

**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.
- THE TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL SURVEY BY VRM DATED AUGUST 2004.
- 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 0057 AND 41C2.  
ALL VERTICAL CONTROLS ARE BASED ON (NAVD' 27). VERTICAL CONTROLS PROVIDED ON DRAWINGS ARE:  
GEODETIC SURVEY CONTROL 0057 (N 550835.217/E 1347017.693)  
BRASS DISC SET ON TOP OF A CONCRETE MONUMENT, LOCATED AT SOUTH WEST CORNER OF ROUTE 29 & 32 INTERSECTIONS, 15' EAST SIDE OF LONGVIEW RD. AND 57' OFF THE NORTH WEST CORNER OF 1 STORY BUILDING.  
GEODETIC SURVEY CONTROL 41C2 (N 551616.404/E 1348104.227)  
BRASS DISC SET ON TOP OF A CONCRETE MONUMENT, LOCATED AT ROUTE 32, EAST OF ROUTE 29, 100' EAST OF BEGINNING OF GUARD RAIL, AND 11.6' SOUTH OF HIGHWAY SIGN BASE.
- 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 LOCATION OF THE TEST PIT. A NOTES 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 THESE PLANS:  
AT &T ..... 1-800-252-1133  
BGE (CONTRACTOR SERVICE) ..... 410-850-4620  
BGE (EMERGENCY) ..... 410-685-1400  
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 ..... 1-800-743-0033/410-224-9210
- 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 ANY 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(a) OF THE HOWARD COUNTY CODE.

**PART II - WATER**

- ALL WATER MAINS TO BE D.I.P. CLASS 54 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO 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 INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. 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.

**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 WATERTIGHT FRAME AND COVER, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAME 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.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND WITH FINAL ROAD CONSTRUCTION PLAN F-08-023.

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

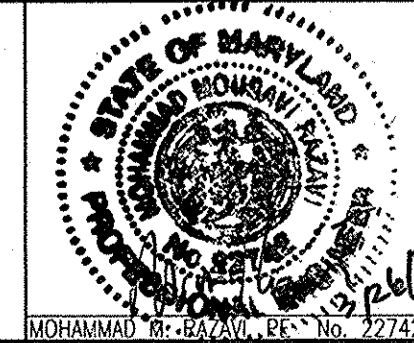
*John R. Robertson* 5/22/08  
SOIL CONSERVATION DISTRICT DATE

*[Signature]*  
U.S. SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*Steve Cline* 4/28/09  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND  
*[Signature]* 5/28/09  
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



|       |            |    |   |          |
|-------|------------|----|---|----------|
| DES:  | LJT/LCO    | 1  | MODIFIED WATER & SEWER DESIGN FOR ADDITIONAL SEVEN LOTS | 7/24/09  |
| DRN:  | KG         |    |   |          |
| CHK:  | MMR        |    |   |          |
| DATE: | MARCH 2008 | BY | NO.   | REVISION |

FINAL WATER AND SEWER COVER SHEET  
CONTRACT NO. 34-4448-D  
600' SCALE MAP NO. 41 BLOCK NO. XX

FINAL WATER AND SEWER RIVERSIDE OVERLOOK PHASE I & PHASE II SINGLE FAMILY DETACHED LOTS 4-12, 18-22, 24-33 AND NON-BUILDABLE BULK PARCEL 'B'  
TAX MAP 41, GRID 11 5TH ELECTION DISTRICT  
PARCEL 179 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 1 OF 6

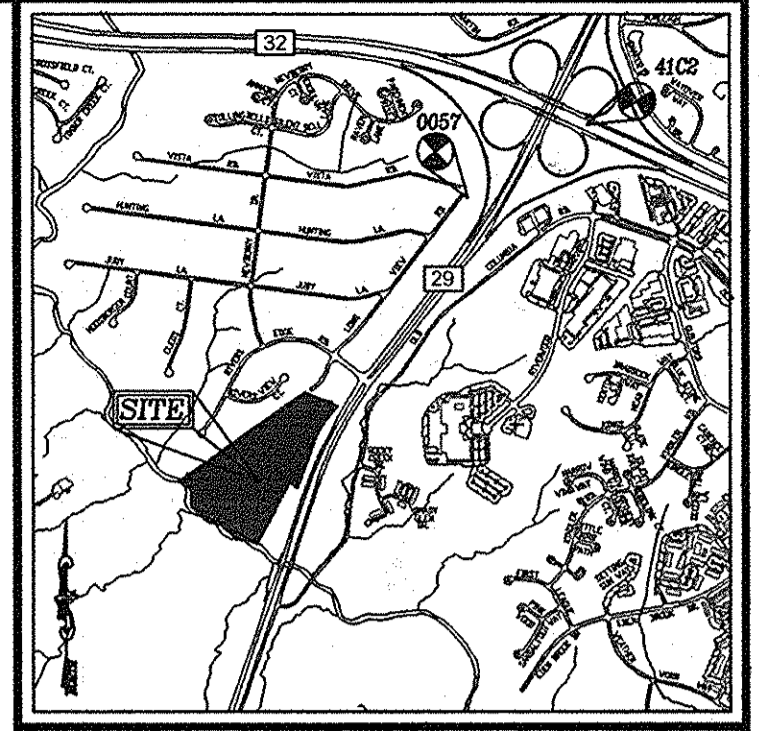
# FINAL WATER & SEWER PLAN

## RIVERSIDE OVERLOOK-Phase I & II

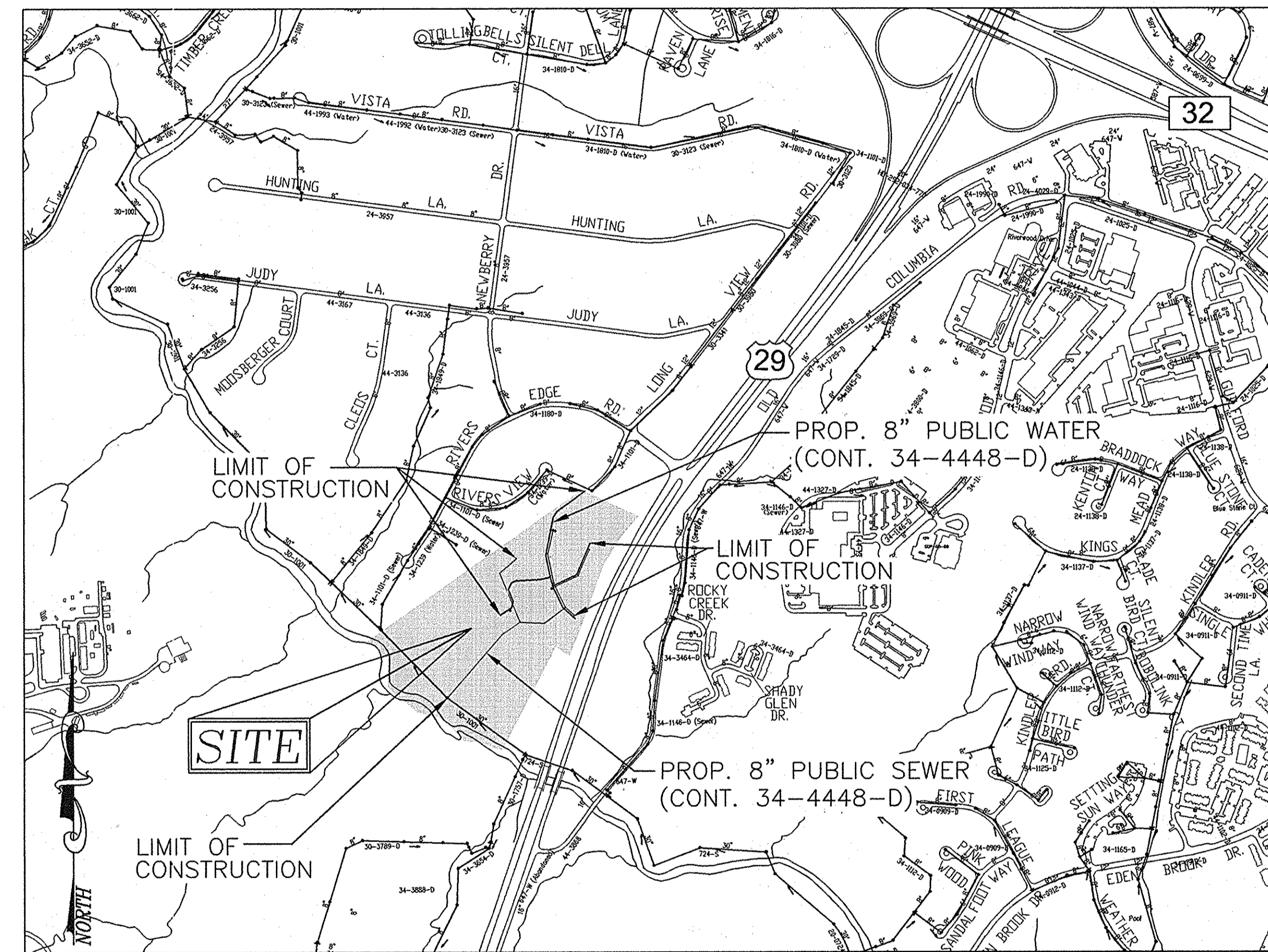
### SINGLE FAMILY LOTS 4-12, 18-22, 24-33

### OPEN SPACE LOTS 17, 23, 34 & 35, AND NON-BUILDABLE BULK PARCEL 'B' (CONT. NO. 34-4448-D)

**BENCHMARKS**  
COORDINATES BASED ON NAD 83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 41C2, 0057.  
41C2 N 551616.404 E 1348104.227 ELEV. 395.856  
0057 N 550835.217 E 1347017.693 ELEV. 399.610



VICINITY MAP  
SCALE: 1"=2000'



PLAN VIEW  
SCALE: 1"=600'

WATER CODE: E21  
SEWER CODE: 6480000  
TEST GRADIENT: 700

|   |                       |
|---|-----------------------|
| Type of Building :                      | SINGLE FAMILY         |
| No. of Lots/Parcels :                   | 29                    |
| No. of single Water House Connections : | 28                    |
| No. of twin Water House Connections :   | 0                     |
| No. of Sewer House Connections :        | 28                    |
| Drainage Area :                         | MIDDLE PATUXENT RIVER |
| Treatment Plant :                       | MIDDLE PATUXENT RIVER |

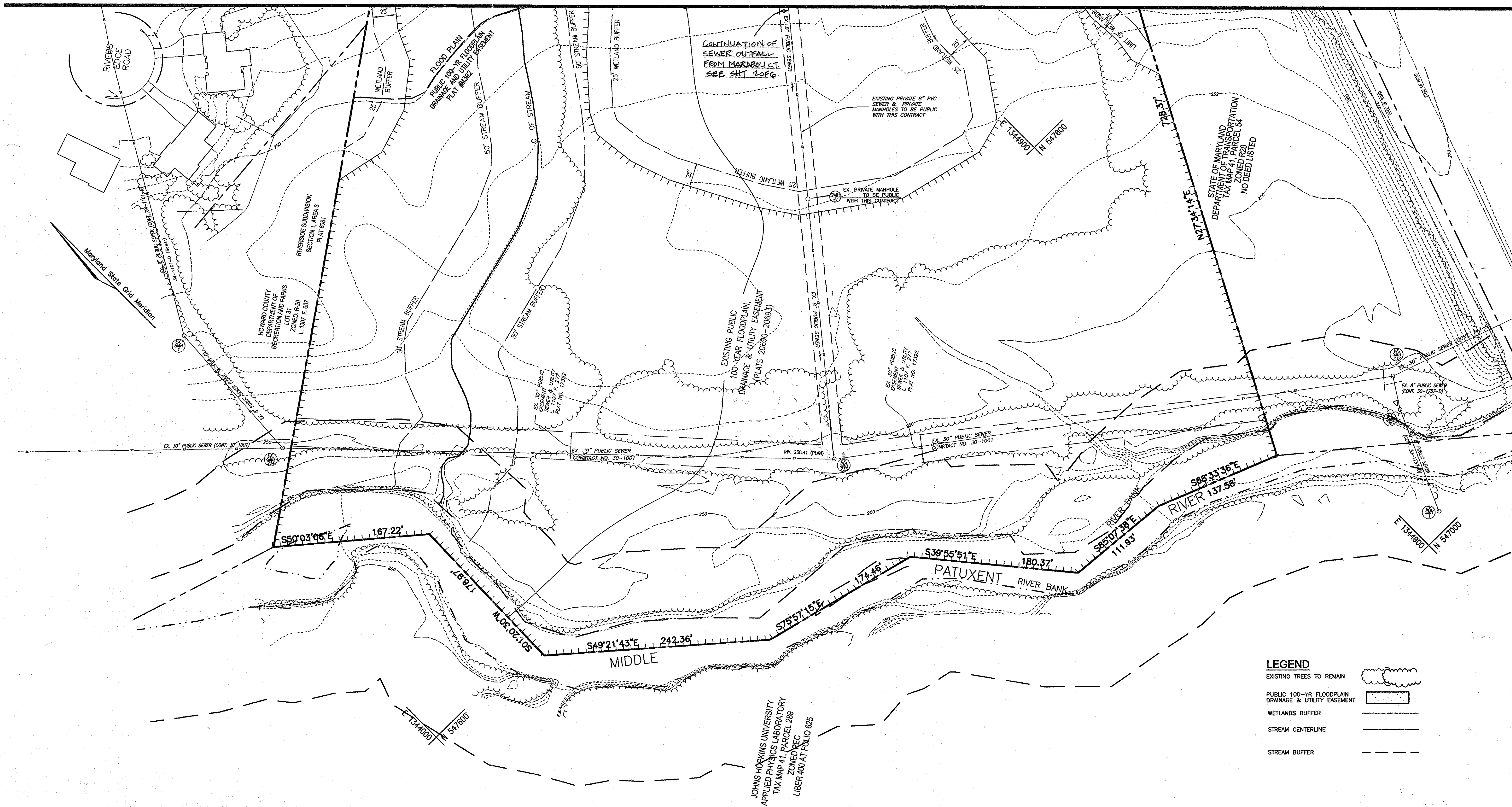
| QUANTITIES  |                      |                     |               |                       |
|---|----------------------|---------------------|---------------|-----------------------|
| NAME OF UTILITY CONTRACTOR : SEH EXCAVATING CONTRACTORS, INC. |                      |                     |               |                       |
| SURVEY AND DRAFTING DIVISION AS-BUILT DATE : 4-29-2010        |                      |                     |               |                       |
| ITEMS   | QUANTITIES ESTIMATED | QUANTITIES AS-BUILT | TYPE          | MANUFACTURER/SUPPLIER |
| WATER   |                      |                     |               |                       |
| 8" WATER  | 2141 LF              | 2,141 L.F.          | DIP           | GRIFFIN PIPE          |
| 1" W/C  | 680 LF               | 680 L.F.            | COPPER        | CAMBRIDGE LEE         |
| 4" S/C  | 573 LF               | 549 L.F.            | SDR-35        | NORTH AMERICAN PIPE   |
| 8" X 8" TAPPING SLEEVE  | 1 EA                 | 1 EA.               | DIP/STAINLESS | SIGMA                 |
| 8" X 6" TEE   | 5 EA                 | 5 EA.               | DUCTILE       | SIGMA                 |
| 8" X 8" TEE   | 3 EA                 | 3 EA.               | DUCTILE       | SIGMA                 |
| 6" VALVE  | 5 EA                 | 5 EA.               | GATE          | KENNEDY VALVE         |
| 8" VALVE  | 9 EA                 | 5 EA.               | GATE          | KENNEDY VALVE         |
| FIRE HYDRANT  | 5 EA                 | 5 EA.               | 5'-0"         | KENNEDY VALVE         |
| 8" - 1/16 BEND  | 5 EA                 | 5 EA.               | DUCTILE       | SIGMA                 |
| 8" - 1/8 BEND   | 4 EA                 | 4 EA.               | DUCTILE       | SIGMA                 |
| 8" - 1/32 BEND  | 4 EA                 | 4 EA.               | DUCTILE       | SIGMA                 |
| 8" CAP AND BUTTRESS   | 4 EA                 | 4 EA.               | DUCTILE       | SIGMA                 |
| 6" CAP AND BUTTRESS   | 1 EA                 | 1 EA.               | DUCTILE       | SIGMA                 |
| 8" SEWER MANHOLE  | 1876 LF              | 1,876 L.F.          | SDR-35        | NORTH AMERICAN PIPE   |
|   | 28 EA                | 22 EA.              | PRECAST CONC. | CONTRACTORS PRECAST   |

| PROPERTIES WITH WELL AND SEPTIC |               |               |
|---------------------------------|---------------|---------------|
| ADDRESS                         | EX. SEPTIC    | EX. WELL      |
| 7129 LONG VIEW ROAD             | TO BE REMOVED | ---           |
| 7125 LONG VIEW ROAD             | TO BE REMOVED | TO BE REMOVED |
| 7121 LONG VIEW ROAD             | TO BE REMOVED | ---           |

**AS BUILT**  
DATE: 4-29-2010  
UPDATED 4/2/13 C.I.D.

DEVELOPER  
REUMER LONG TERM HOLDINGS LLC  
5300 DORSEY HALL DR STE 102  
ELLICOTT CITY, MD 21042





- LEGEND**
- EXISTING TREES TO REMAIN
  - PUBLIC 100-YR FLOODPLAIN DRAINAGE & UTILITY EASEMENT
  - WETLANDS BUFFER
  - STREAM CENTERLINE
  - STREAM BUFFER

PLAN VIEW  
SCALE: 1"=50'

**AS BUILT**  
DATE: 4-29-2010  
UPDATED 4/2/13 C.I.D

NOTES: THIS SHEET REPLACES SHEET 3 OF 6 SIGNED ON 03/26/08 BY THE CHIEF, BUREAU OF UTILITIES.

**DEVELOPER**  
REUER LONG TERM HOLDINGS L.L.C.  
C/O DONALD REUER JR.  
5300 DORSEY HALL DRIVE  
ELLCOTT CITY, MARYLAND 21042  
443-367-0422

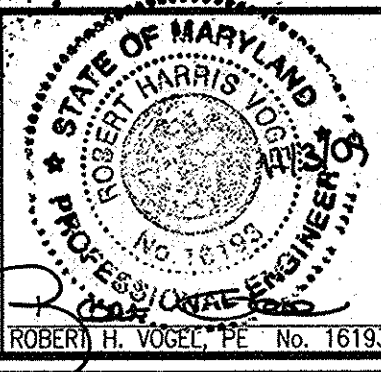
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

*Steve C. Cramer*  
CHIEF, BUREAU OF UTILITIES

*William J. Cramer*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**ROBERT H. VOGEL, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET TEL: 410.461.7666  
ELLCOTT 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. 18193, EXPIRATION DATE: 09-27-2010

DRN: KG DES: RJ  
CHK: RHV  
DATE: OCTOBER 2009

| NO. | REVISION  | DATE     |
|-----|---|----------|
| 1   | MODIFIED WATER AND SEWER DESIGN FOR ADDITIONAL SEVEN LOTS | 06/11/10 |
|     |   |          |
|     |   |          |
|     |   |          |
|     |   |          |

FINAL WATER AND SEWER  
PLAN VIEW  
CONTRACT NO. 34-4448-D

600' SCALE MAP NO. 41 BLOCK NO. XX

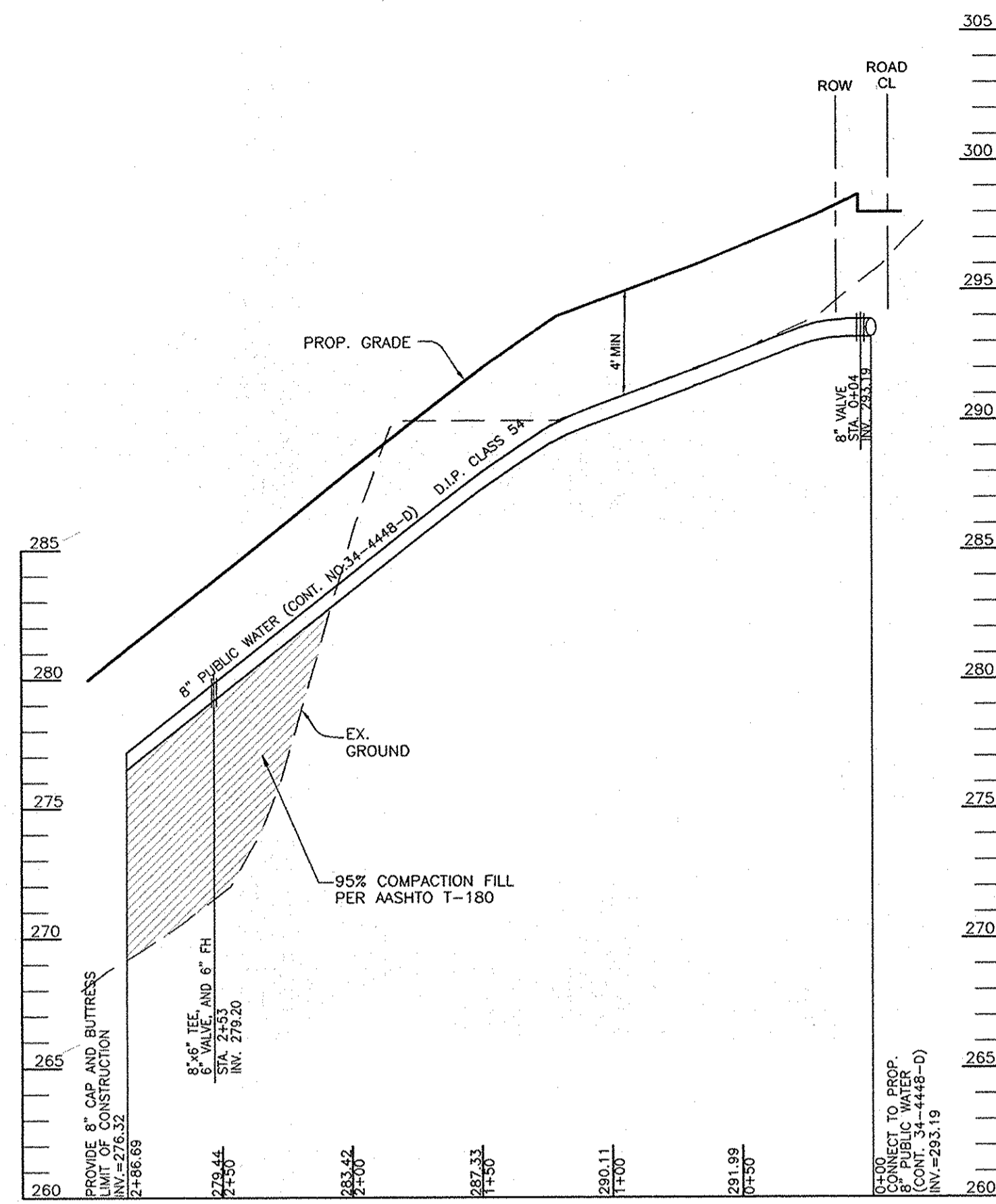
FINAL WATER AND SEWER  
RIVERSIDE OVERLOOK  
PHASE I & PHASE II  
SINGLE FAMILY DETACHED LOTS 4 - 12,  
18 - 22, 24 - 33 AND  
NON-BUILDABLE BULK PARCEL 'B'  
TAX MAP 41, GRID 11  
5TH ELECTION DISTRICT

PARCEL 179  
HOWARD COUNTY, MARYLAND

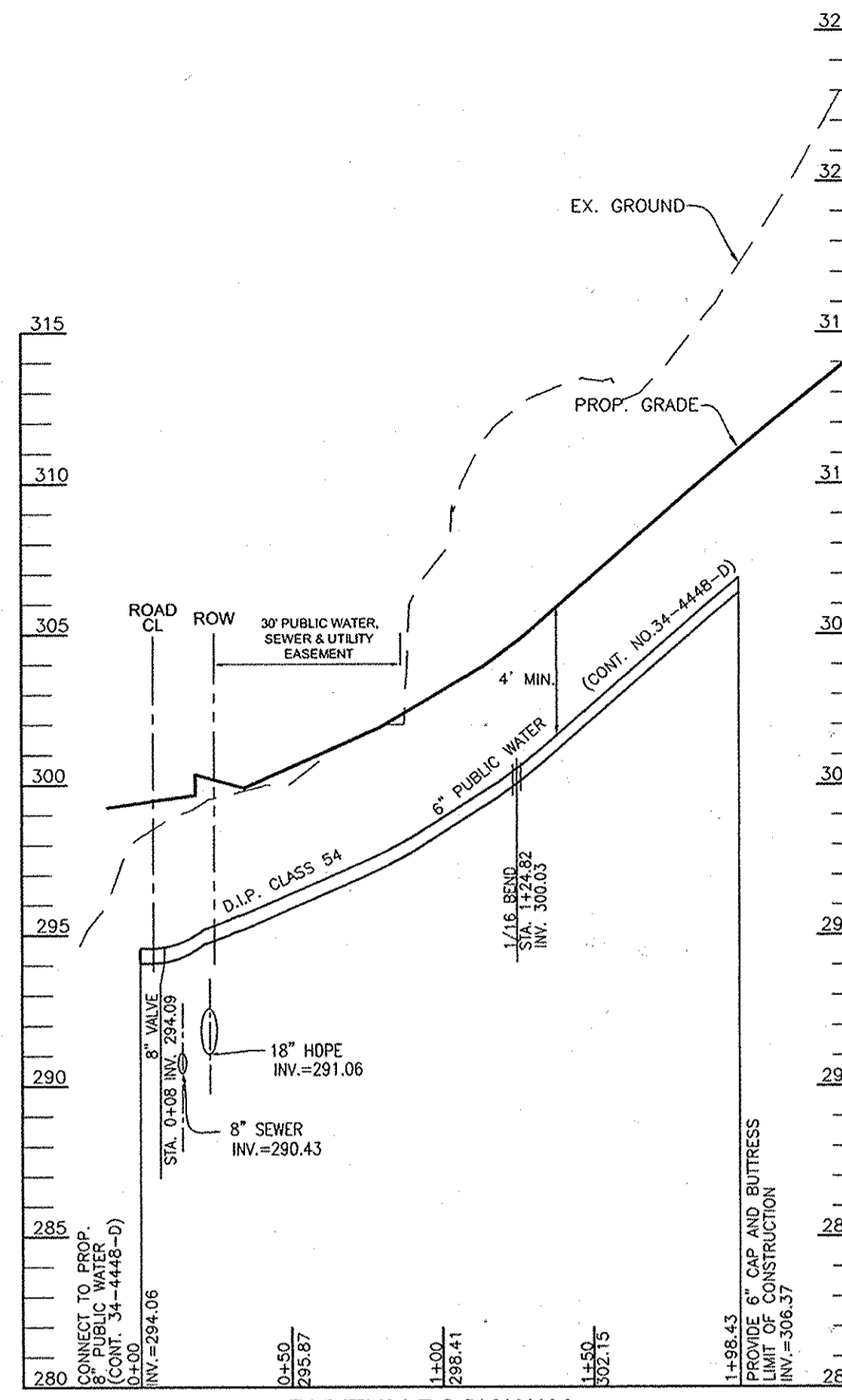
SCALE AS SHOWN

SHEET 3 OF 6

K:\Projects\0329\ENR\ENR\WWS REDLINE R-ED\FINAL\_WWS\_LAYOUT.dwg, 11/16/2009 11:38:34 AM, M:\enr\design\h6502\_hfpl2.pcl



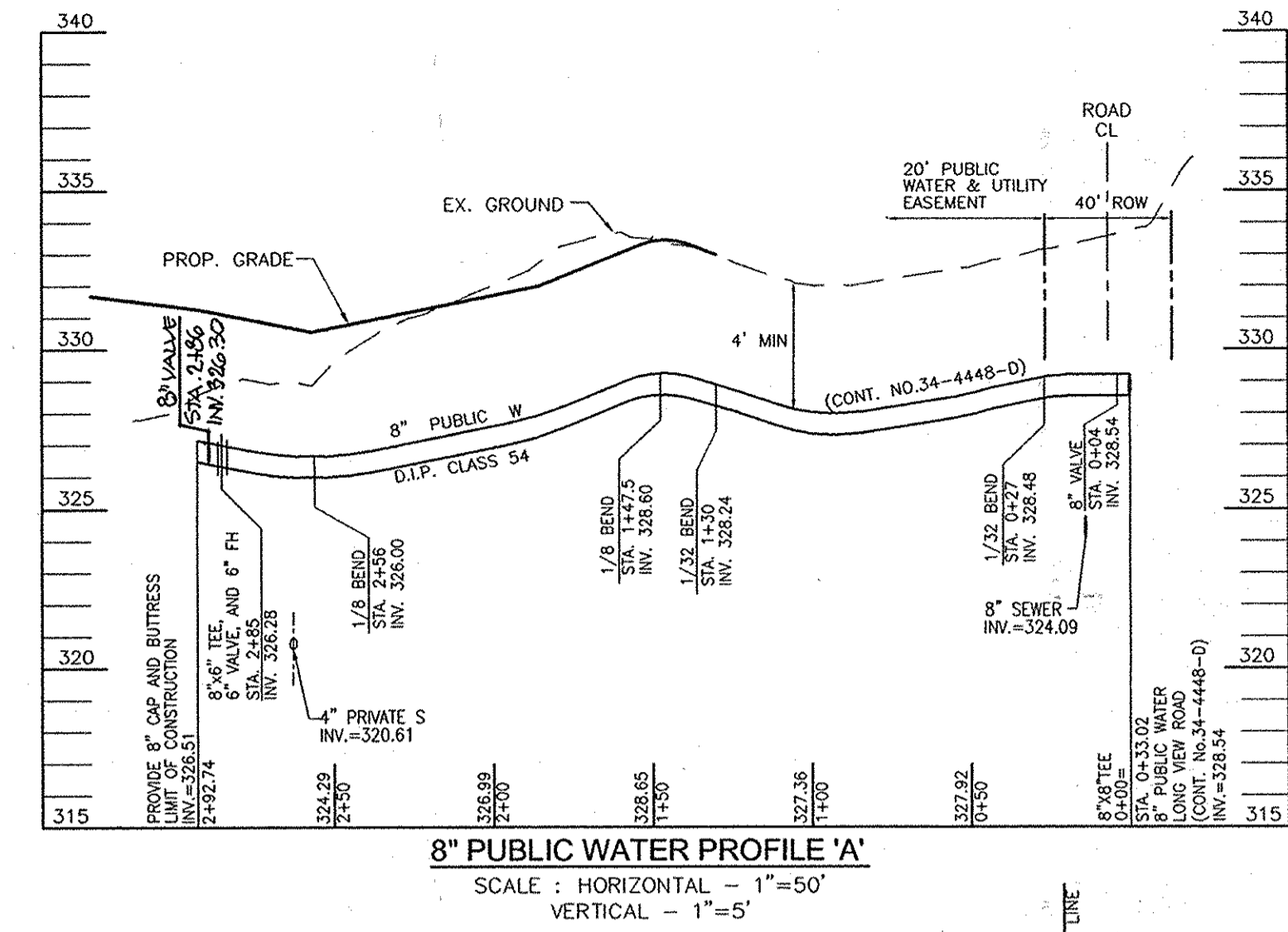
**MARABOU COURT  
8" PUBLIC WATER PROFILE**  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



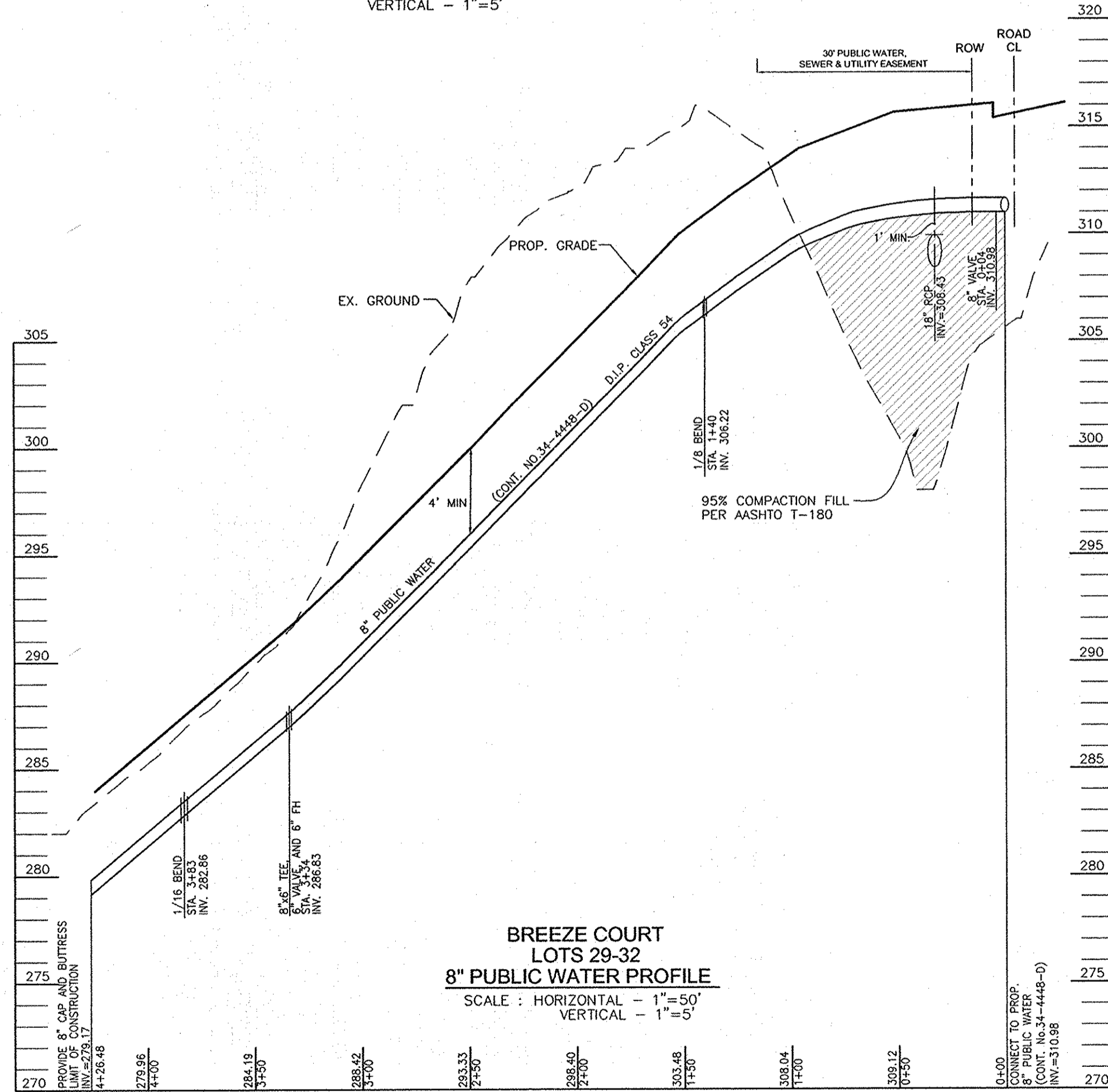
**RHYTHM ROCK WAY  
6" PUBLIC WATER PROFILE**  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'

**WATER MAIN LOCATION CHART**

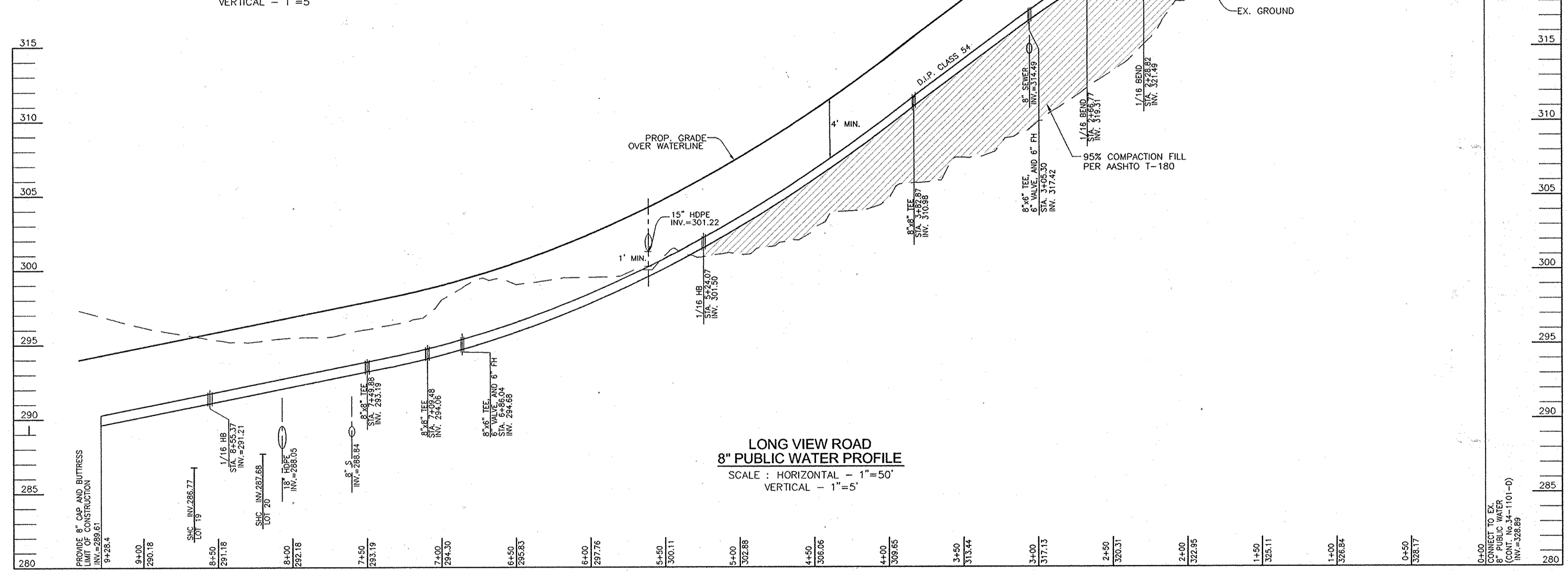
| WL STA.                            | APPURTENANCE                    |
|------------------------------------|---------------------------------|
| <b>LONG VIEW ROAD</b>              |                                 |
| WL STA. 0+00                       | 8" CAP & BUTTRISS               |
| WL STA. 0+05                       | 8" VALVE                        |
| WL STA. 0+13.25                    | 1/32 HB                         |
| WL STA. 0+29.23                    | 1/32 HB                         |
| WL STA. 0+33.02                    | 8" TEE & VALVE                  |
| WL STA. 2+28.82                    | 1/16 HB                         |
| WL STA. 2+66.77                    | 1/16 HB                         |
| WL STA. 3+05.30                    | 8"x6" TEE, VALVE & FH           |
| WL STA. 3+82.87                    | 8"x6" TEE                       |
| WL STA. 5+24.07                    | 1/16 HB                         |
| WL STA. 6+86.04                    | 8"x6" TEE, VALVE & FH           |
| WL STA. 7+09.48                    | 8" TEE & VALVE                  |
| WL STA. 7+49.86                    | 8" TEE & VALVE                  |
| WL STA. 8+55.37                    | 1/16 HB                         |
| WL STA. 9+56.10                    | 8" CAP & BUTTRISS               |
| <b>BREEZE COURT (LOT 32-36)</b>    |                                 |
| WL STA. 0+08                       | 8" VALVE                        |
| WL STA. 1+41                       | 1/8 HB                          |
| WL STA. 3+36.18                    | 8"x6" TEE, VALVE & FH           |
| WL STA. 3+84.59                    | 1/16 HB                         |
| WL STA. 4+26.48                    | 8" CAP & BUTTRISS               |
| <b>RHYTHM ROCK WAY (LOT 13-14)</b> |                                 |
| WL STA. 0+08                       | 8" VALVE                        |
| WL STA. 1+24.82                    | 1/8 HB                          |
| WL STA. 1+88.43                    | 8" CAP & BUTTRISS (IF REQUIRED) |
| <b>MARABOU COURT (LOT 21-26)</b>   |                                 |
| WL STA. 0+04                       | 8" VALVE                        |
| WL STA. 2+53.03                    | 8"x6" TEE, VALVE & FH           |
| WL STA. 2+86.69                    | 8" CAP & BUTTRISS               |
| <b>PROFILE 'A'</b>                 |                                 |
| WL STA. 0+04                       | 8" VALVE                        |
| WL STA. 0+27                       | 1/32 HB                         |
| WL STA. 1+30                       | 1/32 HB                         |
| WL STA. 1+47.5                     | 1/8 HB                          |
| WL STA. 2+56                       | 8"x6" TEE, VALVE & FH           |
| WL STA. 2+85                       | 8"x6" TEE, VALVE & FH           |



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



**BREEZE COURT  
LOTS 29-32  
8" PUBLIC WATER PROFILE**  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



**LONG VIEW ROAD  
8" PUBLIC WATER PROFILE**  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'

NOTES: THIS SHEET REPLACES SHEET 4 OF 6 SIGNED ON 03/26/08 BY THE CHIEF, BUREAU OF UTILITIES.

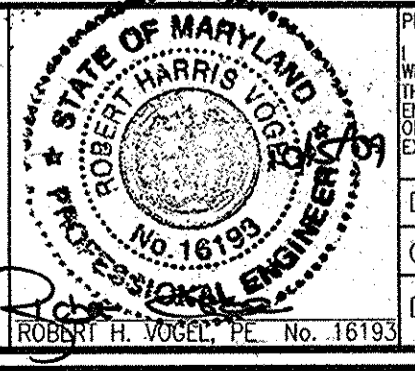
**AS BUILT**  
DATE: 4-29-2010  
UPDATED 4/2/13 C.H.P.

DEVELOPER  
REUMER LONG TERM HOLDINGS LLC  
C/O DONALD REUMER JR.  
5300 DORSEY HALL DRIVE  
ELLICOTT CITY, MARYLAND 21042  
443-367-0422

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*Steve C. Green*  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND  
*William J. ...*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
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ELLICOTT CITY, MD 21043 FAX: 410.461.8966



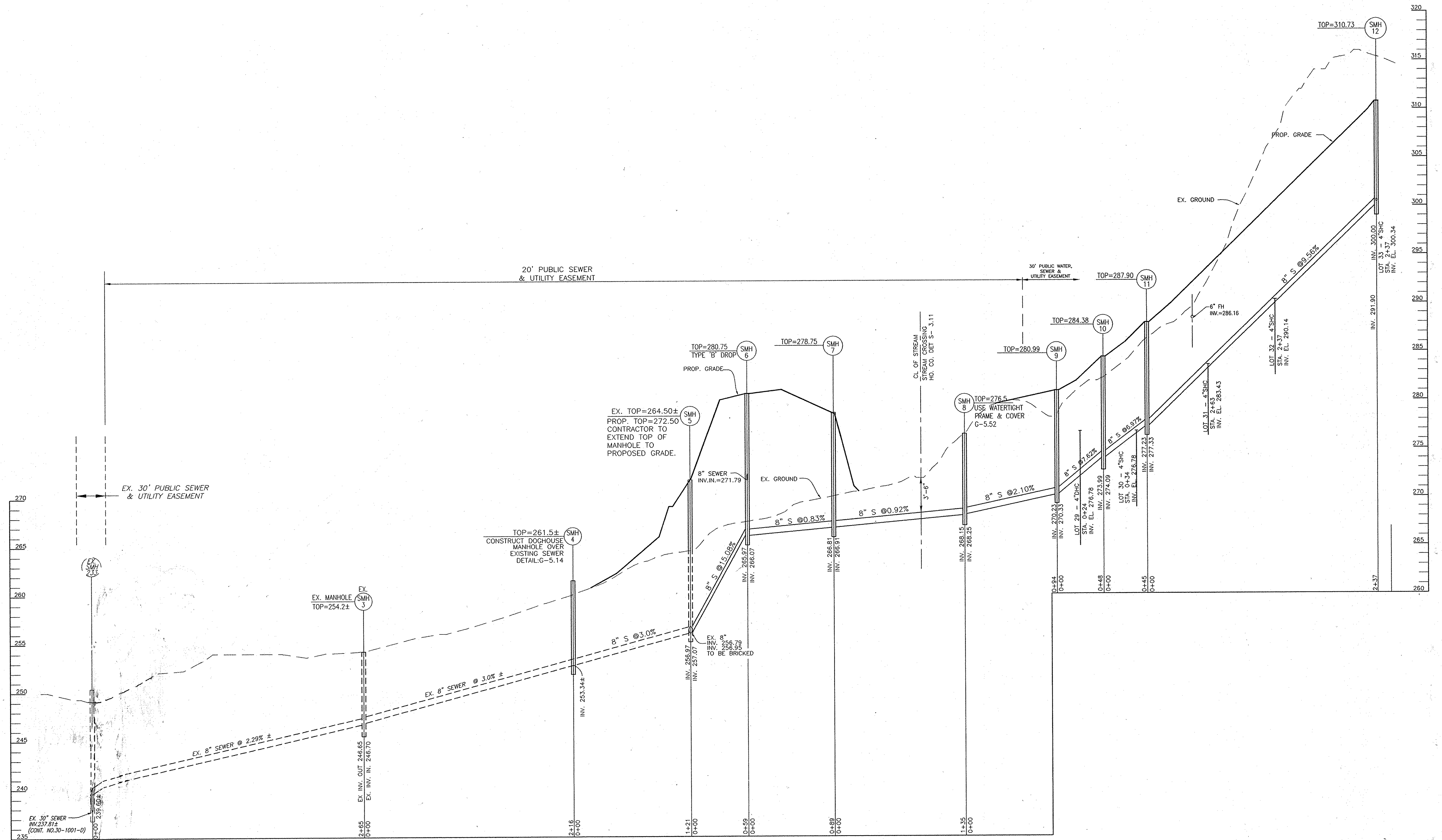
PROFESSIONAL CERTIFICATE  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2010

| NO. | REVISION  | DATE     |
|-----|---|----------|
| 1   | MODIFIED WATER AND SEWER DESIGN FOR ADDITIONAL SEVEN LOTS | 06/11/09 |

**FINAL WATER AND SEWER PROFILES**  
CONTRACT NO. 34-4448-D  
600' SCALE MAP NO. 41 BLOCK NO. XX

**FINAL WATER AND SEWER RIVERSIDE OVERLOOK PHASE I & PHASE II**  
SINGLE FAMILY DETACHED LOTS 4 TO 12, 18 TO 22, 24 TO 33, AND NON-PUBLIC BULK PARCELS  
TAX MAP 41, GRID 11 5TH ELECTION DISTRICT  
PARCEL 179 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 4 OF 6



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

NOTES: THIS SHEET REPLACES SHEET 5 OF 6 SIGNED ON 03/26/08  
 BY THE CHIEF, BUREAU OF UTILITIES.

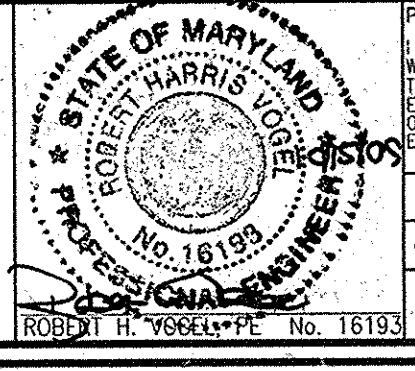
**AS BUILT**  
 DATE: 4-29-2010  
 UPDATED 4/2/13 C.T.P.

**DEVELOPER**  
 RELWER LONG TERM HOLDINGS L.L.C.  
 C/O DONALD RELWER JR.  
 5300 DORSEY HALL DRIVE  
 ELLICOTT CITY, MARYLAND 21042  
 443-367-0422

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Chief, Bureau of Utilities  
 11/6/09

DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND  
 Chief, Development Engineering Division  
 11/19/09

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET  
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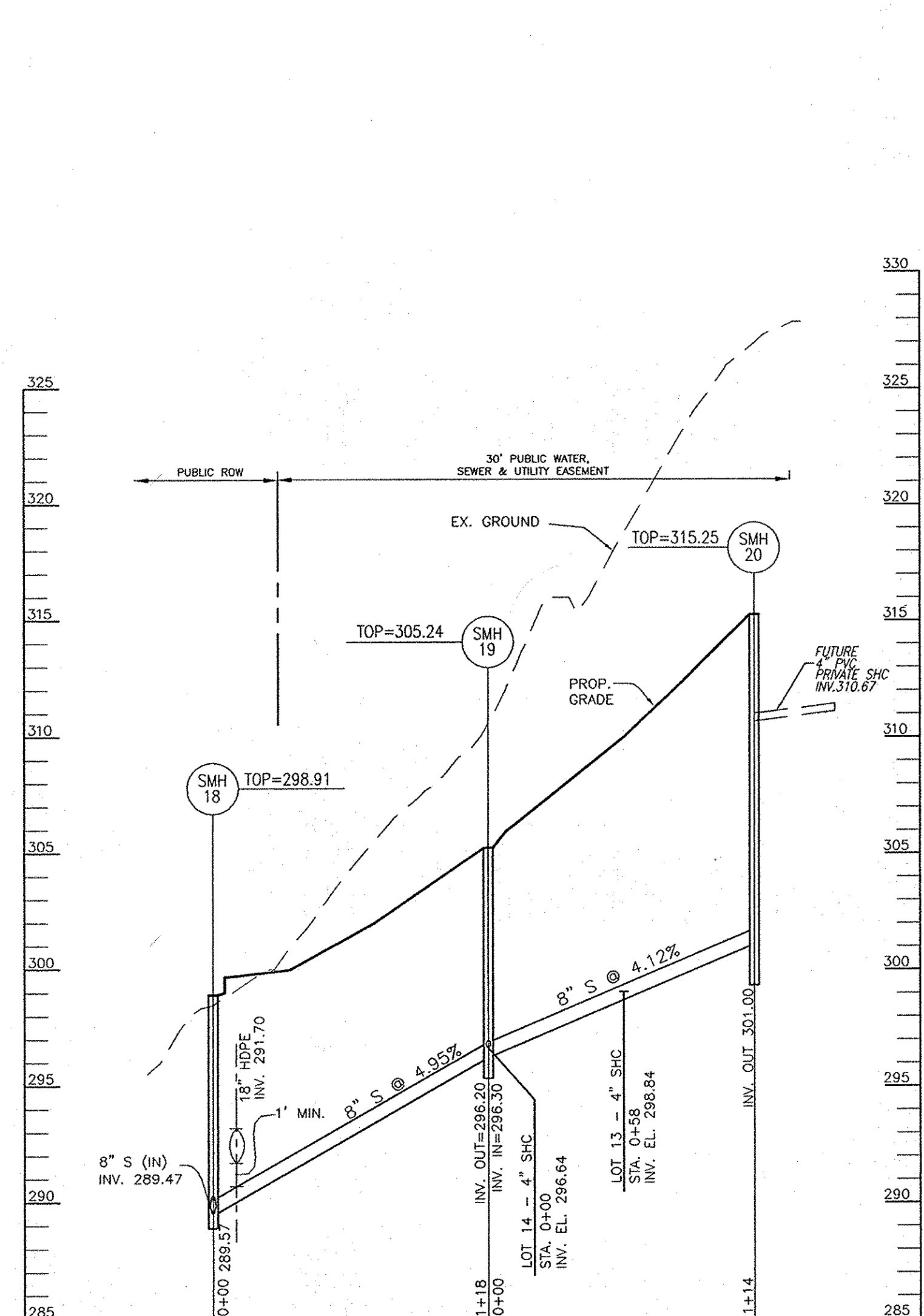
PROFESSIONAL CERTIFICATE  
 I HEREBY CERTIFY THAT THESE DOCUMENTS  
 WERE PREPARED OR APPROVED BY ME, AND  
 THAT I AM A DULY LICENSED PROFESSIONAL  
 ENGINEER UNDER THE LAWS OF THE STATE  
 OF MARYLAND, LICENSE NO. 16193  
 EXPIRATION DATE: 09-27-2010  
 DRN: KG DES: RJ  
 CHK: RHV  
 DATE: JUNE 2009

| NO. | REVISION  | DATE     |
|-----|---|----------|
| 1   | MODIFIED WATER AND SEWER DESIGN FOR ADDITIONAL SEVEN LOTS | 06/11/09 |
|     |   |          |
|     |   |          |
|     |   |          |
|     |   |          |
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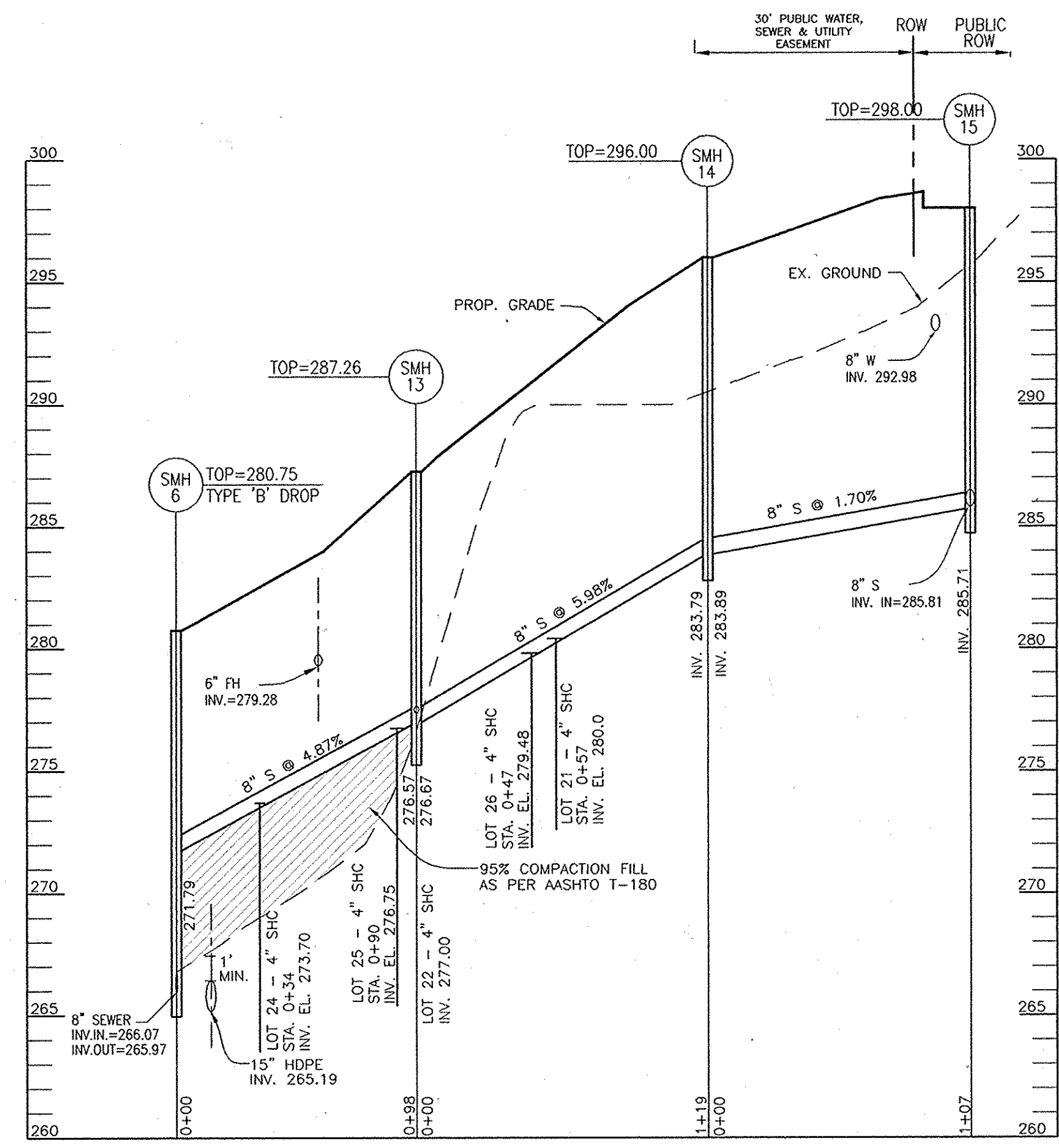
**FINAL WATER AND SEWER PROFILES**  
 CONTRACT NO. 34-4448-D  
 600' SCALE MAP NO. 41 BLOCK NO. XX

**FINAL WATER AND SEWER RIVERSIDE OVERLOOK PHASE I & PHASE II**  
 SINGLE FAMILY DETACHED LOTS 4 TO 12, 18 TO 22, 24 TO 33, AND NON-BUILDABLE BULK PARCEL 'B'  
 TAX MAP 41, GRID 11 5TH ELECTION DISTRICT  
 PARCEL 179 HOWARD COUNTY, MARYLAND

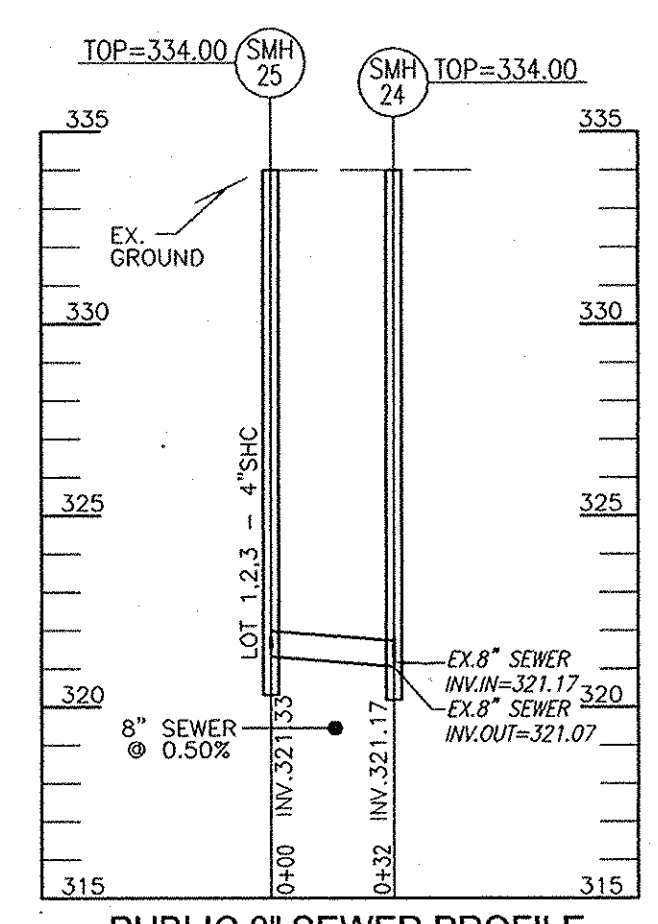
SCALE AS SHOWN  
 SHEET 5 OF 6



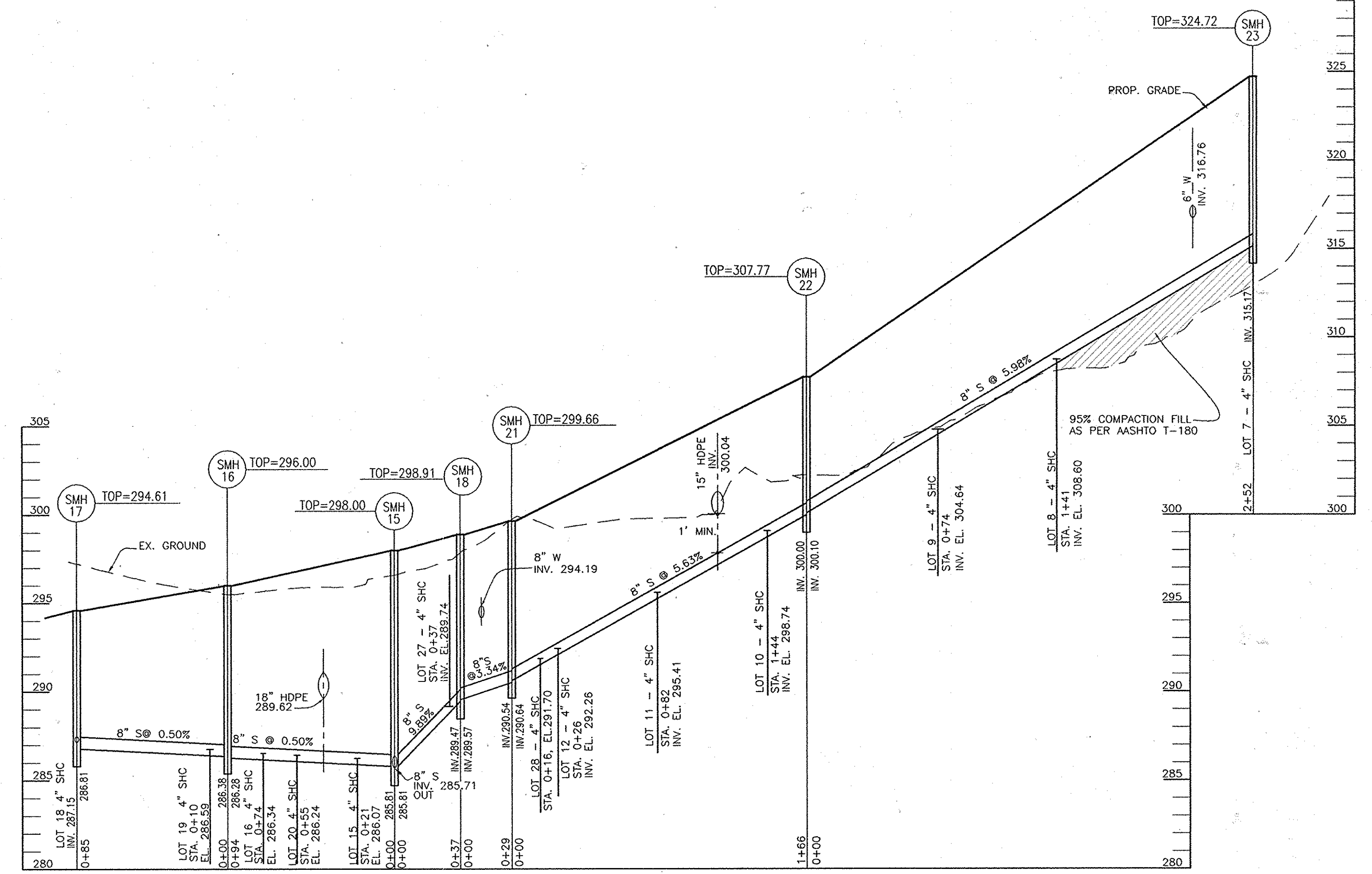
RHYTHM ROCK WAY  
PUBLIC 8" SEWER PROFILE  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



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



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



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

**AS BUILT**  
DATE: 4-29-2010  
UPDATED 4/2/13 C.I.D.

| SEWER CONNECTION TABULATION |               |              |             |                         |               |        |
|-----------------------------|---------------|--------------|-------------|-------------------------|---------------|--------|
| LOT NO                      | TYPE          | ELEV. @ MAIN | ELEV. @ DHC | ELEV. @ R/W OR EASEMENT | ELEV. @ UNL   | M.C.E. |
| 1                           | 4" SHC, @2.0% | 320.72       | --          | (14') 321.00            | (80') 322.32  |        |
| 3                           | 4" SHC, @2.0% | 324.72       | --          | (13') 324.98            | (309') 330.90 |        |
| 4                           | 4" SHC, @1.0% | 319.02       | --          | (15') 319.17            | (233') 321.35 | 323.85 |
| 5                           | 4" SHC, @1.0% | 319.04       | --          | (26') 319.30            | (28') 319.32  | 321.82 |
| 6                           | 4" SHC, @1.0% | 317.28       | --          | (13') 317.41            | (88') 318.16  | 320.66 |
| 7                           | 4" SHC, @2.0% | 315.17       | --          | (17') 315.51            | (39') 315.95  | 318.45 |
| 8                           | 4" SHC, @2.0% | 308.60       | --          | (14') 308.88            | (28') 309.16  | 311.66 |
| 9                           | 4" SHC, @2.0% | 304.64       | --          | (13') 304.90            | (29') 305.22  | 307.72 |
| 10                          | 4" SHC, @2.0% | 298.74       | --          | (16') 299.06            | (42') 299.58  | 302.08 |
| 11                          | 4" SHC, @2.0% | 295.41       | --          | (15') 295.71            | (41') 296.23  | 298.73 |
| 12                          | 4" SHC, @2.0% | 292.26       | --          | (13') 292.52            | (38') 293.04  | 295.54 |
| 13                          | 4" SHC, @5.0% | 298.84       | --          | (10') 299.34            | (32') 300.44  | 302.94 |
| 14                          | 4" SHC, @2.0% | 296.64       | --          | (10') 296.84            | (28') 297.20  | 299.70 |
| 15                          | 4" SHC, @5.0% | 286.07       | --          | (17') 286.92            | (43') 288.22  | 290.72 |
| 16                          | 4" SHC, @5.0% | 286.34       | --          | (17') 287.19            | (40') 288.34  | 290.84 |
| OPEN SPACE LOT 17           |               |              |             |                         |               |        |
| 18                          | 4" SHC, @2.0% | 287.15       | --          | (9') 287.88             | (85') 288.85  | 291.35 |
| 19                          | 4" SHC, @2.0% | 286.59       | --          | (23') 287.05            | (59') 287.77  | 290.27 |
| 20                          | 4" SHC, @2.0% | 286.24       | --          | (23') 286.70            | (54') 287.32  | 289.82 |
| 21                          | 4" SHC, @2.0% | 280.00       | --          | (9') 280.18             | (26') 280.52  | 283.02 |
| 22                          | 4" SHC, @1.0% | 277.00       | --          | (8') 277.08             | (20') 277.20  | 279.20 |
| OPEN SPACE LOT 23           |               |              |             |                         |               |        |
| 24                          | 4" SHC, @2.0% | 273.70       | --          | (9') 273.88             | (39') 274.48  | 276.98 |
| 25                          | 4" SHC, @2.0% | 276.75       | --          | (21') 277.17            | (40') 277.55  | 280.05 |
| 26                          | 4" SHC, @2.0% | 279.48       | --          | (22') 279.92            | (52') 280.52  | 283.02 |
| 27                          | 4" SHC, @2.0% | 289.74       | --          | (22') 290.18            | (55') 290.84  | 293.34 |
| 28                          | 4" SHC, @1.0% | 291.70       | --          | (26') 291.96            | (58') 292.28  | 294.78 |
| 29                          | 4" DHC, @2.0% | 272.32       | 276.48      | (27') 272.32            | (33') 272.44  | 273.94 |
| 30                          | 4" SHC, @2.0% | 276.78       | --          | (10') 276.98            | (46') 277.70  | 280.20 |
| 31                          | 4" SHC, @2.0% | 283.43       | --          | (11') 283.65            | (47') 284.37  | 286.87 |
| 32                          | 4" SHC, @2.0% | 290.14       | --          | (10') 290.34            | (47') 291.08  | 293.58 |
| 33                          | 4" SHC, @2.0% | 300.34       | --          | (34') 301.02            | (52') 301.38  | 303.88 |

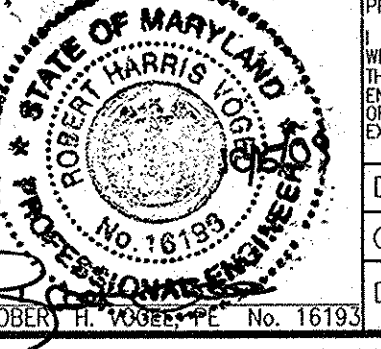
| SEWER MANHOLE SCHEDULE |   |   |                  |         |                 |
|------------------------|---|---|------------------|---------|-----------------|
| NO.                    | TYPE  | LOCATION                                    | TOP ELEV.        | INV. IN | INV. OUT        |
| EX. SMH 233            | EXISTING MANHOLE TO REMAIN (CONTR. NO. 30-1001-D) | N 547512.50 E 1344512.62                    | 251.00           | 240.24  | (30" S) 238.41± |
| SMH 2                  | PROVIDE DOORHOUSE MANHOLE, HO. CO. DET. 05-14     | N 547524.26 E 1344522.11                    | 250.51           | 240.60  | 240.60          |
| SMH 3                  | EXISTING MANHOLE TO REMAIN                        | N 547730.69 E 1344688.75                    | 254.20± (EXIST.) | 246.70  | 246.65          |
| SMH 4                  | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 547898.91 E 1344824.41                    | 259.10± (EXIST.) | 253.34  | 253.24          |
| SMH 5                  | EXISTING MANHOLE TO REMAIN                        | N 547993.10 E 1344900.37                    | 272.50           | 260.58  | 260.48          |
| SMH 6                  | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548052.37 E 1344902.03                    | 280.75           | 271.79  | 265.97          |
| SMH 7                  | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548132.59 E 1344863.46                    | 278.75           | 266.91  | 266.81          |
| SMH 8                  | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548256.57 E 1344815.32                    | 276.50           | 268.08  | 267.98          |
| SMH 9                  | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548334.90 E 1344760.31                    | 280.99           | 270.33  | 270.23          |
| SMH 10                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548362.92 E 1344799.78                    | 284.38           | 274.09  | 273.99          |
| SMH 11                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548401.04 E 1344823.72                    | 287.90           | 277.33  | 277.23          |
| SMH 12                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548538.07 E 1345016.75                    | 310.73           | --      | 300.00          |
| SMH 13                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548092.94 E 1344990.98                    | 287.26           | 276.67  | 276.57          |
| SMH 14                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548118.66 E 1345107.57                    | 296.00           | 283.89  | 283.79          |
| SMH 15                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | CL STA. 7+43.54', LONG VIEW ROAD, 3.48' LT. | 298.00           | 285.81  | 285.71          |
| SMH 16                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | CL STA. 8+37.61', LONG VIEW ROAD, 2.11' LT. | 296.00           | 286.38  | 286.28          |
| SMH 17                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548022.56 E 1345304.74                    | 294.61           | --      | 286.81          |
| SMH 18                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | CL STA. 7+06.50', LONG VIEW ROAD, 6.18' LT. | 298.91           | 289.57  | 289.47          |
| SMH 19                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548249.90 E 1345293.59                    | 305.24           | 296.30  | 296.20          |
| SMH 20                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548357.62 E 1345330.91                    | 315.25           | --      | 301.00          |
| SMH 21                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | CL STA. 6+76.41', LONG VIEW ROAD, 7.53' LT. | 299.66           | 290.64  | 290.54          |
| SMH 22                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | CL STA. 5+10.46', LONG VIEW ROAD, 3.27' LT. | 307.77           | 300.10  | 300.00          |
| SMH 23                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | CL STA. 2+55.10', LONG VIEW ROAD, 7.41' LT. | 324.72           | --      | 315.17          |
| SMH 24                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | N 548811.53 E 1345388.38                    | 334.00           | 321.17  | --              |
| SMH 25                 | STD. PRECAST MH HO. CO. STD. DET. 05-12           | CL STA. 0+08.59', LONG VIEW ROAD, 6.86' LT. | 334.00           | --      | 321.33          |

NOTES: THIS SHEET REPLACES SHEET 5 OF 6 SIGNED ON 03/26/08 BY THE CHIEF, BUREAU OF UTILITIES.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
CHIEF, BUREAU OF UTILITIES  
11/6/09

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
11/9/09

**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. 16139, EXPIRATION DATE: 09-27-2010  
DRN: KG DES: RJ  
CHK: RHW  
DATE: JUNE 2009

| NO. | REVISION  | DATE     |
|-----|---|----------|
| 1   | MODIFIED WATER AND SEWER DESIGN FOR ADDITIONAL SEVEN LOTS | 06/11/09 |

FINAL WATER AND SEWER PROFILES  
CONTRACT NO. 34-4448-D  
600' SCALE MAP NO. 41  
BLOCK NO. XX

FINAL WATER AND SEWER RIVERSIDE OVERLOOK PHASE I & PHASE II SINGLE FAMILY DETACHED LOTS 4 TO 12, 18 TO 22, 24 TO 33, AND NON-BUILDABLE BULK PARCEL 'B'  
TAX MAP 41, GRID 11  
5TH ELECTION DISTRICT  
PARCEL 179  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 6 OF 6