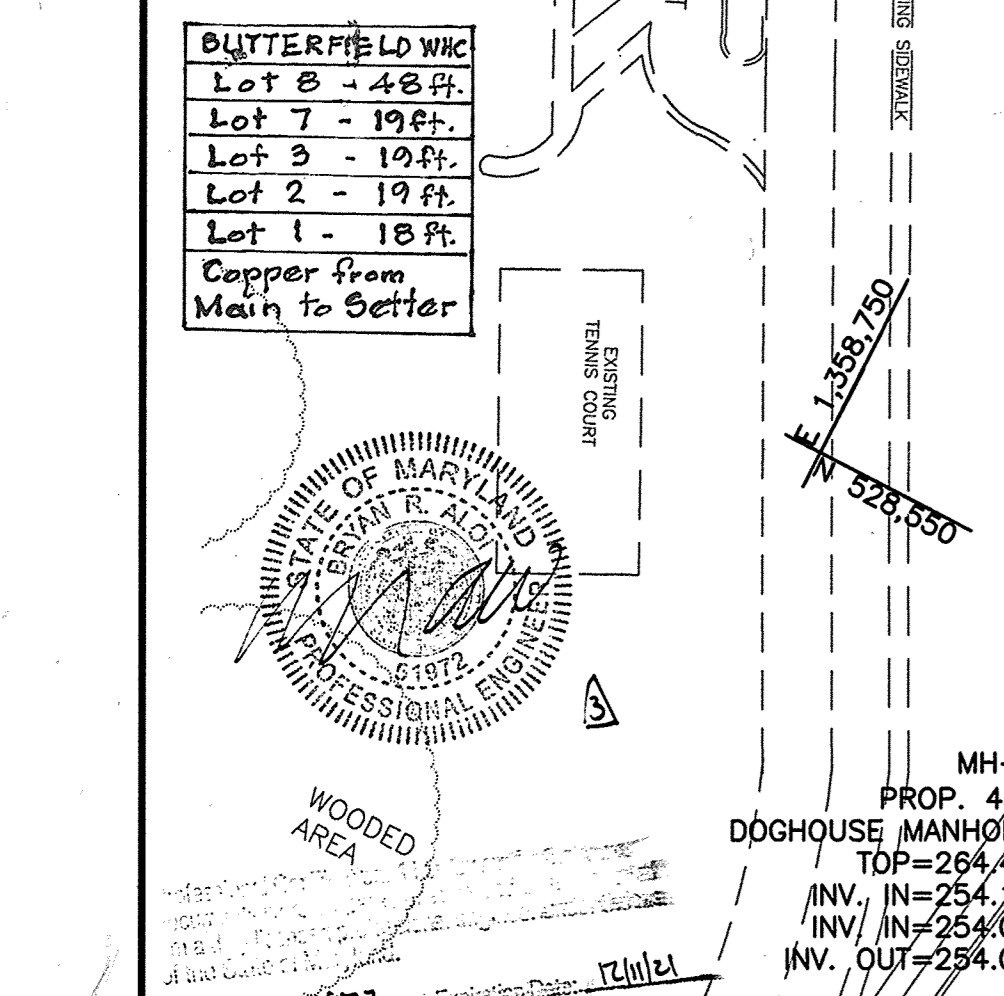


Quantity	Description of Material	Manufacturer
<b>SEWER MATERIAL, Approved</b>		
100 ft.	4" SDR35 PVC 63 Sewer Pipe	USPVC AMERICAN PIPE
200 ft.	6" SDR35 PVC 63 Sewer Pipe	USPVC AMERICAN PIPE
15 Ea.	SDR 35 PVC 63 Sewer Fittings	NATIONAL PLASTIC
5 Ea.	4" x 4" Sewer Cleanout Block	Horne Concrete
2 Ea.	24 x 9 Sewer MH Frame & Cover	Capital Foundry
<b>WATER MATERIAL, Approved</b>		
260 ft.	6" DI Class 54 Tyton Joint Pipe	Mc Wane
3 Ea.	6" MJ-C188 DI Fittings	Tyler Union
1 Ea.	6" x 6" G60 Series Stainless Tapping Valve	Smith-Blair
1 Ea.	6" x 1.5" MJ Open Right Tapping Valve	Mueller
5 Ea.	6" x 1.5" 317 Series CC Double Seal	Smith-Blair
5 Ea.	LF 1 1/2" B 2500 8N Dall Corp Stop	Mueller
5 Ea.	24" x 30" Concrete Meter Vault	Horne Concrete
<b>WATER MATERIAL, Approved (continued)</b>		
5 Ea.	20" x 24" Expansion Ring	Bingham & Taylor
5 Ea.	V 92072 Meter Frame & Cover	Vestal
5 Ea.	*G Stranded Tracer Wire Blue Insulation	Kris-Tech
A/N	*G 1100 Series Megalugs for D.I.P.	Ebas Ifen
<b>WATER MATERIAL, Not Approved</b>		
1 Ea.	Roadway Valve Box 5 1/4" Water	Capital Foundry
5 Ea.	LF 1 1/2" x 1 Custom Setters	Mueller
200 ft.	1 1/2" Type K Soft Copper Tubing	Cerro

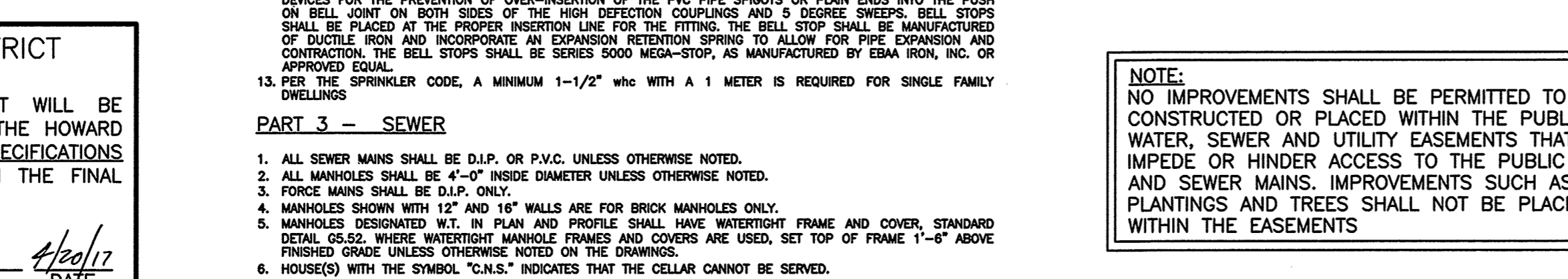
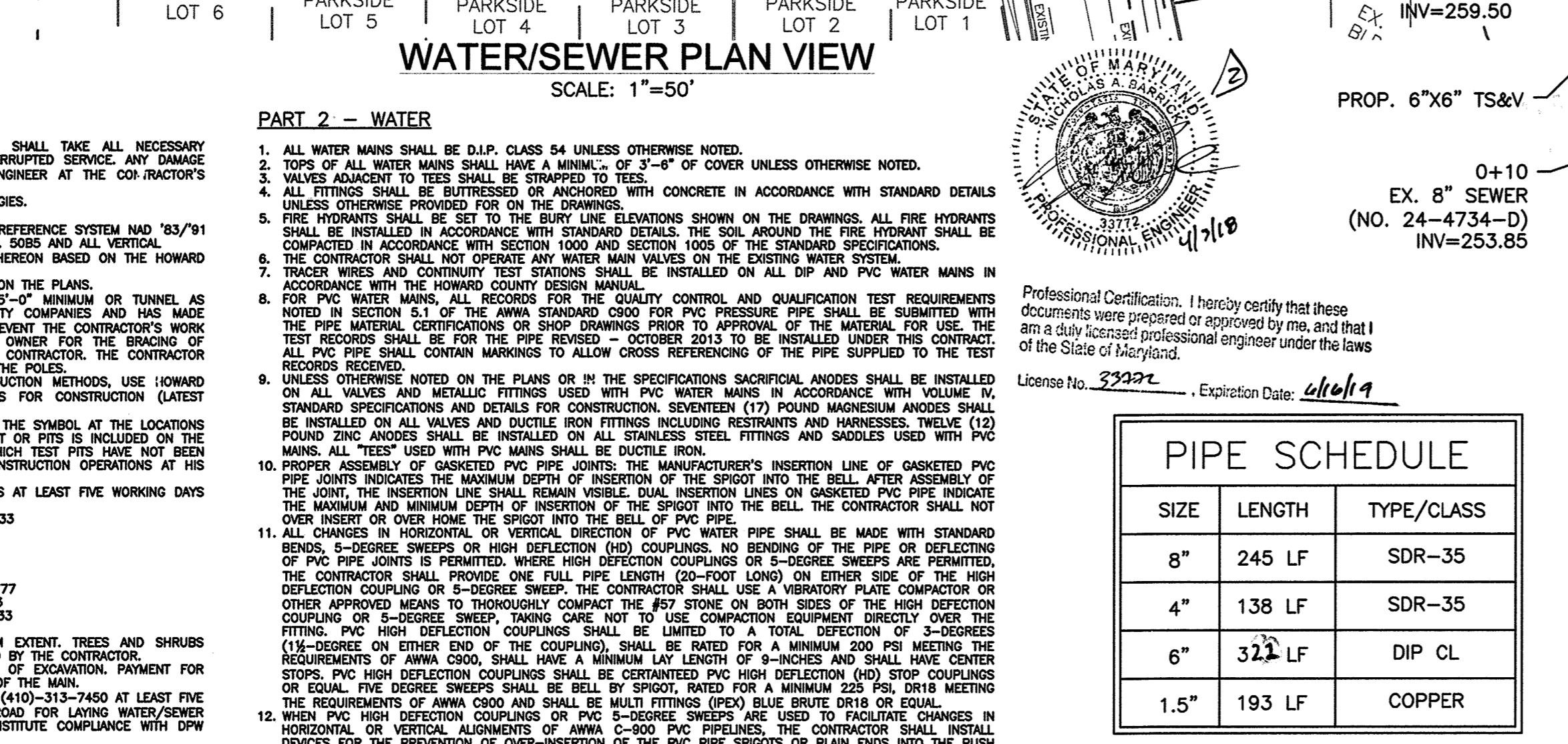
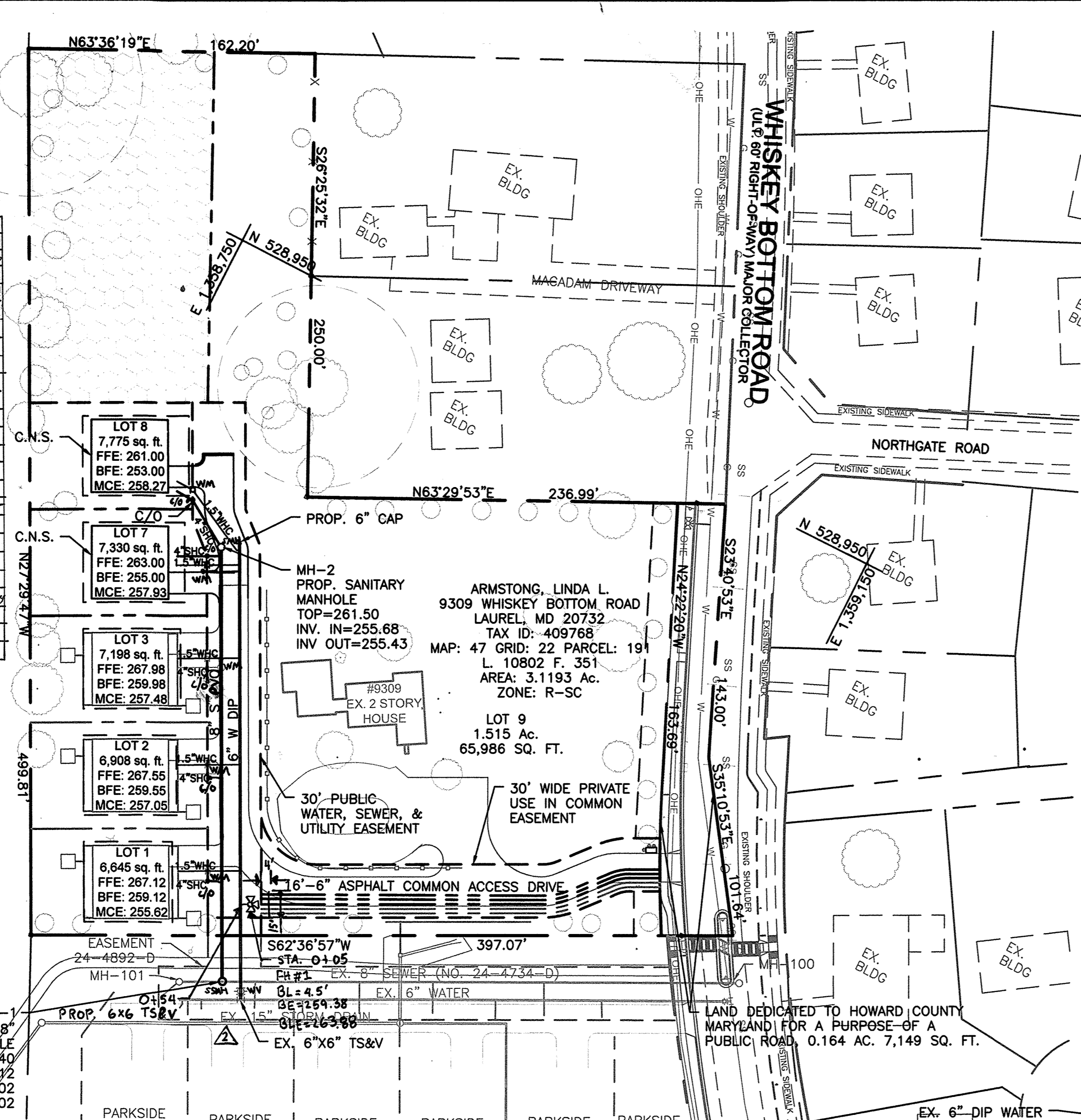


- PART 1 - GENERAL NOTES**
- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
  - TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED IN JUNE 2013 BY KCI TECHNOLOGIES.
  - HORIZONTAL AND VERTICAL SURVEY CONTROLS: THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD 83/91 AS PROVIDED BY HOWARD COUNTY GEODIC CONTROL STATIONS NO. 4788, NO. 5285 AND ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. EXISTING OFF SITE TOPOGRAPHY SHOWN HEREIN BASED ON THE HOWARD COUNTY GIS.
  - 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 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 AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN MADE SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
  - THE CONTRACTOR SHALL NOTIFY THE VICINITY UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 

A&E	1-800-252-1133
B&E (CONSTRUCTION SERVICES)	410-637-8713
B&E (EMERGENCY)	410-685-0123
BUREAU OF UTILITIES	410-313-4890
COLONIAL PIPELINE CO.	410-795-1350
M&S 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/BACKING OF ANY COUNTY ROAD FOR LATER WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DFW REQUIREMENTS PER SECTION 18.11(A) OF THE HOWARD COUNTY CODE.

**HOWARD SOIL CONSERVATION DISTRICT**  
 HOWARD COUNTY, MARYLAND  
 SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE HOWARD COUNTY DESIGN MANUAL - VOLUME IV; STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND AS SHOWN ON THE FINAL CONSTRUCTION PLANS F-16-103.

*John R. Robinson* 4/10/17  
 CHIEF, BUREAU OF UTILITIES DATE



**PIPE SCHEDULE**

SIZE	LENGTH	TYPE/CLASS
8"	245 LF	SDR-35
4"	138 LF	SDR-35
6"	32 LF	DIP CL
1.5"	193 LF	COPPER

**WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE**

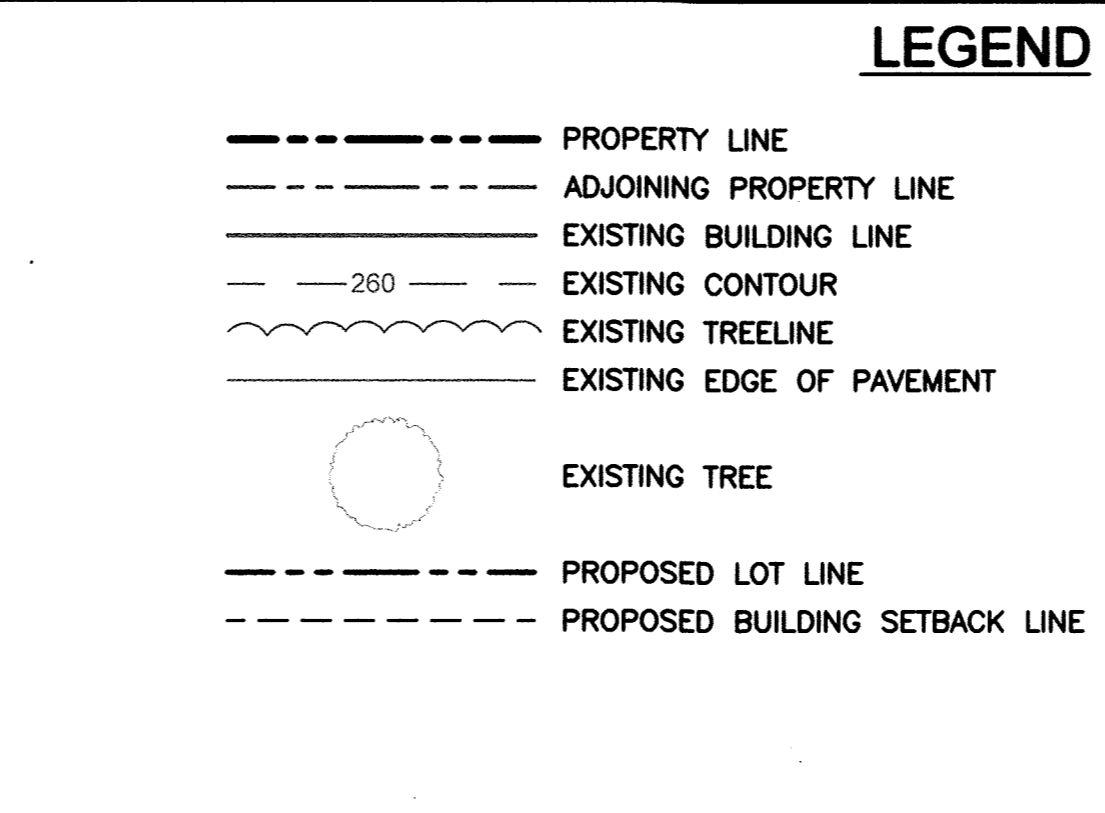
LOT No.	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
1	WHISKEY BOTTOM		
2	WHISKEY BOTTOM		

**SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE**

LOT No.	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
1	WHISKEY BOTTOM		
2	WHISKEY BOTTOM		

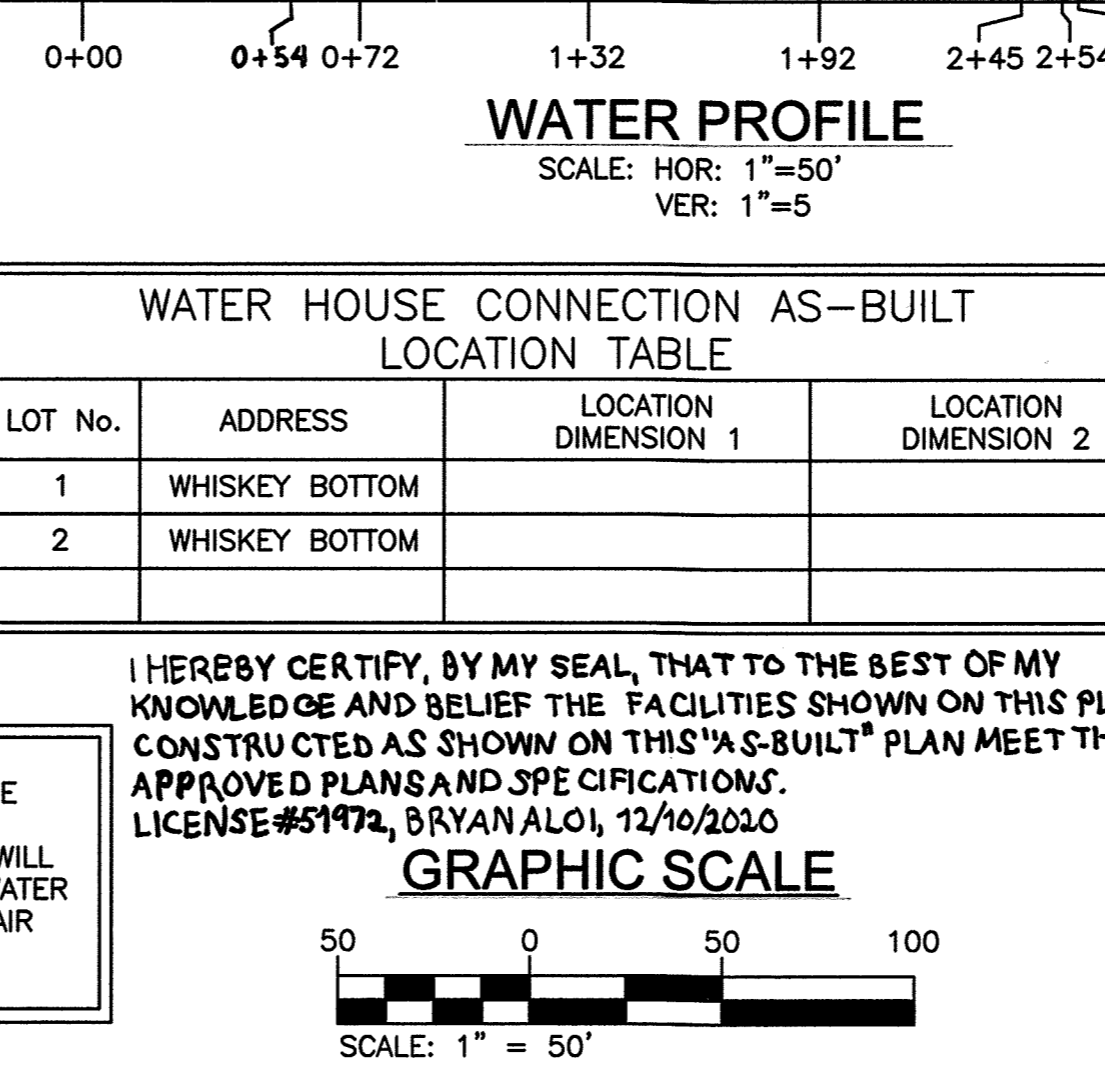
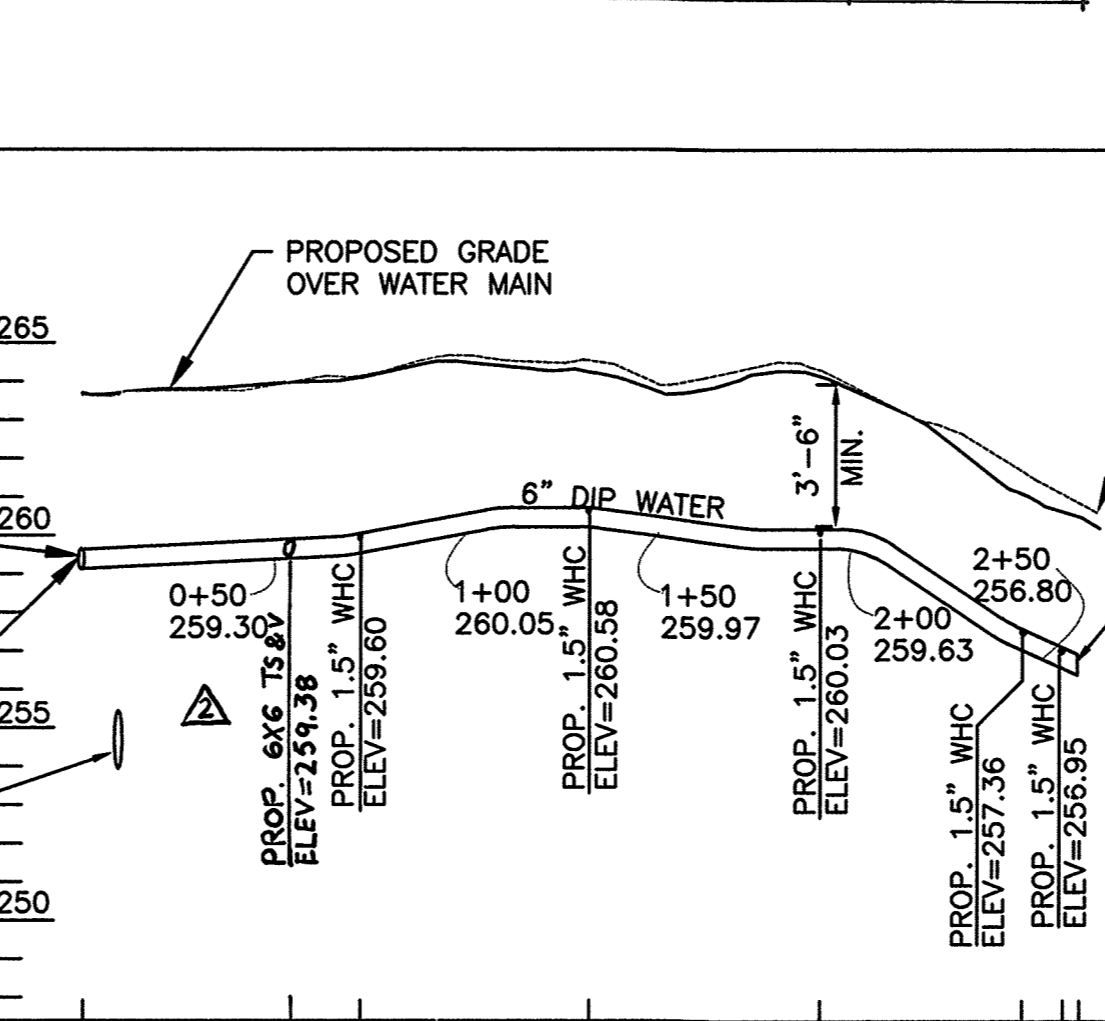
**SANITARY SEWER STRUCTURE SCHEDULE**

SSSMH No.	TYPE	TOP ELEV.	INV. IN	INV. OUT	INV. OUT
MH1	48" SAN. MH.	264.40	254.12	254.02	254.02
MH2	48" SAN. MH.	261.50	256.53		255.88



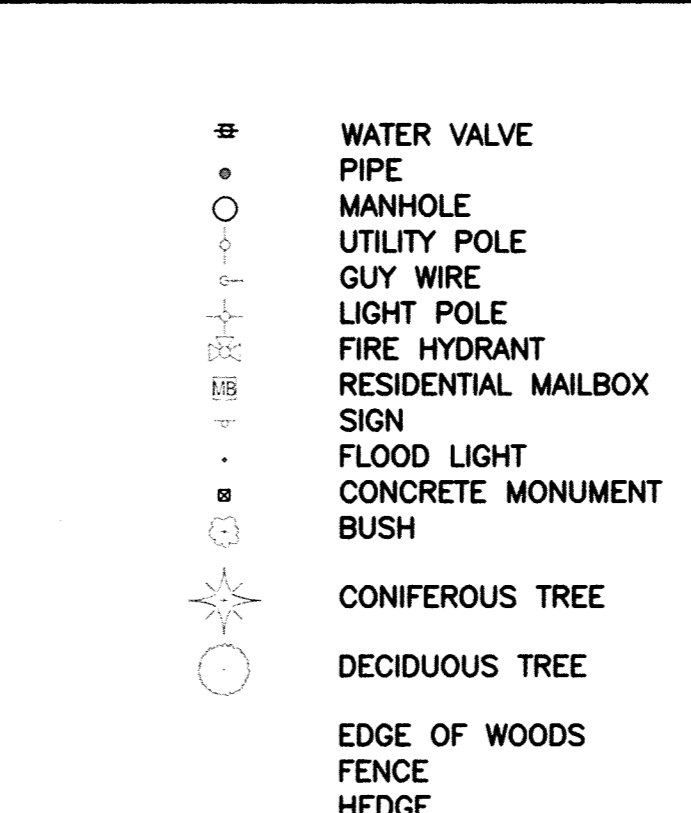
**BUTTERFIELD GROVE 24-4892-D**

Lot #	From	To	Distance	Remarks
1	MH 1	SHC LOT 1	59'	
	SHC TO WHC	LOT 1	6'	
2	MH 1	SHC LOT 2	117'	
	SHC TO WHC	LOT 2	6'	
3	MH 2	SHC LOT 3	68'	
	SHC TO WHC	LOT 3	6'	
7	MH 2	SHC LOT 7	12'	
	SHC TO WHC	LOT 7	5'	
8	MH 2	SHC LOT 8	32'	
	SHC TO WHC	LOT 8	7'	
Test Station	MH1	Test Station	16'	
	6" Valve	Test Station	3'	
	MH 1	6" Valve	12'	



I HEREBY CERTIFY, BY MY SEAL, THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.  
**LICENSE #51972, BRYAN ALOI, 12/10/2020**

**GRAPHIC SCALE**  
 SCALE: 1" = 50'



**MCE CHART**

LOT #	ELV. @ MAIN	TYPE	DIST. TO ESMT.	ELV. @ ESMT.	DIST. ESMT. TO HOUSE	ELV. @ HOUSE	MCE
1	254.86	SHC	8'	255.02	21'-10"	255.46	256.62
2	255.29	SHC	8'	255.45	21'-10"	255.89	257.05
3	255.72	SHC	8'	255.88	21'-10"	256.32	257.48
7	256.17	SHC	8'	256.33	21'-10"	256.77	257.93 *
8	256.21	SHC	16'	256.53	13'-10"	256.81	258.27 **

\* WITH EJECTOR PUMP 252.50  
 \*\* WITH EJECTOR PUMP 250.50



**HOWARD SOIL CONSERVATION DISTRICT**

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE HOWARD COUNTY DESIGN MANUAL - VOLUME IV; STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND AS SHOWN ON THE FINAL CONSTRUCTION PLANS F-16-103.

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND

**DEPARTMENT OF PLANNING & ZONING**  
 HOWARD COUNTY, MARYLAND

**ENGINEERS**  
**PLANNERS**  
**SCIENTISTS**  
**CONSTRUCTION MANAGERS**

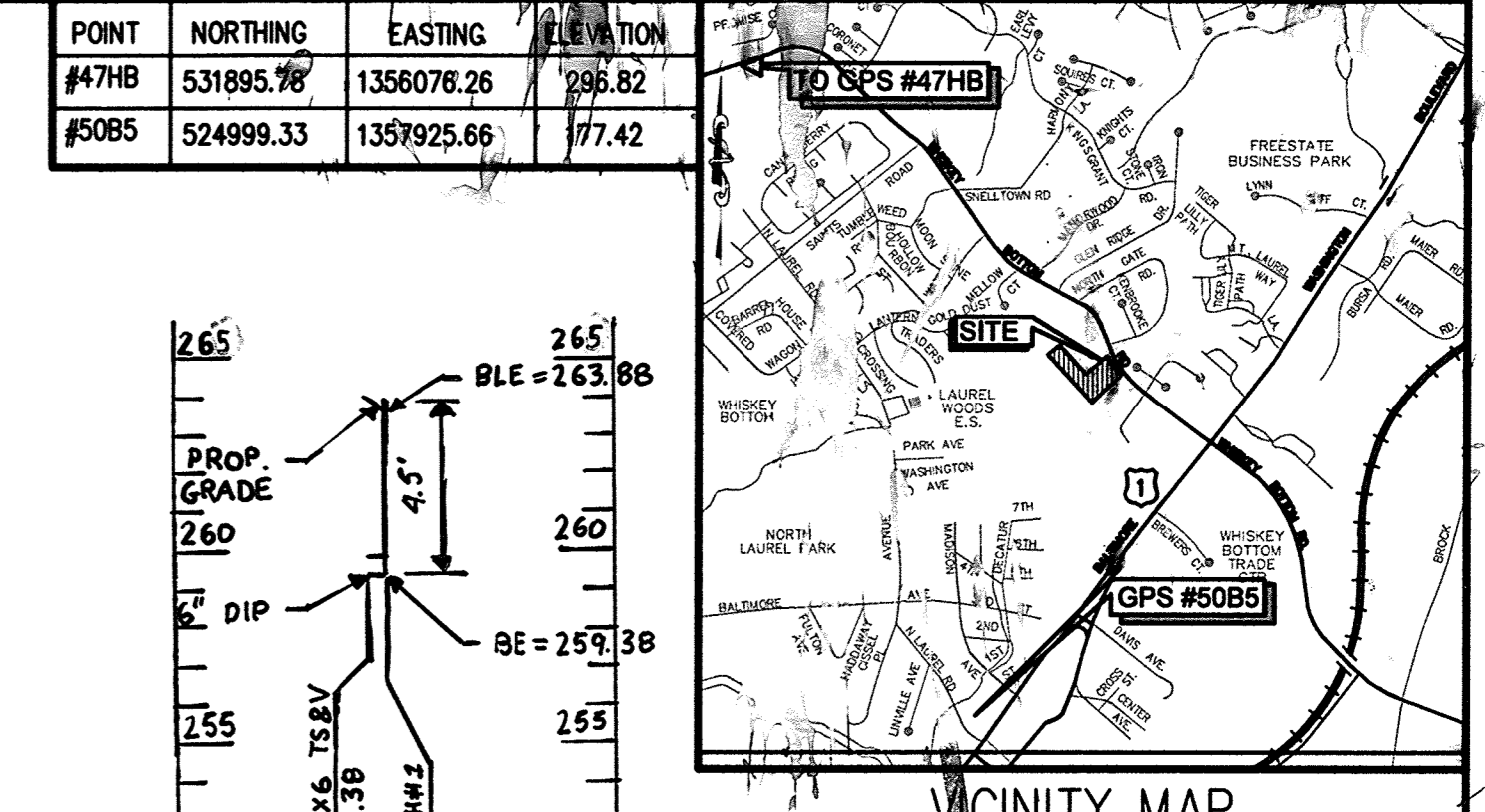
**KCI TECHNOLOGIES**  
 11850 WEST MARKET PLACE  
 SUITE 300  
 FORT LINDSEY, MD 20729  
 TELEPHONE: (410) 792-8086  
 FAX: (410) 792-7419

**OWNER**  
 LINDA L. ARMSTRONG  
 9309 WHISKEY BOTTOM ROAD  
 LAUREL, MD 20732  
 301-776-5600

**DESIGN:** NAB  
**DRAWN:** BRA  
**CHECKED:** BRA  
**DATE:** 4/10/2017

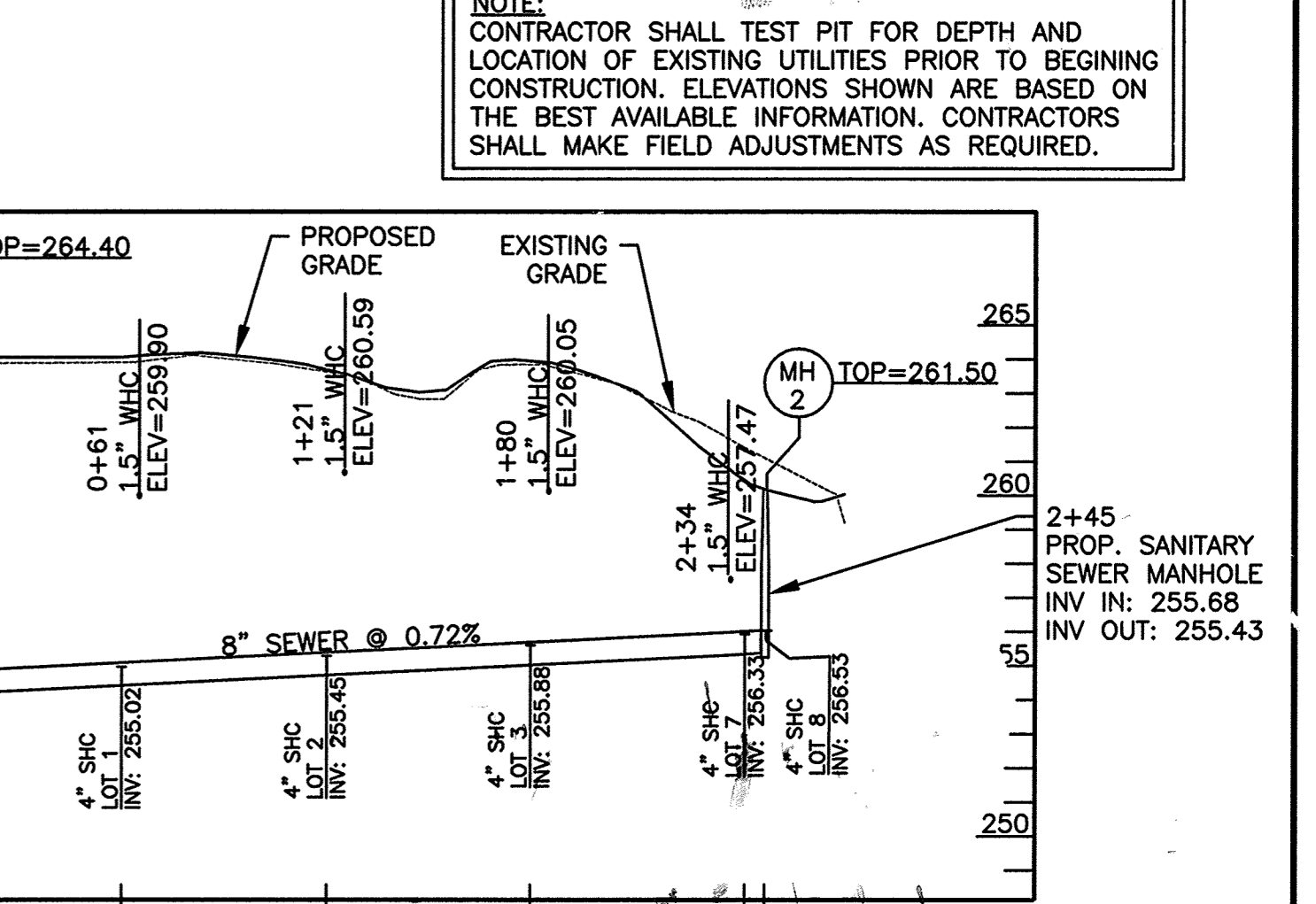
**BY NO.** BRA  
**REVISION**

**ADDED LOTS 7&8 AND EXTENDED WATER & SEWER** 4/10/17  
**ADDED FIRE HYDRANT** 3/19/18  
**AS-BUILT** 12/10/20



**NOTE: SEE DESIGN MANUAL WAIVER FILE DMV2-19-005. THE PURPOSE OF WAIVER IS DUE TO THE BASEMENT FLOORS FOR LOT 7 AND LOT 8, EJECTOR PUMPS ARE REQUIRED BEFORE THE SEWER HOUSE CONNECTION TAKE OVER WITH GRAVITY. THE SECTION THAT IS WAIVED IS 4.383B OF THE HOWARD COUNTY DESIGN MANUAL - VOLUME II, WATER AND SEWER.**

**NOTE: CONTRACTOR SHALL TEST PIT FOR DEPTH AND LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTORS SHALL MAKE FIELD ADJUSTMENTS AS REQUIRED.**



**AS-BUILT**  
 By *[Signature]* Date 12/13/17

**PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017**

**BUTTERFIELD GROVE**  
 CONTRACT #24-4892-D  
 WATER & SEWER PLAN

**SCALE** 1"=50'  
**PROJECT #** 27121943  
**ZONED:** R-SC  
**ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND**  
**CONTRACT # 24-4892-D**

**SHEET 1 OF 1**