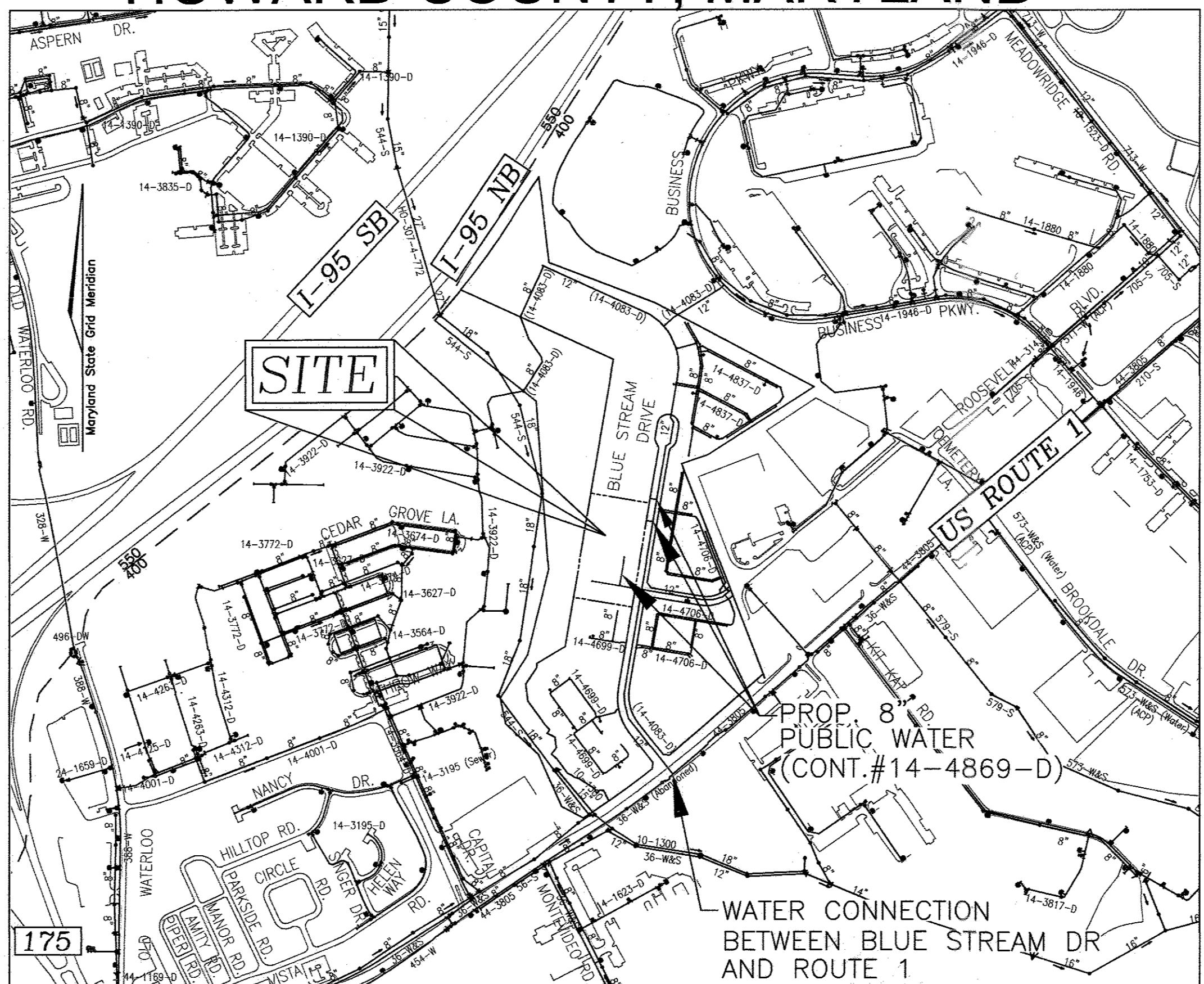


GENERAL NOTES

- 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.
 - TOPOGRAPHY FIELD SURVEYS WERE PERFORMED ON MARCH 1998 BY POTOMAC AERIAL SURVEYS.
 - 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 43B2 AND 43B6.
ALL VERTICAL CONTROLS ARE BASED ON NAVD'88. VERTICAL CONTROLS PROVIDED ON DRAWINGS ARE:
GEODETIC SURVEY CONTROL 43B2 (N 551,654.993/E 1,378,176.951)
BRASS DISC SET ON TOP OF A CONCRETE MONUMENT.
GEODETIC SURVEY CONTROL 43B6 (N 550,601.597/E 1,376,866.072)
BRASS DISC SET ON TOP OF A CONCRETE MONUMENT.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
 - 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 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 (S) 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 OPERATION 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) 410-637-8713
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 THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE 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(c) OF THE HOWARD COUNTY CODE.

- PART II - WATER**
- ALL WATER MAINS SHALL BE C-900 PVC (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 FITTED 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 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 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 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 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 CERTAINTIED 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 (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 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.
 - SPRINKLER SYSTEMS FOR SINGLE RESIDENTIAL DWELLING UNITS SHALL HAVE WATER HOUSE CONNECTIONS AND WATER METERS THAT ARE SIZED IN ACCORDANCE WITH THE DESIGN OF THE SPRINKLER SYSTEMS. THE FIRE SPRINKLER CODE REQUIRES SINGLE RESIDENTIAL DWELLINGS TO HAVE A MINIMUM OF 1.5" SERVICE CONNECTION WITH A 1" OUTSIDE METER SETTING.
 - HOWARD COUNTY IS NOT RESPONSIBLE FOR WALLS LOCATED OVER/CROSS EASEMENTS.

FINAL WATER CONSTRUCTION PLAN BROMPTON HOUSE (GROSVENOR HOUSE, PHASE II) APARTMENTS AND TOWNHOMES BLUE STREAM BUILDABLE BULK PARCEL I-1 CONTRACT 14-4869-D HOWARD COUNTY, MARYLAND



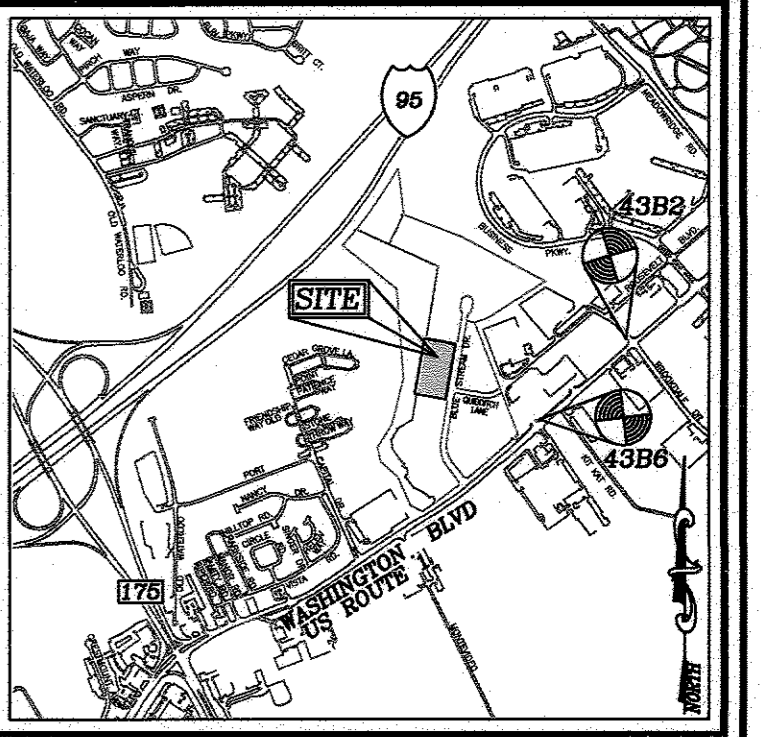
VICINITY MAP
SCALE: 1"=600'

WATER CODE: B01
SEWER CODE: 2153000
TEST GRADIENT: 550

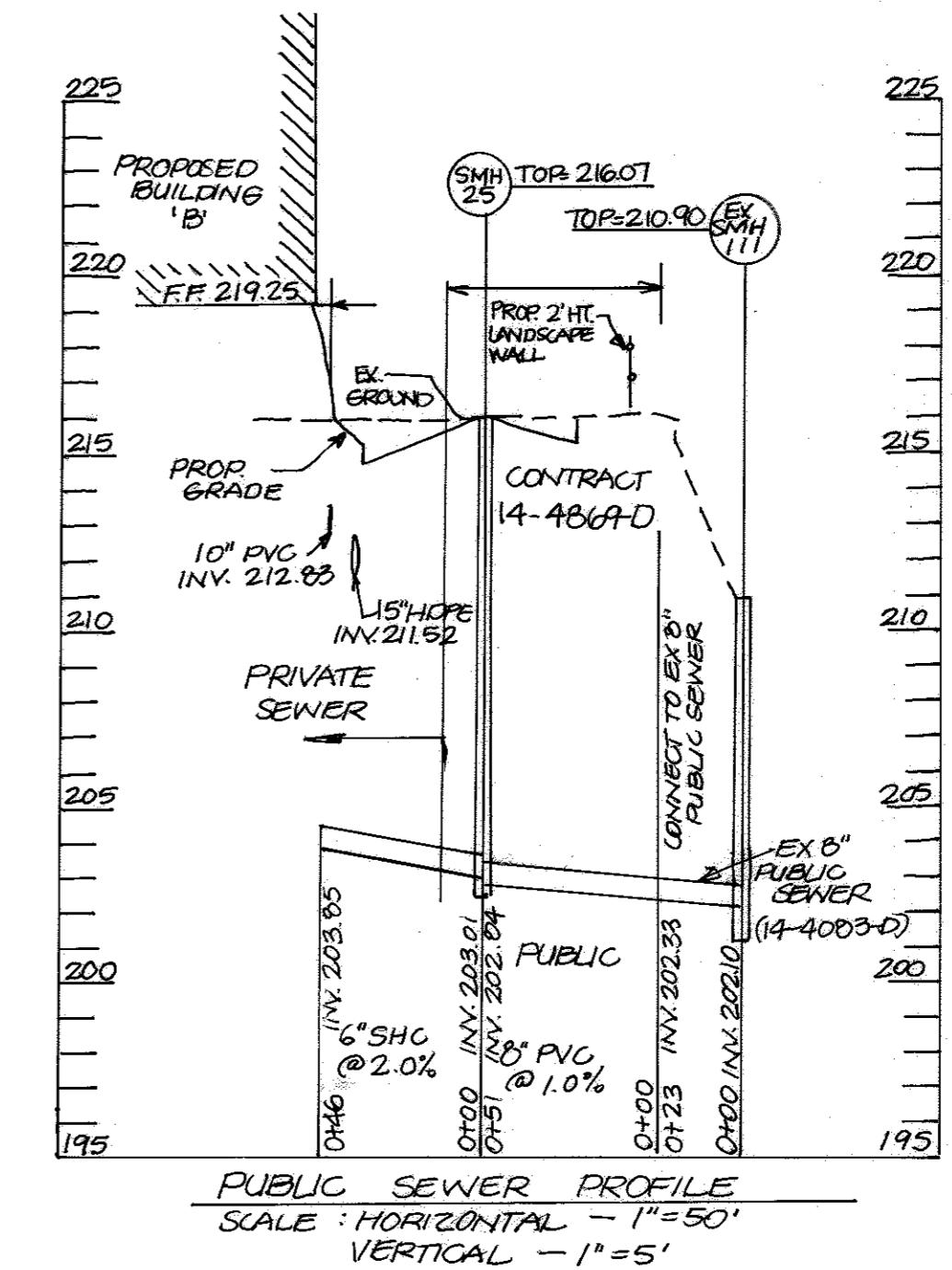
TYPE OF BUILDING :	RESIDENTIAL
NO. OF APARTMENT BUILDING :	2
NO. OF TOWNHOUSE BUILDING :	25
NO. OF SINGLE WATER HOUSE CONNECTIONS :	3
NO. OF TWIN WATER HOUSE CONNECTIONS :	11
SEWER SHED :	PATAPSCO
TREATMENT PLANT :	PATAPSCO RIVER

BENCHMARKS

HOWARD COUNTY BENCHMARK 43B2	N 551,654.993	E 1,378,176.951	ELEV.: 209.601'
HOWARD COUNTY BENCHMARK 43B6	N 550,601.597	E 1,376,866.072	ELEV.: 210.559'



VICINITY MAP
SCALE: 1"=2000'
ADC MAP/GRID NO: 5054/G2



PUBLIC SEWER PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

LEGEND

EXISTING TREELINE	
PROPOSED TREELINE	
EXISTING WATER MAIN	
PROPOSED WATER MAIN	
FIRE HYDRANT	
PROPOSED VALVE	
PROPOSED TEE	
PROPOSED STORM DRAIN	
EXISTING STORM DRAIN	
EXISTING SEWER	
SEWER MANHOLE	
PRIVATE WATER HOUSE CONNECTION	
PRIVATE SEWER	
PROPOSED SIGN	
PROPOSED LIGHT	

QUANTITIES

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
WATER				
8" WATER (C-900 PVC DR-18)	509 LF			
6" WATER (C-900 PVC DR-18)	9 LF			
12" X 8" TEE	2 EA			
8" X 8" TEE	1 EA			
8" X 8" TEE	1 EA			
8" VALVE	4 EA			
8" CAP	4 EA			
8" - 5' SWEEP	7 EA			
8" - 1/8 BEND	2 EA			
1-1/2" WHC	313 LF			
1" OUTSIDE METER VAULT	1 EA			
6" FIRE HYDRANT	1 EA			
MANHOLE	1 EA			
8" PVC SEWER	51 LF			

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

John K. Robertson 11/25/14
SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND WITH SITE DEVELOPMENT PLAN SDP-14-077.

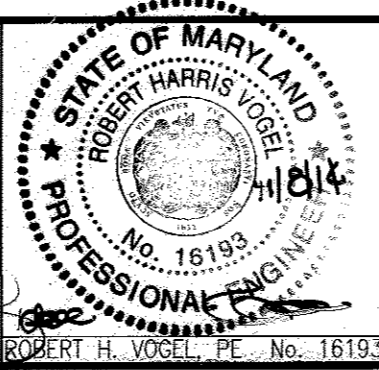
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Steve Conroy 11/11/14
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Chad Allen 12/2/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961



PROFESSIONAL CERTIFICATE
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. 161193, EXPIRATION DATE 12/31/2016.

DRN: KG DES: DZE
CHK: RHV
DATE: NOVEMBER 2014

NO.	REVISION	DATE
1	CONVERT SECTION OF PRIVATE SEWER TO PUBLIC	9/1/16

**FINAL WATER CONSTRUCTION PLAN
CONTRACT 14-4869-D
COVER SHEET**

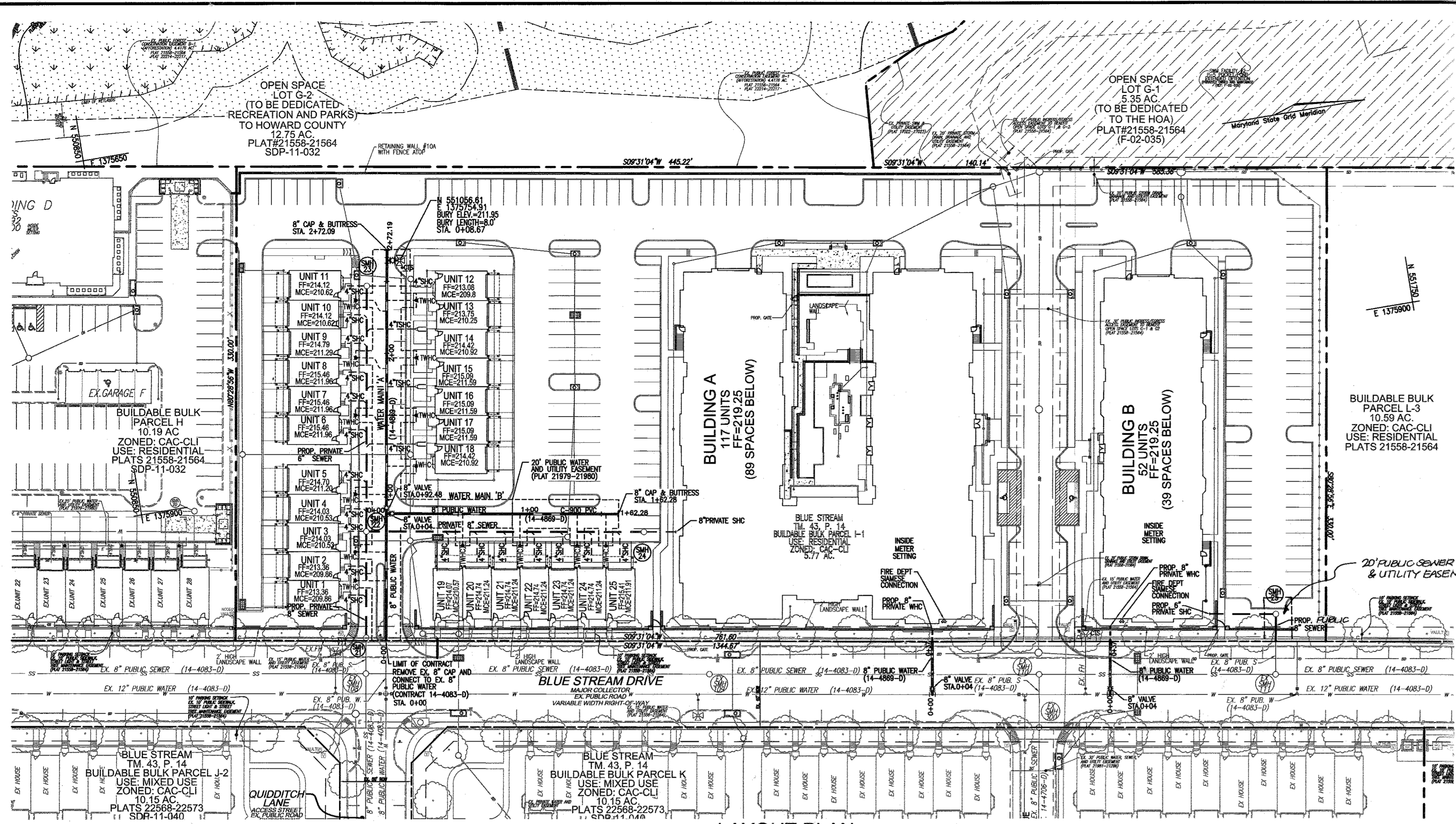
600' SCALE MAP NO. 43 BLOCK NO. 4

**BROMPTON HOUSE
(GROSVENOR HOUSE, PHASE II)
APARTMENTS AND TOWNHOMES
BLUE STREAM
BUILDABLE BULK PARCEL I-1**

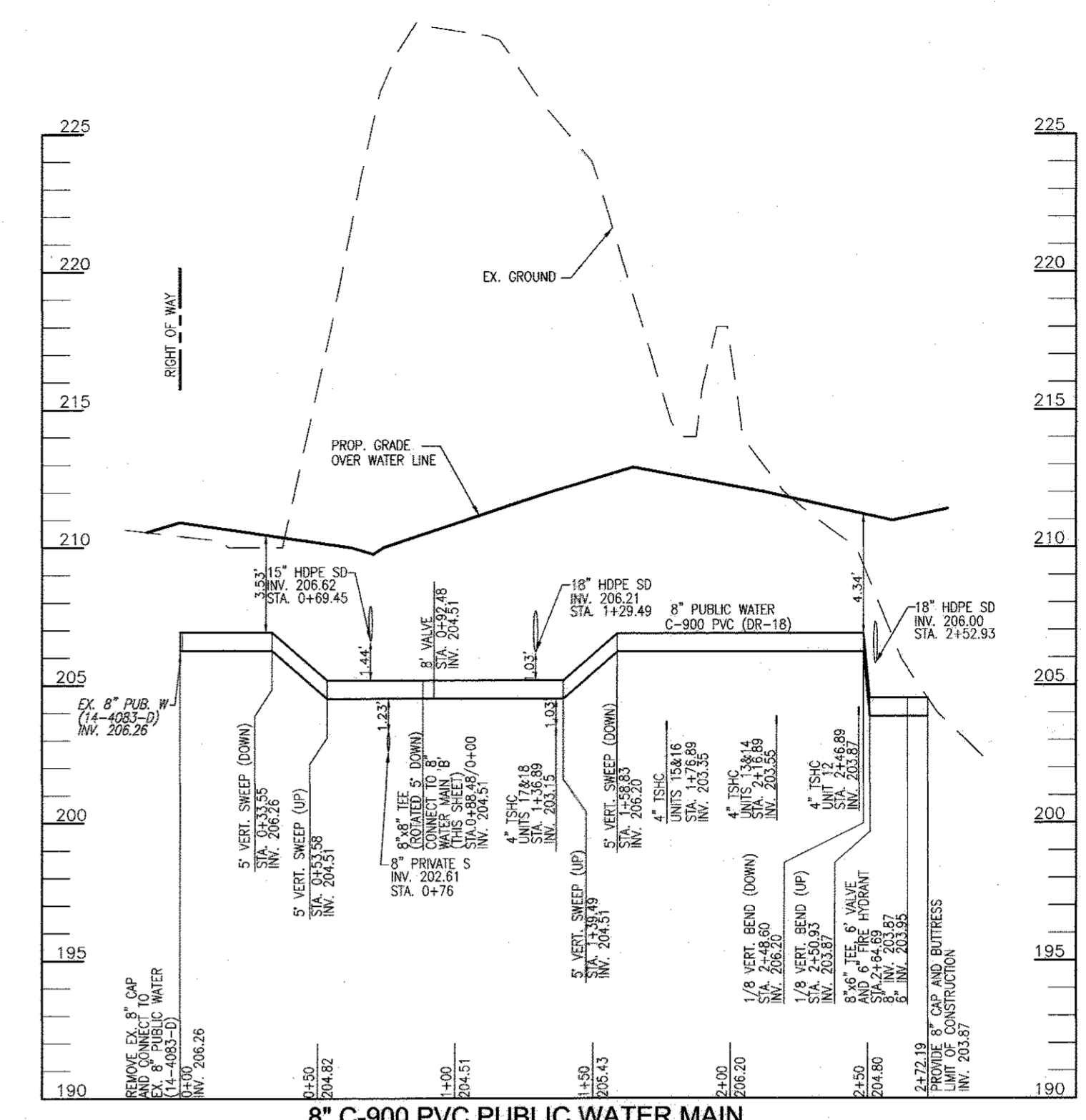
SCALE AS SHOWN
SHEET 1 OF 2

TAX MAP 43 GRID 4 1ST ELECTION DISTRICT
PARCEL I AND P/O L-2 HOWARD COUNTY, MARYLAND

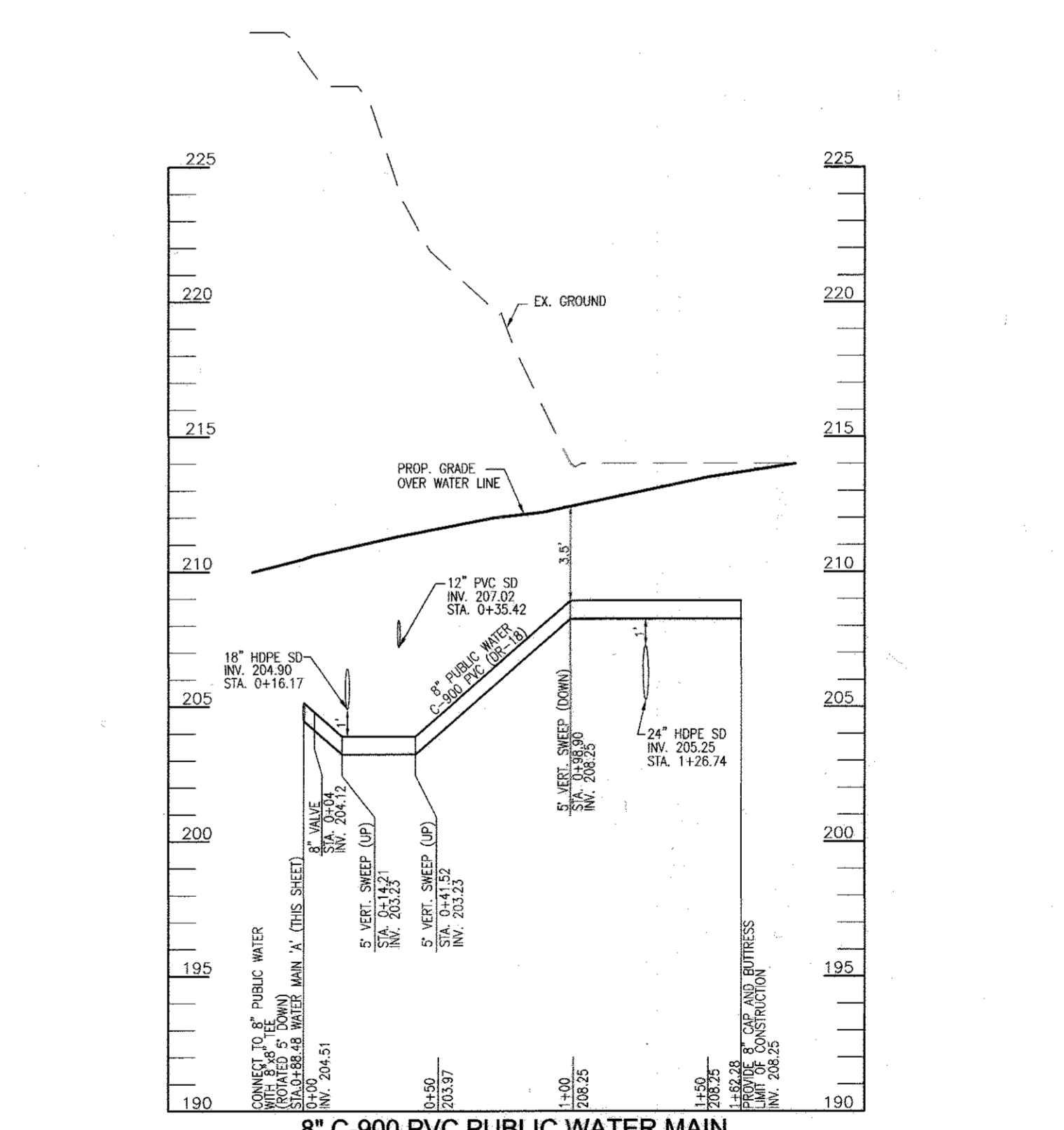
OWNER/DEVELOPER
BLUE STREAM LLC
PO BOX 416
ELLICOTT CITY, MD 21041
C/O: ARNOLD SAGNER
410-465-2020



LAYOUT PLAN
SCALE: 1"=50'



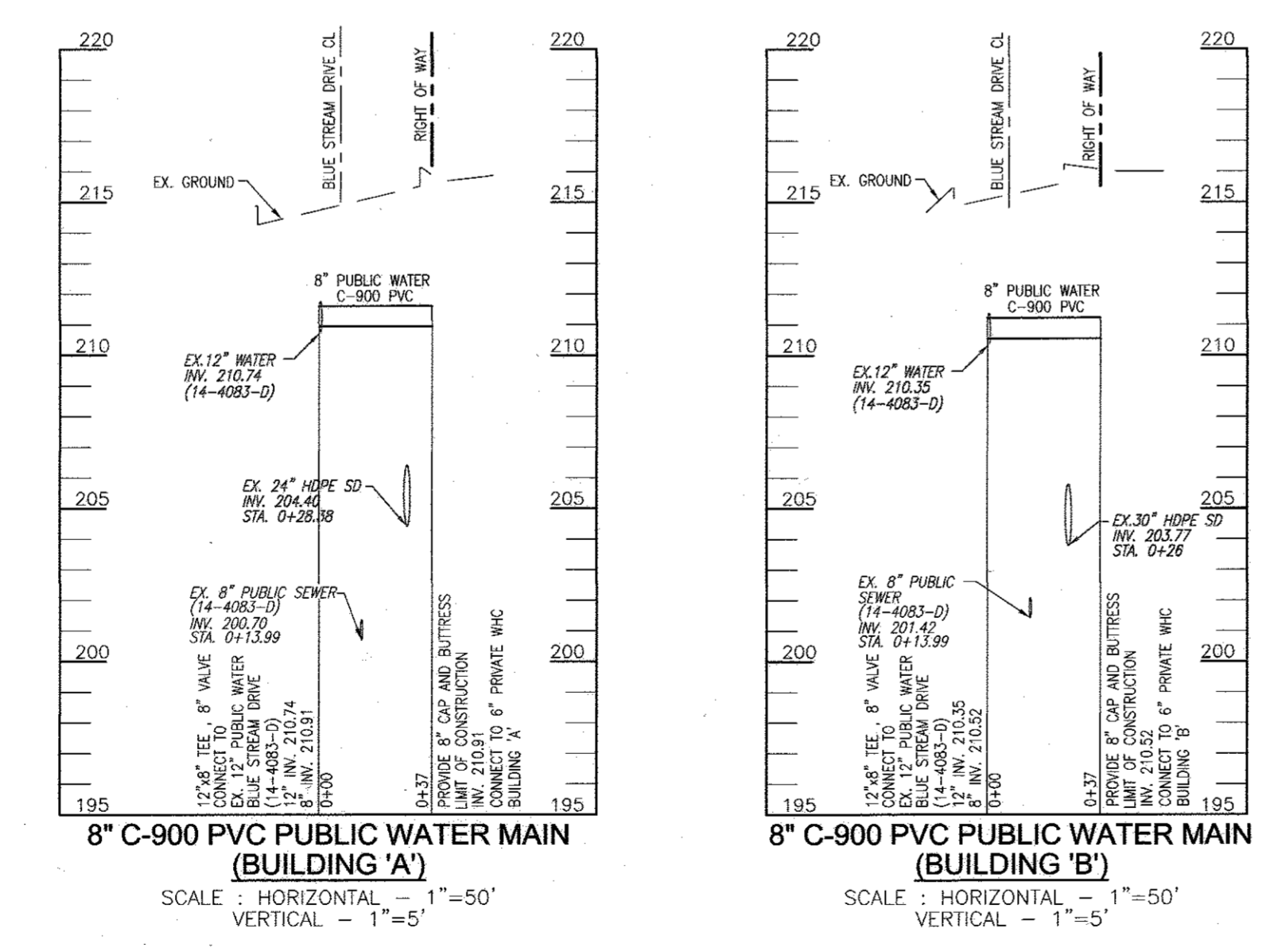
8" C-900 PVC PUBLIC WATER MAIN (WATER MAIN 'A')
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



8" C-900 PVC PUBLIC WATER MAIN (WATER MAIN 'B')
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

WATERHOUSE CONNECTION AS-BUILT LOCATION TABLE

LOT NUMBER	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			



WATER MAIN LOCATION CHART

WL STA.	APPURTENANCE	NORTHING	EASTING
PROFILE 'A'			
WL STA. 0+00	CONNECT TO EX. 8" PUBLIC WATER	551004.29	1376014.52
WL STA. 0+33.55	8" - 5" VERT. SWEEP (DOWN)		
WL STA. 0+53.58	8" - 5" VERT. SWEEP (UP)		
WL STA. 0+88.48	8"x8" TEE (CONNECT TO WATER MAIN PROFILE 'B')		
WL STA. 0+92.48	8" VALVE	551019.59	1375923.32
WL STA. 1+39.49	8" - 5" VERT. SWEEP (UP)		
WL STA. 1+58.83	8" - 5" VERT. SWEEP (DOWN)		
WL STA. 2+48.60	8" - 1/8" VERT. BEND (DOWN)		
WL STA. 2+50.93	8" - 1/8" VERT. BEND (UP)		
WL STA. 2+64.69	8"x6" TEE, 6" VALVE, 6" FH	551048.05	1375753.47
WL STA. 2+72.19	8" CAP AND BUTTRISS	551049.29	1375748.08
PROFILE 'B'			
WL STA. 0+00	8"x8" TEE (CONNECT TO WATER MAIN PROFILE 'A')	551018.92	1375927.26
WL STA. 0+04	8" VALVE	551022.86	1375927.92
WL STA. 0+14.21	8" - 5" VERT. SWEEP (UP)		
WL STA. 0+41.52	8" - 5" VERT. SWEEP (UP)		
WL STA. 0+86.90	8" - 5" VERT. SWEEP (DOWN)		
WL STA. 1+62.28	8" CAP AND BUTTRISS	551178.96	1375954.10
BUILDING 'A'			
WL STA. 0+00	CONNECT TO EX. 12" PUBLIC WATER	551496.96	1376134.64
WL STA. 0+04	8" VALVE	551497.61	1376130.89
WL STA. 0+37	8" CAP AND BUTTRISS	551502.80	1376098.11
BUILDING 'B'			
WL STA. 0+00	CONNECT TO EX. 12" PUBLIC WATER	551380.74	1376077.64
WL STA. 0+04	8" VALVE	551375.29	1376110.19
WL STA. 0+37	8" CAP AND BUTTRISS	551374.89	1376114.17

OWNER/DEVELOPER
BLUE STREAM LLC
PO BOX 416
ELLCOTT CITY, MD 21041
C/O: ARNOLD SAGNER
410-465-2020

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES
CHIEF, DEVELOPMENT ENGINEERING DIVISION

11/11/14
12.2.14

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLCOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

STATE OF MARYLAND
ROBERT H. VOGEL, P.E. No. 16193

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRES ON 09-21-2019.

DRN: KG DES: DZE
CHK: RHV
DATE: NOVEMBER 2014

REVISION
NO. 1
DATE: 9/11/16
DESCRIPTION: CONVERT SECTION OF PRIVATE SEWER TO PUBLIC

FINAL WATER CONSTRUCTION PLAN
CONTRACT 14-4869-D
LAYOUT AND PROFILES

BROMPTON HOUSE (GROSVENOR HOUSE, PHASE II)
APARTMENTS AND TOWNHOMES
BLUE STREAM
BUILDABLE BULK PARCEL L-1

TAX MAP 43 GRID 4
1ST ELECTION DISTRICT

PARCEL 1 AND P/O L-2
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 2