEVELOPMENT
... 8/1/02
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

OWNER
 GREENFIELD HOMES, Inc.
 PARCELS 91, 91A, 183, 201
 6656 LUSTER DRIVE
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 (410) 781-6782
 and
 WILLOW BROOK, LLC
 PARCEL 84
 6656 LUSTER DRIVE
 HIGHLAND, MARYLAND 20777
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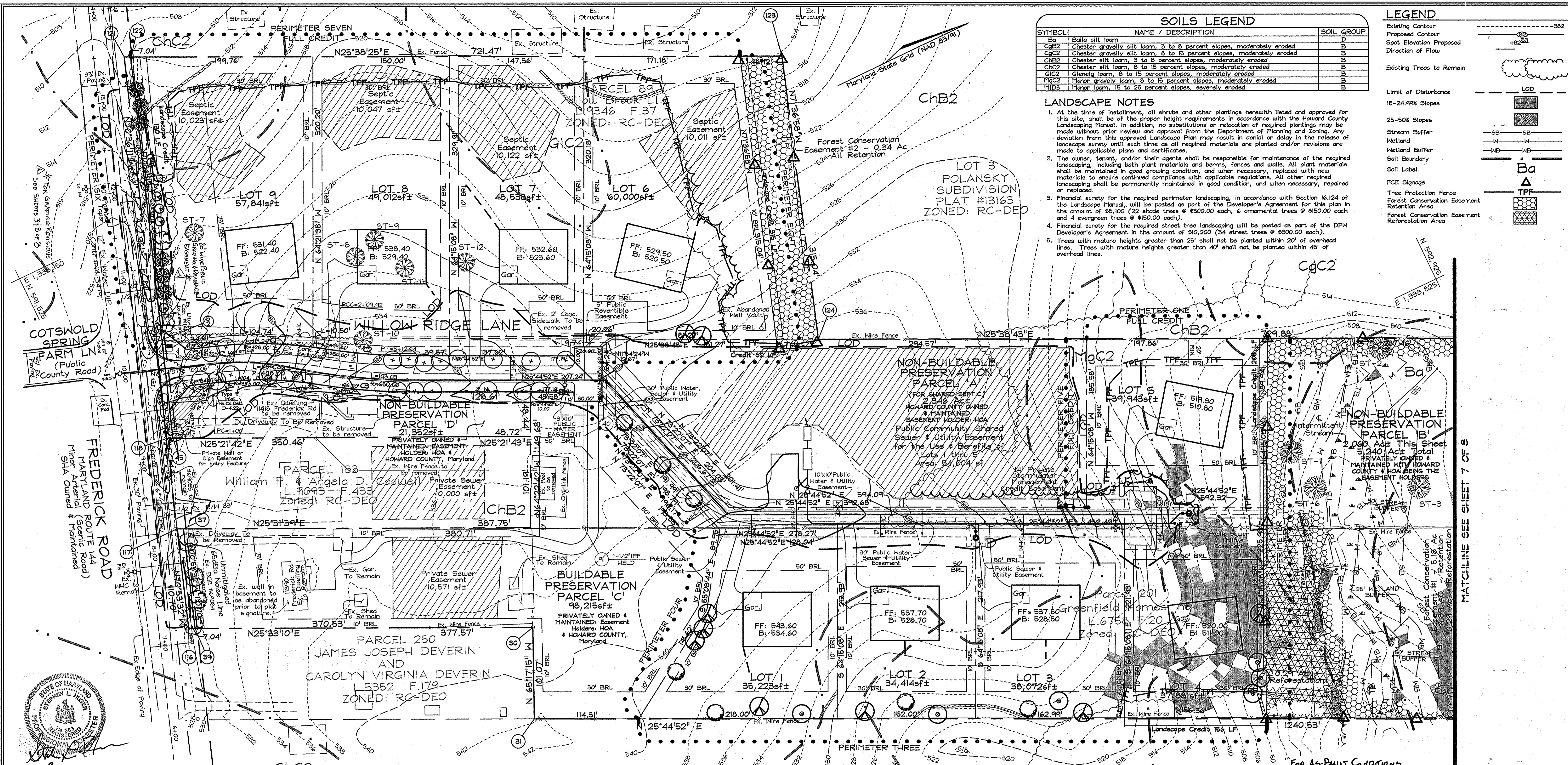
DEVELOPER
 GREENFIELD HOMES, Inc.
 6656 LUSTER DRIVE
 HIGHLAND, MARYLAND 20777
 (410) 781-6782

FINAL SWM SUMMARY TABLE AND CULVERT DRAINAGE AREA MAP
WILLOW RIDGE
 LOTS 1 THRU 9, NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'D' AND BUILDABLE PRESERVATION PARCEL 'C'.
 11418 FREDERICK ROAD
 PARCELS 89, 91 & 201
 3RD ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

FSH Associates
 Engineers Planners Surveyors
 6339 Howard Lane, Elkridge, MD 21075
 Tel: 410-587-5200 Fax: 410-798-1562
 E-mail: info@fshet.com

DESIGN BY: PS
 DRAWN BY: CED
 CHECKED BY: ZYF
 SCALE: 1" = 50'
 DATE: June 26, 2008
 W.O. No.: 3033
 SHEET No.: 5 OF 8

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. #22418, Expiration Date: 07/29/2009.



SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
Ba	Balle silt loam	D
CgB2	Chester gravelly silt loam, 3 to 8 percent slopes, moderately eroded	B
CgC2	Chester gravelly silt loam, 8 to 15 percent slopes, moderately eroded	B
ChB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	B
ChC2	Chester silt loam, 8 to 15 percent slopes, moderately eroded	B
Glc2	Glendale loam, 3 to 15 percent slopes, moderately eroded	B
MgC2	Minor gravelly loam, 8 to 15 percent slopes, moderately eroded	B
MiD3	Minor loam, 15 to 25 percent slopes, severely eroded	B

LEGEND

Existing Contour
Proposed Contour
Spot Elevation Proposed
Direction of Flow

Existing Trees to Remain

Limit of Disturbance
15-24.9% Slopes
25-50% Slopes

Stream Buffer
Wetland
Wetland Boundary
Soil Buffer
Soil Label
FCE Signage
Tree Protection Fence
Forest Conservation Easement Retention Area
Forest Conservation Easement Reforestation Area

LANDSCAPE NOTES

- 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 Landscaping Manual. In addition, no substitution or relocation of required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any 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 revisions are made to applicable plans and certificates.
- 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 continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.
- Financial surety for the required perimeter landscaping, in accordance with Section 16.124 of the Landscape Manual, will be posted as part of the Developer's Agreement for this plan in the amount of \$8,100 (22 shade trees @ \$300.00 each, 6 ornamental trees @ \$150.00 each and 4 evergreen trees @ \$150.00 each).
- Financial surety for the required street tree landscaping will be posted as part of the DPW Developer's Agreement in the amount of \$10,200 (34 street trees @ \$300.00 each).
- Trees with mature heights greater than 25' shall not be planted within 20' of overhead lines. Trees with mature heights greater than 40' shall not be planted within 45' of overhead lines.

EXPLORATION RESEARCH, INC.

ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS
6338 HOWARD LANE
BETHESDA, MARYLAND 20817
TEL: (410) 607-8210 FAX: (410) 798-1852

DEVELOPER'S BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE(1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE OF DEVELOPER/W/owner: *[Signature]* DATE: 6/25/08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 8/1/08

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 8/1/08

STREET TREE SCHEDULE

STREET NAME	LF REQUIRED	TREES REQUIRED	PROVIDED
Frederick Road	237'	(1.30) = 3	3
Willow Ridge Lane	1040'	(1.40) = 26	26

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES						ADJACENT TO ROADWAYS
	1	2	3	4	5	6	
Perimeter/Frontage Designation Landscape Type	A	A	A	A	A	A	B
Linear Feet of Perimeter	198	420	689	424	186	668	496
Credit for Existing Vegetation (Yes, No, Linear Feet)	198	208	156	No	186	668	130
Remaining Perimeter Length	(0)	(212)	(533)	(0)	(0)	(131)	(171)
Credit for Wall, Fence or Berm (Yes, No, Linear Feet)	No	No	No	No	No	No	No
Remaining Perimeter Length	No	No	No	No	No	No	No
Number of Plants Required							
Shade Trees	160	0	160	9	160	0	2
Evergreen Trees	0	0	0	0	0	0	0
Number of Plants Provided							
Shade Trees	0	4	9	7	0	0	2
Evergreen Trees	0	0	0	0	0	0	0
Other Trees (2:1 Substitution)	0	0	0	0	0	0	0
Shrubs (10:1 Substitution)	0	0	0	0	0	0	0
(Describe Plant Substitution Credits Below if needed)							

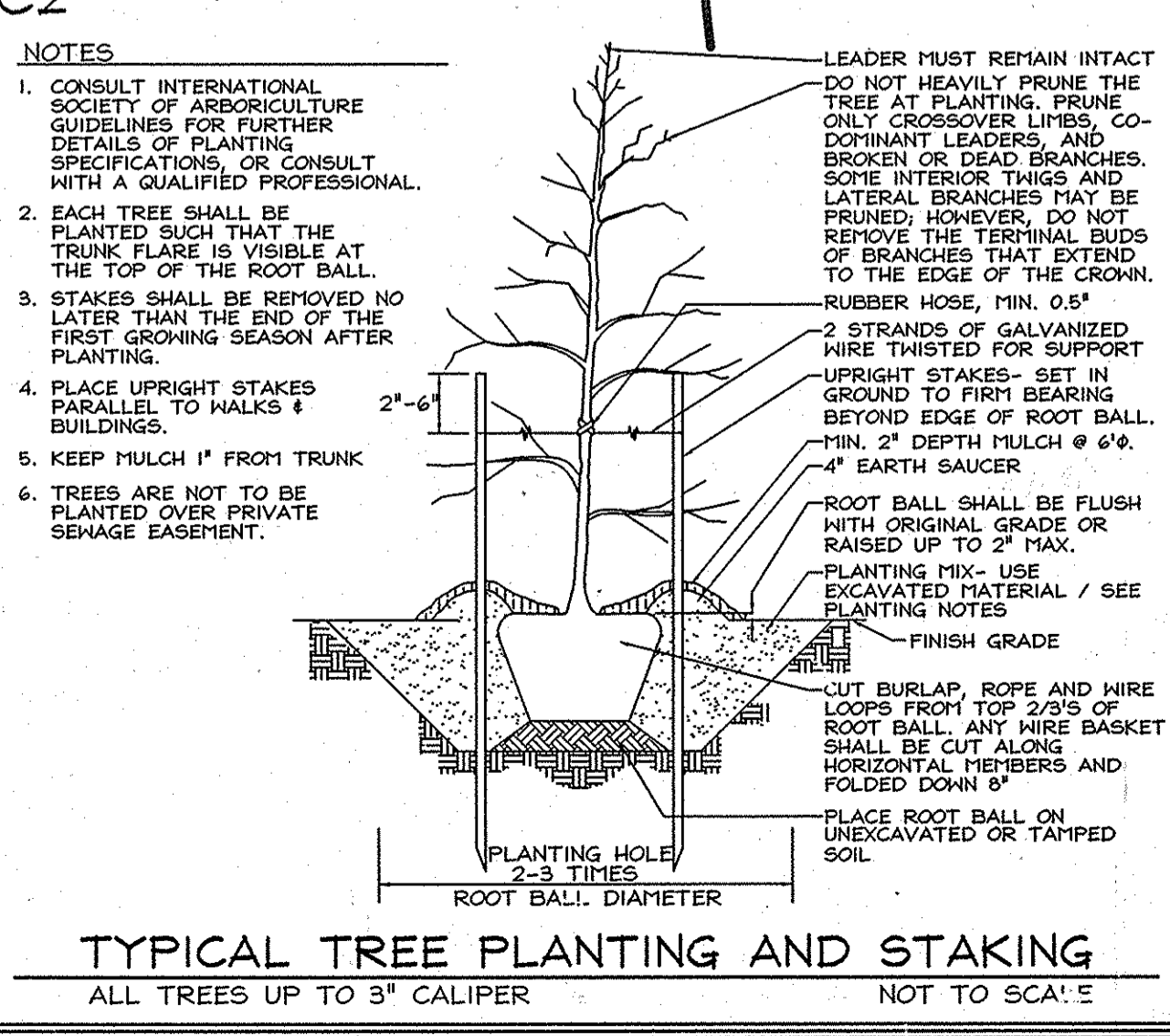
* Existing woods to remain

STREET TREE PLANTING SCHEDULE

KEY	QUAN.	BOTANICAL/COMMON NAME	SIZE	NOTE
8	8	<i>Crataegus crusgalli</i> 'Inermis' Thornless Cockspur Hawthorn	2 1/2"-3" Cal.	B & B
26	26	<i>Platanus x acerifolia</i> 'Columbia' 'Columbia' London Plane	2 1/2"-3" Cal.	B & B

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL/COMMON NAME	SIZE	NOTE
7	7	<i>Acer rubrum</i> 'Red Sunset' 'Red Sunset' Red Maple	2 1/2"-3" Cal.	B & B
6	6	<i>Quercus palustris</i> Pin Oak	2 1/2"-3" Cal.	B & B
9	9	<i>Liquidambar styraciflua</i> American Sweetgum	2 1/2"-3" Cal.	B & B
6	6	<i>Magnolia stellata</i> Star Magnolia	1 1/2"-2" Cal.	B & B
4	4	<i>Thuja occidentalis</i> 'Techny' Techny Arborvitae	5'-6'	B & B



OWNER

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PARCELS 91, 91A, 91B, 201
6656 LUSTER DRIVE
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(410) 781-6782

DEVELOPER

GREENFIELD HOMES, Inc.
6656 LUSTER DRIVE
HIGHLAND, MARYLAND 20777
(410) 781-6782

AND

WILLOW BROOK, LLC
6656 LUSTER DRIVE
HIGHLAND, MARYLAND 20777
(410) 781-6782

FOREST CONSERVATION, LANDSCAPING AND STREET TREE PLAN

WILLOW RIDGE

LOTS 1 THRU 9, NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'D' AND BUILDABLE PRESERVATION PARCEL 'C'.
11418 FREDERICK ROAD
PARCELS 89, 91 & 201
3RD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TAX MAP 16 GRID 15
3RD ELECTION DISTRICT

FSH Associates

Engineers Planners Surveyors
6339 HOWARD LANE, ELKridge, MD 21075
Tel: 410-567-5200 Fax: 410-798-1562
E-mail: info@fsher.com

DESIGN BY: PS
DRAWN BY: MS, SHM
CHECKED BY: ZYF
SCALE: 1" = 50'
DATE: June 26, 2008
H.O. No.: 3033
SHEET No.: 6 OF 8

MATCHLINE SEE SHEET 7 OF 8

Reforestation Area Monitoring Notes

- Monthly visits during the first growing season are to assess the success of the plantings and to determine if supplemental watering, pest control or other actions are necessary. Early spring visits will document winter kill and autumn visits will document summer kill.
- The minimum survival rate shall be 75% of the total number of trees planted per acre at the end of the two year maintenance period. Mild tree seedlings from natural regeneration on the planting site may be counted up to 50% toward the total survival number if they are healthy native species at least 12 inches tall.
- Certification at the end of the two-year post construction period must indicate that the survival rates will result in a 100 tree per acre ratio for a forest and the 3 to 4 foot height standard for whips by the end of the two growing season post construction period, with at least 50% of those trees having the potential of attaining a 2" caliper DBH within 7 years.
- Survival will be determined by a stratified random sample of the plantings. The species composition of the sample population should be proportionate to the amount of each species in the entire planting to be sampled.
- Effective monitoring will assess plant survivability during the first growing season and make recommendations for reinforcement planting if required at that time.

SPECIMEN TREES					
NO.	DBH	COMMON NAME	SCIENTIFIC NAME	CONDITION	RETAINED
ST-1	32.5"	Yellow poplar	Liriodendron tulipifera	Fair	YES
ST-2	34"	White oak	Quercus alba	Good	YES
ST-3	36"	Yellow poplar	Liriodendron tulipifera	Good	YES
ST-4	34.5"	Red oak	Quercus rubra	Good	YES
ST-5	45"	Mocker nut hickory	Carya tomentosa	Good	YES
ST-6	36"	Sweetgum	Liriodendron tulipifera	Fair	YES
ST-7	36"	White Oak	Quercus alba	Good	NO
ST-8	32"	European Larch	Larix decidua	Good	NO
ST-9	51"	White Oak	Quercus alba	Fair	NO
ST-10	38"	White Oak	Quercus alba	Good	NO
ST-11	49"	Red Maple	Acer rubrum	Poor	NO
ST-12	36"	Black Walnut	Juglans nigra	Good	NO

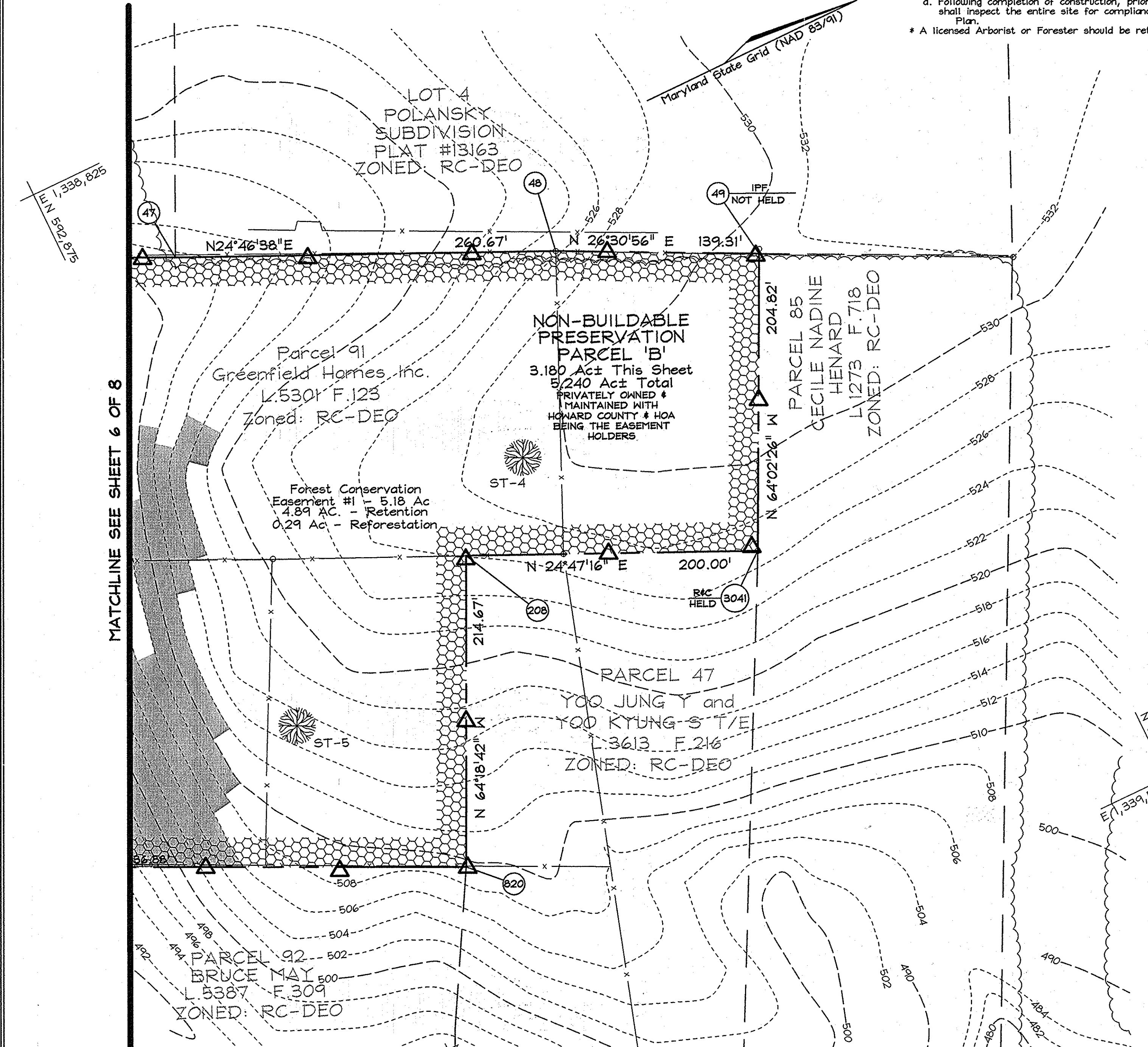
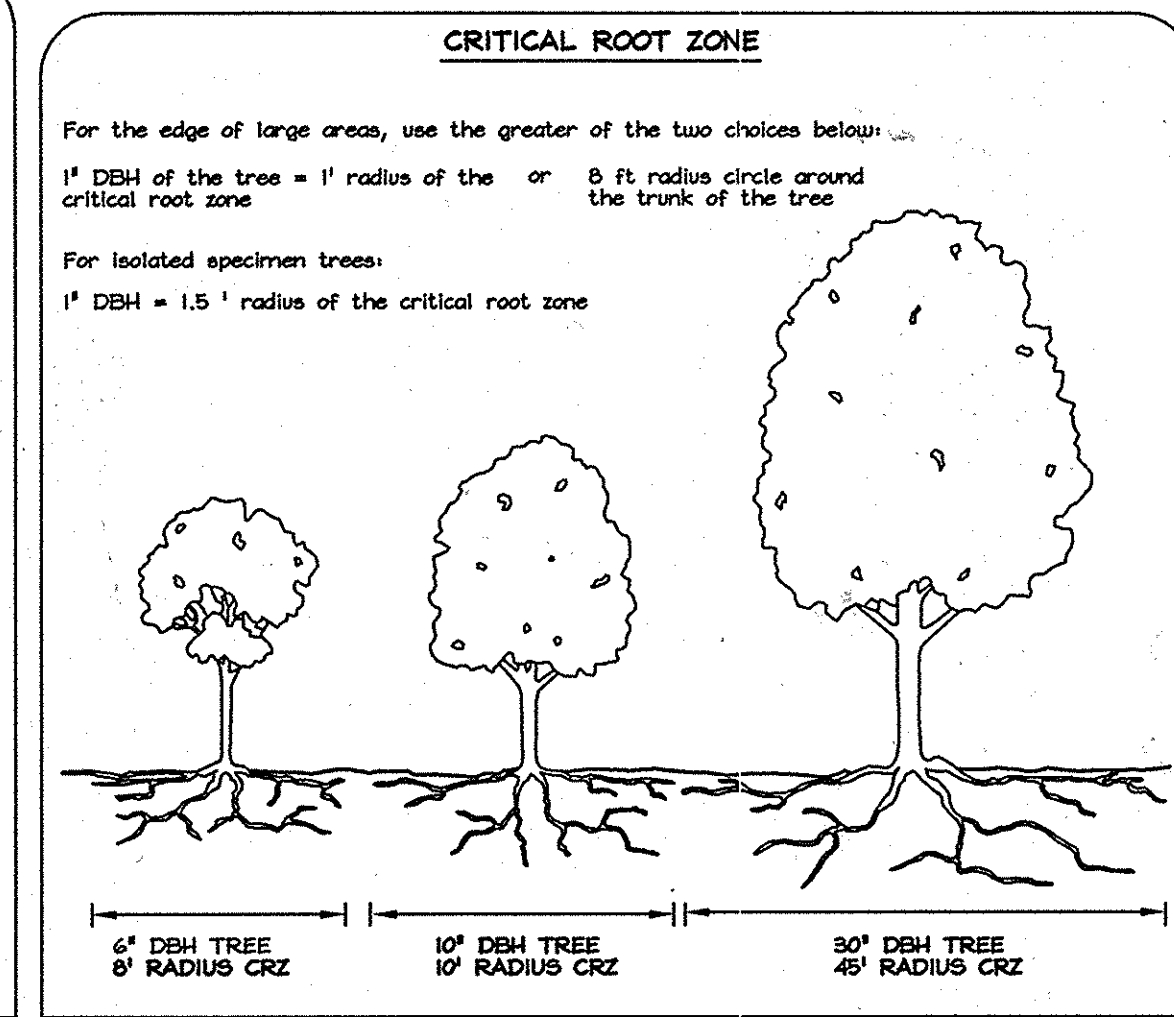
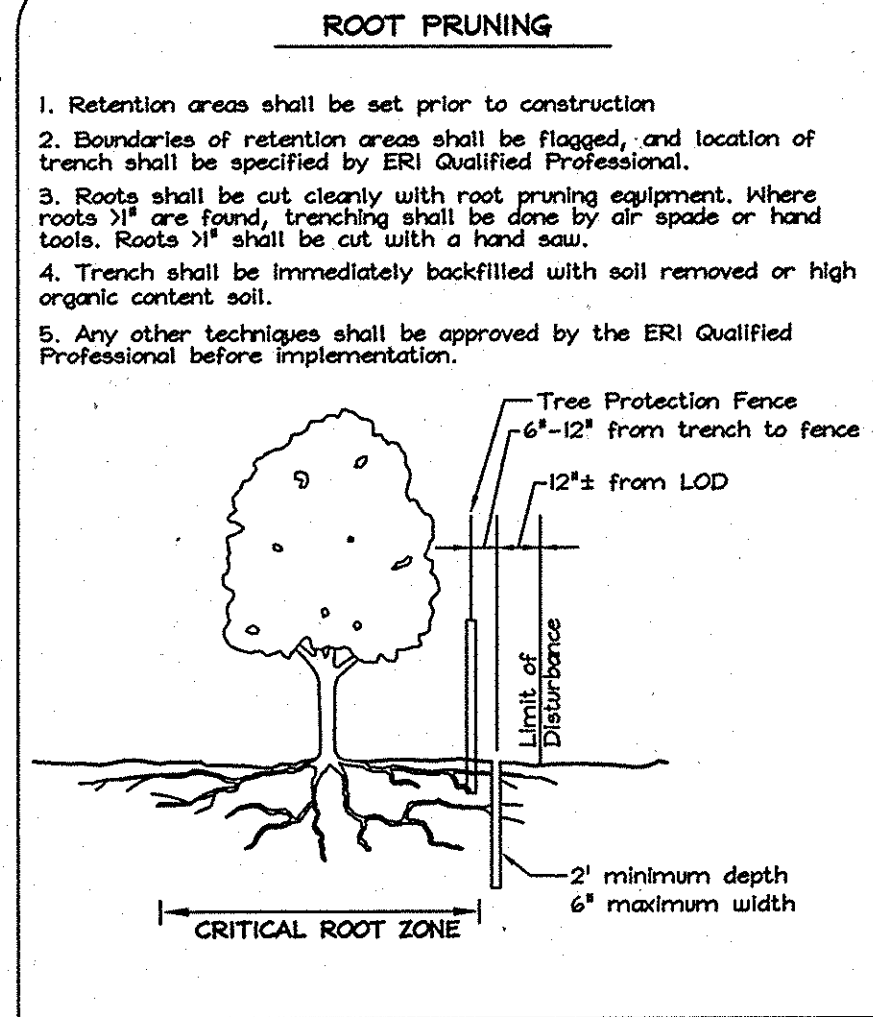
Forest Tree Protection and Management Notes

- Tree protection devices shall be installed prior to any grading or land clearing.
- After the boundaries of the retention areas have been staked and flagged and before any disturbance has taken place a pre-construction meeting with the Howard County Inspector is required.
- Provide maintenance to tree protection devices and signage to maintain their integrity throughout the duration of the project.
- Attachment of signs to tree protection devices to maintain their integrity throughout the duration of the project.
- Any significant changes made to the Forest Conservation Plan shall be made with the prior approval of the Forest Conservation Dept. Of Planning and Zoning.
- No burial of discarded material is permitted within the Forest Conservation and Planting areas.
- No open burning within 100 feet of wooded areas is permitted.
- Post construction phases.
 - Inspect existing trees around the perimeter of the site for signs of root or trunk damage and excessive soil compaction.
 - Remove dead or dying trees and evaluate for hazard tree removal.
 - All temporary forest protection devices will be removed after construction.
 - Following completion of construction, prior to use, the county inspector shall inspect the entire site for compliance with this Forest Conservation Plan.

* A licensed Arborist or Forester should be retained for this service as needed.

Reforestation Area Planting Notes

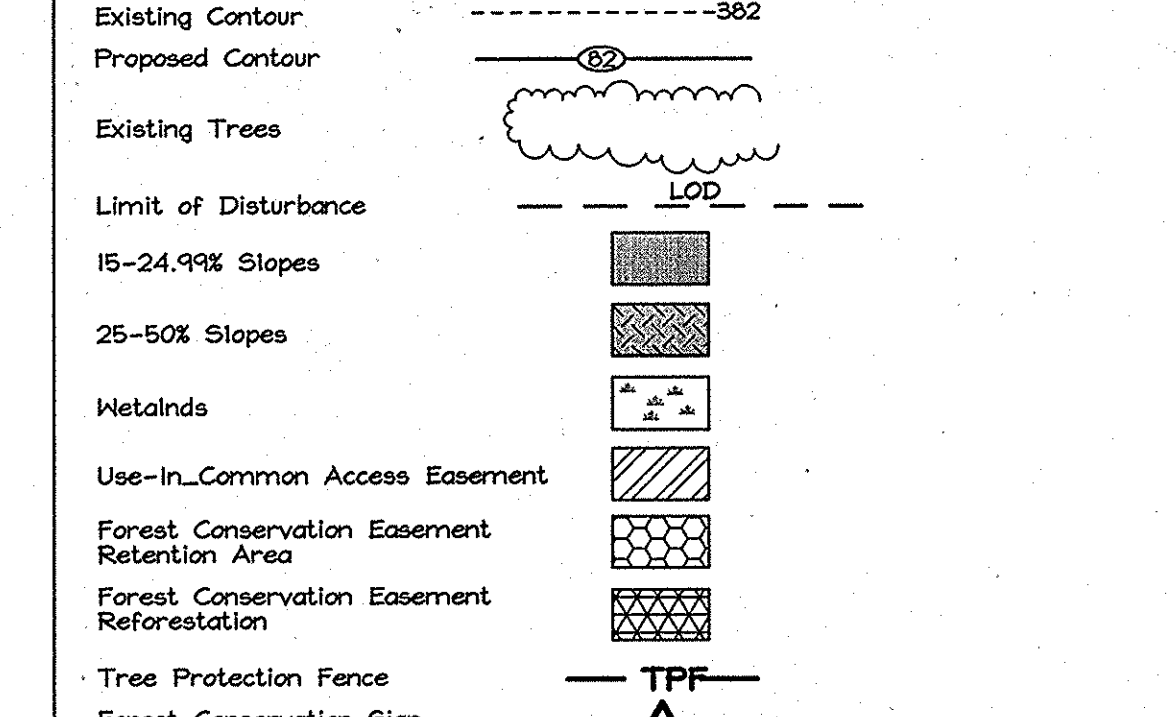
- Initial planting inspection and certification required. Planting contractor to notify ERI qualified professional 24 hours in advance of planting.
- Reforestation areas may be planted as soon as reasonable to do so. Late winter-early spring plantings are preferred. Earliest planting dates will vary from year to year but planting may generally begin as soon as the ground is no longer frozen. Alternate planting dates may be considered as conditions warrant.
- Soil amendments and fertilization recommendations will be made based upon the results of soil analysis for nitrogen, phosphorus, potassium, organic matter content and pH. If required, fertilizer will be provided using a slow release, soluble 16-8-16 analysis designed to last 5-8 years contained in polyethylene perforated bags such as manufactured by AICO World, P.O. Box 310 Hollins, N.Y. 11423 or approved equal.
- Plant materials shall be planted in accordance with the planting diagram, planting details and planting schedule.
- Plant stock must be protected from desiccation at all times prior to planting. Materials held for planting shall be moistened and placed in cool shaded areas until ready for placement.
- Planting materials shall be nursery grown and inspected prior to planting. Plants not conforming to the American Standards for Nursery Stock specifications for size, form, vigor, or roots, or due to trunk wounds, breakage, desiccation, insect or disease must be replaced.
- Newly planted trees may require watering at least once per week during the first growing season depending on rainfall in order to get established. The initial planting operation should allow for watering during installation to completely soak backfill materials.
- Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.
- Planting holes should be excavated to a minimum diameter of 2.5 to 3 times the diameter of the root ball or container. Mechanical angling is preferred with scarification of the sides of each hole.
- All nursery stock to be sprayed with deer repellent containing Bitrex such as Repellex All nursery stock to be grown with deer repellent tablets in growing medium, such as Repellex Tablets.



FOREST CONSERVATION WORKSHEET

Net Tract Area	Acres
A. Total Tract Area	20.10
B. Area Within 100 Year Floodplain	--
C. Other deductions	--
D. Net Tract Area	20.10
Zoning Use Category: RESIDENTIAL-SUBURBAN	
Land Use Category	
E. Afforestation Minimum (20 % x D)	4.02
F. Conservation Threshold (25 % x D)	5.03
Existing Forest Cover	
G. Existing Forest on Net Tract Area	7.23
H. Forest Area Above Conservation Threshold	2.20
Break-even Point	
I. Forest Retention Above Threshold with no Mitigation	5.47
J. Clearing Permitted without Mitigation	1.76
Proposed Forest Clearing	
K. Forest Areas to be Cleared	2.00
L. Forest Areas to be Retained	5.23
Planting Requirements	
M. Reforestation for Clearing Above Threshold	0.50
N. Reforestation for Clearing Below the Threshold	0
P. Credit for Retention Above Conservation Threshold	0.20
Q. Total Reforestation Required	0.30
R. Total Afforestation Required	0
S. Total Reforestation and Afforestation Requirement	0.30

LEGEND



Forest Conservation Narrative

This Forest Conservation Plan was prepared in accordance with the Howard County Forest Conservation Manual. The subject property has a gross and net tract area of 20.10 Ac. There is 7.23 Ac. of forest on site. There are several specimen trees around the site, which will be preserved where possible. Forest has been retained to the greatest extent possible, including all forest in sensitive environments. The forest will be retained in two easements. Easement #1 on Parcel B includes a 0.29 Ac area of Reforestation and 4.89 Ac of Retention. Easement #2 on Parcel A contains 0.34 Ac of retention. For the remaining 0.01 Ac of mitigation required, we are requesting payment of a fee-in-lieu in the amount of \$327,000 (436 s.f. @ \$0.75/s.f.).

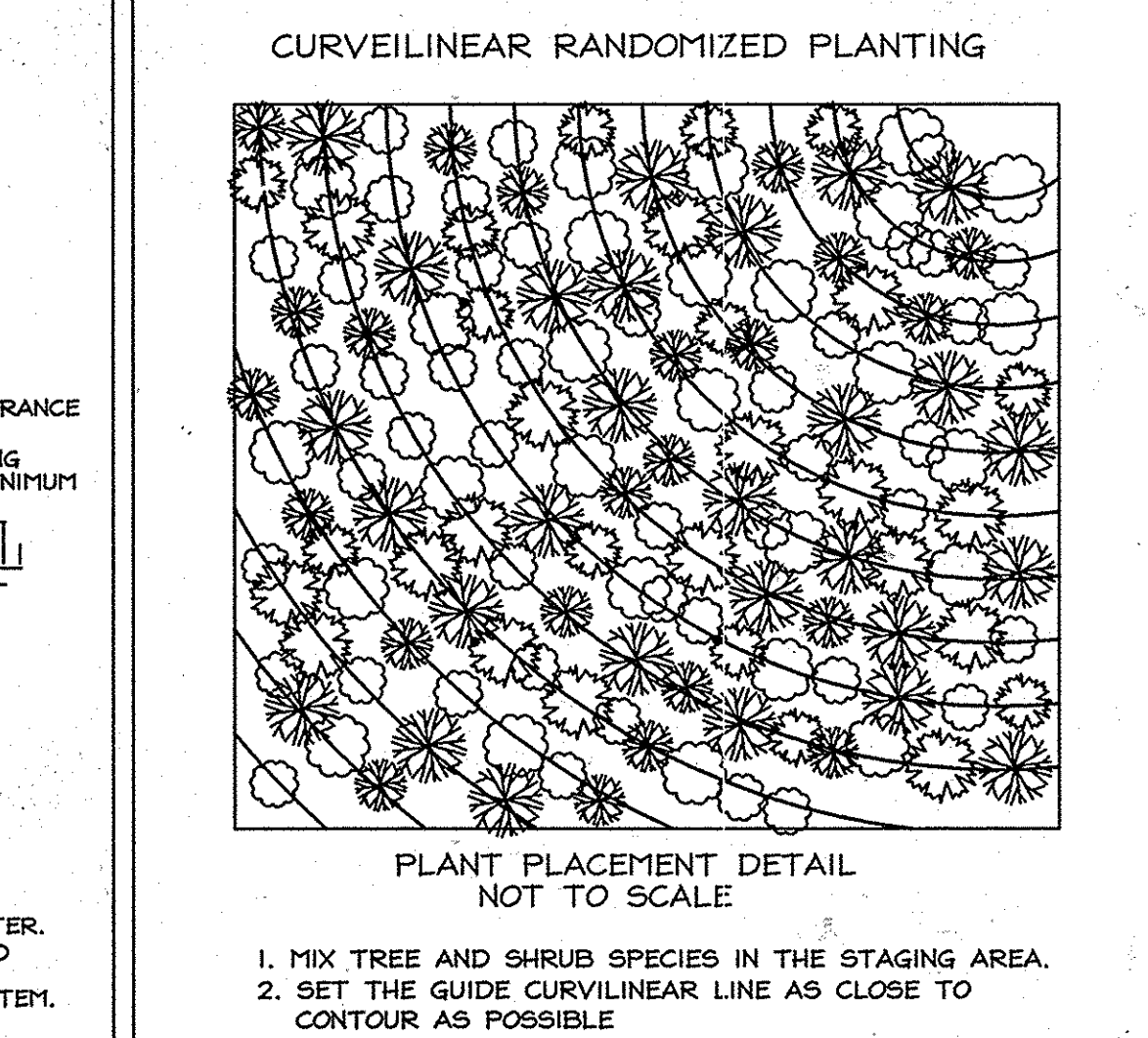
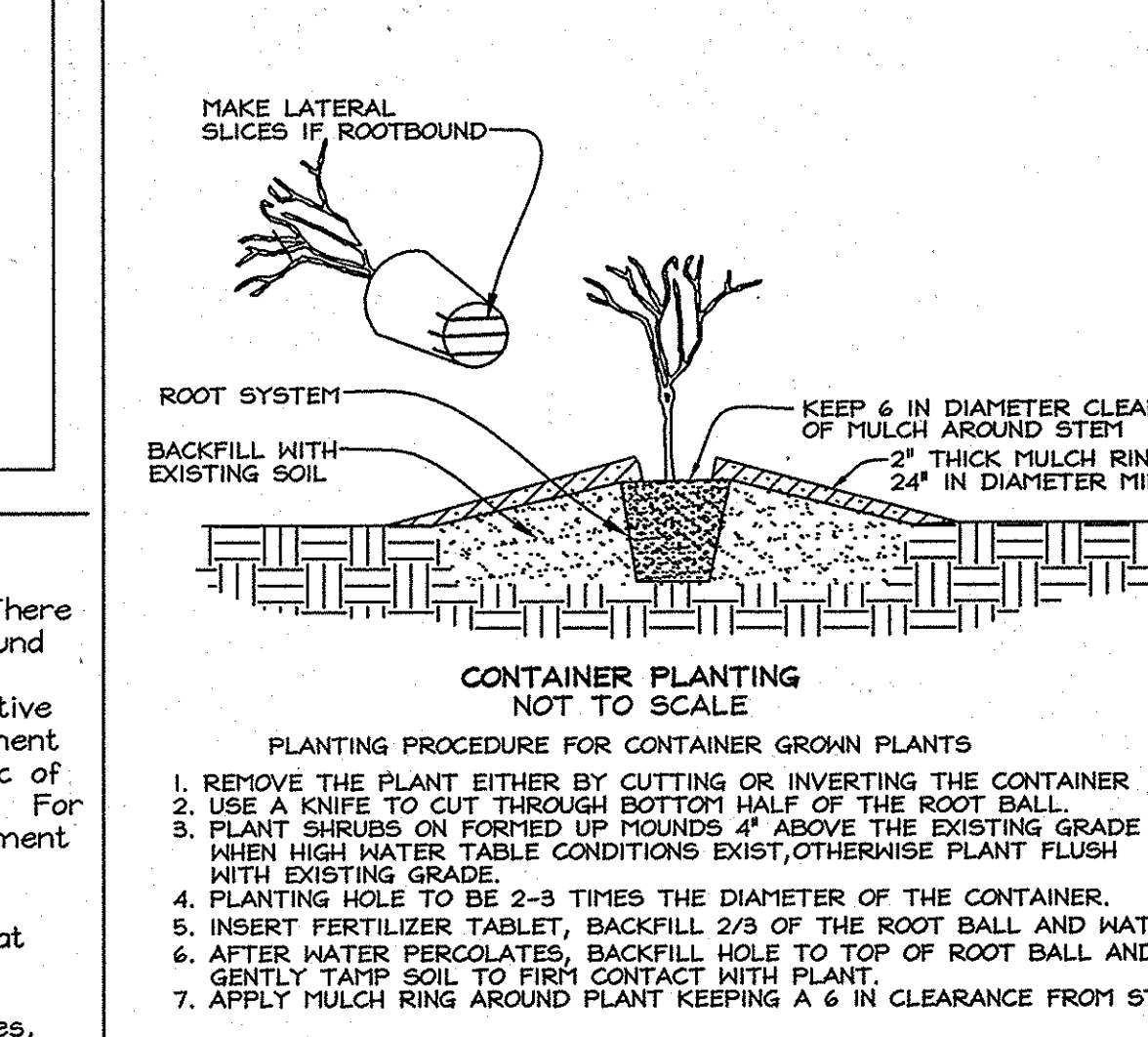
New on-site plantings will be 2-3' containerized whip stock planted at 350 stems/acre with tree shelters.

The total forest conservation obligation met on this site is 5.52 acres, with a total forest conservation surety amount of \$51,880.30 (\$45,565.80 for retention of 5.23 Ac or 227,819 s.f. @ \$ 0.20/s.f. and \$6,316.50 for planting 0.29 Ac or 12,633 s.f. @ \$0.50/s.f.).

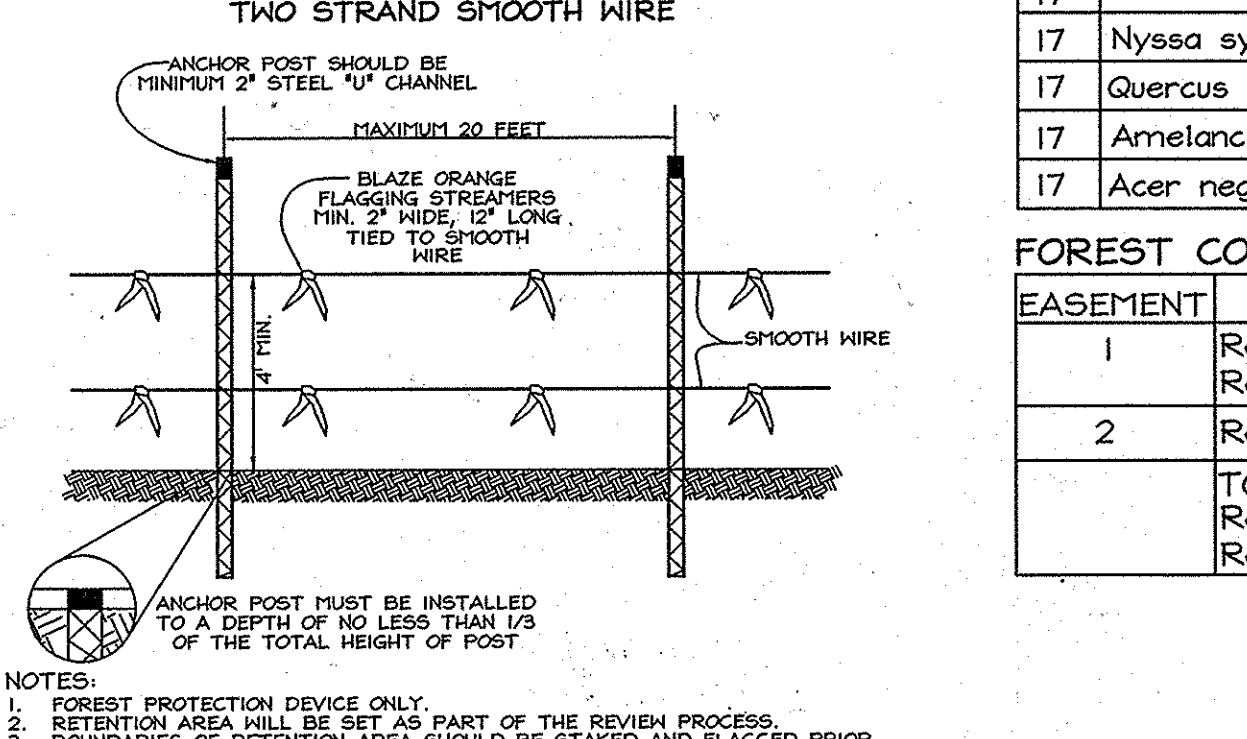
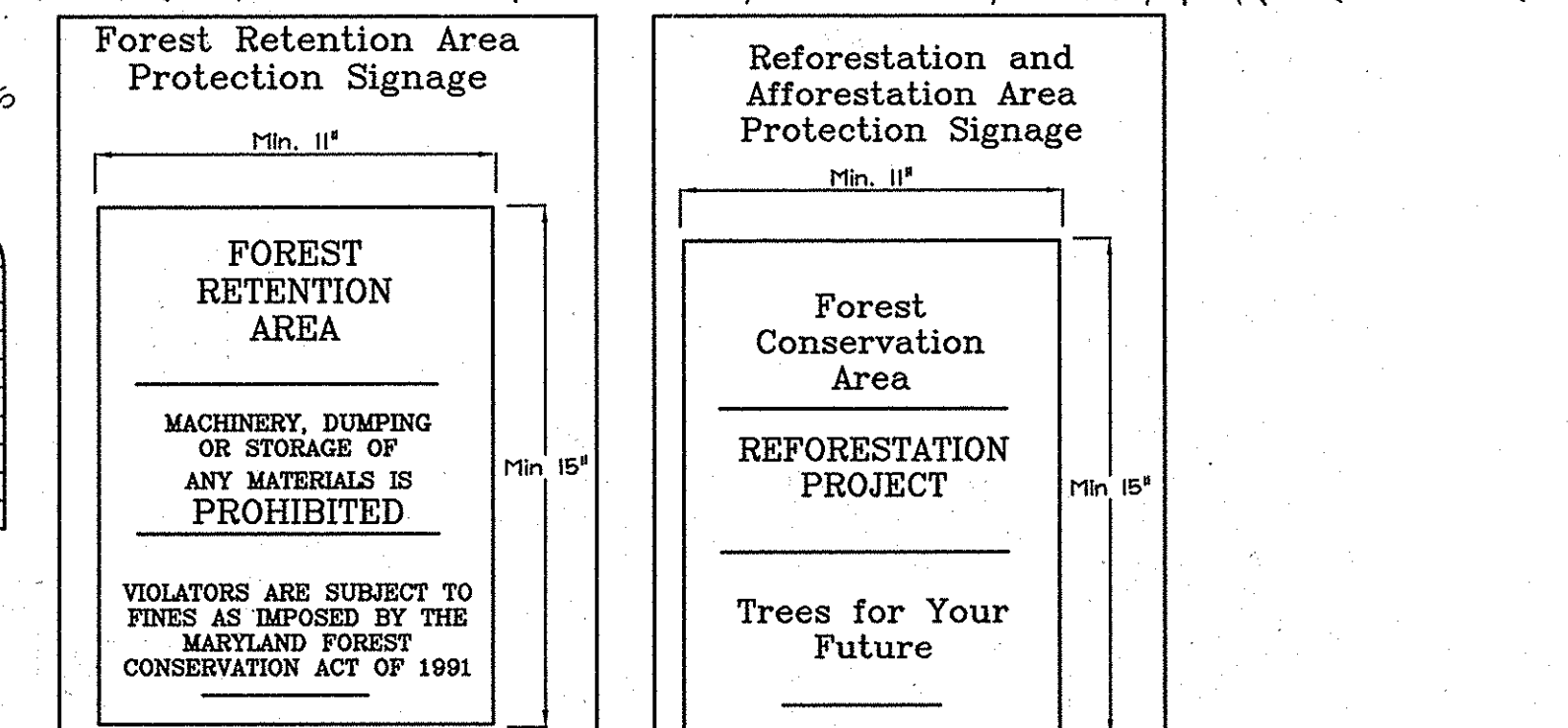
Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
17	Acer rubrum	Red Maple	WHIP 2-3'	11' o.c.	1-3 Gallon Container Grown with tree shelters
17	Liriodendron tulipifera	Tulip Poplar	WHIP 2-3'	11' o.c.	
17	Nyssa sylvatica	Black Gum	WHIP 2-3'	11' o.c.	
17	Quercus rubra	Red Oak	WHIP 2-3'	11' o.c.	
17	Amelanchier canadensis	Serviceberry	WHIP 2-3'	11' o.c.	
17	Acer negundo	Box-elder	WHIP 2-3'	11' o.c.	

Soil Protection Zone Notes

- The Soil Protection Zone shall include all areas contained inside the Limit of Disturbance.
- Where possible, the Soil Protection Zone shall extend to the drip line of specimen trees. For other groups of trees, the zone shall be the drip line or 40% of the height of the tree, whichever is greater.
- No construction activity is permitted within the Soil Protection Zone.
- If soil has been compacted or grading has taken place in the vicinity of the Soil Protection Zone, root pruning shall be implemented per Root Pruning detail, shown on this plan.
- Root pruning shall occur prior to the beginning of construction.
- Where the Soil Protection Zone must encroach inside the Critical Root Zone of a tree, soil disturbance shall be mitigated with vertical mulching, radial trenching, or another method approved by the ERI Forest Conservation Professional.
- Prior to construction, the Limits of Disturbance shall be marked and the ERI Professional shall determine which trees will need preventative treatment or removal.
- Tree maintenance and removal shall be undertaken by a qualified TID Tree Expert to ensure damage to surrounding trees is minimized.
- Brush and limbs removed for construction shall be chipped and spread at the edge of the Soil Protection Zone to a depth of 6 inches. This shall occur outside the Soil Protection Zone where compaction could impact otherwise unprotected Critical Root Zone.



SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	SOIL GROUP
Bg	Balle silt loam	D
Cg2	Chester gravelly silt loam, 3 to 8 percent slopes, moderately eroded	B
Cg2C	Chester gravelly silt loam, 8 to 15 percent slopes, moderately eroded	B
Ch2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	B
Ch2C	Chester silt loam, 8 to 15 percent slopes, moderately eroded	B
Gl2C	Glenns loam, 8 to 15 percent slopes, moderately eroded	B
Mg2	Minor gravelly loam, 8 to 15 percent slopes, moderately eroded	B
MHD3	Minor loam, 15 to 25 percent slopes, severely eroded	B



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 8/1/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 8/1/08
 CHIEF, DIVISION OF LAND DEVELOPMENT

SIGN DETAIL: PERMANENT SIGN

SIGNAGE NOTE: ALL TREE PROTECTION SIGNS SHALL BE PLACED ON METAL "T" POSTS OR PRESSURE TREATED WOOD POLES. NO ATTACHMENT OF SIGNS TO TREES IS PERMITTED.

TREE PROTECTION DETAIL

NOTES:
 1. FOREST PROTECTION DEVICE ONLY.
 2. RETENTION AREA SHALL BE SET AS PART OF THE REVIEW PROCESS.
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 4. NO INSTALLING DEVICE BE AVOIDED.
 5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

FOREST CONSERVATION EASEMENT #1

EASEMENT	TYPE	AREA (ACRES)
1	Retention	4.89
2	Reforestation	0.29
	TOTAL	5.23
	Retention	5.23
	Reforestation	0.29

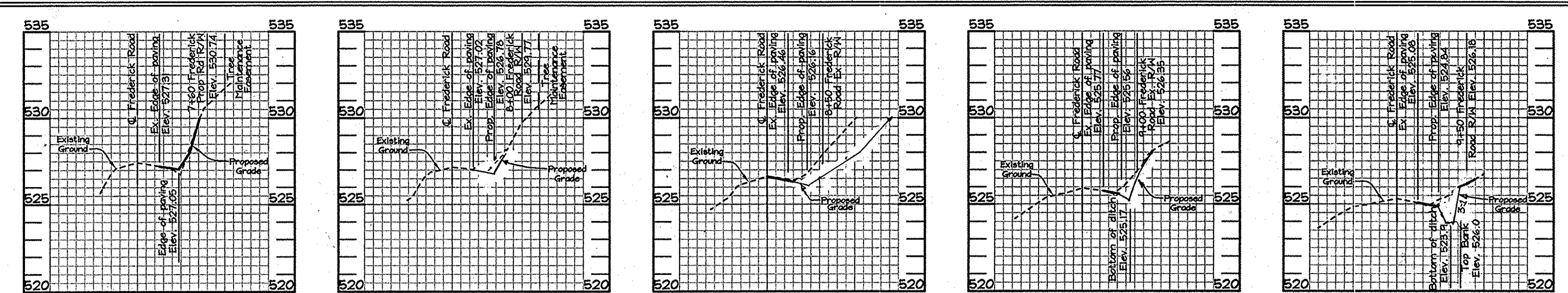
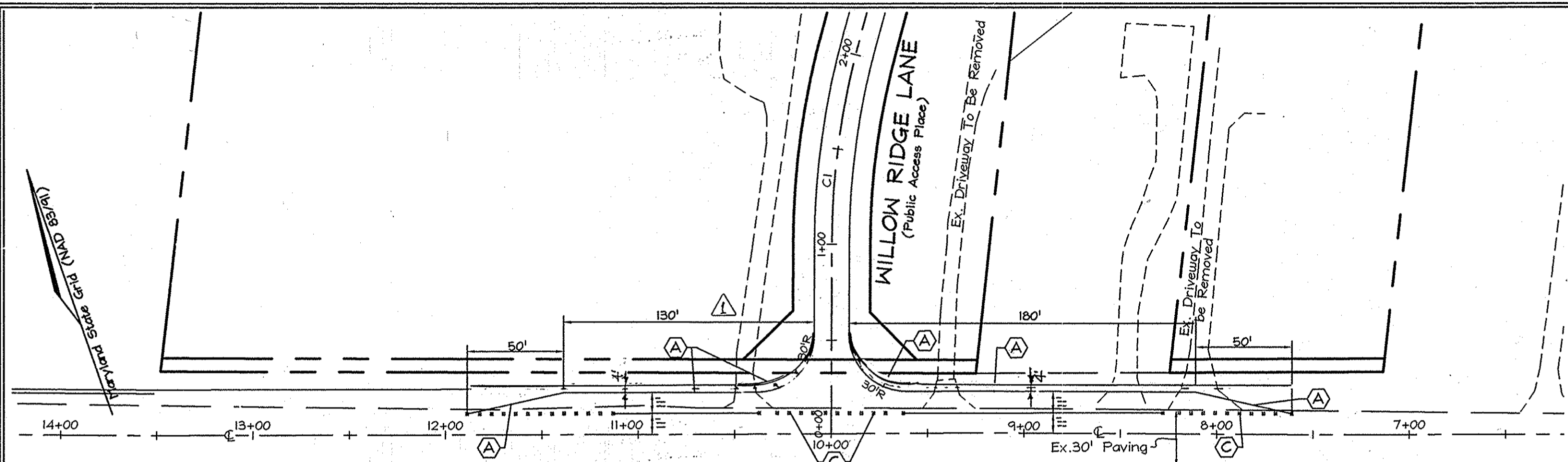
EXPLORATION RESEARCH, INC.
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS
 6330 HOWARD AVE. BRIDGE, MD 21075
 TEL: 410-567-5200 FAX: 410-796-1582

OWNER
 GREENFIELD HOMES, Inc.
 PARCELS 91, p/o 183, 201
 6656 LUSTER DRIVE
 HIGHLAND, MARYLAND 20777
 (410) 781-6782
 and
 WILLOW BROOK, LLC
 PARCEL 84
 6656 LUSTER DRIVE
 HIGHLAND, MARYLAND 20777
 (410) 781-6782

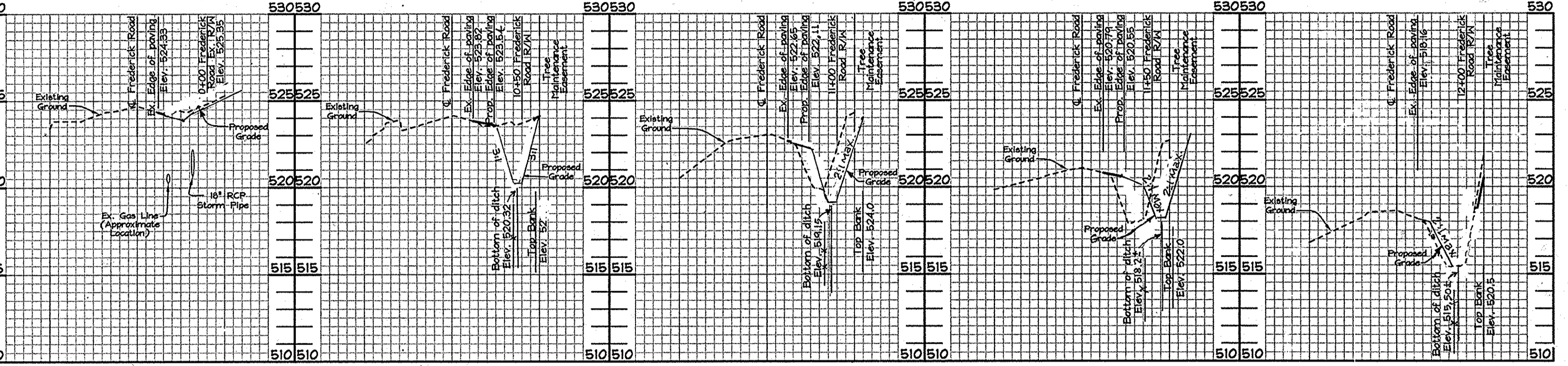
DEVELOPER
 GREENFIELD HOMES, Inc.
 6656 LUSTER DRIVE
 HIGHLAND, MARYLAND 20777
 (410) 781-6782

FOREST CONSERVATION, LANDSCAPING AND STREET TREE PLAN
WILLOW RIDGE
 LOTS 1 THRU 9, NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'D' AND BUILDABLE PRESERVATION PARCEL 'C'.
 11418 FREDERICK ROAD PARCELS 89, 91 & 201
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

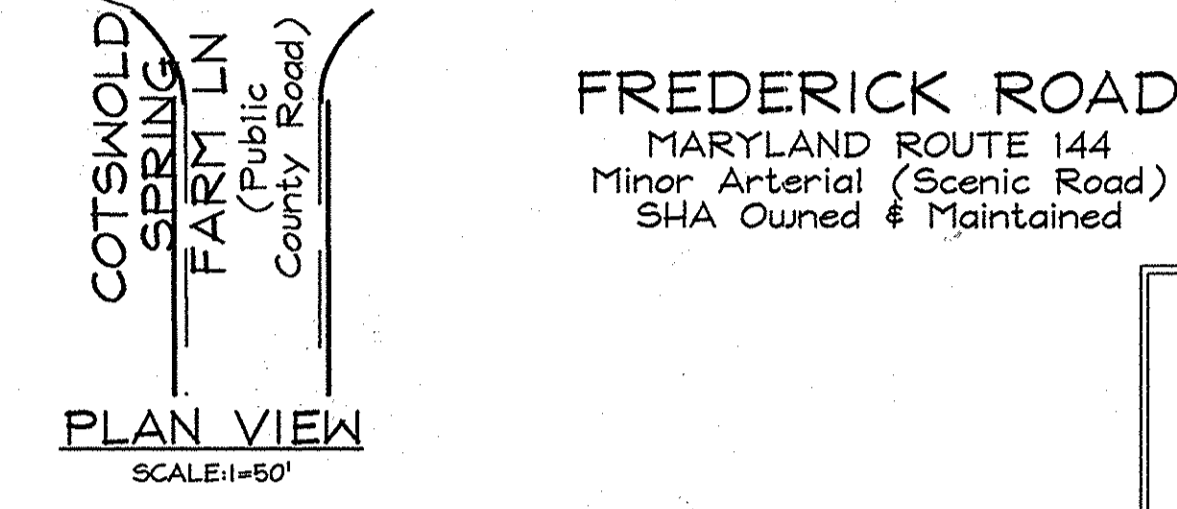
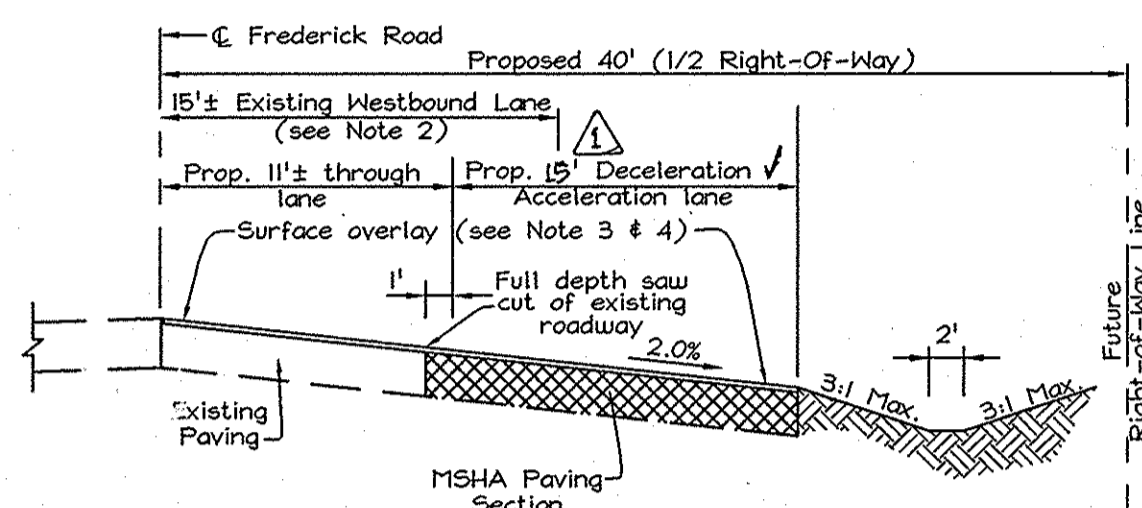
DESIGN BY: *[Signature]* PS
 DRAWN BY: MS, SMT
 CHECKED BY: ZYF
 SCALE: 1" = 50'
 DATE: June 26, 2008
 I.C.O. No.: 3093
 SHEET No.: 7 OF 8



STATION: 7+60 SCALE: 1"=50' HOR. 1"=5' VERT.
 STATION: 8+00 SCALE: 1"=50' HOR. 1"=5' VERT.
 STATION: 8+50 SCALE: 1"=50' HOR. 1"=5' VERT.
 STATION: 9+00 SCALE: 1"=50' HOR. 1"=5' VERT.
 STATION: 9+50 SCALE: 1"=50' HOR. 1"=5' VERT.



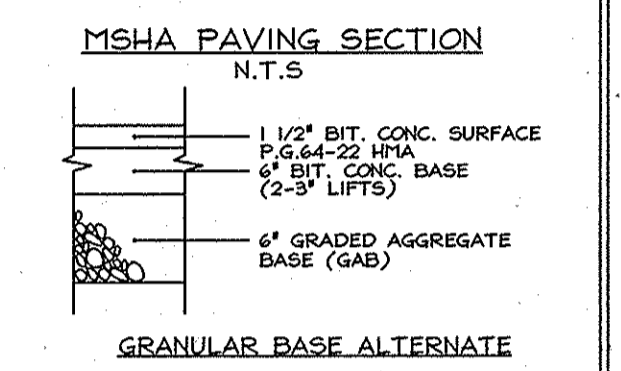
STATION: 10+00 SCALE: 1"=50' HOR. 1"=5' VERT.
 STATION: 10+50 SCALE: 1"=50' HOR. 1"=5' VERT.
 STATION: 11+00 SCALE: 1"=50' HOR. 1"=5' VERT.
 STATION: 11+50 SCALE: 1"=50' HOR. 1"=5' VERT.
 STATION: 12+00 SCALE: 1"=50' HOR. 1"=5' VERT.



PAVING MARKING LEGEND

No.	TYPE - DESCRIPTION
VA	Install 5" solid white pavement marking
VB	Install 5" solid yellow pavement marking
VC	Remove existing pavement marking line

NOTE: All pavement markings shall be reflective thermoplastic.



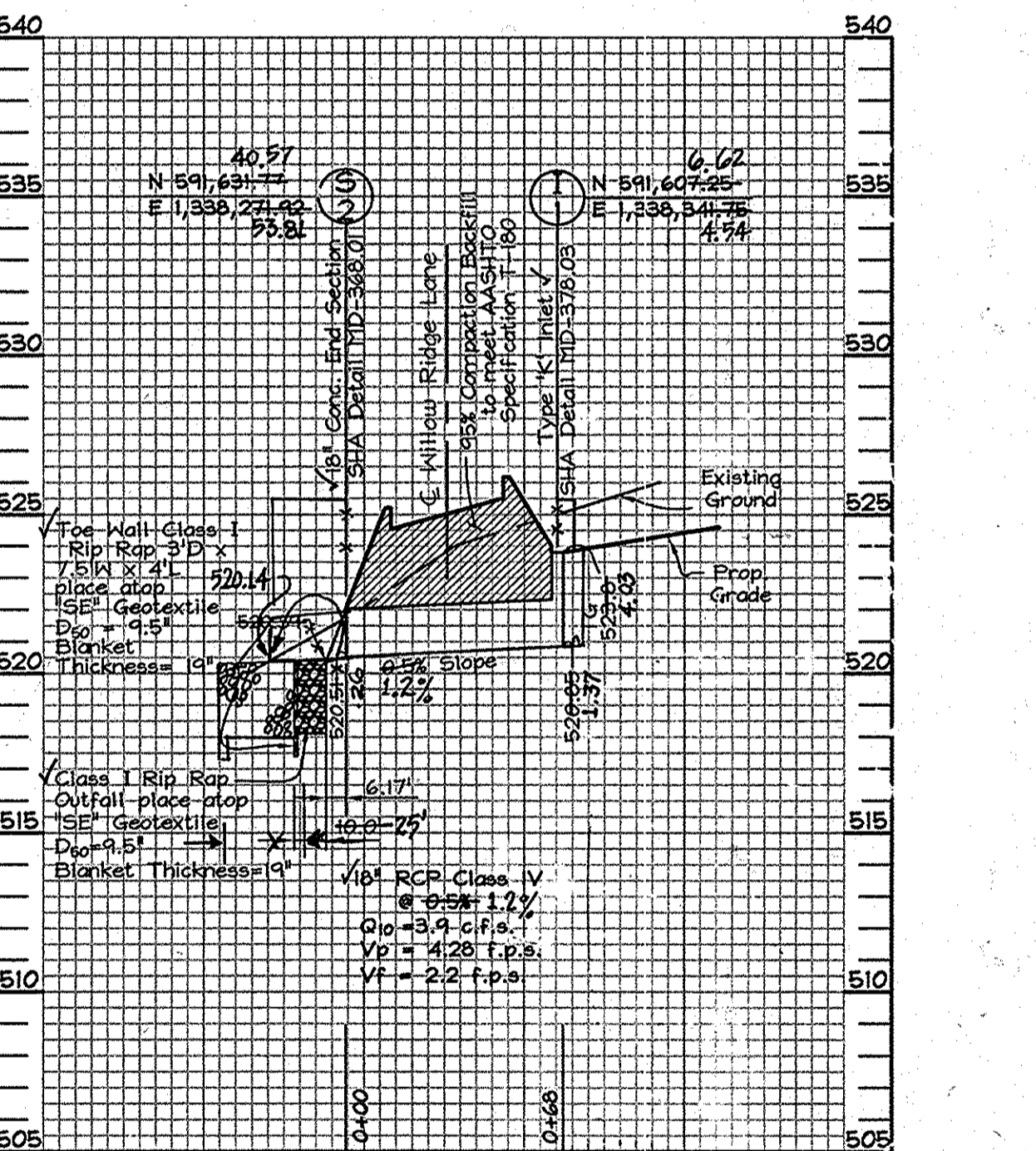
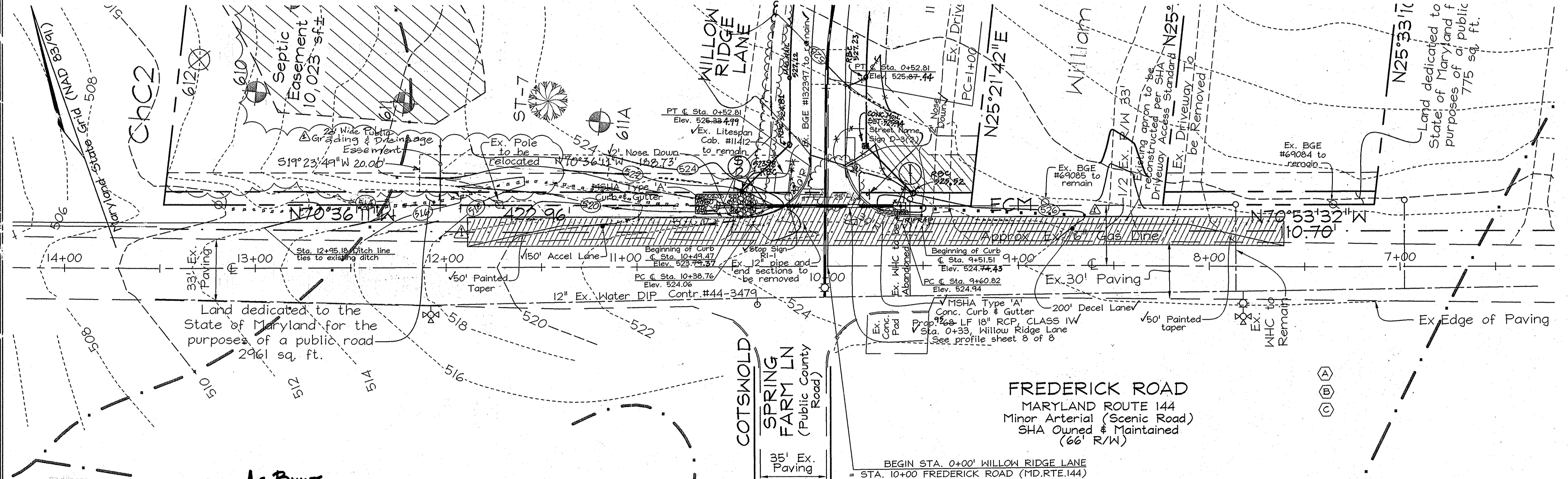
STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	INV. IN.	INV. OUT.	REMARKS
I-1	Precast Standard Type '9' Inlet Single Grate	N 591,607.25 E 1,338,341.75	523.00	520.85	520.85	MD 378.03
S-2	Standard Concrete End Section Round Concrete Pipe	N 591,631.63 E 1,338,271.68	520.85	520.85	520.85	MD 368.01

* TOP OF GRATE ELEVATION.

PIPE SCHEDULE

SIZE	TYPE	LENGTH
18"	RCP CLASS IV	1168 LF

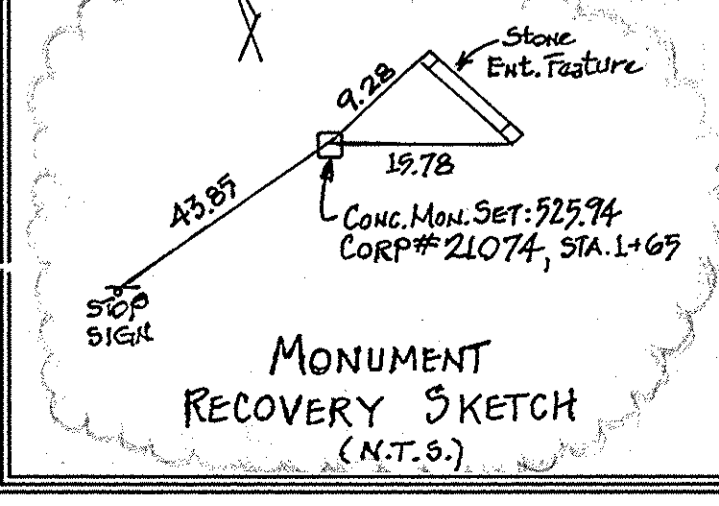


CULVERT PROFILE
 SCALE: 1"=50' HOR. 1"=5' VERT.

OWNER
 GREENFIELD HOMES, Inc.
 6656 Luster Drive
 Highland, Maryland 20777
 (410) 781-6782

DEVELOPER
 GREENFIELD HOMES, Inc.
 6656 Luster Drive
 Highland, Maryland 20777
 (410) 781-6782

WILLOW RIDGE LANE
 6656 Luster Drive
 Highland, Maryland 20777
 (410) 781-6782



As-BUILT

C. BROOKER MILLER
 PROP. L.S. # 135
 DATE 1/22/15

PLAN VIEW
 SCALE: 1"=30'

FREDERICK ROAD
 MARYLAND ROUTE 144
 Minor Arterial (Scenic Road)
 SHA Owned & Maintained
 (66' R/W)

BEGIN STA. 0+00' WILLOW RIDGE LANE
 STA. 10+00' FREDERICK ROAD (MD. RTE. 144)

NOTES:
 For patch of water line installation contractor shall use full depth paving per MSHA detail on this sheet.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Kent She... 2/11/08
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE 2/11/08

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 ... 8-7-08
 CHIEF, BUREAU OF HIGHWAYS
 DATE 8-7-08

S.H.A. WIDENING PLAN FOR FREDERICK ROAD SECTIONS & DETAILS
WILLOW RIDGE
 LOTS 1 THRU 9, NON-BUILDABLE PRESER'ATION PARCELS 'A', 'B' AND 'D' AND BUILDABLE PRESERVATION PARCEL 'C'
 FREDERICK ROAD AT COTSWOLD SPRING FARM LANE
 TAX MAP 16 GRID 15 PARCELS 93, 91 & 201
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND



FSH Associates
 Engineers Planners Surveyors
 6339 W. West Lane Ekrigle, MD 21075
 Tel: 410-587-5200 Fax: 410-798-1562
 E-mail: info@fsh.com

DESIGN BY: ...
 CHECKED BY: ...
 SCALE: AS SHOWN
 DATE: June 26, 2008
 W.O. No.: 3038
 SHEET No.: 8 OF 8