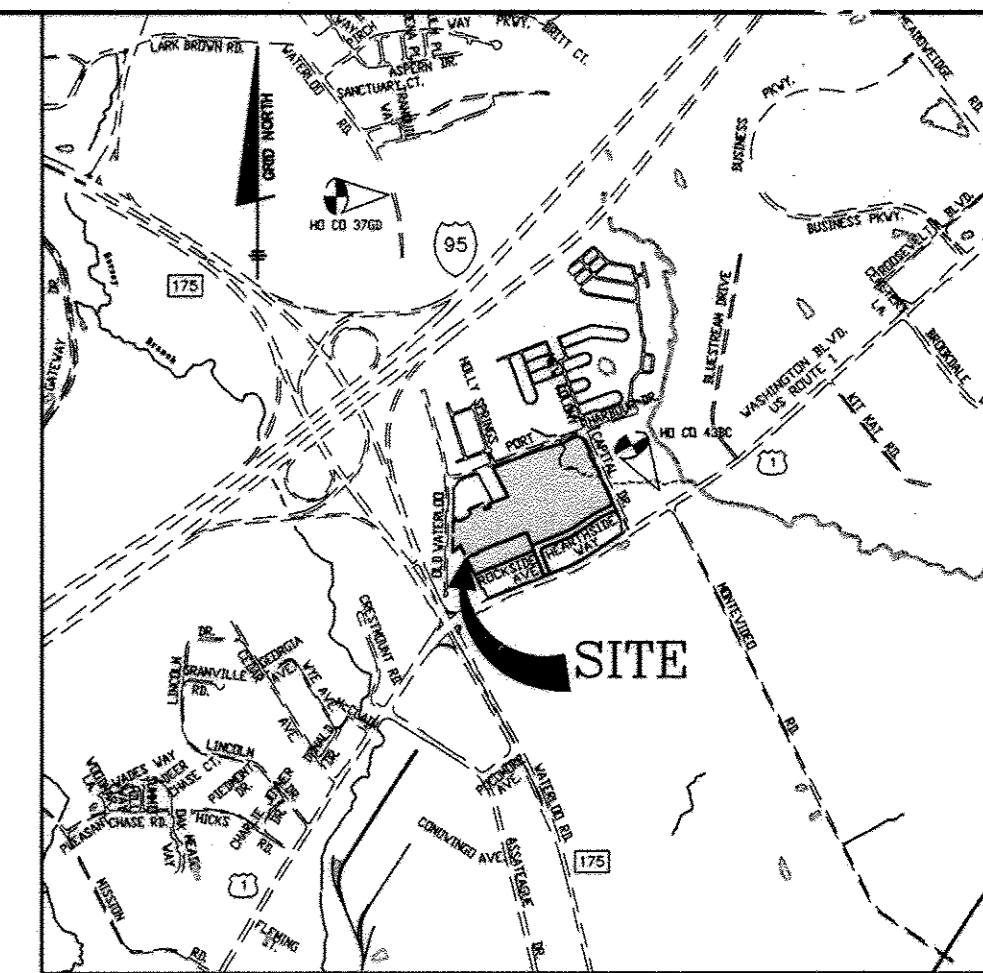


# PUBLIC WATER AND SEWER MAIN EXTENSIONS

## HOWARD SQUARE PHASE 2, SECTION A SFA UNITS 103-109, 135-158 (EXISTING 110-134)

1st ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

### CONTRACT NO.: 14-4707-D



ADC MAP: 5054 GRID: E-3  
VICINITY MAP  
SCALE: 1" = 2000'

ITEMS	ESTIMATED QUANTITIES	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
6" WATER (PVC C900 DR18)	30 L.F.			
8" WATER (PVC C900 DR18)	778 L.F.	826 L.F.	PVC	NORTH AMERICAN PIPE
6" WATER (FH LEADS-DIP)	43 L.F.	43 L.F.	PVC	NORTH AMERICAN PIPE
1.5" WHC	334 L.F.		COPPER	MUELLER
1.5" TWHC	232 L.F.		COPPER	MUELLER
1.5" WHC	13 EACH	13 EA.	COPPER	MUELLER
1.5" TWHC	9 EACH	9 EA.	COPPER	MUELLER
8" CAP & BUTTRESS	2 EACH	2 EA.	DIP	TYLER / UNION
8" 4" HB	1 EACH	1 EA.	DIP	TYLER / UNION
FIRE HYDRANT	2 EACH	2 EA.	DIP	AMERICAN FLOW CONTROL
FH TEE & VALVE	2 EACH	2 EA.	DIP	AMERICAN FLOW CONTROL
8"x8" TEE	2 EACH	1 EA.	DIP	TYLER / UNION
8" WATER VALVES	3 EACH	2 EA.	DIP	AMERICAN FLOW CONTROL
1" OUTSIDE METER VAULT	31 EACH	31 EA.		HOENE CONCRETE
8" SEWER (PVC)	775 L.F.	811 L.F.	PVC	NORTH AMERICAN PIPE
MH (G-5.12)	4 EACH	3 EA.		CONTRACTOR'S PRECAST
MH (S-1.31)	1 EACH	1 EA.		CONTRACTOR'S PRECAST
4" SHC	106 L.F.		PVC	NORTH AMERICAN PIPE
6"x4" TSHC	440 L.F.		PVC	NORTH AMERICAN PIPE
4" SHC	3 EACH	3 EA.	PVC	NORTH AMERICAN PIPE
6"x4" TSHC	14 EACH	14 EA.	PVC	NORTH AMERICAN PIPE
8" SEWER CAP (PVC)	3 EACH	1 EA.	PVC	NORTH AMERICAN PIPE

NAME OF UTILITY CONTRACTOR: SEH CONTRACTING

SURVEY AND DRAFTING DIVISION AS-BUILT DATE:

6" WATER VALVES	1 EACH
6" CAP & BUTTRESS	1 EACH
8" x 6" TEE	1 EACH

#### GENERAL NOTES

##### PART 1 - GENERAL

- APPROXIMATE LOCATION 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 ON FEBRUARY 2003 BY WINGS AERIAL MAPPING AND SUPPLEMENTED BY TOPOGRAPHIC SURVEY PERFORMED BY MILDENBERG BOENDER & ASSOCIATES IN DECEMBER 2007 AND ARE SHOWN AT 2' INTERVALS.
- THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM, NAD 83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 43R1 AND 43R2. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE HO.CO. GEODETIC CONTROL STA. 43R1 & 43R2.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON 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 THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR 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 LOCATIONS OF THE TEST PITS. 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 FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 

AT&T	1-800-252-1133
BGE (CONSTRUCTION SERVICES)	410-852-4620
BGE (EMERGENCY)	410-685-1400
HO. CO. DPW - 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 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 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 HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.

##### PART 2 - WATER

- ALL WATER MAINS TO BE PVC C900 DR18 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO 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 THE 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 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- FOR PVC WATER MAINS, ALL RECORDS FOR THE QUANTITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF MATERIAL FOR USE. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORD RECEIVED.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SEVENTEEN (17) POUND SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. 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.
- FIRE SPRINKLER SYSTEMS FOR ALL SINGLE FAMILY DWELLINGS SHALL HAVE A MINIMUM OF A 1-1/2" CONNECTION WITH A 1" OUTSIDE METER SETTING.

##### PART 3 - SEWER

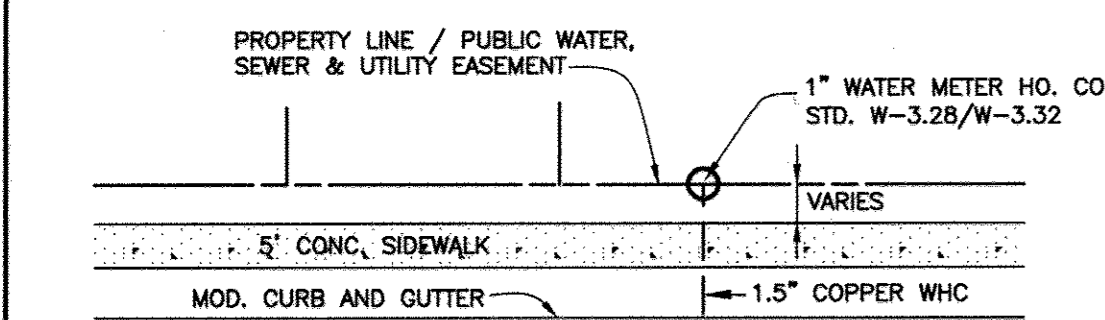
- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4' - 0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE D.I.P. ONLY.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL G-5.52, 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." INDICATES THAT CELLAR CANNOT BE SERVED.

NOTE: USE HO. CO. STD. DETAILS W-3.32 FOR TWIN AND W-3.28 FOR SINGLE OUTSIDE METER SETTINGS

NOTE: ALL JOINTS AND CONNECTIONS LOCATED WITHIN STRUCTURAL FILL AREAS SHALL BE MECHANICALLY RESTRAINED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION)

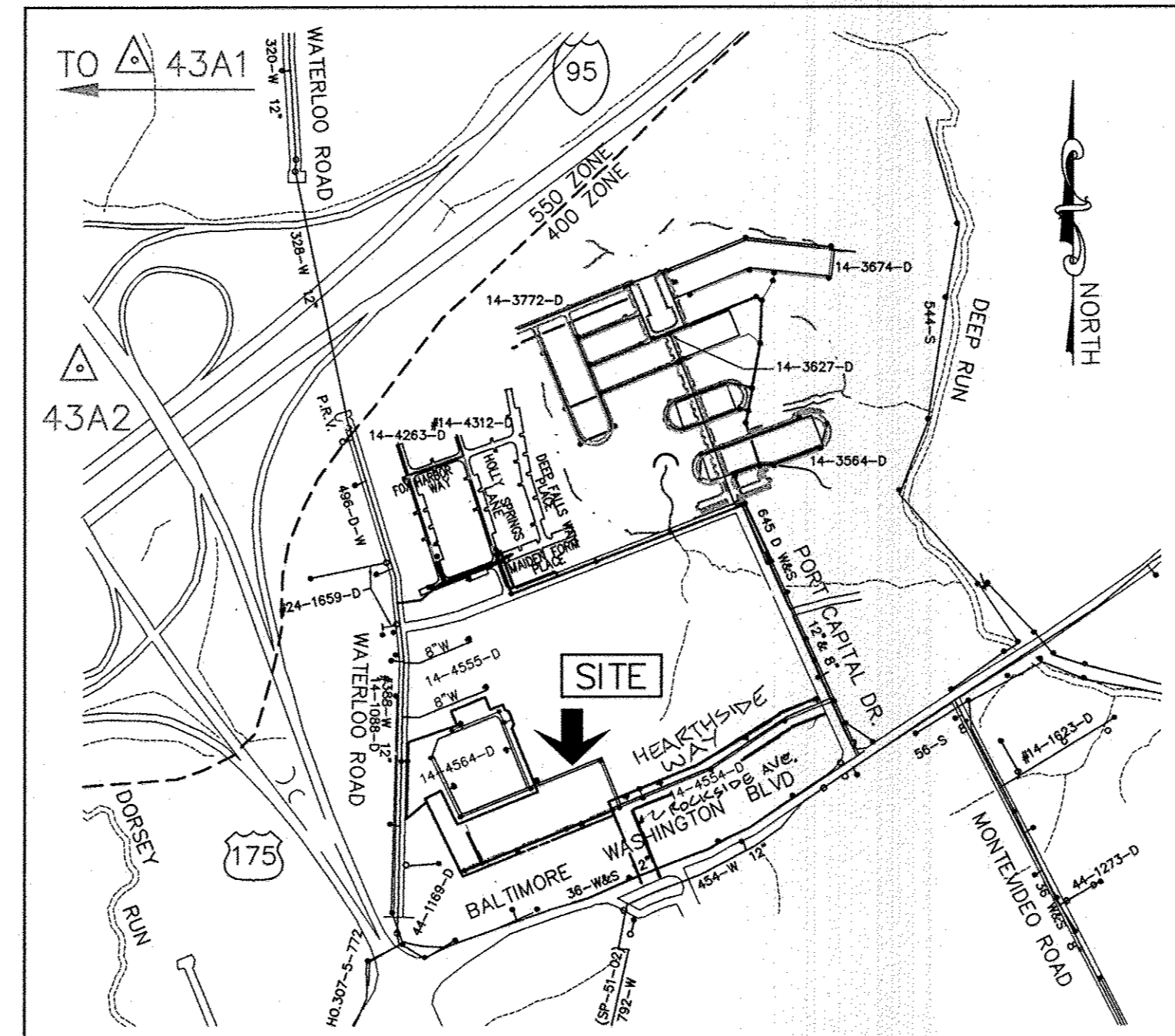
#### LEGEND

EXIST. WATER MAIN	
EXIST. SEWER MAIN	
EXIST. SEWER MANHOLE	
EXIST. STORM DRAIN	
PROP. WATER MAIN	
PROP. SEWER MAIN	
PROP. STORM DRAIN	
PROP. SEWER MANHOLE	
PROP. TERMINAL MANHOLE	
PROP. SEWER HOUSE CONNECTION	
PROP. DROP SEWER HOUSE CONN.	
PROP. WATER HOUSE CONNECTION	
PROP. FIRE HYDRANT	
PROP. VALVE	
PROP. PLUG & BUTTRESS	



TYPICAL WATER HOUSE CONNECTION  
NOT TO SCALE

NOTE:  
ALL WATER HOUSE CONNECTIONS ARE TO BE 1.5" WITH A 1" METER (OUTSIDE SETTING).



TYPE OF BUILDING:	SFA	NUMBER OF SHC'S:	3
NUMBER OF UNITS:	56	NUMBER OF SHC'S (EXISTING):	5
NUMBER OF UNITS (FUTURE):	N/A	NUMBER OF TSHC'S:	14
TOTAL NUMBER OF UNITS:	56	NUMBER OF TSHC'S (EXISTING):	10
DRAINAGE AREA:	PATAPSCO	TOTAL NUMBER OF SHC'S:	56
TREATMENT PLANT:	PATAPSCO WASTEWATER TREATMENT PLANT	NUMBER OF WHC'S:	13
WATER ZONE:	550	NUMBER OF TWHC'S:	7
TEST GRADIENT:	700	NUMBER OF TWHC'S (EXISTING):	9
		TOTAL NUMBER OF WHC'S:	56

#### LOCATION PLAN

SCALE: 1" = 600'

#### SHEET INDEX

NO.	DESCRIPTION
1	TITLE SHEET PUBLIC WATER & SEWER MAINS
2	PLAN VIEW PUBLIC WATER & SEWER MAINS
3	PROFILE VIEWS PUBLIC WATER & SEWER MAINS

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

*John K. Sabuta* 9/14/11  
HOWARD COUNTY SOIL CONSERVATION DISTRICT  
PERMIT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS AND AS PER APPROVED DEVELOPMENT PLANS GP-08-024 & F-08-013.

PLAN REFERENCE NUMBERS:  
S-06-010, F-08-013, F-09-007, SDP-08-046, SDP-08-078, SDP-92-79, WP-92-165, WP-93-044, WP-93-094, WP-94-047, WP-06-114, WP-07-052, WP-08-020, WP-07-129, GP-08-024

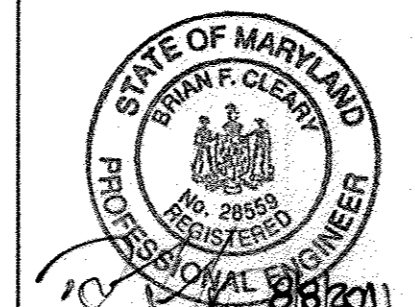
OWNER/DEVELOPER  
ATAPCO HOWARD SQUARE II  
STATUTORY TRUST  
10 E. Baltimore St. Suite 1600  
Baltimore, MD 21202  
(410) 347-7189

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. 28599, Expiration Date: 7-22-2013

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

BENCHMARK  
ENGINEERS & LAND SURVEYORS & PLANNERS  
8480 BALTIMORE NATIONAL PIKE A SUITE 418  
ELUCOTT CITY, MARYLAND 21043  
PHONE: 410-465-8105 FAX: 410-465-8644



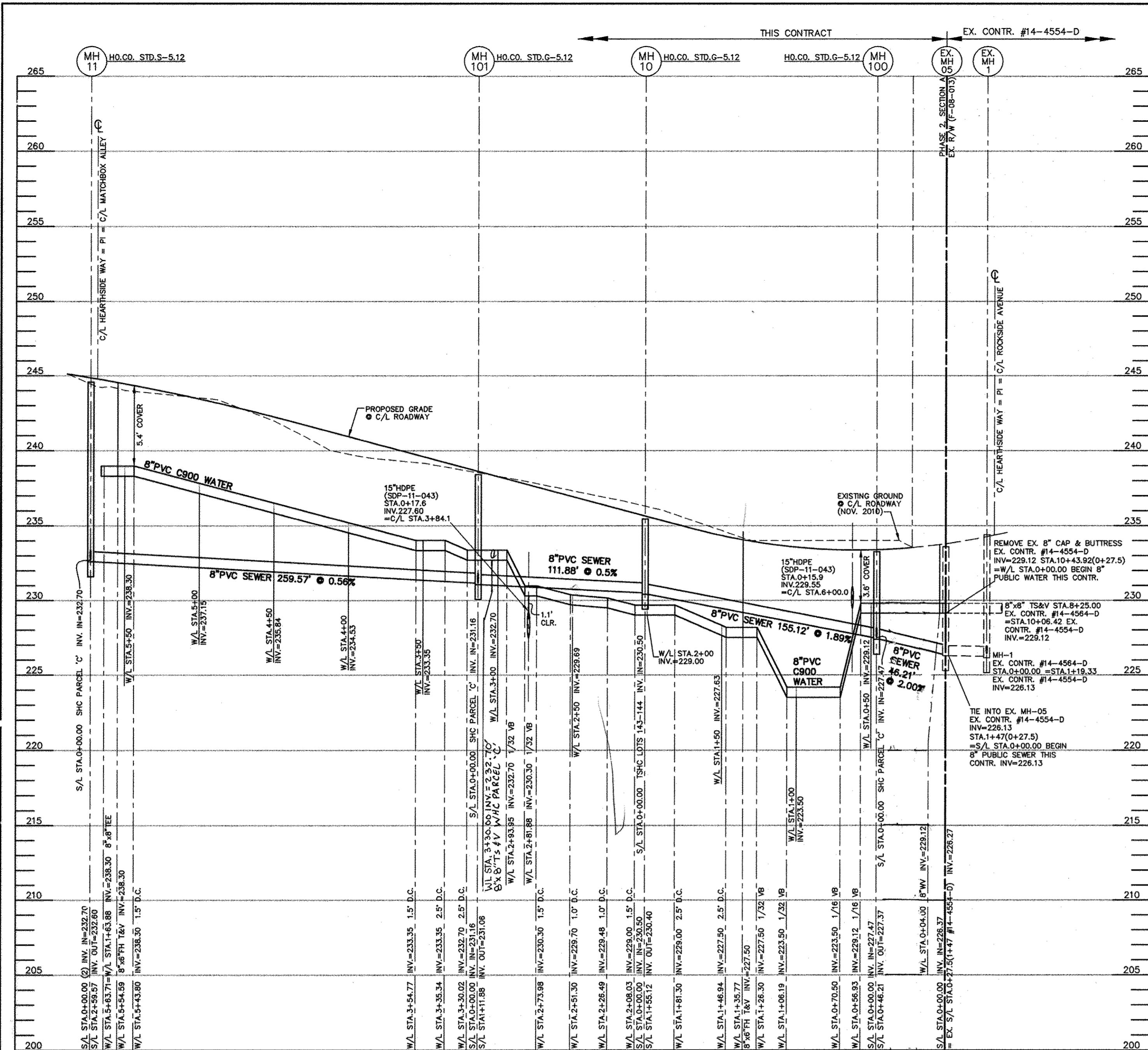
DES:	MCR/BFC			
DRN:	MCR/BFC			
CHK:	BFC	1/1	2	AS-BUILT
DATE:	8/02/2011	BY	NO.	REVISIONS
				ADD MH-100% MH NOT; ADD UTILITY CONNECTIONS FOR PARCEL 'C'; ADJUST UTILITY LINES ACCORDINGLY

PUBLIC WATER AND SEWER  
TITLE SHEET AND DETAILS

HOWARD SQUARE  
PHASE 2, SECTION A  
(L- F-)  
TAX MAP 43, PARCEL A-1, GRIDS 3 & 9  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT No. 14-4707-D

SCALE:  
AS SHOWN  
SHEET NO.  
1 OF 3

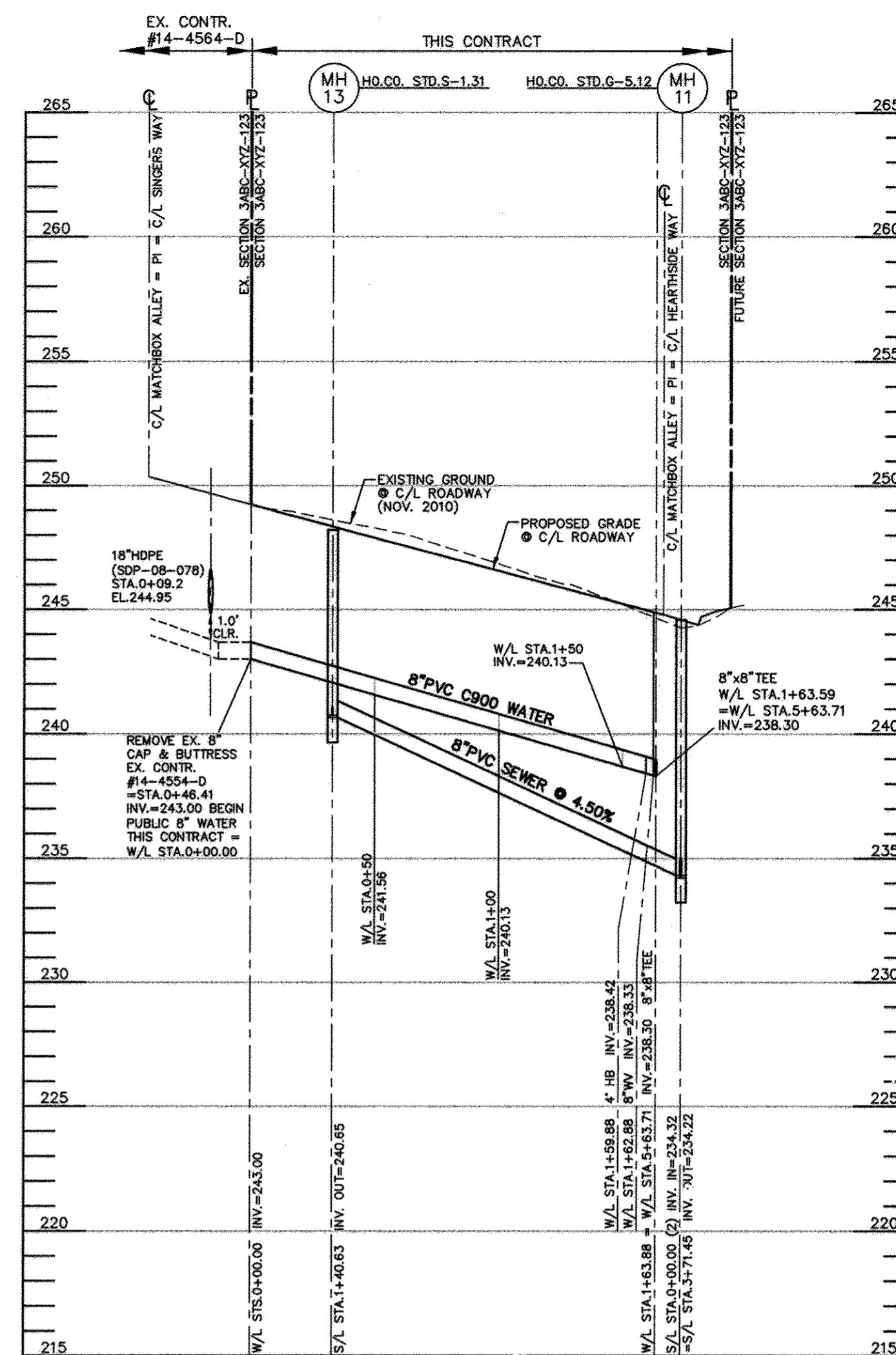




UTILITY PROFILE - HEARTHSIDE WAY

HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'

APPURTENANCE	WATERLINE STATION	LOCATION	OFFSET	COMMENT
EX. 8" CAP & BUTTRESS	0+00.00 = 0+46.41	MATCHBOX ALLEY STA.6+55.2	5.0 LT.	8" CAP & BUTT. END = P/L
4" HB	1+59.88	MATCHBOX ALLEY STA.8+15.1	5.0 LT.	-
8" W	1+62.88	MATCHBOX ALLEY STA.8+18.1	4.8 LT.	-
8"x8" TEE = PI	1+63.88 = 5+63.71	MATCHBOX ALLEY STA.8+19.1	4.7 LT.	HEARTHSIDE WAY STA.0+98.8
EX. 8" CAP & BUTTRESS	10+43.92 = 0+00.00	HEARTHSIDE WAY STA.8+62.6	3.0 LT.	8" CAP & BUTT. END = P/L
8" W	0+01.00	HEARTHSIDE WAY STA.6+61.6	3.0 LT.	-
8"x8" TEE	0+13.48	HEARTHSIDE WAY STA.6+49.1	3.0 RT.	8" WHC PARCEL 'C'
8" W	0+13.48	HEARTHSIDE WAY STA.6+49.1	2.0 RT.	-
8" CAP & BUTTRESS	0+13.48	HEARTHSIDE WAY STA.6+49.1	27.0 RT.	-
8"x8" TEE	0+36.21	HEARTHSIDE WAY STA.6+26.3	3.0 LT.	8" WHC PARCEL 'C'
8" W	0+36.21	HEARTHSIDE WAY STA.6+26.3	2.0 RT.	-
8" CAP & BUTTRESS	0+36.21	HEARTHSIDE WAY STA.6+26.3	27.0 RT.	-
8"x6" FH TEE	1+35.77	HEARTHSIDE WAY STA.5+26.8	3.0 LT.	-
FIRE HYDRANT	1+35.77 (21.10 RT.)	HEARTHSIDE WAY STA.5+26.8	18.1 RT.	BURY HT. = 7.0'
8"x6" FH TEE	5+54.59	HEARTHSIDE WAY STA.1+08.0	3.0 LT.	-
FIRE HYDRANT	5+54.59 (21.10 RT.)	HEARTHSIDE WAY STA.2+43.0	18.1 RT.	BURY HT. = 6.5'
8"x8" TEE = PI	1+63.88 = 5+63.71	HEARTHSIDE WAY STA.0+98.8	3.0 LT.	MATCHBOX ALLEY STA.8+19.1



UTILITY PROFILE - MATCHBOX ALLEY

HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'

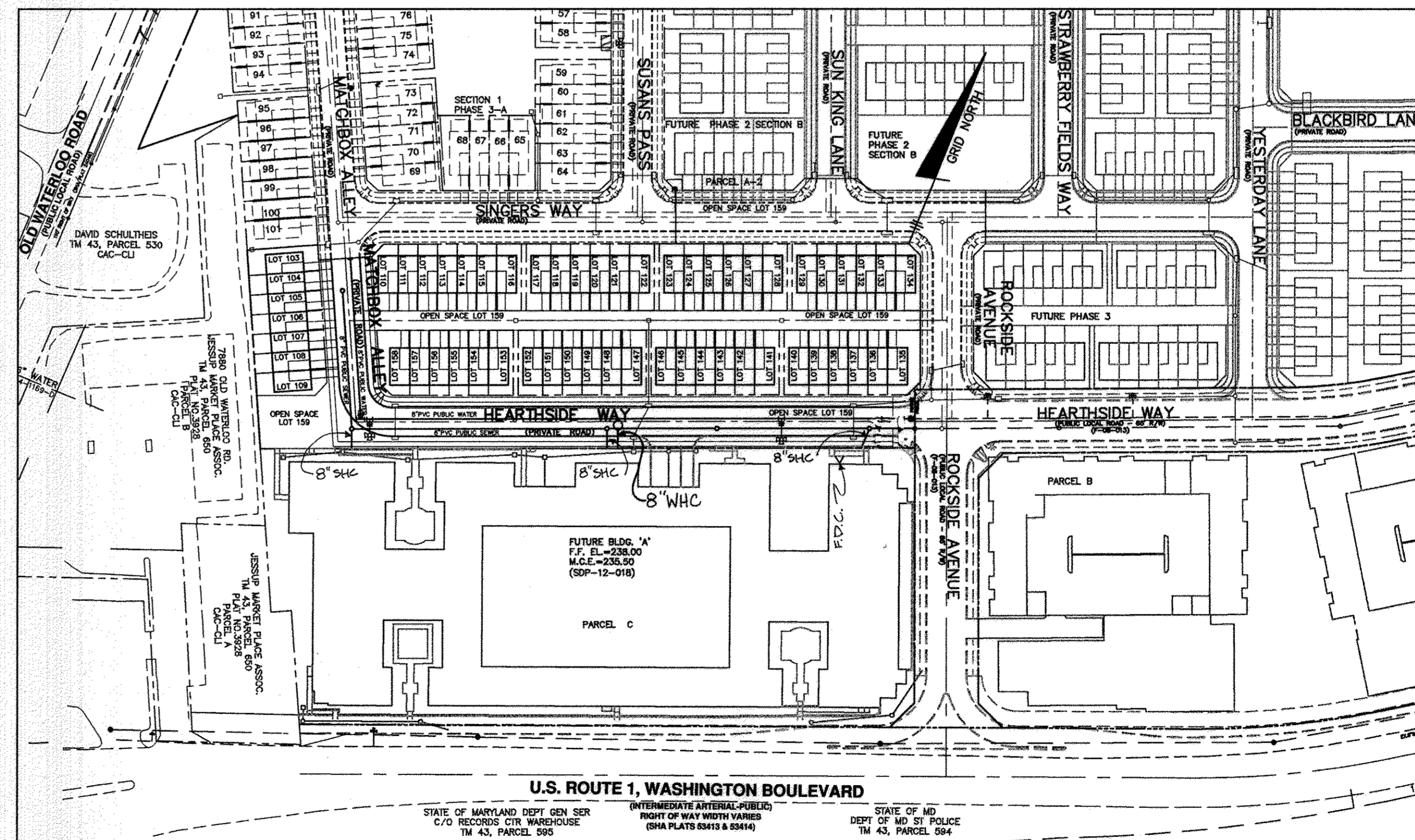
NO.	TYPE	LOCATION	INVERT IN	SHC INV.	INVERT OUT	TOP ELEV.	HO.CO. STD.	REMARKS
EX. MH-05	4.0'φ	HEARTHSIDE WAY STA.6+62.6 OFFS 7.0' RT.	226.37	-	226.27	233.6	-	EX. CONTR. #14-4554-D
MH-10	STD. 4.0'φ PRE-CAST	HEARTHSIDE WAY STA.4+61.2 OFFS 7.0' RT.	230.50	230.50	230.40	235.4	G-5.12	-
MH-11	STD. 4.0'φ PRE-CAST	HEARTHSIDE WAY STA.0+89.8 OFFS 7.0' RT.	(2) 232.70	232.70	232.60	244.9	G-5.12	8" SHC PARCEL 'C'
MH-12	TERMINAL	MATCHBOX ALLEY STA.6+87.8 OFFS 5.0' RT.	-	(2) 240.75	240.65	248.2	S-1.31	-
MH-100	STD. 4.0'φ PRE-CAST	HEARTHSIDE WAY STA.6+16.3 OFFS 7.0' RT.	(2) 227.47	227.47	227.37	233.2	G-5.12	8" SHC PARCEL 'C'
MH-101	STD. 4.0'φ PRE-CAST	HEARTHSIDE WAY STA.4+61.2 OFFS 7.0' RT.	231.16	231.16	231.06	238.3	G-5.12	8" SHC PARCEL 'C'

NOTES:  
1. STRUCTURE LOCATION FOR MANHOLES IS AT THE CENTER OF THE STRUCTURE.

NOTE: ALL JOINTS AND CONNECTIONS LOCATED WITHIN STRUCTURAL FILL AREAS SHALL BE MECHANICALLY RESTRAINED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION)

NOTE: HOUSE CONNECTIONS TO BE SIZED ACCORDINGLY:  
SINGLE WHC = 1-1/2"  
TWIN WHC = 1-1/2"  
SINGLE SHC = 4"  
TWIN SHC = 6"x4"

THE PURPOSE OF THIS REPLACEMENT SHEET IS TO INDICATE CHANGES BASED ON THE ADDITIONS OF SMH-100 & 101 AND REVISION OF ROADWAY LAYOUT



GENERAL SITE LOCATION PLAN

SCALE: 1" = 100'

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*M. K. St.* 1/20/2011  
BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
*[Signature]* 1/20/2011  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK  
ENGINEERS & LAND SURVEYORS & PLANNERS  
ENGINEERING, INC.  
8480 BALTIMORE NATIONAL PIKE, SUITE 418  
ELICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644



DBS:	MCR/BFC			
DRN:	MCR/BFC			
CHK:	BFC	BEI 2	ADD 8" WHC & REMOVE 8" LG" WHC PARCEL 'C'	4-25-12
		BEI 1	REPLACEMENT SHEET 3	12/11
DATE:	12/05/11	BY:	NO.	REVISIONS

REVISED  
PUBLIC WATER AND SEWER  
PROFILE VIEWS  
DATE: 600 SCALE MAPS: 43 BLOCKS: 3 & 9

HOWARD SQUARE  
PHASE 2, SECTION A  
(L.F.)  
TAX MAP 43, PARCEL A-1, GRIDS 3 & 9  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT No.14-4707-D  
SCALE: AS SHOWN  
SHEET NO. 3 OF 3