

FINAL WATER AND SEWER PLAN

RIVER WATCH II

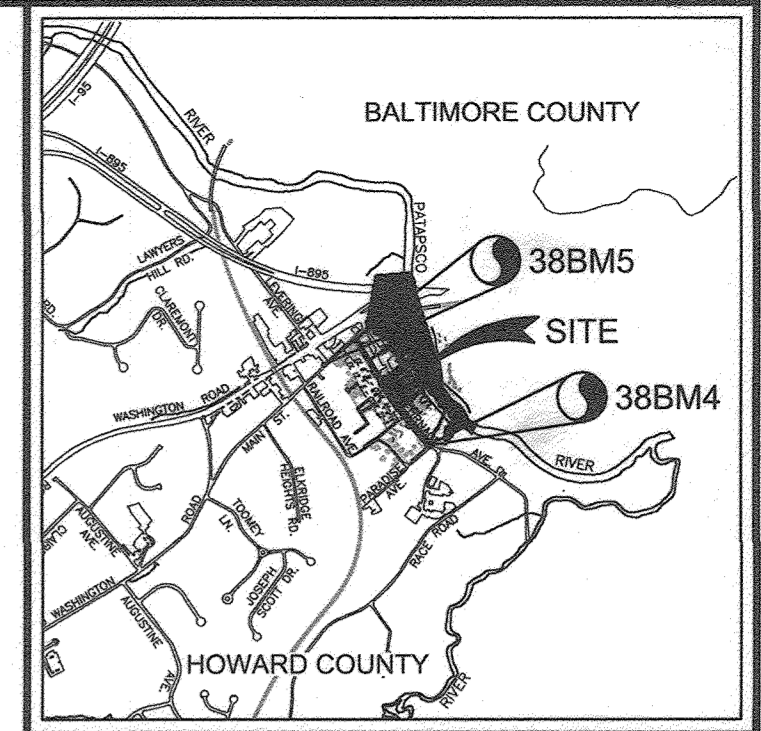
5635-5659 FURACE AVENUE

TAX MAP 38 GRID 04 PARCEL 782

1ST ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

CONTRACT 14-5079-D



VICINITY MAP
SCALE: 1"=2000'
ADC MAP COORDINATE: 4937-66

GENERAL NOTES

- PART I**
- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
 - EXISTING TOPOGRAPHY IS BASED ON 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 0024 AND 0388B, AND GEODETIC BENCHMARKS 38BM4 AND 38BM5. ALL VERTICAL CONTROLS ARE BASED ON NAVD'88. VERTICAL CONTROLS PROVIDED ON DRAWINGS ARE:
 GEODETIC SURVEY CONTROL 0024 (N 565,065.4485/E 1,395,212.167/ ELEV.=26.949') RAMP FROM RT-985 TO ROUTE 1, 73.5' WEST OF G&E POLE #467813, 81.75' NE OF G&E POLE # 229974 AND 8.3' SE OF GUARDRAIL.
 GEODETIC SURVEY CONTROL 388B (N 564,007.645/E 1,393,649.926/ ELEV.=63.655') LEAD AND TACK ON CONCRETE CURB, ROUTE 1 NORTH OF WASHINGTON BLVD. 28.92' NW OF CONCRETE CURB IN PARKING LOT OF J.H. TOOMEY HARDWARE, AND 9.96' SW OF THE PC ON THE NW CORNER OF THE CONCRETE CURB FILLET AT ROUTE 1.
 GEODETIC SURVEY CONTROL 38BM4 (N 563,602.10/E 1,395,768.99/ELEV.=30.820') 3/4" REBAR AT CORNER OF FURNACE ROAD AND RAILROAD AVENUE, 4.7' SOUTH OF CORNER OF INLET AT NW OF RAILROAD AVE. 3.7' WEST OF FC AT NW CORNER OF RAILROAD AVE, AND 8.1' NE OF BGE POLE #263550.
 GEODETIC SURVEY CONTROL 38BM5 (N 564,441.00/E 1,394,604.00/ELEV.=42.368') 3/4" REBAR AT CORNER OF LEVERING AVENUE AND MAIN STREET, 9' SW OF SSMH, 5.5' EAST OF WATER VALVE, AND 2.6' SOUTH OF THE SE POINT OF INTERSECTION OF THE SIDEWALK AND CURB AT LEVERING AVENUE.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
 - CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
 - FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS USE, HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
 - WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. A NOTES OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATION AT HIS OWN EXPENSE.
 - THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN THESE PLANS:
 AT&T 1-800-252-1133
 BGE (CONTRACTOR SERVICE) 410-850-4620
 BGE (EMERGENCY) 410-885-1400
 BUREAU OF UTILITIES 410-313-4900
 COLONIAL PIPELINE CO. 410-795-1390
 MISS UTILITY 1-800-257-7777
 STATE HIGHWAY ADMINISTRATION 410-531-5533
 VERIZON 1-800-743-0033/410-224-9210
 - TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR
 - THE CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE CONSTRUCTION OF THE MAIN.
 - THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(c) OF THE HOWARD COUNTY CODE.

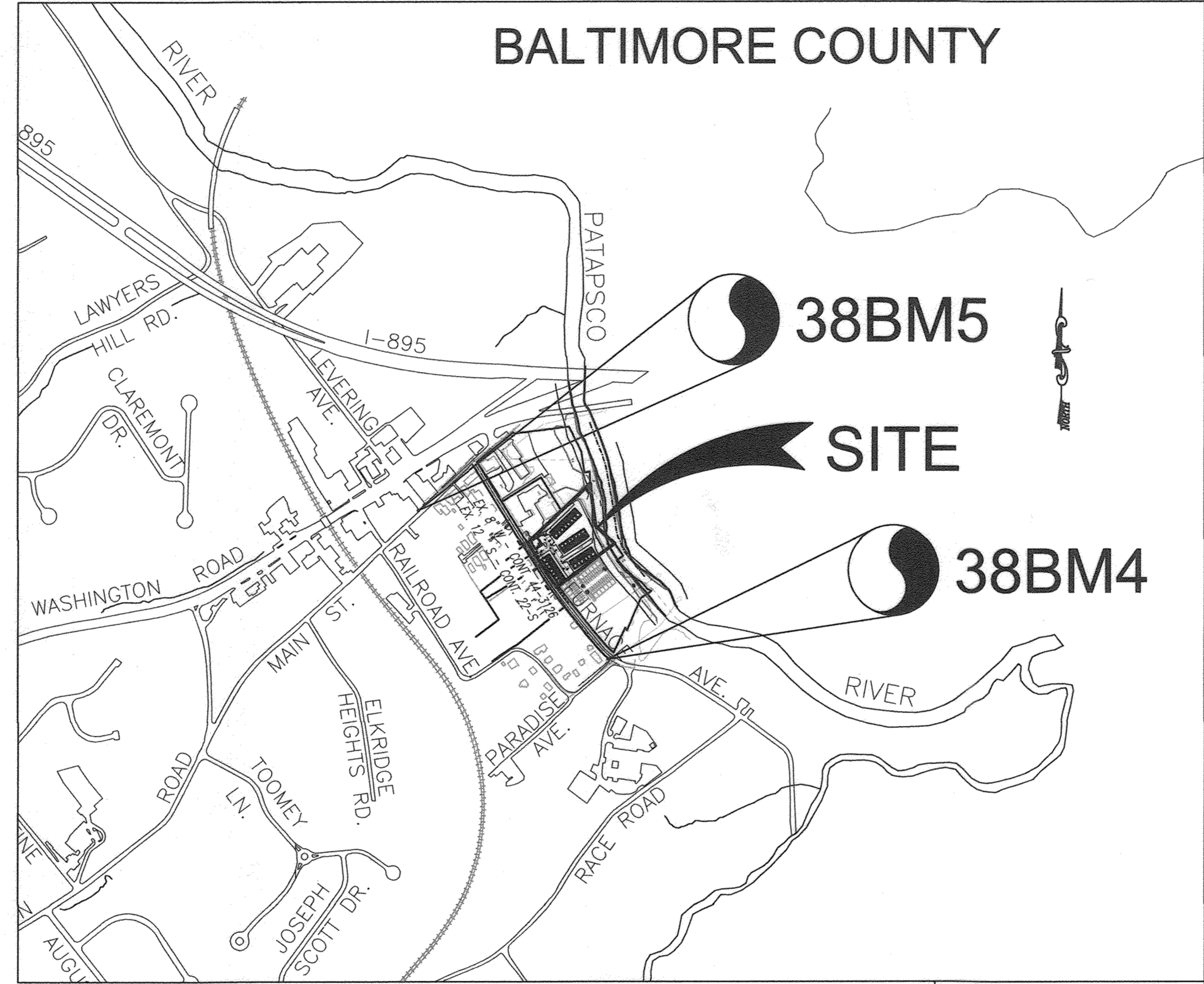
- PART II - WATER**
- ALL WATER MAINS TO BE PVC C900 - AWWA C605 CL DR-14 UNLESS OTHERWISE NOTED.
 - TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-6" COVER UNLESS OTHERWISE NOTED.
 - VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
 - ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
 - FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE 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 WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.

- PART III - SEWER**
- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C UNLESS OTHERWISE NOTED.
 - ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
 - FORCE MAINS SHALL BE D.I.P. ONLY.
 - MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
 - MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL 03.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 - HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND WITH THE SITE DEVELOPMENT PLAN.

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

John R. Robertson 6/12/19
SOIL CONSERVATION DISTRICT DATE



LOCATION MAP
SCALE: 1"=600'

WATER ZONE: 300
TEST GRADIENT: 577
TEST PRESSURE: 237 PSI

TYPE OF BUILDING :	RESIDENTIAL / MIXED USE
NO. OF BUILDING :	4 STACKED TOWNHOUSE APARTMENT BLDGS / 1 CLUBHOUSE
NO. OF LOTS/PARCELS :	1
NO. UNITS :	58 APTS. / 1 COMMERCIAL
NO. OF SINGLE WATER HOUSE CONNECTIONS :	5
NO. OF TWIN WATER HOUSE CONNECTIONS :	0
NO. OF SEWER HOUSE CONNECTIONS :	5
DRAINAGE AREA :	DEEP RUN 1

SHEET INDEX		
COVER SHEET	DESCRIPTION	SHEET NO.
	PUBLIC FINAL WATER AND SEWER PLAN AND PROFILES	2 OF 2

QUANTITIES				
NAME OF UTILITY CONTRACTOR :				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE :				
ITEMS	QUANTITIES ESTIMATED	QUANTITIES	AS-BUILT	
			TYPE	MANUFACTURER/SUPPLIER
WATER				
8" x 8" TAPPING SLEEVE	1 EA	1 EA	EPOXY COATED D I	STAR PIPE
8" WATER - C900 (AWWA C605) CL DR-14	400 LF	400 LF	PVC	NORTH AMERICAN
8" VALVE	3 EA	4 EA	EPOXY COATED D I	AMERICAN FLOW CONTROL
8" WATER - C900 (AWWA C605) CL DR-14	83 LF	84 LF	PVC	NORTH AMERICAN
8" 1/8" VB	4 EA	4 EA	EPOXY COATED D I	STAR PIPE
8" 1/16" VB	2 EA	2 EA	PVC	
8" 5 DEGREE VERTICAL SWEEP	1 EA	1 EA	PVC	
8" 1/32" HB	1 EA	1 EA	EPOXY COATED D I	STAR PIPE
8" x 8" TEE	1 EA	1 EA		
8" CAP AND BUTTRISS	2 EA	2 EA		
8" x 6" TEE	5 EA	5 EA		
8" VALVE	5 EA	5 EA		AMERICAN FLOW CONTROL
FIRE HYDRANT, 8" x 6" TEE AND VALVE	3 EA	3 EA	DUCTILE IRON B 84 D	AMERICAN DARLING
SEWER				
8" SEWER DIP (CL-52)	29 LF	29 LF	PVC	NORTH AMERICAN
DOGHOUSE MANHOLES	1 EA	1 EA		CONTRACTORS PRECAST GROUP
TYPE 'B' DROP CONNECTION	1 EA	1 EA		
PRECAST MANHOLES	1 EA	1 EA		

LEGEND:

	EXISTING CURB AND GUTTER
	PROPOSED CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING CLEANOUT
	EXISTING STORM DRAIN
	EXISTING STORM DRAIN INLET
	TREELINE
	EXISTING FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	PROPOSED WATER LINE
	PROPOSED FIRE HYDRANT
	PROPOSED SEWER LINE
	100 YEAR FLOODPLAIN

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Chris Stuy 6-6-19
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
Ch/Chub 6.17.19
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
3300 N. RIDGE ROAD, SUITE 110 TEL: 410.461.7666
ELLCOTT CITY, MD 21043 FAX: 410.461.8961



PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
DATE: MAY 2019 NO. 16193

DESIGNER	DATE	NO.	REVISION	DATE
GAH	5/18/22	1	AS BUILT QUANTITIES	5/18/22

FINAL WATER AND SEWER PLAN
COVER SHEET

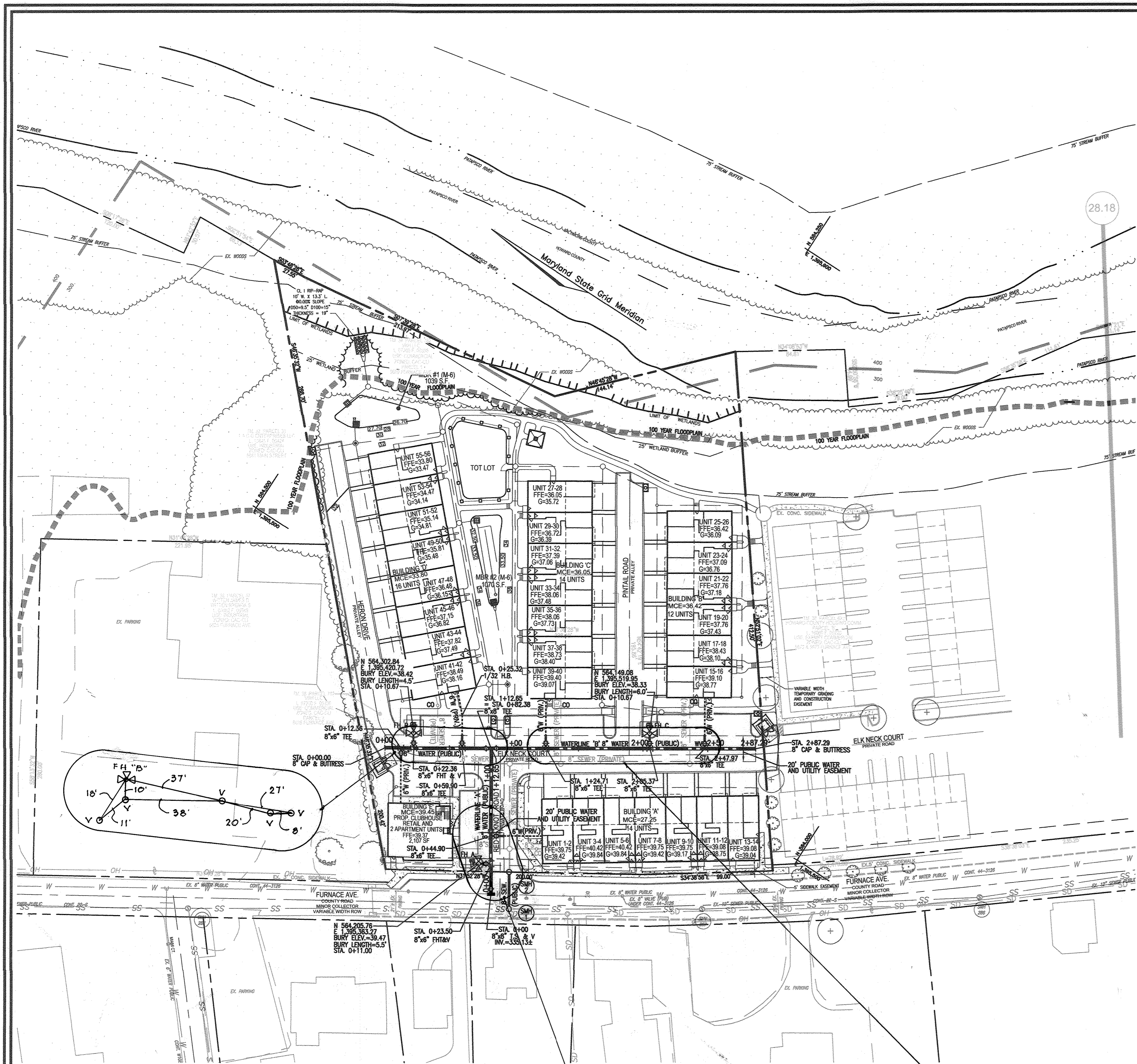
OWNER: VBH LLC, 9113 BRAE BROOKE DRIVE, LANHAM, MD 20706
DEVELOPER: J. KIRBY DEVELOPMENT, LLC, C/O JEFF KIRBY, PRESIDENT, 5780 B FURNACE AVENUE, ELKRIEVE, MD 21075, PHONE: (410) 788-0027

RIVER WATCH II
5635-5659 FURNACE AVENUE
CONTRACT NO. 14-5079-D

TAX MAP 38, GRID 04
1ST ELECTION DISTRICT

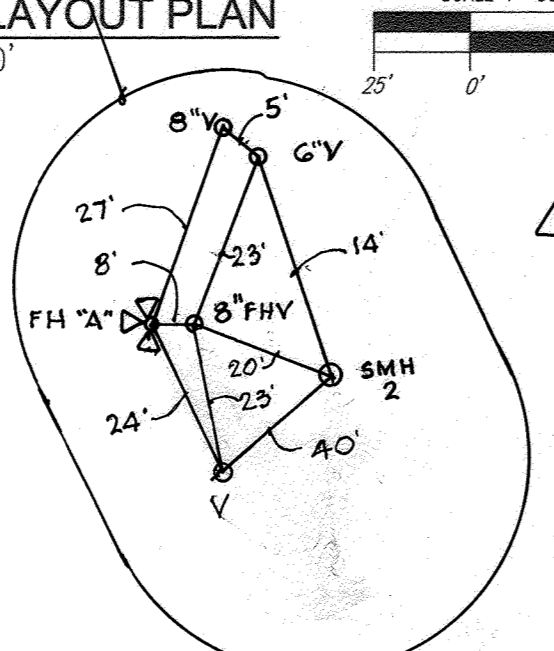
PARCEL 782
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 1 OF 2



WATER AND SEWER LAYOUT PLAN
SCALE: 1"=50'

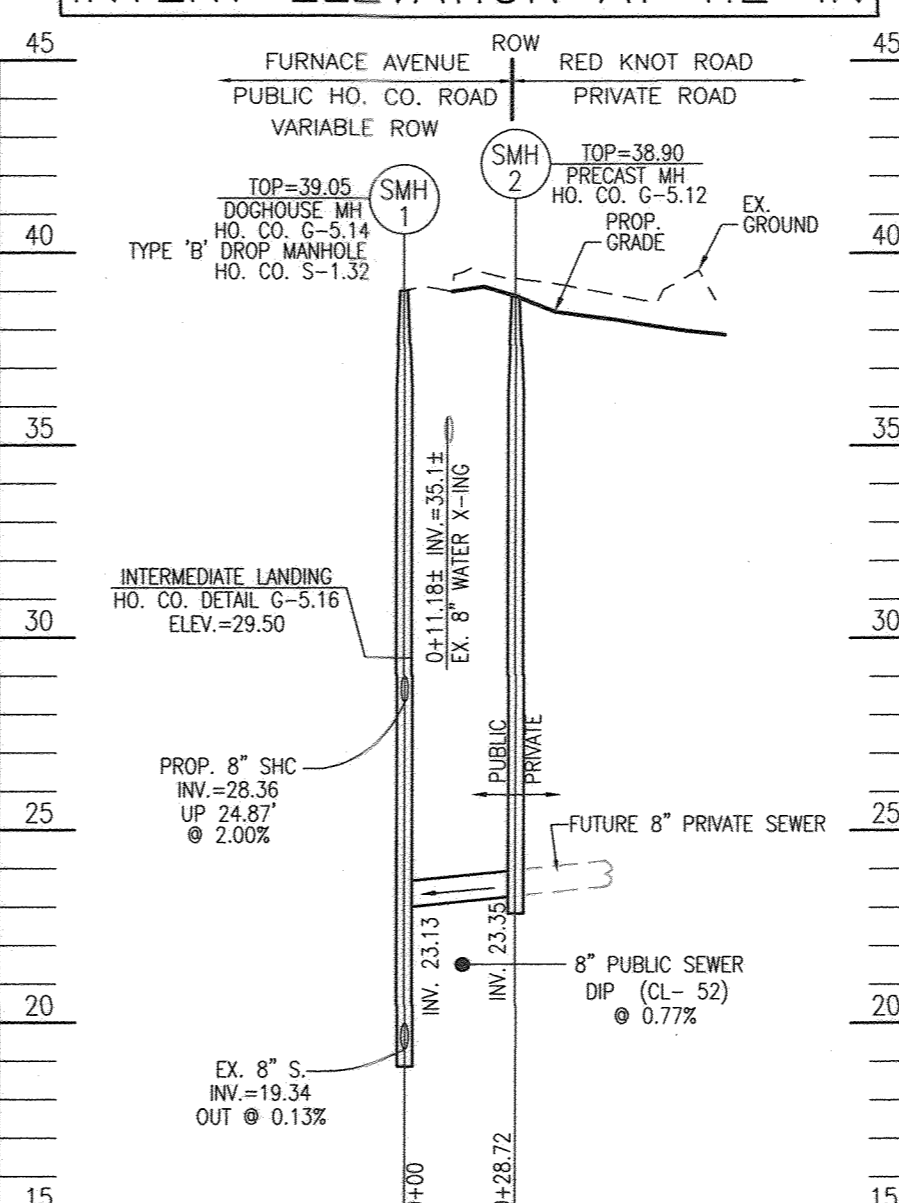
- LEGEND:**
- EXISTING CURB AND GUTTER
 - PROPOSED CURB AND GUTTER
 - EXISTING UTILITY POLE
 - EXISTING LIGHT POLE
 - EXISTING MAILBOX
 - EXISTING SIGN
 - EXISTING CLEANOUT
 - EXISTING WATER LINE
 - EXISTING STORM DRAIN
 - EXISTING STORM DRAIN INLET
 - TREELINE
 - EXISTING FENCE
 - PROPERTY LINE
 - RIGHT-OF-WAY LINE
 - EXISTING SANITARY MANHOLE
 - EXISTING SANITARY LINE
 - EXISTING FIRE HYDRANT
 - EXISTING WATER LINE
 - PROPOSED WATER
 - PROPOSED FIRE HYDRANT
 - PROPOSED SEWER
 - 100 YEAR FLOODPLAIN



WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE

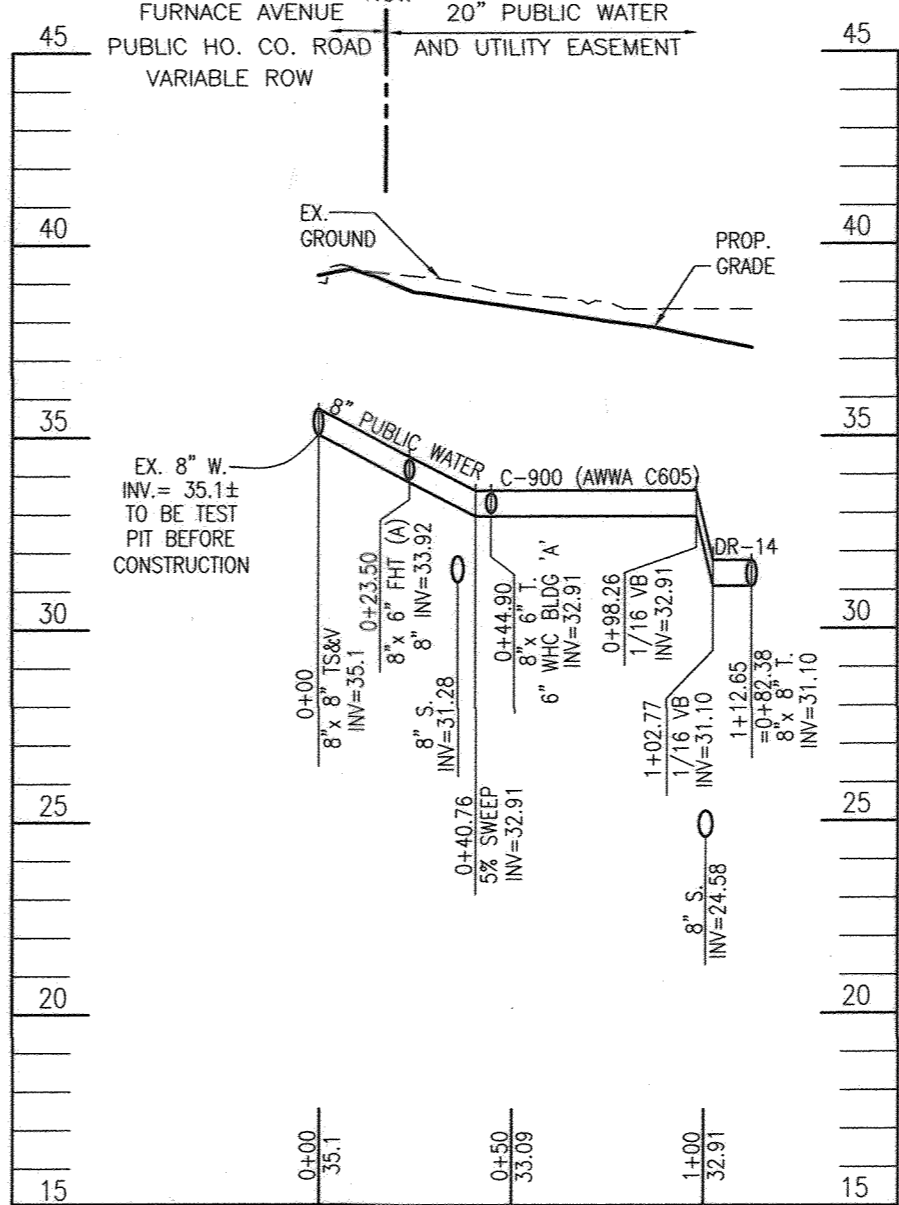
BUILDING	STREET ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
A	5649 FURNACE AVENUE		
B	5415 PINTAL ROAD		
C	5515 PINTAL ROAD		
D	5418 HERON DRIVE		
E	5631 FURNACE AVENUE		

***CONTRACTOR TO TESTPIT EXISTING SEWER TO VERIFY INVERT ELEVATION AT TIE-IN**



PUBLIC SEWER PROFILE
SCALE: 1"=50' HORIZ.
1"=5' VERT.

***CONTRACTOR TO TESTPIT EXISTING WATER TO VERIFY INVERT ELEVATION AT TIE-IN**



WATERLINE 'A' PROFILE
SCALE: 1"=50' HORIZ.
1"=5' VERT.

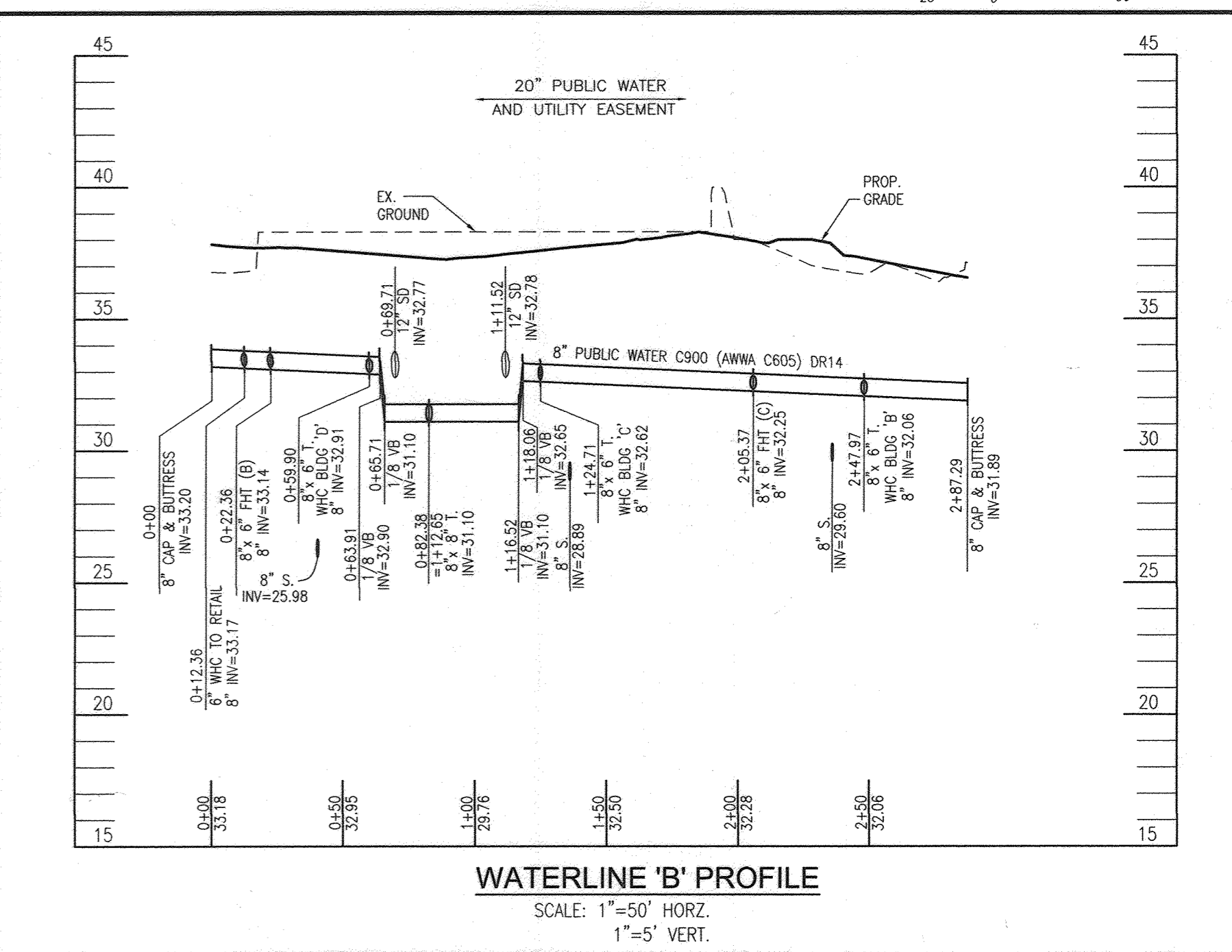
WATER MAIN LOCATION CHART

WL STA.	APPURTENANCE	NORTHING	EASTING
WL STA. 0+00	8"x8" TAPPING SLEEVE AND VALVE	564,184.89	1,395,348.80
WL STA. 0+23.50	8"x8" FIRE HYDRANT TEE	564,197.64	1,395,368.52
WL STA. 0+44.90	8"x8" TEE	564,209.17	1,395,386.55
WL STA. 1+12.65	8"x8" TEE	564,246.03	1,395,443.40

WL STA.	APPURTENANCE	NORTHING	EASTING
WL STA. 0+00	8"x8" CAP AND BUTTRISS	564,315.22	1,395,398.68
WL STA. 0+22.36	8"x8" FIRE HYDRANT TEE	564,296.4	1,395,410.81
WL STA. 0+59.90	8"x8" TEE	564,264.91	1,395,431.19
WL STA. 0+82.38	8"x8" TEE	564,246.03	1,395,443.40
WL STA. 1+24.71	8"x8" TEE	564,210.48	1,395,466.37
WL STA. 2+05.37	8"x8" FIRE HYDRANT TEE	564,142.74	1,395,510.15
WL STA. 2+47.97	8"x8" TEE	564,106.95	1,395,533.28
WL STA. 2+87.29	8" CAP AND BUTTRISS	564,073.93	1,395,554.62



WATER AND SEWER DEMO PLAN
SCALE: 1"=50'



WATERLINE 'B' PROFILE
SCALE: 1"=50' HORIZ.
1"=5' VERT.

PUBLIC MANHOLE LOCATION CHART

MANHOLE NO.	NORTHING	EASTING	TOP ELEV.
1	564,186.85	1,395,346.67	39.05
2	564,182.43	1,395,370.79	38.90

OWNER:
VBH LLC
9113 BRAE BROOKE DRIVE
LANHAM, MD 20706

DEVELOPER:
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C/O JEFF KIRBY, PRESIDENT
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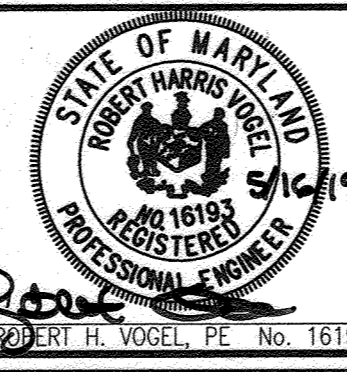
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HOWARD COUNTY, MARYLAND

6-6-19
CHIEF, BUREAU OF UTILITIES

6-17-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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DES: GAH
DRN: GAH
CHK: RHV
DATE: MAY 2019

NO.	REVISION	DATE
1	AS BUILT LOCATIONS	9/18/22

FINAL WATER AND SEWER PLAN

600' SCALE MAP NO. 28
BLOCK NO. 4

RIVER WATCH II
5635-5659 FURNACE AVENUE
CONTRACT NO. 14-5079-D

TAX MAP 38, GRID 04
1ST ELECTION DISTRICT

PARCEL 782
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 2 OF 2