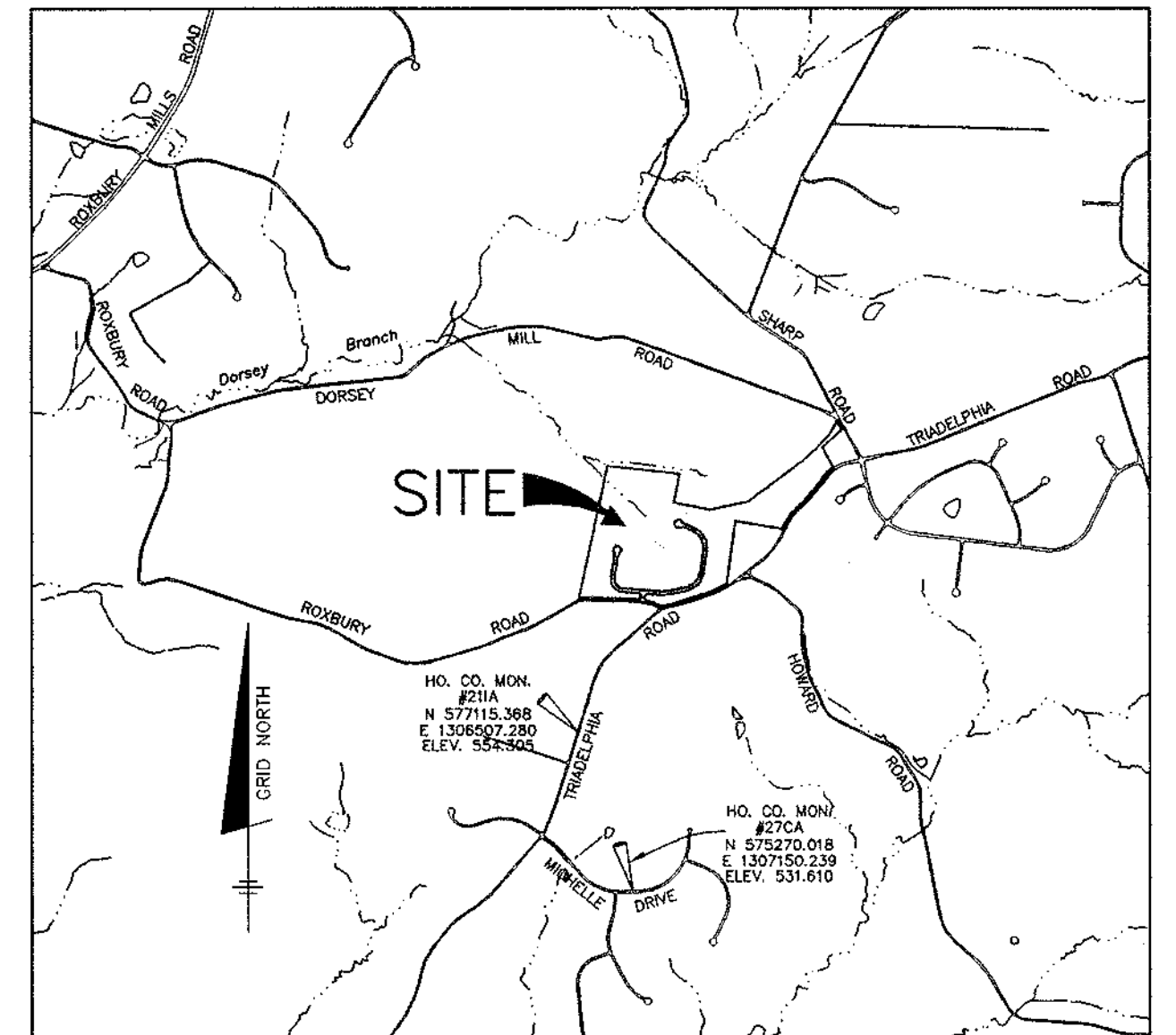


# TRIADELPHIA CROSSING

## LOTS 1 - 22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' - 'H' AND NON-BUILDABLE BULK PARCEL 'I'

### ROADS, STORMWATER MANAGEMENT AND STORM DRAIN CONSTRUCTION PLANS



21A - STAMPED BRASS DISC SET 1'-2" BELOW SURFACE ON A CONCRETE COLUMN (3" DEEP), LOCATED 4' FROM WEST EDGE OF TRIADELPHIA ROAD 99' FROM THE POLE #154679.  
 27CA - STAMPED BRASS DISC SET 1'-2" BELOW SURFACE ON A CONCRETE COLUMN (3" DEEP), LOCATED 25' FROM POLE #154679 IN MAGADAM CURB ON NORTH SIDE OF MICHELLE DRIVE, (APPROX. 158' FROM SAMPING DRIVE).

VICINITY MAP  
 SCALE: 1" = 2000'

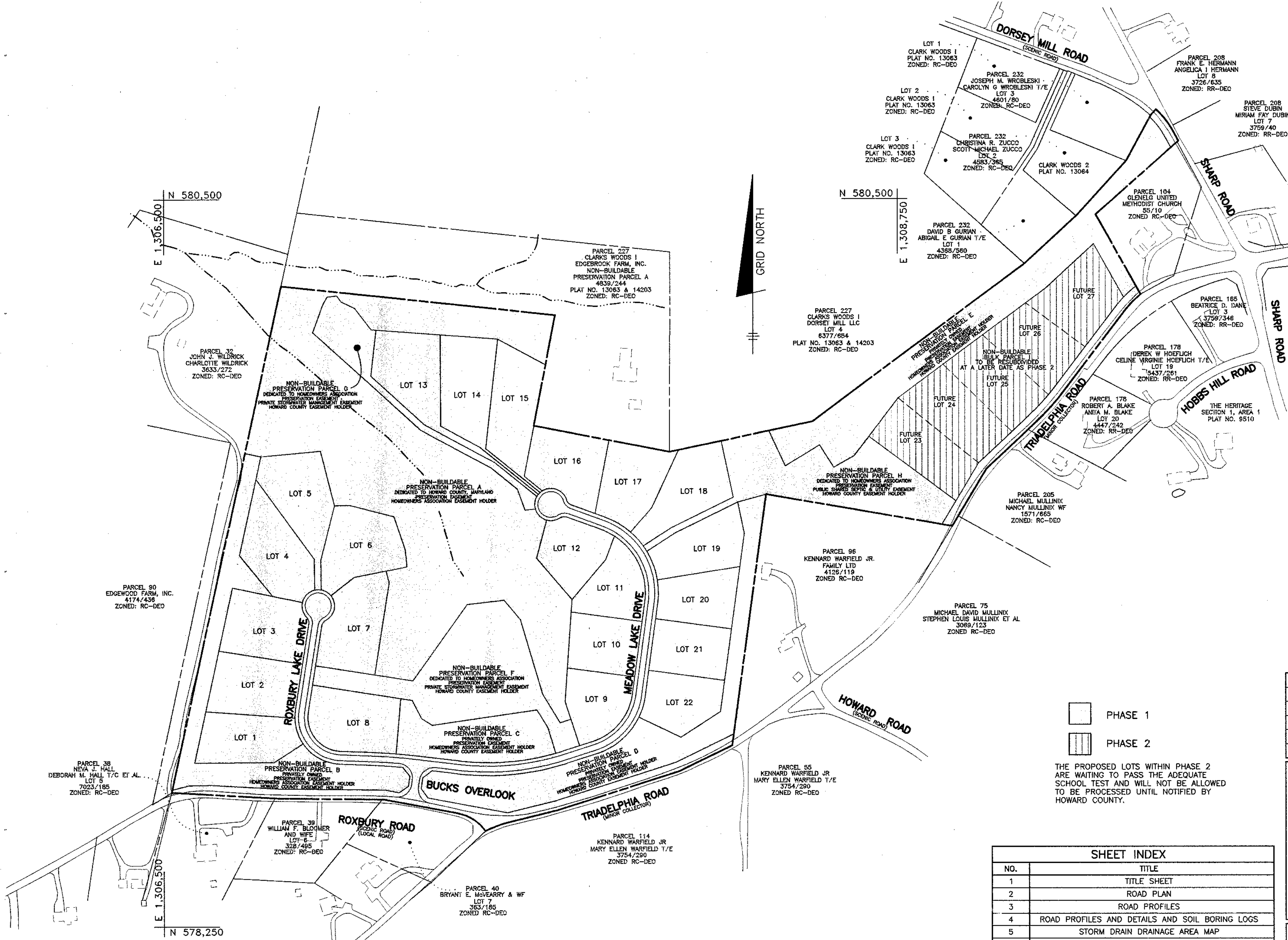
#### SITE ANALYSIS DATA CHART

(DOES NOT INCLUDE AREA FOR CLARKS WOODS 2)

GENERAL SITE DATA	
1.) PRESENT ZONING:	RC-DEO
2.) APPLICABLE OPZ FILE REFERENCES:	S-01-23, F-98-29, P-04-005
3.) PROPOSED USE OF SITE:	RESIDENTIAL (SFD)
4.) PROPOSED WATER AND SEWER SYSTEMS:	PRIVATE
AREA TABULATION	
1.) GROSS TRACT AREA	82.31±
2.) AREA WITHIN 100-YEAR FLOODPLAIN	1.81 AC±
3.) TOTAL AREA OF 25% OR GREATER STEEP SLOPES	0.00 AC±
AREA NOT IN FLOODPLAIN (FOR N/A CALC.)	0.00 AC±
4.) NET TRACT AREA	60.50 AC±
5.) TOTAL NUMBER OF LOTS ALLOWED PER ZONING	14
1 UNIT PER 4.25 GROSS ACRES	30
1 UNIT PER 2 NET ACRES (MAX)	14
6.) TOTAL NUMBER OF RESIDENTIAL UNITS/LOTS PROPOSED ON THIS SUBMISSION	22
(POTENTIAL 5 ADDITIONAL LOTS IN PHASE 2)	
7.) AREA OF CLUSTER LOTS	22.57 AC±
8.) AREA OF NON-BUILDABLE PRESERVATION PARCELS (PARCELS A - H)	30.02 AC±
9.) AREA OF BUILDABLE PRESERVATION PARCELS	N/A
10.) AREA OF NON-BUILDABLE BULK PARCELS	5.23 AC±
11.) AREA OF BUILDABLE BULK PARCELS	N/A
12.) AREA OF ROAD RIGHT-OF-WAY	4.49 AC±
13.) OPEN SPACE ON-TOTAL SITE	N/A
14.) AREA OF RECREATIONAL OPEN SPACE REQUIRED	N/A

\* 5% OF GROSS REQUIRED (3.12 AC±) OR NONE IF THE PRES. PARCEL IS DEDICATED TO THE HOA OR HOWARD COUNTY.

- GENERAL NOTES**
- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
  - THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY WITH 2-FOOT CONTOUR INTERVALS PREPARED BY AIR SURVEY, INC. DATED MARCH, 2001.
  - THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 211A AND 27CA WERE USED FOR THIS PROJECT.
  - WATER IS PRIVATE.
  - SEWER IS PRIVATE.
  - STORMWATER MANAGEMENT SHALL BE PROVIDED BY AN EXTENDED DETENTION POND WITH MICRO-POOL, BIO-RETENTION FACILITY AND RAINGARDENS/DRYWELLS. SWM FACILITIES ARE TO BE PRIVATELY OWNED AND MAINTAINED.
  - EXISTING UTILITIES ARE BASED UPON FIELD SURVEY LOCATIONS.
  - THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY BENCHMARK ENGINEERING, INC., DATED AUGUST, 2003.
  - THE WETLANDS DELINEATION FOR THIS PROJECT WAS PREPARED BY JEFFREY A. WOLINSKI, CONSULTING ECOLOGIST IN FEBRUARY, 2001 AND WAS APPROVED UNDER THE SKETCH PLAN FOR THIS PROJECT (S-01-23).
  - THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY INTEGRATED TRANSPORTATION SOLUTIONS, INC. IN FEBRUARY, 2001 AND WAS APPROVED UNDER THE SKETCH PLAN FOR THIS PROJECT (S-01-23).
  - A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
  - THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLIS CARNES ENGINEERING ASSOCIATES, INC. IN MAY, 2001 FOR BORINGS 1, 2 AND 3. THE GEOTECHNICAL REPORT FOR BORINGS 4, 5, 6 AND 7 AND THE ADDITIONAL-SITU TESTING OF BORINGS 1, 2 AND 3 WAS PREPARED BY HILLIS CARNES ENGINEERING ASSOCIATES, INC. IN OCTOBER, 2003.
  - THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 2-2-04 COMPREHENSIVE ZONING PLAN. ALL ADJACENT PROPERTIES ARE ZONED RC-DEO PER THE 2-2-04 COMPREHENSIVE ZONING PLAN.
  - TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THIS SITE.
  - THERE SHALL BE NO DISTURBANCE WITHIN THE 100-YR FLOODPLAIN, WETLANDS, STREAMS, THEIR BUFFERS OR STEEP SLOPES THAT ARE AT LEAST 20,000 S.F. UNLESS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.
  - BOUNDARY IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED DURING SEPTEMBER, 2000 BY CLARK, FINEPROCK & SACKETT, INC.
  - THIS PROJECT IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT.
  - THIS PLAN IS SUBJECT TO COMPLIANCE WITH THE FOURTH EDITION OF THE SUBDIVISION REGULATIONS AS A CONSEQUENCE FOR ITS SUBMISSION PRIOR TO 11-15-2001. THIS PROJECT IS SUBJECT TO COMPLIANCE WITH COUNTY COUNCIL BILL 50-2001 WHICH AMENDS PORTIONS OF THE ZONING REGULATIONS AS A CONSEQUENCE FOR NOT HAVING PRELIMINARY PLAN APPROVAL PRIOR TO 11-1-2001.
  - THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT OF 10,000 SQUARE FEET REQUIRED BY THE STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA IS RESTRICTED UNTIL PUBLIC SEWER IS AVAILABLE. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENT INTO THE PRIVATE SEWERAGE EASEMENT. RECORDATION OF A MODIFIED SEWERAGE EASEMENT PLAN SHALL NOT BE NECESSARY.
  - THE PURPOSE OF THE PRESERVATION PARCELS AND THE JUSTIFICATION FOR THE DESIGN OF THE CLUSTER SUBDIVISION IS AS FOLLOWS:  
 PRESERVATION PARCEL 'A' IS PROPOSED AS NON-BUILDABLE PARCEL TO PRESERVE ENVIRONMENTALLY SENSITIVE AREAS INCLUDING STEEP SLOPES, STREAM BUFFERS, WETLANDS, FLOODPLAIN AND EXISTING FOREST. IT WILL BE DEDICATED TO THE HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS. IT IS ENCUMBERED BY AN EASEMENT AGREEMENT WITH THE HOMEOWNERS ASSOCIATION. THIS AGREEMENT PROHIBITS FURTHER SUBDIVISION OF THE PARCEL, OUTLINES THE MAINTENANCE RESPONSIBILITIES OF ITS OWNER AND ENUMERATES THE USES PERMITTED ON THE PROPERTY.  
 PRESERVATION PARCELS 'B', 'C', 'D' AND 'E' ARE PROPOSED AS NON-BUILDABLE PARCELS TO PRESERVE ENVIRONMENTALLY SENSITIVE AREAS INCLUDING STEEP SLOPES, STREAM BUFFERS, WETLANDS, FLOODPLAIN AND EXISTING FOREST. THEY WILL BE PRIVATELY OWNED. THEY ARE ENCUMBERED BY AN EASEMENT AGREEMENT WITH HOWARD COUNTY AND THE HOMEOWNERS ASSOCIATION. THIS AGREEMENT PROHIBITS FURTHER SUBDIVISION OF THE PARCEL, OUTLINES THE MAINTENANCE RESPONSIBILITIES OF ITS OWNER AND ENUMERATES THE USES PERMITTED ON THE PROPERTY.  
 PRESERVATION PARCELS 'F' AND 'G' ARE PROPOSED AS NON-BUILDABLE PARCELS FOR STORMWATER MANAGEMENT FACILITIES AS A REQUIREMENT TO CONTROL STORMWATER RUNOFF. THEY WILL BE OWNED BY THE HOMEOWNERS ASSOCIATION. THEY ARE ENCUMBERED BY AN EASEMENT AGREEMENT WITH HOWARD COUNTY. THIS AGREEMENT PROHIBITS FURTHER SUBDIVISION OF THE PARCEL, OUTLINES THE MAINTENANCE RESPONSIBILITIES OF ITS OWNER AND ENUMERATES THE USES PERMITTED ON THE PROPERTY.  
 PRESERVATION PARCEL 'H' IS PROPOSED AS NON-BUILDABLE PARCEL FOR A SHARED SEPTIC FIELD IN ORDER TO PROVIDE SEWAGE DISPOSAL FOR LOTS 9-12 AND 19-22. IT WILL BE DEDICATED TO THE HOMEOWNERS ASSOCIATION. IT IS ENCUMBERED BY AN EASEMENT AGREEMENT WITH HOWARD COUNTY. THIS AGREEMENT PROHIBITS FURTHER SUBDIVISION OF THE PARCEL, OUTLINES THE MAINTENANCE RESPONSIBILITIES OF ITS OWNER AND ENUMERATES THE USES PERMITTED ON THE PROPERTY.  
 BULK PARCEL 'I' IS PROPOSED AS A BULK PARCEL FOR A FUTURE RESUBDIVISION UNDER PHASE 2 THERE IS POTENTIAL FOR 5 ADDITIONAL CLUSTER LOTS.
  - THE TOTAL FOREST CONSERVATION OBLIGATION AMOUNT OF 25.7 ACRES HAS BEEN MET BY THE ON-SITE RETENTION OF 8.6 AC. WITHIN A FOREST CONSERVATION EASEMENT AND THE ON-SITE REFORESTATION OF 15.4 AC. WITHIN A FOREST CONSERVATION EASEMENT AND BY THE OFFSITE REFORESTATION OF 3.7 ACRES WITHIN A FOREST CONSERVATION EASEMENT LOCATED ON PRESERVATION PARCEL 'A' OF THE CLARKS WOODS 1 (F-04-110) SUBDIVISION WITH A 50% DEVELOPER'S AGREEMENT WITH SURETY IN THE AMOUNT OF \$473,497.00 (\$392,911.00 ON-SITE AND \$80,586.00 OFF-SITE).
  - THE CREATION OF CLARKS WOODS 2, LOTS 1-3 NECESSITATED THE FUTURE CREATION OF A 9.38 ACRE PRESERVATION PARCEL (I) (F-04-110) PER SECTION 104.2.1 OF THE ZONING ORDINANCE UPON THE RESUBDIVISION OF THE RESIDUE OF PARCEL 97. THAT 9.38 ACRES IS INCLUDED ON THIS SITE.
  - ALL DRIVEWAY CULVERTS ARE TO BE 15" HOPEP. DESIGN CALCULATIONS ARE PROVIDED IN THE APPROVED STORM DRAIN REPORT.
  - THE DOWNSPOUTS FOR THE HOMES LOCATED ON LOTS 17 & 18 AND FUTURE LOTS 23 - 27 SHALL BE CONSTRUCTED AS SHOWN ON SHEET 15 OF THESE CONSTRUCTION PLANS. THE ROOFTOP DISCONNECTION DESIGN IS BASED ON A TOTAL ROOFTOP SQUARE FOOTAGE OF 3,960 S.F. ANY ADDITIONAL SQUARE FOOTAGE OF ROOFTOP (BASED ON WHAT TYPE OF HOUSE IS SOLD ON EACH LOT) OTHER THAN WHAT IS SHOWN ON SHEET 15 SHALL REQUIRE ADDITIONAL DOWNSPOUTS (1 FOR EVERY 500 S.F.).



PLAN VIEW  
 SCALE: 1" = 200'

SHEET INDEX	
NO.	TITLE
1	TITLE SHEET
2	ROAD PLAN
3	ROAD PROFILES
4	ROAD PROFILES AND DETAILS AND SOIL BORING LOGS
5	STORM DRAIN DRAINAGE AREA MAP
6	STORM DRAIN PROFILES AND DETAILS
7	STORM DRAIN PROFILES
8	GRADING, SEDIMENT AND EROSION CONTROL PLAN
9	GRADING, SEDIMENT AND EROSION CONTROL PLAN
10	GRADING, SEDIMENT AND EROSION CONTROL PLAN
11	SWM NOTES AND SEDIMENT & EROSION CONTROL NOTES & DETAILS
12	LANDSCAPE PLAN
13	SWM DETAILS - EXTENDED DETENTION FACILITY
14	SWM DETAILS - BIO-RETENTION/RAINGARDENS AND SWM LANDSCAPING
15	SWM DETAILS - DISCONNECTION CREDIT PLAN
16	FOREST CONSERVATION PLAN
17	FOREST CONSERVATION PLAN

NO. DATE REVISION	
<b>BENCHMARK</b> ENGINEERS & LAND SURVEYORS & PLANNERS 8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELLICOTT CITY, MARYLAND 21043 phone: 410-665-6105 • fax: 410-665-6644 email: Benchmark@bca.com	
OWNER:	PROJECT: TRIADELPHIA CROSSING PHASE 1
DEVELOPER:	LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'I'
DESIGN: DBT	DRAFT: DBT
CHECK: DAM	SCALE: AS SHOWN
DATE: JUNE, 2004	PROJECT NO. 1634
GRID: 17 & 23	PARCEL: 97 ZONED: RC-DEO
FOURTH ELECTION DISTRICT	HOWARD COUNTY, MARYLAND
TITLE SHEET	
SHEET 1	OF 17

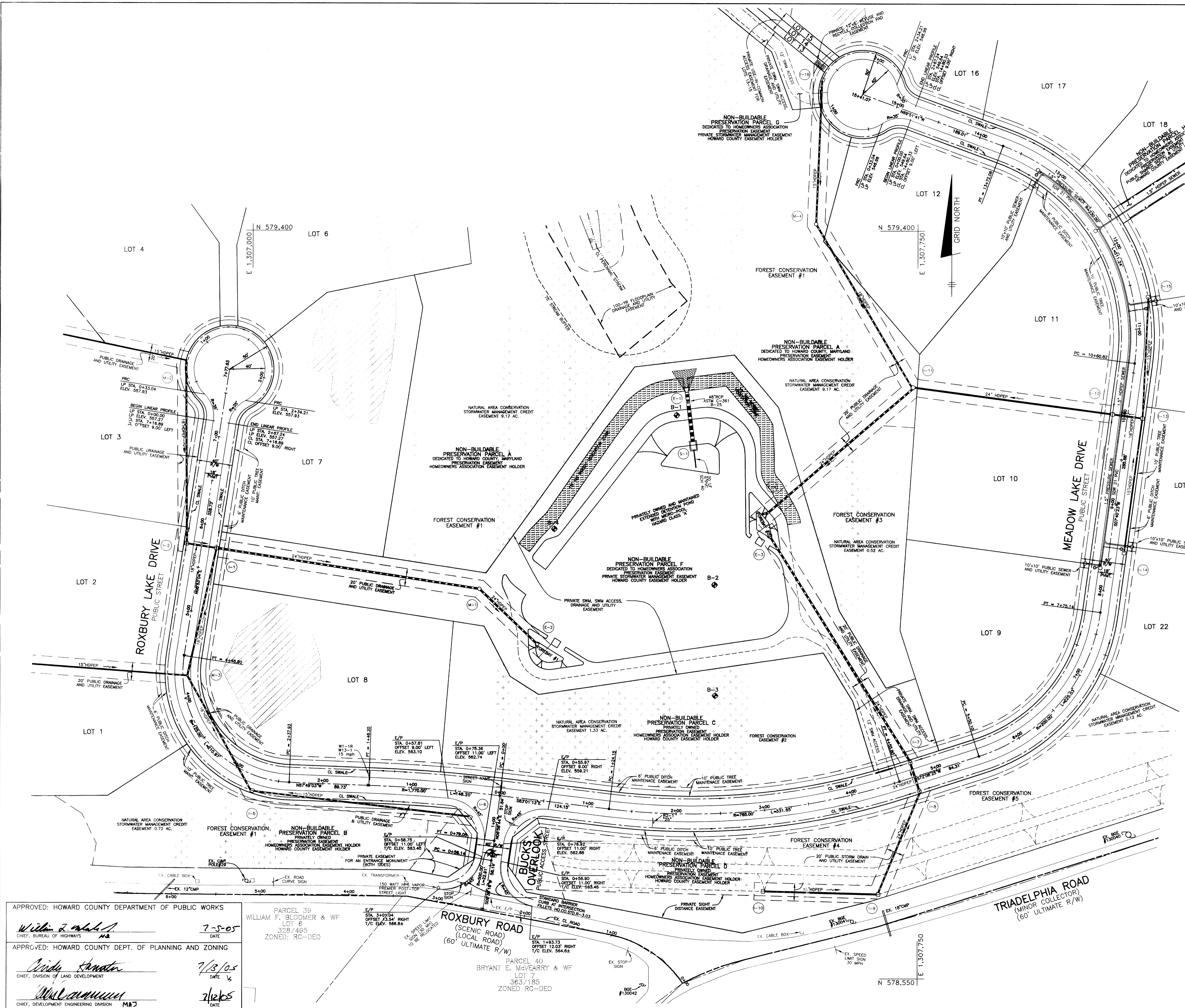
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*William J. Mahoney*  
 CHIEF, BUREAU OF HIGHWAYS  
 8-2-04  
 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*Andy Hamstra*  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 8/16/04  
 DATE

*MAJ*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 8/16/04  
 DATE



**CENTERLINE CONTROL DATA**

STREET NAME	STATION	NORTH	EAST
BUCKS OVERLOOK	START=0+00.00	578629.05	1307260.21
	PC=0+56.14	578684.40	1307269.57
	PT=0+79.05	578707.07	1307272.88
ROXBURY LAKE DRIVE	END=1+30.69	578758.33	1307279.15
	START=0+00.00	578758.33	1307279.15
	PT=1+48.20	578770.16	1307131.50
MEADOW LAKE DRIVE	PC=2+37.93	578773.57	1307041.83
	PT=4+48.90	578917.79	1306923.09
	END=7+77.63	579242.57	1306973.86
BUCKS OVERLOOK	START=0+00.00	578758.33	1307279.15
	PC=1+25.15	578743.24	1307402.41
	PT=4+55.80	578774.43	1307229.98
ROXBURY LAKE DRIVE	PC=5+50.10	578803.36	1307819.74
	PT=7+75.14	578967.01	1307956.62
	PC=10+60.82	579250.14	1307994.76
MEADOW LAKE DRIVE	PT=13+72.06	579496.79	1307846.01
	END=15+41.07	579554.97	1307687.33

**CENTER LINE CURVE DATA**

STREET NAME	STATION	RADIUS	ARC	DELTA	TANGENT	CHORD
BUCKS OVERLOOK	0+56.14 TO 0+79.05	500.00'	22.91'	02°37'32"	11.46'	N08°17'30"E 22.91'
	0+00.00 TO 1+48.20	1,770.00'	148.20'	04°47'50"	74.14'	N85°25'08"W 148.15'
ROXBURY LAKE DRIVE	2+37.93 TO 4+48.90	125.00'	210.97'	96°42'07"	140.55'	N39°27'59"W 186.81'
	1+25.15 TO 4+55.80	765.00'	331.65'	24°50'22"	168.47'	N84°33'36"E 329.06'
MEADOW LAKE DRIVE	5+50.10 TO 7+75.14	200.00'	225.03'	64°28'02"	126.11'	N39°54'24"E 213.35'
	10+60.82 TO 13+72.06	230.00'	311.24'	77°32'04"	184.71'	N31°05'39"W 288.03'

1	5-9-05	LOWER ROADS AND RELATED STORM DRAIN 1 FOOT
NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS • LAND SURVEYORS • PLANNERS  
 8480 BALTIMORE NATIONAL PIKE • SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 phone: 410-465-6105 • fax: 410-465-6644  
 email: Benchmark@ceis.com

*Donald Moon*  
5/10/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William F. Bloomer* 7-5-05  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Wendy Hamilton* 7/13/05  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*William M. ...* 7/13/05  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

PARCEL 39  
 WILLIAM F. BLOOMER & WF  
 LOT 6  
 328/485  
 ZONED: RC-DEO

PARCEL 40  
 BRYANT E. McFERRARY & WF  
 LOT 7  
 363/185  
 ZONED: RC-DEO

ROXBURY ROAD (SCENIC ROAD) (LOCAL ROAD) (60' ULTIMATE R/W)

BUCKS OVERLOOK PUBLIC ACCESS

MEADOW LAKE DRIVE PUBLIC STREET

TRIADELPHIA ROAD (MINOR COLLECTOR) (60' ULTIMATE R/W)

OWNER: EDGEWOOD FARM, INC. 14919 ROXBURY ROAD GLENELG, MARYLAND 21737

DEVELOPER: TOLL BROTHERS, INC. 7164 COLUMBIA GATEWAY DRIVE SUITE 230 COLUMBIA, MARYLAND 21046 410-872-9105

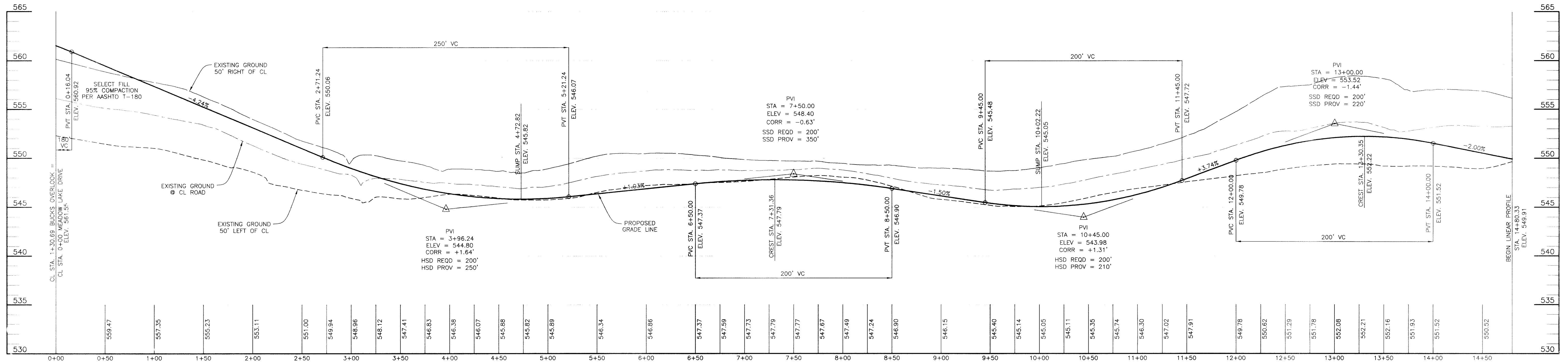
PROJECT: TRIADELPHIA CROSSING PHASE 1 LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'I'

LOCATION: TAX MAP 21 PARCELS 97 GRID: 17 & 23 ZONED: RC-DEO FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

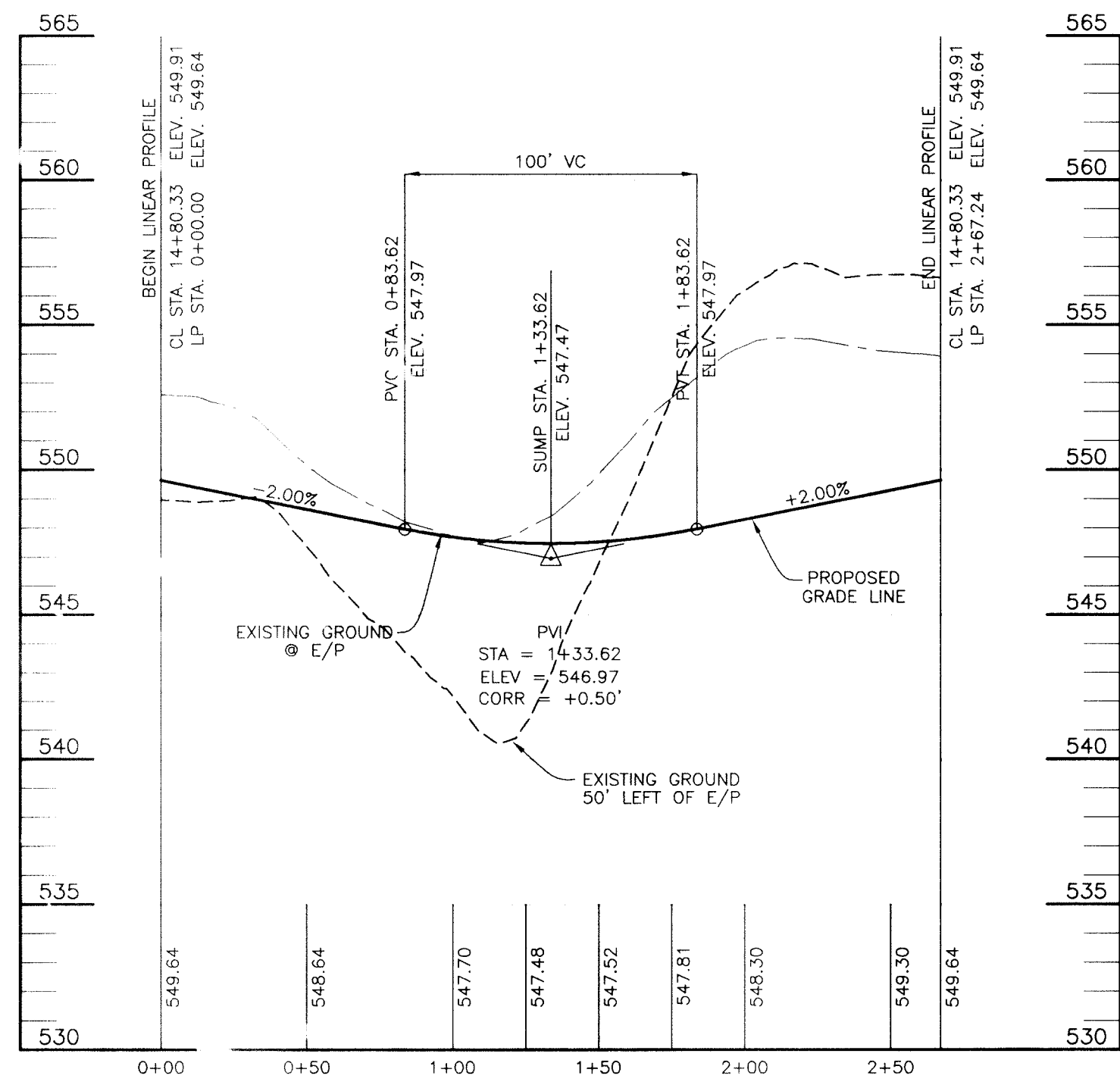
TITLE: REVISED ROAD PLAN

DATE: JUNE, 2004 PROJECT NO. 1634

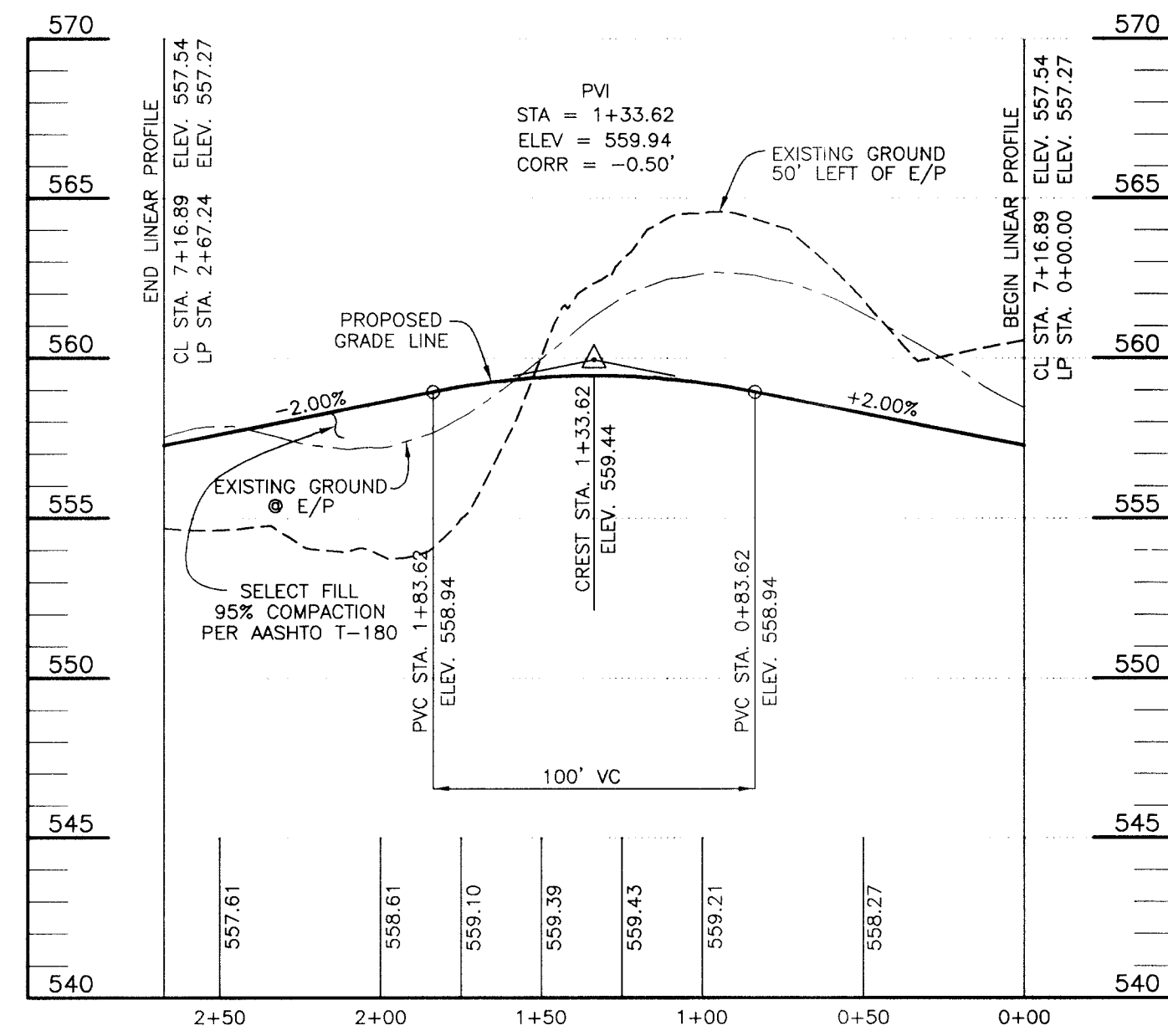
DESIGN: DBT DRAFT: DBT CHECK: CAM SCALE: 1" = 50' SHEET 2 OF 17



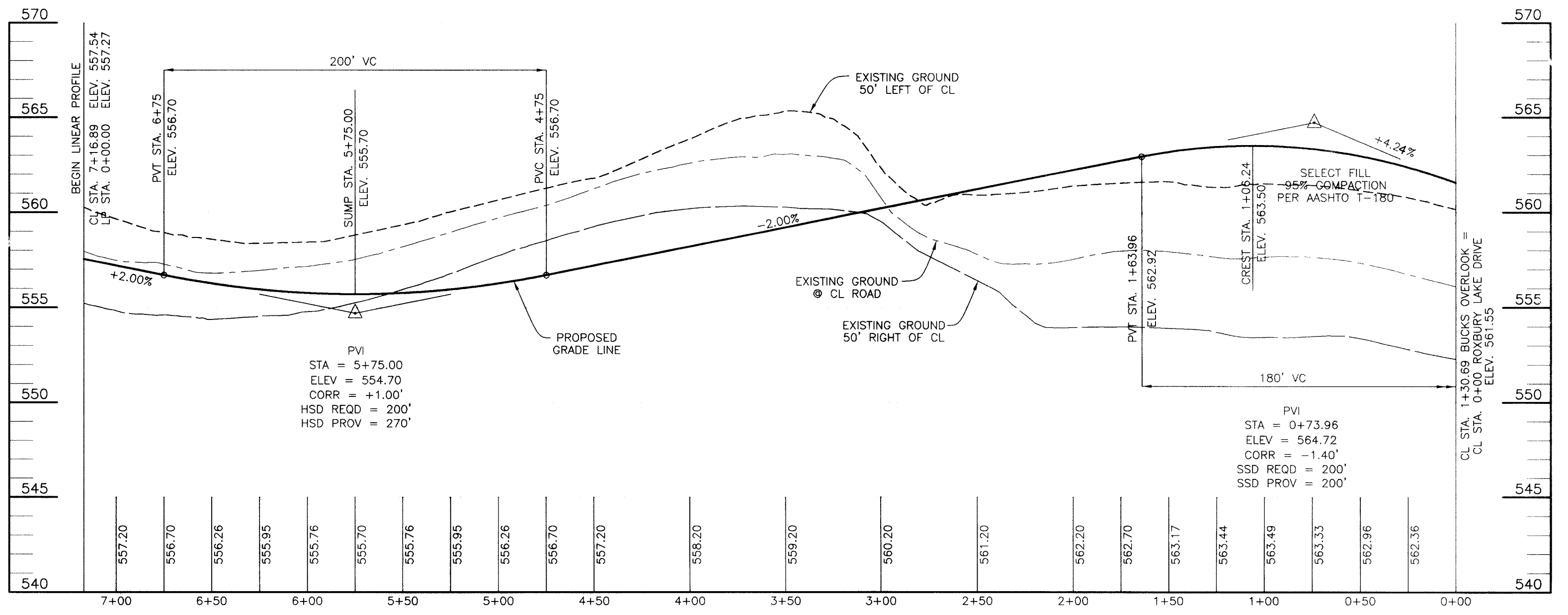
MEADOW LAKE DRIVE  
SCALE: 1"=50' HORIZ., 1"=5' VERT.



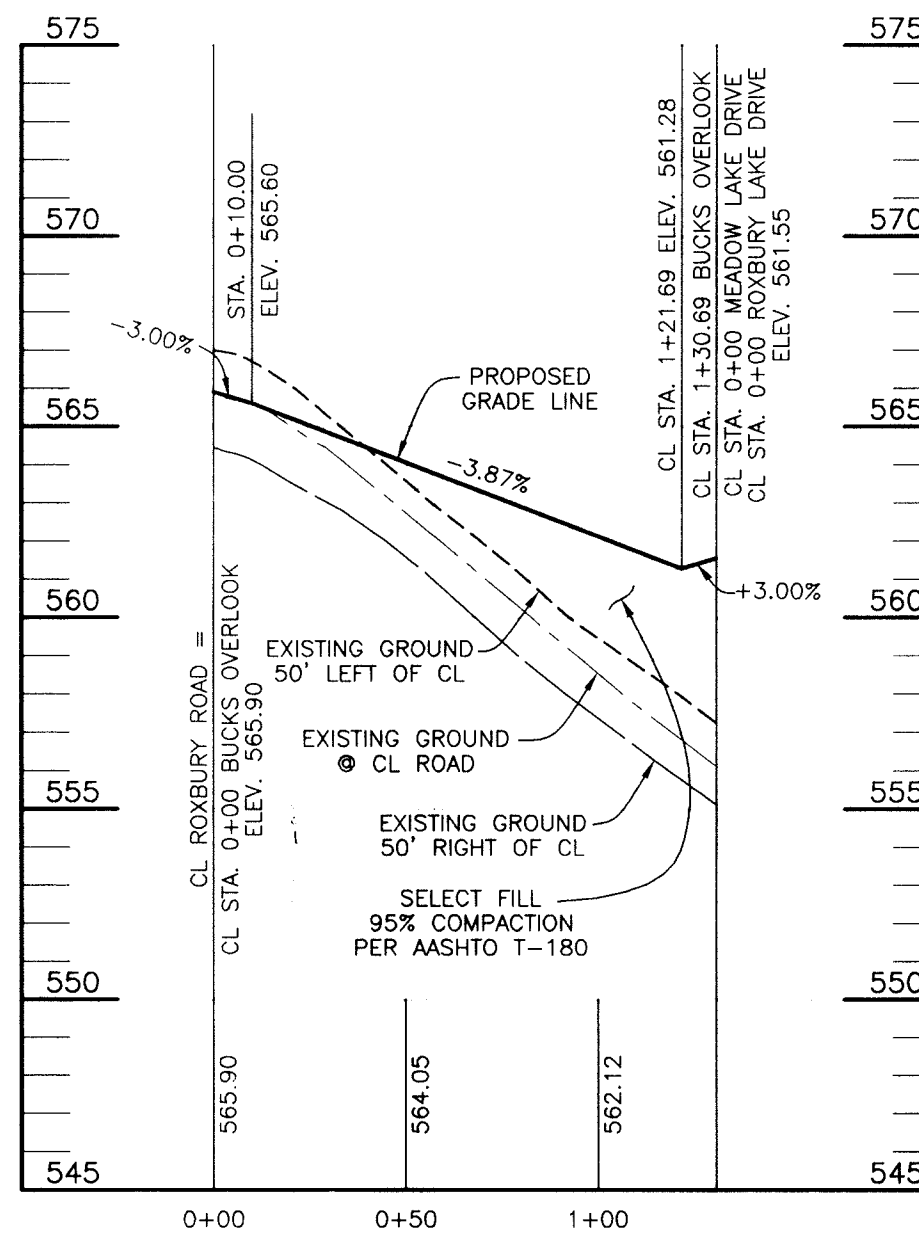
MEADOW LAKE DRIVE  
LINEAR PROFILE  
SCALE: 1"=50' HORIZ., 1"=5' VERT.



ROXBURY LAKE DRIVE  
LINEAR PROFILE  
SCALE: 1"=50' HORIZ., 1"=5' VERT.



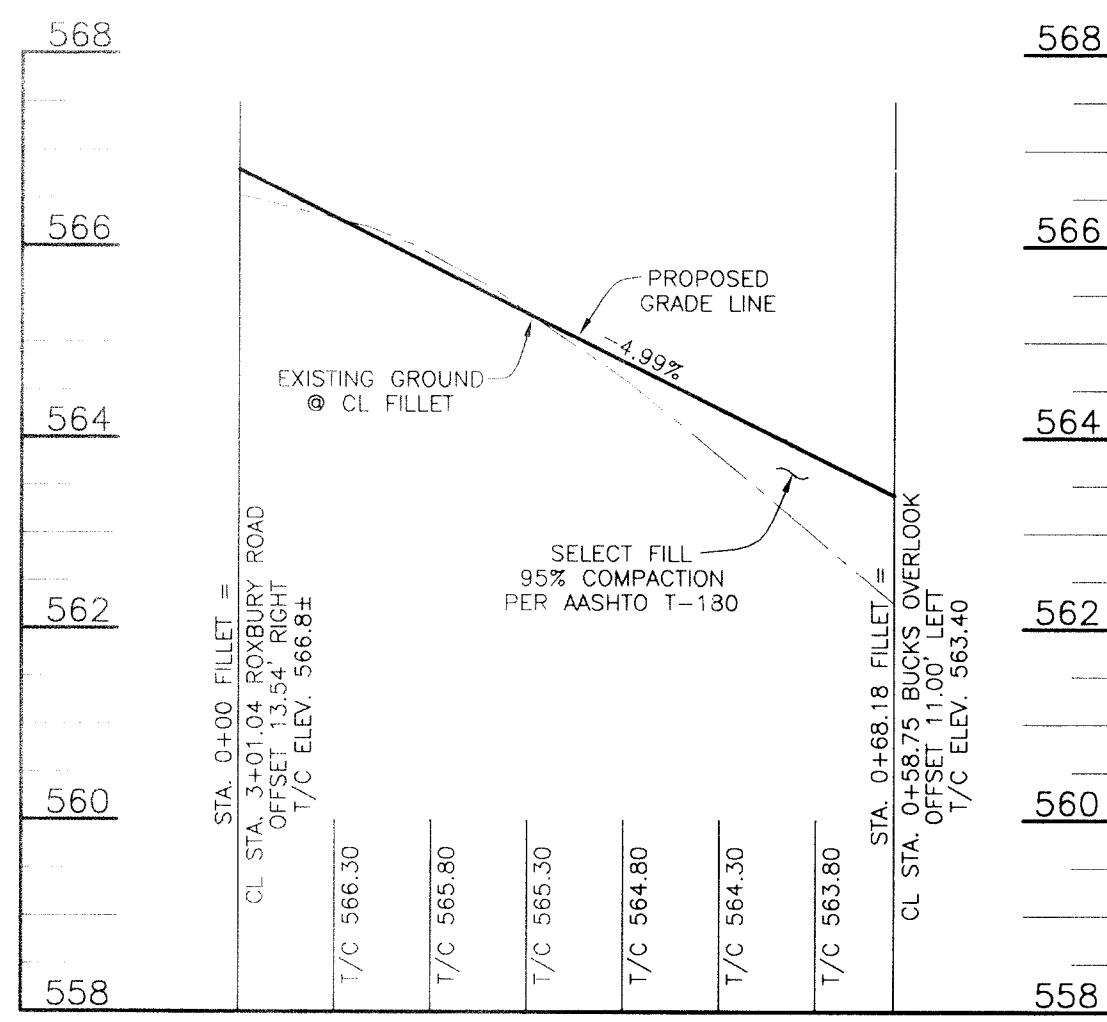
ROXBURY LAKE DRIVE  
SCALE: 1"=50' HORIZ., 1"=5' VERT.



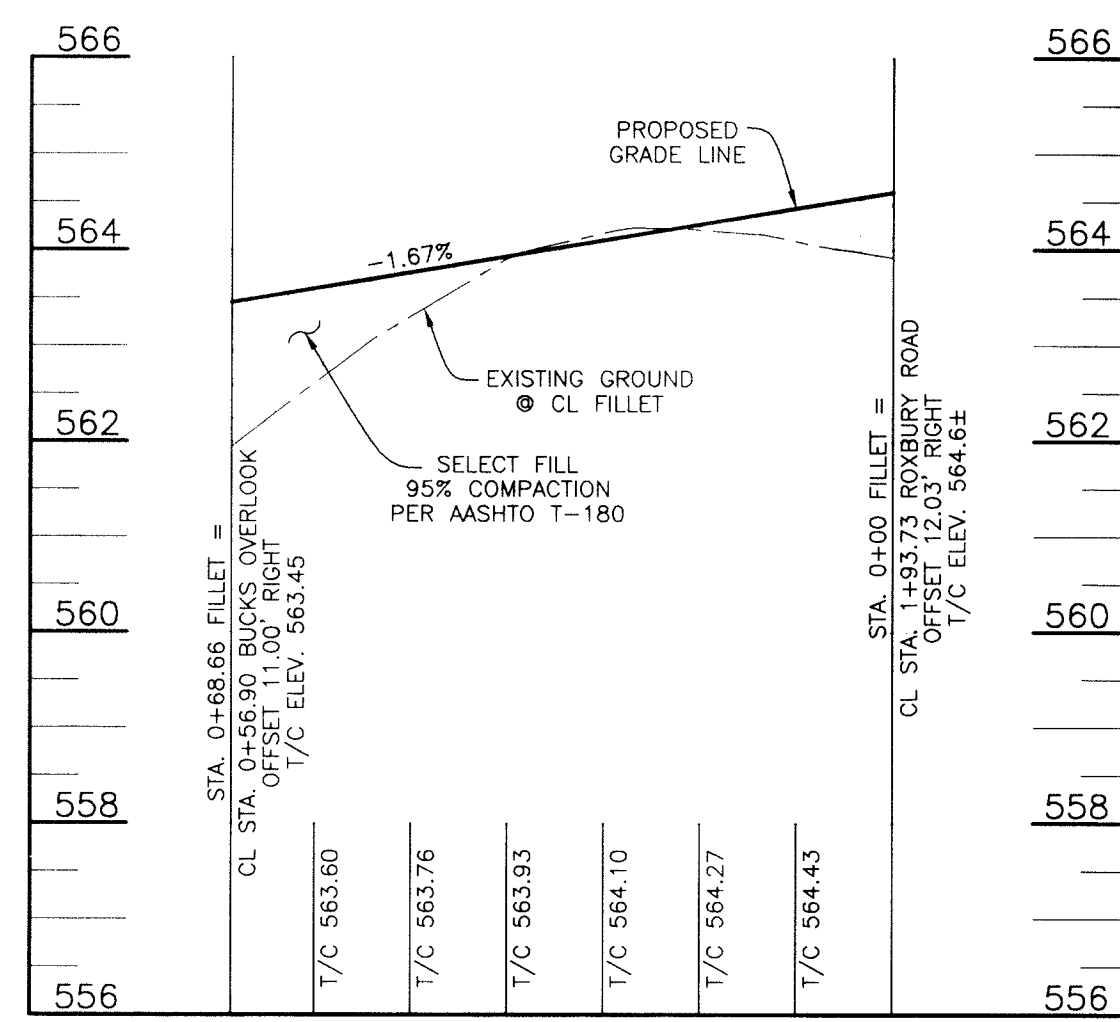
BUCKS OVERLOOK  
SCALE: 1"=50' HORIZ., 1"=5' VERT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William F. [Signature]* 7-5-05  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*[Signature]* 7/13/05  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*[Signature]* 7/12/05  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ DATE

1		5-9-05	LOWER ROADS AND RELATED STORM DRAINS 1 FOOT
NO.	DATE		REVISION
<b>BENCHMARK</b> ENGINEERS & LAND SURVEYORS & PLANNERS <b>ENGINEERING, INC.</b> 8480 BALTIMORE NATIONAL PIKE, SUITE 418 ELLICOTT CITY, MARYLAND 21043 phone: 410-465-6106 & fax: 410-465-6644 email: Benchmark@cais.com			
OWNER:		PROJECT:	
EDGEWOOD FARM, INC. 14919 ROXBURY ROAD GLENELG, MARYLAND 21737		TRIADELPHIA CROSSING PHASE 1 LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'I'	
DEVELOPER:		LOCATION:	
TOLL BROTHERS, INC. 7164 COLUMBIA GATEWAY DRIVE SUITE 230 COLUMBIA, MARYLAND 21046 410-872-9105		TAX MAP: 21 GRID: 17 & 23 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
		TITLE:	
		REVISED ROAD PROFILES	
DESIGN: DBT	DRAFT: DBT	CHECK: CAM	DATE: JUNE, 2004
SCALE: AS SHOWN		PROJECT NO. 1634	SHEET 3 OF 17



**FILLET PROFILE  
WEST CORNER  
ROXBURY ROAD/BUCKS OVERLOOK**  
SCALE: 1"=20' HORIZ., 1"=2' VERT.



**FILLET PROFILE  
EAST CORNER  
ROXBURY ROAD/BUCKS OVERLOOK**  
SCALE: 1"=20' HORIZ., 1"=2' VERT.

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Triadelphia Meadows SWM  
Location: Howard County, Maryland

Page 1 of 1

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	COR.	NO.	RECS.	BORING & SAMPLING	
							DEPTH	NO.
566.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	2.0	1"	D	2-2.3	1	10'	10'
565.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	3.0	1"	D	2-3.4	1	10'	10'
564.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	4.0	1"	D	2-4.5	2	12'	12'
563.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	5.0	1"	D	2-5.3	3	12'	12'
562.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	6.0	1"	D	2-6.3	4	12'	12'
561.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	7.0	1"	D	2-7.3	5	12'	12'
560.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	8.0	1"	D	2-8.3	6	12'	12'
559.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	9.0	1"	D	2-9.3	7	12'	12'
558.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	10.0	1"	D	2-10.3	8	12'	12'
557.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	11.0	1"	D	2-11.3	9	12'	12'
556.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	12.0	1"	D	2-12.3	10	12'	12'

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Triadelphia Meadows SWM  
Location: Howard County, Maryland

Page 1 of 1

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	COR.	NO.	RECS.	BORING & SAMPLING	
							DEPTH	NO.
566.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	2.0	1"	D	2-3.4	1	14'	14'
565.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	3.0	1"	D	2-4.4	2	14'	14'
564.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	4.0	1"	D	2-5.4	3	14'	14'
563.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	5.0	1"	D	2-6.4	4	14'	14'
562.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	6.0	1"	D	2-7.4	5	14'	14'
561.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	7.0	1"	D	2-8.4	6	14'	14'
560.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	8.0	1"	D	2-9.4	7	14'	14'
559.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	9.0	1"	D	2-10.4	8	14'	14'
558.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	10.0	1"	D	2-11.4	9	14'	14'
557.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	11.0	1"	D	2-12.4	10	14'	14'

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Triadelphia Meadows SWM  
Location: Howard County, Maryland

Page 1 of 1

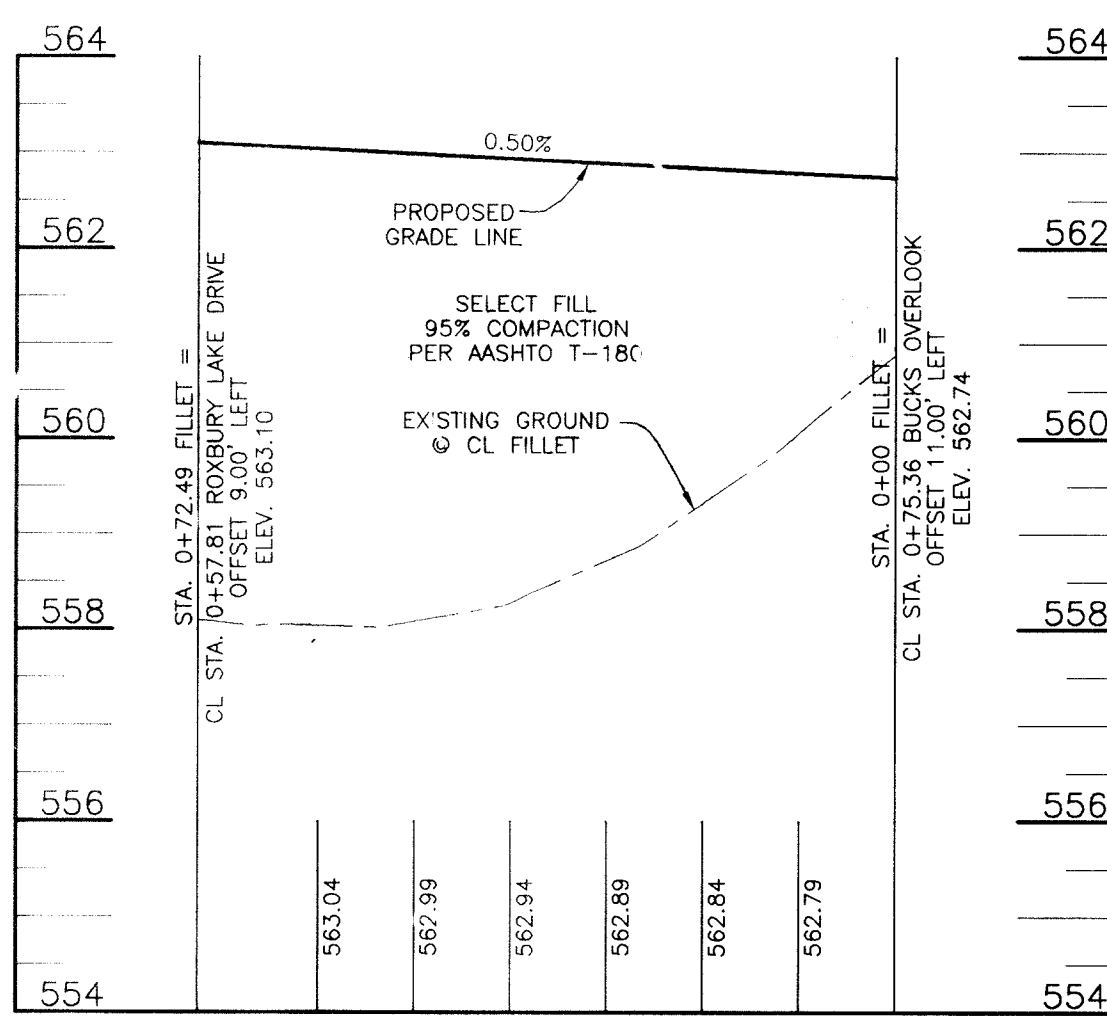
ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	COR.	NO.	RECS.	BORING & SAMPLING	
							DEPTH	NO.
566.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	2.0	1"	D	2-3.3	1	11'	11'
565.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	3.0	1"	D	2-4.3	2	11'	11'
564.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	4.0	1"	D	2-5.3	3	11'	11'
563.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	5.0	1"	D	2-6.3	4	11'	11'
562.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	6.0	1"	D	2-7.3	5	11'	11'
561.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	7.0	1"	D	2-8.3	6	11'	11'
560.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	8.0	1"	D	2-9.3	7	11'	11'
559.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	9.0	1"	D	2-10.3	8	11'	11'
558.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	10.0	1"	D	2-11.3	9	11'	11'
557.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	11.0	1"	D	2-12.3	10	11'	11'

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

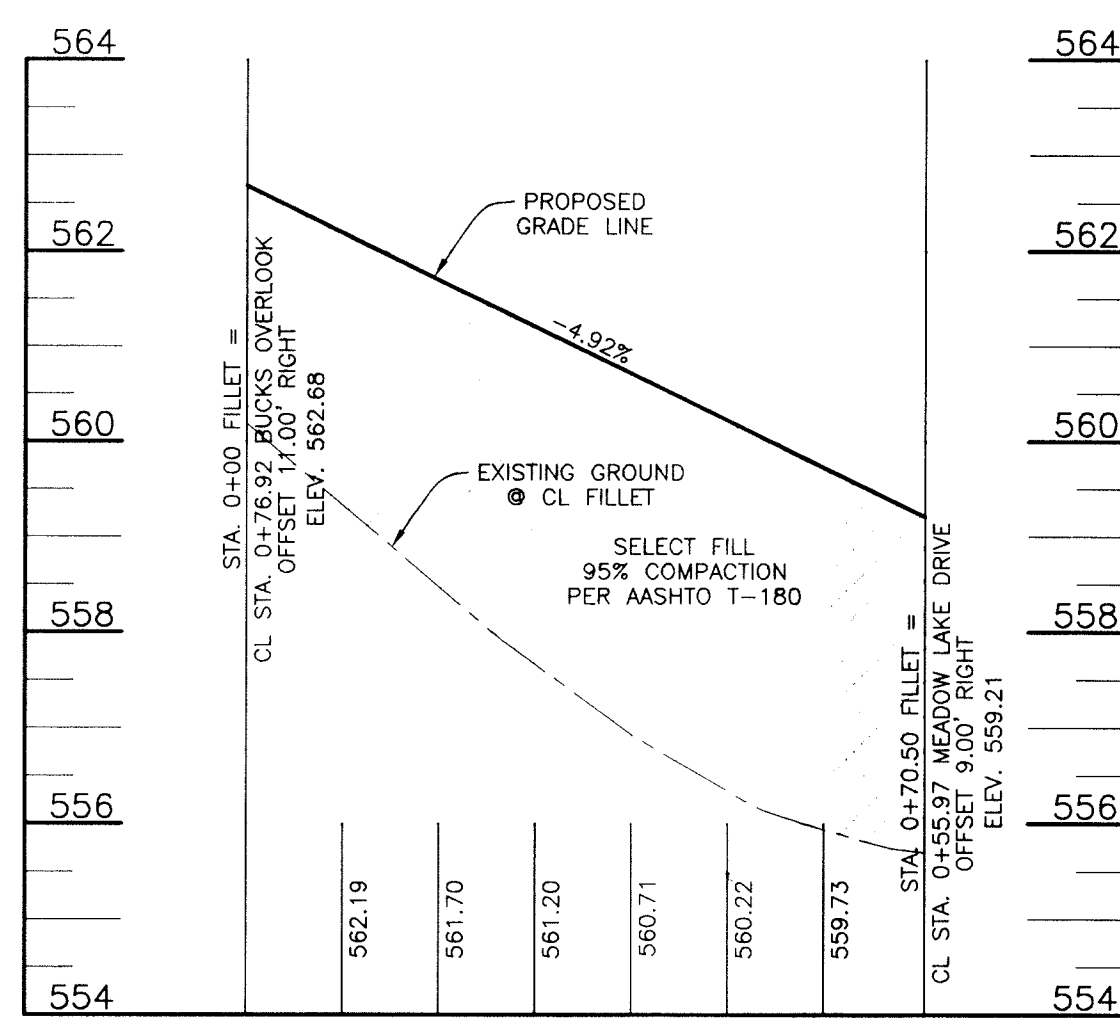
Project Name: Triadelphia Meadows SWM  
Location: Howard County, Maryland

Page 1 of 1

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	COR.	NO.	RECS.	BORING & SAMPLING	
							DEPTH	NO.
566.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	2.0	1"	D	2-2.3	1	10'	10'
565.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	3.0	1"	D	2-3.3	2	10'	10'
564.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	4.0	1"	D	2-4.3	3	10'	10'
563.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	5.0	1"	D	2-5.3	4	10'	10'
562.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	6.0	1"	D	2-6.3	5	10'	10'
561.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	7.0	1"	D	2-7.3	6	10'	10'
560.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	8.0	1"	D	2-8.3	7	10'	10'
559.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	9.0	1"	D	2-9.3	8	10'	10'
558.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	10.0	1"	D	2-10.3	9	10'	10'
557.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	11.0	1"	D	2-11.3	10	10'	10'



**FILLET PROFILE  
BUCKS OVERLOOK/  
ROXBURY LAKE DRIVE**  
SCALE: 1"=20' HORIZ., 1"=2' VERT.



**FILLET PROFILE  
BUCKS OVERLOOK/  
MEADOW LAKE DRIVE**  
SCALE: 1"=20' HORIZ., 1"=2' VERT.

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Triadelphia Meadows SWM  
Location: Howard County, Maryland

Page 1 of 1

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	COR.	NO.	RECS.	BORING & SAMPLING	
							DEPTH	NO.
564.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	2.0	1"	D	2-1.2	1	11'	11'
563.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	3.0	1"	D	2-2.2	2	11'	11'
562.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	4.0	1"	D	2-3.2	3	11'	11'
561.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	5.0	1"	D	2-4.2	4	11'	11'
560.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	6.0	1"	D	2-5.2	5	11'	11'
559.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	7.0	1"	D	2-6.2	6	11'	11'
558.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	8.0	1"	D	2-7.2	7	11'	11'
557.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	9.0	1"	D	2-8.2	8	11'	11'
556.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	10.0	1"	D	2-9.2	9	11'	11'
555.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	11.0	1"	D	2-10.2	10	11'	11'

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Triadelphia Meadows SWM  
Location: Howard County, Maryland

Page 1 of 1

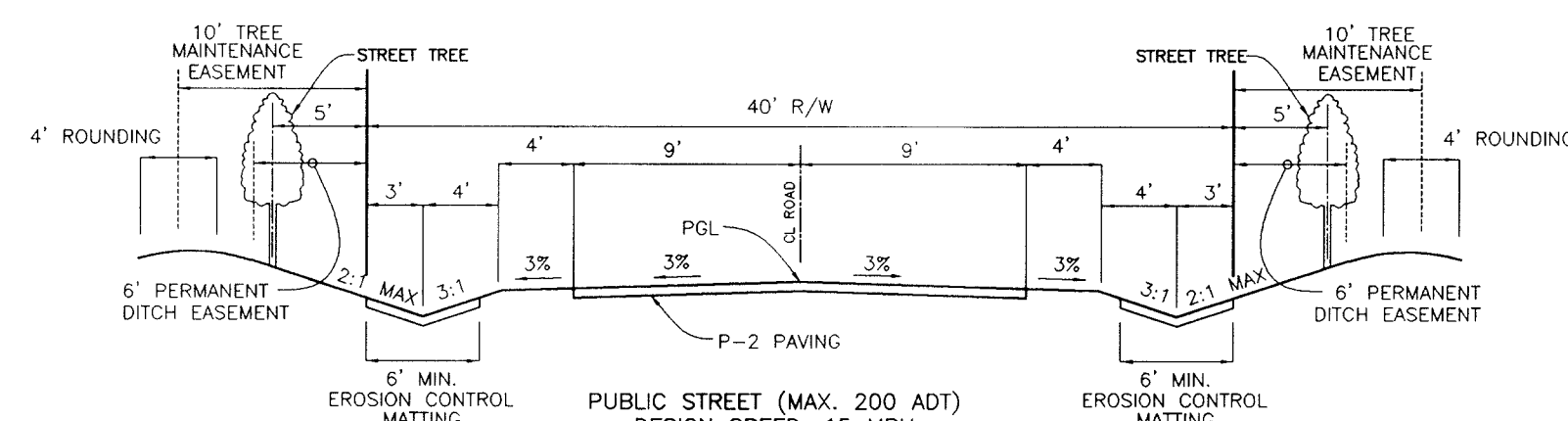
ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	COR.	NO.	RECS.	BORING & SAMPLING	
							DEPTH	NO.
564.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	2.0	1"	D	2-1.1	1	14'	14'
563.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	3.0	1"	D	2-2.1	2	14'	14'
562.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	4.0	1"	D	2-3.1	3	14'	14'
561.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	5.0	1"	D	2-4.1	4	14'	14'
560.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	6.0	1"	D	2-5.1	5	14'	14'
559.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	7.0	1"	D	2-6.1	6	14'	14'
558.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	8.0	1"	D	2-7.1	7	14'	14'
557.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	9.0	1"	D	2-8.1	8	14'	14'
556.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	10.0	1"	D	2-9.1	9	14'	14'
555.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	11.0	1"	D	2-10.1	10	14'	14'

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

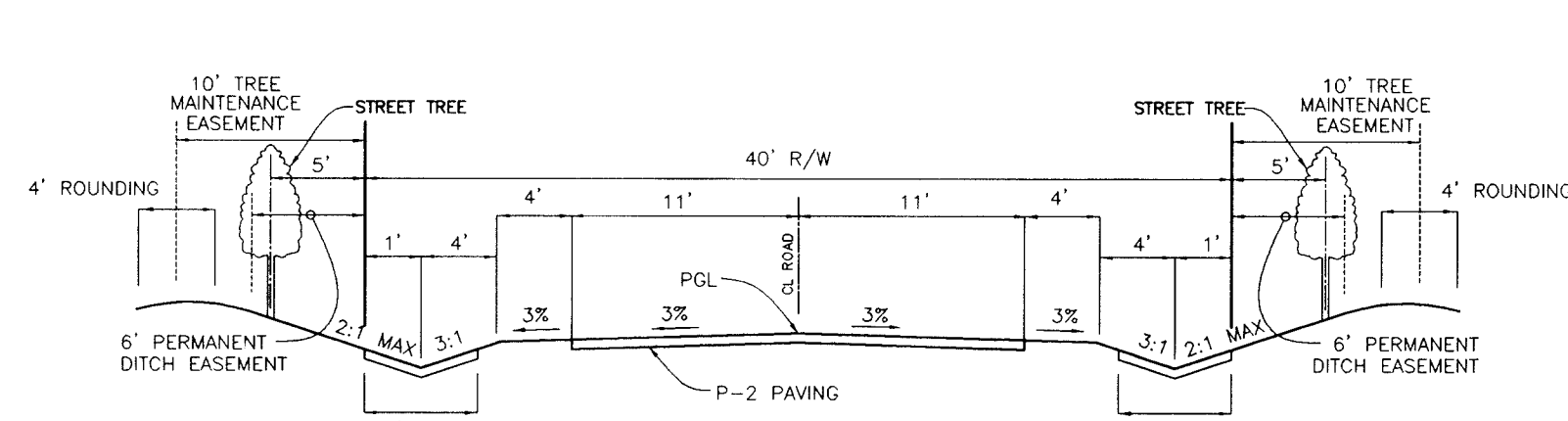
Project Name: Triadelphia Meadows SWM  
Location: Howard County, Maryland

Page 1 of 1

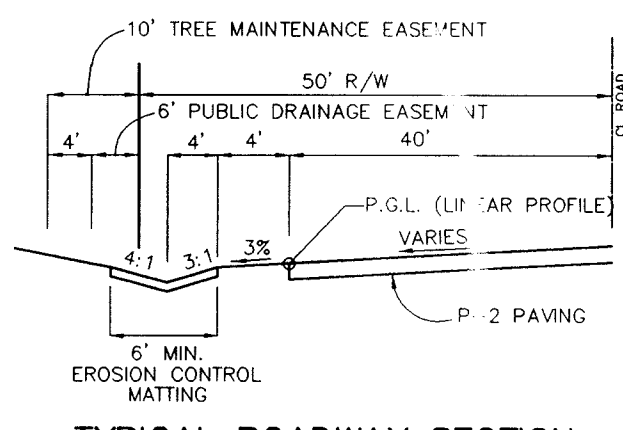
ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	COR.	NO.	RECS.	BORING & SAMPLING	
							DEPTH	NO.
564.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	2.0	1"	D	2-1.1	1	14'	14'
563.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	3.0	1"	D	2-2.1	2	14'	14'
562.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	4.0	1"	D	2-3.1	3	14'	14'
561.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	5.0	1"	D	2-4.1	4	14'	14'
560.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	6.0	1"	D	2-5.1	5	14'	14'
559.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	7.0	1"	D	2-6.1	6	14'	14'
558.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	8.0	1"	D	2-7.1	7	14'	14'
557.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	9.0	1"	D	2-8.1	8	14'	14'
556.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	10.0	1"	D	2-9.1	9	14'	14'
555.00	Light brown, moist, very silty clay. Trace fine sand, trace silt, trace mica. (CL)	11.0	1"	D	2-10.1	10	14'	14'



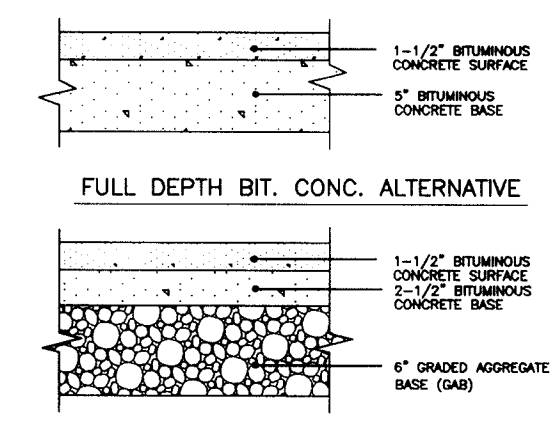
**TYPICAL ROADWAY SECTION  
ROXBURY LAKE DRIVE**  
STA. 0+27.81 TO 7+16.89  
MEADOW LAKE DRIVE  
STA. 0+55.97 TO 14+80.33  
NOT TO SCALE



**TYPICAL ROADWAY SECTION  
BUCKS OVERLOOK**  
STA. 0+58.75 TO 0+75.36  
NOT TO SCALE



**TYPICAL ROADWAY SECTION  
AT CUL-DE-SAC**  
LINEAR PROFILE  
NOT TO SCALE



**GRANULAR BASE ALTERNATIVE  
P-2 PAVING DETAIL**  
NOT TO SCALE

NO.	DATE	REVISION
1	5-9-05	LOWER ROADS AND RELATED STORM DRAINS 1 FOOT.

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE • SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 • FAX: 410-465-6644  
EMAIL: BENCHMARK@COIS.COM

*Donald Mann*  
5/9/05

OWNER: EDGEWOOD FARM, INC. 14919 ROXBURY ROAD GLENELG, MARYLAND 21737

PROJECT: TRIADELPHIA CROSSING PHASE 1  
LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'I'

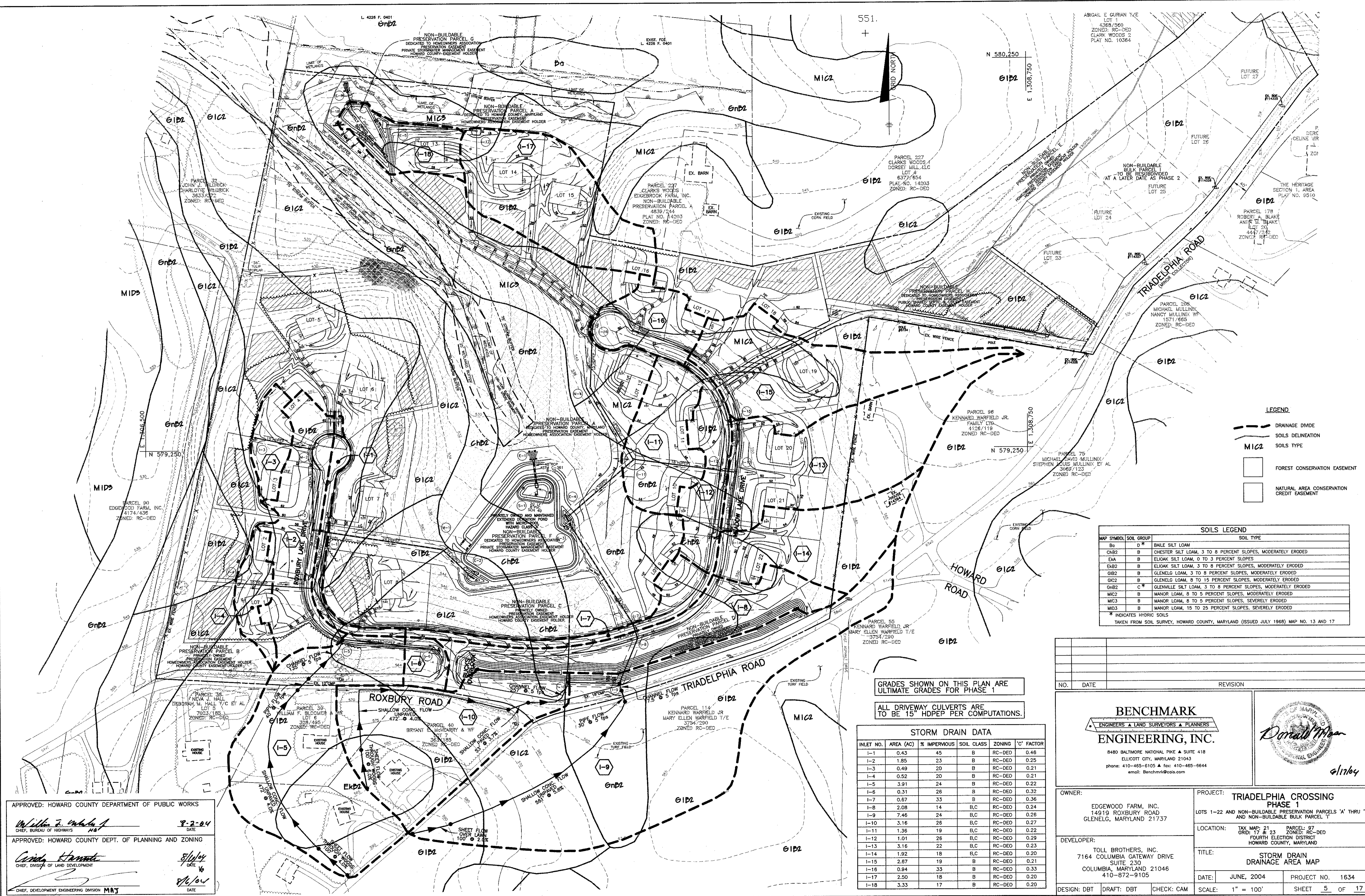
LOCATION: TAX MAP: 21 PARCEL: 97 GRID: 17 & 23 ZONED: RC-DEO FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DEVELOPER: TOLL BROTHERS, INC. 7164 COLUMBIA GATEWAY DRIVE SUITE 230 COLUMBIA, MARYLAND 21046 410-872-9105

TITLE: REVISED ROAD PROFILES AND DETAILS AND SOIL BORINGS

DATE: JUNE, 2004 PROJECT NO. 1634

DESIGN: DBT DRAFT: DBT CHECK: CAM SCALE: AS SHOWN SHEET 4 OF 17



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*William J. ...* 8-2-04  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*...* 8/10/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*...* 8/10/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

GRADES SHOWN ON THIS PLAN ARE ULTIMATE GRADES FOR PHASE 1

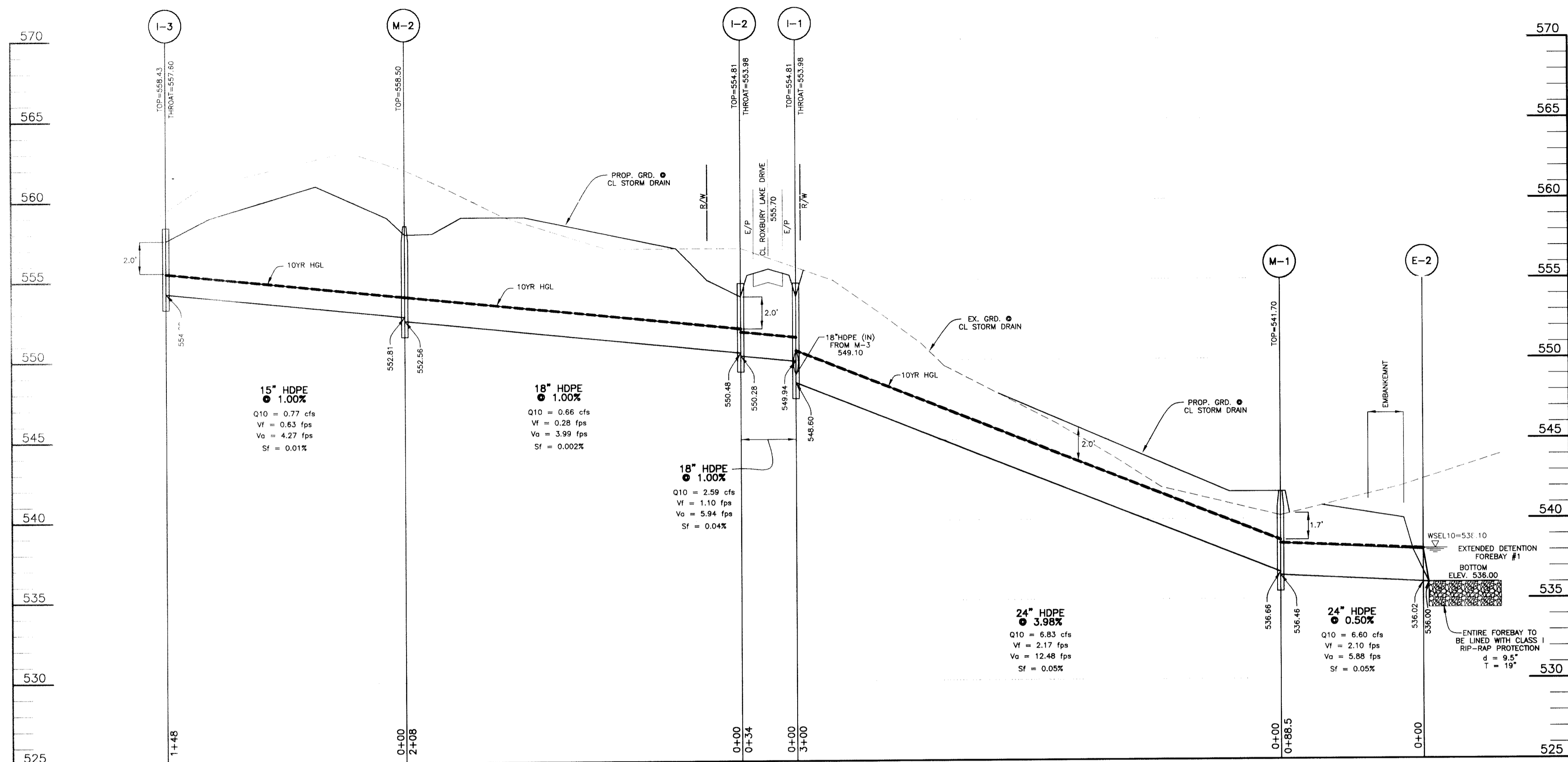
ALL DRIVEWAY CULVERTS ARE TO BE 15" HDPEP PER COMPUTATIONS.

INLET NO.	AREA (AC)	% IMPERVIOUS	SOIL CLASS	ZONING	C' FACTOR
I-1	0.43	45	B	RC-DEO	0.46
I-2	1.85	23	B	RC-DEO	0.25
I-3	0.49	20	B	RC-DEO	0.21
I-4	0.52	20	B	RC-DEO	0.21
I-5	3.91	24	B	RC-DEO	0.22
I-6	0.31	26	B	RC-DEO	0.32
I-7	0.67	33	B	RC-DEO	0.36
I-8	2.08	14	B,C	RC-DEO	0.24
I-9	7.46	24	B,C	RC-DEO	0.26
I-10	3.16	26	B,C	RC-DEO	0.27
I-11	1.36	19	B,C	RC-DEO	0.22
I-12	1.01	26	B,C	RC-DEO	0.29
I-13	3.16	22	B,C	RC-DEO	0.23
I-14	1.92	18	B,C	RC-DEO	0.20
I-15	2.67	19	B	RC-DEO	0.21
I-16	0.94	33	B	RC-DEO	0.33
I-17	2.50	18	B	RC-DEO	0.20
I-18	3.33	17	B	RC-DEO	0.20

MAP SYMBOL	SOIL GROUP	SOIL TYPE
Bs	D*	BAILE SILT LOAM
Ch2	B	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Ea	B	ELIASK SILT LOAM, 0 TO 3 PERCENT SLOPES
En2	B	ELIASK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Qb2	B	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Qc2	B	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Qh2	C*	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Mic2	B	MANOR LOAM, 8 TO 5 PERCENT SLOPES, MODERATELY ERODED
Mic3	B	MANOR LOAM, 8 TO 5 PERCENT SLOPES, SEVERELY ERODED
Mic3	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED

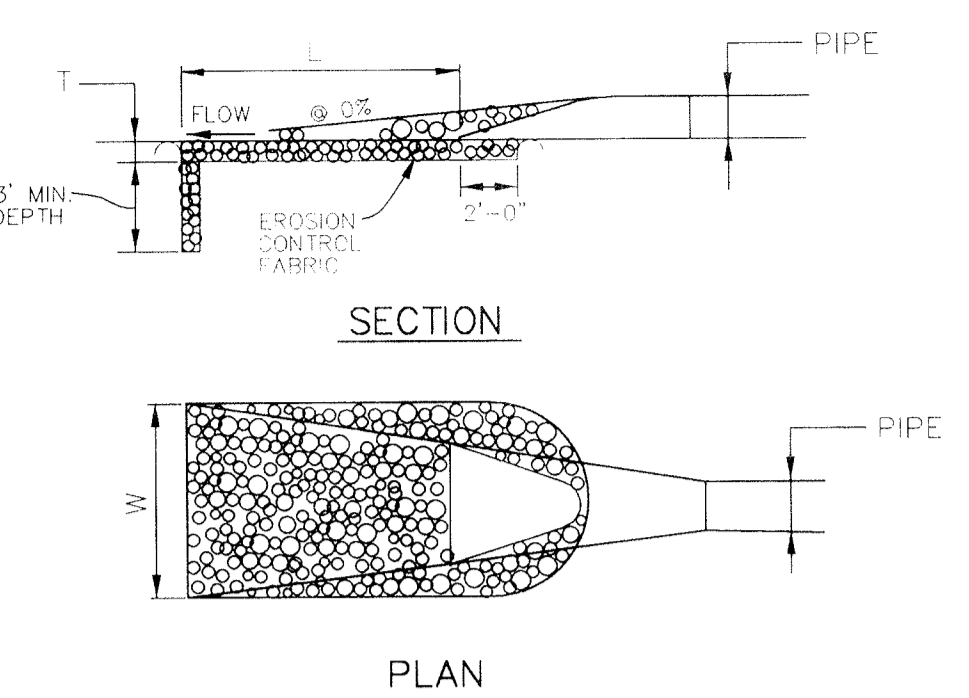
\* INDICATES HYDRIC SOILS  
 TAKEN FROM SOIL SURVEY, HOWARD COUNTY, MARYLAND (ISSUED JULY 1968) MAP NO. 13 AND 17

<p>NO.    DATE    REVISION</p>	
<p><b>BENCHMARK</b>        ENGINEERS • LAND SURVEYORS • PLANNERS  <b>ENGINEERING, INC.</b></p> <p>8480 BALTIMORE NATIONAL PIKE &amp; SUITE 418        ELLICOTT CITY, MARYLAND 21043        phone: 410-465-6105 • fax: 410-465-6644        email: Benchmark@earthlink.net</p>	
<p>OWNER:          EDGEWOOD FARM, INC.          14919 ROXBURY ROAD          GLENELG, MARYLAND 21737</p>	<p>PROJECT:  <b>TRIADELPHIA CROSSING PHASE 1</b>          LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'Y'</p>
<p>DEVELOPER:          TOLL BROTHERS, INC.          7164 COLUMBIA GATEWAY DRIVE          SUITE 230          COLUMBIA, MARYLAND 21046          410-872-9105</p>	<p>LOCATION:          TAX MAP: 21    PARCEL: 87          GRID: 17 &amp; 23    ZONED: RC-DEO          FOURTH ELECTION DISTRICT          HOWARD COUNTY, MARYLAND</p>
<p>TITLE:  <b>STORM DRAIN DRAINAGE AREA MAP</b></p>	
<p>DATE: JUNE, 2004</p>	<p>PROJECT NO. 1634</p>
<p>DESIGN: DBT    DRAFT: DBT    CHECK: CAM</p>	<p>SCALE: 1" = 100'    SHEET 5 OF 17</p>



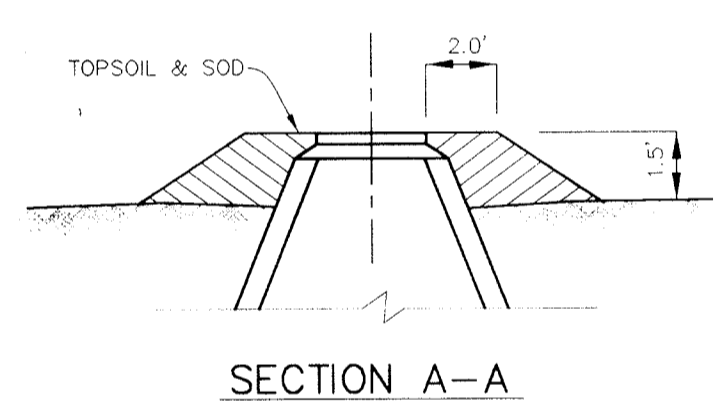
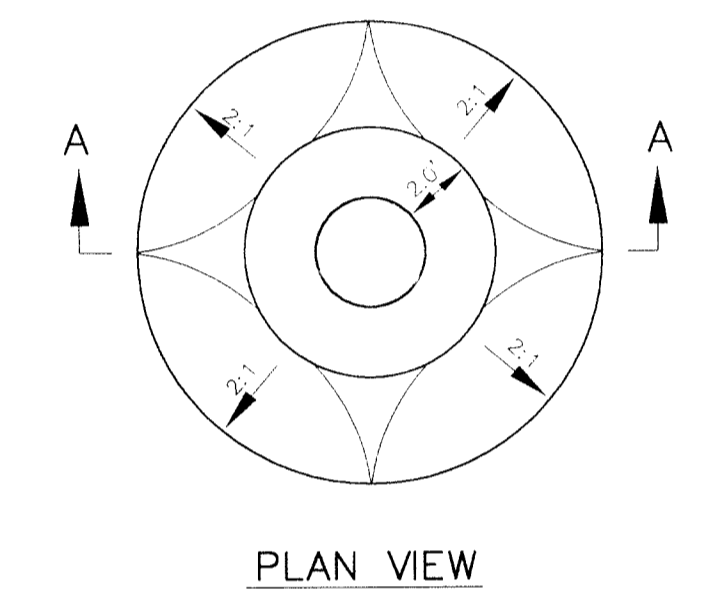
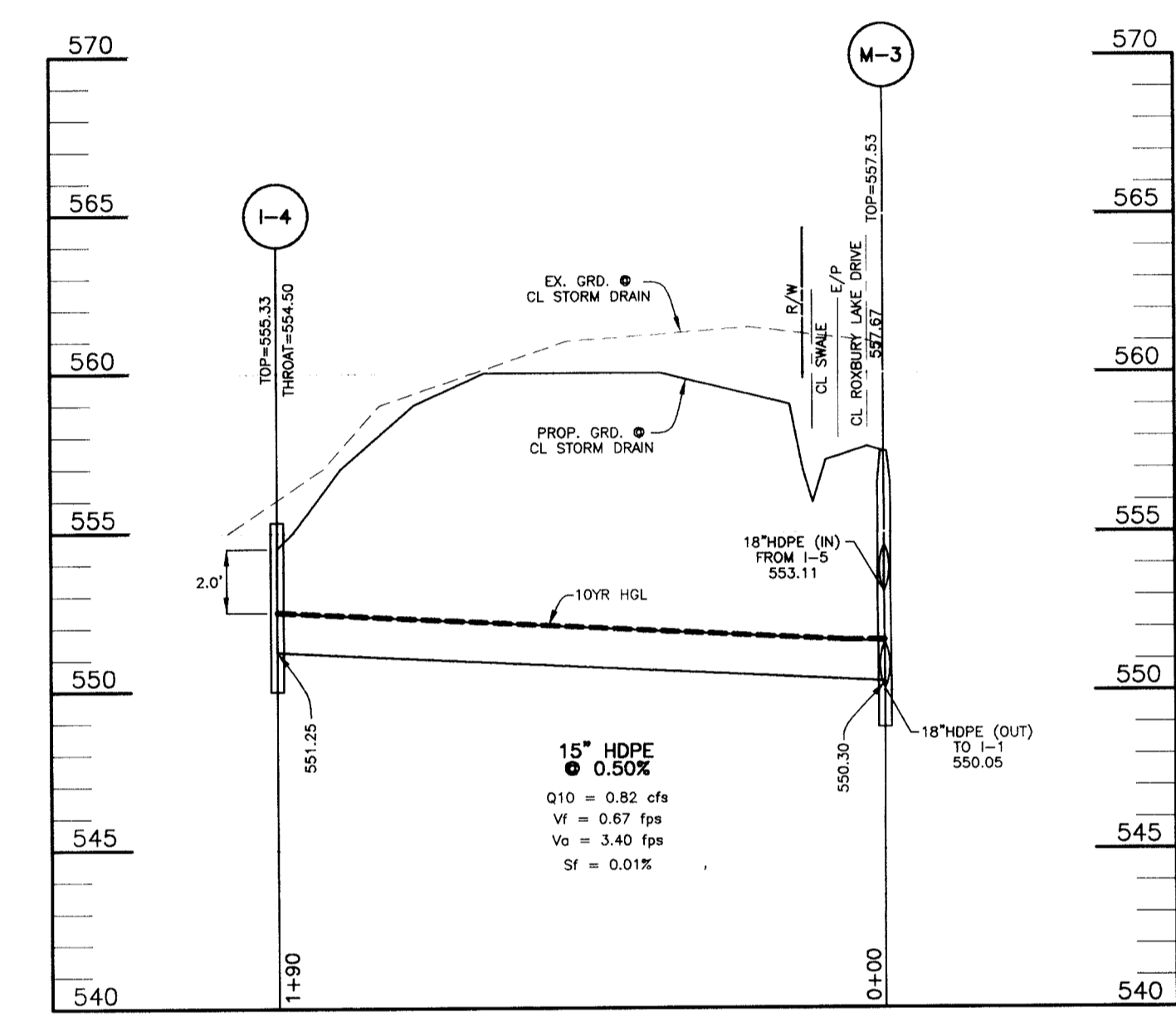
**CONSTRUCTION SPECIFICATIONS**

1. THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
3. GEOTEXTILE CLASS C28 OR BETTER 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 FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
4. 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 THE 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 FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
5. THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.



STRUCTURE	D-50	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SHA CLASS
E-1	9.5"	20'	28"	19"	I
E-2	9.5"	FOREBAY	FOREBAY	19"	I
E-3	9.5"	FOREBAY	FOREBAY	19"	I
E-4	9.5"	FOREBAY	FOREBAY	19"	I
E-5	9.5"	FOREBAY	FOREBAY	19"	I
E-6	9.5"	20'	21.25"	19"	I

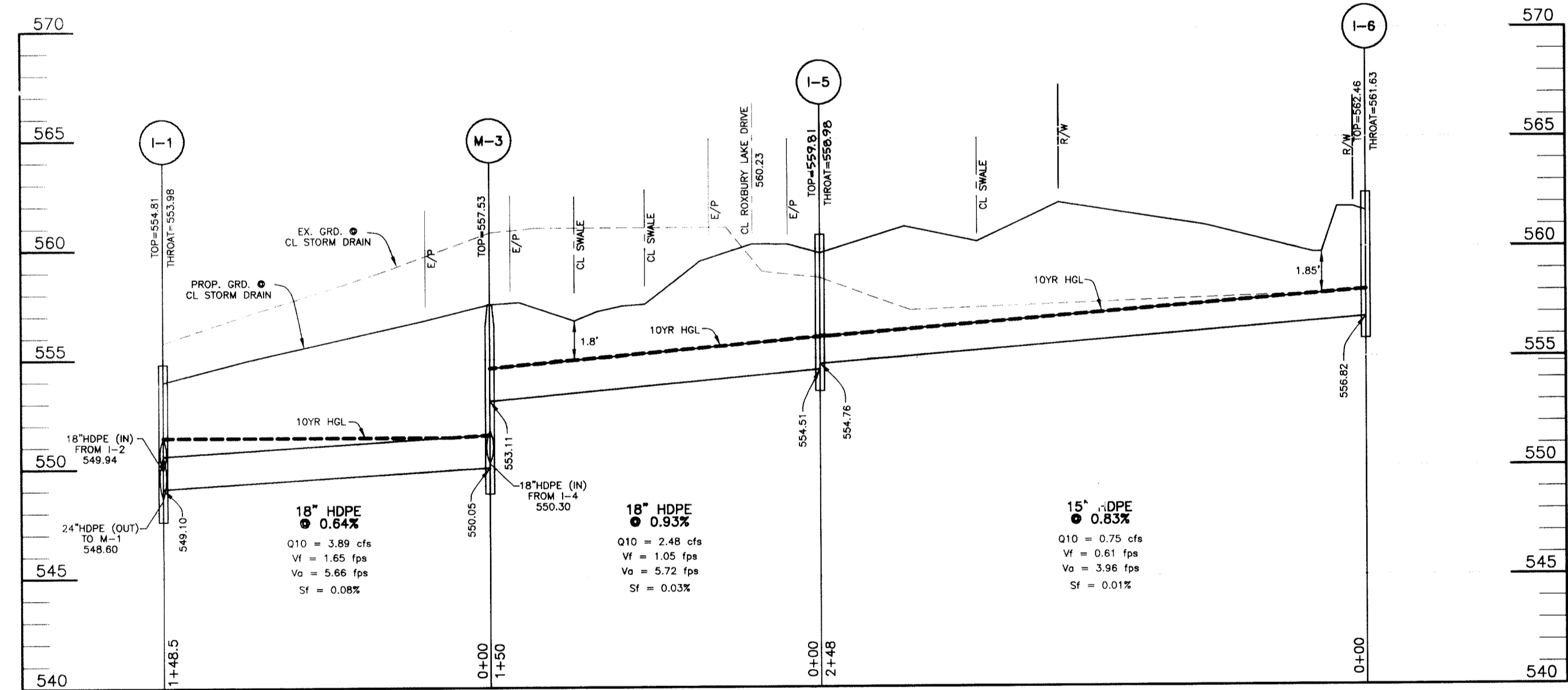
**OUTLET PROTECTION DETAIL**  
 NOT TO SCALE



**NOTES:**

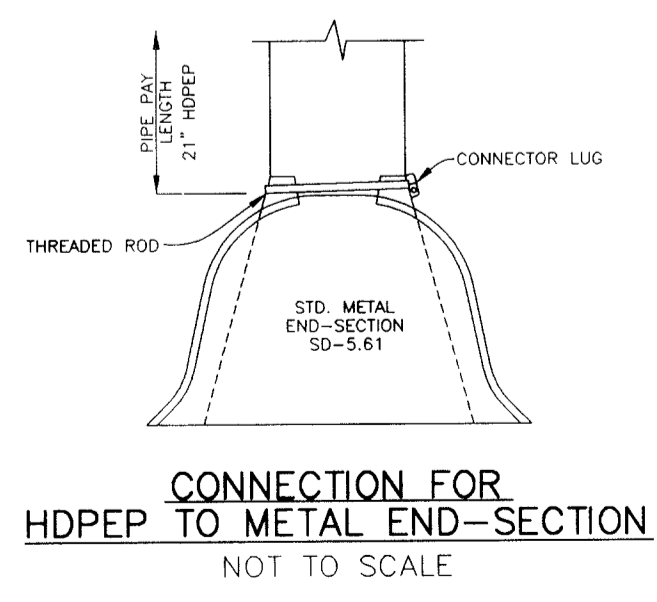
- 1.) ALL MANHOLE FRAME AND COVERS SHALL BE FLUSH WITH GRADE EXCEPT WHEN SHOWN ON PROFILE TO BE SET HIGHER THAN GRADE.
- 2.) MANHOLE FRAME AND COVERS TO BE SET HIGHER THAN GRADE SHALL BE SET IN ACCORDANCE WITH THIS DETAIL.

**FILL AROUND MANHOLE**  
 NOT TO SCALE



\* ALL STORM DRAIN PIPE SHALL HAVE A MINIMUM OF 1.5 FEET OF COVER.

STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD.
E-1	48" CONC. END SECT.	N 579214.31 E 1307489.87	533.00	532.92	--	SD - 5.52
E-2	24" METAL END SECT.	N 578932.14 E 1307319.60	536.02	536.00	--	SD - 5.61
E-3	24" METAL END SECT.	N 579051.46 E 1307584.54	536.04	536.00	--	SD - 5.61
E-4	24" METAL END SECT.	N 579077.94 E 1307578.84	536.02	536.00	--	SD - 5.61
E-5	15" METAL END SECT.	N 580086.65 E 1307120.69	508.04	508.00	--	SD - 5.61
E-6	15" HDPE END SECT.	N 580170.56 E 1307019.61	504.54	504.51	--	HANCOR (SEE MAN. SPECS.)
I-1	"D" INLET - 6"	CL STA. 5+75.00 OFFS. 17.00' RIGHT (ROXBURY LAKE)	549.94	548.60	554.81	SD - 4.11 OR 4.39
I-2	"D" INLET - 6"	CL STA. 5+75.00 OFFS. 17.00' LEFT (ROXBURY LAKE)	550.48	550.28	554.81	SD - 4.11 OR 4.39
I-3	"D" INLET - 6"	LP STA. 0+72.86 OFFS. 158.00' LEFT (ROXBURY LAKE)	--	554.29	558.43	SD - 4.11 OR 4.39
I-4	"D" INLET - 6"	CL STA. 4+33.84 OFFS. 184.61' LEFT (ROXBURY LAKE)	--	554.25	555.33	SD - 4.11 OR 4.39
I-5	"D" INLET - 6"	CL STA. 2+75.00 OFFS. 17.00' RIGHT (ROXBURY LAKE)	554.76	554.51	559.81	SD - 4.11 OR 4.39
I-6	"D" INLET - 6"	CL STA. 0+30.70 OFFS. 28.16' LEFT (ROXBURY LAKE)	--	556.82	562.46	SD - 4.11 OR 4.39
I-7	"D" INLET - 6"	CL STA. 4+73.86 OFFS. 17.00' LEFT (MEADOW LAKE)	538.99	538.79	544.93	SD - 4.11 OR 4.39
I-8	"D" INLET - 6"	CL STA. 4+73.86 OFFS. 17.00' RIGHT (MEADOW LAKE)	540.30	540.10	544.93	SD - 4.11 OR 4.39
I-9	"D" INLET - 8"	CL STA. 4+01.84 OFFS. 117.19' RIGHT (MEADOW LAKE)	545.80	545.30	550.30	SD - 4.11 OR 4.39
I-10	"D" INLET - 6"	CL STA. 2+89.52 OFFS. 92.11' RIGHT (MEADOW LAKE)	537.38	547.70	552.53	SD - 4.11 OR 4.39
I-11	"D" INLET - 6"	CL STA. 9+99.90 OFFS. 244.00' LEFT (MEADOW LAKE)	537.62	537.12	541.95	SD - 4.11 OR 4.39
I-12	"D" INLET - 6"	CL STA. 9+99.90 OFFS. 17.00' LEFT (MEADOW LAKE)	539.29	538.79	544.16	SD - 4.11 OR 4.39
I-13	"D" INLET - 6"	CL STA. 9+99.90 OFFS. 17.00' RIGHT (MEADOW LAKE)	539.83	539.63	544.16	SD - 4.11 OR 4.39
I-14	"D" INLET - 6"	CL STA. 8+45.90 OFFS. 17.00' RIGHT (MEADOW LAKE)	541.99	541.99	546.07	SD - 4.11 OR 4.39
I-15	"D" INLET - 6"	CL STA. 11+33.46 OFFS. 17.00' RIGHT (MEADOW LAKE)	542.33	542.33	546.41	SD - 4.11 OR 4.39
I-16	"D" INLET - 6"	LP STA. 1+33.62 OFFS. 8.00' LEFT (MEADOW LAKE)	542.77	542.77	546.85	SD - 4.11 OR 4.39
I-17	"D" INLET - 6"	N 580089.38 E 1307348.03	512.25	512.25	516.33	SD - 4.11 OR 4.39
I-18	"D" INLET - 6"	N 580127.80 E 1307029.95	505.08	504.98	510.01	SD - 4.11 OR 4.39
M-1	4'-0" MANHOLE	N 578993.42 E 1307255.76	536.66	536.46	541.70	G - 5.12
M-2	4'-0" MANHOLE	LP STA. 0+72.86 OFFS. 10.00' LEFT (ROXBURY LAKE)	552.81	552.56	558.50	G - 5.12
M-3	4'-0" MANHOLE	CL STA. 4+26.00 OFFS. 5.00' RIGHT (MEADOW LAKE)	553.11	550.05	557.53	G - 5.12
M-4	4'-0" MANHOLE	N 579407.80 E 1307835.02	538.95	538.70	543.70	G - 5.12
S-1	SEE DETAIL	N 579155.96 E 1307496.92	533.50	533.50	539.67	--



PIPE SCHEDULE		
PIPE SIZE	LENGTH	TYPE
15"	1751.0'	HDPEP
18"	920.5'	HDPEP
24"	1296.5'	HDPEP
48"	54.0'	RCP

- 1) STRUCTURE ELEVATION AND LOCATION FOR MANHOLES IS AT THE TOP AND CENTER OF RIM.
- 2) STRUCTURE ELEVATION AND LOCATION FOR INLETS IS AT THE TOP OF CURB AT MIDPOINT OF THE INLET OR AT THE CENTER OF SLAB FOR "D" INLETS.
- 3) STRUCTURE ELEVATION AND LOCATION FOR ENSECTIONS IS AT THE CONNECTION OF PIPE AND END SECTION.
- 4) PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.
- 5) ALL STORM DRAINS SHALL BE SMOOTH CORE HIGH DENSITY POLYETHYLENE PIPE.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 With 2 sheets  
 7-6-05  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Cindy Hamel  
 7/15/05  
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 7/20/05  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8480 BALTIMORE NATIONAL PIKE & SUITE 418  
 ELLICOTT CITY, MARYLAND 211043  
 phone: 410-465-6105 & fax: 410-465-6644  
 email: Benchmark@bcis.com

*Donald Moran*  
 5/9/05

OWNER: EDGEWOOD FARM, INC.  
 14919 ROXBURY ROAD  
 GLENELG, MARYLAND 21737

PROJECT: TRIADELPHIA CROSSING PHASE 1  
 LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'I'

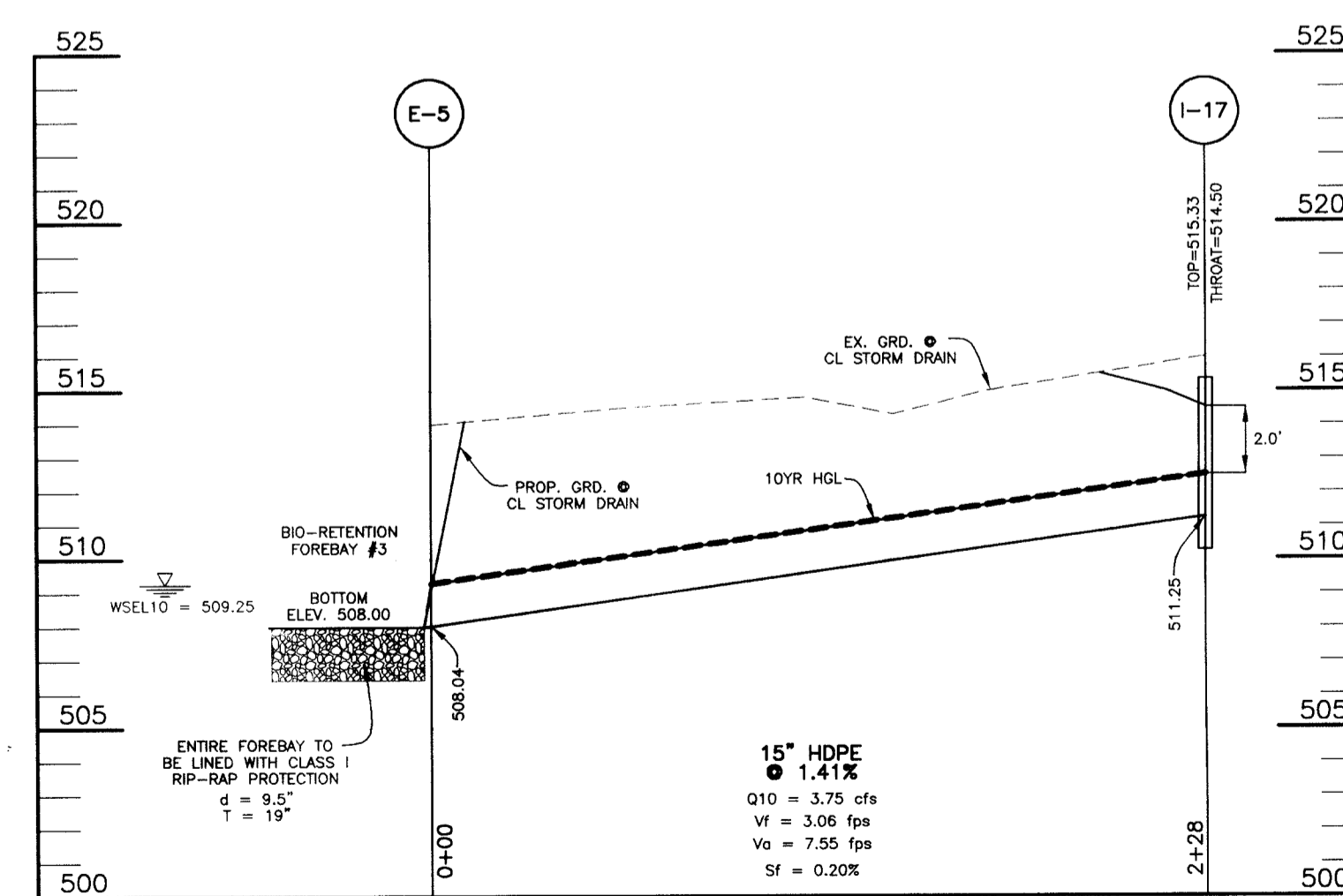
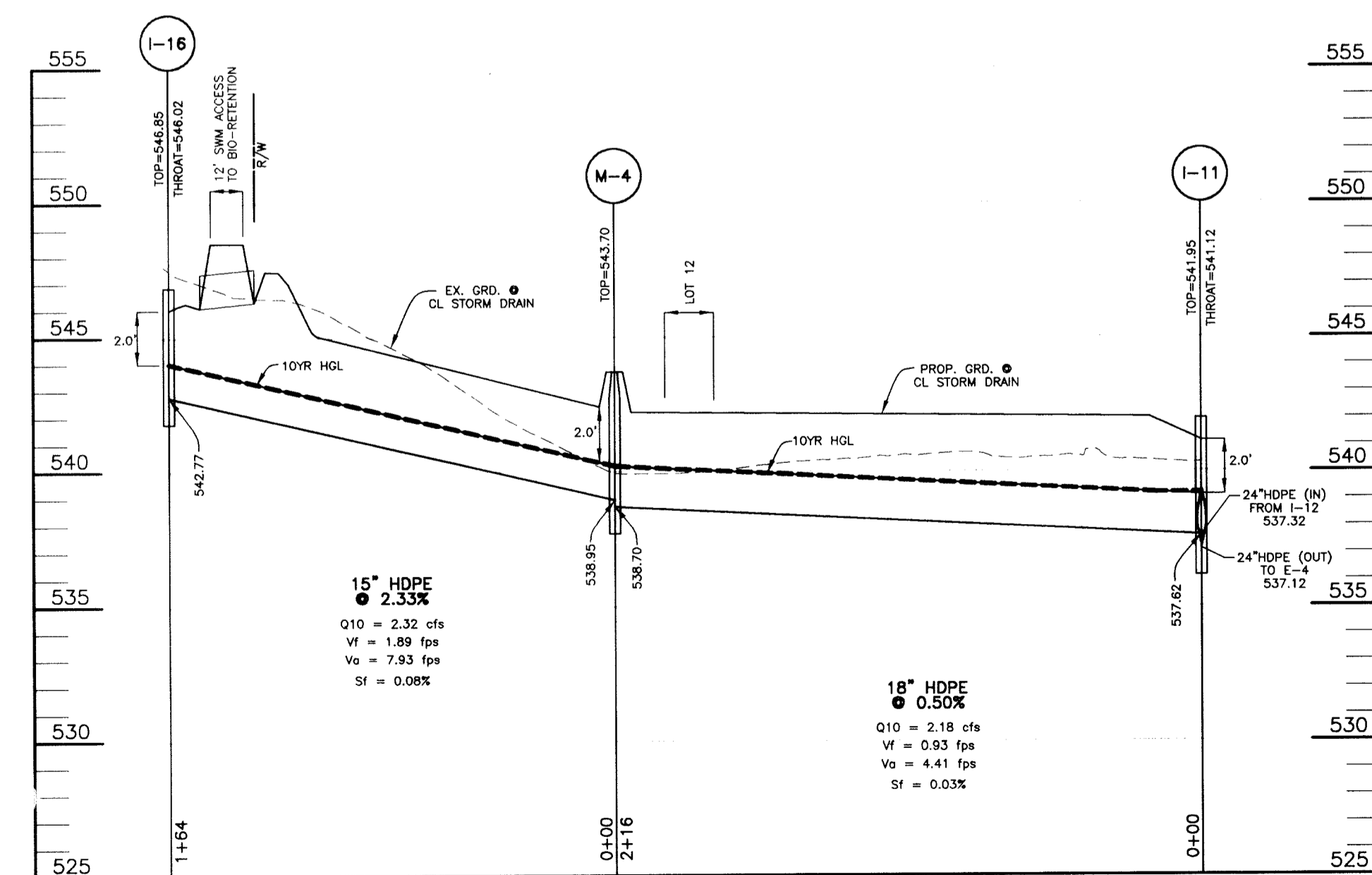
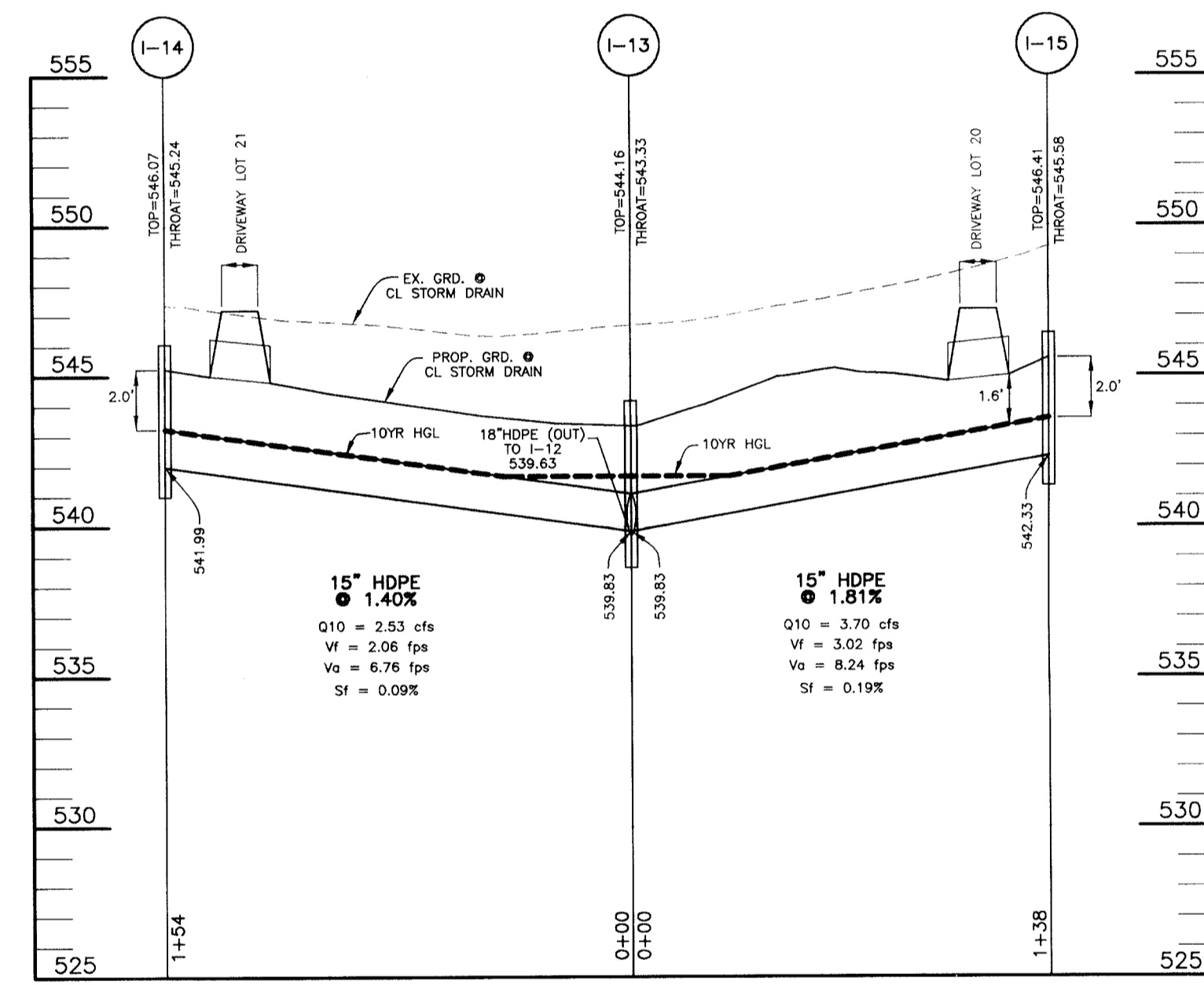
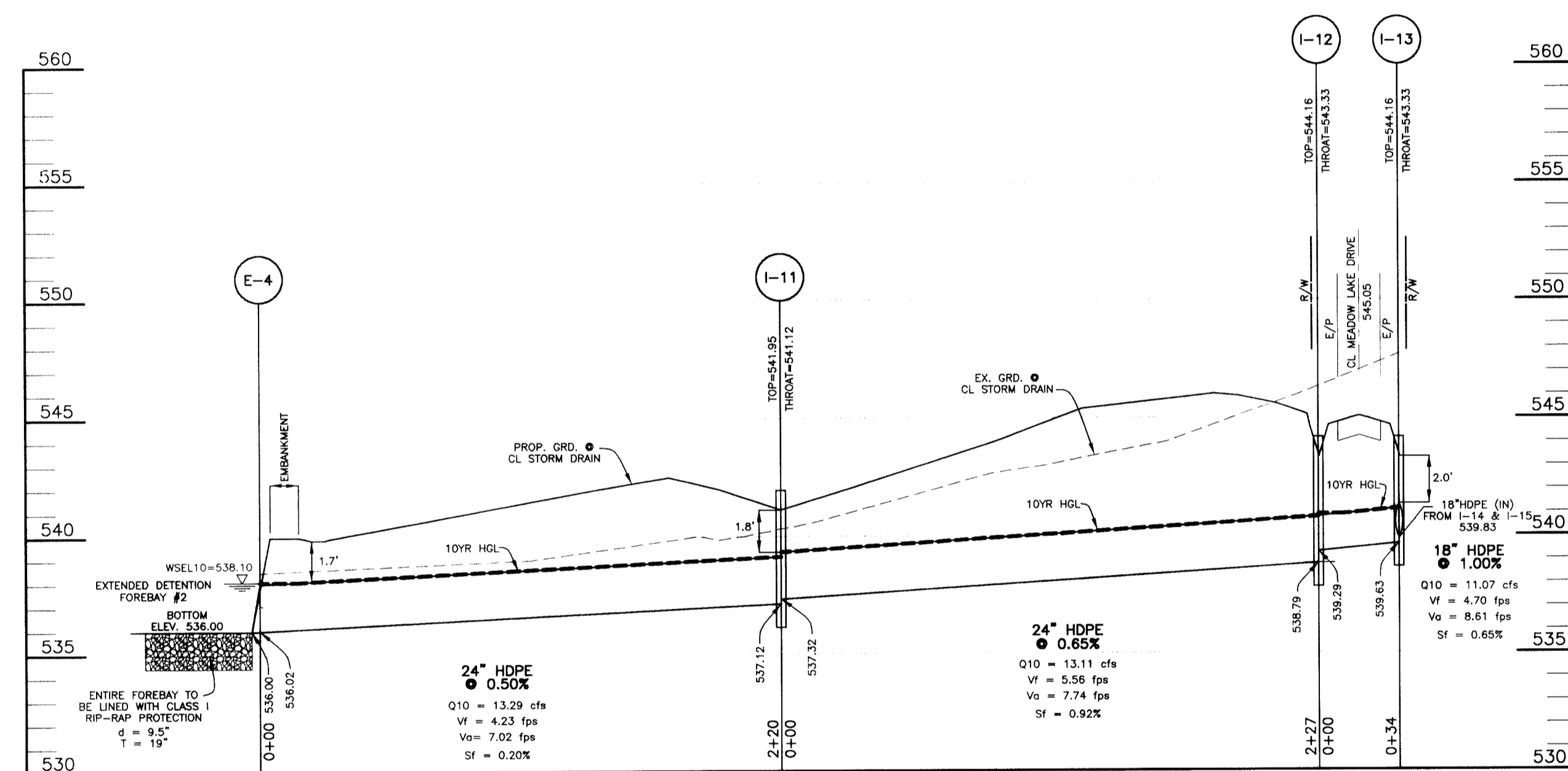
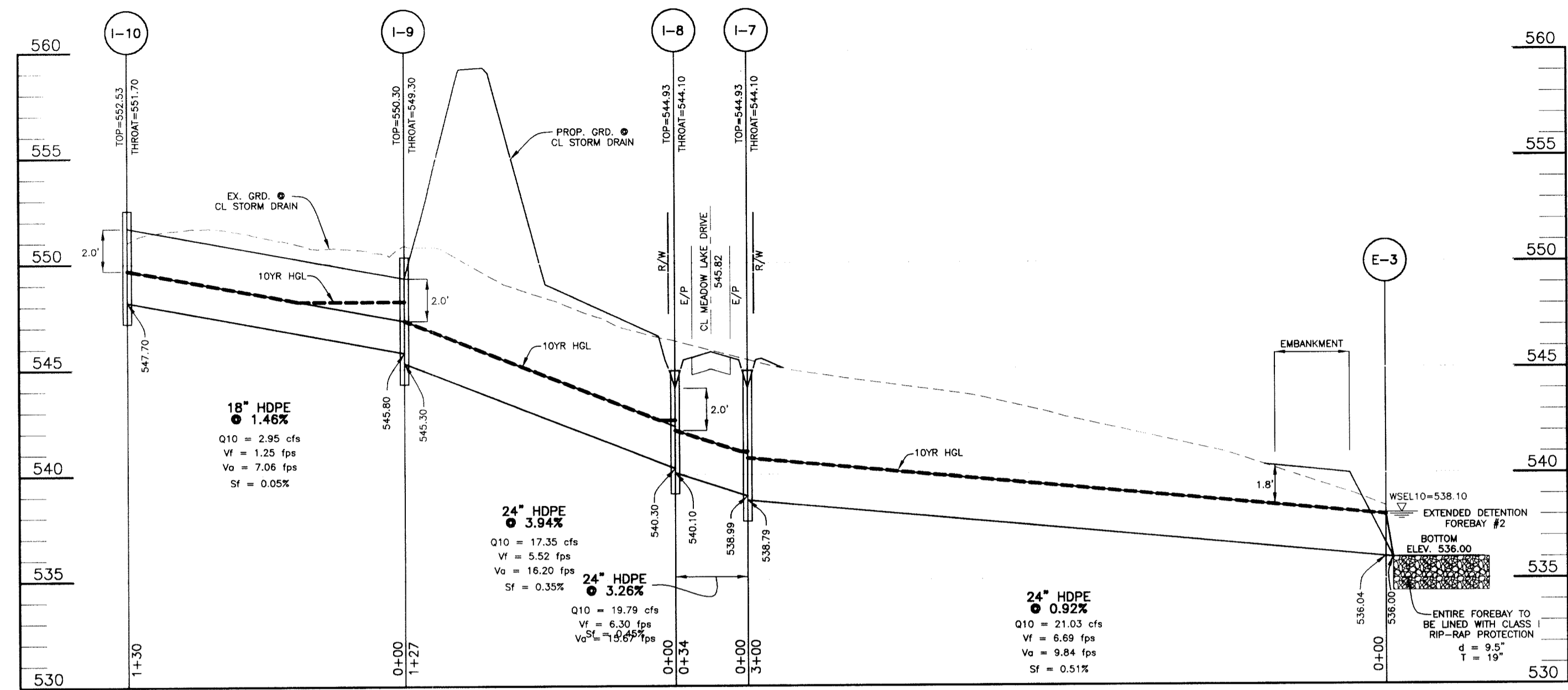
LOCATION: TAX MAP: 21 PARCEL: 17  
 GRID: 17 & 23 ZONED: RU-DEO  
 FOURTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

DEVELOPER: TOLL BROTHERS, INC.  
 7164 COLUMBIA GATEWAY DRIVE  
 SUITE 230  
 COLUMBIA, MARYLAND 21046  
 410-872-9105

TITLE: REVISED STORM DRAIN PROFILES AND DETAILS

DATE: JUNE, 2004 PROJECT NO. 1634

DESIGN: DBT DRAFT: DBT CHECK: CAM SCALE: 1"=50' HORIZ. 1"=5' VERT. SHEET 6 OF 17



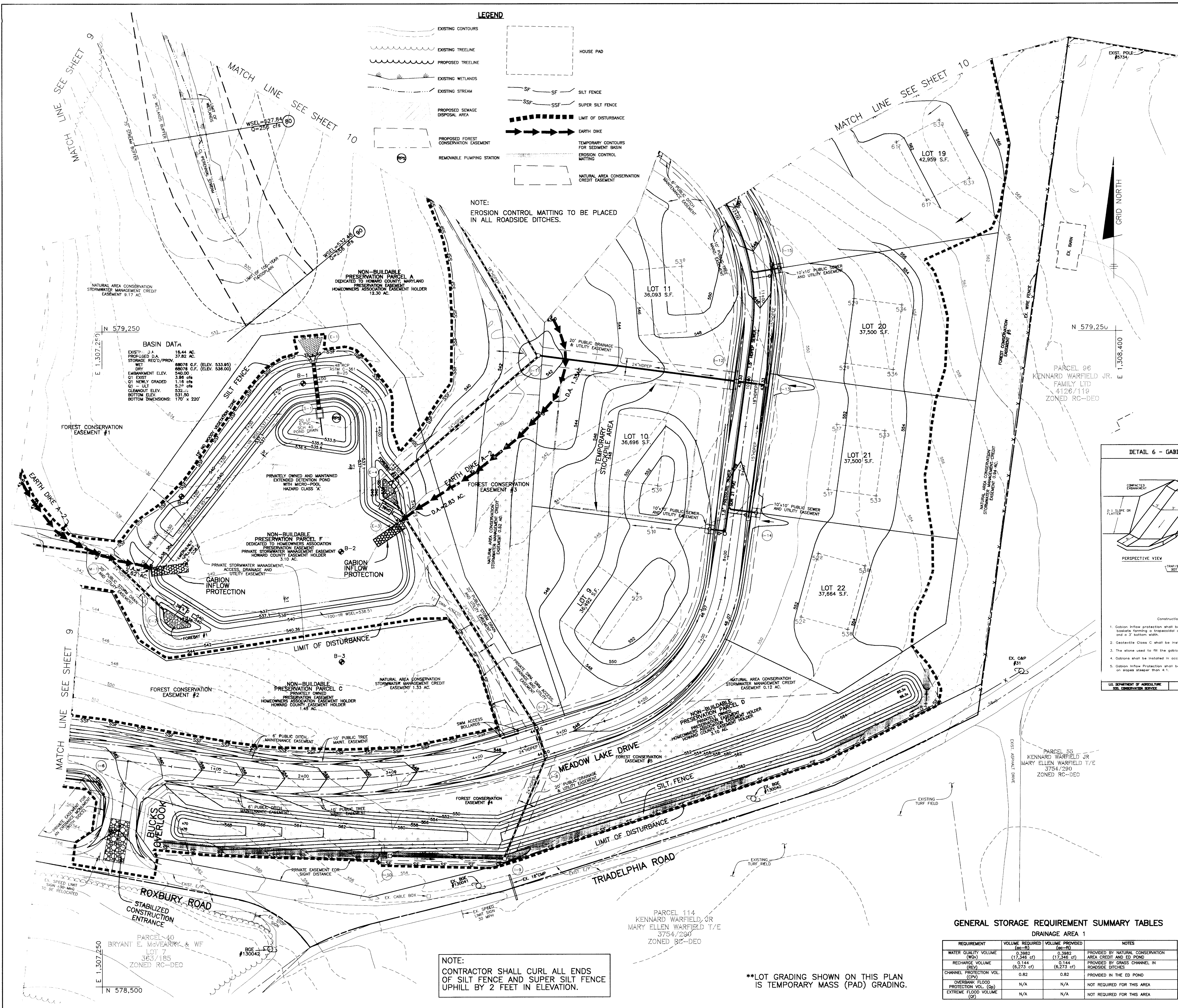
\* ALL STORM DRAIN PIPE SHALL HAVE A MINIMUM OF 1.5 FEET OF COVER.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William T. Gable* 7-6-05  
 CHIEF, BUREAU OF HIGHWAYS MS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Clayton Harris* 7/29/05  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Clayton Harris* 7/29/05  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MBS DATE

1 5-9-05 LOWER ROADS AND RELATED STORM DRAIN 1 FOOT.	
NO.	DATE
REVISION	
<b>BENCHMARK</b> ENGINEERS & LAND SURVEYORS & PLANNERS <b>ENGINEERING, INC.</b> 8480 BALTIMORE NATIONAL PIKE SUITE 418 ELLICOTT CITY, MARYLAND 21043 phone: 410-465-6105 fax: 410-465-6644 email: Benchmark@eais.com	
<i>Donald Mason</i> 6/9/05	
OWNER:	PROJECT:
EDGEWOOD FARM, INC. 14919 ROXBURY ROAD GLENELG, MARYLAND 21737	TRIADELPHIA CROSSING PHASE 1 LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'I' AND NON-BUILDABLE BULK PARCEL 'I'
DEVELOPER:	LOCATION:
TOLL BROTHERS, INC. 7164 COLUMBIA GATEWAY DRIVE SUITE 230 COLUMBIA, MARYLAND 21046 410-872-9105	TAX MAP: 21 PARCEL: 97 GRID: 17 & 23 ZONED: RC-DEO FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DESIGN: DBT	TITLE:
DRAFT: DBT	REVISED STORM DRAIN PROFILES
CHECK: CAM	DATE:
	JUNE, 2004
SCALE:	PROJECT NO.
1"=50' HORIZ. 1"=5' VERT.	1634
	SHEET 7 OF 17



- OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED EXTENDED DETENTION POND**
- ROUTINE MAINTENANCE:**
- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
  - TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
  - DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
  - VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- NON-ROUTINE MAINTENANCE:**
- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER AND THE PILES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
  - SEDIMENTS SHALL BE REMOVED FROM THE POND AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

**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.

PE NO. 21443

DONALD A. MASON  
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 OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

"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."

*Ben R. O'Leary* 5/11/05  
DEVELOPER (DATE)

BY THE ENGINEER:

"I/WE 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 NOTICED 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."

*Donald A. Mason* 5/19/05  
ENGINEER - DONALD A. MASON, P.E. #21443 (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.

*Jan Angeles* 6/28/05  
USDA - NATURAL RESOURCES CONSERVATION SERVICE (DATE)

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

*Andrew S. St...* 6/28/05  
HOWARD SOIL CONSERVATION DISTRICT (DATE)

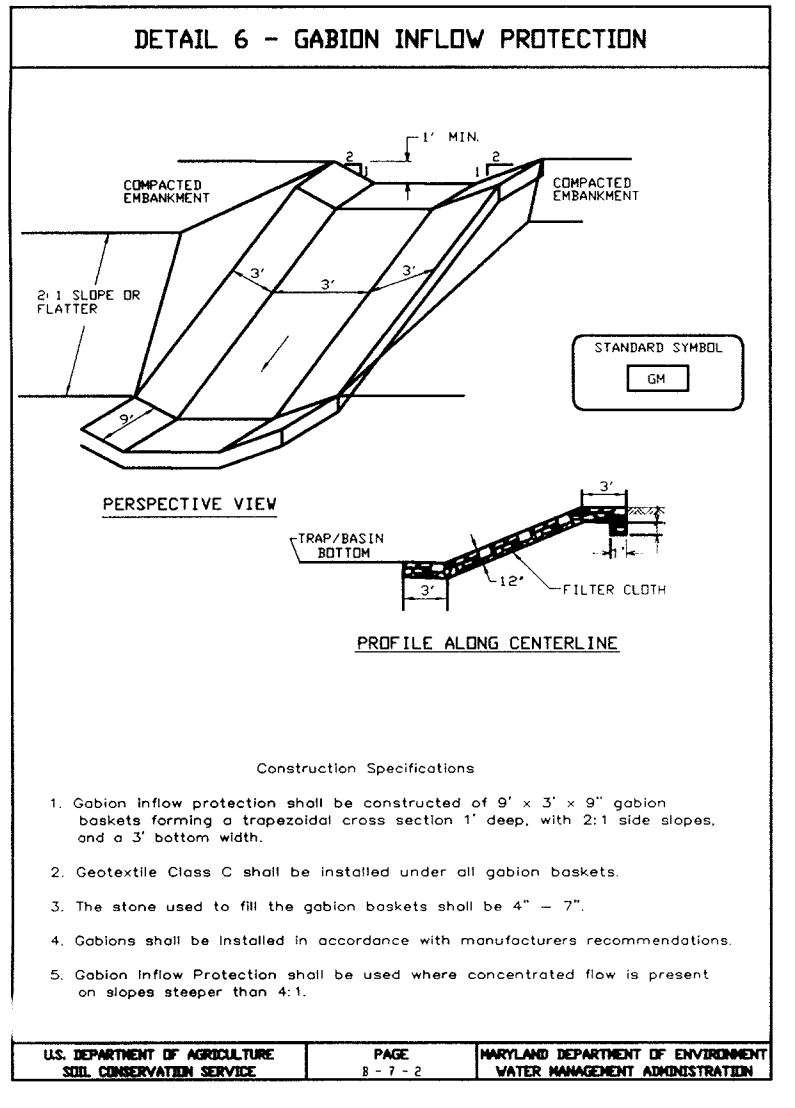
APPROVED: DEPARTMENT OF PUBLIC WORKS

*William T. ...* 7-6-05  
CHIEF, BUREAU OF HIGHWAYS (DATE)

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Andra Hammit* 7/13/05  
CHIEF, DIVISION OF LAND DEVELOPMENT (DATE)

*Michael ...* 7/12/05  
CHIEF, DEVELOPMENT ENGINEERING DIVISION (DATE)



**GENERAL STORAGE REQUIREMENT SUMMARY TABLES**

REQUIREMENT	DRAINAGE AREA 1		NOTES
	VOLUME REQUIRED (cc-ft)	VOLUME PROVIDED (cc-ft)	
WATER QUALITY VOLUME (WQV)	0.3982 (17,346 cf)	0.3982 (17,346 cf)	PROVIDED BY NATURAL CONSERVATION AREA CREDIT AND ED POND
RECHARGE VOLUME (REV)	0.144 (6,273 cf)	0.144 (6,273 cf)	PROVIDED BY GRASS CHANNEL IN ROADSIDE DITCHES
CHANNEL PROTECTION VOL. (CPV)	0.82	0.82	PROVIDED IN THE ED POND
OVERBANK FLOOD PROTECTION VOL. (OFV)	N/A	N/A	NOT REQUIRED FOR THIS AREA
EXTREME FLOOD VOLUME (EFV)	N/A	N/A	NOT REQUIRED FOR THIS AREA

NO.	DATE	REVISION
1	5-9-05	LOWER ROADS AND RELATED STORM DRAIN 1 FOOT.

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE • SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 • FAX: 410-465-6644  
EMAIL: Benchmark@coia.com

*Donald Mason* 5/19/05

OWNER: EDGEWOOD FARM, INC.  
14919 ROXBURY ROAD  
GLENELG, MARYLAND 21737

DEVELOPER: TOLL BROTHERS, INC.  
7164 COLUMBIA GATEWAY DRIVE  
SUITE 230  
COLUMBIA, MARYLAND 21046  
410-872-9105

PROJECT: TRIADELPHIA CROSSING PHASE 1  
LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'I'

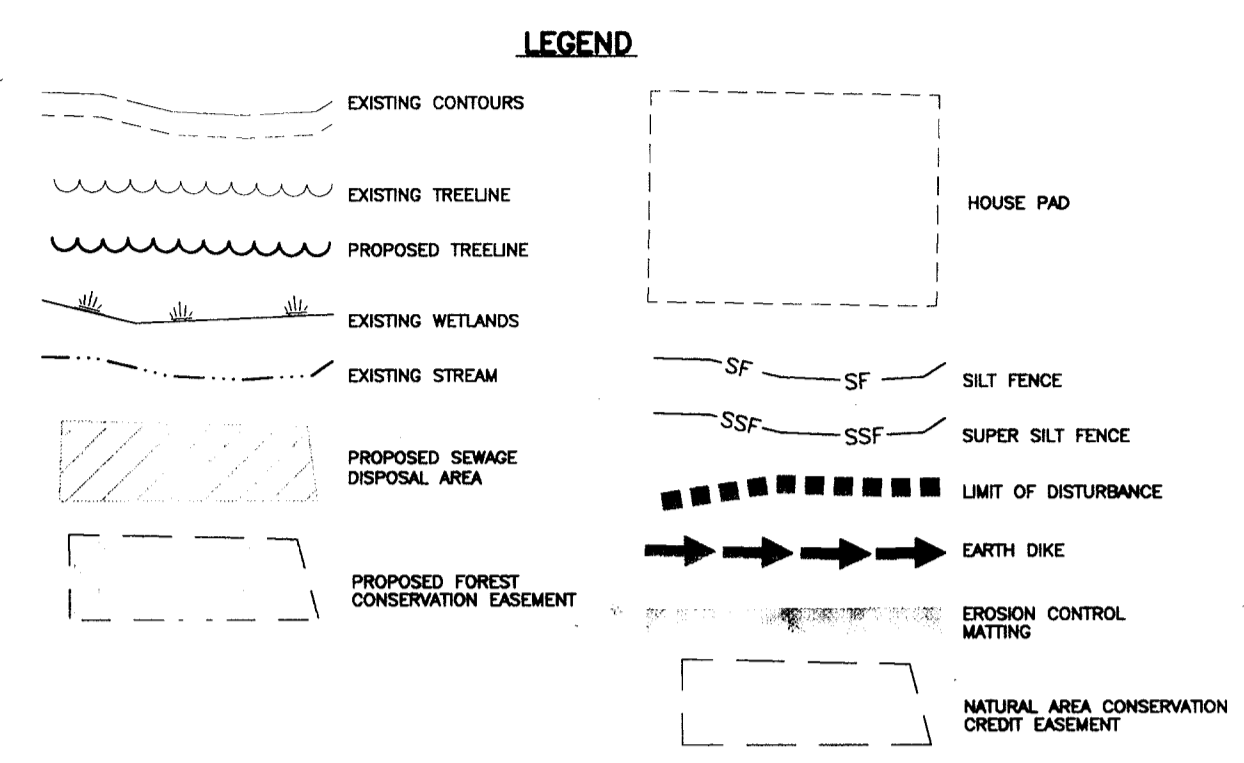
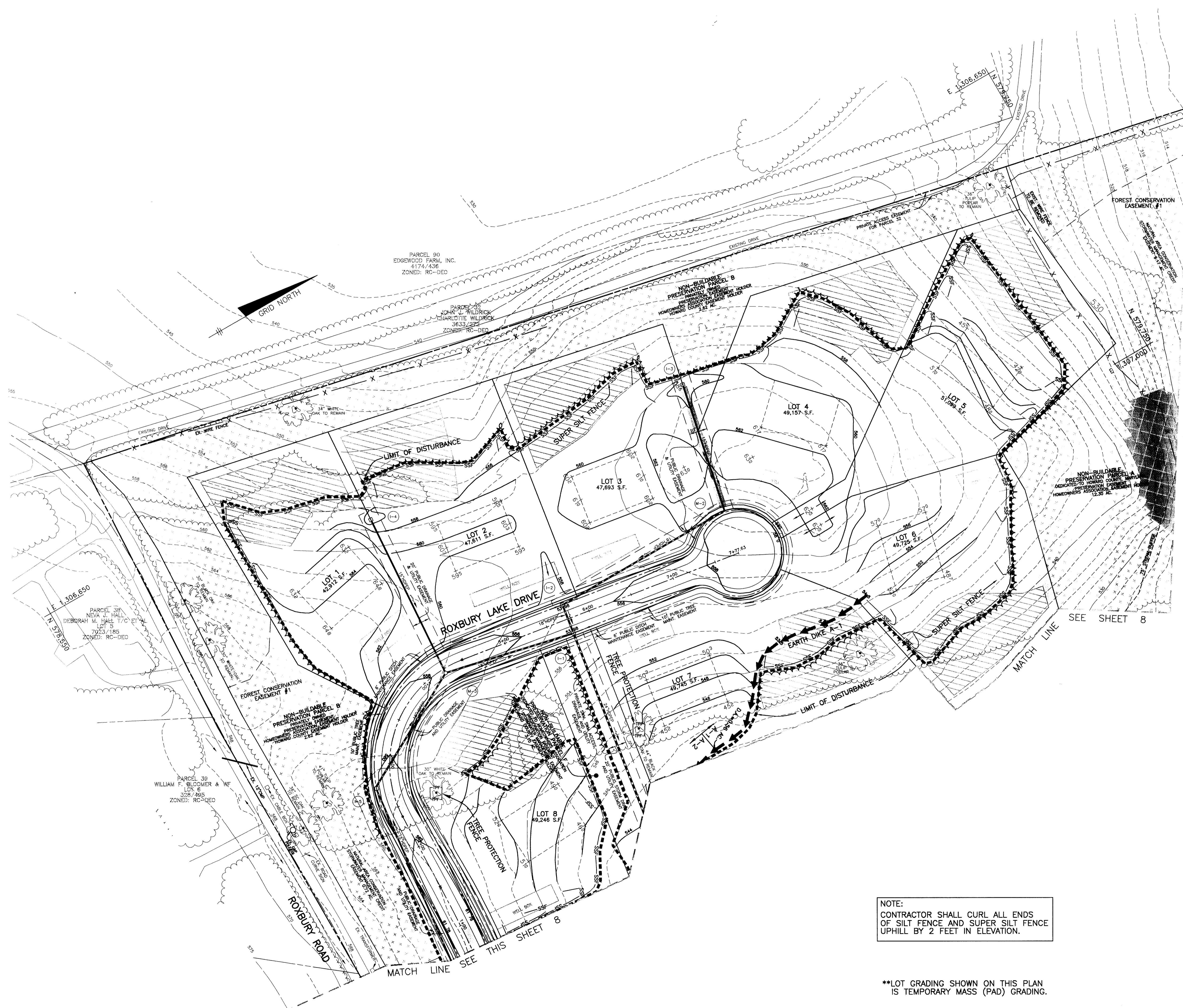
LOCATION: TAX MAP: 18-23 PARCEL: 97  
GRID: 18-23 ZONED: RC-DEO  
FOURTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: REVISED GRADING, SEDIMENT AND EROSION CONTROL PLAN

DATE: JUNE, 2004 PROJECT NO. 1634

DESIGN: DBT DRAFT: DBT CHECK: CAM SCALE: 1" = 50' SHEET 8 OF 17





**NOTE:**  
EROSION CONTROL MATTING TO BE PLACED IN ALL ROADSIDE DITCHES.

**ENGINEER'S CERTIFICATE**

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

*Donald Mason* 5/16/05  
ENGINEER - DONALD A. MASON, P.E. # 21443 DATE

**DEVELOPER'S CERTIFICATE**

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

*Ben R. O'Leary* 5/11/05  
DEVELOPER DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

*Jim Angles* 6/1/05  
USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*Shelly Allen* 6/1/05  
HOWARD SCD DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

*William J. ...* 7-6-05  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Cindy ...* 4/13/05  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*...* 7/12/05  
CHIEF, DEVELOPMENT ENGINEERING DIVISION, MWD DATE

NO.	DATE	REVISION
1	5-9-05	LOWER ROADS AND RELATED STORM DRAINS 1 FOOT.

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS

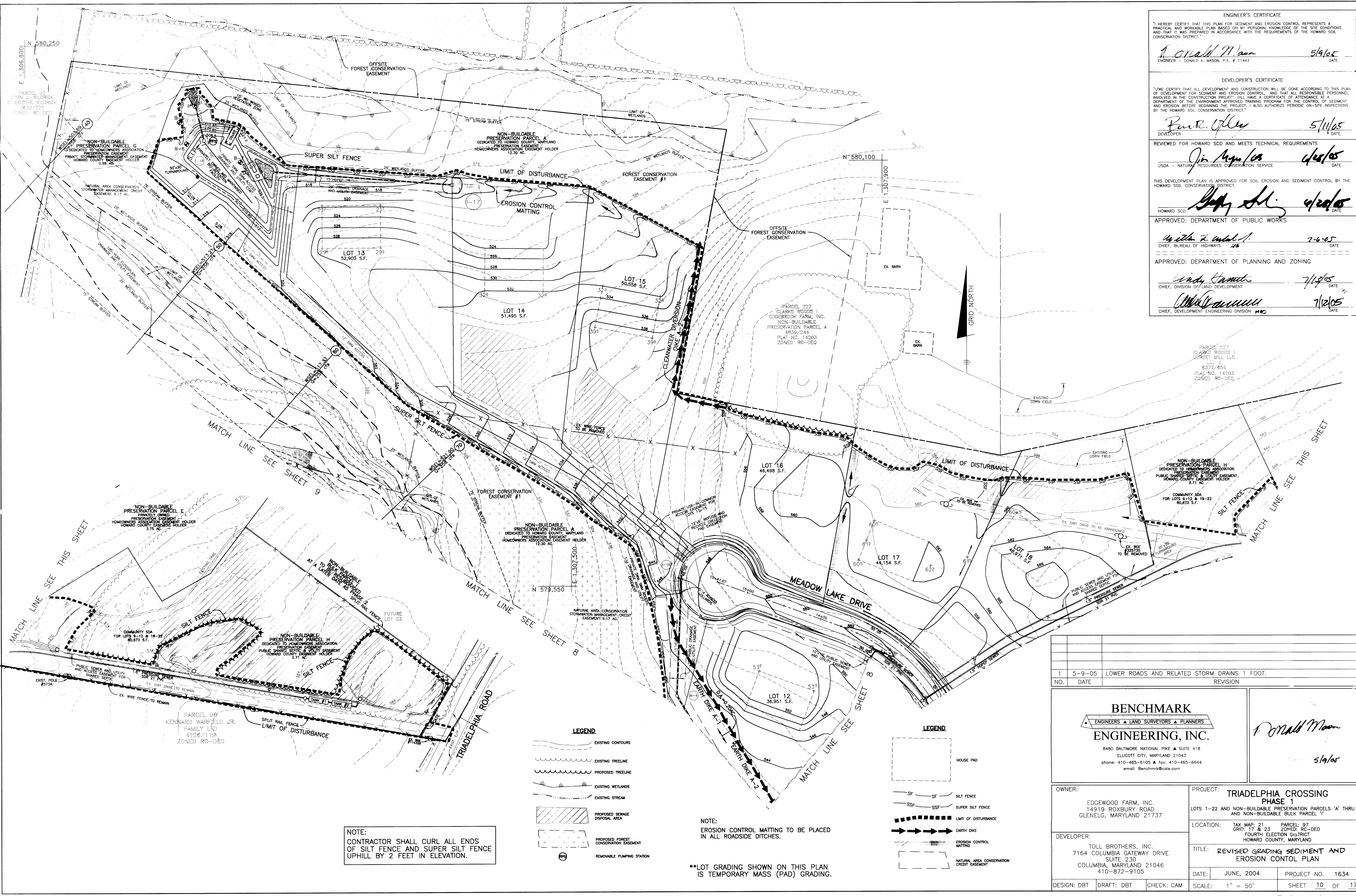
8480 BALTIMORE NATIONAL PIKE • SUITE 418  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 • FAX: 410-465-6644  
EMAIL: Benchmark@ccis.com

*Donald Mason*  
6/16/05

OWNER: EDGEWOOD FARM, INC. 14919 ROXBURY ROAD GLENELG, MARYLAND 21737	PROJECT: <b>TRIADELPHIA CROSSING PHASE 1</b> LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'I'
DEVELOPER: TOLL BROTHERS, INC. 7164 COLUMBIA GATEWAY DRIVE SUITE 230 COLUMBIA, MARYLAND 21046 410-872-9105	LOCATION: TAX MAP: 21 PARCEL: 97 GRID: 17 & 23 ZONED: RC-DEO FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DESIGN: DBT DRAFT: DBT CHECK: CAM	TITLE: <b>REVISED GRADING SEDIMENT AND EROSION CONTROL PLAN</b>
DATE: JUNE, 2004 SCALE: 1" = 50'	PROJECT NO. 1634 SHEET 9 OF 17

**NOTE:**  
CONTRACTOR SHALL CURL ALL ENDS OF SILT FENCE AND SUPER SILT FENCE UPHILL BY 2 FEET IN ELEVATION.

\*\*LOT GRADING SHOWN ON THIS PLAN IS TEMPORARY MASS (PAD) GRADING.



**ENGINEER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 Donald Mason 5/19/05  
 ENGINEER - DONALD A. MASON, P.E. # 21443 DATE

**DEVELOPER'S CERTIFICATE**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 Paul R. O'Leary 5/11/05  
 DEVELOPER DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 Jim McGuire 4/28/05  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] 4/28/05  
 HOWARD SCD DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] 7-6-05  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 7/17/05  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 7/12/05  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

PARCEL 227  
 CLARKS WOODS I  
 DORSET MILL LLC  
 6377/654  
 PLAT NO. 14203  
 ZONED: RC-DEC

NON-BUILDABLE PRESERVATION PARCEL H  
 DEDICATED TO HOMEOWNERS ASSOCIATION  
 PUBLIC SHARED SEPTIC & UTILITY EASEMENT  
 HOWARD COUNTY EASEMENT HOLDER  
 2.71 AC

COMMUNITY SOA  
 FOR LOTS 9-12 & 19-22  
 80,873 S.F.

NOTE:  
 CONTRACTOR SHALL CURL ALL ENDS OF SILT FENCE AND SUPER SILT FENCE UPHILL BY 2 FEET IN ELEVATION.

NOTE:  
 EROSION CONTROL MATTING TO BE PLACED IN ALL ROADSIDE DITCHES.

\*\*LOT GRADING SHOWN ON THIS PLAN IS TEMPORARY MASS (PAD) GRADING.

**LEGEND**

- - - - - EXISTING CONTOURS
- ~ ~ ~ ~ ~ EXISTING TREELINE
- ~ ~ ~ ~ ~ PROPOSED TREELINE
- ~ ~ ~ ~ ~ EXISTING WETLANDS
- ~ ~ ~ ~ ~ EXISTING STREAM
- ▨ ▨ ▨ ▨ ▨ PROPOSED SEWAGE DISPOSAL AREA
- ▨ ▨ ▨ ▨ ▨ PROPOSED FOREST CONSERVATION EASEMENT
- ⊙ REMOVABLE PUMPING STATION

**LEGEND**

- HOUSE PAD
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- — — — — LIMIT OF DISTURBANCE
- → → → → EARTH DIKE
- ▨ ▨ ▨ ▨ ▨ EROSION CONTROL MATTING
- ▨ ▨ ▨ ▨ ▨ NATURAL AREA CONSERVATION CREDIT EASEMENT

NO.	DATE	REVISION
1	5-9-05	LOWER ROADS AND RELATED STORM DRAINS 1 FOOT.

**BENCHMARK**  
 ENGINEERS • LAND SURVEYORS • PLANNERS

**ENGINEERING, INC.**

8480 BALTIMORE NATIONAL PIKE • SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 phone: 410-465-8105 • fax: 410-465-8644  
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Donald Mason  
5/19/05

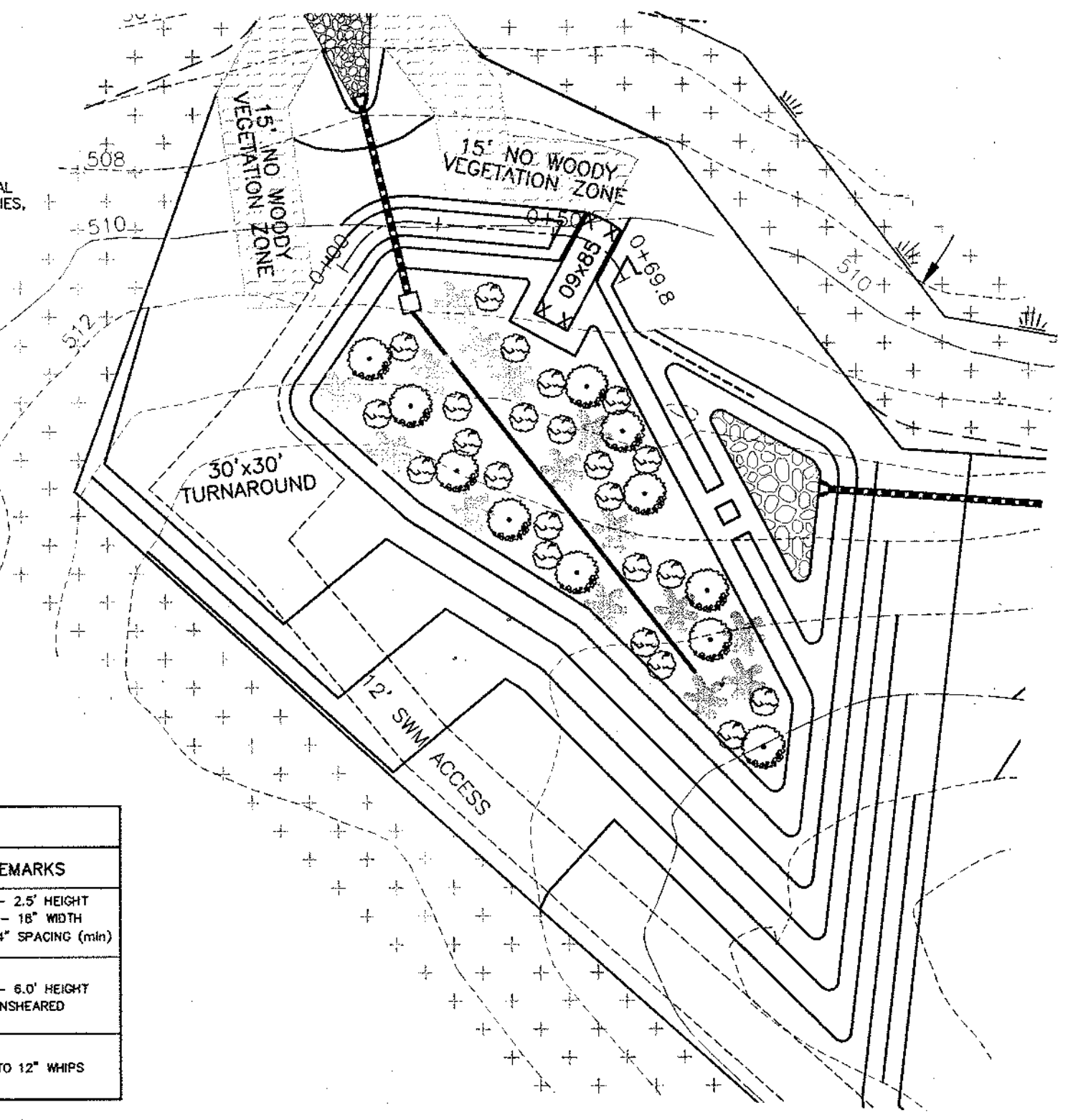
<b>OWNER:</b> EDGEWOOD FARM, INC. 14919 ROXBURY ROAD GLENELG, MARYLAND 21043	<b>PROJECT:</b> TRIADELPHIA CROSSING PHASE 1 LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'I'
<b>DEVELOPER:</b> TOLL BROTHERS, INC. 7164 COLUMBIA GATEWAY DRIVE SUITE 230 COLUMBIA, MARYLAND 21046 410-872-9105	<b>LOCATION:</b> TAX MAP: 21 PARCEL: 97 GRID: 17 & 23 ZONED: RC-DEC FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
<b>DESIGN:</b> DBT <b>DRAFT:</b> DBT <b>CHECK:</b> CAM	<b>TITLE:</b> REVISED GRADING SEDIMENT AND EROSION CONTROL PLAN
<b>DATE:</b> JUNE, 2004 <b>SCALE:</b> 1" = 50'	<b>PROJECT NO.:</b> 1634 <b>SHEET:</b> 10 OF 17







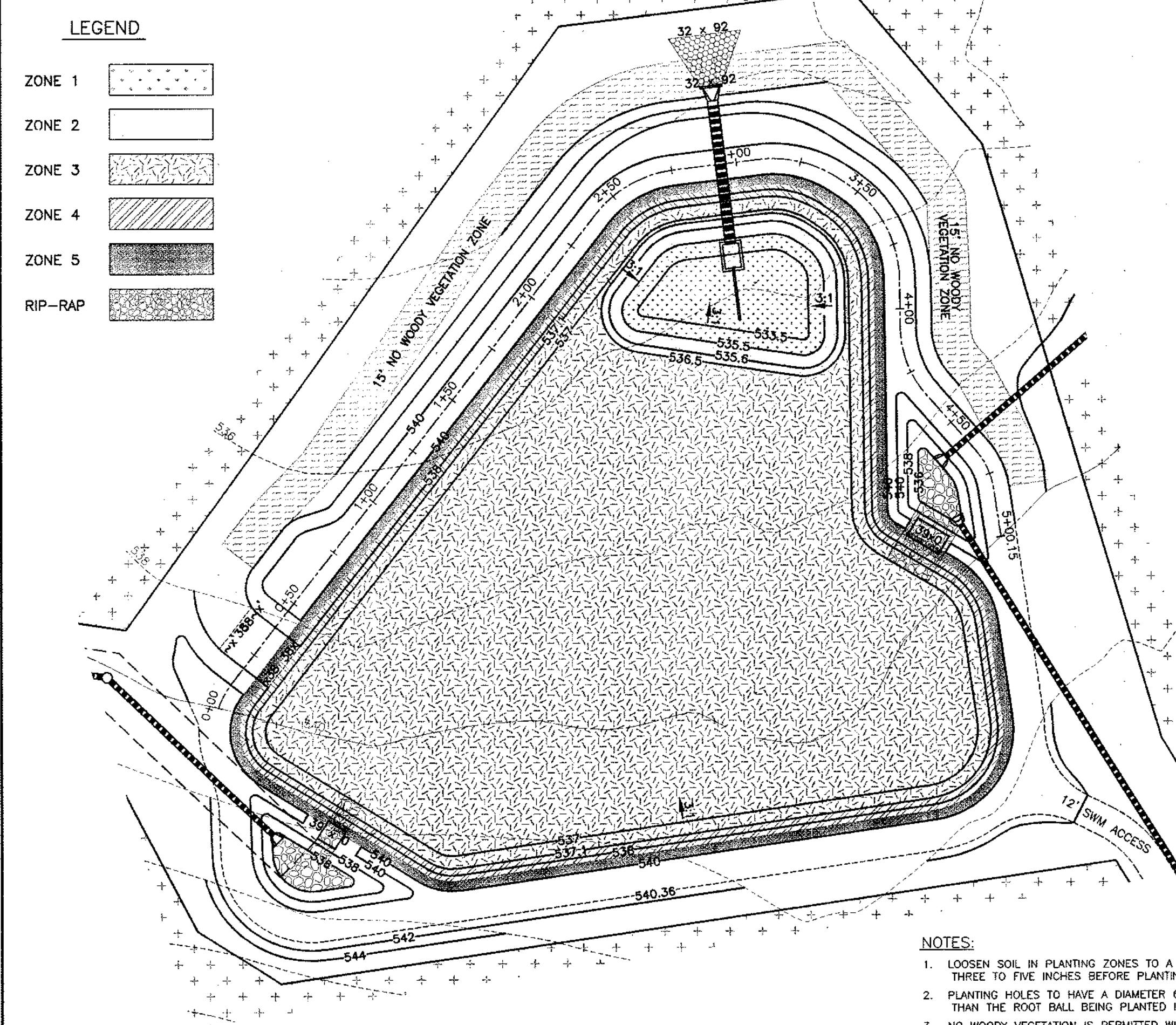
**SWMF LANDSCAPE DATA**  
 HYDROLOGIC ZONE 2 - SHALLOW WATER BENCH (LOW MARSH)  
 HYDROLOGIC CONDITION - 6" TO 12" DEEP  
 HARDINESS - TEMPERATE ZONE 6b (-5 TO 0°)  
 NOTE:  
 REFER TO MDE 2000 STORMWATER MANAGEMENT DESIGN MANUAL VOLUMES 1 AND 2 FOR LANDSCAPE CONTRACTOR RESPONSIBILITIES, PRACTICES AND MAINTENANCE DUTIES.



**BIO-RETENTION PLANTING LIST**

SYMBOL	QUANTITY	NAME	REMARKS
	15	RHODODENDRON CANADENSE "RHODODENDRON"	2.0' - 2.5' HEIGHT 15" - 18" WIDTH 18" - 24" SPACING (min)
	11	ILEX VOMITORIA "YAUPOIN HOLLY"	5.0' - 6.0' HEIGHT UNSHARED
	23	ANDROPOGON GLOMERATUS "BUSHY BEARDGRASS"	UP TO 12" W/SPS

**LANDSCAPING FOR BIO-RETENTION FACILITY**  
 SCALE: 1" = 30'



**LEGEND**

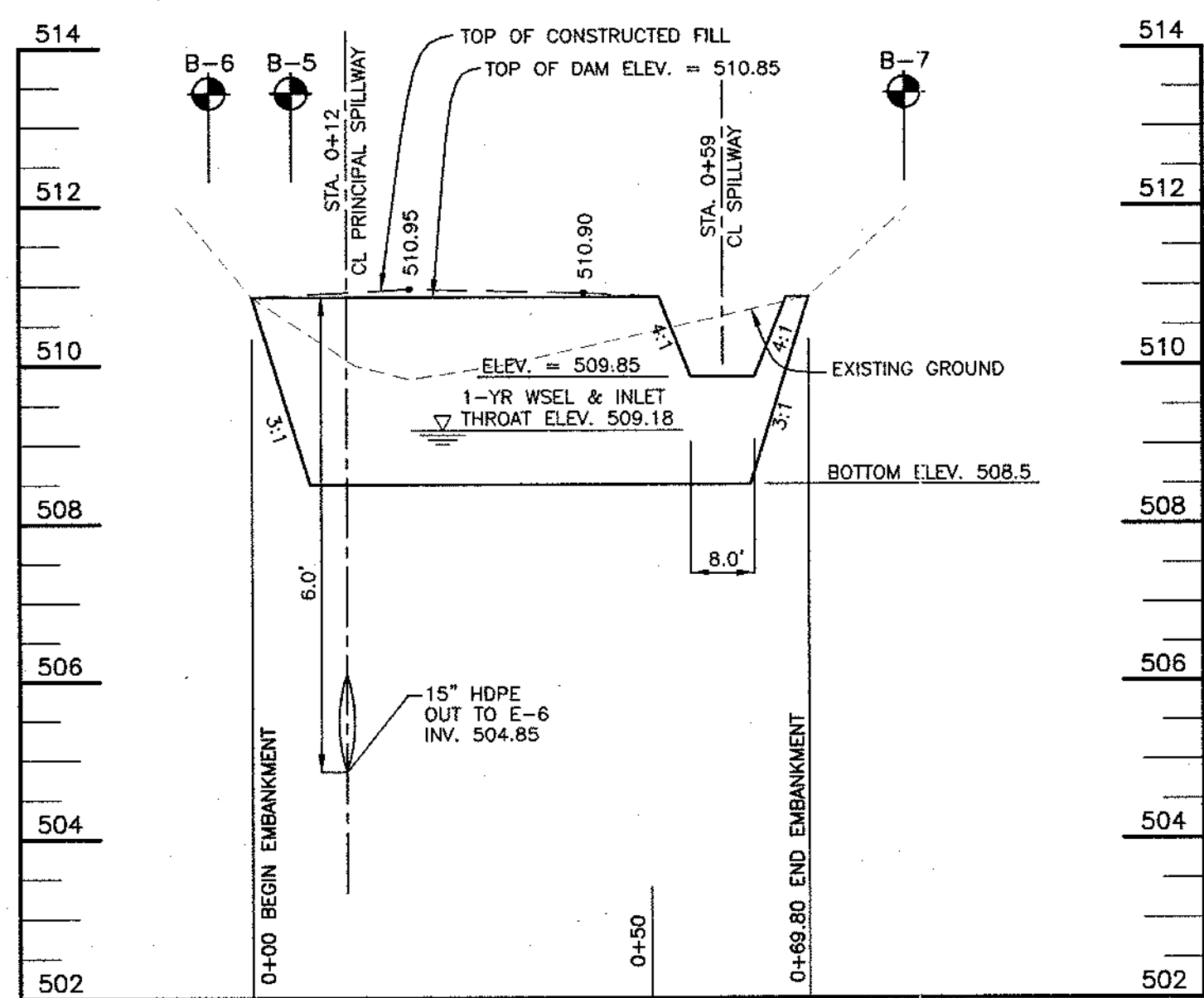
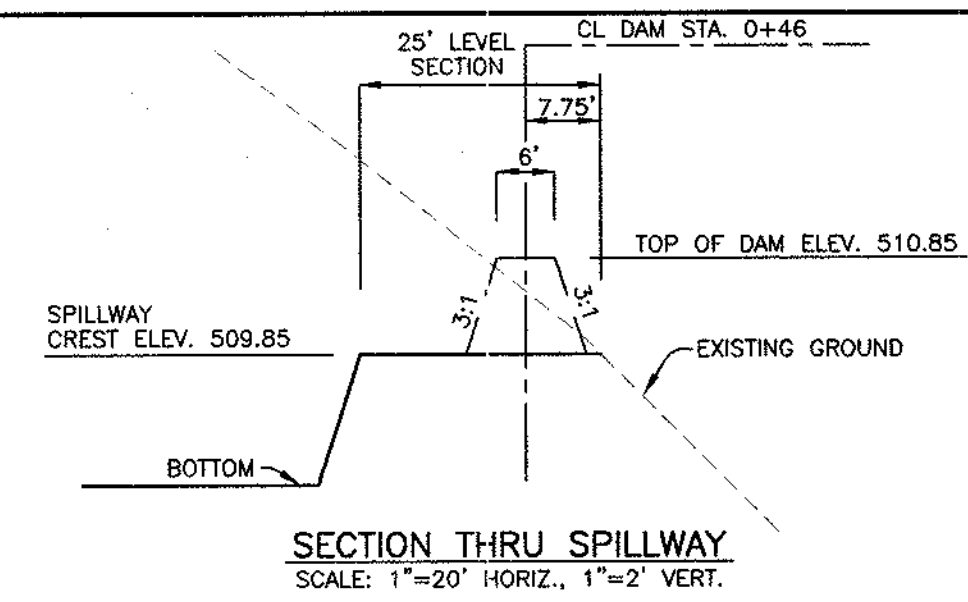
- ZONE 1: [Symbol]
- ZONE 2: [Symbol]
- ZONE 3: [Symbol]
- ZONE 4: [Symbol]
- ZONE 5: [Symbol]
- RIP-RAP: [Symbol]

**NOTES:**  
 1. LOOSEN SOIL IN PLANTING ZONES TO A DEPTH OF THREE TO FIVE INCHES BEFORE PLANTING.  
 2. PLANTING HOLES TO HAVE A DIAMETER 6" GREATER THAN THE ROOT BALL BEING PLANTED IN THEM.  
 3. NO WOODY VEGETATION IS PERMITTED WITHIN 15' OF THE TOE OF SLOPE OR 25' OF THE SPILLWAY.

**PLANTING SCHEDULE FOR EXTENDED DETENTION FACILITY**

ZONE	AREA	PLANT MIX	ELEVATION RANGE
1	2,797	100% WATER LILLY	533.5-535.5
2	1,883	50% BROAD WATER WEED 25% DUCK POTATO 25% ARROW ARUM	535.5-538.5
3	40,983	50% CUTGRASS, RICE 50% SWITCHGRASS	536.5-537.1
4	8,349	50% LOVEGRASS-MEADOW 25% VIOLETS, COMMON BLUE 25% CONEFLOWER, CUT-LEAF	537.1-538.48
5	4,122	75% WITCHGRASS, NEEDLE-LEAF 25% CONEFLOWER, SWEET	538.48-540.0
6	0 SF	N/A	N/A

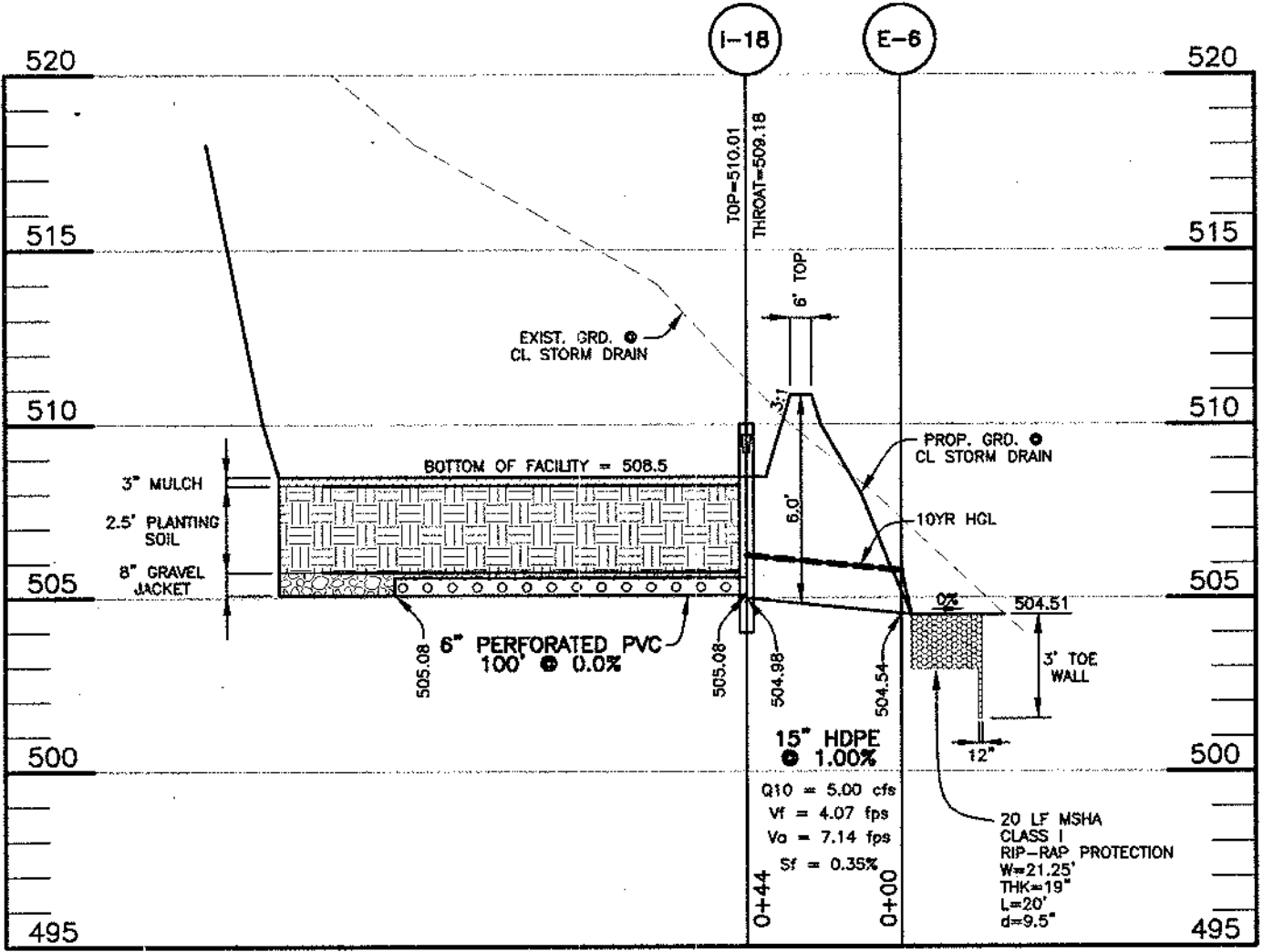
**DEVELOPER'S/BUILDER'S CERTIFICATE**  
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 18.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.  
 Bruce Oxley  
 BRUCE OXLEY  
 TOLL BROTHERS, INC.  
 4/23/04  
 DATE



**PROFILE ALONG CL EMBANKMENT BIO-RETENTION FACILITY**  
 SCALE: 1"=20' HORIZ., 1"=2' VERT.

**TABLE B.3.2 MATERIALS AND SPECIFICATIONS FOR BIO-RETENTION**

MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS (IF REQUIRED)	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2.5' TO 4.0' DEEP)	SAND, 30-50% SILT, 30-55% CLAY, 10-25% STONE	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDDED HARDWOOD	N/A	AGED 6 MONTHS, MINIMUM
PEA GRAVEL, DRAPHRAGM AND CURTAIN DRAIN	PEA GRAVEL, ASTM D-4438 ORNAMENTAL STONE, WASHED COBBLES, 3" TO 5"	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
GEOTEXTILE (CLASS "C")	APPARENT OPENING SIZE: (ASTM D-4751) SOAK TENSILE STRENGTH: (ASTM D-4632) PUNCTURE RESISTANCE: (ASTM D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	ASTM M-43	0.375" TO 0.750"	
UNDERDRAIN PIPING	F758, TYPE PS28 OR AASHTO M-278	4" TO 6" RIGID SCHED 40 PVC OR SURS	3/8" PERF. @ 6" O/C, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES, NOT NECESSARY UNDERNEATH PIPES
POURED-IN-PLACE CONC. (IF REQUIRED)	MSHA MIX NO. 3, F=3000psi @ 28 DAYS, NORMAL WEIGHT, AIR ENTRAINED, REINFORCING TO MEET ASTM 615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONC. REQUIRED; 28 DAY STRENGTH TEST AND SLUMP TEST ALL CONC. DESIGN (CAST -IN-PLACE OF PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRED DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND. DESIGN TO INCLUDE MEETING ACI CODE 308.9/89, VERTICAL LOADING (H=10 or H=20) LIMBED HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING.



**STORM DRAIN PROFILE BIO-RETENTION FACILITY**  
 SCALE: 1"=50' HORIZ., 1"=5' VERT.

**MATERIALS AND SPECIFICATIONS FOR RAIN GARDEN**

MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2.5' TO 4.0' DEEP)	SAND, 30-50% SILT, 30-55% CLAY, 10-25% STONE	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDDED HARDWOOD	N/A	AGED 6 MONTHS, MINIMUM
GEOTEXTILE (CLASS "C")	APPARENT OPENING SIZE: (ASTM D-4751) SOAK TENSILE STRENGTH: (ASTM D-4632) PUNCTURE RESISTANCE: (ASTM D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	ASTM M-43	0.375" TO 0.750"	
UNDERDRAIN PIPING	F758, TYPE PS28 OR AASHTO M-278	4" TO 6" RIGID SCHED 40 PVC OR SURS OR HDPE	3/8" PERF. @ 6" O/C, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES, NOT NECESSARY UNDERNEATH PIPES

**OPERATION & MAINTENANCE SCHEDULE FOR RAIN GARDENS**

- ANNUAL MAINTENANCE OF PLANT MATERIAL AND MULCH LAYER IS REQUIRED. MAINTENANCE OF MULCH IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH-OUT. ANY REPLACEMENT OF MULCH SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE & INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL & PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN THE SPRING AND FALL. THIS INSPECTION WILL INCLUDE: REMOVAL OF DEAD & DISEASED VEGETATION CONSIDERED BEYOND TREATMENT; TREATMENT OF ALL DISEASED TREES & SHRUBS; AND REPLACEMENT OF ALL DEFICIENT STAKES & WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE THE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS-NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

**LOT 23**

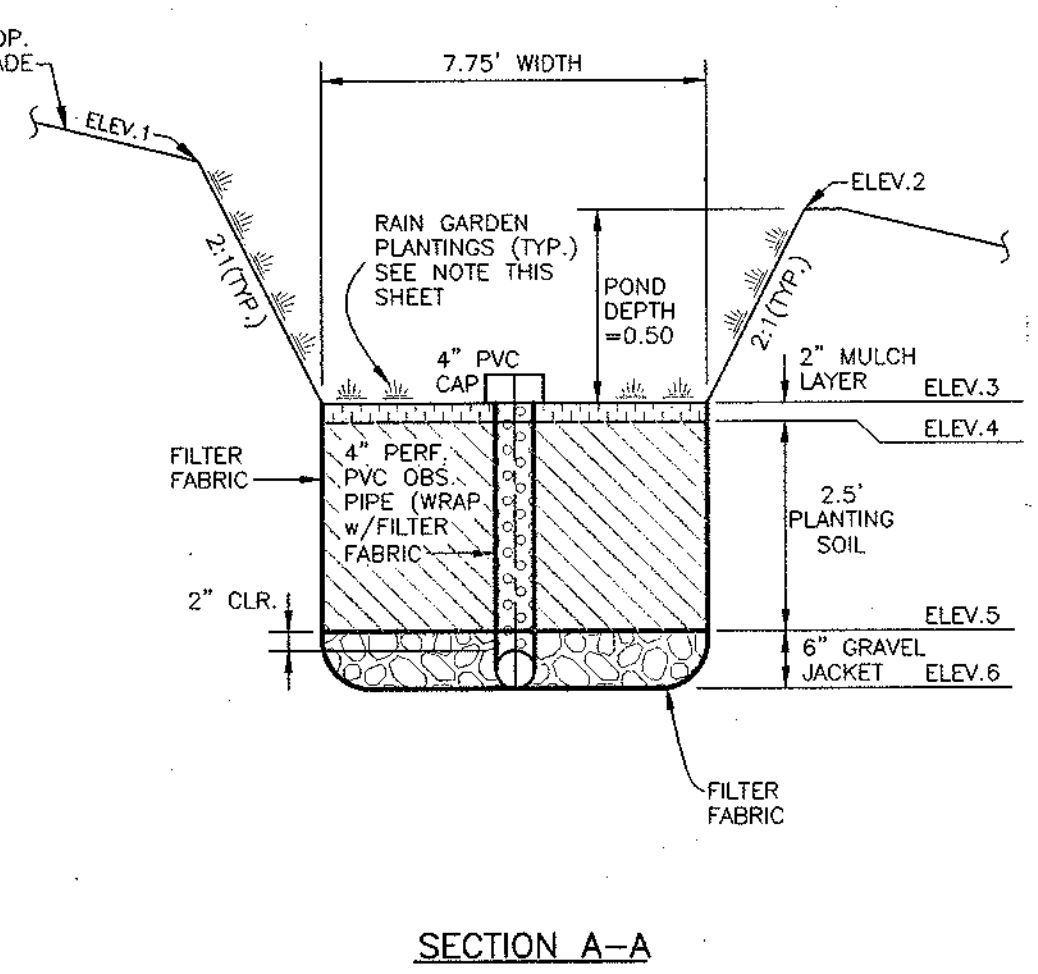
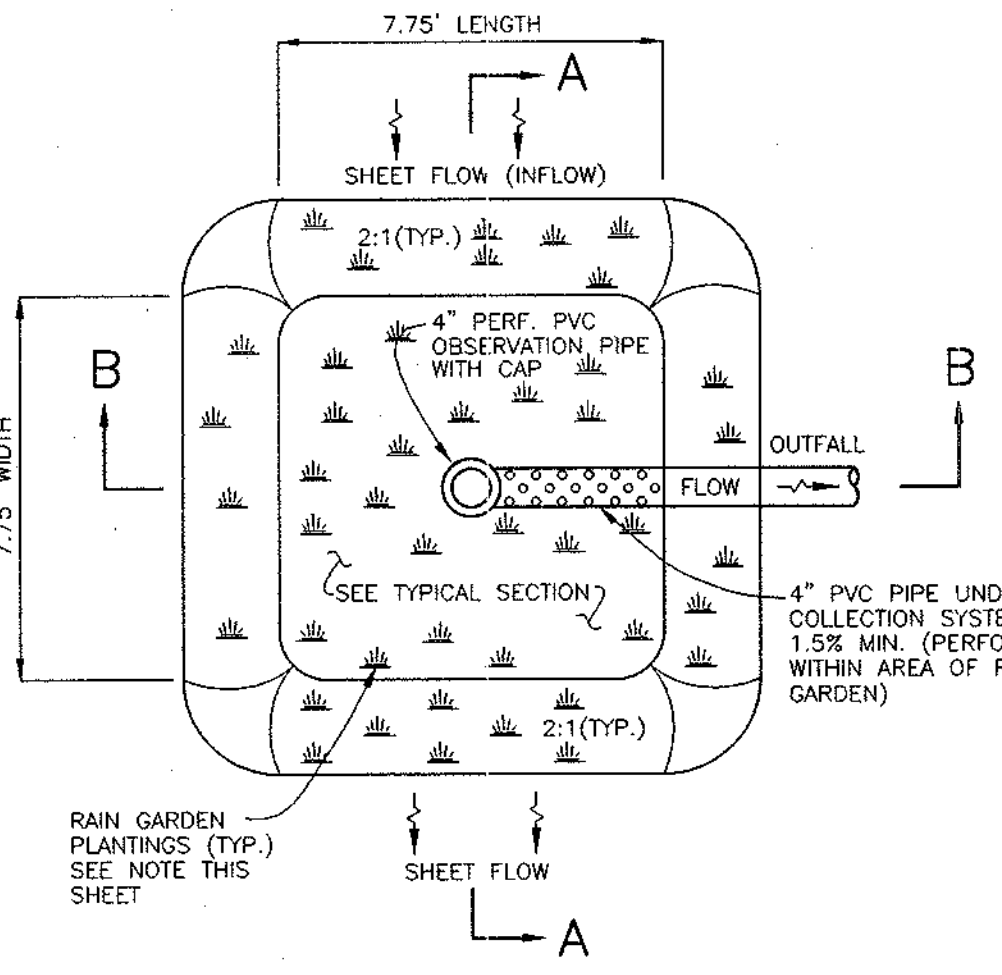
R01	R02
ELEV.1 583.00	581.50
ELEV.2 582.50	581.00
ELEV.3 582.00	580.50
ELEV.4 581.83	580.33
ELEV.5 579.33	577.83
ELEV.6 578.83	577.33
ELEV.7 577.71	576.27

**LOT 24**

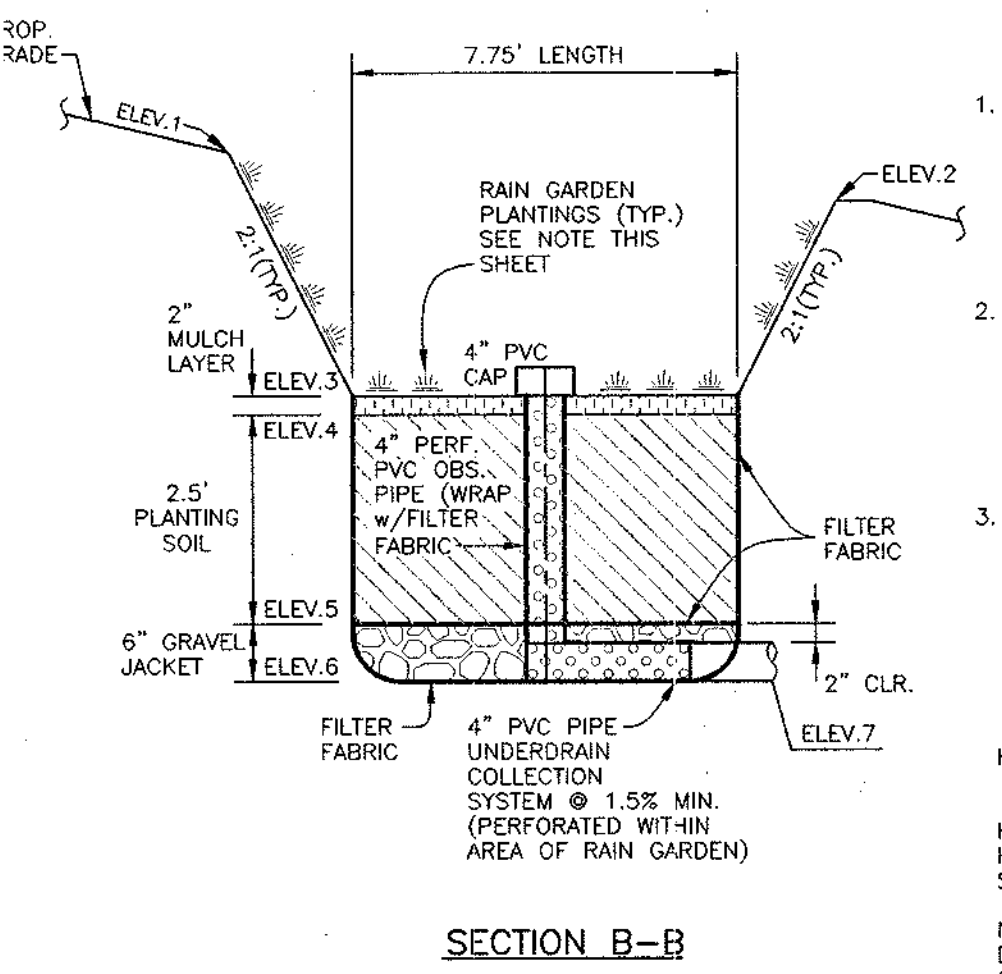
R01	R02
ELEV.1 579.00	575.90
ELEV.2 578.50	575.30
ELEV.3 578.00	574.80
ELEV.4 577.83	574.63
ELEV.5 575.33	572.13
ELEV.6 574.83	571.63
ELEV.7 573.71	570.43

**LOT 26**

R01	R02
ELEV.1 577.00	581.00
ELEV.2 576.50	580.50
ELEV.3 576.00	580.00
ELEV.4 575.83	579.83
ELEV.5 573.33	577.33
ELEV.6 572.83	576.83
ELEV.7 570.96	575.02



**SECTION A-A**



**SECTION B-B**

**RAIN GARDEN DETAILS**  
 NOT TO SCALE

**PLANTING DATA**

- PLANTINGS WITHIN THE PONDING AREA OF THE RAIN GARDEN ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE.  
 SUGGESTED SPECIES: CREEPING BUGLEWEED (AJUGA REPTANS), COMMON PERIWINKLE (VINCA MINOR), LULU-TURF (LIRIOPE, SP.)
- PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE RAIN GARDEN ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE.  
 SUGGESTED SPECIES: (PERENNIALS/ANNUALS) IRIS (IRIS VERSICOLOR), DAYLILY (HEMEROCALLIS SP.), WHITE GLORY (ASTILE SP.)
- AVOID PLANTINGS WITH EXCESSIVE ROOT MASS IN POND AREA OF THE RAIN GARDEN NEAR OBSERVATION PIPE AND UNDERDRAIN.

**LANDSCAPE DATA**  
 HYDROLOGIC ZONE 3 - REGULARLY INUNDATED SHORELINE FRINGE (HIGH MARSH)  
 HYDROLOGIC CONDITION - 0" TO 1"-0" DEEP HARDINESS - TEMPERATE ZONE 6b (-5 TO 0°)  
 SEE SHEET 2 FOR SEQUENCE OF CONSTRUCTION  
 NOTE: REFER TO MDE 2000 MD STORMWATER DESIGN MANUAL VOLUMES 1 & 2 FOR LANDSCAPE CONTRACTOR RESPONSIBILITIES, PRACTICES AND MAINTENANCE DUTIES

**GENERAL STORAGE REQUIREMENT BIO-RETENTION FACILITY**

REQUIREMENT	VOLUME REQUIRED (SS-1)	VOLUME PROVIDED (SS-1)	NOTES
WATER QUALITY VOLUME (WQV)	0.0992 (3884 cu)	0.0992 (3884 cu)	PROVIDED IN BIO-RETENTION FACILITY
RECHARGE VOLUME (RV)	0.021 (832 cu)	0.021 (832 cu)	PROVIDED BY GRASS CHANNEL IN ROADSIDE DITCHES #1 & #2
CHANNEL PROTECTION VOL. (CPV)	N/A	N/A	NOT REQUIRED FOR THIS AREA (CPV RELEASE RATE = 2.69 (LTR))
OVERBANK FLOOD PROTECTION VOL. (OPV)	N/A	N/A	NOT REQUIRED FOR THIS AREA
EXTREME FLOOD VOLUME (EFV)	N/A	N/A	NOT REQUIRED FOR THIS AREA

**OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION FACILITY**

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH-OUT. ANY REPLACEMENT OF MULCH SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE & INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL & PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN THE SPRING AND FALL. THIS INSPECTION WILL INCLUDE: REMOVAL OF DEAD & DISEASED VEGETATION CONSIDERED BEYOND TREATMENT; TREATMENT OF ALL DISEASED TREES AND SHRUBS; AND REPLACEMENT OF ALL DEFICIENT STAKES & WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE THE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS-NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

**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.  
 PE NO. 21443  
 DONALD A. MASON  
 DATE

**CERTIFY THAT 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 OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.**  
 BY THE DEVELOPER:  
 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.  
 Bruce R. Oxley  
 DEVELOPER  
 4/23/04  
 DATE

**BY THE ENGINEER:**  
 I/WE 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.  
 Donald Mason  
 ENGINEER - DONALD A. MASON, P.E. # 21443  
 4/16/04  
 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.  
 Jim McGuire  
 USA - NATURAL RESOURCES CONSERVATION SERVICE  
 7/26/04  
 DATE  
 APPROVED: DEPARTMENT OF PUBLIC WORKS  
 William Z. ...  
 CHIEF, BUREAU OF HIGHWAYS  
 8-2-04  
 DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Cindy Hamstra  
 CHIEF, DIVISION LAND DEVELOPMENT  
 5/10/04  
 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 5/10/04  
 DATE

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS • LAND SURVEYORS • PLANNERS  
 8480 BALTIMORE NATIONAL PIKE # SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 phone: 410-465-6105 • fax: 410-465-6844  
 email: Benchmark@cois.com

**OWNER:**  
 EDGEWOOD FARM, INC.  
 14919 ROXBURY ROAD  
 GLENELG, MARYLAND 21737

**PROJECT:**  
 TRIADPHIA CROSSING PHASE 1  
 LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'I'

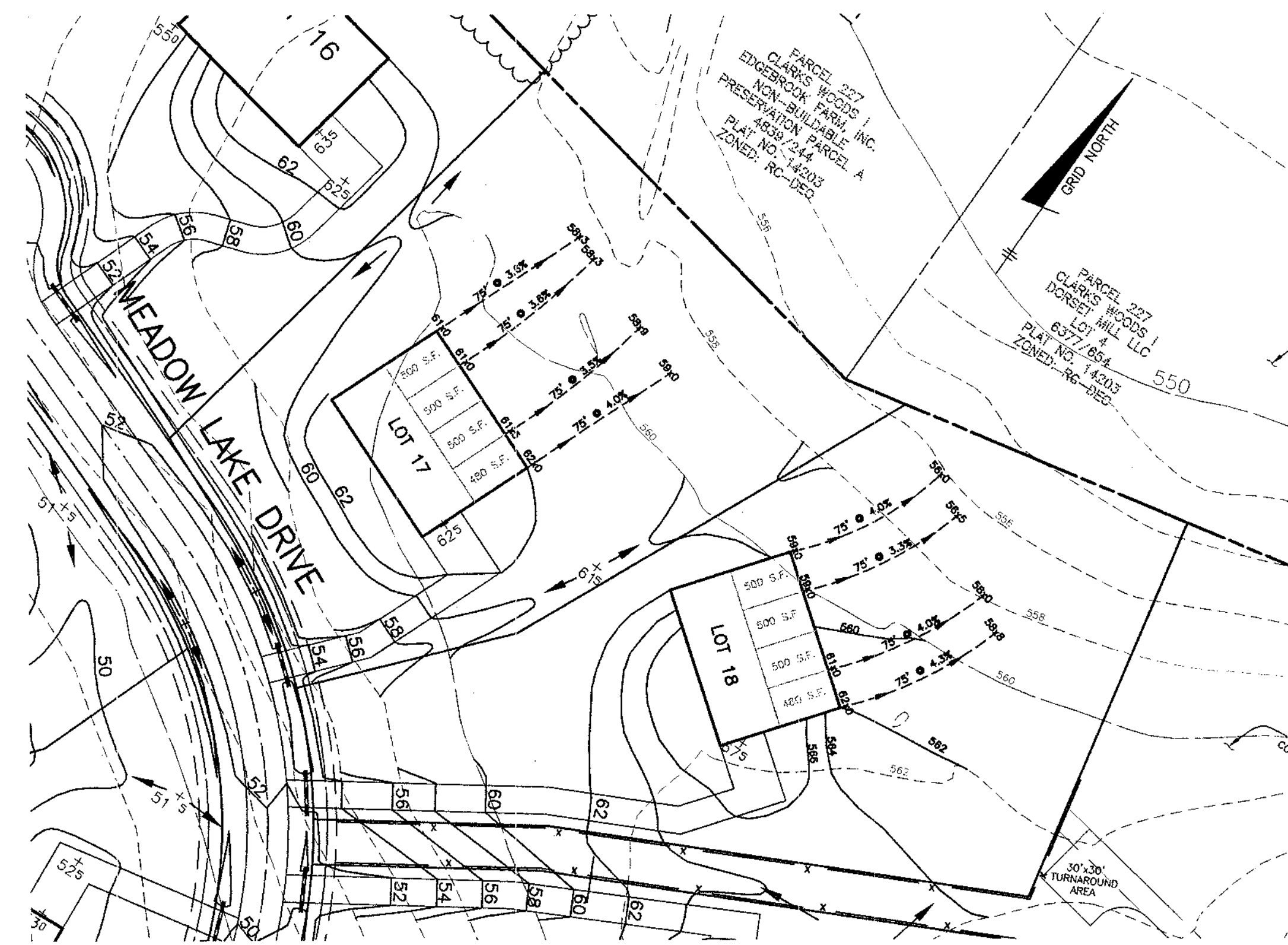
**DEVELOPER:**  
 TOLL BROTHERS, INC.  
 7164 COLUMBIA GATEWAY DRIVE  
 SUITE 230  
 COLUMBIA, MARYLAND 21046  
 410-872-9105

**LOCATION:** TAX MAP: 21 PARCEL: 97  
 GRID: 17 & 23 ZONED: RC-DEO  
 FOURTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

**TITLE:**  
 SWM DETAILS  
 BIO-RETENTION FACILITY/RAIN GARDENS  
 AND SWM LANDSCAPING

**DATE:** JUNE, 2004  
**PROJECT NO.:** 1634

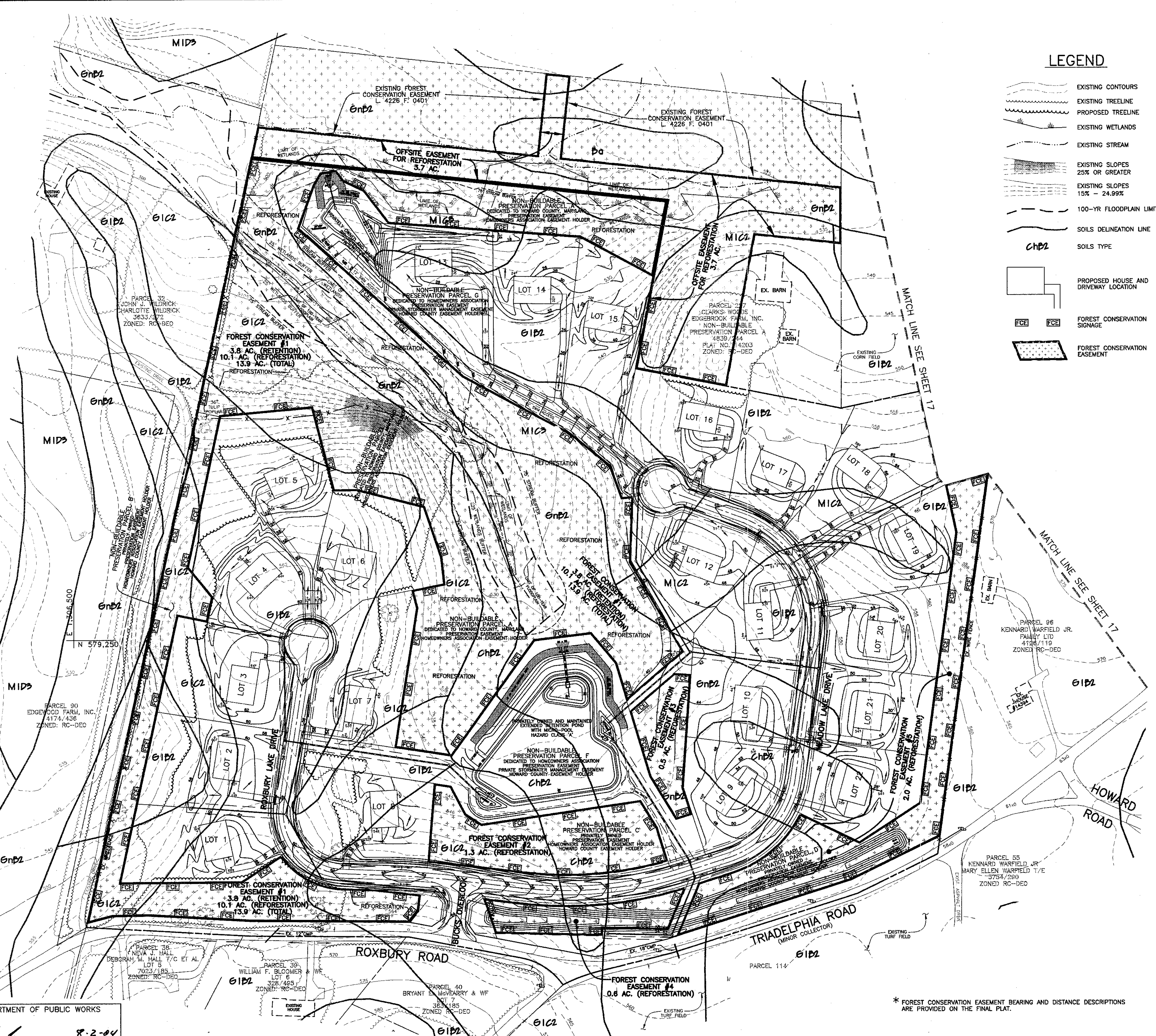
**DESIGN:** MLV **DRAFT:** DBT **CHECK:** CAM  
**SCALE:** AS SHOWN **SHEET 14 OF 17**



THIS PLAN SHOWS THE ROOFTOP DISONNECTION CREDIT AND NON-ROOFTOP DISONNECTION CREDIT DESIGN FOR LOTS 17, 18 AND 23 - 27.

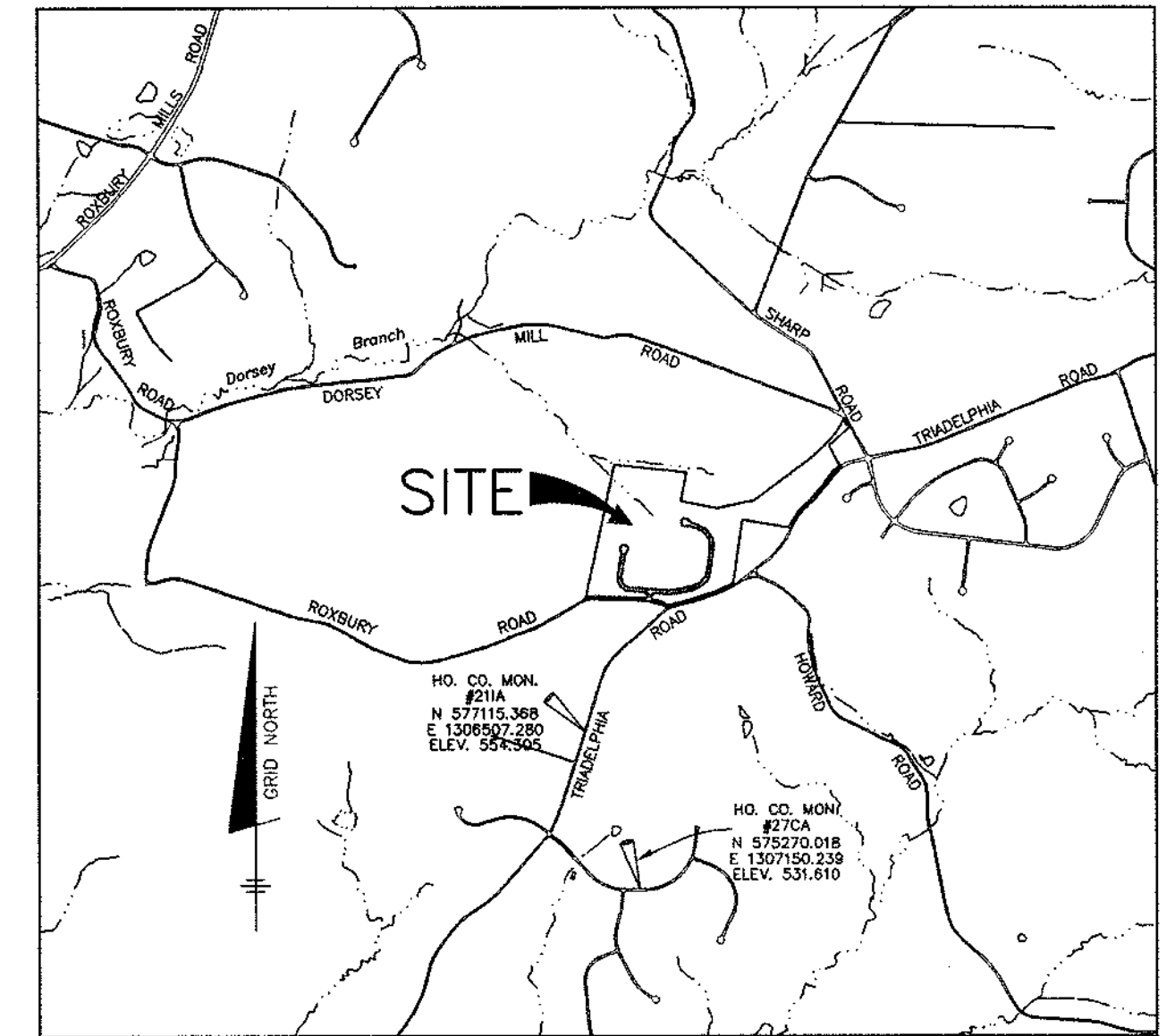
THIS PLAN REFLECTS ULTIMATE GRADING CONDITIONS FOR LOTS 17, 18 AND 23 - 27.





**LEGEND**

- EXISTING CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING WETLANDS
- EXISTING STREAM
- EXISTING SLOPES 25% OR GREATER
- EXISTING SLOPES 15% - 24.99%
- 100-YR FLOODPLAIN LIMIT
- SOILS DELINEATION LINE
- SOILS TYPE
- PROPOSED HOUSE AND DRIVEWAY LOCATION
- FOREST CONSERVATION SIGNAGE
- FOREST CONSERVATION EASEMENT



VICINITY MAP  
SCALE: 1" = 2000'

**SITE DATA**

GROSS AREA:	62.3
100 YEAR FLOODPLAIN	1.8
NET TRACT AREA	60.5
EXISTING FOREST	23.4
AFFORESTATION THRESHOLD	12.1
REFORESTATION THRESHOLD	15.1
CLEARING PROPOSED	16.8
PROPOSED FOREST RETENTION	6.6
REFORESTATION REQUIRED	19.1
ONSITE REFORESTATION PROPOSED	15.4
OFFSITE REFORESTATION PROVIDED ON ADJACENT PRES. PARCEL 'A' CLARKS WOODS 1	3.7

**FCE ACREAGE CHART**

EASEMENT	RETENTION	REFORESTATION
1	3.8 AC.	10.1 AC.
2	-	1.3 AC.
3	-	0.5 AC.
4	-	0.6 AC.
5	-	2.0 AC.
6	2.8 AC.	0.9 AC.
<b>TOTALS</b>	<b>6.6 AC.</b>	<b>15.4 AC.</b>

**SOILS LEGEND**

MAP SYMBOL	SOIL GROUP	SOIL TYPE
Ba	D*	BAILE SILT LOAM
ChB2	B	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
ChC3	B	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
E1A*	B	ELLOAK SILT LOAM, 0 TO 3 PERCENT SLOPES
E1B2	B	ELLOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
G1B2	B	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
G1C2	B	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
ChB2	C*	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
M1C2	B	MANOR LOAM, 8 TO 5 PERCENT SLOPES, MODERATELY ERODED
M1C3	B	MANOR LOAM, 8 TO 5 PERCENT SLOPES, SEVERELY ERODED
M1D3	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED

\* INDICATES HYDRIC SOILS  
TAKEN FROM SOIL SURVEY, HOWARD COUNTY, MARYLAND (ISSUED JULY 1968) MAP NO. 13 AND 17

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS  
8480 BALTIMORE NATIONAL PIKE # SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 • FAX: 410-465-6844  
EMAIL: BENCHMKT@CS.COM

OWNER: EDGEWOOD FARM, INC. 14919 ROXBURY ROAD GLENELG, MARYLAND 21737	PROJECT: <b>TRIADELPHIA CROSSING PHASE 1</b> LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'I'
DEVELOPER: TOLL BROTHERS, INC. 7164 COLUMBIA GATEWAY DRIVE SUITE 230 COLUMBIA, MARYLAND 21046 410-872-9105	LOCATION: TAX MAP: 21 GRID: 17 & 23 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE: <b>FOREST CONSERVATION PLAN</b>	
DATE: JUNE, 2004	PROJECT NO. 1634
DESIGN: DBT	DRAFT: DBT
CHECK: CAM	SCALE: AS SHOWN
SHEET 18 OF 17	

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William F. Bloomer* 8-2-04  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*David Hamstra* 8/4/04  
CHIEF, DIVISION OF LAND DEVELOPMENT

DATE: 8/4/04

PLAN VIEW  
SCALE: 1" = 100'

**Eco-Science Professionals, Inc.**  
CONSULTING ECOLOGISTS  
P.O. Box 5006 Glen Arm, MD 21057 (410) 592-6752

MD DNR Qualified Professional  
USACOW Wetland Delineator  
Certification # YDC0933DD0610044D2  
*John P. Canales*



**PLANTING SCHEDULE**

**FOREST CONSERVATION EASEMENT #1 (10.1 ACRES±)**

QTY.	SPECIES	SIZE	SPACING
345	Acer rubrum - Red Maple	2-3" WHIP	**
290	Cornus florida - Flowering dogwood	2-3" WHIP	**
425	Juglans nigra - Black Walnut	2-3" WHIP	**
350	Juniperus virginiana - Red Cedar	2-3" WHIP	**
425	Liriodendron tulipifera - Poplar	2-3" WHIP	**
250	Nyssa sylvatica - Black gum	2-3" WHIP	**
450	Prunus serotina - Black Cherry	2-3" WHIP	**
250	Quercus alba - White Oak	2-3" WHIP	**
250	Quercus rubra - Red Oak	2-3" WHIP	**
200	Sassafras albidum - Sassafras	2-3" WHIP	**
200	Viburnum prunifolium - Blackhaw	2-3" WHIP	**

**FOREST CONSERVATION EASEMENT #4 (0.6 ACRES±)**

QTY.	SPECIES	SIZE	SPACING
20	Acer rubrum - Red Maple	2-3" WHIP	**
10	Cornus florida - Flowering dogwood	2-3" WHIP	**
35	Juglans nigra - Black Walnut	2-3" WHIP	**
10	Juniperus virginiana - Red Cedar	2-3" WHIP	**
35	Liriodendron tulipifera - Poplar	2-3" WHIP	**
10	Nyssa sylvatica - Black gum	2-3" WHIP	**
30	Prunus serotina - Black Cherry	2-3" WHIP	**
20	Quercus alba - White Oak	2-3" WHIP	**
20	Quercus rubra - Red Oak	2-3" WHIP	**
20	Viburnum prunifolium - Blackhaw	2-3" WHIP	**

**OFFSITE FOREST CONSERVATION EASEMENT (3.7 ACRES±)**

QTY.	SPECIES	SIZE	SPACING
135	Acer rubrum - Red Maple	2-3" WHIP	**
70	Cornus florida - Flowering dogwood	2-3" WHIP	**
235	Juglans nigra - Black Walnut	2-3" WHIP	**
50	Juniperus virginiana - Red Cedar	2-3" WHIP	**
235	Liriodendron tulipifera - Poplar	2-3" WHIP	**
120	Nyssa sylvatica - Black gum	2-3" WHIP	**
120	Prunus serotina - Black Cherry	2-3" WHIP	**
90	Quercus alba - White Oak	2-3" WHIP	**
90	Quercus rubra - Red Oak	2-3" WHIP	**
75	Sassafras albidum - Sassafras	2-3" WHIP	**
75	Viburnum prunifolium - Blackhaw	2-3" WHIP	**

**FOREST CONSERVATION EASEMENT #2 (1.3 ACRES±)**

QTY.	SPECIES	SIZE	SPACING
40	Acer rubrum - Red Maple	2-3" WHIP	**
20	Cornus florida - Flowering dogwood	2-3" WHIP	**
65	Juglans nigra - Black Walnut	2-3" WHIP	**
15	Juniperus virginiana - Red Cedar	2-3" WHIP	**
15	Liriodendron tulipifera - Poplar	2-3" WHIP	**
40	Nyssa sylvatica - Black gum	2-3" WHIP	**
35	Prunus serotina - Black Cherry	2-3" WHIP	**
65	Quercus alba - White Oak	2-3" WHIP	**
65	Quercus rubra - Red Oak	2-3" WHIP	**
25	Sassafras albidum - Sassafras	2-3" WHIP	**
25	Viburnum prunifolium - Blackhaw	2-3" WHIP	**

**FOREST CONSERVATION EASEMENT #5 (2.0 ACRES±)**

QTY.	SPECIES	SIZE	SPACING
70	Acer rubrum - Red Maple	2-3" WHIP	**
30	Cornus florida - Flowering dogwood	2-3" WHIP	**
105	Juglans nigra - Black Walnut	2-3" WHIP	**
50	Juniperus virginiana - Red Cedar	2-3" WHIP	**
105	Liriodendron tulipifera - Poplar	2-3" WHIP	**
40	Nyssa sylvatica - Black gum	2-3" WHIP	**
90	Prunus serotina - Black Cherry	2-3" WHIP	**
75	Quercus alba - White Oak	2-3" WHIP	**
75	Quercus rubra - Red Oak	2-3" WHIP	**
30	Sassafras albidum - Sassafras	2-3" WHIP	**
30	Viburnum prunifolium - Blackhaw	2-3" WHIP	**

**FOREST CONSERVATION EASEMENT #3 (0.5 ACRES±)**

QTY.	SPECIES	SIZE	SPACING
20	Acer rubrum - Red Maple	2-3" WHIP	**
10	Juglans nigra - Black Walnut	2-3" WHIP	**
10	Juniperus virginiana - Red Cedar	2-3" WHIP	**
10	Liriodendron tulipifera - Poplar	2-3" WHIP	**
40	Prunus serotina - Black Cherry	2-3" WHIP	**
15	Quercus alba - White Oak	2-3" WHIP	**
15	Quercus rubra - Red Oak	2-3" WHIP	**
15	Viburnum prunifolium - Blackhaw	2-3" WHIP	**

**FOREST CONSERVATION EASEMENT #6 (0.9 ACRES±)**

QTY.	SPECIES	SIZE	SPACING
30	Acer rubrum - Red Maple	2-3" WHIP	**
15	Cornus florida - Flowering dogwood	2-3" WHIP	**
55	Juglans nigra - Black Walnut	2-3" WHIP	**
15	Juniperus virginiana - Red Cedar	2-3" WHIP	**
55	Liriodendron tulipifera - Poplar	2-3" WHIP	**
15	Nyssa sylvatica - Black gum	2-3" WHIP	**
40	Prunus serotina - Black Cherry	2-3" WHIP	**
30	Quercus alba - White Oak	2-3" WHIP	**
30	Quercus rubra - Red Oak	2-3" WHIP	**
30	Viburnum prunifolium - Blackhaw	2-3" WHIP	**

**PLANTING/SOIL SPECIFICATIONS**

- PLANTING OF NURSERY STOCK SHALL TAKE PLACE BETWEEN MARCH 15TH AND APRIL 30TH. CONTAINER STOCK MAY BE PLANTED BETWEEN MARCH 15TH AND OCTOBER 30TH.
- A THREE (3) INCH LAYER OF TOPSOIL SHALL BE SPREAD OVER ALL REFORESTATION AREAS IMPACTED BY SITE GRADING TO ASSURE A SUITABLE PLANTING MEDIA. PLANTING AREAS NOT IMPACTED BY SITE GRADING SHALL HAVE NO ADDITIONAL TOPSOIL INSTALLED.
- ALL GRADUATED PLANTING STOCK SHALL HAVE THEIR ROOT SYSTEMS TRIMMED INTO AN ANTI-DESICCANT GEL. SPRINKLING PLANTING STOCK SHALL BE DONE WITH THE TOP OF THE ROOTS EXPOSED TO THE AIR.
- PLANTING SHALL BE DONE IN SUCH A MANNER AS TO LEAVE WITH THE TOP OF THE EXISTING GRADE. EACH HOLE IN THE PLANTING PITS SHALL BE FILL WITH SOIL TO 1" BELOW THE TOP OF THE EXISTING GRADE.
- FOR EACH HOLE TO BE EXCAVATED, THE CONTRACTOR SHALL PROVIDE A 2" X 2" X 2" LUMBER POST TO BE SET IN THE HOLE TO BE USED AS AN ANCHOR FOR THE PLANTING STOCK.
- A TWO (2) INCH LAYER OF HARDWOOD MULCH SHALL BE PLACED OVER THE ROOT AREA OF ALL PLANTING STOCK.
- PLANT MATERIAL SHALL BE TRANSPORTED TO THE SITE IN A TAMPED OR COVERED TRUCK. PLANTS SHALL BE KEPT MOIST PRIOR TO PLANTING.
- ALL NON-ORGANIC DEBRIS ASSOCIATED WITH THE PLANTING OPERATION SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.

**SEQUENCE OF CONSTRUCTION**

- PLANTS SHALL BE INSTALLED AS PER PLANT SCHEDULE AND PLANTING/SOIL SPECIFICATIONS FOR THE PROJECT.
- UPON COMPLETION OF THE PLANTING, SIGNAGE SHALL BE INSTALLED AS PER THE FOREST RETENTION AREA AND FOREST CONSERVATION EASEMENT REQUIREMENTS.
- PLANTINGS SHALL BE MAINTAINED AND GUARANTEED IN ACCORDANCE WITH THE MAINTENANCE AND GUARANTEE REQUIREMENTS FOR PROJECT.

**MAINTENANCE OF PLANTINGS**

- MAINTENANCE OF ALL PLANTINGS SHALL LAST FOR A PERIOD OF 24 MONTHS.
- ALL PLANTINGS SHALL BE MAINTAINED THROUGH THE SECOND GROWING SEASON. WATERING MAY BE MORE OR LESS FREQUENT DEPENDING ON WEATHER CONDITIONS. DURING SECOND GROWING SEASON, WEEDS AND EXOTIC SPECIES SHALL BE REMOVED FROM REFORESTATION AREAS. OLD FIELD SUCCESSIONAL SPECIES SHALL BE REMOVED.
- PLANTS WILL BE EXAMINED A MINIMUM OF TWO TIMES DURING THE GROWING SEASON FOR SERIOUS PLANT PESTS AND DISEASES. SERIOUS PROBLEMS WILL BE TREATED WITH THE APPROPRIATE PESTICIDES.
- DEAD BRANCHES WILL BE PRUNED FROM PLANTINGS.

**GUARANTEE REQUIREMENTS**

- AFTER ONE GROWING SEASON, PLANT MATERIAL SHALL BE MAINTAINED AT 80% SURVIVAL THRESHOLD. 24 MONTH MAINTENANCE PERIOD. ALL PLANT MATERIAL BELOW THE 75% THRESHOLD WILL BE REPLACED AT THE BEGINNING OF THE NEXT GROWING SEASON.
- THE CONTRACTOR WILL NOT BE LIABLE FOR PLANT LOSS DUE TO THEFT OR VANDALISM.

**SURETY FOR REFORESTATION**

- THE DEVELOPER SHALL POST A SURETY BOND, LETTER OF CREDIT TO ENSURE THAT REFORESTATION PLANTING IS COMPLETED. UPON ACCOMPLISHMENT OF THE FOREST BY THE COUNTY, THE BOND SHALL BE RELEASED.

**MULTIFLORA ROSE CONTROL NOTE**

MULTIFLORA ROSE IS PREVALENT IN CERTAIN AREAS TO BE AFFORDED. PRIOR TO PLANTING ALL MULTIFLORA ROSE SHOULD BE REMOVED. REMOVAL OF THE ROSE MAY BE PERFORMED WITH MOWING AND HERBICIDE TREATMENTS. PHYSICAL REMOVAL OF ALL TOP GROWTH FOLLOWED BY A PERIODIC HERBICIDE TREATMENT OF STUMP SPROUTS IS RECOMMENDED. NATIVE TREE AND SHRUB SPECIES OCCURRING WITHIN THE FOREST CONSERVATION EASEMENT SHOULD BE MAINTAINED. HERBICIDE TREATMENTS SHALL OCCUR ON 2 MONTH INTERVALS DURING THE FIRST GROWING SEASON AND ONCE EACH IN THE SPRING AND FALL FOR SUBSEQUENT YEARS. HERBICIDE USED SHALL BE MADE SPECIFICALLY TO ADDRESS MULTIFLORA ROSE AND SHALL BE APPLIED AS PER MANUFACTURERS SPECIFICATIONS. CARE SHOULD BE TAKEN NOT TO SPRAY PLANTED TREES OR NATURALLY OCCURRING NATIVE TREE/SHRUB SEEDLINGS. IT IS RECOMMENDED THAT INITIATION OF ROSE REMOVAL BEGIN AT LEAST SIX MONTHS PRIOR TO PLANTING.

**FCP NOTES:**

- ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
- THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE, FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
- THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
- NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
- TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE BOUNDARIES WHICH OCCUR WITHIN 15 FEET OF THE PROPOSED LIMITS OF DISTURBANCE.
- PERMANENT SIGNAGE SHALL BE PLACED 50-100' APART ALONG THE BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS.
- THE TOTAL FOREST CONSERVATION OBLIGATION AMOUNT OF 25.7 SHALL BE MET BY THE ON-SITE RETENTION OF 6.6 AC. WITHIN A FOREST CONSERVATION EASEMENT, THE ON-SITE REFORESTATION OF 15.4 AC. WITHIN A FOREST CONSERVATION EASEMENT AND BY THE OFF-SITE REFORESTATION OF 3.7 AC. WITHIN A FOREST CONSERVATION EASEMENT LOCATED ON PRESERVATION PARCEL 'A' OF THE CLARKS WOODS 1 (F-04-119) SUBDIVISION WITH A DPM, DEVELOPER'S AGREEMENT WITH SURETY IN THE TOTAL AMOUNT OF \$473,497.00 (\$392,911.00 ON-SITE AND \$80,586.00 OFF-SITE).

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

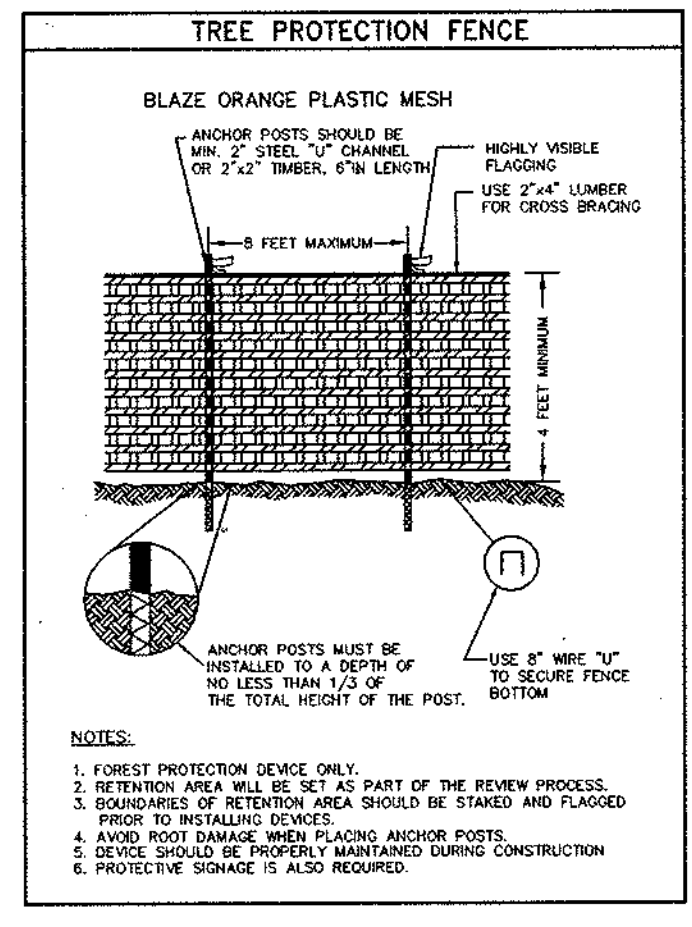
*Walter J. White Jr.* 8-2-04  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*Cindy Hamilton* 8/10/04  
CHIEF, DIVISION OF LAND DEVELOPMENT

*MAJ*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

KEY: PLANTINGS TO BE SPACED 11 FOOT CENTERS - PLANTINGS SHOULD BE INSTALLED IN ROWS TO FACILITATE FUTURE MAINTENANCE WHERE POSSIBLE ROWS SHOULD BE MADE ALONG CONTOUR. PER COUNTY REQUIREMENTS, TREE SHELTERS SHOULD BE USED.



**PLANTING NOTES:**

- MULTIFLORA ROSE CONTROL MAY BE REQUIRED AS PART OF THIS PLANTING PLAN.
- BAREROOT PLANT MATERIAL MAY BE USED TO OFFSET THE COST OF MULTIFLORA ROSE REMOVAL AND MAINTENANCE. IF BAREROOT MATERIAL IS USED IT MUST BE PLANTED IN MARCH - APRIL AND AN ANTI-DESICCANT GEL SHOULD BE UTILIZED TO PROTECT ROOT SYSTEMS. CONTAINER GROWN STOCK IS RECOMMENDED.
- PLANTS SHOULD BE FLAGGED TO AID ON LOCATION DURING MAINTENANCE. PLANTINGS SHOULD ALSO BE PLANTED IN A GRID PATTERN TO FACILITATE MAINTENANCE AND REMOVAL OF INVASIVE AND EXOTIC SPECIES.

**LEGEND**

- EXISTING CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING WETLANDS
- EXISTING STREAM
- EXISTING SLOPES 25% OR GREATER
- EXISTING SLOPES 15% - 24.99%
- 100-YR FLOODPLAIN LIMIT
- SOILS DELINEATION LINE
- SOILS TYPE
- PROPOSED HOUSE AND DRIVEWAY LOCATION
- FOREST CONSERVATION SIGNAGE
- FOREST CONSERVATION EASEMENT

**FOREST RETENTION AREA**

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS PROHIBITED

VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1991

**Forest Conservation Area**

**REFORESTATION PROJECT**

*Trees For Your Future*

**FLOODPLAIN NOTE:**

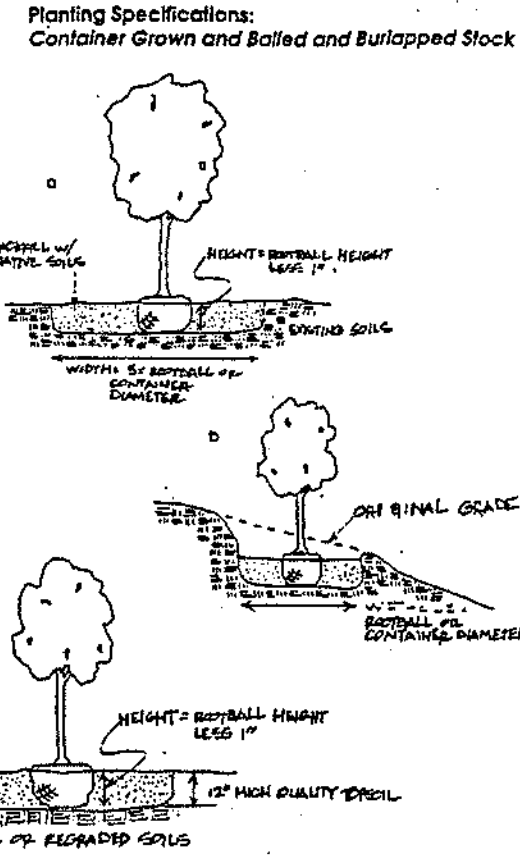
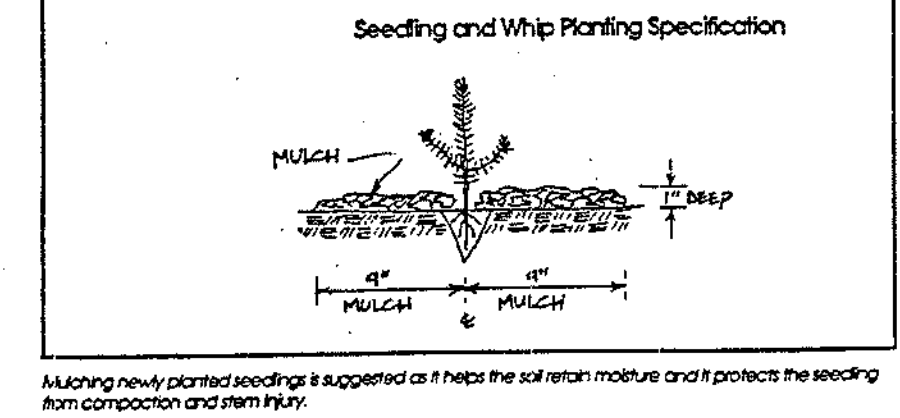
PORTIONS OF THE SITE OCCURRING WITHIN THE 100-YEAR FLOODPLAIN ARE NOT INCLUDED AS PART OF THE NET TRACT AREA OF THE SITE. AREAS OF FLOODPLAIN FOREST OCCURRING WITHIN THE LIMITS OF A FOREST CONSERVATION EASEMENT WILL BE PROTECTED BY THE EASEMENT RESTRICTIONS BUT HAVE NOT BEEN CREDITED TOWARD THE PROJECTS FCA OBLIGATIONS.

**Eco-Science Professionals, Inc.**

CONSULTING ECOLOGISTS

John P. Casales

P.O. Box 506 Glen Arm, Md 21057 (410) 592-6752



**APPENDIX G FOREST CONSERVATION WORKSHEET**

NOTE: THIS SUBDIVISION PLAN IS USING "RURAL CLUSTER OPTION B" OF THE APPENDIX L OF THE FOREST CONSERVATION MANUAL BY INCLUDING THE ENTIRE SITE AREA IN THE CALCULATIONS TO SATISFY ITS FOREST CONSERVATION REQUIREMENT.

I. BASIC SITE DATA		ACRES (1/10 acre)
GROSS SITE AREA		82.3
AREA WITHIN 100 YEAR FLOODPLAIN		1.8
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)		N/A
NET TRACT AREA		60.5
LAND USE CATEGORY (R-RLD, R-RMD, R-S, C/1/O, I)		RC-DEO

II. INFORMATION FOR CALCULATIONS		ACRES
A. NET TRACT AREA		60.5
B. REFORESTATION THRESHOLD (25% x A)		15.1
C. AFFORESTATION MINIMUM (20% x A)		12.1
D. EXISTING FOREST ON NET TRACT AREA		23.4
E. FOREST AREAS TO BE CLEARED		16.8
F. FOREST AREAS TO BE RETAINED		6.6

**III. DETERMINING REQUIREMENTS: AFFORESTATION OR REFORESTATION**

- Reforestation.**  
If existing forest areas equal or exceed the afforestation minimum (if D equals or is more than C), and clearing of forest areas is proposed, reforestation requirements may apply.  
GO TO SECTION IV

- If existing forest areas equal or exceed the afforestation minimum (if D equals or is more than C), and no clearing of existing forest resources is proposed, no reforestation is required. No further calculations are needed.

- Afforestation.**  
If existing forest areas are less than the afforestation minimum (if D is less than C), afforestation requirements apply.  
GO TO SECTION V

IV. REFORESTATION CALCULATIONS		ACRES (1/10 acre)
A. NET TRACT AREA		60.5
B. REFORESTATION THRESHOLD (20% x A)		15.1
D. EXISTING FOREST ON NET TRACT AREA		23.4
E. FOREST AREAS TO BE CLEARED		16.8
F. FOREST AREAS TO BE RETAINED		6.6
G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD (D-F, if F equals or is greater than B, Alternate 1) (D-B, if F is less than B, Alternate 2)		9.3
H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD (B-F, if applicable)		8.5
I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD (F-B, Retention Credit, if applicable)		N/A

**SELECT THE ALTERNATE THAT APPLIES:**

- Clearing above the threshold only.**  
If forest areas to be retained equal or are greater than the reforestation threshold (if F equals or is greater than B), the following calculations apply:  
REFORESTATION FOR CLEARING ABOVE THRESHOLD  $G \times 1/4$   
CREDIT FOR FOREST AREAS RETAINED ABOVE THRESHOLD  $I = \text{Retention Credit}$   
TOTAL REFORESTATION REQUIRED  $(G \times 1/4) - I$   
If the total reforestation requirement is equal to or less than D, no reforestation is required.

REFORESTATION FOR CLEARING ABOVE THRESHOLD	2.1
REFORESTATION FOR CLEARING BELOW THRESHOLD	17.0
TOTAL REFORESTATION REQUIRED $(G \times 1/4) + (H \times 2)$	19.1

Since clearing occurs below the threshold, no forest retention credit is possible.

**BENCHMARK ENGINEERING, INC.**

ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE # SUITE 418  
ELICOTT CITY, MARYLAND 21043  
phone: 410-465-6105 • fax: 410-465-6644  
email: Benchmark@ccis.com

**OWNER:** EDGEWOOD FARM, INC. 14919 ROXBURY ROAD GLENELG, MARYLAND 21737

**PROJECT:** TRIADELPHIA CROSSING PHASE 1 LOTS 1-22 AND NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'H' AND NON-BUILDABLE BULK PARCEL 'I'

**DEVELOPER:** TOLL BROTHERS, INC. 7164 COLUMBIA GATEWAY DRIVE SUITE 230 COLUMBIA, MARYLAND 21046 410-872-9105

**LOCATION:** TAX MAP: 21 GRID: 17 & 23 PARCEL: 87 ZONED: RC-DEO FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**TITLE:** FOREST CONSERVATION PLAN

**DATE:** JUNE, 2004 **PROJECT NO.:** 1634

**DESIGN:** DBT **DRAFT:** DBT **CHECK:** CAM **SCALE:** AS SHOWN **SHEET 17 OF 17**