

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.
 - THE EXISTING TOPOGRAPHY SHOWN HEREON IS TAKEN FROM AN AERIAL TOPOGRAPHIC SURVEY PREPARED BY POTOMAC AERIAL SURVEYS, DATED MARCH, 1998.
 - 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 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. HOUSE CONNECTIONS, THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.

PART II - WATER

- ALL WATER MAINS TO BE PVC-900 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 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 RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAIL. 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 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 REST RECORDS RECEIVED.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SEVENTEEN (17) POUND 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. 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.

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 18" WALLS ARE FOR BRICK MANHOLES ONLY.
 - MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL GS.52. WHERE WATERTIGHT FRAME AND COVER IS 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.
- SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND WITH SITE DEVELOPMENT PLAN SDP-11-032.

FINAL WATER CONSTRUCTION PLAN

GROSVENOR HOUSE

APARTMENTS A-G AND TOWNHOUSE UNITS 1-28

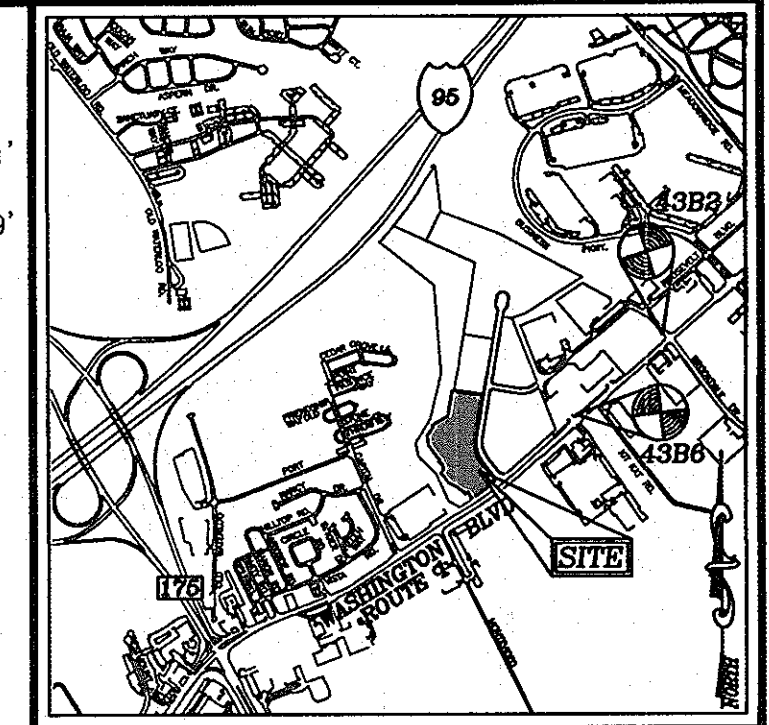
BUILDABLE BULK PARCEL H

CONTRACT 14-4699-D

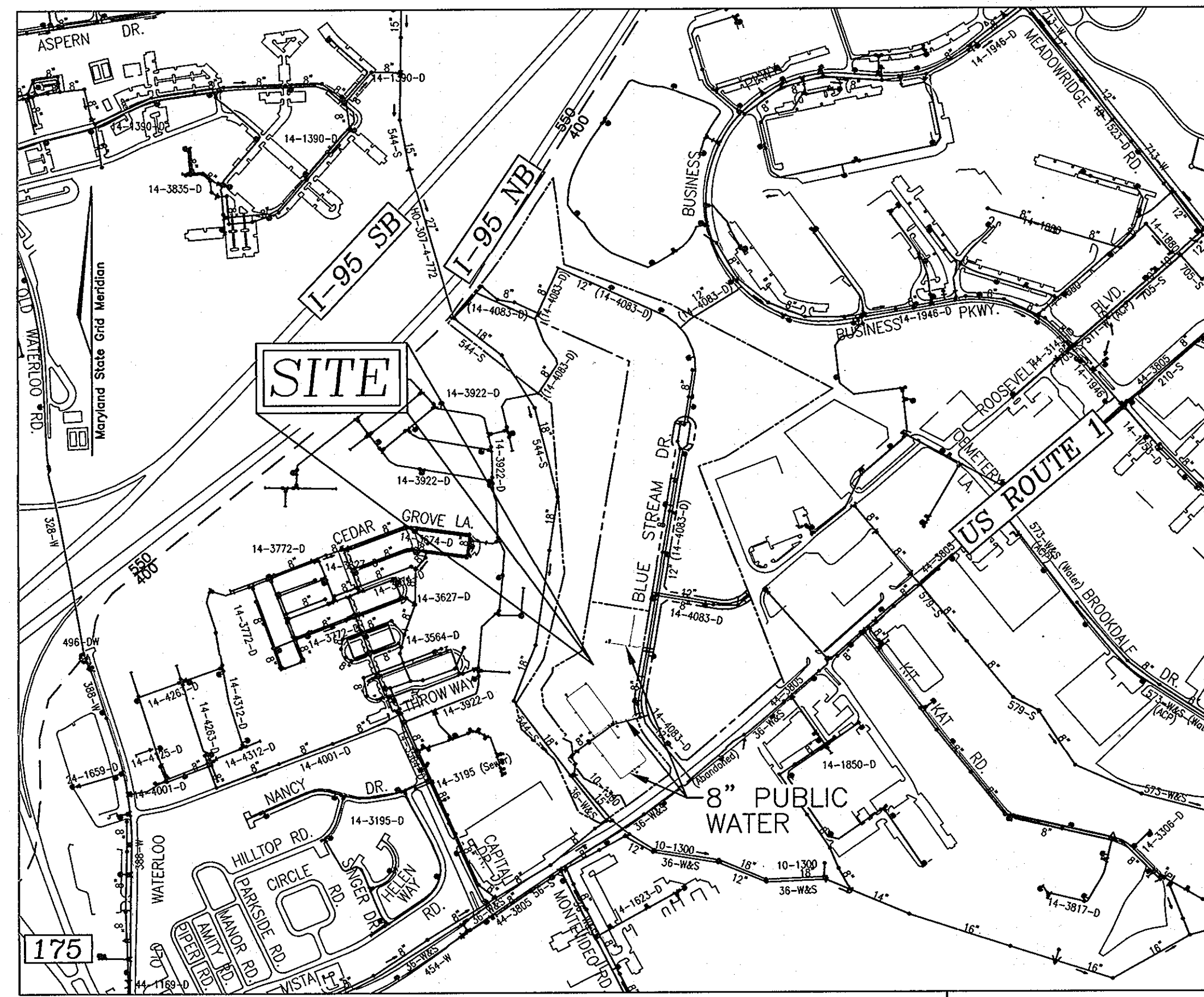
HOWARD COUNTY, MARYLAND

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



VICINITY MAP
 SCALE: 1"=600'

WATER ZONE: 400
 TEST GRADIENT: 550

TYPE OF BUILDING :	RESIDENTIAL
NO. OF APARTMENT BUILDING :	7
NO. OF TOWNHOUSE BUILDING :	28
NO. OF LOTS/PARCELS :	1
NO. OF SINGLE WATER HOUSE CONNECTIONS :	10
NO. OF TWIN WATER HOUSE CONNECTIONS :	13
NO. OF SEWER HOUSE CONNECTIONS :	-
NO. OF TWIN SEWER HOUSE CONNECTIONS :	-
SEWER SHED :	PATAPSCO
TREATMENT PLANT :	PATAPSCO RIVER

LEGEND

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

QUANTITIES

NAME OF UTILITY CONTRACTOR :		SURVEY AND DRAFTING DIVISION AS-BUILT DATE :		
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
WATER				
8" WATER	1932 LF			
6" WATER	124 LF			
4" WATER	30 LF			
1" WATER	10 LF			
8" x 6" TEE	4 EA			
8" x 4" TEE	3 EA			
8" VALVE	4 EA			
6" VALVE	9 EA			
4" VALVE	3 EA			
1" BALL VALVE	1 EA			
6" FIRE HYDRANT	5 EA			
8" CAP	4 EA			
6" CAP	4 EA			
4" CAP	3 EA			
8" - 1/8 BEND	12 EA			
8" - 1/16 BEND	4 EA			
8" - COUPLING	10 EA			
1-1/2" WVC	216 LF			
1" WVC	10 LF			
3/4" OUTSIDE METER SETTING	1 EA			
1" OUTSIDE METER VAULT	15 EA			

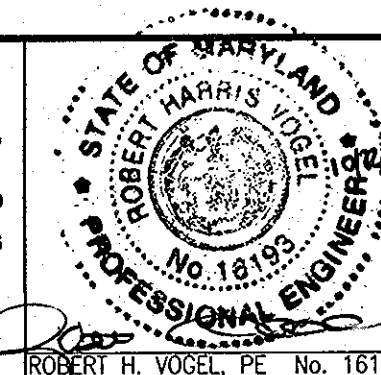
THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

John L. Polster 4/12/11
 CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
John C. Green 4/12/11
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
John C. Green 4/12/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 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. 12123, EXPIRATION DATE: 09-27-2012

DRN: DZ DES: DZ
 CHK: RHV
 DATE: OCTOBER 2011

FINAL WATER CONSTRUCTION PLAN
CONTRACT 14-4699-D
COVER SHEET

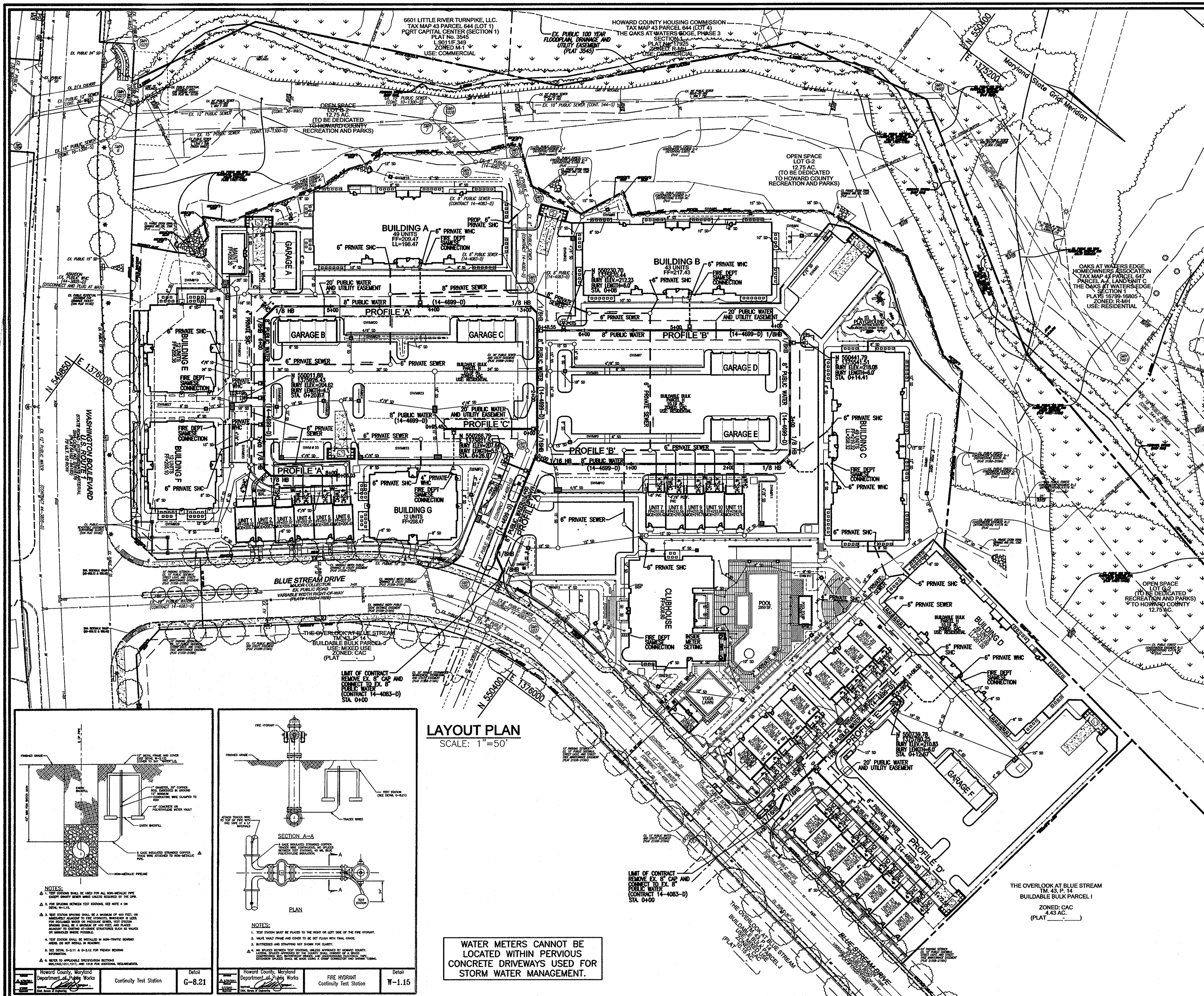
GROSVENOR HOUSE
 APARTMENTS A-G AND TOWNHOUSE UNITS 1-28
 BUILDABLE BULK PARCEL H

SCALE AS SHOWN

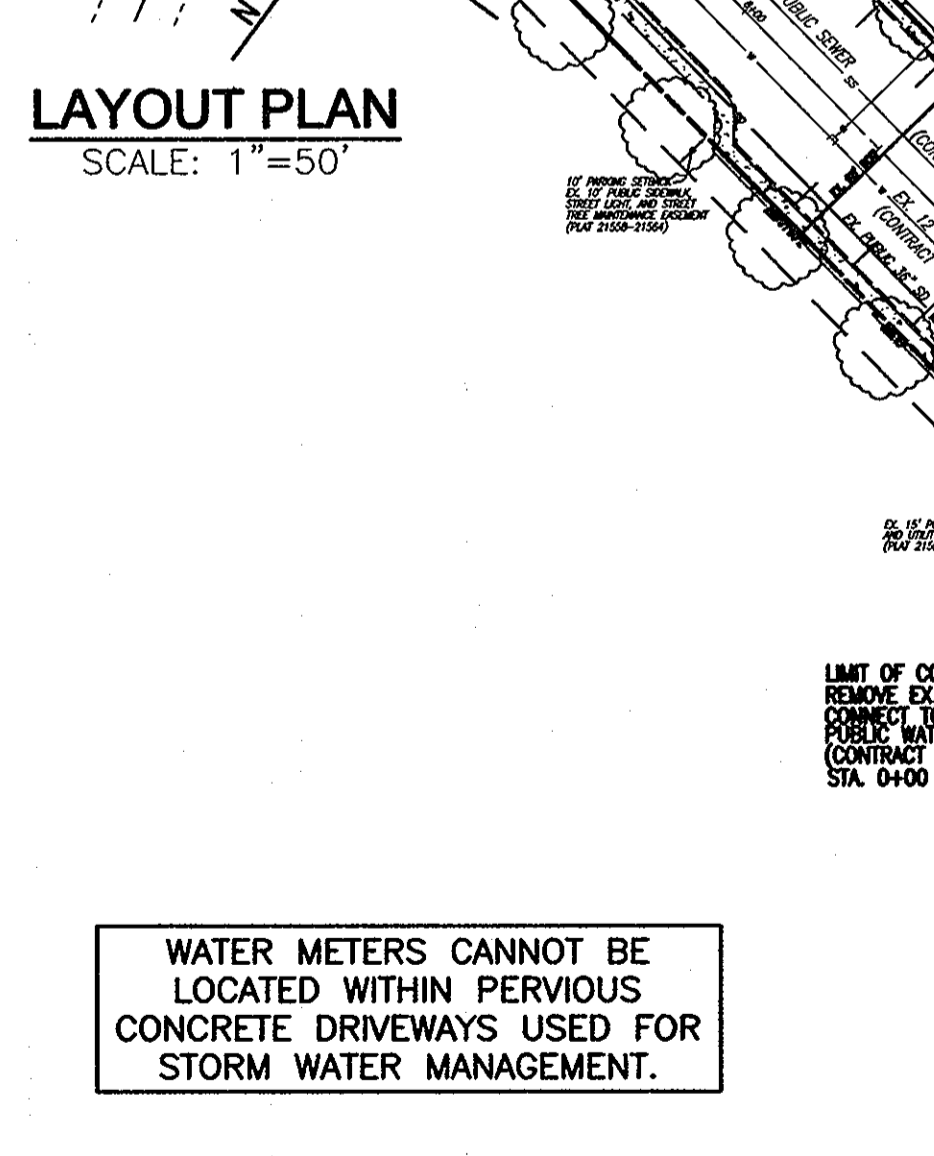
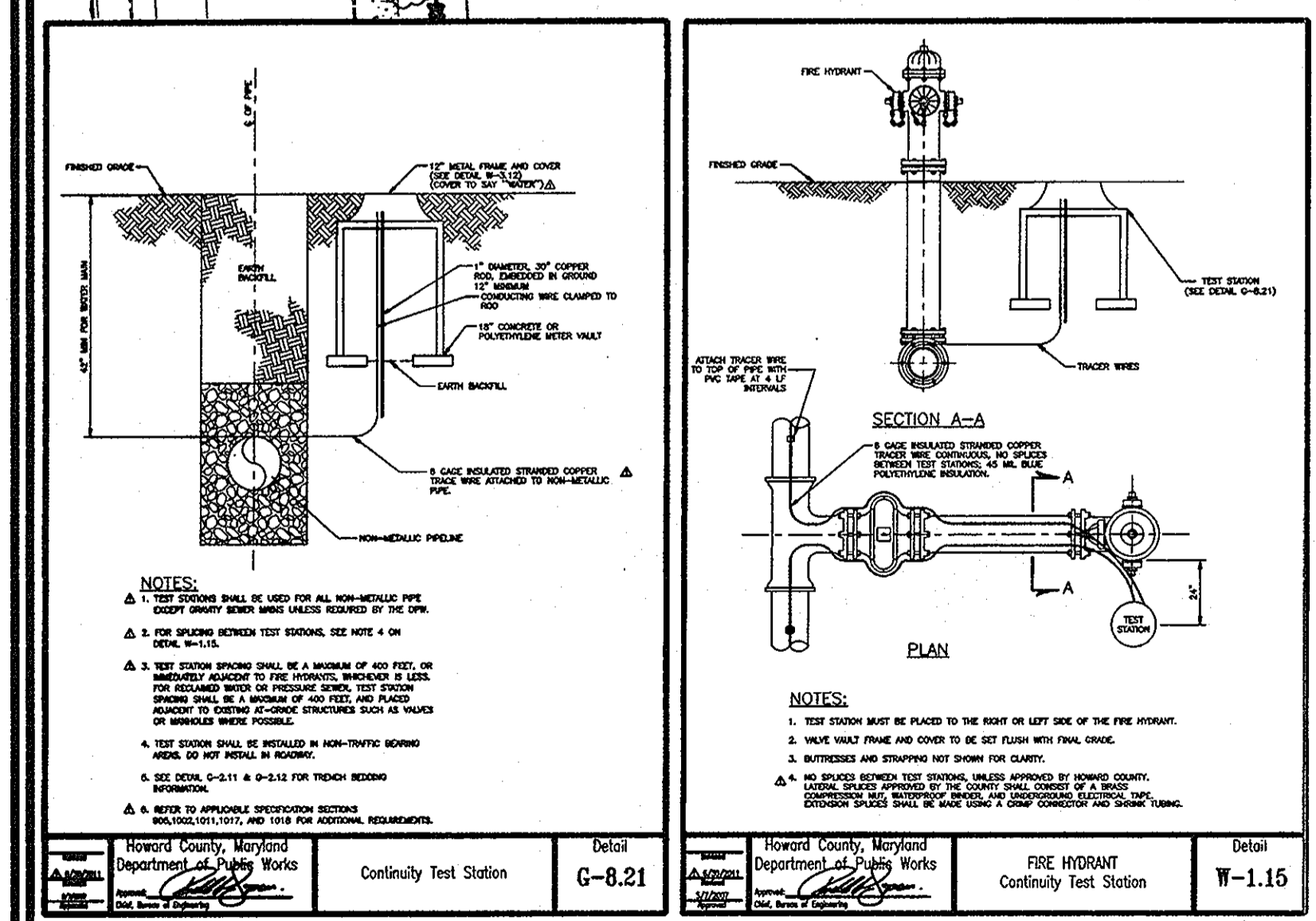
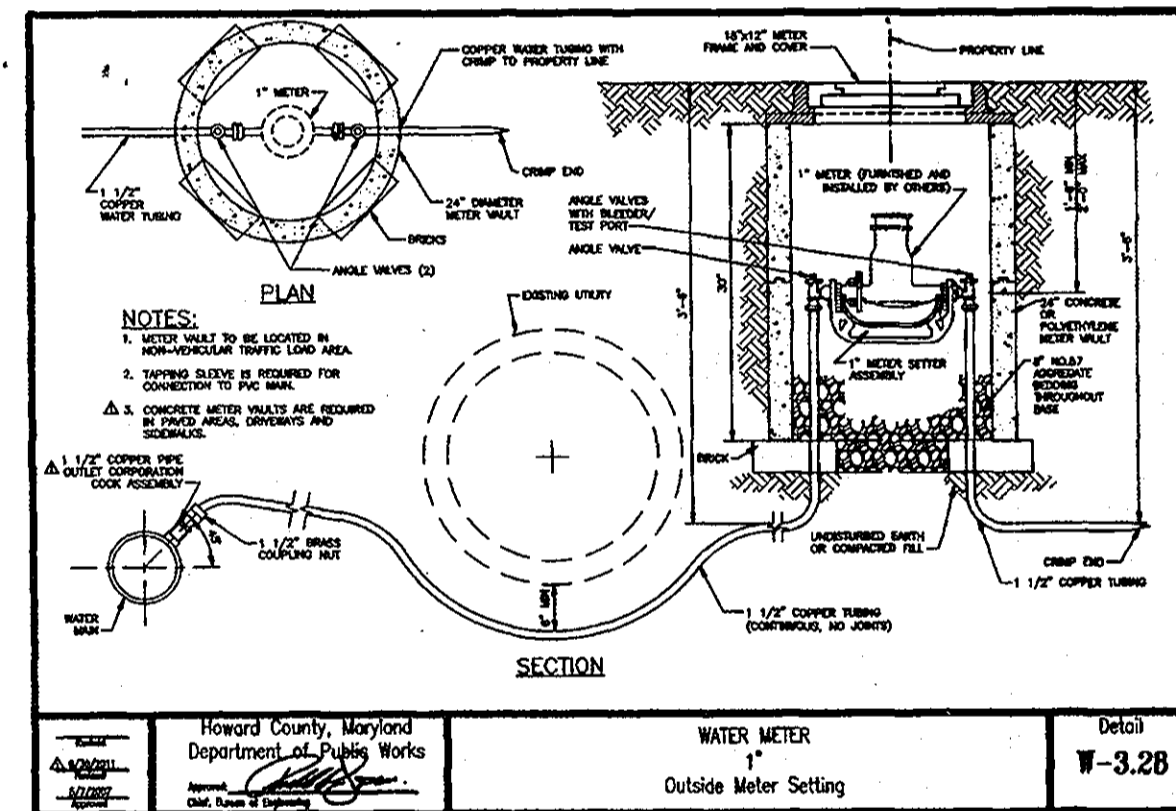
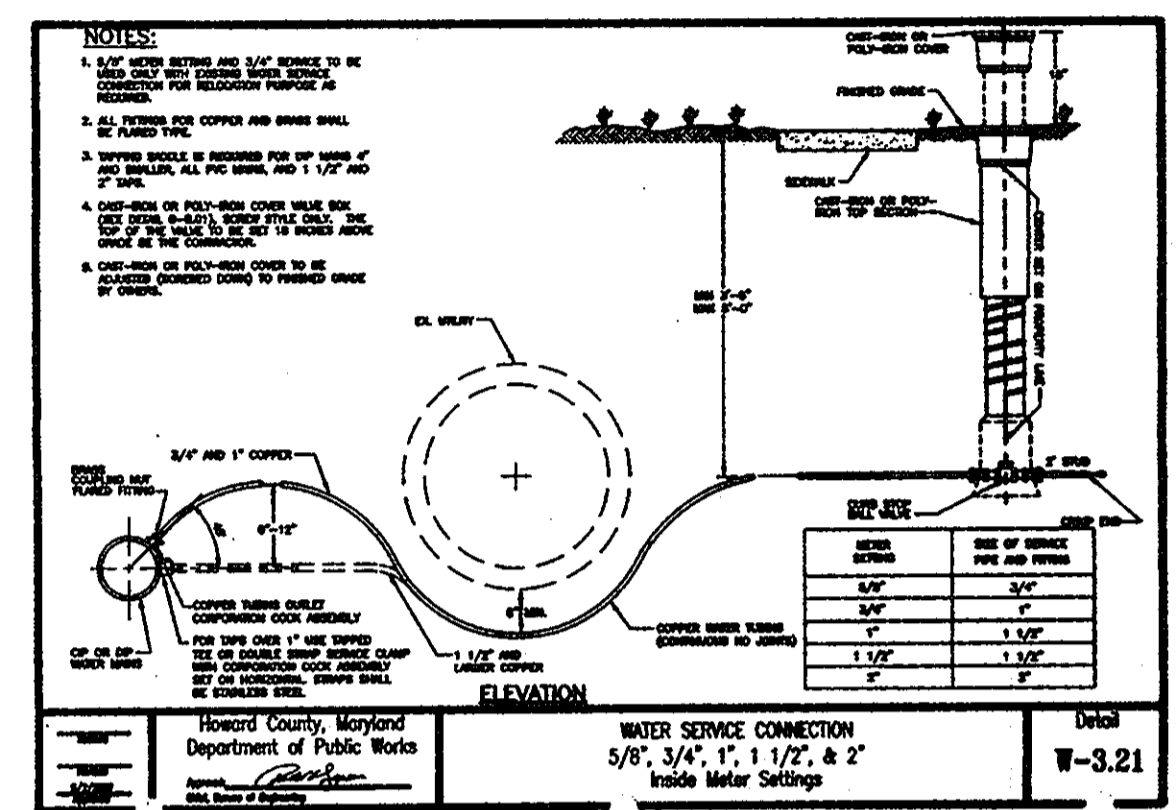
SHEET 1 OF 3

TAX MAP 43 GRID 4 AND 5 PARCEL 14
 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

600' SCALE MAP NO. 43 BLOCK NO. 4 AND 5



- NOTES:**
1. ALL TOWNHOUSE WATER CONNECTIONS SHALL BE 1-1/2" WITH 1" OUTSIDE METER SETTINGS, UNLESS OTHERWISE NOTED. REFER TO HOWARD COUNTY DETAILS W-3.28 AND W-3.32 FOR SINGLE AND TWIN OUTSIDE METER SETTINGS.
 2. THE WATER CONNECTION FOR THE MAINTENANCE BUILDING SHALL BE 1" WITH AN INSIDE METER SETTING. REFER TO HOWARD COUNTY DETAILS W-3.21.
 3. THE WATER CONNECTION FOR THE APARTMENT BUILDINGS A, B, C, AND D SHALL BE 6", WITH INSIDE METER SETTINGS. REFER TO HOWARD COUNTY DETAILS W-3.21.
 4. THE WATER CONNECTION FOR THE BUILDINGS E, F, G, AND CLUBHOUSE SHALL BE 4", WITH INSIDE METER SETTINGS. REFER TO HOWARD COUNTY DETAILS W-3.21.
 5. ABANDON EXISTING WHC'S TO 7656 WASHINGTON BOULEVARD, THE WHC SHALL BE DISCONNECTED AND PLUGGED AT THE MAIN.
 6. CONTINUITY TEST STATIONS ARE TO BE INSTALLED ADJACENT TO EVERY FIRE HYDRANT. REFER TO DETAILS G-8.21 AND W-1.15.



LAYOUT PLAN
SCALE: 1"=50'

WATER METERS CANNOT BE LOCATED WITHIN PERVIOUS CONCRETE DRIVEWAYS USED FOR STORM WATER MANAGEMENT.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION

ROBERT H. VOGEL ENGINEERS, 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.
EXPIRATION DATE: 09-27-2012

DRN: DZ DES: DZ
CHK: RHV
DATE: OCTOBER 2011

FINAL WATER CONSTRUCTION PLAN
CONTRACT 14-4699-D
LAYOUT PLAN

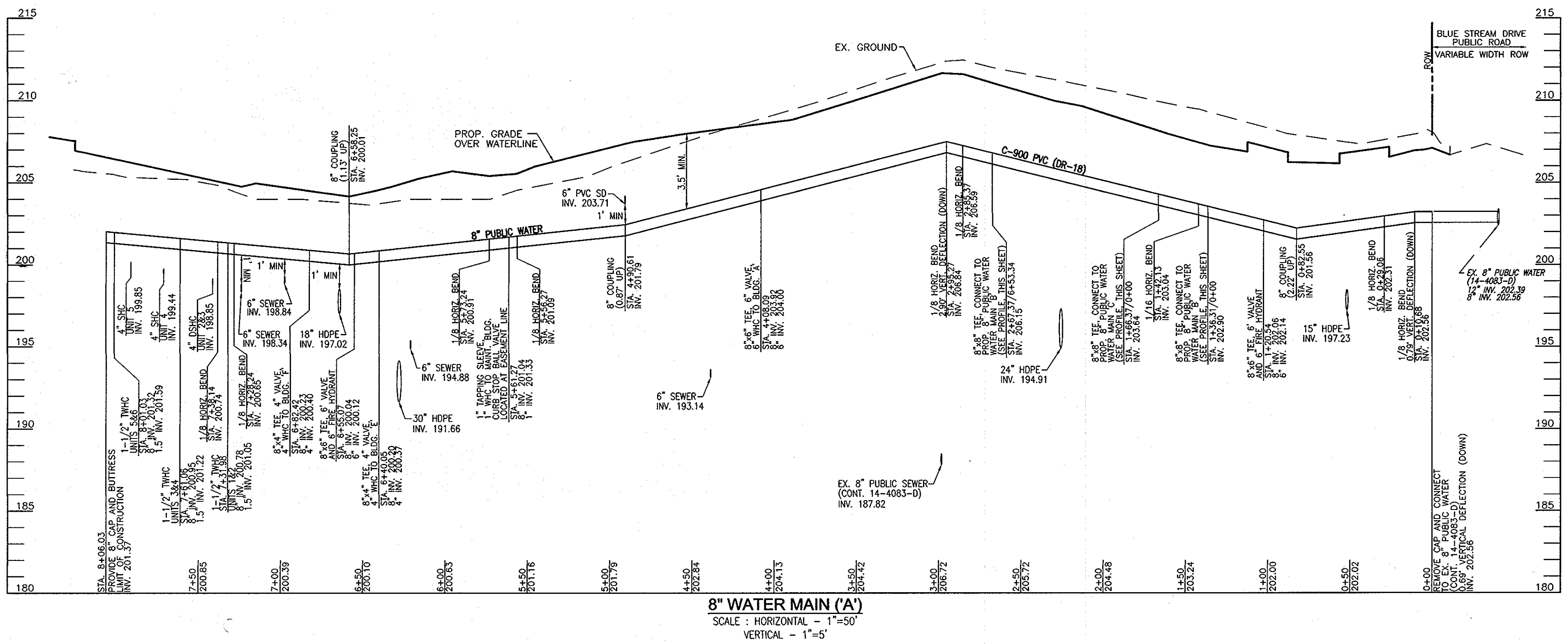
OWNER/DEVELOPER
BLUE STREAM 1, LLC.
P.O. BOX 416
ELLICOTT CITY, MD 21041
C/O: ARNOLD SAGNER
410-465-2020

GROSVENOR HOUSE
APARTMENTS A-G AND TOWNHOUSE UNITS 1-28
BUILDABLE BULK PARCEL H

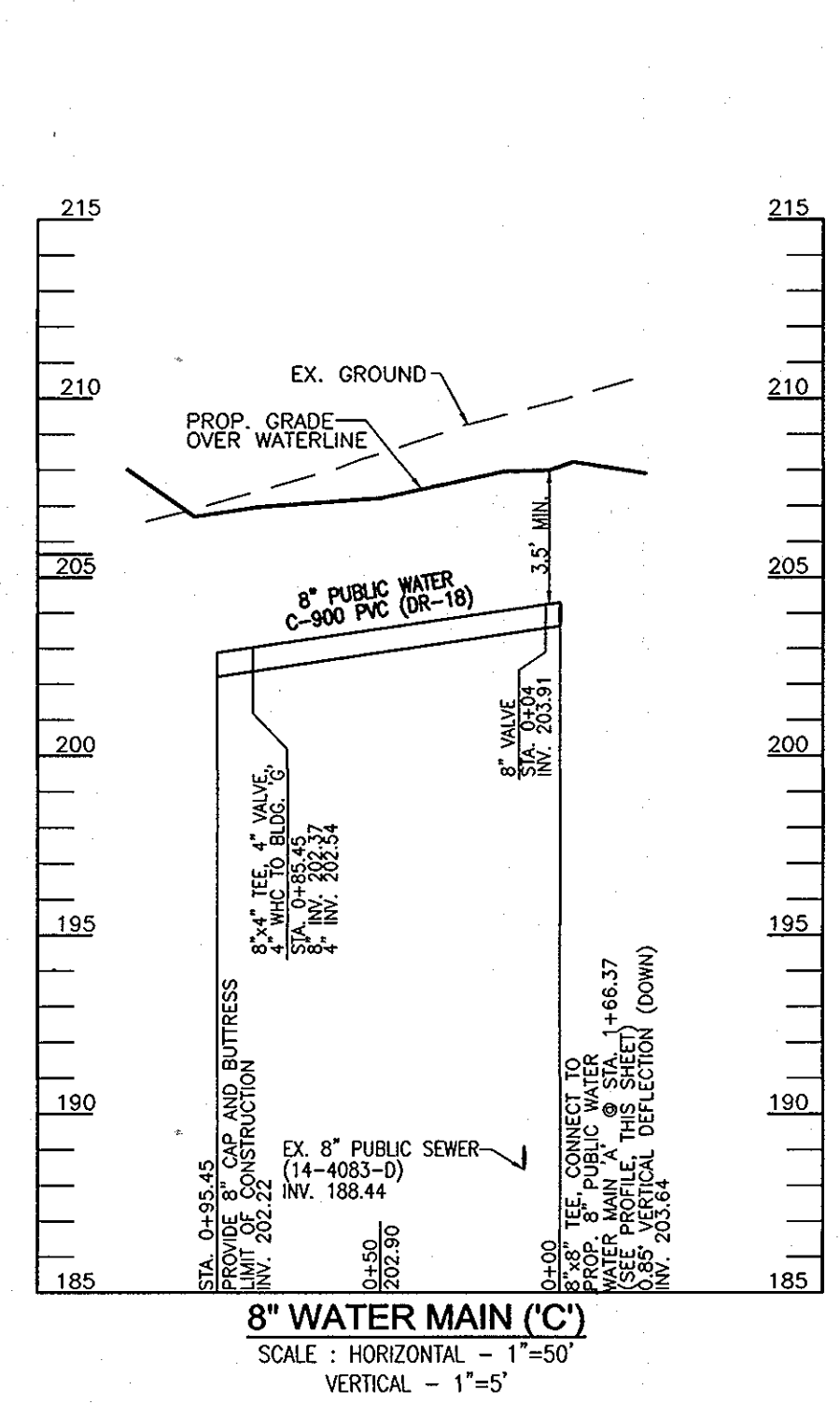
TAX MAP 43 GRID 4 AND 5
1ST ELECTION DISTRICT

PARCEL 14
HOWARD COUNTY, MARYLAND

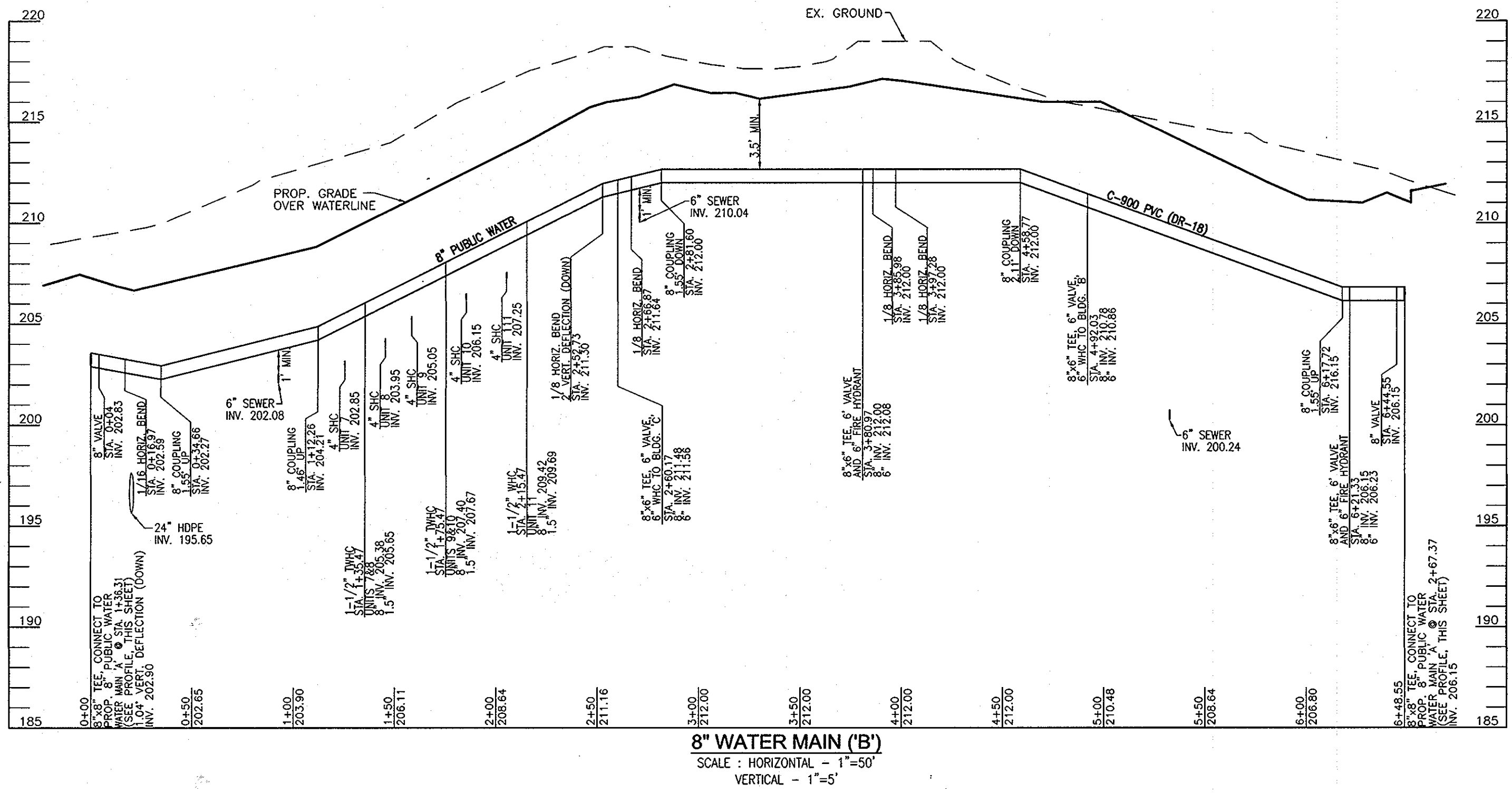
SCALE AS SHOWN
SHEET 2 OF 3



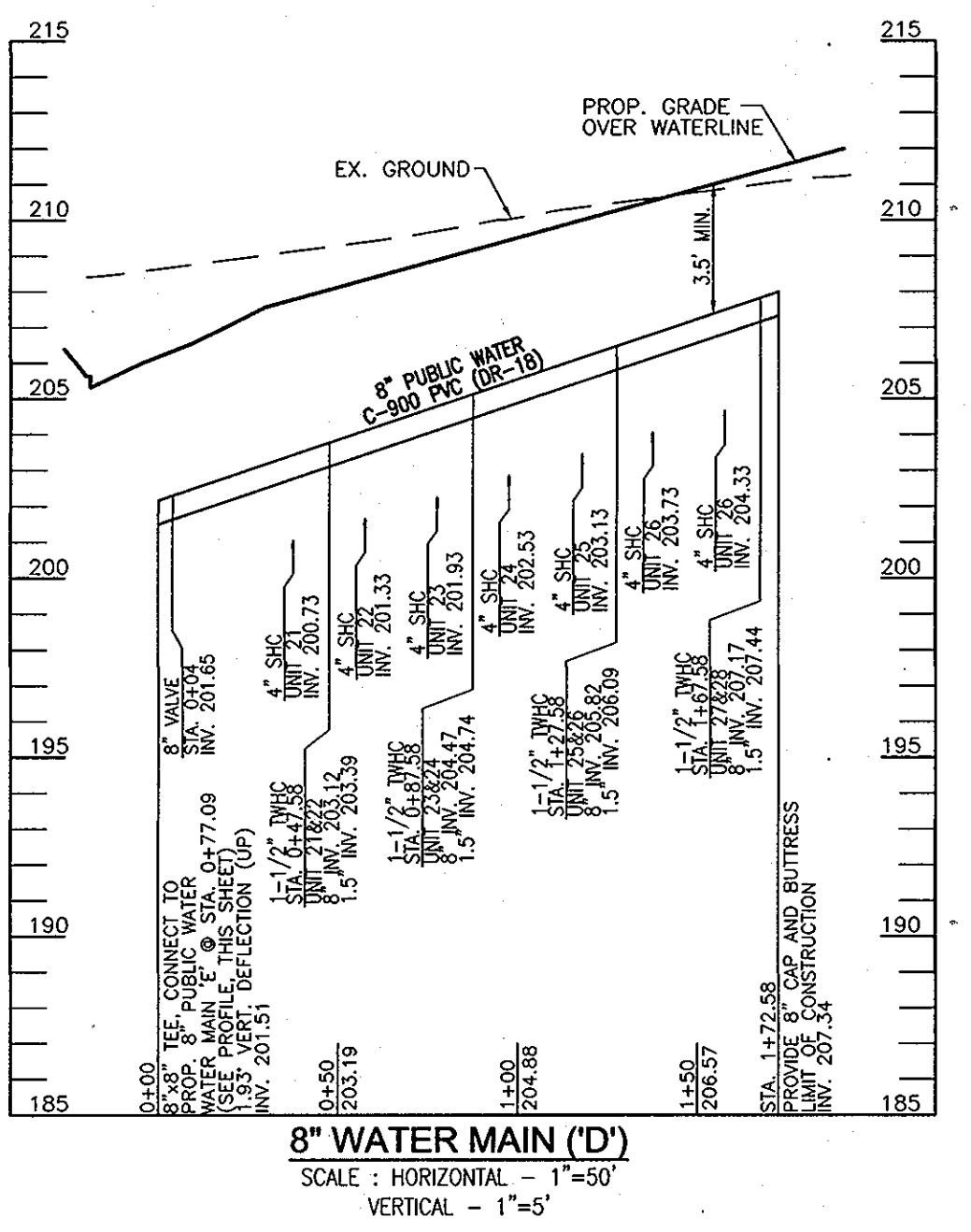
8" WATER MAIN (A)
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



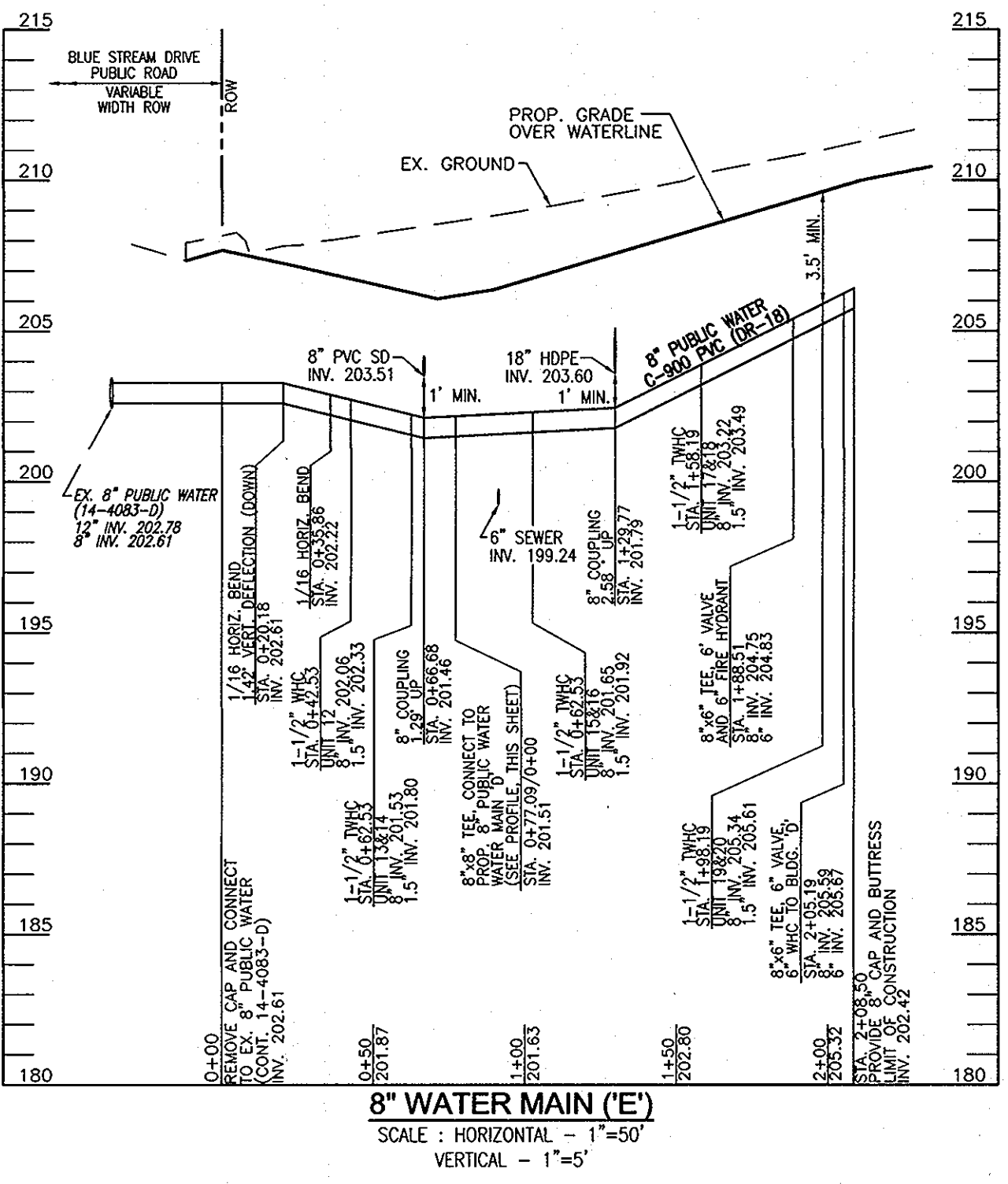
8" WATER MAIN (C)
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



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



8" WATER MAIN (D)
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



8" WATER MAIN (E)
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

WATER MAIN LOCATION CHART	
WL STA.	APPURTENANCE
PROFILE 'A'	
WL STA. 0+10.88	1/8" HB
WL STA. 0+29.06	1/8" HB
WL STA. 1+20.54	8" x 6" TEE, VALVE & FH
WL STA. 1+36.31	8" x 8" CROSS
WL STA. 1+42.13	1/16" HB
WL STA. 1+46.37	8" x 8" CROSS
WL STA. 2+47.57	8" x 8" CROSS
WL STA. 2+45.37	1/8" HB
WL STA. 2+55.27	1/8" HB
WL STA. 4+02.54	8" x 6" TEE, AND 6" VALVE, 10LF 4" WVC, 6" CAP AND BUTTRESS
WL STA. 5+56.27	1/8" HB
WL STA. 5+73.24	1/8" HB
WL STA. 6+40.05	8" x 4" TEE, AND 4" VALVE, 10LF 4" WVC, 4" CAP AND BUTTRESS
WL STA. 6+55.07	8" x 6" TEE, VALVE & FH
WL STA. 6+82.42	8" x 4" TEE, AND 4" VALVE, 10LF 4" WVC, 4" CAP AND BUTTRESS
WL STA. 7+28.24	1/8" HB
WL STA. 7+42.38	1/8" HB
WL STA. 8+07.27	8" CAP AND BUTTRESS
PROFILE 'B'	
WL STA. 0+00	8" x 8" CROSS
WL STA. 0+04	8" VALVE
WL STA. 0+27.46	1/16" HB
WL STA. 2+53.52	1/8" HB
WL STA. 2+63.79	8" x 6" TEE, AND 6" VALVE, 10LF 6" WVC, 6" CAP AND BUTTRESS
WL STA. 2+67.67	1/8" HB
WL STA. 3+45.77	8" x 6" TEE, VALVE & FH
WL STA. 3+60.78	1/8" HB
WL STA. 4+02.08	1/8" HB
WL STA. 4+89.84	8" x 6" TEE, AND 6" VALVE, 10LF 6" WVC, 6" CAP AND BUTTRESS
WL STA. 6+26.12	8" x 6" TEE, VALVE & FH
WL STA. 6+49.34	8" VALVE
WL STA. 6+53.34	8" x 8" TEE
PROFILE 'C'	
WL STA. 0+00	8" x 8" TEE
WL STA. 0+04	8" VALVE
WL STA. 1+72.58	8" CAP AND BUTTRESS
PROFILE 'D'	
WL STA. 0+00	8" x 8" TEE
WL STA. 0+04	8" VALVE
WL STA. 0+27.46	8" CAP AND BUTTRESS
PROFILE 'E'	
WL STA. 0+20.18	1/16" HB
WL STA. 0+35.86	1/16" HB
WL STA. 0+77.09	8" x 8" TEE, AND 8" VALVE
WL STA. 1+88.51	8" x 6" TEE, VALVE & FH
WL STA. 2+05.19	8" x 6" TEE, AND 6" VALVE, 10LF 6" WVC, 6" CAP AND BUTTRESS
WL STA. 2+08.50	8" CAP AND BUTTRESS

OWNER/DEVELOPER
BLUE STREAM 1, LLC.
P.O. BOX 416
ELLCOTT CITY, MD 21041
C/O: ARNOLD SAGNER
410-465-2020

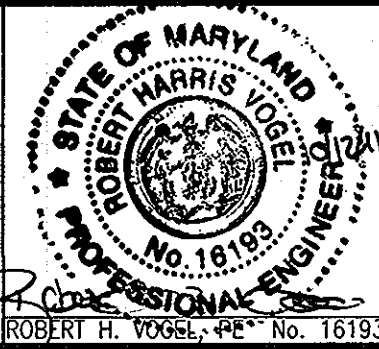
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Silvia C. Green
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

William A. Brown
CHIEF, DEVELOPMENT ENGINEERING DIVISION

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLCOTT 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. EXPIRES 09-27-2012	DRN: DZ DES: DZ
CHK: RHV	DATE: OCTOBER 2011
BY NO.	REVISION
DATE	DATE
600' SCALE MAP NO. 43	BLOCK NO. 4 AND 5

FINAL WATER CONSTRUCTION PLAN
CONTRACT 14-4699-D
WATER PROFILES

GROSVENOR HOUSE
APARTMENTS A-G AND TOWNHOUSE UNITS 1-28
BUILDABLE BULK PARCEL H

TAX MAP 43 GRID 4 AND 5
1ST ELECTION DISTRICT
PARCEL 14
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 3 OF 3