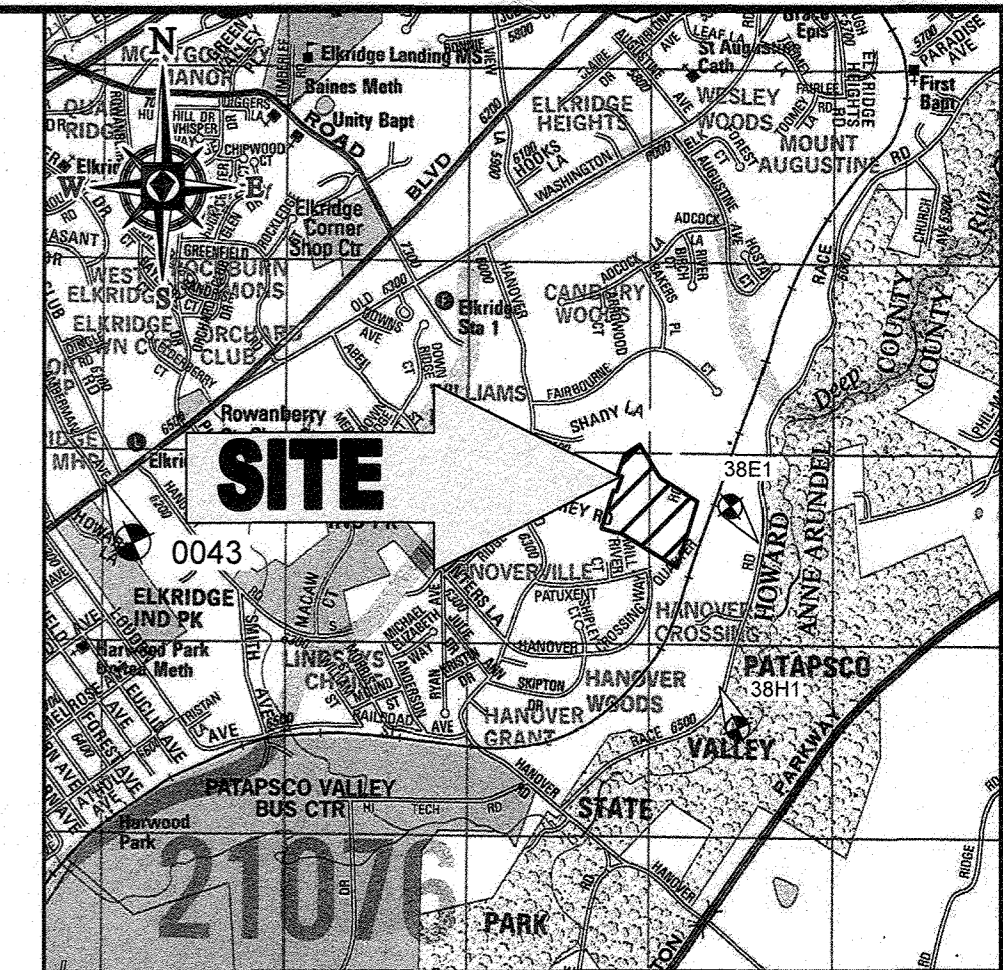


# FINAL PUBLIC WATER & PUBLIC SEWER PLANS

## FOR ELKRIDGE WOODS

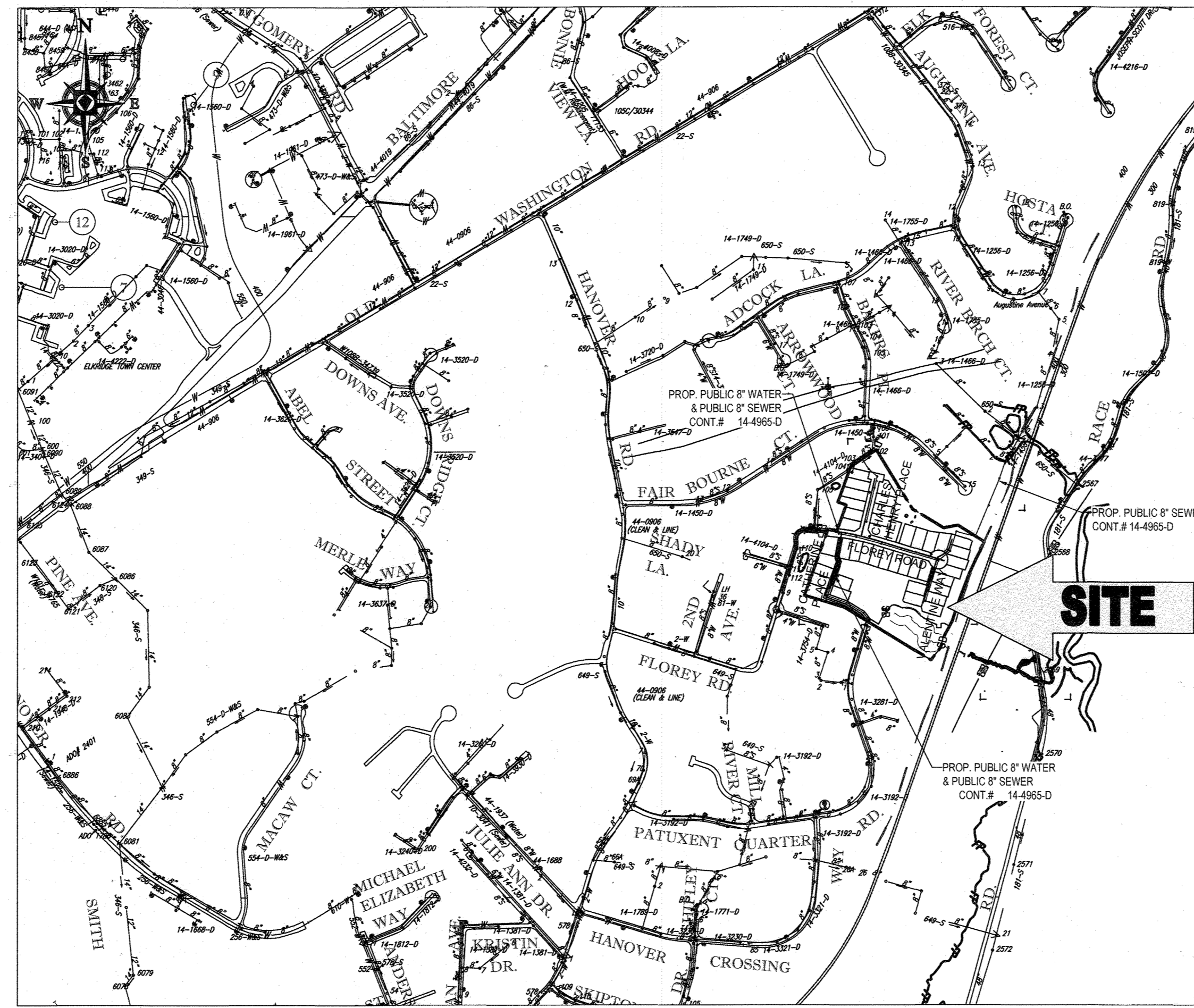
LOCATION OF SITE  
 5920 FLOREY ROAD ELKRIDGE, MD  
 TAX MAP 38, GRID 9, PARCEL 756 & 340  
 1ST ELECTION DISTRICT  
 HOWARD COUNTY  
 CONTRACT NO.: 14-4965-D



LOCATION MAP  
 COPYRIGHT ADC THE MAP PEOPLE  
 PERMIT USE NO. 20602153-5  
 SCALE: 1"=200'  
 ADC MAP COORDINATES: 4937-F8

| SHEET INDEX                                      |              |
|--|--------------|
| SHEET TITLE                                      | SHEET NUMBER |
| TITLE SHEET                                      | 1            |
| PUBLIC 8" WATER MAIN & PUBLIC 8" SEWER MAIN PLAN | 2-3          |
| PUBLIC 8" & 6" WATER MAIN - PROFILES             | 4            |
| PUBLIC 8" & 6" WATER MAIN - PROFILES             | 5            |
| PUBLIC 8" SEWER - PROFILES                       | 6-7          |

| QUANTITIES TABLE                  |                      |                 |                 |                         |
|-----------------------------------|----------------------|-----------------|-----------------|-------------------------|
| ITEMS                             | QUANTITIES ESTIMATED | QUANTITIES      | AS-BUILT TYPE   | MANUFACTURER / SUPPLIER |
| 6" 1/8 BEND                       | 1                    | 1 EA.           | EPOXY COATED DI | STAR PIPE               |
| 6" 1/16 BEND                      | 1                    | 1 EA.           | EPOXY COATED DI | STAR PIPE               |
| 8" 1/16 BEND                      | 4 EA.                | 4 EA.           | EPOXY COATED DI | STAR PIPE               |
| 8" 1/8 BEND                       | 3                    | 3 EA.           | EPOXY COATED DI | STAR PIPE               |
| 6" 1/32 BEND                      | 4                    | 4 EA.           | EPOXY COATED DI | STAR PIPE               |
| 8" 1/32 BEND                      | 5                    | 5 EA.           | EPOXY COATED DI | STAR PIPE               |
| 1 1/2" WHC                        | 985 L.F.             | 985 L.F.        | TYPE K          | CAMBRIDGE LEE           |
| 1 1/2" COPPER WATERLINE           | 42                   | 42 L.F.         | TYPE K          | CAMBRIDGE LEE           |
| 8" C900 DR 18 PVC WATER           | 1,783 L.F.           | 1783 L.F.       | PVC             | NORTH AMERICAN          |
| 8" C900 DR 18 PVC WATER           | 424 L.F.             | 424 L.F.        | PVC             | NORTH AMERICAN          |
| 8" VALVE                          | 9                    | 9 EA.           | EPOXY COATED DI | AMERICAN FLOW CONTROL   |
| 6" VALVE                          | 6                    | 6 EA.           | EPOXY COATED DI | AMERICAN FLOW CONTROL   |
| FIRE HYDRANTS                     | 4                    | 4 EA.           | EPOXY COATED DI | AMERICAN SPARKLING      |
| AIR RELEASE VALVE                 | 1                    | 1 EA.           | EPOXY COATED DI |                         |
| 8"x8" TEE                         | 2                    | 2 EA.           | EPOXY COATED DI | STAR PIPE               |
| 8"x6" CROSS                       | 1                    | 1 EA.           | EPOXY COATED DI | STAR PIPE               |
| 8"x6" TEE                         | 4                    | 4 EA.           | EPOXY COATED DI | STAR PIPE               |
| 6" 3" HIGH DEFLECTION COUPLING    | 3                    | 3 EA.           | PVC             | NORTH AMERICAN          |
| 8" 3" HIGH DEFLECTION COUPLING    | 17                   | 17 EA.          | PVC             | NORTH AMERICAN          |
| 4" SDR 35 PVC SHC                 | 930 L.F.             | 930 L.F.        | PVC             | NORTH AMERICAN          |
| 8" SEWER SDR 35 PVC               | 1,851 L.F.           | 1851 L.F.       | PVC             | NORTH AMERICAN          |
| SANITARY MANHOLE                  | 17                   | 17 EA.          | CONCRETE        | PRISM PRECAST           |
| 8" BLOW-OFF VALVE, CAP & BUTTRESS | 2                    | 2 EA.           | EPOXY COATED DI |                         |
| 6" BLOW-OFF VALVE, CAP & BUTTRESS | 2                    | 2 EA.           | EPOXY COATED DI |                         |
| NAME OF UTILITY CONTRACTOR        |                      | GAINES          |                 |                         |
| CHECK BOX                         |                      |                 |                 |                         |
| AS-BUILT DATE                     |                      |                 | 3/2/22          |                         |
| SURVEY AND DRAFTING DIVISION      |                      |                 |                 |                         |
| <b>8" SEWER C900 PVC</b>          | <b>630 L.F.</b>      | <b>630 L.F.</b> | <b>PVC</b>      | <b>NORTH AMERICAN</b>   |



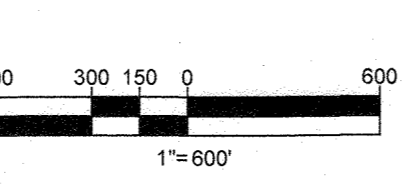
**GEODETTIC SURVEY CONTROL**  
 GEODETTIC SURVEY CONTROL - 38E1  
 ELEV. 32.408'  
 N 557,794.508  
 E 1,393,570.083  
 GEODETTIC SURVEY CONTROL - 0043  
 ELEV. 189.491'  
 N 558,479.001  
 E 1,386,642.122

**SEWER NOTES**  
 1. ALL SEWER MAINS SHALL BE SDR 35 OR SCH. 40 PVC UNLESS OTHERWISE NOTED.  
 2. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.  
 3. FORCE MAINS SHALL BE D.I.P. ONLY.  
 4. MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.  
 5. MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G5.52. WHERE WATERTIGHT FRAME AND COVER IS USED, SET TOP OF FRAME 1"-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.  
 6. HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION  
*John Robert* 8/14/18  
 HOWARD SCD

**OWNER**  
 RHONDA REDD  
 PO BOX 8465  
 ELKRIDGE, MD 21075  
 PHONE: (917) 825-2781  
 FREDERICK SIPES, JR.  
 JOHNNY SIPES  
 DAVID SIPES  
 850 MARRIOTTSVILLE RD  
 MARRIOTTSVILLE, MD 21104  
 PHONE: (410) 596-6765

**DEVELOPER**  
 ELM STREET DEVELOPMENT  
 5074 DORSEY HALL ROAD, SUITE 205  
 COLUMBIA, MD 21042  
 CONTACT: JASON VAN KIRK  
 PHONE: (410) 720-3021



**VICINITY MAP**  
 SCALE: 1"=600'  
 TYPE OF BUILDING: RESIDENTIAL  
 NUMBER OF LOTS/PARCELS: UNITS: 42  
 AREA OF RESIDENTIAL LOT/PARCEL: 15.41 AC  
 NUMBER OF W.H.C.: 42 (PROPOSED)  
 NUMBER OF S.H.C.: 42 (PROPOSED)  
 WATER ZONE: 400  
 TEST GRADIENT: 550W  
 DRAINAGE AREA: PATAPSCO  
 TREATMENT PLANT: PATAPSCO WASTE WATER TREATMENT PLANT

**REFERENCE DRAWINGS**  
 S-16-001  
 ECP-16-008

FOR REVISION 1 ONLY  
**B.R. ROWE**  
 PROFESSIONAL ENGINEER  
 MARYLAND LICENSE NO. 40862  
 PROFESSIONAL CERTIFICATION  
 I, BRUCE B. ROWE, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE MARYLAND PROFESSIONAL ENGINEERING LICENSE ACT, MARYLAND, LICENSE NO. 40862, EXPIRES DATE: 7/3/2019

**GENERAL NOTES**

- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON APRIL 28, 2015 BY BOHLER ENGINEERING.
- THE COORDINATES SHOWN HEREON ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD83/91 AS PROJECTED BY HOWARD COUNTY GEODETTIC CONTROL STATIONS NO. 38E1 AND 0041. ALL VERTICAL CONTROLS ARE BASED ON NAVD'88. VERTICAL CONTROLS PROVIDED ON THE DRAWING ARE 38E1 & 0041.  
 HOWARD COUNTY MONUMENT NO. 38E1 ELEV. = 32.408'  
 HOWARD COUNTY MONUMENT NO. 0041 ELEV. = 189.491'
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWING, AND FOR MATERIALS AND CONSTRUCTION METHODS, 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 [Symbol]. AT THE LOCATIONS OF THE TEST PITS A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IN 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 OPERATIONS AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
 AT & T 1-800-252-1133  
 BGE (CONSTRUCTION SERVICES) 410-637-8713  
 BGE (EMERGENCY) 410-685-0123  
 BUREAU OF UTILITIES 410-313-4900  
 COLONIAL PIPELINE COMPANY 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 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(A) OF THE HOWARD COUNTY CODE.
- A WAIVER REQUEST FROM THE HOWARD COUNTY DESIGN MANUAL VOL. II, WATER AND SEWER SECTION 4.3 B.3 B AND 4.5 E FOR LOTS 17-20 (NO BASEMENT GRAVITY SERVICE) WAS SUBMITTED ON 7/13/17 TO HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS AND APPROVED ON 10/19/17 IN ORDER TO PROVIDE GRAVITY SANITARY SERVICE TO THE BASEMENT OF THE IDENTIFIED LOTS. THE DEPTH OF THE DOWNSTREAM SEWER MAIN WOULD EXCEED THE 18' DEPTH THAT THE BUREAU OF UTILITIES PREFERS BY OVER 5' AT POINTS. THE DEEPER SERVICE WOULD RESULT IN DEEPER MANHOLES AND BURIED DEPTHS OF PIPE THAT WOULD LIKELY RESULT IN HIGHER MAINTENANCE COSTS FOR THE COUNTY. NO OTHER FEASIBLE GRAVITY SOLUTION IS AVAILABLE FOR THESE LOTS. THE FIRST FLOOR OF THE UNITS ON THESE LOTS WOULD BE SERVICED BY GRAVITY SANITARY SEWER. SHOULD AN OWNER CHOOSE TO FINISH THE BASEMENT WITH A BATHROOM FACILITY, A FLUSH-UP SERVICE WILL BE REQUIRED. THE CONDITIONS OF THE APPROVED WAIVER IS TO LABEL EACH LOT C.N.S. TO DENOTE THAT THE CELLAR CANNOT BE SERVED.

**WATER NOTES**

- ALL WATER MAINS TO BE P.V.C. C900 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-0" 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 RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE 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.
- TRACER WIRES AND CONTINUITY TEST STATION SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL.
- FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATIONS TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH PIPE MATERIALS CERTIFICATIONS OR SHOP DRAWING 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 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 RESTRAINS 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 COMPACTOR EQUIPMENT DIRECTLY OVER THE FITTING.
- PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (1 1/2-DEGREE ON EITHER END OF THE COUPLING). SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C900. SHALL HAVE A MINIMUM LAY LENGTH OF 8-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 (IPEX) BLUE BRUTE DR18 OR EQUAL.
- WHEN PVC HIGH DEFLECTION COUPLINGS OR 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.
- EACH DWELLING WILL BE SERVED BY A 1-1/2" DIAMETER WHC, WITH A 1" METER WHICH WILL BE LOCATED AT THE PROPERTY LINE. THE PREFERRED LOCATION OF THE OUTSIDE WATER METER SETTING IS IN A GRASS AREA WITH THE ROAD RIGHT-OF-WAY AND OUTSIDE OF TRAFFIC BEARING AREAS.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  
 [Signature]  
 CHIEF, BUREAU OF UTILITIES DATE 8-7-18

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND  
 [Signature]  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 9-13-18

**BOHLER ENGINEERING**  
 801 DULANEY VALLEY ROAD, SUITE 801  
 TOWSON, MARYLAND 21284  
 Phone: (410) 821-7900  
 Fax: (410) 821-7987  
 www.BohlerEngineering.com

**B.R. ROWE**  
 PROFESSIONAL ENGINEER  
 MARYLAND LICENSE NO. 40862  
 PROFESSIONAL CERTIFICATION  
 I, BRUCE B. ROWE, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE MARYLAND PROFESSIONAL ENGINEERING LICENSE ACT, MARYLAND, LICENSE NO. 40862, EXPIRES DATE: 7/3/2019

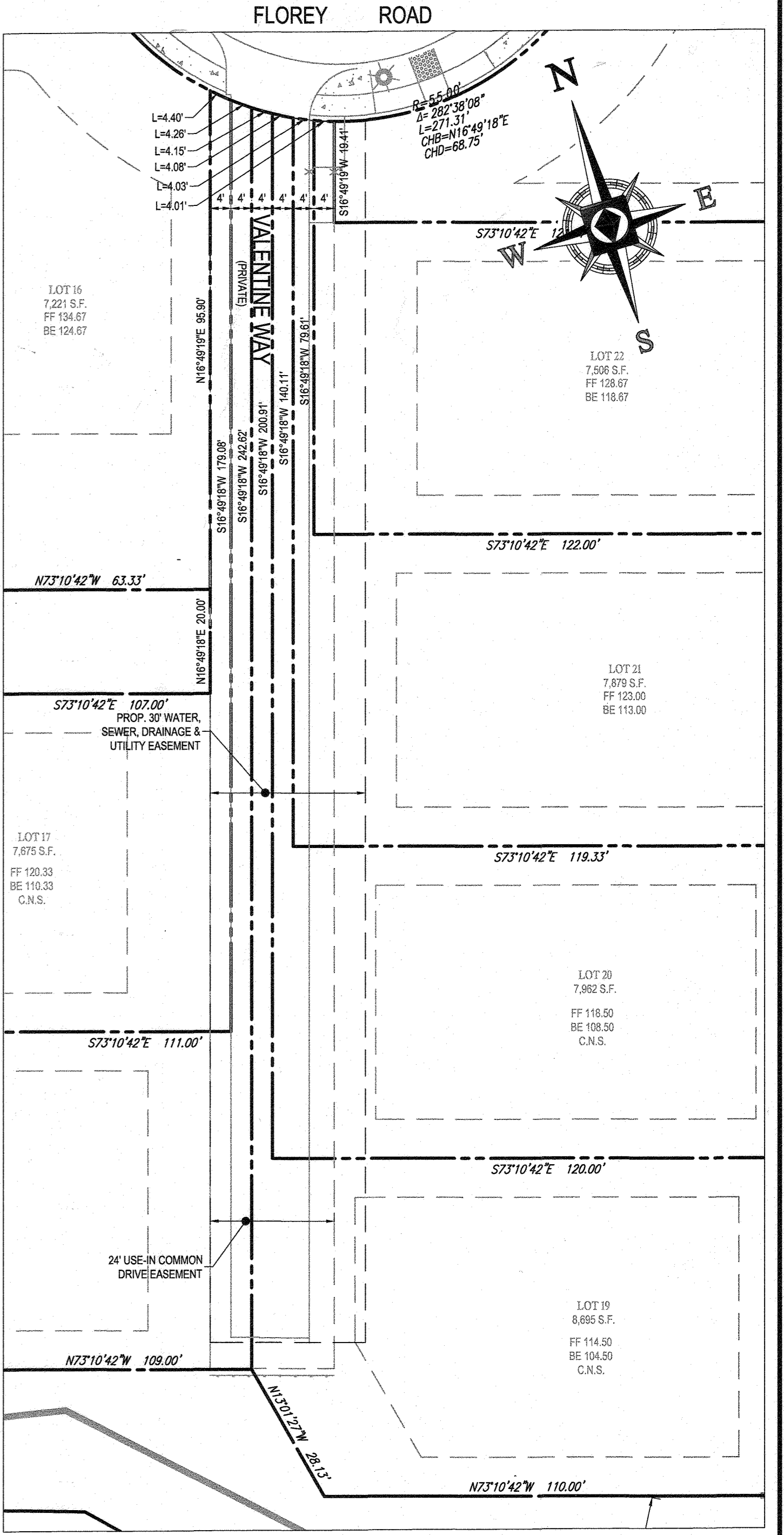
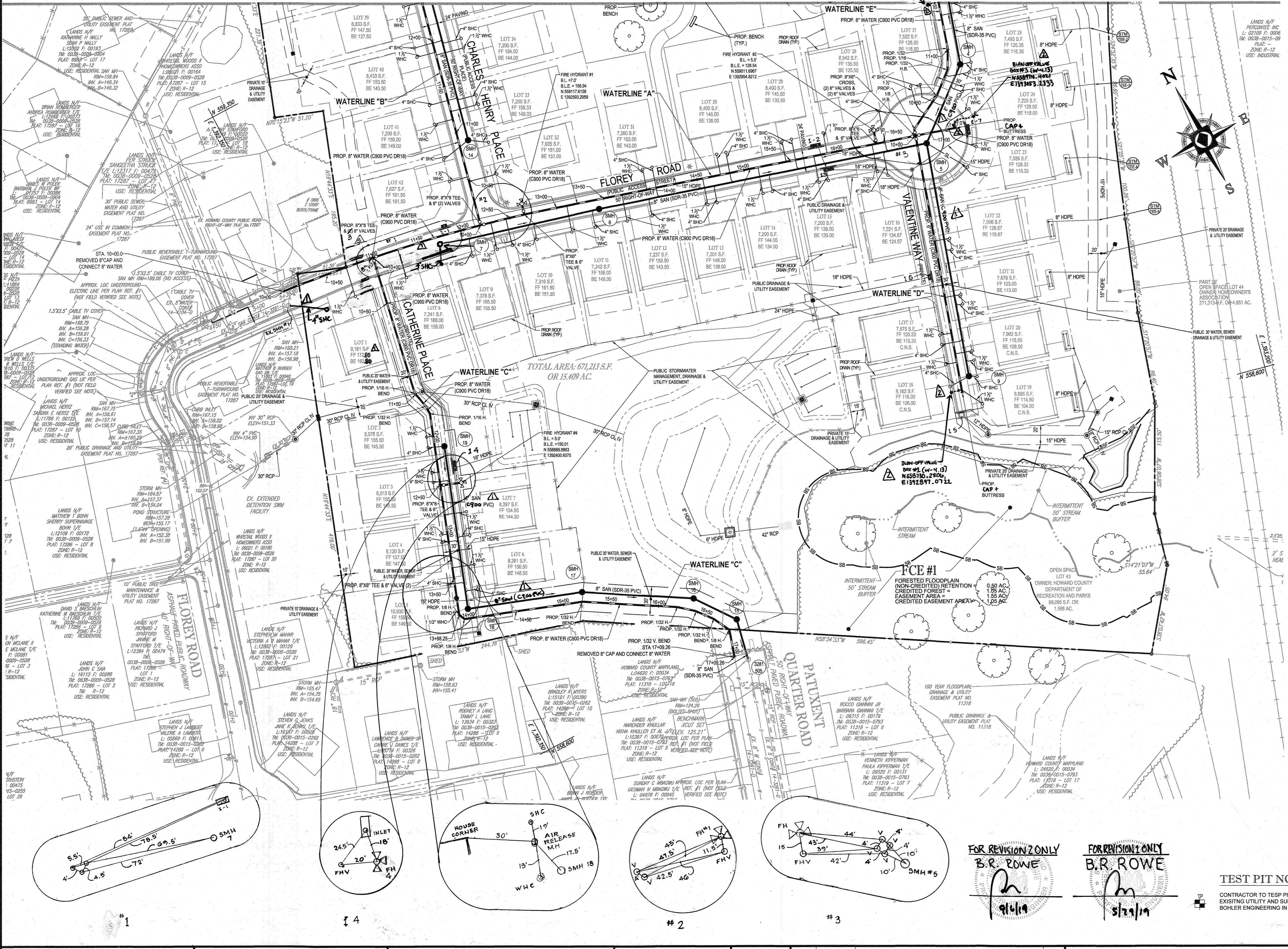
| DES. AVG | DRN. AVG | CK. M.K. | DATE     | DESCRIPTION                          |
|----------|----------|----------|----------|--------------------------------------|
|          |          |          | 04/00/19 | REVISED LOT 1 & 2 SHC, REMOVED SMA-B |
|          |          |          | 07/19/18 |                                      |

| TITLE SHEET        |           |
|--------------------|-----------|
| PARCEL NO.         | 756 & 340 |
| 600' SCALE MAP NO. | 38        |
| BLOCK NO.          | 9         |

**ELKRIDGE WOODS**  
 LOTS 1 - 42 & OPEN SPACE LOTS 43 & 44  
 5920 FLOREY ROAD ELKRIDGE, MD  
 TAX MAP 38, GRID 9, PARCEL 756 & 340  
 1ST ELECTION DISTRICT  
 HOWARD COUNTY  
 CONTRACT NO.: 14-4965-D

SCALE AS SHOWN SHEET 1 OF 7

MATCHLINE: SEE SHEET 3



FRONT FOOT SECTION

SCALE: 1" = 20'

LEGEND

- PROPOSED FIRE HYDRANT
- PROPOSED WATER MAIN
- PROPOSED SANITARY SEWER
- PROPOSED WHC'S
- PROPOSED SHC'S
- EXISTING STORM DRAIN
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER VALVE, TEE & CROSS
- EX. STREAM BUFFER
- EX. FLOODPLAIN
- EX. WETLAND BUFFER

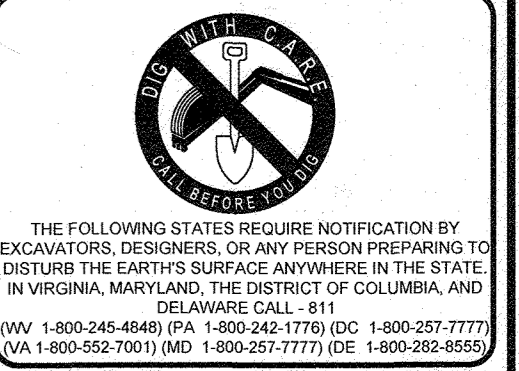
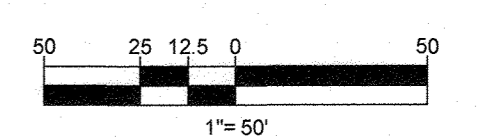
GEODETTIC SURVEY CONTROL

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GEODETTIC SURVEY CONTROL - 0043  
 ELEV. 199.491'  
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 E 1.386,642.122

TEST PIT NOTE:

CONTRACTOR TO TEST PIT FOR EXACT LOCATION OF EXISTING UTILITY AND SUBMIT ANY DISCREPANCIES AT BOHLER ENGINEERING IN WRITING.



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  
 [Signature] 9/15/18  
 CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND  
 [Signature] 9.13.18  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

**BOHLER ENGINEERING**  
 901 DULANEY VALLEY ROAD, SUITE 801  
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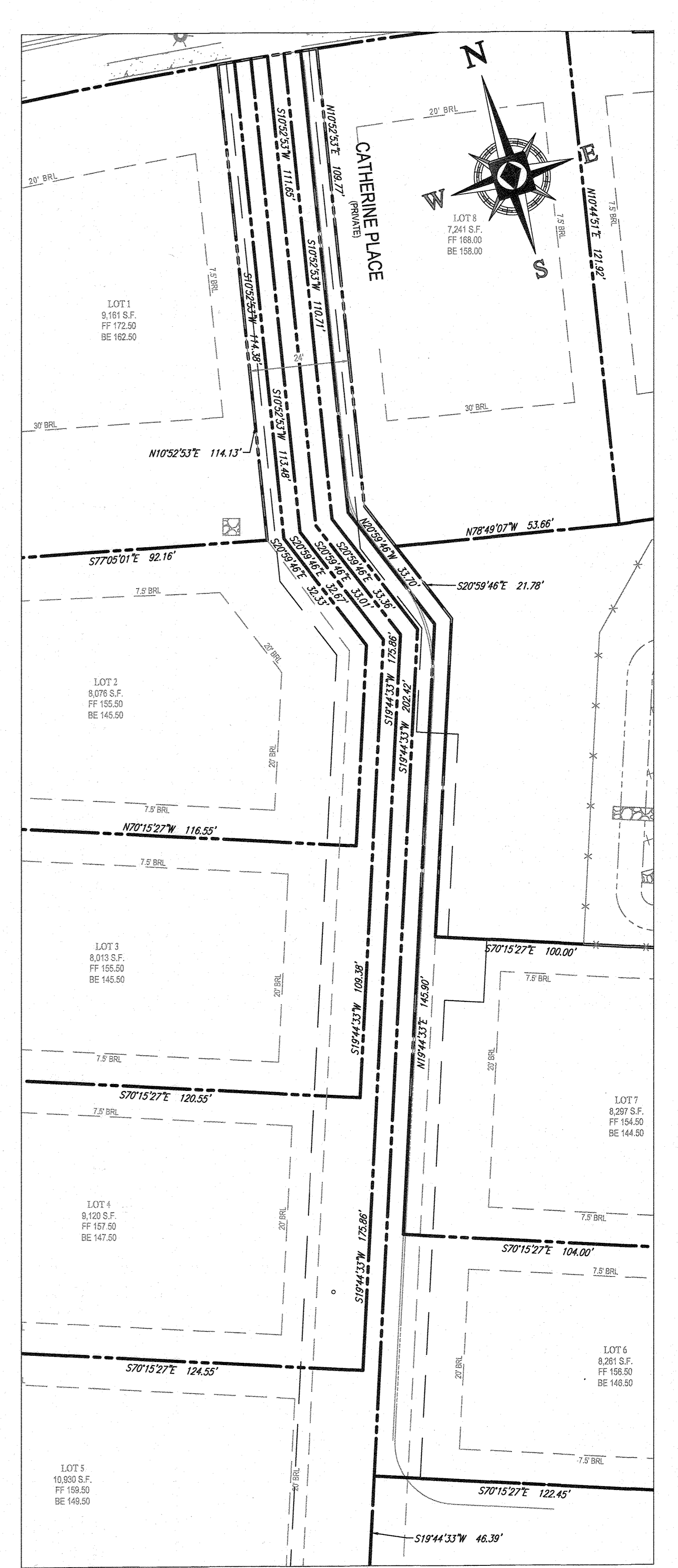
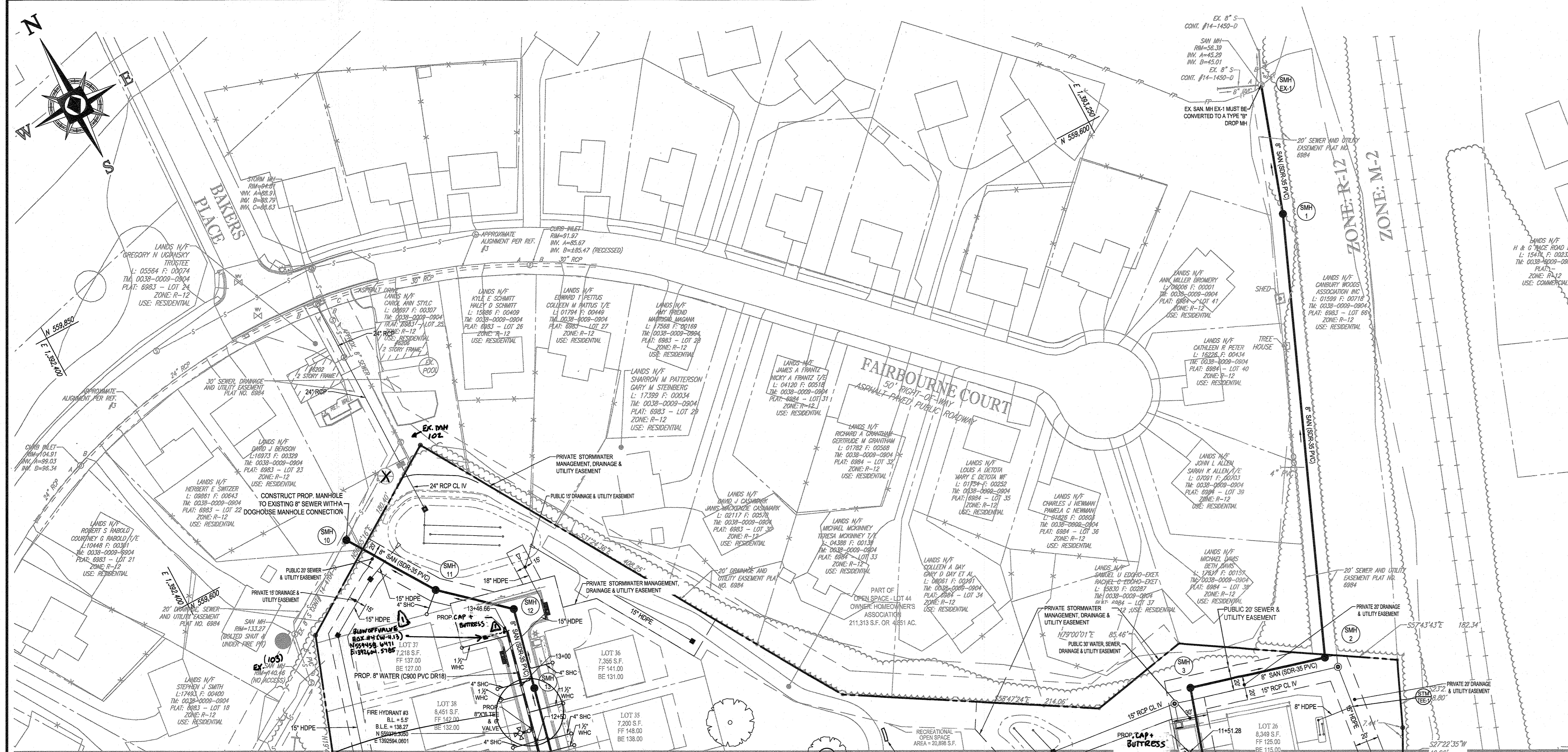
**B.R. ROWE**  
 PROFESSIONAL ENGINEER  
 License No. 4088, Expiration Date 10/20/25

| REV. | DATE     | DESCRIPTION                        | BY  |
|------|----------|------------------------------------|-----|
| 3    | 1/6/23   | CHANGED NO. OF VALVES TO 3         | WRA |
| 2    | 09/05/19 | REVISED BLOW-OFF VALVE'S LOCATION  | CME |
| 1    | 04/01/18 | REVISED LOT 18 SMC'S REMOVED SMC'S | MK  |

PUBLIC 8" & 6" WATER MAIN & PUBLIC 8" SEWER MAIN PLAN  
 PARCEL NO. 756 & 340  
 600' SCALE MAP NO. 38 BLOCK NO. 9

**ELKCRIDGE WOODS**  
 LOTS 1 - 42 & OPEN SPACE LOTS 43 & 44  
 5920 FLOREY ROAD ELKCRIDGE, MD  
 TAX MAP 38, GRID 9, PARCEL 756 & 340  
 1ST ELECTION DISTRICT  
 HOWARD COUNTY  
 CONTRACT NO.: 14-4965-D

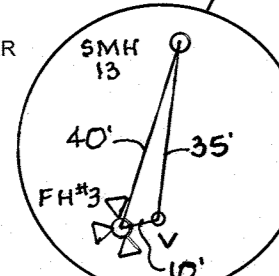
SCALE: 1" = 50'  
 SHEET: 2 OF 7



MATCHLINE: SEE SHEET 2

**LEGEND**

- PROPOSED FIRE HYDRANT
- PROPOSED WATER MAIN
- PROPOSED SANITARY SEWER
- PROPOSED WHC'S
- PROPOSED SHC'S
- EXISTING STORM DRAIN
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER VALVE, TEE & CROSS
- EX. STREAM BUFFER
- EX. FLOODPLAIN
- EX. WETLAND BUFFER



**TEST PIT NOTE:**

CONTRACTOR TO TEST PIT FOR EXACT LOCATION OF EXISTING UTILITY AND SUBMIT ANY DISCREPANCIES AT BOHLER ENGINEERING IN WRITING.

**GEODETIC SURVEY CONTROL**

GEODETIC SURVEY CONTROL - 38E1  
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N 557,794.958  
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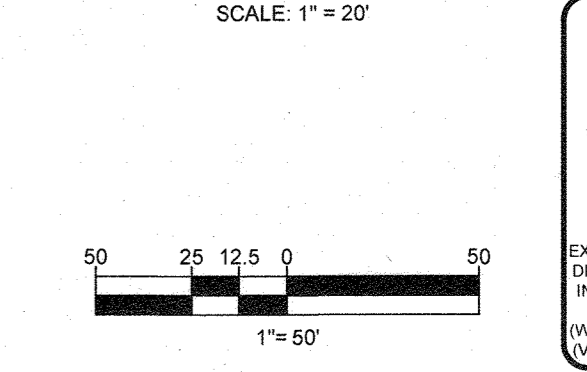
| SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE |                    |                      |                      | SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE |              |                      |                      |
|--|--------------------|----------------------|----------------------|--|--------------|----------------------|----------------------|
| LOT NUMBER                                     | ADDRESS            | LOCATION DIMENSION 1 | LOCATION DIMENSION 2 | LOT NUMBER                                     | ADDRESS      | LOCATION DIMENSION 1 | LOCATION DIMENSION 2 |
| LOT 1  | EX. SMH 70.5'      | MAILBOXES 47'        | LOT 22               | SMH 5 117'                                     | I 6 38.5'    |                      |                      |
| LOT 2  | I 4 34.5'          | SMH 19 2.0'          | LOT 23               | SMH 6 50.5'                                    | I 7 41'      |                      |                      |
| LOT 3  | I 4 27'            | SMH 19 4.0'          | LOT 24               | SMH 5 64'                                      | SMH 4 30'    |                      |                      |
| LOT 4  | I 4 79'            | SMH 18 7.6'          | LOT 25               | SMH 5 74'                                      | SMH 4 11.5'  |                      |                      |
| LOT 5  | ARMH 20'           | SMH 18 37'           | LOT 26               | I 8 36.5'                                      | SMH 4 64'    |                      |                      |
| LOT 6  | ARMH 27.5'         | SMH 18 79'           | LOT 27               | SMH 5 58.5'                                    | I 7 6.5'     |                      |                      |
| LOT 7  | I 4 73'            | SMH 18 25.5'         | LOT 28               | SMH 5 60'                                      | I 3 78'      |                      |                      |
| LOT 8  | SMH 7 66'          | I 1 41'              | LOT 29               | I 2 26'  | I 3 55'      |                      |                      |
| LOT 9  | SMH 7 36'          | I 1 45'              | LOT 30               | I 2 96'  | I 3 118'     |                      |                      |
| LOT 10   | HYD. #1 41'        | SMH 6 72.5'          | LOT 31               | SMH 6 66'                                      | WHC 5917 61' |                      |                      |
| LOT 11   | HYD. #1 82'        | SMH 6 20'            | LOT 32               | SMH 14 22'                                     | I 1 101.5'   |                      |                      |
| LOT 12   | WHC 5910 50'       | SMH 6 122.5'         | LOT 33               | SMH 14 49'                                     | I 1 137'     |                      |                      |
| LOT 13   | I 3 129'           | I 2 119.5'           | LOT 34               | SMH 14 108'                                    | HYD #3 80'   |                      |                      |
| LOT 14   | I 3 70.5'          | I 2 67'              | LOT 35               | SMH 14 164'                                    | HYD #3 85'   |                      |                      |
| LOT 15   | I 3 13.5'          | I 2 40'              | LOT 36               | SMH 15 20.5'                                   | SMH 12 54.5' |                      |                      |
| LOT 16   | I 3 57'            | SMH 5 92.5'          | LOT 37               | SMH 11 23.5'                                   | SMH 12 74'   |                      |                      |
| LOT 17   | I 6 70.5'          | SMH 9 23'            | LOT 38               | SMH 13 32'                                     | SMH 12 68'   |                      |                      |
| LOT 18   | I 6 115'           | SMH 9 45'            | LOT 39               | HYD. #3 13.5'                                  | SMH 14 165'  |                      |                      |
| LOT 19   | I 6 115'           | SMH 9 8.5'           | LOT 40               | HYD. #3 65.5'                                  | SMH 14 112'  |                      |                      |
| LOT 20   | I 6 98.5'          | SMH 9 19'            | LOT 41               | HYD. #3 126.5'                                 | SMH 14 55.5' |                      |                      |
| LOT 21   | I 6 45.5'          | SMH 9 77'            | LOT 42               | I 1 69'  | SMH 14 92'   |                      |                      |
| BLOW OFF 6023 CHARLES HENRY                    | SMH 11 58.5'       | SMH 12 37.5'         |                      |  |              |                      |                      |
| DO VALVE 6023 CHARLES HENRY                    | SMH 13 84'         | SMH 12 21'           |                      |  |              |                      |                      |
| BLOW OFF 5094 FLOREY RD                        | SMH 4 71'          | INLET 8 25.5'        |                      |  |              |                      |                      |
| DO VALVE 5894 FLOREY RD                        | SMH 4 69'          | INLET 8 23.5'        |                      |  |              |                      |                      |
| BLOW OFF 5091 FLOREY RD                        | BLOW OFF VALVE 21' | INLET 7 14'          |                      |  |              |                      |                      |
| DO VALVE 5891 FLOREY RD                        | BLOWOFF 21'        | INLET 7              |                      |  |              |                      |                      |
| BLOW OFF 6014 VALENTINE WAY                    | SMH #9 26'         | WHC 6014 31.5'       |                      |  |              |                      |                      |
| DO VALVE 6014 VALENTINE WAY                    | SMH #9 21'         | WHC 6014 35.5'       |                      |  |              |                      |                      |

| WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE |              |                      |                      | WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE |               |                      |                      |
|--|--------------|----------------------|----------------------|--|---------------|----------------------|----------------------|
| LOT NUMBER                                     | ADDRESS      | LOCATION DIMENSION 1 | LOCATION DIMENSION 2 | LOT NUMBER                                     | ADDRESS       | LOCATION DIMENSION 1 | LOCATION DIMENSION 2 |
| LOT 1  | EX. SMH 41'  | MAILBOXES 69'        | LOT 22               | SMH 5 104'                                     | I 6 45'       |                      |                      |
| LOT 2  | I 4 42'      | SMH 19 22'           | LOT 23               | SMH 5 52'                                      | I 7 20'       |                      |                      |
| LOT 3  | I 4 26'      | SMH 19 32'           | LOT 24               | SMH 5 57'                                      | SMH 4 49'     |                      |                      |
| LOT 4  | I 4 72'      | SMH 18 85.5'         | LOT 25               | SMH 5 86'                                      | SMH 4 13'     |                      |                      |
| LOT 5  | ARMH 13'     | SMH 18 16'           | LOT 26               | I 8 44'  | SMH 4 55'     |                      |                      |
| LOT 6  | ARMH 47'     | SMH 18 102.5'        | LOT 27               | SMH 5 60'                                      | I 7 74'       |                      |                      |
| LOT 7  | I 4 41'      | SMH 18 48.5'         | LOT 28               | SMH 5 108.5'                                   | I 2 16'       |                      |                      |
| LOT 8  | SMH 7 50.5'  | I 1 22'              | LOT 29               | I 3 62'  | I 2 34.5'     |                      |                      |
| LOT 9  | SMH 7 59'    | I 1 62'              | LOT 30               | I 3 125'                                       | I 2 104'      |                      |                      |
| LOT 10   | HYD #1 46'   | SMH 6 100'           | LOT 31               | SMH 6 61'                                      | WHC 5917 57'  |                      |                      |
| LOT 11   | HYD #1 61'   | SMH 6 37.5'          | LOT 32               | SMH 14 46'                                     | I 1 78'       |                      |                      |
| LOT 12   | WHC 5910 57' | SMH 6 114'           | LOT 33               | SMH 14 41'                                     | I 1 145'      |                      |                      |
| LOT 13   | I 3 137'     | I 2 127'             | LOT 34               | SMH 14 99'                                     | HYD #3 87'    |                      |                      |
| LOT 14   | I 3 80'      | I 2 74'              | LOT 35               | SMH 14 154'                                    | HYD #3 47'    |                      |                      |
| LOT 15   | I 3 21'      | I 2 39'              | LOT 36               | SMH 13 26.5'                                   | SMH 12 90'    |                      |                      |
| LOT 16   | I 3 45'      | SMH 5 61'            | LOT 37               | SMH 11 56'                                     | SMH 12 55.5'  |                      |                      |
| LOT 17   | I 6 61'      | SMH 9 28'            | LOT 38               | SMH 13 32'                                     | SMH 12 79'    |                      |                      |
| LOT 18   | I 6 72'      | SMH 9 53.5'          | LOT 39               | HYD #3 21'                                     | SMH 14 156'   |                      |                      |
| LOT 19   | I 6 141'     | SMH 9 80'            | LOT 40               | HYD #3 70'                                     | SMH 14 102.2' |                      |                      |
| LOT 20   | I 6 88'      | SMH 9 28'            | LOT 41               | HYD #3 147'                                    | SMH 14 39'    |                      |                      |
| LOT 21   | I 6 37'      | SMH 9 86.5'          | LOT 42               | I 1 46'  | SMH 14 46'    |                      |                      |

FOR REVISION 1 ONLY  
BR. ROWE



FRONT FOOT SECTION  
SCALE: 1" = 20'



THE FOLLOWING STATE'S REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL - 811 (WWW.811.COM) (VA 1-800-245-4444) (PA 1-800-245-1778) (DC 1-800-257-7777) (MD 1-800-552-7001) (DE 1-800-257-7777)

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  
*[Signature]* 9/5/18  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND  
*[Signature]* 9.13.18  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**BOHLER ENGINEERING**  
901 DULANEY VALLEY ROAD, SUITE 801 TOWSON, MARYLAND 21284  
Phone: (410) 821-7900 Fax: (410) 821-7987  
www.BohlerEngineering.com

**BR. ROWE**  
PROFESSIONAL ENGINEER  
LICENSE NO. 4096 EXPIRATION DATE 10/01/19

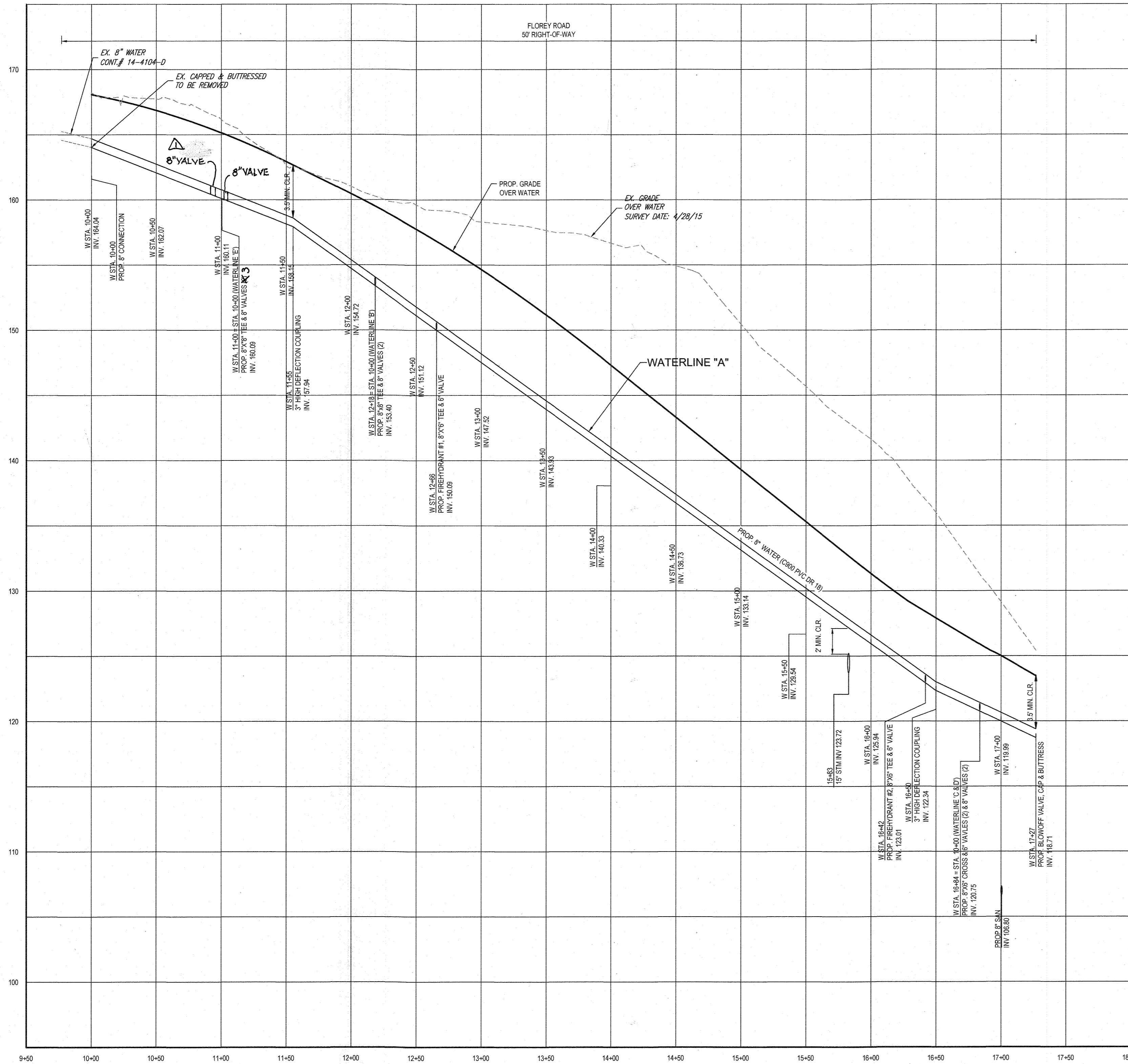
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|---|--|
| DES. AVG  |  |
| DRN. AVG  |  |
| CK. MK  |  |
| DATE: 07/19/18                                  |  |
| REV. DATE DESCRIPTION BY                        |  |
| 1 09/15/19 REVISED BLOW-OFF VALVE LOCATIONS CMB |  |

PUBLIC 8" & 6" WATER MAIN & PUBLIC 8" SEWER MAIN PLAN  
PARCEL NO. 756 & 340  
600' SCALE MAP NO. 38 BLOCK NO. 9

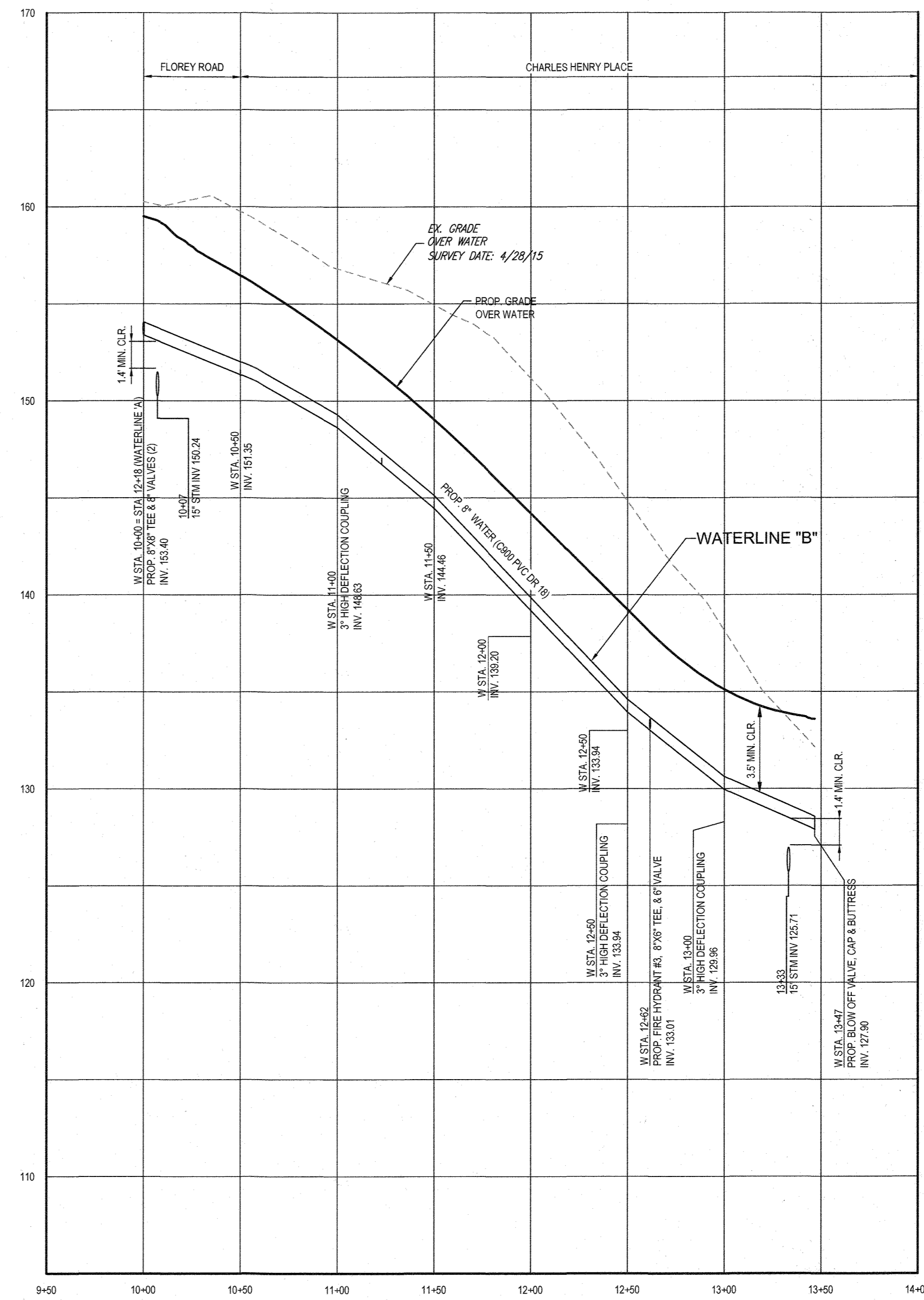
**ELKRIDGE WOODS**  
LOTS 1 - 42 & OPEN SPACE LOTS 43 & 44  
5920 FLOREY ROAD ELKRIDGE, MD  
TAX MAP 28, GRID 9, PARCEL 756 & 340  
1ST ELECTION DISTRICT  
HOWARD COUNTY  
CONTRACT NO.: 14-4965-D  
SCALE 1"=50'  
SHEET 3 OF 7

| WATER MAIN FITTINGS CHART |   |                               |
|---------------------------|---|-------------------------------|
| WATER MAIN CL STATION     | FITTINGS                                  | COORDINATES                   |
| STA 10+00 WATERLINE - A   | 8" CONNECTION                             | N 559153.941<br>E 1392329.505 |
| STA 11+00 WATERLINE - A   | 8"X8" TEE & 8" VALVES (2)                 | N 559141.339<br>E 1392429.187 |
| STA 11+55 WATERLINE - A   | 3" HIGH DEFLECTION COUPLING               | N 559131.697<br>E 1392483.014 |
| STA 12+18 WATERLINE - A   | 8"X8" TEE & 8" VALVES (2)                 | N 559118.115<br>E 1392544.804 |
| STA 12+65 WATERLINE - A   | PROP. FIRE HYDRANT #1                     | N 559117.611<br>E 1392593.422 |
| STA 12+66 WATERLINE - A   | 8"X8" TEE & 8" VALVE                      | N 559106.330<br>E 1392590.392 |
| STA 16+42 WATERLINE - A   | 8"X8" TEE & 8" VALVE                      | N 558997.834<br>E 1392560.758 |
| STA 16+42 WATERLINE - A   | PROP. FIRE HYDRANT #2                     | N 559011.692<br>E 1392564.948 |
| STA 16+50 WATERLINE - A   | 3" HIGH DEFLECTION COUPLING               | N 558995.486<br>E 1392568.524 |
| STA 16+84 WATERLINE - A   | CROSS 8"X8" & 6" VALVE (2) & 8" VALVE (2) | N 558985.737<br>E 1392590.771 |
| STA 17+27 WATERLINE - A   | BLOWOFF VALVE, CAP & BUTTRESS             | N 558973.200<br>E 1393032.239 |

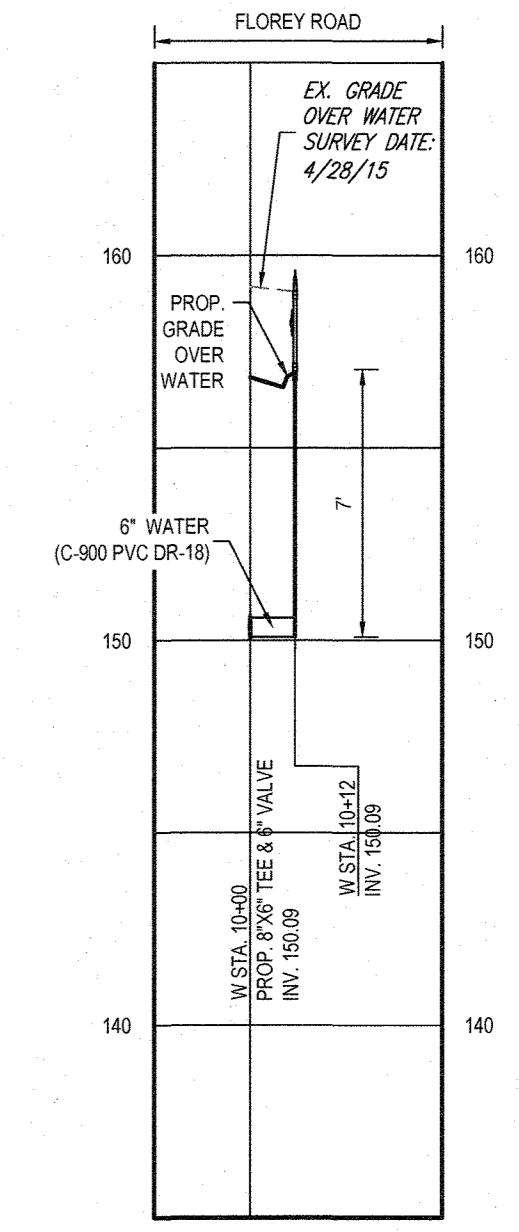
| WATER MAIN FITTINGS CHART |                               |                               |
|---------------------------|-------------------------------|-------------------------------|
| WATER MAIN CL STATION     | FITTINGS                      | COORDINATES                   |
| STA 10+00 WATERLINE - B   | 8"X8" TEE & 8" VALVES (2)     | N 559118.115<br>E 1392544.804 |
| STA 11+00 WATERLINE - B   | 3" HIGH DEFLECTION COUPLING   | N 559215.408<br>E 1392567.753 |
| STA 12+50 WATERLINE - B   | 3" HIGH DEFLECTION COUPLING   | N 559361.402<br>E 1392602.189 |
| STA 12+62 WATERLINE - B   | PROP. FIRE HYDRANT #3         | N 559375.305<br>E 1392594.060 |
| STA 12+62 WATERLINE - B   | 8"X8" TEE & 8" VALVE          | N 559372.756<br>E 1392604.868 |
| STA 13+00 WATERLINE - B   | 3" HIGH DEFLECTION COUPLING   | N 559410.066<br>E 1392613.668 |
| STA 13+47 WATERLINE - B   | BLOWOFF VALVE, CAP & BUTTRESS | N 559455.515<br>E 1392624.389 |



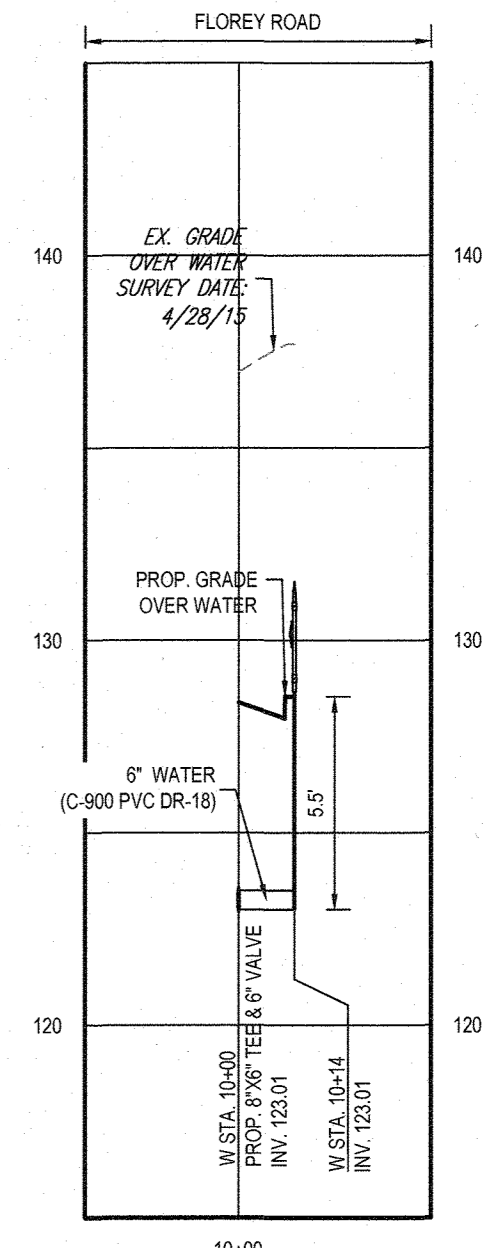
PROP. 8" WATER MAIN (FLOREY RD) - PROFILE WATERLINE 'A'  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL



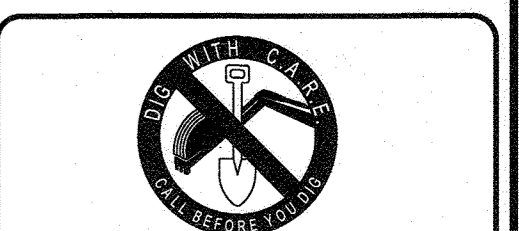
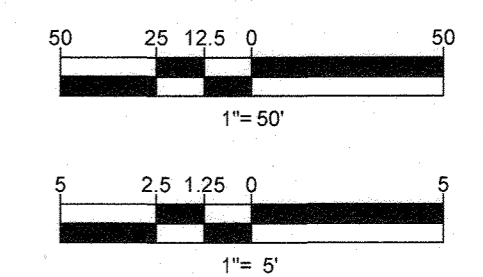
PROP. 8" WATER MAIN (CHARLES HENRY PLACE) - PROFILE WATERLINE 'B'  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL



FIRE HYDRANT # 1 - PROFILE  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL



FIRE HYDRANT # 2 - PROFILE  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL



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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  
8-2-18  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND  
9.13.18  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**BOHLER ENGINEERING**  
901 DULANEY VALLEY ROAD, SUITE 801  
TOWSON, MARYLAND 21284  
Phone: (410) 821-7900  
Fax: (410) 821-7987  
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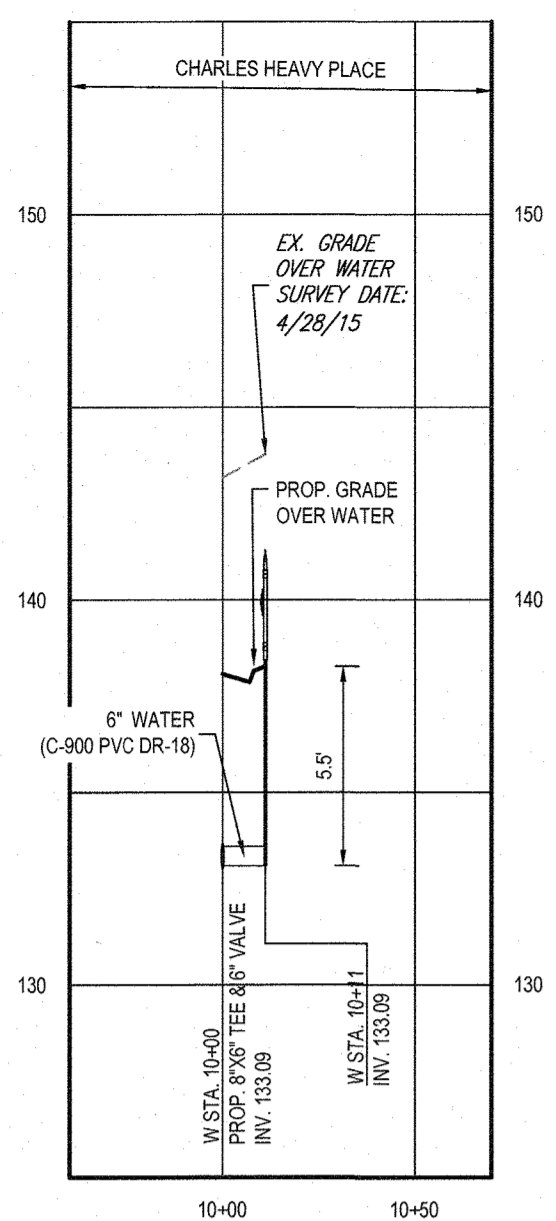
**B.R. ROWE**  
PROFESSIONAL ENGINEER  
M.D. LICENSE NO. 40808  
DATE: 07/19/18

| REV. | DATE   | DESCRIPTION                |
|------|--------|----------------------------|
| 1    | 1/6/23 | CHANGED NO. OF VALVES TO 3 |

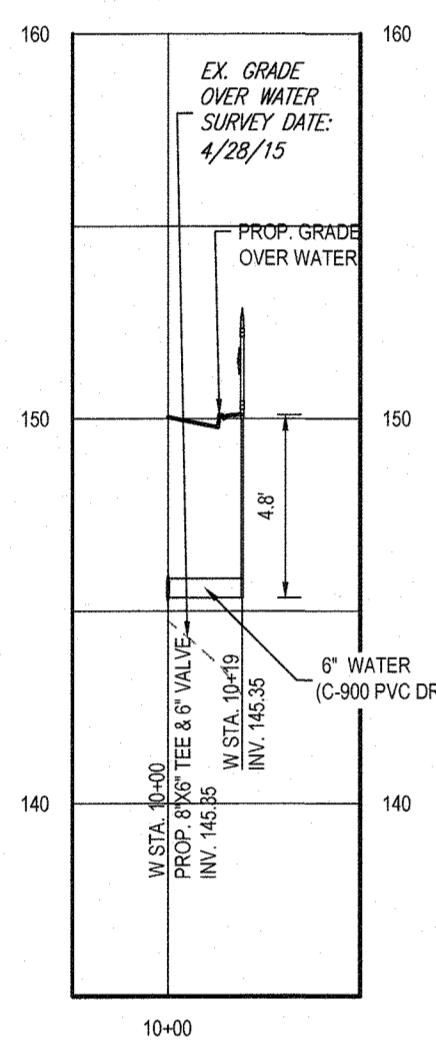
PUBLIC 8" & 6" WATER MAIN - PROFILES  
PARCEL NO. 756 & 340  
600' SCALE MAP NO. 38 BLOCK NO. 9

**ELKRIDGE WOODS**  
LOTS 1 - 42 & OPEN SPACE LOTS 43 & 44  
5920 FLOREY ROAD ELKRIDGE, MD  
TAX MAP 38, GRID 9, PARCEL 756 & 340  
1ST ELECTION DISTRICT  
HOWARD COUNTY  
CONTRACT NO.: 14-4965-D

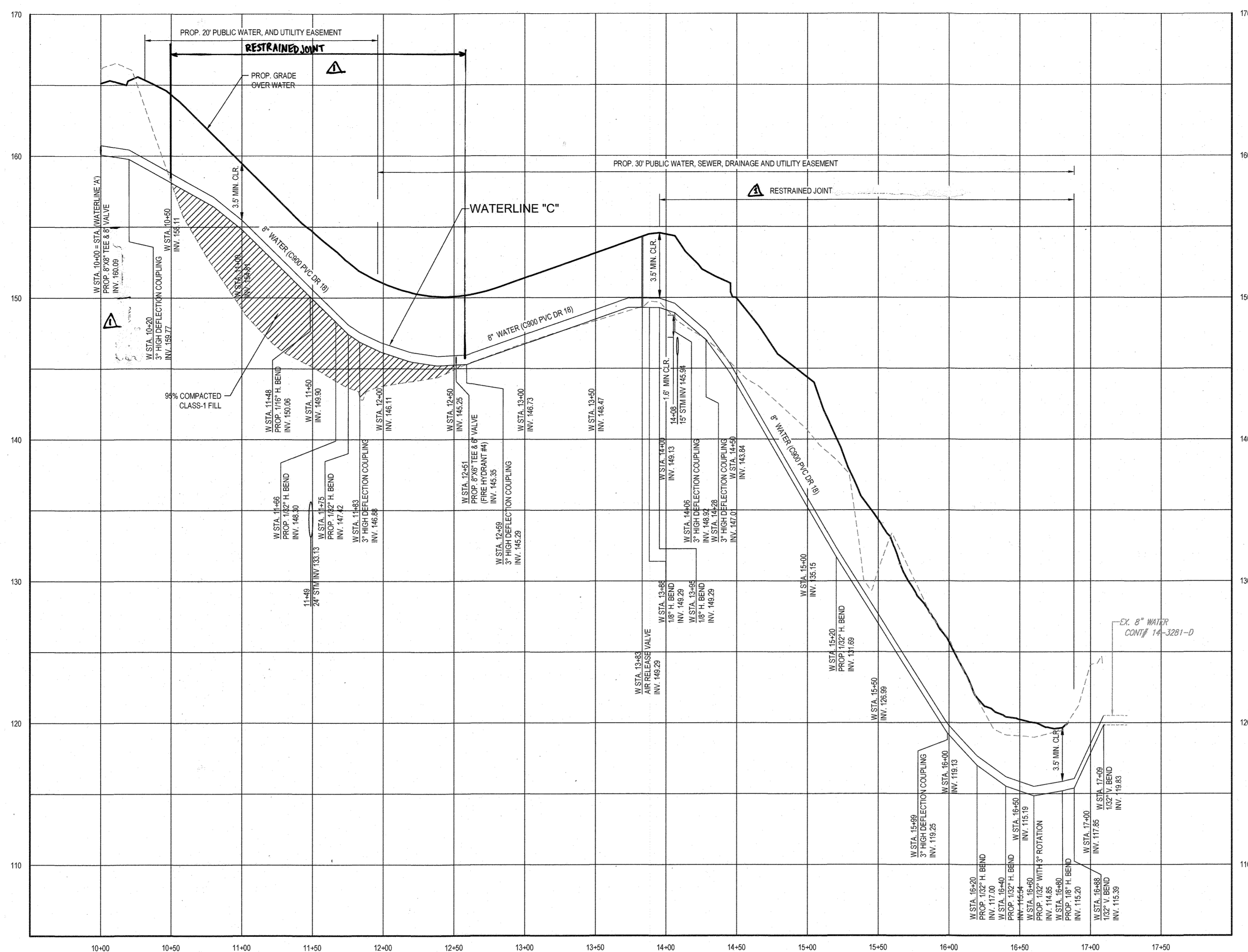
SCALE  
H=1"=50'  
V=1"=5'  
SHEET  
4 OF 7



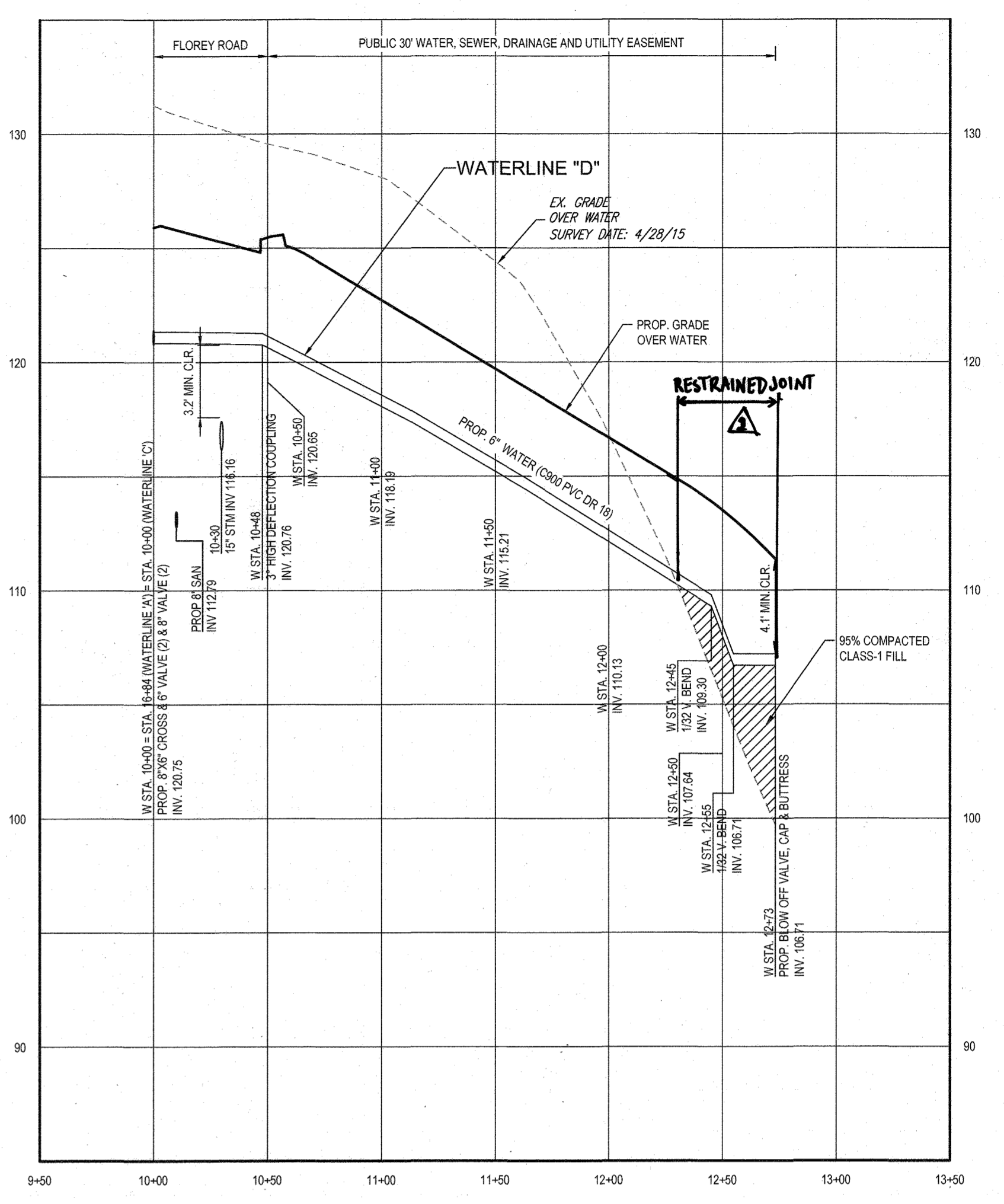
**FIRE HYDRANT # 3 - PROFILE**  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL



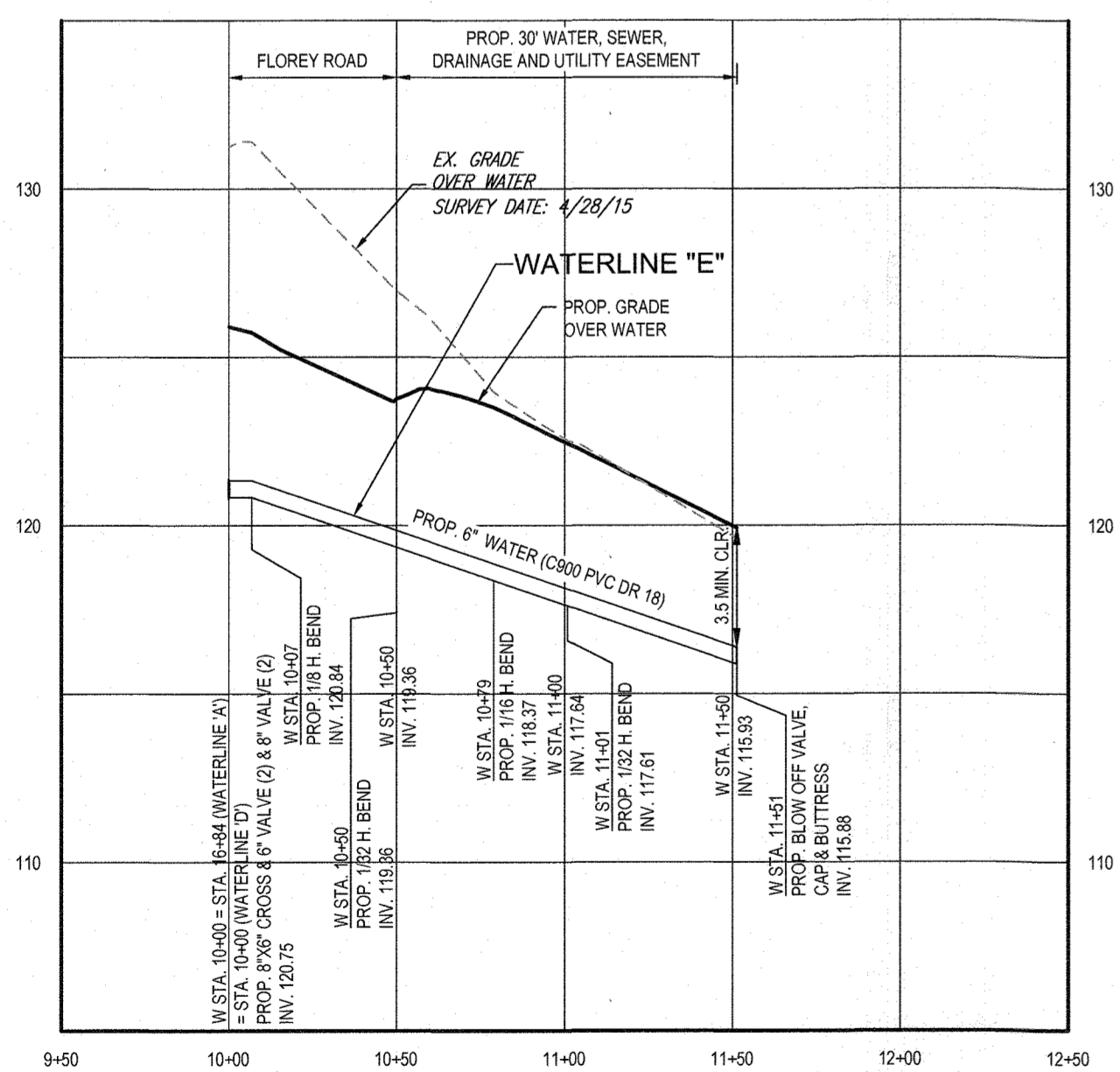
**FIRE HYDRANT # 4 - PROFILE**  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL



**PROP. 8" WATER MAIN (CATHERINE PLACE) - PROFILE WATERLINE 'C'**  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL



**PROP. 6" WATER MAIN (VALENTINE WAY) - PROFILE WATERLINE 'D'**  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL



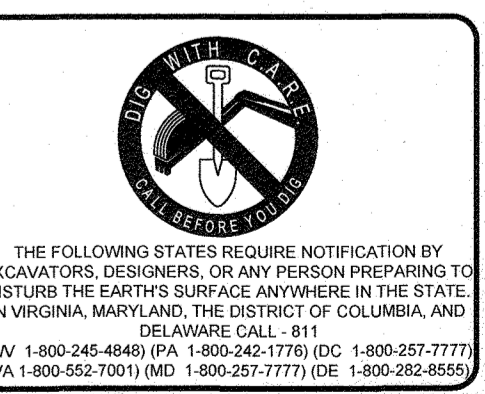
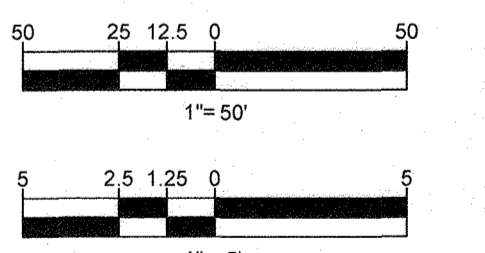
**PROP. 6" WATER MAIN - PROFILE WATERLINE 'E'**  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL

| WATER MAIN FITTINGS CHART |                             |                               |
|---------------------------|-----------------------------|-------------------------------|
| WATER MAIN CL STATION     | FITTINGS                    | COORDINATES                   |
| STA 10+00 WATERLINE - C   | 8"x8" TEE & 8" VALVES (2)   | N 559141.339<br>E 1392429.187 |
| STA 10+20 WATERLINE - C   | 3" HIGH DEFLECTION COUPLING | N 559121.514<br>E 1392425.376 |
| STA 11+48 WATERLINE - C   | 1/16" H. BEND               | N 558995.673<br>E 1392401.186 |
| STA 11+66 WATERLINE - C   | 1/32" H. BEND               | N 558978.069<br>E 1392405.079 |
| STA 11+75 WATERLINE - C   | 1/16" H. BEND               | N 558969.075<br>E 1392405.311 |
| STA 11+83 WATERLINE - C   | 3" HIGH DEFLECTION COUPLING | N 558961.560<br>E 1392402.614 |
| STA 12+51 WATERLINE - C   | 8"x6" TEE & 6" VALVE        | N 558897.427<br>E 1392379.597 |
| STA 12+51 WATERLINE - C   | PROP. FIRE HYDRANT #4       | N 558898.886<br>E 1392400.607 |
| STA 12+59 WATERLINE - C   | 3" HIGH DEFLECTION COUPLING | N 558890.496<br>E 1392377.110 |
| STA 13+83 WATERLINE - C   | AIR RELEASE VALVE           | N 558773.403<br>E 1392335.086 |
| STA 13+88 WATERLINE - C   | 1/8" H. BEND                | N 558768.697<br>E 1392333.397 |
| STA 13+95 WATERLINE - C   | 1/8" H. BEND                | N 558762.237<br>E 1392336.392 |

| WATER MAIN FITTINGS CHART |                             |                               |
|---------------------------|-----------------------------|-------------------------------|
| WATER MAIN CL STATION     | FITTINGS                    | COORDINATES                   |
| STA 14+06 WATERLINE - C   | 3" HIGH DEFLECTION COUPLING | N 558788.575<br>E 1392346.596 |
| STA 14+28 WATERLINE - C   | 3" HIGH DEFLECTION COUPLING | N 558751.130<br>E 1392367.340 |
| STA 15+20 WATERLINE - C   | 1/32 H. BEND                | N 558720.046<br>E 1392453.954 |
| STA 15+99 WATERLINE - C   | 3" HIGH DEFLECTION COUPLING | N 558679.068<br>E 1392521.022 |
| STA 16+40 WATERLINE - C   | 1/32" H. BEND               | N 558685.075<br>E 1392554.241 |
| STA 16+60 WATERLINE - C   | 1/32" H. BEND               | N 558639.389<br>E 1392566.648 |
| STA 16+80 WATERLINE - C   | 1/8" H. BEND                | N 558621.499<br>E 1392575.798 |
| STA 16+85 WATERLINE - C   | 1/16 H. BEND                | N 558616.704<br>E 1392574.295 |
| STA 17+09 WATERLINE - C   | 1/32 V. BEND                | N 558593.646<br>E 1392567.066 |
| STA 16+20 WATERLINE - C   | 1/32" H. BEND               | N 558638.168<br>E 1392536.853 |
| STA 16+88 WATERLINE - C   | 1/32" V. BEND               | N 558613.459<br>E 1392573.277 |

| WATER MAIN FITTINGS CHART |   |                               |
|---------------------------|---|-------------------------------|
| WATER MAIN CL STATION     | FITTINGS                                  | COORDINATES                   |
| STA 10+00 WATERLINE - D   | CROSS 8"x6" & 6" VALVE (2) & 8" VALVE (2) | N 558985.738<br>E 1392990.768 |
| STA 11+12 WATERLINE - D   | 3" HIGH DEFLECTION COUPLING               | N 558879.199<br>E 1392956.739 |
| STA 12+45 WATERLINE - D   | 1/32 V. BEND                              | N 558752.332<br>E 1392916.217 |
| STA 12+55 WATERLINE - D   | 1/32 V. BEND                              | N 558742.980<br>E 1392913.230 |
| STA 12+73 WATERLINE - D   | BLOW OFF VALVE, CAP & BUTTRESS            | N 558725.502<br>E 1392907.647 |

| WATER MAIN FITTINGS CHART |   |                               |
|---------------------------|---|-------------------------------|
| WATER MAIN CL STATION     | FITTINGS                                  | COORDINATES                   |
| STA 10+00 WATERLINE - E   | CROSS 8"x6" & 6" VALVE (2) & 8" VALVE (2) | N 558985.738<br>E 1392990.768 |
| STA 10+07 WATERLINE - E   | 1/8 H. BEND                               | N 558992.358<br>E 1392992.802 |
| STA 10+50 WATERLINE - E   | 1/32 H. BEND                              | N 559012.482<br>E 1393030.367 |
| STA 10+79 WATERLINE - E   | 1/16 H. BEND                              | N 559031.133<br>E 1393053.051 |
| STA 11+01 WATERLINE - E   | 1/32 H. BEND                              | N 559050.493<br>E 1393063.376 |
| STA 11+51 WATERLINE - E   | BLOW OFF VALVE, CAP & BUTTRESS            | N 559098.762<br>E 1393077.969 |



THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL: 811 (WV 1-800-245-4040) (PA 1-800-242-1770) (DC 1-800-267-7777) (MD 1-800-952-7001) (ND 1-800-251-7777) (DE 1-800-392-8666)

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  
 Chief, Bureau of Utilities  
 DATE: 8-2-18

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND  
 Chief, Development Engineering Division  
 DATE: 9.13.18

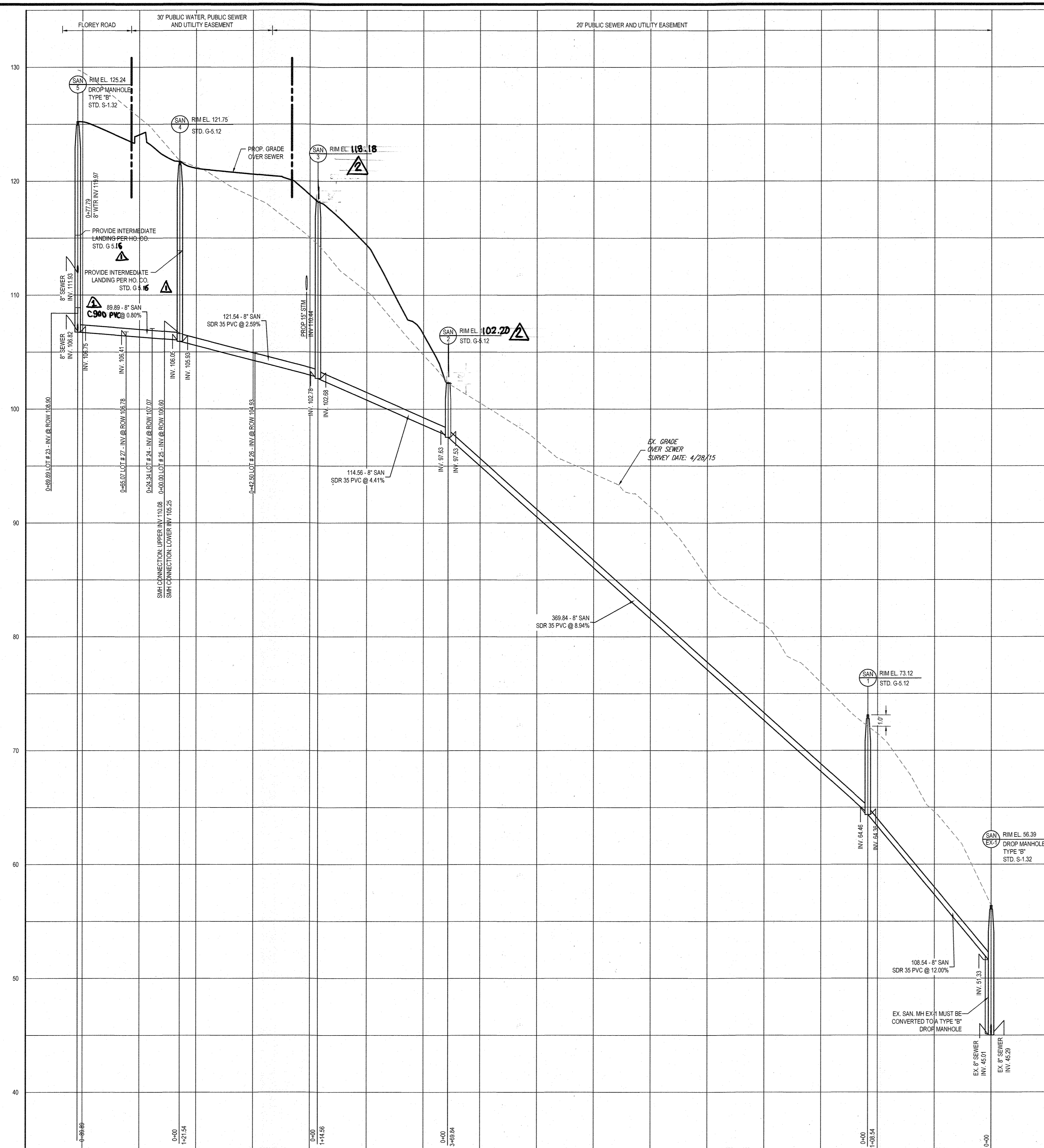
**BOHLER ENGINEERING**  
 901 DULANEY VALLEY ROAD, SUITE 801  
 TOWSON, MARYLAND 21284  
 Phone: (410) 821-7900  
 Fax: (410) 821-7987  
 www.BohlerEngineering.com

**B.R. ROWE**  
 PROFESSIONAL ENGINEER  
 MARYLAND LICENSE NO. 4300  
 PROFESSIONAL CERTIFICATION  
 I BRANCH OF ENGINEERING SERVICE 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. 4300 EXPIRES DATE 7/30/19

|  |    |
|--|----|
| DES: AVG                                       |    |
| DRN: AVG                                       |    |
| CK: M.K.                                       |    |
| DATE: 07/19/18                                 |    |
| REV. DATE DESCRIPTION                          |    |
| 1 04/09/19 REVISED LOT 18 & SHG, REMOVED SMU-5 | MK |

**PUBLIC 8" & 6" WATER MAIN - PROFILES**  
 PARCEL NO. 756 & 340  
 600' SCALE MAP NO. 38 BLOCK NO. 9

**ELKRIDGE WOODS**  
 LOTS 1 - 42 & OPEN SPACE LOTS 43 & 44  
 5920 FLOREY ROAD ELKRIDGE, MD  
 TAX MAP 38, GRID 9, PARCEL 756 & 340  
 1ST ELECTION DISTRICT  
 HOWARD COUNTY  
 CONTRACT NO.: 14-4965-D  
 SCALE: H=1"=50' V=1"=5'  
 SHEET: 5 OF 7

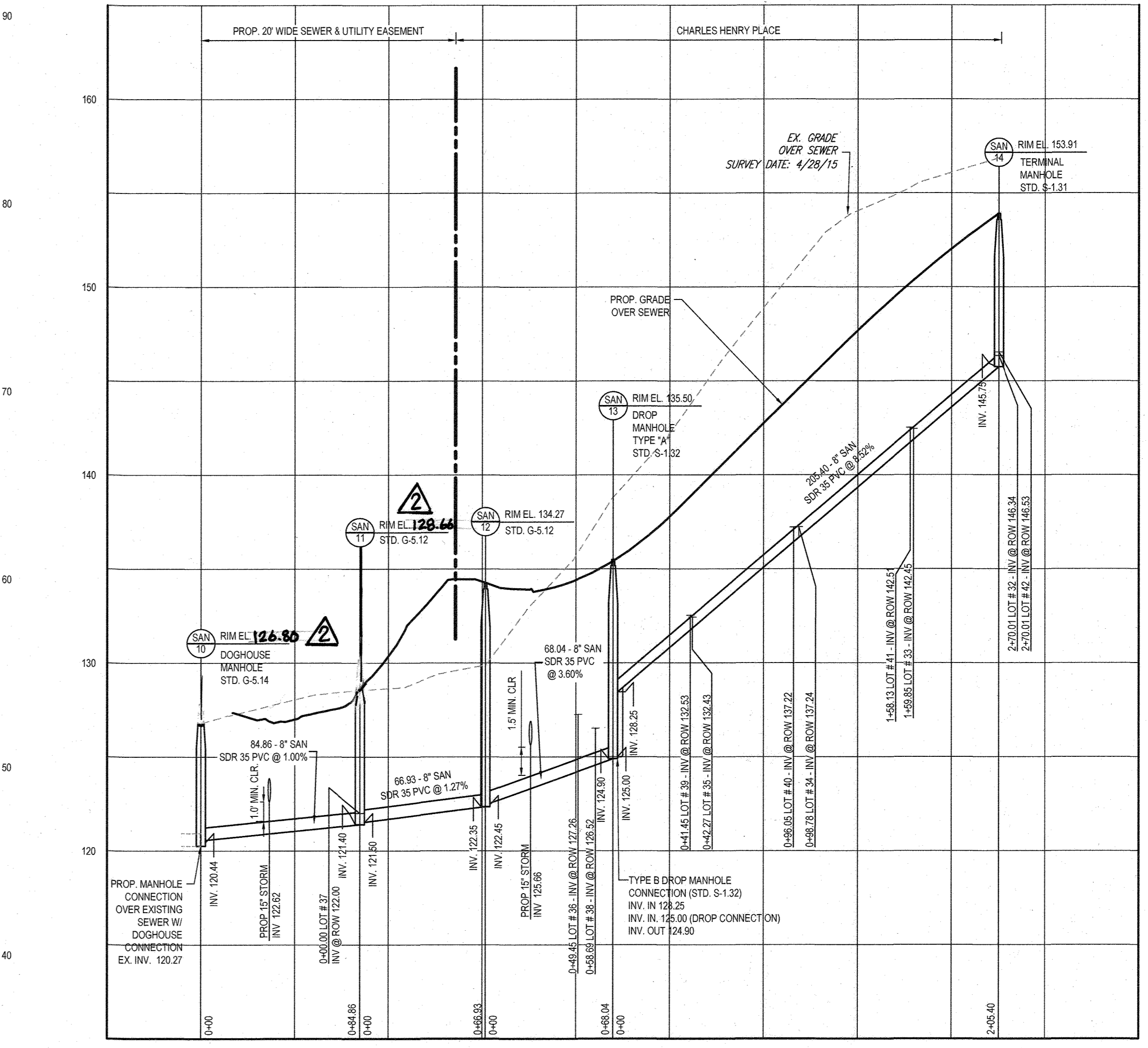


PROP. 8" SANITARY - PROFILES (S-5 TO EX-1)  
SCALE: 1" = 50' HORIZONTAL  
1" = 5' VERTICAL

SJC TABLE

| LOT | FF ELEV. | INV. @ MAN | SJC LENGTH TO ROW (FT) | SJC SLOPE WITHIN ROW | INVERT @ ROW | SJC SLOPE WITHIN LOT | MAX SJC LENGTH (FT) | 2.50 FT BELOW CELLAR | MIN. CELLAR ELEV. (MGS) | CELLAR ELEV. | CONNECTION TYPE |
|-----|----------|------------|------------------------|----------------------|--------------|----------------------|---------------------|----------------------|-------------------------|--------------|-----------------|
| 1   | 122.80   | 157.08     | 40.00                  | 2.0%                 | 157.88       | 2.0%                 | 120.00              | 2.50                 | 147.78                  | 161.80       | STD SHC         |
| 2   | 155.50   | 137.88     | 17.04                  | 2.0%                 | 138.32       | 2.0%                 | 89.52               | 2.50                 | 142.61                  | 145.50       | DROP TYPE A     |
| 3   | 155.50   | 137.83     | 17.88                  | 2.0%                 | 137.98       | 2.0%                 | 84.52               | 2.50                 | 142.18                  | 145.50       | DROP TYPE A     |
| 4   | 157.50   | 136.87     | 14.88                  | 4.0%                 | 137.56       | 4.0%                 | 87.77               | 2.50                 | 143.57                  | 147.50       | DROP TYPE A     |
| 5   | 159.50   | 136.55     | 22.88                  | 5.0%                 | 137.69       | 5.0%                 | 101.15              | 2.50                 | 145.25                  | 149.50       | DROP TYPE A     |
| 6   | 156.50   | 136.46     | 12.00                  | 2.0%                 | 136.70       | 2.0%                 | 108.73              | 2.50                 | 141.37                  | 146.50       | DROP TYPE A     |
| 7   | 154.50   | 137.03     | 10.82                  | 5.0%                 | 137.57       | 5.0%                 | 90.85               | 2.50                 | 144.61                  | 144.50       | STD SHC         |
| 8   | 168.00   | 150.17     | 17.80                  | 2.0%                 | 150.60       | 2.0%                 | 96.50               | 2.50                 | 154.50                  | 158.00       | STD SHC         |
| 9   | 165.50   | 148.49     | 19.00                  | 2.0%                 | 148.88       | 2.0%                 | 92.76               | 2.50                 | 153.23                  | 155.50       | STD SHC         |
| 10  | 181.50   | 145.20     | 17.58                  | 2.0%                 | 145.55       | 2.0%                 | 92.04               | 2.50                 | 149.89                  | 151.50       | STD SHC         |
| 11  | 158.00   | 142.43     | 18.91                  | 2.0%                 | 142.80       | 2.0%                 | 92.80               | 2.50                 | 147.15                  | 148.00       | STD SHC         |
| 12  | 153.50   | 137.19     | 18.82                  | 2.0%                 | 137.56       | 2.0%                 | 84.31               | 2.50                 | 141.86                  | 143.50       | STD SHC         |
| 13  | 149.00   | 131.27     | 18.82                  | 3.0%                 | 131.83       | 3.0%                 | 90.30               | 2.50                 | 137.22                  | 139.00       | STD SHC         |
| 14  | 144.00   | 128.25     | 18.82                  | 3.0%                 | 128.81       | 3.0%                 | 94.93               | 2.50                 | 132.16                  | 134.00       | STD SHC         |
| 15  | 139.00   | 121.16     | 18.82                  | 3.0%                 | 121.72       | 3.0%                 | 95.85               | 2.50                 | 127.10                  | 129.00       | STD SHC         |
| 16  | 134.67   | 115.88     | 25.54                  | 4.0%                 | 116.90       | 4.0%                 | 80.42               | 2.50                 | 123.02                  | 124.67       | STD SHC         |
| 17  | 120.33   | 108.48     | 23.17                  | 2.0%                 | 108.94       | 2.0%                 | 81.27               | 2.50                 | 113.27                  | 110.33       | STD SHC         |
| 18  | 116.00   | 108.77     | 22.88                  | 2.0%                 | 109.22       | 2.0%                 | 84.08               | 2.50                 | 113.41                  | 108.00       | STD SHC         |
| 19  | 114.50   | 108.77     | 8.54                   | 2.0%                 | 108.94       | 2.0%                 | 90.74               | 2.50                 | 113.25                  | 104.50       | STD SHC         |
| 20  | 118.50   | 108.84     | 8.83                   | 2.0%                 | 108.81       | 2.0%                 | 84.13               | 2.50                 | 113.00                  | 108.50       | STD SHC         |
| 21  | 123.00   | 108.21     | 7.80                   | 2.0%                 | 108.37       | 2.0%                 | 90.04               | 2.50                 | 112.67                  | 113.00       | STD SHC         |
| 22  | 128.67   | 107.79     | 7.00                   | 5.0%                 | 108.14       | 5.0%                 | 93.89               | 2.50                 | 115.32                  | 118.67       | DROP TYPE A     |
| 23  | 128.33   | 106.82     | 49.50                  | 4.0%                 | 108.90       | 4.0%                 | 89.00               | 2.50                 | 114.96                  | 118.33       | DROP TYPE A     |
| 24  | 128.00   | 108.39     | 13.65                  | 5.0%                 | 107.07       | 5.0%                 | 92.57               | 2.50                 | 114.20                  | 118.00       | DROP TYPE A     |
| 25  | 126.35   | 106.10     | 10.00                  | 5.0%                 | 108.60       | 5.0%                 | 73.75               | 2.50                 | 112.78                  | 116.35       | DROP TYPE A     |
| 26  | 125.00   | 104.39     | 10.81                  | 5.0%                 | 104.93       | 5.0%                 | 71.31               | 2.50                 | 110.69                  | 115.00       | DROP TYPE A     |
| 27  | 128.50   | 104.97     | 22.53                  | 5.0%                 | 109.09       | 5.0%                 | 71.20               | 2.50                 | 112.15                  | 118.50       | DROP TYPE A     |
| 28  | 135.50   | 115.54     | 43.90                  | 4.0%                 | 117.28       | 4.0%                 | 89.74               | 2.50                 | 123.78                  | 125.50       | STD SHC         |
| 29  | 140.50   | 123.68     | 32.82                  | 2.0%                 | 124.33       | 2.0%                 | 96.63               | 2.50                 | 128.77                  | 130.50       | STD SHC         |
| 30  | 146.00   | 129.65     | 32.82                  | 2.0%                 | 130.30       | 2.0%                 | 95.55               | 2.50                 | 134.73                  | 138.00       | STD SHC         |
| 31  | 153.00   | 136.34     | 32.82                  | 2.0%                 | 136.99       | 2.0%                 | 97.42               | 2.50                 | 141.44                  | 143.00       | STD SHC         |
| 32  | 161.00   | 145.82     | 21.39                  | 2.0%                 | 146.34       | 2.0%                 | 97.77               | 2.50                 | 150.80                  | 151.00       | STD SHC         |
| 33  | 159.33   | 142.04     | 20.82                  | 2.0%                 | 142.45       | 2.0%                 | 97.43               | 2.50                 | 148.90                  | 149.33       | STD SHC         |
| 34  | 154.00   | 136.83     | 20.82                  | 2.0%                 | 137.24       | 2.0%                 | 97.82               | 2.50                 | 141.70                  | 144.00       | STD SHC         |
| 35  | 148.00   | 132.02     | 20.83                  | 2.0%                 | 132.43       | 2.0%                 | 96.48               | 2.50                 | 138.88                  | 138.00       | STD SHC         |
| 36  | 141.00   | 128.85     | 20.82                  | 2.0%                 | 127.26       | 1.8%                 | 98.76               | 2.50                 | 130.73                  | 131.00       | STD SHC         |
| 37  | 137.00   | 121.57     | 21.45                  | 2.0%                 | 122.00       | 2.0%                 | 87.14               | 2.50                 | 128.24                  | 127.00       | STD SHC         |
| 38  | 142.00   | 125.91     | 59.89                  | 2.0%                 | 128.52       | 1.8%                 | 123.95              | 2.50                 | 130.35                  | 132.00       | STD SHC         |
| 39  | 147.50   | 131.92     | 30.83                  | 2.0%                 | 132.53       | 1.8%                 | 128.07              | 2.50                 | 138.31                  | 137.50       | STD SHC         |
| 40  | 153.50   | 138.60     | 31.08                  | 2.0%                 | 137.22       | 1.8%                 | 127.32              | 2.50                 | 140.99                  | 143.50       | DROP TYPE A     |
| 41  | 159.00   | 141.89     | 31.08                  | 2.0%                 | 142.51       | 2.0%                 | 95.00               | 2.50                 | 146.83                  | 149.00       | STD SHC         |
| 42  | 161.50   | 145.82     | 30.85                  | 2.0%                 | 146.53       | 2.0%                 | 104.07              | 2.50                 | 151.12                  | 151.50       | STD SHC         |

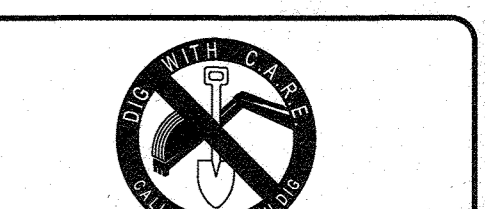
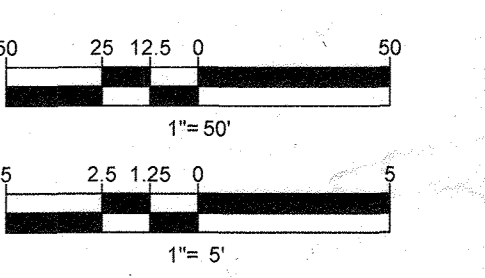
\* CELLAR NOT SERVED (C.N.S.) A DESIGN MANUAL W/SEWER WAS SUBMITTED ON 2/13/18 AND APPROVED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS ON 10/19/17.



PROP. 8" SANITARY - PROFILE (SAN-14 TO SAN-10)  
SCALE: 1" = 50' HORIZONTAL  
1" = 5' VERTICAL

FOR REVISION 2 ONLY  
B.R. ROWE P.E.  
DATE: 1-27-23

FOR REVISION 1 ONLY  
B.R. ROWE  
5/23/19



THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL - 811 (WV 1-800-245-4648) (PA 1-800-242-1776) (DC 1-800-267-7777) (VA 1-800-952-7201) (MD 1-800-251-7777) (DE 1-800-362-6500)

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  
CHIEF, BUREAU OF UTILITIES  
DATE: 8-7-18

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 9-13-18

**BOHLER ENGINEERING**  
901 DULANEY VALLEY ROAD, SUITE 801  
TOWSON, MARYLAND 21284  
Phone: (410) 821-7900  
Fax: (410) 821-7987  
www.BohlerEngineering.com

**B.R. ROWE**  
PROFESSIONAL ENGINEER  
MARYLAND LICENSE NO. 4088  
I, BRADEN R. ROWE, 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. 4088; EXPIRATION DATE: 7/30/219

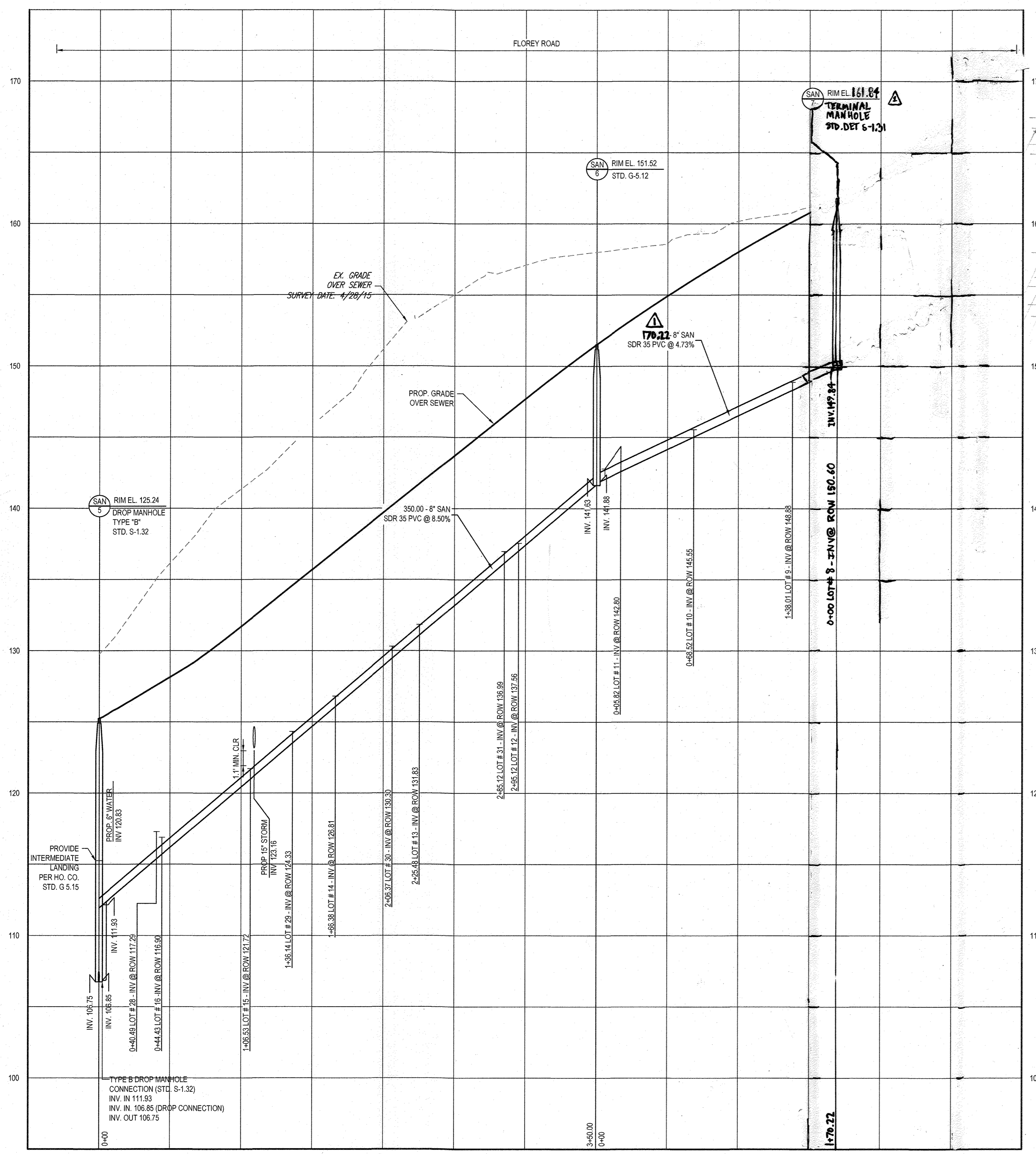
|   |  |
|---|--|
| DES: AVG  |  |
| DRN: AVG  |  |
| CK: M.K.  |  |
| DATE: 07/19/18  |  |
| REV. DATE DESCRIPTION   |  |
| 2 1-27-23 REV. SMH 2,3,10,11,15,16-17 RIM EL. FLUSH TO THE GROUND. AG |  |
| 4 04/01/19 REVISED LOT 188 SHC, AND REMOVED SMH-8                     |  |
| MK  |  |

PUBLIC 8" SEWER MAIN - PROFILES  
PARCEL NO. 756 & 340  
600' SCALE MAP NO. 38 BLOCK NO. 9

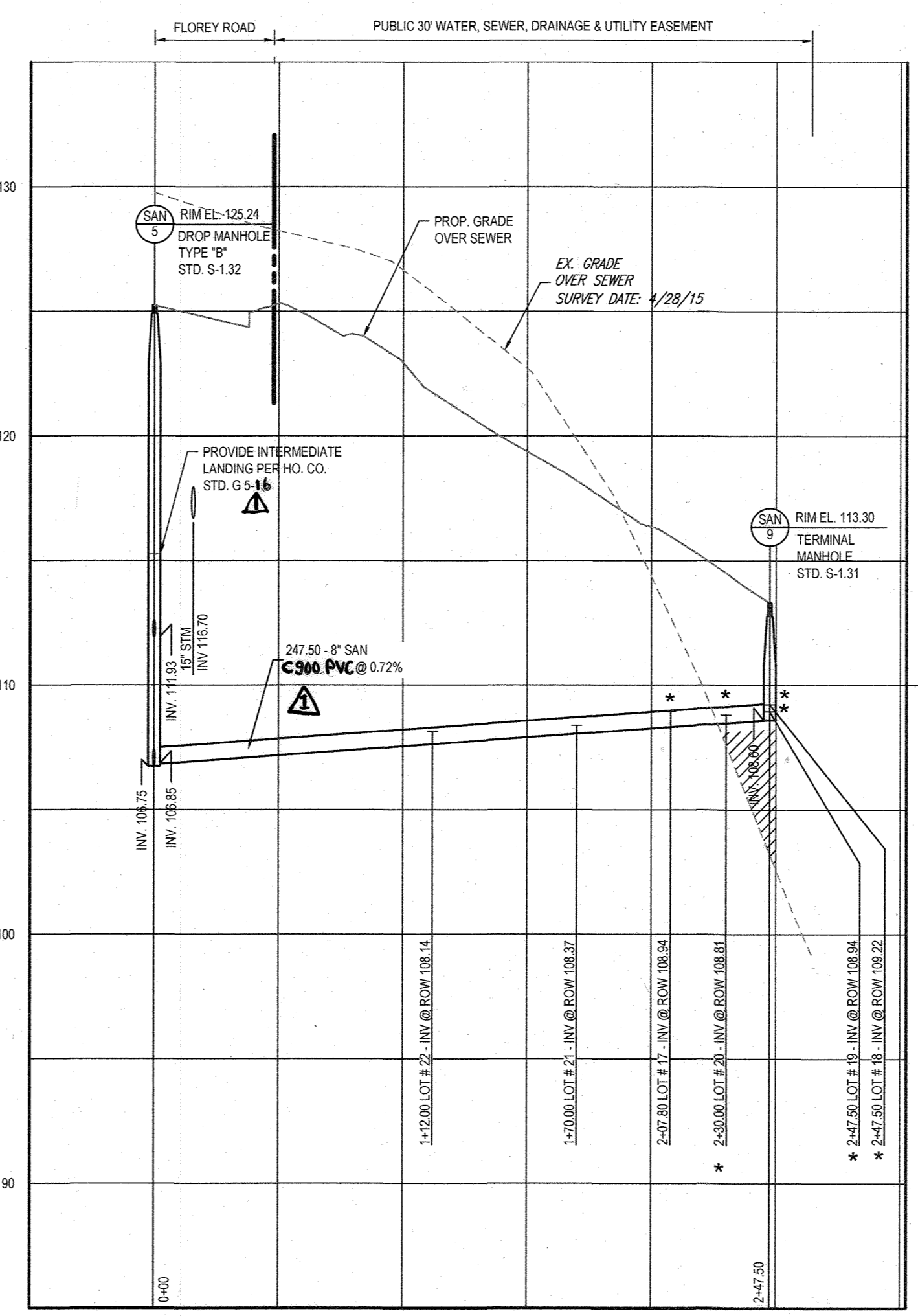
**ELKRIDGE WOODS**  
LOTS 1 - 42 & OPEN SPACE LOTS 43 & 44  
5920 FLOREY ROAD ELKRIDGE, MD  
TAX MAP 38, GRID 9, PARCEL 756 & 340  
1ST ELECTION DISTRICT  
HOWARD COUNTY  
CONTRACT NO.: 14-4965-D  
SCALE SHEET 6 OF 7

**SANITARY STRUCTURE SCHEDULE**

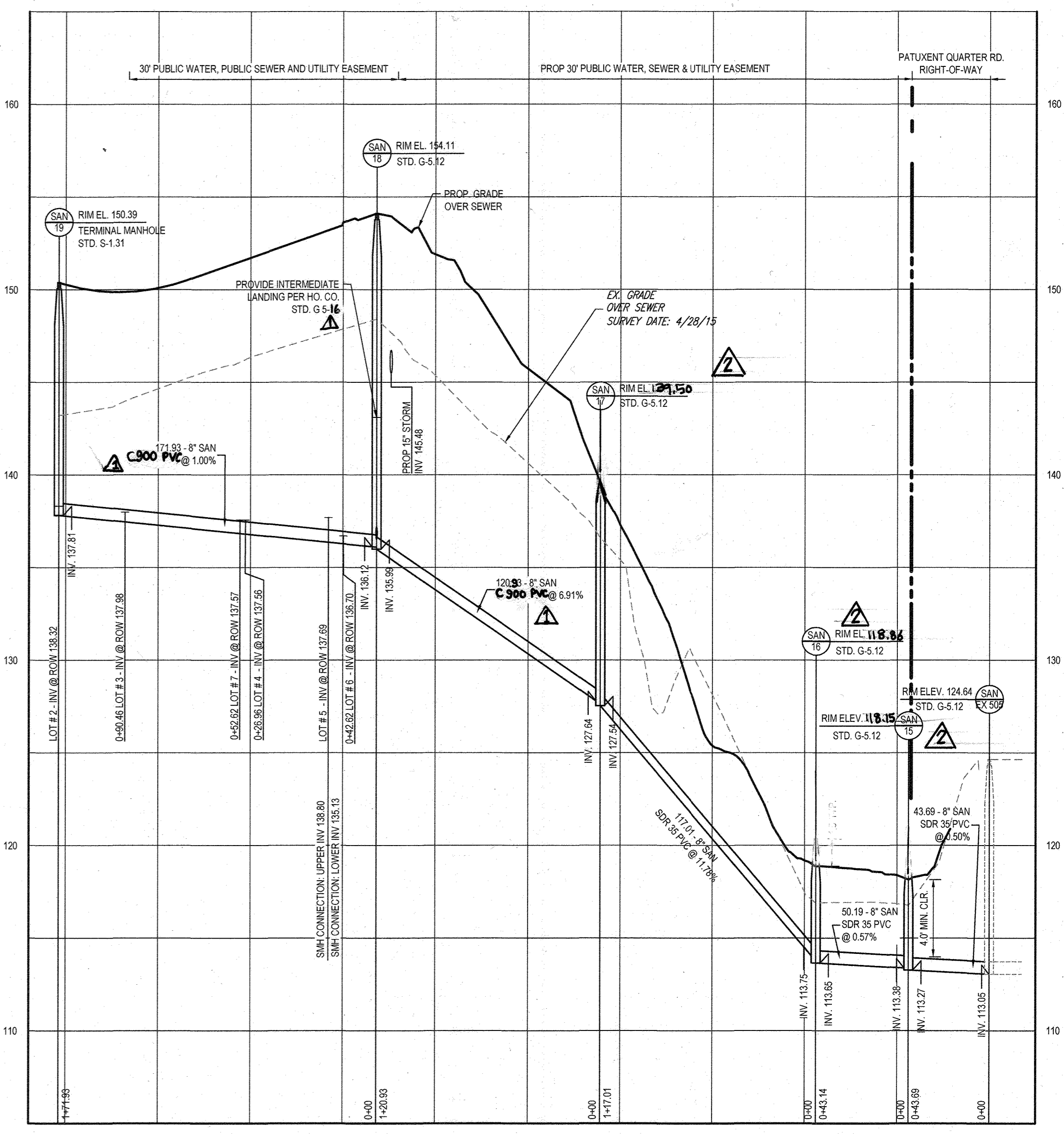
| NAME   | TYPE  | RIM ELEV. (FT.)   | INVERTS  | COORDINATES                     |
|--------|---|-------------------|--|---------------------------------|
| EX 505 | EX. MANHOLE   | 124.64            | INV IN = 113.05  | N 55854.8011<br>E 1392578.4791  |
| EX-1   | STD. DET. S-1.32<br>CONVERT TO A TYPE 'B'<br>DROP MANHOLE | 56.39             | INV IN = 51.33<br>INV OUT = 45.29<br>INV OUT = 45.01   | N 559569.8141<br>E 1393391.0153 |
| 1      | STD. DET. G-5.12  | 73.12             | INV IN = 64.46<br>INV OUT = 64.36  | N 559466.8627<br>E 1393356.6340 |
| 2      | STD. DET. G-5.12  | <del>102.20</del> | INV IN = 97.64<br>INV OUT = 97.53  | N 559115.4154<br>E 1393214.5153 |
| 3      | STD. DET. G-5.12  | <del>118.18</del> | INV IN = 102.78<br>INV OUT = 102.68  | N 559145.6472<br>E 1393104.0191 |
| 4      | STD. DET. G-5.12  | 121.75            | INV IN = 106.03<br>INV OUT = 105.93  | N 559029.7859<br>E 1393067.2958 |
| 5      | STD. DET. S-1.31<br>TERMINAL MANHOLE                      | 125.24            | INV IN = 106.82<br>INV OUT = 106.75  | N 558973.2947<br>E 1392997.3707 |
| 6      | STD. DET. G-5.12  | 151.52            | INV IN = 141.78<br>INV OUT = 141.68  | N 559074.5832<br>E 1392992.3474 |
| 7      | STD. DET. S-1.31<br>TERMINAL MANHOLE                      | <del>161.84</del> | INV IN = <del>150.77</del> (RIM) N 559115.4052<br>INV OUT = <del>149.84</del> E 1392478.1356 |                                 |
| 9      | STD. DET. S-1.31<br>TERMINAL MANHOLE                      | 113.30            | INV OUT = 108.60   | N 558737.5507<br>E 1392921.9983 |
| 10     | STD. DET. G-5.12  | <del>126.30</del> | INV IN = 120.55  | N 559594.5539<br>E 1392541.5394 |
| 11     | STD. DET. G-5.12  | <del>128.66</del> | INV IN = 121.57<br>INV OUT = 121.40  | N 559513.4550<br>E 1392587.8455 |
| 12     | STD. DET. G-5.12  | 134.27            | INV IN = 122.45<br>INV OUT = 122.35  | N 559468.9469<br>E 1392637.8312 |
| 13     | STD. DET. S-1.32<br>TYPE 'B' DROP MANHOLE                 | 135.50            | INV IN = 128.25<br>INV OUT = 124.90  | N 559402.7215<br>E 1392622.2102 |
| 14     | STD. DET. S-1.31<br>TERMINAL MANHOLE                      | 153.91            | INV OUT = 145.75   | N 559202.8118<br>E 1392575.0560 |
| 15     | STD. DET. G-5.12  | <del>118.15</del> | INV IN = 113.37<br>INV OUT = 113.27  | N 558627.5182<br>E 1392587.6620 |
| 16     | STD. DET. G-5.12  | <del>118.86</del> | INV IN = 113.75<br>INV OUT = 113.65  | N 558668.1074<br>E 1392568.1423 |
| 17     | STD. DET. G-5.12  | <del>139.50</del> | INV IN = 127.64<br>INV OUT = 127.54  | N 558729.1124<br>E 1392448.2946 |
| 18     | STD. DET. G-5.12  | 154.11            | INV IN = 136.53  | N 558769.9907<br>E 1392344.4755 |
| 19     | STD. DET. S-1.31<br>TERMINAL MANHOLE                      | 150.39            | INV OUT = 137.82   | N 558931.7831<br>E 1392402.5516 |



**PROP. 8" SANITARY - PROFILE (SAN-8 TO SAN-5)**  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL



**PROP. 8" SANITARY - PROFILE (SAN-9 TO SAN-5)**  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL

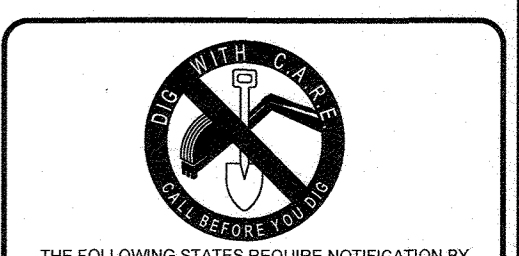
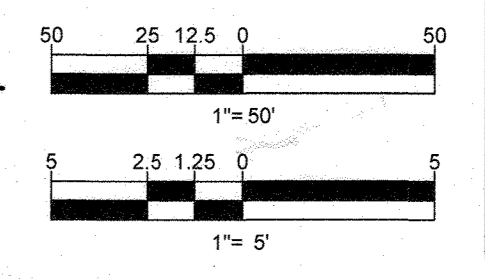


**PROP. 8" SANITARY - PROFILE (SAN-19 TO EX-505)**  
SCALE: 1"=50' HORIZONTAL  
1"=5' VERTICAL

**NOTE:**  
\* DENOTE CELLAR NOT SERVED (C.N.S.)

**FOR REVISION 2 ONLY**  
**B.R. ROWE P.E.**  
DATE: 1-27-23

**FOR REVISION 1 ONLY**  
**B.R. ROWE**  
DATE: 1-27-23



THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATES OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL: 811 (MV 1-800-246-4848) (PA 1-800-242-1776) (DC 1-800-257-7777) (VA 1-800-652-7007) (MD 1-800-657-7777) (DE 1-800-282-8654)

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  
CHIEF, BUREAU OF UTILITIES  
DATE: 8-2-18

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 9-13-18

**BOHLER ENGINEERING**  
901 DULANEY VALLEY ROAD, SUITE 801  
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Phone: (410) 821-7900  
Fax: (410) 821-7987  
www.BohlerEngineering.com

**B.R. ROWE**  
PROFESSIONAL ENGINEER  
MARYLAND LICENSE NO. 4888  
EXPIRES 7/30/29

| DES. AVG | DRN. AVG | CK. M.K. | DATE     | REV. | DATE    | DESCRIPTION  | BY |
|----------|----------|----------|----------|------|---------|--|----|
|          |          |          | 07/19/18 | 1    | 1-27-23 | REVISED LOT 18 & 8 SW, AND REMOVED SMH-8                       | MK |
|          |          |          |          | 2    | 1-27-23 | KEY, SMH 2, 3, 10, 11, 15, 16-17 RIM EL. FLUSH TO THE GRND. AG |    |

**PUBLIC 8" SEWER MAIN - PROFILES**  
PARCEL NO. 756 & 340  
600' SCALE MAP NO. 38 BLOCK NO. 9

**ELKRIDGE WOODS**  
LOTS 1 - 42 & OPEN SPACE LOTS 43 & 44  
5920 FLOREY ROAD ELKRIDGE, MD  
TAX MAP 38, GRID 9, PARCEL 756 & 340  
1ST ELECTION DISTRICT  
HOWARD COUNTY  
CONTRACT NO.: 14-4965-D  
SCALE: SHEET 7 OF 7