






**GENERAL NOTES:**

- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED IN OCTOBER 2010 BY WHITMAN, REQUARDT & ASSOCIATES LLP.
- HORIZONTAL DATUM: THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE COORDINATE SYSTEM NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 30HA AND NO. 36BC ON LITTLE PATUXENT PARKWAY. SEE SURVEY INFORMATION THIS DRAWING.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD '88 AND WERE DERIVED FROM CONCRETE MONUMENTS AT SURVEY CONTROL STATION 30HA AND 36BC. SEE SURVEY INFORMATION TABLE ON THIS DRAWING.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12". CLEAR ALL POLES BY 5'-0" MINIMUM, OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF THE POLES WHICH ARE CALLED OUT ON DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL  AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK SHALL BE LOCATED BY THE CONTRACTOR BY TEST PIT TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.
 

AT&T .....	1-800-252-1133
BGE (CONSTRUCTION SERVICES) .....	410-637-8713
BGE (EMERGENCY) .....	410-685-0123
BUREAU OF UTILITIES .....	410-313-4900
COLONIAL PIPELINE CO. ....	410-795-1390
MISS UTILITY .....	1-800-257-7777
STATE HIGHWAY ADMINISTRATION .....	410-531-5533
VERIZON .....	1-800-743-0033/410-224-9210
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS, AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.
- CONTRACTOR SHALL INSTALL A TREE PROTECTION FENCE ALONG THE LIMIT OF DISTURBANCE FOR THE ENTIRE PROJECT AND WHERE THE LOD IS LINED WITH SILT FENCE OR SUPER SILT FENCE (STABILIZED CONSTRUCTION ENTRANCES EXCLUDED).
- SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREE PROTECTION FENCE DETAIL.
- STOCKPILE SPOILS FROM TRENCHING OPERATIONS ON THE UPHILL SIDE OF THE TRENCH, EXCEPT DO NOT STORE OR WASTE ANY SPOILS WITHIN 100-YEAR FLOOD PLAIN. ALL EXCESS MATERIALS SHALL BE REMOVED BY CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LINES, GRADES AND ELEVATIONS, AND CUT SHEETS SHALL BE PREPARED BASED ON THE LINES AND GRADES SHOWN ON THE CONTRACT DRAWINGS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING STAGING AND STOCKPILE AREAS.
- FOR THIS PROJECT THE STATE OF MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) PERMIT TRACKING NUMBER IS 201061556/10-NI-0417.

**SANITARY SEWER NOTES:**

- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED ON THE PLANS.
- FORCE MAINS SHALL BE D.I.P. ONLY.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED "WT" IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAILS G5.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATED THAT THE CELLAR CANNOT BE SERVED.

**POTABLE WATER NOTES:**

- ALL WATER MAINS SHALL BE D.I.P. CLASS 54 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- TRACER WIRES AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.
- FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. SEVENTEEN (17) POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. TWELVE (12) POUND ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON.
- PROPER ASSEMBLY OF GASKETED PVC PIPE JOINTS: THE MANUFACTURER'S INSERTION LINE OF GASKETED PVC PIPE JOINTS INDICATES THE MAXIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. AFTER ASSEMBLY OF THE JOINT, THE INSERTION LINE SHALL REMAIN VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE THE MAXIMUM AND MINIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. THE CONTRACTOR SHALL NOT OVER INSERT OR OVER HOME THE SPIGOT INTO THE BELL OF PVC PIPE.
- ALL CHANGES IN HORIZONTAL OR VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BEND, 5-DEGREE SWEEPS OR HIGH DEFLECTION (HD) COUPLINGS. NO BENDING OF THE PIPE OR DEFLECTING OF PVC PIPE JOINTS IS PERMITTED. WHERE HIGH DEFLECTION COUPLINGS OR 5-DEGREE SWEEPS ARE PERMITTED, THE CONTRACTOR SHALL PROVIDE ON FULL PIPE LENGTH (20-FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. THE CONTRACTOR SHALL USE VIBRATORY PLATE COMPACTOR OR OTHER APPROVED MEANS TO THOROUGHLY COMPACT THE #57 STONE ON BOTH SIDES OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP, TAKING CARE NOT TO USE COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING.
 

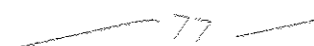
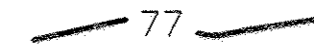




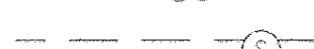






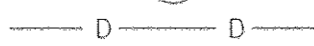



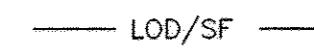

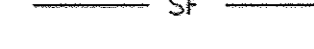



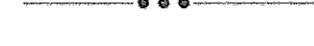












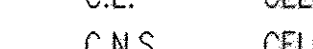
PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (1 1/2 - DEGREE ON EITHER END OF THE COUPLING), SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C900, SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTEEED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL.

FIVE DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (IPEX) BLUE BRUTE DR18 OR EQUAL.
- WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C-900 PVC PIPELINES, THE CONTRACTOR SHALL INSTALL DEVICES FOR THE PREVENTION OF OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH ON BELL JOINT ON BOTH SIDES OF THE HIGH DEFLECTION COUPLINGS AND 5-DEGREE SWEEPS. BELL STOPS SHALL BE PLACED AT THE PROPER INSERTION LINE FOR THE FITTING. THE BELL STOP SHALL BE MANUFACTURED OF DUCTILE IRON AND INCORPORATE AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELL STOPS SHALL BE SERIES 5000 MEGA-STOP, AS MANUFACTURED BY EBAA IRON, INC. OR APPROVED EQUAL.

**SURVEY INFORMATION TABLE**

GEODETIC CONTROL STA.	NORTHING	EASTING	ELEV.
30HA	566,030.6258	1,357,989.5444	386.983
36BC	563,264.1261	1,359,585.7197	409.981


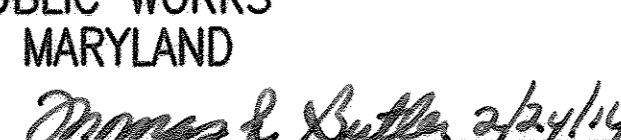


**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
		CONTOUR
		CURB
		SIGN
		TREELINE
		TREE
		SANITARY SEWER & MH
		REDUCER, TEE, VALVE & FIRE HYDRANT
		WATER MAIN
		WATER METER
		STORM DRAIN
		FENCE WIRE
		FENCE WOOD
		LIMITS OF DISTURBANCE
		LIMITS OF DISTURBANCE WITH SILT FENCE
		SILT FENCE
		SUPER SILT FENCE
		100 YEAR FLOOD PLAIN
		CENTER OF STREAM
		EDGE OF STREAM
		WETLAND BOUNDARY
		WETLAND BUFFER
		TRAVERSE POINT
		TEST PIT/HOLE
		BENCHMARK
		PROPERTY LINE
		PERMANENT EASEMENT
		TEMPORARY CONSTRUCTION EASEMENT
		MAILBOX
		POWER/UTILITY POLE
		GUARDRAIL

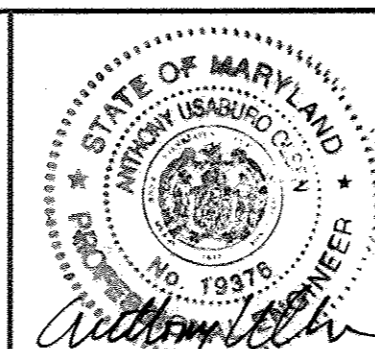
**ABBREVIATIONS**

C.E.	CELLAR ELEVATION	PVI	POINT OF VERTICAL INTERSECTION
C.N.S.	CELLAR NOT SERVED	R/W	RIGHT OF WAY
DES	DESIGN	S	GRAVITY SANITARY SEWER
DIA.	DIAMETER	SAN	SANITARY
DIP	DUCTILE IRON PIPE	SF	SILT FENCE
ELEV.	ELEVATION	SHC	SEWER HOUSE CONNECTION
ESMT.	EASEMENT	SSF	SUPER SILT FENCE
EX.	EXISTING	TYP.	TYPICAL
FPS	FEET PER SECOND	VB	VERTICAL POINT OF CURVATURE
HB	HORIZONTAL BEND	VPC	VERTICAL BEND
HDC	HIGH DEFLECTION COUPLING	VPT	VERTICAL POINT OF TANGENCY
HORIZ.	HORIZONTAL	WT	WATER TIGHT
INV.	INVERT	WHC	WATER HOUSE CONNECTION
LF	LINEAR FOOT		
LOD	LIMIT OF DISTURBANCE		
MGD	MILLION GALLONS PER DAY		
MIN.	MINIMUM		
N/A	NOT APPLICABLE		
NIC	NOT IN CONTRACT		
PC	POINT OF CURVATURE		
PI	POINT OF INTERSECTION		
PRC	POINT OF REVERSE CURVE		
PROP	PROPOSED		
PT	POINT OF TANGENCY		
PVC	POLYVINYL CHLORIDE PIPE		

"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: 9/22/2015."

<b>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</b>	
 DIRECTOR, PUBLIC WORKS	 CHIEF, BUREAU OF ENGINEERING
 CHIEF, BUREAU OF UTILITIES	 CHIEF, UTILITY DESIGN DIVISION

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

DES:	RBC	WRA	AS-BUILTS	7/16
DRN:	CYH			
CHK:	AUO			
DATE:	11/21/2013			
BY	NO.	REVISION	DATE	

GENERAL NOTES, TABLE OF COORDINATES, AND LEGEND

600' SCALE MAP NO. 36 BLOCK NO. 5

BLANDAIR REGIONAL PARK - PHASE J  
WATER AND SEWER EXTENSION  
CONTRACT NO. 24-4779

ELECTION DISTRICT 3/7

HOWARD COUNTY, MARYLAND

**AS-BUILT** DWG. **WS0.1**

SCALE AS SHOWN  
SHEET 2 OF 10



TM 36 P. 3  
 HOWARD COUNTY MARYLAND  
 DEPARTMENT OF PARKS AND RECREATION  
 DB 5203 F 439  
 NORTH OF MARYLAND ROUTE 175

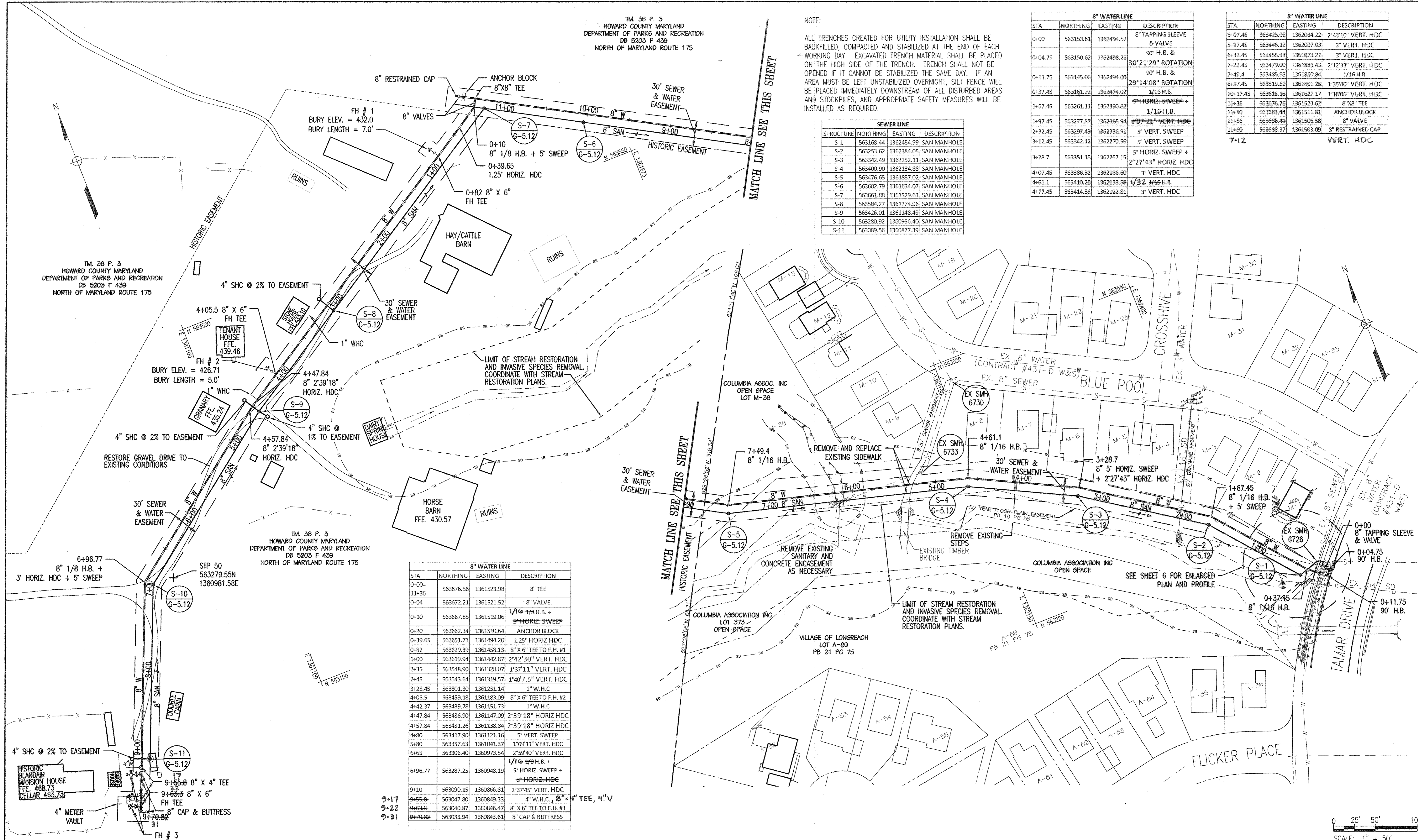
NOTE:

ALL TRENCHES CREATED FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH. TRENCH SHALL NOT BE OPENED IF IT CANNOT BE STABILIZED THE SAME DAY. IF AN AREA MUST BE LEFT UNSTABILIZED OVERNIGHT, SILT FENCE WILL BE PLACED IMMEDIATELY DOWNSTREAM OF ALL DISTURBED AREAS AND STOCKPILES, AND APPROPRIATE SAFETY MEASURES WILL BE INSTALLED AS REQUIRED.

STRUCTURE	NORTHING	EASTING	DESCRIPTION
S-1	563168.44	1362454.99	SAN MANHOLE
S-2	563253.62	1362384.05	SAN MANHOLE
S-3	563342.49	1362252.11	SAN MANHOLE
S-4	563400.90	1362134.88	SAN MANHOLE
S-5	563476.65	1361857.02	SAN MANHOLE
S-6	563602.79	1361634.07	SAN MANHOLE
S-7	563661.88	1361529.63	SAN MANHOLE
S-8	563504.27	1361274.96	SAN MANHOLE
S-9	563426.01	1361148.49	SAN MANHOLE
S-10	563280.92	1360956.40	SAN MANHOLE
S-11	563089.56	1360877.39	SAN MANHOLE

STA	NORTHING	EASTING	DESCRIPTION
0+00	563153.61	1362494.57	8" TAPPING SLEEVE & VALVE
0+04.75	563150.62	1362498.26	90° H.B. & 30°21'29" ROTATION
0+11.75	563145.06	1362494.00	90° H.B. & 29°14'08" ROTATION
0+37.45	563161.22	1362474.02	1/16 H.B.
1+67.45	563261.11	1362390.82	5" HORIZ. SWEEP + 1/16 H.B.
1+97.45	563277.87	1362365.94	1"07'21" VERT. HDC
2+32.45	563297.43	1362336.91	5" VERT. SWEEP
3+12.45	563342.12	1362270.56	5" VERT. SWEEP
3+28.7	563351.15	1362257.15	2°27'43" HORIZ. HDC
4+07.45	563386.32	1362186.60	3" VERT. HDC
4+61.1	563410.26	1362138.58	1/32" H.B.
4+77.45	563414.56	1362122.81	3" VERT. HDC

STA	NORTHING	EASTING	DESCRIPTION
5+07.45	563425.08	1362084.22	2°43'10" VERT. HDC
5+97.45	563446.12	1362007.03	3" VERT. HDC
6+32.45	563455.33	1361973.27	3" VERT. HDC
7+22.45	563479.00	1361886.43	2°12'33" VERT. HDC
7+49.4	563485.98	1361860.84	1/16 H.B.
8+17.45	563519.69	1361801.25	1°35'40" VERT. HDC
10+17.45	563618.18	1361627.17	1°18'06" VERT. HDC
11+36	563676.76	1361523.62	8"X8" TEE
11+50	563683.44	1361511.81	ANCHOR BLOCK
11+56	563686.41	1361506.58	8" VALVE
11+60	563688.37	1361503.09	8" RESTRAINED CAP



STA	NORTHING	EASTING	DESCRIPTION
0+00	563676.56	1361523.98	8" TEE
11+36	563672.21	1361521.52	8" VALVE
0+10	563667.85	1361519.06	1/16" H.B. + 5" HORIZ. SWEEP
0+20	563662.34	1361510.64	ANCHOR BLOCK
0+39.65	563651.71	1361494.20	1.25" HORIZ. HDC
0+82	563629.39	1361458.13	8" X 6" TEE TO F.H. #1
1+00	563619.94	1361442.87	2°42'30" VERT. HDC
2+35	563548.90	1361328.07	1°37'11" VERT. HDC
2+45	563543.64	1361319.57	1°40'7.5" VERT. HDC
3+25.45	563501.30	1361251.14	1" W.H.C.
4+05.5	563459.18	1361183.09	8" X 6" TEE TO F.H. #2
4+42.37	563439.78	1361151.73	1" W.H.C.
4+47.84	563436.90	1361147.09	2°39'18" HORIZ. HDC
4+57.84	563431.26	1361138.84	2°39'18" HORIZ. HDC
4+80	563417.90	1361121.16	5" VERT. SWEEP
5+80	563357.63	1361041.37	1°09'11" VERT. HDC
6+65	563306.40	1360973.54	2°59'40" VERT. HDC
6+96.77	563287.25	1360948.19	1/16" H.B. + 5" HORIZ. SWEEP + 2°27'43" HORIZ. HDC
9+10	563090.15	1360866.81	2°37'45" VERT. HDC
9+55	563047.80	1360849.33	4" W.H.C. 8" X 4" TEE, 4" V
9+22	563040.87	1360846.47	8" X 6" TEE TO F.H. #3
9+31	563033.94	1360843.61	8" CAP & BUTTRISS

PLAN VIEW  
 1"=50'

"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: 9/22/2015."

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

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

DATE: 11/21/2013

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 No. 19376

ANTHONY J. BELL

DES: RBC  
 DRN: CYH  
 CHK: AUO

WRA AS-BUILTS 7/16

DATE: 11/21/2013

WATER AND SEWER PLAN

600' SCALE MAP NO. 36 BLOCK NO. 5

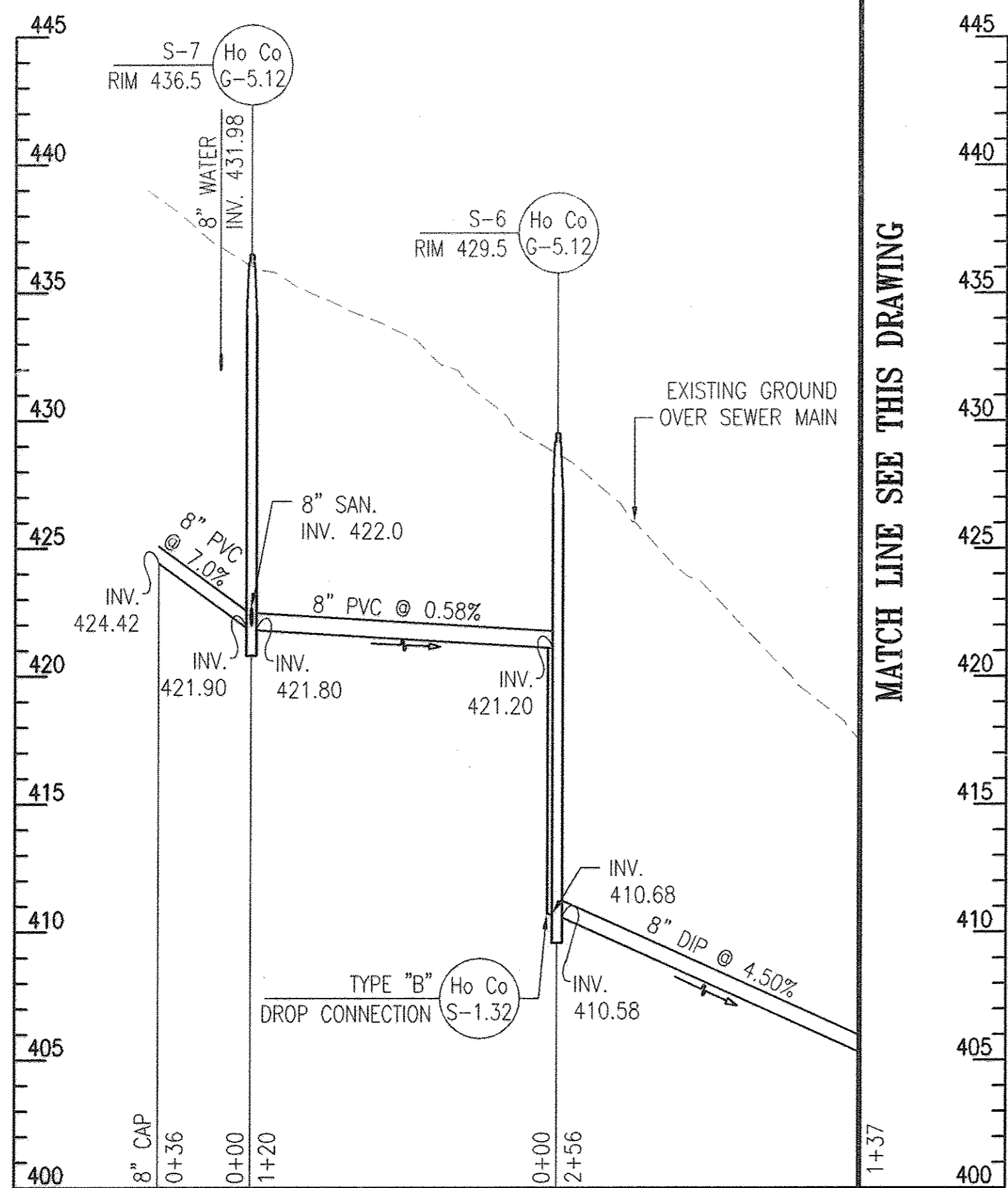
ELECTION DISTRICT 3/7

HOWARD COUNTY, MARYLAND

AS-BUILT

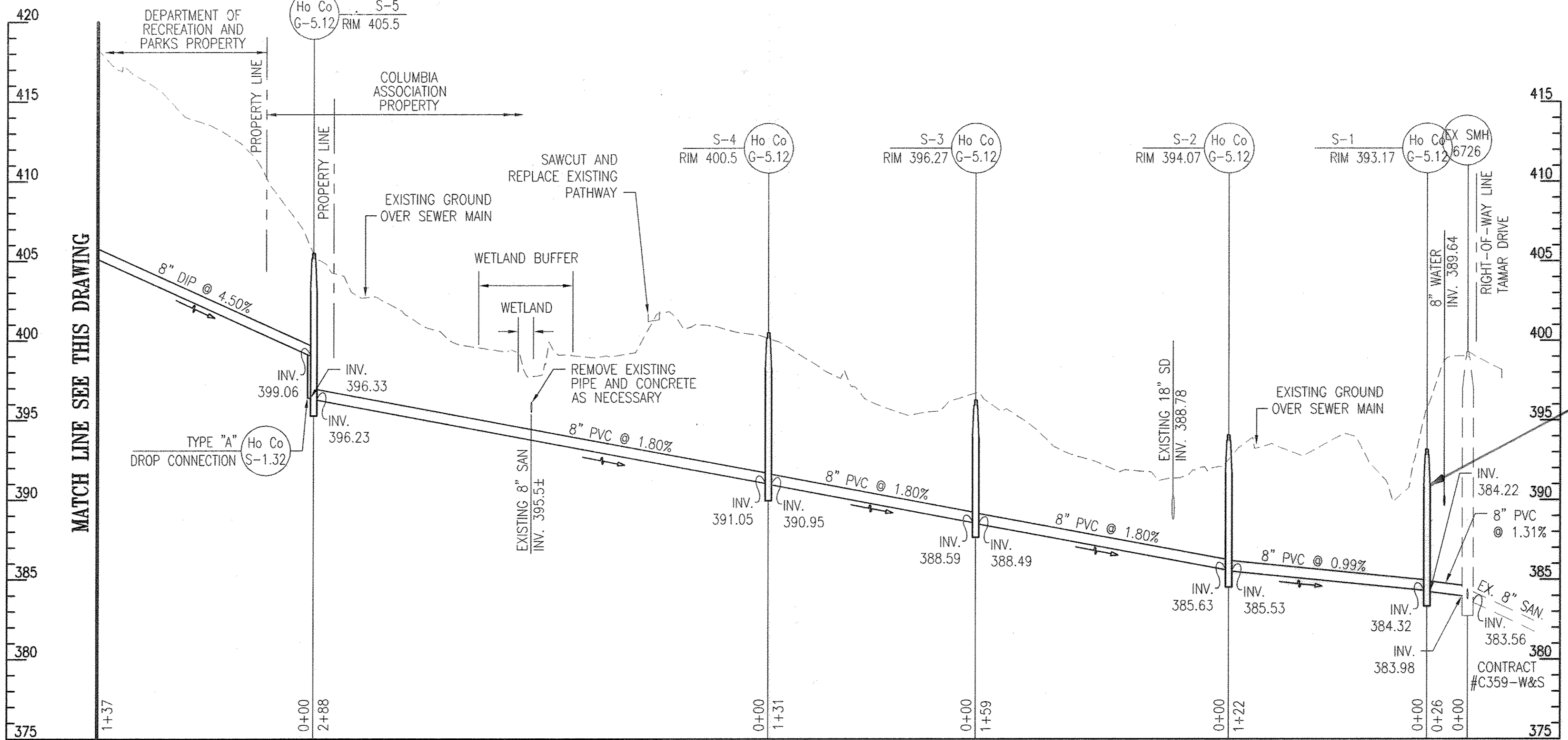
DWG. WS0.2  
 SCALE AS SHOWN  
 SHEET 3 OF 10





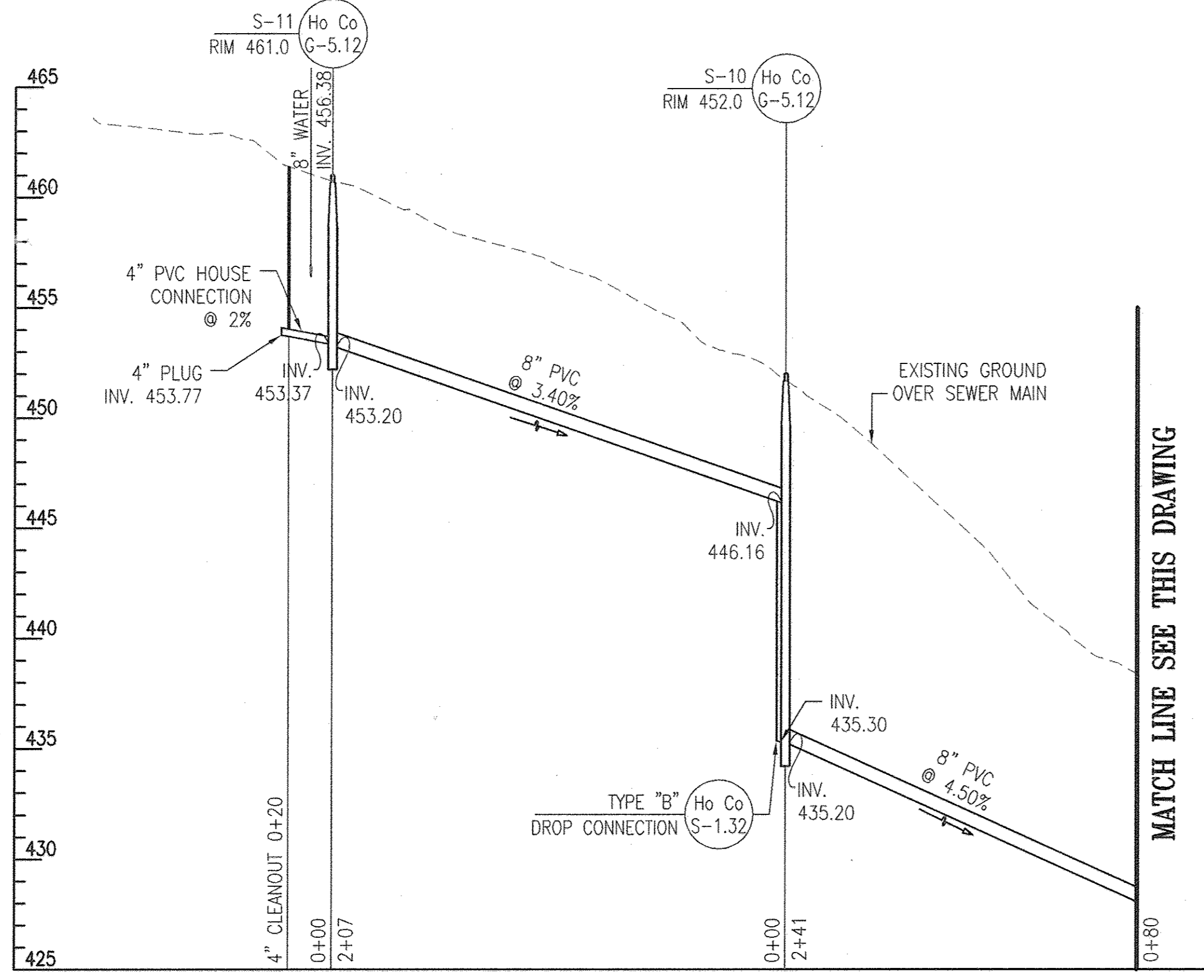
PROFILE 8" SANITARY SEWER

SCALE: 1" = 50' HORIZ  
1" = 5' VERT



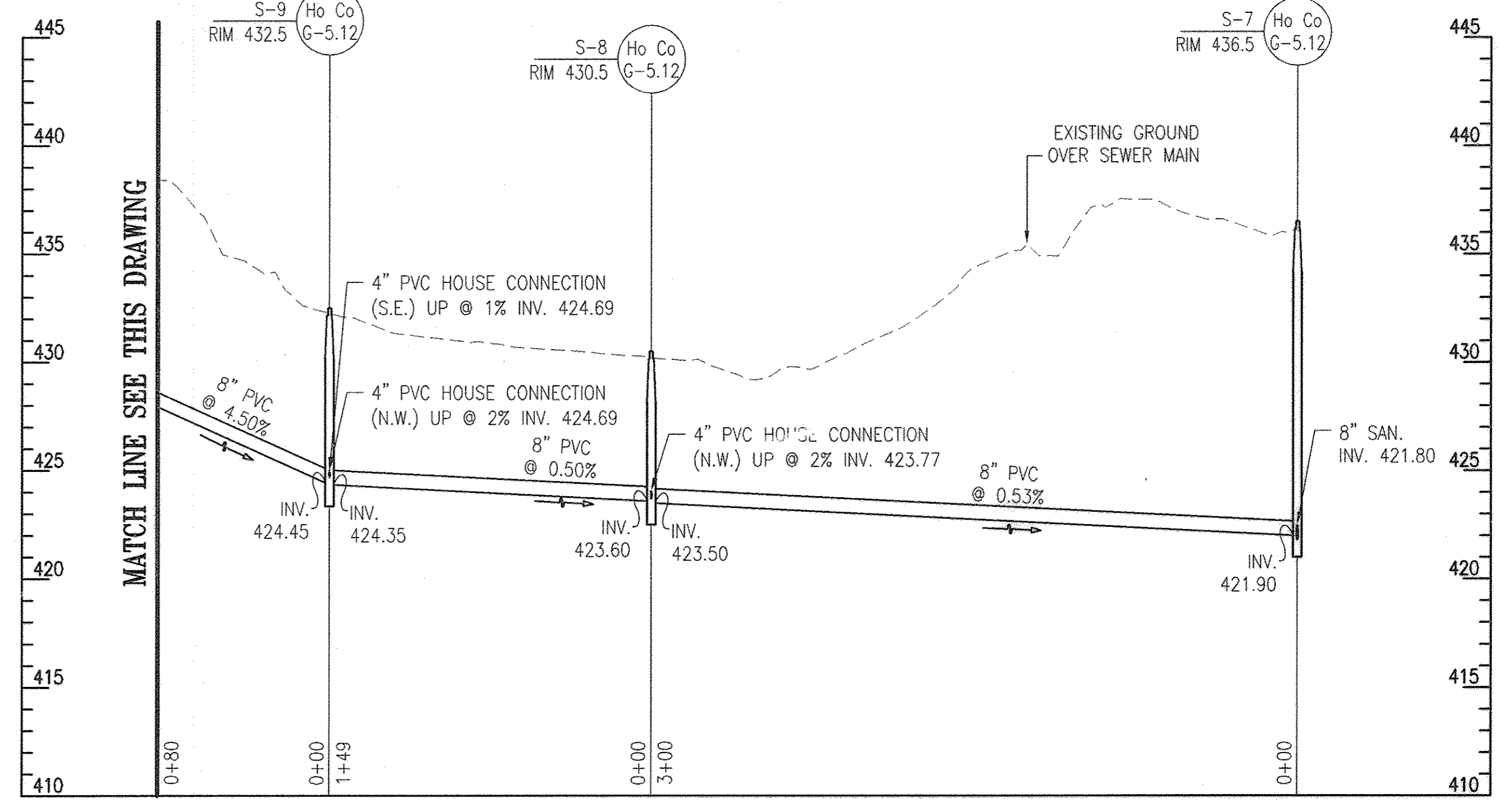
PROFILE 8" SANITARY SEWER

SCALE: 1" = 50' HORIZ  
1" = 5' VERT



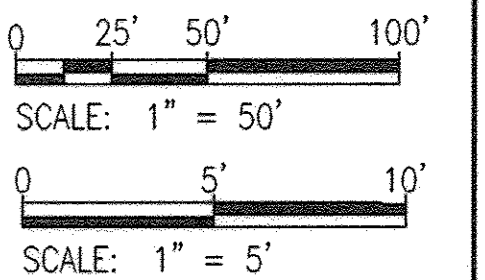
PROFILE 8" SANITARY SEWER

SCALE: 1" = 50' HORIZ  
1" = 5' VERT



PROFILE 8" SANITARY SEWER

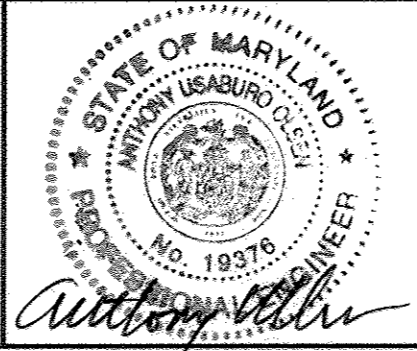
SCALE: 1" = 50' HORIZ  
1" = 5' VERT



"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: 9/22/2015."

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Director, Public Works: [Signature] 2/21/14  
Chief, Bureau of Engineering: [Signature] 2/21/14  
Chief, Bureau of Utilities: [Signature] 2/21/14  
Chief, Utility Design Division: [Signature] 2/21/14

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



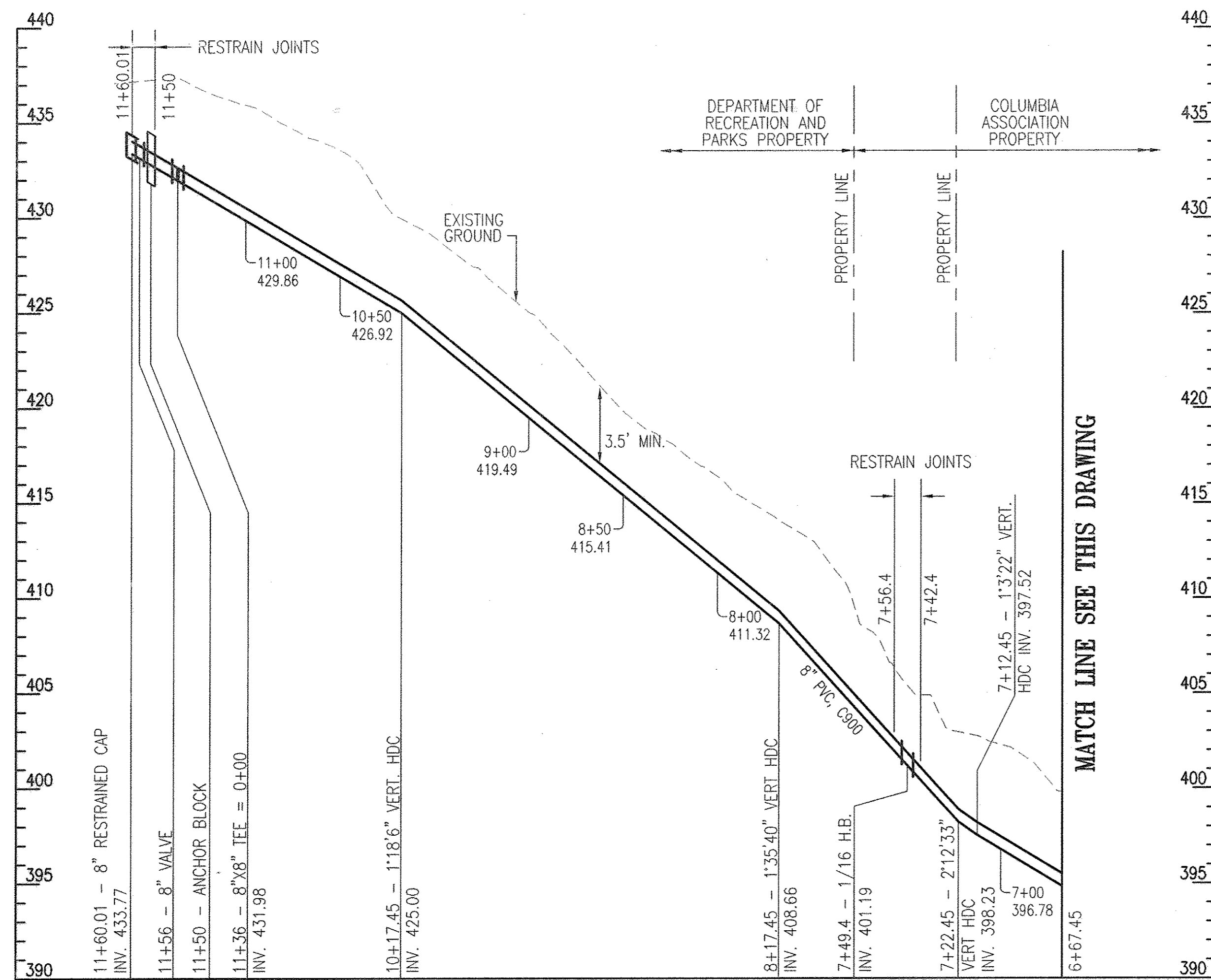
DES:	RBC	WRA	AS-BUILTS	7/16
DRN:	CYH			
CHK:	AJO			
DATE:	11/21/2013	BY NO.	REVISION	DATE

SEWER PROFILE  
600' SCALE MAP NO. 36 BLOCK NO. 5

BLANDAIR REGIONAL PARK - PHASE J  
WATER AND SEWER EXTENSION  
CONTRACT NO. 24-4779  
ELECTION DISTRICT 3/7  
HOWARD COUNTY, MARYLAND

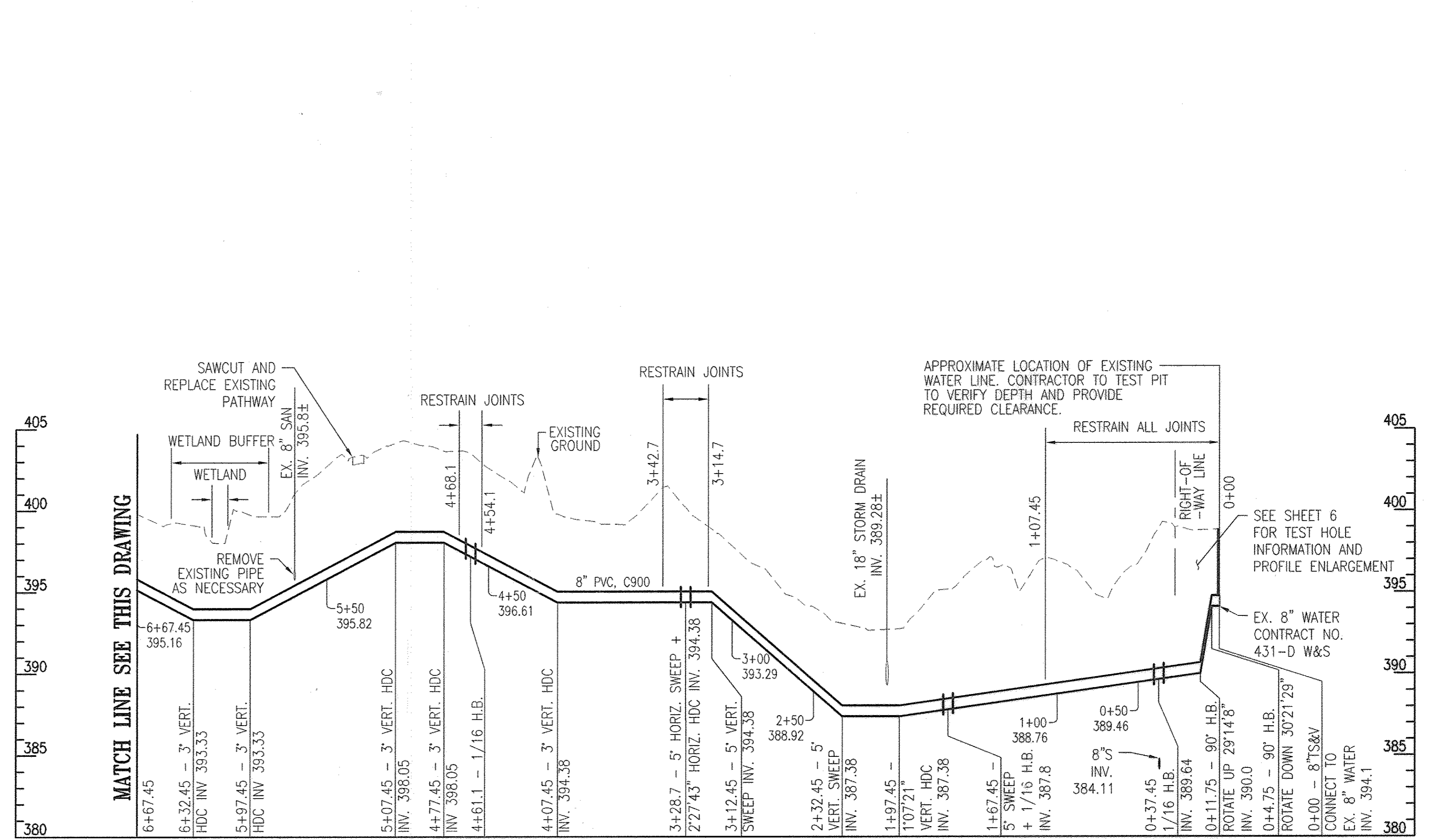
AS-BUILT DWG. WS0.3

SCALE AS SHOWN  
SHEET 4 OF 10



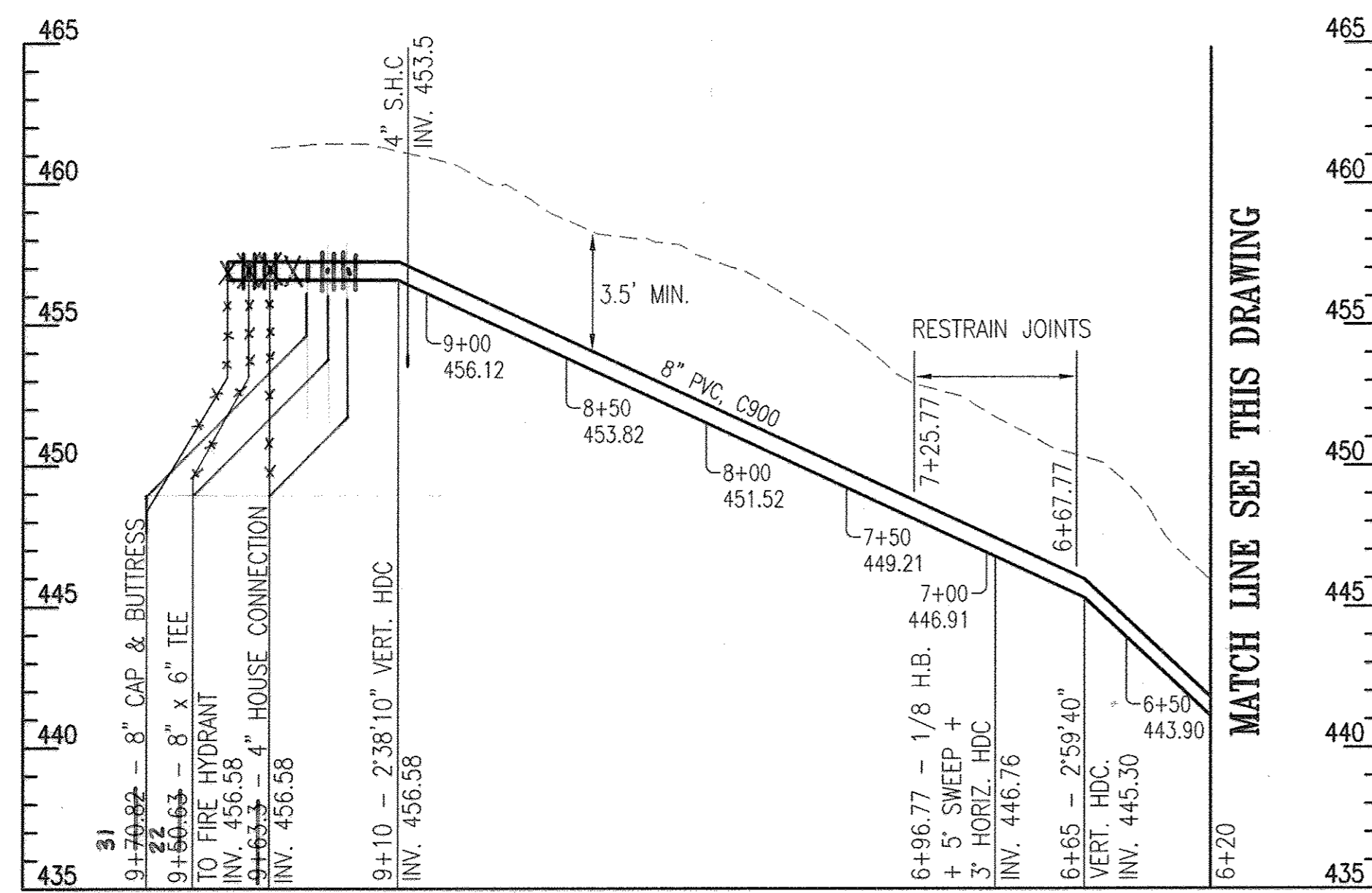
PROFILE 8" WATER

SCALE: 1" = 50' HORIZ  
1" = 5' VERT



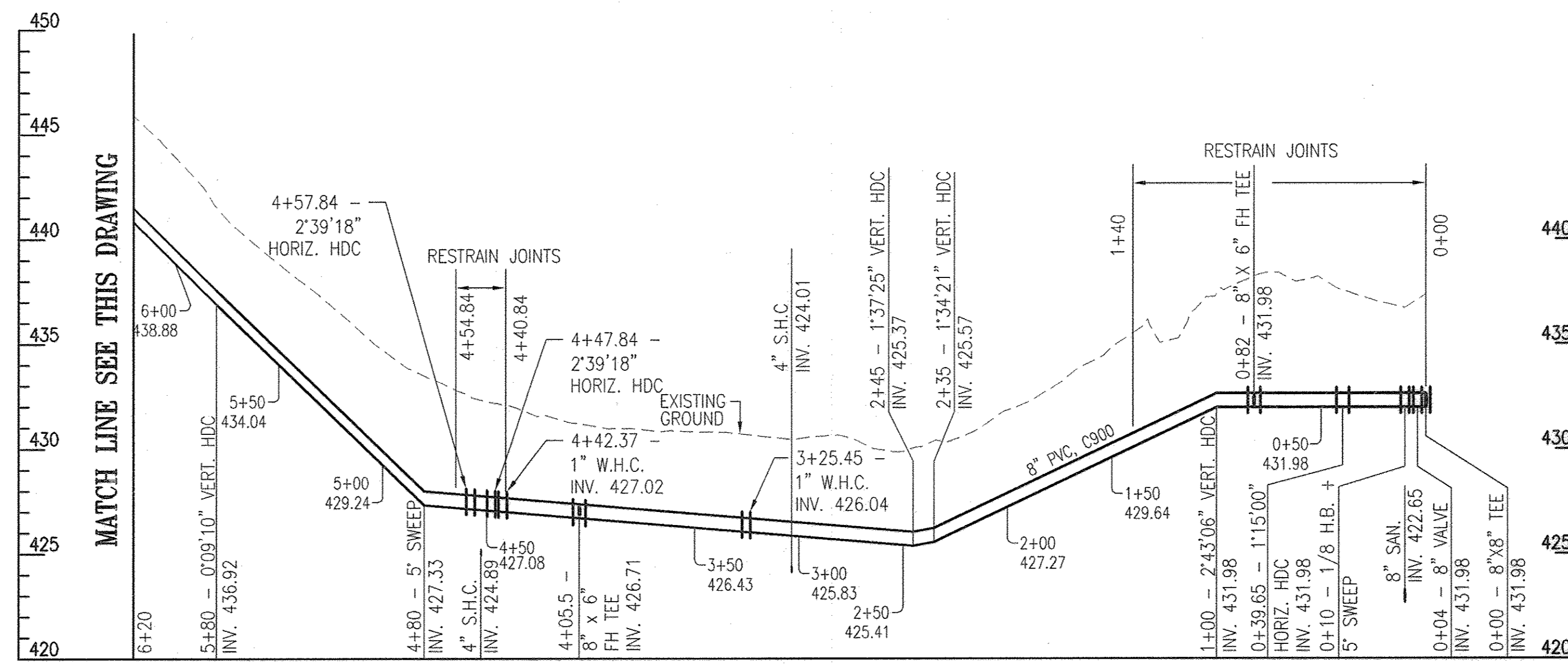
PROFILE 8" WATER

SCALE: 1" = 50' HORIZ  
1" = 5' VERT



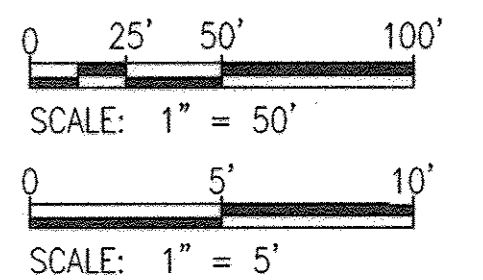
PROFILE 8" WATER

SCALE: 1" = 50' HORIZ  
1" = 5' VERT



PROFILE 8" WATER

SCALE: 1" = 50' HORIZ  
1" = 5' VERT



FILENAME: N:\2020-2025\CD00\WATER\N\20200118204.dwg

"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: 9/22/2015."

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*J. J. ...* 2/22/14  
DIRECTOR, PUBLIC WORKS DATE  
*M. ...* 2/21/14  
CHIEF, BUREAU OF UTILITIES DATE

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



DES:	RBC	WRA	AS-BUILTS	7/16
DRN:	CYH			
CHK:	AUO			
DATE:	11/21/2013			
BY	NO.	REVISION	DATE	

WATER PROFILE

600' SCALE MAP NO. 36 BLOCK NO. 5

BLANDAIR REGIONAL PARK - PHASE J  
WATER AND SEWER EXTENSION  
CONTRACT NO. 24-4779

ELECTION DISTRICT 3/7

HOWARD COUNTY, MARYLAND

AS-BUILT

DWG. WS0.4

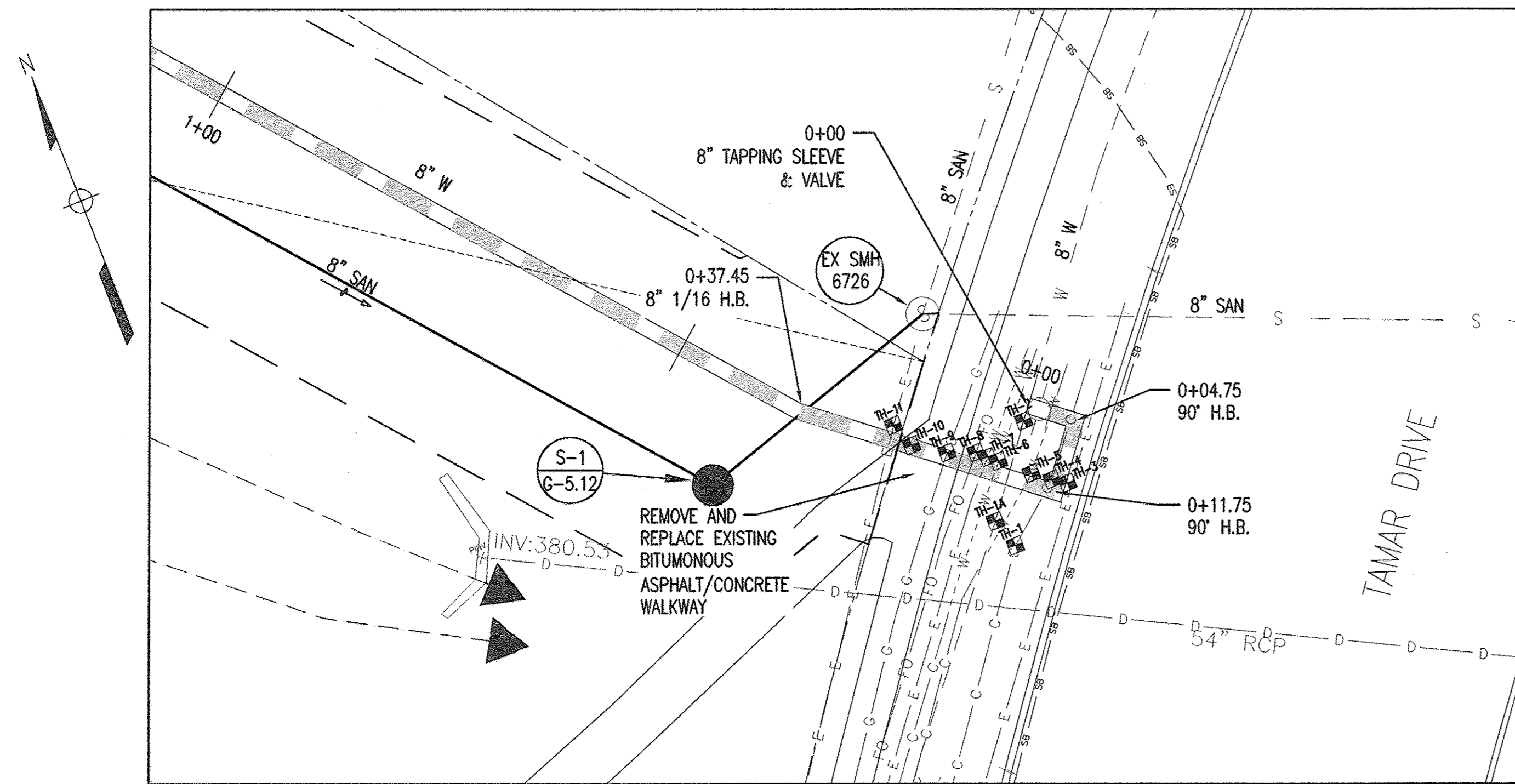
SCALE AS SHOWN

SHEET 5 OF 10

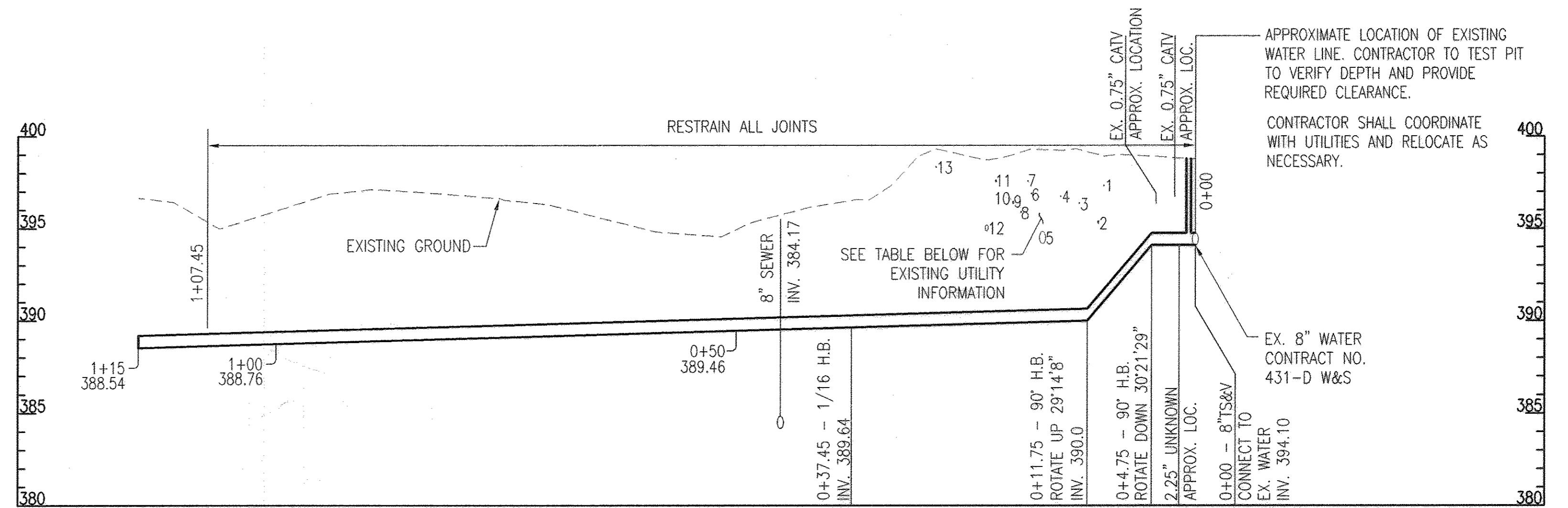


NOTE:

ALL TRENCHES CREATED FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH. TRENCH SHALL NOT BE OPENED IF IT CANNOT BE STABILIZED THE SAME DAY. IF AN AREA MUST BE LEFT UNSTABILIZED OVERNIGHT, SILT FENCE WILL BE PLACED IMMEDIATELY DOWNSTREAM OF ALL DISTURBED AREAS AND STOCKPILES, AND APPROPRIATE SAFETY MEASURES WILL BE INSTALLED AS REQUIRED.



PLAN VIEW  
1"=10'



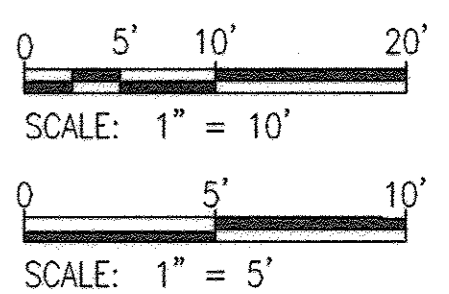
PROFILE 8" WATER

SCALE: 1" = 10' HORIZ  
1" = 5' VERT

TEST HOLE SCHEDULE

NO.	COORDINATES		COVER (FT)	SURFACE ELEV. (FT)	REMARKS
	NORTHING	EASTING			
1	563,141.77	1,362,488.62	2.14/6.14	398.96	0.75" CABLE TV DBC & 2.25" PLASTIC UNKNOWN CONDUIT
1A	563,144.61	1,362,487.68	3.99	398.96	8" CAST IRON WATER
2	563,152.45	1,362,493.66	3.9	398.77	8" CAST IRON WATER
3	563,145.45	1,362,495.40	3.31/1.36	398.73	(3) 1" ELECTRIC DBC'S & 0.75" UNKNOWN DBC
4	563,146.30	1,362,494.14	398.85	2.44	0.75" CATV DBC
5	563,147.54	1,362,492.53	2.11/6.14	398.89	0.75" CATV DBC & 2.25" PLASTIC UNKNOWN CONDUIT
6	563,149.80	1,362,490.04	1.97/4.06	398.9	0.75" CATV DBC & 8" CAST IRON WATER
7	563,150.52	1,362,489.22	3.05/1.39	398.99	1" ELECTRIC DBC & 0.75" CATV DBC
8	563,151.34	1,362,488.35	2.40/2.55	399.03	0.25" FIBER OPTIC DBC & 1.75" PLASTIC FIBER OPTIC CONDUIT
9	563,152.34	1,362,485.78	3.86/1.46	399.06	4" WRAPPED STEEL GAS & 1.5" PLASTIC ELECTRIC CONDUIT
10	563,154.22	1,362,482.89	-	-	NO UTILITY FOUND
11	563,156.63	1,362,481.96	0.94	399.33	(3) 0.5" ELECTRIC DBC'S

NUMBER	TEST HOLE	UTILITY DESCRIPTION	INVERT (FT)
1	TH#3	0.75" CATV	397.31
2	TH#3	3-1" ELECTRIC	395.25
3	TH#4	0.75" CATV	396.35
4	TH#5	0.75" CATV	396.72
5	TH#6	8" WATER	394.17
6	TH#6	0.75" CATV	396.86
7	TH#7	0.75" CATV	397.52
8	TH#7	1" ELECTRIC	395.86
9	TH#8	1.75" FIBER OPTIC CONDUIT	396.30
10	TH#8	0.25" FIBER OPTIC	396.61
11	TH#9	1.5" ELECTRIC CONDUIT	397.52
12	TH#9	4" GAS	394.87
13	TH#11	3-0.5" ELECTRIC	398.31



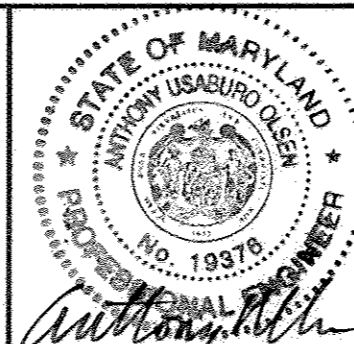
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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John P. Van...*  
DIRECTOR, PUBLIC WORKS  
DATE: 2/21/14

*Memo & Butler*  
CHIEF, BUREAU OF ENGINEERING  
DATE: 2/21/14

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



DES:	RBC	WRA	AS-BUILTS	7/16
DRN:	CYH			
CHK:	AUO			
DATE:	11/21/2013			

WATER CONNECTION ENLARGEMENT

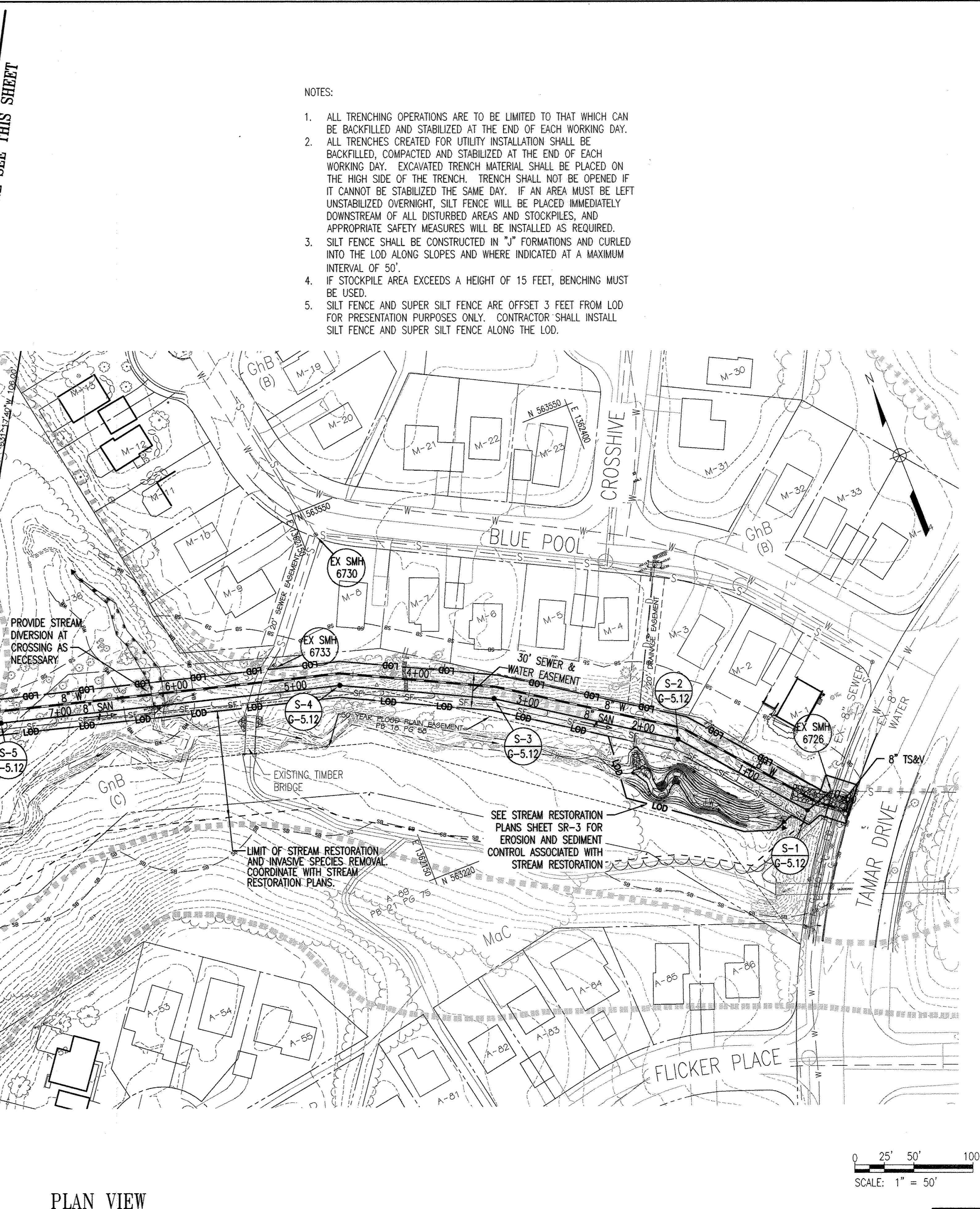
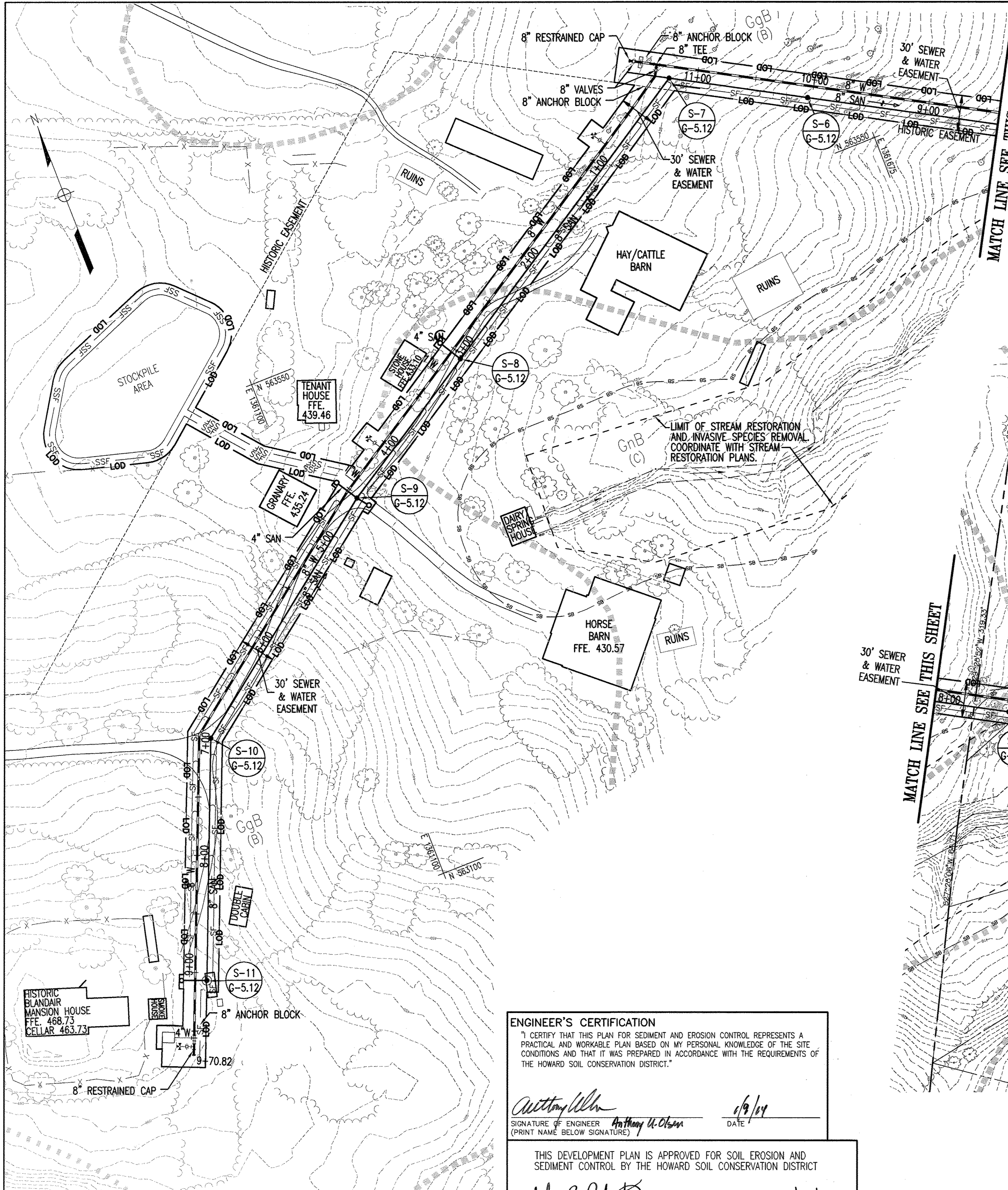
BLANDAIR REGIONAL PARK - PHASE J  
WATER AND SEWER EXTENSION  
CONTRACT NO. 24-4779

AS-BUILT DWG. WS0.5

SCALE AS SHOWN  
SHEET 6 OF 10

600' SCALE MAP NO. 36 BLOCK NO. 5 ELECTION DISTRICT 3/7 HOWARD COUNTY, MARYLAND





- NOTES:
1. ALL TRENCHING OPERATIONS ARE TO BE LIMITED TO THAT WHICH CAN BE BACKFILLED AND STABILIZED AT THE END OF EACH WORKING DAY. ALL TRENCHES CREATED FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH. TRENCH SHALL NOT BE OPENED IF IT CANNOT BE STABILIZED THE SAME DAY. IF AN AREA MUST BE LEFT UNSTABILIZED OVERNIGHT, SILT FENCE WILL BE PLACED IMMEDIATELY DOWNSTREAM OF ALL DISTURBED AREAS AND STOCKPILES, AND APPROPRIATE SAFETY MEASURES WILL BE INSTALLED AS REQUIRED.
  2. SILT FENCE SHALL BE CONSTRUCTED IN "J" FORMATIONS AND CURLED INTO THE LOD ALONG SLOPES AND WHERE INDICATED AT A MAXIMUM INTERVAL OF 50'.
  3. IF STOCKPILE AREA EXCEEDS A HEIGHT OF 15 FEET, BENCHING MUST BE USED.
  4. SILT FENCE AND SUPER SILT FENCE ARE OFFSET 3 FEET FROM LOD FOR PRESENTATION PURPOSES ONLY. CONTRACTOR SHALL INSTALL SILT FENCE AND SUPER SILT FENCE ALONG THE LOD.

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

*Anthony W. Olson* 1/9/14  
 SIGNATURE OF ENGINEER DATE  
 (PRINT NAME BELOW SIGNATURE)

*John R. Roberts* 1/16/14  
 HOWARD SOIL CONSERVATION DISTRICT DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT 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. 19376, EXPIRATION DATE: 9/22/2015."

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*John R. Roberts* 2/2/14  
 DIRECTOR, PUBLIC WORKS DATE

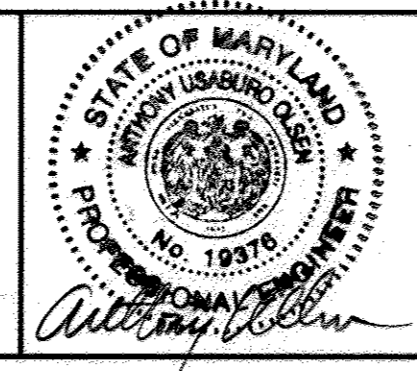
*Thomas E. Sullivan* 2/2/14  
 CHIEF, BUREAU OF ENGINEERING DATE

*Anthony W. Olson* 2/2/14  
 CHIEF, BUREAU OF UTILITIES DATE

*John R. Roberts* 2/2/14  
 CHIEF, UTILITY DESIGN DIVISION DATE

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

**WR&A**



DES:	RBC	WRA	AS-BUILTS	7/16
DRN:	CYH			
CHK:	AUO			
DATE:	11/21/2013			
BY:	NO.	REVISION	DATE	

**EROSION AND SEDIMENT CONTROL PLAN**

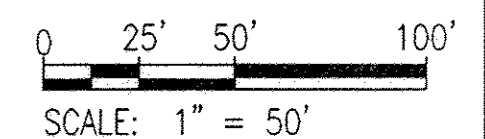
600' SCALE MAP NO. 36 BLOCK NO. 5

**AS-BUILT SC0.1**

BLANDAIR REGIONAL PARK - PHASE J  
 WATER AND SEWER EXTENSION  
 CONTRACT NO. 24-4779

ELECTION DISTRICT 3/7 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 7 OF 10



PLAN VIEW  
 1"=50'

FILENAME: N:\2013-2014\02\04\B\B\MANSION\AS-BUILT\SC0.1.DWG  
 PLOT DATE: 1/9/2014 8:35:57 AM PAGE SETUP: WRA-PDF (DWS) PLOT STYLE: WRA\_2006.ctb PAPER SIZE: A3



## 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 2011 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 2011 "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 FOR 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.

### 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL STANDARD REFERENCE DETAILS

DETAIL NO.	TITLE	PAGE
E-1	SILT FENCE	E.2 - E.3
B-1	STABILIZED CONSTRUCTION ENTRANCE	B.2

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

*John R. Roberts*  
HOWARD SOIL CONSERVATION DISTRICT  
1/16/14  
DATE

### 9. OFF-SITE UTILITY WORK

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

- (a) CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK
- (b) EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
- (c) TRENCHING TO BE LIMITED TO THAT DEPTH 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 298.8 ACRES  
 AREA DISTURBED (TRENCH) 1.48 ACRES  
 AREA TO BE PAVED N/A ACRES  
 TOTAL CUT N/A CU. YDS.  
 TOTAL FILL N/A 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

EARTH DIKE	
TEMPORARY SWALE	
PERIMETER DIKE/SWALE	
STONE CHECK DAM	
STONE OUTLET STRUCTURE	
SILT FENCE*	
SUPER SILT FENCE*	
STRAW BALES	
STANDARD INLET PROTECTION	
AT GRADE INLET PROTECTION	
CURB INLET PROTECTION	
MEDIAN INLET PROTECTION	
GABION INFLOW PROTECTION	
RIPRAP INFLOW PROTECTION	
SUMP PIT	
REMOVABLE PUMPING STATION	
PORTABLE SEDIMENT TANK	
INTERCEPTOR BERM	
TEMPORARY BERM	
PIPE SLOPE DRAIN	
STABILIZED CONSTRUCTION ENTRANCE*	
SOIL STABILIZATION MATTING	
PLACED RIPRAP DITCH	
GABIONS	
CONCRETE GUTTER	
STONE OUTLET SEDIMENT TRAP	
RIPRAP OUTLET SEDIMENT TRAP	
STONE/RIPRAP OUTLET SEDIMENT TRAP	
PIPE OUTLET SEDIMENT TRAP	
LIMIT OF DISTURBANCE*	
EXISTING CONTOURS*	
PROPOSED CONTOURS	

\* = PERTINENT TO THIS PROJECT.

#### ENGINEER'S CERTIFICATION

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

*Anthony U. O'Brien*  
 SIGNATURE OF ENGINEER Anthony U. O'Brien DATE 1/9/14  
 (PRINT NAME BELOW SIGNATURE)

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

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS IS TO BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLANDS BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLANDS BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL MATERIAL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL OR ANY OTHER DELETERIOUS SUBSTANCE.
4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLANDS BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLANDS BUFFERS, OR WATERWAYS OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE.
6. RECTIFY ANY NONTIDAL WETLANDS, NONTIDAL WETLANDS BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING RECOMMENDED SPECIES: ANNUAL RYE GRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.) AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN THE WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9. TO PROTECT IMPORTANT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM AS FOLLOWS:  
 CLASS 1 WATERS - IN-STREAM WORK MAY NOT BE CONDUCTED DURING THE PERIOD OF MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11. CULVERT(S) SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

### OVERALL PROJECT SEQUENCE OF CONSTRUCTION

1. A GRADING PERMIT WILL BE ACQUIRED FROM THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS PRIOR TO THE CONTRACTOR INITIATING WORK. (1 DAY)
2. THE CONTRACTOR SHALL CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS BEFORE ANY CONSTRUCTION IS TO BEGIN. (1 DAY)
3. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY ENVIRONMENTAL COMPLIANCE SECTION AT LEAST 5 DAYS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE A PRE CONSTRUCTION MEETING. (5 DAYS)
4. PLACE STABILIZED CONSTRUCTION ENTRANCE AT ACCESS FROM TAMAR DRIVE. (1 DAY)
5. INSTALL AND STABILIZE SEDIMENT CONTROL MEASURES, CONSISTING PRIMARILY OF SILT FENCE AND SUPER SILT FENCE AT THE LOW SIDE OF THE LIMIT OF DISTURBANCE. SEE PLAN AND PROFILE SHEETS FOR ALL SEDIMENT AND EROSION CONTROL MEASURES. (1 WEEK)
6. INSTALL SANDBAG DIVERSIONS, TEMPORARY CULVERT PIPES, OR PUMP-AROUND PRACTICES AND DEWATERING BASINS AT ALL STREAM CROSSINGS. ALL STREAM CROSSINGS SHALL BE PERFORMED IN AN EXPEDIENT MANNER. DEWATERING BASINS ON EACH BANK WILL RECEIVE WATER PUMPED FROM THE STREAM CROSSING SITE. PORTABLE SEDIMENT TANKS MAY BE USED IN PLACE OF DEWATERING BASINS SO AS TO MINIMIZE DISTURBANCE OF EXISTING TREES AND VEGETATION. (1 WEEK)
7. STOCKPILE TOPSOIL. ALL TOPSOIL FROM THE WETLAND AREAS SHALL BE MAINTAINED SEPARATE FROM UPLAND MATERIALS AND REUSED WITHIN THE LIMITS OF THE ORIGINAL WETLAND AREA AFTER UTILITY INSTALLATION IS COMPLETED. (2 WEEKS)
8. EXCAVATION FROM TRENCHING OPERATIONS SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH. (EACH DAY)
9. EXCAVATE FOR AND INSTALL WATER MAINS, SEWER AND ASSOCIATED STRUCTURES. (EACH DAY)
10. VEGETATIVELY STABILIZE BACKFILLED TRENCH AND STRUCTURE SITES AS WORK PROGRESSES. (EACH DAY)
11. NOTIFY ENVIRONMENTAL COMPLIANCE SECTION (ECS, 410-313-1880) AND OBTAIN APPROVAL TO REMOVE EROSION AND SEDIMENT CONTROL MEASURES. (1 DAY)
12. PERMANENTLY STABILIZE ANY AREAS DISTURBED DURING CLEANUP ACTIVITIES. (2 WEEKS)

FILENAME: N:\V\2014-02\CAD\HOWARD\20140201\20140201.DWG

"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: 9/22/2015."

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>John R. Roberts</i> DIRECTOR, PUBLIC WORKS DATE 2/16/14	<i>Mamas &amp; Butcher 2/16/14</i> CHIEF, BUREAU OF ENGINEERING DATE 2/16/14
<i>Anthony U. O'Brien</i> CHIEF, BUREAU OF UTILITIES DATE 2/16/14	<i>Anthony U. O'Brien</i> CHIEF, UTILITY DESIGN DIVISION DATE 2/16/14

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

**WR&A**



DES: RBC	WRA	AS-BUILTS	7/16
DRN: CYH			
CHK: AUC			
DATE: 11/21/2013	BY NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL  
 GENERAL NOTES

600' SCALE MAP NO. 36 BLOCK NO. 5

BLANDAIR REGIONAL PARK - PHASE J  
 WATER AND SEWER EXTENSION  
 CONTRACT NO. 24-4779

ELECTION DISTRICT 3/7 HOWARD COUNTY, MARYLAND

AS-BUILT DWG. SC0.2

SCALE AS SHOWN  
 SHEET 8 OF 10



**HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.
- ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
- A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

**HOWARD SOIL CONSERVATION DISTRICT  
TEMPORARY SEEDING NOTES**

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: -- LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: -- APPLY 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.).

SEEDING: -- FOR PERIODS MARCH 1 -- APRIL 30, AND FROM AUGUST 15 -- OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 -- AUGUST 14, SEED WITH 3 LBS/ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 -- FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: -- APPLY 1-1/2 TO 2 TONS/ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

**HOWARD SOIL CONSERVATION DISTRICT  
PERMANENT SEEDING NOTES**

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL AT TIME OF SEEDING. APPLY 400 LBS/ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.).
- ACCEPTABLE -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS/ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING -- FOR THE PERIODS MARCH 1 -- APRIL 30, AND AUGUST 1 -- OCTOBER 15, SEED WITH 60 LBS/ACRE (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 -- JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS/ACRE (.05 LBS/1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 -- FEBRUARY 28, PROTECT SITE BY:

OPTION 1 -- TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING.

OPTION 2 -- USE SOD.

OPTION 3 -- SEED WITH 60 LBS/ACRE KENTUCKY 30 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING -- APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE -- INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

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

*John L. Roberts* 1/16/14  
HOWARD SOIL CONSERVATION DISTRICT DATE

**20.0 STANDARDS AND SPECIFICATIONS  
FOR  
VEGETATIVE STABILIZATION**

**Definition**  
Using vegetation as cover for barren soil to protect it from forces that cause erosion.

**Purpose**  
Vegetative Stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and improving wildlife habitat and visual resources.

**Conditions Where Practice Applies**  
This practice shall be used on decided areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

**Effects on Water Quality and Quantity**  
Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

**Section I - Vegetative Stabilization Methods and Materials**

- Site Preparation**
  - Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
  - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
  - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
- Soil Amendments (Fertilizer and Lime Specifications)**  
SEE HOWARD COUNTY SEEDING NOTES ON THIS SHEET.
- Seedbed Preparation**  
SEE HOWARD COUNTY SEEDING NOTES ON THIS SHEET.
- Seed Specifications**
  - All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
  - Seed tags shall be made available to the inspector to verify type and rate of seed used.
  - Inoculant -- The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 - 80°F. can weaken bacteria and make the inoculant less effective.

**E. Methods of Seeding**

- Hydroseeding:** Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a cultipacker seeder.
- If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous); 200 lbs/acre; K20 (potassium); 200 lbs/acre.
- Lime** -- use only ground agricultural limestone. (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
- Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
- Dry Seeding:** This includes use of conventional drop or broadcast spreaders.
- Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the temporary or Permanent Seeding Summaries or Tables 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
- Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
- Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
- Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
  - Wood Cellulose Fiber Mulch (WCFM)**
    - WCFM must consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
    - WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
    - WCFM, including dye, shall contain no germination or growth inhibiting factors.
    - WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blatter-like ground cover on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
    - WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
    - WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
- Note: Only sterile straw mulch should be used in areas where one species of grass is desired.
- Mulching Seeded Areas** -- Mulch shall be applied to all seeded areas immediately after seeding.
    - If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
    - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
    - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

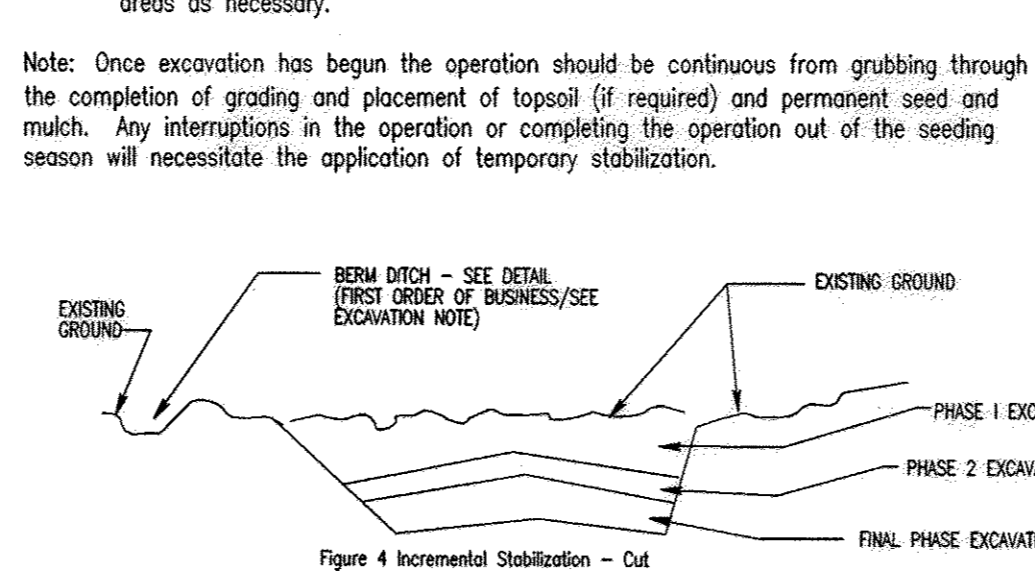
**H. Securing Straw Mulch (Mulch Anchoring):** Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:

- A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.

- Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
- Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. The remainder of area should be appear uniform after binder application. Synthetic binders -- such as Acrylic DLR (Agra-Tack), DCA-70, Petrosol, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

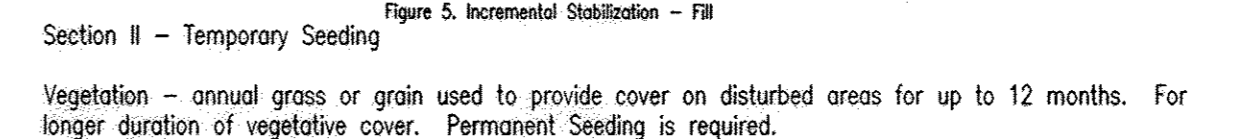
- Incremental Stabilization - Cut Slopes**
  - All cut slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
  - Perform phase 1 excavation, dress, and stabilize as necessary.
  - Perform phase 2 excavation, dress, and stabilize. Overseed phase 1 areas as necessary.
  - Perform final phase excavation, dress, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.



- Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the temporary or Permanent Seeding Summaries or Tables 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
- Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
- Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
- Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- Incremental Stabilization of Embankments - Fill Slopes**
    - Embankments shall be constructed in lifts as prescribed on the plans.
    - Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15', or when the grading operation ceases as prescribed in the plans.
    - At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
    - Construction sequence: Refer to Figure 5 (below).
    - Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct Slope Silt Fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
    - Place phase 1 embankment, dress and stabilize.
    - Place phase 2 embankment, dress and stabilize.
    - Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.
- Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.
- turfgrass areas, refer to the University of Maryland publication "Lawn Care in Maryland" Bulletin No.171.



**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.

- Seed Mixtures - Temporary Seeding**  
SEE HOWARD COUNTY SEEDING NOTES ON THIS SHEET.
- 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.
  - Seed Mixtures - Permanent Seeding**  
SEE HOWARD COUNTY SEEDING NOTES ON THIS SHEET.

**Table 24 Maintenance Fertilization for Permanent Seedings**  
Use Soil Test Results or Rates Shown Below

Seeding Mixture	Type	lb/oc	lb/1000 sq ft	Time	Mowing
Tall fescue mixes up 70% or more of cover	10-10-10 or 30-10-10	500	11.5	Yearly or as needed. Fall	Not closer than 3" if occasional mowing is desired.
Crownvetch, Sericea Lespedeza, Birdfoot Trefoil	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 birdfoot trefoil	50-10-10	500	11.5	Fall the year following establishment and every 4-5 years thereafter	Not required, no closer than 4" in 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 2-4 years thereafter	Not required, no closer than 4" in fall after seed has matured.
Red & chewing fescue, Kentucky bluegrass, hard fescue mixtures	20-10-10	250	5.8	September, 30 days later December, May 20, June 30, if needed	Mow no closer than 2" for red fescue and K. bluegrass 3" for fescue.

**Section IV - Sod:** To provide quick cover on disturbed areas (2:1 grade or flatter).

- General Specifications**
  - Class of turfgrass sod shall be Maryland or Virginia State Certified or Approved. Sod labels shall be made available to the job foreman and inspector.
  - 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 suppliers' 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.
  - 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.
  - Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
  - 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.
- Sod Installation**
  - During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
  - 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.
  - 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 surface.
  - 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 and piece of sod shall be completed within eight hours.

- Sod Maintenance**
  - 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 depth of 4". Watering should be done during the heat of the day to prevent wilting.
  - After the first week, sod watering is required as necessary to maintain adequate moisture content.
  - 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.

**Section V - Turfgrass Establishment**  
Areas where turfgrass 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.

- Turfgrass Mixtures**
    - Kentucky Bluegrass -- Full sun mixture -- For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and 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.
    - 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 Ryegrass 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.
    - Tall Fescue/Kentucky Bluegrass -- Full sun mixture -- For use in drought prone areas and/or for areas receiving 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 sq. ft. One or more cultivars may be blended.
    - 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 and 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 a minimum of 10% to a maximum of 35% of the mixture by weight.
- Note: Turfgrass varieties should be selected from those listed in the most current University of Maryland Publication, Agronomy Mimeo #77, "Turfgrass Cultivar Recommendations for Maryland".
- Ideal times of seeding**  
Western MD: March 15 - June 1, August 1 - October 1 (Hardiness Zones - 5b, 6a)  
Central MD: March 1 - May 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 seedlings with adequate water for plant growth (1/2" - 1" every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

- Repair and Maintenance**  
Inspect all seeded areas for failures and make necessary repairs, replacements, and reseeding within the planting season.
  - Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.
  - If the stand provides less than 40% ground coverage, reestablish following original lime, fertilizer, seedbed preparation and seeding recommendations.
  - If the stand provides between 40% and 94% ground coverage, overseeding and fertilizing using half of the rates originally applied may be necessary.
  - Maintenance fertilizer rates for permanent seedings are shown in Table 24. For lawns and other medium to high maintenance turfgrass areas, refer to the University of Maryland publication "Lawn Care in Maryland" Bulletin No.171.

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

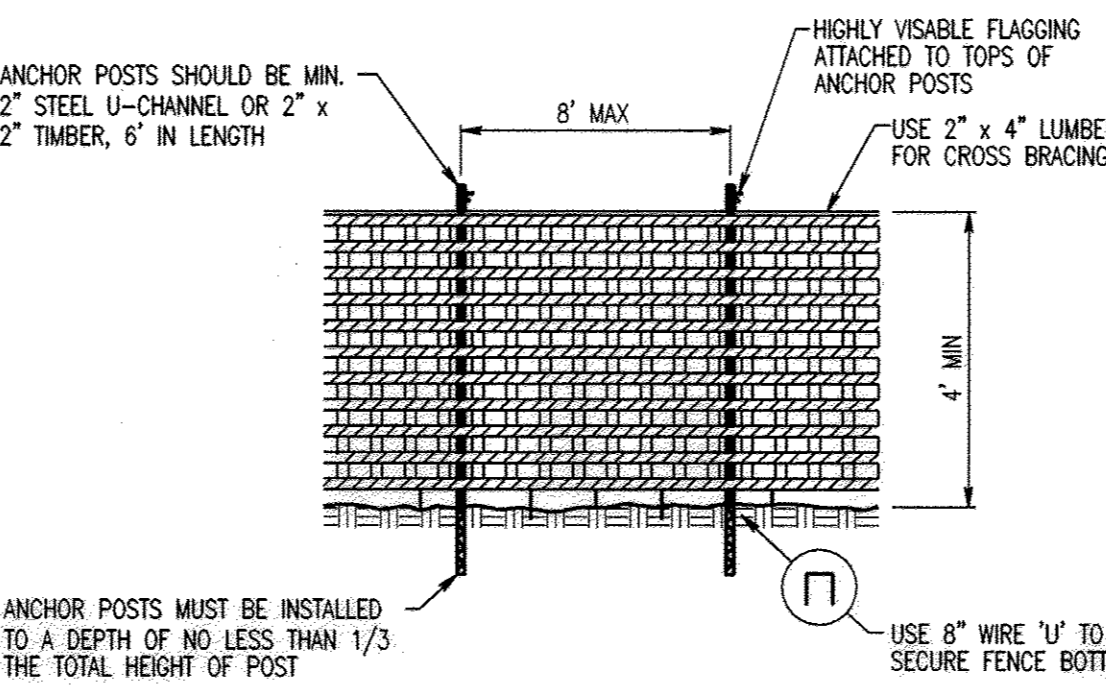
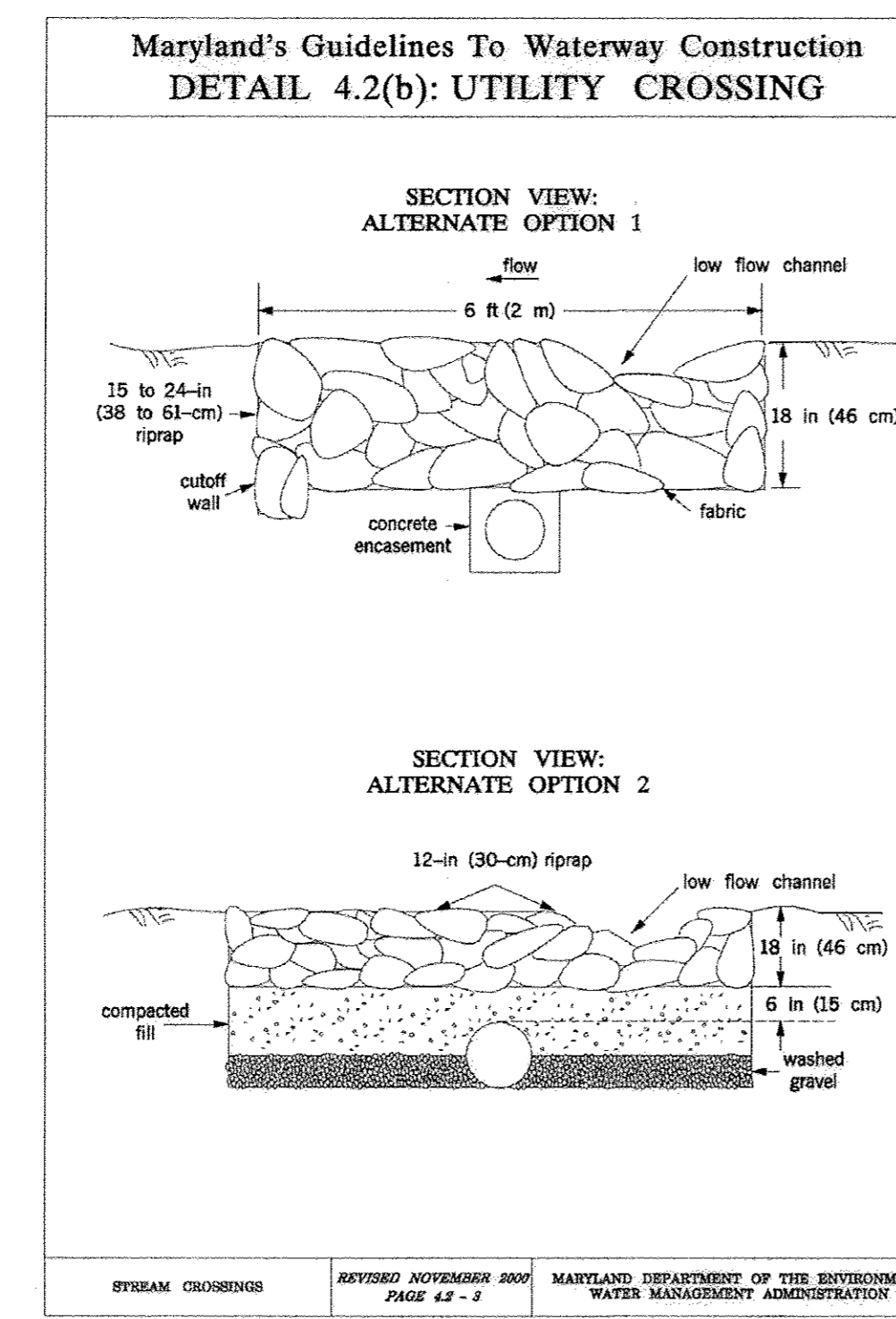
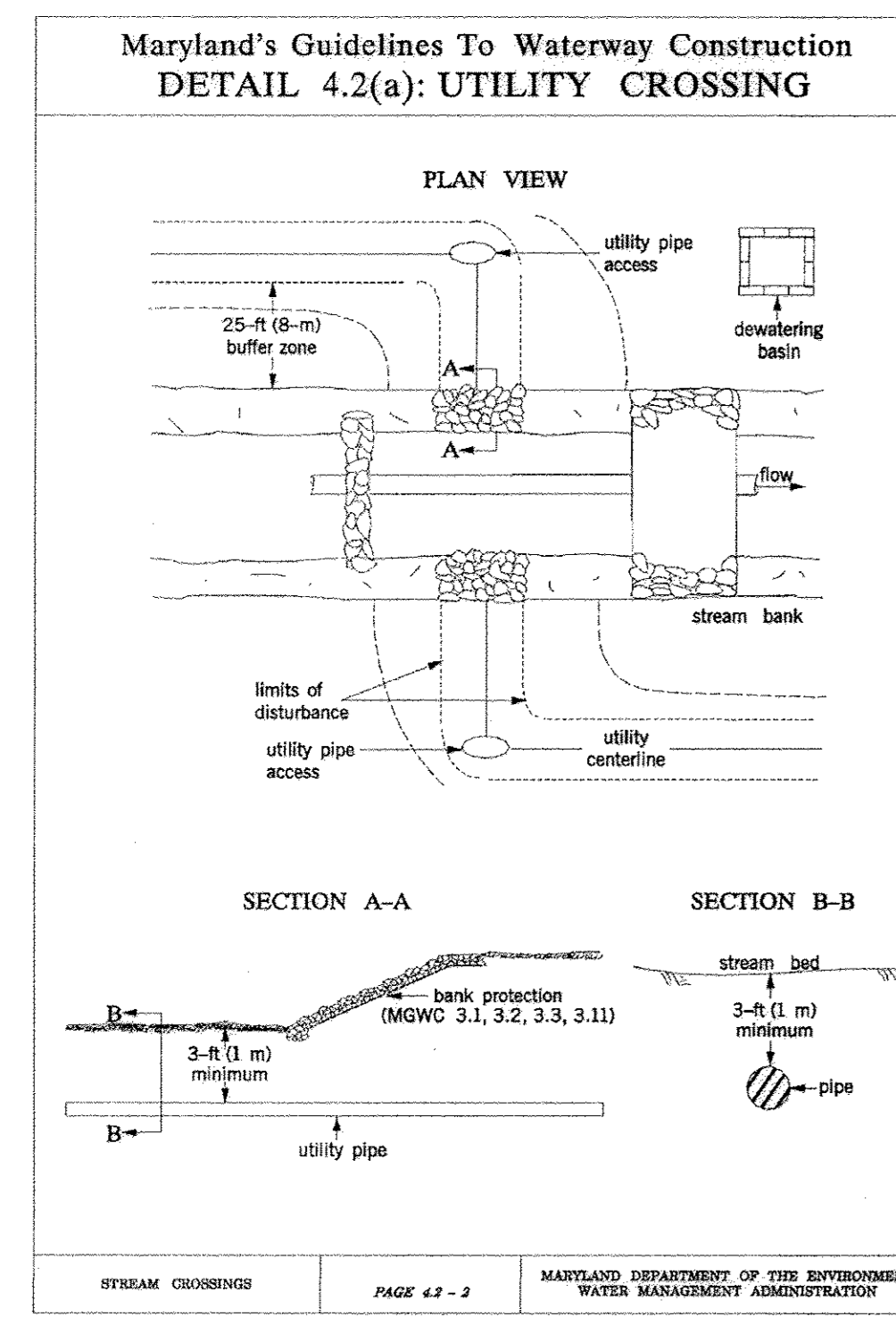
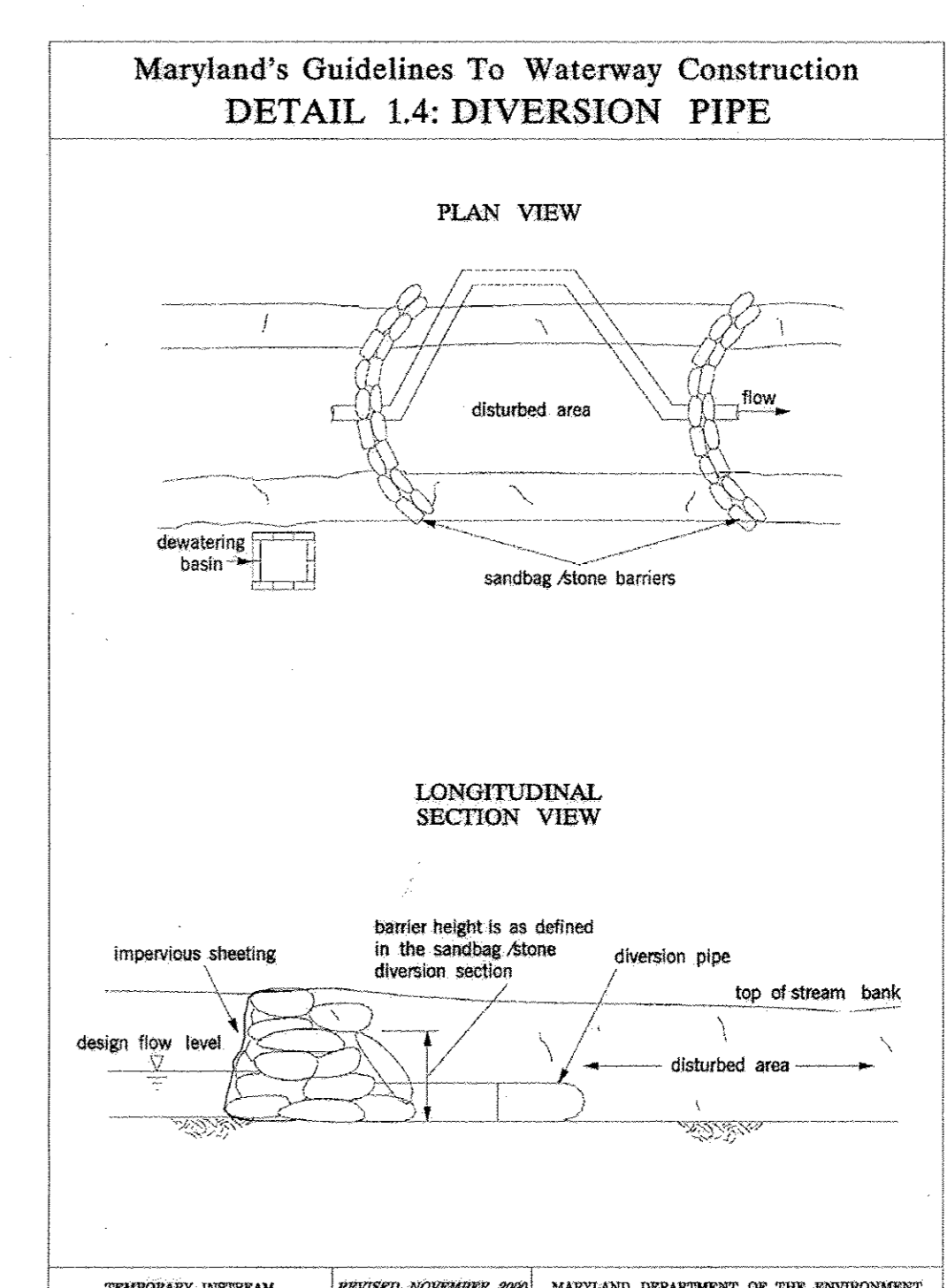
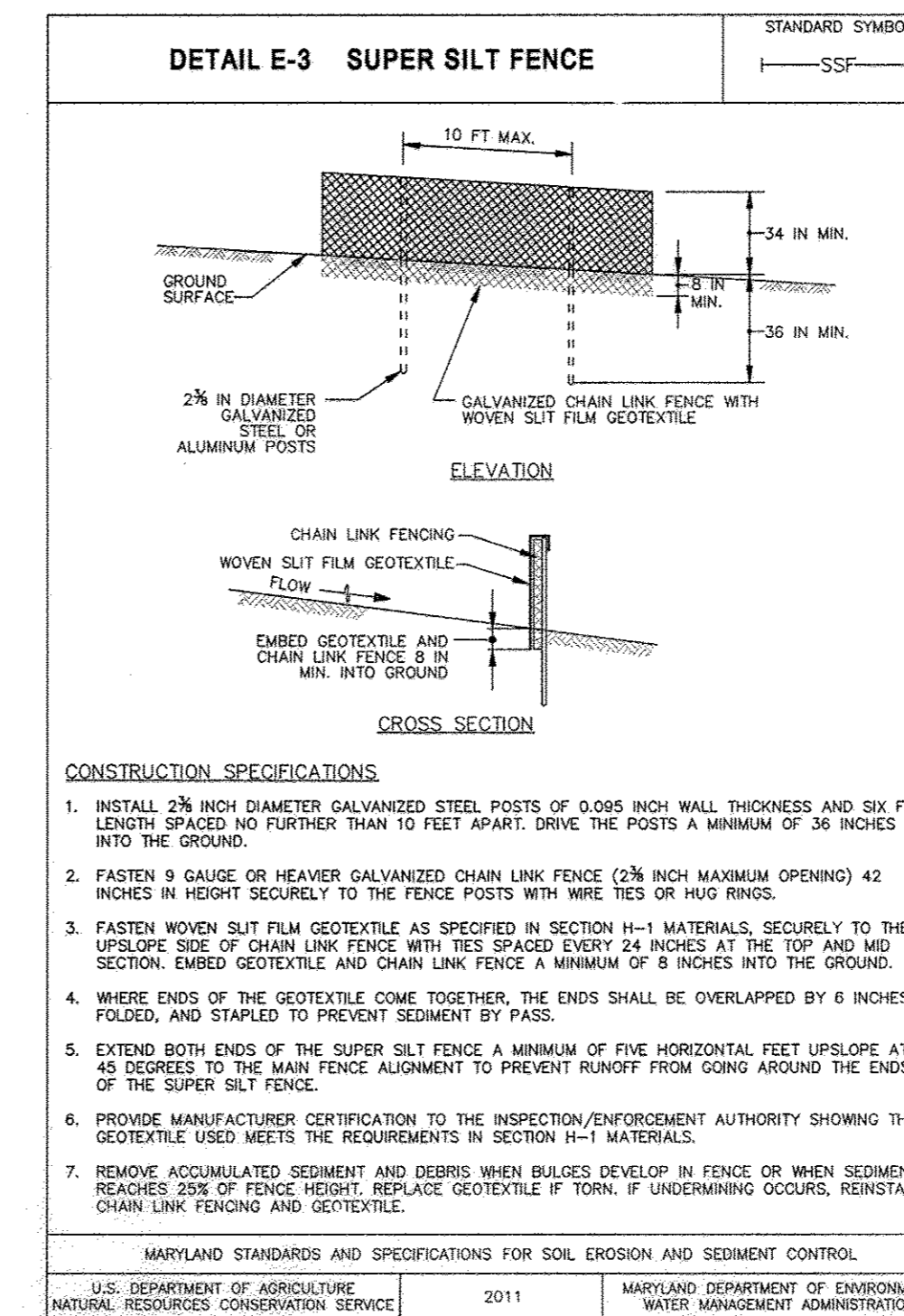
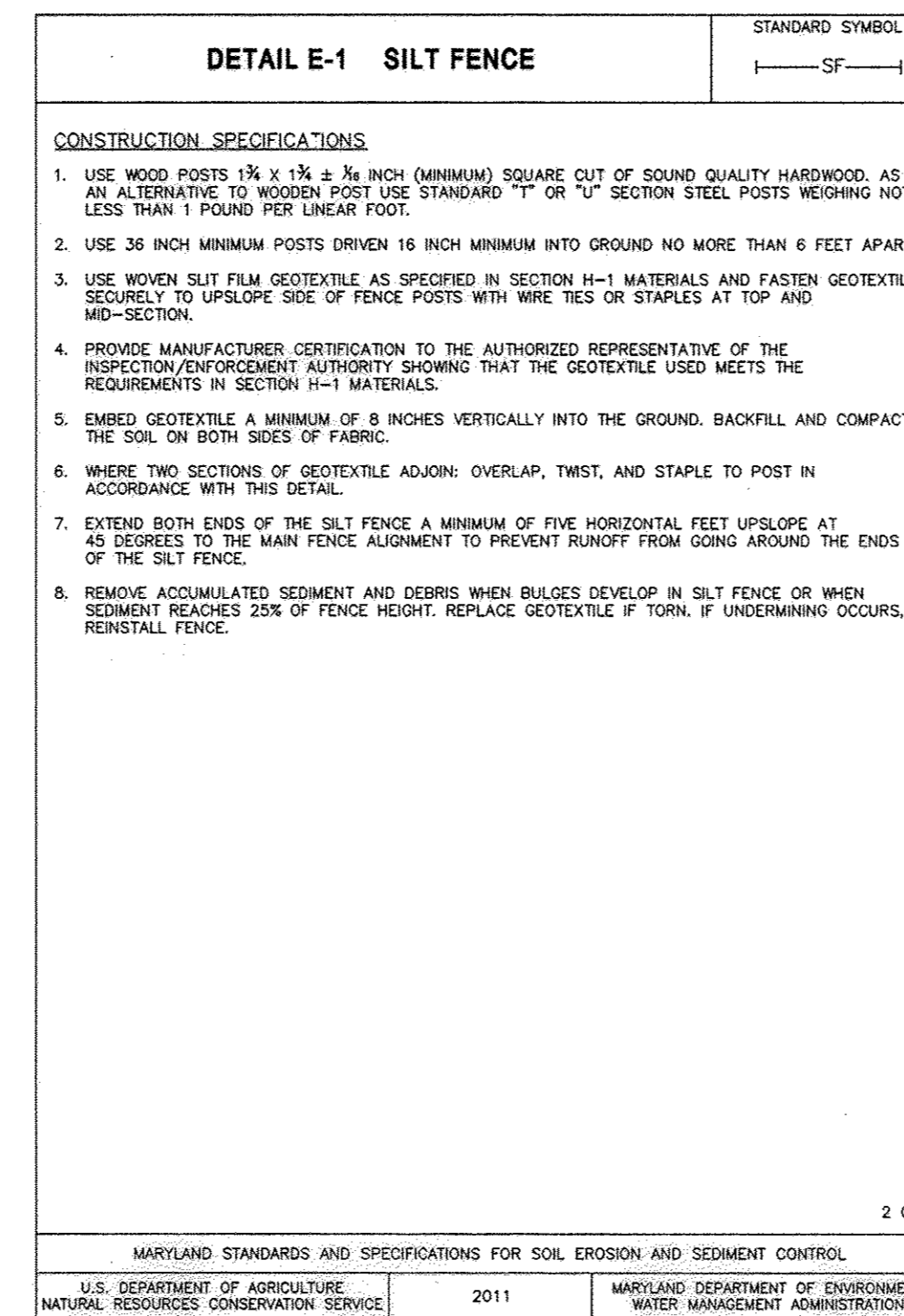
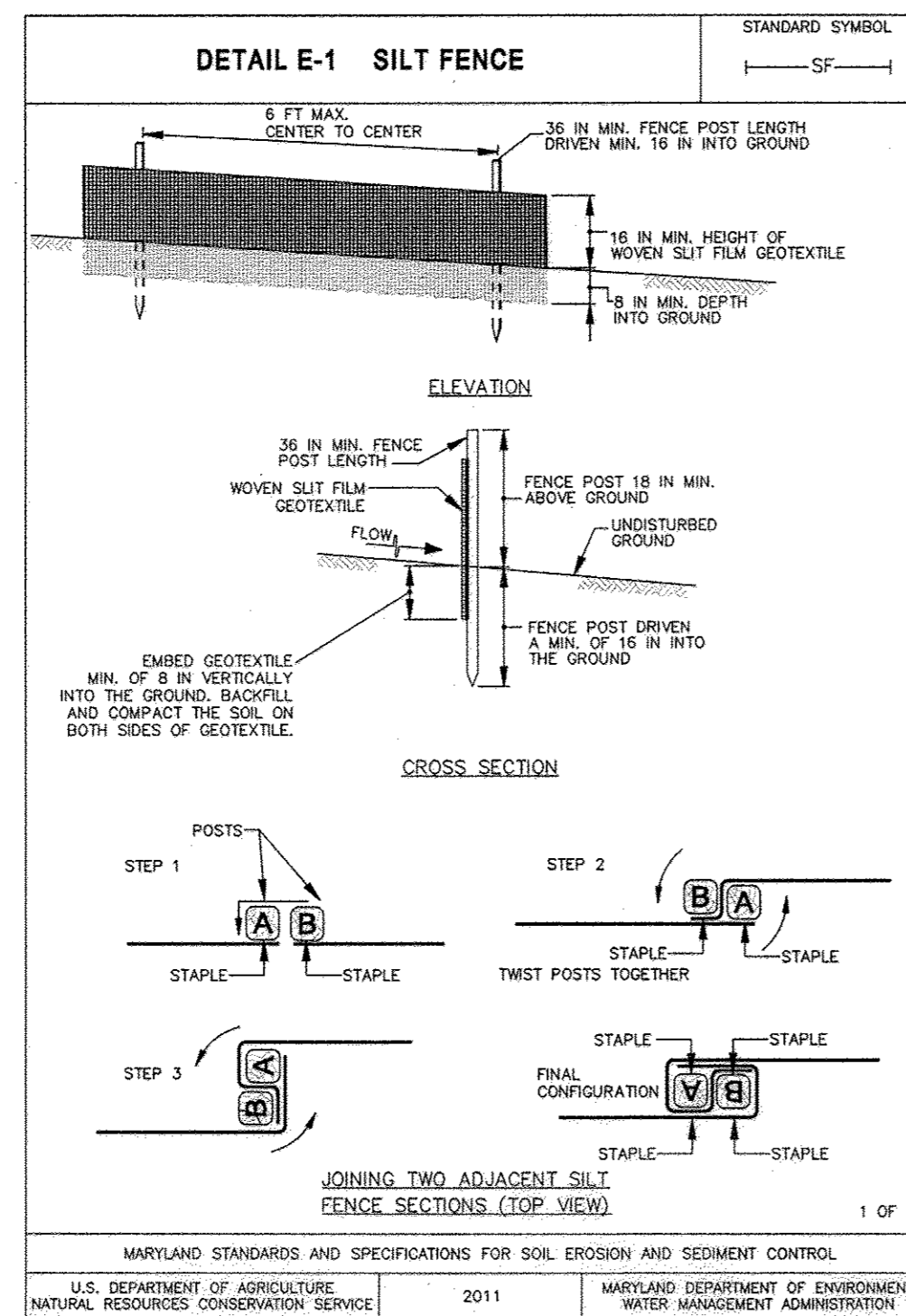
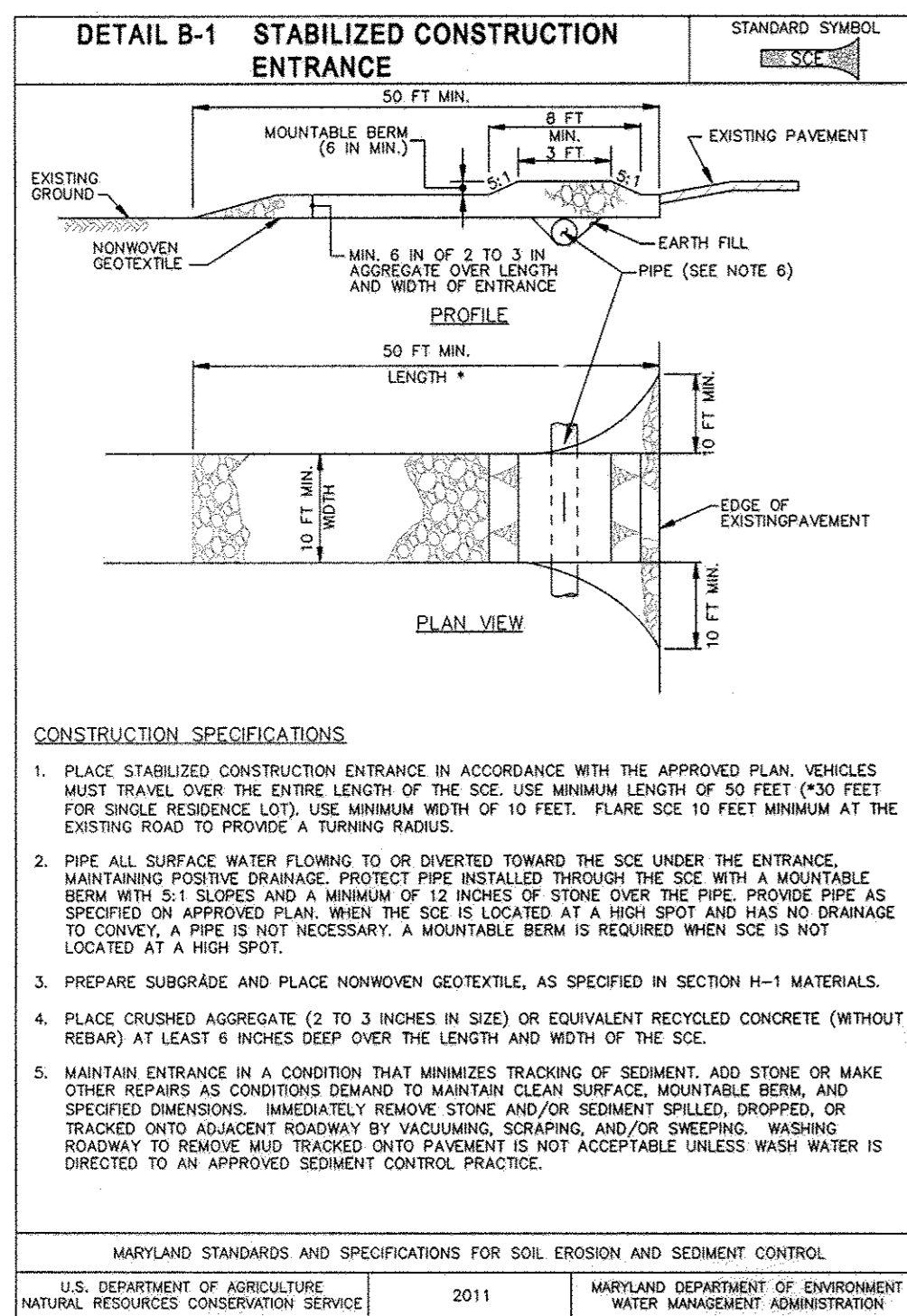
*Anthony M. Loran* 1/9/14  
SIGNATURE OF ENGINEER DATE  
(PRINT NAME BELOW SIGNATURE)

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"I 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: 9/22/2015."

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>John L. Roberts</i> 1/16/14 DIRECTOR, PUBLIC WORKS DATE</p> <p><i>Thomas J. Butler</i> 2/4/14 CHIEF, BUREAU OF ENGINEERING DATE</p> <p><i>John L. Roberts</i> 2/25/14 CHIEF, BUREAU OF UTILITIES DATE</p> <p><i>John L. Roberts</i> 2/4/14 CHIEF UTILITY DESIGN DIVISION DATE</p>		<p>PREPARED BY: WHITMAN, REQUARDT &amp; ASSOCIATES, LLP 801 South Caroline Street, Baltimore, MD 21231</p> <p><b>WR&amp;A</b></p>	<p>DES: RBC</p> <p>DRN: CYH</p> <p>CHK: AUO</p> <p>DATE: 11/21/2013</p>	<p>WRA 1 AS-BUILTS</p> <p>7/16</p>	<p>EROSION AND SEDIMENT CONTROL NOTES</p> <p>600' SCALE MAP NO. 36 BLOCK NO. 5</p>	<p>BLANDAIR REGIONAL PARK - PHASE J WATER AND SEWER EXTENSION CONTRACT NO. 24-4779</p> <p>ELECTION DISTRICT 3/7 HOWARD COUNTY, MARYLAND</p>	<p>DWG. SC0.3</p> <p>SCALE AS SHOWN</p> <p>SHEET 9 OF 10</p>
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- NOTES:**
1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE, ONLY.
  2. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
  3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
  4. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
  5. PROTECTION SIGNAGE IS REQUIRED.
  6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

### PLASTIC MESH TREE PROTECTION FENCE

NO SCALE

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

*John E. Butler*  
HOWARD SOIL CONSERVATION DISTRICT

*11/6/14*  
DATE

**ENGINEER'S CERTIFICATION**

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

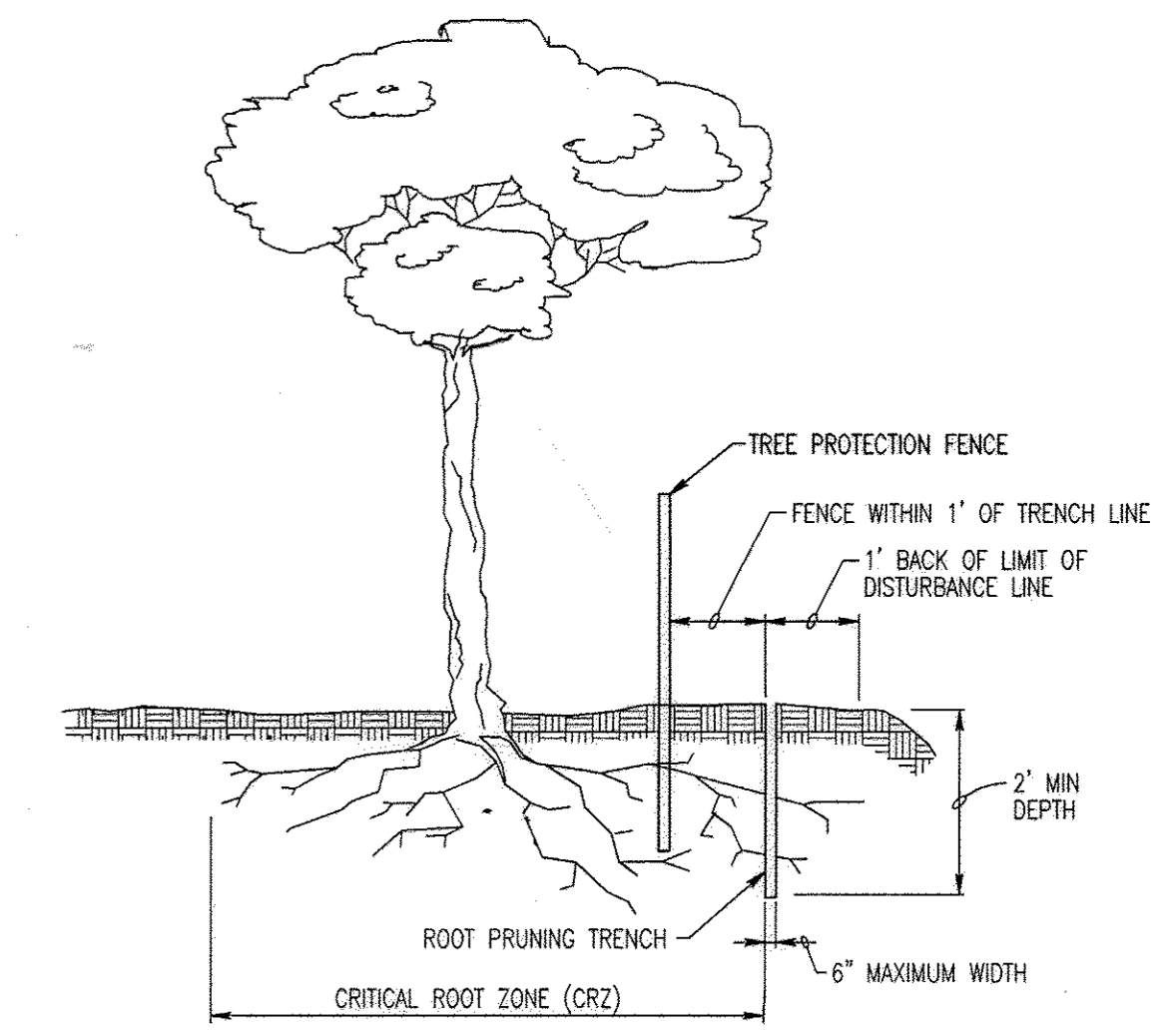
*Anthony U. Olson*  
SIGNATURE OF ENGINEER  
(PRINT NAME BELOW SIGNATURE)

*1/9/14*  
DATE

### TREE CONSERVATION NOTES

#### PRE-CONSTRUCTION ACTIVITIES

- PRIOR TO THE START OF ANY CONSTRUCTION:
- A. 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.
  - B. BLAZE ORANGE FENCING:
    1. BLAZE ORANGE FENCING SHALL BE PLACED ON ALL LIMITS OF DISTURBANCE, EXCEPT WHERE INGRESS/EGRESS IS REQUIRED.
    2. ALL FENCING SHALL BE INSTALLED PRIOR TO CONSTRUCTION ACTIVITIES.
    3. FENCING SHALL BE FIRMLY ANCHORED AT SPACING NO GREATER THAN EIGHT FEET AND CONSTRUCTED IN A MANNER WHICH PRECLUDES SAGGING.
    4. 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.
  - C. SIMULTANEOUS WITH CLEARING, THE FOLLOWING STEPS SHOULD BE UNDERTAKEN TO REDUCE STRESS TO EXISTING TREES:
    1. FERTILIZE TREES WITHIN 10 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.
    2. FERTILIZER SHOULD BE AT LEAST 50 PERCENT SLOW RELEASE NITROGEN AND CONTAIN OTHER ESSENTIAL ELEMENTS AND MICRO-NUTRIENTS.
    3. WATER CRITICAL ROOT ZONE IMMEDIATELY AFTER APPLYING FERTILIZER TO SATURATE THE TOP 6 INCHES OF SOIL.
    4. 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).



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

### ROOT PRUNING DETAIL

NO SCALE

#### CONSTRUCTION PHASE

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

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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John E. Butler* 2/26/14 DATE  
DIRECTOR, PUBLIC WORKS

*Thomas J. Butler* 2/26/14 DATE  
CHIEF, BUREAU OF ENGINEERING

*Steve Chan* 2/25/14 DATE  
CHIEF, BUREAU OF UTILITIES

*Debra* 2/21/14 DATE  
CHIEF, UTILITY DESIGN DIVISION

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

**WR&A**



DES:	RBC	WRA	AS-BUILTS	7/16
DRN:	CYH			
CHK:	AUO			
DATE:	11/21/2013	BY:	NO.	REVISION

EROSION AND SEDIMENT CONTROL  
DETAILS

600' SCALE MAP NO. 36 BLOCK NO. 5

BLANDAIR REGIONAL PARK - PHASE J  
WATER AND SEWER EXTENSION  
CONTRACT NO. 24-4779

ELECTION DISTRICT 3/7 HOWARD COUNTY, MARYLAND

DWG. AS-BUILT SC0.4  
SCALE AS SHOWN  
SHEET 10 OF 10