


**GENERAL NOTES**

**PART I**

- 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.
- TOPOGRAPHY SHOWN HEREON IS OBTAINED FROM AERIAL PHOTOGRAMMETRY COMPILED BY POTOMAC AERIAL SURVEYS INC. JANUARY 12, 2012.
- THE PROPERTY OUTLINE SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING INC., DATED FEBRUARY 2012.
- THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM MAD '83'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 47H2 AND 47GC. ALL VERTICAL CONTROLS ARE BASED ON (NAVD' 88). VERTICAL CONTROLS PROVIDED ON DRAWINGS ARE:  
 GEODETIC SURVEY CONTROL 47H2 (N 529706.4221 E 1355445.3364)  
 BRASS DISC SET ON TOP OF A CONCRETE MONUMENT.  
 GEODETIC SURVEY CONTROL 47GC (N 528939.7281 E 1354223.5536)  
 BRASS DISC SET ON TOP OF A CONCRETE MONUMENT.
- 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 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 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 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 THESE PLANS:  
 AT&T 1-800-252-1133  
 BCE (CONSTRUCTION SERVICES) 410-637-8713  
 BCE (EMERGENCY) 410-685-0123  
 BUREAU OF UTILITIES 410-313-4300  
 COLONIAL PIPELINE COMPANY 410-395-1390  
 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(g) OF THE HOWARD COUNTY CODE.

**PART II - WATER**

- ALL WATER MAINS TO BE C-900 PVC (DR-18) UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO 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 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 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 ANWA 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 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 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 ANWA 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 ANWA C900 AND SHALL BE MULTI FITTINGS (PEX) BLUE BRUTE DR18 OR EQUAL.

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

*John P. Rantan*  
 SOIL CONSERVATION DISTRICT

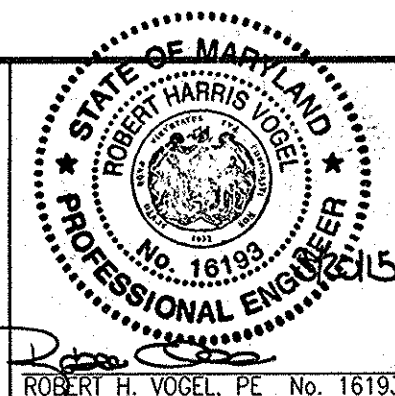
*11/6/15*  
 DATE

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND WITH FINAL PLAN F-14-023.

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*Shirley Green* 4/21/15  
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND  
*Chad Egan* 4/21/15  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 CITY 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.  
 EXPIRATION DATE: 09-27-2018  
 DRN: JMR/KG DES: EDS  
 CHK: RHV  
 DATE: MARCH 2015

|     |     |               |          |
|-----|-----|---------------|----------|
| BY  | NO. | REVISION      | DATE     |
| CLS | 1   | KCI AS-BUILTS | 10-26-15 |

**FINAL WATER AND SEWER PLAN  
 CONTRACT 24-4909-D  
 COVER SHEET**

**HIGH RIDGE MEADOWS-SECTION 2-PHASE 2**  
 LOTS 69-81 (SFD RESIDENTIAL), 96-115 AND 126-143 (SFA RESIDENTIAL),  
 AND OPEN SPACE LOTS 144 AND 147  
 OLD SCAGGSVILLE ROAD  
 PARCELS 363  
 HOWARD COUNTY, MD

SCALE AS SHOWN

SHEET 1 OF 4

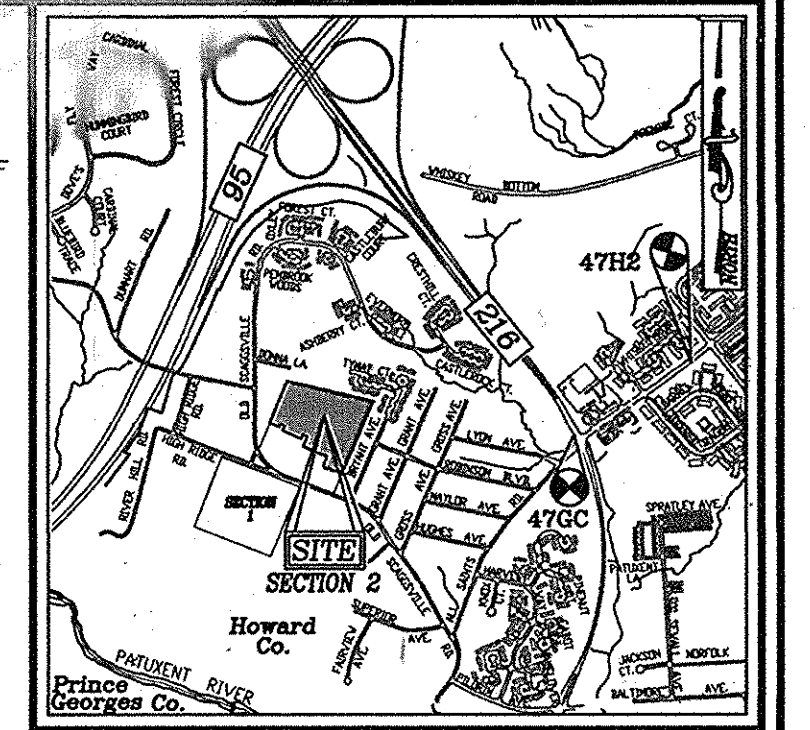
TAX MAP 50 GRID 1  
 6TH ELECTION DISTRICT

ZONING R-SC  
 PARCELS: 363  
 HOWARD COUNTY, MARYLAND

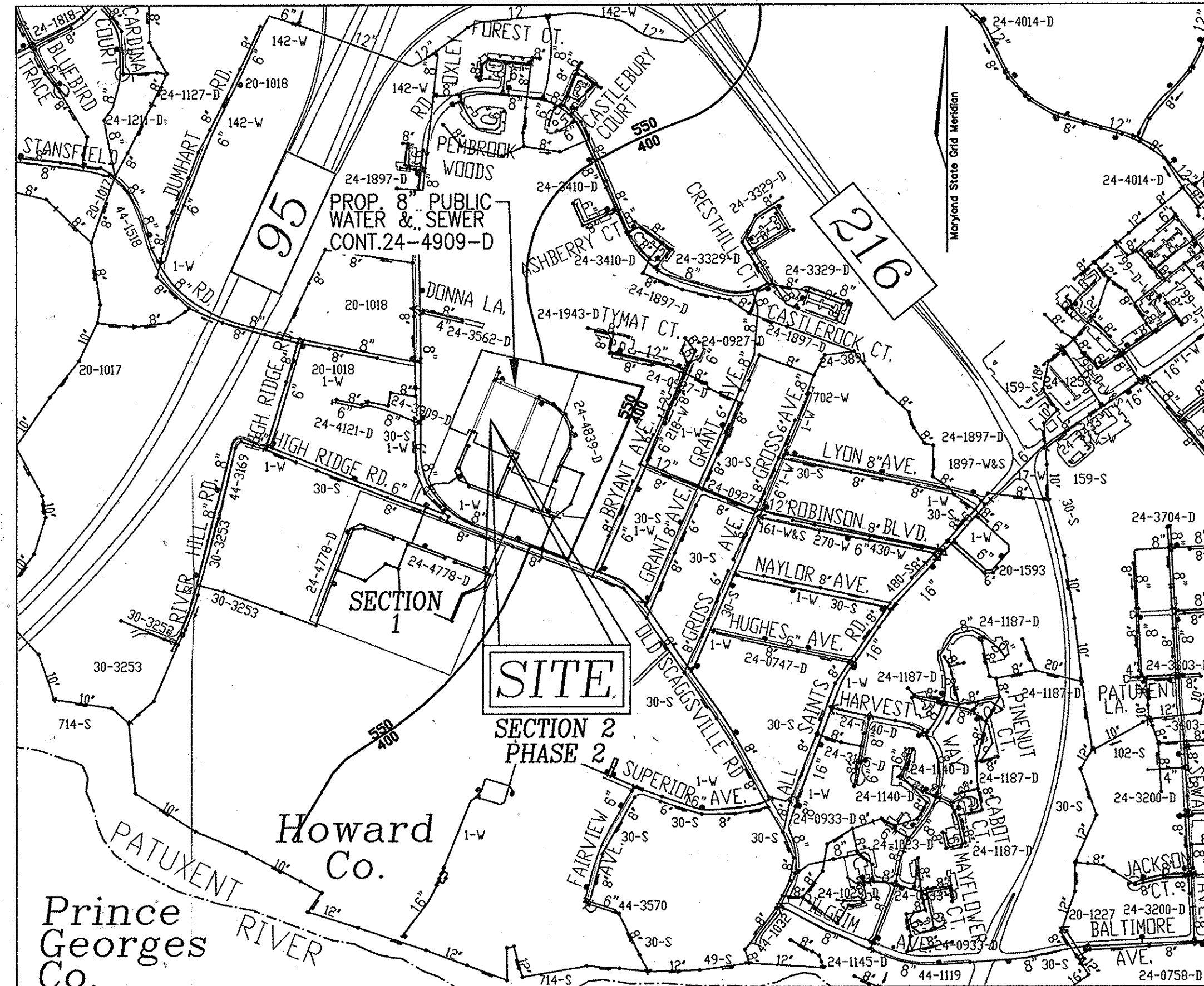
**FINAL WATER AND SEWER PLAN  
 HIGH RIDGE MEADOWS-SECTION 2-PHASE 2  
 LOTS 69-81 (SFD RESIDENTIAL), 96-115 AND 126-143 (SFA RESIDENTIAL),  
 AND OPEN SPACE LOTS 144 AND 147  
 OLD SCAGGSVILLE ROAD  
 PARCELS 363  
 HOWARD COUNTY, MARYLAND  
 CONTRACT 24-4909-D**

**BENCHMARKS**

HOWARD COUNTY BENCHMARK 47H2 (CONC. MON.)  
 N 529706.4221 E 1355445.3364 ELEV. 256.068  
 LOCATION: ALL SAINTS ROAD, 240' +/- SOUTH OF NORTH LAUREL ROAD 2.89 FEET FROM STORM DRAIN INLET; 1' EAST OF CURB, 0.6 BELOW SURFACE  
 HOWARD COUNTY BENCHMARK 47GC (CONC. MON.)  
 N 528939.7281 E 1354223.5536 ELEV. 226.272  
 LOCATION: MEDIUM ISLAND 29 FEET WEST OF ALL SAINTS RD RT 216 INTERSECTION; 1.4 FEET WEST OF SOUTHWEST INLET CORNER



**LOCATION MAP**  
 SCALE: 1"=2,000'  
 ADC MAP COORDINATE: 5169 C2



**VICINITY MAP**  
 SCALE: 1"=600'

|                |     |
|----------------|-----|
| WATER ZONE:    | 550 |
| TEST GRADIENT: | 700 |

|   |                       |
|---|-----------------------|
| TYPE OF BUILDING :                      | SFD & SFA RESIDENTIAL |
| NO. OF BUILDABLE LOTS :                 | 51                    |
| NO. OF OPEN SPACE LOTS :                | 2                     |
| NO. OF SINGLE WATER HOUSE CONNECTIONS : | 23                    |
| NO. OF TWIN WATER HOUSE CONNECTIONS :   | 14                    |
| NO. OF SEWER HOUSE CONNECTIONS :        | 23                    |
| NO. OF TWIN SEWER HOUSE CONNECTIONS :   | 14                    |
| SEWER SHED :                            | PATUXENT RIVER        |
| TREATMENT PLANT :                       | PATUXENT              |

**PART II - WATER CONTINUED**

- WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF ANWA 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 EBBA IRON INC. OR APPROVED EQUAL.
- SPRINKLER SYSTEM 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. SPRINKLER SYSTEMS FOR SINGLE RESIDENTIAL DWELLINGS SHALL HAVE A MINIMUM OF 1.5" SERVICE CONNECTION WITH A 1" OUTSIDE METER SETTING.

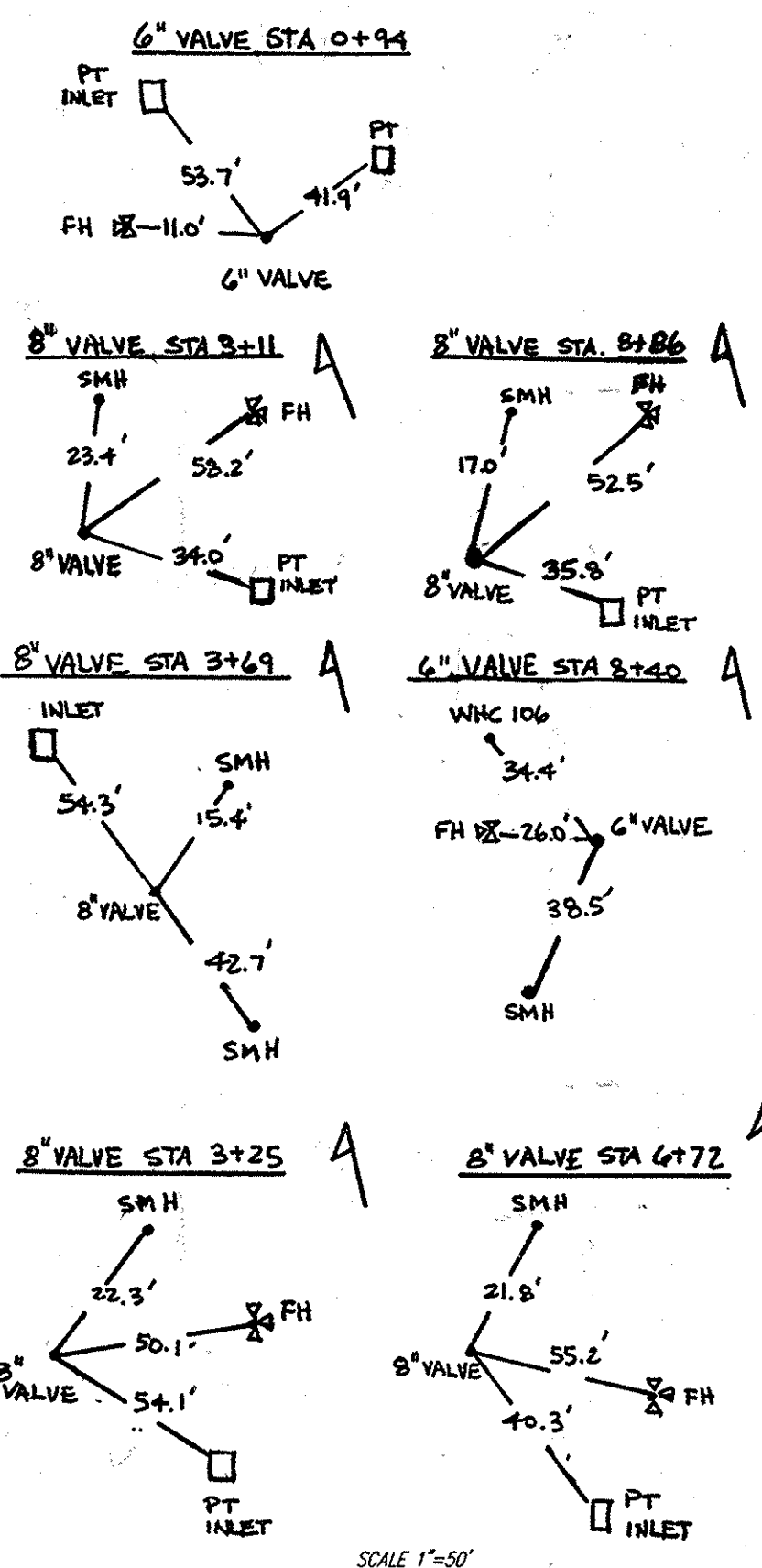
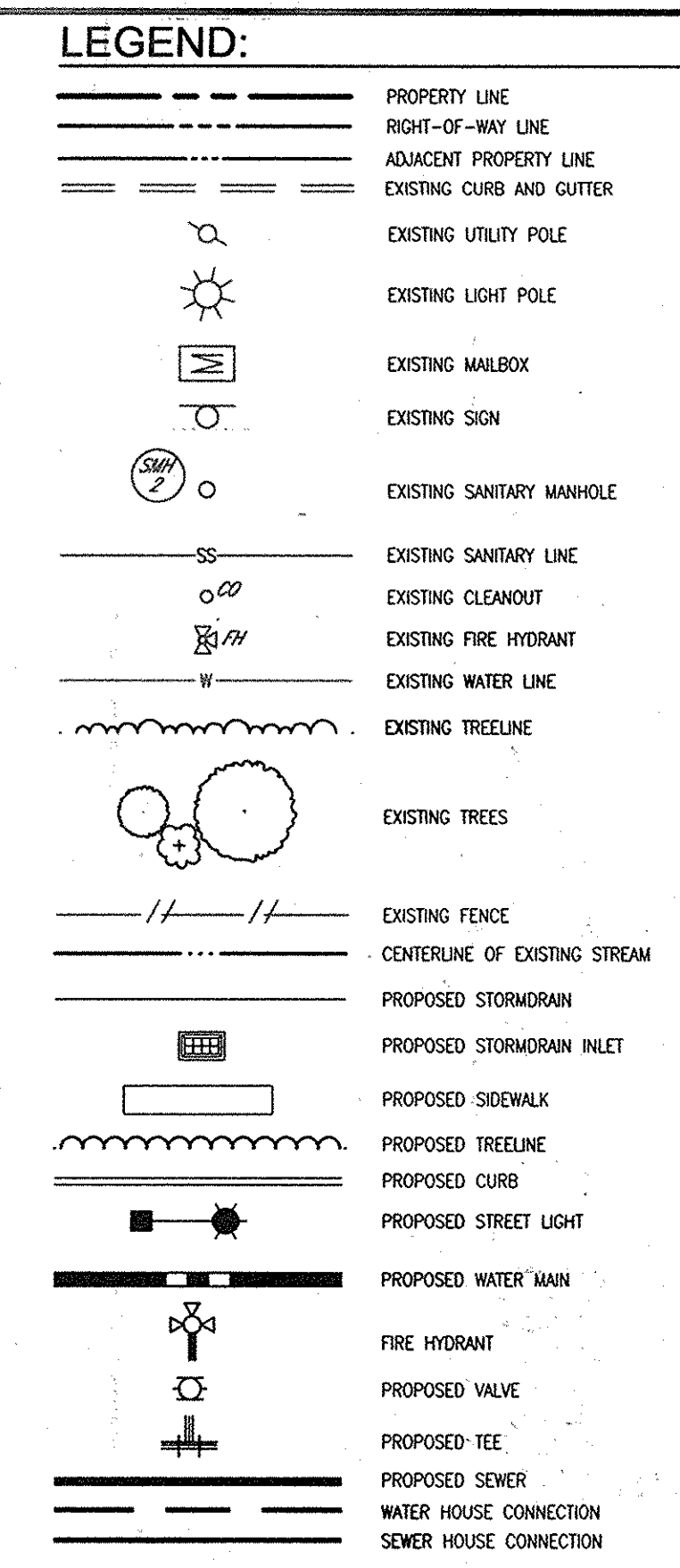
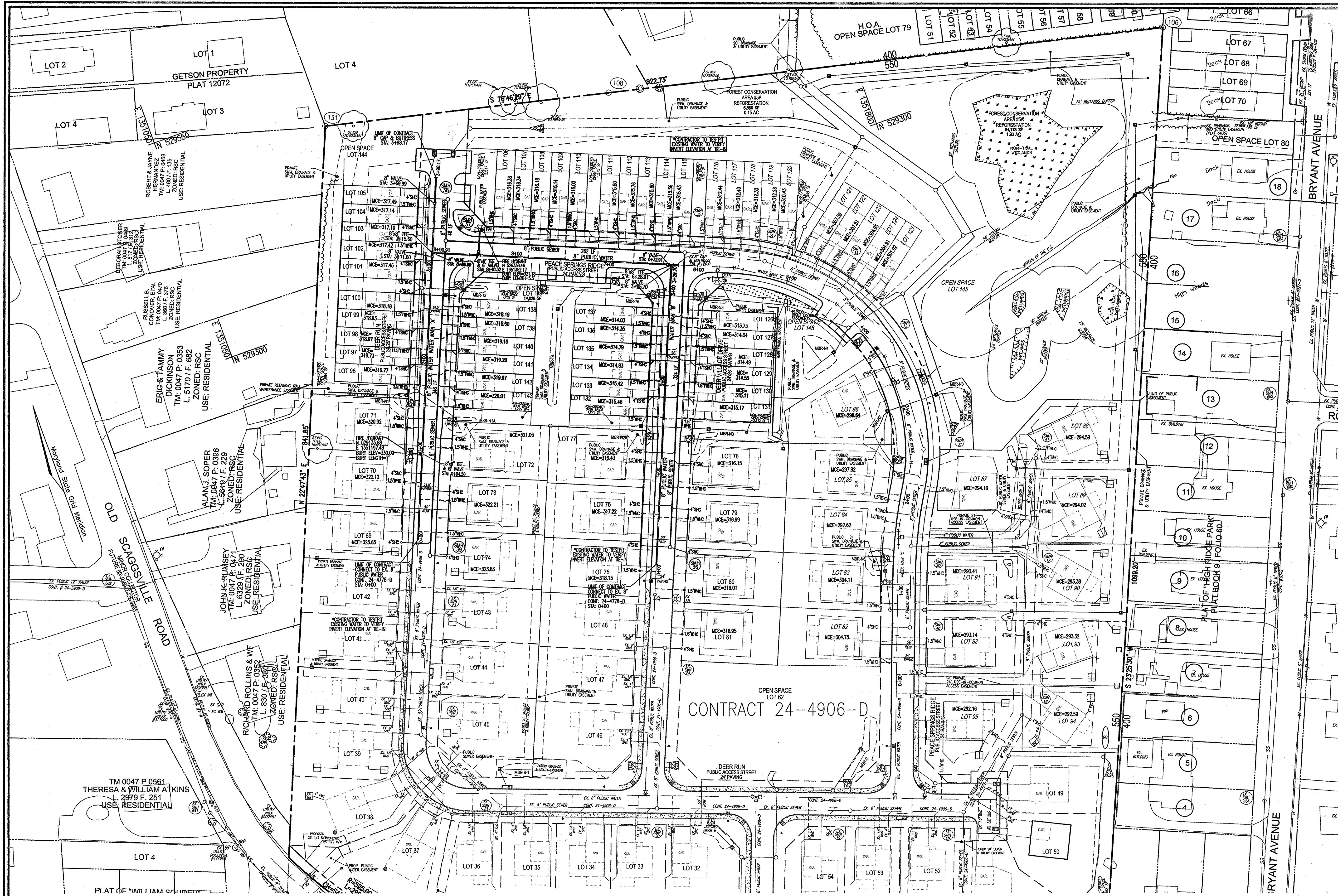
**PART III - SEWER**

- 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.I. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL 05.52. 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.

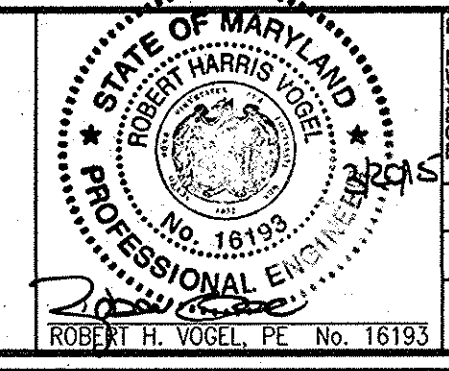
**QUANTITIES**

| NAME OF UTILITY CONTRACTOR : <b>GAINES &amp; CO.</b> |                      |            |              |                              |
|--|----------------------|------------|--------------|------------------------------|
| SURVEY AND DRAFTING DIVISION AS-BUILT DATE :         |                      |            |              |                              |
| ITEMS  | QUANTITIES ESTIMATED | AS-BUILT   |              |                              |
|  |                      | QUANTITIES | TYPE         | MANUFACTURER/SUPPLIER        |
| <b>WATER</b>   |                      |            |              |                              |
| 8" WATER (C-900 PVC) (DR-18)                         | 999 LF               | 999 LF     | C-400 DR18   | US PIPE GRIFFIN              |
| 6" WATER (C-900 PVC) (DR-18)                         | 33.57 LF             | 24 LF      | C-400 DR18   | US PIPE GRIFFIN              |
| 1.5" WHC   | 955.86 LF            | 954 LF     | COPPER       | CAMBRIDGE LE                 |
| 8"x8" TEE  | 2 EA                 | 2 EA       | MJ EPOXY     | STAR PIPE                    |
| 8"x6" TEE  | 2 EA                 | 2 EA       | MJ EPOXY     | STAR PIPE                    |
| 8" VALVE   | 5 EA                 | 5 EA       | GATE VALVE   | KENNEDY                      |
| 8" VALVE   | 2 EA                 | 2 EA       | GATE VALVE   | KENNEDY                      |
| FIRE HYDRANT   | 2 EA                 | 2 EA       | FIRE HYDRANT | KENANEY                      |
| 8" VERTICAL COUPLING                                 | 4 EA                 | 4 EA       | ELECTION     | CERTAINTEED                  |
| 1/32 VERTICAL BEND                                   | 2 EA                 | 2 EA       | MJ EPOXY     | STAR PIPE                    |
| 8" CAP AND BUTTRESS                                  | 1 EA                 | 1 EA       | MJ EPOXY     | STAR PIPE                    |
| <b>SEWER</b>   |                      |            |              |                              |
| 8" PVC SEWER   | 1,067 LF             | 1,067 LF   | SDR 35       | NORTH AMERICAN NATIONAL PIPE |
| 4" SHC   | 610.39 LF            | 610 LF     | SD R 35      | NORTH AMERICAN NATIONAL PIPE |
| MANHOLES   | 4 EA                 | 4 EA       | CONCRETE     | CONCRETE PIPE & PRECAST      |

**OWNER/DEVELOPER**  
 BEAZER HOMES CORPORATION  
 8805 GUILFORD ROAD  
 COLUMBIA, MARYLAND 21046  
 ATTN: MR. EDWARD W. GOLD  
 DIVISION PRESIDENT  
 410-381-3222



LAYOUT PLAN  
SCALE: 1"=50'



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 PROVISIONS OF THE STATE ENGINEERING ACT OF 1916.  
 EXPIRATION DATE: 09-27-2018  
 DRN: JMR/KG DES: EDS  
 CHK: RHV  
 DATE: MARCH 2015

| NO. | REVISION      | DATE  |
|-----|---------------|-------|
| 1   | KCI AS-BUILTS | 02-15 |

**FINAL WATER AND SEWER PLAN**  
**CONTRACT 24-4909-D**  
**LAYOUT PLAN**  
 600' SCALE MAP NO. 50  
 BLOCK NO. 1

**HIGH RIDGE MEADOWS-SECTION 2-PHASE 2**  
 LOTS 69-81 (SFD RESIDENTIAL), 96-115 AND 126-143 (SFA RESIDENTIAL),  
 AND OPEN SPACE LOTS 144 AND 147  
 OLD SCAGGSVILLE ROAD  
 PARCELS 363  
 HOWARD COUNTY, MD  
 ZONING R-SC PARCELS: 363  
 HOWARD COUNTY, MARYLAND

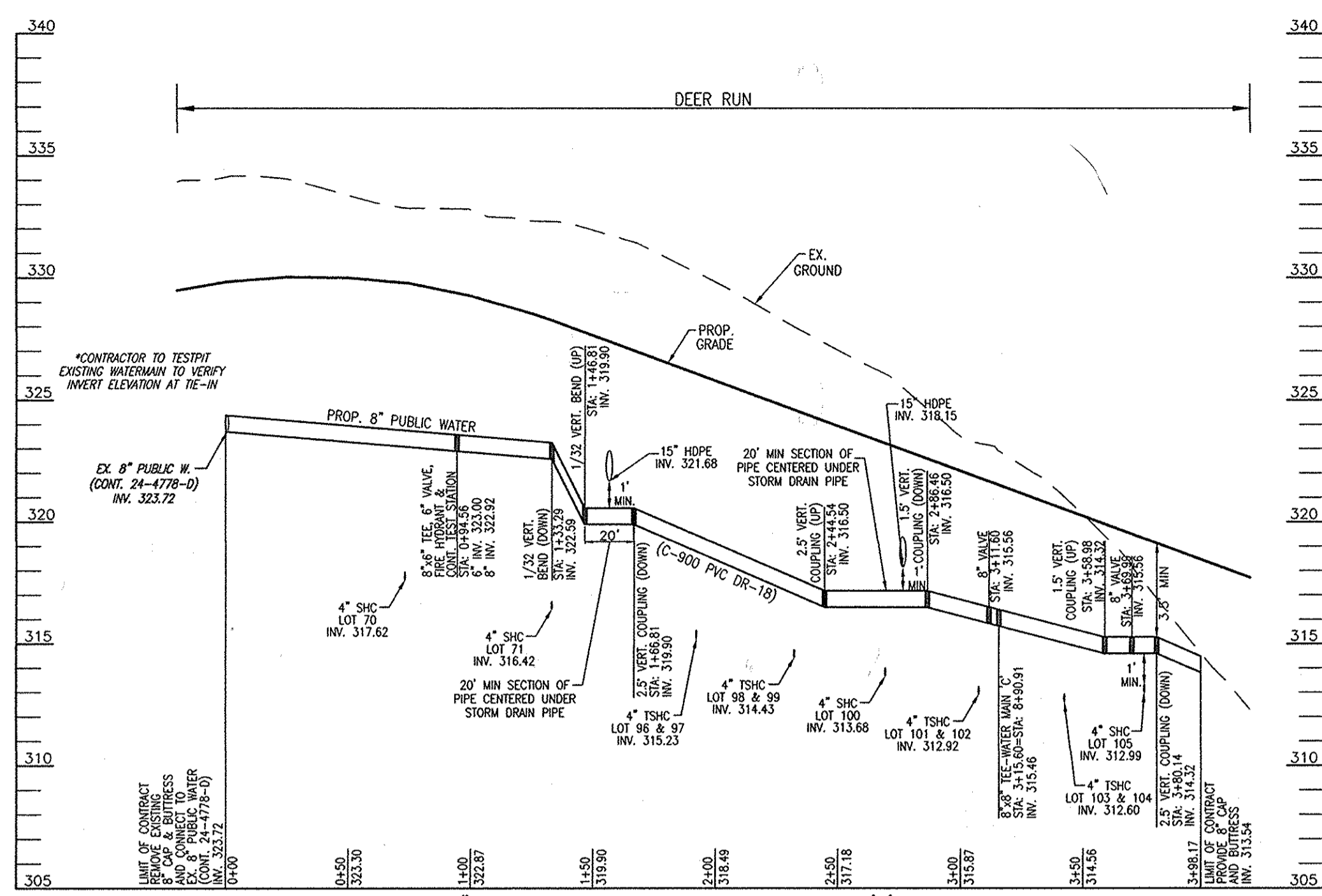
OWNER/DEVELOPER  
 BEAZER HOMES CORPORATION  
 8965 GUILFORD ROAD  
 COLUMBIA, MARYLAND 21046  
 ATTN: MR. EDWARD W. GOLD  
 DIVISION: PRESIDENT  
 410-381-3222

SCALE AS SHOWN  
 SHEET 2 OF 4

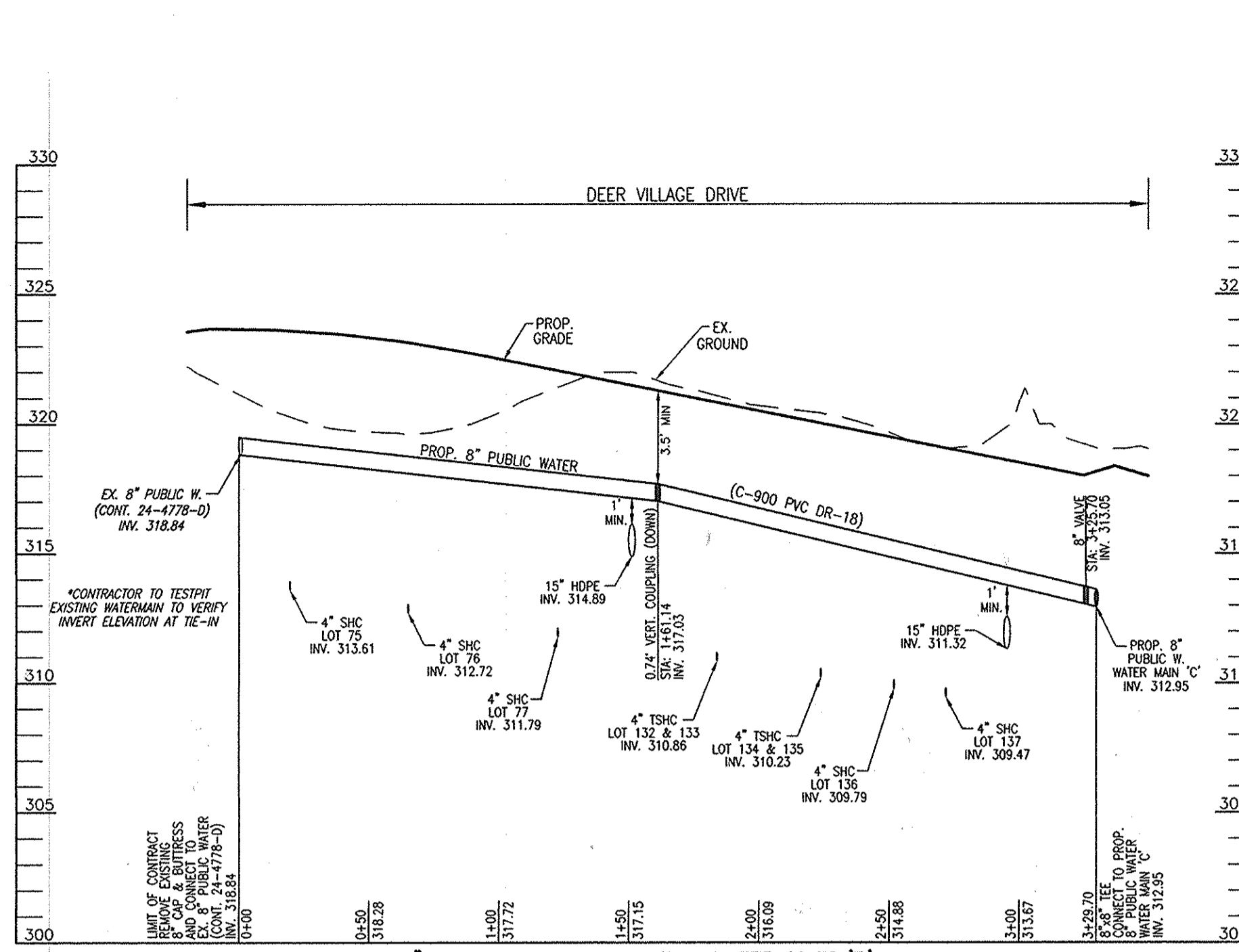
DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 CHIEF, BUREAU OF UTILITIES  
 DATE: 4/2/15

DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 4/24/15

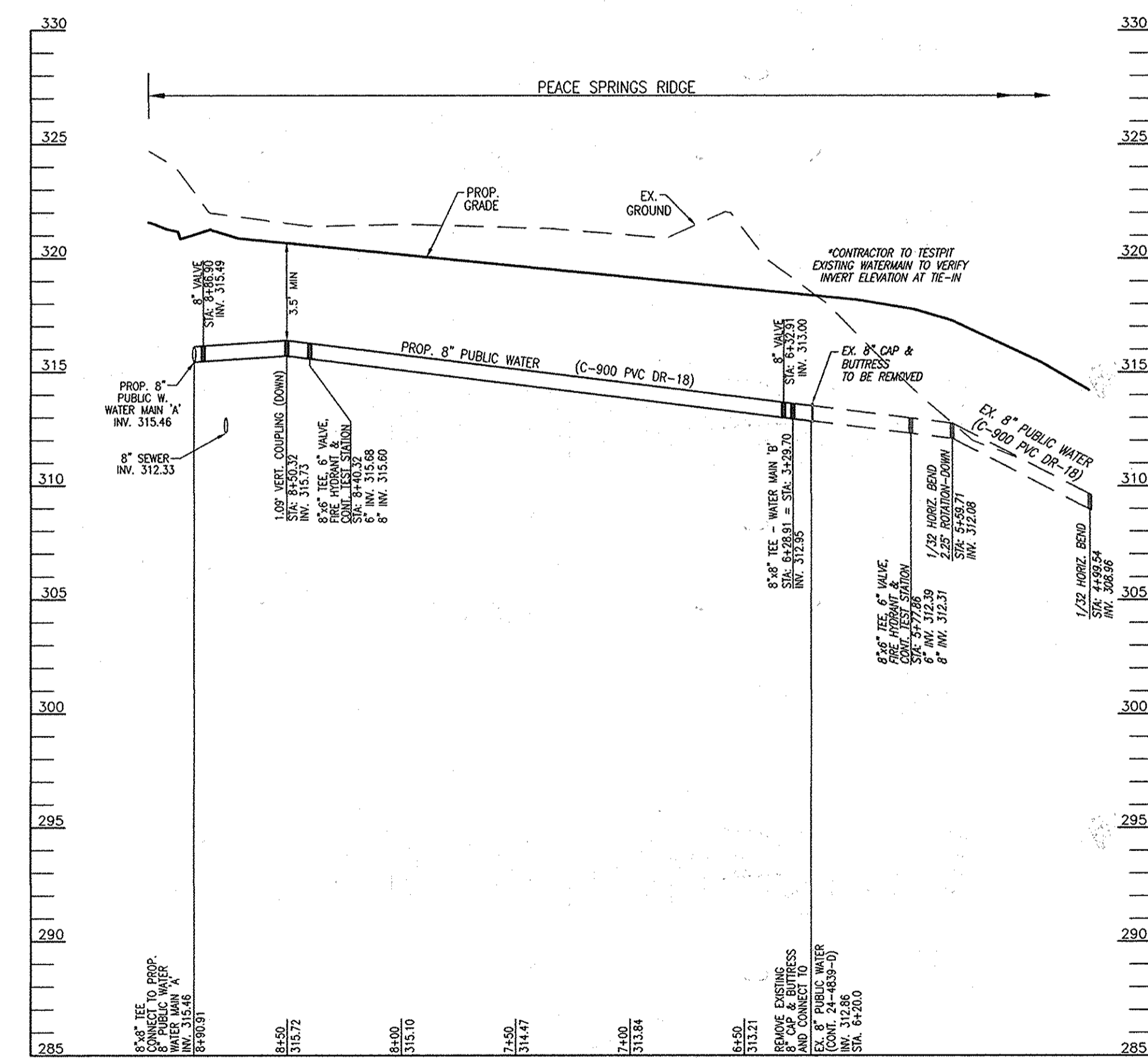
**ROBERT H. VOGEL, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET  
 ELLICOTT CITY, MD 21043  
 TEL: 410.461.7666  
 FAX: 410.461.8961



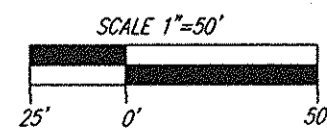
8" PUBLIC WATER PROFILE - WATER MAIN 'A'  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



8" PUBLIC WATER PROFILE - WATER MAIN 'B'  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



8" PUBLIC WATER PROFILE - WATER MAIN 'C'  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



| WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE |         |                      |                      |
|--|---------|----------------------|----------------------|
| LOT #  | ADDRESS | LOCATION DIMENSION 1 | LOCATION DIMENSION 2 |
| 69   |         | 56.3' TO SDMH        | 55.2' TO SMH         |
| 70   |         | 31.2' TO FH          | 35.2' TO 6" VALVE    |
| 71   |         | 30.5' TO FH          | 33.9' TO 6" VALVE    |
| 72   |         | 45.0' TO FH          | 7.2' TO SHC 72       |
| 73   |         | 58.2' TO 6" VALVE    | 8.8' TO SHC 73       |
| 74   |         | 31.7' TO SMH         | 24.3' TO SHC 74      |
| 75   |         | 47.7' TO FH          | 41.3' TO SMH         |
| 76   |         | 36.5' TO SHC 75      | 47.4' TO SMH         |
| 77   |         | 19.6' TO PT INLET    | 40.3' TO PT INLET    |
| 78   |         | 25.2' TO SHC 78      | 27.6' TO SHC 79      |
| 79   |         | 8.5' TO SHC 79       | 38.5' TO SMH         |
| 80   |         | 44.1' TO SMH         | 16.3' TO FH          |
| 81   |         | 25.6' TO SMH         | 40.4' TO FH          |
| 96   |         | 9.9' TO SDMH         | 75.7' TO FH          |
| 97   |         | 47.3' TO SDMH        | 19.6' TO SHC 98      |
| 98   |         | 47.3' TO SDMH        | 19.6' TO SHC 98      |
| 99   |         | 18.6' TO SHC 99      | 19.9' TO SHC 100     |
| 100  |         | 18.6' TO SHC 99      | 19.9' TO SHC 100     |
| 101  |         | 15.7' TO SDMH        | 29.5' TO 8" VALVE    |
| 102  |         | 33.1' TO SMH         | 23.0' TO 8" VALVE    |
| 103  |         | 33.1' TO SMH         | 23.0' TO 8" VALVE    |
| 104  |         | 32.4' TO SMH         | 24.6' TO SDMH        |
| 105  |         | 32.4' TO SMH         | 24.6' TO SDMH        |
| 106  |         | 15.2' TO FH          | 33.0' TO 6" VALVE    |
| 107  |         | 56.2' TO FH          | 63.4' TO 6" VALVE    |
| 108  |         | 56.2' TO FH          | 63.4' TO 6" VALVE    |
| 109  |         | 30.8' TO INLET       | 53.3' TO SDMH        |
| 110  |         | 13.5' TO INLET       | 49.3' TO SDMH        |
| 111  |         | 16.2' TO INLET       | 48.8' TO SDMH        |
| 112  |         | 16.2' TO INLET       | 48.8' TO SDMH        |
| 113  |         | 31.7' TO 8" VALVE    | 22.4' TO SMH         |
| 114  |         | 31.7' TO 8" VALVE    | 22.4' TO SMH         |
| 115  |         | 31.4' TO PT INLET    | 49.2' TO PT INLET    |
| 122  |         | 51.3' TO PT INLET    | 64.0' TO PT INLET    |
| 128  |         | 51.3' TO PT INLET    | 64.0' TO PT INLET    |
| 129  |         | 16.5' TO SHC 131     | 27.0' TO SHC 129     |
| 130  |         | 16.5' TO SHC 131     | 27.0' TO SHC 129     |
| 131  |         | 23.3' TO PT INLET    | 41.9' TO PT INLET    |
| 132  |         | 19.7' TO SHC 133     | 20.3' TO PT INLET    |
| 133  |         | 18.1' TO SHC 134     | 18.2' TO SHC 133     |
| 134  |         | 18.1' TO SHC 134     | 18.2' TO SHC 133     |
| 135  |         | 51.7' TO PT INLET    | 62.6' TO PT INLET    |
| 136  |         | 51.7' TO PT INLET    | 62.6' TO PT INLET    |
| 137  |         | 33.5' TO PT INLET    | 49.1' TO PT INLET    |

PUBLIC WATER MAIN LOCATION CHART

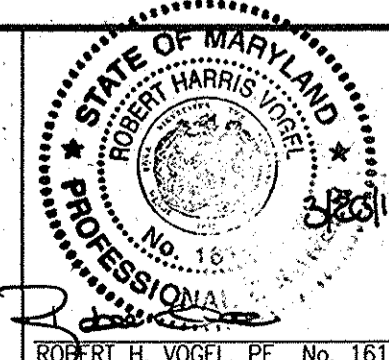
| STA.           | FITTING                               |
|----------------|---------------------------------------|
| WATER MAIN 'A' |                                       |
| 0+00           | CONNECT TO EX. 8" PUBLIC WATER        |
| 0+94.56        | 8"x6" TEE, 6" VALVE, AND FIRE HYDRANT |
| 1+33.29        | 1/32" VERTICAL BEND (DOWN)            |
| 1+46.81        | 1/32" VERTICAL BEND (UP)              |
| 1+66.81        | 2.5" VERTICAL COUPLING (DOWN)         |
| 2+44.54        | 2.5" VERTICAL COUPLING (UP)           |
| 2+86.46        | 1.5" VERTICAL COUPLING (DOWN)         |
| 3+11.60        | 8" VALVE                              |
| 3+15.60        | 8"x8" TEE - WATER MAIN 'C'            |
| 3+58.98        | 1.5" VERTICAL COUPLING (UP)           |
| 3+69.99        | 8" VALVE                              |
| 3+80.14        | 2.5" VERTICAL COUPLING (DOWN)         |
| 3+98.17        | 8" CAP & BUTTRESS                     |
| WATER MAIN 'B' |                                       |
| 0+00           | CONNECT TO EX. 8" PUBLIC WATER        |
| 1+61.14        | 0.74" VERTICAL COUPLING (DOWN)        |
| 3+25.70        | 8" VALVE                              |
| 3+29.70        | 8"x8" TEE                             |
| WATER MAIN 'C' |                                       |
| 6+20.0         | EXISTING 8" CAP & BUTTRESS            |
| 6+28.91        | 8"x8" TEE - WATER MAIN 'B'            |
| 6+32.91        | 8" VALVE                              |
| 8+40.32        | 8"x6" TEE, 6" VALVE, AND FIRE HYDRANT |
| 8+50.32        | 1.09" VERTICAL COUPLING (DOWN)        |
| 8+86.90        | 8" VALVE                              |
| 8+90.91        | 8"x8" TEE                             |

OWNER/DEVELOPER  
BEAZER HOMES CORPORATION  
8955 GUILFORD ROAD  
COLUMBIA, MARYLAND 21046  
ATTN: MR. EDWARD W. GOLD  
DIVISION PRESIDENT  
410-381-3222

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL**  
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. 16193  
EXPIRATION DATE 09-27-2018

DRN: JMR/KG DES: EDS  
CHK: RHV  
DATE: MARCH 2015

FINAL WATER AND SEWER PLAN  
CONTRACT 24-4909-D  
WATER PROFILES

HIGH RIDGE MEADOWS-SECTION 2-PHASE 2  
LOTS 69-81 (SFD RESIDENTIAL), 96-115 AND 126-143  
(SFA RESIDENTIAL),  
AND OPEN SPACE LOTS 144 AND 147  
OLD SCAGGSVILLE ROAD  
PARCELS 363  
HOWARD COUNTY, MD

SCALE  
AS  
SHOWN

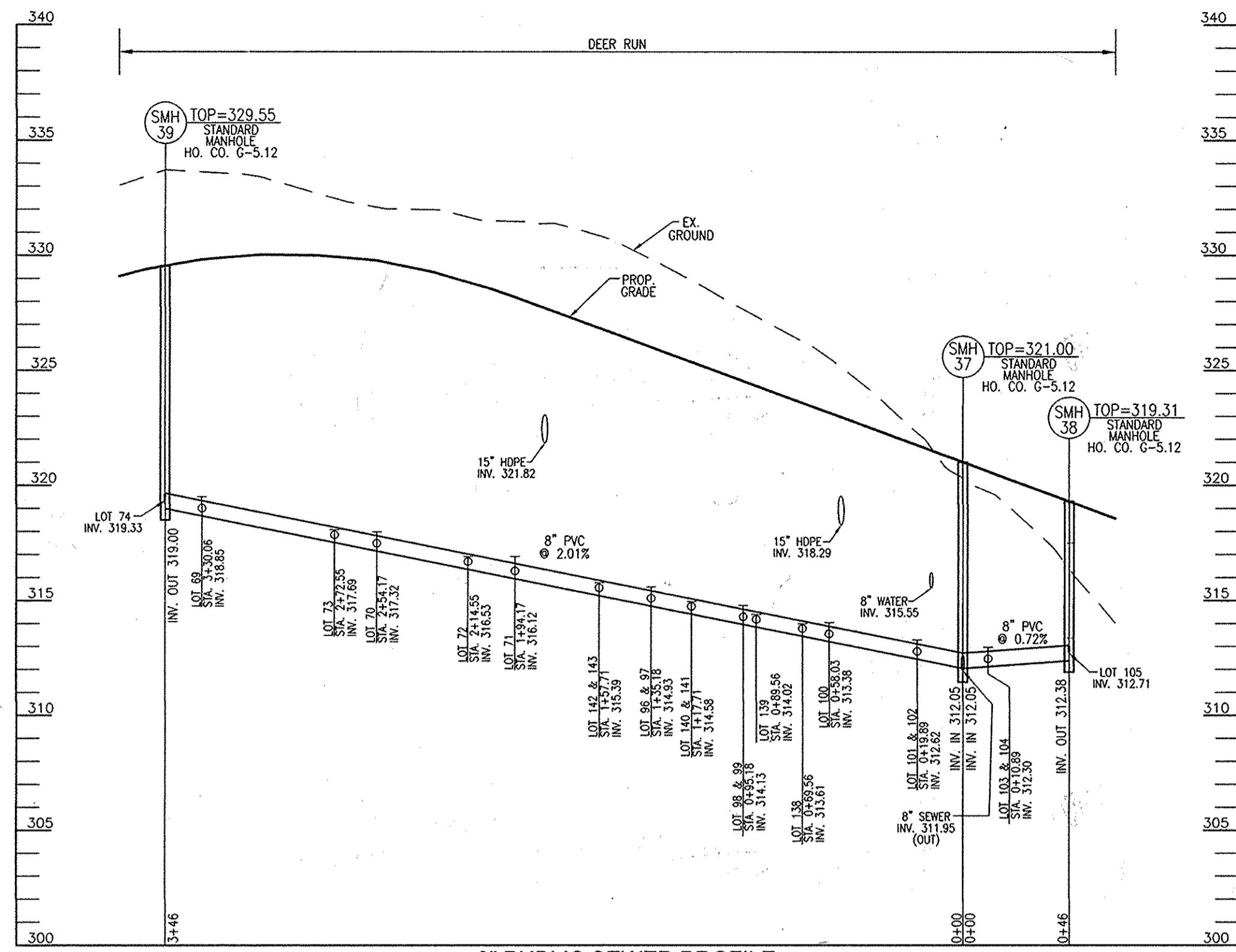
SHEET  
3 OF 4

600' SCALE MAP NO. 50

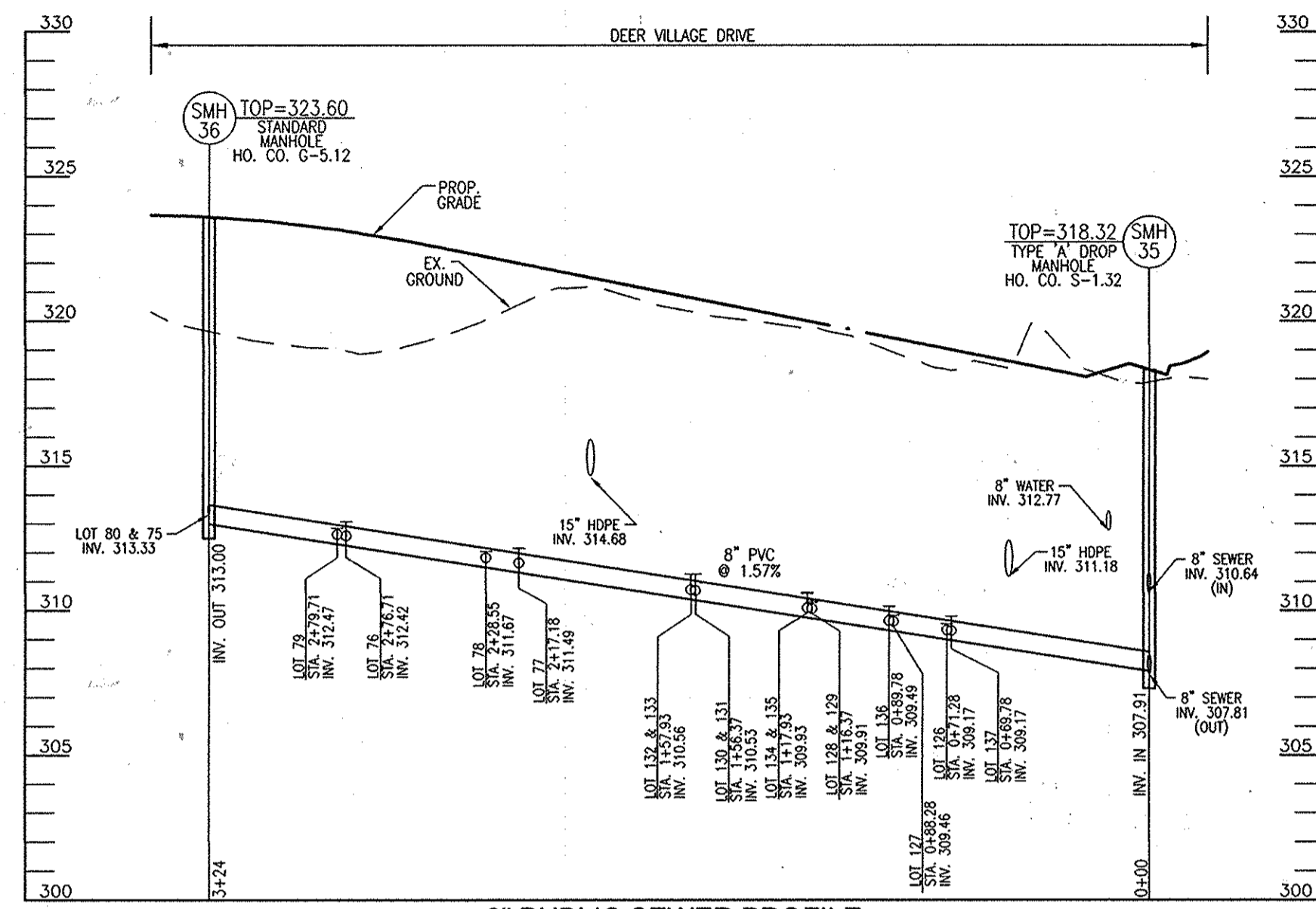
BLOCK NO. 1

TAX MAP 50 GRID 1  
6TH ELECTION DISTRICT

ZONING R-SC  
PARCELS: 363  
HOWARD COUNTY, MARYLAND



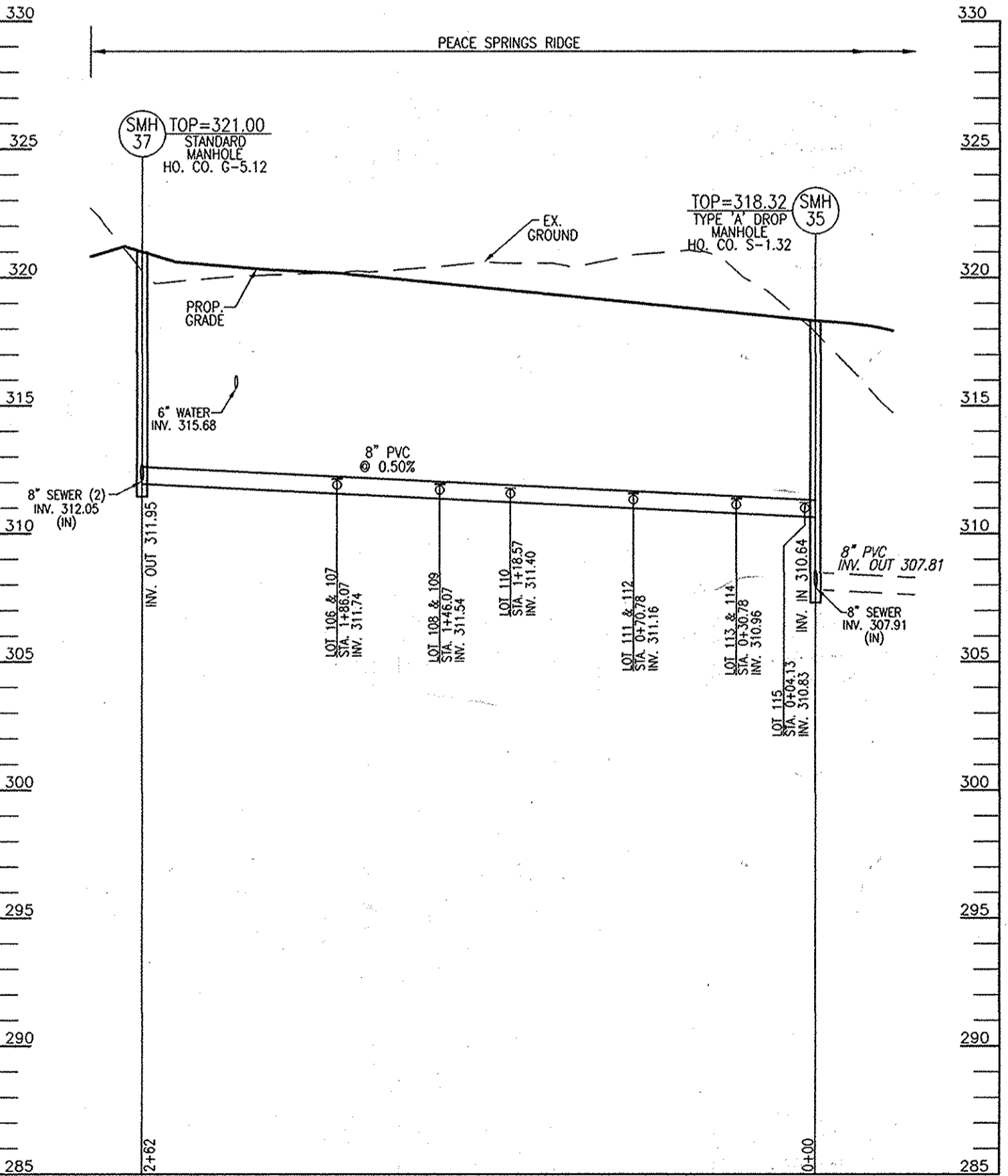
8" PUBLIC SEWER PROFILE  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



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

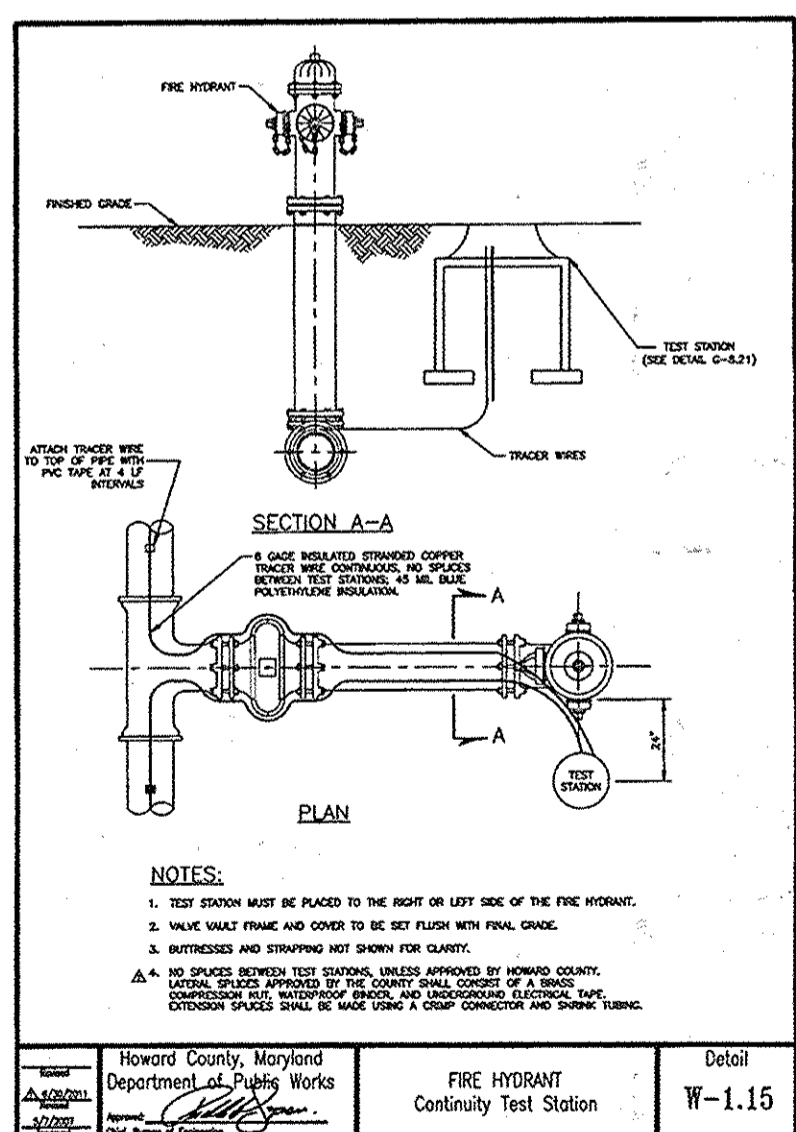
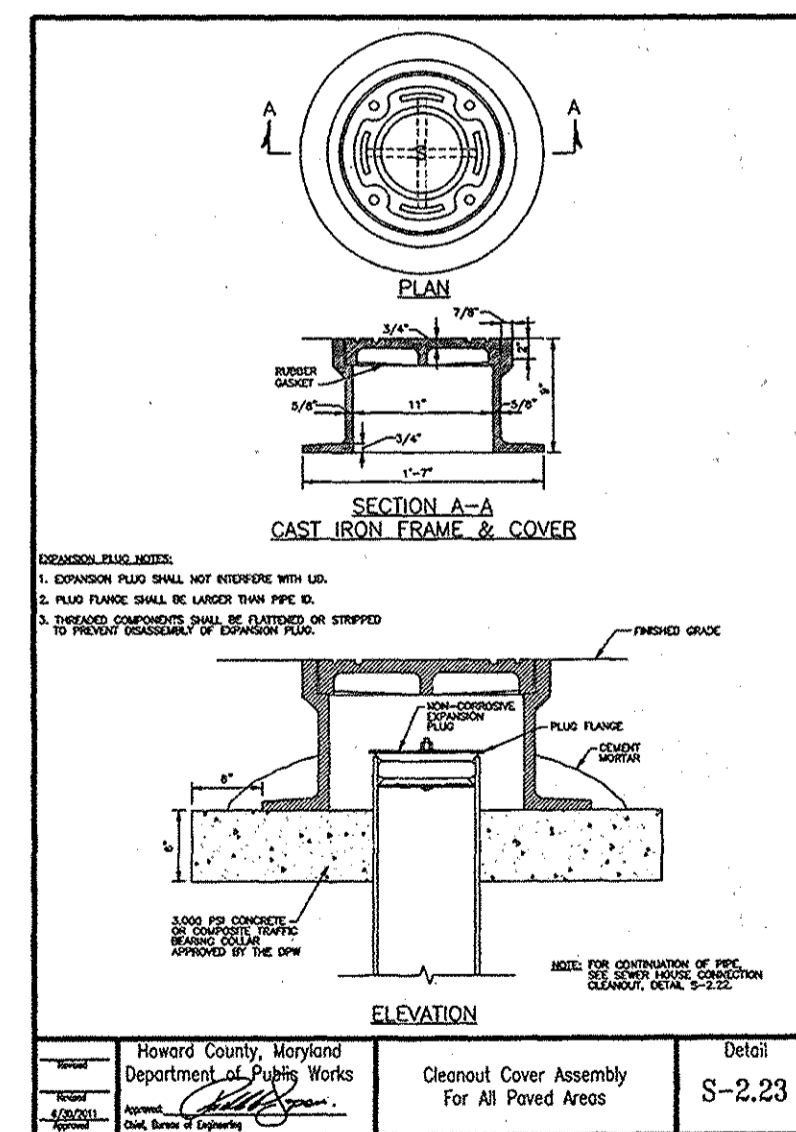
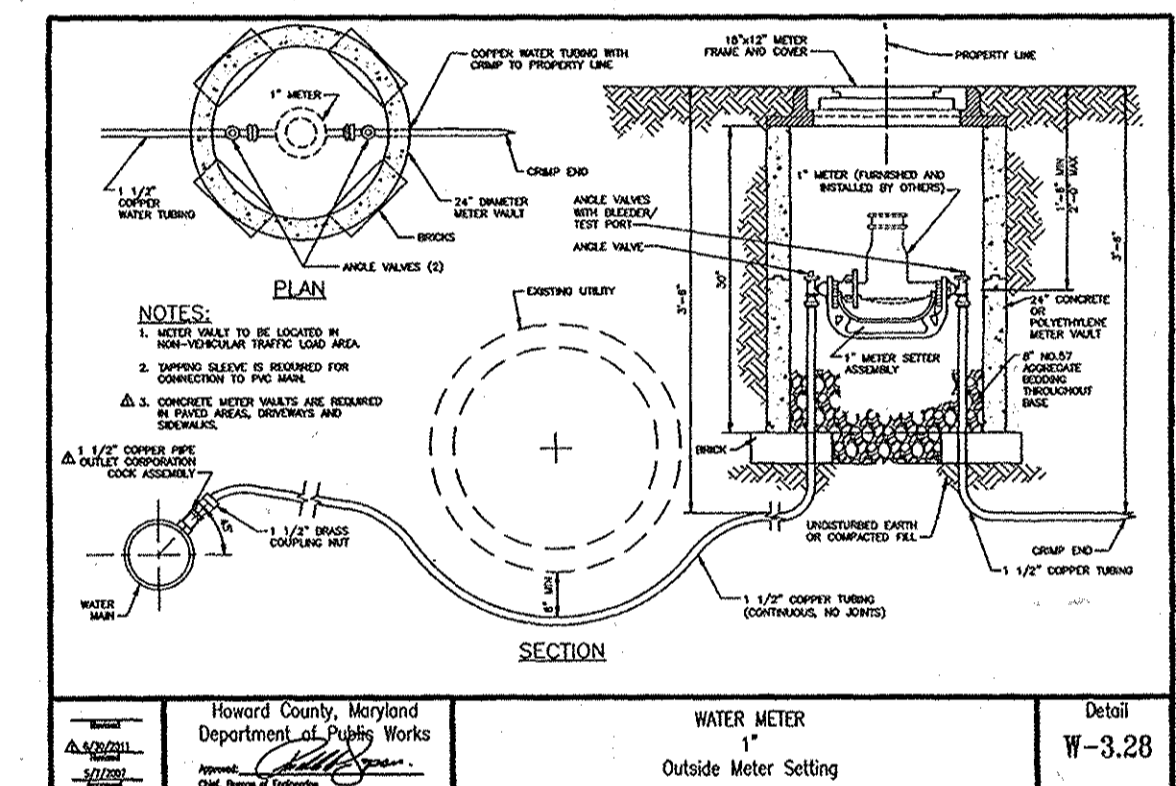
| SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE |         |                      |                      |       |         |                      |                      |
|--|---------|----------------------|----------------------|-------|---------|----------------------|----------------------|
| LOT #  | ADDRESS | LOCATION DIMENSION 1 | LOCATION DIMENSION 2 | LOT # | ADDRESS | LOCATION DIMENSION 1 | LOCATION DIMENSION 2 |
| 69   |         | 24.3' TO SDMH        | 33.8' TO SMH         | 106   |         | 34.6' TO FH          | 45.4' TO 6" VALVE    |
| 70   |         | 23.9' TO FH          | 29.5' TO 6" VALVE    | 107   |         | 38.0' TO FH          | 47.9' TO 6" VALVE    |
| 71   |         | 39.0' TO FH          | 41.6' TO 6" VALVE    | 108   |         | 48.0' TO INLET       | 63.5' TO SDMH        |
| 72   |         | 43.2' TO FH          | 9.2' TO WHC 72       | 109   |         | 45.4' TO INLET       | 62.0' TO SDMH        |
| 73   |         | 51.4' TO 6" VALVE    | 8.8' TO WHC 73       | 110   |         | 20.8' TO INLET       | 58.2' TO SDMH        |
| 74   |         | 19.2' TO SMH         | 24.3' TO WHC 74      | 111   |         | 29.2' TO INLET       | 57.7' TO SDMH        |
| 75   |         | 68.2' TO FH          | 32.4' TO SMH         | 112   |         | 32.6' TO INLET       | 54.5' TO SDMH        |
| 76   |         | 8.5' TO WHC 76       | 54.2' TO SMH         | 113   |         | 37.8' TO 8" VALVE    | 68.8' TO SDMH        |
| 77   |         | 19.6' TO PT INLET    | 40.3' TO PT INLET    | 114   |         | 36.5' TO 8" VALVE    | 37.0' TO SMH         |
| 78   |         | 27.1' TO PT INLET    | 46.7' TO PT INLET    | 115   |         | 33.2' TO 8" VALVE    | 19.0' TO SMH         |
| 79   |         | 27.6' TO WHC 78      | 8.5' TO WHC 79       | 126   |         | 12.1' TO PT INLET    | 39.3' TO PT INLET    |
| 80   |         | 18.3' TO SMH         | 51.6' TO FH          | 127   |         | 40.8' TO PT INLET    | 54.6' TO PT INLET    |
| 81   |         | 20.2' TO SMH         | 56.2' TO FH          | 128   |         | 24.5' TO WHC 129     | 16.3' TO WHC 128     |
| 96   |         | 24.8' TO SDMH        | 17.0' TO WHC 96      | 129   |         | 18.9' TO WHC 129     | 22.0' TO WHC 128     |
| 97   |         | 28.2' TO SDMH        | 26.0' TO WHC 97      | 130   |         | 44.0' TO PT INLET    | 56.2' TO PT INLET    |
| 98   |         | 21.7' TO WHC 98      | 20.9' TO WHC 100     | 131   |         | 41.8' TO PT INLET    | 54.5' TO PT INLET    |
| 99   |         | 11.6' TO SDMH        | 19.0' TO WHC 100     | 132   |         | 19.7' TO WHC 132     | 21.5' TO WHC 134     |
| 100  |         | 11.6' TO SDMH        | 19.0' TO WHC 100     | 133   |         | 18.2' TO WHC 133     | 23.4' TO WHC 134     |
| 101  |         | 21.9' TO SDMH        | 22.5' TO 8" VALVE    | 134   |         | 22.0' TO WHC 135     | 19.1' TO WHC 134     |
| 102  |         | 30.5' TO SDMH        | 43.7' TO 8" VALVE    | 135   |         | 19.6' TO WHC 135     | 21.5' TO WHC 134     |
| 103  |         | 36.2' TO SMH         | 43.7' TO SMH         | 136   |         | 43.4' TO PT INLET    | 56.5' TO PT INLET    |
| 104  |         | 43.1' TO SMH         | 36.8' TO SMH         | 137   |         | 22.8' TO PT INLET    | 42.9' TO PT INLET    |
| 105  |         | 32.6' TO SMH         | 16.9' TO SDMH        |       |         |                      |                      |

| MANHOLE LOCATION CHART |                                  |   |           |         |          |  |
|------------------------|----------------------------------|---|-----------|---------|----------|--|
| MH No.                 | TYPE                             | LOCATION  | TOP ELEV. | INV. IN | INV. OUT |  |
| SMH 36                 | STD. 4' PRECAST MANHOLE (G-5.12) | CL ROAD STA: 2+80.49 DEER VILLAGE DRIVE, 7' RT.   | 323.60    | 313.33  | 313.00   |  |
| SMH 37                 | STD. 4' PRECAST MANHOLE (G-5.12) | CL ROAD STA: 10+25.47 PEACE SPRINGS RIDGE, 7' RT. | 321.00    | 312.08  | 311.95   |  |
| SMH 38                 | STD. 4' PRECAST MANHOLE (G-5.12) | CL ROAD STA: 12+75.14 DEER RUN, 7' RT.            | 319.31    | 312.71  | 312.38   |  |
| SMH 39                 | STD. 4' PRECAST MANHOLE (G-5.12) | CL ROAD STA: 8+83.38 DEER RUN, 7' RT.             | 329.55    | 319.33  | 319.00   |  |
| SMH 40                 | STD. 4' PRECAST MANHOLE (G-5.12) | CL ROAD STA: 1+95.00 PEACE SPRINGS RIDGE, 7' RT.  | 309.82    | 299.83  | 299.50   |  |
| SMH 41                 | STD. 4' PRECAST MANHOLE (G-5.12) | N 528896.62 E 1351833.37                          | 302.35    | 290.05  | 289.87   |  |



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

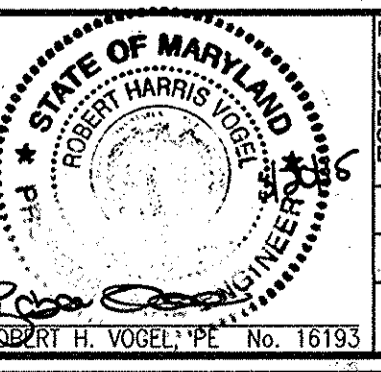
| LOT # | EL @ MAIN | TYPE | DIST TO ESMT. | EL @ ESMT. | DIST ESMT. - HSE | SHC SLOPE | EL @ HOUSE | MCE    |
|-------|-----------|------|---------------|------------|------------------|-----------|------------|--------|
| 69    | 318.85    | SHC  | 33            | 319.51     | 82               | 2%        | 321.15     | 323.65 |
| 70    | 317.32    | SHC  | 33            | 317.98     | 82               | 2%        | 319.62     | 322.12 |
| 71    | 316.12    | SHC  | 33            | 316.78     | 82               | 2%        | 318.42     | 320.82 |
| 72    | 316.53    | SHC  | 19            | 316.91     | 82               | 2%        | 318.55     | 321.05 |
| 73    | 317.69    | SHC  | 19            | 318.07     | 82               | 2%        | 319.71     | 322.21 |
| 74    | 319.33    | SHC  | 18            | 319.69     | 82               | 2%        | 321.33     | 323.83 |
| 75    | 313.33    | SHC  | 33            | 313.99     | 82               | 2%        | 315.63     | 318.13 |
| 76    | 312.42    | SHC  | 33            | 313.08     | 82               | 2%        | 314.72     | 317.22 |
| 77    | 311.49    | SHC  | 32            | 312.13     | 80               | 2%        | 313.83     | 316.43 |
| 78    | 311.67    | SHC  | 19            | 312.05     | 80               | 2%        | 313.65     | 316.15 |
| 79    | 312.47    | SHC  | 19            | 312.85     | 82               | 2%        | 314.49     | 316.99 |
| 80    | 313.33    | SHC  | 19            | 313.71     | 80               | 2%        | 315.51     | 318.01 |
| 81    | 312.33    | SHC  | 18            | 312.69     | 82               | 2%        | 314.45     | 316.95 |
| 95    | 314.83    | TSHC | 35            | 315.63     | 82               | 2%        | 317.27     | 319.77 |
| 97    | 314.93    | TSHC | 33            | 315.59     | 82               | 2%        | 317.23     | 319.73 |
| 98    | 314.13    | TSHC | 35            | 314.83     | 82               | 2%        | 316.47     | 318.97 |
| 99    | 314.13    | TSHC | 33            | 314.79     | 82               | 2%        | 316.43     | 318.93 |
| 100   | 313.38    | SHC  | 33            | 314.04     | 82               | 2%        | 315.68     | 318.18 |
| 101   | 312.82    | TSHC | 35            | 313.32     | 82               | 2%        | 314.98     | 317.48 |
| 102   | 312.82    | TSHC | 33            | 313.28     | 82               | 2%        | 314.92     | 317.42 |
| 103   | 312.30    | TSHC | 33            | 312.96     | 82               | 2%        | 314.60     | 317.10 |
| 104   | 312.30    | TSHC | 35            | 313.00     | 82               | 2%        | 314.64     | 317.14 |
| 105   | 312.71    | SHC  | 32            | 313.35     | 82               | 2%        | 314.99     | 317.49 |
| 106   | 311.74    | TSHC | 21            | 312.16     | 86               | 2%        | 313.88     | 316.38 |
| 107   | 311.74    | TSHC | 19            | 312.12     | 86               | 2%        | 313.84     | 316.34 |
| 108   | 311.54    | TSHC | 21            | 311.96     | 86               | 2%        | 313.68     | 316.18 |
| 109   | 311.54    | TSHC | 19            | 311.92     | 86               | 2%        | 313.64     | 316.14 |
| 110   | 311.40    | SHC  | 19            | 311.78     | 86               | 2%        | 313.50     | 316.00 |
| 111   | 311.16    | TSHC | 21            | 311.58     | 86               | 2%        | 313.30     | 315.80 |
| 112   | 311.16    | TSHC | 19            | 311.54     | 86               | 2%        | 313.26     | 315.76 |
| 113   | 310.96    | TSHC | 21            | 311.38     | 86               | 2%        | 313.10     | 315.60 |
| 114   | 310.96    | TSHC | 19            | 311.34     | 86               | 2%        | 313.06     | 315.56 |
| 115   | 310.83    | SHC  | 19            | 311.21     | 86               | 2%        | 312.93     | 315.43 |
| 126   | 309.17    | SHC  | 19            | 309.55     | 85               | 2%        | 311.25     | 313.75 |
| 127   | 309.46    | SHC  | 19            | 309.84     | 85               | 2%        | 311.54     | 314.04 |
| 128   | 309.91    | TSHC | 19            | 310.29     | 85               | 2%        | 311.99     | 314.49 |
| 129   | 309.91    | TSHC | 22            | 310.35     | 85               | 2%        | 312.05     | 314.55 |
| 130   | 310.53    | TSHC | 19            | 310.91     | 85               | 2%        | 312.61     | 315.11 |
| 131   | 310.53    | TSHC | 22            | 310.97     | 85               | 2%        | 312.67     | 315.17 |
| 132   | 310.56    | TSHC | 35            | 311.28     | 85               | 2%        | 312.98     | 315.48 |
| 133   | 310.56    | TSHC | 33            | 311.22     | 85               | 2%        | 312.92     | 315.42 |
| 134   | 309.93    | TSHC | 35            | 310.63     | 85               | 2%        | 312.33     | 314.83 |
| 135   | 309.93    | TSHC | 33            | 310.59     | 85               | 2%        | 312.29     | 314.79 |
| 136   | 309.49    | SHC  | 33            | 310.15     | 85               | 2%        | 311.85     | 314.35 |
| 137   | 308.17    | SHC  | 33            | 308.83     | 85               | 2%        | 311.53     | 314.03 |



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
4/10/15  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND  
4/24/15  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8966



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. 16193, EXPIRATION DATE: 09-27-2018

DRN: JMR/KG DES: EDS  
CHK: RHV  
DATE: MARCH 2015

|     |     |               |          |
|-----|-----|---------------|----------|
| BY  | NO. | REVISION      | DATE     |
| OLS | 1   | KCI AS-BUILTS | 10-26-15 |

**FINAL WATER AND SEWER PLAN**  
CONTRACT 24-4909-D  
**SEWER PROFILES**

**HIGH RIDGE MEADOWS-SECTION 2-PHASE 2**  
LOTS 69-81 (SFD RESIDENTIAL), 96-115 AND 126-143 (SFA RESIDENTIAL),  
AND OPEN SPACE LOTS 144 AND 147  
OLD SCAGSVILLE ROAD  
PARCELS 363  
HOWARD COUNTY, MD  
ZONING R-SC PARCELS: 363  
DIVISION PRESIDENT  
410-381-3222

TAX MAP 50 GRID 1  
6TH ELECTION DISTRICT

SCALE AS SHOWN  
SHEET 4 OF 4