

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 OCTOBER 2011 BY SHANABERGER AND LANE. THE COORDINATES ON THE DRAWINGS ARE BASED ON THE MARYLAND STATE REFERENCE SYSTEM NAD 83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 161B AND NO. 17AB.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE CONCRETE MONUMENTS.
- 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.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING UNLESS OTHERWISE NOTED ON PLANS OR IN SPECIFICATIONS.
- FOR SPRINKLER SYSTEM FOR ALL TOWN HOMES OR MULTI-FAMILY DWELLING UNITS SHOULD HAVE A MINIMUM OF 1" CONNECTION WITH A 3/4" METER.
- 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 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 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:

A T & T	1-800-292-1133
BGE (CONSTRUCTION SERVICES)	410-850-4620
BGE (EMERGENCY)	410-685-1400
BUREAU OF UTILITIES	410-313-6900
COLONIAL PIPELINE COMPANY	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 CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)313-7450 AT LEAST 5 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 16.11(a) OF THE HOWARD COUNTY CODE.

STANDARD WATER MAIN GENERAL NOTES

- ALL WATER MAINS TO BE D.I.P. CLASS 54 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-6" OF COVER UNLESS NOTED OTHERWISE.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTING SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAIL 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 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 C900 FOR PVC PRESSURE PIPES 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 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. 17 POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTING INCLUDING RESTRAINTS AND HARNESSES. 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 THE 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 COMPACTION 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 LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTEEED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL.
- 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 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 INCORPORATES AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELLS STOPS SHALL BE SERIES 5000 MEGA-STOP AS MANUFACTURED BY EBAA INC. OR APPROVED EQUAL.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE STANDARD SPECIFICATIONS AND WITH ROAD CONSTRUCTION PLANS SDP-16-014

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

[Signature] / 1/21/2020
 SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

[Signature]
 CHIEF, BUREAU OF UTILITIES

1-10-2020
 DATE

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND

[Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

1-21-20
 DATE

SILL ENGINEERING GROUP, LLC

11130 Dovecote Court, Suite 200
 Marriottsville, Maryland 21104
 Phone: 443.325.5076
 Fax: 410.696.2022
 Email: info@sillengineering.com
 Civil Engineering for Land Development

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 No. 32025
 EXPIRES 06/30/2021

DESIGNED BY:	PS		
DRAWN BY:	RA		
CHECKED BY:	PS		
DATE:	JAN. 2, 2020		
	2	REVISE CONTRACT # IN LOCATION PLAN	3/2/2022
	1	REVISE BUILDING, PUBLIC WATER, PARKING, AND PENATE	12/14/2020
		UTILITY LINES	
NO.		DESCRIPTION	DATE
		REVISIONS	

COVER SHEET

600' SCALE MAP NO. 43 BLOCK NO. 9

WATERLOO FIRE STATION

TAX MAP 43 GRID 9
 1ST ELECTION DISTRICT

PARCEL 745
 HOWARD COUNTY, MARYLAND

CONTRACT NO. 44-5037-D

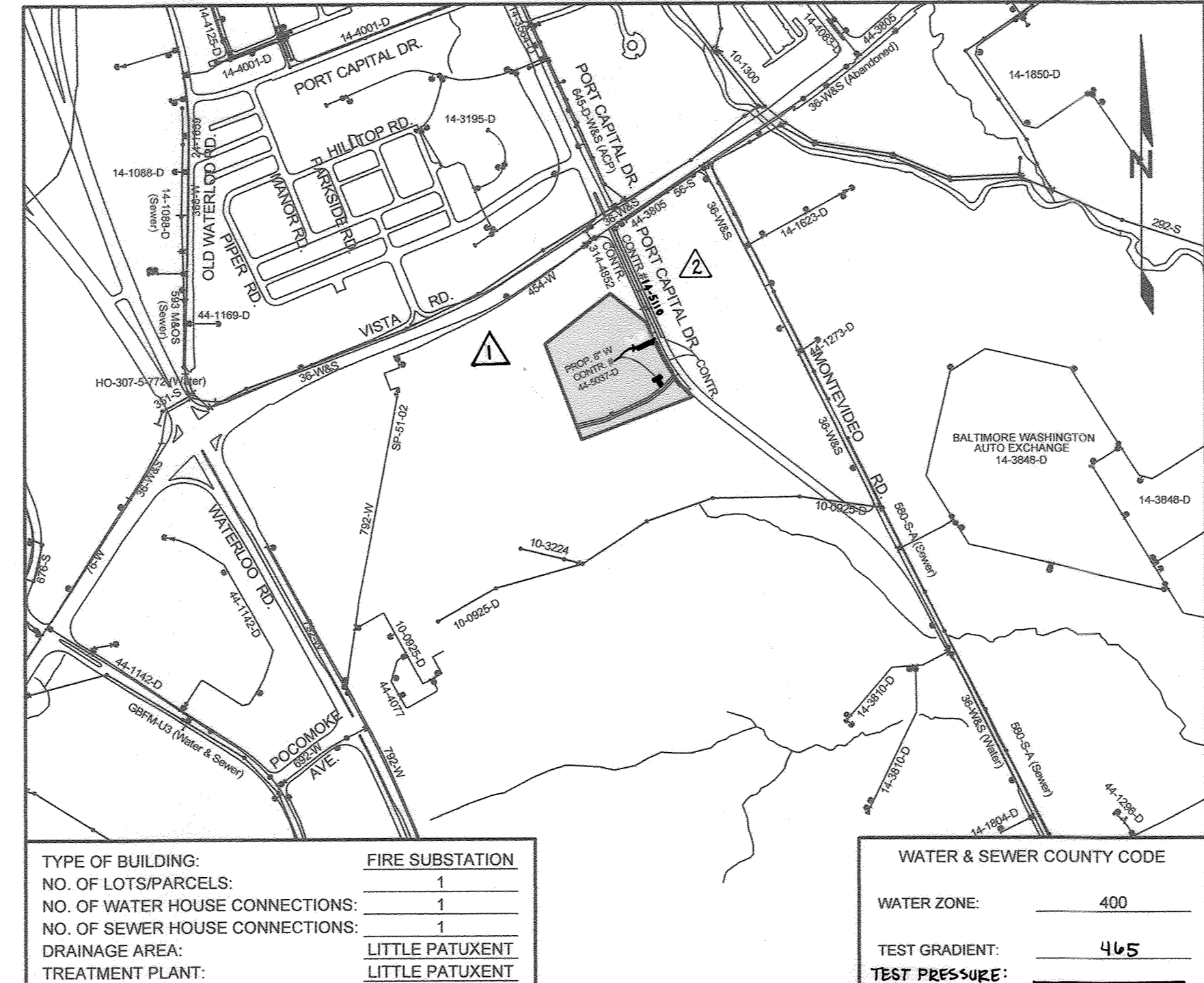
SCALE: AS SHOWN

SHEET NO. 1 OF 3

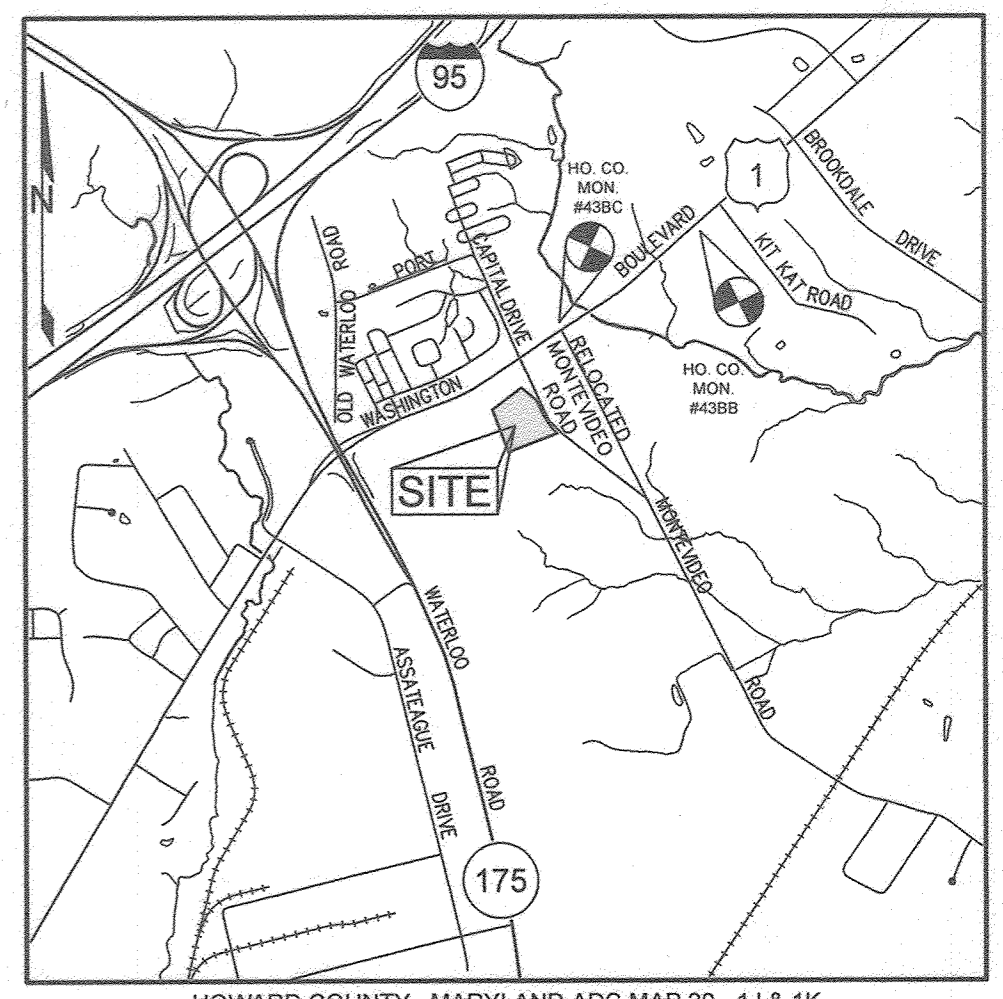
PUBLIC WATER PLAN

WATERLOO FIRE STATION

CONTRACT NO. 44-5037-D



LOCATION PLAN
 SCALE: 1"=800'



HOWARD COUNTY, MARYLAND ADC MAP 20 - 1J & 1K
 VICINITY MAP
 SCALE: 1"=2000'

BENCHMARKS

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
43BC	549,592.106	1,375,466.623	214.07	SOUTH SIDE OF US ROUTE 1 AND MONTEVIDEO ROAD INTERSECTION
43BB	550,534.212	1,376,905.353	208.97	EAST SIDE OF US ROUTE 1 AND 320 FEET SOUTH OF KAT KAT ROAD

SHEET INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	FINAL PUBLIC WATER PLAN AND PROFILES

QUANTITIES

ITEMS	QUANTITIES		AS-BUILT	
	ESTIMATED	QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
8" PVC C-900 DRAIN CL. 225 (WATER)	142 LF			
8" PVC C-900 DRAIN CL. 225 (WATER)	714 LF			
1" FIRE HYDRANT	2 EA			
1 1/2" HB	1 EA			
8" X 4" TEE	1 EA			
8" X 8" TEE	1 EA			
1" VALVE	2 EA			
8" VALVE	1 EA			

OWNER/DEVELOPER
 HOWARD COUNTY MARYLAND
 C/O MICHAEL KAMINETZ, P.E.
 9250 BENDX ROAD,
 COLUMBIA, MARYLAND 21045
 410.313.5781
 MKAMINETZ@HOWARDCOUNTYMD.GOV

LEGEND

- EXISTING WATER:
- EXISTING SEWER:
- EXISTING FENCE:
- EXISTING STORM DRAIN:
- PROPOSED GAS:
- PROPOSED ELECTRIC:
- PROPOSED TELEPHONE:
- WETLANDS:
- WETLAND BUFFER:

FOREST CONSERVATION EASEMENT:

PROPOSED FIRE HYDRANT:

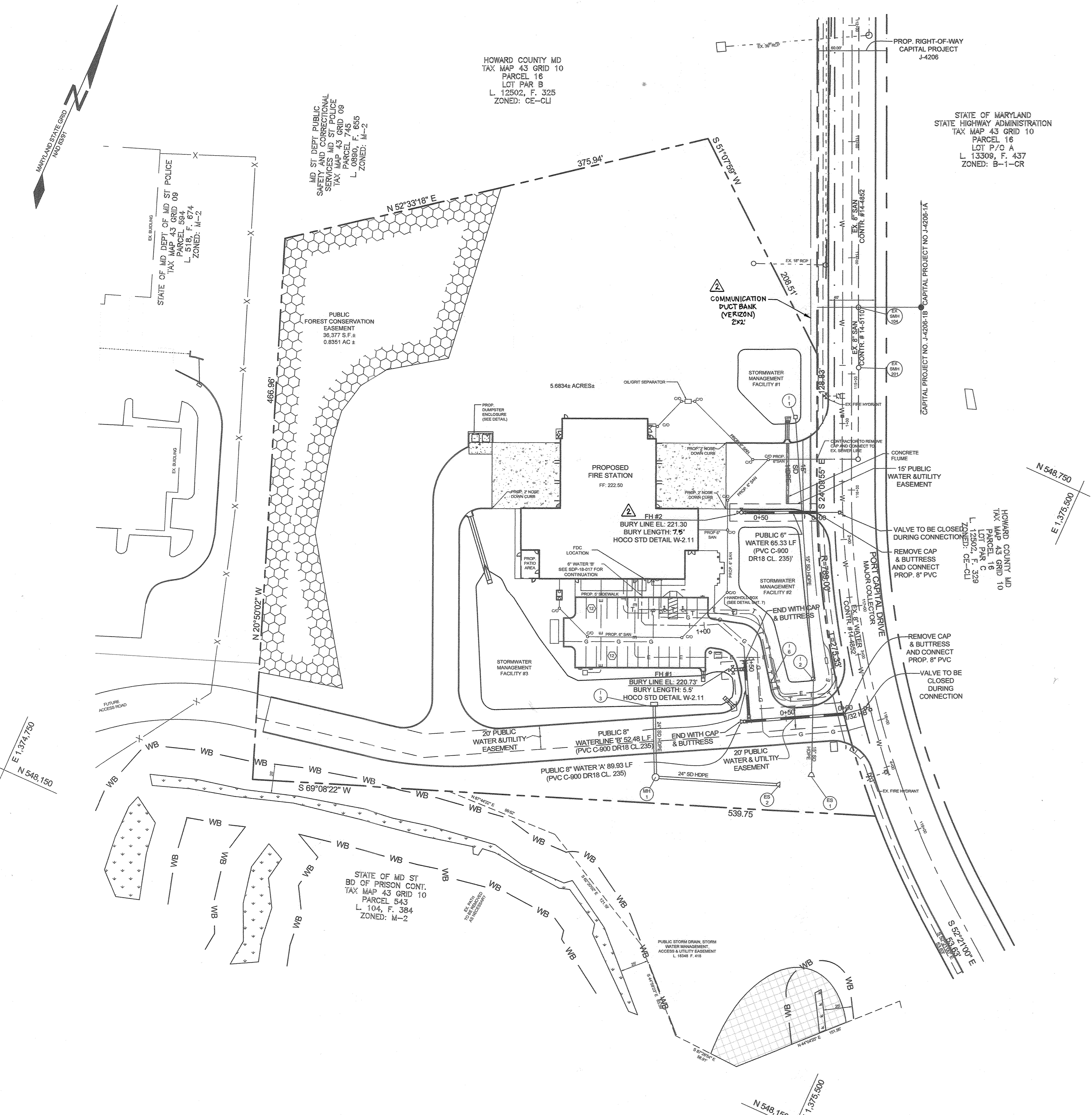
PROPOSED WATER TEE AND VALVE:

PROPOSED WATER HORIZONTAL BEND:

STORM DRAIN STRUCTURES:

ROOF DRAIN PIPES:

STORM DRAIN PIPES:



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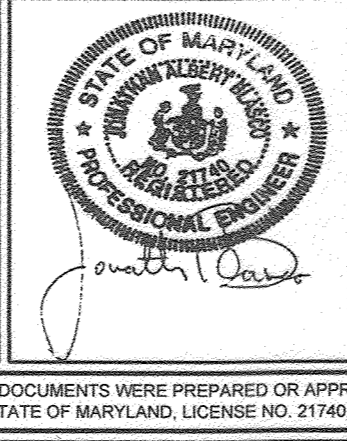
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

 CHIEF, BUREAU OF UTILITIES
 DATE: 4-16-21

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4-26-21

SILL ENGINEERING GROUP, LLC
 16005 Frederick Road, 2nd Floor
 Woodbine, Maryland 21797
 Phone: 443.325.5076
 Fax: 410.696.2022
 Email: info@sillengineering.com
 Civil Engineering for Land Development

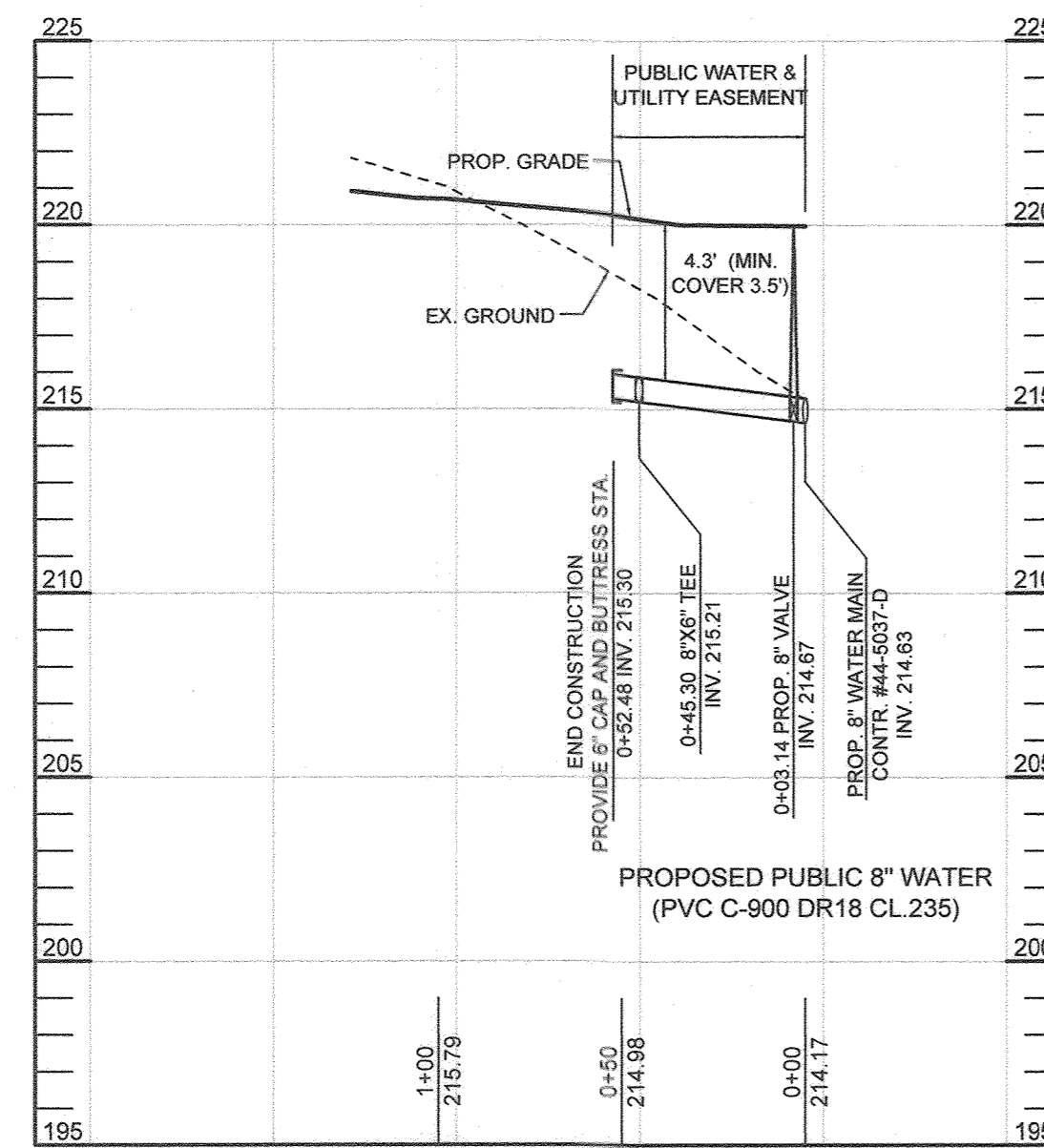


DESIGNED BY: MPO			
DRAWN BY: MPO			
CHECKED BY: JB			
DATE: OCTOBER 16, 2020			
	2	LABEL COMM. DUCT, REVISE HYDRANT BURY DEPTH	3/2/2022
	1	REVISE BUILDING, PUBLIC WATER, PARKING, AND PRIVATE UTILITY LINES.	12/14/2019
	NO.	DESCRIPTION	DATE
		REVISIONS	

FINAL PUBLIC WATER PLAN AND PROFILES
 600' SCALE MAP NO. 43 BLOCK NO. 9

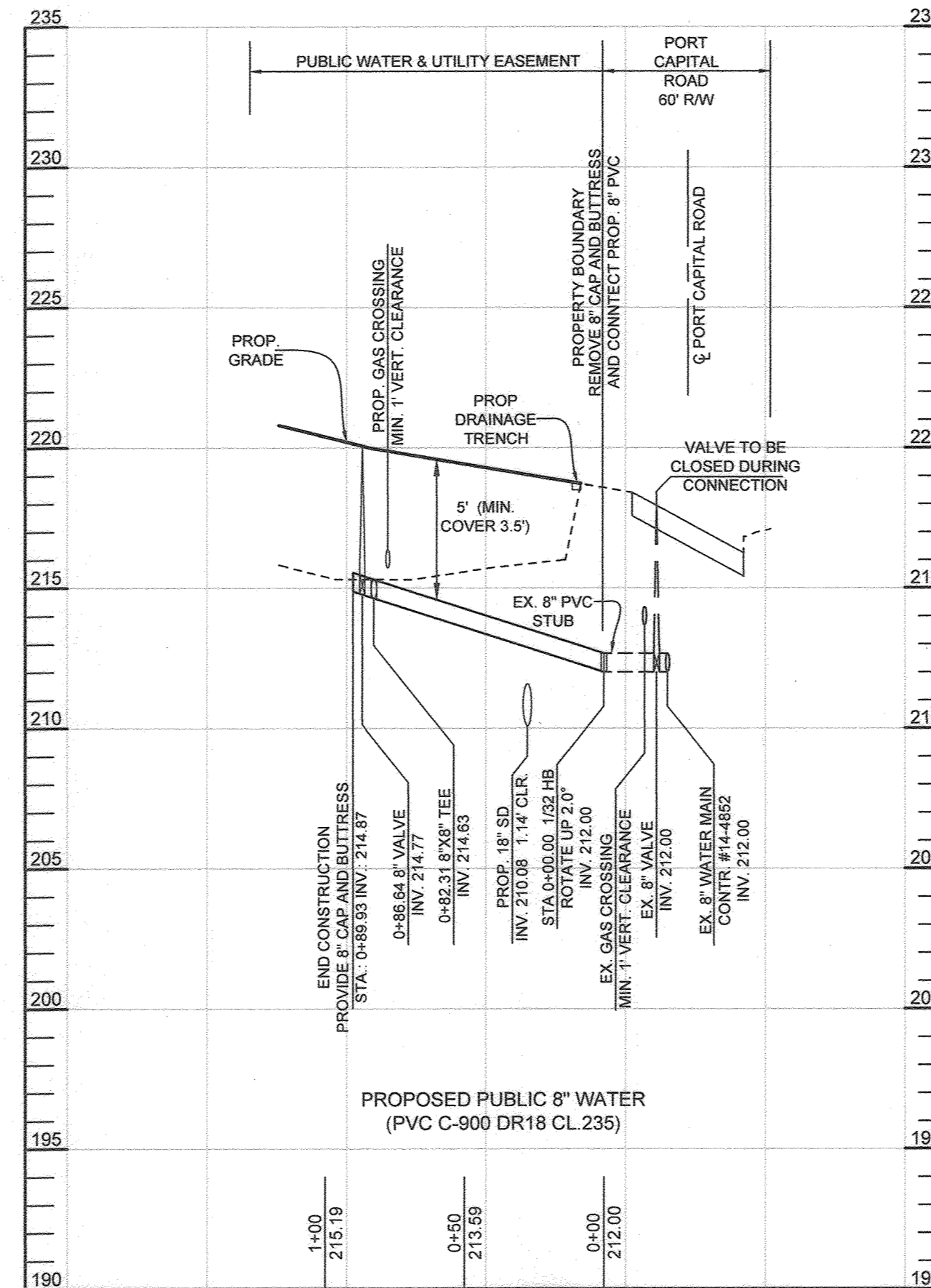
WATERLOO FIRE STATION
 TAX MAP 43 GRID 9
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 44-5037-D

SCALE: AS SHOWN
 SHEET NO. 2 OF 3



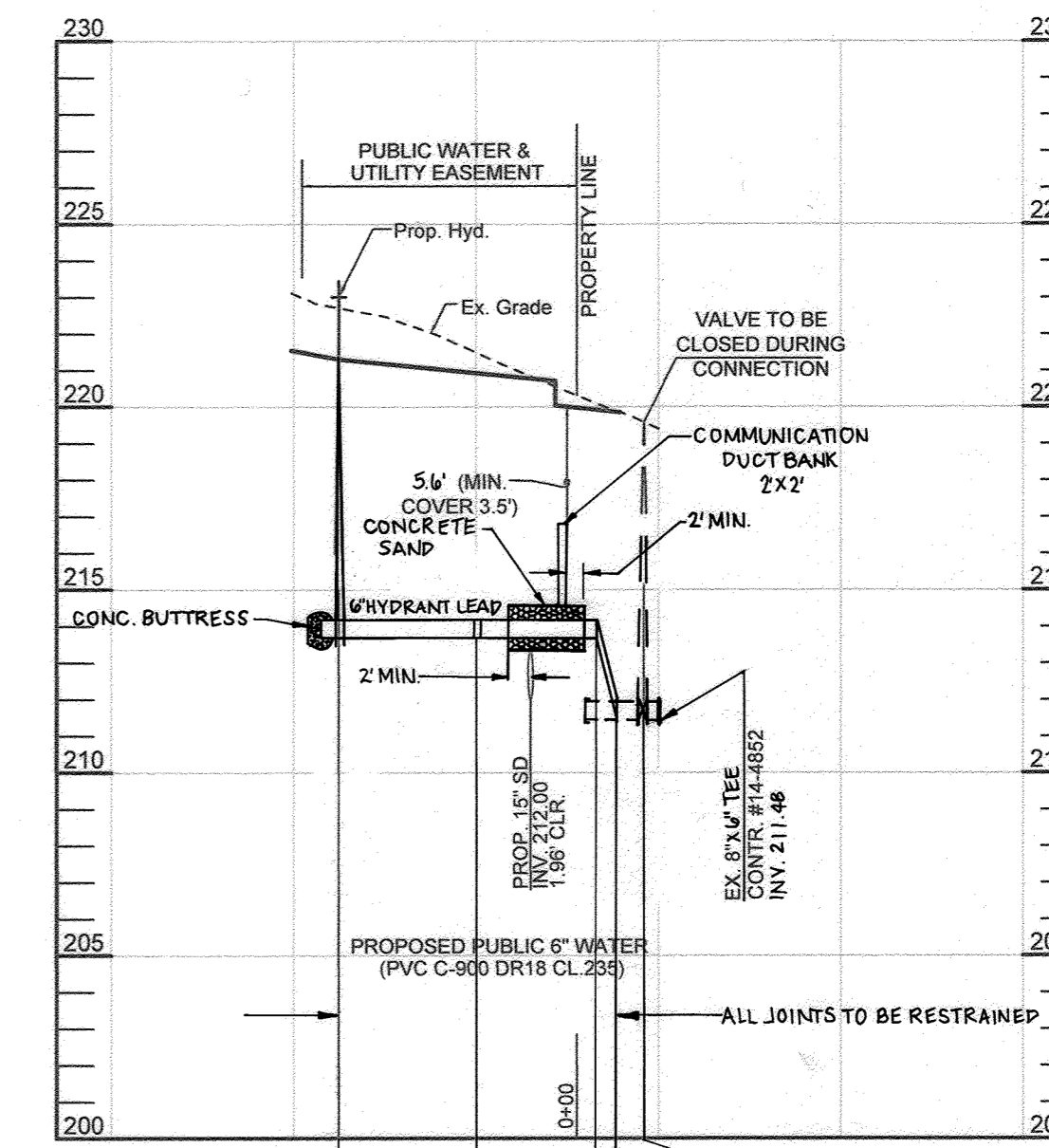
WATER MAIN 'B' PROFILE
SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

WATER MAIN FITTING CHART			
STATION	TYPE	LOCATION	INV.
0+03.14	8" VALVE	N 548,455.68 E 1,375,319.30	214.67
0+47.48	FIRE HYDRANT TEE	N 548,494.69 E 1,375,298.23	215.23
0+52.48	6" CAP AND BUTTRISS	N 548,499.00 E 1,375,296.00	215.30



WATER MAIN 'A' PROFILE
SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

WATER MAIN 'A' FITTING CHART			
STATION	TYPE	LOCATION	INV.
0+00.00	1/32 HORIZONTAL BEND	N 548,492.00 E 1,375,393.20	212.00
0+82.31	8"X8" TEE	N 548,452.92 E 1,375,320.78	214.63
0+86.64	8" VALVE	N 548,450.97 E 1,375,317.21	214.77
0+89.93	8" CAP AND BUTTRISS	N 548,449.26 E 1,375,314.07	214.87



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

WATER MAIN FITTING CHART			
STATION	TYPE	LOCATION	INV.
0+87.63	FIRE HYDRANT	N 548,811 E 1,375,241	215.12
0+11.60	1/16 VERTICAL BEND	N 548,642 E 1,375,311	211.49
0+17.00	1/16 VERTICAL BEND	N 548,640 E 1,375,306	213.72
0+80.00	6" PIPE JOINT	N 548,627 E 1,375,276	213.72

0+87.63 HYDRANT INV. 215.12
0+89.93 6" PIPE JOINT INV. 214.87
0+11.60 1/16 VERTICAL BEND INV. 211.49
0+17.00 1/16 VERTICAL BEND INV. 213.72
0+80.00 6" PIPE JOINT INV. 213.72

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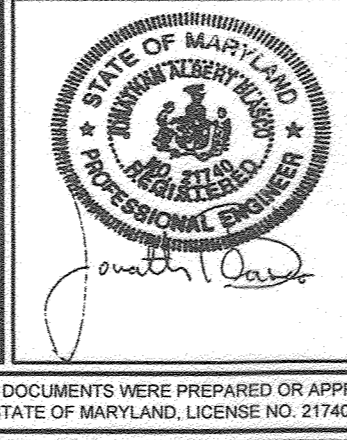
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

4-16-21
DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

4-26-21
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Civil Engineering for Land Development



DESIGNED BY: MPO
DRAWN BY: MPO
CHECKED BY: JB
DATE: OCTOBER 16, 2020

NO.	DESCRIPTION	DATE
2	REVISE HYDRANT PROFILE	1/2/2022
1	REVISE BUILDING, PUBLIC WATER, PARKING, AND PRIVATE UTILITY LINES.	12/14/2019

FINAL PUBLIC WATER PLAN AND PROFILES
600' SCALE MAP NO. 43
BLOCK NO. 9

WATERLOO FIRE STATION
TAX MAP 43 GRID 9
1ST ELECTION DISTRICT
PARCEL 745
HOWARD COUNTY, MARYLAND
CONTRACT NO. 44-5037-D

SCALE: AS SHOWN
SHEET NO. 3 OF 3