

LEGEND

MINOR CONTOUR - (2' INTERVAL)

INDEX CONTOUR - (10' INTERVAL)

SOILS BOUNDARY

CL. STREAM/POND

100' STREAM BANK BUFFER

NON TIDAL WETLAND LIMIT

WETLAND BUFFER

100 YR. FLOOD PLAIN

EXISTING DRIVEWAY

EXISTING TREELINE

PROPOSED TREELINE

APPROXIMATE LOCATION EXISTING SEPTIC EASEMENTS FII-022

MINIMUM LOT SIZE TABULATION

LOT NO.	GROSS AREA	PIPESTEM	MINIMUM LOT SIZE
3	1.4986 AC	0.1592 AC	1.3394 AC
4	0.9591 AC	0.0407 AC	0.9185 AC
5	1.1081 AC	0.0953 AC	1.0128 AC

SOILS LEGEND:

GgB - Glenelg Loom, 3 to 8 percent slopes

GgC - Glenelg Loom, 8 to 15 percent slopes

GmB - Glenville Silt Loom, 3 to 8 percent slopes

GmC - Glenville-Silt silt loams, 0 to 8 percent slopes

MaC - Manor Loom, 8 to 15 percent slopes

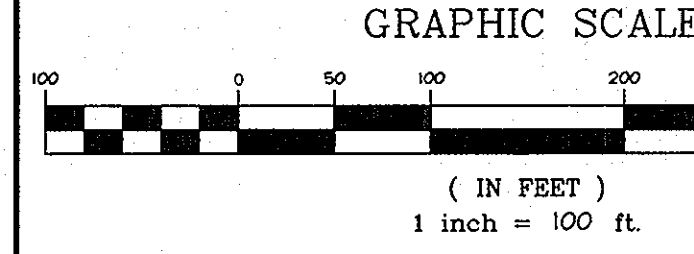
MaD - Manor Loom, 15 to 25 percent slopes

6' - 10' depth to bedrock; 20'+ to water table; slight to severe limitations for sewage disposal fields and homes w/ basements depending on slopes; erosion hazard.

Forest Conservation Note

Forest Conservation is provided by retention of 11.34 acres of forest in existing easements # 2, 4, 5, 7, 8, 9, 10 and non-easement credit areas located on Lot 2 (F00-59) and Lot 6 (F01-81) Thaler Estates, 1.18 acres of reforestation in existing easements #1 and #3 Thaler Estates (F00-59) and 3.26 acres of reforestation in existing easement #6 Thaler Estates (F00-59); total reforestation / afforestation = 4.44 Acres.

This subdivision proposes the removal of 1.6914 Acres from existing Forest Conservation Easement #8 (Retention) for the creation of proposed Lots 4 & 5. Expansion of existing (Retention) Forest Conservation Easements # 9 (0.1398 Acres), #10 (0.0450 Acres) and #8 (0.0145 Acres) in addition to a new reforestation area / Forest Conservation Easement #11 (1.4949 Acres) provides the required replacement forest conservation easement area.



EASEMENT LEGEND

PRIVATE STORMWATER MANAGEMENT CREDIT EASEMENT F II-022

EXISTING F00-59 FOREST CONSERVATION EASEMENT

PROPOSED FOREST CONSERVATION EASEMENTS

THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWER IS AVAILABLE. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE ADJUSTMENT.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division **3/24/11** DATE

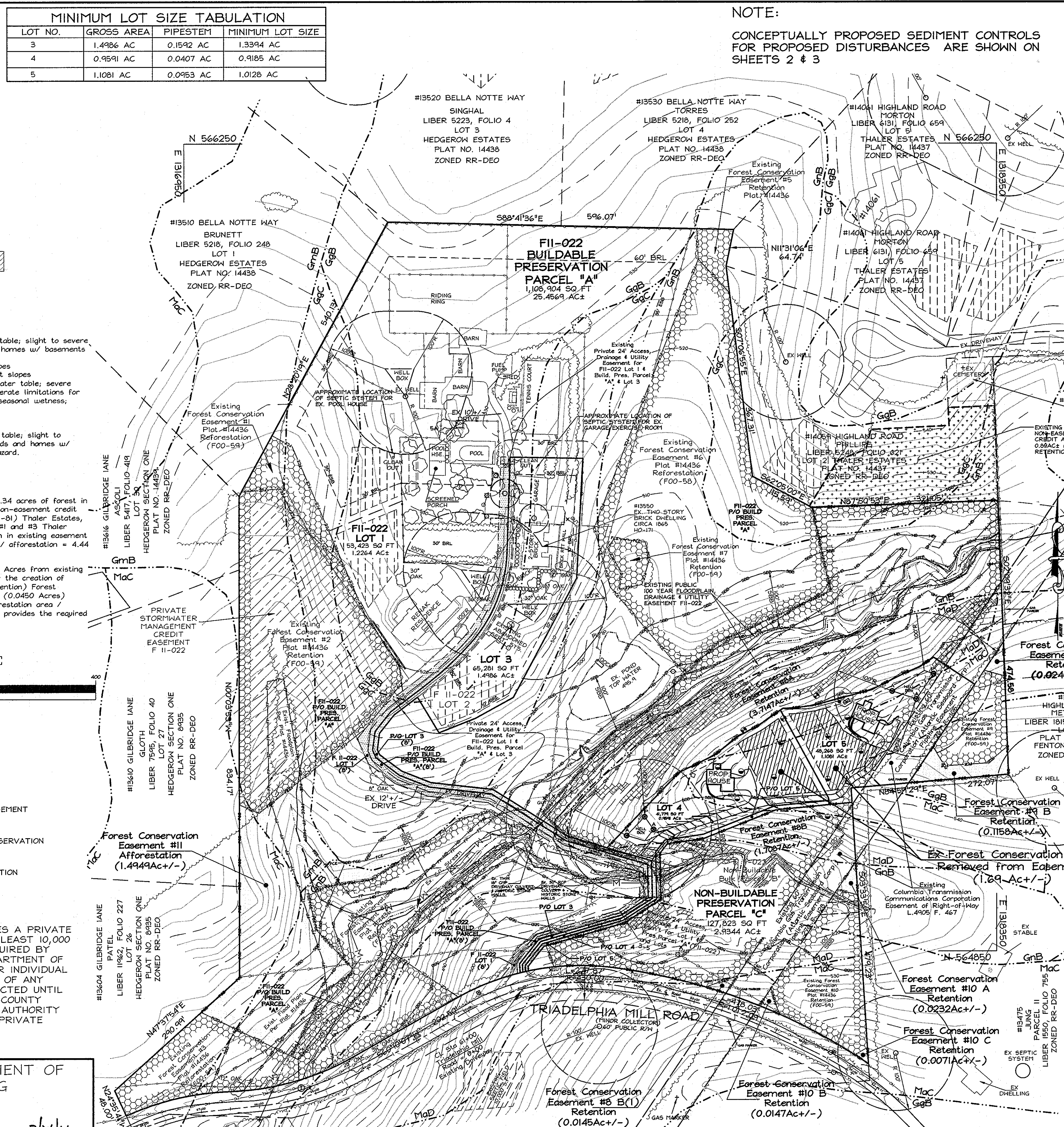
Chief, Division of Land Development **3/23/11** DATE

NOTES:

1. Related Howard County - Department of Planning & Zoning file numbers include: F00-59, F00-59, F01-81, WPO6-58, F07-44, WP-10-172, ECP 10-015 and F II-022.
2. There are existing dwellings and structures located on existing Buildable Preservation Parcel "A" and Lot 2 (New Lot 3) to remain. No new buildings, extensions or additions to the existing dwelling and structures are to be constructed at a distance less than the Zoning Regulation requirements.
3. Upon building permit review the septic systems for all proposed structures and/or existing structure expansions shall be reevaluated to determine sufficient system capacity.
4. This Environmental Concept Plan (ECP) Review is based on ECP checklist requirements; Zoning Regulations and Subdivision and Land Development Regulations will be evaluated and approved under the final plan submission.
5. Proposed activities under ECP 10-015 within the environmental buffers were determined essential or necessary disturbance per Subsection 16.116.c of the Subdivision and Land Development Regulations.

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED FROM UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18184. **3/16/11**

Bruce D. Burton
BRUCE D. BURTON

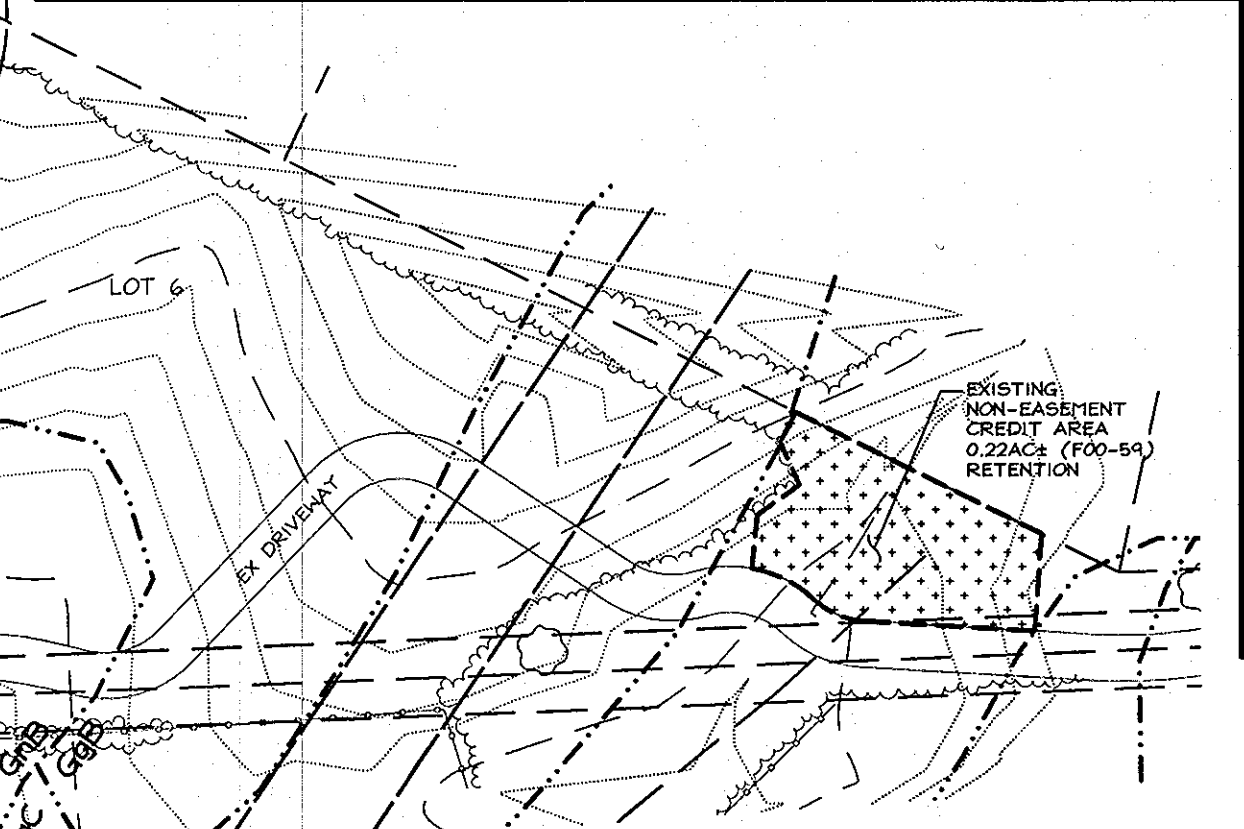
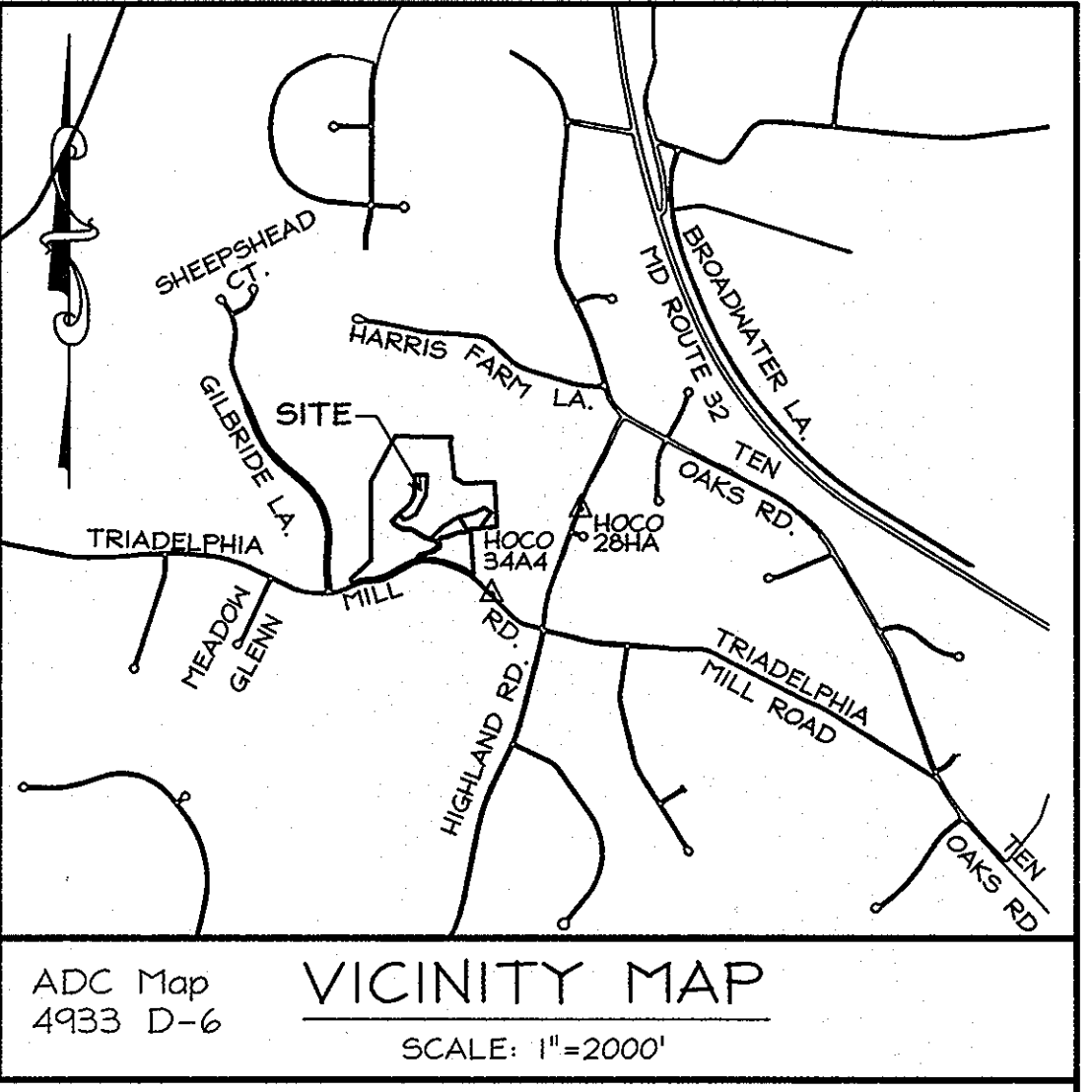


NOTE:

CONCEPTUALLY PROPOSED SEDIMENT CONTROLS FOR PROPOSED DISTURBANCES ARE SHOWN ON SHEETS 2 & 3

INDEX OF SHEETS

No.	Description
1	ENVIRONMENTAL CONCEPT PLAN - OVERALL
2	ENVIRONMENTAL CONCEPT PLAN
3	ENVIRONMENTAL CONCEPT PLAN
4	ENVIRONMENTAL CONCEPT PLAN - SWM DETAILS
5	ENVIRONMENTAL CONCEPT PLAN - SWM DETAILS
6	ENVIRONMENTAL CONCEPT PLAN
7	TREE IDENTIFICATION & SPECIMEN TREE LOCATIONS
8	TURNING RADIUS EXHIBIT & DRIVEWAY PROFILE



In accordance with Checklist Item III, Concept Plan - Number II.

1. Natural Resource Protection

The project proposal is the resubdivision of Lot 2 and Non-Buildable Bulk Parcel "B" of Hedgerow Farm F II-022 to create new Lots 3-5 & Non-Buildable Preservation Parcel "C". The owners propose new dwellings on a portion of existing Forest Conservation Easement #8 (F00-59) known as Lots 4 & 5 and Lot 3 (existing Lot 2) contains the existing historic dwelling and garage to remain. This lot is included as the pipestem is part of the resubdivision. The existing forest conservation area removed from easement will be replaced with a new Easement #11 connecting existing Forest Conservation Easements #2, #3 and #4 and expansion of existing Easements # 8, 9, 10. The natural resources will be protected as the development on Lot 5 is outside existing environmental features. A waiver shall be submitted to allow the disturbances within the stream bank buffer. These disturbances include drilling the well for Lot 4 and construction of a portion of the Use-in-Common driveway. The proposed use-in-common driveway for Lots 4 & 5 will be located within the bed of an existing logging road (to the extent practical) minimizing disturbance to the existing forest. All necessary precautions will be taken and shown on the Construction Drawings to protect the natural resources which remain in the protected Forest Conservation (Retention) Easement. Existing Buildable Preservation Parcel "A", the residue piece of the project property, contains all (with the exception of pipestem crossings and the portion of Lot 4) of the existing environmental features, to include floodplains, wetlands, stream buffers and forest conservation areas.
2. Maintenance of Natural Flow Patterns

Proposed grading, directing rooftop runoff into the subspace of a permeable surface driveways and the construction of the proposed Dry Well or Rain garden will maintain natural / sheet flow patterns that currently exist in this wooded portion of the Hedgerow Farm project.
3. Reduction of Impervious area

The conceptual reduction in impervious area through better site design is achieved through the conceptual Environmental Site Design (ESD) for this project. The ESD concept includes Alternative Surface - Permeable Surface for the proposed driveways imperviousness, "Rooftop disconnection" via conveyance of a portion of the rooftop runoff into the subspace of the driveway Permeable surface, rain garden and/or Dry Well for the remaining portions of the rooftop runoff.
4. Integration of Erosion & Sediment Controls into stormwater management strategy

Conceptually proposed is perimeter silt fence around the septic areas to manage / protect any septic system installation, super silt fence will be provided around the proposed new dwelling construction on Lots 4 & 5. Lot 4 & 5 Disturbances will be less than 4,400 SF each; the developer wishes to save the majority of the existing trees located on Lot 4 & 5. The construction of the permeable surface driveways will occur with minimal cut and be limited to that which can be completed within an agreed upon clear weather forecast. The Shared driveway construction will be protected with silt fence perimeter controls.
5. Implementation of ESD planning techniques & practices to MEP.

The use of Alternative Surface (Permeable Surface) is proposed as well as the use of a Dry Well and / or rain garden. The dry well will percolate the rooftop runoff whereas the rain garden (liner required) will filter the rooftop runoff and its discharge will flow into an existing Forest Conservation Area. Together these methods will treat the proposed runoff from the proposed development to the MEP.
6. Request for Design Manual & Waiver Petition for environmental & stormwater design.

This project will be subject to a new waiver petition WP II-XX which requests relief from Section 16.120(b)(4)(ii)(b) to allow environmental features on lots less than 200 sq ft in size, and to allow the elimination of the 35 foot environmental setback from the 100' stream bank buffer on Lot 4. Like previous WP 10-172 / F II-022; Lots 3-5's pipestems are proposed to follow the existing driveway and therefore cross / contain environmental features. The developer also requests relief from Section 16.116(a)(2)(ii) to allow grading, removal of vegetative cover and trees & paving within the 100 feet streambank buffer for the "well box" location and construction of the portion of the Use-in-Common driveway on Lot 4 which serves Lot 4 & 5. The "well box" location has been approved by the Howard County Health Department as part of the Parcelation Certification Plat (approved by the Health Officer 9/15/2010). Previously, as part of ECP 10-015 (July 8, 2010) a Design Manual waiver was approved for Hedgerow Farm allowing the continued use of the 12' +/- existing historic paved driveway in lieu of the required 16 foot shared driveway and also allowing the requirement of providing a Public Access Place roadway due to crossing a floodplain. The developer will request a Design Manual Waiver to reduce the required 16 foot use-in-common driveway width for Lots 4 & 5 to a minimum width of 12 feet.

SITE ANALYSIS DATA

- Gross Area: 6.50 Ac ±
- Lot 2, 4 and 5 ± Pres. Parcel "C", formerly F II-022 Lot 2 & Non-Build Bulk Parcel "B"
- Wetland Buffer Area: 0.1629 Ac ±
- Lot 3, 4 and 5 pipestems & Pres. Parcel "C"
- 100 Year Floodplain Area: 0.0182 Ac ±
- Lot 3 pipestem (F II-022 Lot 2)
- Forested Area: 4.13 Ac ±
- Lot 3, 4 and 5 ± Pres. Parcel "C"
- Forest Con. area to be removed & replaced
- Steep Slope Area: 0.26 Ac ±
- Lot 3, 4 and 5 ± Pres. Parcel "C"
- Eroding Soils Area: Glenville 1.08 Ac ±
- Lot 3, 4 and 5 ± Pres. Parcel "C"
- Project Area: 6.50 Ac ±
- Limit of Disturbance: 0.70 Ac ±
- Proposed Site Use: Residential
- Green Open Area: 5.83 Ac ± of 6.50 Ac ± or 90%
- Impervious Area (Existing + FII-022): 1.22 Ac ±
- Impervious Area (Proposed):
- 1.11 Ac, (Less Perm. Surface @ 0.11Ac ±)
- + 0.08 Ac ± Prop.
- 1.19 Ac ± Total
- * 0.28 Ac± Prop. Imp. is reduced by Prop. Permeable Surface by 0.20 Ac ±

1.19 Ac / 31.9% Ac = 3.7 % Impervious TOTAL SITE

REVISIONS

No.	By	Date	Description

LDE inc.
Engineers • Surveyors • Planners
Historic Carriage House • 7520 Main Street • Suite 203 • Sykesville, Maryland • 21784
(410)795-6391 • (410)795-6392 • FAX(410)795-9540 • www.Landsurveyormd.com

DESIGNED	ENVIRONMENTAL CONCEPT PLAN - OVERALL PLAN	SCALE
BDB	HEDGEROW FARM LOTS 3-5 AND NON-BUILDABLE PRESERVATION PARCEL "C"	1"=100'
EDS		
DRAWN	A Resubdivision of Lot 2 & Non-Buildable Bulk Parcel "B" and Forest Conservation Easements on Buildable Preservation Parcel "A" - Hedgerow Farms, Plat # XXX	DRAWING
LDE		1 of 6
CHECKED	Triadelphia Mill Road - RR-DEO Zoning Tax Map 28 - Grd 20 Parcel 64 5th Election District - Howard County, Maryland Previous Submittals: WPO0-65, F00-59, F01-81, WPO6-58, F07-44, WPO1-172, ECP 10-015, FII-022.	JOB NO.
BDB		09-009.1
DATE	OWNER/DEVELOPER: Hedgerow Farm LLC 13803 Lakeside Drive Clarksville, MD 21029-1025 (301)802-1051	FILE NO.
2/2011		ECP 11-020

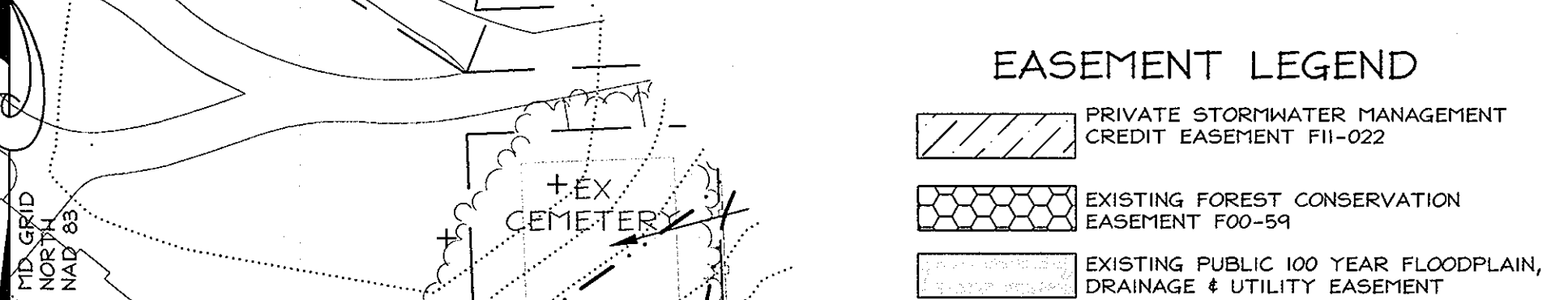
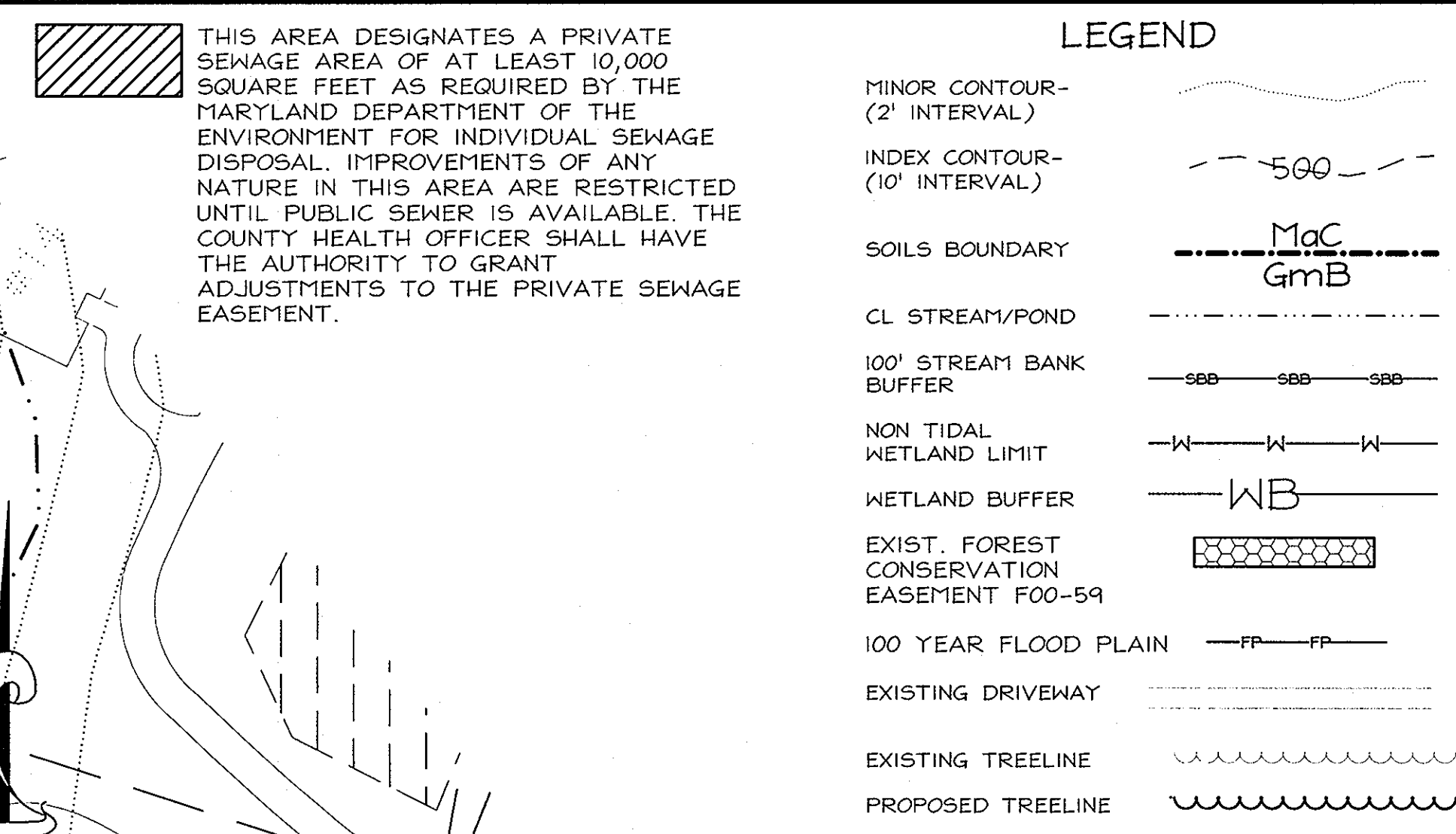
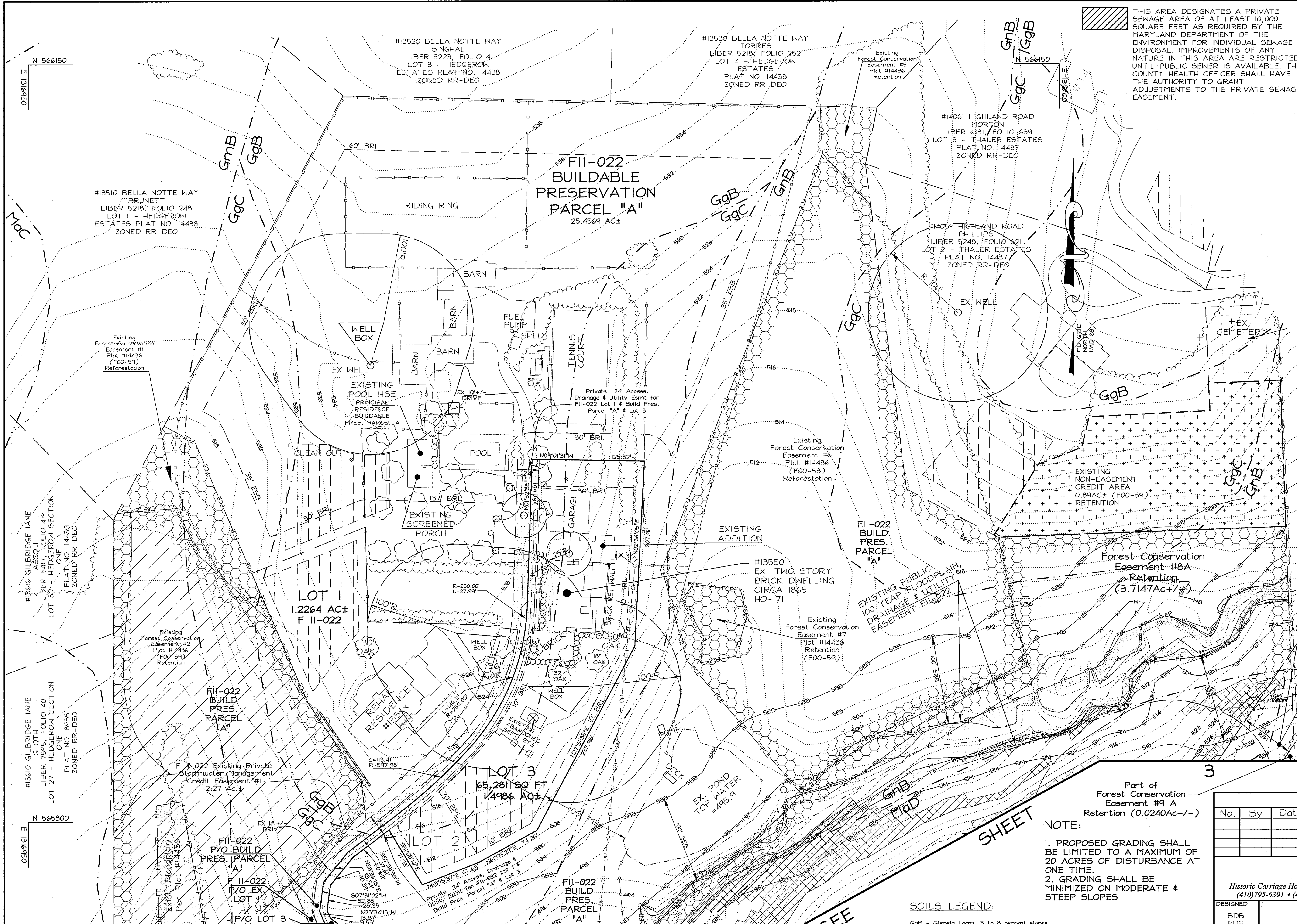
NOTE:

Approval of this Environmental Concept Plan (ECP) does not constitute approval of any associated subdivision and/or site development plan. Review of this project against the Howard County Subdivision and Land Development Regulations and the Howard County Zoning Regulations shall occur at the subdivision and site plan stages. Therefore, the applicant and consultant should expect additional and more detailed comments as the project progresses.

Concept Plan Proposal

The stormwater proposal will result in the development of Lots 4 & 5 being placed back to "woods in good condition". The properties, Lots 4 & 5, will be developed using ESD methods. The "2000 Maryland Stormwater Design Manual target is "woods in good condition". The proposed site design will incorporate the use of Alternative Surfaces - Permeable Surfaces and Filter Practice - Rain Garden & or Dry Well. The downhill portion of the proposed homes will drain toward a Rain Garden/Dry well sized for the rooftop impervious areas. The Rain Garden will have an impermeable liner and outlet toward existing Forest Conservation Easement on Buildable Preservation Parcel "A" FII-022. Also, the proposal is for a Permeable Surface to be utilized. The entire uphill portion of the homes rooftop runoff will drain into the sub base of the driveway as well as the impermeable portion of the driveway (within 10' of the home.) As discussed in the April 21, 2010 seminar, this proposal will result in the development of Lots 4 & 5 being placed back to wood in good condition.

Per Howard County SWM Seminar Example Packet - April 2010; "HDE has indicated that... For residential detached developments with small amounts of impervious areas the impervious areas should be treated at the source using ESD practices. If the ESD practices address the calculated Pe for the site impervious area and the ESDV, then the remaining grass areas of the site shall be considered adequate and no further treatment will be required." Therefore, no additional "management" is required for the Septic Area / Well Radius portion of site which shall remain as existing or placed to lawn grasses.



APPROVED:
DEPARTMENT OF
PLANNING AND
ZONING

[Signature] 3/24/11
CHIEF, DEVELOPMENT
ENGINEERING DIVISION DATE

[Signature] 3/23/11
CHIEF, DIVISION OF LAND
DEVELOPMENT DATE

**DEVELOPER'S
CERTIFICATE**

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.

[Signature] 3/16/11
SIGNATURE OF DEVELOPER
ROBERT B. WHITE DATE

REVISIONS

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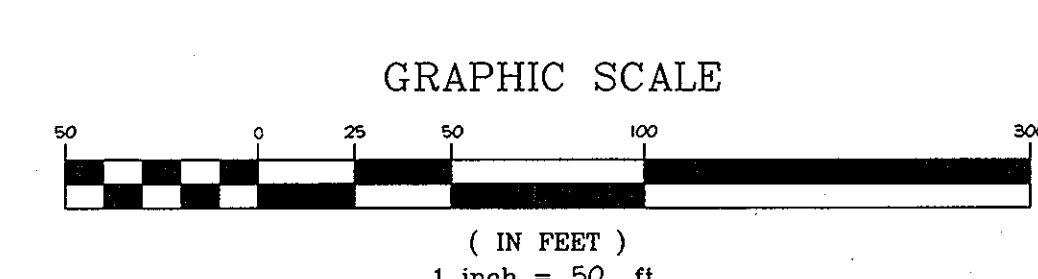
DESIGNED BDB EDS	ENVIRONMENTAL CONCEPT PLAN HEDGEROW FARM LOTS 3-5 AND NON-BUILDABLE PRESERVATION PARCEL "C"	SCALE 1"=50'
DRAWN LDE	A Resubdivision of Lot 2 & Non-Buildable Bulk Parcel "B" and Forest Conservation Easements on Buildable Preservation Parcel "A" - Hedgerow Farms, Plat # XXX	DRAWING 2 of 6
CHECKED BDB	Triadelphia Hill Road - RR-DEO Zoning Tax Map 28 - Grid 20 - Parcel 64 5th Election District - Howard County, Maryland	JOB NO. 09-009.1
DATE 2/2011	OWNER/DEVELOPER: Hedgerow Farm LLC 13803 Lakeside Drive Clarksville, MD 21029-1025 (301)802-1051	FILE NO. ECP 11-020

Part of Forest Conservation Easement #9 A Retention (0.0240Ac+/-)

NOTE:
1. PROPOSED GRADING SHALL BE LIMITED TO A MAXIMUM OF 20 ACRES OF DISTURBANCE AT ONE TIME.
2. GRADING SHALL BE MINIMIZED ON MODERATE & STEEP SLOPES

SOILS LEGEND:

GgB - Glenelg Loam, 3 to 8 percent slopes
GgC - Glenelg Loam, 8 to 15 percent slopes
4" - 10" depth to bedrock; 10" to water table; slight to severe limitations for sewage disposal fields and homes w/ basements depending on slopes; erosion hazard.
GmB - Glenville Silt Loam, 3 to 8 percent slopes
GmC - Glenville silt loam, 0 to 8 percent slopes
4" - 10" depth to bedrock; 15' to 3' to water table; severe limitations for sewage disposal fields moderate limitations for homes w/ basements; impeded drainage; seasonal wetness; erosion hazard.
MaC - Manor Loam, 8 to 15 percent slopes
MaD - Manor Loam, 15 to 25 percent slopes
6" - 10" depth to bedrock; 20" to water table; slight to severe limitations for sewage disposal fields and homes w/ basements depending on slopes; erosion hazard.



NOTE: No Disturbance is proposed on this sheet. This sheet is included in the set to show the extent of existing Lot 2 (Plat # xxxxxx) being resubdivided into Lot 3; as well as the extent of Buildable Preservation Parcel "A" (Plat # xxxxxx) for the addition of Forest Conservation Easement (Retention) as shown herein.

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. 19184, EXPIRES 12/31/2011.

SIGNED *[Signature]* 3/16/11
BRUCE D. BURTON

F:\09-009\1009-0091 ECP 2.dwg, ECP 2, 3/16/2011 12:53 PM

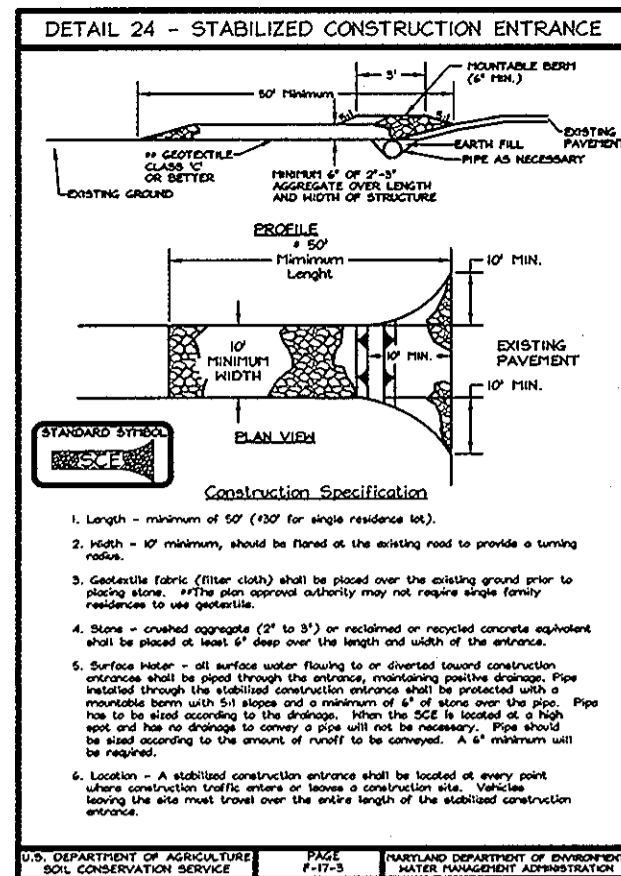
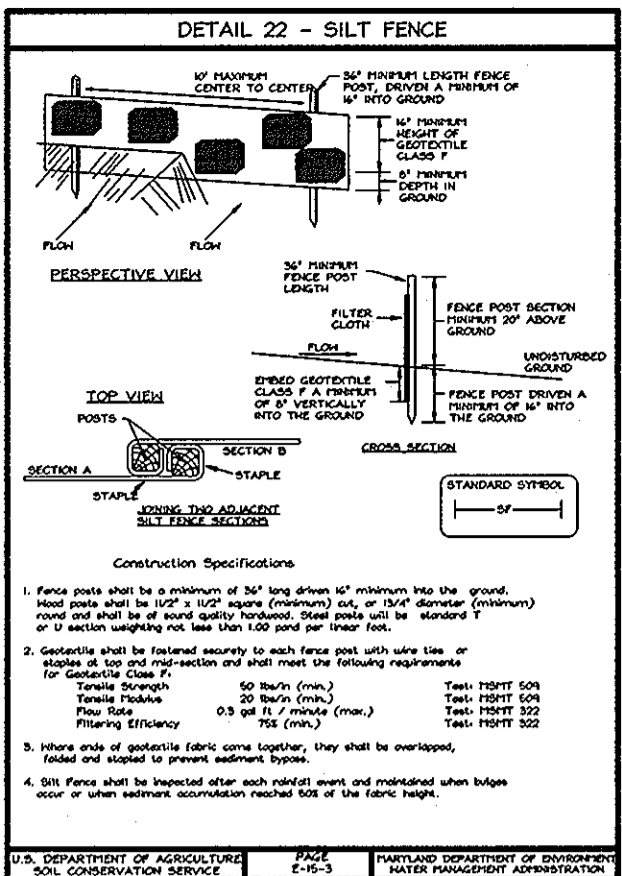
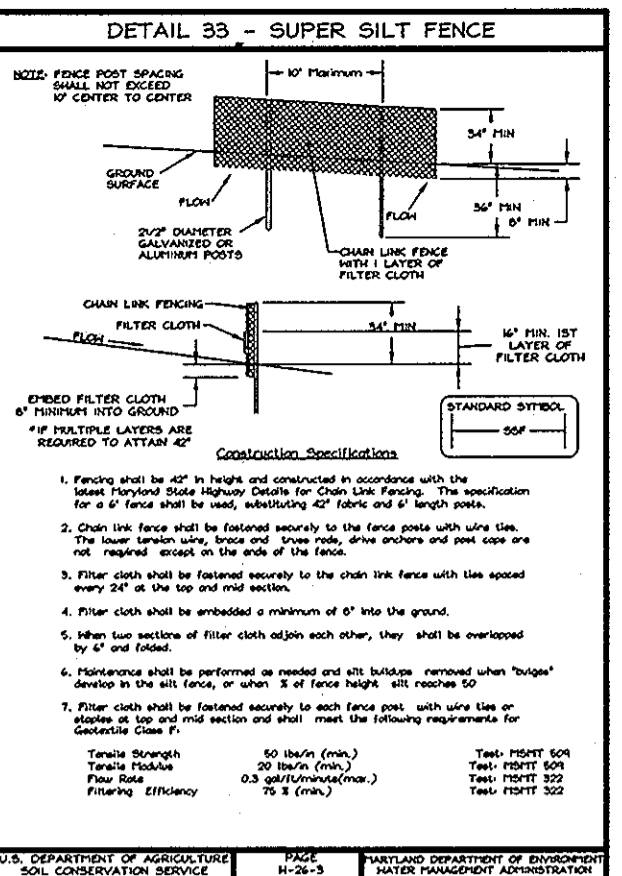
HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction, (313-1855.)
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
- Following initial soil disturbance or 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 shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (Section G) for permanent seeding, sod, temporary seeding, and mulching. Temporary stabilization which can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:

Total Area of Site	31.96	Acres
Area Disturbed	0.70	Acres
Area to be roofed or paved	0.28	Acres
Area to be vegetatively stabilized	0.42	Acres
Total Cut	800	Cu. Yds. ±
Total Fill	800	Cu. Yds. ±

* Contractor shall complete their own earthwork analysis
Offsite waste/borrow area location N/A

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

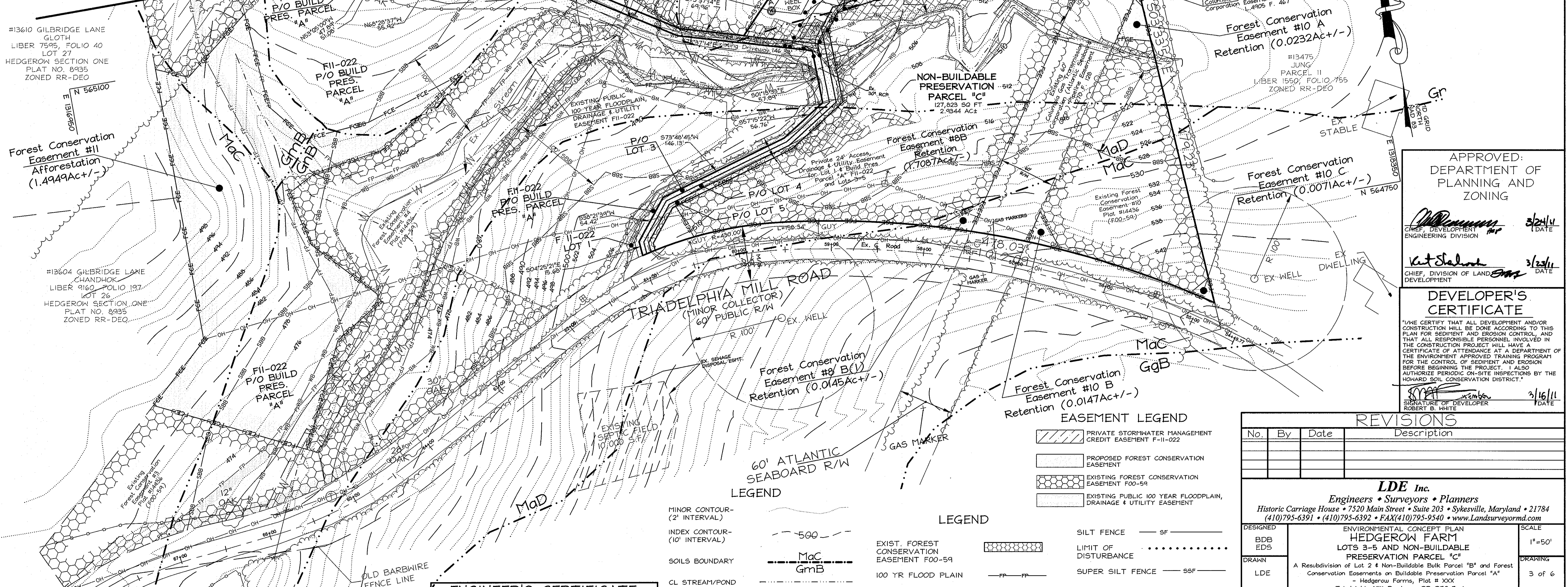
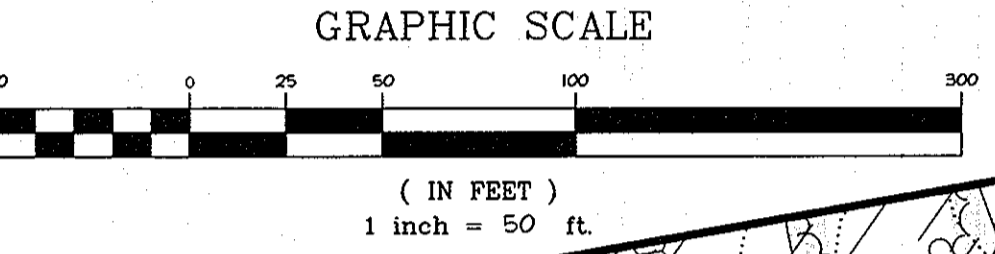


SOILS LEGEND:

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- 4' - 10' depth to bedrock; 10' to water table; slight to severe limitations for sewage disposal fields and homes w/ basements; erosion hazard.
- MaC - Manor Loom, 8 to 15 percent slopes
- MaD - Manor Loom, 15 to 25 percent slopes
- 4' - 10' depth to bedrock; 20' to water table; slight to severe limitations for sewage disposal fields and homes w/ basements depending on slopes; erosion hazard.

Ex. Forest Conservation area to be removed from easement (1.69 Ac +/-)

NOTE:
This sheet shows the Limits of Disturbance and conceptual sediment controls required for the construction of the proposed homes & driveways on Lots 4 & 5.



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. 14184, EXPIRES 03/31/11.
BRUCE D. BURTON
2/16/11

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT 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.
BRUCE D. BURTON
2/16/11
SIGNATURE OF ENGINEER
BRUCE D. BURTON, P.E. 14184

- MINOR CONTOUR - (2' INTERVAL) - - - - -
- INDEX CONTOUR - (10' INTERVAL) - - - - -
- SOILS BOUNDARY - - - - -
- CL STREAM/POND - - - - -
- 100' STREAM BANK BUFFER - - - - -
- NON TIDAL WETLAND LIMIT - - - - -
- WETLAND BUFFER - - - - -

- LEGEND**
- EXIST. FOREST CONSERVATION EASEMENT F00-59
 - 100 YR FLOOD PLAIN
 - EXISTING DRIVEWAY
 - EXISTING TREELINE
 - PROPOSED TREELINE

- EASEMENT LEGEND**
- PRIVATE STORMWATER MANAGEMENT CREDIT EASEMENT F-II-022
 - PROPOSED FOREST CONSERVATION EASEMENT
 - EXISTING FOREST CONSERVATION EASEMENT F00-59
 - EXISTING PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT

APPROVED:
DEPARTMENT OF PLANNING AND ZONING
3/24/11
DATE

3/23/11
DATE

DEVELOPER'S CERTIFICATE
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.
ROBERT B. WHITE
3/16/11
DATE

REVISIONS			
No.	By	Date	Description

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DESIGNED	BDB	EDS
DRAWN	LDE	
CHECKED	BDB	
DATE	2/20/11	

ENVIRONMENTAL CONCEPT PLAN
HEDGEROW FARM
LOTS 3-5 AND NON-BUILDABLE PRESERVATION PARCEL "C"
A Resubdivision of Lot 2 & Non-Buildable Bulk Parcel "B" and Forest Conservation Easements on Buildable Preservation Parcel "A" - Hedgerow Farms, Plat # XXX
Triadelphia Mill Road - RR-DEO Zoning
Tax Map 28 - Grid 20 - Parcel 64
5th Election District - Howard County, Maryland
Previous Submittals: WP00-65, F00-59, F00-59, F01-81, WP06-59, F07-44, WP10-172, ECP 10-018, FII-022.

OWNER/DEVELOPER:
Hedgerow Farm LLC
13803 Lakeside Drive
Clarksville, MD 21029-1025
(301)802-1051

SCALE
1"=50'
DRAWING
3 of 6
JOB NO.
09-009.1
FILE NO.
ECP 11-020

NOTE:
1. PROPOSED GRADING SHALL BE LIMITED TO A MAXIMUM OF 20 ACRES OF DISTURBANCE AT ONE TIME.
2. GRADING SHALL BE MINIMIZED ON MODERATE & STEEP SLOPES

NOTE:

LDE, Inc. provides that listed in Appendix B.4. of the 2000 Maryland Stormwater Design Manual Volume 2 as guidelines to contractor and guidance in the shown overdrain & underdrain system. The contractor shall provide verification that the materials used meet the specifications shown within Appendix B.4.

INSPECTION CHART FOR PERMEABLE SURFACES

Table with columns: STAGE, Engineer's Approval (Initials, Date). Rows include: 1. Inspection of excavation to subgrade... 2. Inspection during placement and backfill... 3. Inspection during placement of subbase material... 4. Inspection during placement of surface material... 5. Inspection upon the completion of final grading...

Please notify certifying engineer 48 hours prior to commencing construction

Engineer's Name: LDE, Inc. Phone Number: 410-715-1070

MAINTENANCE CRITERIA FOR PERMEABLE SURFACES

- 1. PAVEMENTS SHOULD BE USED WHEN REGULAR MAINTENANCE CAN BE PERFORMED TO ENSURE LONG TERM PERFORMANCE. 2. MAINTENANCE TO INCLUDE, SHEEP AND VACUUMING TO REMOVE SEDIMENT ACCUMULATION TO ENSURE SURFACE POROSITY... 3. DRAINAGE PIPES, INLETS, STONE EDGES AND ANY OTHER STRUCTURES ANNUALLY OR DRAINING TO THE SUBBASE SHOULD BE CLEANED REGULARLY... 4. AVOID TRUCKS FROM TRACKING AND SPILLING MATERIALS WHICH CAN BE GROUND INTO THE PERMEABLE PAVEMENT... 5. DECKERS SHOULD BE USED IN MODERATION. DECKERS SHALL BE NON TOXIC AND ORGANIC...

B.4.B Specifications for Permeable Surfaces

These specifications include information on acceptable materials for typical applications and are not exclusive or limiting.

1. Pervious Concrete Specifications

Design Thickness - Pervious concrete applications shall be designed so that the thickness of the concrete slab shall support the traffic and vehicle types that will be carried. Applications may be designed using either standard pavement procedures (e.g., AASHTO, ACI 308R, ACI 309R) or using structural values derived from flexible pavement design procedures.

Mix & Installation - Traditional Portland cements (ASTM C 150, C 1157) may be used in pervious concrete applications. Phosphoric acid admixtures may also be used. Materials should be tested (e.g., trial batching) prior to construction so that critical properties (e.g., setting time, rate of strength development, porosity, permeability) can be determined.

Aggregate - Pervious concrete contains a limited fine aggregate content. Commonly used gradations include ASTM C 33 No. 67 (3/4 in. to No. 4), No. 8 (3/8 in. to No. 16) and No. 84 (3/8 in. to No. 50) sieves. Single-sized aggregate (up to 1 inch) may also be used.

Water Content - Water-to-cement ratios between 0.27 and 0.30 are used routinely with proper inclusion of chemical admixtures. Water quality should meet ACI 308. As a general rule, potable water should be used although recycled concrete production water meeting ASTM C 94 or AASHTO M 157 may also be used.

Admixtures - Chemical admixtures (e.g., retarders or hydration-stabilizers) are used to obtain special properties in pervious concrete. Use of admixtures should meet ASTM C 494 (chemical admixtures) and ASTM C 260 (air entraining admixtures) and closely follow manufacturer's recommendations.

Base Course - The base course shall be AASHTO No. 3 or 4 course aggregate with an assumed open pore space of 30% (n = 0.30).

2. Permeable Interlocking Concrete Pavements (PICP)

Paver Blocks - Blocks should be either 3 in. or 4 in. thick, and meet ASTM C 936 or CSA A231.2 requirements. Applications should have 20% or more (40% preferred) of the surface area open. Installation should follow manufacturer's instructions, except that infill and base course materials and dimensions specified in this Appendix shall be followed.

Infill Materials and Leveling Course - Openings shall be filled with ASTM C-33 graded sand or sandy loam. PICP blocks shall be placed on a one-inch thick leveling course of ASTM C-33 sand.

Base Course - The base course shall be AASHTO No. 3 or 4 course aggregate with an assumed open pore space of 30% (n = 0.30).

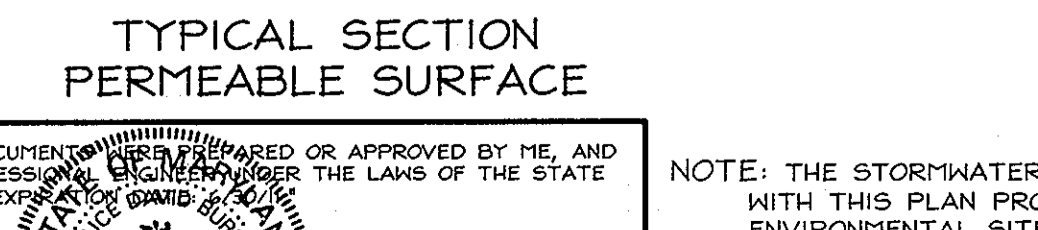
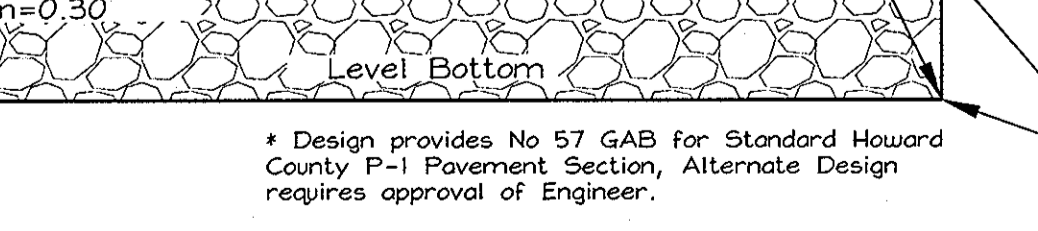
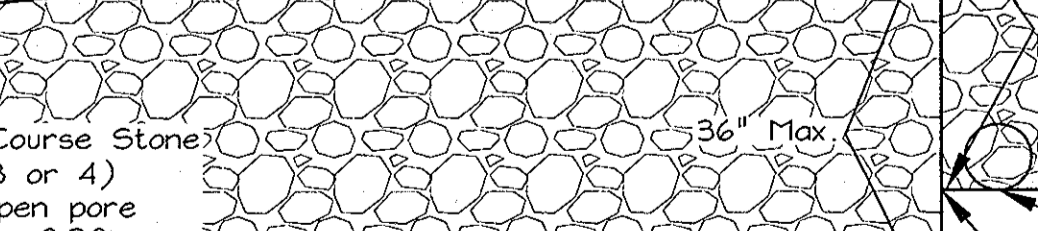
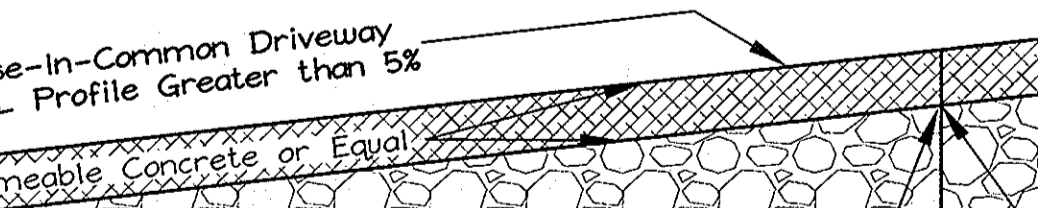
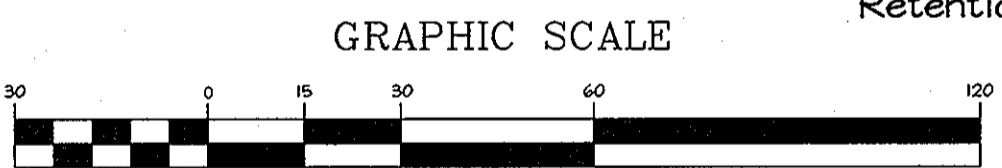
PERMEABLE SURFACE UNDERDRAIN OUTFALL LOCATIONS

Table with columns: CL STA DRIVEWAY, UNDERDRAIN INVERT ELEV, CL STA DRIVEWAY, UNDERDRAIN INVERT ELEV. Rows include: 0+09.4, 0+17, 0+34.74, 0+49.21, 0+63.50, 0+77.74, 0+92.00, 1+06.37, 1+20.66, 1+34.95, 1+50.25, 1+66.45.

LEGEND

HDS HEALTH DEPARTMENT STORMWATER MANAGEMENT SETBACK

CRZ SPECIMEN TREE CRITICAL ROOT ZONE

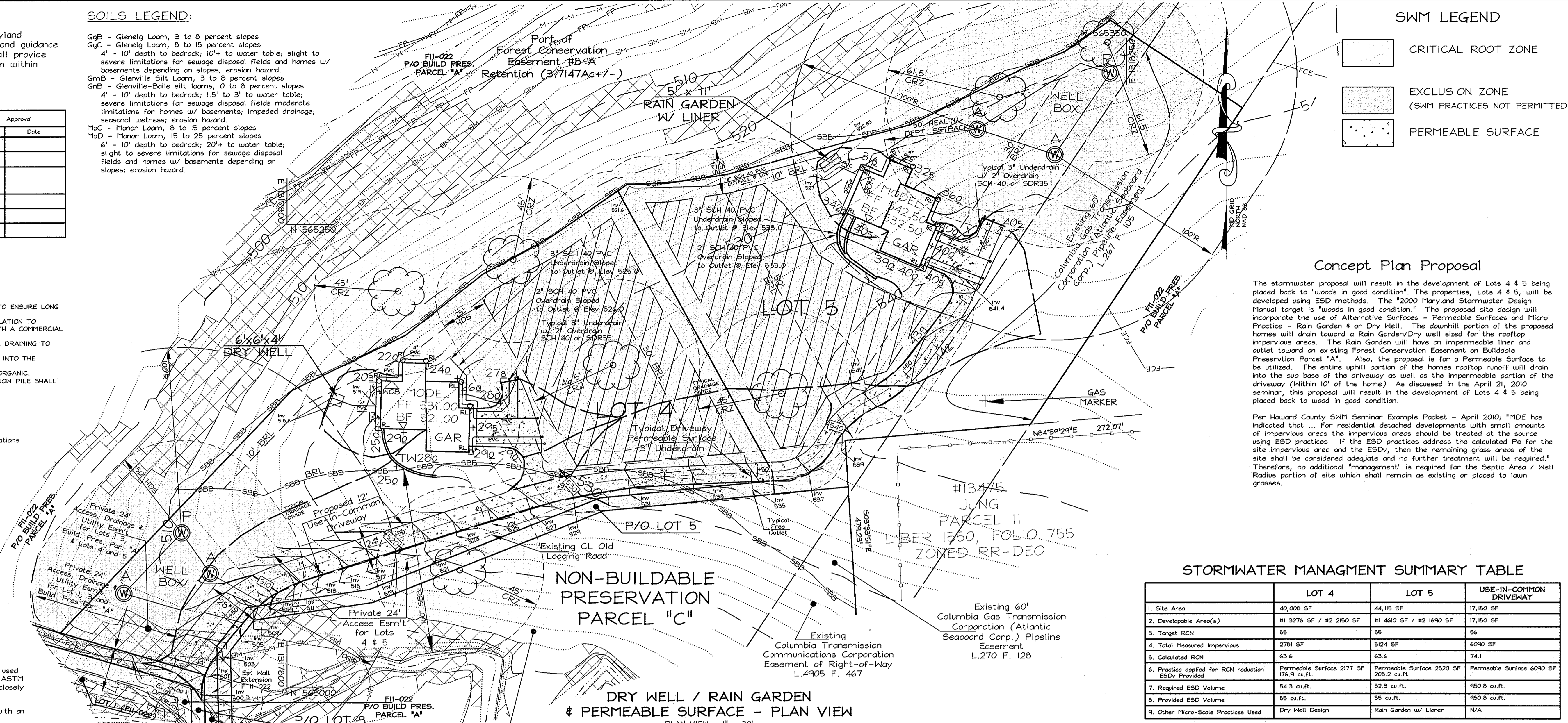


I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 11814, EXPIRES 01/01/2021. SIGNED: BRUCE D. BURTON, PROFESSIONAL ENGINEER, 9/16/11.

NOTE: THE STORMWATER MANAGEMENT DESIGN SHOWN WITH THIS PLAN PROVIDES COMPLIANCE WITH ENVIRONMENTAL SITE DESIGN AS REQUIRED BY 5/5/10. FINAL DESIGN OF ALL STORMWATER CONTROLS AND FEATURES SHALL BE PROVIDED PRIOR TO BUILDING PERMIT ISSUANCE.

SOILS LEGEND:

- G6B - Glenelg Loam, 3 to 8 percent slopes
G6C - Glenelg Loam, 8 to 15 percent slopes
4' - 10' depth to bedrock; 10' to water table; slight to severe limitations for sewage disposal fields and homes w/ basements depending on slopes; erosion hazard.
GnB - Glenville Silt Loam, 3 to 8 percent slopes
GnB - Glenville Silt Loam, 0 to 8 percent slopes
4' - 10' depth to bedrock; 15' to 3' to water table; severe limitations for sewage disposal fields moderate limitations for homes w/ basements; impeded drainage; seasonal wetness; erosion hazard.
M6C - Manor Loam, 8 to 15 percent slopes
M6D - Manor Loam, 15 to 25 percent slopes
6' - 10' depth to bedrock; 20' to water table; slight to severe limitations for sewage disposal fields and homes w/ basements depending on slopes; erosion hazard.



SWM LEGEND

- CRITICAL ROOT ZONE
EXCLUSION ZONE (SWM PRACTICES NOT PERMITTED)
PERMEABLE SURFACE

Concept Plan Proposal

The stormwater proposal will result in the development of Lots 4 & 5 being placed back to woods in good condition. The properties, Lots 4 & 5, will be developed using ESD methods. The "2000 Maryland Stormwater Design Manual" target is "woods in good condition". The proposed site design will incorporate the use of Alternative Surfaces - Permeable Surfaces and Micro Practice - Rain Garden & Dry Well. The downhill portion of the proposed homes will drain toward a Rain Garden/Dry well sized for the rooftop impervious areas. The Rain Garden will have an impermeable liner and outlet toward an existing Forest Conservation Easement on Buildable Preservation Parcel "A". Also, the proposal is for a Permeable Surface to be utilized. The entire uphill portion of the homes rooftop runoff will drain into the sub base of the driveway as well as the impermeable portion of the driveway (within 10' of the home). As discussed in the April 21, 2010 seminar, this proposal will result in the development of Lots 4 & 5 being placed back to wood in good condition.

Per Howard County SWM Seminar Example Packet - April 2010; "HDE has indicated that... For residential detached developments with small amounts of impervious areas the impervious areas should be treated at the source using ESD practices. If the ESD practices address the calculated Pe for the site impervious area and the ESDv, then the remaining grass areas of the site shall be considered adequate and no further treatment will be required." Therefore, no additional "management" is required for the Septic Area / Well Radius portion of site which shall remain as existing or placed to lawn grasses.

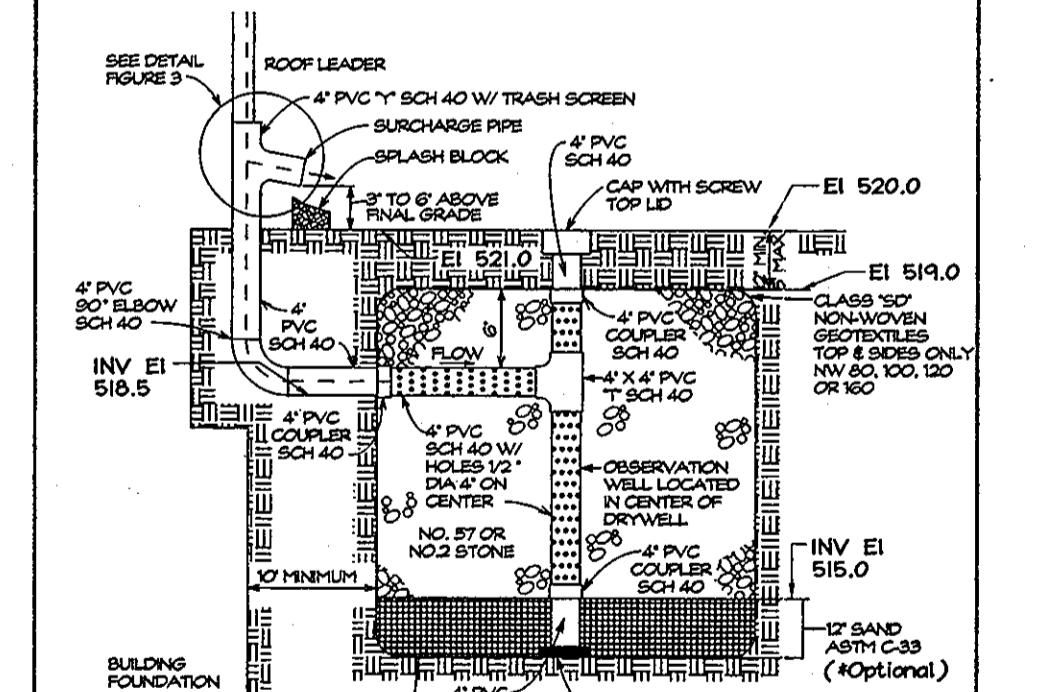
STORMWATER MANAGEMENT SUMMARY TABLE

Table with columns: 1. Site Area, 2. Developable Area(s), 3. Target RCN, 4. Total Measured Impervious, 5. Calculated RCN, 6. Practice applied for RCN reduction, 7. Required ESD Volume, 8. Provided ESD Volume, 9. Other Micro-Scale Practices Used.

DRY WELL / RAIN GARDEN & PERMEABLE SURFACE - PLAN VIEW

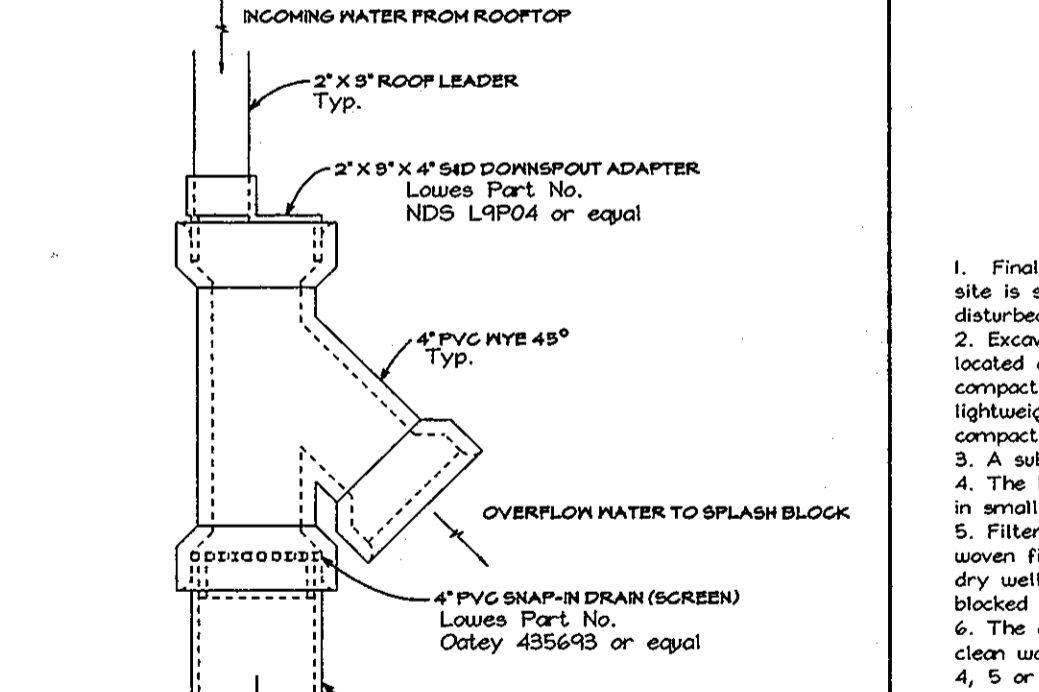
PLAN VIEW - 1" = 30'

FIGURE 2 STANDARD DRYWELL



- NOTES: 1. PROPOSED DRYWELL 6' X 6' X 4' Deep, sized for 604 SF Imp +/- 2. MINIMUM SETBACKS: A 100 FT FROM WELLS, 25 FT FROM SEPTIC AREAS, 10 FT FROM BUILDINGS. 3. FROM THE DOWNSPOUT TO THE DRYWELL THE DRAIN PIPE MUST BE AT LEAST 6\"/>

FIGURE 3 STANDARD DRYWELL DOWNSPOUT FITTINGS



- NOTES: 1. THE SNAP-IN DRAIN IS REQUIRED TO PREVENT CLOGGING OF THE DRYWELL WITH DEBRIS.

CONSTRUCTION CRITERIA FOR DRYWELLS

- 1. Final grading for installation should not take place until surrounding site is stabilized. If this can not be accomplished, runoff from disturbed areas shall be diverted around proposed pavement location. 2. Excavation shall be conducted in dry conditions with equipment located outside of the practice to minimize bottom and sidewall compaction. Construction of a dry well shall be performed with lightweight, wide tracked equipment to minimize disturbance and compaction. Excavated materials shall be placed in a contained area. 3. A subsurface prefabricated chamber may be used. 4. The bottom shall be as level as possible to minimize pooled water in small areas that may reduce overall infiltration and longevity. 5. Filter cloth shall not be installed on the bottom of the well. Non woven filter cloth should be used to line the top and sides of the dry well to prevent the pore space between the stones from being blocked by the surrounding native material. 6. The aggregate shall be composed of an 18 to 48 inch layer of clean washed, open graded material with 40% porosity (ASTM D448 4, 5 or 6 stone or equal).

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: [Name], CHIEF, ENGINEERING DIVISION, DATE: 3/24/11
Signature: [Name], CHIEF, DIVISION OF LAND DEVELOPMENT, DATE: 3/23/11

REVISIONS

Table with columns: No., By, Date, Description.

LDE Inc. Engineers • Surveyors • Planners
Historic Carriage House • 7520 Main Street • Suite 203 • Sykesville, Maryland • 21784
(410)795-6391 • (410)795-6392 • FAX(410)795-9540 • www.Landsurveyorsmd.com

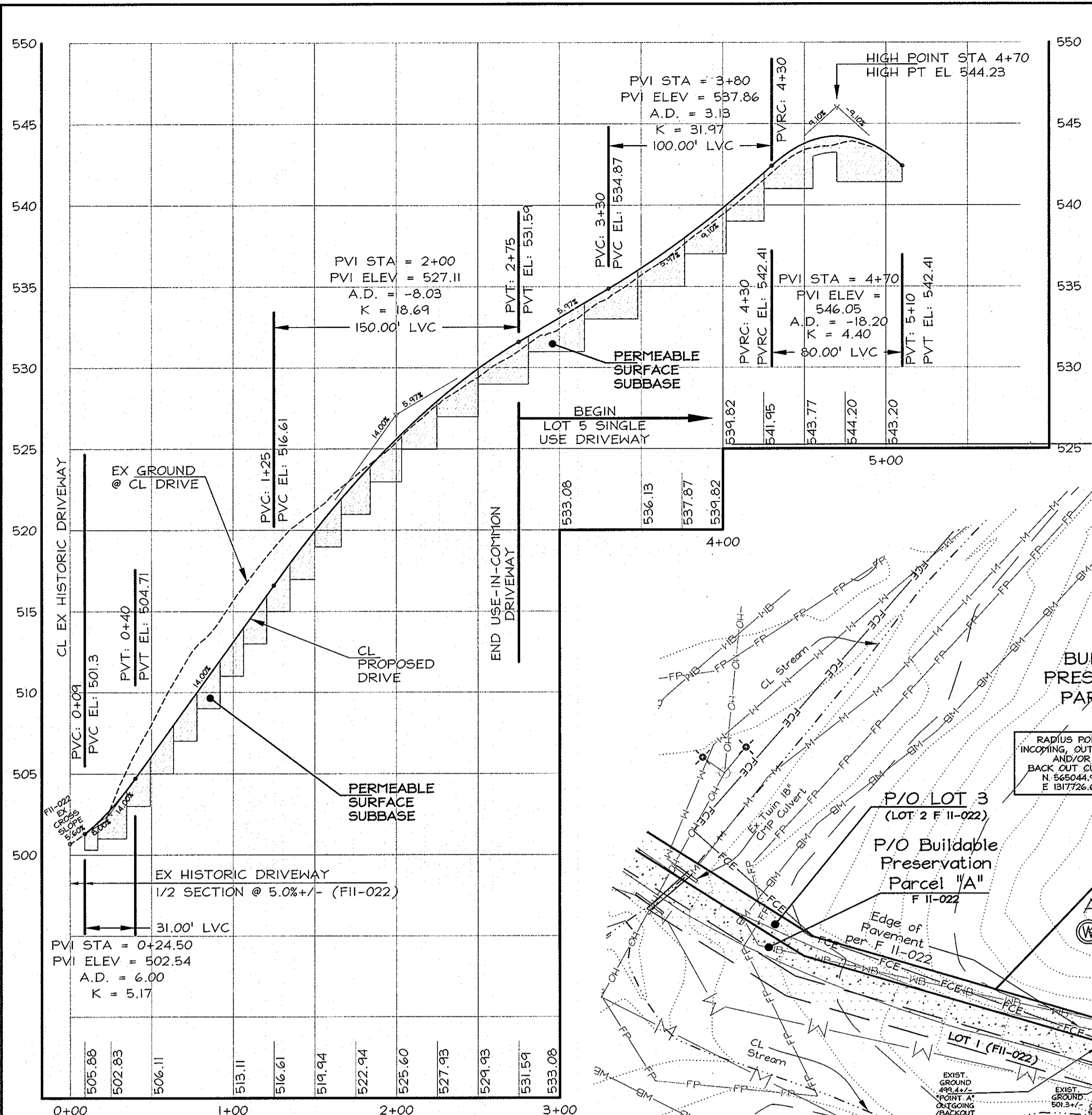
Table with columns: DESIGNED, DRAWN, CHECKED, DATE, OWNER/DEVELOPER, SCALE, AS SHOWN, DRAWING, JOB NO., FILE NO., ECP.

INSPECTION CHART FOR DRY WELLS

Table with columns: STAGE, Engineer's Approval (Initials, Date). Rows include: 1. During excavation to subgrade... 2. During placement of backfill and perforated inlet pipe and observation well... 3. During placement of geotextiles and all filter media... 4. During construction of the appurtenant conveyance... 5. Upon completion of final grading and establishment of permanent stabilization.

MAINTENANCE CRITERIA FOR DRY WELLS

- Dry Wells shall have a maintenance plan and shall be protected by easement, deed restriction, ordinance, or other legal measures preventing its neglect, adverse alteration and removal.
- Dry Wells shall be inspected and cleaned annually; to include pipes, gutters, downsouts and all filters.
- Ponding, standing water or algal growth on the top of a dry well may indicate failure due to sedimentation in the gravel media. If water ponds for more than 48 hours after a major storm or more than 6 inches of sediment has accumulated, the gravel media should be excavated and replaced.

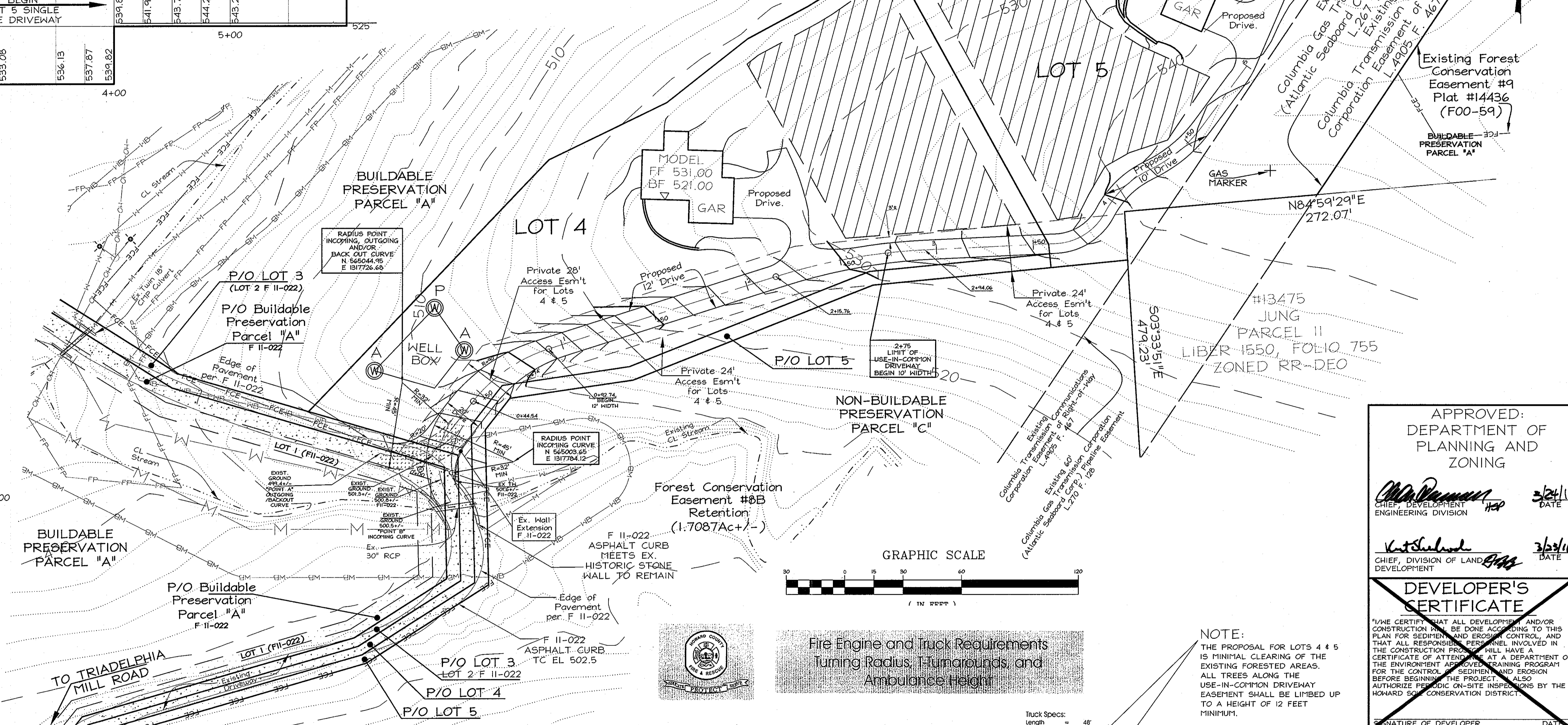


NOTE:

This detail shows the Proposed Driveway Entrance Pavement meets the inside 32' and outside 45' minimum radii per Howard County Fire & Rescue "Fire Engine and Truck Requirements, Turning Radius, T-Turnarounds, and Ambulance Height" Detail (Shown hereon).

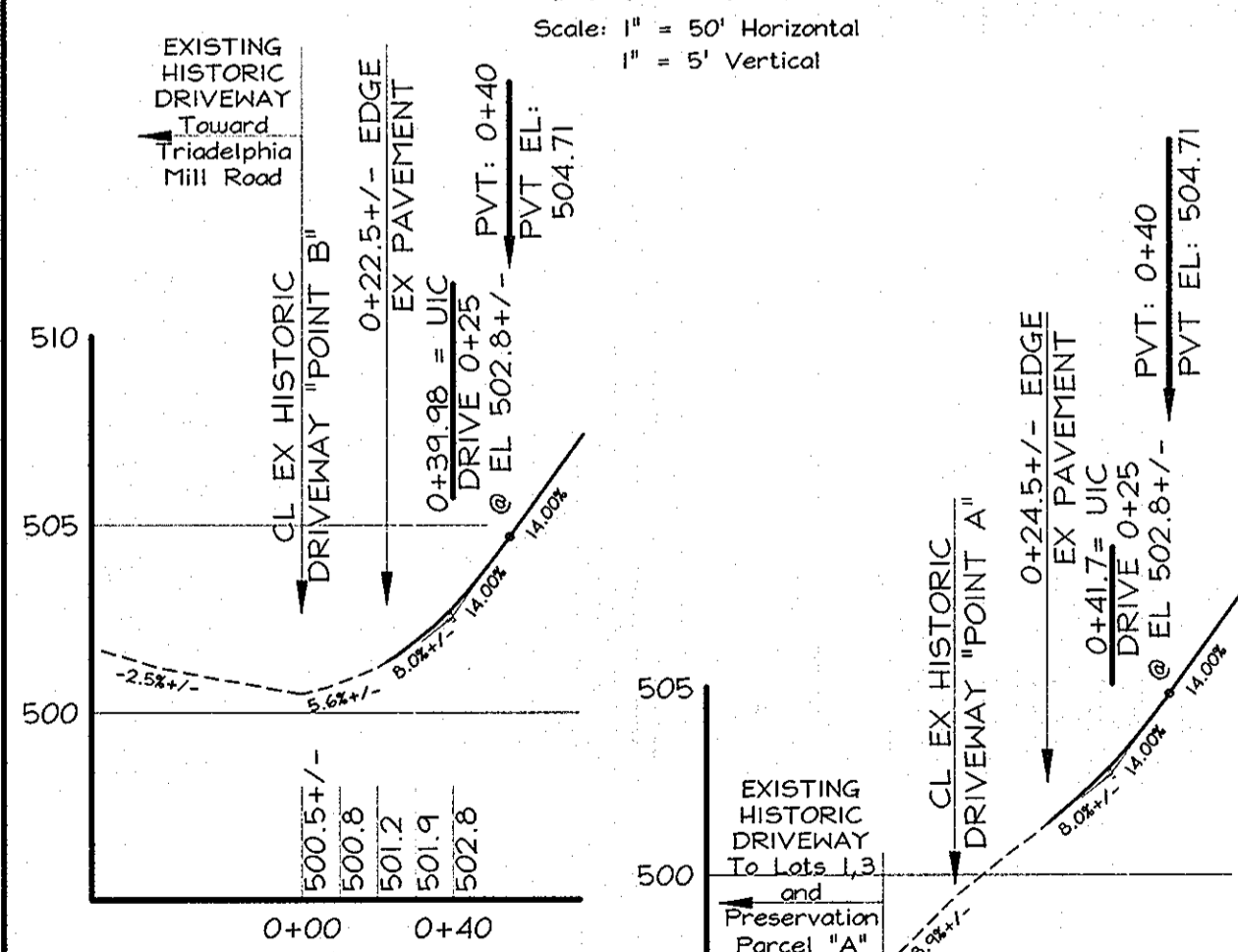
**PLAN VIEW
USE-IN-COMMON
LOTS 4 & 5**

Scale: 1" = 30'



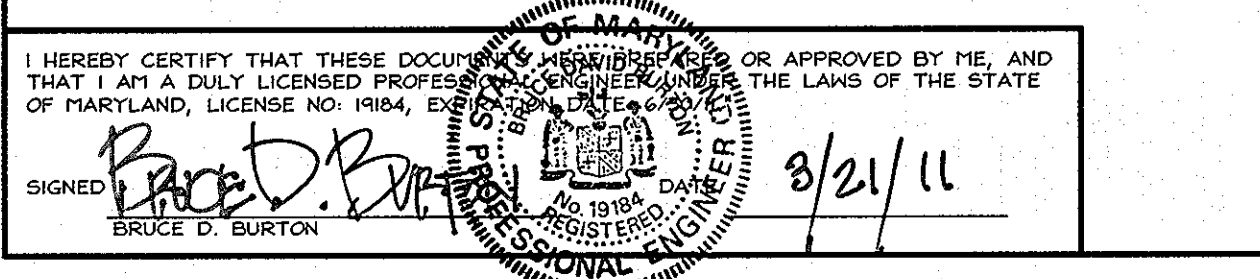
**PROFILE ALONG CENTERLINE
USE-IN-COMMON DRIVEWAY
LOTS 4 & 5**

Scale: 1" = 50' Horizontal
1" = 5' Vertical



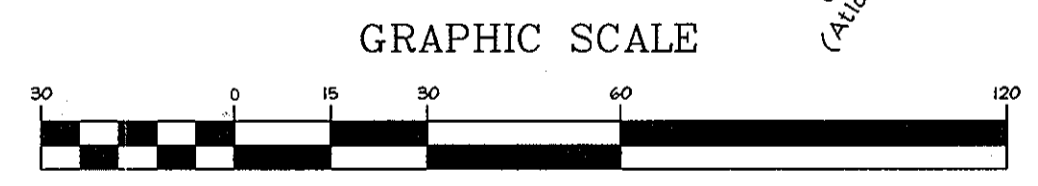
**PROFILE ALONG CENTERLINE
USE-IN-COMMON DRIVEWAY
INCOMING CURVE**

Scale: 1" = 50' Horizontal
1" = 5' Vertical



**PROFILE ALONG CENTERLINE
USE-IN-COMMON DRIVEWAY
OUTGOING/BACKOUT CURVE**

Scale: 1" = 50' Horizontal
1" = 5' Vertical

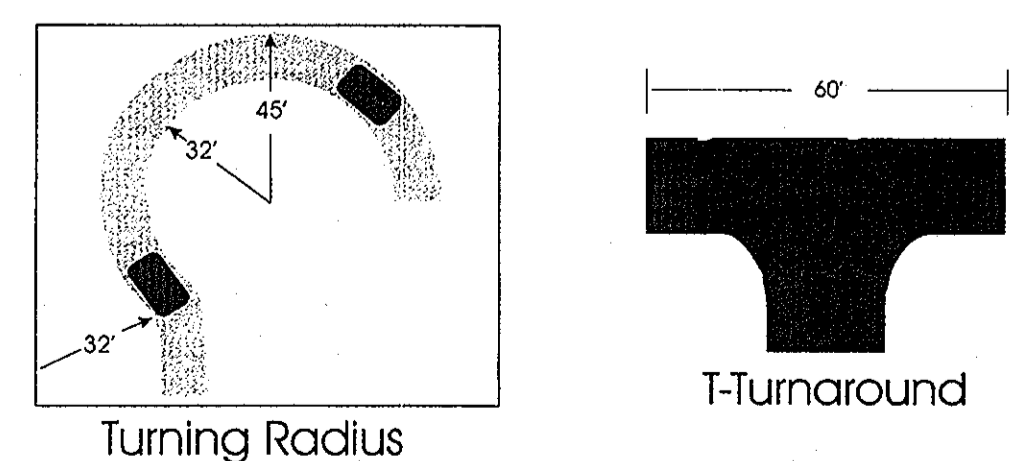


**Fire Engine and Truck Requirements
Turning Radius, Turnarounds, and
Ambulance Height**

Truck Specs:
Length = 48'
Width = 8'
Height = 11.7'
Turnaround = 45'

Engine Specs:
Length = 32'
Width = 8'
Height = 10'
Turnaround = 45'

Ambulance Requirement:
Height = 10'



**MINIMUM FIRE DEPARTMENT
"DRIVEWAY" REQUIREMENTS
N.T.S.**

NOTE:
THE PROPOSAL FOR LOTS 4 & 5 IS MINIMAL CLEARING OF THE EXISTING FORESTED AREAS. ALL TREES ALONG THE USE-IN-COMMON DRIVEWAY EASEMENT SHALL BE LIMBED UP TO A HEIGHT OF 12 FEET MINIMUM.

APPROVED:
DEPARTMENT OF
PLANNING AND
ZONING

Robert B. White 3/21/11
CHIEF, DEVELOPMENT
ENGINEERING DIVISION DATE

Robert B. White 3/21/11
CHIEF, DIVISION OF LAND
DEVELOPMENT DATE

**DEVELOPER'S
CERTIFICATE**

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

SIGNATURE OF DEVELOPER: *Robert B. White* DATE: 3/21/11

REVISIONS			
No.	By	Date	Description

<p>LDE Inc. Engineers • Surveyors • Planners Historic Carriage House • 7520 Main Street • Suite 203 • Sykesville, Maryland • 21784 (410)795-6391 • (410)795-6392 • FAX(410)795-9540 • www.Landsurveyormd.com</p>			SCALE AS SHOWN
DESIGNED BDB EDS	ENVIRONMENTAL CONCEPT PLAN TURNING RADIUS EXHIBIT & DRIVEWAY PROFILE HEDGEROW FARM LOTS 3-5 AND NON-BUILDABLE PRESERVATION PARCEL 'C'		DRAWING
DRAWN LDE	A Resubdivision of Lots 2 & Non-Buildable Bulk Parcel 'B' and Forest Conservation Easements on Buildable Preservation Parcel 'A' - Hedgerow Farms, Plat # XXX		6 of 6
CHECKED BDB	Triadelphia Mill Road - RR-DEO Zoning Tax Map 28 Grid 20 Parcel 64 5th Election District - Howard County, Maryland Previous Submittals: MPO0-65, F00-55, F00-59, F01-81, MPO6-58, F07-44, MPO1-72, ECP 10-015, F11-022,		JOB NO. 09-009.1
DATE 2/2011	OWNER/DEVELOPER: Hedgerow Farm LLC 13803 Lakeside Drive Clarksville, MD 21024-1025 (301)802-1051	FILE NO. ECP 11-020	

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19184, EXPIRES 12/31/11.

SIGNED: *Bruce D. Burton* DATE: 3/21/11