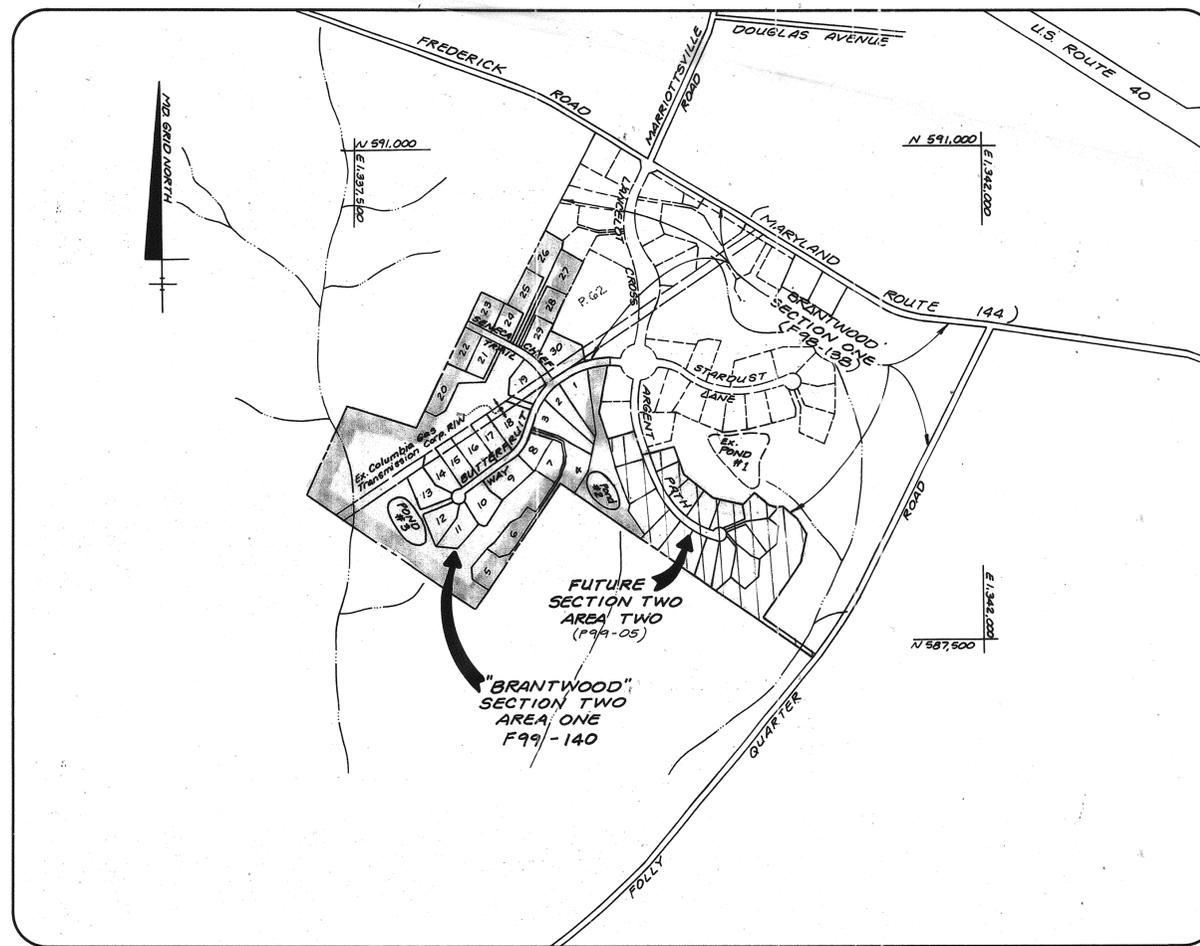


SHEET INDEX	
Sheet Number	Description
1	Cover Sheet
2	Plan & Profile - Butterfruit Way 0+00 thru 9+79.43
3	Plan & Profile - Butterfruit Way 9+79.43 thru 16+31.35
4	Plan & Profile - Seneca Chief Trail 0+00 thru 8+17.47
5	Road Details
6	Storm Drain Profiles
7	Storm Drain Profiles
8	Drainage Area Map
9	Drainage Area Map
10	Drainage Area Map
11	Drainage Area Map
12	Grading and Soil Erosion & Sediment Control Plan
13	Grading and Soil Erosion & Sediment Control Plan
14	Grading and Soil Erosion & Sediment Control Plan
15	Grading and Soil Erosion & Sediment Control Plan
16	Grading and Soil Erosion & Sediment Control Plan - Details
17	Grading and Soil Erosion & Sediment Control Plan - Details
18	Pond Construction Notes / Soil Borings
19	Pond #2 Construction Details
20	Pond #3 Construction Details
21	Ultimate Ponds #2 & #3 - Plan Views & Details
22	Landscape & Street Tree Planting Plan
23	Landscape & Street Tree Planting Plan
24	Landscape & Street Tree Planting Plan
25	Landscape & Street Tree Planting Plan
26	Landscape & Street Tree Planting Plan - Details & Notes

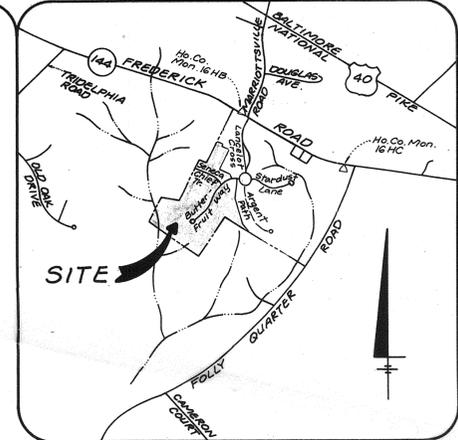


LOCATION MAP  
Scale: 1" = 600'

**BENCHMARKS**

Howard County Monument # 16HC  
Elevation: 449.451  
Description: Concrete Monument 2' below surface. South side MD 144, 0.1 Mile West Folly Quarter Road

Howard County Monument # 16HB  
Elevation: 540.658  
Description: Concrete Monument flush with surface. 21.9' South of centerline MD 144, 147.5' West of Marriottsville Road



VICINITY MAP  
Scale 1" = 2000'

**GENERAL NOTES**

- All construction shall be in accordance with the latest standards and specifications of Howard County Design Manual Vol IV and MSHA standards & specifications.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection at (410) 313-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least forty-eight (48) hours prior to any excavation work.
- Project Background:  
Location: Ellicott City, Maryland  
Tax Map: 16 & 23  
Parcels: P10 214  
Deed Reference: P. 214 Liber 4866, Folio 686  
Zoning: RC (Rural / Conservation: Per 10/18/93 Comprehensive Plan)  
Election District: 3 rd  
Total Tract Area: 67.66 Ac. plus/minus  
Previous Submittals: WP 98-133, S 98-23, P 98-08, WP 98-133 GP 98-56, F 98-130, WP 99-14, P 99-05, RE 99-01
- Traffic control and signage shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- Any damage caused by the contractor to existing public right-of-way, existing paving, existing curb and gutter, existing utilities, etc. shall be corrected at the contractor's expense.
- The existing utilities shown hereon are located from field surveys and construction drawings of record. The approximate location of existing utilities are shown for the contractor's information and convenience. The contractor shall locate existing utilities to his own satisfaction and well in advance of any construction activities. Additionally, the contractor shall take all necessary precautions to protect all existing utilities and maintain uninterrupted service.
- The topography shown hereon is compiled from Howard County Aerial Photography, GP 98-56, field run topography in areas where site improvement, to include road construction and stormwater management facilities, by LDE, Inc. in December, 1997.
- Horizontal and vertical datums are related to the Maryland State Plane Coordinate System as projected from Howard County Geodetic Control station Nos. 1610 and 1618 (NAD 83).
- The property shown hereon is based on a field run boundary survey performed by LDE, Inc. dated July 1995.
- The proposed Water and Sewer systems to be private well and septic. The property is not located within the Metropolitan District.
- All private use-in-common driveways shall meet the following specifications:  
- 14 foot width - 6" compacted crusher run base with "tar and chip" coating  
- Minimum turning radius of 45 feet - Designed to support vehicles with a gross weight of 25 tons - 12 feet of overhead clearance - Maintained for all weather use - Maximum grade is 10% with the durable and sustained grade of 8% - Where one (1) driveway serves more than one (1) lot, a house number sign must be placed at each lot entrance and a range of street address house numbers sign where the common driveway intersects with the main road.
- All hydraulic data is for the 10-year storm unless otherwise noted.
- See sheet 17 for construction sequence.
- 30% compaction in all fill areas shall be determined by ASTM T-180.
- The Geotechnical report was compiled by Dennis J. LaBare, M.S. & Associates, Inc. dated August 22, 1997, and approved under P 98-08.
- The Noise Study was compiled by LDE, Inc., dated October, 1997 and approved under P 98-08.
- The Floodplain Study was compiled by LDE, Inc., dated August, 1997 and approved under P 98-08.
- The Wetland Delineation was compiled by Dennis J. LaBare, M.S. & Associates, Inc. dated August 22, 1997, and approved under P 98-08.
- The Transportation Analysis for The Faega Property dated August 10, 1996 and approved under S 98-23.
- Stormwater management will be met in:  
Pond #2 on Preservation Parcel "E" by EXTENDED DETENTION.  
Pond #3 on Preservation Parcel "F" by RETENTION.  
Public Ponds #2 & #3 shall be jointly maintained by Howard County and the Brantwood Community Association (H.O.A.). The responsibilities of the H.O.A. shall be completed in accordance with the Operation & Maintenance Schedules on sheet 21.
- Street Light placement and the type of fixture and pole selected shall be in accordance with the Howard County Design Manual, Volume 11 (1995) and as modified by "Guidelines for street lights in Residential Developments (June 1995).
- Tree Protection Fence or Blaze Orange Fence shall be placed around the perimeter of the sewage disposal easement prior to any construction of road or lot improvements to insure that placement of fill material upon the easement area will not occur.
- This plan is subject to MP 98-133. The Planning Director approved the request waive Section 16.123(a)(2) and Section 16.155 to allow grading prior to final subdivision plan as site development plan, to create stockpile areas on September 3, 1998 subject to the following conditions:  
1. Forest Conservation obligations for Brantwood - Sections 1 & 2 (F98-133, F98-140, & F98-149) have been met per the Brantwood - Section One F98-133 afforestation planting plan.
- Per Section 104(f) of the Howard County, Maryland - Zoning Regulations, Cluster Subdivision consists of cluster lots & "Preserved" areas. "Preserved" areas shall be placed on typical "Open Space" requirements. Financial Surety for the required landscaping has been posted as part of the Department of Public Works - Developer's Agreement in the amount of \$68,550.

**COLUMBIA GAS TRANSMISSION CORPORATIONS  
SPECIAL NOTE TO CONTRACTORS:**

**CONSTRUCTION:**  
No construction or excavation activities of any kind, including blasting, are to be done on Columbia's easement area before Columbia personnel have established the actual location of all affected facilities and the limits of the easements. Columbia personnel must be present during any approved excavation or construction activities.

- NOTIFICATION:** Personnel of the Columbia Gas Transmission Corporation (Columbia) must be notified at least two working days prior to commencement of any construction in the vicinity of Columbia's facilities. This notification can be made directly to the appropriate local Columbia office, however, the one call system should be used in all cases. When requested, Columbia will, at no charge, locate and mark all affected facilities.
- EXCAVATION IN THE VICINITY OF PIPELINES:**  
a. No excavation with powered machinery shall be made on the pipeline right-of-way without prior notification to Columbia's local operations office.  
b. Excavations that are done above, below, or within three feet of either side of the pipeline shall be hand dug.
- CROSSING PIPELINES WITH HEAVY EQUIPMENT:**  
During construction, to adequately protect Columbia's pipelines from damage which could be caused by the crossing of heavy equipment; mats, dirt pads or other protective materials approved by the company may be required. The company shall be contracted for suggested protective methods. The additional over-burden must be removed after construction unless otherwise directed by Columbia personnel.
- BLASTING:**  
Any blasting proposed within 300 feet of Columbia's facilities must have prior written consent. Consent may be requested by submitting a blasting plan for evaluation by Columbia's Engineering personnel. Any required modifications to the blasting plan will be specified in writing. If requested, the blasting contractor will monitor and record the seismic shock at the facilities.
- SCHEDULING:**  
To schedule a Columbia Gas Transmission Representative, contact Don Blizard at (301) 762-6308 one week prior to the start of proposed construction. In addition, you must call Miss Utility 48 hours in advance of starting construction @ (800) 257-7777.

ROAD & STORM DRAIN CONSTRUCTION PLANS  
**BRANTWOOD**  
Section Two - Area One  
3rd Election District - Howard County, Maryland

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 10/21/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 10/21/99  
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: Department of Public Works for Storm Systems and Roads

*[Signature]* 10-25-99  
CHIEF, BUREAU OF HIGHWAYS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL

*[Signature]* 9/21/99  
NATURAL RESOURCE CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT

*[Signature]* 9/21/99  
HOWARD SOIL CONSERVATION DISTRICT

**ENGINEER'S CERTIFICATE**

I certify that this plan for pond construction, erosion, and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

*[Signature]* 9/14/99  
REGISTERED PROFESSIONAL ENGINEER

**DEVELOPER'S CERTIFICATE**

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 9/25/99  
SIGNATURE OF DEVELOPER

*[Signature]* 9/14/99  
Boris D. Burpo

**LDE, INC.**  
9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED B.D.B. E.D.S.	Cover Sheet <b>BRANTWOOD</b> Section Two - Area One	SCALE As Shown
DRAWN K.B.W.	Lots 1 - 30 & Preservation Parcels "E" and "F" A Resubdivision of Land of "BRANTWOOD" Section One Non-Buildable Bulk Parcel "E"	DRAWING 1 of 26
CHECKED B.D.B.	Tax Map Nos. 16 & 23 - Grid Nos. 21/22 & 3/4 - P/O Parcel 214 3rd Election District - Howard County, Maryland Previous Submittals: P 80-07, WP 98-133, S 98-23, P 98-08, GP 98-56 WP 98-133, F 98-130, WP 99-14, P 99-05, RE 99-01	JOB NO. 95056.2
DATE 9/99	BRANTWOOD, LLC. 8835 - P Columbia 100 Parkway Columbia, Maryland 21045 (410) 780-0810	FILE NO. F 99-140

Owner:  
David A. Carney, Trustee  
Laurence B. Baber, Trustee  
c/o Reese and Carney, LLP  
10715 Charter Drive  
Columbia, Maryland 21045  
(410) 740-4800

Street Name	Symbol	Station	Offset	Lamp Type	Fixture Type	Pole Type
Butterfruit Way	⊙	0+45	17' LT	150W HPS Vapor	Project Fixture (Std. arm)	30' Bronze Fiberglass - 12' Arm
Butterfruit Way	⊙	5+48	28' RT	150W HPS Vapor	Project Fixture (Std. arm)	30' Bronze Fiberglass - 12' Arm
Butterfruit Way	⊙	9+09	16' LT	150W HPS Vapor	Project Fixture (Std. arm)	30' Bronze Fiberglass - 12' Arm

Name & Station	Radius	Delta	Length	Tangent	Chord Bearing & Dist.
Butterfruit Way - 1+16.50 - 3+45.16	316.00'	41°27'32"	228.66'	119.59'	S76°57'42"W 223.70'
Butterfruit Way - 5+88.86 - 7+98.06	316.00'	37°55'55"	209.20'	108.60'	S37°15'59"W 205.40'

- NOTES:
- For street tree locations, see sheets 22 and 23.
  - All street trees and/or street signs shall be located 5 feet minimum from proposed drainage and utility structures.
  - There shall be a minimum of 20 feet between street lights and street signs.
  - For storm drain profiles refer to sheets G47.
  - Contractor shall coordinate adjustment and/or relocation of existing utility poles with the appropriate utility companies. All utility poles shall be braced subsequent to and during construction.
  - Prior to starting construction, see "Special Note to Contractors" sht. 1.
  - All future driveway crossings within the Public R/W shall be Approved at the time of Building Permit.
  - For Details & Typical Sections across the Columbia Gas Transmission R/W, see sht. 5.
  - For Traffic Control Sign Location Table, see sht. 5.

APPROVED: Department of Planning & Zoning

*Cinda Hamstra* 10/26/99  
Chief, Division of Land Development

*Mike Dammann* 10/16/99  
Chief, Development Engineering Division

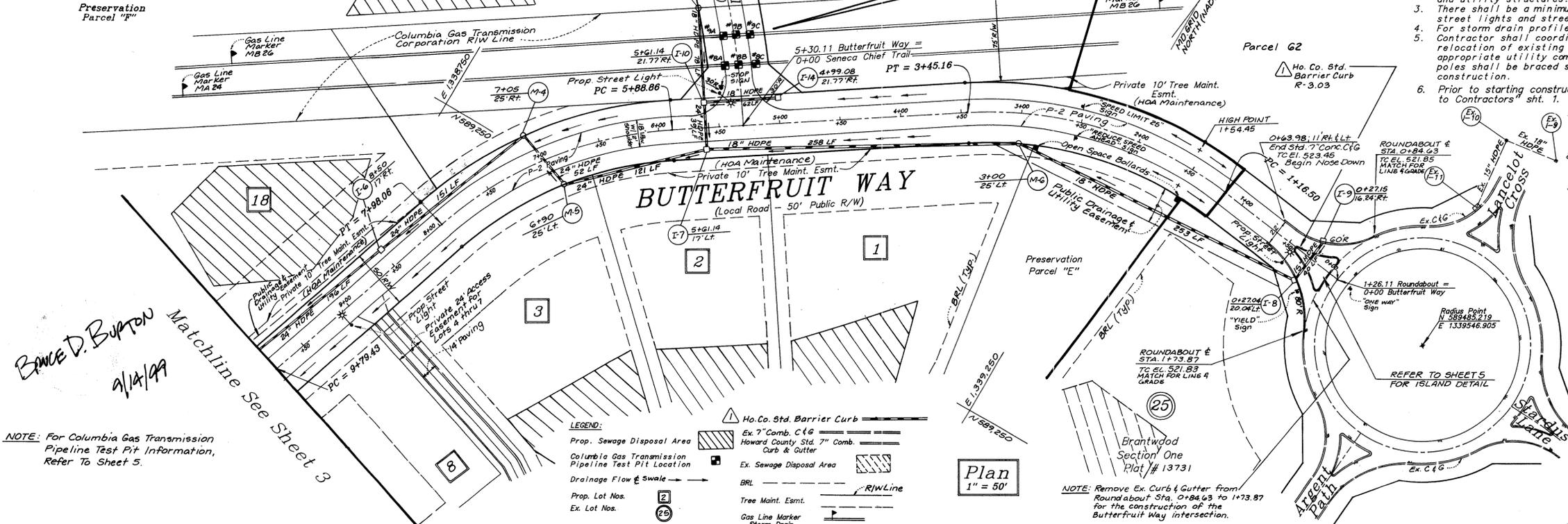
APPROVED: Department of Public Works for Storm Drainage Systems and Roads

*Robert C. ...*  
Chief, Bureau of Highways

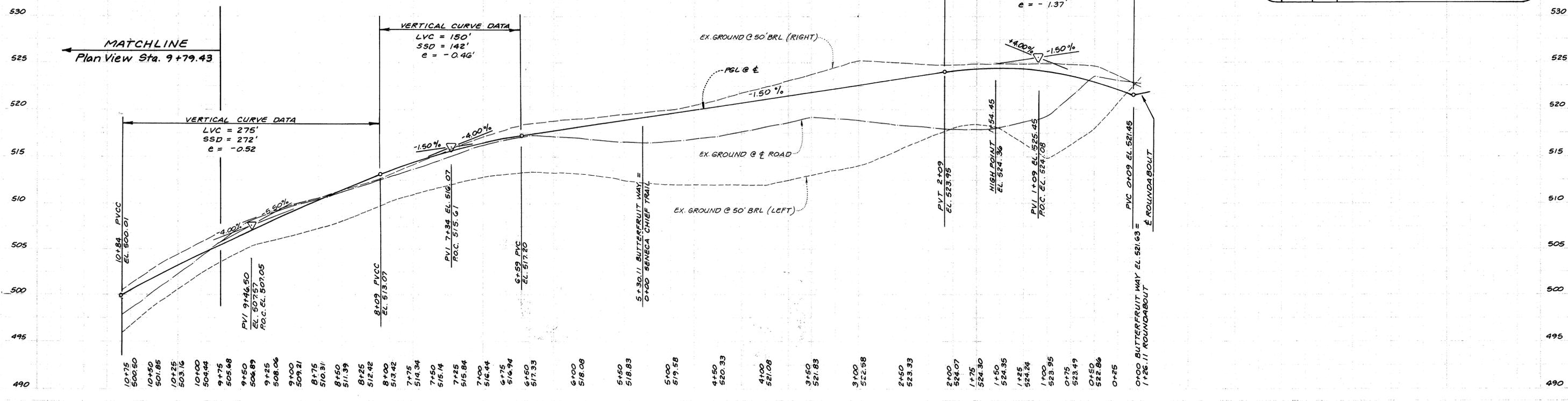
**LDE, INC.**  
9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED	E.D.S.	Plan & Profile Butterfruit Way - 0+00 thru 9+79.43	SCALE	1"=5' V. 1"=50' H.	
DRAWN	K.B.W.	SECTION TWO - AREA ONE A Resubdivision of part of "Brantwood" - Section One Non-Buildable Bulk Parcel "B"	DRAWING	2 OF 26	
CHECKED	B.D.B.		JOB NO.	95-056.2	
DATE	9/99	Owner: David A. Charney, Trustee Lawrence & Susan, Trustee C/O Boone and Charney, LLP 10715 Charter Drive Columbia, Maryland 21045 (410) 740-4800	Developer: BRANTWOOD, LLC 8885-P Columbia 100 Parkway Columbia, Maryland 21045 (410) 750-0810	FILE NO.	F 99-140

BY	DATE	NO.	DESCRIPTION
LDE	6/01	1	Revise Curb Type - Add to Legend



**BUTTERFRUIT WAY**  
(LOCAL ROAD - DESIGN SPEED: 25 MPH)  
SCALE: 1" = 5' VERT.  
1" = 50' HORIZ.



*BRUCE D. BURTON* 9/14/99  
Matchline See Sheet 3

NOTE: For Columbia Gas Transmission Pipeline Test Pit Information, Refer to Sheet 5.

NOTE: Remove Ex. Curb & Gutter from Roundabout Sta. 0+84.63 to 1+73.87 for the construction of the Butterfruit Way intersection.

- NOTES:**
- For street tree locations, see sheets 23 and 24.
  - All street trees and/or street signs shall be located 5 feet minimum from proposed drainage and utility structures.
  - There shall be a minimum of 20 feet between street lights and street signs.
  - For storm drain profiles refer to sheets G47.
  - Contractor shall coordinate adjustment and/or relocation of existing utility poles with the appropriate utility companies. All utility poles shall be braced subsequent to and during construction.
  - All future driveway crossings within the Public R/W shall be Approved at the time of Building Permit.
  - For Traffic Control Sign locations Table see sht. 5

± STA	NORTHING	EASTING
PC 9+79.43	588991.142	1338741.406
PT 11+93.16	588823.817	1338614.675
± STA 16+31.35	588578.659	1338251.486

CENTERLINE CURVE DATA					
Name & Station	Radius	Delta	Length	Tangent	Chord Bearing & Dist.
Butterfruit Way - 9+79.43 - 11+93.16	325.00'	37°40'47"	213.73'	110.89'	N37°08'25"E 209.90'

STREET LIGHT TABLE					
Street Name	Symbol	± Station	Offset	Lamp Type	Pole Type
Butterfruit Way	⊙	15+93	16' RT	150W HPS Vapor	30" Bronze Fiberglass-12' Arm

- LEGEND:**
- Prop. Sewage Disposal Area
  - BRL
  - Tree Maintenance Easement
  - Drainage Flow & Swale
  - Ex. Fence
  - Prop. Lot Numbers
  - Howard County Std. 7" Conc. Curb & Gutter
  - Storm Drain

- PAVING LEGEND:**
- P-2 Paving Section (Howard County)
  - P-2 Paving

APPROVED: Department of Planning & Zoning

*Chris Hamlett* 10/26/99  
Chief, Division of Land Development

*John P. ...* 10/19/99  
Chief, Development Engineering Division

APPROVED: Department of Public Works for Storm Drainage Systems and Roads

*David D. ...*  
Chief, Bureau of Highways

*BRUCE D. BURTON* 9/14/99

**LDE, INC.**  
9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

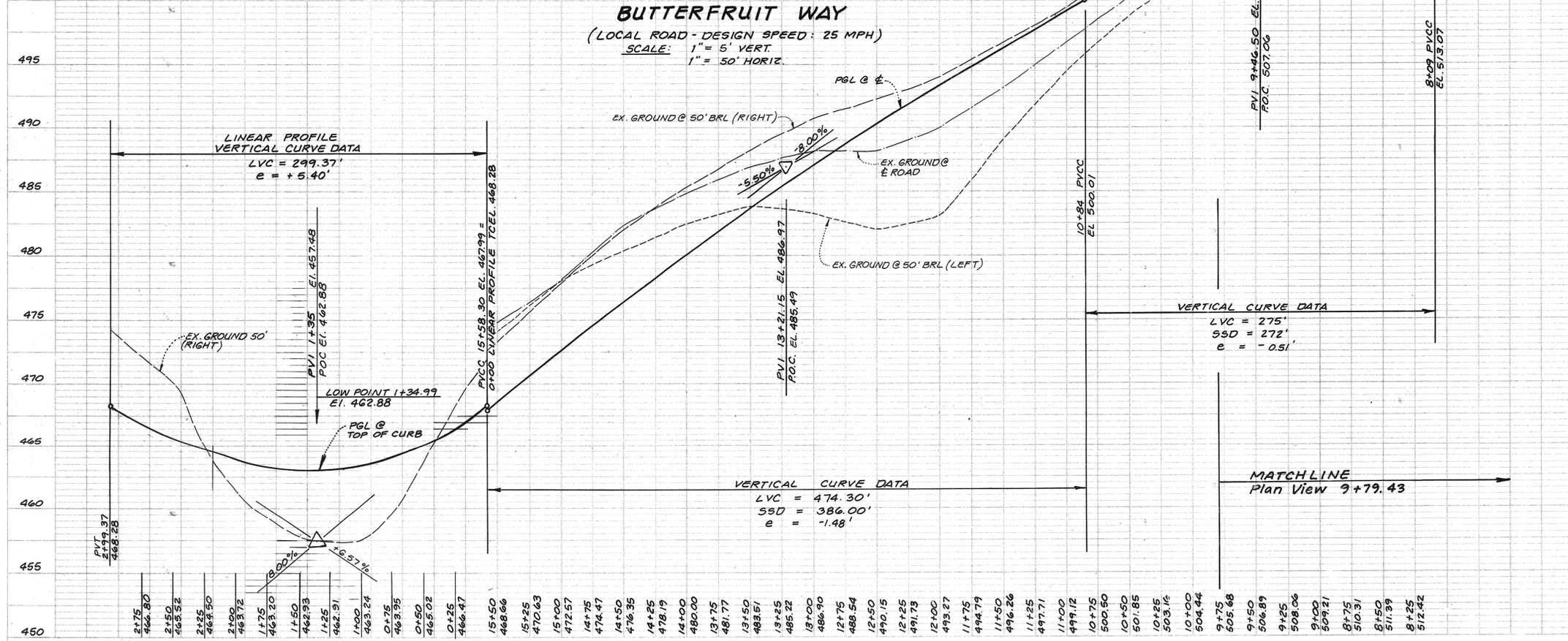
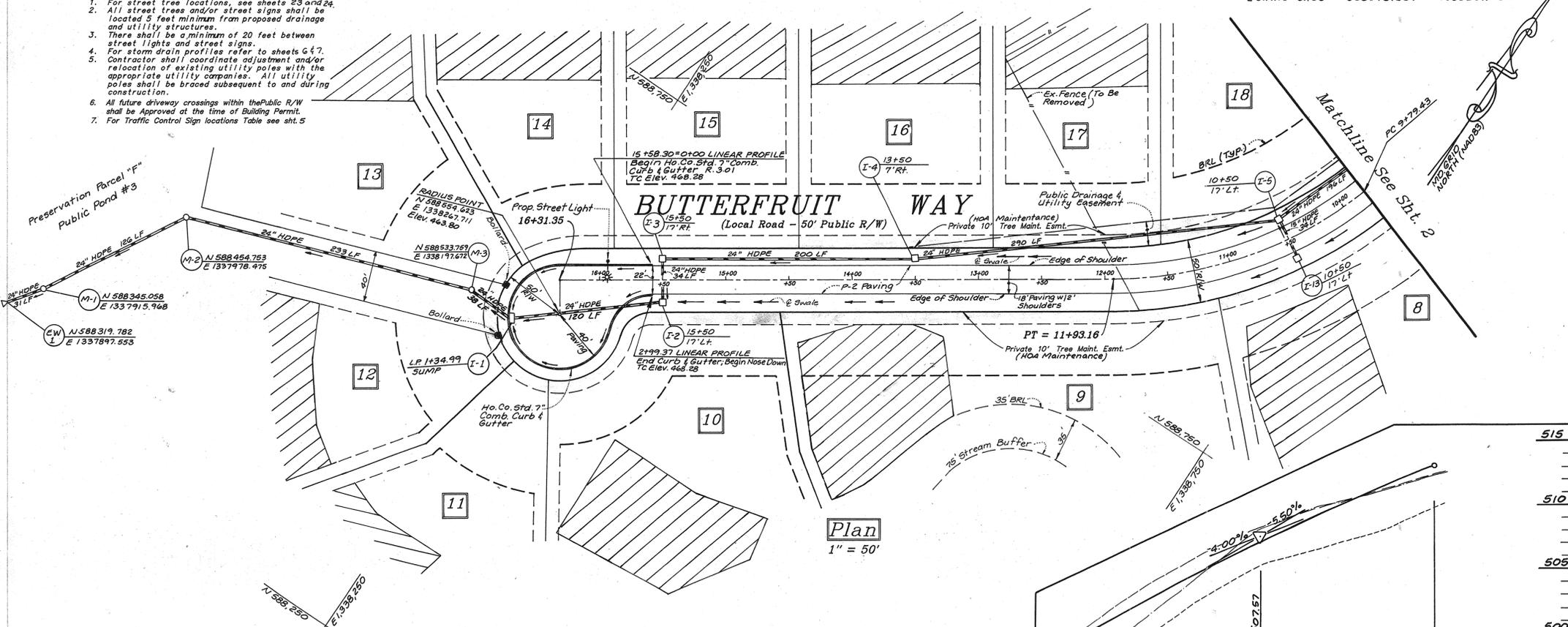
DESIGNED E.D.S.	Plan & Profile Butterfruit Way - 9 + 79.43 Thru 16 + 31.35	SCALE 1"=5' V. 1"=50' H.
DRAWN K.B.W.	<b>BRANTWOOD</b> SECTION TWO - AREA ONE	DRAWING 3 OF 26
CHECKED B.D.B.	Lots 1 - 30 & Preservation Parcels "E" & "F" A Resubdivision of part of "Brantwood - Section One" "Non-Buildable Bulk Parcel" "Z"	JOB NO. 95-056.2
DATE 9/99	Tax Map 16 & 23 - P10 Parcel 214 3rd Election District - Howard County, Maryland Previous Submittals: P80-07, WP98-133, S86-23, P98-08, WP98-133, P88-138, WP98-14, P99-05, RE99-01	FILE NO. F 99-140

Owner: David A. Cuzzey, Trustee  
Lawrence & Babler, Trustees  
C/O Home and Carney, LLP  
10714 Quarter Drive  
Columbia, Maryland 21045  
(410) 746-6600

Developer: BRANTWOOD, LLC  
8838-P Columbia 100 Parkway  
Columbia, Maryland 21045  
(410) 750-0810

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
SUBMITTED: \_\_\_\_\_  
NOTE BOOK: \_\_\_\_\_  
NO. OF WAY CHECKED: \_\_\_\_\_  
NO. OF WAY CHECKED: \_\_\_\_\_

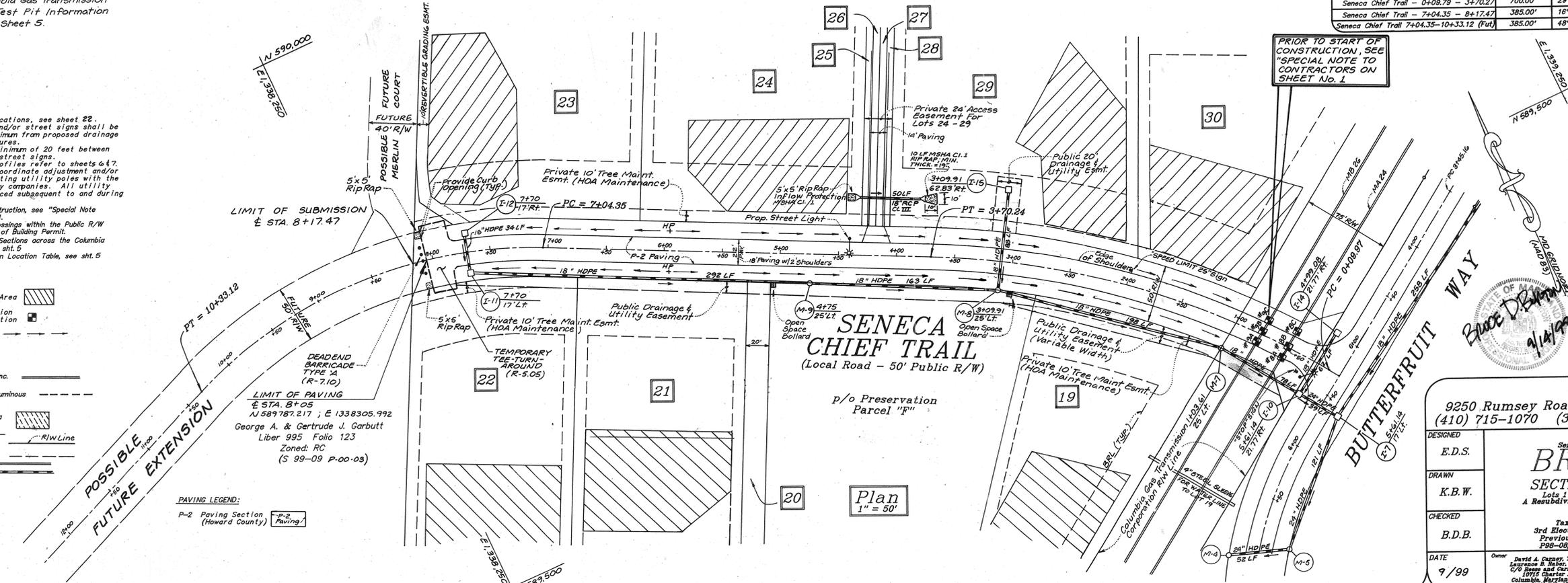
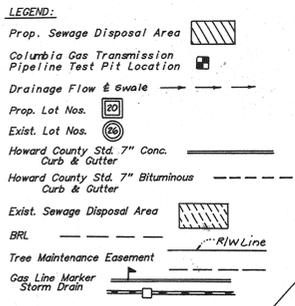
DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
SUBMITTED: \_\_\_\_\_  
NOTE BOOK: \_\_\_\_\_  
NO. OF WAY CHECKED: \_\_\_\_\_  
NO. OF WAY CHECKED: \_\_\_\_\_



NOTE: For Columbia Gas Transmission Pipeline Test Pit Information Refer to Sheet 5.

CENTERLINE CURVE DATA					
Name & Station	Radius	Delta	Length	Tangent	Chord Bearing & Dist.
Seneca Chief Trail - 0+08.79 - 3+70.27	700.00'	29°22'27"	360.30'	184.24'	N48°30'47"W 356.34'
Seneca Chief Trail - 7+04.35 - 8+17.47	385.00'	16°50'06"	113.12'	56.97'	N71°40'34"W 112.72'
Seneca Chief Trail 7+04.35-10+33.12 (Pt)	385.00'	48°55'37"	328.77'	175.16'	N87°43'20"W 318.87'

- NOTES:
- For street tree locations, see sheet 22.
  - All street trees and/or street signs shall be located 5 feet minimum from proposed drainage and utility structures.
  - There shall be a minimum of 20 feet between street lights and street signs.
  - For storm drain profiles refer to sheets 4 & 7.
  - Contractor shall coordinate adjustment and/or relocation of existing utility poles with the appropriate utility companies. All utility poles shall be braced subsequent to and during construction.
  - Prior to starting construction, see "Special Note to Contractors" sht. 1.
  - All future driveway crossings within the Public R/W Approved at the time of Building Permit.
  - For Details & Typical Sections across the Columbia Transmission R/W, see sht. 5.
  - For Traffic Control Sign Location Table, see sht. 5.



APPROVED: Department of Planning & Zoning

*Cindy Hamstra* 10/29/99  
Chief, Division of Land Development

*John D. ...* 10/19/99  
Chief, Development Engineering Division

APPROVED: Department of Public Works for Storm Drainage Systems and Roads

*John M. ...*  
Chief, Bureau of Highways

**LDE, INC.**  
9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

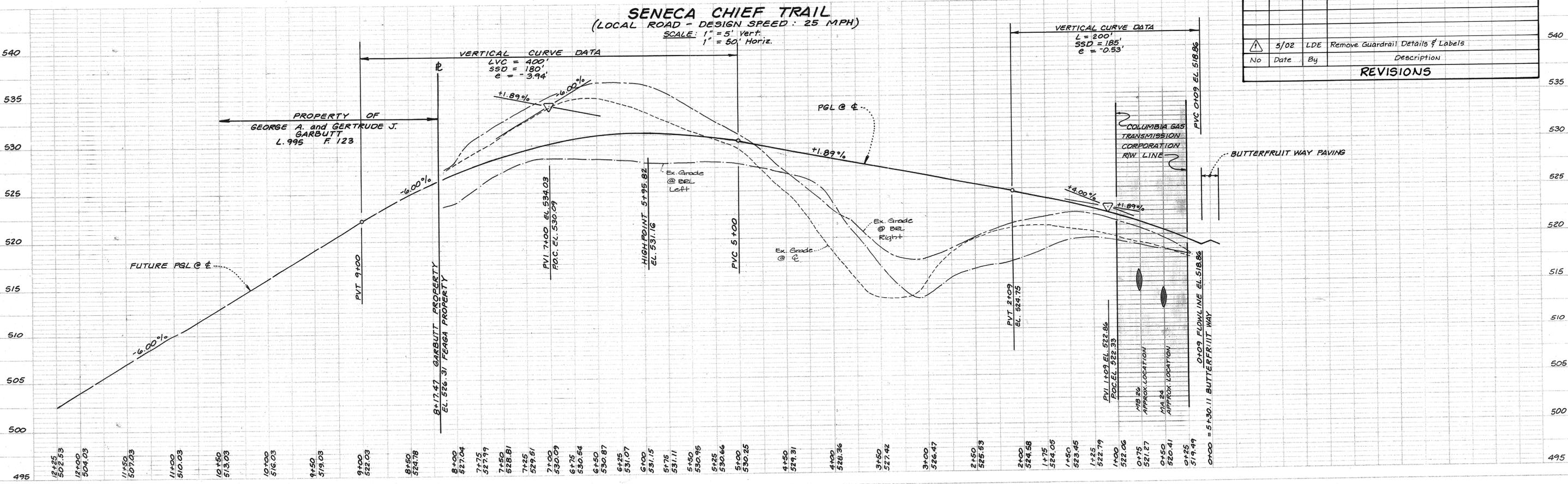
DESIGNED: E.D.S.  
DRAWN: K.B.W.  
CHECKED: B.D.B.  
DATE: 9/99

Plan & Profile  
Seneca Chief Trail 0+00 thru 8+17.47  
**BRANTWOOD**  
SECTION TWO - AREA ONE  
Lots 1 - 30 & Preservation Parcels "E" & "F"  
A Resubdivision of part of "Brantwood - Section One Non-Buildable Bulk Parcel "B"

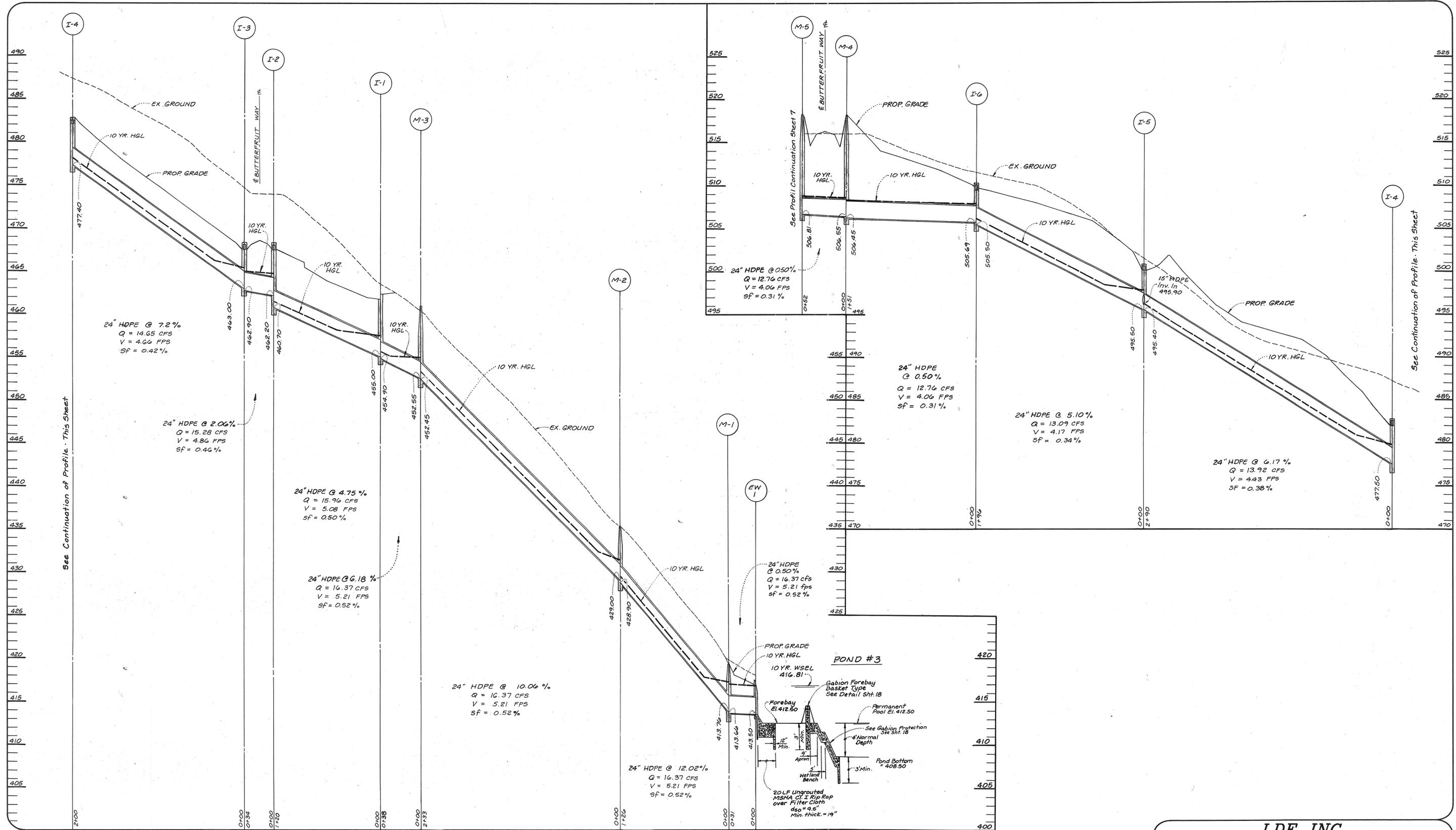
SCALE: 1"=5' V. 1"=50' H.  
DRAWING: 4 OF 26  
JOB NO.: 95-056.2  
FLE NO.: F99-140

No	Date	By	Description
5/02	LDE		Remove Guardrail Details & Labels

REVISIONS







APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 10/19/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 10/26/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

*[Signature]* 10-8-99  
 CHIEF, BUREAU OF HIGHWAYS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

*[Signature]* 9/24/99  
 NATURAL RESOURCE CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

*[Signature]* 9/26/99  
 HOWARD SOIL CONSERVATION DISTRICT

**ENGINEER'S CERTIFICATE**

I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have advised the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

*[Signature]* 9/14/99  
 SIGNATURE OF ENGINEER

**DEVELOPER'S CERTIFICATE**

I/We certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard Soil Conservation District.

*[Signature]* 9/27/99  
 SIGNATURE OF DEVELOPER

*[Signature]* 9/14/99

**LDE, INC.**  
 9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

Storm Drain Profiles

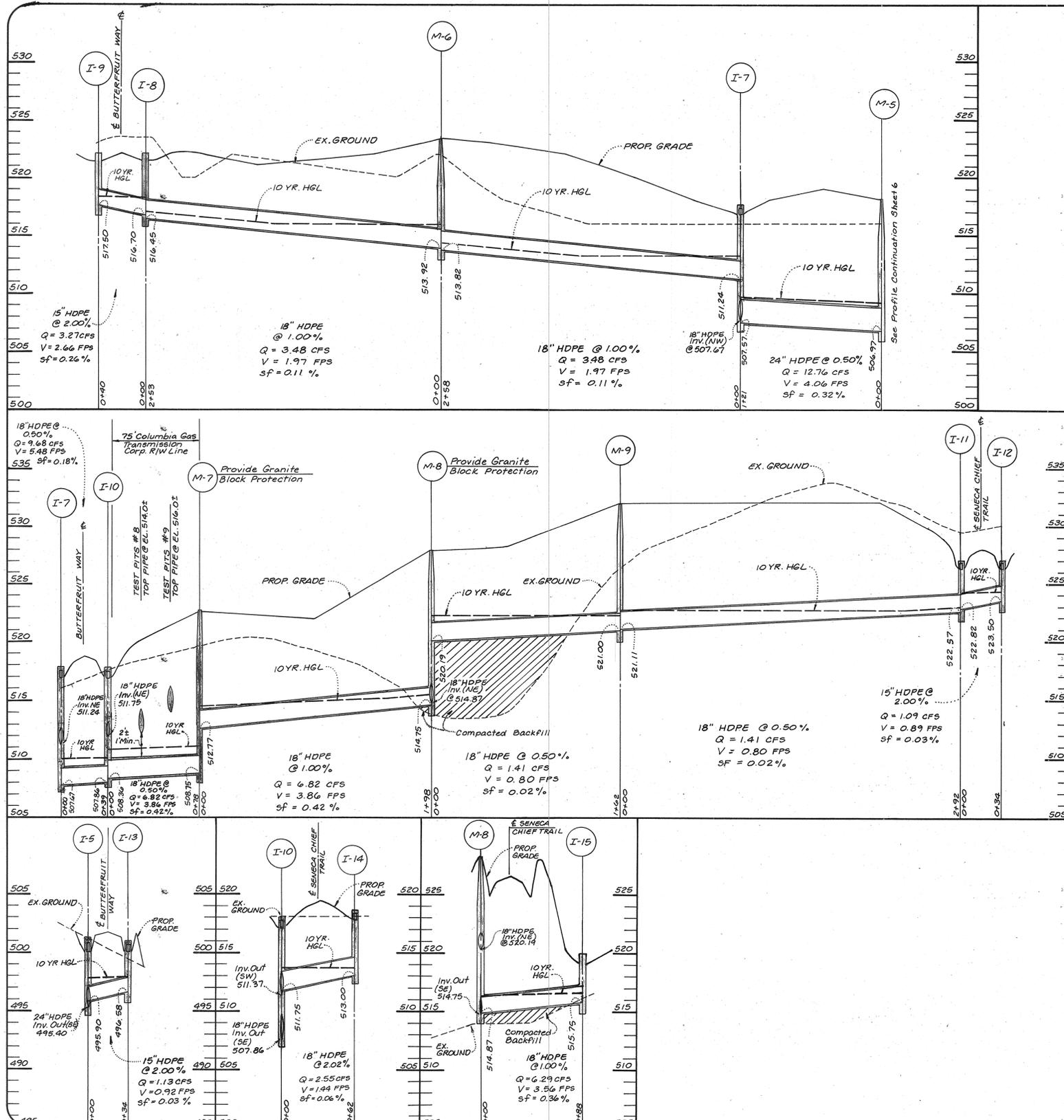
**BRANTWOOD**  
 Section Two - Area One

Scale: As Shown  
 Drawing: 6 of 26  
 Job No.: 95-056.2  
 File No.: F 99-140

DESIGNED: E.D.S.  
 DRAWN: K.B.W.  
 CHECKED: B.D.B.  
 DATE: 9/99

Owner: David A. Carney, Trustee  
 Laurence B. Rebar, Trustee  
 o/o Reese and Carney, LLP  
 10712 Charter Drive  
 Columbia, Maryland 21045  
 (410) 742-6800

Developer: BRANTWOOD LLC  
 8835 - P Columbia 100 Parkway  
 Columbia, Maryland 21045  
 (410) 730-0810

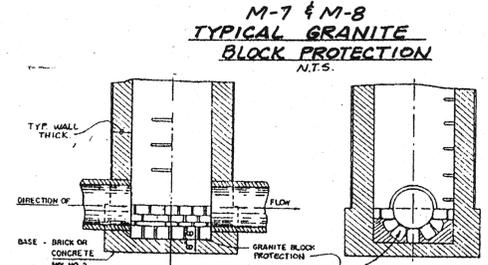


PIPE SCHEDULE		
Size	Class	Total Length
15"	HDPE Smooth Interior	108
18"	HDPE Smooth Interior	1430
24"	HDPE Smooth Interior	1592

\* The total length of pipe does not take into account the slope of the pipe. This total is for linear feet only.

STRUCTURE SCHEDULE						
Inlet No.	Type	Inv. In	Inv. Out	Top Elevation or		Remarks
				Upper	Lower	
I-1	Dbl. "S" Comb.	455.00	454.90	462.88	SD 4.34	Sump
I-2	"D"	462.20	460.70	468.33	SD 4.39	Throat 4 Sides
I-3	"D"	463.00	462.90	468.33	SD 4.39	Throat 4 Sides
I-4	"D"	477.50	477.40	482.83	SD 4.39	Throat 4 Sides
I-5	"D"	495.50	495.40	501.00	SD 4.39	Throat 4 Sides
I-6	"D"	505.60	505.50	510.45	SD 4.39	Throat 4 Sides
I-7	"D"	511.24 / 507.67	507.57	517.75	SD 4.39	Throat 4 Sides
I-8	A-5	516.70	516.45	521.60	SD 4.40	Modified Open Box - See Detail 20.5
I-9	A-5	-	517.50	521.72	SD 4.40	Modified Open Box - See Detail 20.5
I-10	"D"	511.75 / 508.36	507.66	517.75	SD 4.39	Throat 4 Sides
I-11	"D"	522.82	522.57	527.25	SD 4.39	Throat 4 Sides
I-12	"D"	-	523.50	527.25	SD 4.39	Throat 4 Sides
I-13	"D"	-	496.58	501.00	SD 4.39	Throat 4 Sides
I-14	"D"	-	513.00	518.83	SD 4.39	Throat 4 Sides
I-15	"D"	-	515.75	520.00	SD 4.39	Throat 4 Sides
M-1	Manhole	413.76	413.66	419.20	G 5.12	
M-2	Manhole	429.00	428.90	435.00	G 5.12	
M-3	Manhole	452.55	452.45	461.00	G 5.12	
M-4	Manhole	506.55	506.45	518.20	G 5.12	
M-5	Manhole	506.57	506.81	518.20	G 5.12	
M-6	Manhole	513.92	513.82	523.50	G 5.12	
M-7	Manhole	512.77	508.75	522.70	G 5.12	Provide Granite Block Protection
M-8	Manhole	520.19	514.75	523.50	G 5.12	Temp. Outfall - Granite Block Protect.
M-9	Manhole	521.00	521.11	532.00	G 5.12	
EW-1	"A" Headwall	413.50	413.50	417.00	SD-5.11	
S-1	"A" Headwall	408.00	408.00	411.50	SD-5.11	
S-2	Riser	408.50	408.50	Ultimate 418.33	-	See Sheets 20 & 21
S-3	"A" Headwall	459.00	459.00	462.50	SD-5.11	
S-4	Riser	460.00	459.90	467.33	-	See Sheet 19

\* Grade is for Headpiece / Top of Curb  
Finished grade / Top of Grate @ Face of Curb = 462.28



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 10/19/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 10/26/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE  
 [Signature] 10/28/99  
 CHIEF, BUREAU OF HIGHWAYS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.  
 [Signature] 9/21/99  
 NATURAL RESOURCE CONSERVATION SERVICE  
 THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
 [Signature] 9/21/99  
 HOWARD SOIL CONSERVATION DISTRICT

ENGINEER'S CERTIFICATE  
 I certify that this plan for pond construction and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with a "re-bid" plan of the pond within 30 days of completion.  
 [Signature] 9/14/99  
 SIGNATURE OF ENGINEER  
 DEVELOPER'S CERTIFICATE  
 I/We certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with a "re-bid" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard Soil Conservation District.  
 [Signature] 9/14/99  
 SIGNATURE OF DEVELOPER

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 [Signature] 9/14/99

**LDE, INC.**  
 9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: E.D.S.  
 DRAWN: K.B.W.  
 CHECKED: B.D.B.  
 DATE: 9/99

Storm Drain Profiles  
**BRANTWOOD**  
 Section Two - Area One  
 Lots 1 - 30 & Preservation Parcels "E" and "F"  
 A Resubdivision of part of "BRANTWOOD" - Section One  
 Non-Buildable Bulk Parcel "E"

SCALE: As Shown  
 DRAWING: 7 of 26  
 JOB NO.: 95-056.2  
 FILE NO.: F 99-140

Owner: David A. Carney, Trustee  
 Laurence B. Baker, Trustee  
 c/o Reese and Carney, LLP  
 10715 Carney Drive  
 Columbia, Maryland 21045  
 (410) 740-4800

Developer: BRANTWOOD, LLC.  
 8835 - P Columbia 100 Parkway  
 Columbia, Maryland 21045  
 (410) 790-0810

**LEGEND**

- 522 --- EX. 2 FT. CONTOUR
  - 522 --- PROP. 2 FT. CONTOUR
  - 520 --- EX. 10 FT. CONTOUR
  - [Hatched Box] PROP. SEPTIC AREA
  - [Hatched Box] EX. SEPTIC AREA
  - [Wavy Line] EX. TREES
  - [Wavy Line] EX. TREES TO REMAIN
  - EX. F98-138 DRAINAGE DIVIDE
  - DRAINAGE DIVIDE
  - TC PATH
- Area Zoning  
"C" Factor # % Impervious



GEORGE A. & CERRUDE J. GARBUTT  
Liber 985 / Folio 183  
Zoned: RC

QUINTIN FERGUSON and WIFE  
Liber 227 / Folio 395  
Zoned: RC

A=0.11 Ac ± I-11 RC Zone  
C=0.47 49% Imp.

A=0.35 Ac ± I-10 RC Zone  
C=0.44 45% Imp.

A=1.43 Ac ± I-14 RC Zone  
C=0.35 33% Imp.

A=2.00 Ac ± I-9 RC Zone  
C=0.26 21% Imp.

A=4.85 Ac ± I-15 RC Zone  
C=0.25 20% Imp.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]*  
10/1/99  
DATE

*[Signature]*  
11/2/99  
DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

*[Signature]*  
10-2-99  
DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

*[Signature]*  
9/24/99  
DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

*[Signature]*  
9/24/99  
DATE

**ENGINEER'S CERTIFICATE**

I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have certified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

*[Signature]*  
9/14/99  
DATE

**DEVELOPER'S CERTIFICATE**

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have certificates of attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I shall provide periodic on-site inspections by Howard Soil Conservation District.

*[Signature]*  
9/25/99  
DATE

*[Signature]*  
9/14/99

By	Date	No.	Description
LDE	2/00	1	Add Note #2

Note 1) If no TC Path is shown, Worst Case 5 Minute TC was used.  
2) Do not use this sheet for Grading, refer to sheet 12.

LDE, INC.  
9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: E.D.S.  
DRAWN: K.B.W.  
CHECKED: B.D.B.  
DATE: 9/99

**BRANTWOOD**  
Section Two - Area One

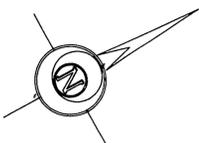
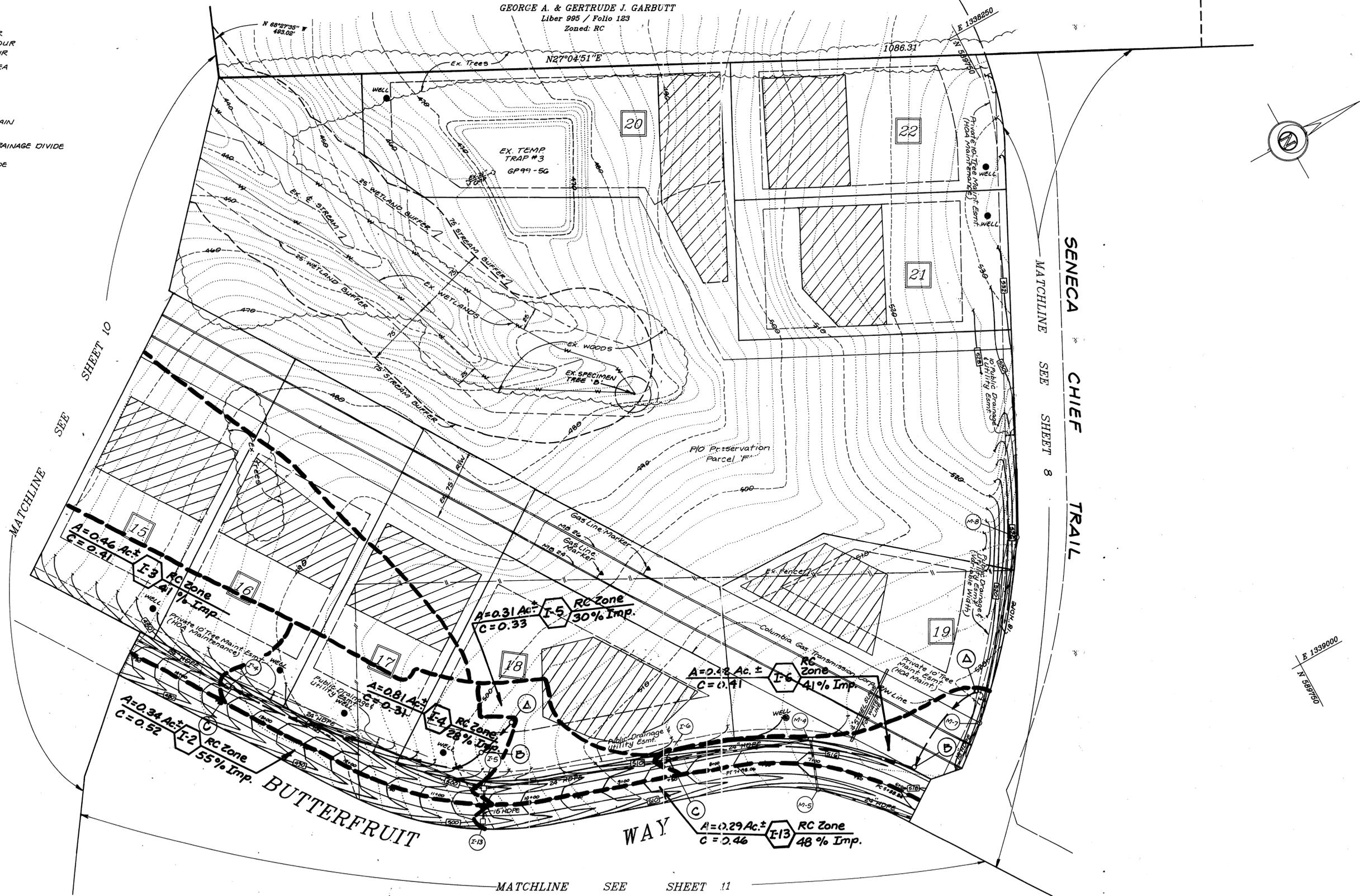
Scale: 1"=50'  
Drawing: 8 of 26  
Job No.: 95-0562  
File No.: F99-140

REVISIONS

**LEGEND**

	EX. 2 FT. CONTOUR
	PROP. 2 FT. CONTOUR
	EX. 10 FT. CONTOUR
	PROP. SEPTIC AREA
	EX. SEPTIC AREA
	EX. TREES
	EX. TREES TO REMAIN
	EX. F98-138 DRAINAGE DIVIDE
	DRAINAGE DIVIDE
	TC PATH
	AREA ZONING
	"C" FACTOR INLET # % IMPERVIOUS

GEORGE A. & GERTRUDE J. GARBUTT  
 Liber 995 / Folio 123  
 Zoned: RC



APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 10/19/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 10/26/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

*[Signature]* 10-5-99  
 CHIEF, BUREAU OF HIGHWAYS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

*[Signature]* 9/2/99  
 NATURAL RESOURCE CONSERVATION

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

*[Signature]* 9/2/99  
 HOWARD SOIL CONSERVATION DISTRICT

**ENGINEER'S CERTIFICATE**

I certify that this plan for pond construction... represents a practical and workable plan based on my personal knowledge of the site conditions... and that my 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also subject the public works inspections by Howard Soil Conservation District.

*[Signature]* 9/14/99  
 SIGNATURE OF ENGINEER

**DEVELOPER'S CERTIFICATE**

I/We certify that all development and/or construction will be done according to these plans, and that my 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also subject the public works inspections by Howard Soil Conservation District.

*[Signature]* 9/2/99  
 SIGNATURE OF DEVELOPER

*[Signature]* 9/14/99

Note 1) If no TC Path is shown, Worst Case 5 Minute TC was used.  
 2) Do not use this sheet for grading, refer to Sheet 13.

By	Date	No.	Description
LDE	2/00	1	Add Note # 2

REVISIONS

**LDE, INC.**  
 9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: E.D.S. SCALE: 1" = 50'

DRAWN: K.B.W. DRAWING: 9 of 26

CHECKED: B.D.B. JOB NO.: 95-056.2

DATE: 19/99

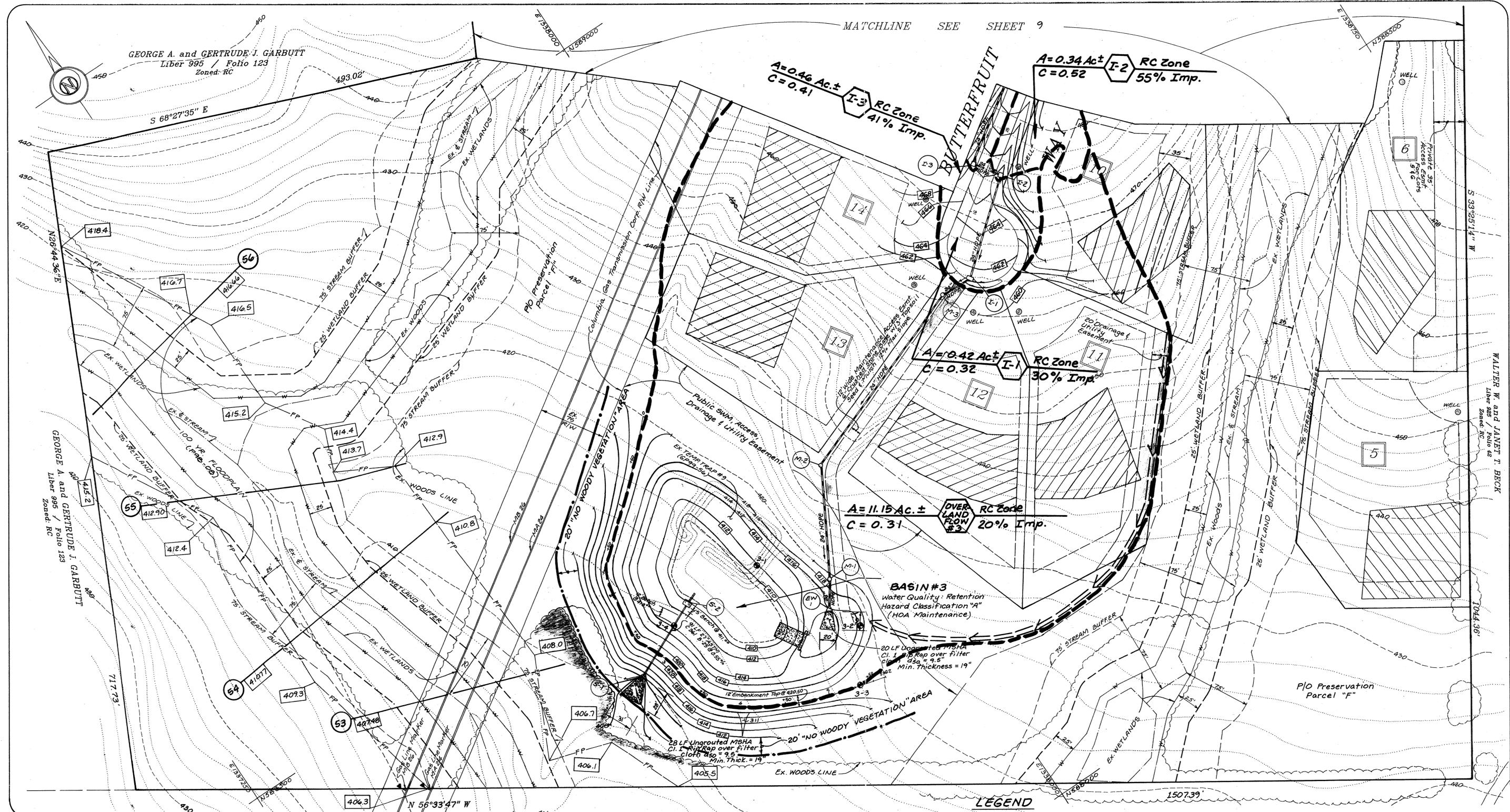
Tax Map Nos. 16 & 23 - Grid Nos. 21/22 & 3/A - P/O Parcel 214  
 3rd Election District - Howard County, Maryland

Previous Submittals: F 80-07, WP 96-133, S 96-23, P 98-08, GP 99-56  
 WP 98-133, E 99-138, WP 99-14, P 99-05, RE 99-01

Owner: **MATT & CRYSTAL TRUSTEE**  
 Laurence B. Rubin, Trustee  
 2% Rosen and Garay, LLP  
 10715 Charter Drive  
 Columbia, Maryland 21045  
 (410) 740-4800

Developer: **BRANTWOOD, LLC.**  
 8835 - P Columbia 100 Parkway  
 Columbia, Maryland 21045  
 (410) 750-0810

FILE NO.: F 99-140



MATCHLINE SEE SHEET 9

GEORGE A. and GERTRUDE J. GARBUTT  
Liber 995 / Folio 123  
Zoned: RC

A = 0.34 Ac ± I-2 RC Zone  
C = 0.52 55% Imp.

A = 0.46 Ac ± I-3 RC Zone  
C = 0.41 41% Imp.

A = 0.42 Ac ± I-1 RC Zone  
C = 0.32 30% Imp.

A = 11.15 Ac ± OVERLAND FLOW #2 RC Zone  
C = 0.31 20% Imp.

BASIN #3  
Water Quality: Retention  
Hazard Classification "A"  
(HOA Maintenance)

P/O Preservation Parcel "F"

LEGEND

- 522 EX. 2 FT. CONTOUR
- 522 PROP. 2 FT. CONTOUR
- 520 EX. 10 FT. CONTOUR
- PROP. SEPTIC AREA
- EX. SEPTIC AREA
- EX. TREES
- EX. TREES TO REMAIN
- EX. F 98-138 DRAINAGE DIVIDE
- DRAINAGE DIVIDE
- TC PATH
- Area INLET Zoning  
"C" Factor # % Impervious
- "NO WOODY VEGETATION" AREA DELINEATION

Note: 1) If no TC Path is shown, worst case 5 Minute Tc was used.  
2) Do not use this sheet for Grading, refer to Sheet 14.

LDE	2/00	▲	Add Note #2
By	Date	No.	Description

REVISIONS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 10/19/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 4/24/99  
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

*[Signature]* 10-8-99  
CHIEF, BUREAU OF HIGHWAYS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

*[Signature]* 9/24/99  
CHIEF, NATURAL RESOURCE CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 9/24/99  
HOWARD SOIL CONSERVATION DISTRICT

**ENGINEER'S CERTIFICATE**

I certify that this plan for pond construction and sediment control represents a practical and workable plan based on the best knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District and I have advised the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

*[Signature]* 9/24/99  
SIGNATURE OF ENGINEER DATE

**DEVELOPER'S CERTIFICATE**

I/We certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I shall engage a registered professional engineer to supervise and provide periodic on-site inspections by Howard Soil Conservation District.

*[Signature]* 9/24/99  
SIGNATURE OF DEVELOPER DATE

STATE OF MARYLAND  
DEPARTMENT OF THE ENVIRONMENT  
HOWARD SOIL CONSERVATION DISTRICT

*[Signature]* 9/24/99

WALTER W. and JANET T. BECK  
Liber 925 / Folio 42  
Zoned: RC

NOTE: FOR ULTIMATE POND GRADES, REFER TO SHEET 21.

LDE, INC.  
9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: E.D.S.  
DRAWN: K.B.W.  
CHECKED: B.D.B.  
DATE: 9/99

SCALE: 1" = 50'  
DRAWING: 10 of 26  
JOB NO.: 95-056.2  
FILE NO.: F 99-140

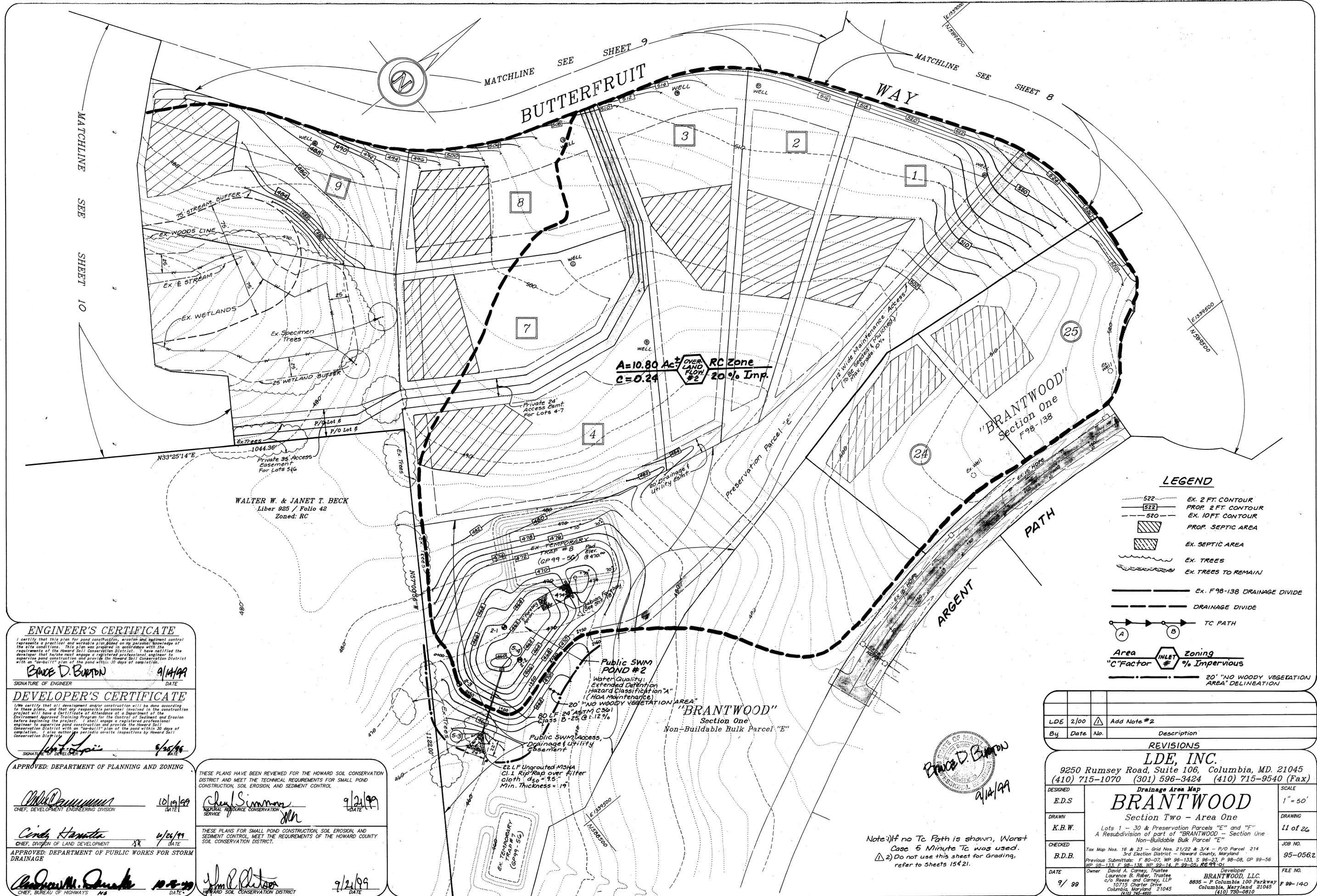
Drainage Area Map  
**BRANTWOOD**  
Section Two - Area One

Lots 1 - 30 & Preservation Parcels "E" and "F"  
A Resubdivision of part of "BRANTWOOD - Section One"  
Non-Buildable Bulk Parcel "E"

Tax Map Nos. 16 & 23 - Grid Nos. 21/22 & 3/4 - P/O Parcel 214  
3rd Election District - Howard County, Maryland  
Previous Submittals: F 80-07, WP 96-133, S 98-23, P 98-08, GP 99-56  
WP 98-133, F 98-138, WP 99-14, P 99-05, PE 99-01

Owner: David A. O'Casey, Trustee  
Laurence B. Barber, Trustee  
O/O Reese and O'Casey, LLP  
10715 Charter Drive  
Columbia, Maryland 21045  
(410) 740-4800

Developer: BRANTWOOD, LLC  
8835 - P Columbia 100 Parkway  
Columbia, Maryland 21045  
(410) 730-0810



MATCHLINE SEE SHEET 9  
 BUTTERFRUIT WAY  
 MATCHLINE SEE SHEET 8

MATCHLINE SEE SHEET 10

A=10.80 Ac<sup>2</sup> OVERLAND FLOW #2  
 C=0.24 RC Zone 20% Imp.

WALTER W. & JANET T. BECK  
 Liber 925 / Folio 42  
 Zoned: RC

**LEGEND**

- ..... 522 ..... EX. 2 FT. CONTOUR
- 522 ----- PROP. 2 FT. CONTOUR
- 520 ----- EX. 10 FT. CONTOUR
- [Hatched Box] PROP. SEPTIC AREA
- [Hatched Box] EX. SEPTIC AREA
- [Wavy Line] EX. TREES
- [Wavy Line] EX. TREES TO REMAIN
- EX. F98-138 DRAINAGE DIVIDE
- DRAINAGE DIVIDE
- TC PATH
- Area Inlet Zoning  
 "C" Factor # % Impervious
- 20' "NO WOODY VEGETATION AREA" DELINEATION

**ENGINEER'S CERTIFICATE**  
 I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.  
**BRUCE D. BURTON** 9/14/99  
 SIGNATURE OF ENGINEER DATE

**DEVELOPER'S CERTIFICATE**  
 I/We certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I shall authorize periodic on-site inspections by Howard Soil Conservation District.  
**Jim Lopez** 9/25/99  
 SIGNATURE OF DEVELOPER DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

**Chris DeLuca** 10/19/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**Cindy Hamstra** 4/26/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

**Chris M. DeLuca** 10-25-99  
 CHIEF, BUREAU OF HIGHWAYS DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.  
**Chris Simmon** 9/21/99  
 NATURAL RESOURCE CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
**Jim P. Patton** 9/21/99  
 HOWARD SOIL CONSERVATION DISTRICT DATE

Public SWM POND #2  
 Water Quality: Extended Detention Hazard Classification "A" (HOA Maintenance)  
 20' "NO WOODY VEGETATION AREA"  
 "BRANTWOOD" Section One  
 Non-Buildable Bulk Parcel "E"

22 LF Ungrooved MOHA Cl. 1 Rip Rap over filter cloth d<sub>50</sub> = 7.5" Min. Thickness = 19"

80 LF 24" ASTM C391 Class B-25 G 1-12.9%

Private 24' Access Esm't. For Lots 4-7

Private 35' Access Easement For Lots 5&6

Private 24' Access Esm't. For Lots 4-7

60' Drainage & Utility Esm't.

12' Wide Maintenance Access (70' BE Subject to Municipality) Max. Grade 10%

Preservation Parcel "E"

75' STREAM BUFFER

EX. WOODS LINE

EX. E STREAM

EX. WETLANDS

Ex. Specimen Trees

25' WETLAND BUFFER

1044.36'

N33°25'14"E

Private 24' Access Esm't. For Lots 4-7

Private 35' Access Easement For Lots 5&6

Private 24' Access Esm't. For Lots 4-7

60' Drainage & Utility Esm't.

12' Wide Maintenance Access (70' BE Subject to Municipality) Max. Grade 10%

Preservation Parcel "E"

75' STREAM BUFFER

EX. WOODS LINE

EX. E STREAM

EX. WETLANDS

Ex. Specimen Trees

25' WETLAND BUFFER

1044.36'

N33°25'14"E

**BRUCE D. BURTON** 9/14/99  
 PROFESSIONAL ENGINEER  
 STATE OF MARYLAND

Note: 1) If no TC Path is shown, Worst Case 5 Minute TC was used.  
 2) Do not use this sheet for Grading, refer to sheets 15421.

LDE	2/00	△	Add Note #2
By	Date	No.	Description

REVISIONS

**LDE, INC.**  
 9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: E.D.S.  
 DRAWN: K.B.W.  
 CHECKED: B.D.B.  
 DATE: 9/99

**BRANTWOOD**  
 Section Two - Area One

Scale: 1" = 50'

Job No: 95-0562

File No: F 99-140

Owner: David A. Carney, Trustee  
 Laurence B. Raber, Trustee  
 c/o Reese and Carney, LLP  
 10715 Charter Drive  
 Columbia, Maryland 21045  
 (410) 720-8800

Developer: BRANTWOOD, LLC  
 8835 - F Columbia 100 Parkway  
 Columbia, Maryland 21045  
 (410) 720-0810

**LEGEND**

- S22 --- EX. 2 FT. CONTOUR
- S22 --- PROP. 2 FT. CONTOUR
- S20 --- EX. 10 FT. CONTOUR
- [Hatched Box] PROP. SEPTIC AREA
- [Hatched Box] EX. SEPTIC AREA
- [Wavy Line] EX. TREES
- [Wavy Line] EX. TREES TO REMAIN
- EX. & STREAM
- 75 FT. STREAM BUFFER
- EX. NON-TIDAL WETLANDS
- 25 FT. WETLAND BUFFER
- FP --- 100 YEAR FLOODPLAIN
- SF --- SF SILT FENCE
- SSF --- SSF SUPER SILT FENCE
- TPF --- TPF TREE PROTECTION FENCE
- ..... LIMIT OF DISTURBANCE
- [SCE] STABILIZED CONSTRUCTION ENTRANCE
- EX-SF --- EX-SF EX. SILT FENCE (GP99-56)
- [Arrow] PROP. EARTH DIKE CLEARWATER DIV.
- [Arrow] EX. EARTH DIKE CLEARWATER DIV. (GP99-56)
- [V-Wall] MOUNTABLE BERM
- [SIP] STANDARD INLET PROTECTION

QUINTIN FERGUSON and WIFE  
Liber 227 / Folio 335  
Zoned: RC

GEORGE A. & GERTRUDE J. GARBUIT  
Liber 205 / Folio 123  
Zoned: RC

**NOTE:** ALL ROAD SIDE DITCHES SHALL BE STABILIZED WITH EROSION CONTROL MATTING PER DETAILS ON SHEETS 5 AND 17.

**DO NOT DISTURB**

**SENECA CHIEF TRAIL**

MATCHLINE SEE SHEET 13

BUTTERFRUIT WAY  
SEE SHEET 15  
MATCHLINE

LDE	2/00	△	Revise Grading, L.O.D., Sediment Controls and Ex. Topo
By	Date	No.	Description

**REVISIONS**

**LDE, INC.**  
9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: Grading and Soil Erosion & Sediment Control Plan  
**E.D.S.**

DRAWN: **K.B.W.**

CHECKED: **B.D.B.**

DATE: 9/99

SCALE: 1" = 50'

DRAWING: 12 of 26

JOB NO.: 95-0562

FILE NO.: F99-140

Owner: David J. Carney, Trustee  
Lorraine & Baber, Trustee  
c/o Basso and Carney, LLP  
10715 Charter Drive  
Columbia, Maryland 21045  
(410) 740-4800

Developer: **BRANTWOOD, LLC.**  
8855 - P Columbia 100 Parkway  
Columbia, Maryland 21045  
(410) 750-0810

**ENGINEER'S CERTIFICATE**

I certify that this plan for pond construction, sediment control, erosion control, and silt fence is a practical and suitable plan for the site conditions shown. I have verified the requirements of the Howard Soil Conservation District and the Department of the Environment. I will engage a registered professional engineer to supervise pond construction and provide a "as-built" plan of the pond within 30 days of completion. I also will provide periodic inspections by Howard Soil Conservation District.

Signature of Engineer: *Paul D. Smith* DATE: 9/2/99

**DEVELOPER'S CERTIFICATE**

I hereby certify that all development and construction will be done according to these plans, and that appropriate construction will be done according to the requirements of the Howard Soil Conservation District and the Department of the Environment. I will engage a registered professional engineer to supervise pond construction and provide a "as-built" plan of the pond within 30 days of completion. I also will provide periodic inspections by Howard Soil Conservation District.

Signature of Developer: *John R. Peterson* DATE: 9/2/99

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*David J. Carney* 10/2/99 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Andy Hanetta* 10/2/99 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

*Andrew M. Donak* 10/2/99 DATE  
CHIEF, BUREAU OF HIGHWAYS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

*Paul D. Smith* 9/2/99 DATE  
NATURAL RESOURCE CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

*John R. Peterson* 9/2/99 DATE  
HOWARD SOIL CONSERVATION DISTRICT

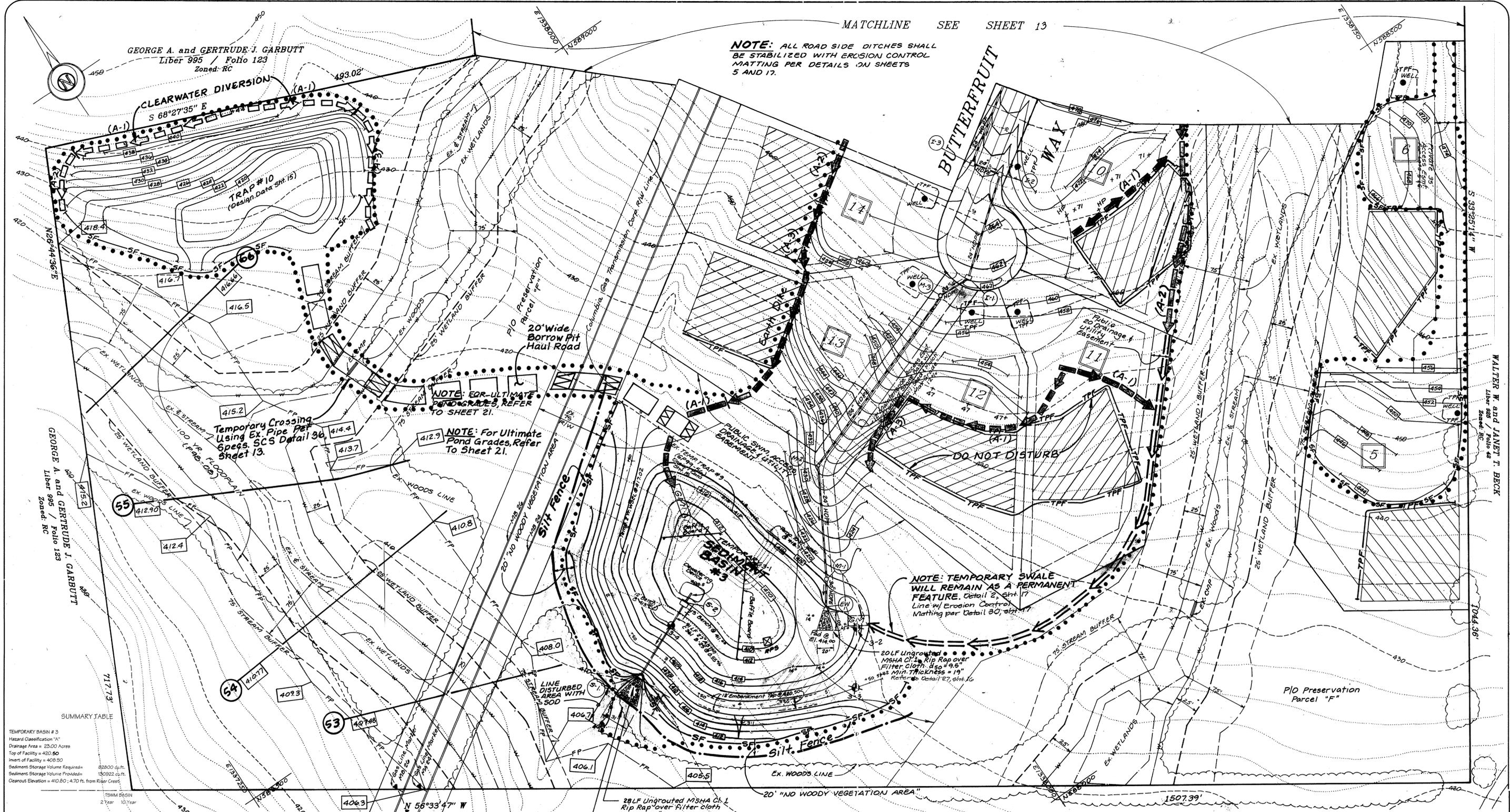
STATE OF MARYLAND  
DAVID J. CARNEY  
REGISTERED PROFESSIONAL ENGINEER  
9/2/99

**WELL NOTE:** TREE PROTECTION FENCE (TPF) OF ORANGE BLAZE FENCE SHALL BE PLACED AROUND ALL WELLS UPON COMPLETION OF DRILLING OPERATIONS. WELL DRILLING SHALL NOT OCCUR UNTIL THE PROPOSED GRADES SHOWN HEREON ARE ESTABLISHED. THE TPF SHOULD SURROUND THE WELL AT A 10 FT. RADIUS MINIMUM.



GEORGE A. and GERTRUDE J. GARBUTT  
 Liber 995 / Folio 123  
 Zoned: RC

**NOTE:** ALL ROAD SIDE DITCHES SHALL  
 BE STABILIZED WITH EROSION CONTROL  
 MATTING PER DETAILS ON SHEETS  
 5 AND 17.



**NOTE:** EOR-ULTIMATE  
 POND GRADES, REFER  
 TO SHEET 21.

**NOTE:** For Ultimate  
 Pond Grades, Refer  
 To Sheet 21.

**NOTE:** TEMPORARY SWALE  
 WILL REMAIN AS A PERMANENT  
 FEATURE. Detail 2, Silt  
 Line w/ Erosion Control  
 Matting per Detail 30, etc.

**WELL NOTE:** TREE PROTECTION FENCE (TPF) OF ORANGE BLAZE  
 FENCE SHALL BE PLACED AROUND ALL WELLS UPON COMPLETION OF  
 DRILLING OPERATIONS. WELL DRILLING SHALL NOT OCCUR UNTIL THE  
 PROPOSED GRADES SHOWN HEREON ARE ESTABLISHED. THE TPF SHOULD  
 SURROUND THE WELL AT A 10 FT. RADIUS MINIMUM.

**SUMMARY TABLE**

TEMPORARY BASIN # 3	
Hazard Classification "A"	
Drainage Area = 23.00 Acres	
Top of Facility = 408.80	
Invert of Facility = 408.50	
Sediment Storage Volume Required = 82800 cu.ft.	
Sediment Storage Volume Provided = 130922 cu.ft.	
Clearance Elevation = 410.80 / 4.70 Ft. from Rider Crest	

**REVISIONS**

LDG	2/00	△	Revise Grading, LOD, Sediment Controls and Existing Topography
By	Date	No	Description

Ex. Q<sub>2</sub> = 2.3 cfs  
 Rip. Q<sub>2</sub> = 2.7 cfs

WALTER W. and JANET T. BECK  
 Liber 925 / Folio 42  
 Zoned: RC

**LEGEND**

522	EX. 2 FT. CONTOUR	SSF	SSF SUPER SILT FENCE
520	EX. 10 FT. CONTOUR	TPF	TPF TREE PROTECTION FENCE
	PROP. SEPTIC AREA	.....	LIMIT OF DISTURBANCE
	EX. SEPTIC AREA	SCC	STABILIZED CONSTRUCTION ENTRANCE
	EX. TREES	— Ex. SF — Ex. SF	EX. SILT FENCE (6P99-56)
	EX. TREES TO REMAIN	→	PROP. EARTH DIKE / CLEARWATER DIVERSION
	EX. & STREAM	→	EX. EARTH DIKE / CLEARWATER DIVERSION (6P99-56)
	75 FT. STREAM BUFFER	AAA	MOUNTABLE BERM
	EX. NON-TIDAL WETLANDS	VVV	TEMPORARY SWALE
	25 FT. WETLAND BUFFER	→	GABION INFLOW PROTECTION
	100 YEAR FLOODPLAIN	GM	
	SF	SF	SILT FENCE

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

*Michael J. ...*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 10/19/99  
 DATE

*Cind Hamitta*  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 10/25/99  
 DATE

**APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE**

*Andrew M. ...*  
 CHIEF, BUREAU OF HIGHWAYS  
 10-2-99  
 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

*Chief Simmons*  
 NATURAL RESOURCE CONSERVATION SERVICE  
 9/21/99  
 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

*John P. ...*  
 HOWARD SOIL CONSERVATION DISTRICT  
 9/21/99  
 DATE

**ENGINEER'S CERTIFICATE**

I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan for the proposed project. I have the personal knowledge of the site conditions. This plan was prepared by me or under my direct supervision and I am a duly licensed professional engineer in the State of Maryland. I hereby certify that I am a duly licensed professional engineer in the State of Maryland.

*George A. Garbutt*  
 SIGNATURE OF ENGINEER  
 9/14/99  
 DATE

**DEVELOPER'S CERTIFICATE**

I/We certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard Soil Conservation District.

*George A. Garbutt*  
 SIGNATURE OF DEVELOPER  
 9/14/99  
 DATE

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 WALTER W. and JANET T. BECK  
 9/14/99

**LDE, INC.**  
 9250 Rümsey Road, Suite 106, Columbia, MD 21045  
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

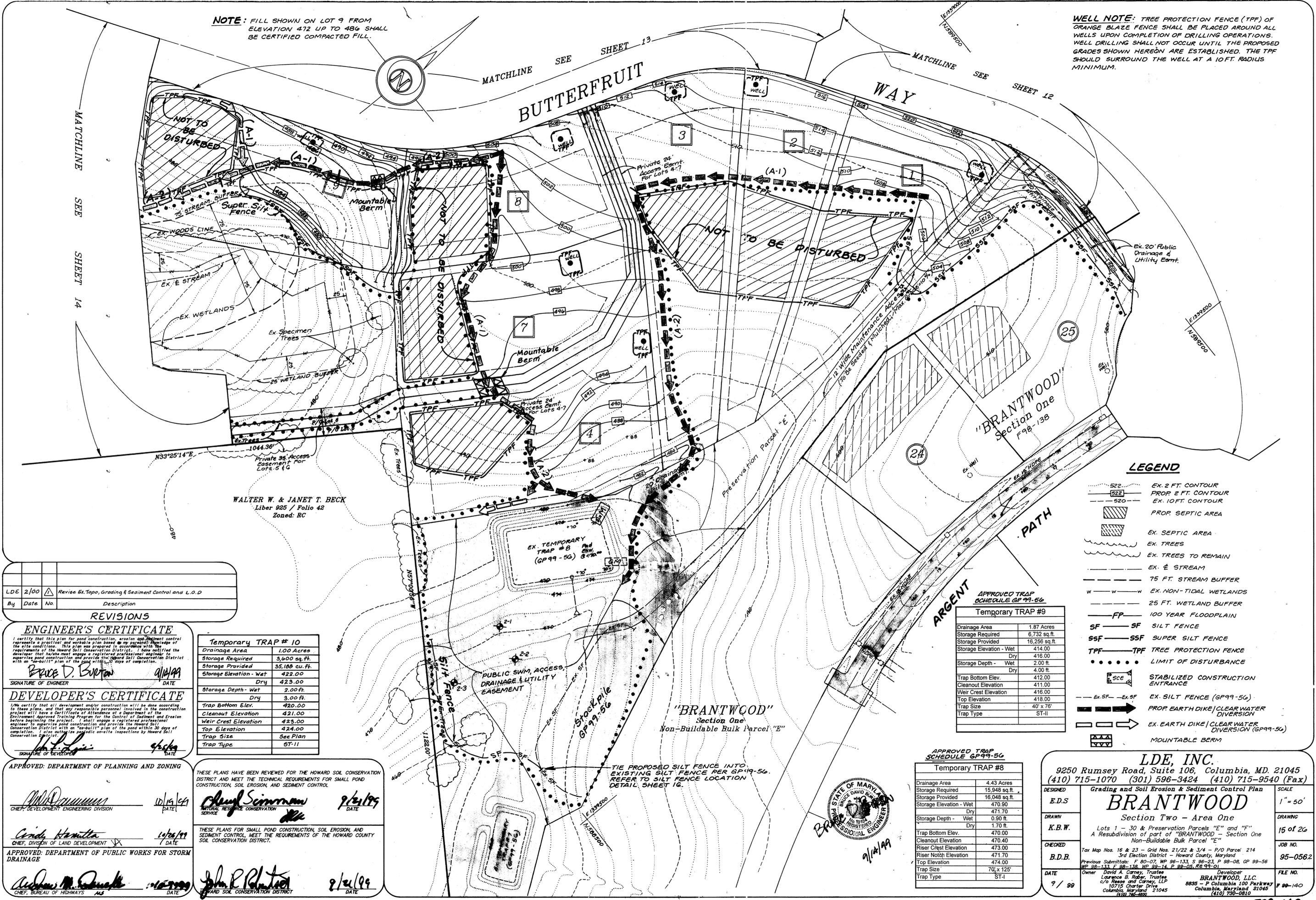
DESIGNED: E.D.S.  
 DRAWN: K.B.W.  
 CHECKED: B.D.B.  
 DATE: 9/99

Grading and Soil Erosion & Sediment Control Plan  
**BRANTWOOD**  
 Section Two - Area One  
 Lots 1 - 30 & Preservation Parcels "E" and "F"  
 A Resubdivision of part of "BRANTWOOD" - Section One  
 Non-Buildable Bulk Parcel "E"

SCALE: 1" = 50'  
 DRAWING: 14 of 26  
 JOB NO.: 95-056.2  
 FILE NO.: F 99-140

NOTE: FILL SHOWN ON LOT 9 FROM ELEVATION 472 UP TO 486 SHALL BE CERTIFIED COMPACTED FILL.

WELL NOTE: TREE PROTECTION FENCE (TPF) OF ORANGE BLAZE FENCE SHALL BE PLACED AROUND ALL WELLS UPON COMPLETION OF DRILLING OPERATIONS. WELL DRILLING SHALL NOT OCCUR UNTIL THE PROPOSED GRADES SHOWN HEREON ARE ESTABLISHED. THE TPF SHOULD SURROUND THE WELL AT A 10 FT RADIUS MINIMUM.



**LEGEND**

- 522 --- EX. 2 FT. CONTOUR
- 520 --- EX. 10 FT. CONTOUR
- ▨ PROP. SEPTIC AREA
- ▨ EX. SEPTIC AREA
- EX. TREES
- EX. TREES TO REMAIN
- EX. E. STREAM
- 75 FT. STREAM BUFFER
- EX. NON-TIDAL WETLANDS
- 25 FT. WETLAND BUFFER
- FP --- 100 YEAR FLOODPLAIN
- SF --- SF SILT FENCE
- SSF --- SSF SUPER SILT FENCE
- TPF --- TPF TREE PROTECTION FENCE
- LIMIT OF DISTURBANCE
- SCE --- STABILIZED CONSTRUCTION ENTRANCE
- Ex. SF --- Ex. SF EX. SILT FENCE (GP99-56)
- PROP. EARTH DIKE / CLEAR WATER DIVERSION
- EX. EARTH DIKE / CLEAR WATER DIVERSION (GP99-56)
- MOUNTABLE BERM

**APPROVED TRAP SCHEDULE GP99-56**

Temporary TRAP #9

Drainage Area	1.87 Acres
Storage Required	6,732 sq. ft.
Storage Provided	16,256 sq. ft.
Storage Elevation - Wet	414.00
Dry	416.00
Storage Depth - Wet	2.00 ft.
Dry	4.00 ft.
Trap Bottom Elev.	412.00
Cleanout Elevation	411.00
Weir Crest Elevation	416.00
Top Elevation	418.00
Trap Size	40' x 76'
Trap Type	ST-II

**APPROVED TRAP SCHEDULE GP99-56**

Temporary TRAP #8

Drainage Area	4.43 Acres
Storage Required	15,948 sq. ft.
Storage Provided	16,048 sq. ft.
Storage Elevation - Wet	470.90
Dry	471.70
Storage Depth - Wet	0.90 ft.
Dry	1.70 ft.
Trap Bottom Elev.	470.00
Cleanout Elevation	470.40
Riser Crest Elevation	473.00
Riser Notch Elevation	471.70
Top Elevation	474.00
Trap Size	70' x 125'
Trap Type	ST-I

**REVISIONS**

LDE	2/00	△	Revise Ex. Topo, Grading & Sediment Control and L.O.D.
By	Date	No.	Description

**ENGINEER'S CERTIFICATE**  
I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

*Bruce D. Burton* 9/14/99  
SIGNATURE OF ENGINEER DATE

**DEVELOPER'S CERTIFICATE**  
I, the developer, certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I shall submit the periodic on-site inspections by Howard Soil Conservation District.

*Walter W. Beck* 9/14/99  
SIGNATURE OF DEVELOPER DATE

**Temporary TRAP #10**

Drainage Area	1.00 Acres
Storage Required	3,600 sq. ft.
Storage Provided	35,188 cu. ft.
Storage Elevation - Wet	422.00
Dry	423.00
Storage Depth - Wet	2.00 ft.
Dry	3.00 ft.
Trap Bottom Elev.	420.00
Cleanout Elevation	421.00
Weir Crest Elevation	423.00
Top Elevation	424.00
Trap Size	See Plan
Trap Type	ST-II

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Michelle Cummings* 10/19/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Hammit* 10/26/99  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

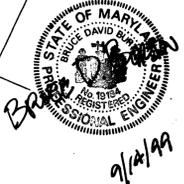
*Andrew M. Edwards* 10/26/99  
CHIEF, BUREAU OF HIGHWAYS DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

*Cheryl Scrimman* 9/21/99  
NATURAL RESOURCE CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

*John R. Blanton* 9/21/99  
HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE



**LDE, INC.**  
9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: E.D.S.  
DRAWN: K.B.W.  
CHECKED: B.D.B.  
DATE: 9/99

Grading and Soil Erosion & Sediment Control Plan  
**BRANTWOOD**  
Section Two - Area One  
Lots 1 - 30 & Preservation Parcels "E" and "F"  
A Resubdivision of part of "BRANTWOOD" - Section One  
Non-Buildable Bulk Parcel "E"

SCALE: 1" = 50'  
DRAWING: 15 of 26  
JOB NO.: 95-0562  
FILE NO.: P 99-140

Owner: David A. Carney, Trustee  
Laurence B. Rider, Trustee  
c/o Reese and Carney, LLP  
10715 Charter Drive  
Columbia, Maryland 21045  
(410) 746-8800

Developer: BRANTWOOD, LLC  
8835 - F Columbia 100 Parkway  
Columbia, Maryland 21045  
(410) 730-0810

**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 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.
- All sediment traps/basins shown must be fenced and warning signs posted around the 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 C) 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.
- 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	67 Acres
Area Disturbed	3.50 Acres
Area to be roofed or paved	1.24 Acres
Area to be vegetatively stabilized	24.26 Acres
Total Cut Volume	52,222 Cu. Yds.
Total Fill	52,222 Cu. Yds.

Offsite waste/borrow area location F-88-138 Trap #10

- Any sediment control practice which is disturbing grading activities 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 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.

**HOWARD SOIL CONSERVATION DISTRICT  
PERMANENT SEEDING NOTES**

Apply to graded or cleared areas not subject to immediate further disturbance where a 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 one of the following

- PREFERRED** — Apply 2 tons per acre dolomitic limestone (92 lbs/1000sq. ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000sq. ft.)
- ACCEPTABLE** — Apply 2 tons per acre dolomitic limestone (92 lbs/1000sq. ft.) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

**SEEDING** — For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs per acre (1.4 lbs/1000sq. ft.) of Kentucky 31 Tall Fescue and 2 lbs. per acre (.05 lbs/1000sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) — 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) — Use sod. Option (3) — Seed with 60 lbs per acre Kentucky 31 Tall Fescue and mulch 2 tons / acre well anchored straw.

**MULCHING** — Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000sq. ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000sq. ft.) for anchoring.

**MAINTENANCE** — Inspect all seeding areas and make needed repairs, replacements and reseeding.

**TEMPORARY SEEDING NOTES**

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

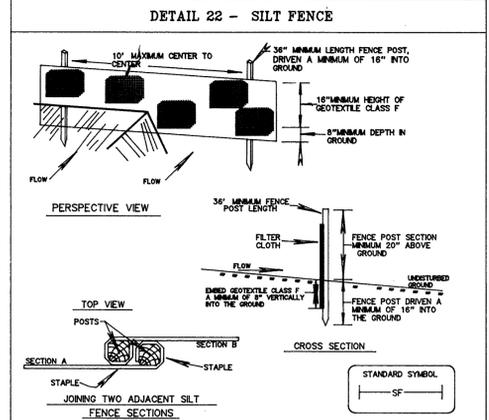
**SEEDBED PREPARATION:** — Loosen upper three inches of soil by raking, disking, or other acceptable means before seeding, if not previously loosened.

**SOIL AMENDMENTS:** — Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000sq. ft.).

**SEEDING** — For periods March 1 thru April 30, and from August 15 thru October 15 seed with 2-12 bushels per acre of annual rye (3.2 lbs/1000sq. ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre (.07 lbs/1000sq. ft.) of weeping lovegrass. For the period November 16 thru February 28, protect site by: applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

**MULCHING** — Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000sq. ft.) of unrotted weed free small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000sq. ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000sq. ft.) for anchoring.

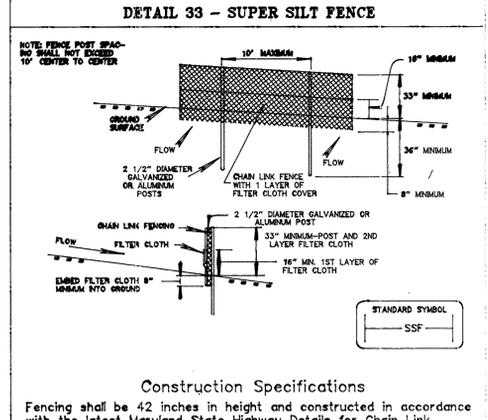
Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.



**Construction Specifications**

- Fence posts shall be a minimum of 3/8" diameter 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard I or U section weighing not less than 1.00 pound per linear foot.
- Geotextiles shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements:
  - Tensile strength 50 lbs/in (min)
  - Tensile modulus 20 lbs/in (min)
  - Flow Rate 0.3 gal ft / minute (max)
  - Filtering Efficiency 75% (min)
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-18-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

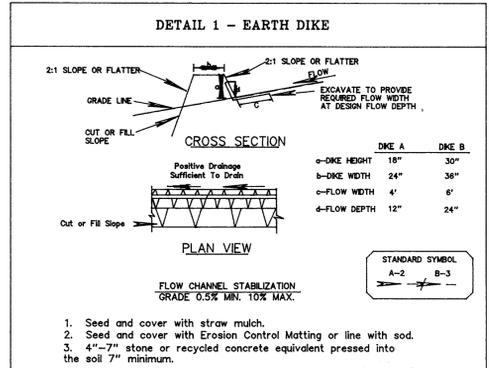


**Construction Specifications**

Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.

- The poles do not need to set in concrete.
- Chain link fence shall be fastened securely to the fence posts with wire ties or staples.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence.

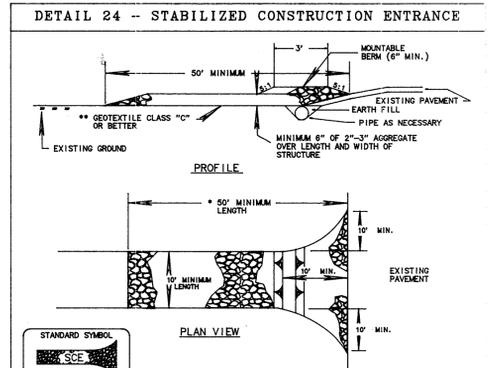
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-28-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**Construction Specifications**

- All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
- Runoff diverted from a disturbed area shall be converted to a sediment trapping device.
- Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
- All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
- The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
- Fill shall be compacted by earth moving equipment.
- All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
- Inspection and maintenance must be provided periodically and after each rain event.

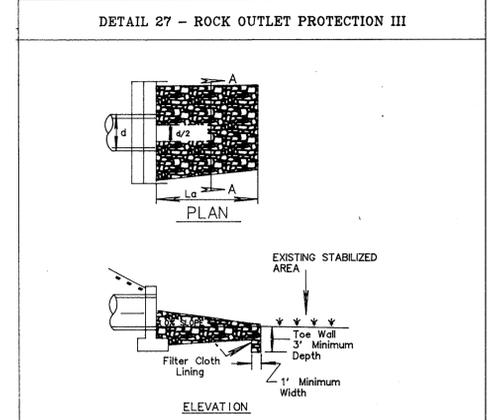
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE A-1-6 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**Construction Specification**

- Length - minimum of 50' (\*30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextiles.
- Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrances, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the S.C.E. is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

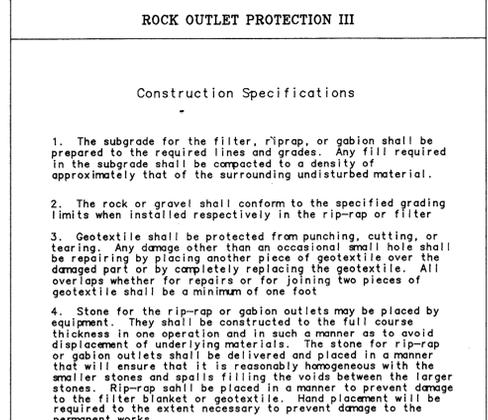
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**Construction Specifications**

- The subgrade for the filter, riprap, 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.
- Stone 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 spalls 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 stones 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-18-10A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**Construction Specifications**

- The subgrade for the filter, riprap, 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.
- Stone 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 spalls 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 stones 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-18-10A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DATE: 10/19/99

DATE: 10/19/99

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

DATE: 10/25/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

DATE: 9/24/99

DATE: 9/24/99

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

DATE: 9/24/99

**ENGINEER'S CERTIFICATE**

I certify that this plan for pond construction and sediment control represents a practical and workable plan and meets the conditions of the Howard Soil Conservation District. I have met with the developer and we have agreed upon the plan and I have signed this certificate with an "as-built" plan of the pond.

DATE: 9/14/99

**DEVELOPER'S CERTIFICATE**

I/we certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I shall also engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

DATE: 9/14/99

STATE OF MARYLAND PROFESSIONAL ENGINEER

DATE: 9/14/99

By	Date	No	Description
LDE	2/00	△	Revise Site Analysis

REVISIONS

**LDE, INC.**

9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

**BRANTWOOD**

Section Two - Area One

16 of 26

9/99

DESIGNED: E.D.S.

DRAWN: C.A.D.D.

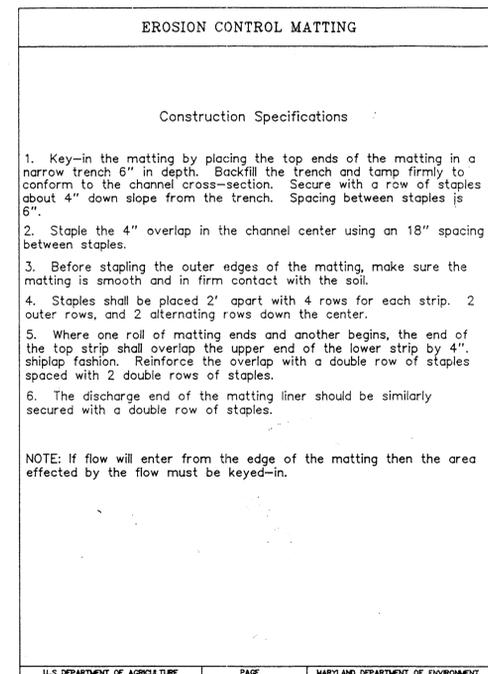
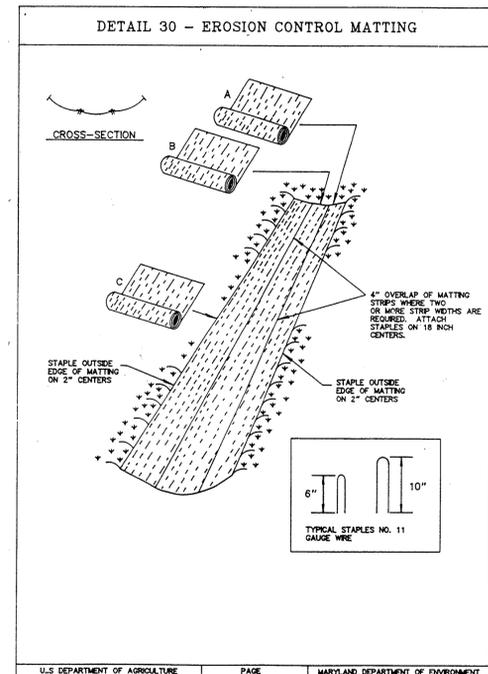
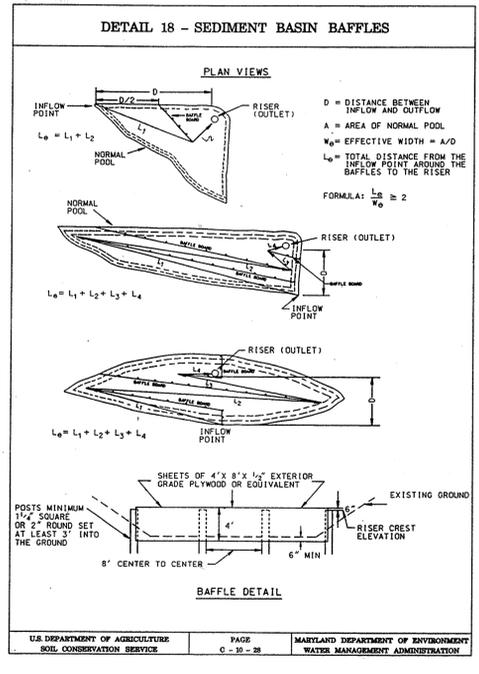
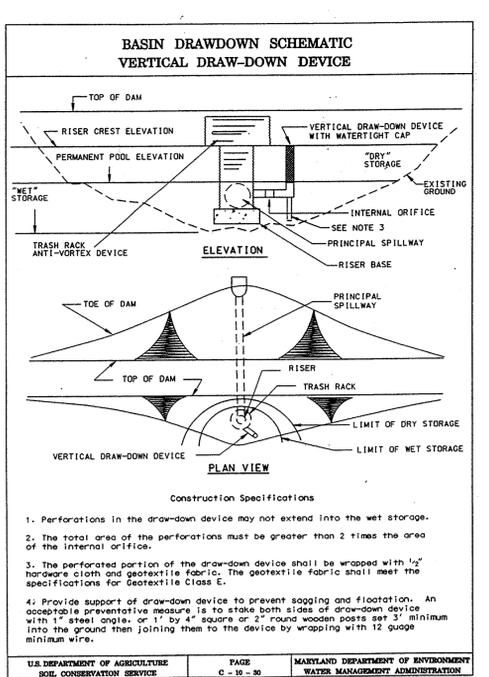
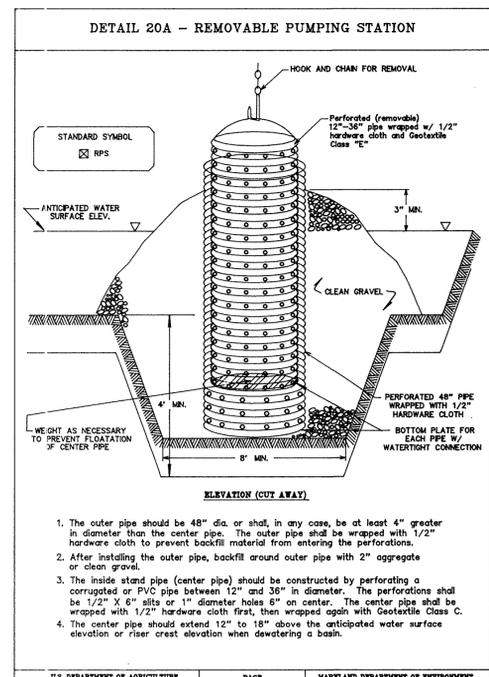
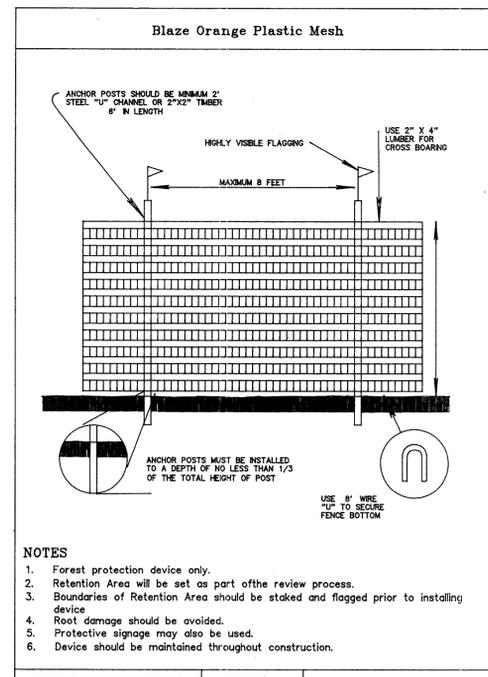
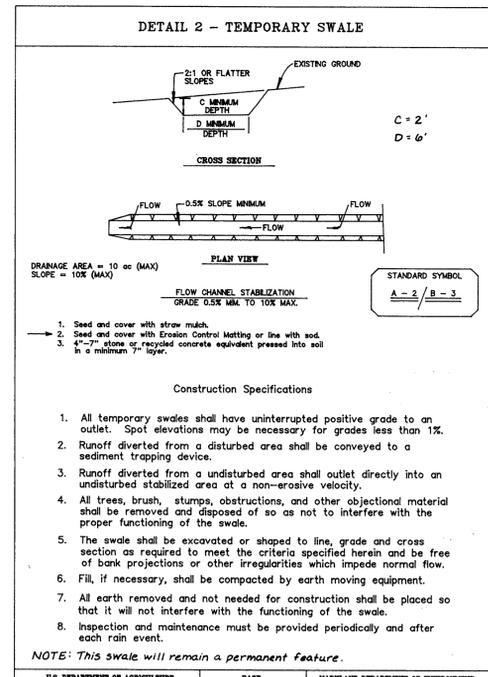
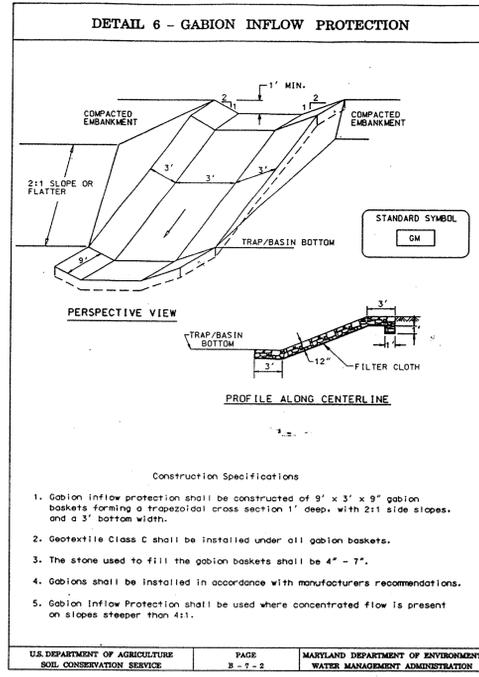
CHECKED: B.D.B.

DATE: 9/99

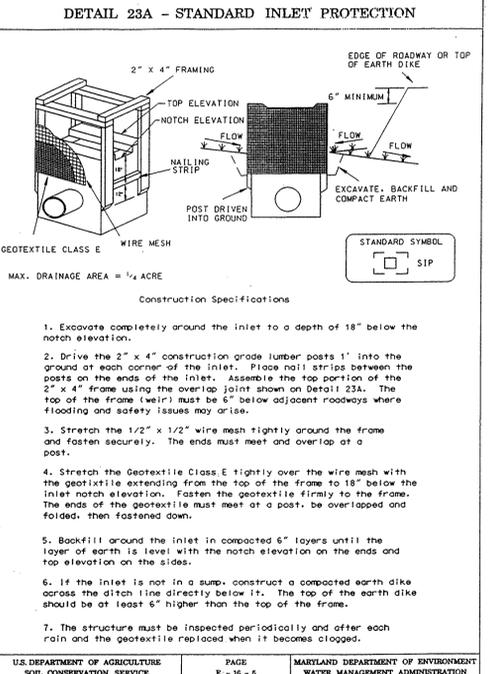
SCALE: As Shown

JOB NO.: 95056.2

FILE NO.: P 99-140



- ### CONSTRUCTION SEQUENCE
- Obtain Grading Permit. - 1 day
  - Install stabilized construction entrance. - 1 day
  - Stakeout limits of disturbance. - 3 days
  - Install Tree Protection Fence (TPF) where shown hereon. - 1 week
  - Install Silt Fence (SF) and Super Silt Fence (SSF) at the limit of disturbance where shown. - 2 days
  - Construct Earth Dike and Clearwater Diversion Dike as shown hereon. - 2 days
  - The contractor shall inspect and provide necessary maintenance on the sediment and erosion controls & control structures being used from the GP 99-56 Mass Grading Plan. Trap #3, #8, & #9 shall be dewatered by pumping and returned to their original design size. The accumulated sediment from the traps shall be placed up grade from the structure in such a manner as not to interfere with construction operations or cause erosion down grade from the structures. - 4 days
  - Install Storm Drain system I-15 to M-0 and temporary 24" HDPE pipe outfall, as shown hereon. - 2 days
  - Construct Basin # 3 per the MD 37B specifications, shown on sheet 18. The riser shall be constructed per the Sediment Basin Details shown on sheets 14 & 20. Obtain permission from the sediment control inspector to proceed. - 3 weeks
  - Cut temporary swale shown on sheet 14. Temporary swale at rear of Lot 11 shall remain as a permanent feature draining toward Pond #3, and should be constructed as such. - 2 days
  - Clear & grade site as shown on sheets 15, 14 & 15. Bring Seneca Chief Trail to subgrade per sheet 12. - 1 week
  - The sediment shall be removed from the sediment traps and Basin when the cleanout elevation has been reached. - 2 days
  - The contractor shall inspect and provide necessary maintenance on the sediment and erosion control structures shown hereon after each rainfall and on a daily basis. - 1 day
  - The sediment traps and basin shall be dewatered by pumping. The accumulated sediment from the trap and basin shall be placed up grade from the structures in such a manner as not to interfere with construction operations or cause erosion down grade from the structures. - 2 days
  - Install curb & gutter, road base and stabilize road swales - 2 weeks
  - With permission of the sediment control inspector, remove temporary pipe per item # 8, complete grading from this disturbance, complete grading as shown on sheet 12 over Lots 23-30, and install paving. - 1 week
  - Construct Pond #2 per the MD 37B specifications, shown on sheet 18. Pond Details are shown on sheets 19 & 21 - 2 weeks
  - Complete any grading, add topsoil per the specifications per sheet 16, and stabilize disturbed areas with permanent seeding mixture and straw mulch - 1 week
  - After all upgrade areas from Basin #3 have been stabilized and permission has been given by Sediment Control Inspector, flush the storm drain system into the Basin #3. - 1 day
  - After permission has been given by Sediment Control Inspector, remove earth and clearwater diversion dikes, backfill TRAP #3 and stabilize the disturbed areas with permanent seeding mixture and straw mulch - 3 days
  - Convert Basin #3 to POND #3 per the details on sheet 21. The temporary riser components are to remain in place during the grading of the pond body. Full stabilization must be achieved prior to the removal of the temporary riser components. - 1 week
  - Convert riser (S-2) by removing dewatering device, installing permanent pond drain, installing "Water Quality Hood", and removing temporary brickwork per details on sheet 21. - 1 week
  - After permission has been given by Sediment Control Inspector, remove silt fence & super silt fence, and stabilize the disturbed areas from the aforementioned disturbances with permanent seeding mixture and straw mulch - 1 week



APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 10/19/99 DATE

*[Signature]* 10/20/99 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

*[Signature]* 10/20/99 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

*[Signature]* 9/21/99 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

*[Signature]* 9/21/99 DATE

**ENGINEER'S CERTIFICATE**

I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District and meets the requirements of the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard Soil Conservation District.

*[Signature]* 9/14/99 DATE

**DEVELOPER'S CERTIFICATE**

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attainment as a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard Soil Conservation District.

*[Signature]* 9/14/99 DATE

**PROFESSIONAL ENGINEER**

*[Signature]* 9/14/99 DATE

LD#	2/00	Revise Sequence	By	Date	No	Description
<b>REVISIONS</b>						
<b>LDE, INC.</b>						
9250 Rumsey Road, Suite 106, Columbia, MD 21045 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)						
DESIGNED	Grading and Soil Erosion & Sediment Control Plan - Details					SCALE
E.D.S.						As Shown
DRAWN						DRAWING
C.A.D.D.						17 of 26
CHECKED						JOB NO.
B.D.B.	Tax Map Nos. 16 & 21 - Grid Nos. 21/22 & 3/4 - P/O Parcel 214 3rd Election District - Howard County, Maryland Previous Submittals: F 80-07, WP 96-133, S 96-23, P 98-08, WP 98-133 F 98-136, WP 99-14, P 99-05, RE 99-01					95-056.2
DATE	Owner: David A. Carney, Trustee LAWSON B. CARNEY, Trustee c/o Reese and Carney, LLP 1075 Oberlin Drive Columbia, Maryland 21045 (410) 740-4600					FILE NO.
9/99	Developer: BRANTWOOD, LLC 8835 - P Columbia 100 Parkway Columbia, Maryland 21045 (410) 730-0810					F 99-140

# POND CONSTRUCTION SPECIFICATIONS

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

## SITE PREPARATION

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

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish, and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level to the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

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

## EARTH FILL

**Material** - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6" frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

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

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

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within +/- 2% of the optimum. Each layer of fill shall be compacted as soon as it is placed to that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

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

## STRUCTURAL BACKFILL

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

## PIPE CONDUITS

All pipes shall be circular in cross section.

**CORRUGATED METAL PIPE** - All of the following criteria shall apply for corrugated metal pipe:

1. **Materials** - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating. Steel pipes with polymer coatings have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coating or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Lay. Galvanized corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

**Materials** - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-224 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

**Materials** - (Aluminum Pipe) - This pipe and appurtenances shall conform to the requirements of AASHTO Specifications M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

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

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

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter: flanges on both ends of the pipe, a 12 inch wide standard lap type band with 1/2" wide by 3/8" thick closed cell circular neoprene gasket; and a 12 inch wide hugger type band with O-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugated depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band with rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

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

5. **Backfilling** shall conform to "Structure Backfill."

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

**REINFORCED CONCRETE PIPE** - All of the following criteria shall apply for reinforced concrete pipe:

1. **Materials** - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.

2. **Bedding** - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

3. **Laying pipe** - Bell and spigot pipe shall be placed with the bell and upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

4. **Backfilling** shall conform to "Structure Backfill."

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

**POLYVINYL CHLORIDE (PVC) PIPE** - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. **Materials** - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

2. **Joints and connections** to anti-seep collars shall be completely watertight.

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

4. **Backfilling** shall conform to "Structure Backfill."

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

## CONCRETE

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 808, Mix No. 3.

## ROCK RIPRAP

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 905.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919, 12.

## CARE OF WATER DURING CONSTRUCTION

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

## STABILIZATION

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

## EROSION AND SEDIMENT CONTROL

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

## GEOTECHNICAL RECOMMENDATIONS:

### EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION

The site should be stripped of topsoil and any other unsuitable materials from the embankment and cut-off trench in accordance with Soil Conservation Guidelines. After stripping operations have been completed, the exposed substrate materials should be profiled with a loaded dump truck or similar equipment in the presence of a geotechnical engineer or his representative, for areas that are not accessible to a dump truck, the exposed materials should be observed and tested by a geotechnical engineer or his representative utilizing a Dynamic Cone Penetrometer. Any excessively soft or loose materials identified by profiling or penetrometer testing should be excavated to suitable firm soil, and then grades re-established by backfilling with suitable soil. Based on the borings de-watering of the core trench excavations are anticipated.

A representative of the Geotechnical Engineer should be present to monitor placement and compaction of fill for the embankment and cut off trench. In accordance with Maryland Soil Conservation Specification 378 soils considered suitable for the center of embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Soil materials meeting these specifications were not identified in the borings. Based on our experience with similar projects it is our professional opinion that the plastic silt materials with a liquid limit of 40 or greater and plastic index of 10 or greater will also be suitable for cut off trench and core trench to the 10 year water elevation. However, backfill material under, around and adjacent (25') to the principal spillway should be constructed with Unified Soil Classification types GC, SC, CH, or CL materials. Additional exploration and laboratory testing of the on-site soils may locate these materials or they may need to be imported from off-site. Any rock larger than 6 inches should be removed from the fill materials. All fill materials must be placed and compacted in accordance with MD SC3 378 Specifications.

### CONCRETE RISER AND STRUCTURE CONSTRUCTION

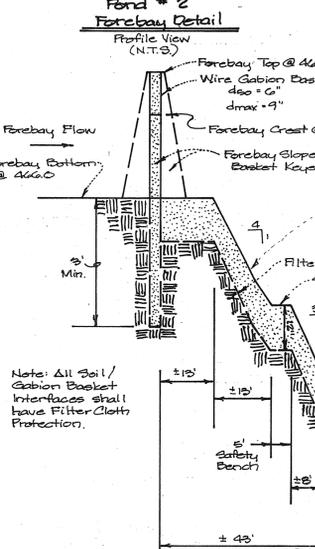
Based on the soil borings and correlation with proposed and existing grades the foundations for the proposed concrete riser structures can be supported on firm natural soils. We recommend that the concrete riser structure foundation be designed for a maximum allowable bearing pressure of 2000 lbs per square foot (psf). Water should not be allowed to pool or collect within the foundation excavations, as this can cause a reduction in the bearing capacity of the soils. A geotechnical engineer or his representative should observe foundation excavations and conduct dynamic cone penetrometer testing (DCP) of the bearing surfaces to depths of three feet.

## HILLIS-CARNES ENGINEERING ASSOCIATES, INC.

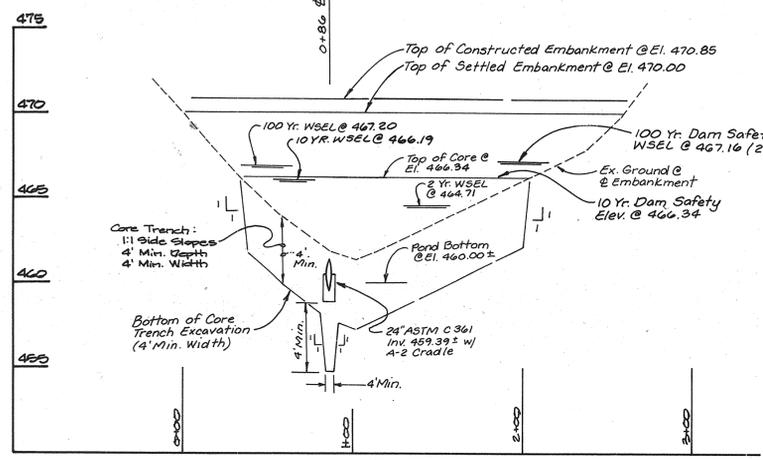
RECORD OF SOIL EXPLORATION

NO.	DEPTH	DESCRIPTION	WATER	REMARKS
1	0-1	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
2	1-2	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
3	2-3	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
4	3-4	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
5	4-5	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
6	5-6	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
7	6-7	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
8	7-8	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
9	8-9	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
10	9-10	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
11	10-11	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
12	11-12	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
13	12-13	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
14	13-14	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
15	14-15	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
16	15-16	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
17	16-17	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
18	17-18	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
19	18-19	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
20	19-20	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
21	20-21	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
22	21-22	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
23	22-23	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
24	23-24	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
25	24-25	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
26	25-26	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
27	26-27	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
28	27-28	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
29	28-29	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
30	29-30	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
31	30-31	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
32	31-32	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
33	32-33	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
34	33-34	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
35	34-35	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
36	35-36	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
37	36-37	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
38	37-38	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
39	38-39	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
40	39-40	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
41	40-41	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
42	41-42	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
43	42-43	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
44	43-44	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
45	44-45	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
46	45-46	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
47	46-47	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
48	47-48	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
49	48-49	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
50	49-50	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
51	50-51	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
52	51-52	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
53	52-53	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
54	53-54	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
55	54-55	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
56	55-56	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
57	56-57	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
58	57-58	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
59	58-59	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
60	59-60	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
61	60-61	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
62	61-62	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
63	62-63	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
64	63-64	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
65	64-65	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
66	65-66	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
67	66-67	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
68	67-68	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
69	68-69	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
70	69-70	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
71	70-71	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
72	71-72	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
73	72-73	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
74	73-74	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
75	74-75	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
76	75-76	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
77	76-77	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
78	77-78	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
79	78-79	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
80	79-80	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
81	80-81	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
82	81-82	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
83	82-83	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
84	83-84	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
85	84-85	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
86	85-86	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
87	86-87	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
88	87-88	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
89	88-89	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
90	89-90	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
91	90-91	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
92	91-92	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
93	92-93	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
94	93-94	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
95	94-95	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
96	95-96	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
97	96-97	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
98	97-98	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
99	98-99	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil
100	99-100	Dark grey, medium silty clay with sand and silt inclusions	1.5	1' of top soil

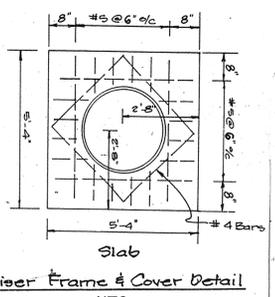
### Pond # 2 Forebay Detail



Dam Safety Elevations  
(Based on Clogged Low Flow)  
10 Yr. WSEL = 466.34  
100 Yr. WSEL = 467.16

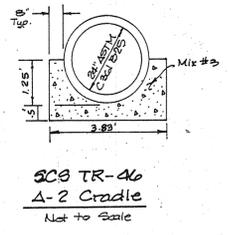


Profile Along Centerline of Embankment  
1" = 5' Vert.  
1" = 50' Hor.

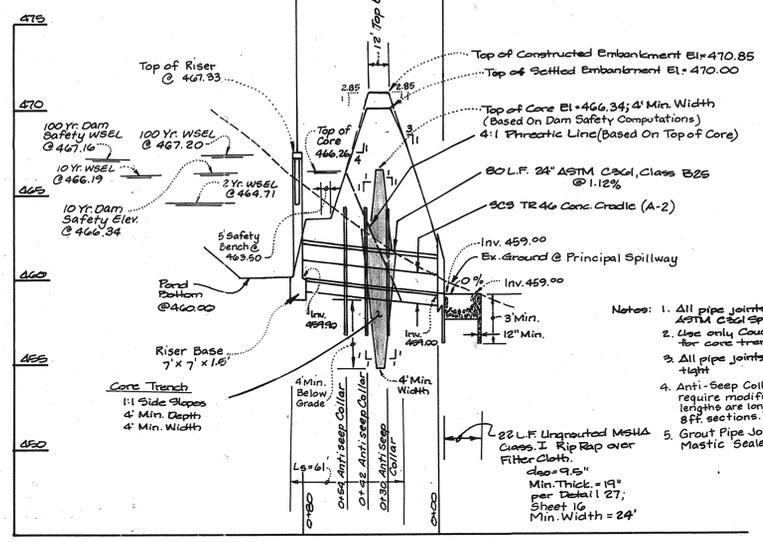


River Frame & Cover Detail  
N.T.S.  
Note: River Frame & Cover shall be bolted to riser structure.

- Notes:
1. A Geotechnical Engineer is to be present on-site to supervise the construction of the core trench, per MD 97B specifications.
  2. Core Trench shall be dewatered prior to the placement of County Approved Fill material.
  3. The site shall be stripped of topsoil and any other unsuitable materials from the embankment or structure areas in accordance with Soil Conservation Guidelines. After stripping operations have been completed, the exposed subgrade materials should be protected with a loaded dump truck or similar equipment in the presence of a Geotechnical Engineer or his representative. For areas that are not applicable to a dump truck, exposed material shall be observed and tested by a Geotechnical Engineer or his representative, utilizing a Dynamic Cone Penetrometer. Any excessively soft or loose materials identified by pre-rolling or penetration testing shall be excavated to suitably firm soil, and then re-established by backfilling with suitable soil.
  4. Refer to Hillis Carnes' Geotechnical Recommendations on Sheet 18.

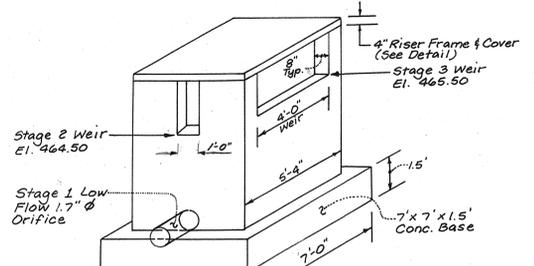


SCS TR-46 A-2 Cradle  
Not to Scale

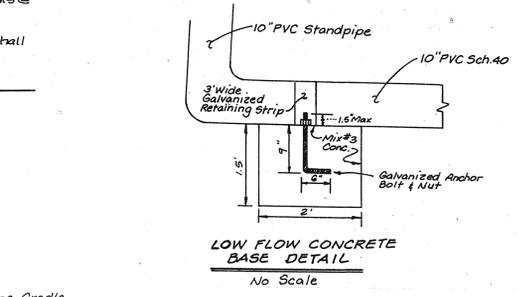


Profile Along Centerline of Principal Spillway  
1" = 5' Vert.  
1" = 50' Hor.

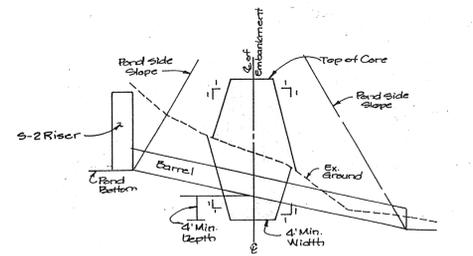
- Notes:
1. All pipe joints must conform to ASTM C201 Specifications.
  2. Use only County Approved Fill for core trench.
  3. All pipe joints shall be water tight.
  4. Anti-Seep Collar locations will require modification if pipe lengths are longer than 4ft. or 8ft. sections.
  5. Grout Pipe Joints with Mastic Sealer.



S-4 Isometric View  
No Scale



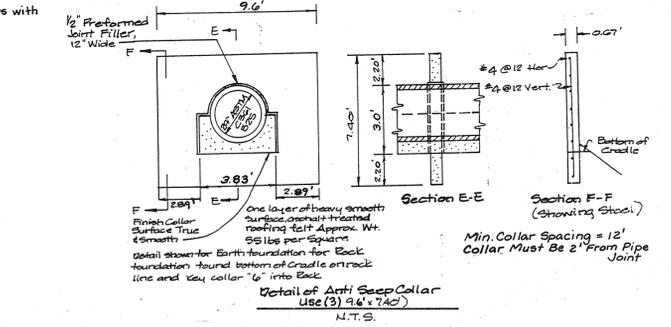
LOW FLOW CONCRETE BASE DETAIL  
No Scale



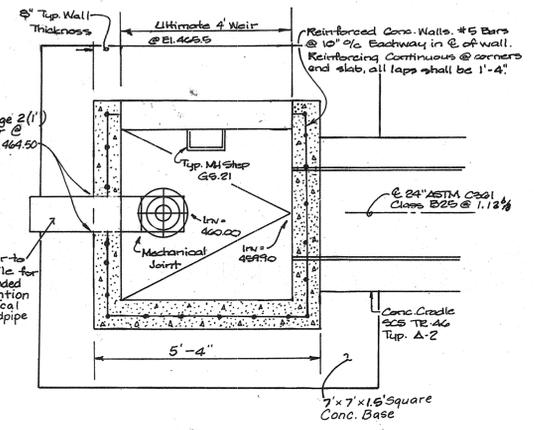
Core Trench Top Section  
No Scale

Ultimate  
Q<sub>2</sub> = .8cfs  
V<sub>2</sub> = .25 fps  
Q<sub>10</sub> = 14.8cfs  
V<sub>10</sub> = 4.71 fps  
Q<sub>100</sub> = 36.7cfs  
V<sub>100</sub> = 11.68 fps

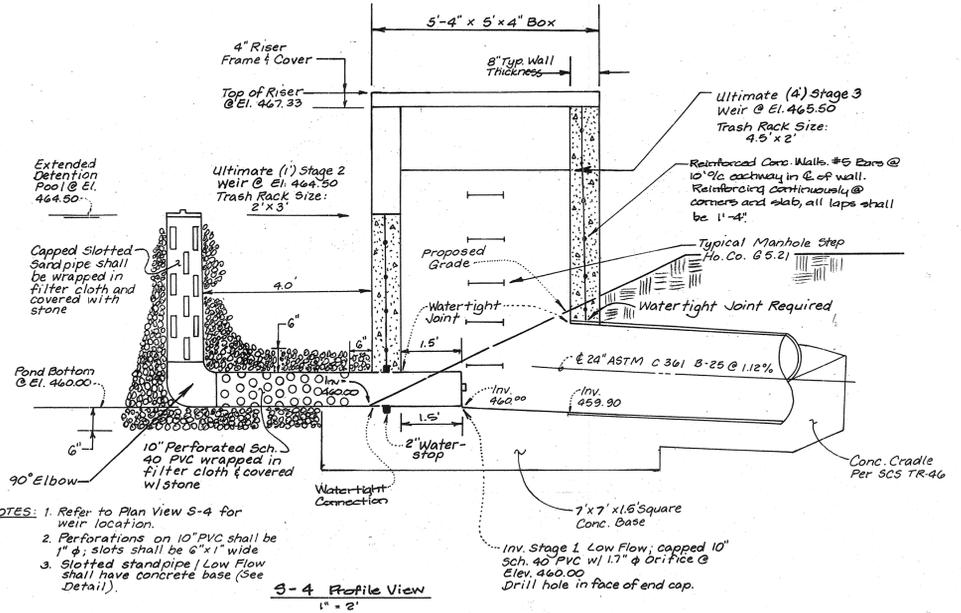
Note: County Approved Material is to be used for core trench. If unsuitable material exists on-site, acceptable material will need to be trucked to the site.  
\*County Approved Material must conform to Unified Classification Designations of CL, CH, SC or GC.



Detail of Anti-Seep Collar  
Use (3) 1/2" x 1/4" (N.T.S.)

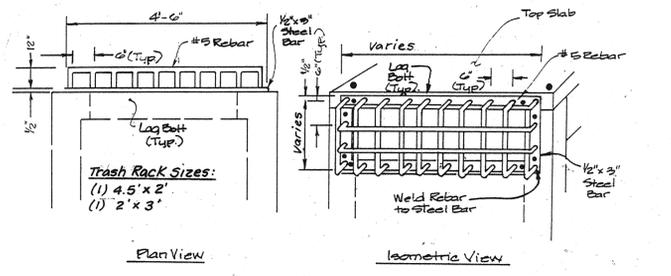


S-4 Plan View  
1" = 2'



S-4 Profile View  
1" = 2'

- NOTES:
1. Refer to Plan View S-4 for weir location.
  2. Perforations on 10" PVC shall be 1" diameter; slots shall be 6" x 1" wide.
  3. Slotted standpipe / Low Flow shall have concrete base (See Detail).



- Notes:
1. The steel used in the trash rack shall be galvanized and painted battleship grey after fabrication.
  2. The #5 Rebar to be welded to the 1/2" x 3/4" steel bar and bolted to the face of the structure.
  3. All bolts used to fasten trash rack to the riser structure shall be galvanized.

Trash Rack Details (2 Required)  
Scale: 1/2" = 1'

AS-BUILT CERTIFICATION  
I hereby certify that the facility shown on this plan was constructed as shown on the "as-built" plans and meets the approved plans and specifications.

Signature: \_\_\_\_\_ P.E. No.: \_\_\_\_\_  
Date: \_\_\_\_\_

Certify means to state or declare a professional opinion based upon on-site inspections and material tests which are conducted during construction. The on-site inspections and material tests are those inspections and tests deemed sufficient and appropriate by commonly accepted engineering standards. Certify does not mean or imply a guarantee by the engineer nor does an engineer's certification relieve any other party from meeting requirements imposed by contract, employment, or means, including meeting commonly accepted industry practices.

OPERATION, MAINTENANCE, AND INSPECTION

Inspection of the pond shown herein shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS Standards and Specifications For Ponds (MD 278). The pond owner(s) and their heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
10/19/19

*[Signature]*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
10/20/19

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

*[Signature]*  
CHIEF, BUREAU OF HIGHWAYS  
10-5-19

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

*[Signature]*  
NATURAL RESOURCE CONSERVATION SERVICE  
9/21/19

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

*[Signature]*  
HOWARD SOIL CONSERVATION DISTRICT  
9/21/19

ENGINEER'S CERTIFICATE

I certify that this plan for pond construction, soil erosion and sediment control represents a practical and feasible plan based on my personal knowledge of the site and the soil. This plan was prepared in accordance with the requirements of the Howard County Soil Conservation District. I have not observed any conditions that would require me to engage a registered professional engineer to supervise pond construction and provide the Howard County Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard County Soil Conservation District.

DEVELOPER'S CERTIFICATE

I, the undersigned, certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will use the District's approved plan. I will engage a registered professional engineer to supervise pond construction and provide the Howard County Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard County Soil Conservation District.

STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
9/21/19

LDE, INC.  
9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

Pond #2 Construction Details

SCALE: As Shown

DRAWING: 19 of 26

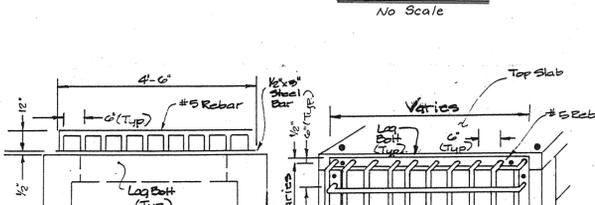
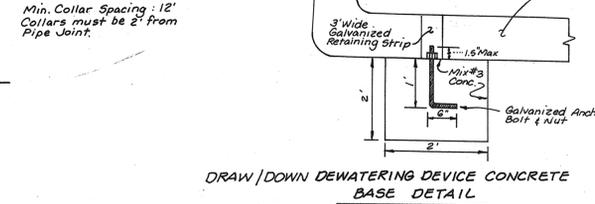
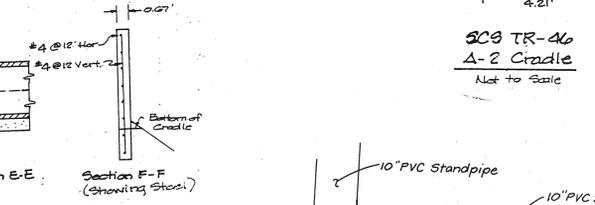
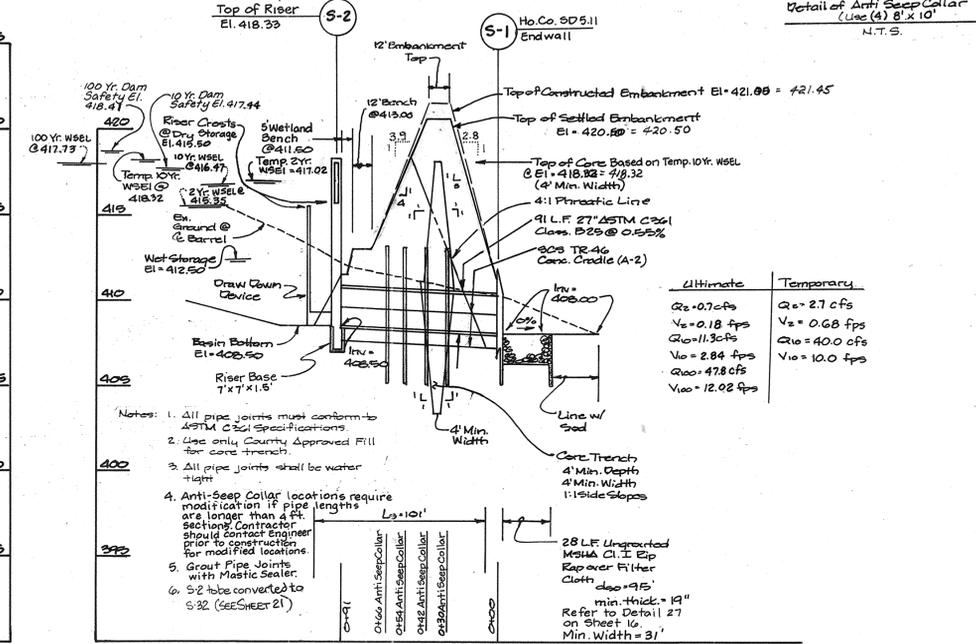
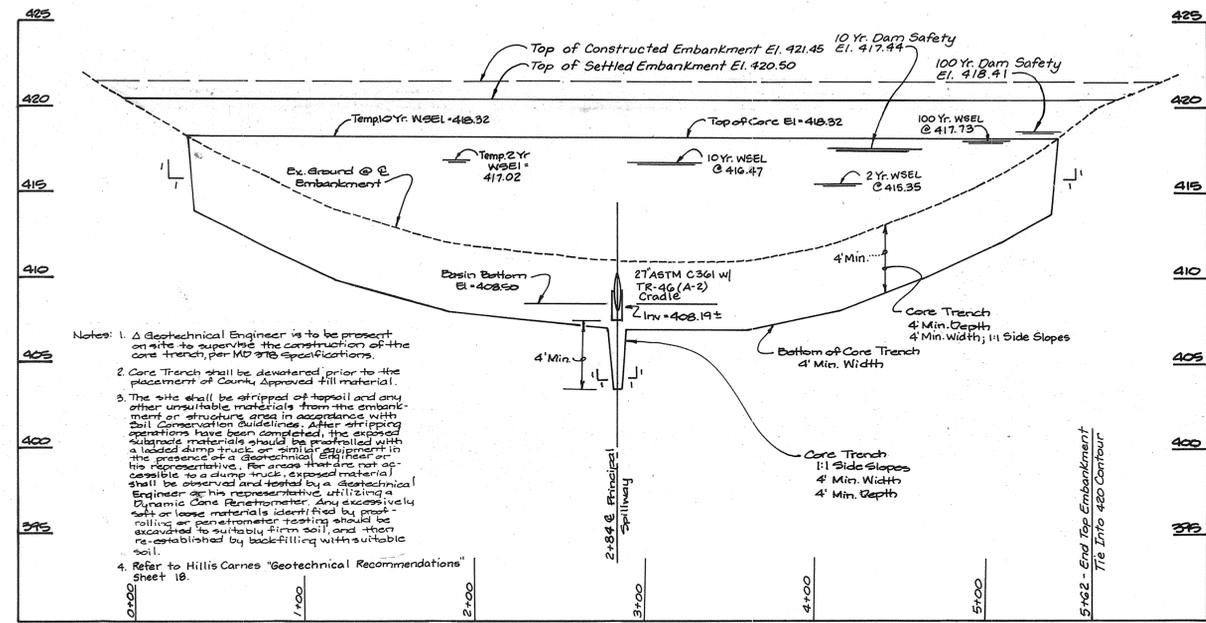
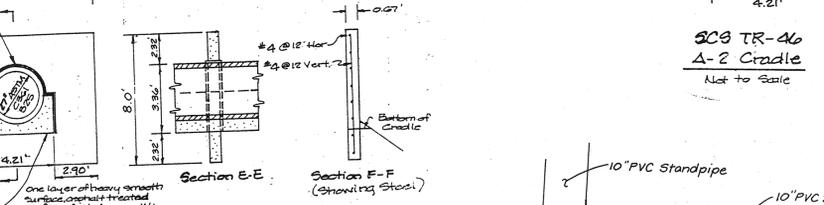
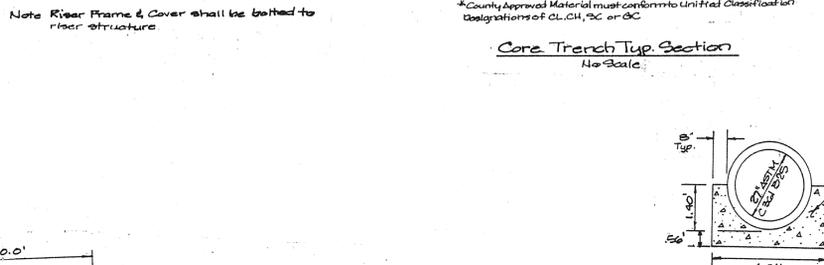
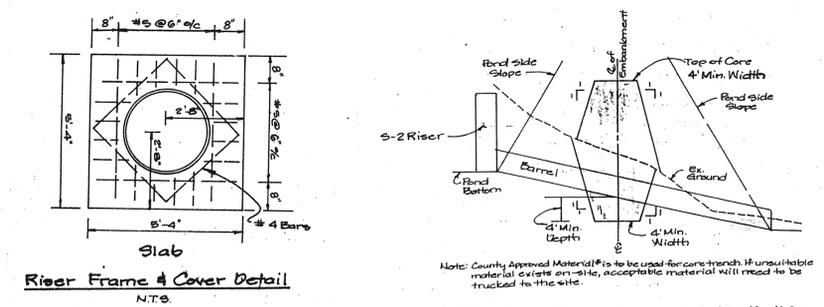
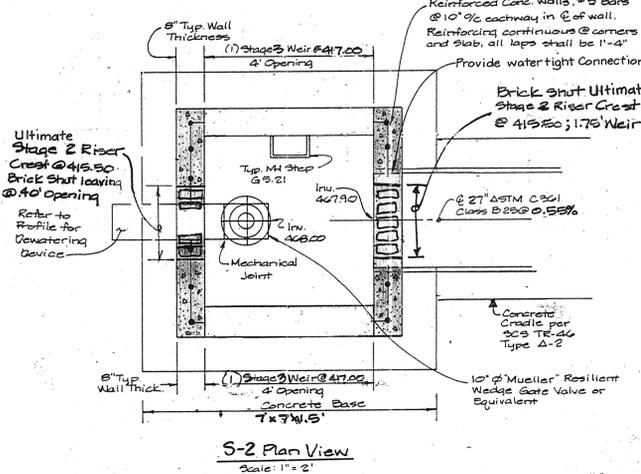
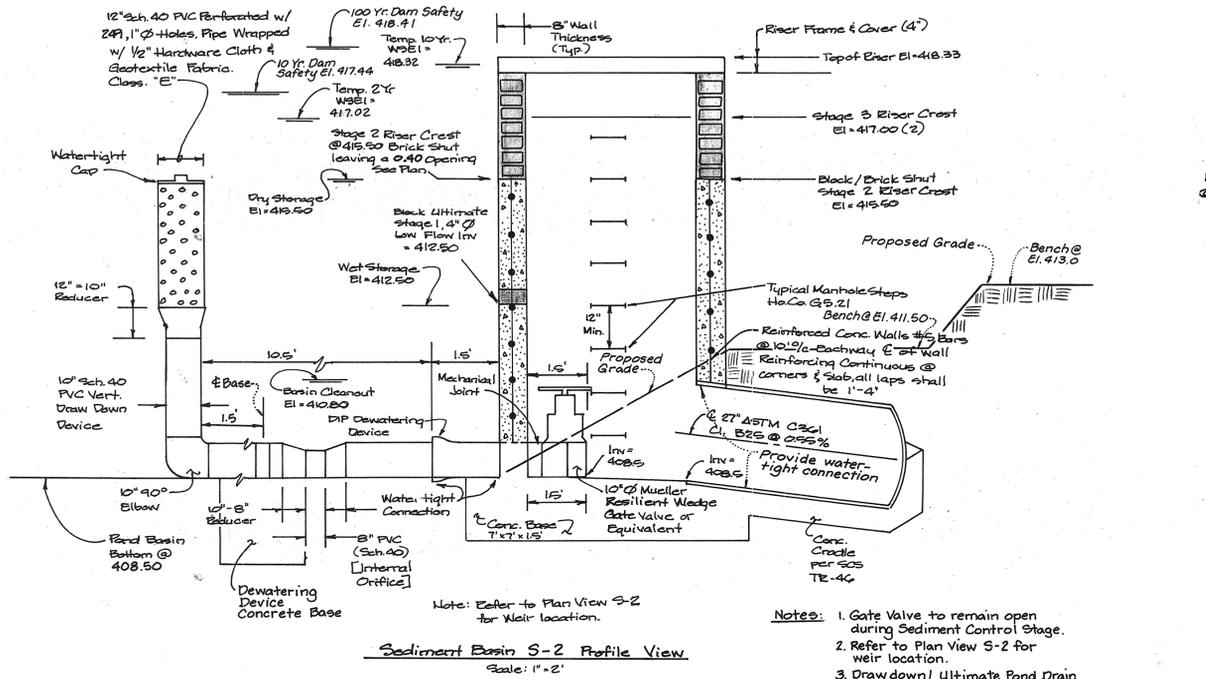
JOB NO.: 95-056.2

FILE NO.: F 99-140

DESIGNED: E.D.S.  
DRAWN: B.E.I./K.W.  
CHECKED: B.D.B.  
DATE: 9/99

Owner: David A. Carney, Trustee  
Laurence B. Roben, Trustee  
c/o Reese and Carney, LLP  
10715 Charter Drive  
Columbia, Maryland 21045  
(410) 740-4600

Developer: BRANTWOOD, LLC  
8835 - P Columbia 100 Parkway  
Columbia, Maryland 21045  
(410) 730-0810



APPROVED: DEPARTMENT OF PLANNING AND ZONING

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

AS-BUILT CERTIFICATION

I hereby certify that the facility shown on this plan was constructed as shown on the "as-built" plans and meets the approved plans and specifications.

Signature: \_\_\_\_\_ P.E. No: \_\_\_\_\_  
Date: \_\_\_\_\_

Certify means to state or declare a professional opinion based upon on-site inspections and material tests which are conducted during construction. The on-site inspections and material tests are those inspections and tests deemed sufficient and appropriate by commonly accepted engineering standards. Certify does not mean or imply a guarantee by the engineer nor does an engineer's certification relieve any other party from meeting requirements imposed by contract, employment, or means, including meeting commonly accepted industry practices.

OPERATION, MAINTENANCE, AND INSPECTION

Inspection of the pond shown herein shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, BCS "Standards and Specifications for Ponds" (MD 878). The pond owner(s) and their heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, maintenance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

**ENGINEER'S CERTIFICATE**

I certify that this plan for pond construction, soil erosion and sediment control represents a professional engineering plan based on my personal knowledge of the site and the plan was prepared in accordance with the standards of the Howard Soil Conservation District. I have a license as a registered professional engineer in the State of Maryland and I am duly licensed to practice my profession in the State of Maryland. I also authorize periodic on-site inspections by Howard Soil Conservation District.

**DEVELOPER'S CERTIFICATE**

I, the developer, certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard Soil Conservation District.

STATE OF MARYLAND  
PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE

**LDE, INC.**  
9250 Rumsey Road, Suite 106, Columbia, MD 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

Pond #3 Construction Details

**BRANTWOOD**  
Section Two - Area One

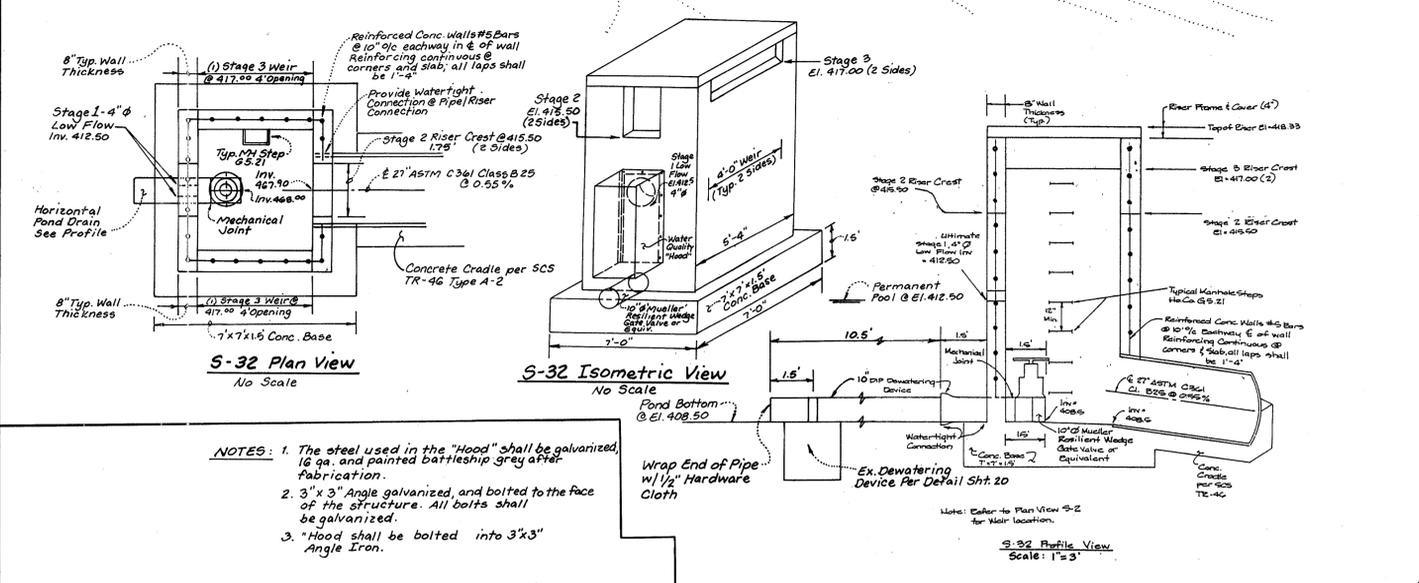
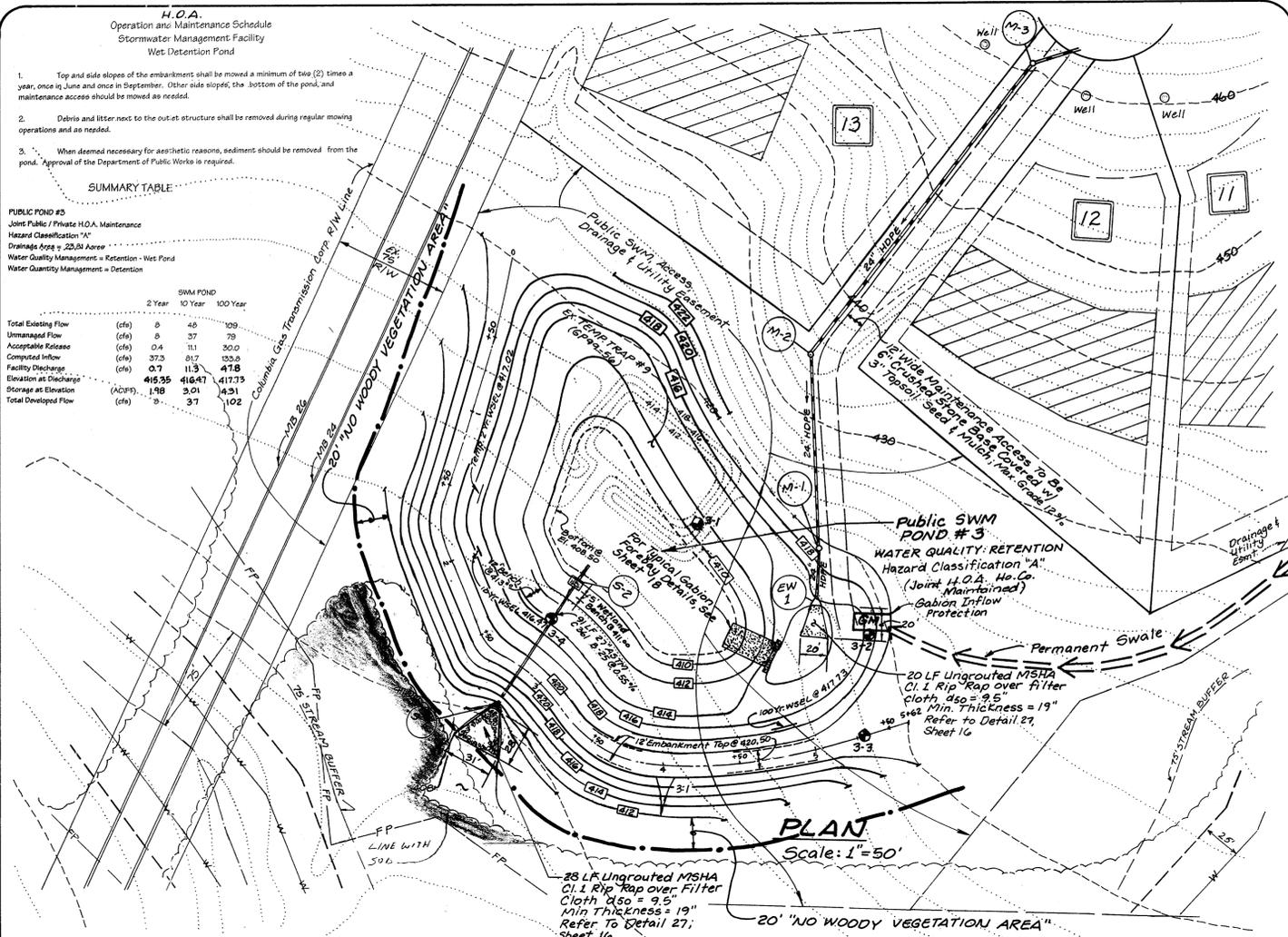
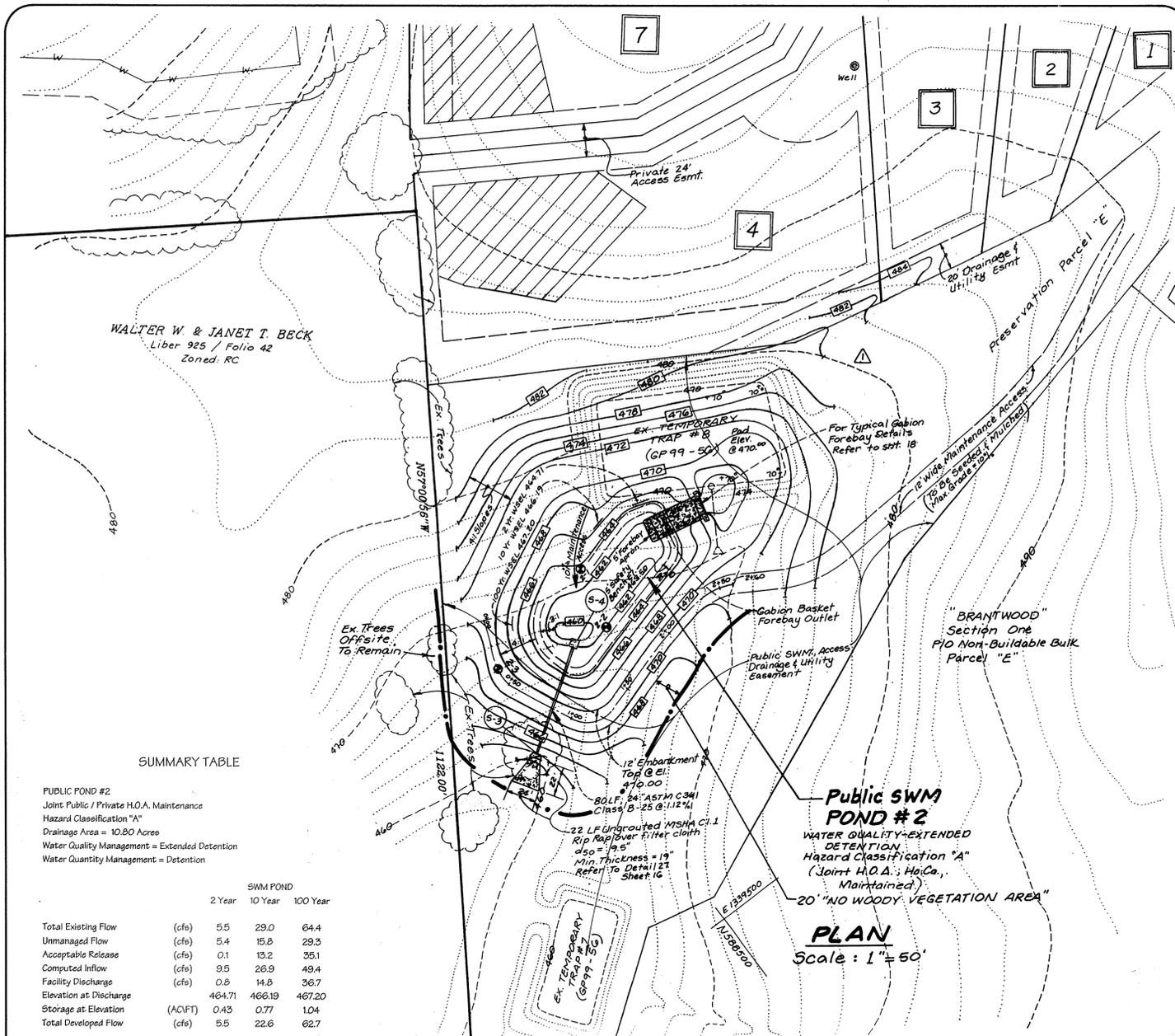
Lots 1 - 30 & Preservation Parcels "E" and "F"  
A Resubdivision of part of "BRANTWOOD" - Section One  
Non-Buildable Bulk Parcel "E"

DESIGNED: E.D.S.  
DRAWN: B.E.I./K.W.  
CHECKED: B.D.B.  
DATE: 9/99

SCALE: As Shown  
DRAWING: 20 of 26  
JOB NO.: 95-056.2  
FILE NO.: F 99-140

Owner: David A. Carney, Trustee  
Laurence B. Baker, Trustee  
c/o Reese and Carney, LLP  
10715 Charter Drive  
Columbia, Maryland 21045  
(410) 740-6600

Developer: BRANTWOOD, LLC  
8835 - P Columbia 100 Parkway  
Columbia, Maryland 21045  
(410) 730-0810



**NOTES:**

- The steel used in the "Hood" shall be galvanized, 18 ga. and painted Barbeship Gray after fabrication.
- 3" x 3" Angle galvanized, and bolted to the face of the structure. All bolts shall be galvanized.
- Hood shall be bolted into 3"x3" Angle Iron.

**REVISIONS**

LDE	Date	By	Description
2/00			Revise Ex. Topo & Grading

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

**APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE**

**ENGINEER'S CERTIFICATE**  
 I certify that this plan for pond construction...  
**BRUCE D. BURTON**  
 REGISTERED PROFESSIONAL ENGINEER  
 9/14/99

**DEVELOPER'S CERTIFICATE**  
 I/we certify that all development and/or construction will be done according to these plans...  
**DAVID A. CARNEY**  
 9/14/99

**LDE, INC.**  
 9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

**BRANTWOOD**  
 Section Two - Area One  
 Lots 1 - 30 & Preservation Parcels "E" and "F"  
 A Resubdivision of part of "BRANTWOOD - Section One Non-Buildable Bulk Parcel "E"

**DESIGNED: E.D.S.**  
**DRAWN: K.B.W.**  
**CHECKED: B.D.B.**  
**DATE: 9/99**

**SCALE: As Shown**  
**DRAWING: 21 of 26**  
**JOB NO.: 95-056.2**  
**FILE NO.: F 99-140**

**H.O.A. Operation and Maintenance Schedule**  
 Stormwater Management Facility  
 Wet Detention Pond

- Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.
- Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
- When deemed necessary for aesthetic reasons, sediment should be removed from the pond. Approval of the Department of Public Works is required.

**SUMMARY TABLE**

**PUBLIC POND #2**  
 Joint Public / Private H.O.A. Maintenance  
 Hazard Classification "A"  
 Drainage Area = 22.01 Acres  
 Water Quality Management = Retention - Wet Pond  
 Water Quantity Management = Detention

	SWM POND		
	2 Year	10 Year	100 Year
Total Existing Flow (cfs)	8	46	109
Unmanaged Flow (cfs)	8	37	79
Acceptable Release (cfs)	0.4	11.1	30.0
Computed Inflow (cfs)	37.3	81.7	133.8
Facility Discharge (cfs)	0.7	11.3	47.8
Elevation at Discharge (cfs)	415.35	416.47	417.75
Storage at Elevation (ADCF)	1.98	3.01	4.31
Total Developed Flow (cfs)	8	37	102

**SUMMARY TABLE**

**PUBLIC POND #2**  
 Joint Public / Private H.O.A. Maintenance  
 Hazard Classification "A"  
 Drainage Area = 10.80 Acres  
 Water Quality Management = Extended Detention  
 Water Quantity Management = Detention

	SWM POND		
	2 Year	10 Year	100 Year
Total Existing Flow (cfs)	5.5	29.0	64.4
Unmanaged Flow (cfs)	5.4	15.8	29.3
Acceptable Release (cfs)	0.1	13.2	35.1
Computed Inflow (cfs)	9.5	26.9	49.4
Facility Discharge (cfs)	0.8	14.8	36.7
Elevation at Discharge (ADCF)	464.71	466.19	467.20
Storage at Elevation (ADCF)	0.43	0.77	1.04
Total Developed Flow (cfs)	5.5	22.6	62.7

**H.O.A. Operation and Maintenance Schedule**  
 Stormwater Management Facility  
 Extended Detention Pond

- Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.
- Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
- When deemed necessary for aesthetic reasons, sediment should be removed from the pond. Approval of the Department of Public Works is required.

- Maintenance Requirements**
- Removal of silt when accumulation exceeds six (6) inches in basins without forebays. In basins with forebays, removal of silt shall occur when the accumulation exceeds four (4) inches in the forebay.
  - Removal of accumulated paper, trash and debris as necessary.
  - Vegetation growing on the embankment top and faces is not allowed to exceed 18 inches in height at any time.
  - Annual inspection and repair of the structure.
  - Corrective maintenance is required any time an extended detention basin does not drain the equivalent of the Water Quality Volume within 60 hours (i.e., no standing water is allowed).
  - Corrective maintenance is required any time the forebay does not drain down completely within 60 hours (i.e., no standing water allowed).

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

**APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE**

**HOWARD SOIL CONSERVATION DISTRICT**

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

**NATURAL RESOURCE CONSERVATION SERVICE**

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

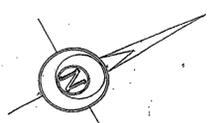
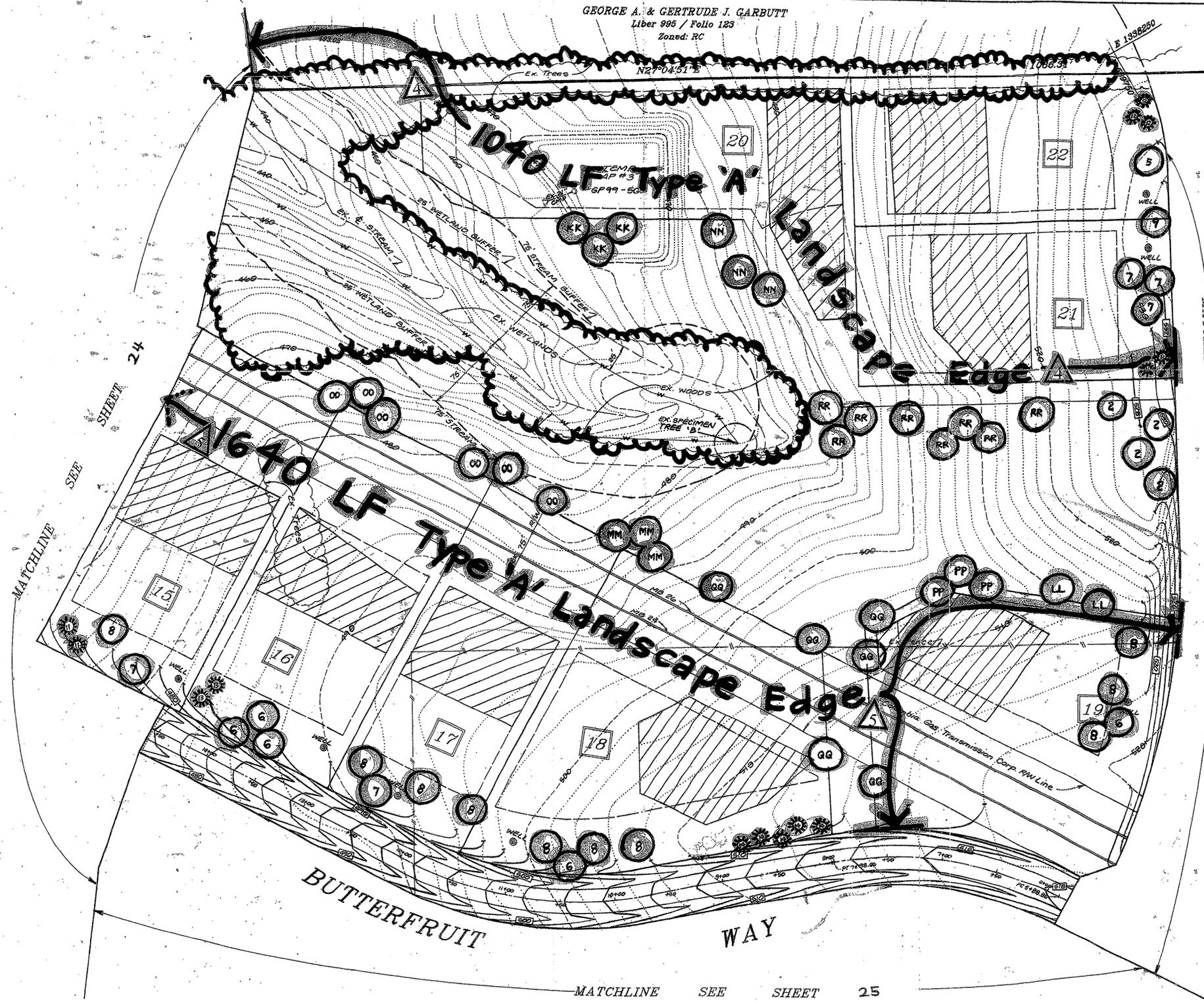
**ENGINEER'S CERTIFICATE**  
 I certify that this plan for pond construction...  
**BRUCE D. BURTON**  
 REGISTERED PROFESSIONAL ENGINEER  
 9/14/99

**DEVELOPER'S CERTIFICATE**  
 I/we certify that all development and/or construction will be done according to these plans...  
**DAVID A. CARNEY**  
 9/14/99

**STATE OF MARYLAND**  
**REGISTERED PROFESSIONAL ENGINEER**  
**BRUCE D. BURTON**  
 9/14/99



GEORGE A. & GERTRUDE J. GARbutt  
 Liber 985 / Folio 123  
 Zoned: RC



MATCHLINE SEE SHEET 24

MATCHLINE SEE SHEET 22

MATCHLINE SEE SHEET 25

NOTE A  
 1) DO NOT USE THIS SHEET FOR GRADING, REFER TO SHEET 13.

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
  
 2/21/10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
  
 2/22/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
  
 2-22-10  
 CHIEF, BUREAU OF HIGHWAYS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.  
 NATURAL RESOURCE CONSERVATION SERVICE  
 DATE  
 THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
 HOWARD SOIL CONSERVATION DISTRICT  
 DATE

ENGINEER'S CERTIFICATE  
 I certify that this plan for construction, erosion, and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of Howard County Soil Conservation. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation with an "as-built" of the pond within 30 days of completion.  
 Signature of Engineer  
 Date  
 DEVELOPER'S CERTIFICATE  
 I/We certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on site inspections by the Howard Soil Conservation District.  
 Signature of Developer  
 Date



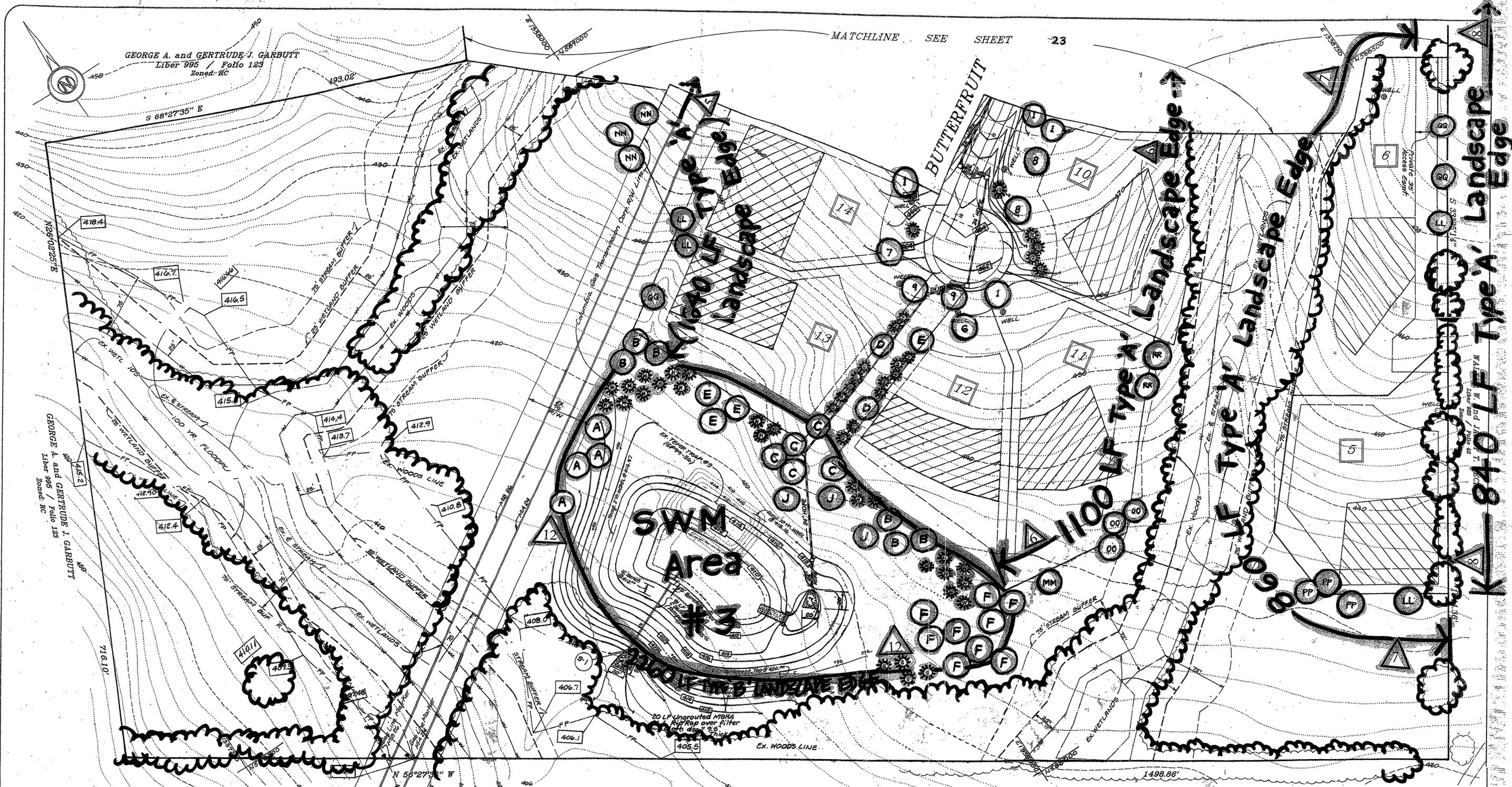
Note: The landscaping plantings have been revised (as shown on this sheet). All revisions were made in accordance with the Howard County Landscape Manual and have been approved by Howard County.

I hereby certify that the landscaping plans were prepared or approved by me, and that I am a duly licensed professional landscape architect under the laws of the state of Maryland, License Number 906, expiration date 3-2012.

Revision Block	
Landscaping revision NEW SHEET	10.20.09
LDE AND NOTE A	Zlco

LDE, INC.  
 9250 Rumsey Road, Suite 106, Columbia, MD 21045  
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED D.D.B.	REVISED FINAL PLAN - LANDSCAPE, FOREST CONSERVATION AND STREET TREE PLAN	SCALE 1" = 80'
DRAWN K.B.W.	<b>BRANTWOOD</b> Section Two - Area One Lots 1 - 30 & Preservation Parcels "E" and "F" A Resubdivision of part of "BRANTWOOD - Section One Non-Buildable Bulk Parcel "E"	DRAWING 23 of 26
CHECKED B.D.B.	Tax Map Nos. 16 & 23 - Grid Nos. 21/22 & 3/4 - P/O Parcel 214 3rd Election District - Howard County, Maryland Previous Submittals: F 80-07, WP 98-133, S 98-23, P 98-08, GP 99-56 WP 98-133, F 98-138, WP 99-14, P 99-05, RE 99-01	JOB NO. 95-056.2
DATE 9/99	Owner: David A. Gentry, License 906 Laurence B. Baker, Trustee c/o Innes and Casser, LLP 10718 Charter Drive Columbia, Maryland 21045 (410) 740-0810 Developer: BRANTWOOD, LLC. 8835 - P Columbia 100 Parkway Columbia, Maryland 21045 (410) 740-0810	FILE NO. F 99-140



MATCHLINE SEE SHEET 23

GEORGE A. and GERTRUDE J. GARBUTT  
Liber 995 / Folio 123  
Zoned: RC

GEORGE A. and GERTRUDE J. GARBUTT  
Liber 995 / Folio 123  
Zoned: RC

Note: The landscaping plantings have been revised (as shown on this sheet)  
All revisions were made in accordance with the Howard County Landscape  
Manual and have been approved by Howard County.

WALTER W. and JANET T. BECK  
Liber 925 / Folio 42  
Zoned: RC

NOTE Δ  
1) DO NOT USE THIS SHEET  
FOR GRADING, REFER TO  
SHEET 1A. FOR ULTIMATE  
POND GRADES, USE SHEET 21.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 2/21/10

*[Signature]*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 2/21/10

*[Signature]*  
CHIEF, BUREAU OF HIGHWAYS  
DATE: 2-22-10

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

NATURAL RESOURCE CONSERVATION SERVICE  
DATE: \_\_\_\_\_

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT  
DATE: \_\_\_\_\_

ENGINEER'S CERTIFICATE

I certify that this plan for construction, erosion, and sediment control represents a practical and suitable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard County Soil Conservation. I have notified the developer that s/he must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation with an "as-built" plan of the pond within 30 days of completion.

Signature of Engineer: \_\_\_\_\_ Date: \_\_\_\_\_

DEVELOPER'S CERTIFICATE

I/We certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on site inspections by Howard Soil Conservation District.

Signature of Developer: \_\_\_\_\_ Date: 1/1/10



I hereby certify that the landscaping plans were prepared or approved by me, and that I am a duly licensed professional landscape architect under the laws of the state of Maryland, License Number 906, expiration date 3-2012.

Revision Block	
Landscaping revision	10.20.09
LDE AND NOTE Δ	ZTC

LDE, INC.  
9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: B.D.B. SCALE: 1" = 50'

DRAWN: K.B.W. DRAWING: 24 of 26

CHECKED: B.D.B. JOB NO.: 95-056.2

DATE: 9/99 FILE NO.: F 99-140

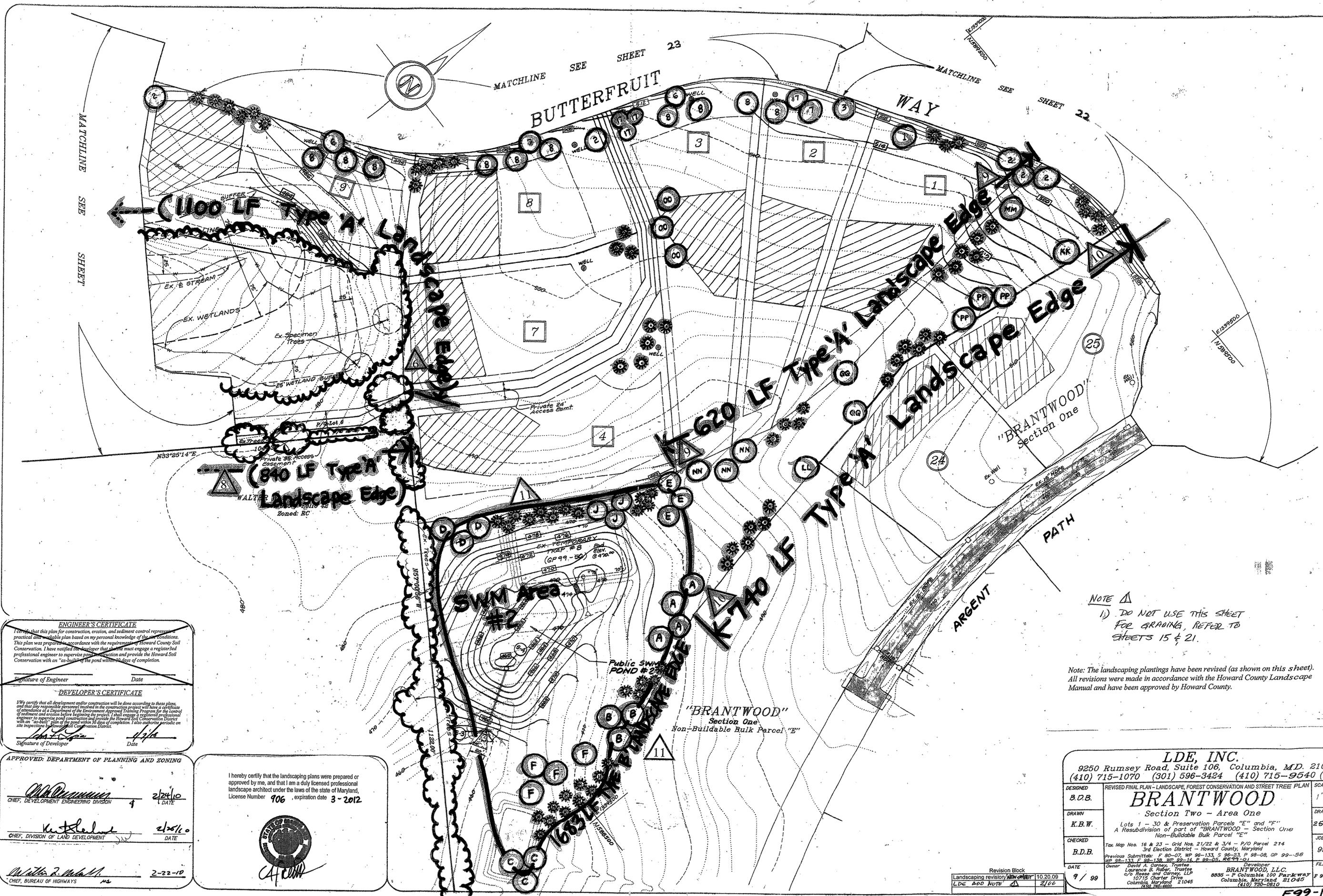
REVISIONS: 10.20.09 ZTC

BRANTWOOD  
Section Two - Area One  
Lots 1 - 30 & Preservation Parcels "E" and "F"  
A Resubdivision of part of "BRANTWOOD - Section One  
Non-Buildable Bulk Parcel "E"

Tax Map Nos. 16 & 23 - Grid Nos. 21/22 & 314 - P/O Parcel 214  
3rd Election District - Howard County, Maryland  
Previous Submittals: F 80-07, WP 96-133, S 96-23, P 98-08, GP 99-56  
WP 98-133, F 98-138, WP 99-16, P 99-05, RE 99-01

Owner: David A. Garney, Trustee  
Lorenzo B. Baber, Trustee  
C/O Ross and Garney, LLP  
10715 Charter Drive  
Columbia, Maryland 21045  
(410) 840-4800

Developer: BRANTWOOD, LLC.  
8835 - P Columbia 100 Parkway  
Columbia, Maryland 21045  
(410) 730-0810



**ENGINEER'S CERTIFICATE**  
 I certify that this plan for construction, erosion, and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of Howard County Soil Conservation. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation with an "as-built" of the pond within 30 days of completion.

Signature of Engineer \_\_\_\_\_ Date \_\_\_\_\_

**DEVELOPER'S CERTIFICATE**  
 I/We certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard Soil Conservation District.

Signature of Developer \_\_\_\_\_ Date \_\_\_\_\_

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 \_\_\_\_\_ 2/24/10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 \_\_\_\_\_ 2/25/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 \_\_\_\_\_ 2-22-10  
 CHIEF, BUREAU OF HIGHWAYS

I hereby certify that the landscaping plans were prepared or approved by me, and that I am a duly licensed professional landscape architect under the laws of the state of Maryland, License Number 906, expiration date 3-2012.



NOTE:   
 1) DO NOT USE THIS SHEET FOR GRADING, REFER TO SHEETS 15 & 21.

Note: The landscaping plantings have been revised (as shown on this sheet). All revisions were made in accordance with the Howard County Landscape Manual and have been approved by Howard County.

**LDE, INC.**  
 9250 Rumsey Road, Suite 106, Columbia, MD, 21045  
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED B.D.B.	REVISED FINAL PLAN - LANDSCAPE, FOREST CONSERVATION AND STREET TREE PLAN	SCALE 1" = 50'
DRAWN K.B.W.	<b>BRANTWOOD</b> Section Two - Area One	DRAWING 26 of 26
CHECKED B.D.B.	Lots 1 - 30 & Preservation Parcels "E" and "F" A Resubdivision of part of "BRANTWOOD" - Section One Non-Buildable Bulk Parcel "E"	JOB NO. 95-0562
DATE 9 / 99	Developer BRANTWOOD, L.L.C. 8835 - P Columbia 100 Parkway Columbia, Maryland 21045 (410) 730-0810	FILE NO. F 99-140

Revision Block  
 Landscaping revision 10.20.09  
 LDE A&D Note 2/10

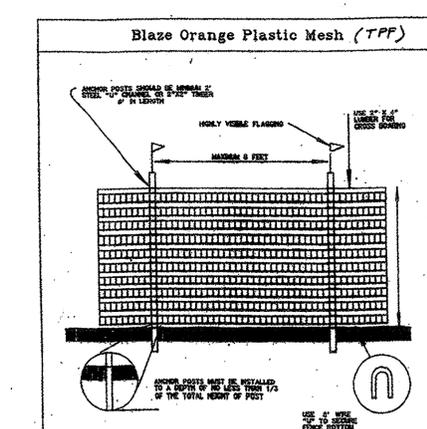
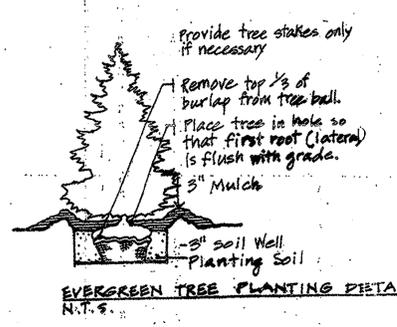
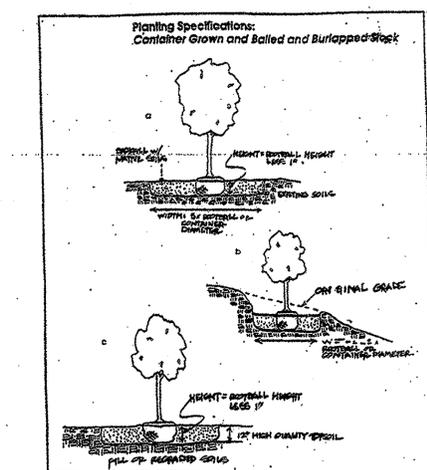
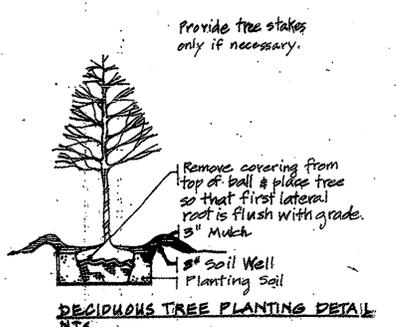
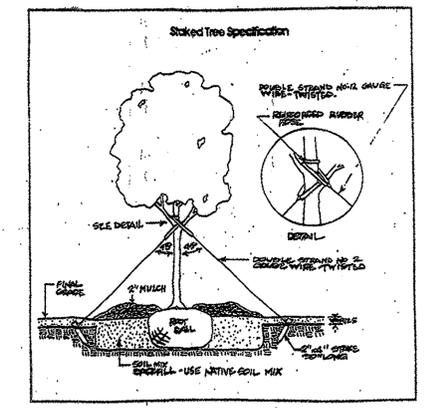
F99-140

**GENERAL NOTES**

1. This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and Landscape Manual.
2. The Owner/Developer is responsible for the planting of all plant material required to meet the standards established by the Howard County Landscape Manual.
3. Financial Surety for the required landscaping has been posted as part of the Department of Public Works Developer's Agreement in the amount of \$68,350.00.
4. Financial Surety for the required street trees has been posted in the amount of \$33,900.00.

**PLANTING NOTES - street trees**

1. Notify "Miss Utility" 72 hours prior to installation of all plant material.
2. Plant installation must conform to the minimum standards cited in the latest edition of Landscape Specification Guidelines, published by the Landscape Contractors Association.
3. Plants to be located in the field by the owner or owner's representative. Notify owner 72 hours in advance of planting.
4. A Certification of Landscape Installation is required as per the Howard County Landscape Ordinance.
5. The number, size, location of plants shall not be changed without the approval of the Landscape Architect. Substitutions must be included in the recommended plant list in the Howard County Landscape Ordinance.
6. Street tree locations may be adjusted for final location of driveways. Trees to be located a minimum of 10 feet from driveways.
7. Street trees may not be planted within 5 feet of drain inlets, 5 feet of an open space access strip and 10 feet of a driveway.
8. Street Tree planting must conform to the Subdivision and Land Development Regulations and the Department of Public Works Design Manual of Howard County.
9. Balled and Burlapped plant material shall not be accepted if ball is cracked or broken before or during planting. Protect all plants from drying by either sun or wind.
10. Tree pits shall be backfilled with 50% topsoil, 25% peat, 25% sand with one pound of 10-10-10 fertilizer per pit.
11. Top soil shall be sandy loam soil free from noxious weeds or grasses, roots, clay clumps, stones, sticks, etc. Peat moss shall be commercial with pH 4.5 to 5.5, free of woody material or harmful minerals.
12. All plants shall be watered at planting with weekly watering thereafter for the first 60 days. Watering shall continue bi-monthly or as necessary to maintain plants in a healthy condition during the guarantee period.
13. Maintain the site in an orderly manner. Streets and sidewalks shall be swept clean. All rejected or dead materials shall be immediately removed from the site.
14. Plant material to be alive and healthy at the time of the guarantee period (one year), as specified in the Howard County Landscape Ordinance.
15. Maintenance shall begin immediately after planting and continue to the end of guarantee period.
16. Maintenance consists of pruning, watering, weeding, re-mulching, resetting plants to proper grades as needed and repairing guys and stakes as needed.
17. There shall be a minimum of 20 feet between street lights and street trees.
18. All street trees shall be maintained by the HOA (Homeowners Association).



- NOTES**
1. Forest protection devices only.
  2. Retention Area will be set as part with the review process.
  3. Boundaries of Retention Area should be staked and flagged prior to installing device.
  4. Road damage should be avoided.
  5. Protective signage may also be used.
  6. Device should be maintained throughout construction.

**Perimeter Summary**

Area #	Type	Sheet #	# LF	Trees Required	Credit for Existing	Total Trees Required	Proposed Trees
1	A	22 of 26	225	225 / 60 = 4	60 / 60 = 1	4 - 1 = 3	6 Evergreens
2	A	22 of 26	590	590 / 60 = 10	590 / 60 = 10	10 - 10 = 0	0
3	A	22 of 26	950	950 / 60 = 16	320 / 60 = 5	16 - 5 = 11	6 Shade, 33 Evergreen
4	A	23 of 26	1040	1040 / 60 = 17	200 / 60 = 3	17 - 3 = 14	14 Shades
5	A	23 & 24 of 26	1640	1640 / 60 = 27	60 / 60 = 1	27 - 1 = 26	26 Shade
6	A	24 & 25 of 26	1100	1100 / 60 = 18	730 / 60 = 12	18 - 12 = 6	6 Shade
7	A	24 of 26	880	880 / 60 = 14	630 / 60 = 10	14 - 10 = 4	4 Shade
8	A	24 & 25 of 26	840	840 / 60 = 14	660 / 60 = 11	14 - 11 = 3	6 Shade
9	A	25 of 26	620	620 / 60 = 10	0	10 - 0 = 10	8 Shade, 18 Evergreen
10	A	25 of 26	740	740 / 60 = 12	0	12 - 0 = 12	6 Shade, 12 Evergreen
11	B	25 of 26 (Shade)	1683	1683 / 50 = 34	550 / 50 = 11	34 - 11 = 23	23 Shades
	B	25 of 26 (Evergreen)	1683	1683 / 40 = 42	550 / 40 = 14	42 - 14 = 28	28 Evergreens
12	B	24 of 26 (Shade)	2280	2280 / 50 = 45	625 / 50 = 12	45 - 12 = 33	33 Shades
	B	24 of 26 (Evergreen)	2280	2280 / 40 = 57	625 / 40 = 16	57 - 16 = 41	41 Evergreens

**Proposed Street Tree (Outside Right-of-Way) Schedule**

Symbol	Botanical Name	Common Name	Quantity	Size
1	Acer s. 'October Glory'	October Glory Maple	6	2 1/2 - 3" cal. BB
2	Acer s. 'Green Mountain'	Green Mt. Sugar Maple	11	2 1/2 - 3" cal. BB
5	Prunus s. 'Thundercloud'	Purpleleaf Plum	2	1 1/2 - 2" cal. BB
6	Prunus s. 'Kwanzan'	Kwanzan Cherry	7	1 1/2 - 2" cal. BB
7	Prunus yedoensis	Yoshino Cherry	6	1 1/2 - 2" cal. BB
9	Zelkova s. 'Village Green'	Village Green Zelkova	3	2 1/2 - 3" cal. BB
10	Cupressocyparis leylandii	Leyland Cypress	2	5 - 6" HL BB/cont.
11	Picea abies	Norway Spruce	12	6 - 7" HL BB
12	Picea omorika	Serbian Spruce	9	6 - 7" HL BB
13	Picea pungens	Colorado Blue Spruce	6	5 - 6" HL BB
14	Pinus strobus	White Pine	15	6 - 8" HL BB
15	Thuja p. 'Green Giant'	Green Giant Western Arborvitae	5	7 - 8" HL BB/cont.
17	Cercis canadensis	Eastern Redbud	3	6 - 8" HL BB

**Proposed Tree (Landscape Edge/Planting)**

Symbol	Botanical Name	Common Name	Quantity	Size
KK	Cercidiphyllum japonicum	Katsura-tree	4	2-2 1/2" cal. BB/cont.
LL	Fraxinus p. 'marshall's seedless'	Green Ash	10	2 1/2 - 3" cal. BB
MM	Liquidambar styraciflua	Sweet Gum	5	2 1/2 - 3" cal. BB
NN	Nyssa sylvatica	Black Gum	9	2 1/2 - 3" cal. BB
OO	Platanus a. 'Bloodgood'	London Plane-tree	12	2 1/2 - 3" cal. BB
PP	Prunus sargentii	Sargent Cherry	9	2 - 2 1/2" cal. BB
QQ	Quercus rubra	Red Oak	14	2 1/2 - 3" cal. BB
RR	Betula n. 'Heritage'	River Birch	10	10 - 12" HL BB/cont.
SS	Cryptomeria j. 'Yoshino'	Cryptomeria	9	7 - 8" HL BB/cont.
TT	Pinus strobus	White Pine	30	6 - 8" HL BB
UU	Thuja p. 'Green Giant'	Western Arborvitae	16	7 - 8" HL BB/cont.
VV	Taxus canadensis	Canada Hemlock	14	6 - 8" HL BB

**SWM Area #2 Landscape Schedule**

Symbol	Botanical Name	Common Name	Quantity	Size
A	Fagus grandiflora	American Beech	4	2 1/2" cal. BB
E	Fraxinus a. 'Autumn Plum'	Autumn Purple Ash	3	2 1/2 - 3" cal. BB
C	Magnolia soulagiana	Saucer Magnolia	3	6 - 8" HL BB
D	Parrotia persica	Persian Parrotia	3	7 - 8" HL BB
E	Quercus acutissima	Sawtooth Oak	3	2 1/2 - 3" cal. BB
F	Taxodium distichum	Bald Cypress	4	8-10" HL BB
G	Picea omorika	Serbian Spruce	4	6 - 7" HL HL BB
H	Pinus strobus	White Pine	19	6 - 8" HL BB
I	Thuja p. 'Green Giant'	Green Giant Western Arborvitae	5	7 - 8" HL BB/cont.
J	Salix babylonica	Weeping Willow	3	2 1/2 - 3" cal. BB

**Proposed SWM #3 Area Landscape Schedule**

Symbol	Botanical Name	Common Name	Quantity	Size
A	Fagus grandiflora	American Beech	4	2 1/2" cal. BB
B	Fraxinus a. 'Autumn Purple'	Autumn Purple Ash	6	2 1/2 - 3" cal. BB
C	Magnolia soulagiana	Saucer Magnolia	5	6 - 8" HL BB
D	Parrotia persica	Persian Parrotia	2	7 - 8" HL BB
E	Quercus acutissima	Sawtooth Oak	4	2 1/2 - 3" cal. BB
F	Taxodium distichum	Bald Cypress	9	8-10" HL BB
G	Picea omorika	Serbian Spruce	11	6 - 7" HL HL BB
H	Pinus strobus	White Pine	23	6 - 8" HL BB
I	Thuja p. 'Green Giant'	Green Giant Western Arborvitae	7	7 - 8" HL BB/cont.
J	Salix babylonica	Weeping Willow	3	2 1/2 - 3" cal. BB

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 2/24/10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 2/24/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*[Signature]* 2-22-10  
 CHIEF, BUREAU OF PERMITS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

NATURAL RESOURCE CONSERVATION SERVICE

DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT

DATE

**ENGINEER'S CERTIFICATE**

I certify that this plan for construction, erosion, and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard County Soil Conservation. I have notified the developer that specific must engage a registered professional engineer to supervise proper construction and provide the Howard Soil Conservation with an "as-built" of the pond within 30 days of completion.

Signature of Engineer: *[Signature]* Date: 2/24/10

**DEVELOPER'S CERTIFICATE**

I hereby certify that all development and/or construction will be done according to these plans, and that any 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 shall engage a registered professional engineer to supervise proper construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections to the Howard Soil Conservation District.

Signature of Developer: *[Signature]* Date: 2/24/10

STATE OF MARYLAND

Professional Engineer License No. 906

*[Signature]*

I hereby certify that the landscaping plans were prepared or approved by me, and that I am a duly licensed professional landscape architect under the laws of the state of Maryland, License Number 906, expiration date 3-2012.

Revision Block

Landscaping revision 10.20.09

**LDE, INC.**  
 9250 Rumsey Road, Suite 108, Columbia, MD. 21045  
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: B.D.B. 2/24/10  
 DRAWN: C.A.D.D.  
 CHECKED: B.D.B. K.B.W. 9/99

REVISION: 10.20.09

SCALE: As Shown  
 DRAWING: 26 of 26  
 JOB NO.: 95-056.2  
 FILE NO.: 99-140

**BRANTWOOD**  
 Section Two - Area One  
 Lots 1 - 30 & Preservation Parcels "E" and "F"  
 A Resubdivision of part of "BRANTWOOD" - Section One  
 Non-Buildable Bulk Parcel "E"

Tax Map Nos. 16 & 23 - Grid Nos. 21/22 & 3/4 - P/O Parcel 214  
 3rd Election District - Howard County, Maryland  
 Previous Submittals: F 80-07, WP 96-133, S 96-23, P 98-08, WP 98-133  
 F 98-136, WP 99-14, P 99-05, RE99-01

Owner: *[Signature]*  
 Developer: BRANTWOOD, LLC  
 8835 - P Columbia 100 Parkway  
 Columbia, Maryland 21045  
 (410) 740-4000