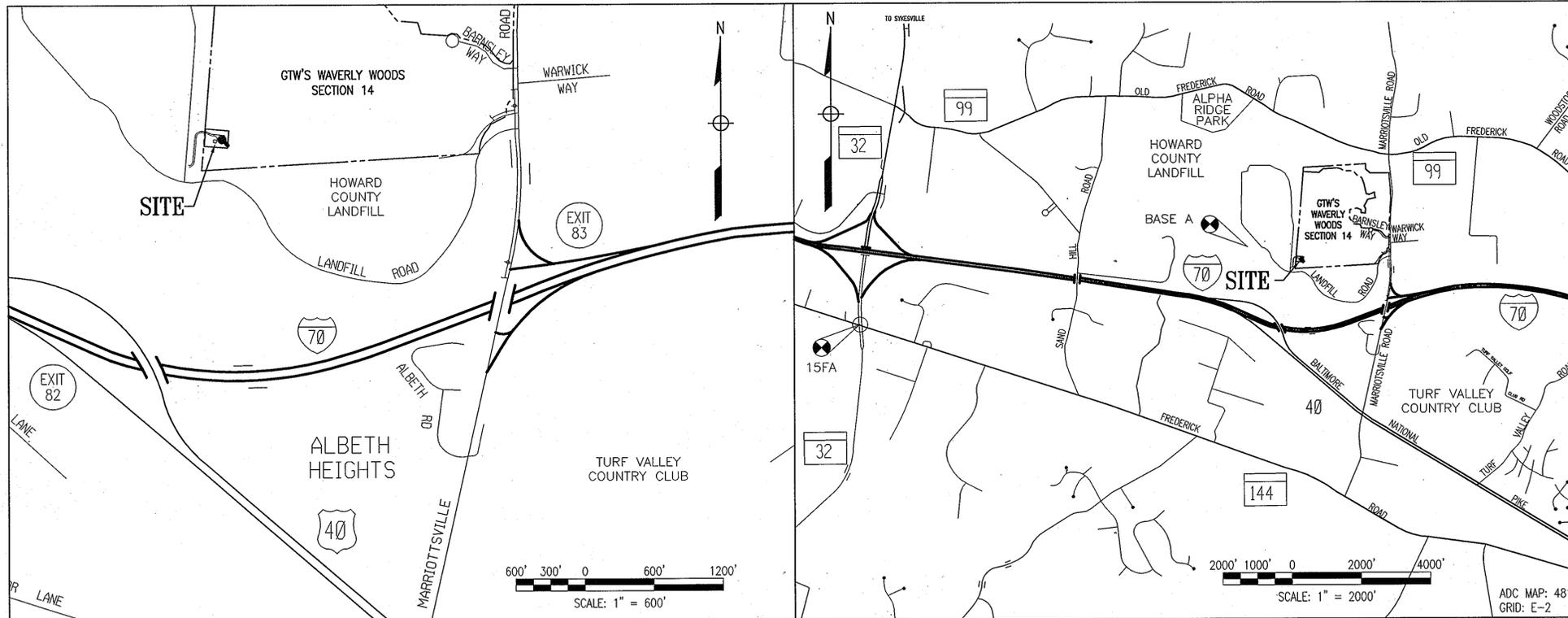


**GENERAL NOTES**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY SPECIFICATIONS AND DETAILS FOR CONSTRUCTION PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS (410) 313-6125 AND BUREAU OF ENVIRONMENTAL SERVICES AT (410) 313-6444 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE SUBJECT PROPERTY IS ZONED PSC PER THE FEBRUARY 2, 2004 COMPREHENSIVE ZONING PLAN AND PER THE "COMP LITE" ZONING REGULATION AMENDMENTS EFFECTIVE JULY 28, 2006.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAM(S) OR THEIR REQUIRED BUFFERS AND FOREST CONSERVATION EASEMENTS.
- WAIVER PETITION WP-10-055 FOR WAIVER OF SUBSECTION 16.1201(n) OF THE HOWARD COUNTY CODE WAS APPROVED ON 12/04/2009 FOR TM PARCELS 220 AND 302 TO ALLOW THE PROJECT LIMIT OF DISTURBANCE TO BE USED FOR FOREST CONSERVATION REQUIREMENTS. \$23,195.70 WAS TRANSFERRED TO THE FOREST CONSERVATION FUND - SECTION 16.1211.
- THE FOREST CONSERVATION OBLIGATION FOR OPEN SPACE LOT 1 HAS BEEN PROVIDED BY F-09-057.
- WATER IS PUBLIC CONTRACT NUMBER 44-4509.
- OPEN SPACE LOT 1 IS IN A SUBDIVISION SERVED BY PUBLIC WATER AND PUBLIC SEWER.
- THERE ARE NO WETLANDS OR FLOODPLAIN WITHIN THE LIMITS OF THIS PLAN SUBMISSION.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE MARYLAND STATE P.A. COORDINATE SYSTEM: HORIZONTAL NAD'83/91 VERTICAL NAVD'88.
- TOPOGRAPHICAL FIELD SURVEYS OF THE SITE WERE PERFORMED BY WHITMAN REQUARDT AND ASSOCIATES LLP (WRA) IN DECEMBER 2006. ADDITIONAL UTILITY INFORMATION WAS PROVIDED BY HOWARD COUNTY RECORDS AND MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION.
- APPROXIMATE LOCATION AND INVERTS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN AN UNINTERRUPTED SERVICE. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES BY TEST PIT OR OTHER MEANS OF INVESTIGATION APPROVED BY THE OWNER WELL IN ADVANCE OF CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- ALL STORMWATER MANAGEMENT FOR THE PROPOSED SITE DEVELOPMENT WILL BE ADDRESSED BY NON-STRUCTURAL STORMWATER MANAGEMENT CREDITS.
- THE CONTRACTOR SHALL PERMANENTLY STABILIZE AND SEED ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED.
- ALL DRIVEWAYS ARE MAINTAINED BY THE COUNTY.
- NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT AS GOVERNMENT FACILITIES ARE EXEMPT TO APFO IN GENERAL PER DESIGN MANUAL VOLUME III; SECTION 4.7.
- THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS SO AS NOT TO DAMAGE EXISTING ADJACENT FACILITIES AND STRUCTURES. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION OR BETTER, UNLESS NOTED OTHERWISE.
- ACCESS TO ALL EXISTING FACILITIES SHALL BE MAINTAINED AT ALL TIMES.



HORIZONTAL AND VERTICAL INFORMATION SHOWN HEREON IS BASED ON A GPS SURVEY PERFORMED BY WHITMAN REQUARDT AND ASSOCIATES. THESE VALUES WERE DERIVED FROM HOWARD COUNTY SURVEY CONTROL MONUMENTS "BASE A" AND "15FA", COORDINATES AND ELEVATIONS SHOWN HEREON ARE IN THE MARYLAND STATE COORDINATE SYSTEM: HORIZONTAL NAD'83/91 VERTICAL NAVD'88

NAME	NORTHING (US FL)	EASTING (US FL)	ELEVATION (US FL)
BASE A	598156.232	1336841.788	564.874
15FA	595906.984	1325627.673	486.232

**SITE DATA ANALYSIS CHART**

TOTAL PROJECT AREA: 0.73 ACRES  
 LIMIT OF DISTURBED AREA: ~~0.38~~ **0.28** ACRES  
 PRESENT ZONING DESIGNATION: PSC  
 PROPOSED USE: WATER STORAGE TANK  
 APPLICABLE DPZ FILE REFERENCES: S-06-13, F-08-159, F-09-057  
 SDP-09-037, SDP-09-039, SDP-05-074, WP-10-055

**LOCATION MAP**

**VICINITY MAP**

# MARRIOTTSVILLE ROAD ELEVATED TANK AND BOOSTER STATION SITE DEVELOPMENT PLAN CAPITAL PROJECT NO. W8263 CONTRACT NO. 44-4509 HOWARD COUNTY, MARYLAND

**DRAWING/SHEET INDEX**

DWG.	SHEET	DESCRIPTION
SDP-1	1	COVER SHEET
SDP-2	2	EXISTING SURVEY PLAN
SDP-3	3	SITE DEVELOPMENT PLAN
SDP-4	4	DRAINAGE AREA PLAN
SC-1	5	EROSION AND SEDIMENT CONTROL PLAN
SC-2	6	EROSION AND SEDIMENT CONTROL GENERAL NOTES
SC-3	7	EROSION AND SEDIMENT CONTROL GENERAL NOTES
SC-4	8	EROSION AND SEDIMENT CONTROL DETAILS

NAME OF UTILITY CONTRACTOR:  
 SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.

**HOWARD SOIL CONSERVATION DISTRICT CERTIFICATION**

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

*[Signature]* 3/16/11  
 HOWARD SOIL CONSERVATION DISTRICT DATE

**OWNERS/DEVELOPERS CERTIFICATION:**

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

*[Signature]* 3/9/11  
 DATE

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

*[Signature]* 3/25/11  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 16 DATE  
*[Signature]* 4/13/11  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*[Signature]* 4/16/11  
 DIRECTOR DATE

**APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS**

*[Signature]* 4/11/2011  
 COUNTY HEALTH OFFICER DATE  
 HOWARD COUNTY HEALTH DEPARTMENT

"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. 19376, EXPIRATION DATE: 9/22/2011."

**ENGINEERS/ARCHITECT DESIGN CERTIFICATION**

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

*[Signature]* 19376 3/7/11  
 SIGNATURE REGISTRATION NUMBER DATE

PREPARED BY:  
 WHITMAN, REQUARDT & ASSOCIATES, LLP  
 801 South Caroline Street, Baltimore, MD 21231



DES:	EAM		
DRN:	EAM		
CHK:	CYH	CYH	Revise Limit of Disturbance
BY:	NO.	REVISION	DATE

ADDRESS CHART	
PARCEL #	STREET ADDRESS
OPEN SPACE LOT 1	2350 MARRIOTTSVILLE ROAD

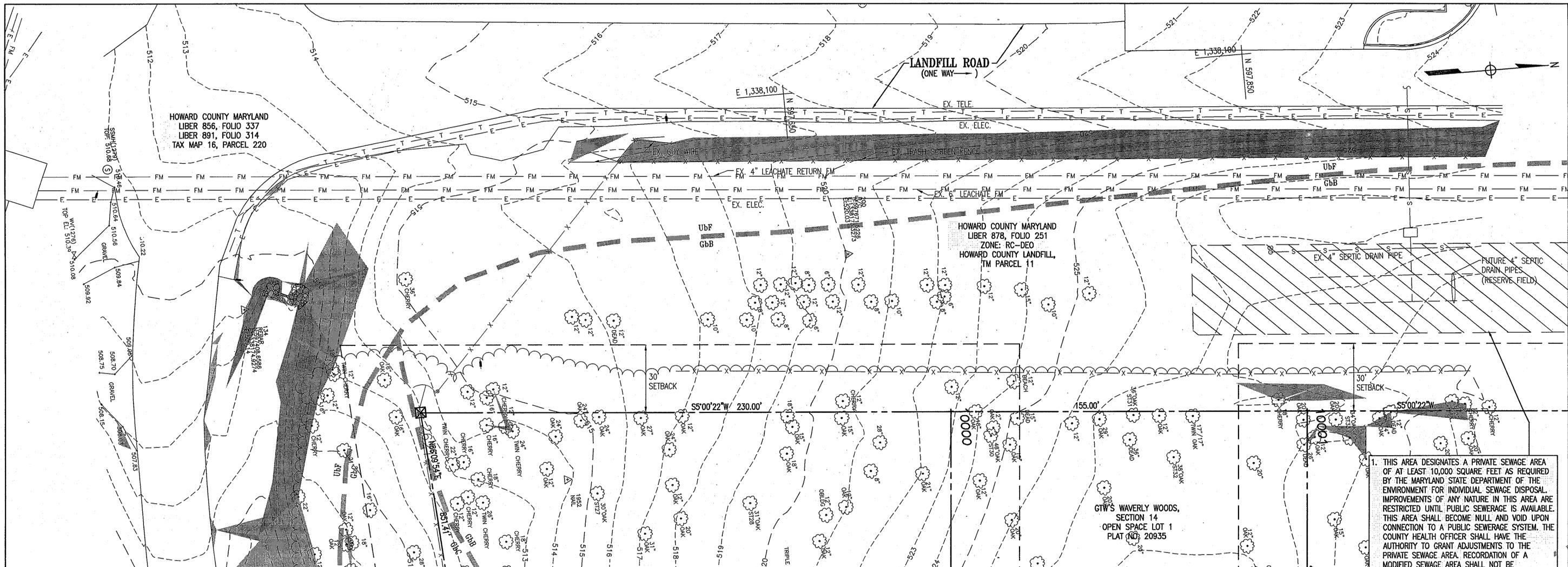
OWNER:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 COLUMBIA, MD 21045  
 ATTN: ROBERT DIAZ  
 VOICE 410-313-6125  
 FAX 410-313-6144

PERMIT INFORMATION CHART				
SUBDIVISION NAME:	SECTION/AREA	LOT/PARCEL	DWG.	
GTW'S WAVERLY WOODS	14	OPEN SPACE LOT 1 / TM PARCEL 120	SDP-1	
PLAT NO.	GRID #3	ZONING	TAX MAP	ELEC. DIST.
20935		PSC	16	3RD
CENSUS TRACT				
6030.00				

COVER SHEET

MARRIOTTSVILLE ROAD  
 ELEVATED TANK AND BOOSTER STATION  
 CAPITAL PROJECT NO. W8263  
 CONTRACT NO. 44-4509

ELECTION DISTRICT 3 DATE: 02/17/2011 HOWARD COUNTY, MARYLAND



**GENERAL NOTES**

1. THE COORDINATES SHOWN HEREON ARE BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM: HORIZONTAL NAD'83/91 VERTICAL NAD'88.
2. TOPOGRAPHICAL FIELD SURVEYS OF THE SITE WERE PERFORMED BY WHITMAN REQUARDT AND ASSOCIATES LLP (WRA) IN DECEMBER 2006. ADDITIONAL UTILITY INFORMATION WAS PROVIDED BY HOWARD COUNTY RECORDS AND MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION.
3. APPROXIMATE LOCATION AND INVERTS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN AN UNINTERRUPTED SERVICE. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES BY TEST PIT OR OTHER MEANS OF INVESTIGATION APPROVED BY THE OWNER WELL IN ADVANCE OF CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.

**SOILS LEGEND**

- Ubf- UDORTHODENTS, REFUSE 0 TO 65% SLOPES, ASSUME HSG C
  - Gbb- GLADSTONE LOAM, 3 TO 8% SLOPES, HSG B
  - Gbc- GLADSTONE LOAM, 8 TO 15% SLOPES, HSG B
- \*NO HYDRIC SOILS ARE PRESENT IN THE VICINITY.

**LEGEND**

- CONTOURS
- TRAVERSE STATION
- DECIDUOUS TREE
- CONIFEROUS TREE
- SAN. SEWER MANHOLE
- WATER VALVE
- GUY WIRE
- SIGN
- POST
- TREE LINES
- FENCE LINE
- WATER
- SEPTIC FIELD
- FORCE MAIN
- ELECTRICAL CONDUIT
- COMMUNICATION LINE
- SOILS DIVIDE
- PROPERTY LINE
- SETBACK
- SLOPES 15-24.9%
- SLOPES 25% AND GREATER
- RP RAP
- SEPTIC RESERVE AREA

1. THIS AREA DESIGNATES A PRIVATE SEWAGE AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.

2. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

*John P. ...* 3/25/11  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*West ...* 4/13/11  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

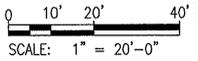
*Thomas ...* 4/16/11  
 DIRECTOR DATE

**APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS**

*Robert ...* 4/11/2011  
 COUNTY HEALTH OFFICER DATE

*...* 1798  
 HOWARD COUNTY HEALTH DEPARTMENT

OWNER:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 COLUMBIA, MD 21045  
 ATTN: ROBERT DIAZ  
 VOICE 410-313-6125  
 FAX 410-313-6144



"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. 19376, EXPIRATION DATE: 9/22/2011."

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND.

*John ...* 3/14/11  
 DIRECTOR OF PUBLIC WORKS DATE

*Robert ...* 3/10/11  
 CHIEF, BUREAU OF ENGINEERING DATE

*John ...* 3/19/11  
 CHIEF, BUREAU OF UTILITIES DATE

*...* 3/19/11  
 CHIEF, UTILITY DESIGN DIVISION DATE

PREPARED BY:  
 WHITMAN, REQUARDT & ASSOCIATES, LLP  
 801 South Caroline Street, Baltimore, MD 21231

**WR&A**

*Whitman Requardt*



DES:	EAM
DRN:	EAM
CHK:	CYH
BY:	NO.
REVISION:	
DATE:	

EXISTING SURVEY PLAN

600' SCALE TAX MAP NO. 16 BLOCK NO. 3

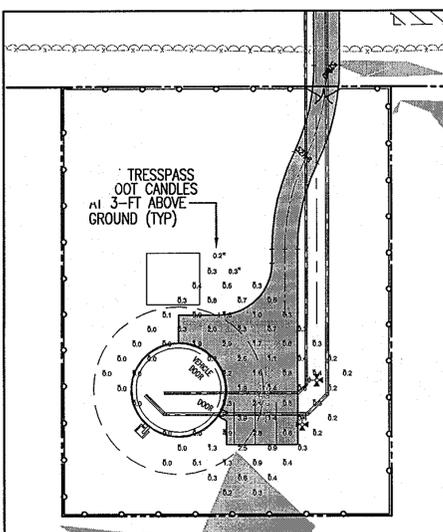
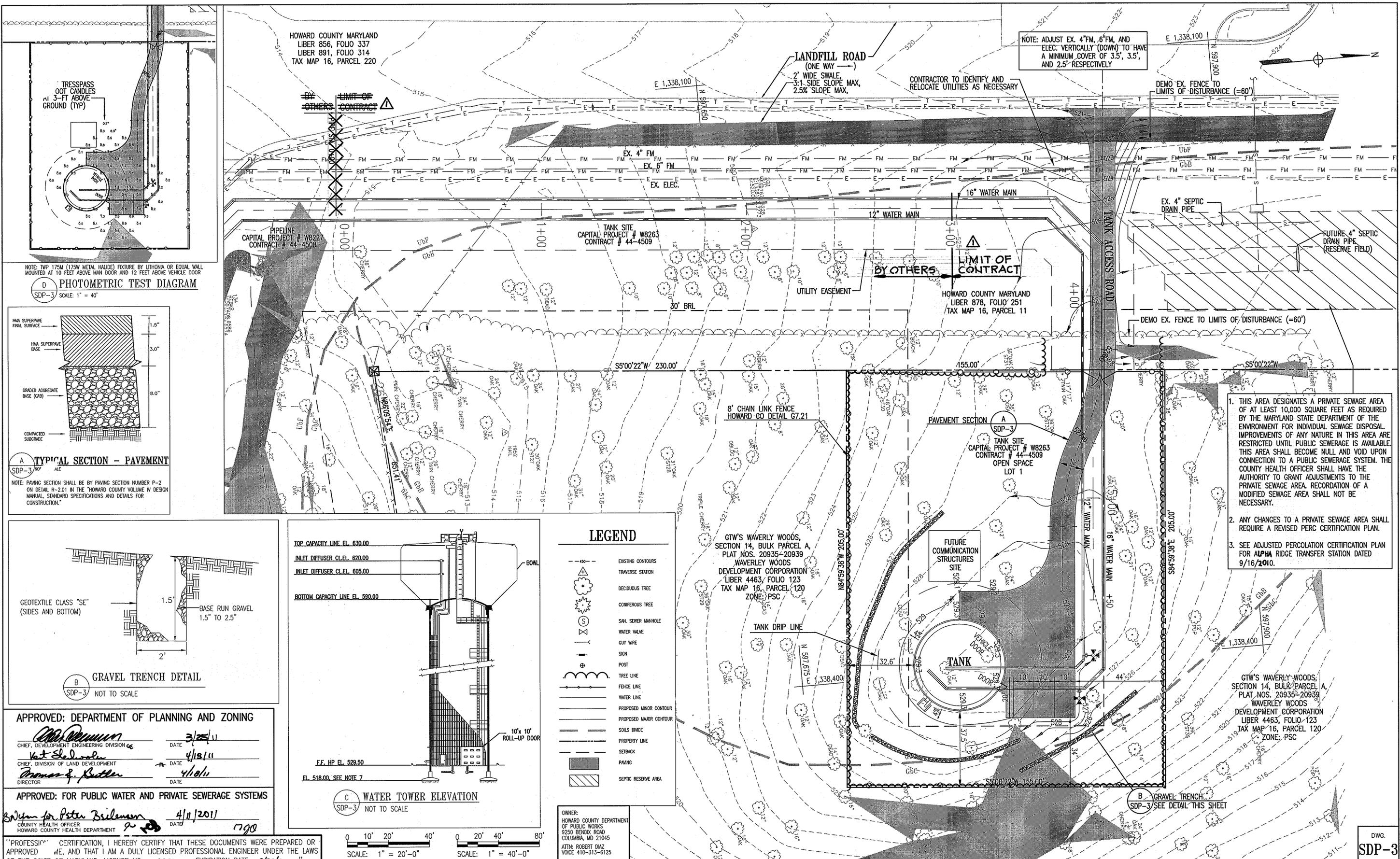
MARRIOTTVILLE ROAD  
 ELEVATED TANK AND BOOSTER STATION  
 CAPITAL PROJECT NO. W8263  
 CONTRACT NO. 44-4509

ELECTION DISTRICT 3 DATE: 02/17/2011 HOWARD COUNTY, MARYLAND

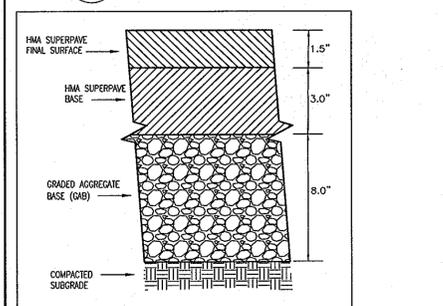
DWG.  
**SDP-2**

SCALE  
 1" = 20'

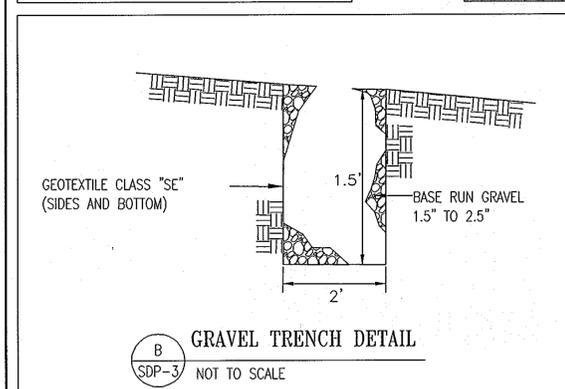
SHEET  
 2 OF 8



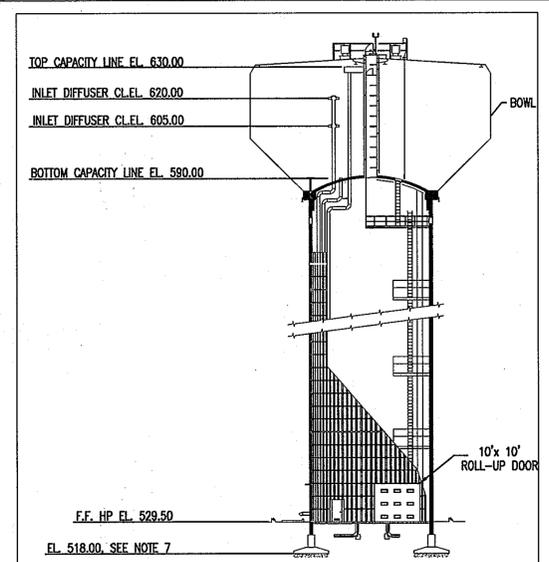
**D PHOTOMETRIC TEST DIAGRAM**  
SDP-3 SCALE: 1" = 40'



**A TYPICAL SECTION - PAVEMENT**  
SDP-3 NOTE: PAVING SECTION SHALL BE BY PAVING SECTION NUMBER P-2 ON DETAIL P-2.01 IN THE "HOWARD COUNTY VOLUME IV DESIGN MANUAL, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION"



**B GRAVEL TRENCH DETAIL**  
SDP-3 NOT TO SCALE



**C WATER TOWER ELEVATION**  
SDP-3 NOT TO SCALE

**LEGEND**

- - - - - EXISTING CONTOURS
- △ TRVERSE STATION
- DECIDUOUS TREE
- CONIFEROUS TREE
- SANI. SEWER MANHOLE
- WATER VALVE
- GUY WIRE
- SIGN
- POST
- TREE LINE
- FENCE LINE
- WATER LINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- SOILS DIVIDE
- PROPERTY LINE
- SETBACK
- PAVING
- SEPTIC RESERVE AREA

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

*[Signature]* 3/25/11  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 4/12/11  
CHIEF, DIVISION OF LAND DEVELOPMENT

*[Signature]* 4/16/11  
DIRECTOR

**APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS**

*[Signature]* 4/11/2011  
COUNTY HEALTH OFFICER  
HOWARD COUNTY HEALTH DEPARTMENT

"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. 19276, EXPIRATION DATE: 9/22/2011."

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND.

*[Signature]* 3/14/11  
DIRECTOR OF PUBLIC WORKS

*[Signature]* 3/12/11  
CHIEF, BUREAU OF ENGINEERING

*[Signature]* 3/13/11  
CHIEF, BUREAU OF UTILITIES

PREPARED BY:  
**WHITMAN, REQUARDT & ASSOCIATES, LLP**  
801 South Caroline Street, Baltimore, MD 21231

**WR&A**

OWNER:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
9250 BENDIX ROAD  
COLUMBIA, MD 21045  
ATTN: ROBERT DIAZ  
VOICE 410-313-6125

DES:	EAM
DRN:	EAM
	CYH
CHK:	08/25/10
BY:	CYH
NO.:	1
REVISION:	Revise Limit of Contract
DATE:	4/29/11

**SITE DEVELOPMENT PLAN**

MARRIOTTVILLE ROAD  
ELEVATED TANK AND BOOSTER STATION  
CAPITAL PROJECT NO. W8263  
CONTRACT NO. 44-4509

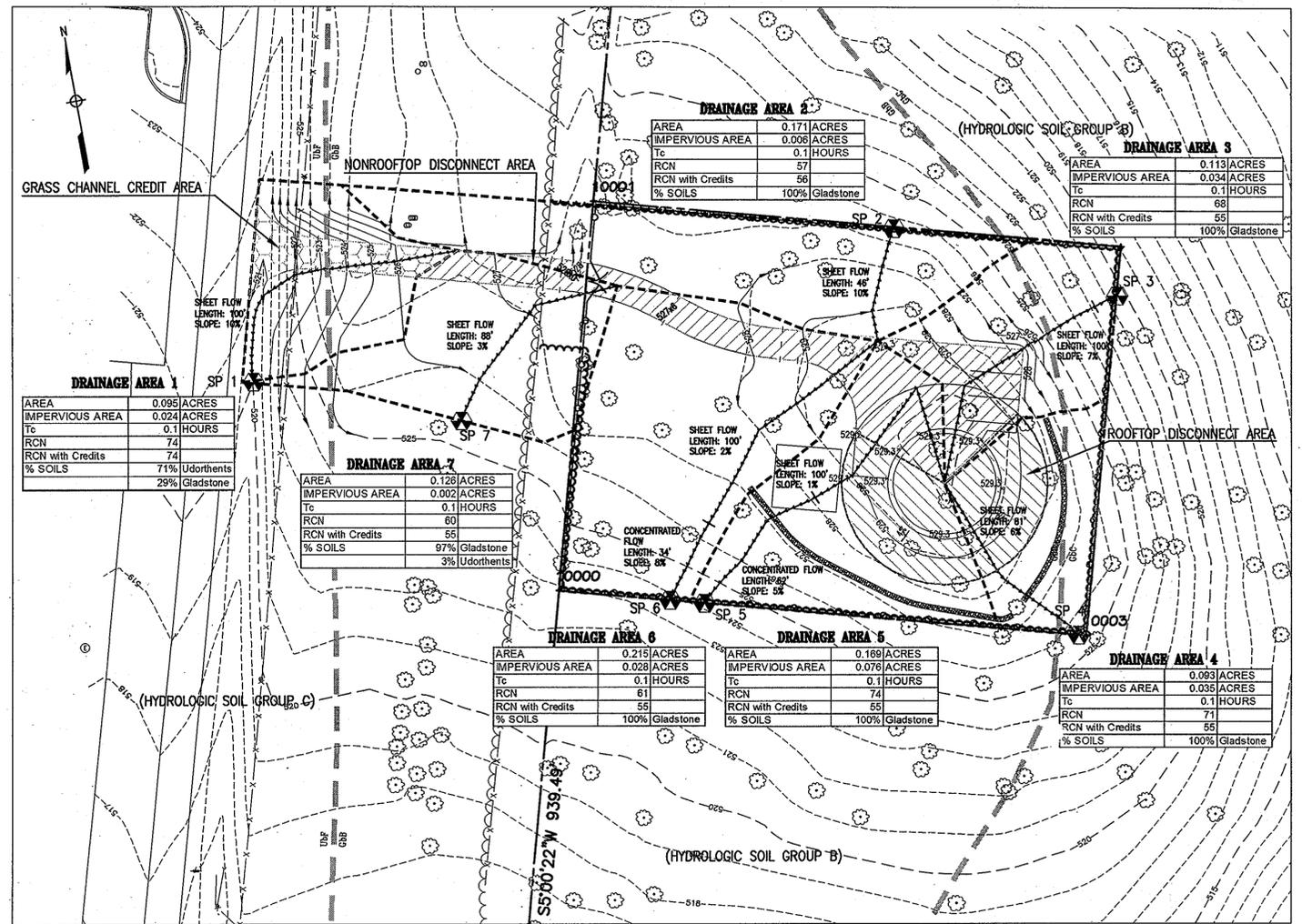
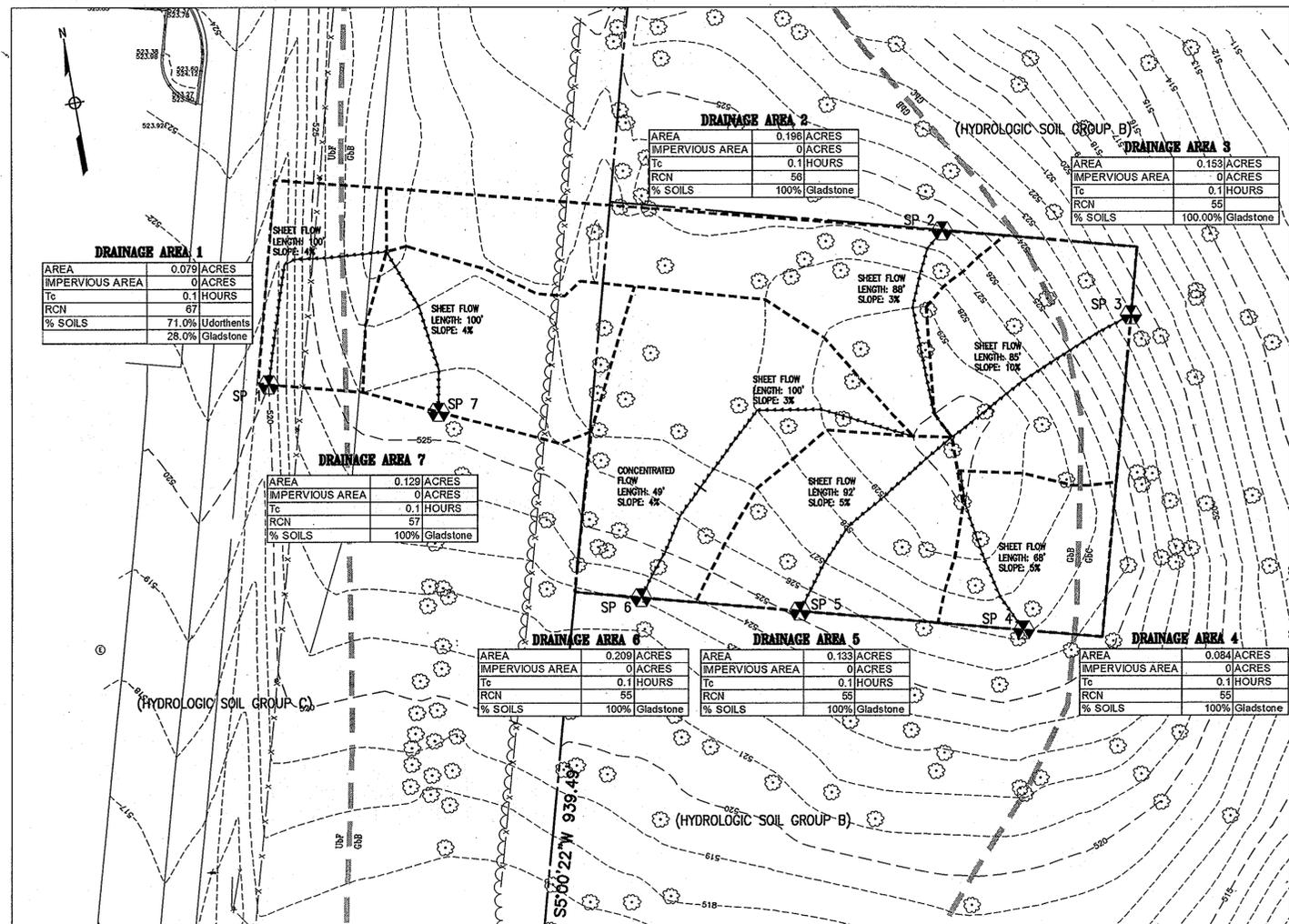
SCALE: 1" = 20'

SHEET 3 OF 8

ELECTION DISTRICT 3 DATE: 02/17/2011 HOWARD COUNTY, MARYLAND

SDP-10-083

1. THIS AREA DESIGNATES A PRIVATE SEWERAGE AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWERAGE AREA. RECORDATION OF A MODIFIED SEWERAGE AREA SHALL NOT BE NECESSARY.
2. ANY CHANGES TO A PRIVATE SEWERAGE AREA SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.
3. SEE ADJUSTED PERCOLATION CERTIFICATION PLAN FOR ALPHA RIDGE TRANSFER STATION DATED 9/16/2010.



**EXISTING DRAINAGE AREA PLAN**

**PROPOSED DRAINAGE AREA PLAN**

**LEGEND**

	CONTOURS		TREE LINES
	TRAVERSE STATION		FENCE LINE
	DECIDUOUS TREE		WATER
	CONIFEROUS TREE		SOILS DIVIDE
	SAN SEWER MANHOLE		PROPERTY LINE
	WATER VALVE		SETBACK
	GUY WIRE		TIME OF CONCENTRATION LINE
	SIGN		EXISTING DRAINAGE DIVIDE
	POST		PROPOSED DRAINAGE DIVIDE
	STUDY POINT		NON-ROOFTOP DISCONNECT AREA
			ROOFTOP DISCONNECT AREA
			GRASS CHANNEL TREATMENT AREA

**TR-20 SUMMARY**

	1 YEAR	10 YEAR	100 YEAR
EXISTING	0.04	0.21	0.38
PROPOSED	0.11	0.36	0.59
PROPOSED WITH CREDITS	0.11	0.36	0.59

	1 YEAR	10 YEAR	100 YEAR
EXISTING	0.01	0.31	0.68
PROPOSED	0.04	0.38	0.74
PROPOSED WITH CREDITS	0.03	0.36	0.72

	1 YEAR	10 YEAR	100 YEAR
EXISTING	0.00	0.22	0.51
PROPOSED	0.10	0.38	0.65
PROPOSED WITH CREDITS	0.01	0.21	0.45

	1 YEAR	10 YEAR	100 YEAR
EXISTING	0.00	0.12	0.27
PROPOSED	0.10	0.35	0.58
PROPOSED WITH CREDITS	0.01	0.18	0.37

	1 YEAR	10 YEAR	100 YEAR
EXISTING	0.00	0.19	0.44
PROPOSED	0.21	0.66	1.12
PROPOSED WITH CREDITS	0.01	0.29	0.62

	1 YEAR	10 YEAR	100 YEAR
EXISTING	0.00	0.30	0.70
PROPOSED	0.10	0.57	1.09
PROPOSED WITH CREDITS	0.03	0.43	0.87

	1 YEAR	10 YEAR	100 YEAR
EXISTING	0.01	0.21	0.46
PROPOSED	0.05	0.41	0.80
PROPOSED WITH CREDITS	0.02	0.33	0.69

**TREATMENT AREAS**

ROOFTOP DISCONNECT: 0.081 ACRES  
NON-ROOFTOP DISCONNECT: 0.113 ACRES  
GRASS CHANNEL CREDIT: 0.024 ACRES

**SOILS LEGEND**

UdF- UDORTHODENTS, REFUSE 0 TO 65% SLOPES, ASSUME HSG C  
G6B- GLADSTONE LOAM, 3 TO 8% SLOPES, HSG B  
G6C- GLADSTONE LOAM, 8 TO 15% SLOPES, HSG B  
\*NO HYDRIC SOILS ARE PRESENT IN THE VICINITY.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 3/25/11  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*[Signature]* 4/18/11  
CHIEF, DIVISION OF LAND DEVELOPMENT  
*[Signature]* 4/16/11  
DIRECTOR

OWNER: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
9250 BENDIX ROAD  
COLUMBIA, MD 21045  
ATTN: ROBERT DIAZ  
VOICE 410-315-6125

"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. 19376, EXPIRATION DATE: 2/22/2011."

SCALE: 1" = 30'-0"

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
*[Signature]* 3/14/11  
DIRECTOR OF PUBLIC WORKS  
*[Signature]* 3/19/11  
CHIEF, BUREAU OF ENGINEERING  
*[Signature]* 3/19/11  
CHIEF, UTILITY DESIGN DIVISION

PREPARED BY:  
WHITMAN, REQUARDT & ASSOCIATES, LLP  
801 South Caroline Street, Baltimore, MD 21231  
**WR&A**  
*[Signature]*



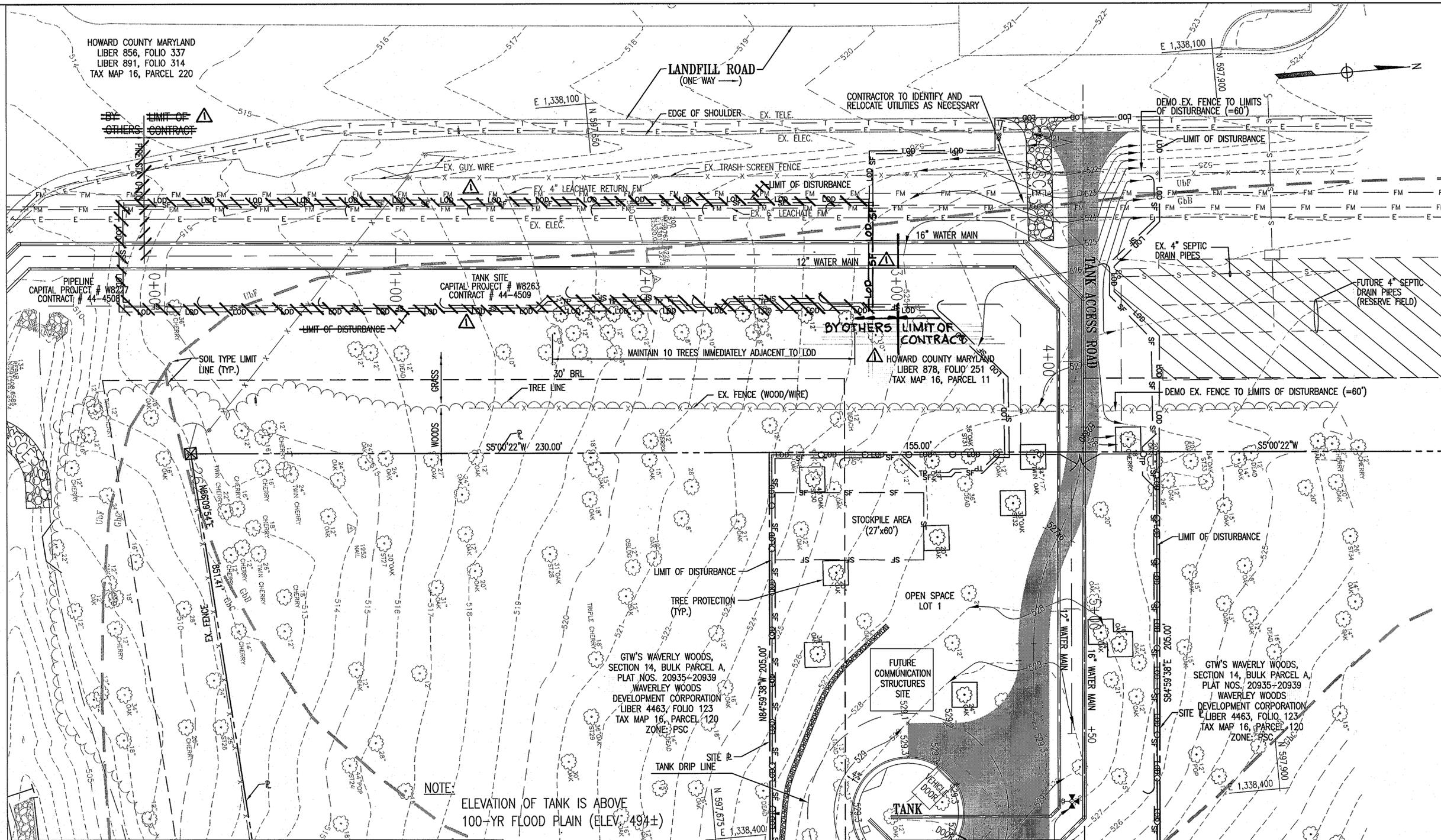
DES:	EAM			
DRN:	EAM			
CHK:	CYH			
BY:	NO.	REVISION	DATE	

**DRAINAGE AREA PLAN**

600' SCALE TAX MAP NO. 16, BLOCK NO. 3

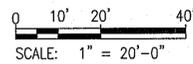
MARRIOTTVILLE ROAD  
ELEVATED TANK AND BOOSTER STATION  
CAPITAL PROJECT NO. W8263  
CONTRACT NO. 44-4509  
ELECTION DISTRICT 3 DATE: 02/17/2011 HOWARD COUNTY, MARYLAND

DWG.  
**SDP-4**  
SCALE  
1" = 30'  
SHEET  
4 OF 8



- NOTES:
1. ALL TRENCHING OPERATIONS ARE TO BE LIMITED TO THAT WHICH CAN BE BACKFILLED AND STABILIZED AT THE END OF EACH WORKING DAY.
  2. SILT FENCE SHALL BE CONSTRUCTED IN "J" FORMATIONS WHERE INDICATED AT A MAXIMUM INTERVAL OF 50'.
  3. SHIFT STABILIZED CONSTRUCTION ENTRANCE TO ACCESS ROAD AS CONSTRUCTION PROGRESSES.

NOTE: ELEVATION OF TANK IS ABOVE 100-YR FLOOD PLAIN (ELEV. 494±)



APPROVED: DEPARTMENT OF PLANNING AND ZONING

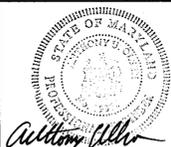
[Signature] 3/25/11  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
 [Signature] 4/13/11  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
 [Signature] 4/10/11  
 DIRECTOR DATE  
 OWNER: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 2250 BENDIX ROAD  
 COLUMBIA, MD 21045  
 ATTN: ROBERT DIAZ  
 VOICE 410-313-6125

"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. 19376, EXPIRATION DATE: 9/22/2011."

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

[Signature] 3/14/11  
 DIRECTOR OF PUBLIC WORKS DATE  
 [Signature] 3/14/11  
 CHIEF, BUREAU OF UTILITIES DATE  
 [Signature] 3/14/11  
 CHIEF, UTILITY DESIGN DIVISION DATE

PREPARED BY:  
WHITMAN, REQUARDT & ASSOCIATES, LLP  
801 South Caroline Street, Baltimore, MD 21231



DES: JDV

DRN: ACM

CHK: JDV

BY: [Signature] NO. 1 REVISION: Revise Limit of Disturbance DATE: 6/29/11

EROSION AND SEDIMENT CONTROL PLAN

MARRIOTTVILLE ROAD  
ELEVATED TANK AND BOOSTER STATION  
CAPITAL PROJECT NO. W8263  
CONTRACT NO. 44-4509

ELECTION DISTRICT 3 DATE: 02/17/2011 HOWARD COUNTY, MARYLAND

DWG.  
SC-1

SCALE  
1" = 20'

SHEET  
5 OF 8

**EROSION AND SEDIMENT CONTROL - GENERAL NOTES**

**1. HOWARD COUNTY NOTIFICATION**

THE CONTRACTOR MUST NOTIFY THE HOWARD COUNTY ENVIRONMENTAL COMPLIANCE SECTION IN WRITING AND/OR BY TELEPHONE (410) 313-1880 AT THE FOLLOWING POINTS:

- PRE-CONSTRUCTION MEETING (MINIMUM 5 DAYS PRIOR TO START OF CONSTRUCTION)
- FOLLOWING INSTALLATION OF INITIAL SEDIMENT CONTROL MEASURES
- PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL DEVICE
- PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES
- PRIOR TO FINAL ACCEPTANCE BY COUNTY.

**2. STANDARDS AND SPECIFICATIONS**

THIS PLAN IS DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND ALL REVISIONS THEREOF AND ADDITIONS THERETO INCLUDED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL HAVE A COPY OF THE 1994 "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" ON THE SITE.

**3. INGRESS/EGRESS CONTROLS**

THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ON PUBLIC ROADS. ALL MATERIALS DEPOSITED ON PUBLIC ROADS SHALL BE MECHANICALLY REMOVED IMMEDIATELY. THE FLUSHING OF ROAD SURFACES IS PROHIBITED.

TYPICALLY, ALL INGRESS AND EGRESS POINTS SHALL BE CONTROLLED THROUGH THE USE OF A "STABILIZED CONSTRUCTION ENTRANCE."

**4. INSPECTION**

THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES.

**5. SHUTDOWNS AND OR PENALTIES**

TOTAL COMPLIANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS EXPECTED AT ALL TIMES. IN CASES WHERE THE CONTRACTOR IS FOUND TO BE IN NON-COMPLIANCE THE COUNTY MAY TAKE STEPS TO IMPOSE SELECTED OR TOTAL SHUTDOWNS AND IMPOSE PER DAY PENALTIES OR NON-COMPLIANCE.

THE COUNTY ENGINEER CAN IMPOSE A TOTAL OR PARTIAL SHUTDOWN IF THE PROJECT MAY ADVERSELY IMPACT THE WATERS OF THE STATE.

**6. RECORD KEEPING**

THE PROJECT'S APPROVAL LETTER, APPROVED EROSION AND SEDIMENT CONTROL PLANS, APPROVED CHANGE REQUESTS, DAILY LOG BOOKS AND TEST REPORTS WILL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MDE.

**EROSION AND SEDIMENT CONTROL EXCAVATION**

SILT REMOVED FROM CONTROL DEVICES SHALL BE PLACED IN AN APPROVED WASTE SITE EITHER ON OR OFF THE PROJECT. MATERIAL STORED ON SITE MAY BE REUSED ONCE IT IS DRIED AND IF IT MEETS COUNTY REQUIREMENTS FOR EMBANKMENT OR ANY UNSPECIFIED NEED.

**1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL STANDARD REFERENCE DETAILS**

DETAIL NO.	TITLE	PAGE
22	SILT FENCE	E-15-3, 3A
24	STABILIZED CONSTRUCTION ENTRANCE	F-17-3
33	SUPER SILT FENCE	H-26-3, 3A

**OTHER PROTECTION MEASURES**

--- TREE PROTECTION (SEE DWG. SC-3) ---

**9. OFF-SITE UTILITY WORK**

SEDIMENT CONTROL FOR UTILITY CONSTRUCTION IN AREAS OUTSIDE OF DESIGNED CONTROLS SHALL FOLLOW THESE ADDITIONAL BEST MANAGEMENT PRACTICES:

- CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK
- EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
- TRENCHING TO BE LIMITED TO THAT LENGTH WHICH CAN BE BACKFILLED AND STABILIZED AT THE END OF EACH WORKING DAY, I.E., TRENCHES SHALL NOT BE LEFT OPEN.

**10. SENSITIVE AREAS**

NO CONSTRUCTION ACTIVITIES SHALL BE UNDERTAKEN WITHIN SPECIFIED SENSITIVE AREAS OF THE PROJECT WITHOUT PRIOR NOTIFICATION OF THE ENGINEER. ALL WORK IN THESE AREAS SHALL BE MONITORED BY A RESPONSIBLE PARTY DESIGNATED BY THE CONTRACTOR TO ASSURE THAT REASONABLE CARE IS TAKEN IN OR ADJACENT TO THESE AREAS. AREAS CONSIDERED SENSITIVE ARE DEFINED AS: FLOODPLAINS, WETLANDS (TIDAL, NONTIDAL AND ASSOCIATED BUFFERS) CRITICAL AREAS, FORESTED AREAS, ARCHEOLOGICAL SITES, HISTORIC SITES, PARKLAND AND OPEN WATER.

**11. SITE INFORMATION** \* (NOT FOR BIDDING PURPOSES)

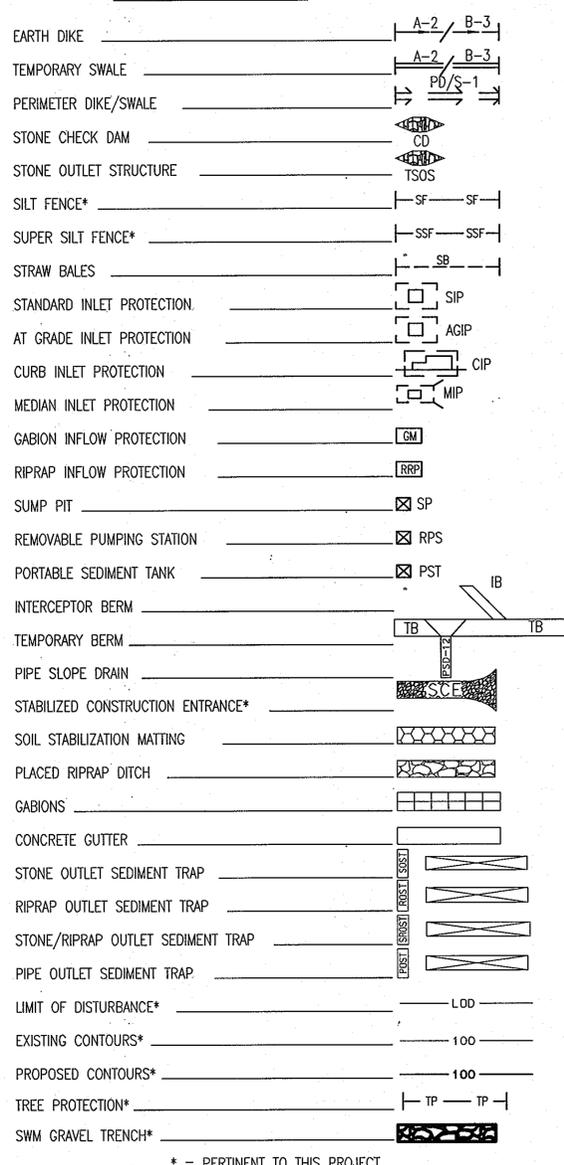
TOTAL AREA OF SITE ~~0.73~~ **0.73** ACRES  
 AREA DISTURBED ~~0.98~~ **0.98** ACRES  
 AREA TO BE PAVED 0.13 ACRES  
 TOTAL CUT 361.0 CU. YDS.  
 TOTAL FILL 71.0 CU. YDS.  
 OFFSITE WASTE/BORROW AREA LOCATION (IF KNOWN) NOT KNOWN ACRES

**12. CHECKLIST FOR REQUIRED INSPECTIONS**

**\*\* NOTICE \*\***  
 THIS LIST IS FOR THE SEQUENCE OF CONSTRUCTION ONLY. HOWARD COUNTY ASSUMES NO RESPONSIBILITY FOR IMPROPER INSTALLATION OF ANY ITEM ON THIS CHECKLIST. A PROFESSIONAL ENGINEER OR THEIR DESIGNEE MUST CERTIFY ALL ASPECTS OF CONSTRUCTION AND CONFORMANCE TO DESIGN REQUIREMENTS.

TYPE OF INSPECTION	
1. PRE-CONSTRUCTION MEETING	<input type="checkbox"/>
2. COMPLETION OF SEDIMENT CONTROL MEASURES (IF CONSTRUCTING A BASIN, SEE #6)	<input type="checkbox"/>
3. PRIOR TO MODIFICATION OR REMOVAL OF SEDIMENT CONTROL	<input type="checkbox"/>
4. INFILTRATION SYSTEMS (NOT APPLICABLE ON THIS CONTRACT)	<input type="checkbox"/>
A. SITE READINESS PER SEQUENCE OF CONSTRUCTION	<input type="checkbox"/>
B. INFILTRATION AREA PROTECTED FROM SEDIMENTATION	<input type="checkbox"/>
C. DIMENSIONS	<input type="checkbox"/>
D. FILTERING MATERIAL (TYPE/DEPTH)	<input type="checkbox"/>
E. FILL MATERIAL	<input type="checkbox"/>
F. SIZE, PLACEMENT, TYPE OF PIPING (IF APPLICABLE)	<input type="checkbox"/>
G. OBSERVANT WELL	<input type="checkbox"/>
H. COVER/STABILIZATION	<input type="checkbox"/>
5. OPEN CHANNEL FLOW ATTENUATION (NOT APPLICABLE ON THIS CONTRACT)	<input type="checkbox"/>
A. SITE READINESS PER SEQUENCE OF CONSTRUCTION	<input type="checkbox"/>
B. CROSS-SECTION CONFORMATION	<input type="checkbox"/>
C. MATERIAL (TYPE/SIZE)	<input type="checkbox"/>
D. STABILIZATION	<input type="checkbox"/>
6. RETENTION/DETENTION STRUCTURES, BASINS/PONDS (NOT APPLICABLE ON THIS CONTRACT)	<input type="checkbox"/>

**STANDARD SYMBOLS**



\* = PERTINENT TO THIS PROJECT.

**BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, NOTIDAL WETLANDS BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS**

NOTE: THE MARRIOTTVILLE ROAD TANK SITE IS DEVOID OF ANY OF THESE ENVIRONMENTALLY SENSITIVE FEATURES.

**OVERALL PROJECT SEQUENCE OF CONSTRUCTION**

- CALL 'MISS UTILITY' AT 1-800-257-7777 48 HOURS BEFORE ANY CONSTRUCTION IS TO BEGIN.
- NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISIONS AT LEAST 5 DAY\* PRIOR TO THE START OF CONSTRUCTION TO ARRANGE A PRE-CONSTRUCTION MEETING.
- PLACE STABILIZED CONSTRUCTION ENTRANCES AT ALL POINTS OF EASEMENT ACCESS FROM EXISTING ROADS.
- INSTALL AND STABILIZE SEDIMENT CONTROL MEASURES CONSISTING PRIMARILY OF SILT FENCE ALONG THE TANK SITE PROPERTY LINE AND LIMIT OF DISTURBANCE LINE FOR THE ACCESS ROAD AND APPROACHING 16" AND 12" WATER MAINS. (SEE DWG. SC-1.)
- STOCKPILE TOPSOIL.
- EXCAVATE FOR AND INSTALL ACCESS ROAD, WATERMANS, TANK AND ASSOCIATED STRUCTURES.
- EXCAVATION FROM PIPE TRENCHING OPERATIONS SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
- VEGETATIVELY STABILIZE BACKFILLED TRENCH AND STRUCTURE SITES AS WORK PROGRESSES.
- NOTIFY ENVIRONMENTAL COMPLIANCE SECTION (ECS, 410-313-1880) AND OBTAIN APPROVAL TO REMOVE SEDIMENT CONTROL MEASURES
- PERMANENTLY STABILIZE ANY AREAS DISTURBED DURING CLEANUP ACTIVITIES.
- EXCAVATION FROM TRENCHING OPERATIONS SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 2/25/11  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 4/13/11  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 4/13/11  
 DIRECTOR

OWNER:  
 HOWARD COUNTY DEPARTMENT  
 OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 COLUMBIA, MD 21045  
 ATTN: ROBERT DIAZ  
 VOICE 410-313-6125

"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. 19376, EXPIRATION DATE: 9/22/2011."

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND.  
 [Signature] 3/13/11  
 DIRECTOR OF PUBLIC WORKS  
 [Signature] 3/9/11  
 CHIEF, BUREAU OF UTILITIES

PREPARED BY:  
 WHITMAN, REQUARDT & ASSOCIATES, LLP  
 801 South Caroline Street, Baltimore, MD 21231



DES:	JDV			
DRN:	ACM			
CHK:	JDV	CYH	Revise Limit of Disturbance	6/21/11
BY	NO.	REVISION	DATE	

EROSION AND SEDIMENT CONTROL  
 GENERAL NOTES

MARRIOTTVILLE ROAD  
 ELEVATED TANK AND BOOSTER STATION  
 CAPITAL PROJECT NO. W8263  
 CONTRACT NO. 44-4509  
 ELECTION DISTRICT 3 DATE: 02/17/2011 HOWARD COUNTY, MARYLAND

DWG.  
**SC-2**  
 SCALE  
 N/A  
 SHEET  
 6 OF 8

**SECTION II - TEMPORARY SEEDING**

VEGETATION - ANNUAL GRASS OR GRAIN USED TO PROVIDE COVER ON DISTURBED AREAS FOR UP TO 12 MONTHS. FOR LONGER DURATION OF VEGETATIVE COVER, PERMANENT SEEDING IS REQUIRED.

**A. SEED MIXTURES - TEMPORARY SEEDING**

- I. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN NRCS-MD TABLE 1 FOR THE APPROPRIATE PLANT HARDINESS ZONE AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW, ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLANS AND COMPLETED, THEN TABLE 1 MUST BE PUT ON THE PLANS.
- II. FOR SITES HAVING SOIL TESTS PERFORMED, THE RATES SHOWN ON THIS TABLE SHALL BE DELETED AND THE RATES RECOMMENDED BY THE TESTING AGENCY SHALL BE WRITTEN IN. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

**TEMPORARY SEEDING SUMMARY**

SEED MIXTURE (HARDINESS ZONE 6B) FROM NRCS-MD TABLE 1					FERTILIZER RATE (10-10-10)	LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS		
	ANNUAL RYEGRASS	40	MAR 1 TO MAY 15 AUG 1 TO OCT 15	0.5"	600 LB/AC (15 LB/1000 SF)	2 TONS/AC (100 LB/1000 SF)

**SECTION III - PERMANENT SEEDING**

SEEDING GRASS AND LEGUMES TO ESTABLISH GROUND COVER FOR A MINIMUM PERIOD OF ONE YEAR ON DISTURBED AREAS GENERALLY RECEIVING LOW MAINTENANCE.

**A. SEED MIXTURES - PERMANENT SEEDING**

- I. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN NRCS-MD TABLE 4 FOR THE APPROPRIATE PLANT HARDINESS ZONE AND ENTER THEM IN THE PERMANENT SEEDING SUMMARY BELOW, ALONG WITH APPLICATION RATES AND SEEDING DATES. SEEDING DEPTHS CAN BE ESTIMATED USING TABLE 4. IF THIS SUMMARY IS NOT PUT ON THE CONSTRUCTION PLANS AND COMPLETED, THEN TABLE 4 MUST BE PUT ON THE PLANS. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-SCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING. FOR SPECIAL LAWN MAINTENANCE AREAS, SEE SECTIONS IV SOD AND V TURF GRASS.
- II. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, THE RATE SHOWN ON THIS TABLE SHALL BE DELETED AND THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY SHALL BE WRITTEN IN.
- III. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREAFORM FERTILIZER (46-0-0) AT 3 A/2 LBS/1000 SQ. FT. (150 LBS/AC), IN ADDITION TO THE ABOVE SOIL AMENDMENTS SHOWN IN THE TABLE BELOW, TO BE PERFORMED AT THE TIME OF SEEDING.

**PERMANENT SEEDING SUMMARY**

SEED MIXTURE (HARDINESS ZONE 6B) FROM NRCS-MD TABLE 4					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P205	K20	
11*	CREeping RED FESCUE CHEWING FESCUE KENTUCKY BLUEGRASS ROUGH BLUEGRASS	30 30 20 15	MAR 1 TO MAY 31 AUG 1 TO SEPT 30	1/4-1/2"	90 LB/AC (2.0 LB/ 1000 SF)	175 LB/AC (4 LB/ 1000 SF)	175 LB/AC (4 LB/ 1000 SF)	2 TONS/AC (100 LB/ 1000 SF)

\* SEED MIX 11 FROM THE NATURAL RESOURCES CONSERVATION SERVICE - MARYLAND, SEE TABLE 4, PAGE 342-21 FOR RECOMMENDED CULTIVARS AND TABLE 5 FOR QUALITY OF SEEDS.

**SECTION IV - SOD:** TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

**A. GENERAL SPECIFICATIONS**

- I. CLASS OF TURF GRASS SOD SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED OR APPROVED. SOD LABELS SHALL BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
- II. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4", PLUS OR MINUS 1/4", AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH. INDIVIDUAL PIECES OF SOD SHALL BE CUT TO THE SUPPLIER'S WIDTH AND LENGTH. MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTHS SHALL BE 5 PERCENT. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
- III. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
- IV. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
- V. SOD SHALL BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD SHALL BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

**B. SOD INSTALLATION**

- I. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, THE SUBSOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD.
- II. THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
- III. WHEREVER POSSIBLE, SOD SHALL BE LAID WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. SOD SHALL BE ROLLED AND TAMPED, PEGGED OR OTHERWISE SECURED TO PREVENT SLIPPAGE ON SLOPES AND TO ENSURE SOLID CONTACT BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
- IV. SOD SHALL BE WATERED IMMEDIATELY FOLLOWING ROLLING OR TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN EIGHT HOURS.

**C. SOD MAINTENANCE**

- I. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4". WATERING SHOULD BE DONE DURING THE HEAT OF THE DAY TO PREVENT WILTING.
- II. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
- III. THE FIRST MOWING OF SOD SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF SHALL BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2" AND 3" UNLESS OTHERWISE SPECIFIED.

**MAINTENANCE FERTILIZATION FOR PERMANENT SEEDINGS**

**USE SOIL TEST RESULTS OR RATES SHOWN BELOW**

SEEDING MIXTURE	TYPE	LB/AC	LB/1000 SF	TIME	MOWING
TALL FESCUE MAKES UP 70% OR MORE OF COVER	10-10-10 OR 30-10-10	500 400	11.5 9.2	YEARLY OR AS NEEDED. FALL	NOT CLOSER THAN 3" IF OCCASIONAL MOWING IS DESIRED
CROWNVETCH SERICEA LESPEDEZA BIRDSFOOT TREFLOIL	0-20-0	400	9.2	SPRING, THE YEAR FOLLOWING ESTABLISHMENT AND EVERY 4-5 YEARS THEREAFTER	DO NOT MOW CROWNVETCH
FAIRLY UNIFORM STAND OF TALL FESCUE AND SERICEA LESPEDEZA, OR BIRDSFOOT TREFLOIL	5-10-10	500	11.5	FALL THE YEAR FOLLOWING ESTABLISHMENT AND EVERY 4-5 YEARS THEREAFTER	NOT REQUIRED, NO CLOSER THAN 4" IN THE FALL AFTER SEED HAS MATURED.
WEEPING LOVEGRASS & SERICEA LESPEDEZA FAIRLY UNIFORM PLANT DISTRIBUTION	5-10-10	500	11.5	SPRING, THE YEAR FOLLOWING ESTABLISHMENT AND EVERY 4-5 YEARS THEREAFTER	NOT REQUIRED, NO CLOSER THAN 4" IN THE FALL AFTER SEED HAS MATURED.
RED & CHEWING FESCUE, KENTUCKY BLUEGRASS, HARD FESCUE MIXTURES	20-10-10	250 100	5.8 2.3	SEPTEMBER, 30 DAYS LATER, DECEMBER, MAY 20, JUNE 30, IF NEEDED.	MOW NO CLOSER THAN 2" FOR RED FESCUE AND KENTUCKY BLUEGRASS, 3" FOR FESCUE.

**SECTION V - TURF GRASS ESTABLISHMENT**

AREAS WHERE TURF GRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. AREAS TO RECEIVE SEED SHALL BE TILLED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVELED AND RAKED TO PREPARE A PROPER SEEDBED. STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER SHALL BE REMOVED. THE RESULTING SEEDBED SHALL BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

NOTE: CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

**A. TURF GRASS MIXTURES**

- I. KENTUCKY BLUEGRASS - FULL SUN MIXTURE - FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND THE EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS/1000 SQUARE FEET. A MINIMUM OF THREE BLUEGRASS CULTIVARS SHOULD BE CHOSEN RANGING FROM A MINIMUM OF 10% TO A MAXIMUM OF 35% OF THE MIXTURE BY WEIGHT.
- II. KENTUCKY BLUEGRASS/PERENNIAL RYE - FULL SUN MIXTURE - FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYE GRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE/1000 SQUARE FEET. A MINIMUM OF 3 KENTUCKY BLUEGRASS CULTIVARS MUST BE CHOSEN, WITH EACH CULTIVAR RANGING FROM 10% TO 35% OF THE MIXTURE BY WEIGHT.

- III. TALL FESCUE/KENTUCKY BLUEGRASS - FULL SUN MIXTURE - FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS TO RECEIVE LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95-100%, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0-5%. SEEDING RATE: 5 TO 8 LB/1000 SF. ONE OR MORE CULTIVARS MAY BE BLENDED.
- IV. KENTUCKY BLUEGRASS/FINE FESCUE - SHADE MIXTURE - FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30-40% AND CERTIFIED FINE FESCUE 60-70%. SEEDING RATE: 1 1/2 - 3 LBS/1000 SQUARE FEET. A MINIMUM OF 3 KENTUCKY BLUEGRASS CULTIVARS MUST BE CHOSEN, WITH EACH CULTIVAR RANGING FROM 10% TO A MAXIMUM OF 35% OF THE MIXTURE BY WEIGHT.

NOTE: TURF GRASS VARIETIES SHOULD BE SELECTED FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MIMCO #77, "TURF GRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND".

**B. IDEAL TIMES OF SEEDING**

WESTERN MD: MARCH 15 - JUNE 1, AUGUST 1 - OCTOBER 1 (HARDINESS ZONES - 5B, 6A)

CENTRAL MD: MARCH 1 - MAY 15, AUGUST 15 - OCTOBER 15 (HARDINESS ZONE - 6B)

SOUTHERN MD, EASTERN SHORE: MARCH 1 - MAY 15, AUGUST 15 - OCTOBER 15 (HARDINESS ZONES - 7A, 7B)

**C. IRRIGATION**

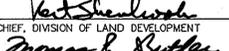
IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2" - 1" EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

**D. REPAIRS AND MAINTENANCE**

INSPECT ALL SEEDING AREAS FOR FAILURES AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

- I. ONCE THE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUND COVER TO BE CONSIDERED ADEQUATELY STABILIZED.
- II. IF THE STAND PROVIDES LESS THAN 40% GROUND COVERAGE, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZING SEEDBED PREPARATION AND SEEDING RECOMMENDATIONS.
- III. IF THE STAND PROVIDES BETWEEN 40% AND 94% GROUND COVERAGE, OVER SEEDING AND FERTILIZING USING HALF OF THE RATES ORIGINALLY APPLIED MAY BE NECESSARY.
- IV. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDINGS AS SHOWN IN TABLE 24. FOR LAWNS AND OTHER MEDIUM TO HIGH MAINTENANCE TURF GRASS AREAS, REFER TO THE UNIVERSITY OF MARYLAND PUBLICATION "LAWN CARE IN MARYLAND" BULLETIN NO. 171.

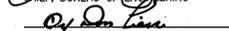
**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

 DATE: 3/25/11  
 DATE: 4/13/11  
 DATE: 4/13/11

OWNER:  
HOWARD COUNTY DEPARTMENT  
OF PUBLIC WORKS  
9250 BENDIX ROAD  
COLUMBIA, MD 21045  
ATTN: ROBERT DIAZ  
VOICE 410-313-6125

"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. 19376, EXPIRATION DATE: 3/22/2011."

**DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.**

 DATE: 3/14/11  
 DATE: 3/13/11  
 DATE: 3/2/11

PREPARED BY:  
**WHITMAN, REQUARDT & ASSOCIATES, LLP**  
801 South Caroline Street, Baltimore, MD 21231



DES:	JDV				
DRN:	ACM				
CHK:	JDV				
BY	NO.	REVISION	DATE		

**EROSION AND SEDIMENT CONTROL  
GENERAL NOTES**

600' SCALE TAX MAP NO. 16 BLOCK NO. 3

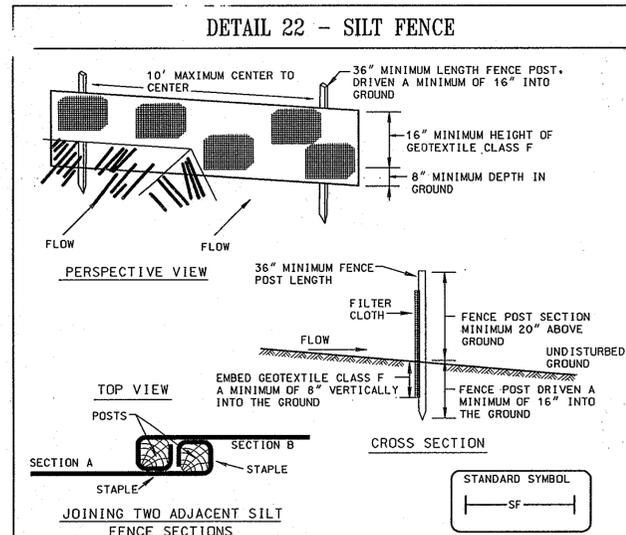
MARRIOTTVILLE ROAD  
ELEVATED TANK AND BOOSTER STATION  
CAPITAL PROJECT NO. W8263  
CONTRACT NO. 44-4509

ELECTION DISTRICT 3 DATE: 02/17/2011 HOWARD COUNTY, MARYLAND

DWG.  
**SC-3**

SCALE  
N/A

SHEET  
7 OF 8



**Construction Specifications**

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 1/2" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

Silt Fence shall be inspected after each rainfall event and maintained when algae occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

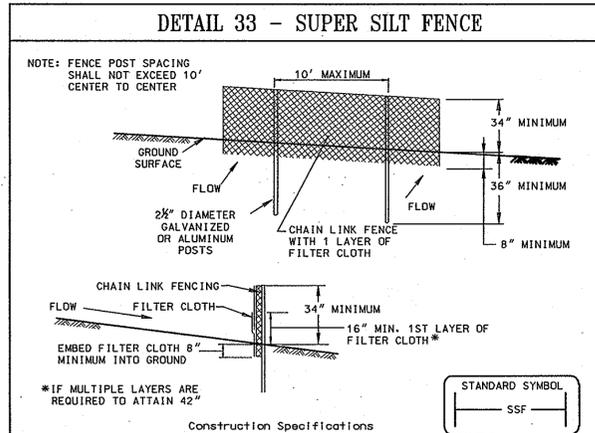
### SILT FENCE

**Silt Fence Design Criteria**

Slope Steepness	Silt Fence Design Criteria	
	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-15-3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**Construction Specifications**

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height
- Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

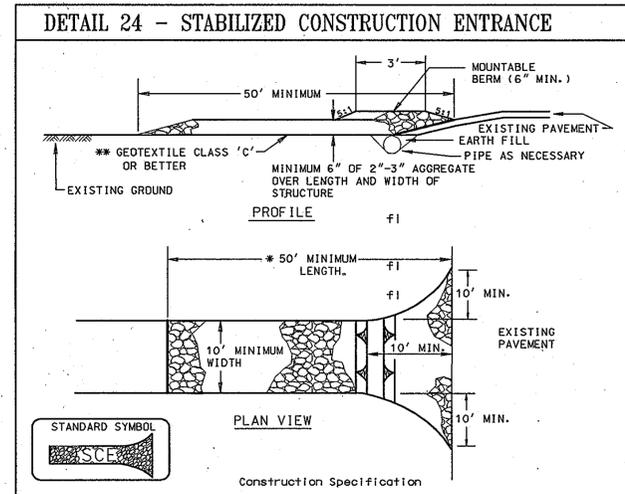
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-26-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### SUPER SILT FENCE

**Design Criteria**

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

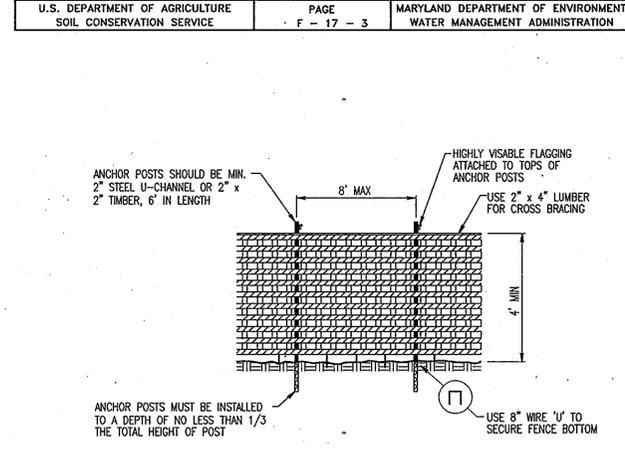
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-26-3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



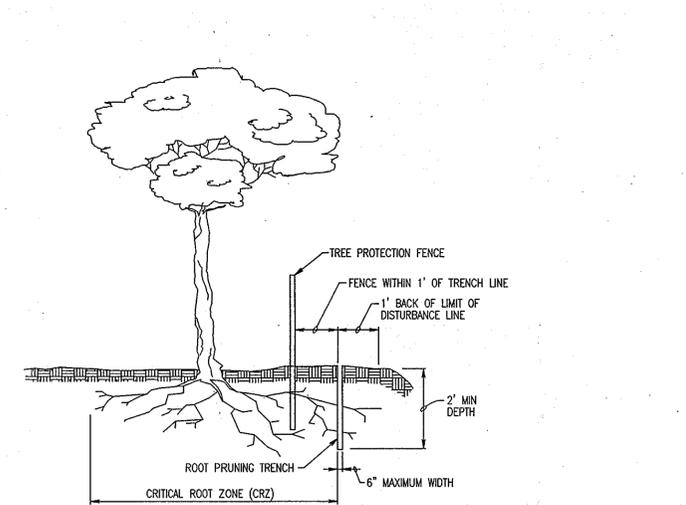
**Construction Specifications**

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

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



**PLASTIC MESH TREE PROTECTION FENCE**  
 NO SCALE



**THE CRITICAL ROOT ZONE (CRZ):**  
 FOR TREES ALONG THE EDGES OF STANDS, THE CRZ RADIUS = 1' FOR EVERY 1" OF TREE DIAMETER.  
 FOR RETENTION AREAS LESS THAN 10,000 SF AND ISOLATED SPECIMEN TREES, THE CRZ RADIUS = 1.5' FOR EVERY 1" OF TREE DIAMETER.

**NOTES:**

- RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
- BOUNDARIES OF RETENTION AREAS TO BE STAKED AND FLAGGED PRIOR TO TRENCHING.
- EXACT LOCATION OF TRENCH SHALL BE IDENTIFIED.
- TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR OTHER HIGH ORGANIC SOIL.
- ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.

### TREE CONSERVATION NOTES

- PRE-CONSTRUCTION ACTIVITIES**
- PRIOR TO THE START OF ANY CONSTRUCTION:
- THE CONTRACTOR SHALL LOCATE THE LIMITS OF DISTURBANCE (LOD) IN THE FIELD PRIOR TO ANY CONSTRUCTION ACTIVITIES. THEN INSTALL ALONG THE LOD BLAZE ORANGE FENCING. LOD SHALL BE PLACED OUTSIDE OF CRITICAL ROOT ZONES OF TREES TO BE PRESERVED WHEREVER POSSIBLE.
  - BLAZE ORANGE FENCING:
    - BLAZE ORANGE FENCING SHALL BE PLACED ON ALL LIMITS OF DISTURBANCE, EXCEPT WHERE INGRESS/EGRESS IS REQUIRED.
    - ALL FENCING SHALL BE INSTALLED PRIOR TO CONSTRUCTION ACTIVITIES.
    - FENCING SHALL BE FIRMLY ANCHORED AT SPACING NO GREATER THAN 10 FEET AND CONSTRUCTED IN A MANNER WHICH PRECLUDES SAGGING.
    - ALL FENCING SHALL BE MAINTAINED IN A GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS, FOR THE PROTECTION OF THE ADJACENT WOODLANDS.
  - SIMULTANEOUS WITH CLEARING, THE FOLLOWING STEPS SHOULD BE UNDERTAKEN TO REDUCE STRESS TO EXISTING TREES:
    - FERTILIZE TREES WITHIN 20 FEET OF THE CONSTRUCTION AREA AT THE RATE OF 3 POUNDS OF NITROGEN PER 1000 SQUARE FEET OF ROOT ZONE DISTURBED. APPLY FERTILIZER TO ENTIRE CRITICAL ROOT ZONE OUT TO THE BLAZE ORANGE FENCING.
    - FERTILIZER SHOULD BE AT LEAST 50 PERCENT SLOW RELEASE NITROGEN AND CONTAIN OTHER ESSENTIAL ELEMENTS AND MICRO-NUTRIENTS.
    - WATER CRITICAL ROOT ZONE IMMEDIATELY AFTER APPLYING FERTILIZER TO SATURATE THE TOP 6 INCHES OF SOIL.
    - A MULCH 1 TO 4 INCHES DEEP COMPRISED OF WOOD CHIPS OR SHREDDED BARK OR LEAVES, SHALL BE APPLIED IN THE CRITICAL ROOT ZONE ADJACENT TO THE BLAZE ORANGE FENCING (SEE EXISTING TREE MULCHING DETAIL).

- CONSTRUCTION PHASE**
- EXCAVATED AND BACK FILL MATERIAL SHALL NOT BE PLACED OR SIDE CAST WITHIN THE CRITICAL ROOT ZONES OF TREES TO BE PROTECTED.
  - CONSTRUCTION EQUIPMENT SHALL NOT BE DRIVEN INTO OR THROUGH PROTECTED TREES, NOR SHALL SWING CRANES OR BACKHOES BE ALLOWED IN THEIR CANOPIES.
  - THERE SHALL BE NO STACKING OR STORING SUPPLIES WITHIN THE CRITICAL ROOT ZONES OF TREES TO BE PROTECTED.
  - TREES TO BE REMOVED SHALL BE TAKEN OUT WITHOUT DAMAGING PROTECTED TREES.
  - ALL GRADING SHALL TAKE PLACE OUTSIDE OF THE CRITICAL ROOT ZONE OF THE TREES TO BE PROTECTED.
  - ALL EQUIPMENT SHALL BE KEPT INSIDE THE BLAZE ORANGE FENCING AND WITHIN THE LIMITS OF DISTURBANCE.
  - IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.

- POST-CONSTRUCTION ACTIVITIES**
- THE CONTRACTOR SHALL RETAIN A CERTIFIED TREE EXPERT, LANDSCAPE ARCHITECT, FORESTER OR ARBORIST TO DEVELOP A TREE REPAIR PLAN. THE TREE REPAIR PLAN MUST BE APPROVED BY HOWARD COUNTY.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 3/25/11  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 4/12/11  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 4/12/11  
 DIRECTOR DATE

OWNER:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 3250 BENDIX ROAD  
 COLUMBIA, MD 21045  
 ATTN: ROBERT DIAZ  
 VOICE 410-313-6125

"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. 19376, EXPIRATION DATE: 3/23/2011."

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND.

*[Signature]* 3/14/11  
 DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 3/9/11  
 CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 3/9/11  
 CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 3/9/11  
 CHIEF, UTILITY DESIGN DIVISION DATE

PREPARED BY:  
 WHITMAN, REQUARDT & ASSOCIATES, LLP  
 801 South Caroline Street, Baltimore, MD 21231

**WR&A**

*[Signature]*

DES:	JDV				
DRN:	ACM				
CHK:	JDV				
BY:	NO.	REVISION	DATE	600' SCALE TAX MAP NO. 16	BLOCK NO. 3

MARRIOTTVILLE ROAD  
 ELEVATED TANK AND BOOSTER STATION  
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ELECTION DISTRICT 3 DATE: 02/17/2011 HOWARD COUNTY, MARYLAND