

FINAL ROAD CONSTRUCTION PLAN

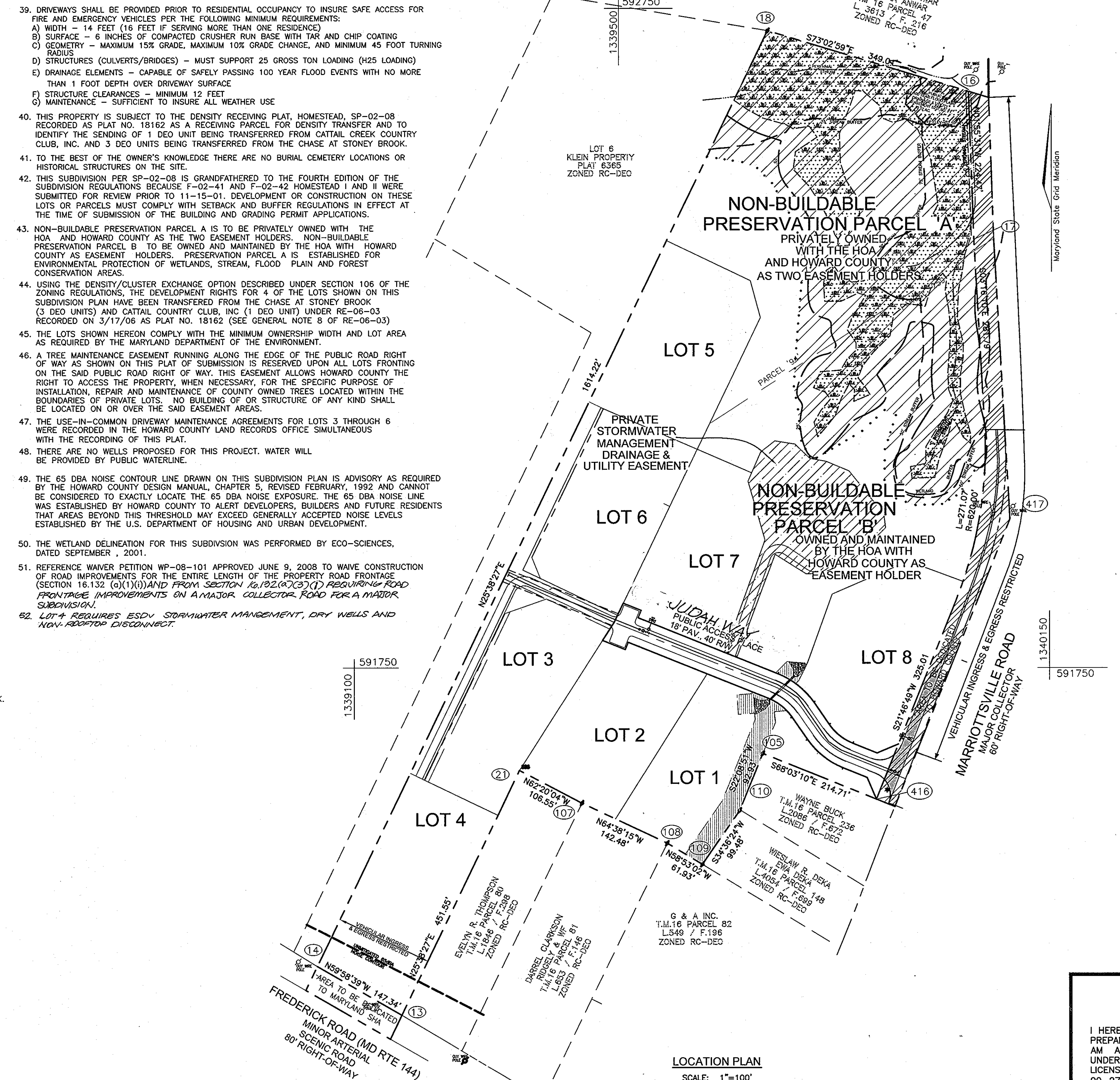
BRANTWOOD OVERLOOK

LOTS 1-8 AND NON-BUILDABLE PRESERVATION PARCELS 'A' & 'B'

HOWARD COUNTY, MARYLAND

SITE DATA
 LOCATION: TAX MAP 16, GRIDS 15, 16, 21 & 22, PARCELS '94' & '259'
 3RD ELECTION DISTRICT
 EXISTING ZONING: RC-DEO, AS PER THE 02-02-04 COMPREHENSIVE ZONING PLAN AND THE COMP. LITE ZONING REGULATION AMENDMENTS EFFECTIVE 07-28-06.
 GROSS AREA OF PROJECT: 17.01 AC.
 AREA OF 100-YEAR FLOOD PLAIN DRAINAGE & UTILITY EASEMENT: 0.12 AC (5237 SF)
 AREA OF STEEP SLOPES: 0.22 AC. (9640 SF AREA OUTSIDE OF THE FLOOD PLAIN±)
 NET AREA OF PROJECT: 16.67 AC
 AREA OF PROPOSED BUILDABLE LOTS: 8.50 AC (370,260 SF±)
 AREA OF OPEN SPACE REQUIRED: 0 AC
 NON-BUILDABLE AREA: 0 AC
 NON-BUILDABLE PROPOSED NON-BUILDABLE PARCELS: 0
 AREA OF PROPOSED RIGHT-OF-WAY: 1.40 AC (60,984 SF±)
 NUMBER OF LOTS/PARCELS PROPOSED: 8 BUILDABLE LOTS + 2 NON-BUILDABLE PRESERVATION PARCELS
 TOTAL APPROXIMATE LIMIT OF DISTURBANCE: 1.61 AC (70,176 SF±)

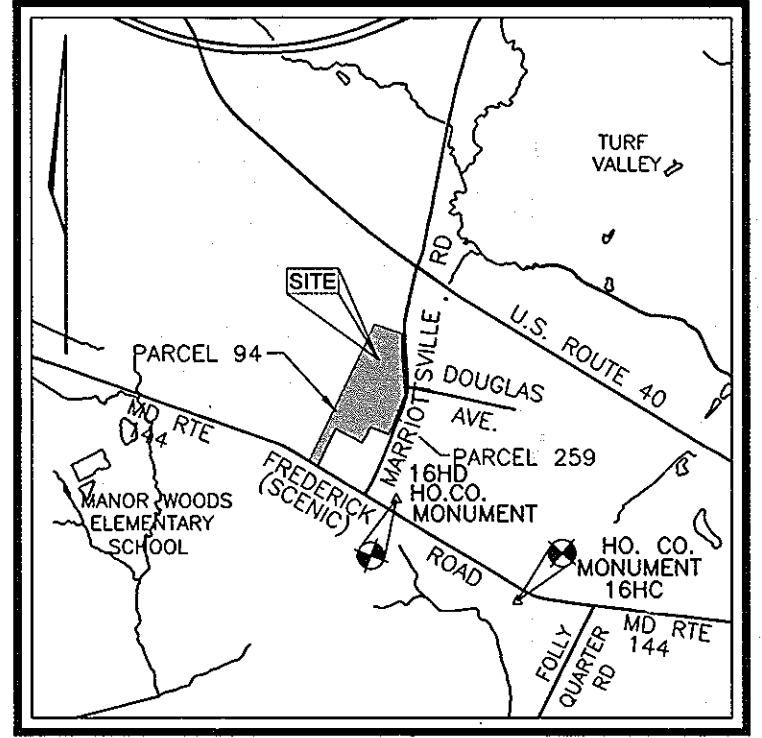
- GENERAL NOTES**
- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
 - DEED REFERENCE: 5871/35 (PARCEL 94) 5239/319 (PARCEL 259)
 - DENSITY: 16.66 AC/2 = 8
 NUMBER OF DWELLING UNITS PERMITTED BY RIGHT: 17.01 AC/4.25 = 4
 NUMBER OF DWELLING UNITS PROPOSED: 8 CLUSTER LOTS
 DEO'S REQUIRED: 4
 - THE SENDING PARCEL FOR THIS SUBDIVISION WILL BE THE RECORDED PROPERTIES OF "THE CHASE AT STONEY BROOK" AND "CATTAIL CREEK COUNTRY CLUB, INC." PER RE 06-03.
 - THE PROJECT BOUNDARY IS BASED ON A SURVEY PERFORMED BY FREDERICK WARD ASSOCIATES, DATED AUGUST 2001.
 - THE TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD RUN TOPOGRAPHY SURVEY BY FREDERICK WARD ASSOCIATES, DATED AUGUST 2001.
 - WATER FOR THIS PROJECT WILL BE PUBLIC AND SEWER WILL BE PRIVATE. WATER WILL PROVIDED THROUGH CONTR. NO. 44-3480.
 - STORM WATER MANAGEMENT TO BE PROVIDED FOR THE DEVELOPMENT. THE STORM WATER MANAGEMENT FACILITY IS HAZARD CLASS 'A' AND DOES NOT QUALIFY AS A MD-378 FACILITY. THE MICROPOOL EXTENDED DETENTION POND W/IN 0.42 AC PRIVATELY OWNED AND MAINTAINED BY THE HOA.
 - DRY WELLS TO BE PROVIDED FOR EACH HOUSE AND WILL BE PROVIDED WITH BUILDING PERMITS
 - STREAMS AND WETLANDS SHOWN ON SITE ARE BASED ON A FIELD INVESTIGATION PERFORMED BY ECO-SCIENCES, DATED SEPTEMBER 2001.
 - THE 100-YEAR FLOODPLAIN SHOWN HEREON IS BASED ON ANALYSIS PERFORMED BY FREDERICK WARD ASSOCIATES.
 - FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE FOR THIS SUBDIVISION WILL BE FULFILLED BY A FOREST CONSERVATION RETENTION EASEMENT ON NON-BUILDABLE PRESERVATION PARCEL A IN THE AMOUNT OF 6.38 AC, AND A FEE IN LIEU PAYMENT IN THE AMOUNT OF \$327.00 FOR THE REQUIRED REFORESTATION A FINANCIAL SURETY IN THE AMOUNT OF \$55,583.00 WILL BE POSTED WITH THIS CONSERVATION MAINTENANCE AGREEMENT TOTAL FOREST CONSERVATION OBLIGATION FOR THIS SUBDIVISION IS 6.39 AC. RETENTION (6.38 AC) 277912.80 SF, x 0.20 = 55583.00 FEE-IN-LIEU FOR REMAINING REFORESTATION 0.01AC. 435.60SF. x0.75 = \$327.00
 - A TRAFFIC STUDY WAS PREPARED BY THE TRAFFIC GROUP, DATED MARCH 29, 2002.
 - ALL LANDSCAPING REQUIREMENTS AS SET FORTH IN SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL SHALL BE COMPLIED WITH. FINANCIAL SURETY FOR THE REQUIRED 23 SHADE TREES AND 2 EVERGREEN TREES IN THE AMOUNT OF \$7200.00 WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.
 - STREET LIGHTING IS NOT REQUIRED FOR THIS SITE.
 - SEDIMENT AND EROSION CONTROL IS PROVIDED FOR THIS SITE.
 - THIS PROPERTY IS WITHIN THE ARLINGTON DISTRICT.
 - TO THE BEST OF THE OWNER'S KNOWLEDGE, THERE ARE NO BURIAL/CEMETARY LOCATIONS ON SITE.
 - STREET TREES ARE PROVIDED FOR THIS SUBDIVISION IN ACCORDANCE WITH SECTION 16.124(e)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 31 STREET TREES IN THE AMOUNT OF \$9,300 WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.
 - NON-BUILDABLE PRESERVATION PARCEL 'A' TO BE PRIVATELY OWNED WITH THE HOA AND HOWARD COUNTY AS THE TWO EASEMENT HOLDERS. NON-BUILDABLE PRESERVATION PARCEL B TO BE OWNED AND MAINTAINED BY THE HOA WITH HOWARD COUNTY AS EASEMENT HOLDERS.
 - EXISTING STRUCTURES ON LOT 4 ARE TO REMAIN. NO ADDITIONS OR EXPANSIONS ARE ALLOWED UNLESS IN COMPLIANCE WITH THE APPLICABLE ZONING REGULATIONS.
 - A NOISE STUDY WAS PREPARED BY FREDERICK WARD ASSOCIATES, DATED SEPTEMBER 2001 AND APPROVED UNDER SP-02-08.
 - NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAMS, OR THEIR BUFFERS, AND THE FOREST CONSERVATION EASEMENTS AND 100 YEAR FLOODPLAIN.
 - LOTS 3-6 WILL UTILIZE A USE-IN-COMMON DRIVEWAY. HOWARD COUNTY STANDARD DETAIL NO. R-6.06 WILL BE UTILIZED FOR THE ENTRANCE AT THE INTERSECTION OF THE PUBLIC ROAD.
 - FREDERICK ROAD (MARYLAND ROUTE 144) IS A SCENIC ROAD.
 - TREE PROTECTION PROVIDED AT THE LIMITS OF DISTURBANCE WHERE GRADING IS ADJACENT TO ENVIRONMENTAL AREAS.
 - THIS SITE HAS BEEN SUBDIVIDED IN ACCORDANCE WITH CLUSTER SUBDIVISION PROVISIONS OF SECTION 106 OF THE HOWARD COUNTY ZONING REGULATIONS.
 - THIS SUBDIVISION COMPLIES WITH THE 4TH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 50-2001.
 - WATER SERVICE TO LOTS 1-8 WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122(b) OF THE HOWARD COUNTY CODE. PUBLIC WATER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME. ACCESS TO WATER HAS BEEN PROVIDED UNDER CONTRACT NO. 44-3480.
 - REFUSE COLLECTION, SNOW REMOVAL, AND MAINTENANCE FOR LOTS 3-6 SHALL BE PROVIDED AT THE JUNCTION OF THE PRIVATE USE-IN-COMMON ACCESS EASEMENT AND RIGHT-OF-WAY OF JUDAH WAY.
 - THE PURPOSE OF NON-BUILDABLE PRESERVATION PARCEL 'A' IS TO PRESERVE EXISTING FOREST, STREAMS, STREAM BUFFERS, WETLANDS AND WETLAND BUFFERS. THE PURPOSE OF NON-BUILDABLE PRESERVATION PARCEL 'B' IS TO CONSTRUCT A STORMWATER MANAGEMENT FACILITY FOR THIS SUBDIVISION.
 - THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT OF 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENT INTO THE PRIVATE SEWAGE EASEMENT.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION 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 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
 MISS UTILITY 1-800-257-7777
 VERIZON TELEPHONE CO. 725-8976
 HOWARD COUNTY BUREAU OF UTILITIES: 313-2366
 VERIZON CABLE LOCATION DIVISION: 383-3553
 B.G.&E. CO. CONTRACTOR SERVICES: 850-4620
 B.G.&E. CO. UNDERGROUND DAMAGE CONTROL: 787-4620
 STATE HIGHWAY ADMINISTRATION: 531-5533
 - TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PACEMENT OF ANY ASPHALT.
 - STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)". A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
 - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE GAP SHALL BE MOUNTED ON TOP OF EACH POST.



STORMWATER MANAGEMENT REQUIREMENTS

DRAINAGE AREA	AREA AC.	Cpv	WQv	Rev
DA 1	16.4	12,000 CF (3)	768 AC-FT (2)	0.40 AC-FT (1)
DA 2	7.5	0 CF (4)	0 AC-FT (5)	0 AC-FT (5)

- REV PROVIDED BY ROOFTOP DISCONNECTS.
- WQV PROVIDED FOR BY ENVIRONMENTALLY SENSITIVE CREDIT EXCLUDING THE PROPOSED ROAD RIGHT-OF-WAY. REMAINING WQV PROVIDED IN THE POND AS EXTENDED DETENTION AND MICROPOOL.
- INCLUDES SORT OF WQV REMAINING SORT PROVIDED IN MICROPOOL.
- NOT REQUIRED FOR ENVIRONMENTALLY SENSITIVE CREDIT AREA SINCE Cpv IS 2 CFS.
- NOT REQUIRED DUE TO ENVIRONMENTALLY SENSITIVE CREDIT AREA (NO DEVELOPMENT).



VICINITY MAP
 SCALE: 1"=2000'
 ADC 11A5

LEGEND

- WETLANDS
- VARIABLE WIDTH ACCESS EASEMENT FOR LOTS 3 THRU 6
- PUBLIC DRAINAGE & UTILITY EASEMENT
- PUBLIC STORM WATER MANAGEMENT CREDIT
- AREA TO BE DEDICATED TO HOWARD COUNTY
- PRIVATE STORMWATER MANAGEMENT DRAINAGE & UTILITY EASEMENT HOWARD COUNTY
- 100 YR FLOODPLAIN DRAINAGE & UTILITY EASEMENT

BENCHMARKS

NO.	NORTHING	EASTING	ELEVATION	TYPE
16HC	N 589780.908	E 1341530.147		
16HD	N 590674.171	E 1340043.586		

MINIMUM LOT SIZE CHART

LOT NO.	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZE
4	57214 SQ. FT.	8666 SQ. FT.	48548 SQ. FT.
5	54682 SQ. FT.	7610 SQ. FT.	47052 SQ. FT.

SHEET INDEX

DESCRIPTION	SHEET NO.
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GRADING SEDIMENT & EROSION CONTROL PLAN	3 OF 9
GRADING SEDIMENT & EROSION CONTROL PLAN	4 OF 9
SEDIMENT & EROSION CONTROL DETAILS	5 OF 9
STORM DRAIN DRAINAGE AREA MAP FOR CULVERT	6 OF 9
STORMWATER MANAGEMENT DETAILS	7 OF 9
LANDSCAPE PLAN & DETAILS	8 OF 9
FOREST CONSERVATION PLAN & DETAILS	9 OF 9

DENSITY EXCHANGE CHART

TOTAL GROSS AREA OF SUBDIVISION	17.01 ACRES
AREA OF 100 YEAR FLOODPLAIN	0.12 ACRES
AREA OF 25% SLOPES (OUTSIDE FLOODPLAIN)	0.22 ACRES
NET TRACT AREA	16.67 ACRES
NUMBER OF RESIDENTIAL UNITS ALLOWED BY RIGHT	4 (GROSS AREA/4.25)
NUMBER OF RESIDENTIAL UNITS ALLOWED BY DENSITY EXCHANGE	8 (NET AREA/2)
NUMBER OF RESIDENTIAL UNITS PROPOSED	8
NUMBER OF DEO UNITS REQUIRED	4 (8-4 BASE DENSITY)
SENDING PARCEL INFORMATION	3 DEO UNITS FROM CHASE AT STONEY BROOK, LOCATED ON TAX MAP NO. 7, GRID 17, PARCEL NO. 133, LIBER 6377, FOLIO 176 AND 1 DEO UNIT FROM CATTAIL CREEK COUNTRY CLUB, INC. ON TAX MAP 21, GRID 3 PARCEL NO. 3, LIBER 4617, FOLIO 100, RE-06-03 RECORDED ON 3/17/06 AS PLAT NO. 18162.

OWNER/DEVELOPER
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVE., STE. 301
 ELLICOTT CITY, MARYLAND
 21043

COORDINATE CHART

POINT	NORTH	EAST
13	591187.14028	1339154.03280
14	591260.87540	1339026.43618
16	592614.30133	1340058.81154
17	592400.63689	1340065.98949
18	592716.13450	1339724.95400
21	591594.32913	1339348.20357
105	591619.77330	1339716.88000
107	591544.85690	1339443.57200
108	591483.82190	1339572.32900
109	591461.81920	1339265.34700
110	591533.69760	1339681.84500
416	591539.50599	1339916.07992
417	591975.48985	1340090.28362

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 5-3-08
 Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 9/19/05
 Chief, Division of Land Development

[Signature] 5/12/06
 Chief, Development Engineering Division

NO.	REVISION	DATE
2	PROVIDE ESDV LOT 4	1-30-12

FINAL ROAD CONSTRUCTION PLAN COVER SHEET
BRANTWOOD OVERLOOK
 LOTS 1-8 AND NON-BUILDABLE PRESERVATION PARCELS 'A' & 'B'

TAX MAP 16 BLOCK 15, 16, 21 & 22 PARCELS '94' & '259'
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 REF.: F-02-41, F-02-42, SP-02-08, RE-06-03, WP-08-101

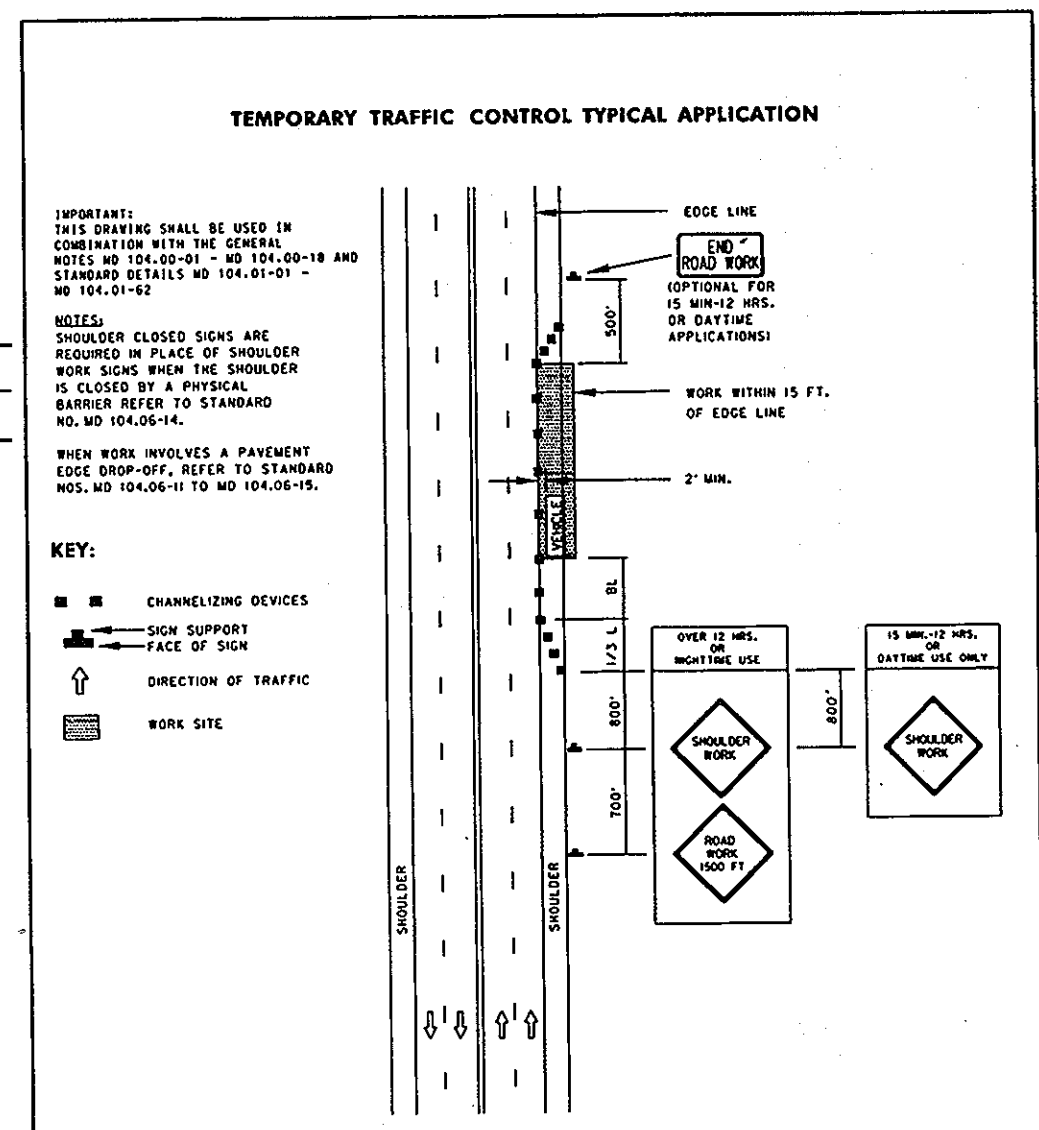
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410-461-7666 FAX: 410-461-8961

DESIGN BY: RHV/RJ
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 03-28-2008
 SCALE: AS SHOWN
 W.O. NO.: 2017112.00-05-65

1 SHEET OF 9

LEGEND

- EXISTING CONTOUR ---440---
- PROPOSED CONTOUR ---417---
- DIRECTION OF FLOW
- EXISTING TREES TO REMAIN
- SOILS
- AREA OF 15 TO 24.9 PERCENT SLOPES
- AREA OF 25 PERCENT OR GREATER SLOPES
- WETLANDS BUFFER
- STREAM CENTERLINE
- STREAM BUFFER
- PROP. STREET LIGHT
- 10' PUBLIC TREE MAINTENANCE EASEMENT
- PUBLIC DRAINAGE & UTILITY EASEMENT
- VARIABLE WIDTH ACCESS EASEMENT FOR LOTS 3 THRU 6
- PRIVATE STORMWATER MANAGEMENT DRAINAGE & UTILITY EASEMENT



APPROVED	APPROVED	APPROVED	APPROVED
DATE	DATE	DATE	DATE

**Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION**
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
**SHOULDER WORK/MULTILANE UNDIV.
EQUALLY THAN 40 MPH**
 STANDARD NO. MD 104.03-02

PERCOLATION NOTES:

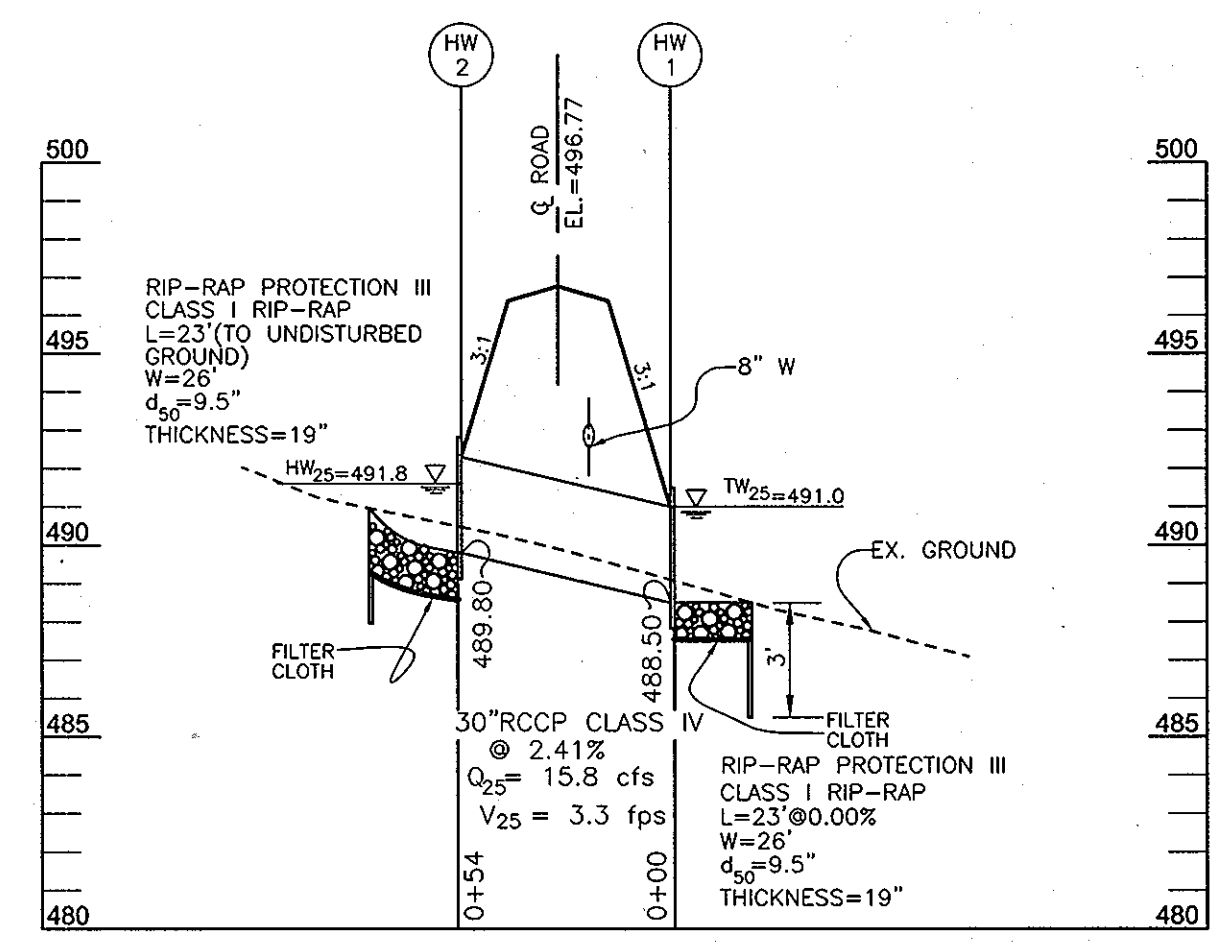
THIS AREA DESIGNATES A MINIMUM 10,000 SQ FT PRIVATE SEWAGE EASEMENT REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENTS OF ANY NATURE. IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE EASEMENTS SHALL BE NULL AND VOID UPON CONNECTION TO A PUBLIC SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENT INTO THE PRIVATE SEWAGE EASEMENT. RECORDED OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY.

THE PERCOLATION TEST HOLES SHOWN HEREON HAVE BEEN FIELD LOCATED AND SHOWN AS FOLLOWS:
 PASSED PERCOLATION TEST
 FAILED PERCOLATION TEST

THE LOT SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.

EXISTING WELL ON LOT 4 (PROPOSED) WILL BE PROPERLY ABANDONED AND SEALED BY A LICENSED WELL DRILLER PRIOR TO SUBMITTAL OF THE RECORD PLAT FOR SIGNATURE.

- LOT 4 ESDP**
1. PROVIDE NON-ROOFTOP DISCONNECT
 2. PROVIDE DRYWELLS
 3. REFERENCE DRYWELL DETAIL SHEET 7.
 4. DRYWELL 7.75'x 7.75'x 5'D, TYP 4 PLACES



PIPE SCHEDULE

PIPE SIZE	TYPE	TOTAL LENGTH
30"	RCCP CLASS IV	54 LF

STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	INV IN	INV OUT	REMARKS
HW-1	30" TYPE 'A' HEADWALL CIRCULAR	N 591737.26 E 1339764.17	491.49	-	489.80	SD 5.11
HW-2	30" TYPE 'A' HEADWALL CIRCULAR	N 591699.91 E 1339726.23	492.84	488.50	-	SD 5.11

OWNER/DEVELOPER
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVE., STE. 301
 ELLICOTT CITY, MARYLAND
 21043

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008.



SOIL TABLE

Soil	Description	Code
B ₀	BAILE SILT LOAM, (HYDRIC)	D
ChB ₂	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
M1D ₃	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	B
ChB ₂	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
ChC ₂	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
G1C ₃	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
CgC ₂	CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
CgB ₂	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 9-3-08
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 9/19/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 9/19/08
 CHIEF, DIVISION OF LAND DEVELOPMENT

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 8/28/08
 JOHN R. ROBERTSON
 ENGINEERS CERTIFICATE

"I hereby certify that this plan for sediment and erosion 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."

[Signature] 8/25/08
 ROBERT H. VOGEL
 DEVELOPER'S CERTIFICATE

"I/WE certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

[Signature] 8.25.08
 MICHAEL FLOW
 SIGNATURE OF DEVELOPER
 TRINITY QUALITY HOMES, INC.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRYWELLS

1. THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.
2. WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
3. A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
4. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN THE 72 HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
5. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
6. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

BE NOTE: BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.

2. TREES WITH MATURE HEIGHT GREATER THAN 25' SHALL NOT BE PLANTED WITHIN 20' OF EITHER SIDE OF THE UTILITY POLE LINE. TREES WITH MATURE HEIGHT GREATER THAN 40' SHALL NOT BE PLANTED WITHIN 45' OF THE UTILITY POLE LINE.
3. THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION WITHIN THE FOREST CONSERVATION EASEMENTS LOCATED IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OR A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT. IF BGE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST CONSERVATION EASEMENT, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS CONSTELLATION ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLY WITHHOLD PERMISSION.
4. THE PROPOSED DEVELOPER OR HIS AGENT SHALL PROVIDE A LIST OF TREES AND PLANTS AS SHOWN ON THE EXISTING MAP IN ACCORDANCE WITH THE LIST OF TREES AND PLANTS AS SHOWN ON THE EXISTING MAP.

NO.	REVISION	DATE
2	PROVIDE ESDP LOTS 4	1-30-12

**FINAL ROAD CONSTRUCTION PLAN
GRADING, SEDIMENT & EROSION CONTROL PLAN**

BRANTWOOD OVERLOOK
 LOTS 1-8 AND NON-BUILDABLE PRESERVATION PARCELS 'A' & 'B'

TAX MAP 16 BLOCK 15, 16, 21 & 22
 3RD ELECTION DISTRICT
 REF.: F-02-41-F-02-42, SP-02-08, RE-06-03, WP-08-101 PARCELS '94' & '25'
 HOWARD COUNTY, MARYLAND

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 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: RHW/RJ
 DRAWN BY: RJ
 CHECKED BY: RHW
 DATE: 03-28-2008
 SCALE: AS SHOWN
 W.O. NO.: 201712.00
 05-65

STATE OF MARYLAND PROFESSIONAL ENGINEER NO. 16193

3 SHEET OF 9



GRADING PLAN
SCALE: 1"=50'
MATCHLINE - SHEET 3 OF 9

- LEGEND**
- EXISTING CONTOUR
 - PROPOSED CONTOUR
 - DIRECTION OF FLOW
 - EXISTING TREES TO REMAIN
 - AREA OF 15 TO 24.9 PERCENT SLOPES
 - AREA OF 25 PERCENT OR GREATER SLOPES
 - PUBLIC FOREST CONSERVATION AREA (RETENTION)
 - WETLANDS
 - NO WOODY BUFFER
 - WETLANDS BUFFER
 - STREAM CENTERLINE
 - STREAM BUFFER
 - PROP. STREET LIGHT
 - PUBLIC STORM WATER MANAGEMENT CREDIT EASEMENT
 - VARIABLE WIDTH ACCESS EASEMENT FOR LOTS 4, 5 & 6
 - PUBLIC 100 YEAR FLOODPLAIN DRAINAGE & UTILITY EASEMENT
 - PRIVATE STORMWATER MANAGEMENT DRAINAGE & UTILITY EASEMENT
 - TREE PROTECTION FENCE

APPROVED: DEPARTMENT OF PUBLIC WORKS
W. J. ... 9-3-08
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
J. R. ... 9/19/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

C. J. ... 9/19/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
J. K. ... 8/28/08
 HOWARD SCD

ENGINEERS CERTIFICATE

"I hereby certify that this plan for sediment and erosion 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."

Robert H. Vogel 8/25/08
 Signature of Engineer Date
 ROBERT H. VOGEL

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 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."

Michael B. ... 8.25.08
 Signature of Developer Date
 TRINITY QUALITY HOMES, INC.

NO.	REVISION	DATE

**FINAL ROAD CONSTRUCTION PLAN
 GRADING, SEDIMENT & EROSION CONTROL PLAN**

BRANTWOOD OVERLOOK
 LOTS 1-8 AND NON-BUILDABLE
 PRESERVATION PARCELS 'A' & 'B'

TAX MAP 16 BLOCK 15, 16, 21 & 22
 3RD ELECTION DISTRICT
 REF.: F-02-41,F-02-42,SP-02-08,RE-06-03,WP-08-101 PARCELS '94' & '259'
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

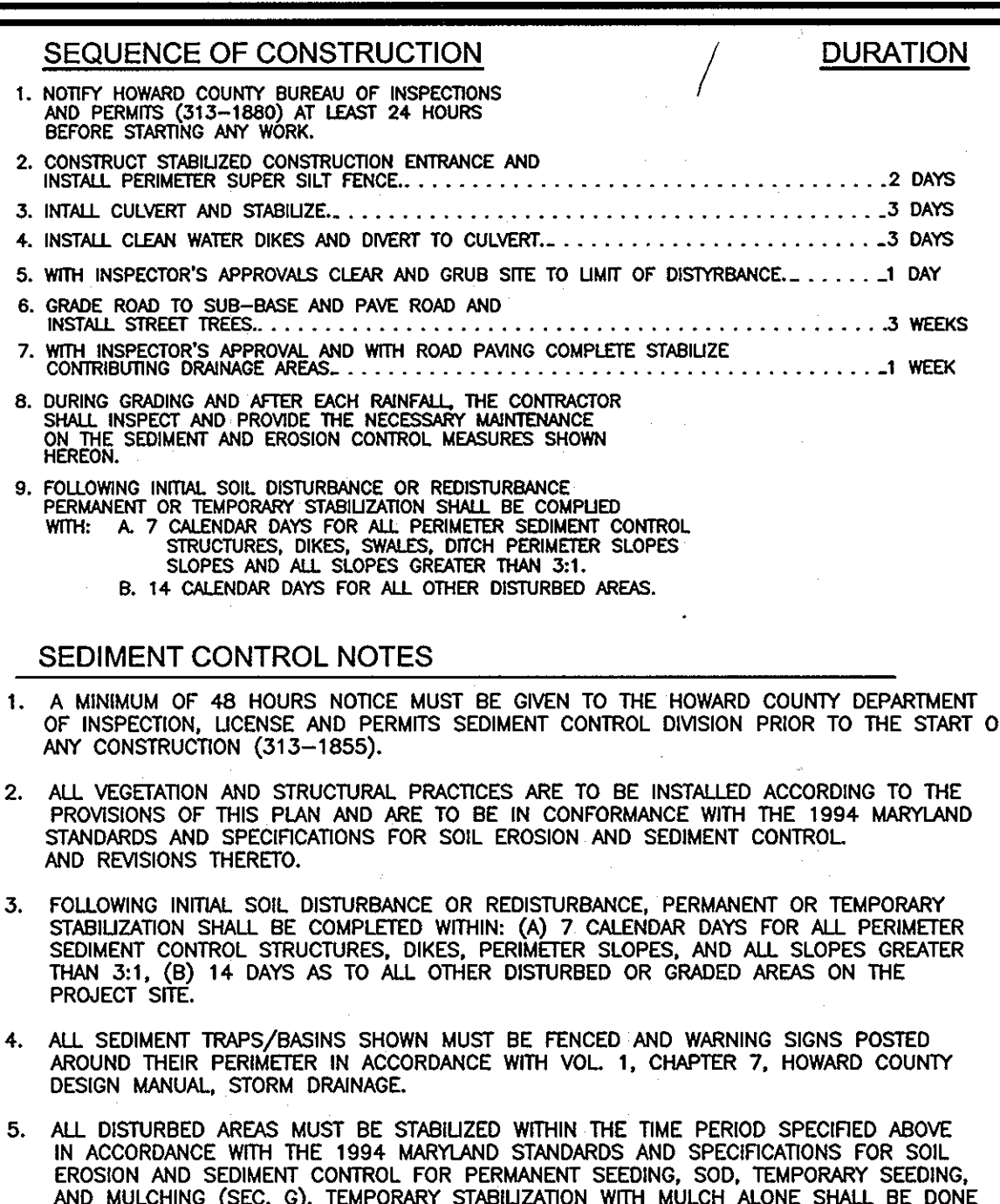
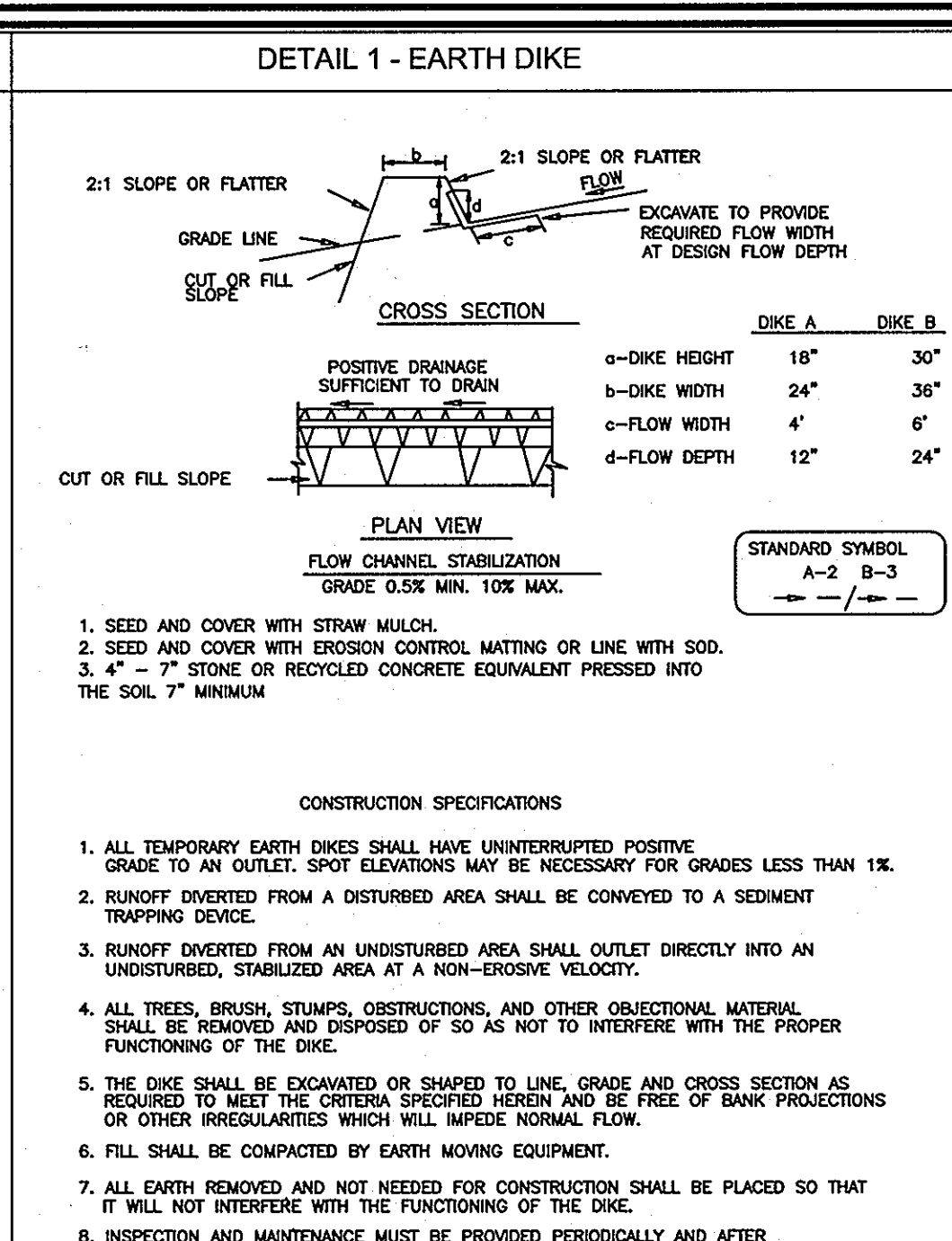
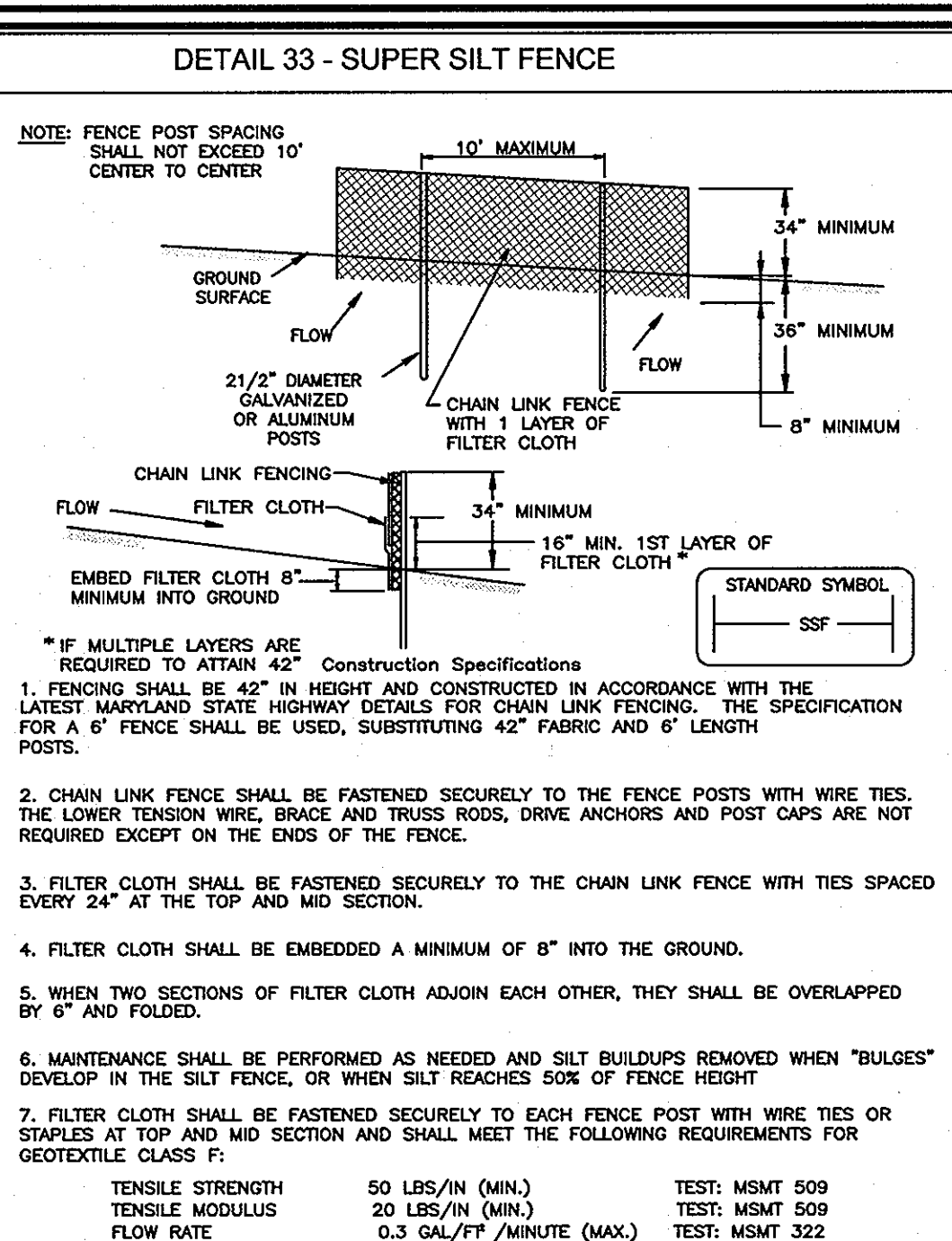
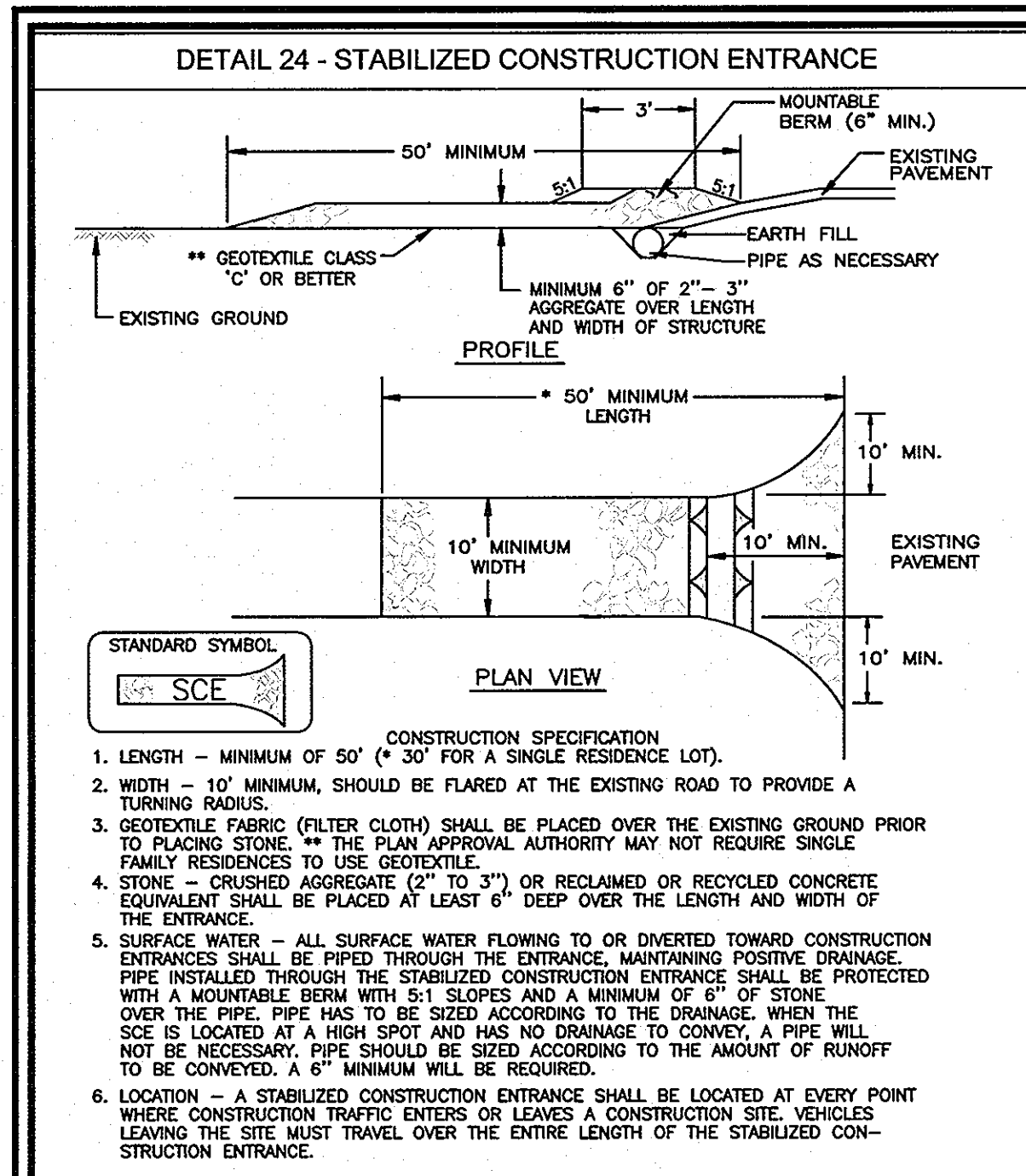
PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008."

DESIGN BY: RHV/RJ
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 03-28-2008
 SCALE: AS SHOWN
 W.O. NO.: 201712.00
 05-65

STATE OF MARYLAND
 REGISTERED PROFESSIONAL ENGINEER
 NO. 16193
 ROBERT H. VOGEL, PE No. 16193

4 SHEET OF 9



MARYLAND 378
STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

CONSTRUCTION SPECIFICATIONS

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE 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 BERMS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

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 WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-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 AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER. MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCOURED PRIOR TO PLACEMENT OF FILL. FILL MATERIAL SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE EMBANKMENT, AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. 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 TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIREMENT 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.

WHEN REQUIRED BY THE REVIEWING AGENCY THE MINIMUM REQUIRED DENSITY 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 NECESSARY TO OBTAIN 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 (STANDARD PROCTOR).

CUT OFF TRENCH/CUT OFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE COVERED 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 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

EMBANKMENT CORRE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

STRUCTURE 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. AT NO TIME 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 DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI, 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 7.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND ON THE SIDES OF THE PIPE. IF ONLY NEEDS TO EXTERIOR TO THE RIGID CONDUITS, AVERAGE SLUMP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL 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 SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF THE STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL-PIPE OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

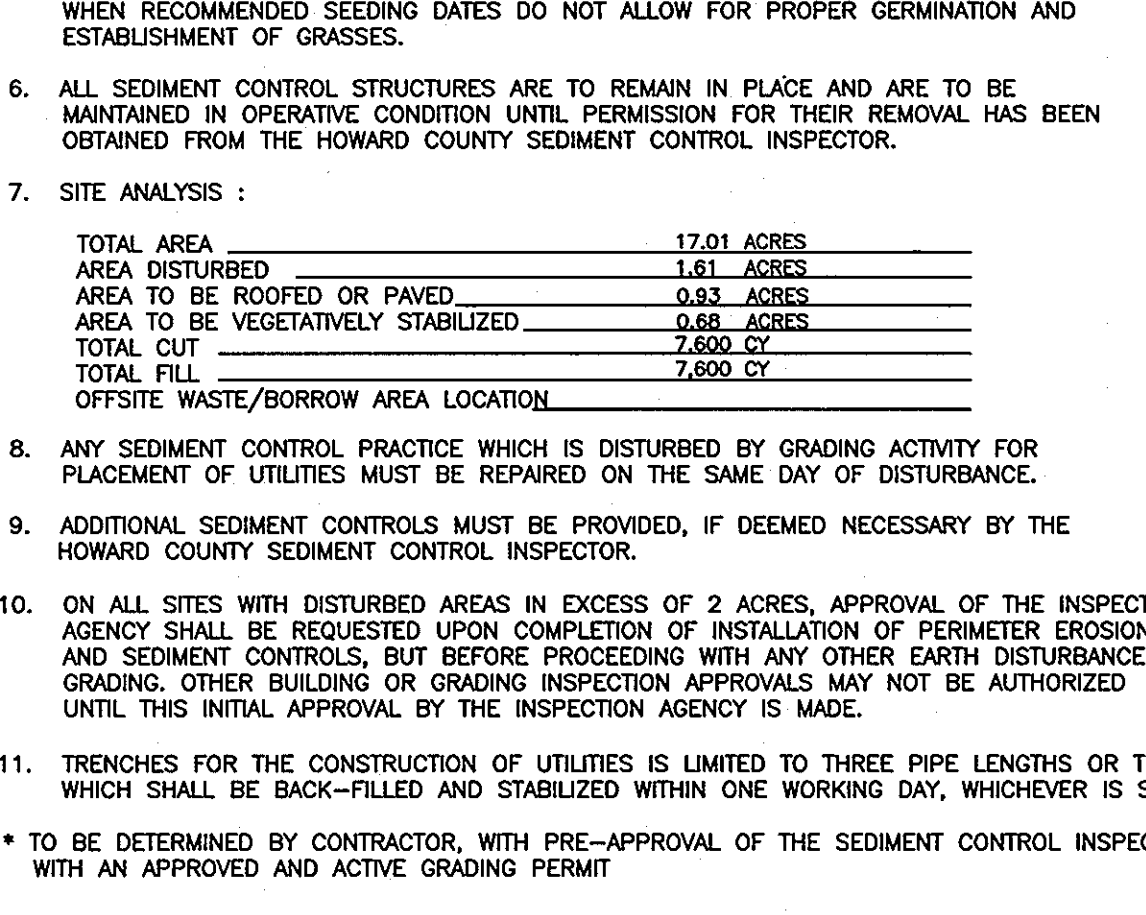
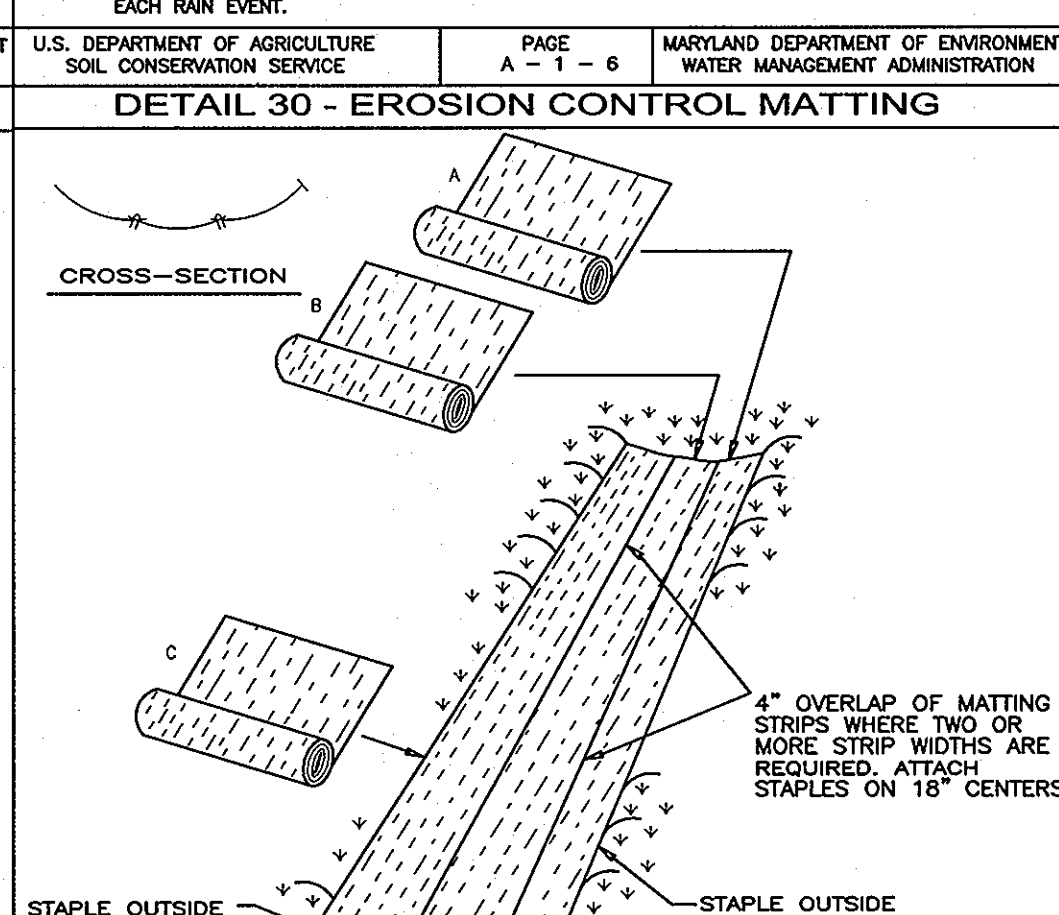
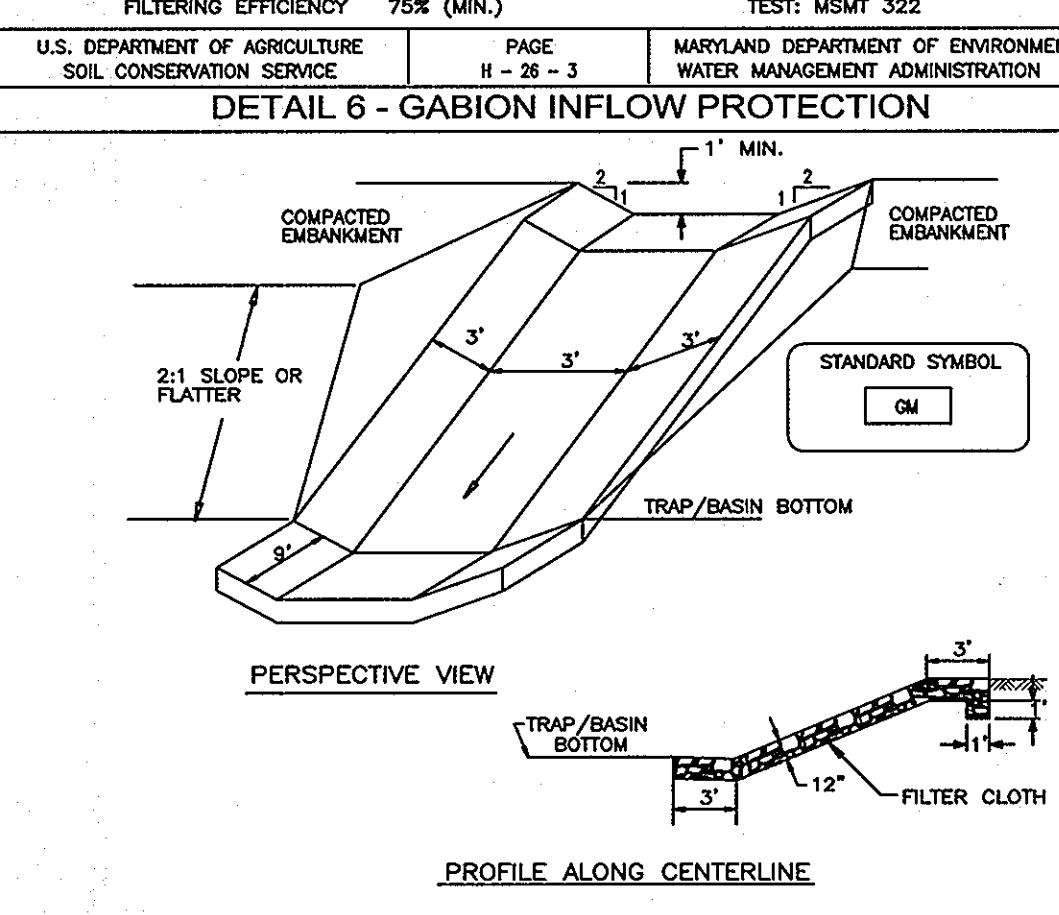
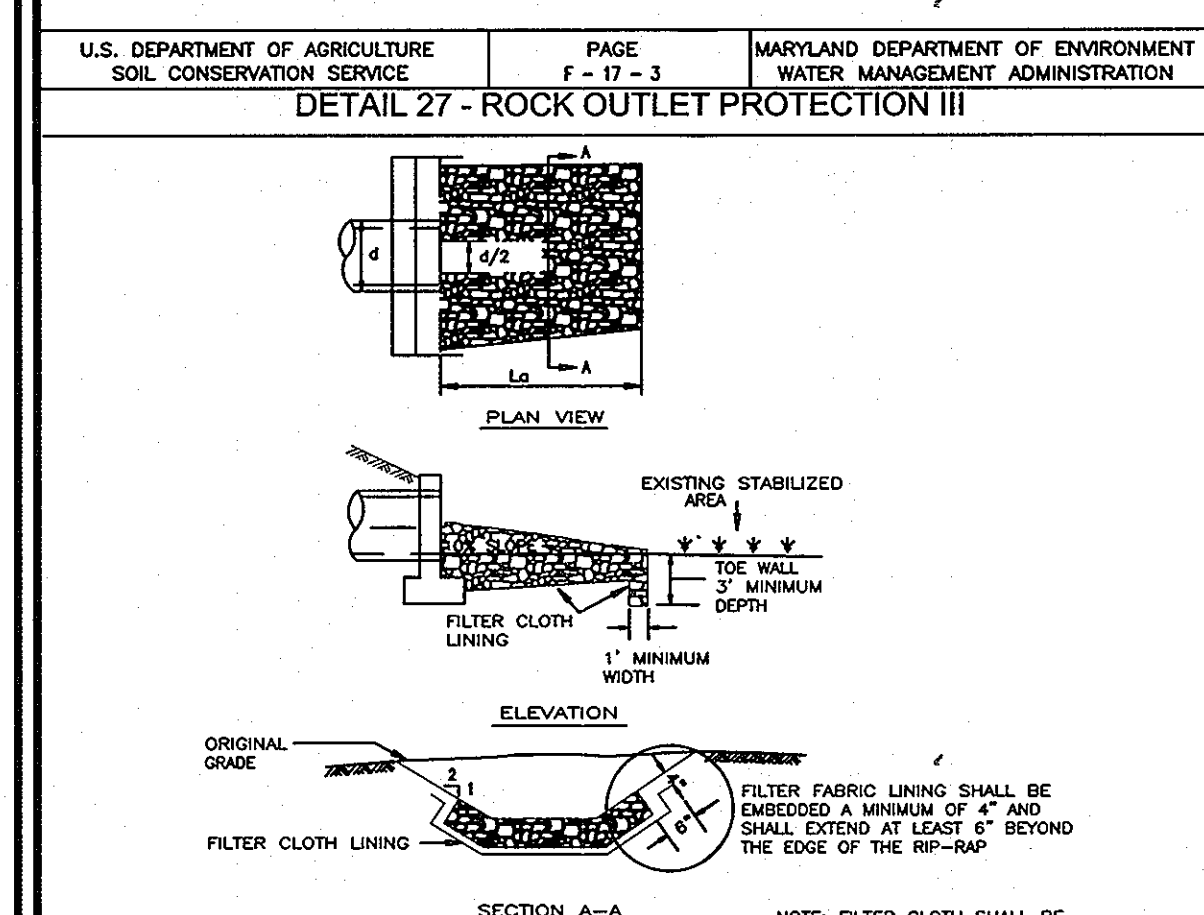
1. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH POLYMERIC COATING SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS M-245 & M-249 WITH WATER TIGHT COUPLING BANDS OR FLANGES.

MATERIALS - (ALUMINUM COATED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATER TIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-110 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

CONSTRUCTION SPECIFICATIONS

1. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH POLYMERIC COATING SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS M-245 & M-249 WITH WATER TIGHT COUPLING BANDS OR FLANGES.

MATERIALS - (ALUMINUM COATED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATER TIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-110 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

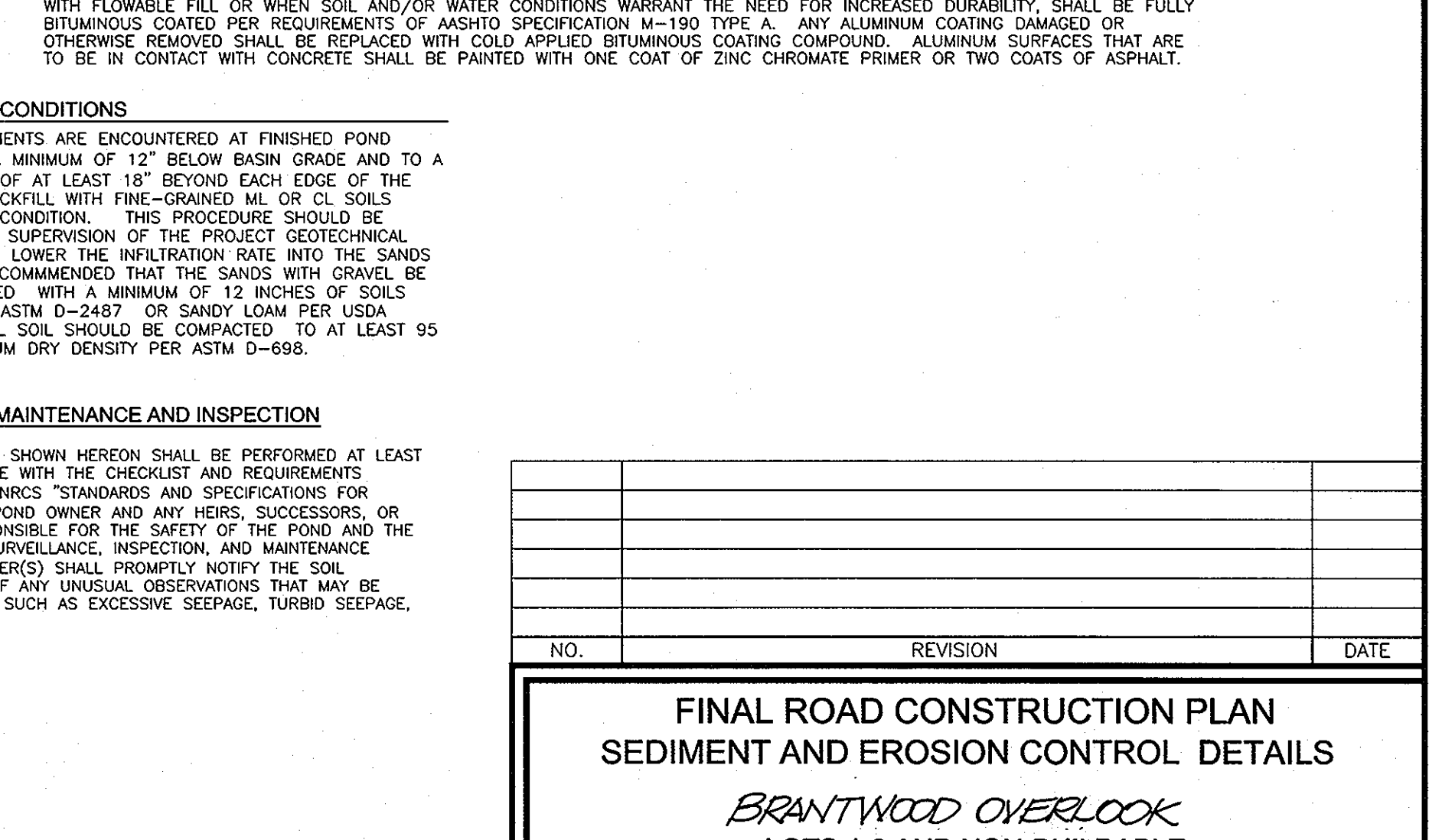
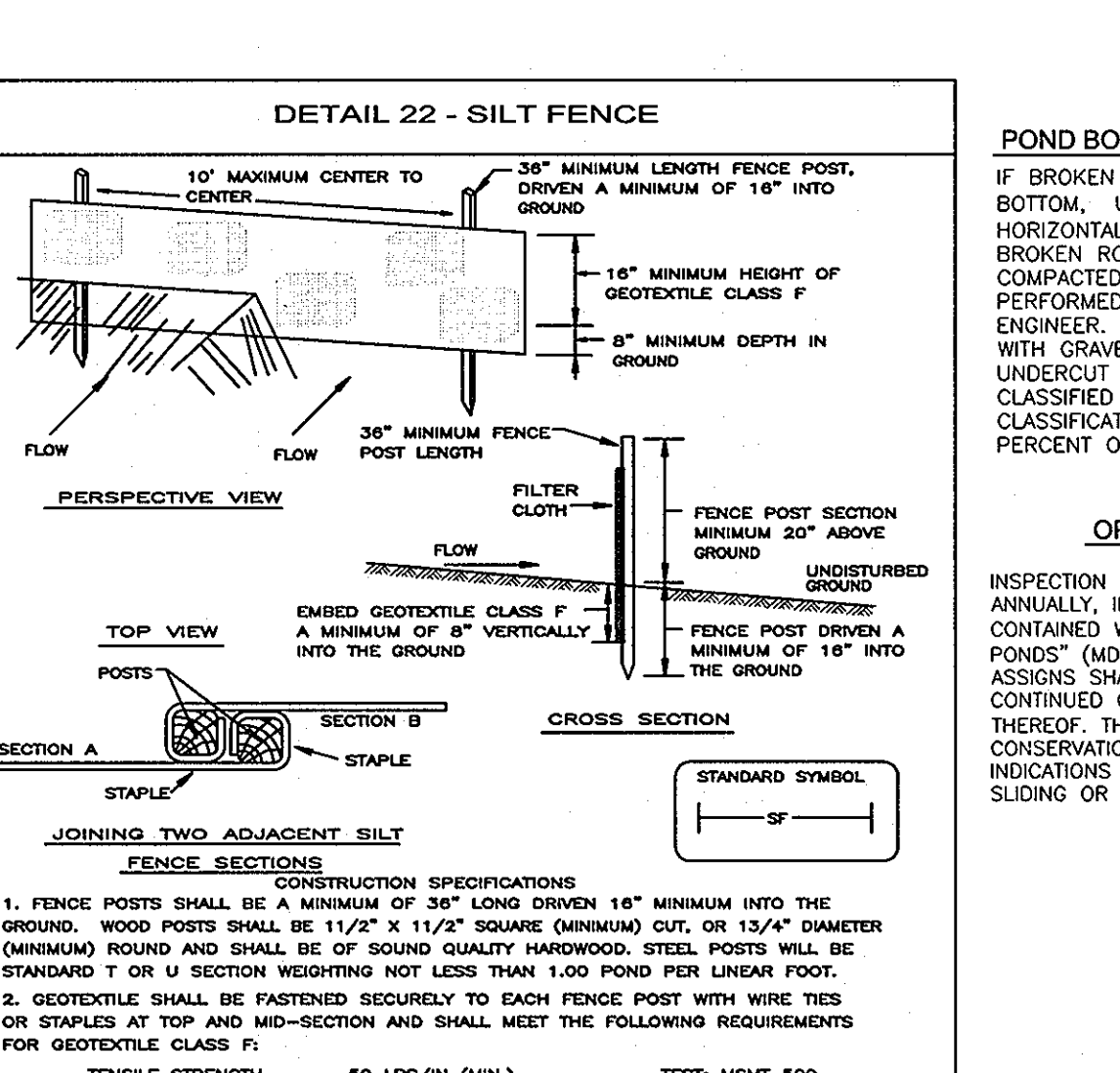
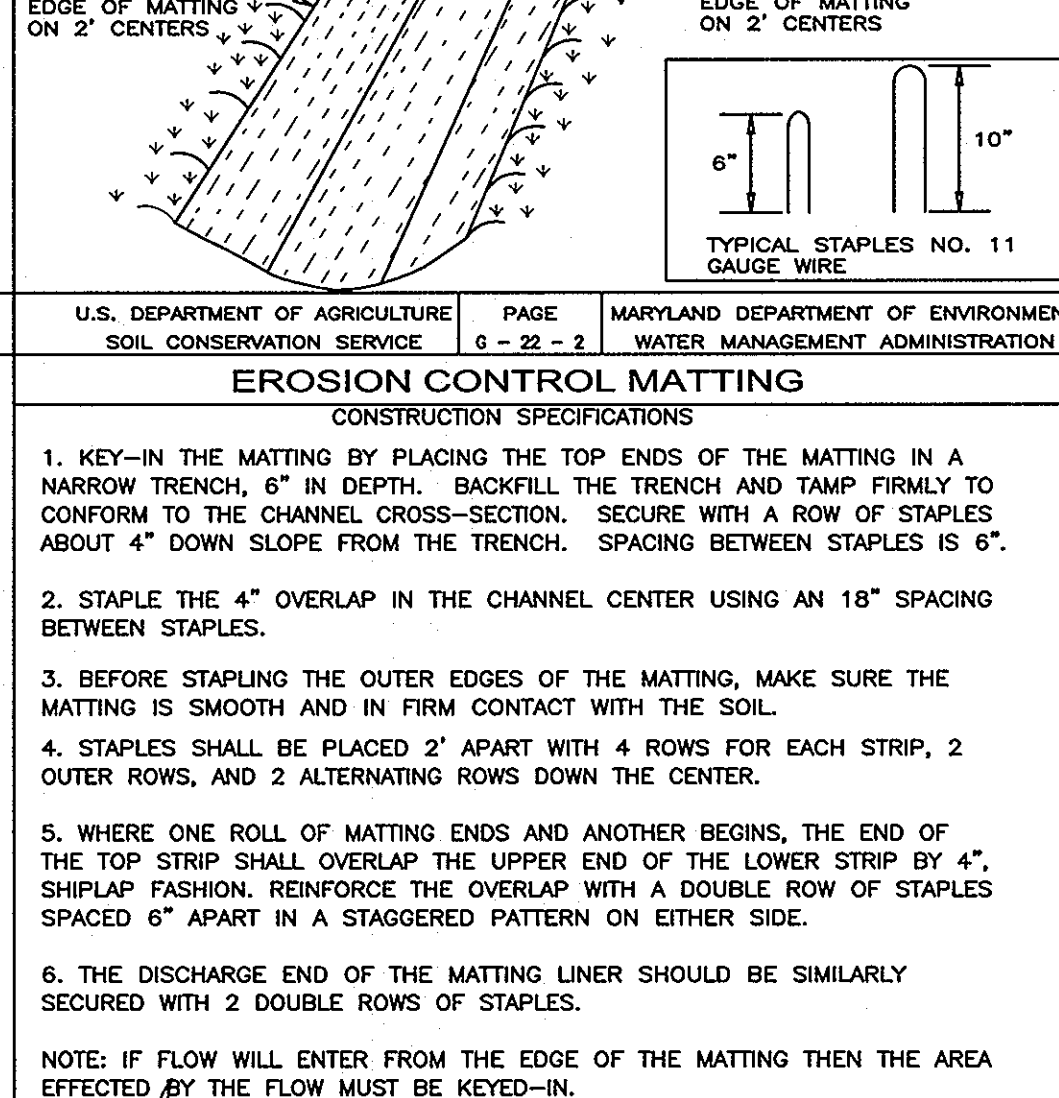
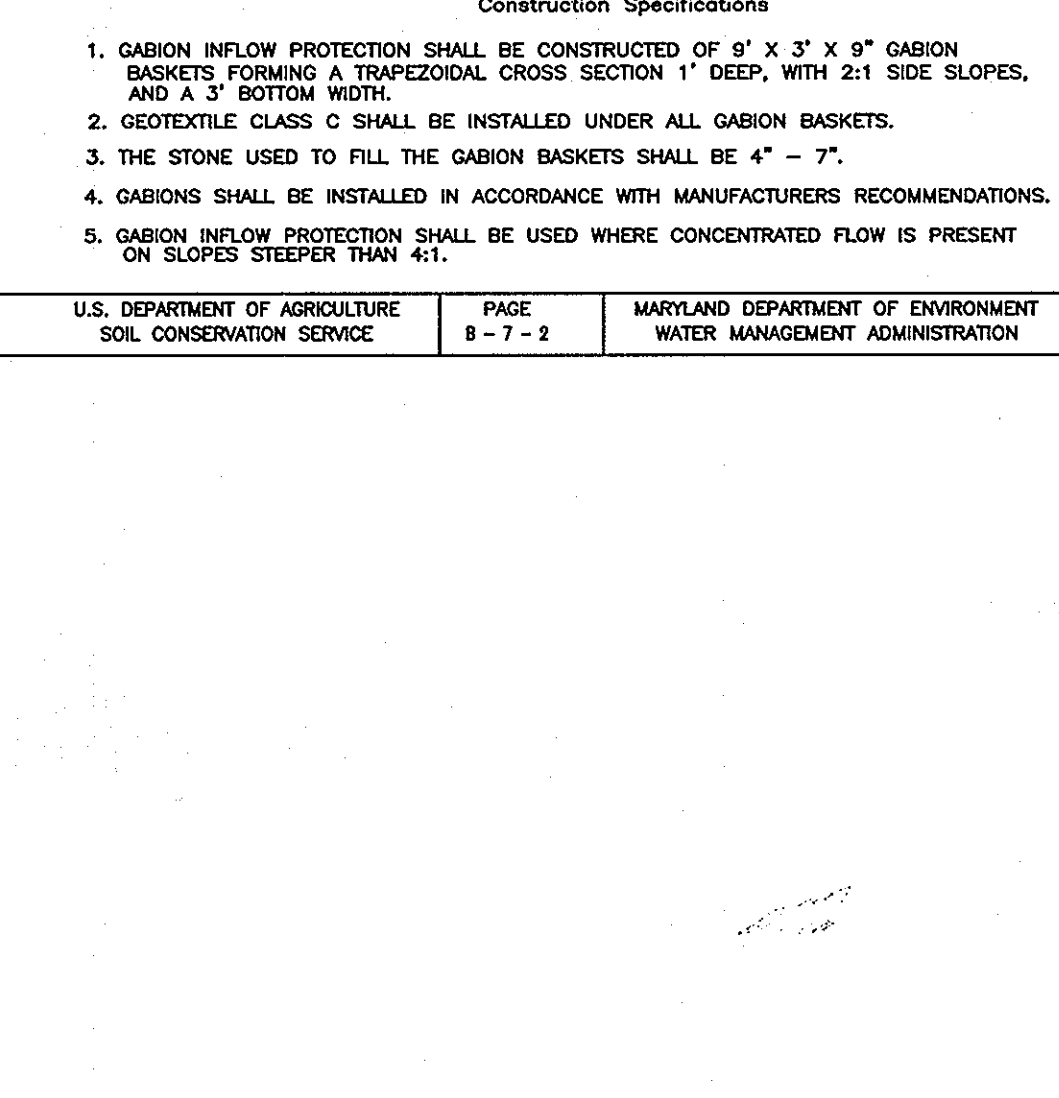
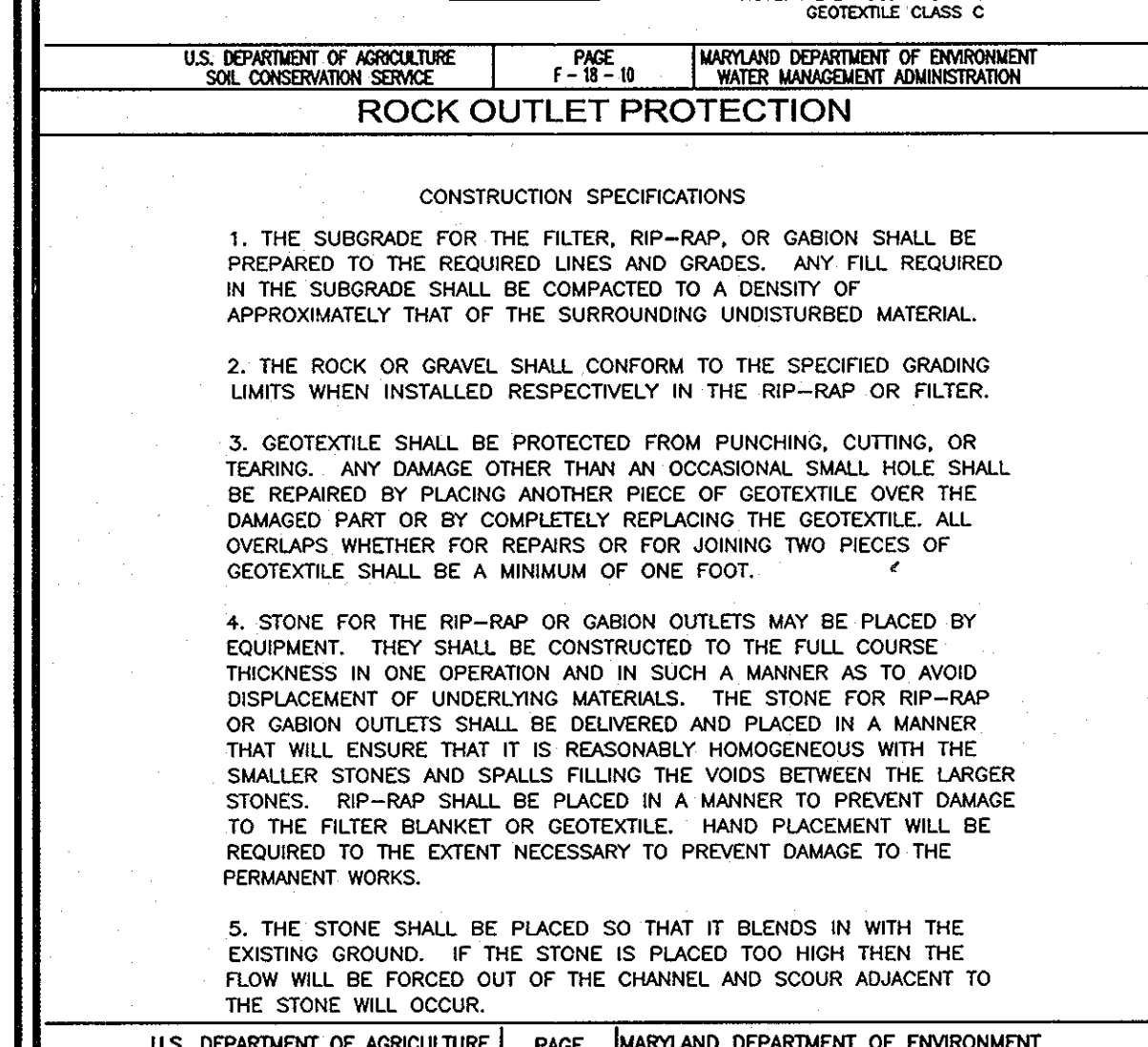


POND BOTTOM SOIL CONDITIONS

IF BROKEN ROCK FRAGMENTS ARE ENCOUNTERED AT FINISHED POND BOTTOM, UNDER CUT A MINIMUM OF 12" BELOW BASIN GRADE AND TO A HORIZONTAL DISTANCE OF AT LEAST 18" BEYOND EACH EDGE OF THE BROKEN ROCK AND BACKFILL WITH FINE-GRAINED ML OR CL SOILS COMPACTED TO A FIRM CONDITION. THIS PROCEDURE SHOULD BE PERFORMED UNDER THE SUPERVISION OF THE PROJECT GEOTECHNICAL ENGINEER IN ORDER TO LOWER THE INFILTRATION RATE INTO THE SANDS WITH GRAVEL. IT IS RECOMMENDED THAT THE SANDS WITH GRAVEL BE UNDERCUT AND REPLACED WITH A MINIMUM OF 12 INCHES OF SOILS CLASSIFIED AS SM PER ASTM D-2487 OR SANDY LOAM PER USDA CLASSIFICATION. THE FILL SOIL SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF ITS MAXIMUM DRY DENSITY PER ASTM D-698.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA NRCS STANDARDS AND SPECIFICATIONS FOR PONDS (MD-378). THE POND OWNER AND ANY 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 INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.



APPROVED: DEPARTMENT OF PUBLIC WORKS
9-3-08
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
9/10/08
DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION
9/19/08
DATE

CHIEF, DIVISION OF LAND DEVELOPMENT
9/19/08
DATE

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John F. Robertson
HOWARD SCD

Robert H. Vogel
Date 9/19/08

ENGINEERS CERTIFICATE

I hereby certify that this plan for sediment and erosion 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.

Robert H. Vogel
Signature of Engineer
Date 9/19/08

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 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.

Michael P. Pappas
Signature of Developer
Date 08/20/08

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008.

ROBERT H. VOGEL, PE No. 16193

SOIL TABLE		
Bo	BAILE SILT LOAM, (HYDRIC)	D
GnB2	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
MID3	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	B
ChB2	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
ChC2	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
G1C3	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
CgC2	CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
CgB2	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
MgC2	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B



PLAN VIEW
SCALE: 1"=100'

LEGEND

- EXISTING CONTOUR 382
- PROPOSED CONTOUR +82.53
- SPOT ELEVATION
- EXISTING TREES TO REMAIN
- SOILS DIVIDE
- DRAINAGE AREA TO CULVERT
- DRAINAGE AREA TO SWALE

TC PATH INFORMATION

AREA : 9.2 ACRES (AREA TO CULVERT)
5.1 ACRES (AREA TO SWALE)
TC: 0.14 HR

A-B B-C
SHEET FLOW SHALLOW CONCENTRATED
75' @ 9.0% 605' @ 10.0%

ROAD SIDE DITCH (WORST CASE)

AREA : 4.1 ACRES
TC: A-B 75' SHEET FLOW (GRASS) @3.3%
B-C 520' SHALLOW CONCENTRATED (UNPAVED) @8.0%
TC : 0.19 HR.

APPROVED: DEPARTMENT OF PUBLIC WORKS

William R. ... 9-3-08
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Candy ... 9/19/08
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 9/19/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

PROFESSIONAL CERTIFICATION

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NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
STORM DRAIN DRAINAGE AREA MAP FOR CULVERT

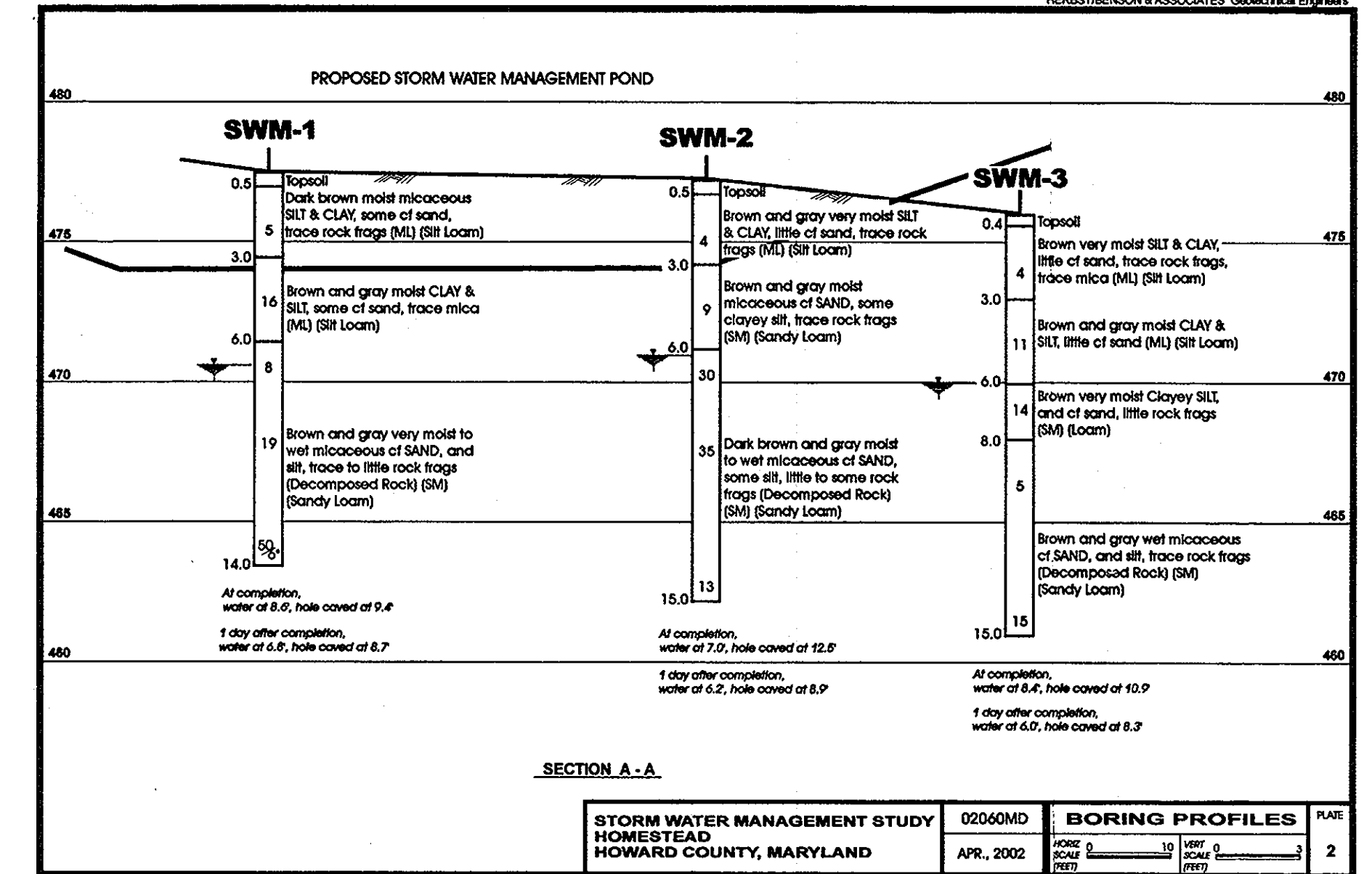
BRANTWOOD OVERLOOK
LOTS 1-8 AND NON-BUILDABLE
PRESERVATION PARCELS 'A' & 'B'

TAX MAP 16 BLOCK 15, 16, 21 & 22 PARCELS '3A' & '25B'
3RD ELECTION DISTRICT
REF: F-02-41,F-02-42,SP-02-08,RE-06-03,WP-08-101 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLICOTT CITY, MD 21043 FAX: 410.461.8961

DESIGN BY: RHV/RJ
DRAWN BY: RJ
CHECKED BY: RHV
DATE: 03-28-2008
SCALE: AS SHOWN
W.O. NO.: 2017112.00
05-65

6 SHEET OF 9



GEOTECHNICAL RECOMMENDATIONS FOR SWM FACILITY

NO.	REVISION	DATE

GENERAL CONDITIONS

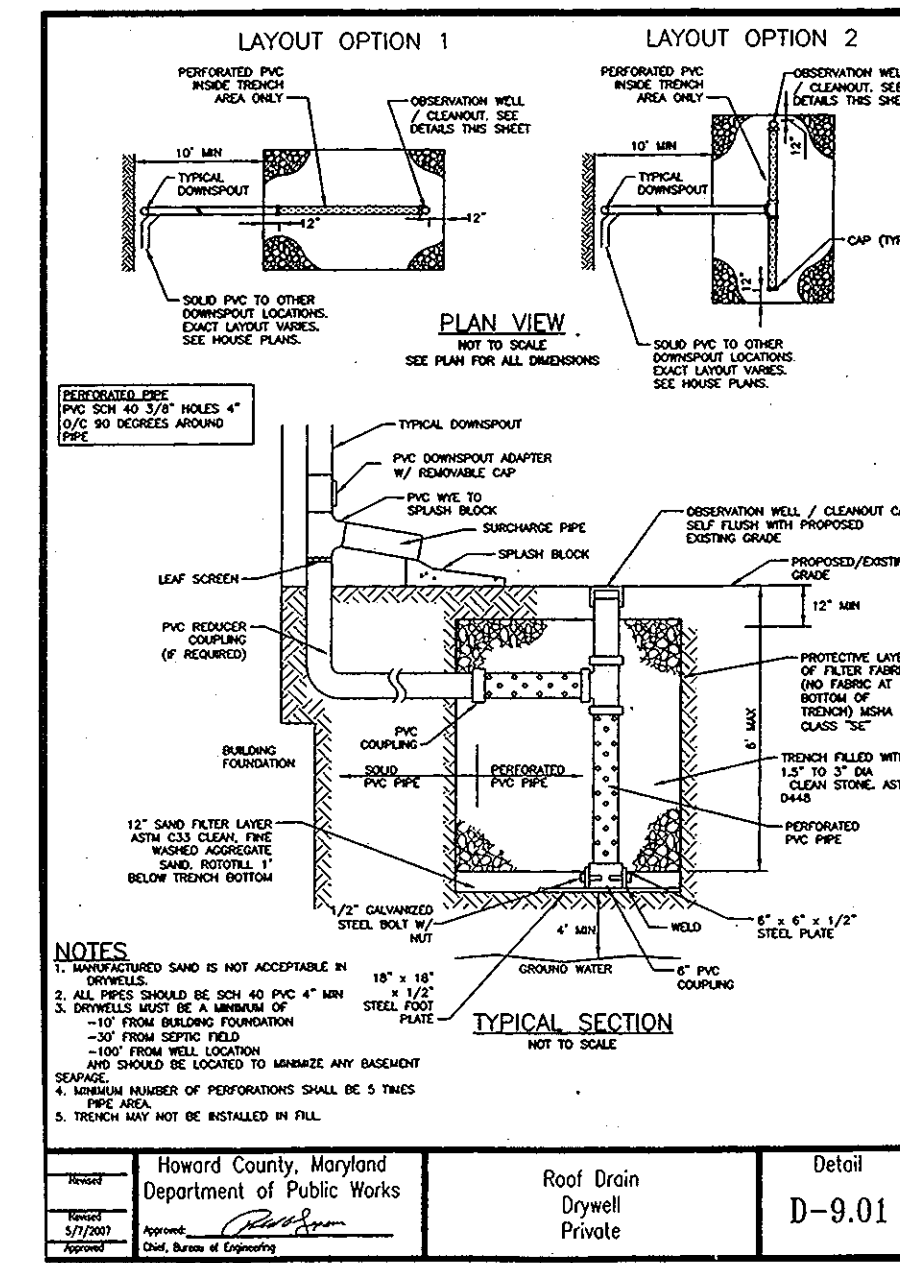
This report has been prepared in accordance with generally accepted geotechnical engineering practice to aid in the evaluation and design of this project. In the event of changes in the proposed construction (types, elevations, locations, etc.) the conclusions and recommendations presented in this report should not be considered valid unless changes are reviewed and the conclusions of this report are modified or approved in writing by our office.

The analyses and recommendations included in this report are based upon the data obtained from the test borings performed at the approximate locations indicated on the boring location plan. This report does not reflect variations which may occur between the borings. The nature and extent of the variations may not become evident until the time of construction. If significant variations then become evident, it may be necessary for us to reevaluate the recommendations of this report.

We appreciate the opportunity to provide geotechnical services during the design phase of this project. We will be available to provide additional consultation as necessary during the design phase and hope to have the opportunity to provide geotechnical services during the construction phase of the project as well.

If you have any questions, please do not hesitate to contact us.

Most Sincerely,
 HERBSTENSON & ASSOCIATES
 By: Robert C. Benson, Principal
 RCB/rjh
 02/06/00
 cc: Frederick Ward Associates; Attn: Mr. Rob Vogel



LOCATIONS AND SIZES OF DRYWELLS TO BE DETERMINED BY BUILDING PERMIT PLANS

TBI Homes, Inc. -3- April 12, 2002

VI. PROPOSED CONSTRUCTION
 The storm water management basin will be in cut with perhaps only 1 to 2 feet of fill on the north side. Basin cuts will range in depth from 3 to 4 feet.

VII. INFILTRATION POTENTIAL
 The Maryland Department of the Environment (MDE) requires that storm water disposal by infiltration take place only in undisturbed soils with infiltration rates no less than 0.52 inches per hour. For estimating purposes, this corresponds to USDA soil classification of loam or more granular. It is further recommended that the bottom of the infiltration basins or structures be no closer than 4 feet to the seasonally high water level. With the on-going drought and related lower than normal ground water levels, we are now recommending that bottom of infiltration structures be maintained at least 4 feet above the indicated ground water levels.

Given the Silt Loam USDA classification in two of the three borings at pond basin elevation, and the existing ground water level presently 3 to 4 feet below basin grade, it is our conclusion that the subsurface conditions within the proposed facility do not meet the requirements of the infiltration design.

VIII. CONSTRUCTION AND EARTHWORK RECOMMENDATIONS
 The medium dense and stiff or very stiff soils encountered within the test borings below a depth of 3 feet in SWM-1, 6 feet in SWM-2 and 3 feet in SWM-3 would provide adequate support for principal spillway construction with allowable bearing pressures less than 2,500 PSF. Should the principal spillway invert grades be within the less competent materials in the upper portions of the test borings, it may be necessary to rework and recompact loose granular soils or undercut and replace softer fine-grained soils in order to obtain sufficient bearing.

The proposed 3:1 cut slopes within the medium stiff, borderline soft, fine-grained silt & clay soils should prove acceptable given the relatively low slope heights of 4 to 6 feet. Localized areas of instability on the cut slopes, if observed, can be best addressed at the time of construction by placement of slope drains or undercutting and replacing with more suitable materials. Pond design and construction should conform to Maryland 378/2000 specifications.

OPERATION, MAINTENANCE AND INSPECTION
 INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378), THE POND OWNER(S) AND ANY 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.

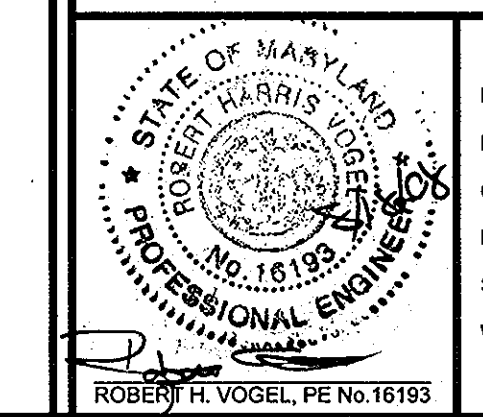
OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT FACILITY

- STORMWATER MANAGEMENT FACILITY**
 ROUTINE MAINTENANCE BY HOA
1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IS FUNCTIONING PROPERLY.
 2. 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 AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
 3. DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
 4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- NON-ROUTINE MAINTENANCE BY HOA**
1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
 2. SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERE WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

OWNER/DEVELOPER
 MICHAEL PFAU
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVE., STE. 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008.



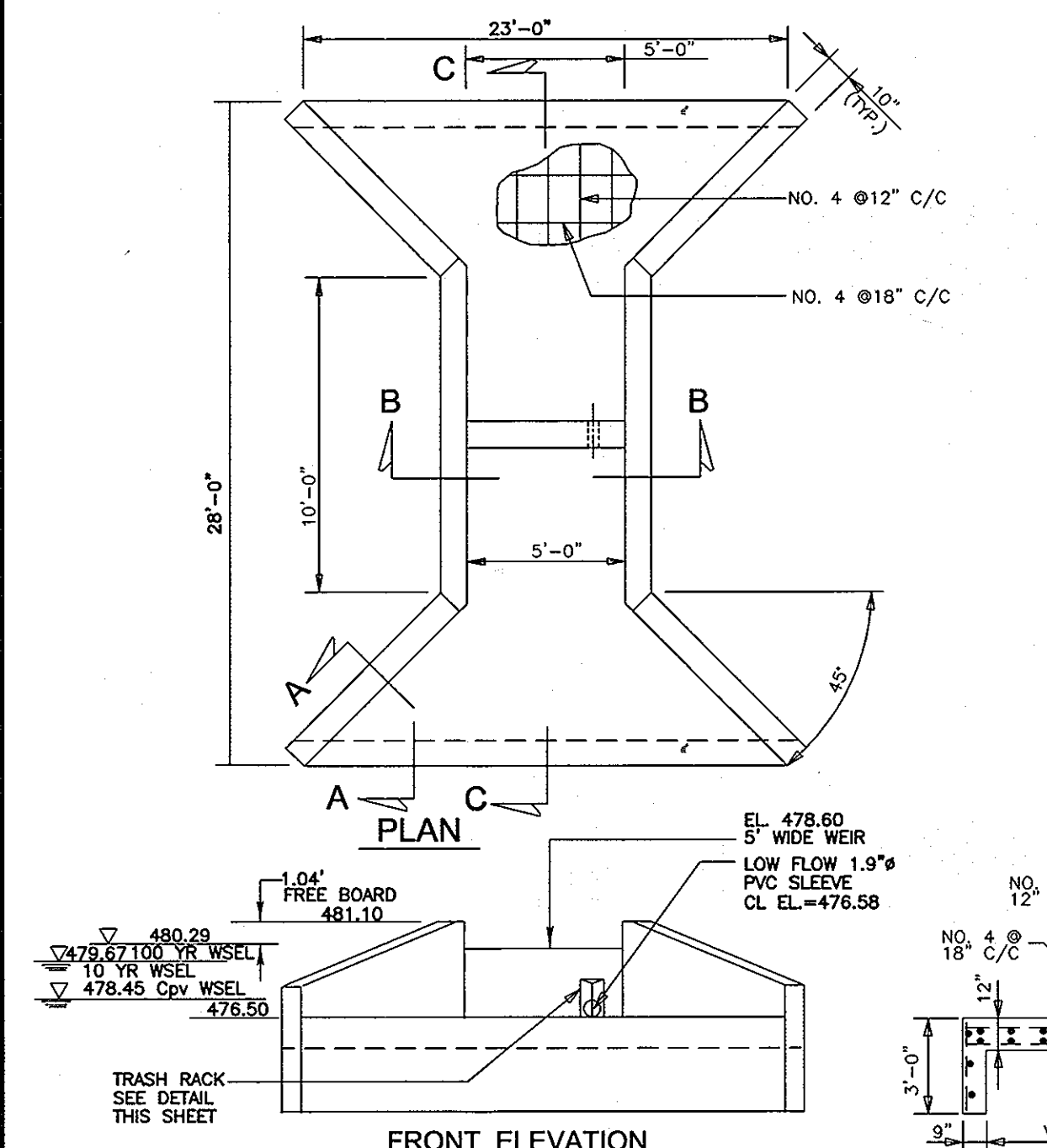
DESIGN BY: RHW/RJ
 DRAWN BY: RJ
 CHECKED BY: RHW
 DATE: 03-28-2008
 SCALE: AS SHOWN
 W.O. NO.: 201712.00
 05-05

NOTES

1. ALL EXPOSED EDGES TO HAVE 3/4" X 3/4" CHAMFER OR AS DIRECTED.
2. CONCRETE SHALL BE SHA MIX. NO. 3 (f'c = 3500 PSI @ 28 DAYS)
3. REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.
4. QUANTITIES IN TABLE FOR ESTIMATING ONLY.
5. WEIR CONTROL SECTION SHALL BE SIZED FOR APPROPRIATE CONTROL OF DISCHARGE RATED (WEIR SHOWN IS FOR ILLUSTRATION PURPOSES ONLY).
6. MAXIMUM WALL HEIGHT IS 3'. HIGHER WALLS REQUIRE SPECIAL DESIGN.

VOL. CONC. (CY)	STEEL (LBS)
14.5	1100

* VALUES SHOWN ARE APPROXIMATE FOR THE MAXIMUM SIZE OF THE STRUCTURES.

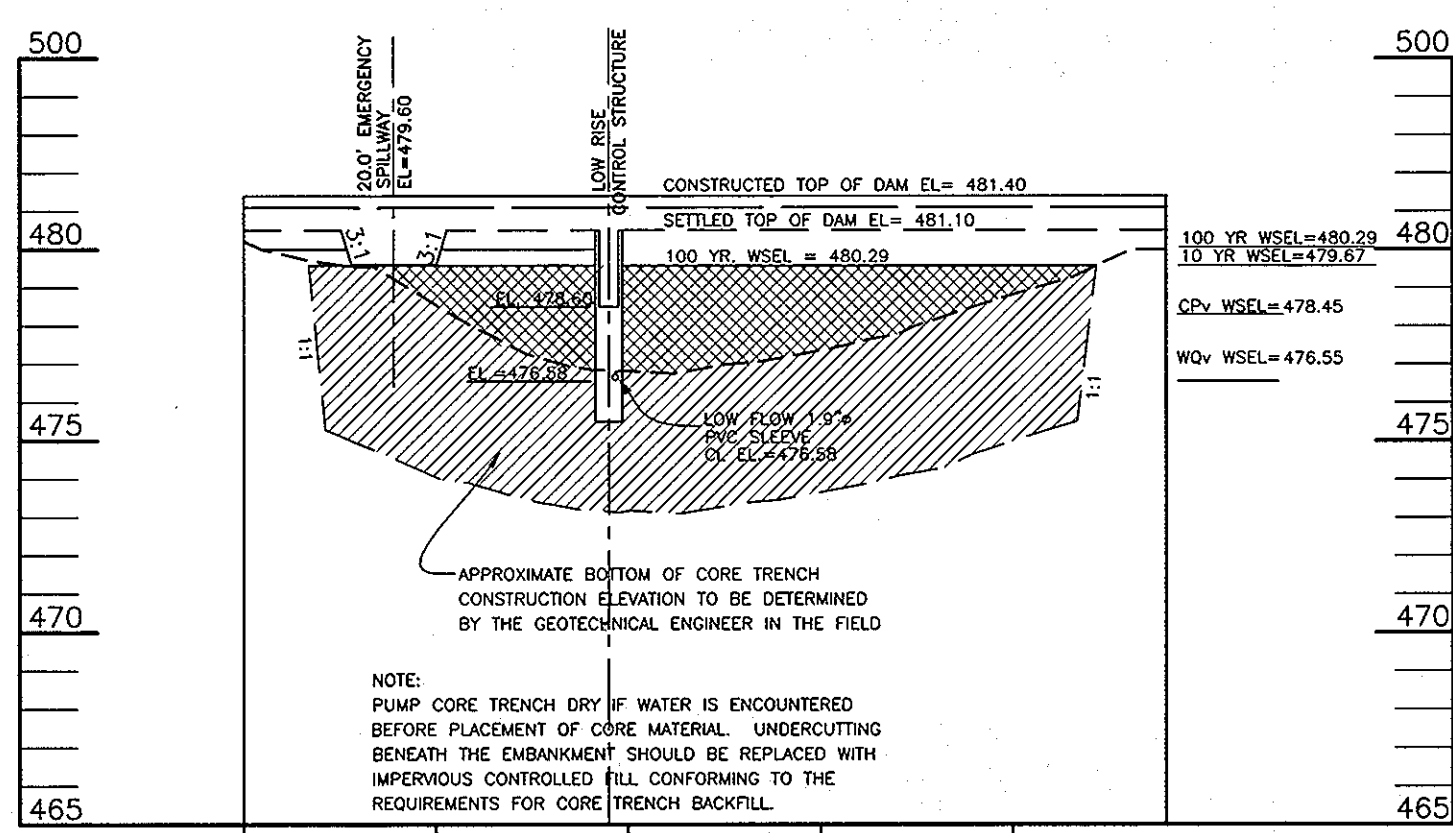
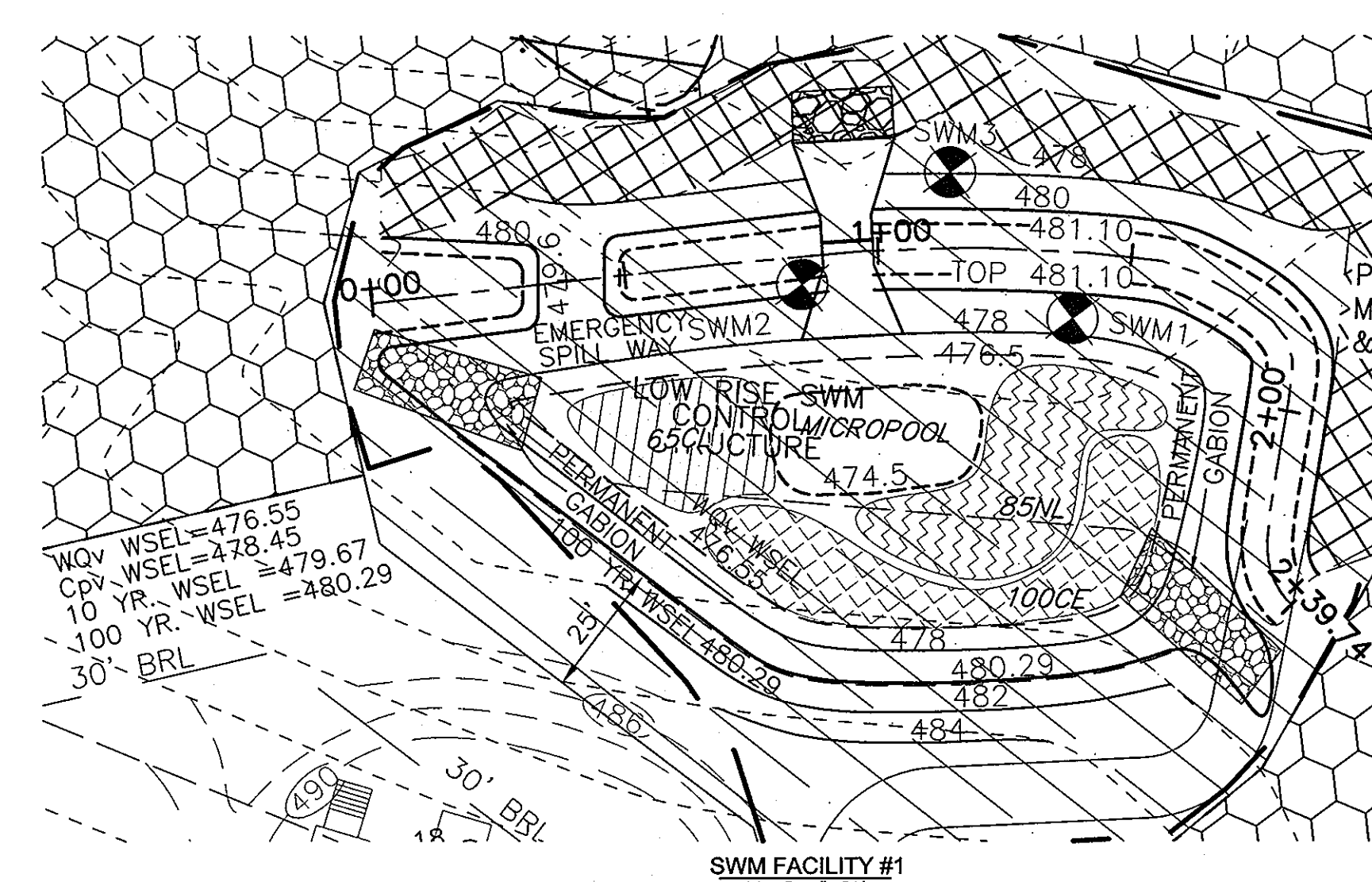


LOW RISE SWM CONTROL STRUCTURE

MODIFIED HOWARD COUNTY STANDARD DETAILS D-6.01

LOW FLOW ORIFICE TRASH RACK DETAIL

- NOTES FOR TRASH RACK**
1. TRASH RACK TO BE CENTERED OVER OPENING.
 2. STEEL TO CONFORM TO ASTM A-36.
 3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
 4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.



FACILITY #1

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
CE	100	Cyperus esculentus Yellow Nut Sedge	plug	2' oc
NL	85	Nuphar luteum Spatterdock	plug	1.5' oc
CL	65	Carex lacustris Lake Sedge	plug	2' oc

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways
 Chief, Division of Land Development
 Chief, Development Engineering Division

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 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.

ENGINEER'S CERTIFICATE

I hereby certify that this plan for sediment and erosion 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.

Reviewed for HOWARD SCD and meets Technical Requirements.

USDA-Natural Resources Conservation Service
 This plan is approved for sediment and erosion control by the HOWARD SOIL CONSERVATION DISTRICT.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008.



SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES							TOTAL
	1	2	3	4	5	6	7	
PERIMETER/FRONTAGE DESIGNATION	1	2	3	4	5	6	7	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	265'	377'	386'	896'	509'	657'	361'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	Yes* 265'	Yes* 165'	Yes* 311'	No	Yes* 509'	Yes** 657'	Yes** 361'	
CREDIT FOR WALL FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No	No	No	No	No	No	No	
NUMBER OF PLANTS REQUIRED								
SHADE TREES	1:50 0	1:60 4	1:60 2	1:60 15	1:60 0	1:60 0	1:60 0	21
EVERGREEN TREES	1:40 0	1:60 0	1:60 0	1:60 0	1:60 0	1:60 0	1:60 0	1
NUMBER OF PLANTS PROVIDED								
EVERGREEN TREES	0	4	2	15	0	0	0	21
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-	-	-	-	-
SHRUBS (10:1 SUBSTITUTION)	-	-	-	-	-	-	-	-
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED								

* EXISTING WOODS TO REMAIN
** 575' OF P-6 IS THE SWM PERIMETER WITH THE REMAINING 82' OF PERIMETER RECEIVING CREDIT FOR EXISTING TREES.

PUBLIC ACCESS PLACE STREET TREE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REM.
○	27	ACER SACCHARUM 'GOLDSPIRE'	2 1/2"-3" CAL.	B & B
+	4	AMUR MAPLE ACER GINNALA	2"-3" CAL.	B & B

STREET TREE CALCULATIONS

STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
MARRIOTTVILLE - RD IMPROVEMENT	158/40	4	4
COTTAGE FARM LANE	1075/40	27	27
TOTAL		31	31

LANDSCAPE SCHEDULE THIS SHEET

QUAN.	BOTANICAL NAME	SIZE	REM.
21	Acer rubrum 'Red Sunset' Red Sunset Maple (Shade trees)	2 1/2"-3" Cal.	B & B
2	Quercus coccinea Scarlet Oak (Shade trees)	2 1/2"-3" Cal.	B & B
2	picea abies norway spruce (Evergreen trees)	6'-8' Ht.	B & B

- GENERAL NOTES**
- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT LAND SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAMW PLANTING SPECIFICATIONS.
 - CONTRACTOR SHALL CERTIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
 - FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
 - CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

- LANDSCAPE NOTES**
- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF THE REQUIRED PLANTING MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
 - THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
 - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. 4. NO CLEARING OF EXISTING VEGETATION IS PERMITTED WITHIN THE LANDSCAPE EDGE FOR WHICH CREDIT IS BEING TAKEN; HOWEVER, LANDSCAPE MAINTENANCE IS AUTHORIZED.

- B.G. & E. NOTES:**
- THE LANDSCAPING ON WIREZONE (40' FROM BOE POLES) IS IN ACCORDANCE WITH BOE LIST OF TREES AND PLANTS.
 - BOE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BOE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
 - THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION WITHIN THE FOREST CONSERVATION EASEMENTS LOCATED IMMEDIATELY ADJACENT TO THE BOE R/W OR EASEMENT, IF BOE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OR A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT, IF BOE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST CONSERVATION EASEMENT, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK, NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS CONSTRUCTION ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLE WITHHOLD PERMISSION.

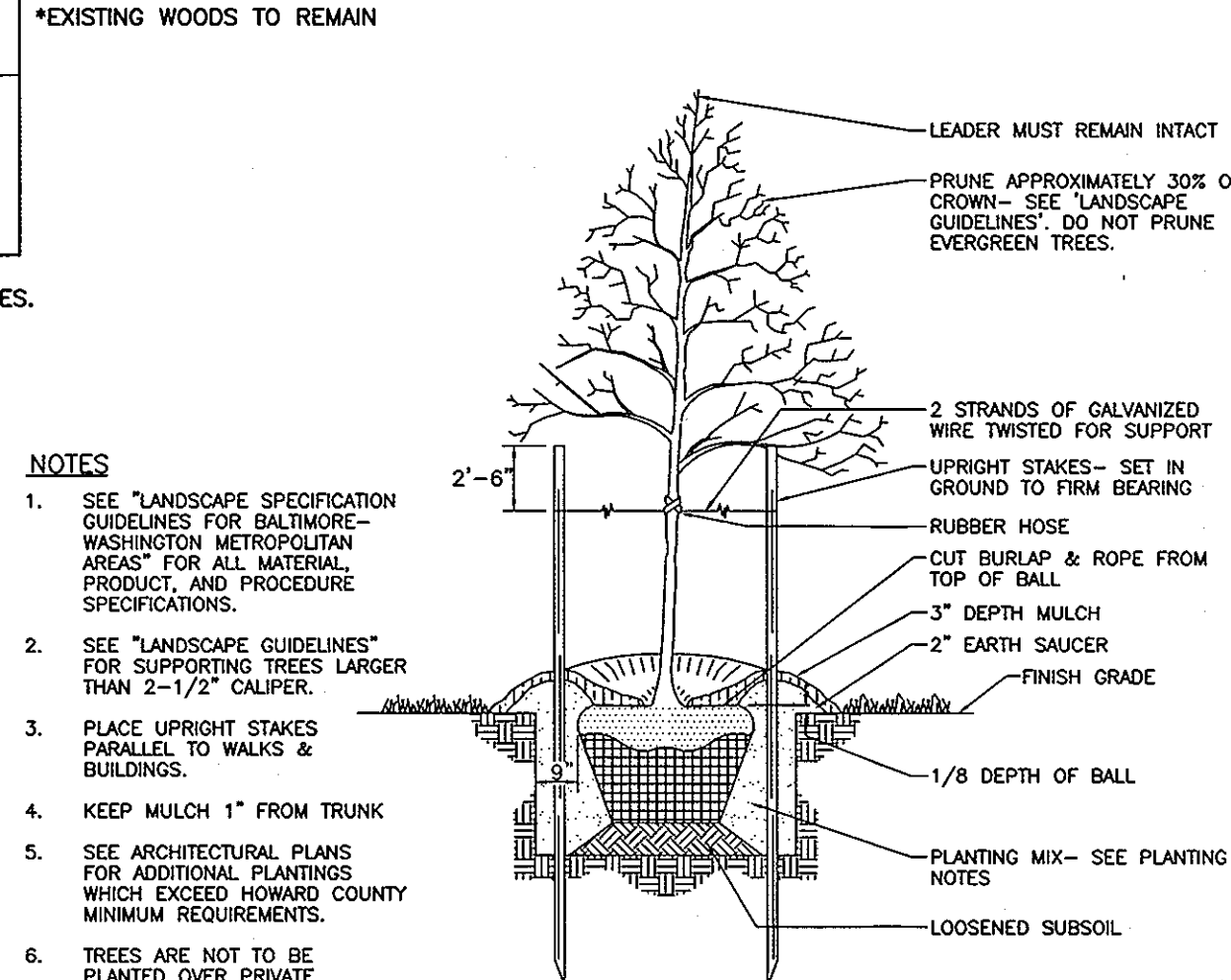
OWNER/DEVELOPER
TRINITY QUALITY HOMES, INC.
3675 PARK AVE., STE. 301
ELLCOTT CITY, MARYLAND
21043

R. Joshi
ROMA JOSHI
DNR QUALIFIED FOREST PROFESSIONAL

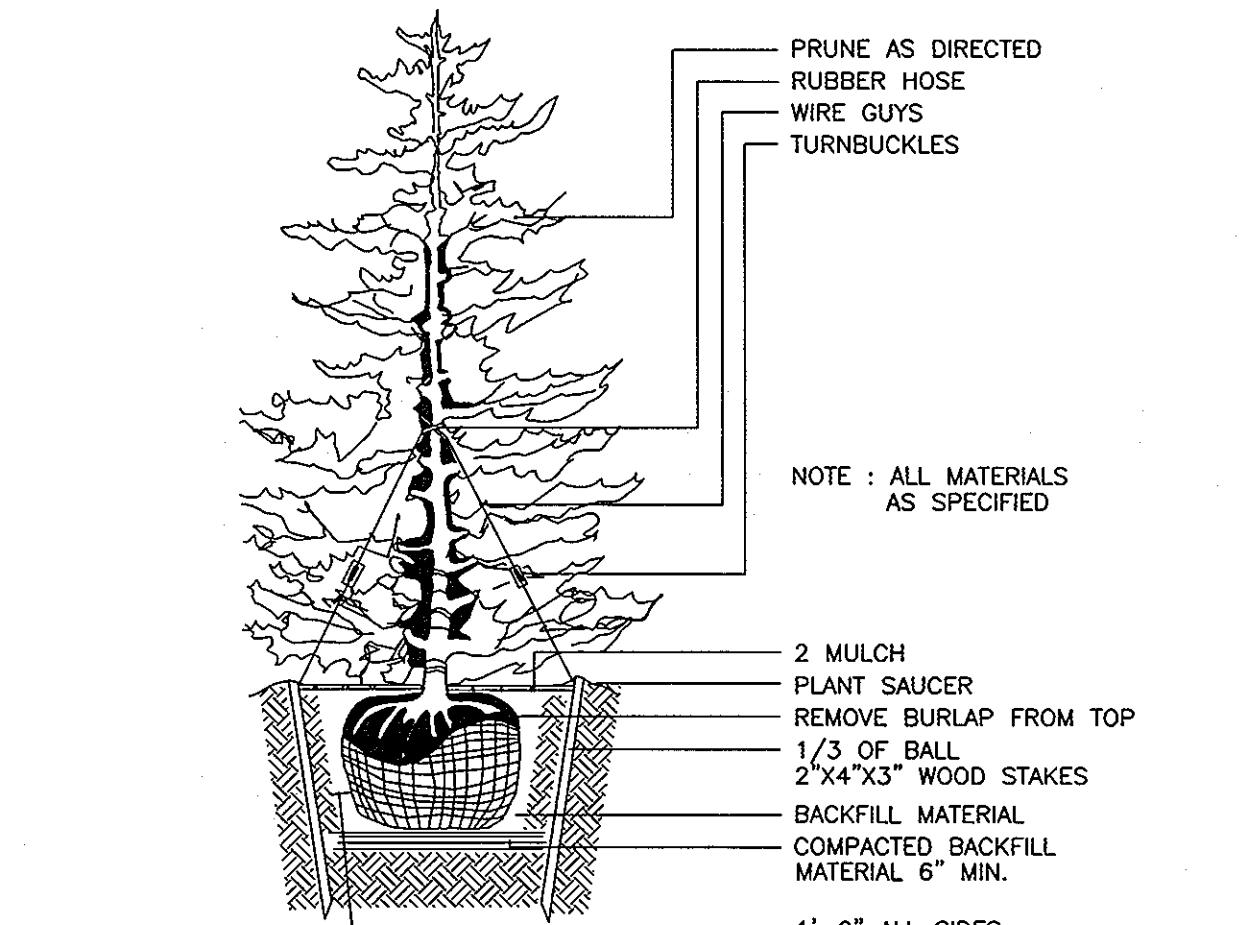
SCHEDULE D: STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	575 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND %) (NO, YES AND %)	YES* 480'
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES REQUIRED	(95)
SHADE TREES	2 SHADE TREES
EVERGREEN TREES	2 EVERGREEN TREES
NUMBER OF TREES PROVIDED	
SHADE TREES	2 SHADE TREES
EVERGREEN TREES	2 EVERGREEN TREES
SHRUBS	

* EXISTING WOODS TO REMAIN



TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER
NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
LANDSCAPE PLAN & DETAILS
BRANTWOOD OVERLOOK
LOTS 1-8 AND NON-BUILDABLE PRESERVATION PARCELS 'A' & 'B'

TAX MAP 16 BLOCK 15, 16, 21 & 22
3RD ELECTION DISTRICT
REF: F-02-41,F-02-42,SP-02-08,RE-06-03,WP-08-101 PARCELS '94' & '259'
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS & SURVEYORS, INC.
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: RHW/RJ
DRAWN BY: RHJ
CHECKED BY: RHJ
DATE: 03-28-2008
SCALE: AS SHOWN
W.O. NO.: 2017112.00-05-65

8 SHEET OF 9

APPROVED: DEPARTMENT OF PUBLIC WORKS
W. J. ...
Chief, Bureau of Highways
Date: 9-3-07

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy ...
Chief, Division of Land Development
Date: 9/19/08

Chief, Development Engineering Division
Date: 9/16/08

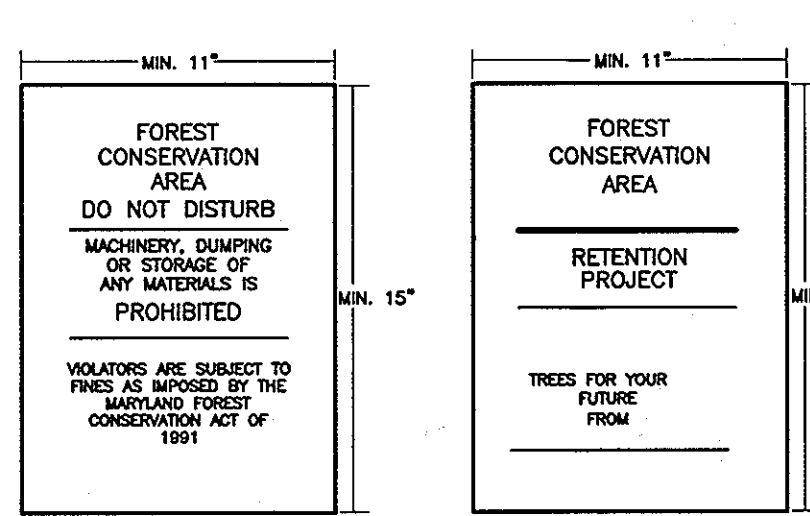
DEVELOPER'S AGREEMENT
STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124(a)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$9,500.00 TO BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THE REQUIRED 31 PUBLIC STREET TREES.

FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING PROVIDED PER THE LANDSCAPE MANUAL TO BE POSTED WITH THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$7,200.00 FOR THE REQUIRED 23 SHADE TREES AND THE REQUIRED 2 EVERGREEN TREES.

DEVELOPER'S LANDSCAPE CERTIFICATE
I/WE CERTIFY THAT LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF THE PROJECT, 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.

Michael ...
DEVELOPER'S NAME:
TRINITY QUALITY HOMES, INC.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008.



LEGEND
 EXISTING CONTOUR
 PROPOSED CONTOUR
 EXISTING TREES TO REMAIN
 SOILS
 FOREST CONSERVATION RETENTION SIGN
 TREE PROTECTION FENCE

NOTE:
 1. BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
 2. SIGNS TO BE PLACED AT A MAXIMUM SPACING OF 50-100 FEET.
 CONDITIONS ON-SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
 3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.

FOREST RETENTION AREAS AND NOTES

1. FORESTED STREAM AND WETLAND BUFFERS ARE RETAINED IN OPEN SPACE LOTS.
2. NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THIS SITE.
3. FORESTED AREAS ADJACENT TO FLOODPLAINS AND STREAM BUFFERS ARE SUBSTANTIALLY RETAINED IN OPEN SPACE LOTS.
4. THERE ARE NO ISOLATED FOREST STANDS ON THIS SITE.
5. CHANGES IN GRADING AND RUNOFF WITHIN CONSTRUCTION/INSTALLATION AREAS WILL NOT ADVERSELY AFFECT THE SOILS WITHIN THE FOREST RETENTION AREA. SEDIMENT CONTROL MEASURES WILL REDIRECT CONCENTRATED FLOW RUNOFF TO STORMWATER MANAGEMENT FACILITIES, RETAIN SEDIMENT WITHIN THE CONSTRUCTION SITE, AND/OR REDIRECT CLEAN WATER AWAY FROM CONSTRUCTION AREAS.
6. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

FOREST PROTECTION NOTES

- PRE-CONSTRUCTION ACTIVITIES**
1. FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
 2. FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
 3. A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNE TREES AS REQUIRED. WATER ANY ROOT-PRUNED TREES IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.

- CONSTRUCTION PHASE**
1. NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA.
 2. NO EQUIPMENT SHALL BE OPERATED INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
 3. IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.

- POST-CONSTRUCTION ACTIVITIES**
1. AT THE DIRECTION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
 2. FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
 3. DO NOT REMOVE SIGNS.

COST ESTIMATE: (For bonding purposes, only)
 (RETENTION - (6.38 AC.) 277912.80 SF x 20 = \$55,583.00)
 FEE-IN-LIEU FOR REMAINING REFORESTATION - (0.01 AC.) 435.60 SF x 75 = \$327.00

SURETY NOTE
 FINANCIAL SURETY IN THE AMOUNT OF \$55,583.00 WILL BE POSTED WITH THE FC MAINTENANCE AGREEMENT.

SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION

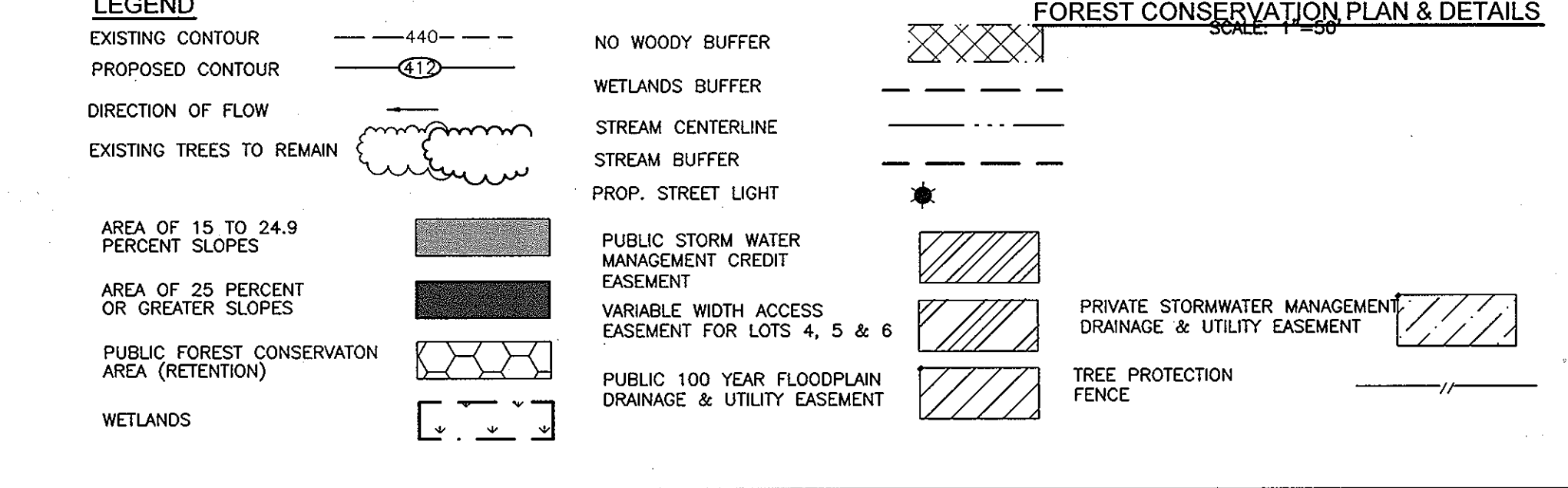
1. PRECONSTRUCTION MEETING / SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.
2. STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS.
3. INSTALL TREE PROTECTION FENCING; FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
4. PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED SEDIMENT CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.
5. TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTILITY CONSTRUCTION HAS OCCURRED AND WITH APPROVAL FROM THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

SOIL TABLE			
Ba	BAILE SILT LOAM, (HYDRIC)		D
GnB2	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED		C
M1D3	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED		B
ChB2	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED		B
ChC2	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED		B
G1C3	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED		B
CgC2	CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED		B
CgB2	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED		B

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 9-3-08
 Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 9/19/08
 Chief, Division of Land Development

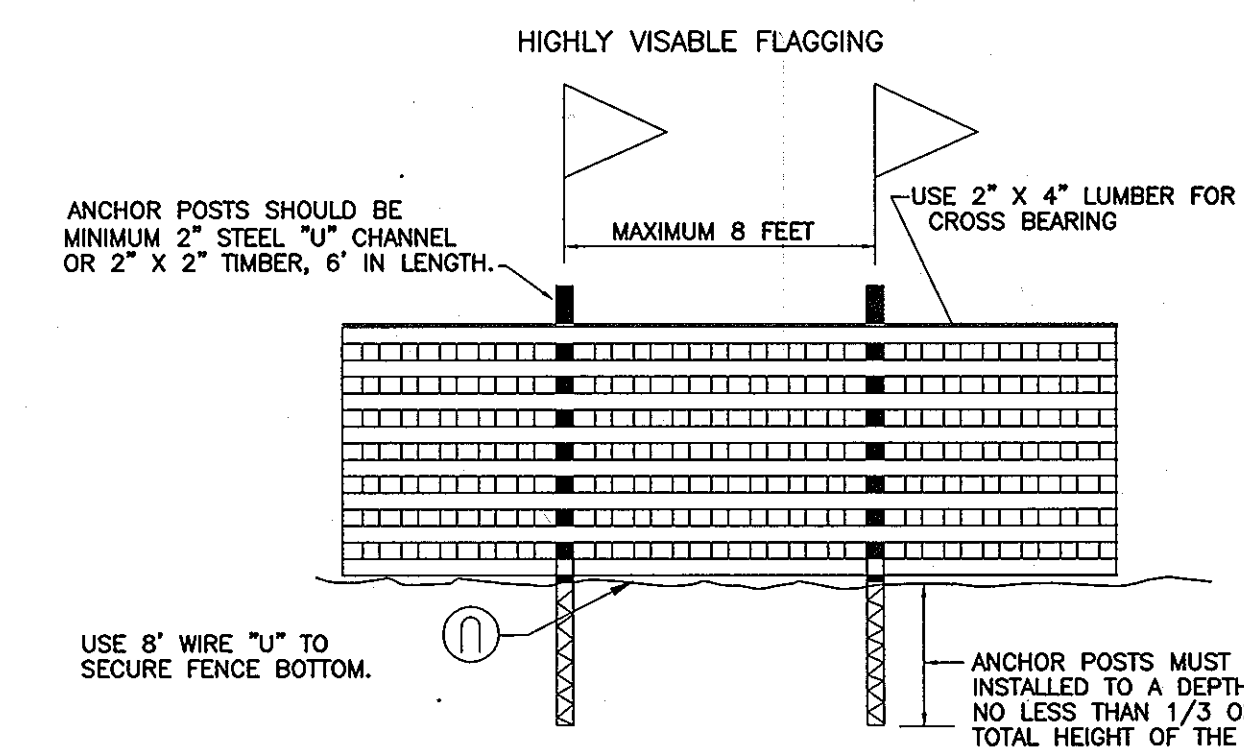
[Signature] 9/16/08
 Chief, Development Engineering Division



OWNER/DEVELOPER
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVE., STE. 301
 ELLICOTT CITY, MARYLAND
 21043

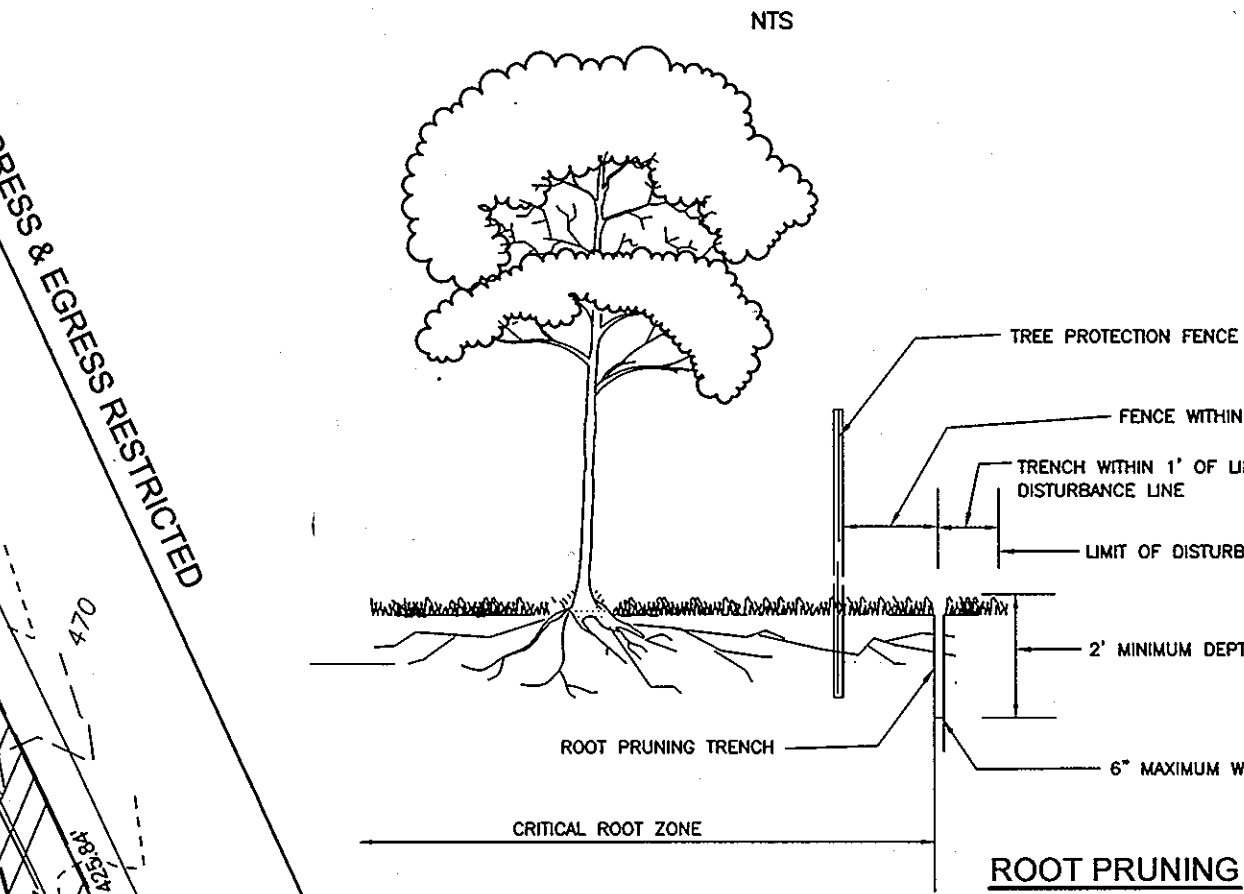
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008.

[Signature] ROMA JOSHI
 DNR QUALIFIED FOREST PROFESSIONAL



- NOTES:**
1. FOREST PROTECTION DEVICE ONLY.
 2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 4. ROOT DAMAGE SHOULD BE AVOIDED.
 5. PROTECTION SIGNAGE SHOULD BE USED.
 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

BLAZE ORANGE PLASTIC MESH TYPICAL TREE PROTECTION FENCE DETAIL



- NOTES:**
1. RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
 2. BOUNDARIES OF RETENTION AREAS TO BE STAKED, FLAGGED AND/OR FENCED PRIOR TRENCHING.
 3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
 4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR ORGANIC SOIL. 5. ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.

WETLAND LINE TABLE			
L1	S02°06'46"E 219.27	L40	S20°50'37"W 18.92
L2	S18°49'27"W 31.38	L41	S33°52'30"E 31.01
L3	S08°30'49"W 31.28	L42	S66°43'04"W 26.55
L4	S12°06'23"W 22.93	L43	N03°43'20"E 18.04
L5	S02°23'41"W 42.23	L44	N44°36'39"W 11.69
L6	S13°05'07"E 39.62	L45	S28°42'39"W 24.38
L7	S01°01'27"W 21.89	L46	S18°15'21"W 27.61
L8	S08°42'09"W 26.42	L47	S39°24'15"W 41.84
L9	S00°10'11"E 28.36	L48	N13°37'37"W 22.92
L10	S12°36'13"E 33.41	L49	N29°58'40"E 20.62
L11	S15°45'59"E 29.66	L50	N39°58'41"E 22.03
L12	S00°16'06"W 14.33	L51	N08°58'48"W 12.74
L13	N49°44'34"W 14.33	L52	N68°55'52"W 19.32
L14	N27°21'05"W 28.37	L53	N23°17'37"E 26.51
L15	N50°54'55"W 5.31	L54	N85°37'29"E 30.68
L16	S13°06'54"W 23.40	L55	N30°11'35"E 19.38
L17	S20°12'06"W 43.02	L56	N45°04'59"E 18.99
L18	S13°00'06"W 27.44	L57	N00°25'55"E 11.00
L19	S88°06'23"W 34.05	L58	N33°52'11"W 23.72
L20	N07°41'07"W 17.79	L59	N19°51'43"E 16.72
L21	N77°56'19"E 23.26	L60	N30°50'56"E 44.00
L22	N01°29'19"E 25.96	L61	N24°02'36"W 11.64
L23	N32°17'23"E 60.54	L62	S64°52'40"W 29.35
L24	N24°18'15"E 20.23	L63	N89°32'28"W 24.13
L25	N21°16'43"W 17.91	L64	N03°17'01"W 27.67
L26	N02°18'55"W 25.80	L65	N11°43'16"E 19.43
L27	N03°49'01"E 48.60	L66	N58°18'47"E 13.67
L28	N01°49'00"E 22.95	L67	S33°18'59"E 18.76
L29	N05°35'41"W 27.65	L68	S60°22'06"E 19.29
L30	N10°07'19"W 28.95	L69	N84°18'08"E 18.22
L31	N07°34'40"E 17.26	L70	N43°32'02"E 31.34
L32	S37°02'31"W 10.01	L71	N38°01'40"E 36.19
L33	S37°32'22"W 30.09	L72	N41°30'05"E 48.32
L34	S17°13'11"W 27.18	L73	S72°42'45"E 19.14
L35	N81°43'33"W 27.53	L74	N28°22'29"E 38.28
L36	S50°16'09"W 26.95	L75	N08°58'24"W 39.21
L37	S09°31'48"W 32.37	L76	N09°12'22"W 33.54
L38	S45°55'52"W 34.36	L77	N24°01'46"W 46.15
L39	S37°30'54"W 27.71	L78	N48°37'23"W 24.37

NET TRACT AREA:
 A. TOTAL TRACT AREA (INCLUDING R.O.W.) 17.01 AC
 B. AREA WITHIN 100 YEAR FLOODPLAIN 0.12 AC
 C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION 0.00 AC
 D. NET TRACT AREA 16.89 AC

LAND USE CATEGORY
 INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING.
 THIS PROJECT IS COMPLYING WITH RURAL CLUSTER OPTION B OF APPENDIX L OF THE FOREST CONSERVATION MANUAL WHERE ALL PRESERVATION PARCELS ARE INCLUDED IN THE FOREST CONSERVATION OBLIGATION CALCULATION. ZONED RC-DEO.

ARA MDR IDA HDR MPD CIA
 0 1 0 0 0 0
 E. AFFORESTATION THRESHOLD 20% X D = 3.38 AC
 F. CONSERVATION THRESHOLD 25% X D = 4.22 AC

EXISTING FOREST COVER:
 G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN) 15.04 AC
 H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD 11.66 AC
 I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD 10.82 AC

BREAK EVEN POINT:
 J. FOREST RETENTION WITH NO MITIGATION 6.39 AC
 K. CLEARING PERMITTED WITHOUT MITIGATION 8.65 AC

PROPOSED FOREST CLEARING:
 L. TOTAL AREA OF FOREST TO BE CLEARED 8.66 AC
 M. TOTAL AREA OF FOREST TO BE RETAINED 6.38 AC

PLANTING REQUIREMENTS:
 N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L X 25) 2.17 AC
 P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD 0.00 AC
 Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M-F) 2.16 AC
 R. TOTAL REFORESTATION REQUIRED (N+P-Q) 0.01 AC
 S. TOTAL AFFORESTATION REQUIRED 0.00 AC
 T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED 0.01 AC

THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE; FOREST CONSERVATION ACT, FOR THIS SUBDIVISION HAVE BEEN FULFILLED THROUGH THE CREATION OF A FOREST CONSERVATION RETENTION EASEMENT ON NON-BUILDABLE PRESERVATION PARCEL 'A' IN THE AMOUNT OF 6.38 ACRES AND A FEE-IN LIEU FOR THE REQUIRED 0.01 AC. OF REFORESTATION. TOTAL FOREST CONSERVATION OBLIGATION FOR THIS SUBDIVISION IS 6.39 AC.

DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE

I/WE CERTIFY THAT LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF THE PROJECT, 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.

[Signature] Michael Pflaum
 DEVELOPER'S/OWNER'S NAME:
 TRINITY QUALITY HOMES

WETLAND LINE TABLE		100 FLOOD PLAIN, DRAINAGE & UTILITY EASEMENT	
L79	S74°55'35"W 19.88	L96	N43°12'54"W 33.23
L80	N67°57'42"W 17.51	L97	N07°10'56"E 27.15
L81	N11°54'00"W 19.13	L98	N55°57'13"E 39.23
L82	N48°22'29"W 33.25	L99	N35°15'04"W 20.01
L83	N87°10'07"W 12.16	L100	S81°52'56"W 24.76
L84	S18°44'15"W 26.90	L101	N60°06'37"W 12.57
L85	S20°58'00"W 42.18	L102	N74°15'18"W 35.68
L86	S01°33'51"E 43.89	L103	N61°03'27"W 25.95
L87	S17°53'38"E 28.91	L104	N55°42'19"W 25.76
L88	S33°02'15"E 33.88	L105	S01°55'31"E 46.13
L89	S04°15'26"E 23.83	L106	S36°02'44"W 6.87
L90	S31°25'16"W 31.96	L107	N88°26'27"W 62.18
L91	S02°59'23"E 18.74	L108	N44°37'35"W 43.34
L92	S85°42'42"W 16.27	L109	N10°00'52"E 14.46
L93	N18°27'14"W 28.29	L110	N42°58'50"E 16.80
L94	N26°06'44"W 39.19	L111	N70°01'42"E 9.81
L95	N32°59'56"W 34.86	L112	N07°54'35"W 11.76

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
FOREST CONSERVATION PLAN & DETAILS
 BRANTWOOD OVERLOOK
 LOTS 1-8 AND NON-BUILDABLE PRESERVATION PARCELS 'A' & 'B'

TAX MAP 16 BLOCK 15, 16 & 22
 3RD ELECTION DISTRICT
 REF: F-02-41,F-02-42,SP-02-08,RE-06-03,WP-08-101 PARCELS '94' & '259'
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7866 FAX: 410.461.8951

DESIGN BY: RHM/RJ
 DRAWN BY: RJ
 CHECKED BY: RHM
 DATE: 03-28-2008
 SCALE: AS SHOWN
 W.O. NO.: 2017112.00-05-65

9 SHEET OF 9