

**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.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS TAKEN FROM AN AERIAL TOPOGRAPHIC SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED OCTOBER 2012 & JANUARY 2013. OFFSITE TOPOGRAPHY FROM HOWARD COUNTY GIS.
- THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 38DA AND 38GA. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON DRAWINGS ARE: GEODETIC SURVEY CONTROL 38DA (N 529,044.94 E 1,350,855.03) BRASS DISC SET ON TOP OF A CONCRETE MONUMENT. GEODETIC SURVEY CONTROL 38GA (N 530,494.49 E 1,350,872.35) BRASS DISC SET ON TOP OF A CONCRETE MONUMENT.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATION AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
 AT&T 1-800-252-1133  
 BGE (CONSTRUCTION SERVICES) 410-637-8713  
 BGE (EMERGENCY) 410-685-0123  
 BUREAU OF UTILITIES 410-313-4900  
 COLONIAL PIPELINE CO 410-795-1390  
 MISS UTILITY 1-800-257-7777  
 STATE HIGHWAY ADMINISTRATION 410-531-5533  
 VERIZON 1-800-743-0033
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BILL OF THE CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR JACKING OF A COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(g) OF THE HOWARD COUNTY CODE.

**PART II - WATER**

- ALL WATER MAINS SHALL BE AWWA STANDARD C900 DR18 PVC UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.
- FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATIONS TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C 900 FOR PVC PRESSURE PIPES SHALL BE SUBMITTED WITH THE MATERIALS AND SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.
- SPRINKLER SYSTEM FOR SINGLE RESIDENTIAL DWELLING UNITS SHALL HAVE WATER HOUSE CONNECTIONS AND WATER METERS THAT ARE SIZED IN ACCORDANCE WITH THE DESIGN OF THE SPRINKLER SYSTEMS. SPRINKLER SYSTEMS FOR SINGLE RESIDENTIAL DWELLINGS SHALL HAVE A MINIMUM OF 1" SERVICE CONNECTION WITH A 1" OUTSIDE METER SETTING.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. SEVENTEEN (17) POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESES, 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 DEFINITION (HD) COUPLINGS, NO BENDING OF THE PIPE OR DEFLECTION 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 VIBRATORY PLATE COMPACTOR OR OTHER APPROVED MEANS TO THOROUGHLY COMPACT THE BEST STONE ON BOTH SIDES OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP, TAKING CARE NOT TO USE COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING. PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (1.5-DEGREE ON EITHER END OF THE COUPLING). SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C900, SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTIED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL. 5-DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (PEX) BLUE BRUTE DR18 OR EQUAL.
- WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C900 PVC PIPELINES, THE CONTRACTOR SHALL INSTALL DEVICES FOR THE PREVENTION OF OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH 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 EBAK IRON, INC., OR APPROVED EQUAL.

**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 WATER TIGHT FRAME AND COVERS, STANDARD DETAIL G5.52, WHERE WATER TIGHT FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATED THAT CELLAR CANNOT BE SERVED.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND WITH FINAL PLAN F-20-076

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

Alexander Butcheri 08/25/21  
 SOIL CONSERVATION DISTRICT DATE

# FINAL WATER AND SEWER CONSTRUCTION PLAN

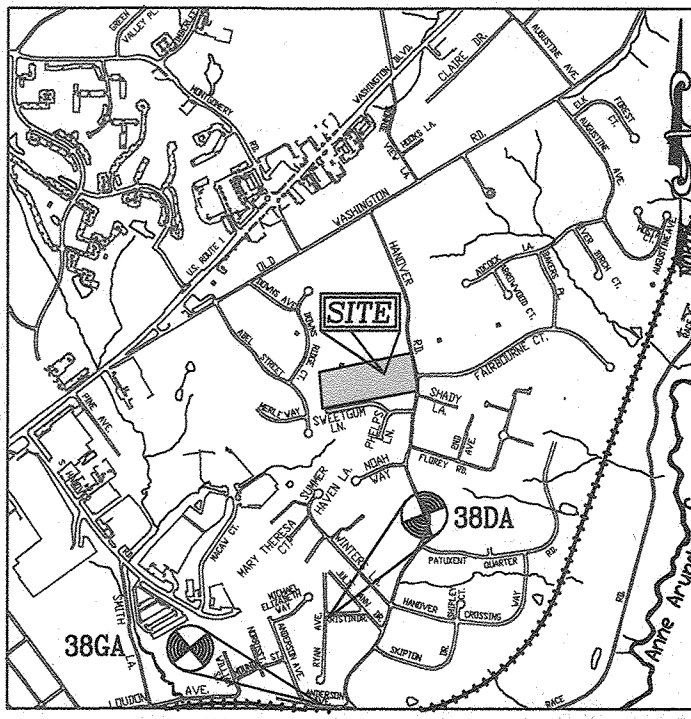
## GRACE MEADOWS

### LOTS 1 - 18 AND OPEN SPACE LOTS 19 - 29

### A SUBDIVISION OF TAX MAP 38 - PARCEL 731

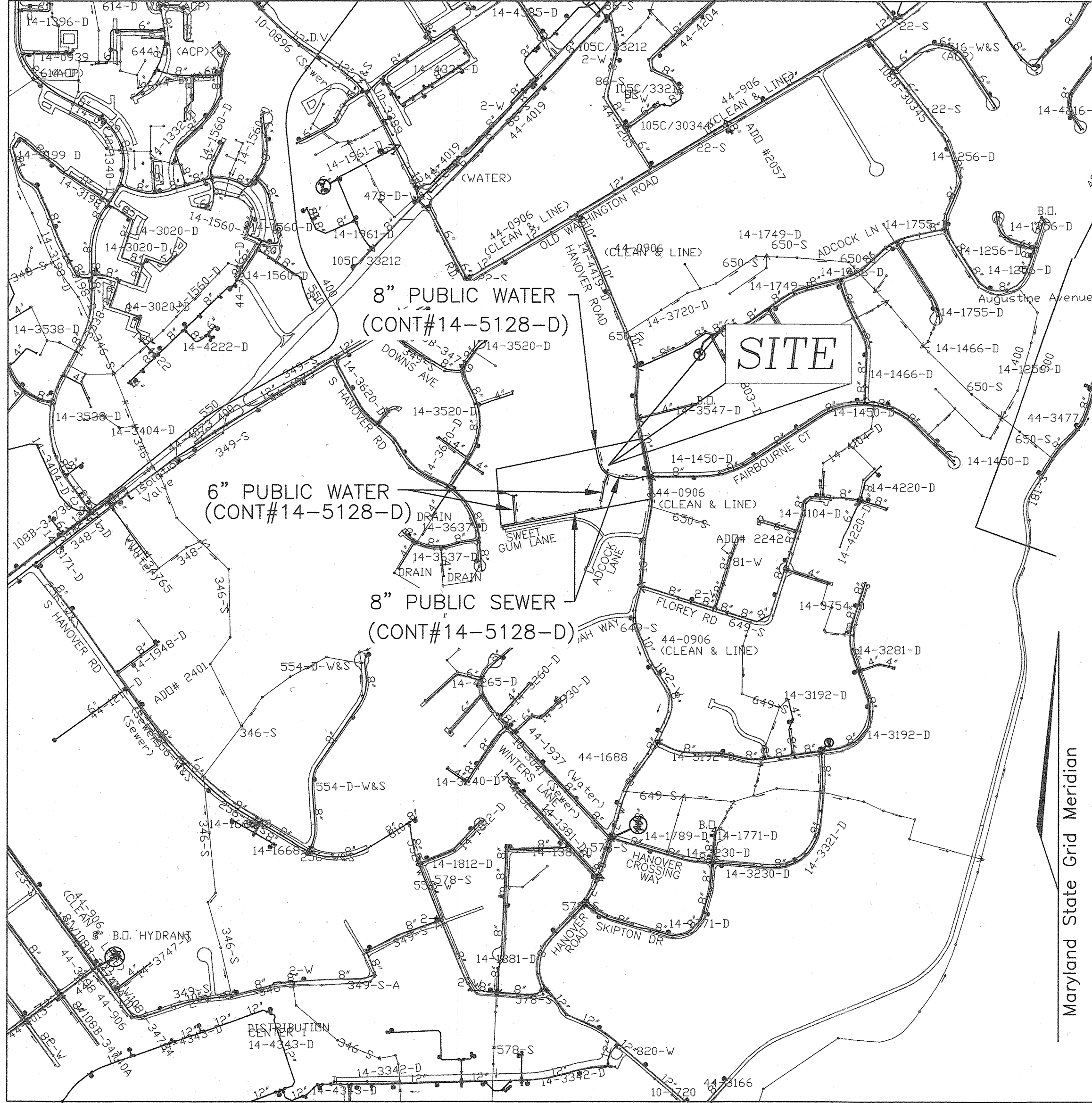
### HOWARD COUNTY, MARYLAND

**BENCHMARKS**  
 HOWARD COUNTY BENCHMARK - 38DA  
 N 529044.94 E 1350855.03 ELEV.: 337.61  
 HOWARD COUNTY BENCHMARK - 38GA  
 N 530494.49 E 1350872.35 ELEV.: 312.28



**VICINITY MAP**  
 SCALE: 1"=2,000'  
 ADC MAP COORDINATE: PAGE: 35 BLOCK: E3

SHEET INDEX	
DESCRIPTION	SHEET NO.
COVER SHEET & LOCATION MAP	1 OF 4
LAYOUT PLAN	2 OF 4
WATER PROFILES	3 OF 4
SEWER PROFILES	4 OF 4



**LEGEND**

	EXISTING CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	EXISTING FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	EXISTING TREELINE
	PROPOSED TREELINE
	PROPOSED WATER MAIN
	FIRE HYDRANT
	PROPOSED VALVE
	PROPOSED TEE
	STORM DRAIN
	EXISTING SEWER
	SEWER MANHOLE
	PRIVATE WATER HOUSE CONNECTION
	PRIVATE SEWER HOUSE CONNECTION
	PROPOSED SEWER

**QUANTITIES**

NAME OF UTILITY CONTRACTOR : GAINES				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE : 12/5/2022 TOM ARK / MARK MINYAH				
ITEMS	QUANTITIES ESTIMATED	QUANTITIES	TYPE	AS-BUILT MANUFACTURER/SUPPLIER
<b>WATER</b>				
8" WATER - (PVC C-900) (DR-18)	487 LF	467	DR 18	NORTH AMERICAN
6" WATER - (PVC C-900) (DR-18)	510 LF	492	DR 18	DR 18
6" WATER DIP (FH)	28 LF	126	CL52 TYTON JT	U S PIPE & FOUNDRY
8" x 8" TAPPING SLEEVE	1 EA	1		FORD METER
8" x 6" TEE	2 EA	2		SIP
6" x 6" TEE	1 EA	1		-SIP
6" x 6" TEE (FHT)	2 EA	2		-SIP
6" x 6" TEE (FHT)	1 EA	1		-SIP
6" VALVE	1 EA	1		KENNEDY VALVE
6" VALVE	6 EA	6		KENNEDY VALVE
FIRE HYDRANT	4 EA	4		KENNEDY VALVE
8" CAP AND BUTTRESS	1 EA	1		SIP
6" CAP AND BUTTRESS	3 EA	3		-SIP
6" - 1/32 HORIZ. BEND	1 EA	1		-SIP
6" - 1/16 HORIZ. BEND	1 EA	1		-SIP
6" - 1/8 HORIZ. BEND	4 EA	4		-SIP
6" - 1/16 HORIZ. BEND	2 EA	2		-SIP
6" - 1/32 HORIZ. BEND	5 EA	5		-SIP
6" - 1/16 VERTICAL BEND	4 EA	4		-SIP
6" - 1/16 VERTICAL BEND	2 EA	2		-SIP
6" - 1/32 VERTICAL BEND	2 EA	2		-SIP
VERT COUPLING	8 EA	6		
1-1/2" WHC	370 LF	374		
8" x 8" TAPPING SLEEVE VALVE	1 EA	1 EA		FORD METER / KENNEDY VALVE
<b>SEWER</b>				
MANHOLE	13 EA	13		CONTRACTORS PRECAST
18" PVC SEWER - SDR 35	1060 LF	1060 LF	SDR 35	NORTH AMERICAN
8" DIP SEWER	319 LF	319 LF	CL52 TYTON JT	U S PIPE & FOUNDRY
4" SHC	367 LF	372 LF	SDR 35	NORTH AMERICAN
TYPE A DROP CONNECTION / TYPE B	1 EA	1/2		CONTRACTORS PRECAST

\*FROM HOWARD COUNTY DESIGN MANUAL VOLUME II-SECTION 4.3, TABLE 4.3D.

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

WATER ZONE: 400  
 TEST PRESSURE: 215 psi  
 TEST GRADIENT: 677

Type of Building :	RESIDENTIAL
No. of Lots/Parcels :	18
No. of single Water House Connections :	18
No. of Twin Water House Connections :	0
No. of Sewer House Connections :	18
No. of Twin Sewer House Connections :	0
Drainage Area :	PATUXENT RIVER
Treatment Plant :	PATUXENT RIVER (MIDDLE)

**EXISTING PROPERTIES TEMPORARY INTERRUPTION**

EXISTING ADDRESS
LOT 7 - 6227 SWEETGUM LANE
LOT 8 - 6223 SWEETGUM LANE
LOT 9 - 6219 SWEETGUM LANE
LOT 10 - 6215 SWEETGUM LANE
LOT 11 - 6205 SWEETGUM LANE

CONTRACTOR SHALL PROVIDE ADVANCED NOTICE TO PROPERTY OWNERS

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
  
 CHIEF, BUREAU OF UTILITIES DATE

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

**VOGEL ENGINEERING**  
  
**TIMMONS GROUP**  
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21103  
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

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. 18160  
 EXPIRATION DATE 08-27-2022  
 DRN: VE+TG DES: RHV  
 CHK: RHV  
 DATE: AUGUST 2021

NO.	REVISION	DATE
WRA 3	"AS BUILT"	1/6/23
VTG 2	REVISE TO REMOVE EXISTING HYDRANT, PLACE NEW HYDRANT AND ABANDON EXISTING HOUSE CONNECTIONS	6-22-22
VTG 1	REVISE TO EXTEND WATER MAIN TO USE LARGER HOUSE MODELS ON LOT 1B	4-27-22

**FINAL WATER AND SEWER CONSTRUCTION PLAN**  
**CONTRACT 14-5128-D**  
**COVER SHEET**

600' SCALE MAP NO. 38 BLOCK NO. 09

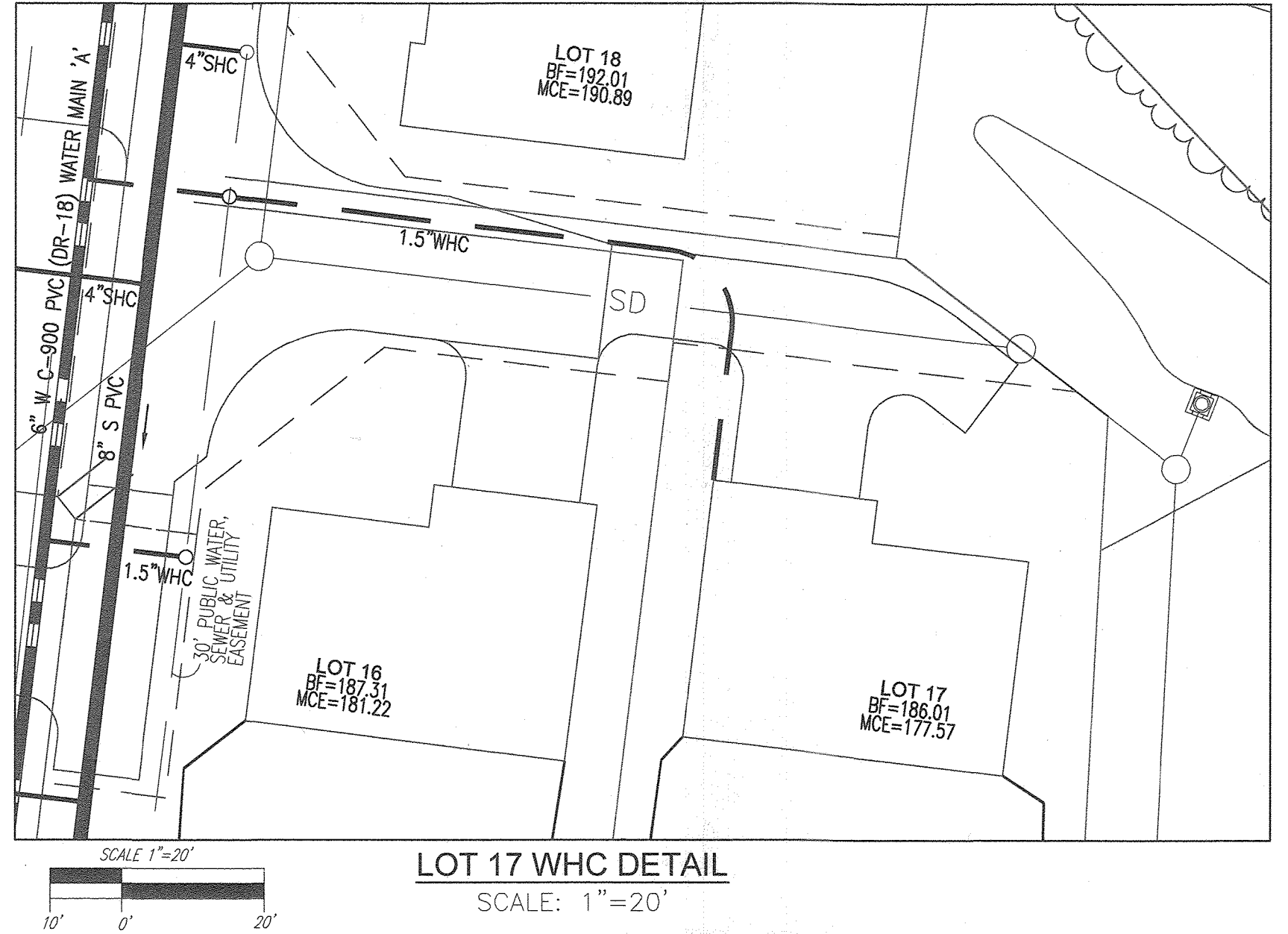
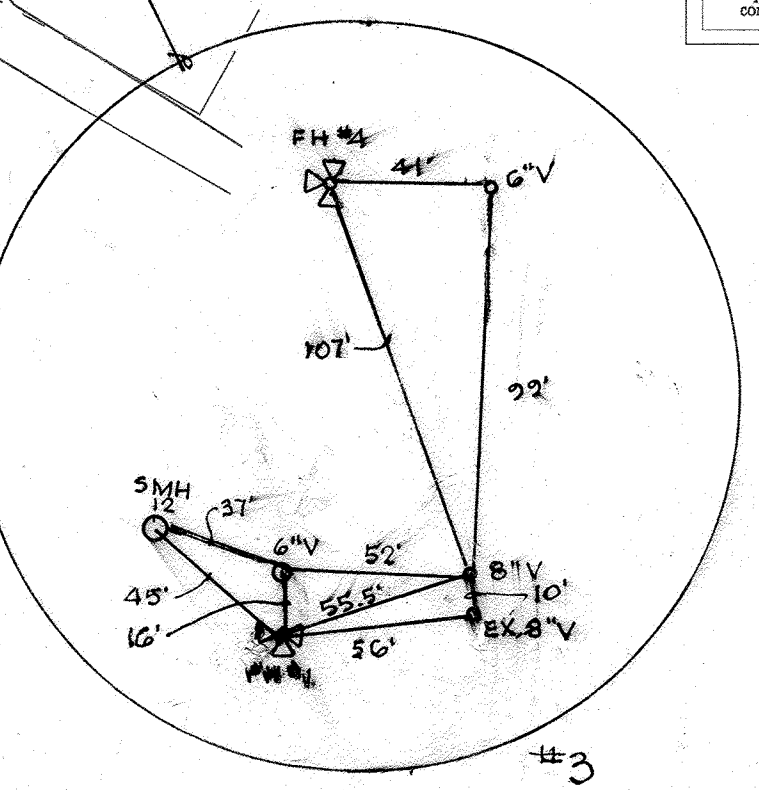
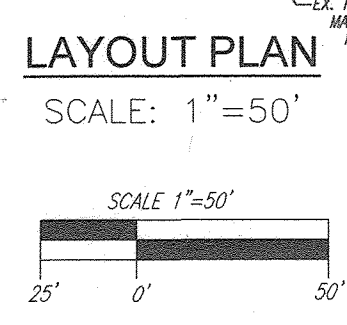
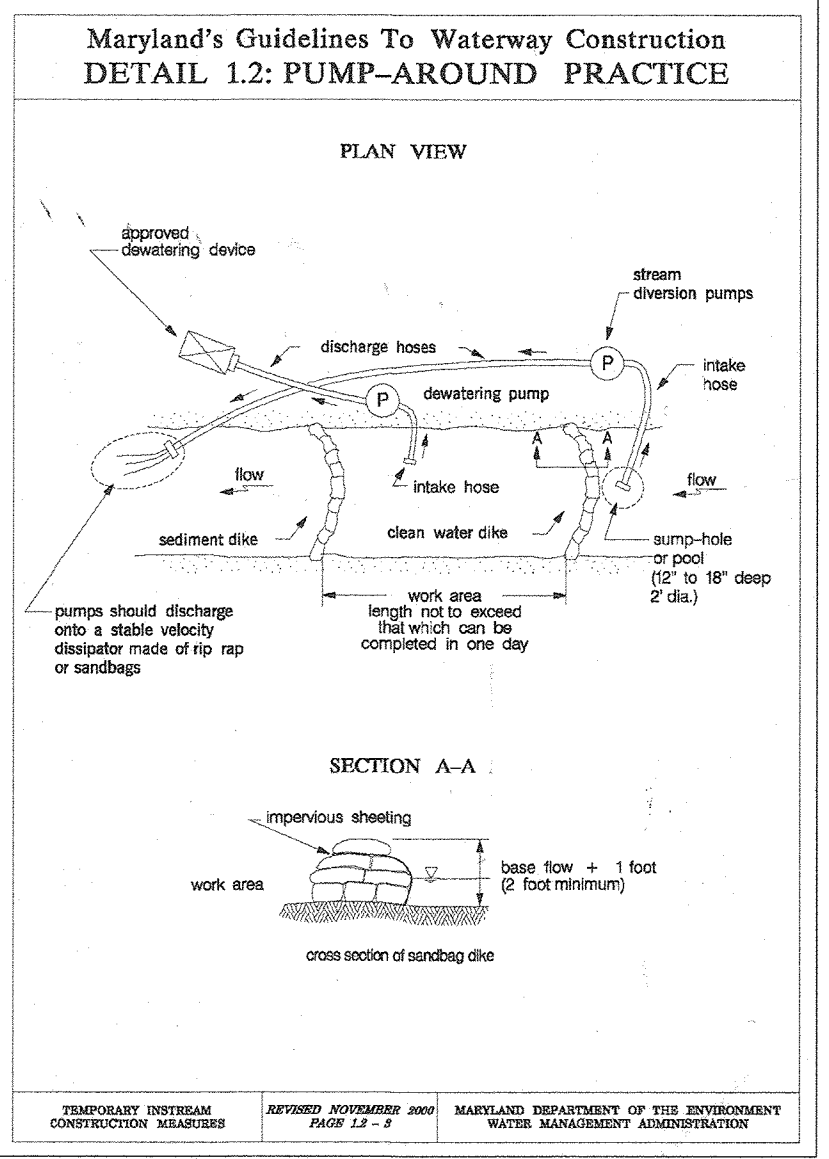
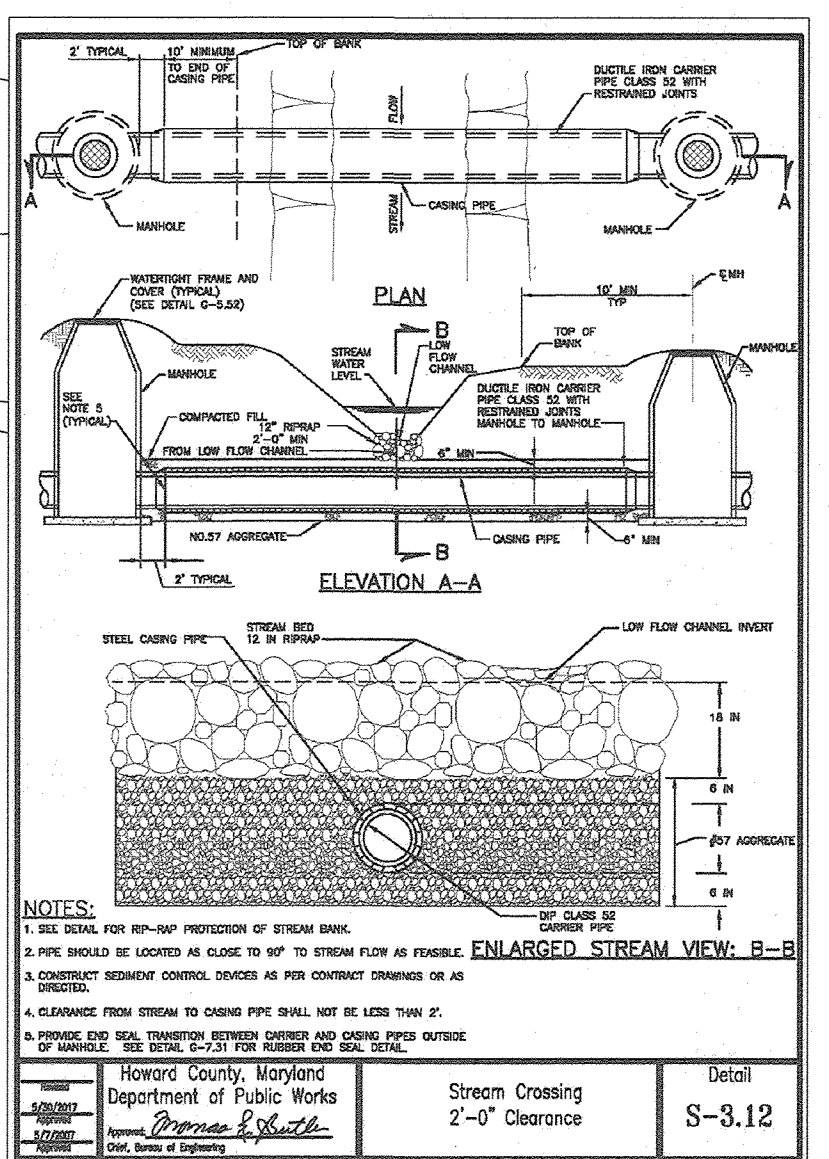
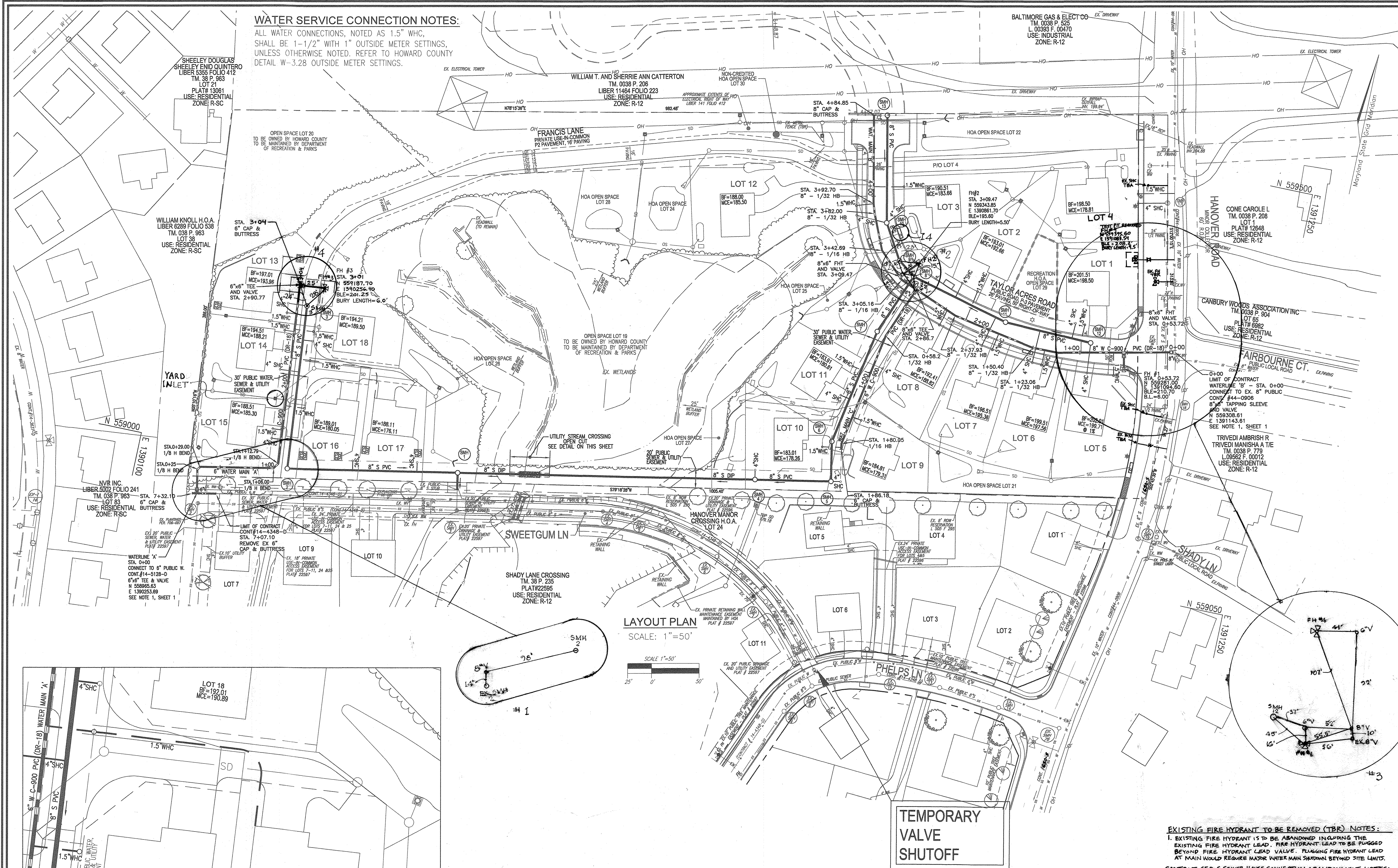
**GRACE MEADOWS**  
 LOTS 1 - 18 AND OPEN SPACE LOTS 19 - 29  
 A SUBDIVISION OF TAX MAP 38 - PARCEL 731

ZONED R-12  
 PARCEL 731  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 1 OF 4



**WATER SERVICE CONNECTION NOTES:**  
 ALL WATER CONNECTIONS, NOTED AS 1.5" WHC, SHALL BE 1-1/2" WITH 1" OUTSIDE METER SETTINGS, UNLESS OTHERWISE NOTED. REFER TO HOWARD COUNTY DETAIL W-3.28 OUTSIDE METER SETTINGS.



**EXISTING PROPERTIES TEMPORARY INTERRUPTION**

EXISTING ADDRESS
LOT 7 - 6227 SWEETGUM LANE
LOT 8 - 6223 SWEETGUM LANE
LOT 9 - 6219 SWEETGUM LANE
LOT 10 - 6215 SWEETGUM LANE
LOT 11 - 6205 SWEETGUM LANE

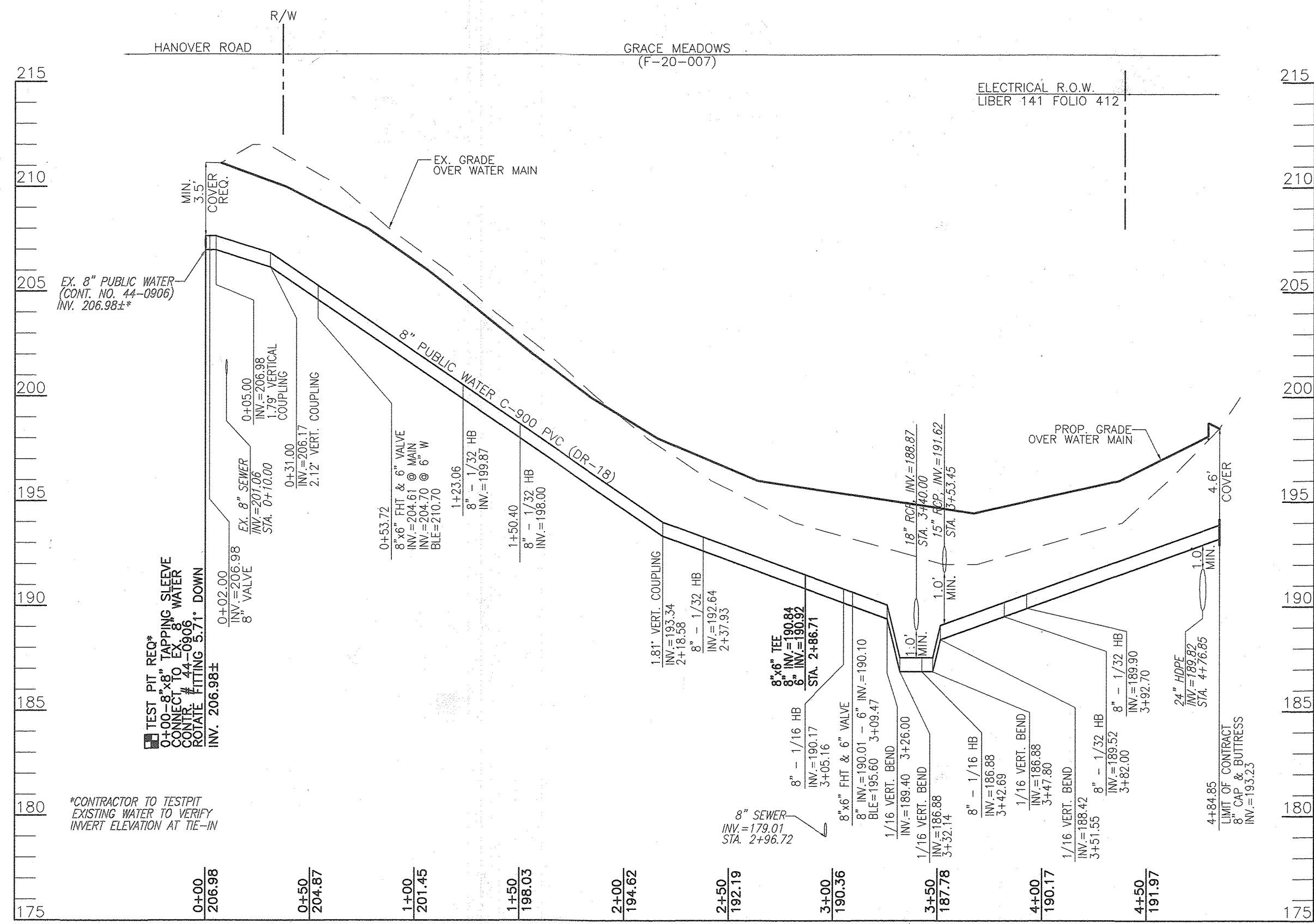
CONTRACTOR SHALL PROVIDE ADVANCED NOTICE TO PROPERTY OWNERS

- EXISTING FIRE HYDRANT TO BE REMOVED (TBR) NOTES:**
- EXISTING FIRE HYDRANT IS TO BE ABANDONED INCLUDING THE EXISTING FIRE HYDRANT LEAD. FIRE HYDRANT LEAD TO BE PLUGGED BEYOND FIRE HYDRANT LEAD VALVE. PLUGGING FIRE HYDRANT LEAD AT MAIN WOULD REQUIRE WATER MAIN SHUTDOWN BEYOND SITE LIMITS.
- CONTRACT 650-S SEWER HOUSE CONNECTION ABANDONMENT NOTES:**
- EXISTING CONTRACT 650-S SEWER HOUSE CONNECTIONS (SHC) SERVING PARCEL 731 SHALL BE ABANDONED (TBA) IN PLACE IN ACCORDANCE WITH DESIGN MANUAL VOLUME II, SECTION 5.6.B.
- CONTRACT 44-0906 WATER SERVICE CONNECTION ABANDONMENT NOTES:**
- EXISTING CONTRACT 44-0906 WATER METERS (A), TO BE ABANDONED (TBA) ALONG HANOVER ROAD SERVING PARCEL 731, ARE TO BE DISCONNECTED AND PLUGGED AT THE WATER MAIN.
  - WATER SERVICE CONNECTIONS SHALL BE ABANDONED IN ACCORDANCE WITH DESIGN MANUAL VOLUME II, SECTION 5.6.D3. CONTRACTOR SHALL INFORM BUREAU OF UTILITIES.

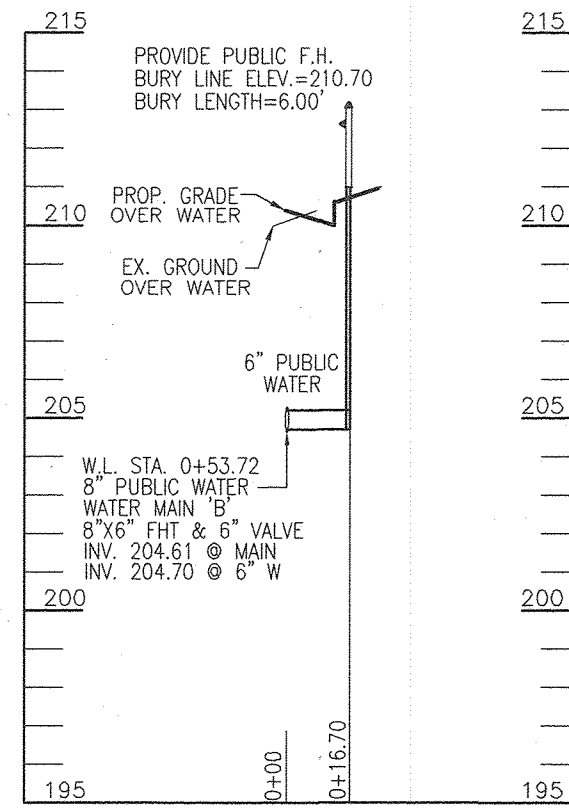
**OWNER/DEVELOPER**  
 GRACE TAYLOR SCHUTT, TRUSTEE OF THE GRACE T. SCHUTT REVOCABLE TRUST  
 6132 HANOVER ROAD  
 HANOVER, MD 21076  
 443-463-6760

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND 	<b>VOGEL ENGINEERING</b>  <b>TIMMONS GROUP</b> 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com	 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 09-27-2022. DRN: VE+TG DES: RHV CHK: RHV DATE: AUGUST 2021	<table border="1"> <tr> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td>WRA 3</td> <td>"AS BUILT"</td> <td>1/6/23</td> </tr> <tr> <td>VTG 2</td> <td>REVISE TO REMOVE EXISTING HYDRANT, PLACE NEW HYDRANT</td> <td>6-22-22</td> </tr> <tr> <td>VTG 3</td> <td>AND ABANDON EXISTING HOUSE CONNECTIONS</td> <td></td> </tr> <tr> <td>VTG 1</td> <td>MOVE TO EXISTING WATER MAIN "A" FOR LARGER HOUSE TYPE MODELS ON LOTS 1</td> <td>1-27-22</td> </tr> </table>	NO.	REVISION	DATE	WRA 3	"AS BUILT"	1/6/23	VTG 2	REVISE TO REMOVE EXISTING HYDRANT, PLACE NEW HYDRANT	6-22-22	VTG 3	AND ABANDON EXISTING HOUSE CONNECTIONS		VTG 1	MOVE TO EXISTING WATER MAIN "A" FOR LARGER HOUSE TYPE MODELS ON LOTS 1	1-27-22	<b>FINAL WATER AND SEWER CONSTRUCTION PLAN</b> <b>CONTRACT 14-5128-D</b> <b>LAYOUT PLAN</b> 600' SCALE MAP NO. 38 BLOCK NO. 09 TAX MAP 38 BLOCK 09 1ST ELECTION DISTRICT ZONED R-12 PARCEL 731 HOWARD COUNTY, MARYLAND	<b>SCALE AS SHOWN</b> <b>SHEET 2 OF 4</b>
NO.	REVISION	DATE																			
WRA 3	"AS BUILT"	1/6/23																			
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VTG 3	AND ABANDON EXISTING HOUSE CONNECTIONS																				
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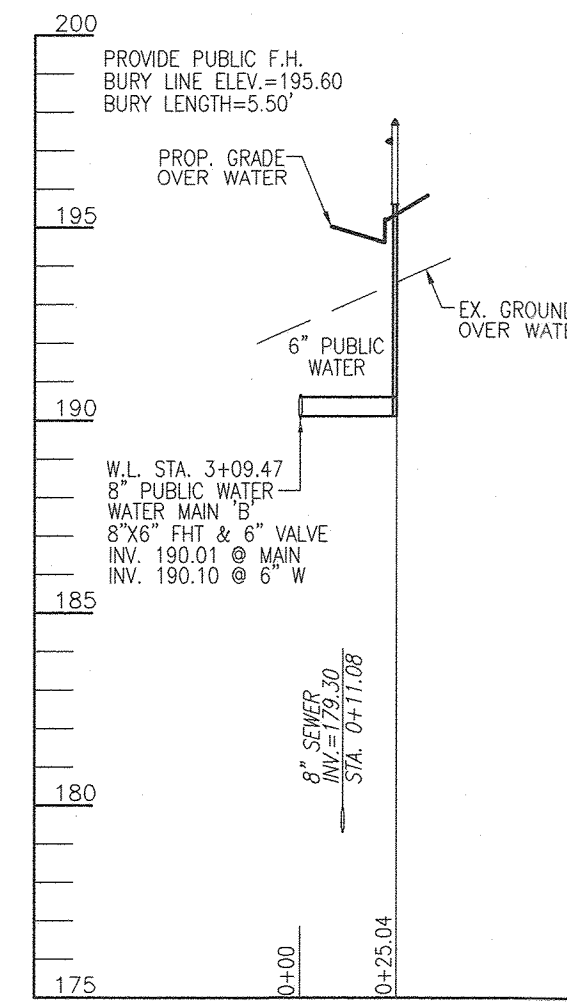




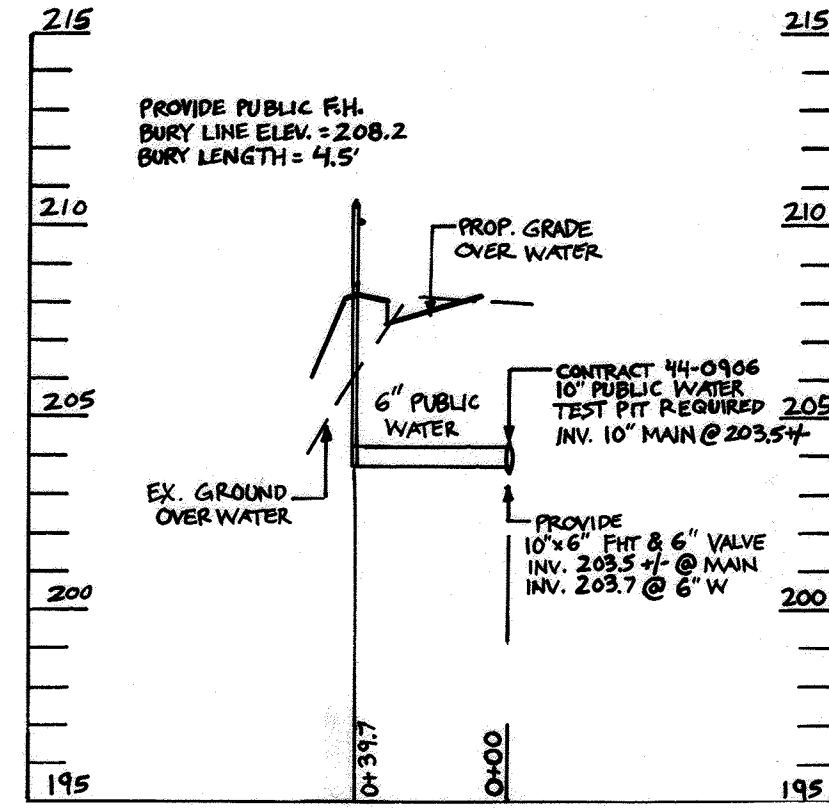
**8" PUBLIC WATER PROFILE (WATERMAIN 'B')**  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'  
 TAYLOR ACRES ROAD



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



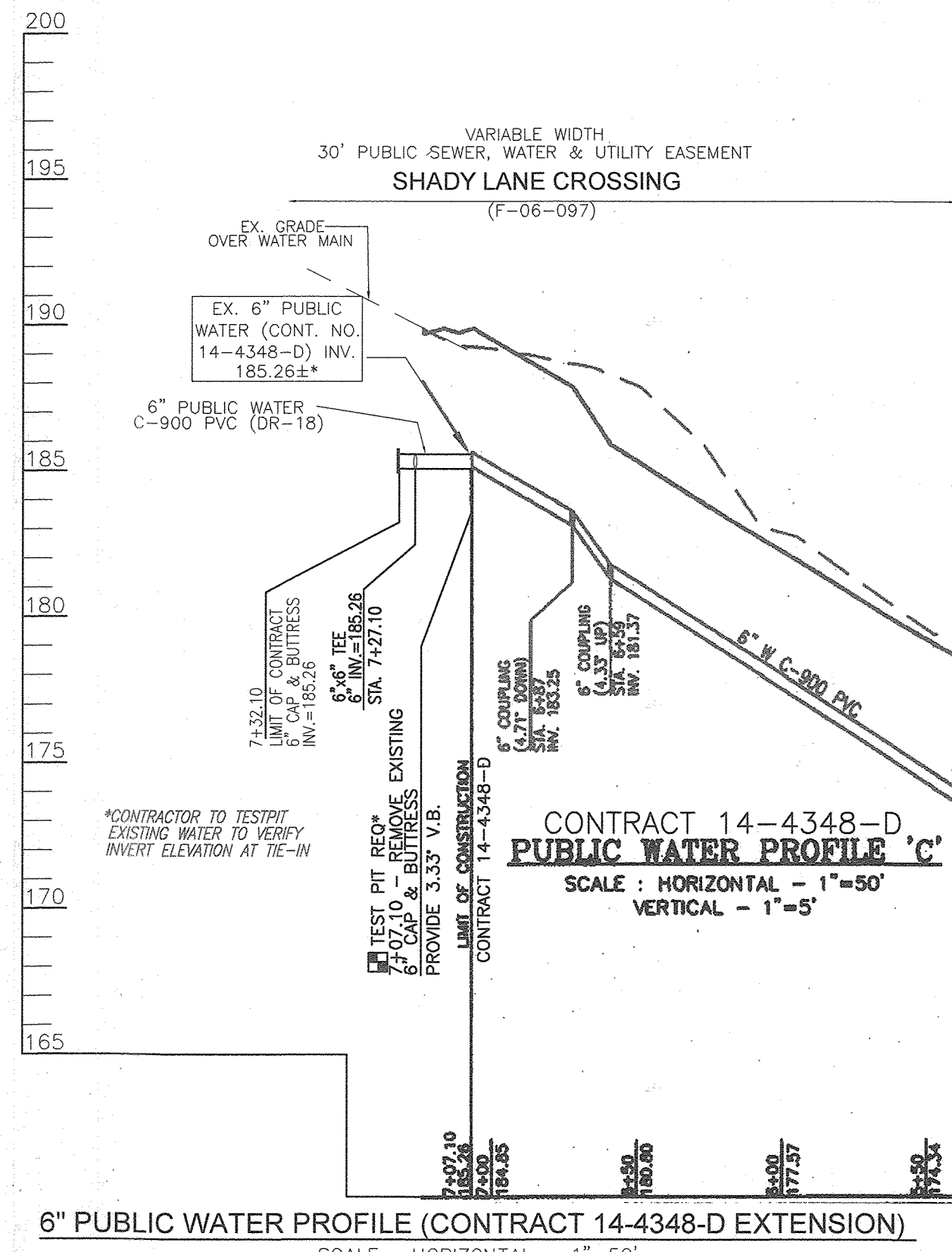
**TAYLOR ACRES ROAD FIRE HYDRANT #2 PROFILE**  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'



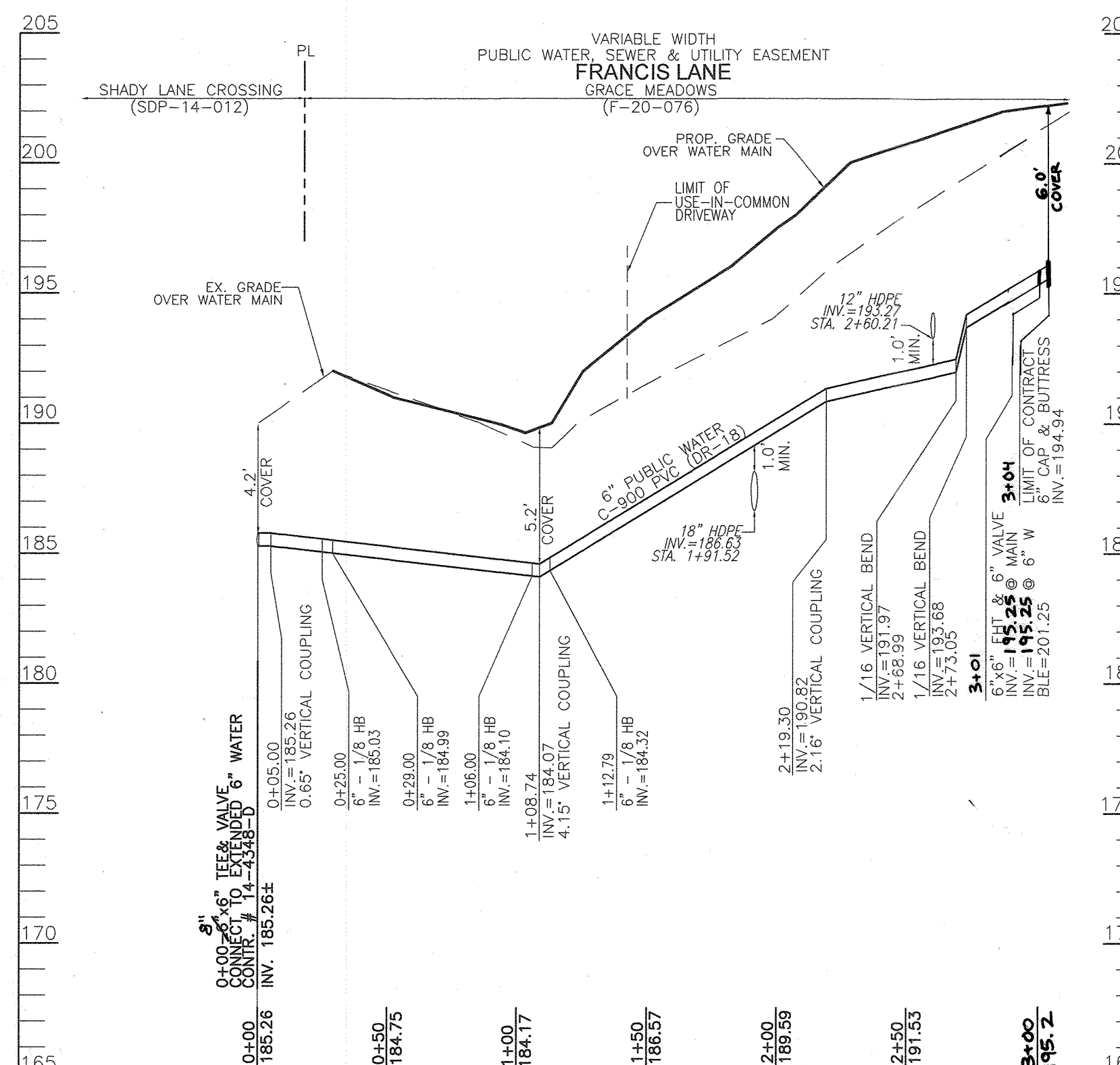
**HANOVER ROAD FIRE HYDRANT #4 PROFILE**  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'

WATER HOUSE CONNECTION - AS-BUILT LOCATION TABLE			
LOT	STREET ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
LOT 1		SMH 11 54'	SMH 12 19'
LOT 2		SMH 11 45'	SMH 8 67'
LOT 3		SMH 10 46'	SMH 4 53'
LOT 4		SMH 11 71'	SMH 17 34'
LOT 5		FH #1 13.5'	SMH 12 42'
LOT 6		SMH 11 58.5'	SMH 12 56'
LOT 7		SMH 11 34.5'	INLET 1 36'
LOT 8		SMH 11 63'	SMH 8 56'
LOT 9		SMH 7 96'	SMH 6 40'
LOT 10		SMH 5 37'	SMH 6 10.5'
LOT 11		SMH 1 45'	SMH 6 83'
LOT 12		SMH 3 35'	SMH 13 59'
LOT 13		SMH 3 25'	FH 3 50'
LOT 14		SMH 3 35'	FH 3 62'
LOT 15		SMH 2 45'	YARD INLET 51'
LOT 16		SMH 2 67'	YARD INLET 33'
LOT 17		SMH 3 56'	YARD INLET 54.5'
LOT 18		SMH 3 26'	FH 3 48'

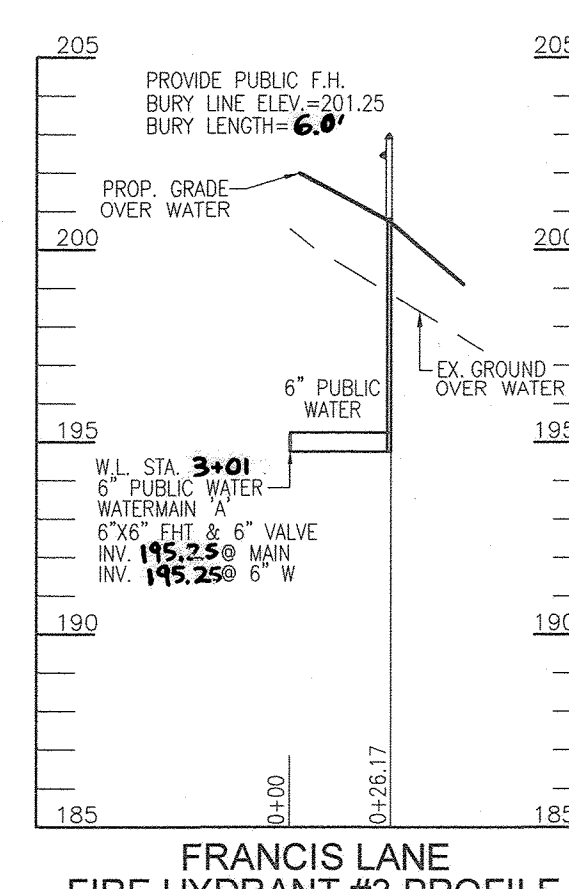
WATER MAIN LOCATION CHART			
STATION	APPURTENANCE	NORTHING	EASTING
<b>WATER MAIN 'A'</b>			
WL 0+00.00	6"x6" TEE & VALVE	558949.8993	1390170.3466
WL 0+05.00	0.65" VERTICAL COUPLING - DOWN	558954.8061	1390169.3974
WL 0+25.00	6" - 1/8" HB	558974.4442	1390165.5984
WL 0+29.00	6" - 1/8" HB	558977.7583	1390167.8381
WL 1+06.00	6" - 1/8" HB	558992.3829	1390243.4366
WL 1+08.74	4.15" VERTICAL COUPLING - UP	558994.6942	1390244.9986
WL 1+12.79	6" - 1/8" HB	558998.1628	1390247.3423
WL 2+19.30	2.16" VERT COUPLING	559103.2263	1390237.8760
WL 2+68.99	1/16" VERTICAL BEND - UP	559154.5377	1390233.2386
WL 2+73.05	1/16" VERTICAL BEND - DOWN	559157.5925	1390232.8279
WL 2+90.77	6" x 6" FHT & 6" VALVE	559175.2380	1390231.3173
WL 2+93.77	6" CAP AND BUTTRISS	559178.2258	1390231.0469
<b>WATER MAIN 'B'</b>			
WL 0+00.00	8" x 8" TAPPING SLEEVE & 8" VALVE	559308.6144	1391143.6135
WL 0+05.00	1.75" VERT COUPLING	559307.5639	1391138.7251
WL 0+31.00	2.12" VERT COUPLING	559302.1018	1391113.3053
WL 0+53.72	8" x 6" FHT & 6" VALVE	559297.3468	1391091.0914
WL 1+23.06	8" - 1/32" HB	559282.7622	1391023.3034
WL 1+50.40	8" - 1/32" HB	559282.3435	1390995.9617
WL 2+18.58	1.81" VERT COUPLING	559294.7706	1390928.0955
WL 2+37.93	8" - 1/32" HB	559298.1034	1390909.8620
WL 2+86.71	8" x 6" TEE	559316.0795	1390864.5122
WL 3+05.16	8" - 1/16" HB	559322.8749	1390847.5687
WL 3+09.47	8" x 6" FHT & 6" VALVE	559325.8756	1390844.2747
WL 3+26.00	1/16" VERTICAL BEND - DOWN	559337.3837	1390832.4087
WL 3+32.14	1/16" VERTICAL BEND - UP	559341.5687	1390828.0935
WL 3+42.69	8" - 1/16" HB	559349.0084	1390820.4224
WL 3+47.80	1/16" VERTICAL BEND - UP	559353.7024	1390818.3933
WL 3+51.55	1/16" VERTICAL BEND - DOWN	559357.1446	1390816.9054
WL 3+82.00	8" - 1/32" HB	559385.0950	1390804.8233
WL 3+92.70	8" - 1/32" HB	559395.2521	1390801.4490
WL 4+84.85	8" CAP AND BUTTRISS	559485.4625	1390782.7015
<b>WATER MAIN 'C'</b>			
WL 0+00.00	CONNECT TO 8" WATER LINE 'A', 8"x6" TEE & 6" VALVE	559316.0795	1390864.5122
WL 0+02.00	6" - 1/32" VERT. BEND	559314.2200	1390863.7756
WL 0+04.00	6" - VALVE	559312.8248	1390863.2235
WL 0+12.00	6" - 1/32" VERT. BEND	559304.9228	1390860.0931
WL 0+58.22	6" - 1/32" HB, ROTATE 3" DOWN	559261.9508	1390843.0725
WL 0+78.22	1" COUPLING DOWN	559242.2474	1390839.4702
WL 1+38.22	3" COUPLING UP	559183.2354	1390828.8823
WL 1+80.05	6" - 1/16" HB, ROTATE 1" UP	559142.1017	1390821.162
WL 1+86.18	6" CAP AND BUTTRISS	559136.1053	1390822.4089



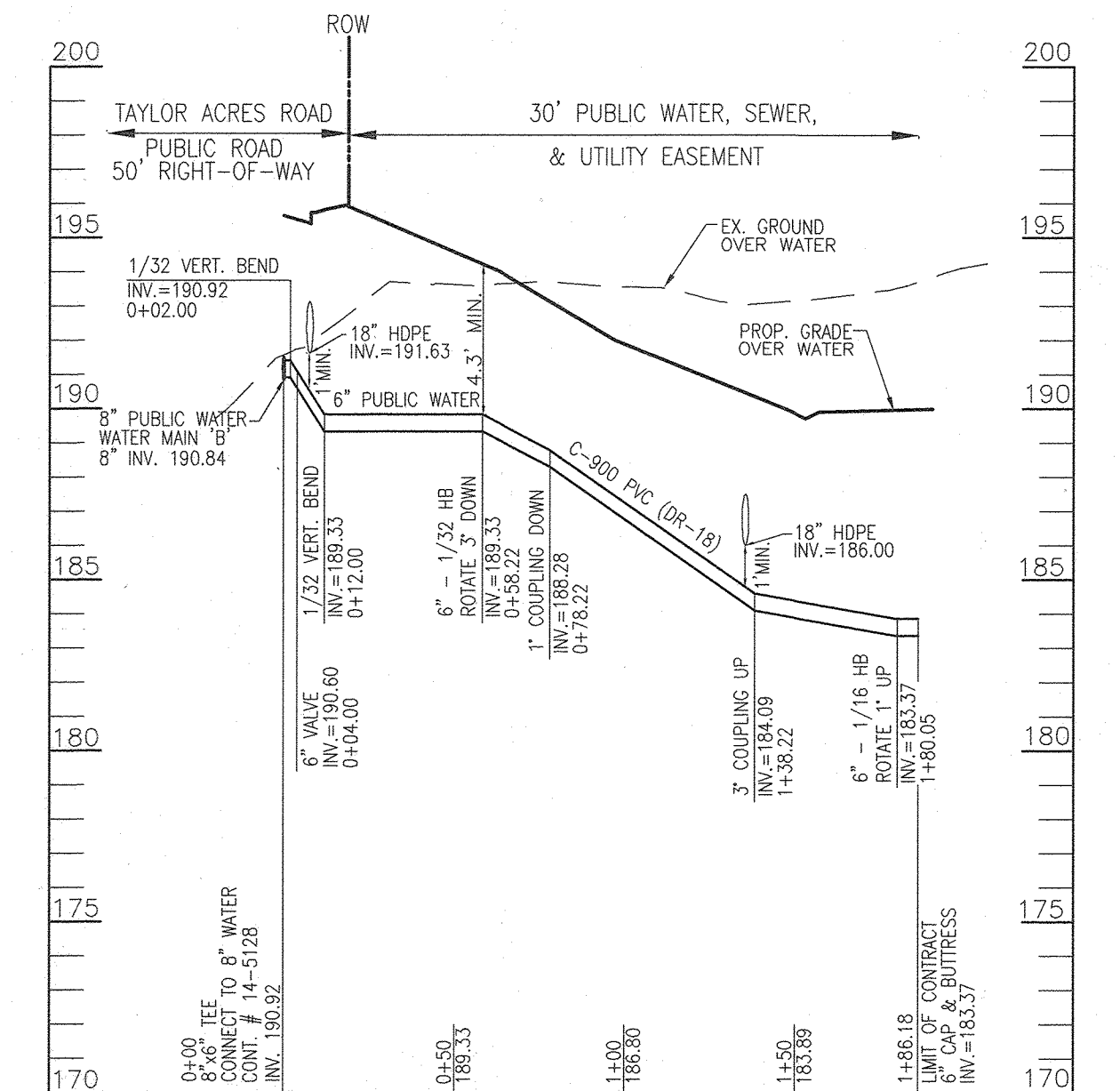
**6" PUBLIC WATER PROFILE (CONTRACT 14-4348-D EXTENSION)**  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'



**6" PUBLIC WATER PROFILE (WATERMAIN 'A')**  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'




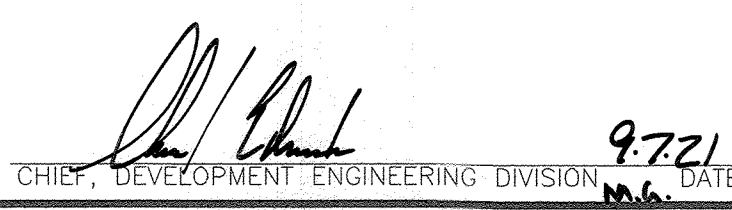

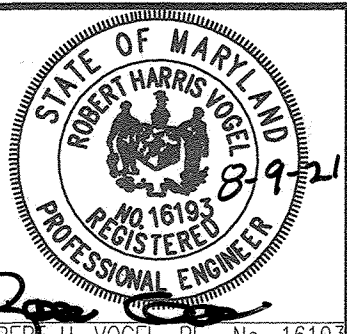
**FRANCIS LANE FIRE HYDRANT #3 PROFILE**  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'



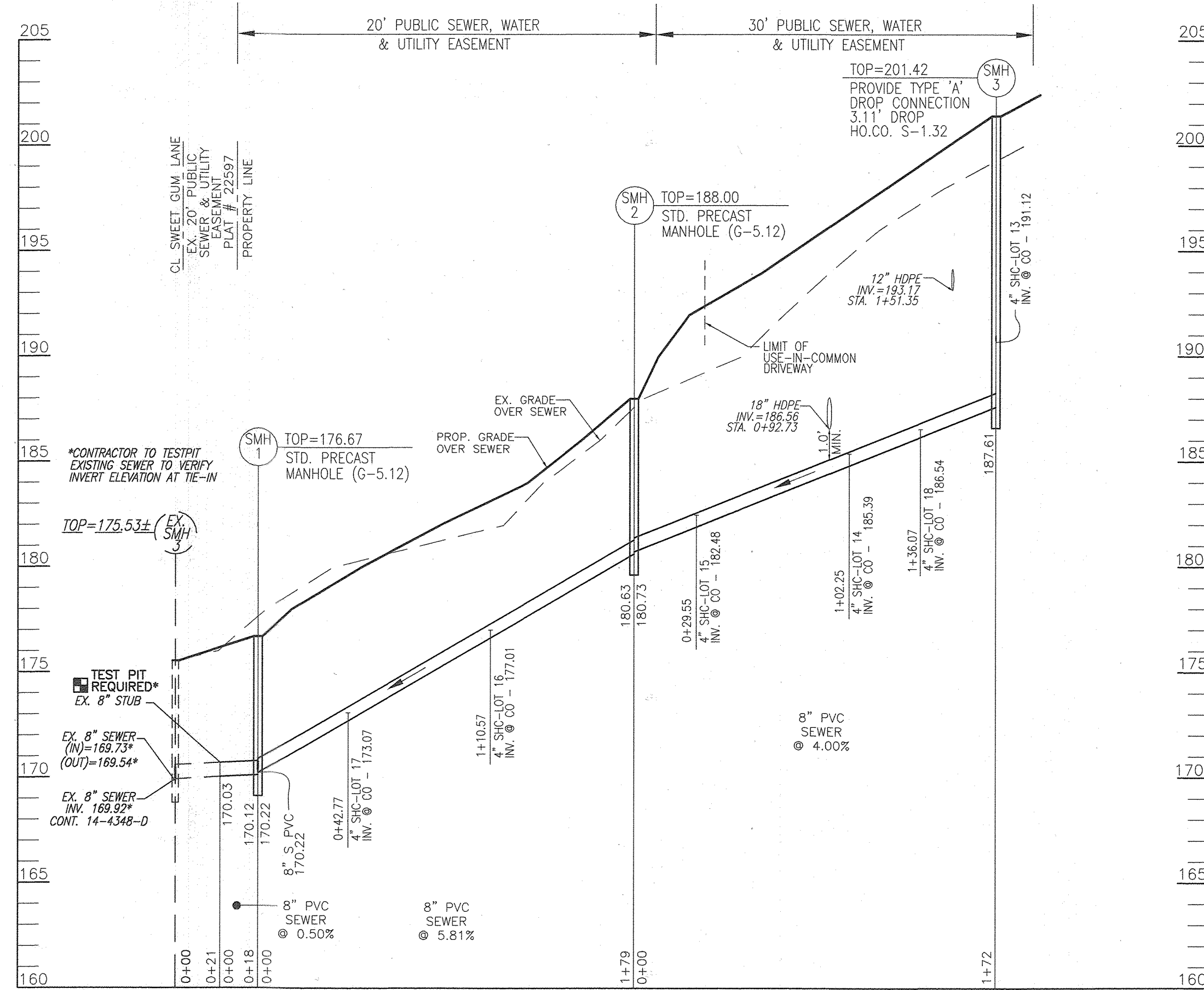
**6" PUBLIC WATER PROFILE (WATERMAIN 'C')**  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'

**NOTES:**  
 1. CONTRACTOR SHALL TEST PIT EXISTING WATER MAINS (CONTRACT 14-4348-D AND 44-0906) TO VERIFY INVERT ELEVATION AT TIE-IN.

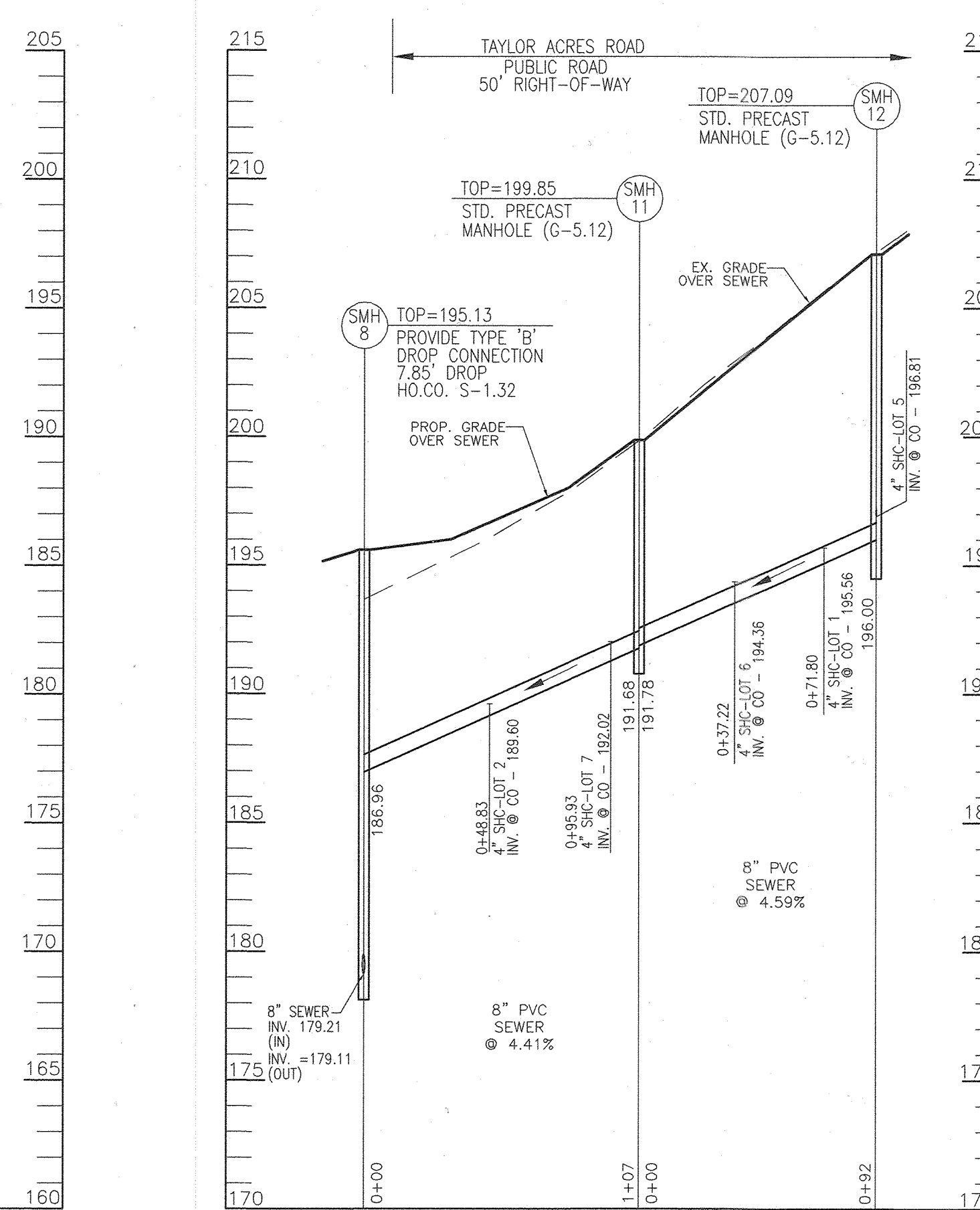
**OWNER/DEVELOPER**  
 GRACE TAYLOR SCHUTT, TRUSTEE OF THE GRACE T. SCHUTT REVOCABLE TRUST  
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 443-463-6760

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND 	<b>VOGEL ENGINEERING</b>  <b>TIMMONS GROUP</b> 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com		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: 08-27-2022 DRN: VE+TG DES: RHV CHK: RHV DATE: AUGUST 2021	<table border="1"> <tr><td>WRA</td><td>3</td><td>"AS BUILT"</td><td>1/6/23</td></tr> <tr><td>VTG</td><td>2</td><td>REVISE TO REMOVE EXISTING HYDRANT, PLACE NEW HYDRANT AND ABANDON EXISTING HOUSE CONNECTIONS</td><td>6-22-22</td></tr> <tr><td>VTG</td><td>1</td><td>REVISE TO EXTEND WATER MAIN 'A' FOR LARGER HOUSE TYPE MODELS CALLED</td><td>4-27-22</td></tr> </table>	WRA	3	"AS BUILT"	1/6/23	VTG	2	REVISE TO REMOVE EXISTING HYDRANT, PLACE NEW HYDRANT AND ABANDON EXISTING HOUSE CONNECTIONS	6-22-22	VTG	1	REVISE TO EXTEND WATER MAIN 'A' FOR LARGER HOUSE TYPE MODELS CALLED	4-27-22	<b>FINAL WATER AND SEWER CONSTRUCTION PLAN</b> <b>CONTRACT 14-5128-D</b> <b>WATER PROFILES</b> 600' SCALE MAP NO. 38 BLOCK NO. 09 TAX MAP 38 BLOCK 09 1ST ELECTION DISTRICT ZONED R-12 PARCEL 731 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 3 OF 4
WRA	3	"AS BUILT"	1/6/23																
VTG	2	REVISE TO REMOVE EXISTING HYDRANT, PLACE NEW HYDRANT AND ABANDON EXISTING HOUSE CONNECTIONS	6-22-22																
VTG	1	REVISE TO EXTEND WATER MAIN 'A' FOR LARGER HOUSE TYPE MODELS CALLED	4-27-22																

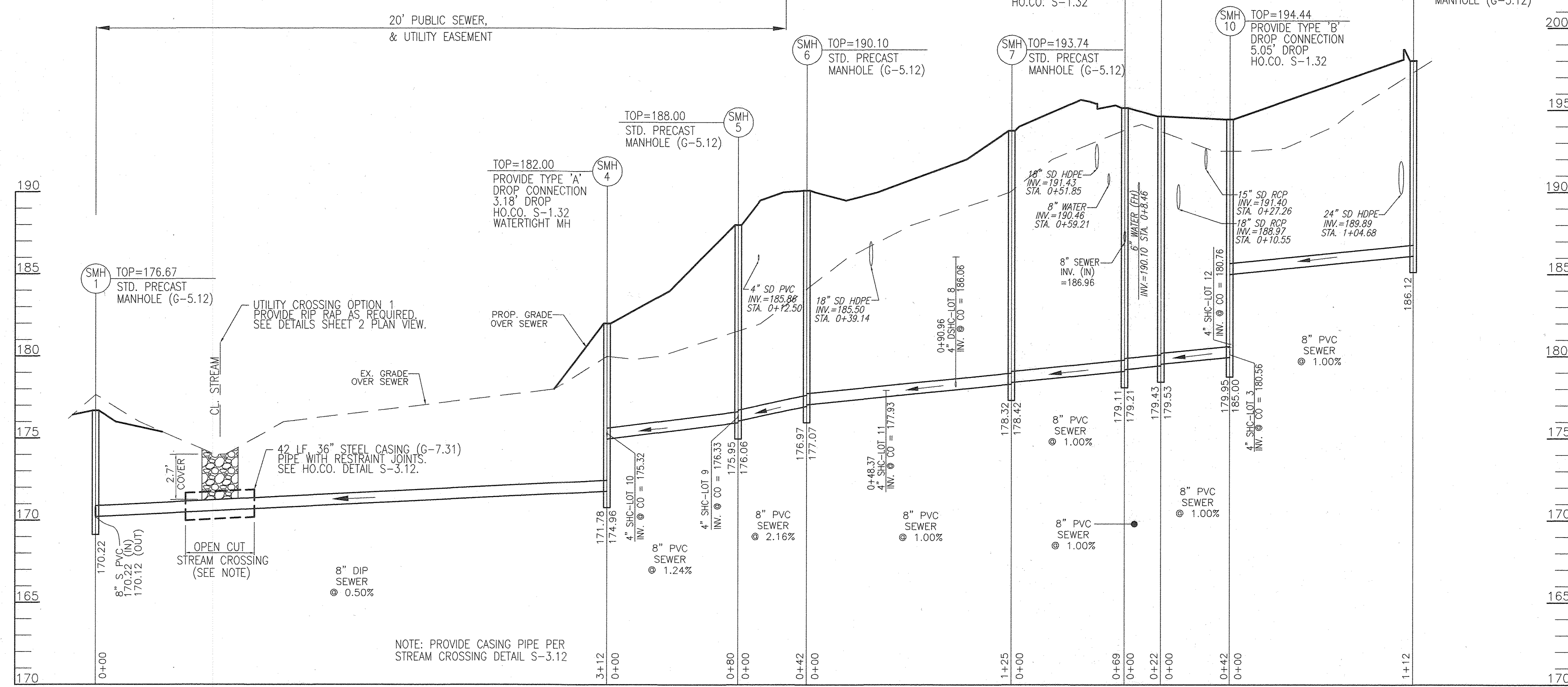




**8" PUBLIC SEWER PROFILE**  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'  
 FRANCIS LANE



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



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

MIN CELLAR ELEV'S										
LOT#	EL@MAIN	TYPE	TYPE A	DIST TO ESMT/ROW	EL@ESMT/ROW	DIST TO HSE	SHC SLOPE	EL @ HOUSE	MCE	BF*
1	195.24	SHC	-	16	195.56	22	2%	196.00	198.50	201.51
2	189.28	SHC	-	16	189.60	28	2%	190.16	192.66	193.01
3	180.12	MH	-	28	180.56	30	2%	181.16	183.66	190.51
4	175.13	EX. MH	-	28	175.69	31	2%	176.31	178.81	198.50
5	196.17	MH	-	32	196.81	40	1%	197.21	199.71	202.01
6	193.66	SHC	-	35	194.36	35	2%	195.06	197.56	199.51
7	191.36	SHC	-	33	192.02	42	2%	192.86	195.36	196.51
8	178.15	DSHC	7.25	33	186.06	13	2%	186.32	188.82	192.41
9	176.13	MH	-	30	176.33	24	2%	176.81	179.31	184.81
10	175.12	MH	-	10	175.32	22	2%	175.76	178.26	183.01
11	177.73	SHC	-	10	177.93	19	2%	178.31	180.81	183.91
12	180.12	MH	-	32	180.76	112	2%	183.00	185.50	188.00
13	190.72	MH	-	32	191.12	17	2%	191.46	193.96	197.01
14	184.99	SHC	-	20	185.39	16	2%	185.71	188.21	194.51
15	182.08	SHC	-	20	182.48	16	2%	182.80	185.30	188.51
16	176.81	SHC	-	10	177.01	27	2%	177.55	180.05	189.01
17	172.87	SHC	-	10	173.07	27	2%	173.61	176.11	188.11
18	186.34	SHC	-	10	186.54	23	2%	187.00	189.50	194.21

SEWER MANHOLE SCHEDULE					
NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT
SMH 1	STD. PRECAST MD HO. CO. STD. DET. G-5.12	N 559028.21 E 1390433.59	176.67	170.22/170.22	170.12
SMH 2	STD. PRECAST MD HO. CO. STD. DET. G-5.12	N 558994.95 E 1390257.65	188.00	180.73	180.63
SMH 3	TYPE 'A' DROP CONNECTION HO. CO. S-1.32	N 559166.18 E 1390242.18	201.42	190.72	187.61
SMH 4	TYPE 'A' DROP CONNECTION HO. CO. S-1.32	N 559086.24 E 1390740.34	182.00	174.96/175.12	171.78
SMH 5	STD. PRECAST MD HO. CO. STD. DET. G-5.12	N 559100.94 E 1390818.79	188.00	176.06/176.13	175.95
SMH 6	STD. PRECAST MD HO. CO. STD. DET. G-5.12	N 559142.06 E 1390810.99	190.10	177.07	176.97
SMH 7	STD. PRECAST MD HO. CO. STD. DET. G-5.12	N 559264.71 E 1390833.41	193.74	178.42	178.32
SMH 8	TYPE 'B' DROP CONNECTION HO. CO. S-1.32	N 559328.80 E 1390858.79	195.13	179.21/186.96	179.11
SMH 9	STD. PRECAST MD HO. CO. STD. DET. G-5.12	N 559341.82 E 1390840.65	194.62	179.53	179.43
SMH 10	TYPE 'B' DROP CONNECTION HO. CO. S-1.32	N 559378.06 E 1390819.29	194.44	180.12/180.12/186.00	179.95
SMH 11	STD. PRECAST MD HO. CO. STD. DET. G-5.12	N 559302.44 E 1390962.82	199.85	191.78	191.68
SMH 12	STD. PRECAST MD HO. CO. STD. DET. G-5.12	N 559299.88 E 1391054.93	207.09	196.17	196.00
SMH 13	STD. PRECAST MD HO. CO. STD. DET. G-5.12	N 559488.31 E 1390796.40	198.00	---	186.12

- NOTES:**
- CONTRACTOR SHALL TEST PIT EXISTING SEWER MAIN (CONTRACT 14-4348-D) TO VERIFY INVERT ELEVATION AT TIE-IN.
  - MANHOLES PLACED IN FILL SHALL HAVE THEIR BASE EXTENDED TO UNDISTURBED EARTH AT FINAL GRADE.

SEWER HOUSE CONNECTION - AS-BUILT LOCATION TABLE				
LOT	STREET ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2	
LOT 1		SMH 12 33'	SMH 11 75'	
LOT 2		SMH 8 51'	SMH 11 60'	
LOT 3		SMH 10 26'	INLET 4 76'	
LOT 4		FH 4 56'	SMH 17 34'	
LOT 5		SMH 12 31'	FH 1 38'	
LOT 6		SMH 12 64'	SMH 11 52'	
LOT 7		SMH 8 33'	SMH 11 11'	
LOT 8		SMH 7 40'	SMH 6 25'	
LOT 9		SMH 5 11'	SMH 6 40'	
LOT 10		SMH 5 31.5'	SMH 4 73'	
LOT 11		SMH 6 50'	SMH 7 76'	
LOT 12		SMH 10 39'	SMH 9 68'	
LOT 13		FH 3 42'	SMH 5 21'	
LOT 14		YARD INLET 12'	SMH 3 70'	
LOT 15		YARD INLET 4'	SMH 2 38'	
LOT 16		SMH 1 102'	SMH 2 67'	
LOT 17		SMH 1 45'	SMH 2 134'	
LOT 18		SMH 3 37'	FH 3 56'	

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