#### **QUANTITIES** AS-BUILT **ESTIMATED** Star Pipe American barling Cambridge Tee 1" METER VAULT Concrete SDR-35 PVC National Pipe Scher Manbele Atlantic Concrete SDR-36 PVC National Pipe NAME OF UTILITY CONTRACTOR: UTILITIES UNLIMITED SURVEY AND DRAFTING DIVISION AS-BUILT DATE: 5/20/2020

WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE							
LOT	ADDRESS		LOCATION DIMENSION 1	LOCATION DIMENSION 2			
6	10433	RESORT ROAD	49' to FH Sta. 28+44	52' to 6" valve Sta. 28+44			
7	10431	RESORT ROAD	21.6 to FH Sta. 28+44	28' to 6" valve Sta. 28+44			

SEW	SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE						
LOT	ADDRESS		LOCATION DIMENSION 1	LOCATION DIMENSION 2			
1	10445	RESORT ROAD	28' to SMH - 2	37' to Lot 2 SHC			
2	10443	RESORT ROAD	17' to SMH - 2	29' to Lot 3 SHC			
3	10441	RESORT ROAD	49 to Lot 4 SHC	43' to SMH-2			
4	10437	RESORT ROAD	35' to Lot 5 SHC	49' to Lot 3 SHC			
5	10435	RESORT ROAD	29' to Lot 6 SHC	35' to Lot 4 SHC			
6	10433	RESORT ROAD	32' to Lot 7 SHC	29' to Lot 5 SHC			
7	10431	RESORT ROAD	14' to SMH - 3	32' to Lot 6 SHC.			

Lot Fron	Lot Frontage Chart				
Lot Number	Distance				
	(feet)				
1	37.50				
2	30.00 35.00				
3					
4	35.00				
5	30.00				
6	30.00				
7	37.50				

	WATER APPURTENANCE SCHEDULE					
No.	Appurtenance	WL Station	Location (NAD '83)			
WL A	8"X6" FH TEE AND VALVE	28+44.0	N 594092.04 E 1350132.69			
WL B	12" VALVE	28+62.0	N 594096.68 E 1350150.03			
WLC	12"x8" REDUCER	28+65.0	N 594097.46 E 1350152.93			
WLD	1/8 HB	29+09.5	N 594108.99 E 1350196.08			
WLE	8" PLUG AND BUTTRESS	30+28.0	N 594049.77 E 1350298.56			

SEWER MANHOLE SCHEDULE						
Manhole	Location (NAD '83)	Invert	Invert	Rim	Ho.Co.Std.	
Number	Location (NAD 65)	In	Out	Elevation	Detail	
1	N 593861.76 E 1349856.59	425.20	425.00	432.00	G-5.11	
2	N 593886.88 E 1349953.38	440.00	433.00	448.00	G-5.11	
3	N 593932.73 E 1350130.04	_	443.66	448.00	G-5.11	

SHC CHART						
Lot Number	Drop Connection	Invert @ main	DHC standpipe length/height	Invert @ R/W or esmt line	Minimum Cellar Elevation	Basement Floor
1	yes	431.14	6.00	437.34	441.84	452.23
2	yes	440.39	6.00	446.59	451.09	452.90
3	yes	440.99	6.00	447.19	451.69	453.57
4	yes	441.99	5.00	447.19	451.69	455.84
5	yes	442.69	5.00	447.89	452.39	456.51
6	yes	443.29	4.00	447.49	451.99	456.51
7	no ·	443.99	0.00	444.19	448.69	456.51

DEPARTMENT OF PLANNING AND ZONING

HOWARD COUNTY, MARYLAND

All SHC's are at a 2.0% unless otherwise noted All Drop connections are Ho.Co.Std. S-2.12 Type 'A'

THIS PLAN IS APPROVED FOR SOIL EROSION AND

SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED

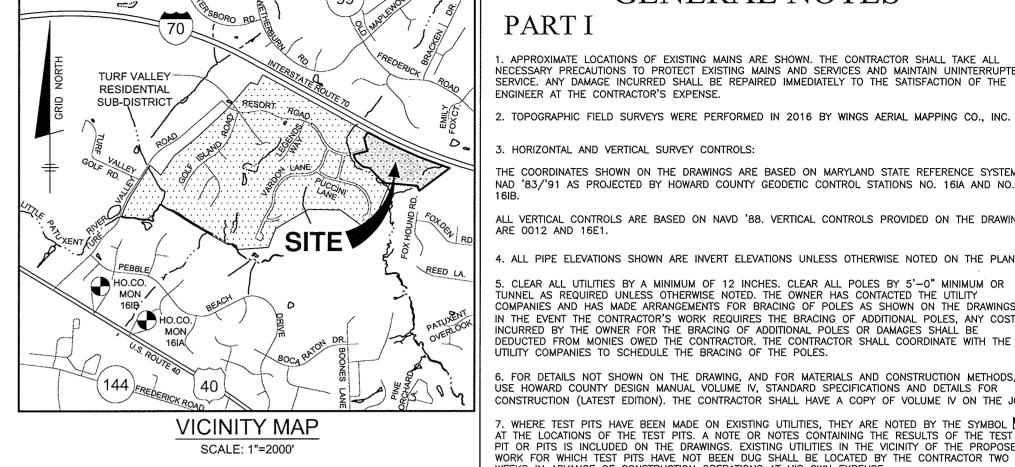
N ACCORDANCE WITH SECTION 308 OF THE HOWARD COUNTY STANDARD

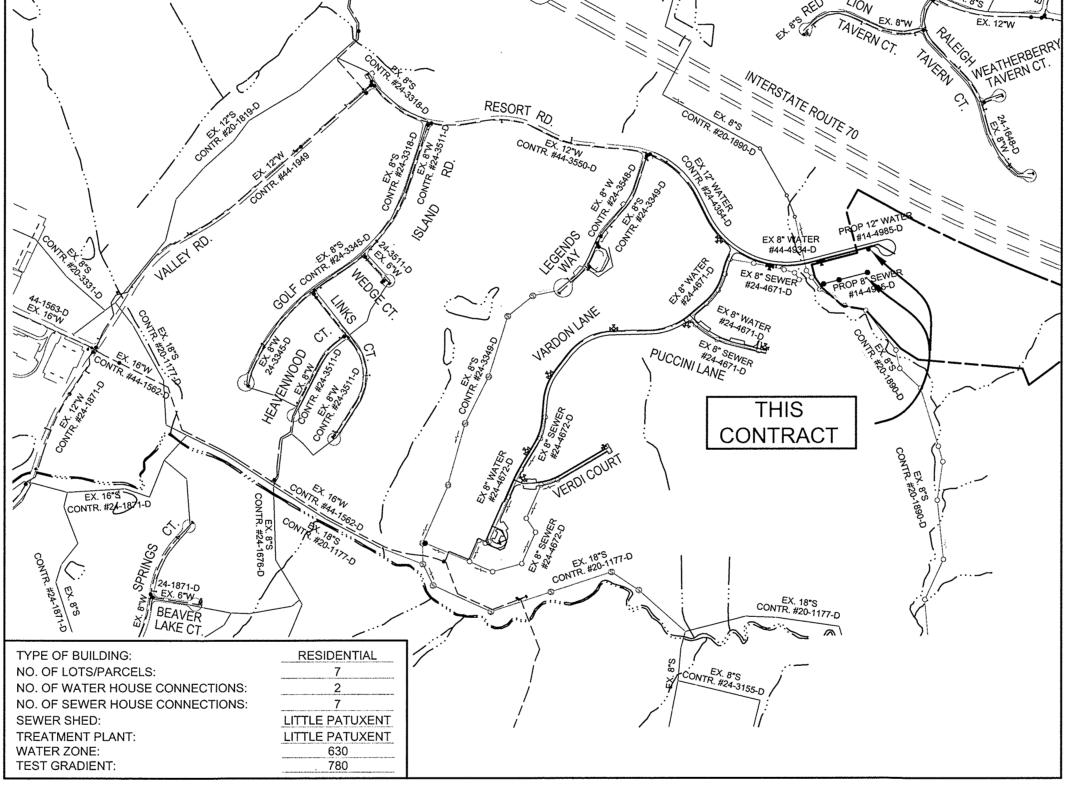
## RAVENWOOD AT TURF VALLEY

LOTS 1-7; OPEN SPACE LOTS 8-10, GOLF SPACE LOT 11,

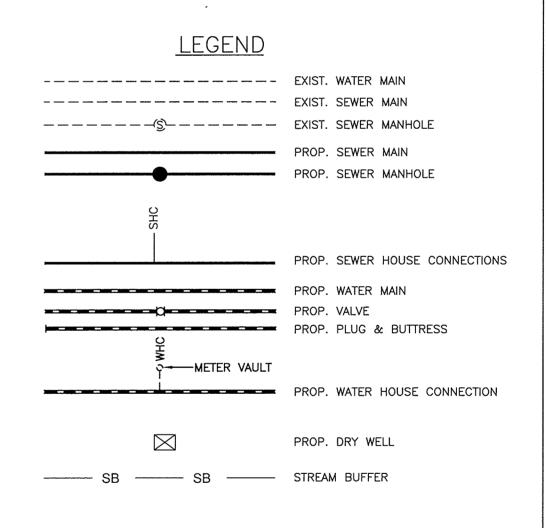
AND BUILDABLE PARCEL 'AA'

# PUBLIC WATER & SEWER PLANS CONTRACT NO. 24-4985-D



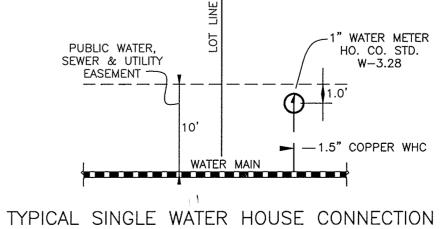


**LOCATION PLAN** 



ALL WATER HOUSE CONNECTIONS ARE TO BE 1.5" WITH A 1" METER (OUTSIDE SETTING). ALL SEWER HOUSE CONNECTIONS SHALL BE 4" PVC.

SEE HO. CO. STD. DETAIL W-3.28 FOR SINGLE OUTSIDE METER SETTING



(OUTSIDE METER SETTING)

#### GENERAL NOTES

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.

. HORIZONTAL AND VERTICAL SURVEY CONTROLS

NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 16IA AND NO. 16IB.

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 THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.

6. 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 JOE

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 OPERATIONS AT HIS OWN EXPENSE.

8. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE

BGE (CONTRACTOR SERVICES BGE (EMERGENCY) ...410-685-0123 COLONIAL PIPELINE C ..410-795-1390 MISS LITHLITY 1-800-257-7777 ....410-531-5533 STATE HIGHWAY ADMINISTRATION

WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND

(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.

#### PART II WATER

. ALL WATER MAINS TO BE PVC C900 DR-18 UNLESS OTHERWISE NOTED.

2. TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE

3. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES 4. 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 THE STANDARD DETAILS. THE SOIL

AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS. 6. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM. 7. TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.

8. FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.

UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS SACRIFICIAL ANODES SHAL 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 HARNESSES. TWELVE (12) POUND ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC

10. 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 INSERTIONLINE SHALL REMAIN VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE HE MAXIMUM AND MINIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. THE CONTRACTOR SHALL NOT OVER INSERT OR OVER HOME THE SPIGOT INTO

11. ALL CHANGES IN HORIZONTAL AND VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BENDS, 5-DEGREE SWEEPS OR HIGH DEFLECTION (HD) COUPLINGS. NO BENDING OF THE PIPE OR DEFLECTING OF PVC PIPE JOINTS IS PERMITTED. WHERE HIGH DEFLECTION COUPLINGS OR 5-DEGREE SWEEPS ARE PERMITTED. THE CONTRACTOR SHALL PROVIDE ONE FULL PIPE LENGTH (20-FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. THE CONTRACTOR SHALL USE A VIBRATORY PLATE COMPACTOR OR OTHER APPROVED MEANS TO THOROUGHLY COMPACT THE #57 STONE ON BOTH SIDES OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP, TAKING CARE NOT TO USE COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING.

PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (1 1 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 CERTAINTEED 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 2. WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C-900 PVC PIPELINES, THE CONTRACTOR SHALL INSTALL DEVICESFOR 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.

### PART III SEWER

1. ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. 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.

. MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER. STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.

SCALE:

6. HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

AS SHOWN

SHEET NO.

1 OF 2

RAVENWOOD AT TURF VALLEY LOTS 1-7; OPEN SPACE LOTS 8-10; GOLF SPACE LOT 11; AND BUILDABLE PARCEL 'AA'

CONTRACT NO. 24-4985-D

OWNER/DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400

> BENCHMARK ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS ENGINEERING, INC.

3480 BALTIMORE NATIONAL PIKE A SUITE 315 A ELLICOTT CITY, MARYLAND 21043

WWW.BEI-CIVILENGINEERING.COM

(P) 410-465-6105 (F) 410-465-6644

Expiration Date. 6-39-2019.

Professional Certification. 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. 22390,

DES: DBT DRAFT: DBT 11/2018 DATE 600 SCALE MAP # REVISIONS

TITLE SHEET PUBLIC WATER & SEWER PLAN

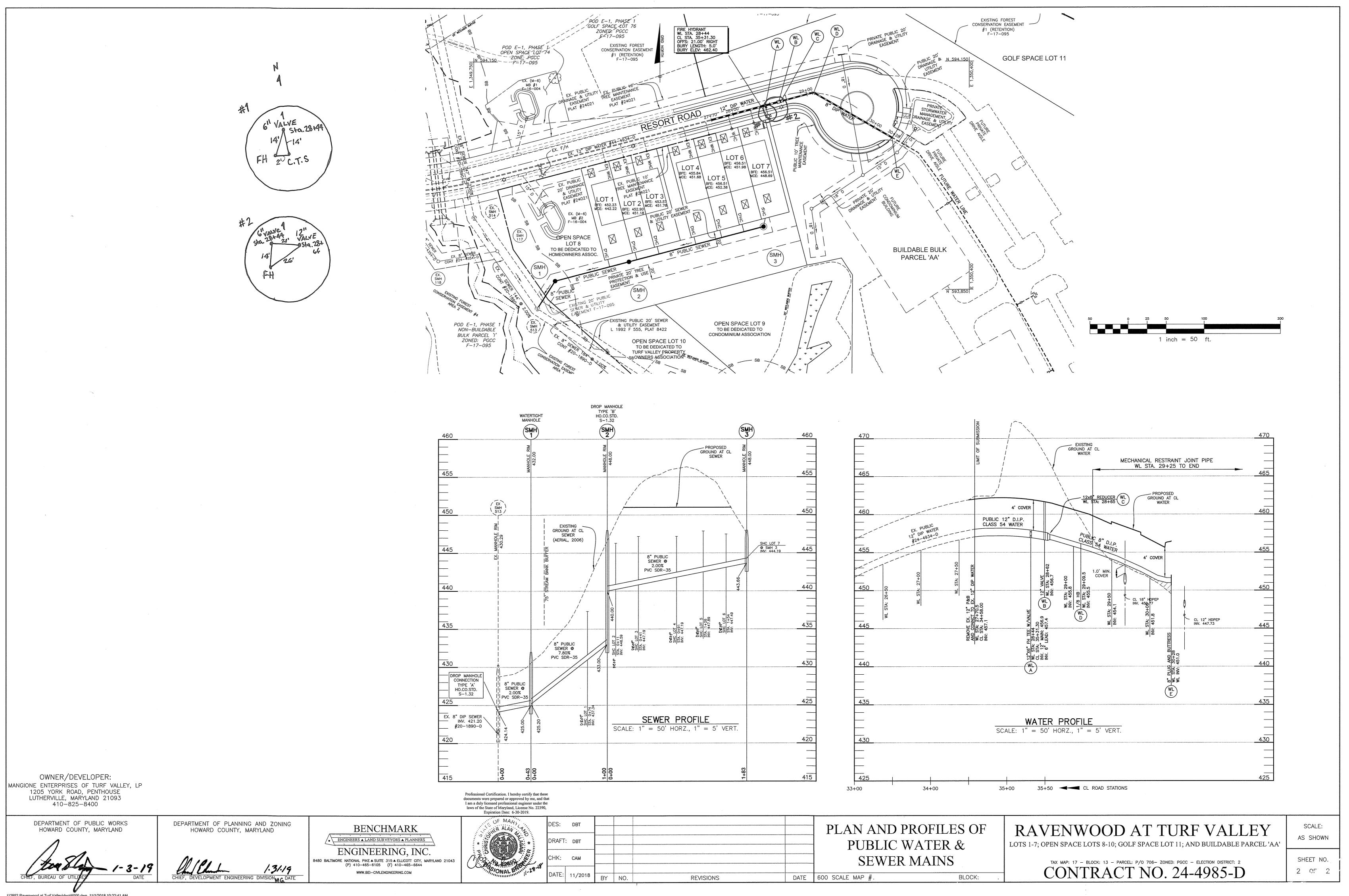
TAX MAP: 17 - BLOCK: 13 - PARCEL: P/O 706- ZONED: PGCC - ELECTION DISTRICT: 2

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

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SPECIFICATIONS AND AS PER F-18-027



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