LEGEND

- MINOR CONTOUR- (2' INTERVAL)
- INDEX CONTOUR- (10' INTERVAL) — 500
- SOILS BOUNDARY — MaC / GmB
- CL STREAM/POND
- 100' STREAM BANK BUFFER — SBB
- NON TIDAL WETLAND LIMIT — W
- WETLAND BUFFER — WB
- EXIST. FOREST CONSERVATION EASEMENT
- 100 YR FLOOD PLAIN — FP
- EXISTING DRIVEWAY
- EXISTING TREELINE
- PROPOSED TREELINE
- APPROXIMATE LOCATION EXISTING SEPTIC EASEMENT PLAT 14436
- PROPOSED SEPTIC EASEMENT

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
GnB - Glenville-Baile silt loams, 0 to 8 percent slopes
4' - 10' depth to bedrock; 1.5' 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.

EASEMENT LEGEND

- PRIVATE STORMWATER MANAGEMENT CREDIT EASEMENT
- EXISTING F00-59 FOREST CONSERVATION EASEMENT
- VARIABLE WIDTH PRIVATE USE-IN-COMMON ACCESS, DRAINAGE & UTILITY EASEMENT

THIS AREA DESIGNATES A PRIVATE SEWAGE AREA 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 EASEMENT.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 8/26/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[signature] 8/25/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

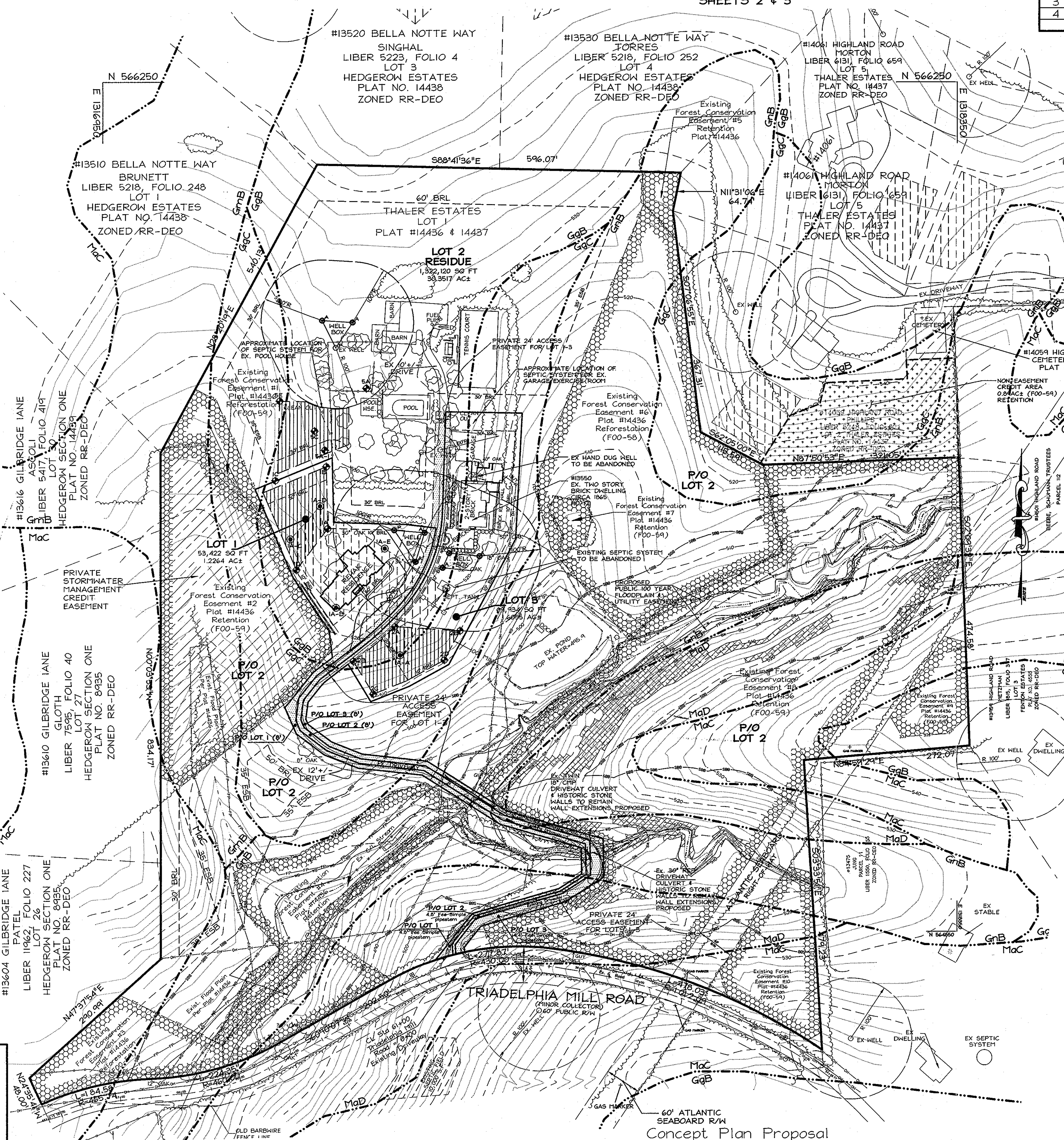
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION DATE: [illegible]."

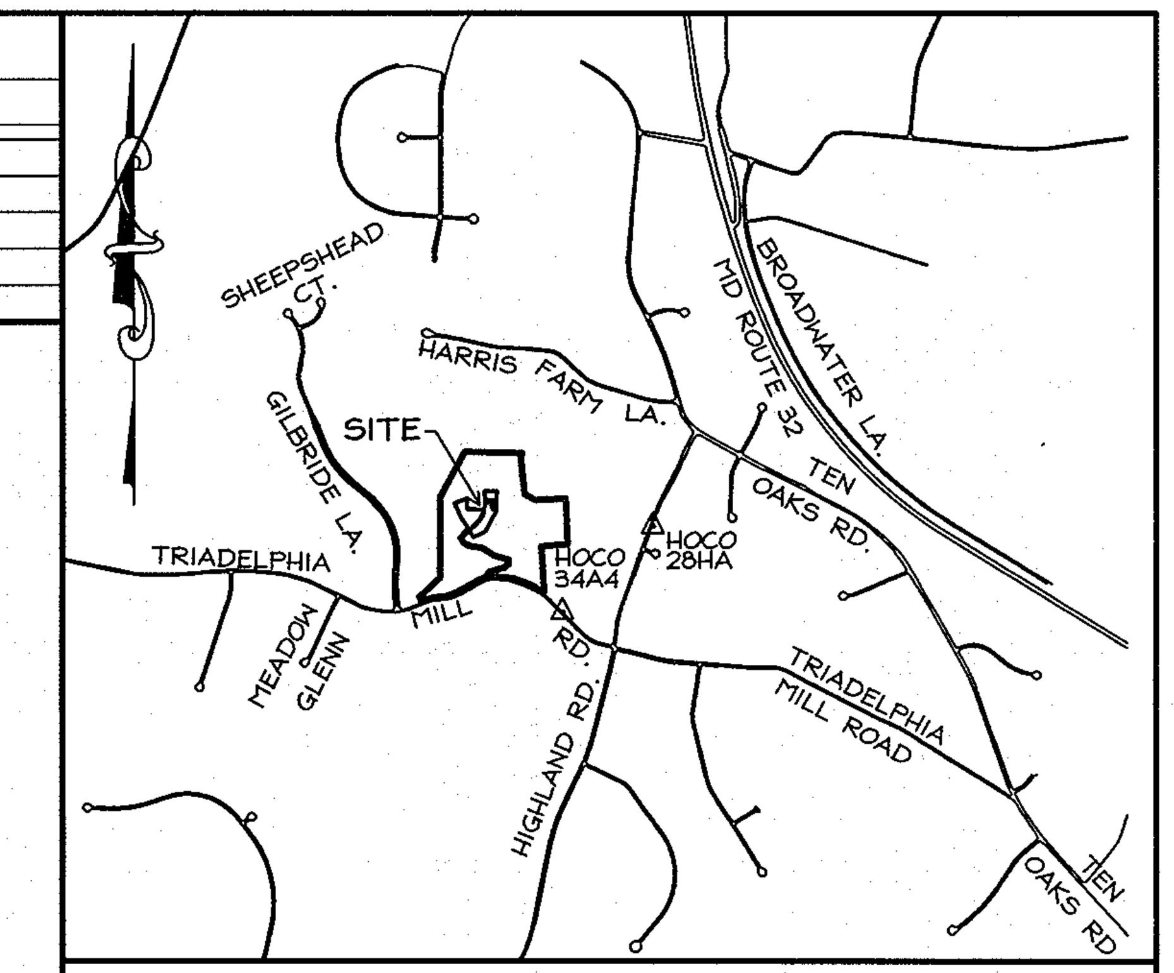
SIGNED [signature] BRUCE D. BURTON — DATE 8/25/10

NOTE:

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

INDEX OF SHEETS





ADC Map 4933 D-6

VICINITY MAP

SCALE: 1"=2000'

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

1. Natural Resource Protection

The project proposal is the creation of new Lots 1, 2 and 3 from Lot 1 Thaler Estates, Plat 14436. Lot 1 proposes a new dwelling, Lot 2 is the residue parcel with the existing outbuildings, pool & pool house and Lot 3 contains the existing historic dwelling and garage to remain. The natural resources will be protected as the development on Lot 1 is outside existing environmental features. In fact, Lot 2, the residue piece of the project property, contains all (with the exception of pipestem crossings) 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 subbase of a permeable pavement driveway and the construction of the proposed level spreader will the maintain natural / sheet flow patterns that currently exist in this portion of the site.

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 Pavement for the proposed driveway imperviousness, "Rooftop disconnection" via conveyance of a portion of the rooftop into the subbase of the Permeable pavement and "Non Structurally" by Sheetflow to Conservation Area to treat the remaining portion 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 protect any septic system installation, super silt fence will be provided around the proposed new dwelling construction on Lot 1. Lot 1 Disturbance is < 40,000 SF. The 2 existing driveway culvert's upstream headwalls will be improved and shall be protected with silt fence.

5. Implementation of ESD planning techniques & practices to MEP.

The use of Alternative Surface (Permeable Pavement) is proposed as well as the use of a level spreader. The level spreader will to sheet flow the proposed runoff into the existing Forest Conservation Area as part of the Sheet Flow to Conservation Area practice. Together these methods will treat the proposed runoff from Lot 1 to the MEP.

6. Request for Design Manual & Waiver Petition for environmental & stormwater design.

This project is subject to WP-10-172 which request relief from Section 16.145 to waive Sketch Plan, Preliminary Equivalent Sketch Plan, 16.132.a.1.iv to waive Road Construction; Subdivision of property which was part of a previous Minor Subdivision and 16.120(b)(4)(iii)(b) to allow environmental features on lots less than ten acres in size. Lots 1 & 3's pipestems are proposed to follow the existing driveway and therefore cross / contain environmental features.

Notes (Cont.)

(2) 5. The 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.

(2) 6. Proposed activities within the environmental buffers were determined essential or necessary disturbance per Subsection 16.116.c of the Subdivision and Land Development Regulations.

(2) 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).

NOTES:

1. Related Howard County - Department of Planning & Zoning file numbers include: F00-58, F00-59, F01-81, WP06-58 and F07-44. This current project is subject to WP-10-172 which request relief from Section 16.145 to waive Sketch Plan, Preliminary Equivalent Sketch Plan, 16.132.a.1.iv to waive Road Construction; Subdivision of property which was part of a previous Minor Subdivision and 16.120(b)(4)(iii)(b) to allow environmental features on lots less than ten (10) acres in size. Lot #1 & #3 pipestems are proposed to follow the existing historical driveway and therefore crosses and contains environmental features.
2. The existing septic system presently used by the existing dwelling, #13550, shall be abandoned and a new septic system installed for Lot 3 and the existing hand dug well located on Lot 3 shall be properly abandoned by a licensed well driller and the abandonment report shall be forwarded to the Health Department prior to final plat signature approval. The existing septic system presently used by the garage/exercise room on Lot 3 shall be abandoned and the effluent line from this structure shall be tied into the new septic system for Lot 3 noted above.
3. There are existing dwellings and structures located on Lot 2 and 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 Regulations require.
4. Upon building permit review the septic systems for all proposed structures and/or existing structure expansions shall be reevaluated to determine sufficient system capacity.

Concept Plan Proposal

The stormwater proposal will result in the development of Lot 1 being placed back to woods in good condition. The property, Lot 1, 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 Sheet Flow to Conservation Area - Non Structural practice. The rear of the house will drain toward a 100' level spreader which will sheet flow the runoff toward an existing 2+ acre forest conservation area. Also, the proposal is for Permeable Pavement to be utilized. The entire front of the homes rooftop runoff will drain into the sub base of the driveway.
As discussed in the April 21, 2010 seminar, this proposal will result in the development of Lot 1 being placed back to wood in good condition.

Per Howard County SWM Seminar Example Packet - April 2010; "MDE 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 portion of site.

SITE ANALYSIS DATA

- Gross Area: 33.18 Ac ±
- Wetland Buffer Area: 2.77 Ac ±
- 100 Year Floodplain Area: 2.81 Ac ±
- Forested Area: 12.25 Ac ±
  * Does not include Reforestation Areas
- Steep Slope Area: 1.04 Ac ±
- Erodible Soils Area: Glenville 12.35 Ac ±
- Project Area: 33.18 Ac ±
- Limit of Disturbance: 1.90 Ac ±
- Impervious Area (Existing): 1.05 Ac ±
- Impervious Area (Proposed): 1.05 Ac. + 0.17 Ac ± = 1.22 Ac ±

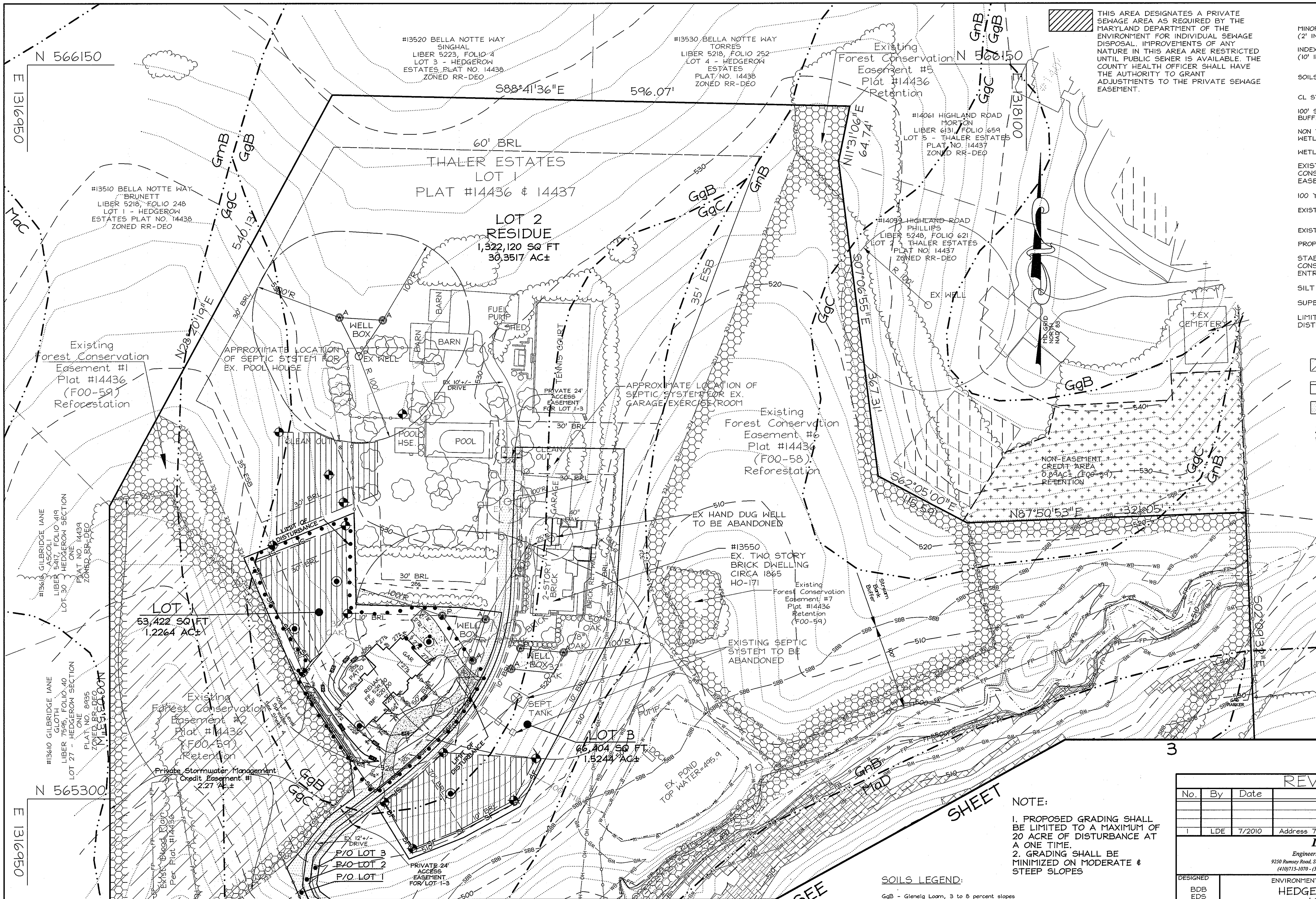
REVISIONS

No.	By	Date	Description
2	LDE	8/24/2010	DLD Comments Forest Con. note, Gen. note #5 & #6
1	LDE	7/2010	Address 7/10 Project Dox Comments

LDE Inc.
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED: BDB EDS	ENVIRONMENTAL CONCEPT PLAN - OVERALL PLAN HEDGEROW FARM LOTS 1-3 A RESUBDIVISION OF LOT 1, THALER ESTATES, PLAT #14436 13550 Triadelphia Mill Road RR-DEO Zoning Tax Map 28 Grid 20 Parcel 64 5th Election District - Howard County, Maryland Previous Submittals: F00-58, F00-59, F01-81, WP06-58, F07-44, WP10-172	SCALE: 1"=100'
DRAWN: LDE		DRAWING: 1 of 4
CHECKED: BDB		JOB NO.: 09-009
DATE: 6/2010	OWNER/DEVELOPER: Hedgerow Farm LLC, 13803 Lakeside Drive, Clarksville, MD 21029-1025, (301)802-1051	FILE NO.: ECP10-15

ECP 10-015



N 566150
E 1316950
#13520 BELLA NOTTE WAY SINGHAL LIBER 5223, FOLIO 4 LOT 3 - HEDGEROW ESTATES PLAT NO. 14438 ZONED RR-DEO
#13530 BELLA NOTTE WAY TORRES LIBER 5218, FOLIO 252 LOT 4 - HEDGEROW ESTATES PLAT NO. 14438 ZONED RR-DEO
Existing Forest Conservation Easement #5 Plat #14436 Retention
N 566150
E 1318100
S88°41'36"E 596.07'
60' BRL
THALER ESTATES LOT 1 PLAT #14436 & 14437
LOT 2 RESIDUE 1,322,120 SQ FT 30.3517 AC±
#13510 BELLA NOTTE WAY BRUNETT LIBER 5218, FOLIO 248 LOT 1 - HEDGEROW ESTATES PLAT NO. 14438 ZONED RR-DEO
#14061 HIGHLAND ROAD MORTON LIBER 6131, FOLIO 659 LOT 5 - THALER ESTATES PLAT NO. 14437 ZONED RR-DEO
#14089 HIGHLAND ROAD PHILLIPS LIBER 5248, FOLIO 621 LOT 2 - THALER ESTATES PLAT NO. 14437 ZONED RR-DEO
N11°31'06"E 64.74'
S07°06'55"E 367.31'
N28°20'19"E 540.13'
35' ESB
EX WELL
EX. CEMETERY
MD GRID NORTH NAD 83
WELL BOX
BARN
FUEL PUMP
SHED
TENNIS COURT
EX WELL
Existing Forest Conservation Easement #1 Plat #14436 (F00-59) Reforestation
APPROXIMATE LOCATION OF SEPTIC SYSTEM FOR EX. POOL HOUSE
EX 10'+/- DRIVE
PRIVATE 24' ACCESS EASEMENT FOR LOT 1-3
APPROXIMATE LOCATION OF SEPTIC SYSTEM FOR EX. GARAGE EXERCISE ROOM
Existing Forest Conservation Easement #6 Plat #14436 (F00-58) Reforestation
NON-EASEMENT CREDIT AREA 0.89AC± (F00-59) RETENTION
S62°05'00"E 115.59'
N87°50'53"E 324.05'
30' BRL
POOL HSE
POOL
CLEAN OUT
LIMIT OF DISTURBANCE
EX HAND DUG WELL TO BE ABANDONED
#13550 EX. TWO STORY BRICK DWELLING CIRCA 1865 HO-171
Existing Forest Conservation Easement #7 Plat #14436 Retention (F00-59)
Stream Bank Buffer
LOT 1 53,422 SQ FT 1.2264 AC±
EXISTING SEPTIC SYSTEM TO BE ABANDONED
WELL BOX
SEPT TANK
PUMP
OAK
2-STORY BRICK
GARAGE
GAR
PATIO
#13610 GILBRIDGE LANE ASCOLI LIBER 5417, FOLIO 419 LOT 28 - HEDGEROW SECTION ONE PLAT NO. 14439 ZONED RR-DEO
#13610 GILBRIDGE LANE GLOTH LIBER 7595, FOLIO 40 LOT 27 - HEDGEROW SECTION ONE PLAT NO. 8935 ZONED RR-DEO
Existing Forest Conservation Easement #2 Plat #14436 (F00-59) Retention
Private Stormwater Management Credit Easement #1 2.27 AC±
LOT 3 66,404 SQ FT 1.5244 AC±
EX. POND TOP WATER=495.9
N 565300
E 1316950
EX 12'+/- DRIVE
P/O LOT 3
P/O LOT 2
P/O LOT 1
PRIVATE 24' ACCESS EASEMENT FOR LOT 1-3
SEE SHEET 3
MATCHLINE
GgB
GgC
GmB
GnB
MaC
MaD
500
510
520
530
540

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LEGEND

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- 100' STREAM BANK BUFFER — SBB
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- 100 YR FLOOD PLAIN — FP
- EXISTING DRIVEWAY
- EXISTING TREELINE
- PROPOSED TREELINE
- STABILIZED CONSTRUCTION ENTRANCE — SCE
- SILT FENCE — SF
- SUPER SILT FENCE — SSF
- LIMIT OF DISTURBANCE

EASEMENT LEGEND

- PRIVATE STORMWATER MANAGEMENT CREDIT EASEMENT
- EXISTING F00-59 FOREST CONSERVATION EASEMENT
- VARIABLE WIDTH PRIVATE USE-IN -COMMON ACCESS, DRAINAGE & UTILITY EASEMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION HSP — DATE 8/12/10

Kent Sheubrooks — 8/25/10
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 OF DEVELOPER ~~WILLIE~~ WHITE Robert, member — DATE 8/12/10

NOTE:

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

NOTES:

1. The existing septic system presently used by the existing dwelling, #13550, shall be abandoned and a new septic system installed for Lot 3 and the existing hand dug well located on Lot 3 shall be properly abandoned by a licensed well driller and the abandonment report shall be forwarded to the Health Department prior to final plat signature approval. The existing septic system presently used by the garage/exercise room on Lot 3 shall be abandoned and the effluent line from this structure shall be tied into the new septic system for Lot 3 noted above.
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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
GnB - Glenville-Baile silt loams, 0 to 8 percent slopes
4' - 10' depth to bedrock; 1.5' 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.

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, EXPIRATION DATE: 7/30/11

SIGNED Bruce D. Burton — BRUCE D. BURTON — DATE 8/12/10

STATE OF MARYLAND — BRUCE D. BURTON — No. 19184 — REGISTERED PROFESSIONAL ENGINEER

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 — 8/12/10
SIGNATURE OF ENGINEER — DATE
BRUCE D. BURTON, P.E. 19184

REVISIONS

No.	By	Date	Description
1	LDE	7/2010	Address 7/10 Project Dox Comments

LDE Inc.
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED: BDB EDS	ENVIRONMENTAL CONCEPT PLAN HEDGEROW FARM LOTS 1-3 A RESUBDIVISION OF LOT 1, THALER ESTATES, PLAT #14436 13550 Triadelphia Mill Road RR-DEO Zoning Tax Map 28 Grid 20 Parcel 64 5th Election District - Howard County, Maryland Previous Submittals: F00-58, F00-59, F01-81, WP06-58, F07-44, WP10-172	SCALE: 1"=50'
DRAWN: LDE		DRAWING: 2 of 4
CHECKED: BDB		JOB NO.: 09-009
DATE: 6/2010	OWNER/DEVELOPER: Hedgerow Farm LLC 13803 Lakeside Drive Clarksville, MD 21029-1025 (301)802-1051	FILE NO.: ECP10-15

ECP 10-015

F:\09-009\dwg\09-009 ECP 2.dwg, ECP 2, 8/12/2010 11:07:05 AM

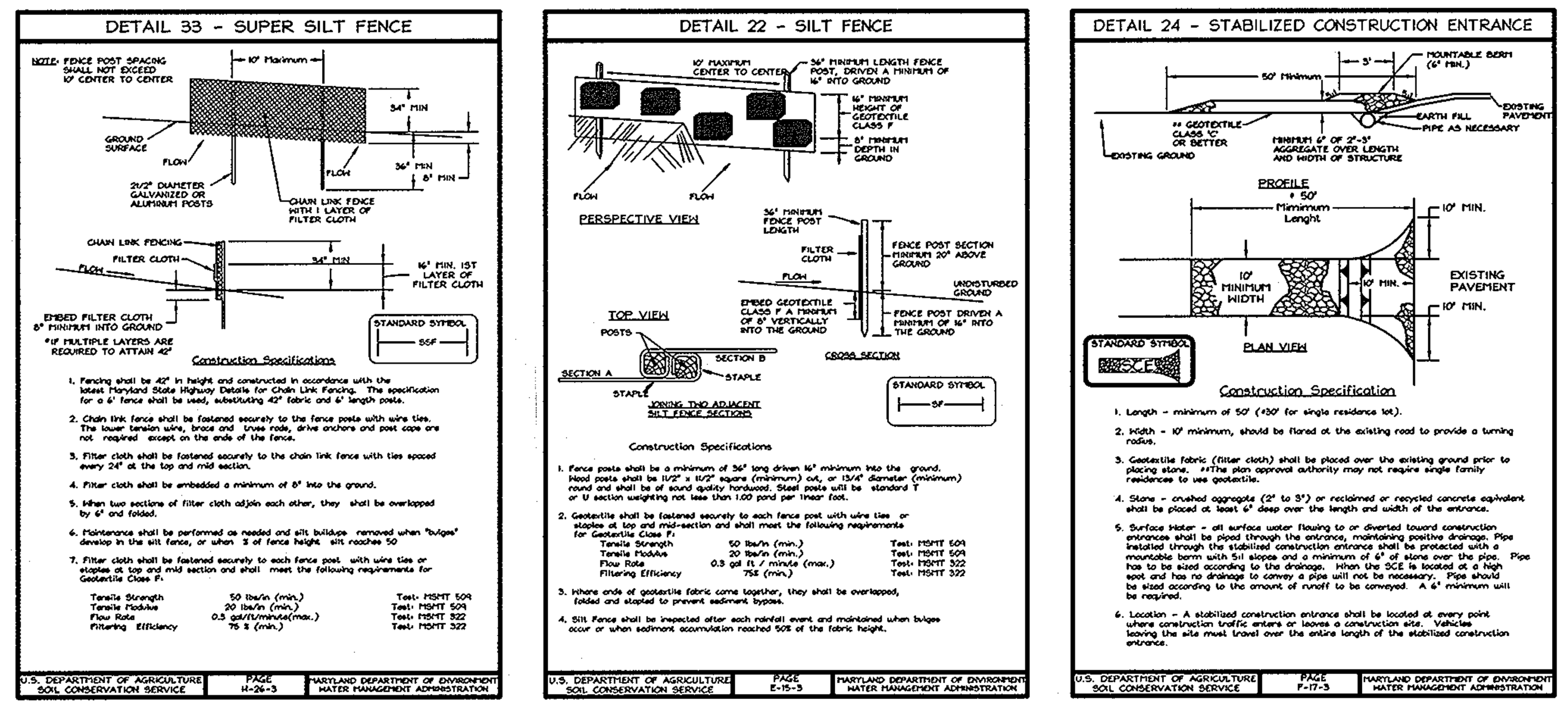
HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

1. 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).
2. 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.
3. Following initial soil disturbance or redisturbance, 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.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. I, Chapter 7, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (Section G) for permanent seeding, sod, temporary seeding, and mulching. Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:

Total Area of Site	33.18	Acres		
Area Disturbed	1.00	Acres		
	Lot 1		0.92	Acres
	Headwall Extension #1		0.04	Acres
	Headwall Extension #2		0.04	Acres
Area to be roofed or paved	0.26	Acres		
	Lot 1		0.24	Acres
	Headwall Extension #1		0.01	Acres
	Headwall Extension #2		0.01	Acres
Area to be vegetatively stabilized	0.74	Acres		
Total Cut	500	Cu. Yds. *		
Total Fill	500	Cu. Yds. *		

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

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of 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.
11. 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.



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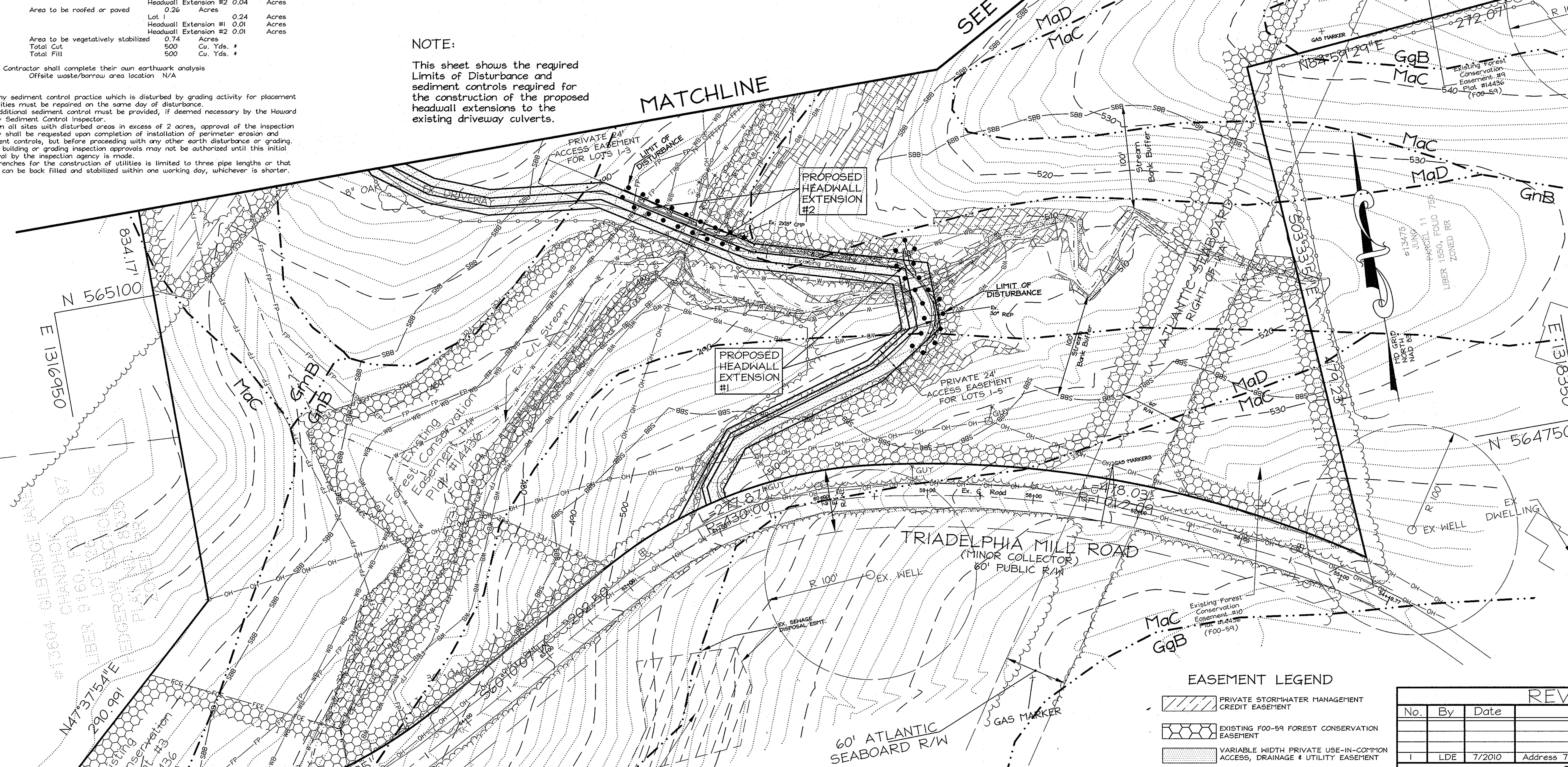
NOTE:
1. PROPOSED GRADING SHALL BE LIMITED TO A MAXIMUM OF 20 ACRE OF DISTURBANCE AT A ONE TIME.
2. GRADING SHALL BE MINIMIZED ON MODERATE & STEEP SLOPES

NOTE:
This sheet shows the required Limits of Disturbance and sediment controls required for the construction of the proposed headwall extensions to the existing driveway culverts.



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- EXISTING DRIVEWAY
- EXISTING TREELINE
- PROPOSED TREELINE
- SILT FENCE — SF
- LIMIT OF DISTURBANCE

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, EXPIRATION DATE: 1/30/11."

SIGNED Bruce D. Burton DATE 8/12/10
BRUCE D. BURTON

STATE OF MARYLAND BRUCE DAVID BURTON No. 19184 REGISTERED PROFESSIONAL ENGINEER

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 8/12/10
SIGNATURE OF ENGINEER DATE
BRUCE D. BURTON, P.E. 19184

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 8/17/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 8/25/10 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."

member 8/12/10
SIGNATURE OF DEVELOPER DATE
~~WILLIE~~ WHITE

REVISIONS

No.	By	Date	Description
1	LDE	7/2010	Address 7/10 Project Dox Comments

LDE Inc.
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

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DRAWN LDE		DRAWING 3 of 4
CHECKED BDB		JOB NO. 09-009
DATE 6/2010	OWNER/DEVELOPER: Hedgerow Farm LLC 13803 Lakeside Drive Clarksville, MD 21029-1025 (301)802-1051	FILE NO. ECP10-15

ECP 10-015

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
GnB - Glenville-Baile silt loams, 0 to 8 percent slopes
4' - 10' depth to bedrock; 1.5' 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.

NOTES:

1. There are existing dwellings and structures located on Lot 2 and 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 Regulations require.

INSPECTION CHART FOR PERMEABLE PAVEMENTS

STAGE	Engineer's Approval	
	Initials	Date
1. Inspection of excavation to subgrade. Surrounding site shall be stabilized.		
2. Inspection during placement and backfill of the drainage ¢ roof drain collection / distribution system. (See Appendix B.4.)		
3. Inspection during placement of subbase material. Aggregate shall be clean, washed and free of fines with a porosity (n) of 30%. Material shall be placed in lifts and lightly rolled according to the specifications (See Appendix B.4.)		
4. Inspection during placement of surface material conforming to specifications found in Appendix B.4.		
5. Inspection upon the completion of final grading ¢ establishment of permanent stabilization.		

Please notify certifying engineer 48 hours prior to commencing construction

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

MAINTENANCE CRITERIA FOR PERMEABLE PAVEMENTS

1. PAVEMENTS SHOULD BE USED WHEN REGULAR MAINTENANCE CAN BE PERFORMED TO ENSURE LONG TERM PERFORMANCE.
2. MAINTENANCE TO INCLUDE, SWEPT AND VACUMING TO REMOVE SEDIMENT ACCUMULATION TO ENSURE SURFACE POROSITY. SWEEPING SHOULD BE COMPLETED TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. DO NOT USE COMPRESSED AIR OR WASHING SYSTEMS.
3. DRAINAGE PIPES, INLETS, STONE EDGES AND ANY OTHER STRUCTURES WITHIN 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. DEICERS SHOULD BE USED IN MODERATION. DEICERS SHALL BE NON TOXIC AND ORGANIC. PLOWING SHALL BE DONE CAREFULLY WITH BLADES SET 1" HIGHER THAN NORMAL. SNOW PILE SHALL NOT BE PLACED ON THE PERMEABLE PAVEMENT.

B.4.B Specifications for Permeable Pavements

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 325.9R, ACI 330R) 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. Phosphorus admixtures may also be used. Materials should be tested (e.g., trial batching) prior to construction so that critical properties (e.g., settling 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. 89 (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 30a. 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.

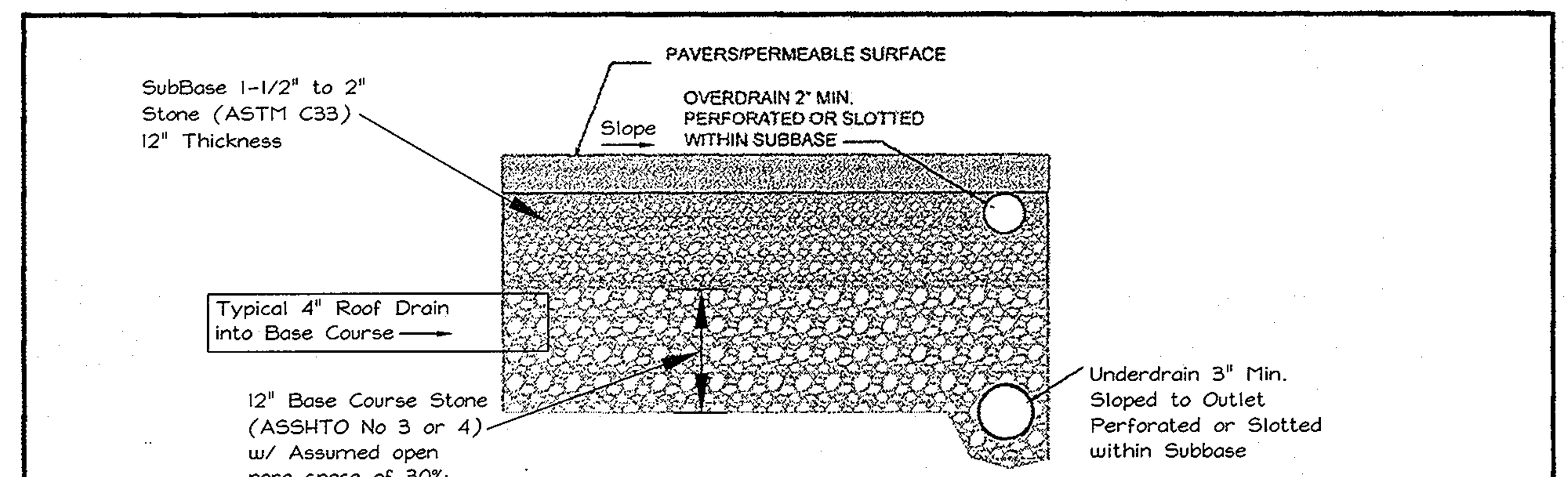
Base Course - The base course shall be AASHTO No. 3 or 4 course aggregate with an assumed open pore space of 30% (a = 0.30).

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 manufacturers 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).



Typical Section w/Overdrain & Underdrain

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, EXPIRATION DATE

SIGNED BRUCE D. BURTON DATE 8/12/10

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.

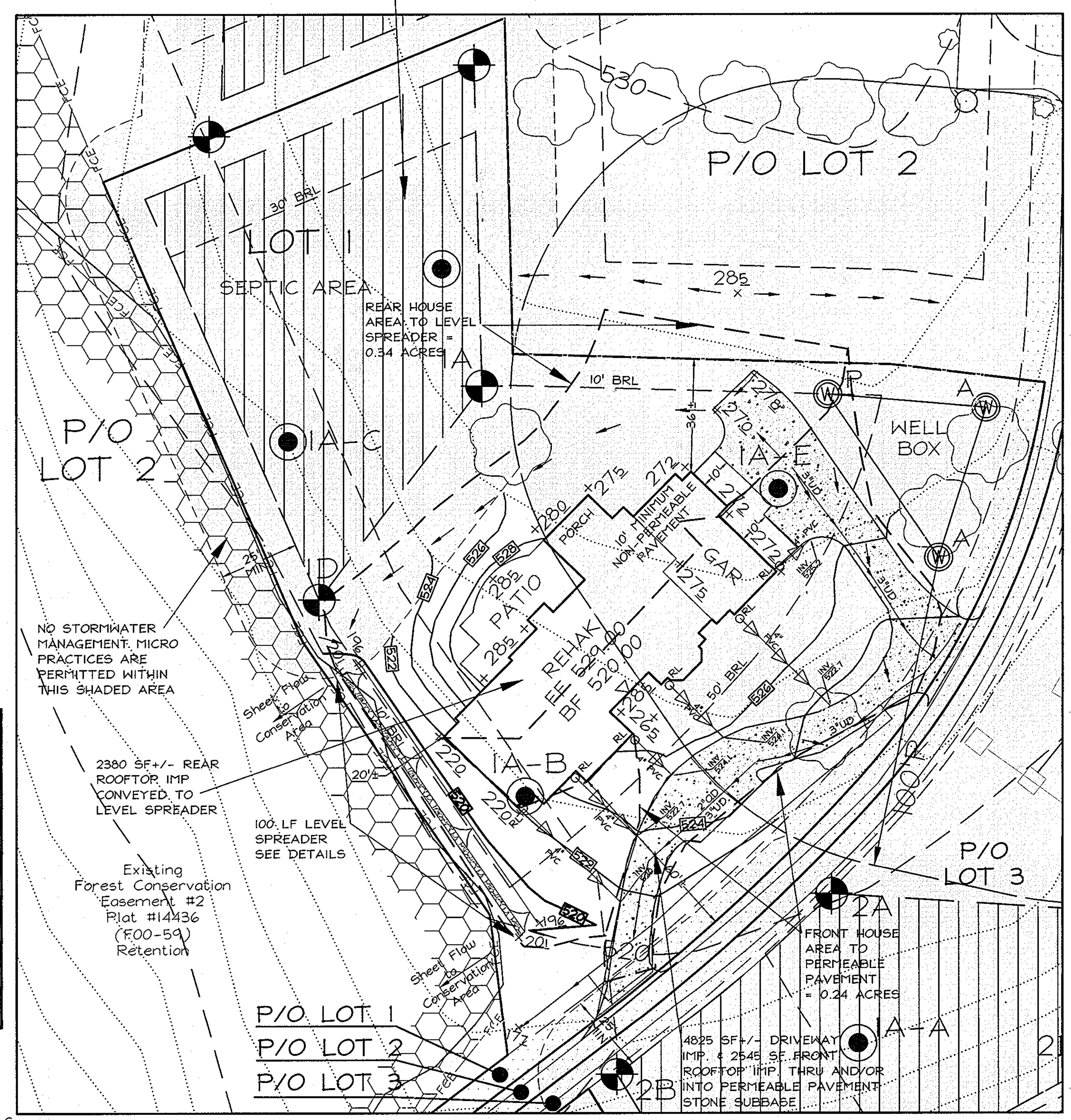
Concept Plan Proposal

The stormwater proposal will result in the development of Lot 1 being placed back to woods in good condition. The property, Lot 1, 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 Sheet Flow to Conservation Area - Non Structural practice. The rear of the house will drain toward a 100' level spreader which will sheet flow the runoff toward an existing 2+ acre forest conservation area. Also, the proposal is for Permeable Pavement to be utilized. The entire front of the homes rooftop runoff will drain into the sub base of the driveway.
As discussed in the April 21, 2010 seminar, this proposal will result in the development of Lot 1 being placed back to wood in good condition.

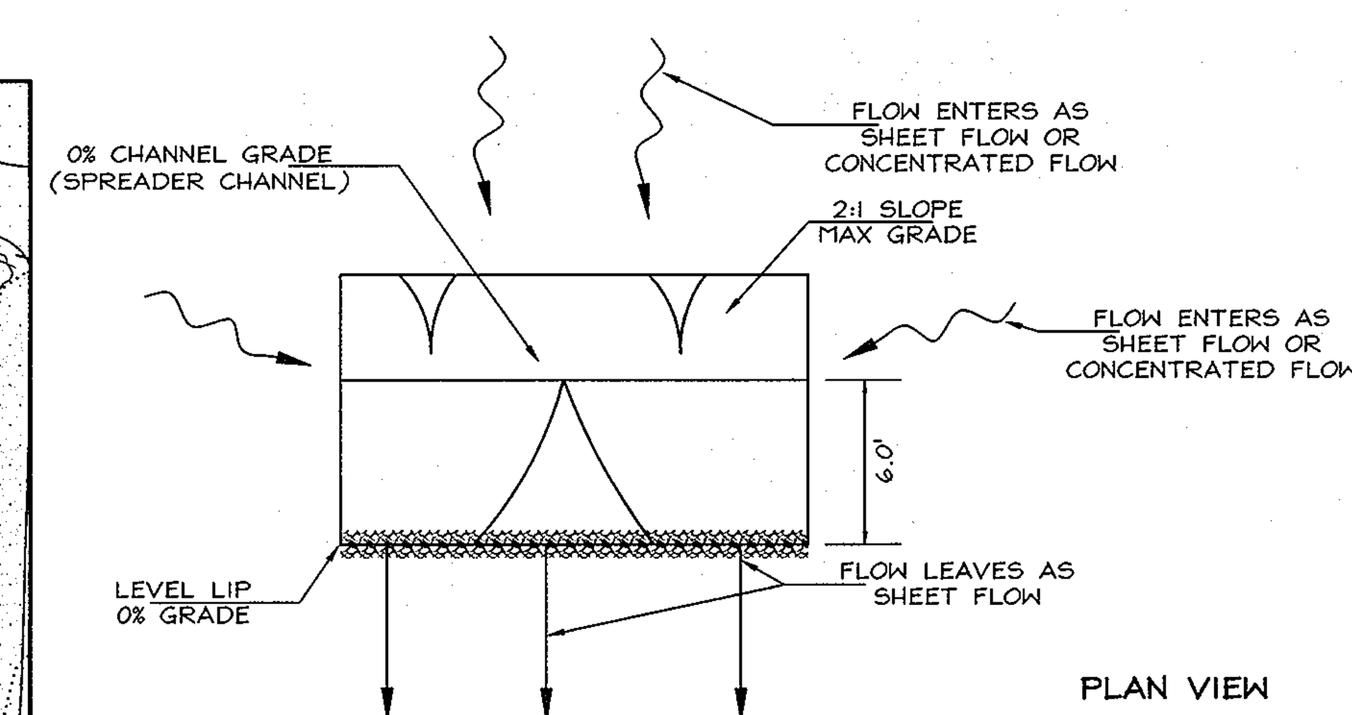
Per Howard County SWM Seminar Example Packet - April 2010; "MDE has indicated that ... For residential detached developments with small amounts of impervious areas the impervious areas should be treated at the source using ESD practices. If the ESD practices address the calculated Pe for the site impervious 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 portion of site.

SWM LEGEND

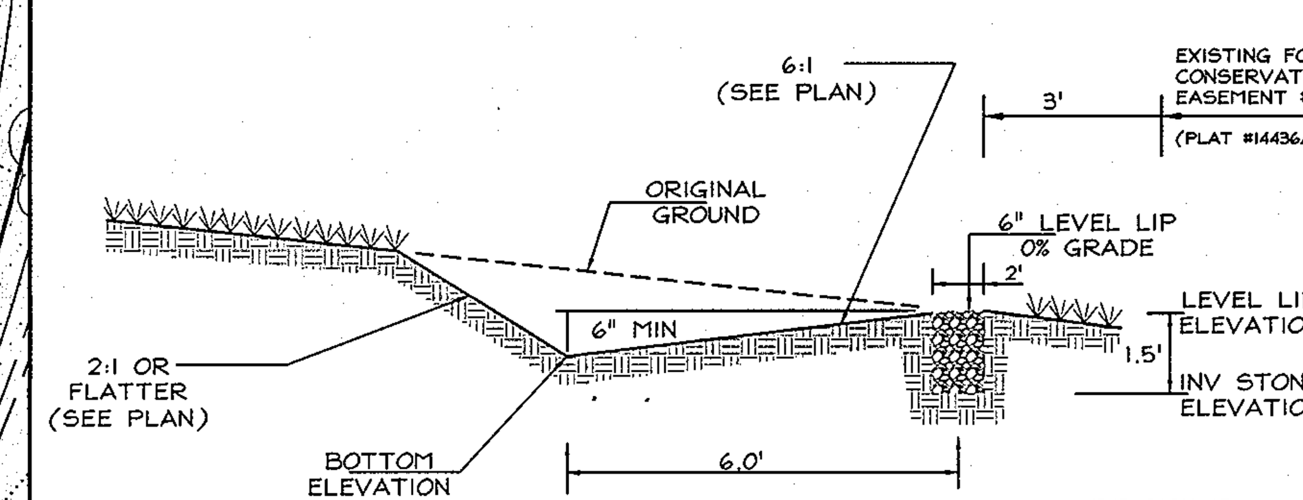
NON-PERMEABLE PAVEMENT
EXCLUSION ZONE (SWM PRACTICES NOT PERMITTED)
PERMEABLE PAVEMENT



SHEET FLOW CONSERVATION AREA ¢ PERMEABLE PAVEMENT
PLAN VIEW - 1" = 30'



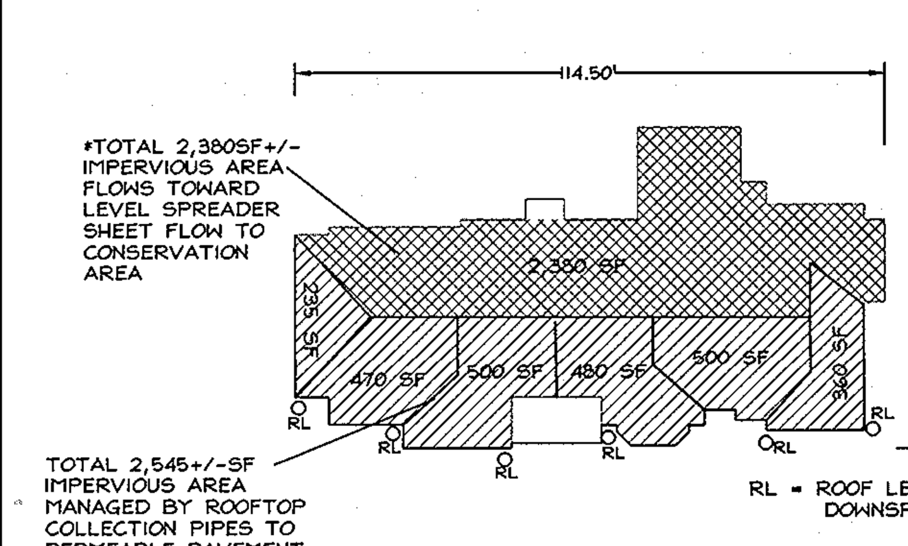
PLAN VIEW



PROFILE

LEVEL SPREADER NUMBER	TOP STONE ELEV	INV STONE ELEV	LEVEL LIP ELEV
1	520.0	318..5	520.0

LEVEL SPREADER
(Sheet Flow to Conservation Area)



REHAK HOUSE MODEL
SCALE: 1"=30'

INSPECTION CHART FOR SHEET FLOW TO CONSERVATION AREA

STAGE	Engineer's Approval	
	Initials	Date
1. Buffer/FCE clearly marked along Lot 1 to ensure no disturbance.		
2. Prior to Use ¢ Occupancy, verify area measurements to level spreaders		
3. Prior to Use ¢ Occupancy, verify permanent stabilization has been established		
4. Upon stabilization obtain permission from engineer to proceed.		
5. Construct Level Spreader and connect downspout conveyance pipes per details hereon under supervision of the certifying professional.		

Please notify certifying engineer 48 hours prior to commencing construction

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

MAINTENANCE CRITERIA FOR SHEET FLOW TO CONSERVATION AREA

CONSERVATION AREAS SHALL REMAIN UNMANAGED OTHER THAN ROUTINE DEBRIS REMOVAL AND REPAIRING AREAS OF CONCENTRATED FLOW. INVASIVE AND NOXIOUS PLANT REMOVAL AND BI-ANNUAL MOWING FOR MEADOW AREAS MAY BE NEEDED.

Level Spreader - Sequence of Construction

1. Once the individual house has been constructed and the final lot grading is complete, contact the LDE, Inc./ certifying professional engineer/professional land surveyor (LDE, Inc. 410-715-1070)). Once the certifying professional has given his/her approval proceed as follows:
2. Construct Level Spreader and connect downspout conveyance pipes per details hereon under supervision of the certifying professional.

OPERATION AND MAINTENANCE SCHEDULE FOR LEVEL SPREADERS

1. LEVEL SPREADERS shall be installed after the contributing site has been stabilized unless filter fabric is placed over the device immediately after construction to divert sediment from entering the device.

2. After the site has been stabilized and with the inspector's approval, the fabric may be removed

3. Maintenance shall be performed on a level spreader by the lot / homeowner when sediment is visually apparent within the stone voids. The portion of the stones that are affected shall be removed and replaced by the lot / homeowner with clean stone.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 8/12/10

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 8/25/10

REVISIONS			
No.	By	Date	Description
1	LDE	7/2010	Address 7/10 Project Dox Comments

LDE Inc.
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED: BDB EDS
DRAWN: LDE
CHECKED: BDB
DATE: 6/2010

ENVIRONMENTAL CONCEPT PLAN - SWM DETAILS
HEDGEROW FARM
LOTS 1-3
A RESUBDIVISION OF
LOT 1, THALER ESTATES, PLAT #14436
13550 Triadelphia Mill Road
RR-DEO Zoning
Tax Map 28 Grid 20 Parcel 64
5th Election District - Howard County, Maryland
Previous Submittals: F00-58, F00-59, F01-81, WP06-58, F07-44, WP10-172

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

SCALE: AS SHOWN
DRAWING: 4 of 4
JOB NO. 09-009
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