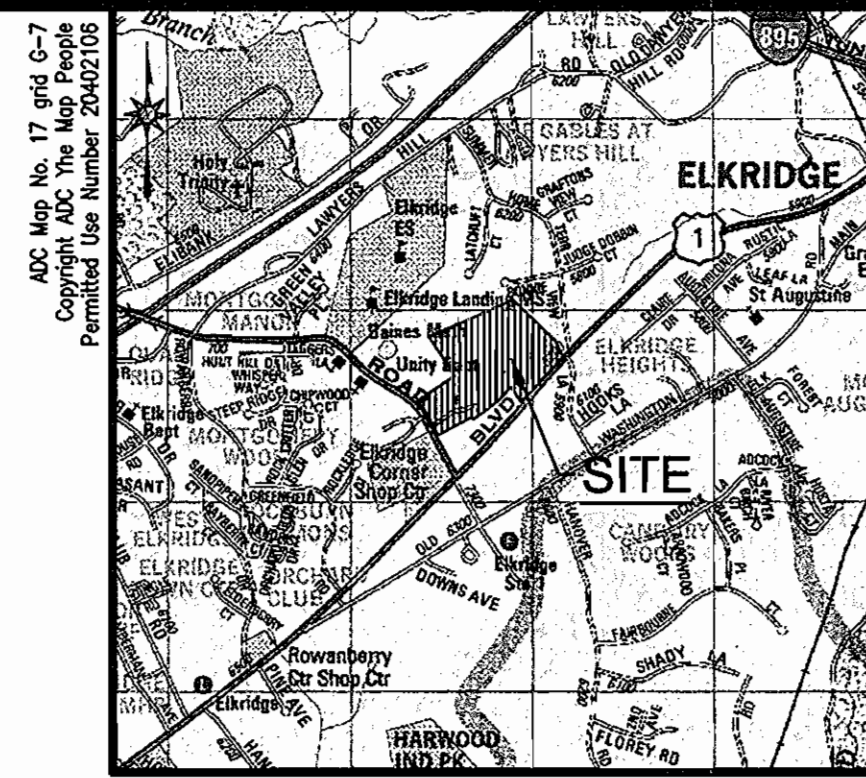


# ELKRIDGE CROSSING MONTGOMERY ROAD & WASHINGTON BOULEVARD (U.S. RTE. #1) PRELIMINARY WATER & SEWER PLAN HOWARD COUNTY, MARYLAND CONTRACT No. 14 - 4353 - D

SHC & WHC LOCATIONS-AS BUILT				
BUILDING #	FROM	TO	DISTANCE	REMARKS
BLDG. B3	M-4	SHC	71.5'	
	6" V WHC 083	SHC	03'	
	FH 3+77	SHC	01'	
BLDG. B4	M-7B	SHC	01'	
	6" V WHC 084	SHC	50'	
BLDG. B3	M-4	WHC	38'	
	6" V WHC	WHC	40'	
BLDG. B4	M-7B	WHC	23'	
	6" V WHC	WHC	29'	

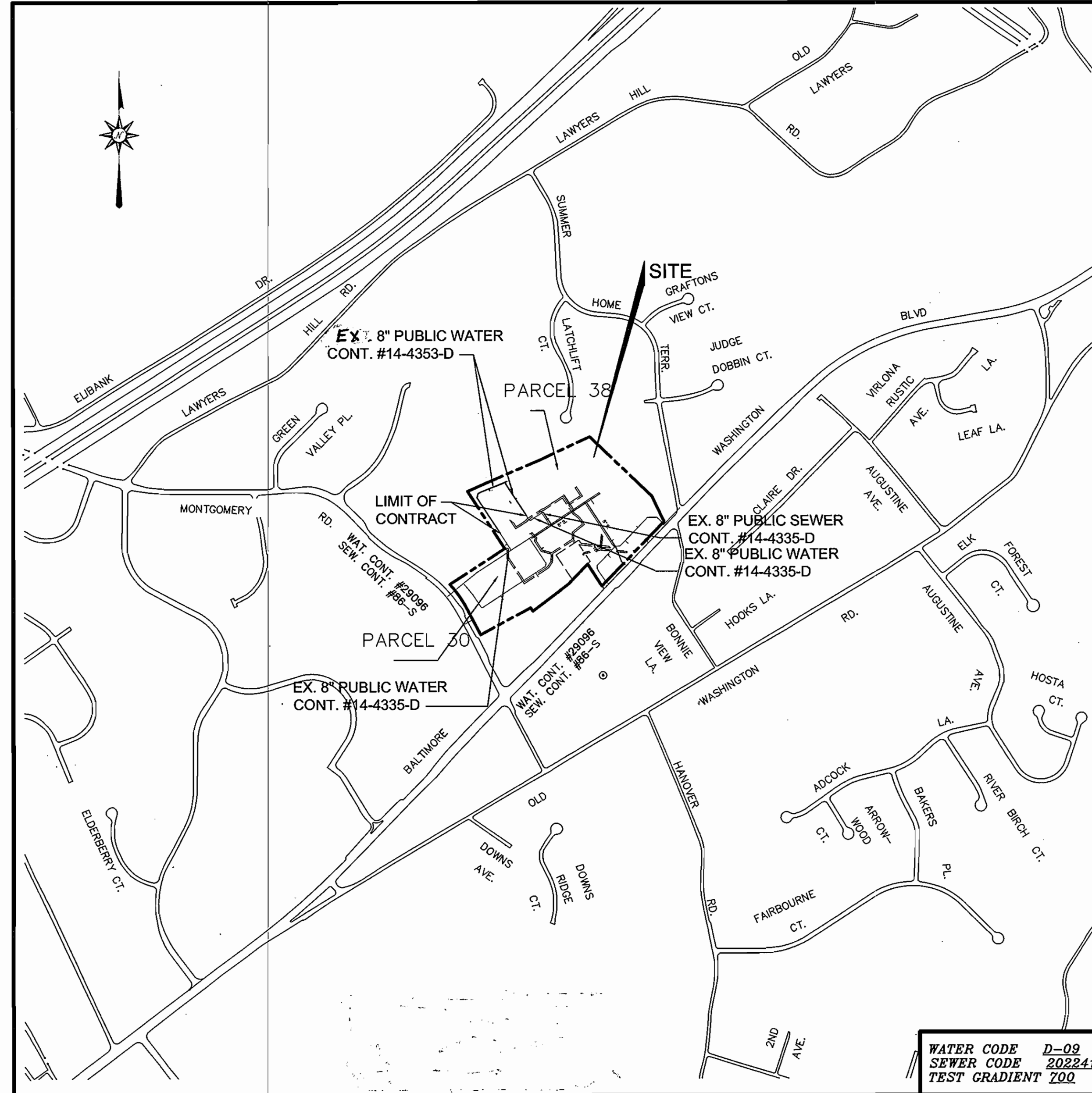


QUANTITIES				
NAME OF UTILITY CONTRACTOR: AMERICAN INFRASTRUCTURE				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE: SEPTEMBER 2007				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
8" P.V.C. C-900	845 LF	824 LF	SDR 35	NORTH AMERICAN/FERGUSON
6" P.V.C. CL 52	175 LF	20.3 LF	DIP CL 52	ATLANTIC STATES/FERGUSON
8" x 8" TEE	1 EA.	1 EA.	MJ C 153	TYLER PIPE/FERGUSON
8" x 6" TEE	2 EA.	2 EA.	MJ C 153	TYLER PIPE/FERGUSON
8" VALVE	2 EA.	3 EA.	MJGV, OR	MUELLER CO./FERGUSON
6" VALVE	2 EA.	2 EA.	MJGV, OR	MUELLER CO./FERGUSON
8" CAP & BUTTRESS	1 EA.	1 EA.	MJ C 153	TYLER PIPE/FERGUSON
1/32 H.B. 8"	2 EA.	2 EA.	MJ C 153	TYLER PIPE/FERGUSON
1/8 H.B. 8"	2 EA.	2 EA.	MJ C 153	TYLER PIPE/FERGUSON
8" x 4" TSV, F.V.	4 EA.	2 EA.	MJ F6, RS	MUELLER CO./FERGUSON
CURB STOP, W 2x23	66 EA.	61 EA.	SLIDE VBOX	CAPITOL FOUNDRY/FERGUSON
1 1/2" COPPER	350 LF	454.5 LF	K' COPPER	MUELLER CO./FERGUSON
FIRE HYDRANT	2 EA.	2 EA.	A-423	MUELLER CO./FERGUSON
4" VALVE	6 EA.	6 EA.	MJ RS 6V	MUELLER CO./FERGUSON
4" SHC	840 LF	960 LF	SDR 35	NORTH AMERICAN/FERGUSON
4" PVC CL 52	315 LF	258 LF	DIP CL 52	ATLANTIC STATES/FERGUSON
8" x 4" TEE	2 EA.	2 EA.	MJ C 153	TYLER PIPE/FERGUSON
3/4" INSIDE METER	66 EA.	66 EA.	MJ C 153	TYLER PIPE/FERGUSON
1" COPPER	352 LF	274 LF	K' COPPER	MUELLER CO./FERGUSON
1 1/2" x 1" WYE	33 EA.	33 EA.	TCS	FORD CO./FERGUSON

HOWARD COUNTY BENCHMARKS				
NO.	NORTHING	EASTING	ELEV.	DESCRIPTION
3849	561,056.341	1,389,634.145	223.417	BRASS DISK ON CONC. MONUMENT IN GRASS PLOT ON SOUTHEAST SIDE OF U.S. RTE. #1 AND MONTGOMERY ROAD.
361B	562,553.293	1,380,967.941	166.939	BRASS DISC ON CONC. MONUMENT ON WEST SIDE OF U.S. RTE. #1 APPROXIMATELY 100' NORTH OF BONNIE VIEW LANE.

WATER VALVE LOCATIONS-AS BUILT				
FROM	TO	DISTANCE	REMARKS	
6" FHV	I-141	VALVE	15'	COBURN COURT
3+08	FH 3+08	VALVE	7'	
	TH14 U 1/2 CC	VALVE	44'	
8" VALVE	SMH 15C	VALVE	39.3'	COBURN COURT
5+00	DJD 6+82 8"V	VALVE	4'	
	DJD 6+88 8"V	VALVE	4'	
8" VALVE	CC 5+00 8"V	VALVE	4'	DANIEL JOHN DR.
6+88	SMH 15C	VALVE	43.3'	
	DJD 6+82 8"V	VALVE	0'	
8" VALVE	SMH 15C	VALVE	40.4'	DANIEL JOHN DR.
6+82	TH13 U 9/16 CO	VALVE	57'	
	CC 5+00 8"V	VALVE	4'	
4"V(FIRE LINE)	8"V 6+82	VALVE	66.4'	DANIEL JOHN DR.
6+10	TH13 U 9/16 CO	VALVE	50'	
ADD ON	TH13 U 9/16 CO	VALVE	73'	
6" FHV	FH 5+01	VALVE	14'	DANIEL JOHN DR.
5+01	TH12 U 1/2 CO	VALVE	38'	
	4"V 5+12	VALVE	41'	
4"V(FIRE LINE)	6" FHV 5+01	VALVE	49'	DANIEL JOHN DR.
5+12	FH 5+01	VALVE	50.3'	
ADD ON	TH12 U 1/2 CO	VALVE	43'	
4"V(FIRE LINE)	SMH 17	VALVE	20.0'	DANIEL JOHN DR.
1+33	TH11 U 1/2 WHC	VALVE	23'	
ADD ON	TH11 U 3/4 WHC	VALVE	43.4'	

FROM	TO	DISTANCE	REMARKS
4"V(FIRE LINE)	SMH 15A	VALVE	25'
2+10	TH14 U 1/2 SHC	VALVE	35'
ADD ON	TH14 U 1/2 WHC	VALVE	31.5'



### GENERAL NOTES

- PART I.**
- 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 ON APRIL, 2004 BY MILDENBERG-BOENDER ASSOCIATES, INC.
  - HORIZONTAL AND VERTICAL SURVEY CONTROLS: THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD 83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 3848, NO. 3884.
  - ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE BRASS DISKS ON CONCRETE MONUMENTS.
  - ALL PIPE ELEVATIONS SHOWN ARE SHORTEST ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
  - CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. 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 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 DRAWING, 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 'X' 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 MADE SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
  - THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.
 

AT&T (CONSTRUCTION SERVICES)	1-800-252-1133
BCE (EMERGENCY)	410-850-4620
BUREAU OF UTILITIES	410-681-1400
COLONIAL PIPELINE CO.	410-313-4900
MISS UTILITY	410-795-1390
STATE HIGHWAY ADMINISTRATION	1-800-257-7777
VERIZON	410-531-5533
	1-800-743-0033/410-224-9210
- PART II WATER**
- ALL WATER MAINS SHALL BE AWWA C900 P.V.C. UNLESS OTHERWISE NOTED.
  - TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3' -6" OF 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.
  - FOR SPRINKLER SYSTEM FOR ALL TOWNHOMES OR MULTI-FAMILY DWELLING UNITS SHOULD HAVE A 1 1/2" CONNECTION WITH A 1" METER.
  - ALL DUCTILE IRON PIPES TO BE USED ON THE PUBLIC WATER SYSTEM SHALL BE CLASS 54. DUCTILE IRON FITTINGS SHALL MEET THE REQUIREMENTS OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND SHALL BE EXTERIOR EPOXY COATED IN ACCORDANCE WITH AWWA C106.
  - ALL WATER HOUSE CONNECTIONS SHALL BE COPPER MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
  - ALL FIRE HYDRANT LEADS INCLUDING THE TEE SHALL BE DUCTILE IRON CLASS 54 MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
  - ALL WATER MAINS CONSTRUCTED IN FILL AREAS SHALL BE RESTRAINED DUCTILE IRON PIPE CLASS 54 MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
  - ALL WATER MAINS WITHIN CASING PIPES SHALL BE RESTRAINED DUCTILE IRON PIPE CLASS 54 MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
  - THE FOLLOWING NOTE IS ADDED TO HOWARD COUNTY STANDARD DETAIL W222, BUTTRESSES AND ANCHORAGES FOR VERTICAL BENDS. WHEN ANCHORING PVC PIPE, THE STRAPPING IN CONTACT WITH THE PIPE SURFACE SHALL BE 1-INCH WIDE BY 14-INCH THICK STEEL. THE REMAINING PORTION OF THE STRAP SHALL BE REINFORCING BAR SIZED IN ACCORDANCE WITH THE PERTINENT CHART SHOWN ON THE DETAIL.
  - EXCEPT AS INDICATED ON THE PLANS AND NOTED ABOVE, ALL PUBLIC WATER MAINS SHALL BE POLY(VINYL CHLORIDE) (PVC) PIPE MEETING THE REQUIREMENTS OF AWWA C900 DR18. PRESSURE CLASS 150 AND THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND ALL SUBSEQUENT AMENDMENTS THEREOF.

### LOCATION MAP

SCALE: 1" = 2000'

### WHC & SHC LOCATIONS-AS BUILT

TH9U1	FROM	TO	DISTANCE
	SMH 0	WHC	49'
	TH9U2 WHC	WHC	4.5'
TH9U2	SMH 0	WHC	53'
	TH9U3 WHC	WHC	4.5'
TH9U3	SMH 5A	WHC	104'
	TH9U4 WHC	WHC	101.5'
TH9U4	SMH 5A	WHC	101.5'
	8"V 0+04	WHC	98'
TH9U5	SMH 5A	WHC	81.5'
	8"V 0+04	WHC	80'
TH9U6	SMH 5A	WHC	77'
	8"V 0+04	WHC	70.5'
TH9U7	SMH 5A	WHC	58.5'
	8"V 0+04	WHC	50.5'
TH9U8	SMH 5A	WHC	55'
	8"V 0+04	WHC	57'
TH9U9	SMH 5A	WHC	38'
	8"V 0+04	WHC	45'
TH9U10	SMH 5A	WHC	35.5'
	8"V 0+04	WHC	43'
TH9U11	SMH 5A	WHC	25'
	8"V 0+04	WHC	38.5'
TH9U12	SMH 5A	WHC	24.5'
	8"V 0+04	WHC	39'
TH9U1/2	SMH 0	SHC	60'
	TH9U3/4 SHC	SHC	23.4'
TH9U3/4	SMH 0	SHC	81'
	TH9U5/8	SHC	25'
TH9U5/8	SMH 0	SHC	104'
	TH9U7/8	SHC	24'
TH9U7/8	SMH 5A	SHC	51.5'
	8"V 0+04	SHC	53.0'
TH9U9/10	SMH 5A	SHC	33'
	8"V 0+04	SHC	41'
TH9U9/10	SMH 5A	SHC	27'
	8"V 0+04	SHC	41'

### WATERLINE TEST STATIONS

FROM	TO	DISTANCE	REMARKS
TEST STATION 6"V 3+08	TEST STATION 8	2'	COBURN COURT
3+08	FH 3+08	TEST STATION	2'
RT. OF FH	TH14 U 1/2 SHC	TEST STATION	51'
TEST STATION 6"V 5+01	TEST STATION	2'	
5+01	FH 5+01	TEST STATION	14'
LT. OF FH	TH12 U 1/2	TEST STATION	23'

**AS BUILT**  
DATE: SEPTEMBER 2007

**DEVELOPER**  
BRANTLY DEVELOPMENT GROUP, INC.  
8835-P COLUMBIA 100 PARKWAY  
COLUMBIA, MARYLAND 21045

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

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*John K. Roberts* 10/24/06  
SOIL CONSERVATION DISTRICT DATE

*Jim Meyer* 10/24/06  
SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

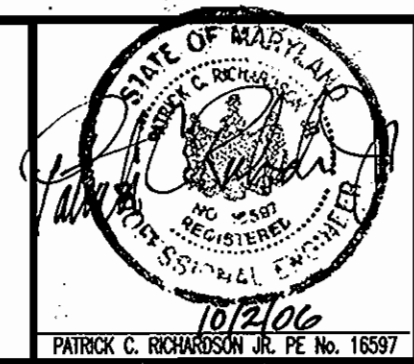
DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*Ruth Berman* 10-16-06  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 10/24/06  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**Richardson Engineering, LLC**

110 Old Potosi Road, Suite LC  
Cockeysville, Maryland 21030  
Phone: 410-560-1502 Fax: 410-560-0827



DES: CND	CND	I	QUANTITIES & CALCULATIONS	6/18/07
DRN: CND				
CHK: PCR				
OCT. DATE: 2006				
BY	NO.	REVISION	DATE	

### PHASE II PRELIMINARY WATER PLAN COVER SHEET

**ELKRIDGE CROSSING**  
CONTRACT #14-4353-D



**SHC & WHC LOCATIONS - ASBUILT**

FROM	TO	DISTANCE
TH 10 U 1/2	4" V. 0+04 SHC	47'
TH 10 U 1/2	4" V. 10+22 SHC	87'
TH 10 U 3/4	4" V. 0+04 SHC	65.5'
TH 10 U 3/4	4" V. 10+22 SHC	65'
TH 10 U 5/6	4" V. 0+04 SHC	87'
TH 10 U 5/6	4" V. 10+22 SHC	47'
TH 10 U 7/8	I-A 23 SHC	32'
TH 10 U 7/8	4" V. 10+22 SHC	35.5'
TH 10 U 1	4" V. 9+10 WHC	40'
TH 10 U 1	4" V. 10+22 WHC	96'
TH 10 U 2	4" V. 9+10 WHC	42'
TH 10 U 2	4" V. 10+22 WHC	93'

\* 9+10 AND 10+22 ARE THE ML "T" STATIONS

FROM	TO	DISTANCE
TH 10 U 3	4" V. 9+10 WHC	56.5'
TH 10 U 3	4" V. 10+22 WHC	73'
TH 10 U 4	4" V. 9+10 WHC	59'
TH 10 U 4	4" V. 10+22 WHC	70'
TH 10 U 5	4" V. 9+10 WHC	77'
TH 10 U 5	4" V. 10+22 WHC	53'
TH 10 U 6	4" V. 9+10 WHC	80'
TH 10 U 6	4" V. 10+22 WHC	50'
TH 10 U 7	4" V. 9+10 WHC	99'
TH 10 U 7	4" V. 10+22 WHC	38'
TH 10 U 8	4" V. 9+10 WHC	102'
TH 10 U 8	4" V. 10+22 WHC	36'

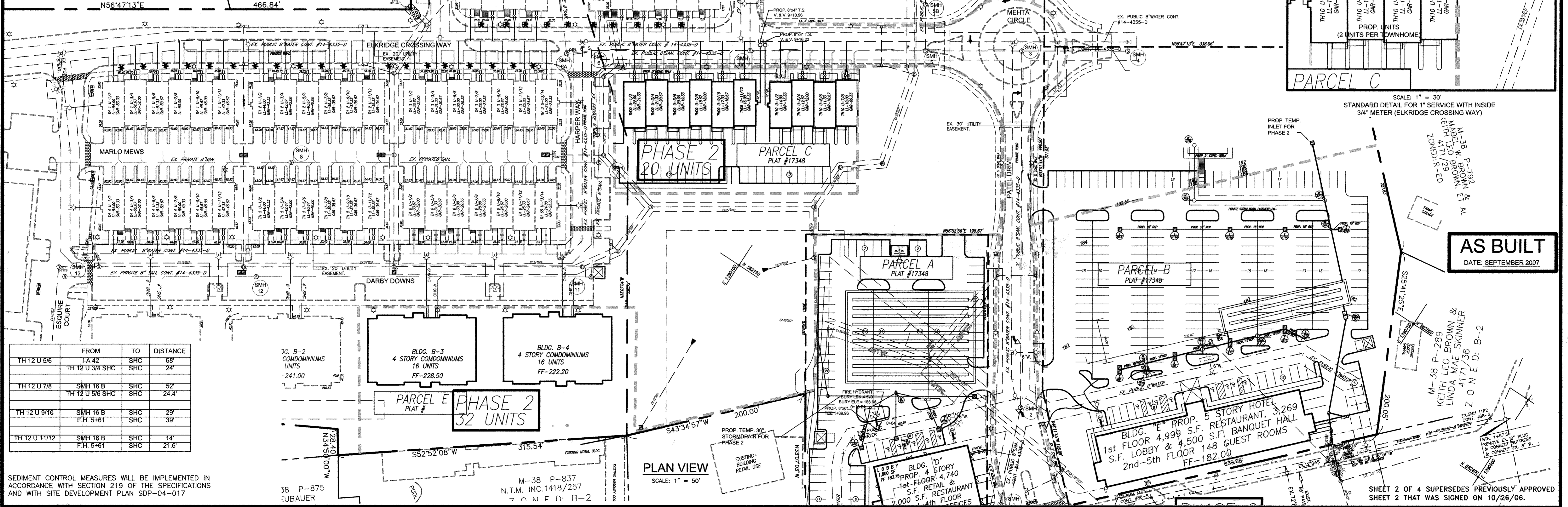
McMULLEN PARCEL 655 L-364 F-421 ZONED: R-ED

**WHC LOCATIONS - ASBUILT**

FROM	TO	DISTANCE
TH 11 U 1/2	SMH 17 WHC	29'
TH 11 U 1/2	TH 11 U 3 WHC	24'
TH 11 U 3	4" V. 1+31 WHC	43'
TH 11 U 3	TH 11 U 4 WHC	2.5'
TH 11 U 4	4" V. 1+31 WHC	45'
TH 11 U 4	TH 11 U 5 WHC	21'
TH 11 U 5	I-A 43 WHC	97'
TH 11 U 5	TH 11 U 6 WHC	2.5'
TH 11 U 6	I-A 43 WHC	94.5'
TH 11 U 6	TH 11 U 7 WHC	21'
TH 11 U 7	I-A 43 WHC	75'
TH 11 U 7	TH 11 U 8 WHC	2'
TH 11 U 8	I-A 43 WHC	73'
TH 11 U 8	TH 11 U 9 WHC	2'
TH 11 U 9	I-A 43 WHC	53.5'
TH 11 U 9	TH 11 U 10 WHC	21'

**WHC LOCATIONS - ASBUILT**

FROM	TO	DISTANCE
TH 11 U 10	I-A 43 WHC	52'
TH 11 U 10	TH 11 U 11 WHC	2'
TH 11 U 11	I-A 43 WHC	37'
TH 11 U 11	TH 11 U 12 WHC	2'
TH 11 U 12	I-A 43 WHC	36'
TH 11 U 12	TH 12 U 1 WHC	2'
TH 12 U 1	I-A 43 WHC	36'
TH 12 U 1	TH 12 U 2 WHC	2.5'
TH 12 U 2	I-A 43 WHC	37'
TH 12 U 2	TH 12 U 3 WHC	22'
TH 12 U 3	I-A 43 WHC	53.5'
TH 12 U 3	TH 12 U 4 WHC	22'
TH 12 U 4	I-A 43 WHC	55'
TH 12 U 4	TH 12 U 5 WHC	2'
TH 12 U 5	I-A 43 WHC	74'
TH 12 U 5	TH 12 U 6 WHC	2'
TH 12 U 6	I-A 43 WHC	76'
TH 12 U 6	TH 12 U 7 WHC	2'
TH 12 U 7	I-A 41 WHC	23.5'
TH 12 U 7	TH 13 U 1 WHC	2'
TH 12 U 8	TH 12 U 8 WHC	2'
TH 12 U 8	TH 12 U 9 WHC	23'
TH 12 U 9	TH 12 U 9 WHC	2'
TH 12 U 9	TH 12 U 10 WHC	22'
TH 12 U 10	TH 12 U 8 WHC	2'
TH 12 U 10	TH 12 U 9 WHC	2'
TH 12 U 10	TH 12 U 10 WHC	2'
TH 12 U 11	TH 12 U 9 WHC	26'
TH 12 U 11	TH 12 U 10 WHC	24'
TH 12 U 11	I-A 43 WHC	76'
TH 12 U 11	TH 12 U 7 WHC	2'
TH 13 U 1	I-A 41 WHC	44'
TH 13 U 1	SMH 15C WHC	101.5'
TH 13 U 2	I-A 41 WHC	46'
TH 13 U 2	SMH 15C WHC	98.5'
TH 13 U 3	I-A 41 WHC	67'
TH 13 U 3	SMH 15C WHC	78.5'
TH 13 U 4	I-A 41 WHC	70'
TH 13 U 4	SMH 15C WHC	76'
TH 13 U 5	I-A 41 WHC	19'
TH 13 U 5	SMH 15C WHC	57'
TH 13 U 6	SMH 15C WHC	17'
TH 13 U 6	8" V. 5+20 WHC	55.5'
TH 13 U 7	SMH 15C WHC	9'
TH 13 U 7	8" V. 5+20 WHC	39'
TH 13 U 8	SMH 15C WHC	9'
TH 13 U 8	8" V. 5+20 WHC	39'
TH 13 U 9	SMH 15C WHC	9'
TH 13 U 9	8" V. 5+20 WHC	39'



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

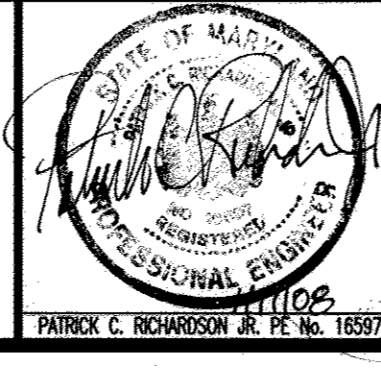
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION

**Richardson Engineering, LLC**

30 East Potomac Road, Suite 500  
Timonium, Maryland 21093  
Phone: 410-560-1502 Fax: 443-901-1208



DES:	CLB:	DRN:	CHK:	OCT:	DATE:	BY:	NO.	REVISION	DATE:
CND	1	CND	PCR		6/27/07			W.H.C. FOR TOWNHOUSES	6/27/07
	2				6/3/16			REMOVE F.H. AT STA. 2+35.30 PATEL DR.	6/3/16

**PHASE II PRELIMINARY WATER UTILITY PLAN**

600' SCALE MAP #38

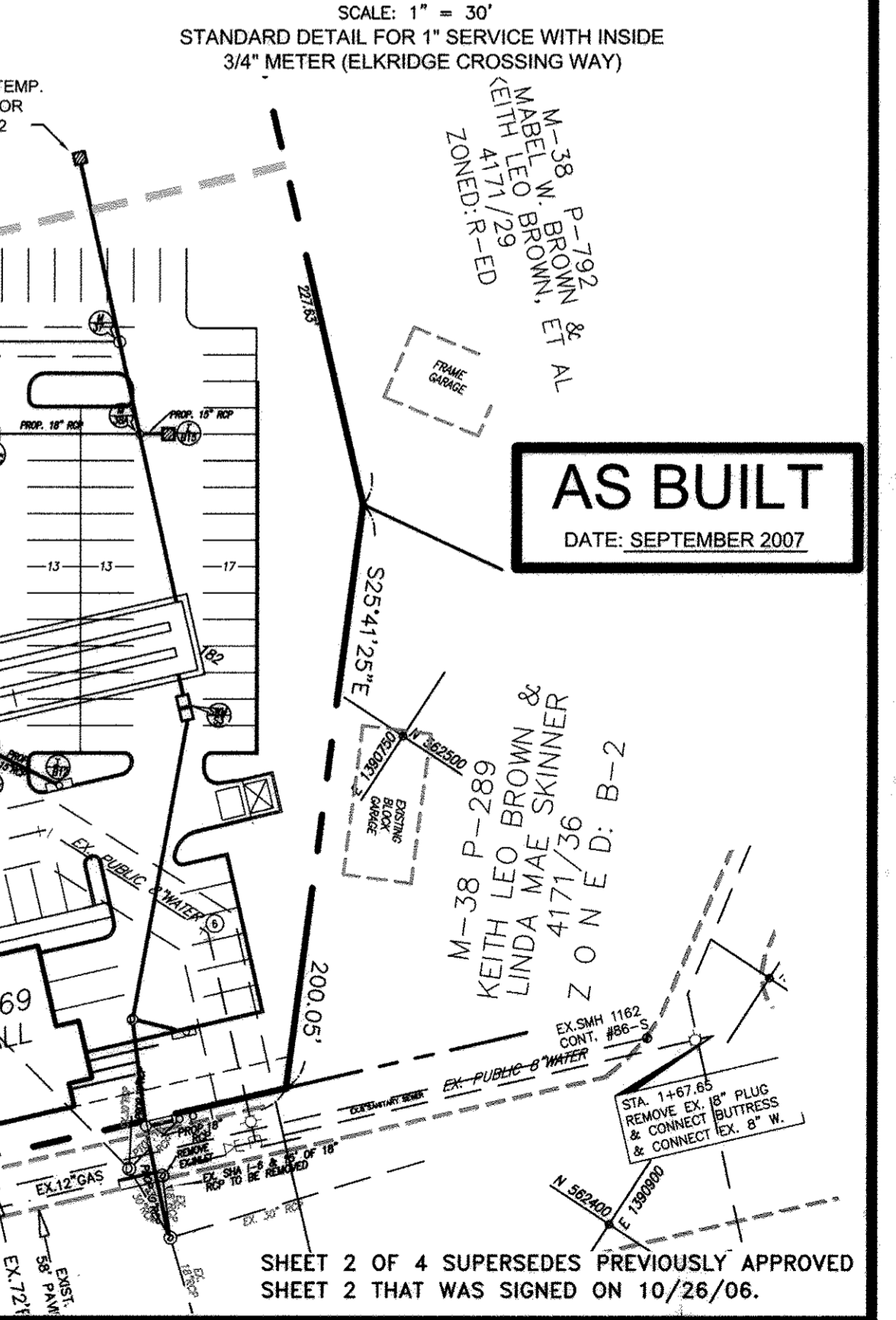
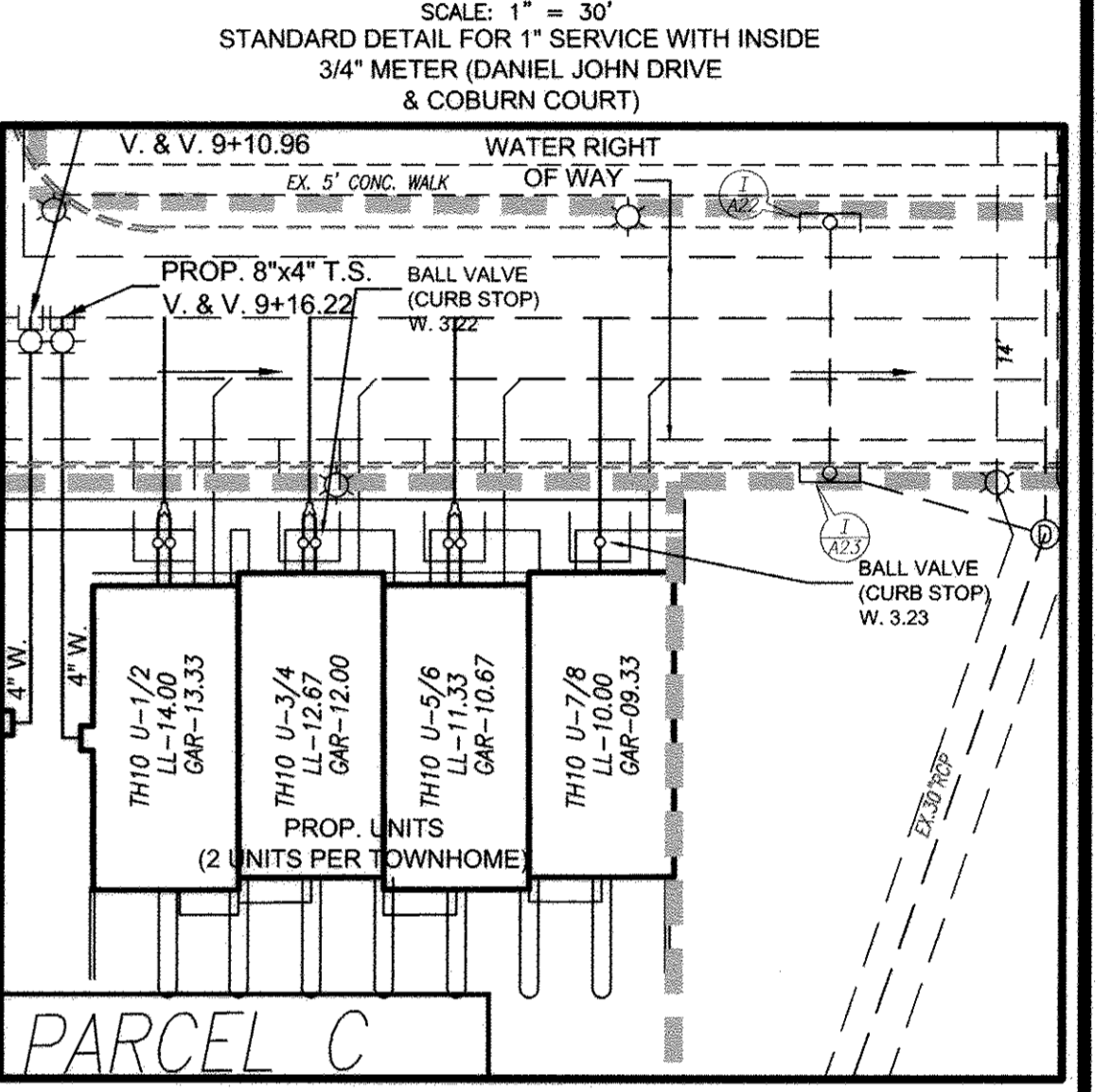
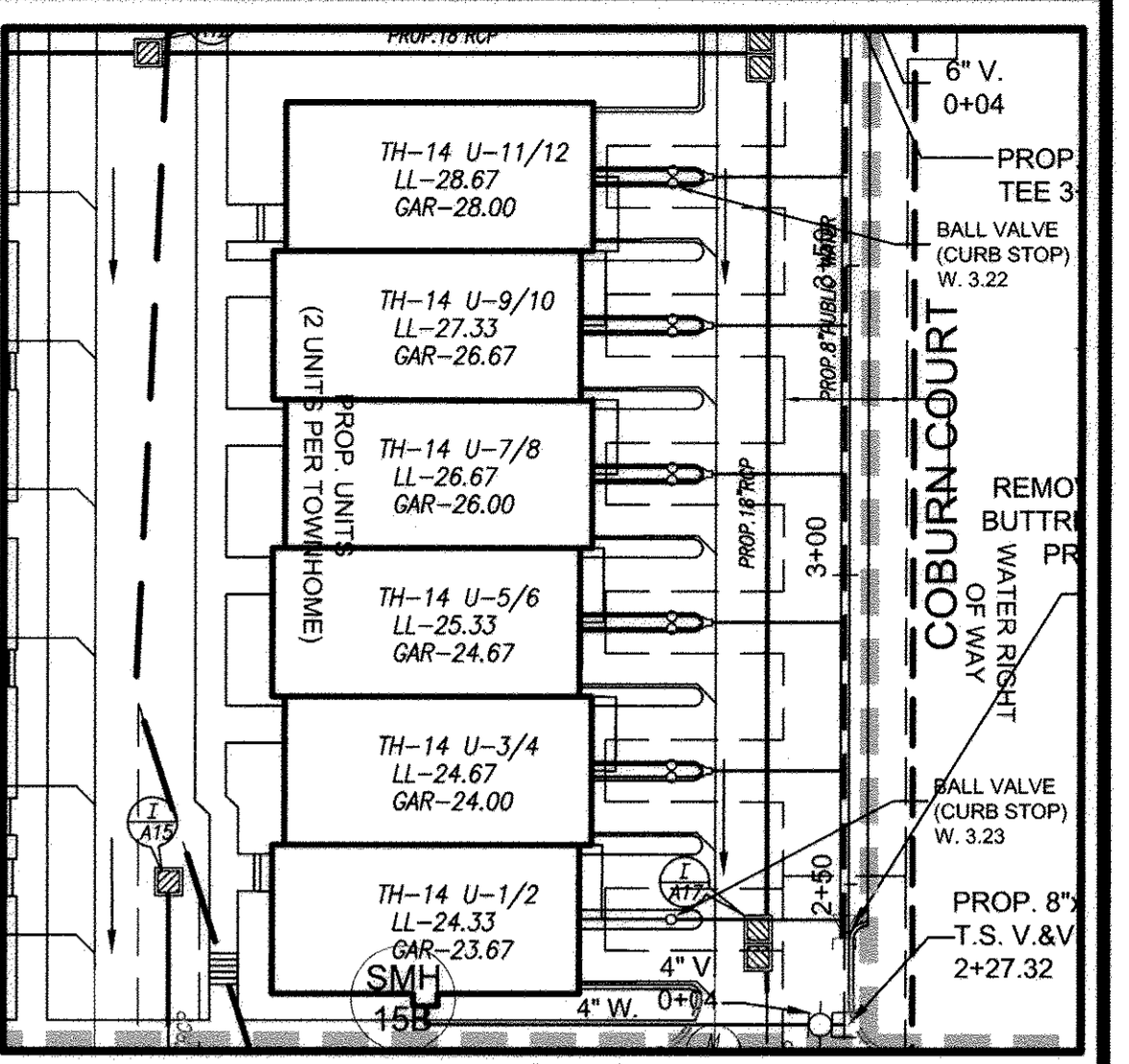
**ELKRIDGE CROSSING MONTGOMERY ROAD & WASHINGTON BOULEVARD (U.S. RTE. #1)**

CONTRACT #14-4353-D

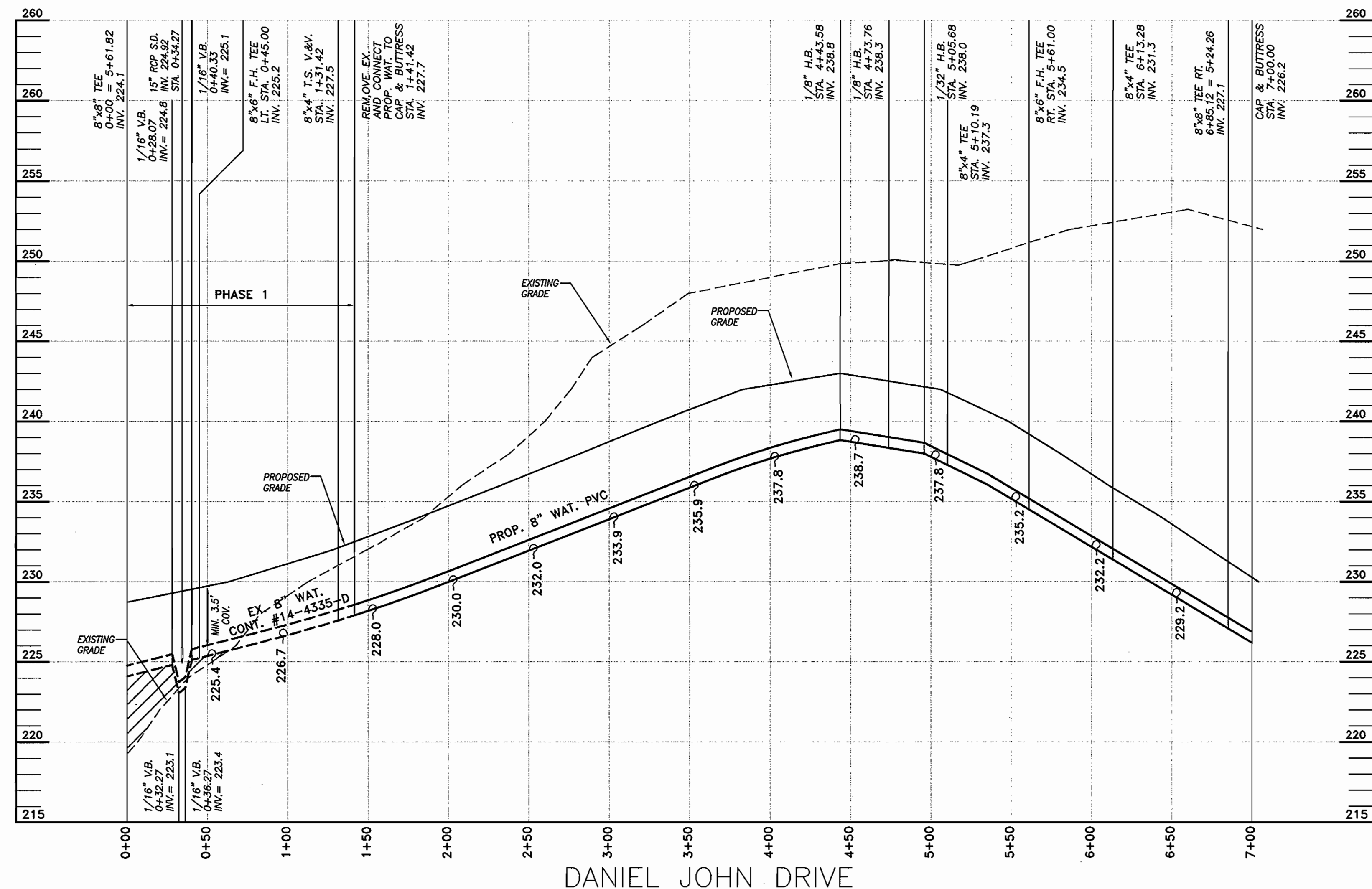
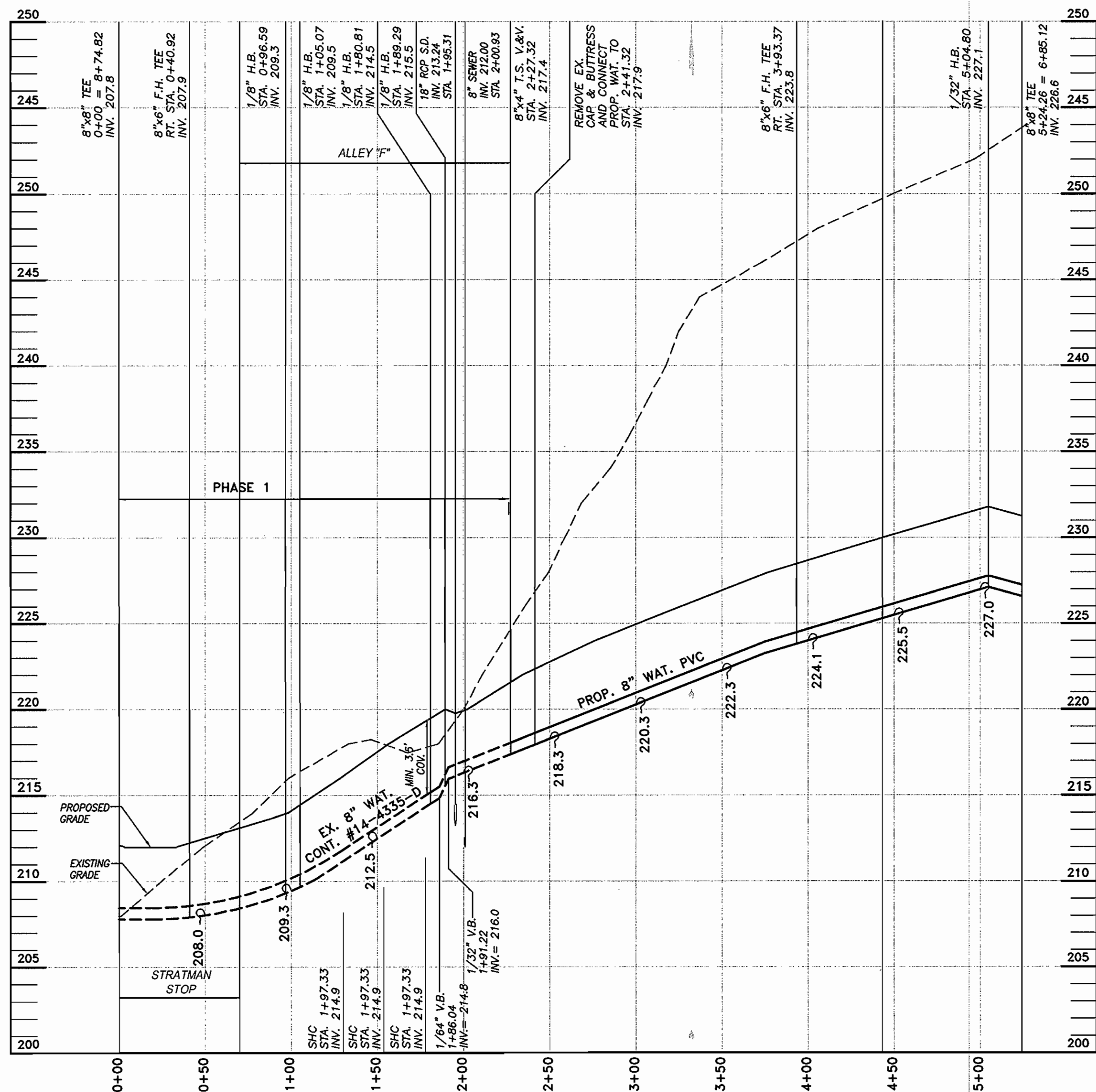
TAX MAP #38  
1ST ELECTION DISTRICT

PARCEL #30 & 38  
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
SHEET: 2 OF 4







**SHC LOCATIONS - AS BUILT**

FROM	TO	DISTANCE
TH13U 1/2	I-A 41	23'
	FH 3+28	44'
TH13U 3/4	I-A 41	41'
	TH13U 1/2 SHC	23.7'
TH13U 5/8	I-A 41	62'
	TH13U 1/2 SHC	24.0'
TH13U 7/8	SMH 15C	31'
	TH13U 5/8 SHC	24'
TH13U 9/8	SMH 15C	14'
	TH13U 1/2 SHC	24'
TH14U 1/2	SMH 15A	26'
	I-A 17	20'
TH14U 3/4	I-A 17	27'
	TH14U 1/2 SHC	24'
TH14U 5/4	I-A 17	48'
	TH14U 3/4 SHC	24'

**PROFILES**

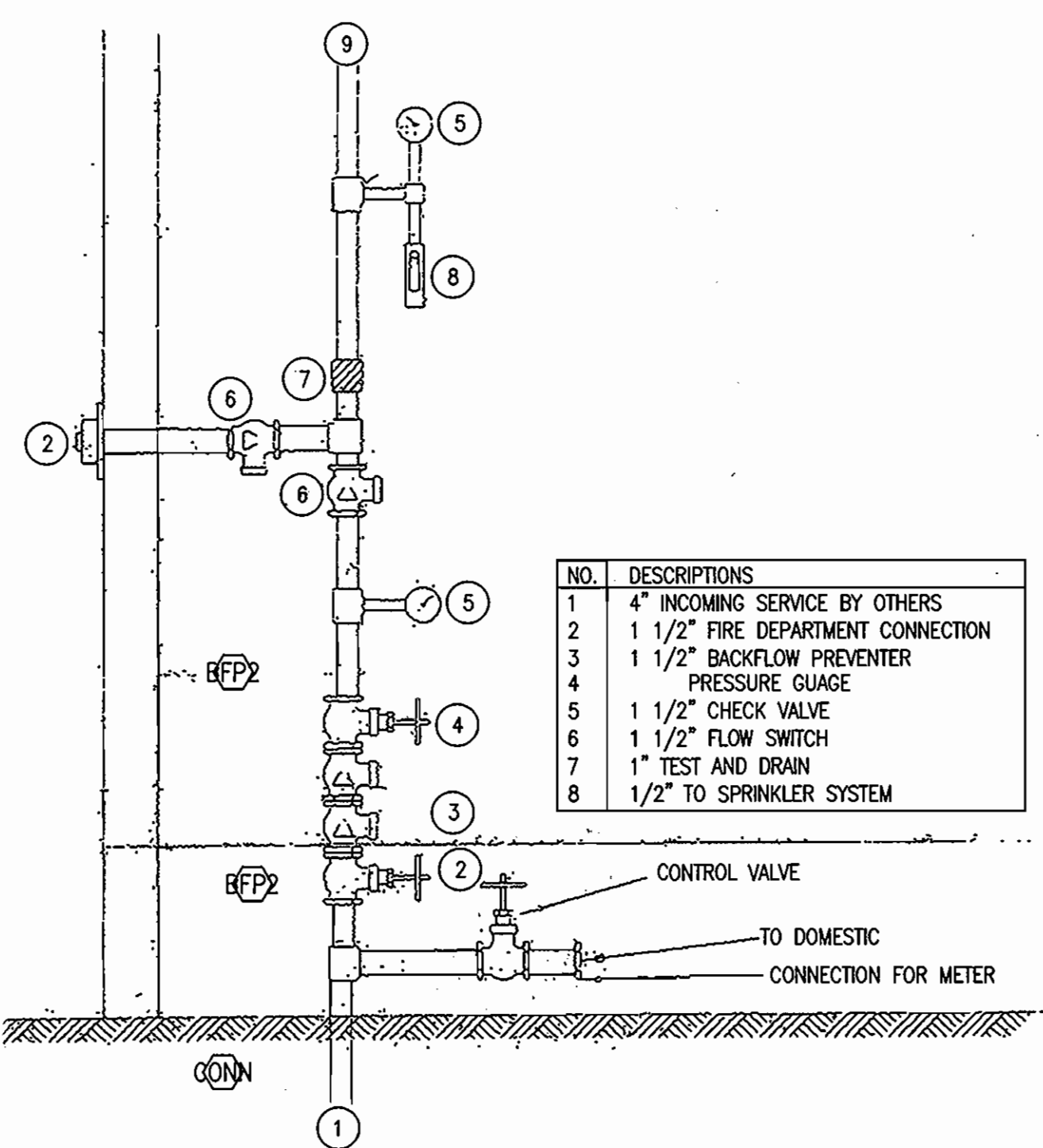
SCALE: HORIZ: 1"=50'  
VERT: 1"=5'

**SHC & WHC LOCATIONS - AS BUILT**

FROM	TO	DISTANCE
TH14U 7/8	TH14U 5/8 SHC	24'
	TH14U 3/8 SHC	24'
TH14U 9/8	FH 3+28	67'
	TH14U 1/2 SHC	24'
TH14U 1 1/2	I-A 41	37'
	FH 3+28	53'
TH14U 1 1/2	I-A 17	14'
	SMH 15A	29.5'
TH14U 3	I-A 17	30'
	SMH 15A	52'
TH14U 4	I-A 17	32'
	SMH 15A	55'

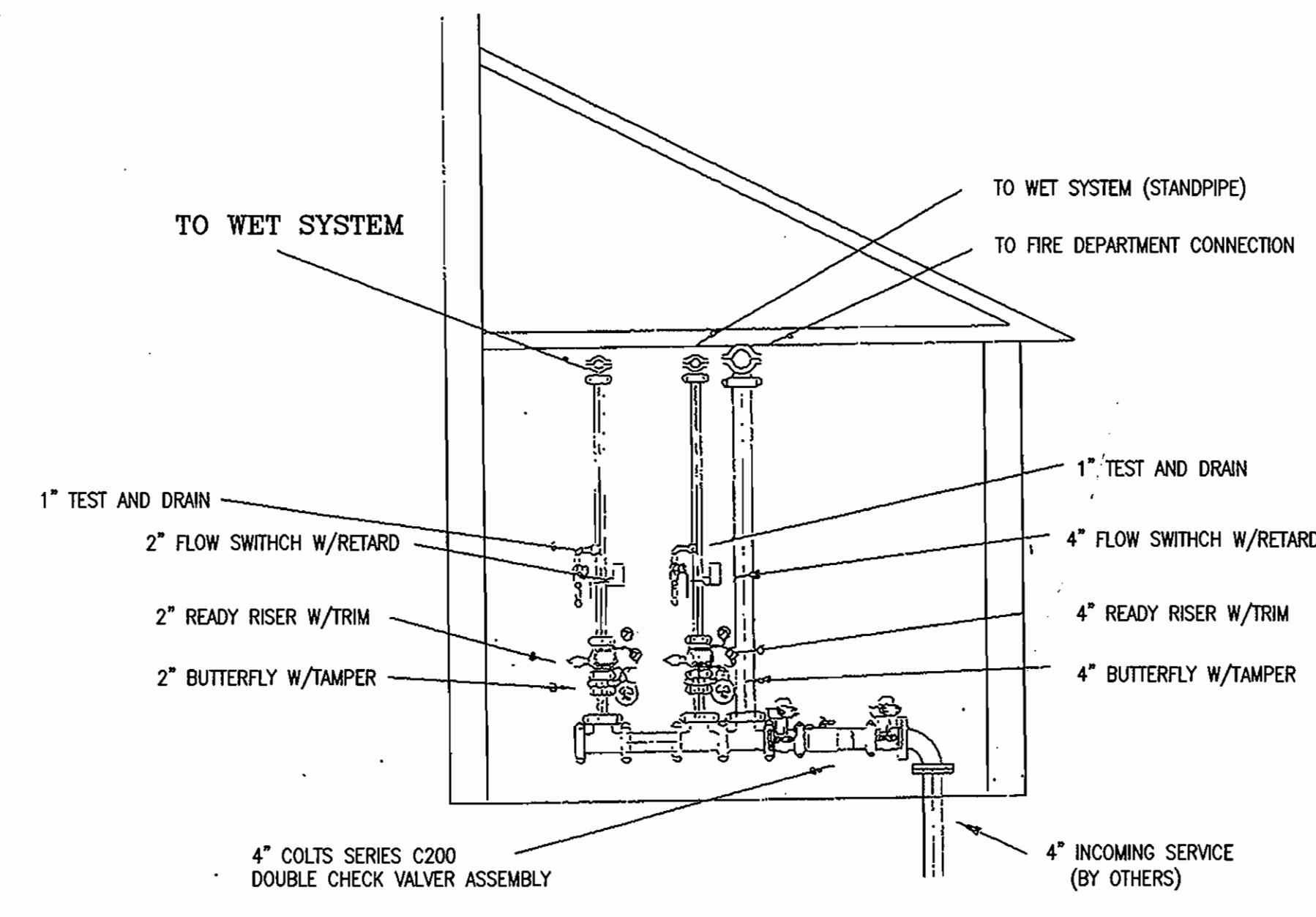
**WHC LOCATIONS - AS BUILT**

FROM	TO	DISTANCE
TH14U 5	I-A 41	94'
	I-A 17	52'
TH14U 6	I-A 41	92'
	I-A 17	54'
TH14U 7	I-A 41	70'
	I-A 17	76'
TH14U 8	I-A 41	68.5'
	I-A 17	75'
TH14U 9	I-A 17	99.5'
	I-A 41	46.5'
TH14U 10	I-A 41	44'
	TH14U 9	2.5'
TH14U 11	I-A 41	25'
	TH14U 10	2.5'
TH14U 12	I-A 41	23'
	TH14U 11	2.5'



**PROFILES**

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



SPKLN HEADER DETAIL

**AS BUILT**  
DATE: SEPTEMBER 2007

VALVE ROOM

NO SCALE

NOTE: THE MATERIAL TO BE USED FOR THE WATER MAIN CONSTRUCTION IS C-900 PVC. ALL DEFLECTIONS, VERTICAL & HORIZONTAL, MUST BE USING BENDS & AND NOT CRIMPS. THE JOINTS IN C-900 PIPE CANNOT BE DEFLECTED.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND WITH SITE DEVELOPMENT PLAN SDP-04-017

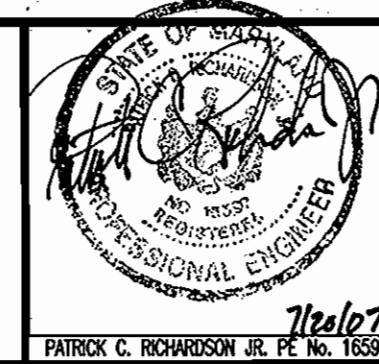
SHEET 3 OF 4 SUPERSEDES PREVIOUSLY APPROVED SHEET 3 THAT WAS SIGNED ON 10/26/06.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Richard A. Dismore  
9/21/07

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
[Signature]  
DATE

**Richardson Engineering, LLC**

110 Old Podomus Road, Suite LC  
Cockeysville, Maryland 21030  
Phone: 410-560-1502 Fax: 410-560-0827



DES:	CND	1	W.R.C. FOR TOWNHOUSES	6/21/07
DRN:	CND			
CHK:	PCR			
OCT. DATE:	2006	BY	NO.	REVISION

PHASE II PRELIMINARY  
WATER PLAN  
DETAILS & PROFILES

ELKRIDGE CROSSING MONTGOMERY  
ROAD & WASHINGTON BOULEVARD  
(U.S. RTE. #1)  
CONTRACT #14-4353-D

SCALE:  
AS SHOWN  
SHEET:  
3 OF 4

600' SCALE MAP #38 BLOCK #2&3 TAX MAP #38 PARCEL #30 & 38  
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND







### SHC & WHC LOCATIONS - ASBUILT

FROM	TO	DISTANCE
TH 10 U 1/2	4" V. 0+04 SHC	47'
TH 10 U 1/2	4" V. 10+22 SHC	87'
TH 10 U 3/4	4" V. 0+04 SHC	65.5'
TH 10 U 3/4	4" V. 10+22 SHC	65'
TH 10 U 5/6	4" V. 0+04 SHC	87'
TH 10 U 5/6	4" V. 10+22 SHC	47'
TH 10 U 7/8	I-A 23 SHC	32'
TH 10 U 7/8	4" V. 10+22 SHC	35.5'
TH 10 U 1	4" V. 9+10 WHC	40'
TH 10 U 1	4" V. 10+22 WHC	96'
TH 10 U 2	4" V. 9+10 WHC	42'
TH 10 U 2	4" V. 10+22 WHC	33'

FROM	TO	DISTANCE
TH 11 U 1/2	SMH 16 SHC	28.4'
TH 11 U 1/2	I-A 15 SHC	25'
TH 11 U 3/4	SMH 16 SHC	50.7'
TH 11 U 3/4	TH 11 U 7/8 SHC	24.7'
TH 11 U 5/6	SMH 16 SHC	74'
TH 11 U 5/6	TH 11 U 7/8 SHC	24.8'
TH 11 U 7/8	I-A 15 SHC	70'
TH 11 U 7/8	I-A 42 SHC	74.3'
TH 11 U 9/10	TH 11 U 7/8 SHC	23.6'
TH 11 U 9/10	I-A 42 SHC	53'

\* 9+10 AND 10+22 ARE THE ML "T" STATIONS

### WHC LOCATIONS - ASBUILT

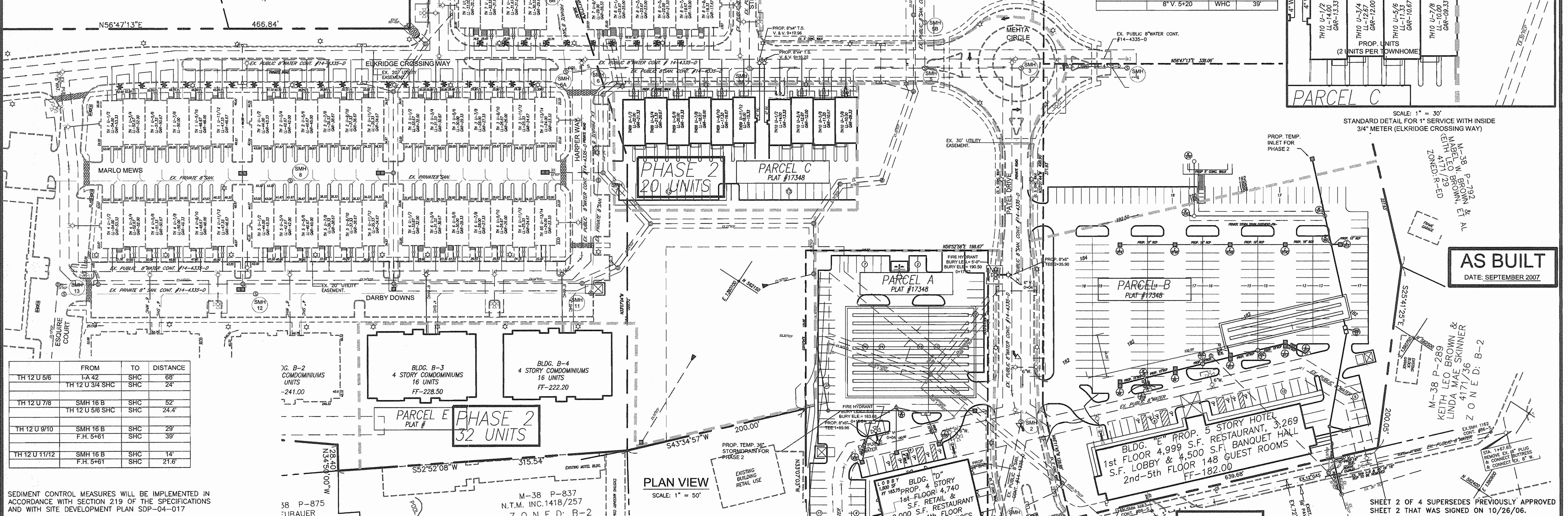
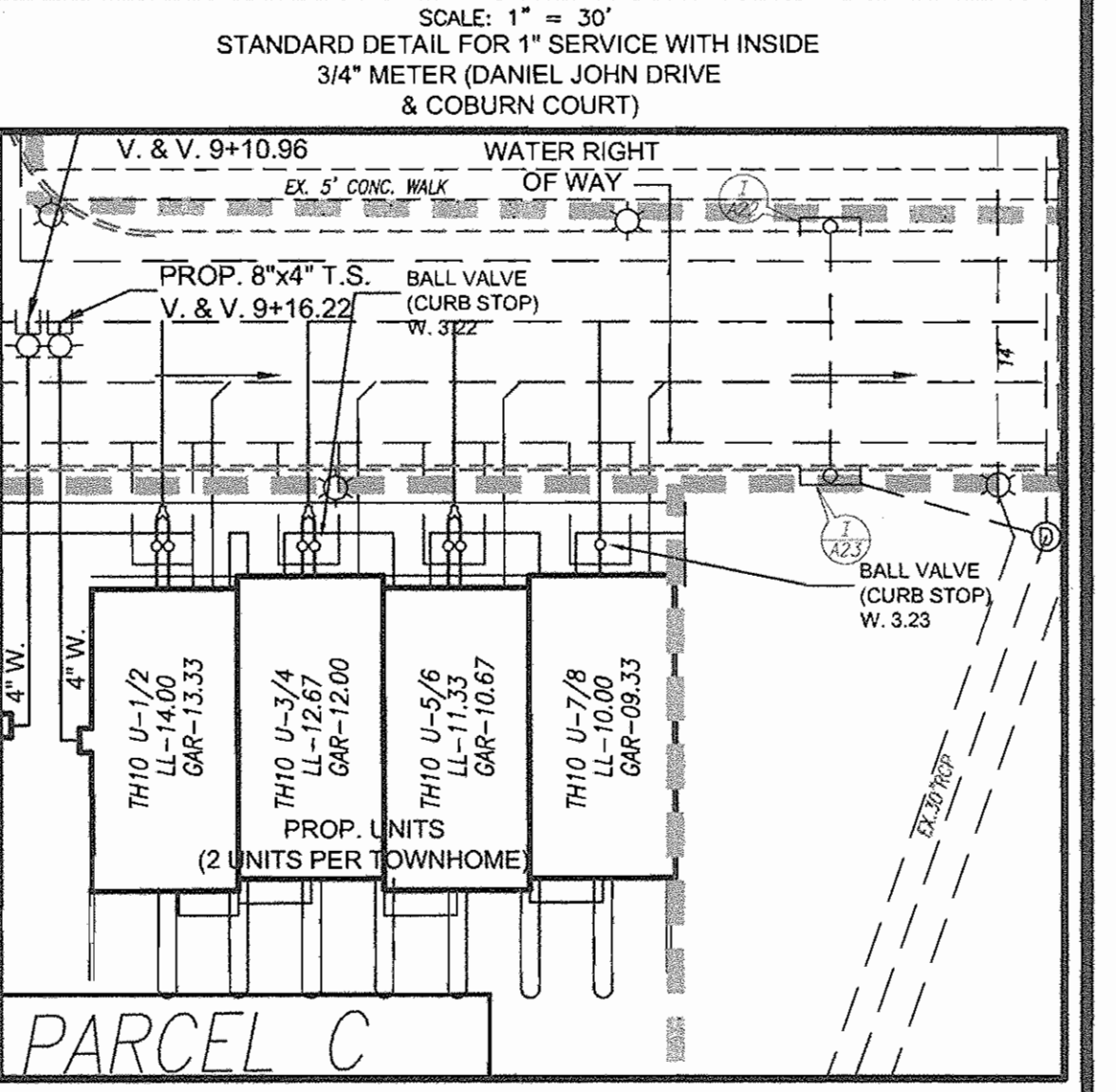
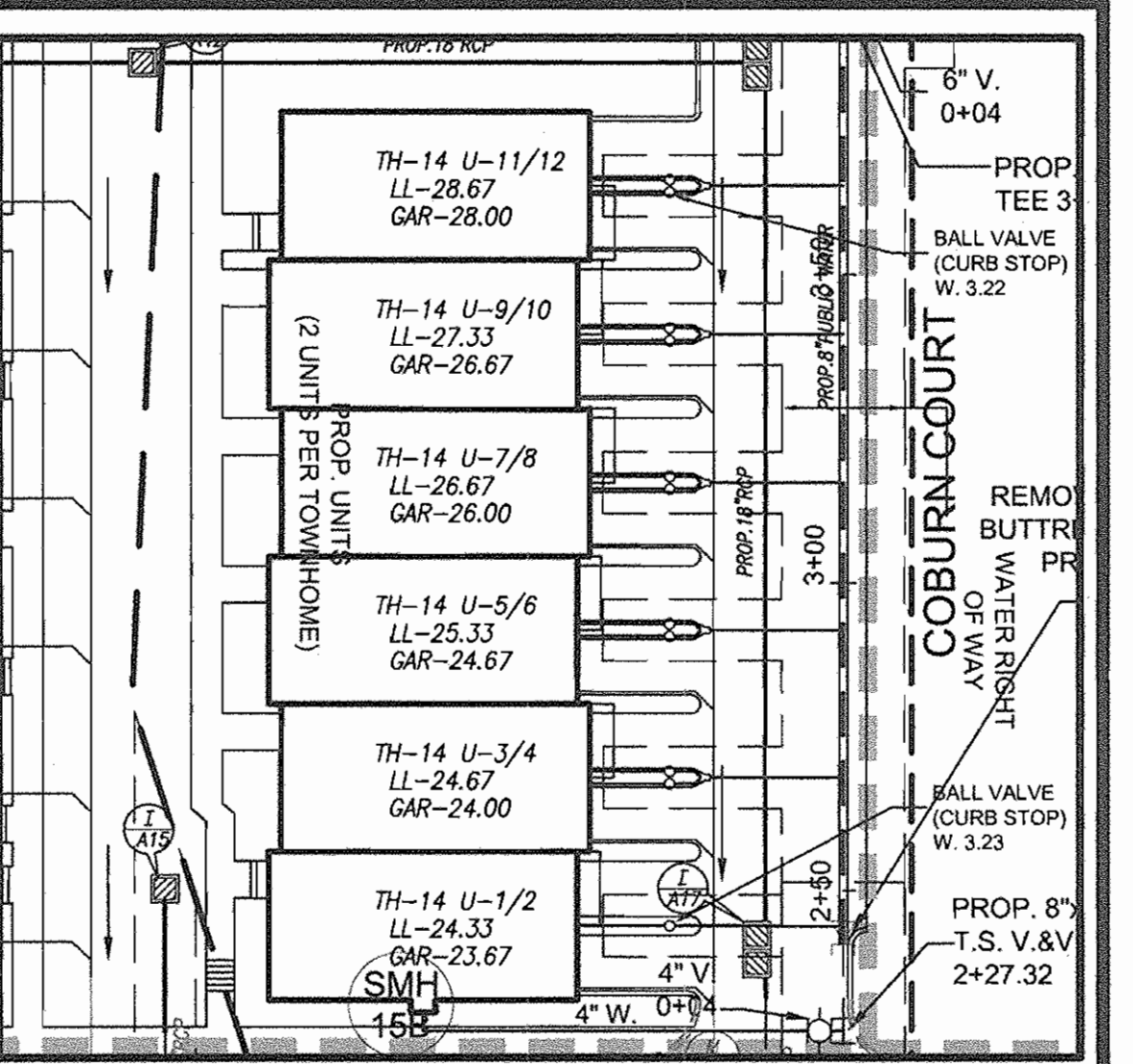
FROM	TO	DISTANCE
TH 11 U 10	TH 11 U 11 WHC	52'
TH 11 U 10	I-A 43 WHC	2'
TH 11 U 11	I-A 43 WHC	37'
TH 11 U 11	TH 11 U 12 WHC	2'
TH 11 U 12	I-A 43 WHC	36'
TH 11 U 12	TH 12 U 11 WHC	2'
TH 12 U 1	I-A 43 WHC	36'
TH 12 U 1	TH 12 U 2 WHC	2.5'
TH 12 U 2	I-A 43 WHC	37'
TH 12 U 2	TH 12 U 3 WHC	22'
TH 12 U 3	I-A 43 WHC	53.5'
TH 12 U 3	TH 12 U 4 WHC	22'
TH 12 U 4	I-A 43 WHC	55'
TH 12 U 4	TH 12 U 5 WHC	2'
TH 12 U 5	I-A 43 WHC	74'
TH 12 U 5	TH 12 U 6 WHC	2'

FROM	TO	DISTANCE
TH 11 U 12	SMH 17 WHC	29'
TH 11 U 3	4" V. 1+31 WHC	43'
TH 11 U 3	TH 11 U 4 WHC	2.5'
TH 11 U 4	4" V. 1+31 WHC	45'
TH 11 U 4	TH 11 U 5 WHC	21'
TH 11 U 5	I-A 43 WHC	97'
TH 11 U 5	TH 11 U 6 WHC	2.5'
TH 11 U 6	I-A 43 WHC	94.5'
TH 11 U 6	TH 11 U 7 WHC	21'
TH 11 U 7	I-A 43 WHC	75'
TH 11 U 7	TH 11 U 8 WHC	2'
TH 11 U 8	I-A 43 WHC	73'
TH 11 U 8	TH 11 U 9 WHC	2'
TH 11 U 9	I-A 43 WHC	53.5'
TH 11 U 9	TH 11 U 10 WHC	21'

### WHC LOCATIONS - ASBUILT

FROM	TO	DISTANCE
TH 12 U 6	I-A 43 WHC	76'
TH 12 U 6	TH 12 U 7 WHC	2'
TH 12 U 7	TH 12 U 8 WHC	2'
TH 12 U 7	TH 12 U 9 WHC	23'
TH 12 U 8	TH 12 U 7 WHC	2'
TH 12 U 8	TH 12 U 9 WHC	22'
TH 12 U 9	TH 12 U 8 WHC	2'
TH 12 U 9	TH 12 U 10 WHC	2'
TH 12 U 10	TH 12 U 9 WHC	22'
TH 12 U 10	TH 12 U 11 WHC	2'
TH 12 U 11	TH 12 U 10 WHC	22'
TH 12 U 11	TH 12 U 12 WHC	26'
TH 12 U 12	I-A 43 WHC	76'
TH 12 U 12	TH 12 U 13 WHC	2'
TH 13 U 1	I-A 41 WHC	23.5'
TH 13 U 1	TH 13 U 2 WHC	2'
TH 13 U 2	I-A 41 WHC	25'
TH 13 U 2	TH 13 U 1 WHC	2'
TH 13 U 3	I-A 41 WHC	44'
TH 13 U 3	SMH 15C WHC	101.5'
TH 13 U 4	I-A 41 WHC	46'
TH 13 U 4	SMH 15C WHC	98.5'
TH 13 U 5	I-A 41 WHC	67'
TH 13 U 5	SMH 15C WHC	78.5'
TH 13 U 6	I-A 41 WHC	70'
TH 13 U 6	SMH 15C WHC	76'
TH 13 U 7	SMH 15C WHC	19'
TH 13 U 7	TH 13 U 8 WHC	57'
TH 13 U 8	SMH 15C WHC	17'
TH 13 U 8	8" V. 5+20 WHC	55.5'
TH 13 U 9/10	SMH 15C WHC	9'
TH 13 U 9/10	8" V. 5+20 WHC	39'



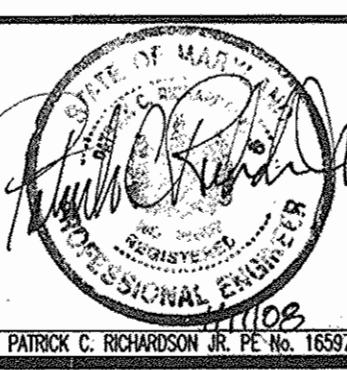
FROM	TO	DISTANCE
TH 12 U 5/6	I-A 42 SHC	68'
TH 12 U 5/6	TH 12 U 3/4 SHC	24'
TH 12 U 7/8	SMH 16 B SHC	52'
TH 12 U 7/8	TH 12 U 5/6 SHC	24.4'
TH 12 U 9/10	SMH 16 B SHC	29'
TH 12 U 9/10	F.H. 5+61 SHC	39'
TH 12 U 11/12	SMH 16 B SHC	14'
TH 12 U 11/12	F.H. 5+61 SHC	21.6'

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND WITH SITE DEVELOPMENT PLAN SDP-04-017

38 P-875  
UBAUER

M-38 P-837  
N.T.M. INC. 1418/257  
ZONED: B-2

**Richardson Engineering, LLC**  
30 East Podonia Road, Suite 500  
Timonium, Maryland 21093  
Phone: 410-560-1592 Fax: 443-901-1208



DES.	DRN.	CHK.	OCT.	DATE	BY	NO.	REVISION	DATE
CND	CND	PCR		2006				

PHASE II PRELIMINARY WATER UTILITY PLAN

6/27/07

W.H.C. FOR TOWNHOUSES

600' SCALE MAP #38

ELKRIDGE CROSSING MONTGOMERY ROAD & WASHINGTON BOULEVARD (U.S. RTE. #1) CONTRACT #14-4363-D

TAX MAP #38 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

PARCEL #30 & 38

2 OF 4

**AS BUILT**  
DATE: SEPTEMBER 2007



# ELKRIDGE CROSSING MONTGOMERY ROAD & WASHINGTON BOULEVARD (U.S. RTE. #1) PRELIMINARY WATER & SEWER PLAN HOWARD COUNTY, MARYLAND CONTRACT No. 14 - 4353 - D

QUANTITIES				
NAME OF UTILITY CONTRACTOR: AMERICAN INFRASTRUCTURE				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE: SEPTEMBER 2007				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
8" P.V.C. C -900	845 LF	824 LF	SDR 35	NORTH AMERICAN/FERGUSON
2" I.P. CL 52	175 LF	20.3 LF	DIP CL 52	ATLANTIC STATES/FERGUSON
8" x 8" TEE	1 EA.	1 EA.	MJ C153	TYLER PIPE/FERGUSON
8" x 6" TEE	2 EA.	2 EA.	MJ C153	TYLER PIPE/FERGUSON
8" VALVE	2 EA.	3 EA.	MJGV, OR	MUELLER CO./FERGUSON
6" VALVE	3 EA.	2 EA.	MJGV, OR	MUELLER CO./FERGUSON
8" CAP & BUTTRESS	1 EA.	1 EA.	MJ C153	TYLER PIPE/FERGUSON
1/32 H.B. 8"	2 EA.	2 EA.	MJ C153	TYLER PIPE/FERGUSON
1/8 H.B. 8"	2 EA.	2 EA.	MJ C153	TYLER PIPE/FERGUSON
8" x 4" TSV, F.V.	4 EA.	2 EA.	MJFL6, RS	MUELLER CO./FERGUSON
CURB STOP, W 3/23	66 EA.	61 EA.	SLIDE V BOX	CAPITOL FOUNDRY/FERGUSON
1 1/2" COPPER	950 LF	454.5 LF	K COPPER	MUELLER CO./FERGUSON
FIRE HYDRANT	3 EA.	2 EA.	A-423	MUELLER CO./FERGUSON
4" VALVE	6 EA.	6 EA.	MJRS 6V	MUELLER CO./FERGUSON
4" SHC	840 LF	960 LF	SDR 35	NORTH AMERICAN/FERGUSON
4" P.V.C. CL 52	335 LF	258 LF	DIP CL 52	ATLANTIC STATES/FERGUSON
3/4" x 1/2" TEE	2 EA.	2 EA.	---	---
3/4" INSIDE METER	66 EA.	66 EA.	---	---
1" COPPER	322 LF	274 LF	K COPPER	MUELLER CO./FERGUSON
1 1/2" x 1" WYE	33 EA.	33 EA.	TCS	FORD CO./FERGUSON
8" x 6" T.S.V.F.V.	1 EA.	1 EA.	---	---

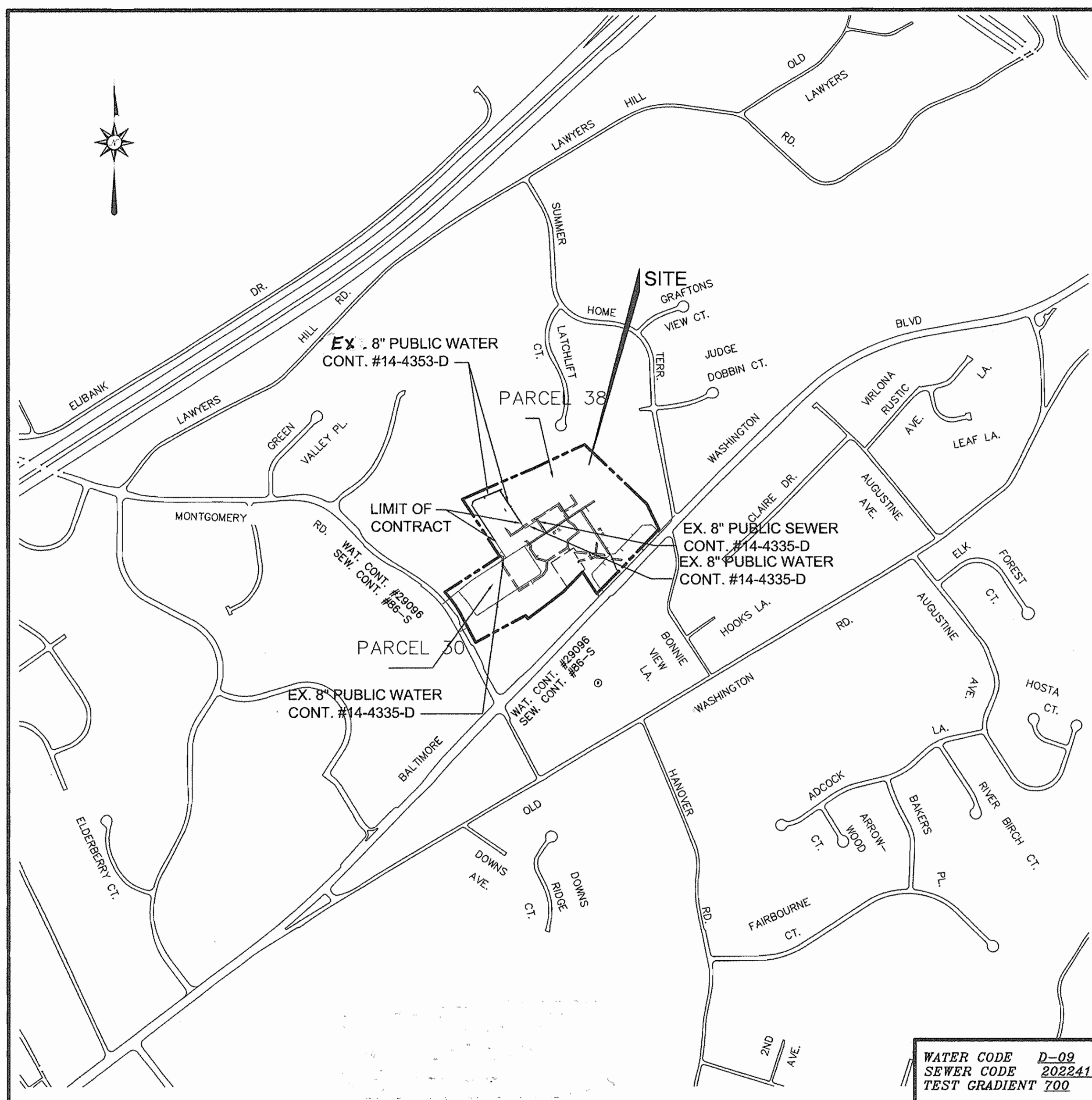
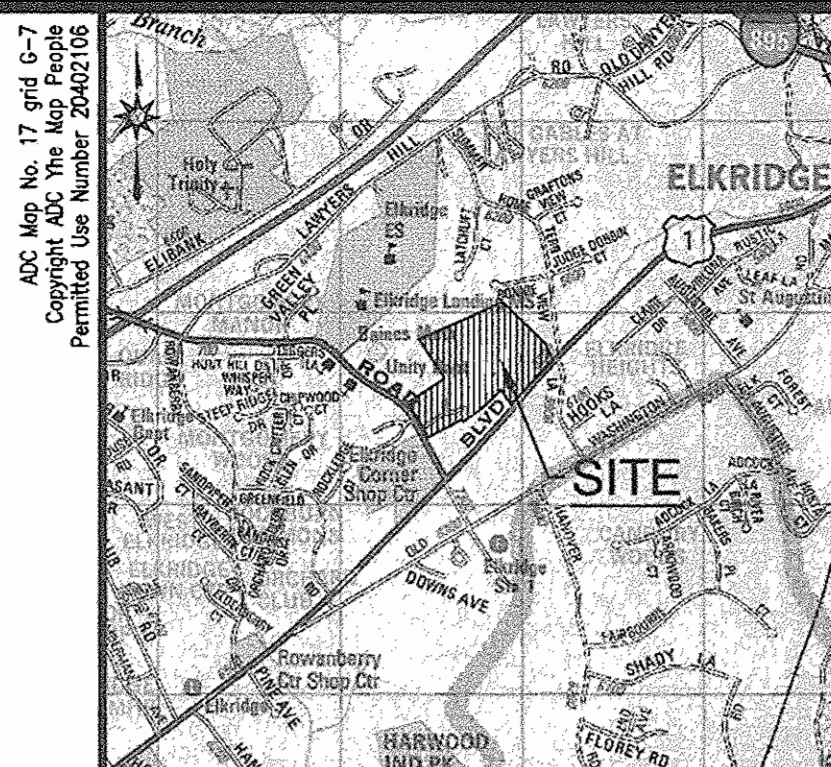
HOWARD COUNTY BENCHMARKS				
NO.	NORTHING	EASTING	ELEV.	DESCRIPTION
3849	561,056.341	1,389,634.145	223.417	BRASS DISK ON CONC. MONUMENT IN GRASS PLOT ON SOUTHEAST SIDE OF U.S. RTE. #1 AND MONTGOMERY ROAD.
3618	562,553.293	1,390,967.941	166.939	BRASS DISK ON CONC. MONUMENT ON WEST SIDE OF RTE. #1 APPROXIMATELY 100' NORTH OF BONNIE VIEW LANE.

WATER VALVE LOCATIONS-AS BUILT				
FROM	TO	DISTANCE	REMARKS	
6" FHV	I-141	VALVE	15'	COBURN COURT
3+08	FH 3+08	VALVE	7'	
	TH14 U 1/2 CC	VALVE	44'	
8" VALVE	SMH 15 C	VALVE	39.3'	COBURN COURT
5+06	DJD 6+82 8" V	VALVE	4'	
	DJD 6+88 8" V	VALVE	4'	
8" VALVE	CC 5+06 8" V	VALVE	4'	DANIEL JOHN DR.
6+88	SMH 15 C	VALVE	43.3'	
	DJD 6+82 8" V	VALVE	6'	
8" VALVE	SMH 15 C	VALVE	40.4'	DANIEL JOHN DR.
6+82	TH13 U 9/10 CO	VALVE	57'	
	CC 5+06 8" V	VALVE	4'	
4" (FIRE LINE)	8" V 6+82	VALVE	66.4'	DANIEL JOHN DR.
6+10	TH13 U 9/10 CO	VALVE	50'	
ADD ON	TH13 U 9/10 CO	VALVE	73'	
6" FHV	FH 5+61	VALVE	14'	DANIEL JOHN DR.
5+61	TH12 U 1/2 CO	VALVE	38'	
	4" V 5+12	VALVE	41'	
4" (FIRE LINE)	6" FHV 5+61	VALVE	49'	DANIEL JOHN DR.
5+12	FH 5+61	VALVE	50.3'	
ADD ON	TH12 U 1/2 CO	VALVE	43'	
4" (FIRE LINE)	SMH 17	VALVE	26.6'	DANIEL JOHN DR.
1+38	TH11 U 1/2 WHC	VALVE	23'	
ADD ON	TH11 U 3/4 WHC	VALVE	43.4'	

FROM	TO	DISTANCE	REMARKS
4" (FIRE LINE)	SMH 15 A	VALVE	25'
2+10	TH14 U 1/2 SHC	VALVE	35'
ADD ON	TH14 U 1/2 WHC	VALVE	31.5'

TYPE OF BUILDING.....RESIDENTIAL/COMMERCIAL  
 No. OF UNITS/PARCELS..... 98  
 No. OF WATER HOUSE CONNECTIONS.....35  
 No. OF SEWER HOUSE CONNECTIONS.....0  
 DRAINAGE AREA.....PATAPSCO  
 TREATMENT PLANT.....PATAPSCO

SHC & WHC LOCATIONS-AS BUILT				
BUILDING #	FROM	TO	DISTANCE	REMARKS
BLDG. B3	M-4	SHC	71.5'	
	6" V WHC TO B3	SHC	63'	
	FH 3+77	SHC	61'	
BLDG. B4	M-7 B	SHC	61'	
	6" V WHC TO B4	SHC	50'	
	TH 6 U 13/14 WHC	SHC	38'	
BLDG. B3	M-4	WHC	38'	
	6" V WHC	I-A52	WHC	40'
	4" SHC (B3)	WHC	63'	
BLDG. B4	M-7 B	WHC	23'	
	6" V WHC	TH 6 U 13/14 WHC	WHC	29'
	4" SHC (B4)	WHC	63'	



**GENERAL NOTES**

**PART I.**

- 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 ON APRIL, 2004 BY MILDENBERG-BOENDER ASSOCIATES, INC.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS: THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 3849, NO. 3854.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE BRASS DISKS ON CONCRETE MONUMENTS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE 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 TO THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWING, 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 NOT BEEN SHOWN BUT SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- THE 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).....410-850-4620  
 BGE (EMERGENCY).....410-886-1400  
 BUREAU OF UTILITIES.....410-313-4900  
 COLONIAL PIPELINE CO.....410-795-1390  
 MESS UTILITY.....1-800-257-7777  
 STATE HIGHWAY ADMINISTRATION.....410-531-5533  
 VERIZON.....1-800-743-0033/410-224-9210

9. 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.  
 10. THE 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.  
 11. 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 DW REQUIREMENTS PER SECTION 18.114(A) OF THE HOWARD COUNTY CODE.

**PART II WATER**

- ALL WATER MAINS SHALL BE ANNA C900 P.V.C. UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF 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.
- FOR SPRINKLER SYSTEM FOR ALL TOWNHOMES OR MULTI-FAMILY DWELLING UNITS SHOULD HAVE A 1 1/2" CONNECTION WITH A 1" METER.
- ALL DUCTILE IRON PIPES TO BE USED ON THE PUBLIC WATER SYSTEM SHALL BE CLASS 54. DUCTILE IRON FITTINGS SHALL MEET THE REQUIREMENTS OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND SHALL BE EXTERIOR EPOXY COATED IN ACCORDANCE WITH ANNA C16.
- ALL WATER HOUSE CONNECTIONS SHALL BE COPPER MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL FIRE HYDRANT LEADS INCLUDING THE TEE SHALL BE DUCTILE IRON CLASS 54 MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL WATER MAINS CONSTRUCTED IN FILL AREAS SHALL BE RESTRAINED DUCTILE IRON PIPE CLASS 54 MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL WATER MAINS WITHIN CASING PIPES SHALL BE RESTRAINED DUCTILE IRON PIPE CLASS 54 MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- THE FOLLOWING NOTE IS ADDED TO HOWARD COUNTY STANDARD DETAIL W2.22, BUTTRESSES AND ANCHORAGES FOR VERTICAL BENDS. WHEN ANCHORING PVC PIPE, THE STRAPPING IN CONTACT WITH THE PIPE SURFACE SHALL BE 1-INCH WIDE BY 14-INCH THICK STEEL. THE REMAINING PORTION OF THE STRAP SHALL BE REINFORCING BAR SIZED IN ACCORDANCE WITH THE PERMITTING CHART SHOWN ON THE DETAIL.
- EXCEPT AS INDICATED ON THE PLANS AND NOTED ABOVE, ALL PUBLIC WATER MAINS SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF ANNA C900 DRB, PRESSURE CLASS 150 AND THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND ALL SUBSEQUENT AMENDMENTS THEREOF.

WATER CODE D-09  
 SEWER CODE 2022418  
 TEST GRADIENT 700

LOCATION MAP				
SCALE: 1" = 2000'				
WHC & SHC LOCATIONS-AS BUILT				
TH9U1	FROM	TO	DISTANCE	
	SMH 0	WHC	49'	
	TH9U2 WHC	WHC	4.5'	
TH9U2	SMH 0	WHC	59'	
	TH9U3 WHC	WHC	4.5'	
TH9U3	SMH 5A	WHC	104'	
	TH9U4 WHC	WHC	101.5'	
TH9U4	SMH 5A	WHC	101.5'	
	8" V 0+04	WHC	98'	
TH9U5	SMH 5A	WHC	81.5'	
	8" V 0+04	WHC	80'	
TH9U6	SMH 5A	WHC	77'	
	8" V 0+04	WHC	76.5'	
TH9U7	SMH 5A	WHC	58.5'	
	8" V 0+04	WHC	60.5'	
TH9U8	SMH 5A	WHC	55'	
	8" V 0+04	WHC	57'	
TH9U9	SMH 5A	WHC	38'	
	8" V 0+04	WHC	45'	
TH9U10	SMH 5A	WHC	35.5'	
	8" V 0+04	WHC	43'	
TH9U11	SMH 5A	WHC	25'	
	8" V 0+04	WHC	38.5'	
TH9U12	SMH 5A	WHC	24.5'	
	8" V 0+04	WHC	39'	
TH9U1/2	SMH 0	SHC	60'	
	TH9U3/4 SHC	SHC	23.4'	
TH9U3/4	SMH 0	SHC	81'	
	TH9U5/6	SHC	25'	
TH9U5/6	SMH 0	SHC	104'	
	TH9U7/8	SHC	24'	
TH9U7/8	SMH 5A	SHC	51.5'	
	8" V 0+04	SHC	53.6'	
TH9U9/10	SMH 5A	SHC	33'	
	8" V 0+04	SHC	41'	
TH9U11/2	SMH 5A	SHC	27'	
	8" V 0+04	SHC	41'	

WATERLINE TEST STATIONS				
TEST STATION	FROM	TO	DISTANCE	REMARKS
3+08	6" V 3+08	TEST STATION	8'	COLBURN COURT
RT. OF FH	FH 3+08	TEST STATION	51'	
5+61	6" V 5+61	TEST STATION	2'	
LT. OF FH	FH 5+61	TEST STATION	14'	
	TH12 U 1/2	TEST STATION	23'	

**AS BUILT**  
 DATE: SEPTEMBER 2007

**DEVELOPER**  
 BRANTLY DEVELOPMENT GROUP, INC.  
 8835-P COLUMBIA 100 PARKWAY  
 COLUMBIA, MARYLAND 21045

D:\Projects\2007\14-4353-D\14-4353-D.dwg

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

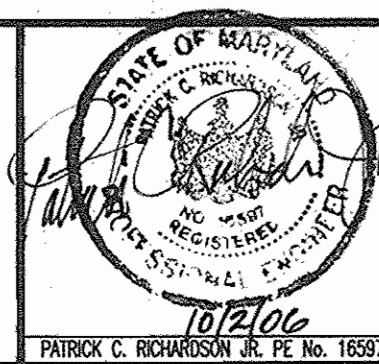
*John K. Robinson* 10/24/06  
 SOIL CONSERVATION DISTRICT DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*Jim Mays* 10/24/06  
 S.S. SOIL CONSERVATION DISTRICT DATE

**Richardson Engineering, LLC**

110 Old Padonia Road, Suite LC  
 Cockeysville, Maryland 21030  
 Phone: 410-550-1502 Fax: 410-550-0827



DES.	CND	1	QUANTITIES & CALCULATIONS	6/18/07
DRN.	CND	2	QUANTITIES & CALCULATIONS	10/29/07
CHK.	PCR			
OCT.				
DATE: 2008	BY	NO.	REVISION	DATE

PHASE II PRELIMINARY  
 WATER PLAN  
 COVER SHEET

ELKRIDGE CROSSING  
 CONTRACT #14-4353-D

SCALE:  
 AS SHOWN  
 SHEET:  
 1 OF 4

TAX MAP #38  
 1ST ELECTION DISTRICT  
 PARCEL #30 & 38  
 HOWARD COUNTY, MARYLAND



### SHC & WHC LOCATIONS - ASBUILT

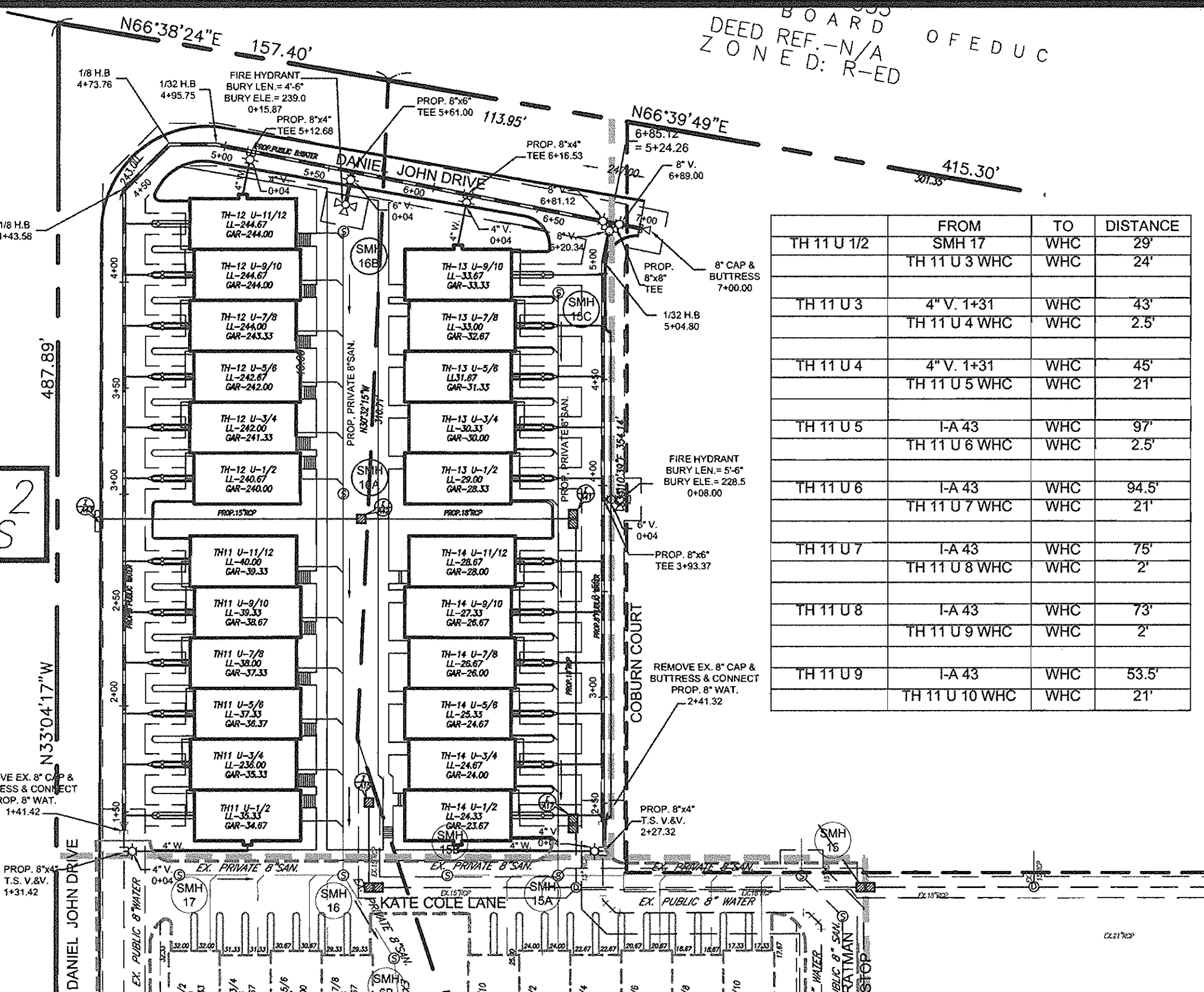
FROM	TO	DISTANCE
TH 10 U 1/2	4" V. 0+04 SHC	47'
	4" V. 10+22 SHC	87'
TH 10 U 3/4	4" V. 0+04 SHC	65.5'
	4" V. 10+22 SHC	65'
TH 10 U 5/6	4" V. 0+04 SHC	87'
	4" V. 10+22 SHC	47'
TH 10 U 7/8	I-A23 SHC	32'
	4" V. 10+22 SHC	35.5'
TH 10 U 1	4" V. 9+10 WHC	40'
	4" V. 10+22 WHC	96'
TH 10 U 2	4" V. 9+10 WHC	42'
	4" V. 10+22 WHC	93'

FROM	TO	DISTANCE
TH 11 U 1/2	SMH 16 SHC	28.4'
	I-A 15 SHC	25'
TH 11 U 3/4	SMH 16 SHC	50.7'
	TH 11 U 1/2 SHC	24.7'
TH 11 U 5/6	SMH 16 SHC	74'
	TH 11 U 7/8 SHC	24.8'
TH 11 U 7/8	I-A 15 SHC	70'
	I-A 42 SHC	74.3'
TH 11 U 9/10	TH 11 U 7/8 SHC	23.6'
	I-A 42 SHC	53'

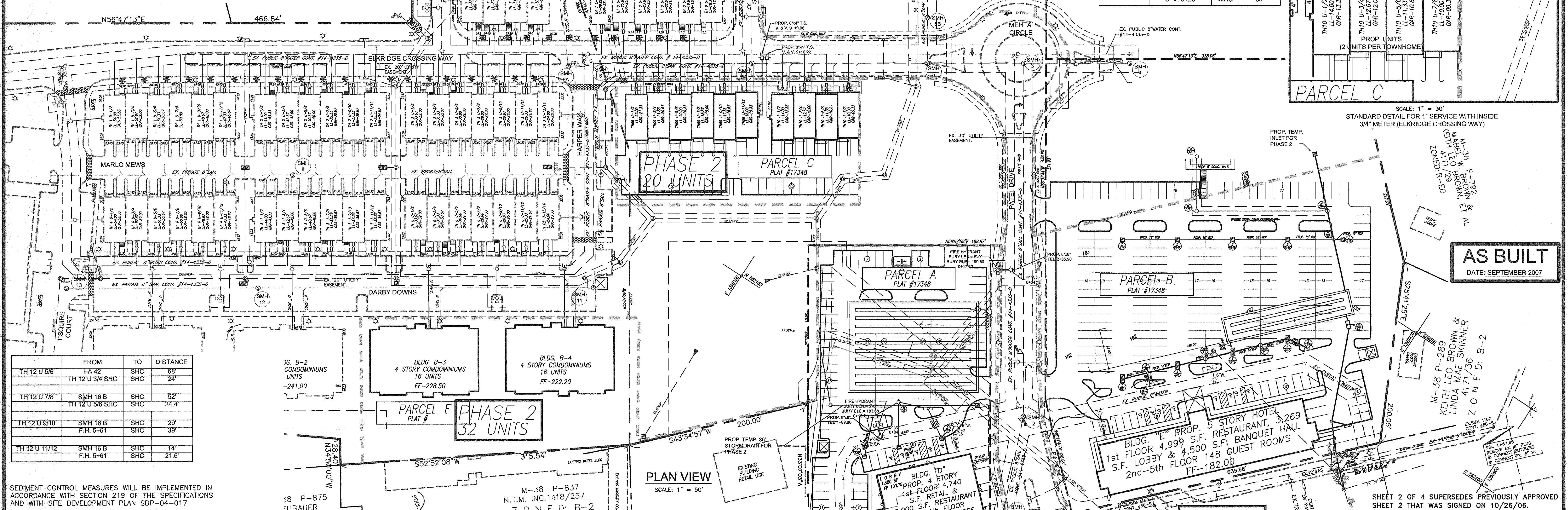
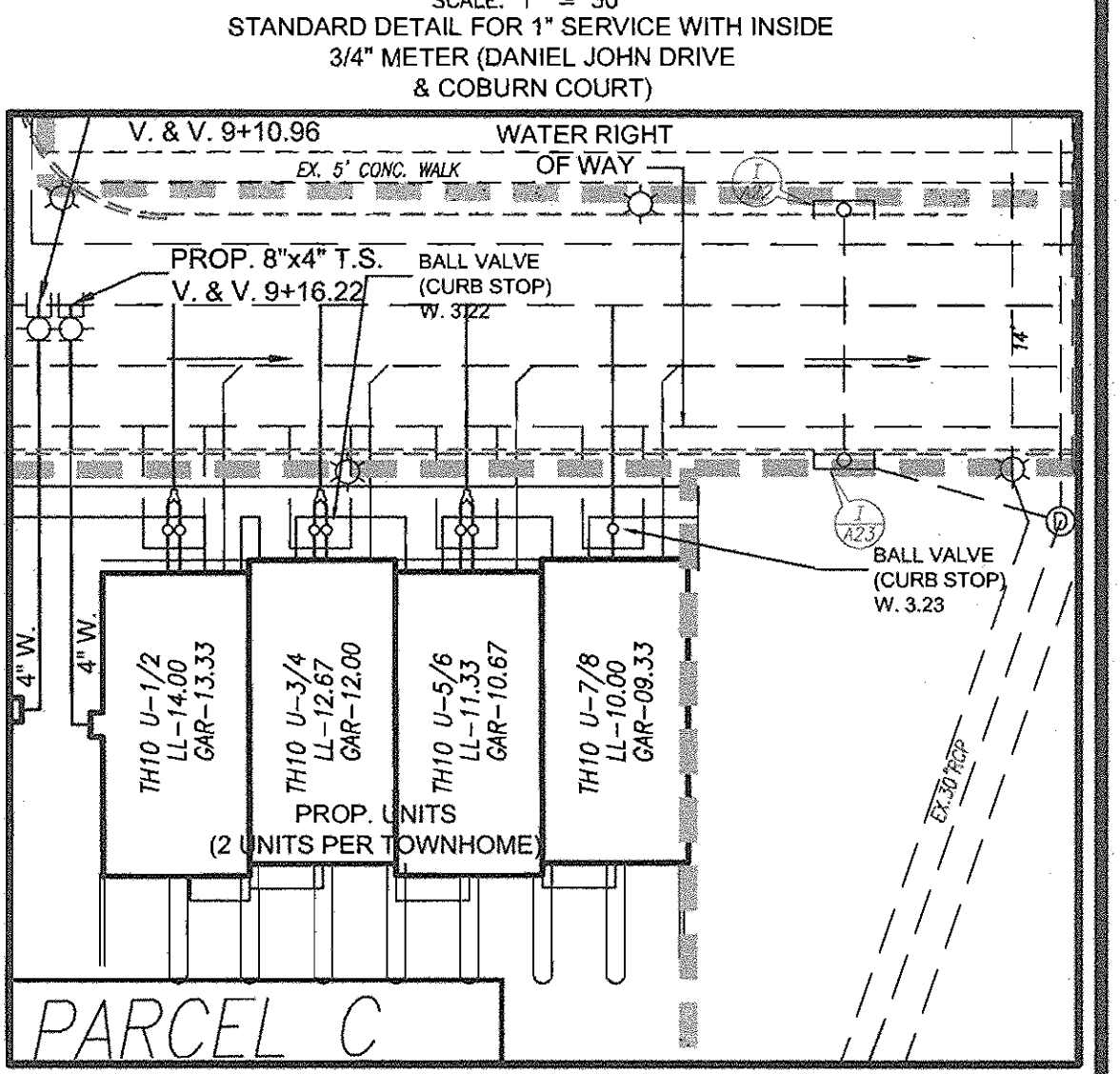
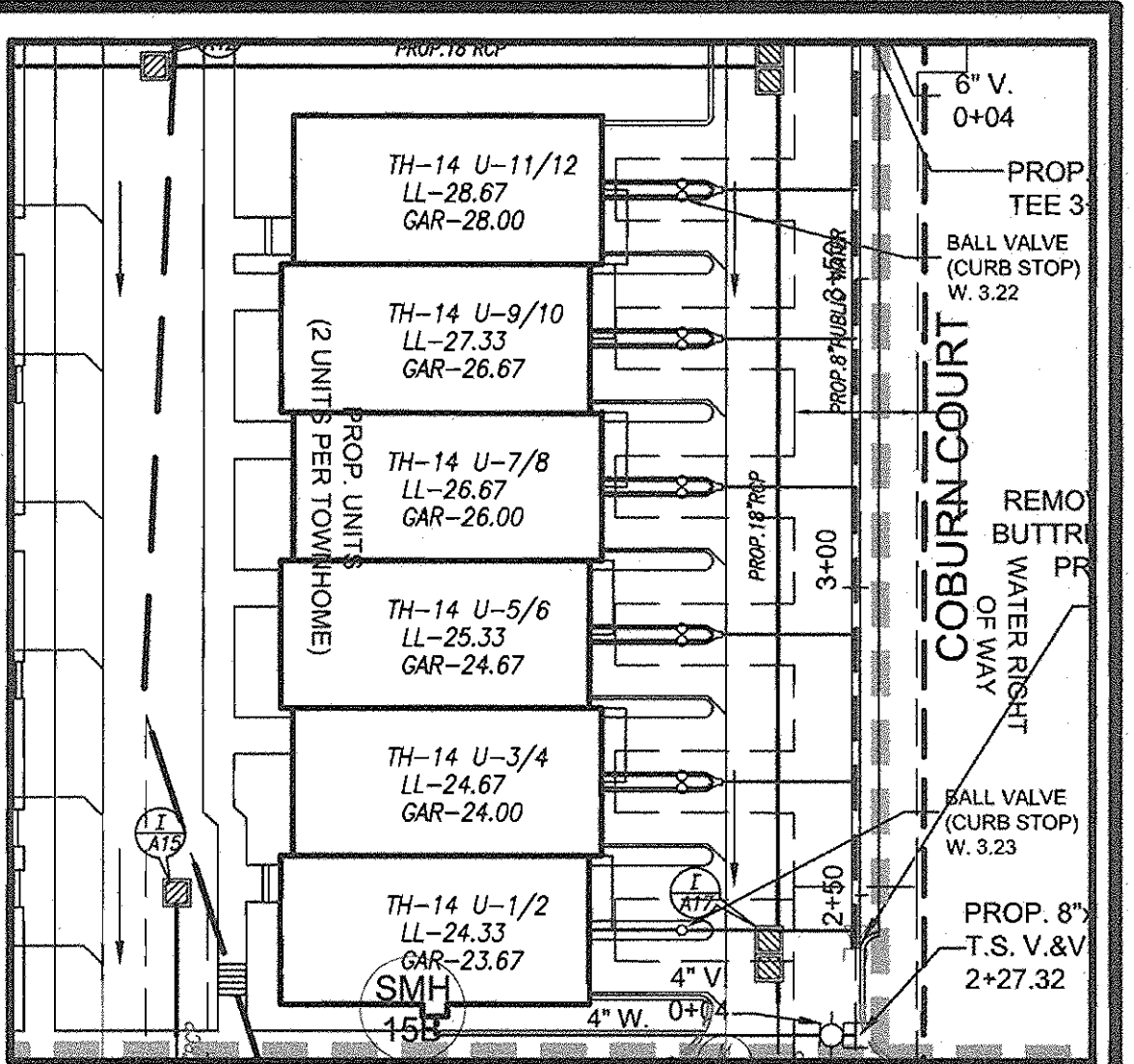
  

FROM	TO	DISTANCE
TH 11 U 1/2	SMH 17 WHC	29'
	TH 11 U 3 WHC	24'
TH 11 U 3	4" V. 1+31 WHC	43'
	TH 11 U 4 WHC	2.5'
TH 11 U 4	4" V. 1+31 WHC	45'
	TH 11 U 5 WHC	21'
TH 11 U 5	I-A 43 WHC	97'
	TH 11 U 6 WHC	2.5'
TH 11 U 6	I-A 43 WHC	94.5'
	TH 11 U 7 WHC	21'
TH 11 U 7	I-A 43 WHC	75'
	TH 11 U 8 WHC	2'
TH 11 U 8	I-A 43 WHC	73'
	TH 11 U 9 WHC	2'
TH 11 U 9	I-A 43 WHC	53.5'
	TH 11 U 10 WHC	21'



### WHC LOCATIONS - ASBUILT

FROM	TO	DISTANCE
TH 11 U 10	I-A 43 WHC	52'
	TH 11 U 11 WHC	2'
TH 11 U 11	I-A 43 WHC	37'
	TH 11 U 12 WHC	2'
TH 11 U 12	I-A 43 WHC	36'
	TH 12 U 1 WHC	2'
TH 12 U 1	I-A 43 WHC	36'
	TH 12 U 2 WHC	2.5'
TH 12 U 2	I-A 43 WHC	37'
	TH 12 U 3 WHC	22'
TH 12 U 3	I-A 43 WHC	53.5'
	TH 12 U 4 WHC	22'
TH 12 U 4	I-A 43 WHC	55'
	TH 12 U 5 WHC	2'
TH 12 U 5	I-A 43 WHC	74'
	TH 12 U 6 WHC	2'
TH 12 U 6	I-A 43 WHC	76'
	TH 12 U 7 WHC	2'
TH 12 U 7	TH 12 U 6 WHC	2'
	TH 12 U 7 WHC	23'
TH 12 U 7	TH 12 U 8 WHC	2'
	TH 12 U 9 WHC	22'
TH 12 U 8	TH 12 U 7 WHC	2'
	TH 12 U 8 WHC	23'
TH 12 U 8	TH 12 U 9 WHC	2'
	TH 12 U 10 WHC	2'
TH 12 U 9	TH 12 U 8 WHC	22'
	TH 12 U 9 WHC	26'
TH 12 U 9	TH 12 U 10 WHC	24'
TH 12 U 10	TH 12 U 9 WHC	22'
	TH 12 U 10 WHC	2'
TH 12 U 10	I-A 43 WHC	76'
	TH 12 U 7 WHC	2'
TH 13 U 1	I-A 41 WHC	23.5'
	TH 13 U 2 WHC	2'
TH 13 U 2	I-A 41 WHC	25'
	TH 13 U 1 WHC	2'
TH 13 U 3	I-A 41 WHC	44'
	SMH 15C WHC	101.5'
TH 13 U 4	I-A 41 WHC	46'
	SMH 15C WHC	98.5'
TH 13 U 5	I-A 41 WHC	67'
	SMH 15C WHC	78.5'
TH 13 U 6	I-A 41 WHC	70'
	SMH 15C WHC	76'
TH 13 U 7	SMH 15C WHC	19'
	TH 13 U 8 WHC	57'
TH 13 U 8	SMH 15C WHC	17'
	8" V. 5+20 WHC	55.5'
TH 13 U 9/10	SMH 15C WHC	9'
	8" V. 5+20 WHC	39'



FROM	TO	DISTANCE
TH 12 U 5/6	I-A 42 SHC	68'
	TH 12 U 3/4 SHC	24'
TH 12 U 7/8	SMH 16 SHC	52'
	TH 12 U 5/6 SHC	24.4'
TH 12 U 9/10	SMH 16 SHC	29'
	F.H. 5+61 SHC	39'
TH 12 U 11/12	SMH 16 SHC	14'
	F.H. 5+61 SHC	21.6'

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND WITH SITE DEVELOPMENT PLAN SDP-04-017

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

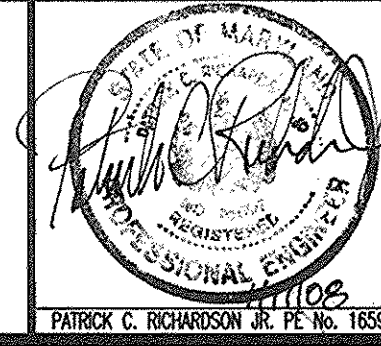
*Stacy Coon*  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*John J. P.*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**Richardson Engineering, LLC**

30 East Potomac Road, Suite 500  
Timonium, Maryland 21093  
Phone: 410-560-1502 Fax: 443-901-1208



DES:	CND	1	W.H.C. FOR TOWNHOUSES	6/27/07
DRN:	CND			
CHK:	PCR			
OCT. DATE: 2006	BY NO.		REVISION	DATE

**PHASE II PRELIMINARY WATER UTILITY PLAN**

60' SCALE MAP #38  
BLOCK #2&3

**ELKRIDGE CROSSING MONTGOMERY ROAD & WASHINGTON BOULEVARD (U.S. RTE. #1)**

CONTRACT #14-4353-D

TAX MAP #38  
1ST ELECTION DISTRICT

PARCEL #30 & 38  
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
SHEET: 2 OF 4

**AS BUILT**  
DATE: SEPTEMBER 2007

SHEET 2 OF 4 SUPERSEDES PREVIOUSLY APPROVED SHEET 2 THAT WAS SIGNED ON 10/26/06.