

QUANTITIES				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
8" PVC C900 DR-18 WATER	520 LF	820 LF	C900	NATIONAL PIPE
6" FIRE HYDRANT	2 EA	2 EA	5" x 8" A 423	MUELLER
1.5" WVC	282 LF	339 LF	K O O P P E R	GERING FLOW PRODUCTS
1" METER VAULT	11 EA	11 EA	CONCRETE	VESTAL
6" PVC C900	30 LF	30 LF	C900	NATIONAL PIPE
8" PVC SDR-35 SEWER	441 LF	439 LF	SDR-35	NORTH AMERICAN
MANHOLES	3 EA	3 EA	PRECAST	CONTRACTORS PRECAST
4" SHC	270 LF	300 LF	SDR-85	NATIONAL PIPE

NAME OF UTILITY CONTRACTOR: C C S  
 SURVEY AND DRAFTING DIVISION AS-BUILT DATE: 6/15/10

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

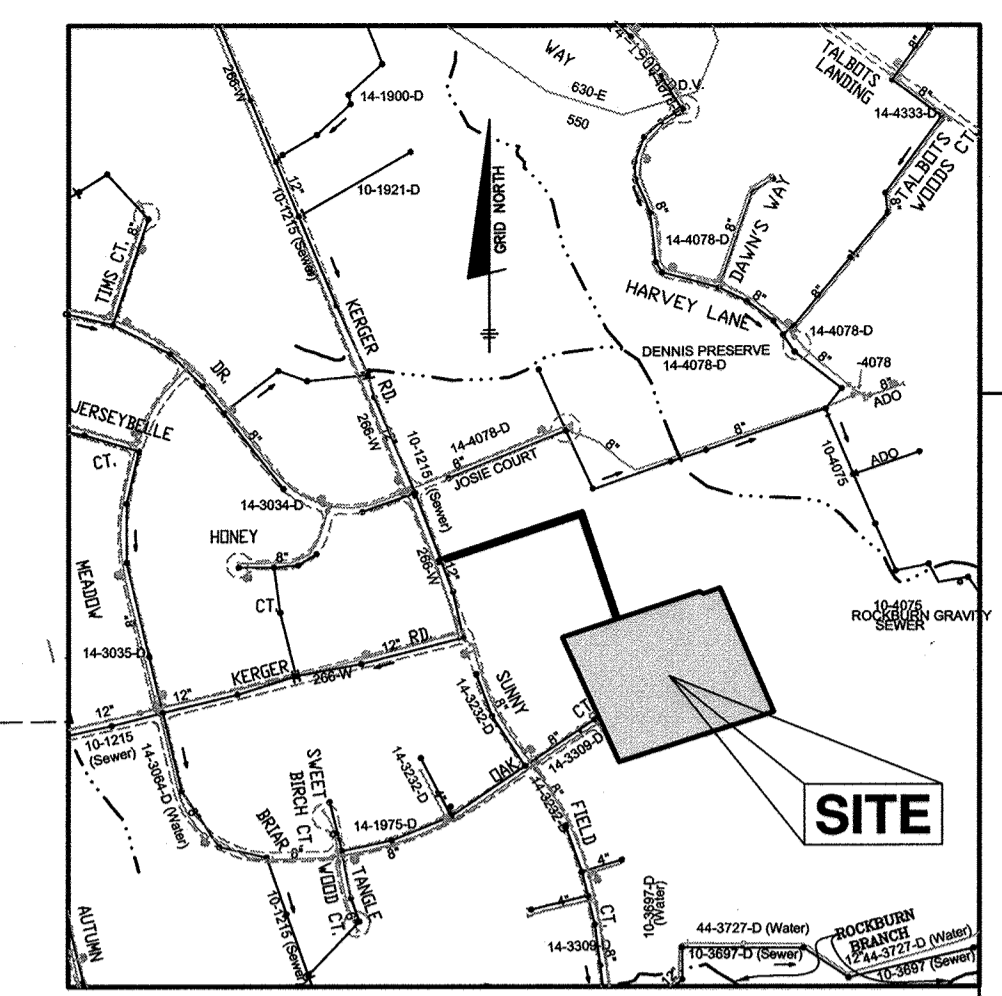
*John R. Roberts* 10/26/17  
 HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS AND AS PER F-17-097

# ROCKBURN ESTATES

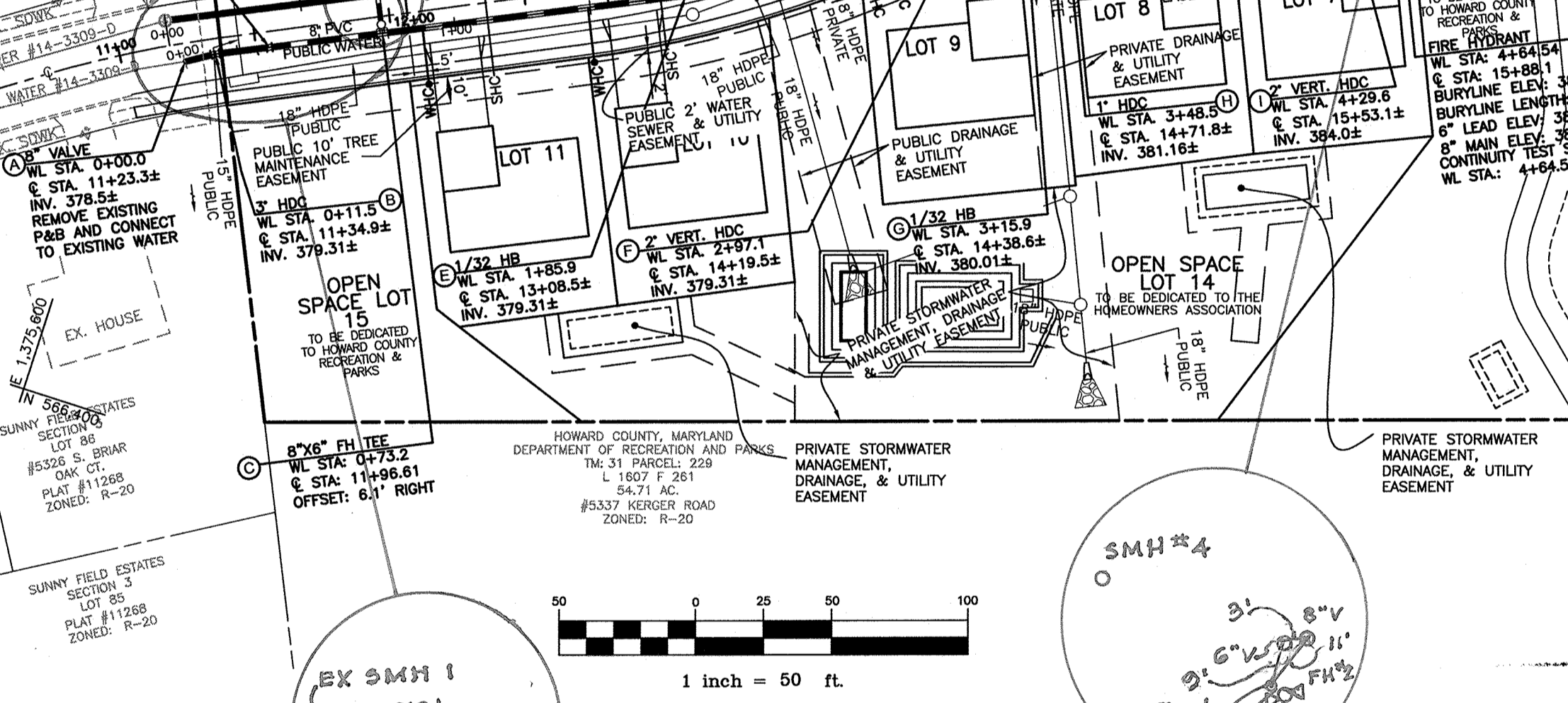
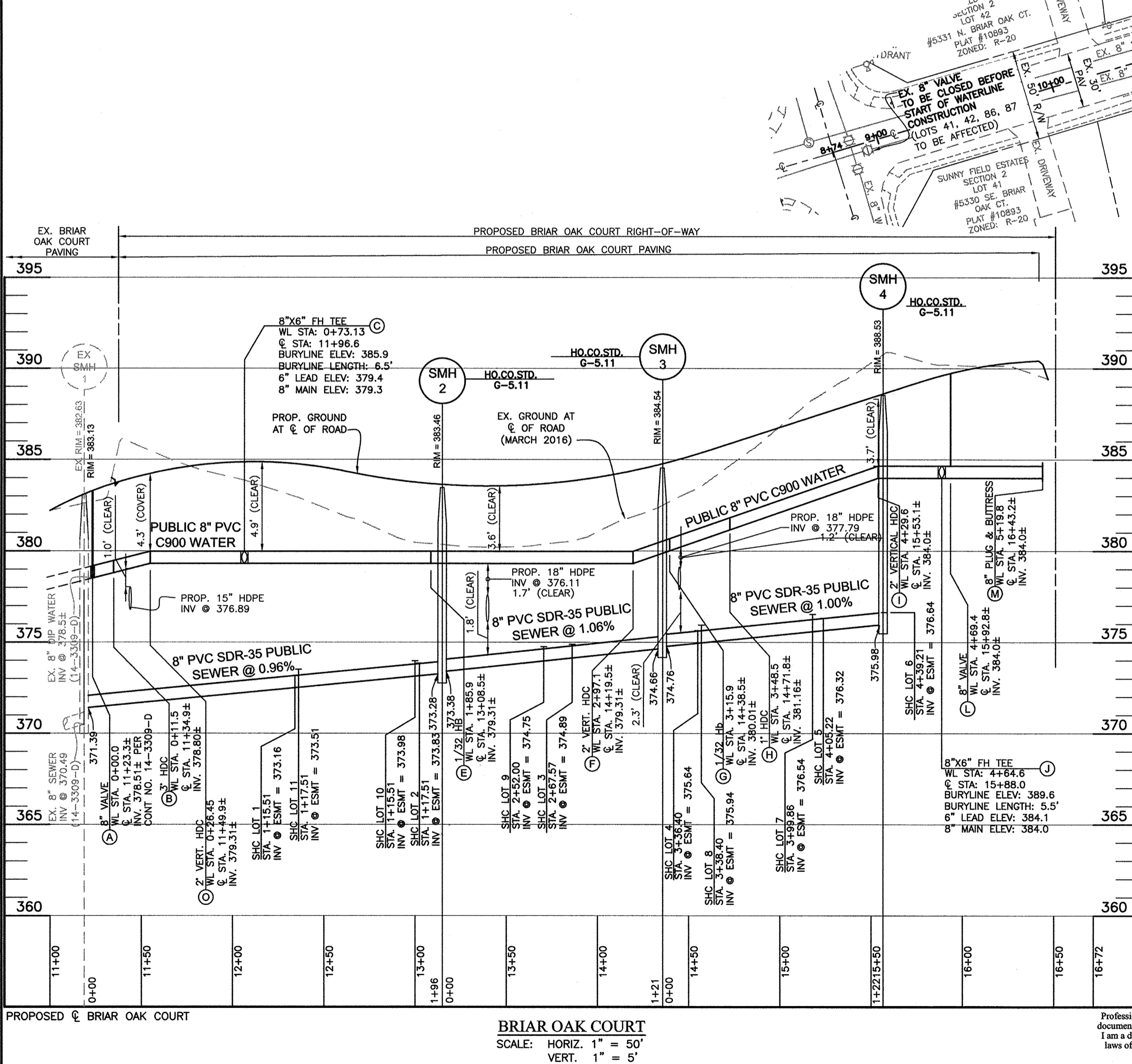
## LOTS 1 thru 11 AND OPEN SPACE LOT 12 thru 16

### CONTRACT No. 14-4983-D



WATER APPURTENANCE SCHEDULE					
POINT NUMBER	APPURTENANCE	WATER LINE STATION	CENTERLINE ROAD STATION, OFFSET	NORTHING	EASTING
A	8" VALVE	WL STA. 0+00.0	± STA. 11+23.3, OFFSET 6.72' RT	566532.7409	1375619.5865
B	3" HDC	WL STA. 0+11.5	± STA. 11+34.9, OFFSET 5.64' RT	566538.7842	1375629.3177
C	8"x6" FIRE HYDRANT TEE	WL STA. 0+73.1	± STA. 11+96.6, OFFSET 6.12' RT	566564.7575	1375685.3183
D	FIRE HYDRANT	WL STA. 0+73.5	± STA. 11+96.8, OFFSET 16.05' LT	566584.8713	1375675.9895
E	1/32 HD	WL STA. 1+85.9	± STA. 13+08.5, OFFSET 9.05' RT	566612.1995	1375787.6073
F	2" HDC	WL STA. 2+97.1	± STA. 14+19.5, OFFSET 8.02' RT	566677.7126	1375877.3430
G	1/32 HD	WL STA. 3+15.9	± STA. 14+38.6, OFFSET 6.30' RT	566688.8537	1375892.6032
H	1" HDC	WL STA. 3+48.5	± STA. 14+71.8, OFFSET 7.60' RT	566702.5560	1375922.1468
I	2" HDC	WL STA. 4+29.6	± STA. 15+53.1, OFFSET 7.02' RT	566735.4043	1375996.3359
J	8"x6" FIRE HYDRANT TEE	WL STA. 4+64.6	± STA. 15+88.0, OFFSET 6.73' RT	566749.5494	1376028.2833
K	FIRE HYDRANT	WL STA. 4+64.6	± STA. 15+88.0, OFFSET 16.25' RT	566740.8456	1376032.1584
L	8" VALVE	WL STA. 4+69.4	± STA. 15+92.8, OFFSET 6.69' RT	566751.5021	1376032.7046
M	8" PLUG & BUTTRESS	WL STA. 5+19.8	± STA. 16+43.2, OFFSET 6.26' RT	566771.9097	1376078.7850
N	2" HDC	WL STA. 0+31.5	± STA. 11+54.9, OFFSET 5.80' RT	566547.1945	1375647.4509

SEWER MANHOLE SCHEDULE							
NUMBER	LOCATION (NAD '83)	INVERT IN	INVERT OUT	TOP ELEV.	STD. DETAIL	OWNER	REMARKS
(EX) 1	N 566544.8210 E 1375608.0190	371.39(8")		382.63	Ho.Co. STD. G-5.11	PUBLIC	
2	N 566627.4032 E 1375785.8095	373.38(8")	373.28(8")	383.46	Ho.Co. STD. G-5.11	PUBLIC	
3	N 566701.1906 E 1375881.9306	374.76(8")	374.66(8")	384.54	Ho.Co. STD. G-5.11	PUBLIC	
4	N 566749.6307 E 1375993.8991	375.98(8")	375.98(8")	388.53	Ho.Co. STD. G-5.11	PUBLIC	



WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE

LOT	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
1	BRIAR OAK COURT	SMH 2 10'	HYDRANT 13'
2	BRIAR OAK COURT	SMH 2 3'	HYDRANT 9'
3	BRIAR OAK COURT	SMH 3 3'	SMH 2 10'
4	BRIAR OAK COURT	SMH 4 9'	SMH 5 4'
5	BRIAR OAK COURT	SMH 4 2'	SMH 5 11'
6	BRIAR OAK COURT	SMH 4 5'	HYDRANT 4'
7	BRIAR OAK COURT	SMH 4 4'	SMH 5 9'
8	BRIAR OAK COURT	SMH 4 9'	SMH 5 4'
9	BRIAR OAK COURT	SMH 3 7'	SMH 5 7'
10	BRIAR OAK COURT	SMH 2 6'	HYDRANT 9'
11	BRIAR OAK COURT	SMH 2 6'	HYDRANT 4.8'

SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE

LOT	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
1	BRIAR OAK COURT	SMH 2 8'	HYDRANT 3'
2	BRIAR OAK COURT	SMH 2 2'	HYDRANT 10.4'
3	BRIAR OAK COURT	SMH 3 5'	SMH 2 7'
4	BRIAR OAK COURT	SMH 4 10'	SMH 5 2'
5	BRIAR OAK COURT	SMH 4 3'	SMH 5 10'
6	BRIAR OAK COURT	SMH 4 3'	SMH 5 4'
7	BRIAR OAK COURT	SMH 4 5'	SMH 5 8'
8	BRIAR OAK COURT	SMH 4 10'	SMH 5 4'
9	BRIAR OAK COURT	SMH 3 7'	SMH 5 6'
10	BRIAR OAK COURT	SMH 2 3'	HYDRANT 11'
11	BRIAR OAK COURT	SMH 2 6'	HYDRANT 8'

VICINITY MAP  
SCALE: 1" = 50'

BENCH MARKS NAD '83

HO. CO. 3160	ELEV. 419.340
STAMPED DISC ON CONCRETE MONUMENT, MONTGOMERY ROAD WEST OF KERGER ROAD	
N 566,299.852	E 1,372,014.021
HO. CO. 3181	ELEV. 400.938
3/4" REBAR, MONTGOMERY ROAD 275' NORTH OF ROCKBURN DRIVE.	
N 565,303.479	E 1,372,517.790

TYPE OF BUILDING: \_\_\_\_\_ SFD

NUMBER OF WH'S: \_\_\_\_\_ 11

NUMBER OF SHC'S: \_\_\_\_\_ 11

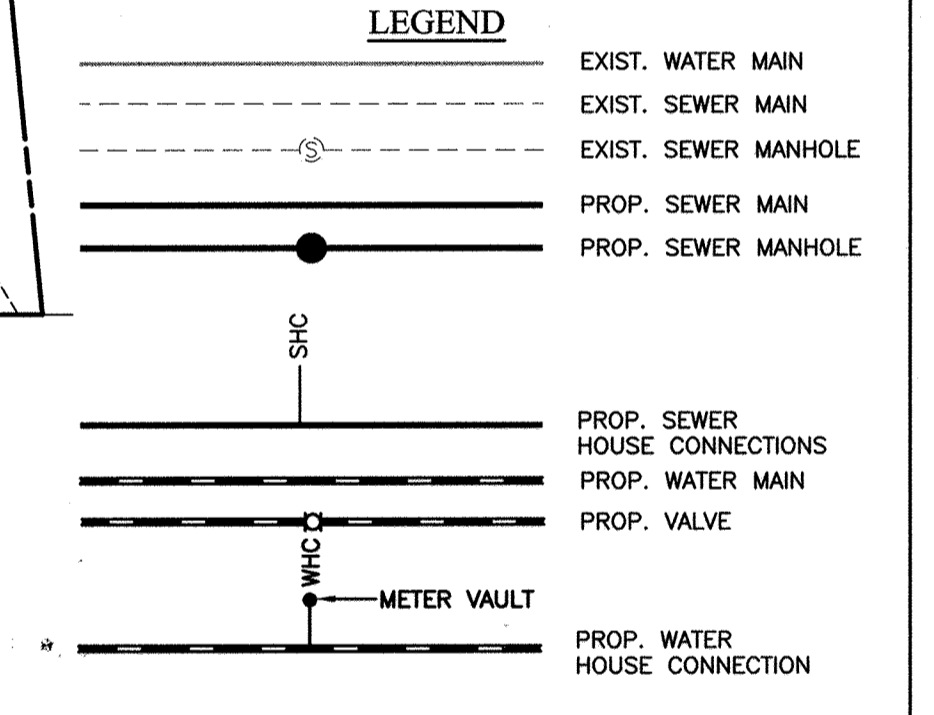
DRAINAGE AREA: \_\_\_\_\_ PATAPSCO

TREATMENT PLANT: \_\_\_\_\_ BONNIE BRANCH

WATER ZONE: \_\_\_\_\_ 550

TEST GRADIENT: \_\_\_\_\_ 700

FILE REFERENCES:



NOTE:  
 ALL WATER HOUSE CONNECTIONS ARE TO BE 1.5" WITH A 1" METER (OUTSIDE SETTING).  
 ALL SEWER HOUSE CONNECTIONS SHALL BE 4" PVC.

SHC CHART

Lot Number	Invert @ main	Invert @ R/W	Minimum Elevation	Cellar Elevation
1	372.83	373.20	377.50	380.81
2	373.49	373.99	378.13	379.47
3	374.47	374.93	379.19	378.85
4	375.28	375.68	379.87	384.13
5	375.97	376.36	380.57	384.13
6	376.32	376.68	381.42	387.60**
7	375.90	376.58	380.90	382.31
8	375.30	375.98	380.29	380.61
9	374.30	374.78	378.51	378.51
10	373.47	374.01	377.62	377.70
11	372.85	373.53	377.51	378.56

\* REQUIRES 1.5% CONNECTION FROM MAIN TO HOUSE  
 \*\* EX. ESTIMATED FROM FIELD SURVEYED FF ELEVATION

OWNER:  
 SECURITY DEVELOPMENT, LLC  
 P.O. BOX 417  
 ELLICOTT CITY, MARYLAND 21041  
 410-465-4244

DEVELOPER:  
 SECURITY DEVELOPMENT, LLC  
 P.O. BOX 417  
 ELLICOTT CITY, MARYLAND 21041  
 410-465-4244

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 IN MARCH, 2016 BY BENCHMARK ENGINEERING, 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 STATATIONS NO. 3160 AND NO. 3181.  
 ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE 43EC AND 43EB.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT 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, THE 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 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.....1-800-252-1133  
 BGE (CONTRACTOR 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
- 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.
- THE 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 OUP 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(G) OF THE HOWARD COUNTY CODE.

PART II WATER

- ALL WATER MAINS TO BE PVC C900 DR-18 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 THE STANDARD DETAILS FOR 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 WIRE 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 ANNA 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 REQUIRED.
- 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 HARNESSES, 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 SHOULD BE VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE THE MINIMUM AND MAXIMUM 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 AND VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BENDS, 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 ONE FULL PIPE LENGTH (20-FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. THE CONTRACTOR SHALL USE A 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 COMPACTOR 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 ANMA C900, SHALL HAVE A MINIMUM LAUNCH LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTIFIED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL.
- 5-DEGREE SWEEPS SHALL BE BELL SPIGOT, RATED FOR A MINIMUM 225 PSI, DR18 MEETING THE REQUIREMENTS OF ANMA C900 AND SHALL BE MULTI FITTINGS (PEX) 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 ANMA 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 PUGH 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 EDAM IRON, INC. OR APPROVED EQUAL.

PART III 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 WATER-TIGHT FRAME AND COVER. STANDARD DETAIL CS-52, WHERE WATER-TIGHT 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.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

BENCHMARK ENGINEERING, INC.  
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-8100 (F) 410-465-8644  
 WWW.BE-CVLENGINEERING.COM

DES: DBT/NAF  
 DRAFT: NAF  
 CHK: CAM  
 DATE: 10/2017

By: [Signature] Date: 7/23/10

AS-BUILT

PLAN VIEW & PROFILE

ROCKBURN ESTATES  
 LOTS 1 thru 11 AND OPEN SPACE LOTS 12 thru 16

TAX MAP: 31 - GRID: 22 - PARCEL: 628 - ZONED: R-20 - ELECTION DISTRICT 1

SCALE: AS SHOWN

SHEET NO. 1 OF 1

CONTRACT NO. 14-4983-D

600 SCALE MAP # 14 BLOCK: 37