


GENERAL NOTES

PART I

- 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 MARCH 2006 BY ROBERT H. VOGEL ENGINEERING, INC.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 37AA AND 37AB.
ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON DRAWINGS ARE:
GEODETIC SURVEY CONTROL 37AA (N 562422.96/E 1369052.64)
BRASS DISC SET ON TOP OF A CONCRETE MONUMENT.
GEODETIC SURVEY CONTROL 37AB (N 561137.34/E 1369891.86)
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 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 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) 410-637-8713
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 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 C-900 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS SHALL 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 RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAIL. 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.
- 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, SEVENTEEN (17) POUND 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. MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. 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.

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 G5.52. WHERE WATERTIGHT 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." INDICATES THAT CELLAR CANNOT BE SERVED.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND WITH SITE DEVELOPMENT PLAN SDP-07-102.

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

John K. Robertson 6/14/12
SOIL CONSERVATION DISTRICT DATE

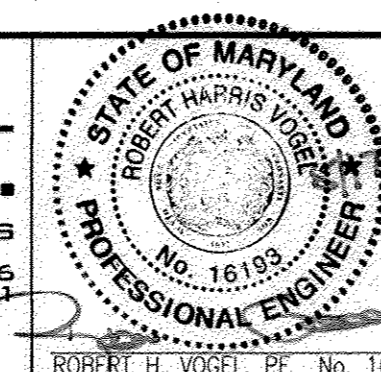
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Sally Green 6/15/12
CHIEF, BUREAU OF UTILITIES DATE

Robert H. Vogel 6/15/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLCOTT CITY, MD 21104 FAX: 410.461.8964



PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 09-27-2012

DES:	DZ	DRN:	DZ
W/O NO.:	05-52	NO.	2
CHK:	RHW	NO.	1
DATE:	MAY 2012	NO.	

AS-BUILTS
6/16
MODIFIED DESIGN PER CHANGES TO SDP-07-102
05/16/12

**FINAL WATER & SEWER PLAN
COVER SHEET**

**WATERLOO CROSSING
PARCEL A
CONTRACT 14-4488-D**

SCALE AS SHOWN
SHEET 1 OF 2

TAX MAP 37 PARCEL 1&7
6TH ELECTION DISTRICT

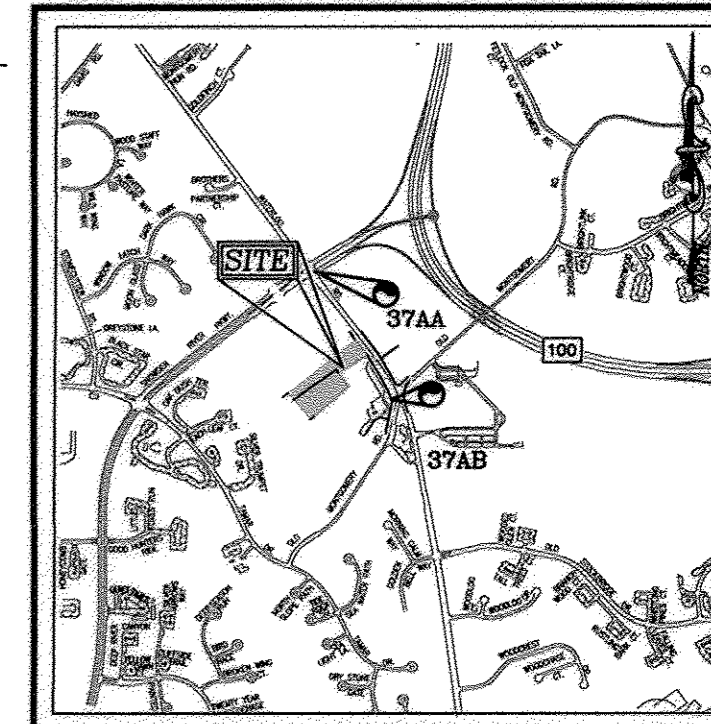
PARCEL 548 AND 227
HOWARD COUNTY, MARYLAND

FINAL WATER AND SEWER PLAN

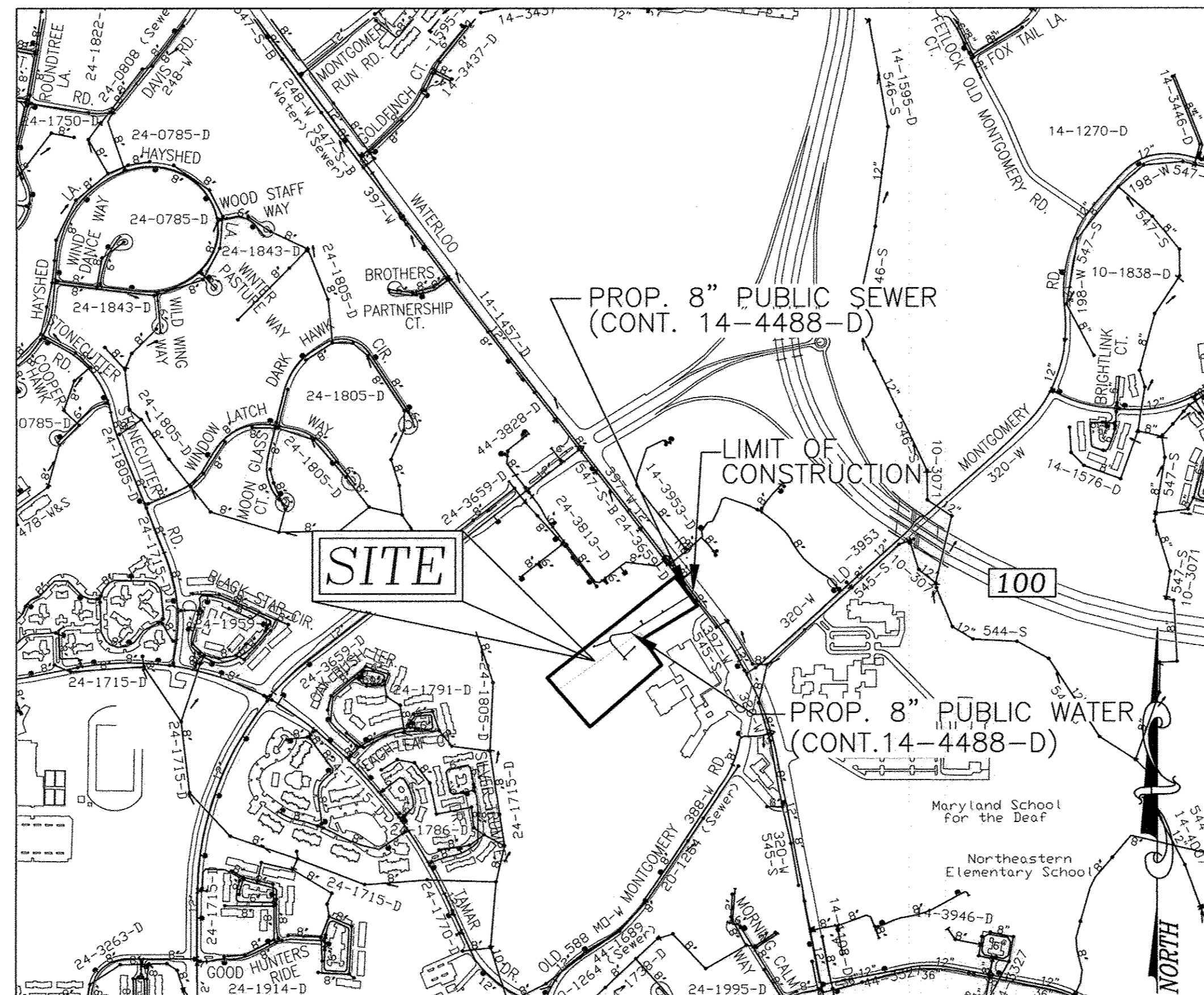
WATERLOO CROSSING PARCEL A CONTRACT 14-4488-D

BENCHMARKS

HOWARD COUNTY BENCHMARK 37AA (CONCRETE MONUMENT)
N 562422.9605 E 1369052.6433 ELEV. 398.739
HOWARD COUNTY BENCHMARK 37AB (CONCRETE MONUMENT)
N 561137.342 E 1369891.8618 ELEV. 390.465



LOCATION MAP
SCALE: 1"=2000'
ADC MAP COORDINATES: 4936/C7



VICINITY MAP
SCALE: 1"=600'

WATER ZONE: _____
TEST GRADIENT: 700

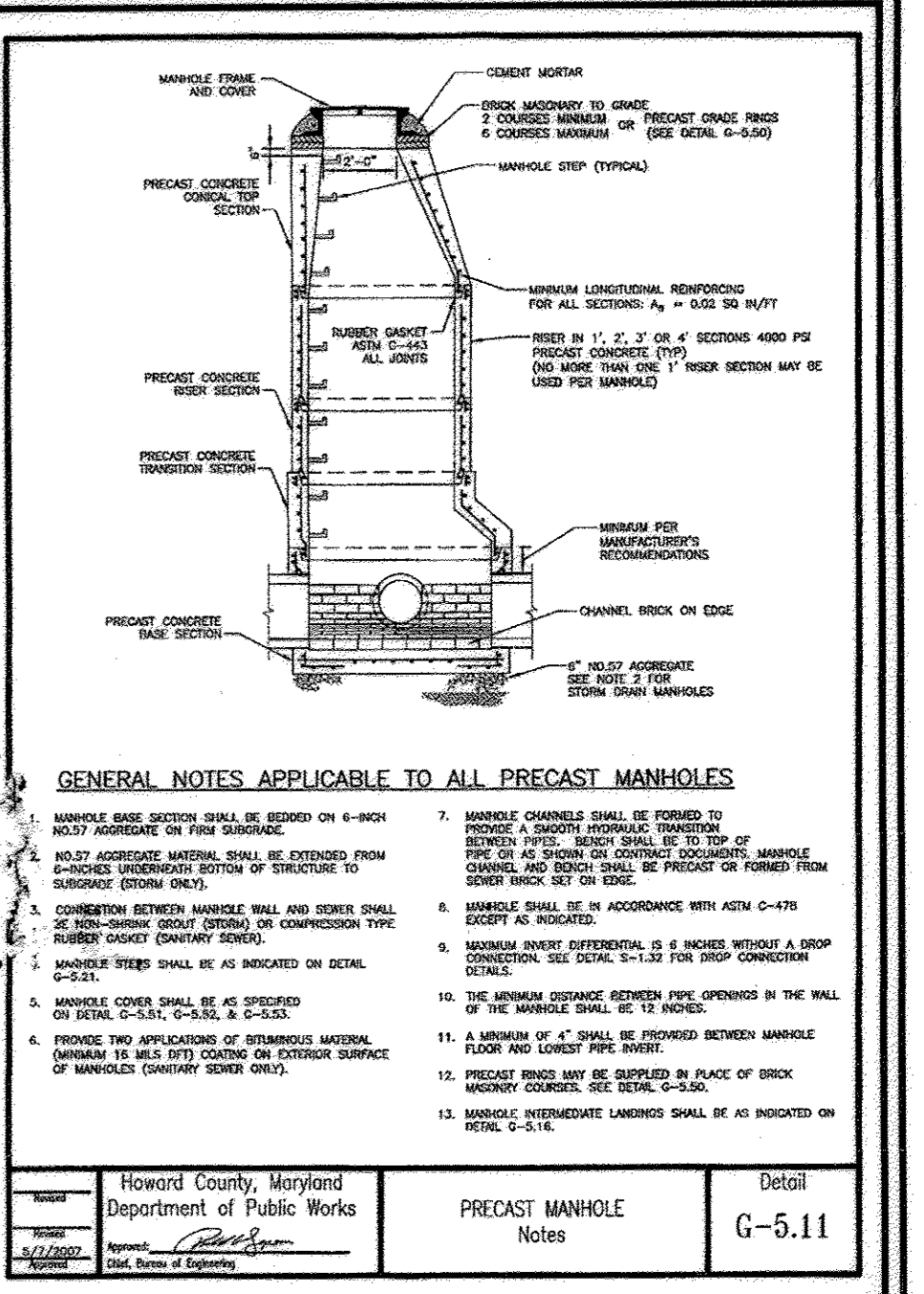
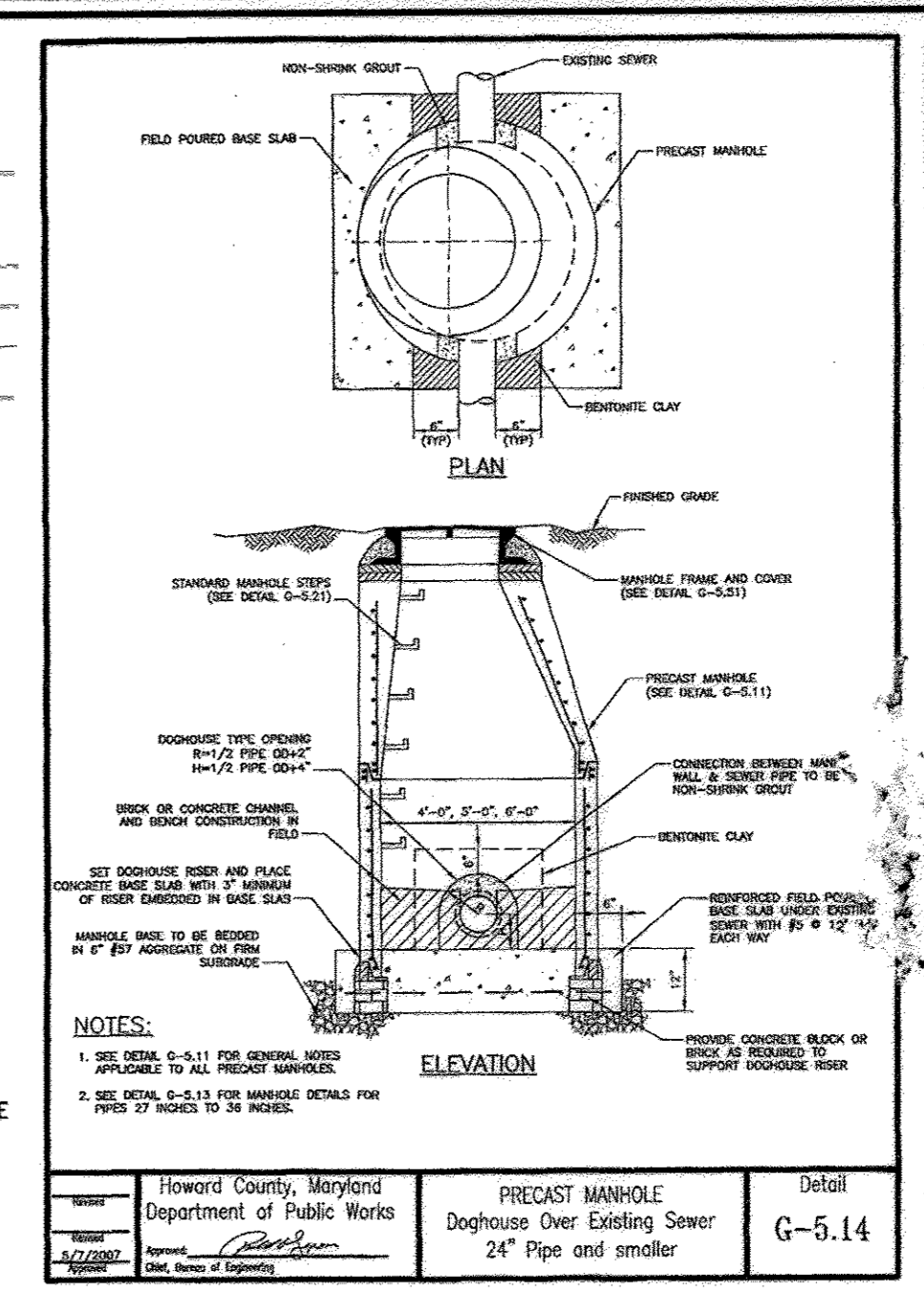
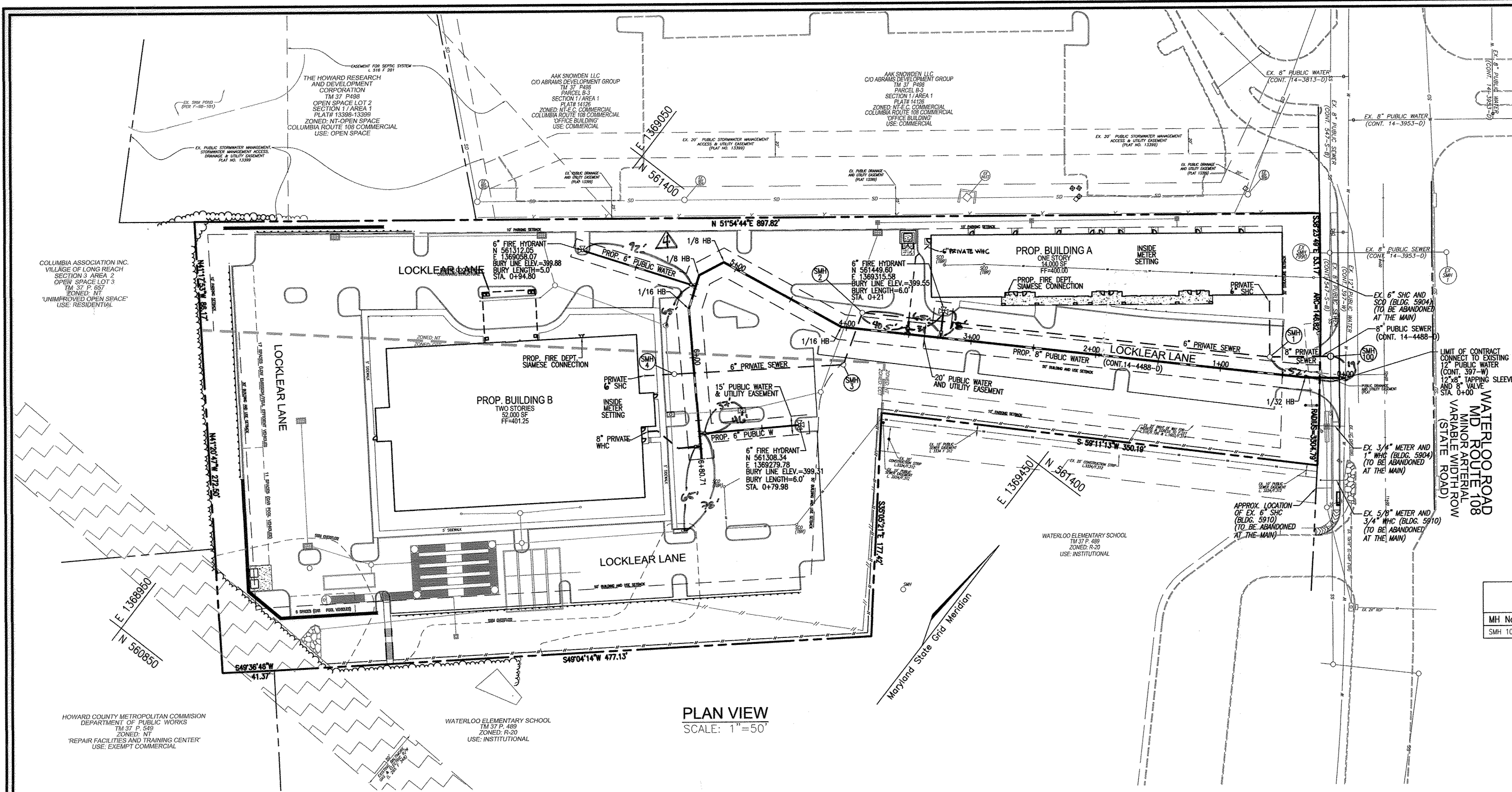
TYPE OF BUILDING :	OFFICE
NO. OF LOTS/PARCELS :	1
NO. OF SINGLE WATER HOUSE CONNECTIONS :	2
NO. OF TWIN WATER HOUSE CONNECTIONS :	0
NO. OF SEWER HOUSE CONNECTIONS :	0
SEWER SHED :	PATAPSCO RIVER LOWER NORTH BRANCH
TREATMENT PLANT :	PATAPSCO RIVER

LEGEND

- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- FIRE HYDRANT
- PROPOSED VALVE
- PROPOSED TEE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- EXISTING SEWER
- SEWER MANHOLE
- PRIVATE WATER HOUSE CONNECTION
- PUBLIC SEWER
- PRIVATE SEWER HOUSE CONNECTION
- PROPOSED SIGN
- PROPOSED LIGHT

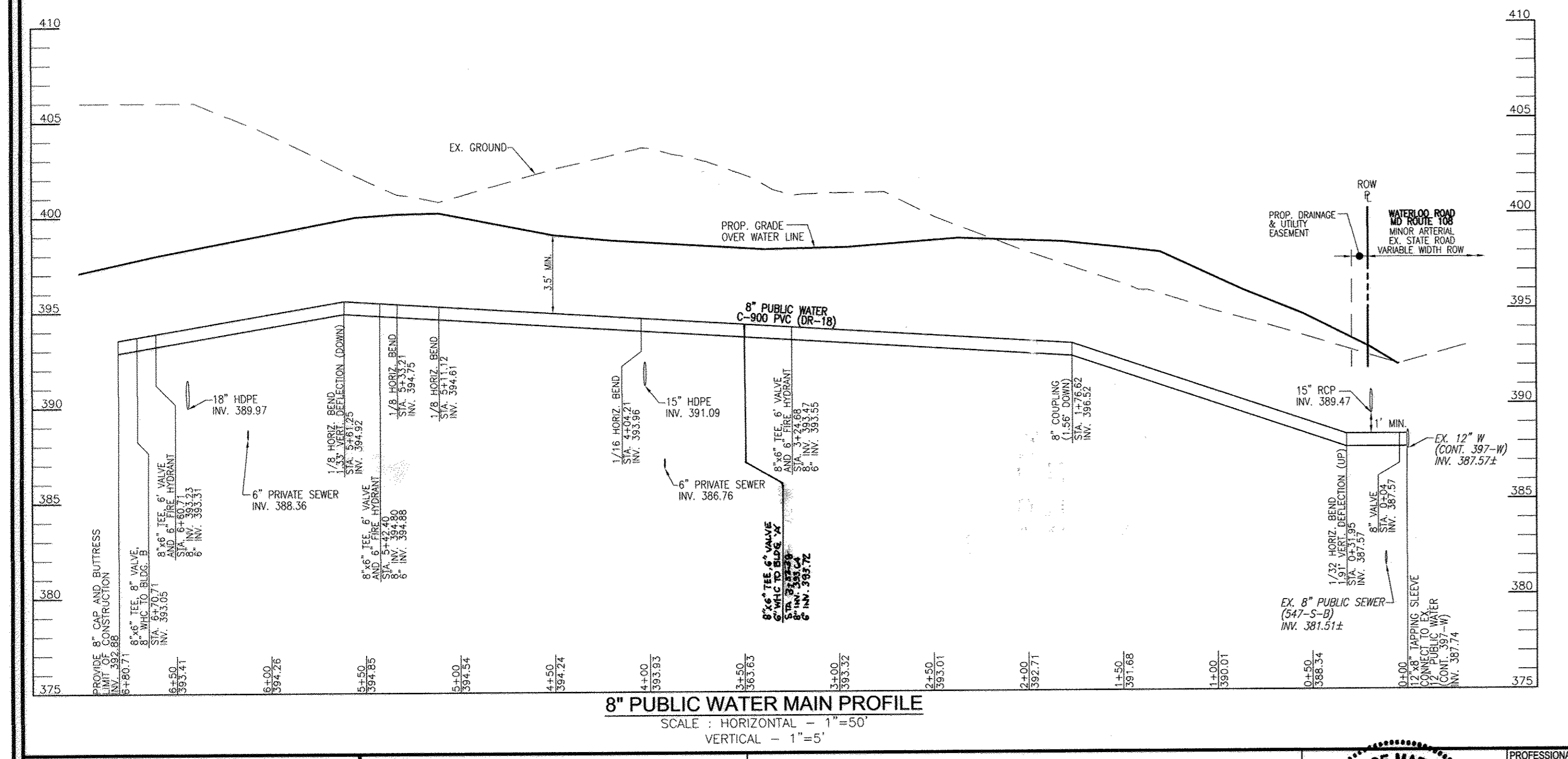
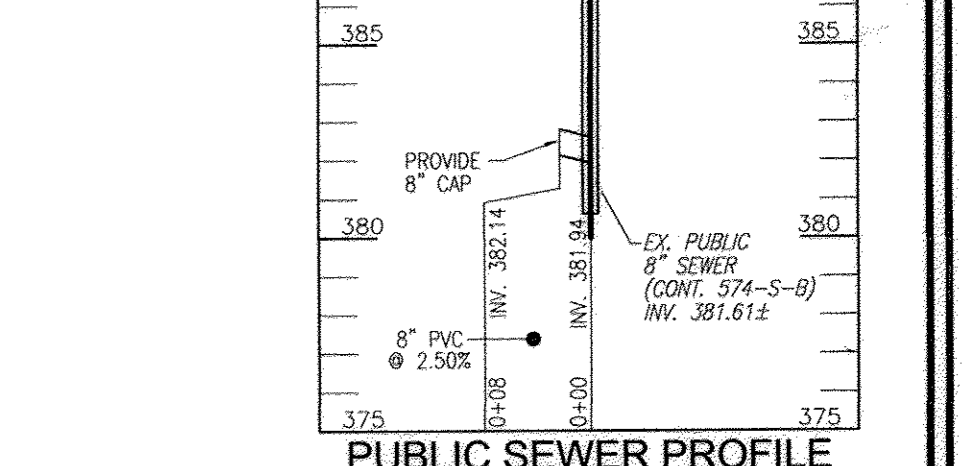
QUANTITIES

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
WATER				
12"x8" TAPPING SLEEVE	1 EA	1 EA	C207	FORD METER BOX
8" WATER	691 LF	685 LF	C900	NORTH AMERICAN
6" WATER	206 LF	210 LF	C900	NORTH AMERICAN
8" X 8" TEE	1 EA	1 EA	C153	STAR PIPE PRODUCTS
8" X 6" TEE	4 EA	4 EA	C153	STAR PIPE PRODUCTS
8" VALVE	2 EA	2 EA	C509	KENNEDY VALVE
6" VALVE	4 EA	4 EA	C509	KENNEDY VALVE
6" FIRE HYDRANT	3 EA	3 EA	C502	KENNEDY VALVE
8" - 1/8 BEND	2 EA	2 EA	C153	STAR PIPE PRODUCTS
8" - 1/16 BEND	2 EA	2 EA	C153	STAR PIPE PRODUCTS
8" - 1/32 BEND	1 EA	1 EA	C153	STAR PIPE PRODUCTS
8" CAP AND BUTTRESS	2 EA	2 EA	C153	STAR PIPE PRODUCTS
6" CAP AND BUTTRESS	1 EA	1 EA	C153	STAR PIPE PRODUCTS
SEWER				
8" PVC SEWER	8 LF	9 LF	SDC-35	NORTH AMERICAN
MANHOLE	1 EA	1 EA	C488	C.P.P.



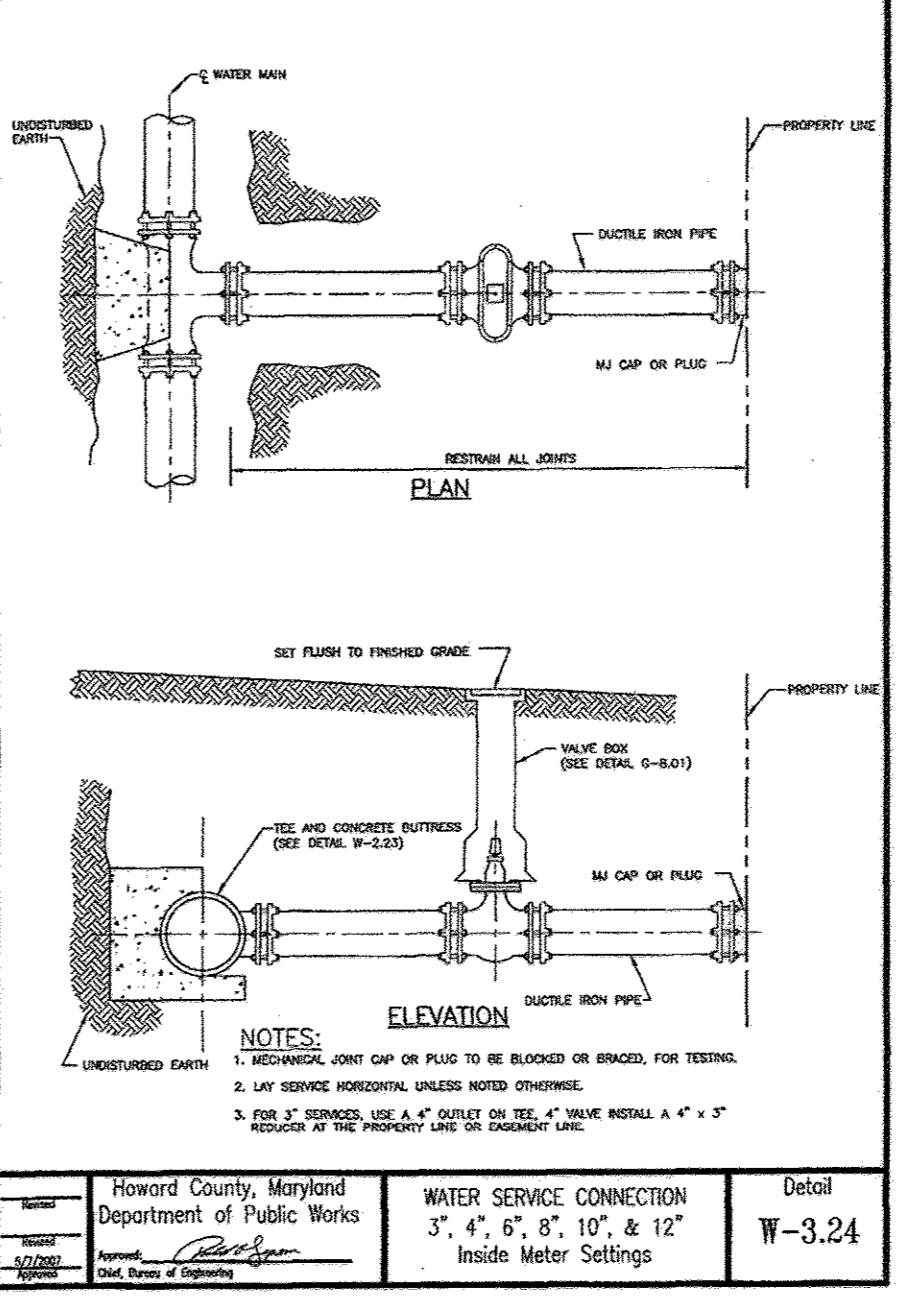
Howard County, Maryland Department of Public Works	PRECAST MANHOLE Doghouse Over Existing Sewer 24\" Pipe and smaller	Detail G-5.14
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MH No.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT
SMH 100	STD. PRECAST MANHOLE (C 5.14)	N 561610.02 E 1369582.01	392.53	381.94	381.61



- NOTES:**
- THE EXISTING WHC & SHC TO BUILDING 5904, AND THE EXISTING WHC TO BUILDING 5910 HAVE BEEN FIELD LOCATED.
 - THE APPROXIMATE LOCATION FOR THE EXISTING SHC TO BUILDING 5910 HAS BEEN PROVIDED.
 - ALL CONNECTIONS ARE TO BE VERIFIED FOR LOCATION BY THE CONTRACTOR PRIOR TO ABANDONMENT.
 - THE WATER CONNECTION FOR BUILDING A SHALL BE 6", WITH INSIDE METER SETTINGS. REFER TO HOWARD COUNTY DETAIL W-3.24.
 - THE WATER CONNECTION FOR THE BUILDING B SHALL BE 8", WITH INSIDE METER SETTINGS. REFER TO HOWARD COUNTY DETAIL W-3.24.

WL STA.	APPURTENANCE
WL STA. 0+00	12"x8" TAPPING SLEEVE
WL STA. 0+04	8" VALVE
WL STA. 0+31.95	8" - 1/2" HORIZONTAL BEND (1.91' UP)
WL STA. 1+76.62	8" COUPLING (1.56' DOWN)
WL STA. 3+24.08	8"x6" TEE, 6" VALVE, & FH
WL STA. 3+82.58	8"x6" TEE, 6" VALVE, 6" W/C, 8" CAP
WL STA. 4+04.21	8" - 1/16" HORIZONTAL BEND
WL STA. 5+11.12	8" - 1/8" HORIZONTAL BEND
WL STA. 5+33.21	8" - 1/8" HORIZONTAL BEND
WL STA. 5+42.40	8"x6" TEE, 6" VALVE & FH
WL STA. 5+61.25	8" - 1/8" HORIZONTAL BEND (1.33' DOWN)
WL STA. 5+60.71	8"x6" TEE, 6" VALVE & FH
WL STA. 6+70.71	8"x8" TEE, 8" VALVE, 8" WHC, 8" CAP
WL STA. 6+80.71	8" CAP AND BUTTRISS

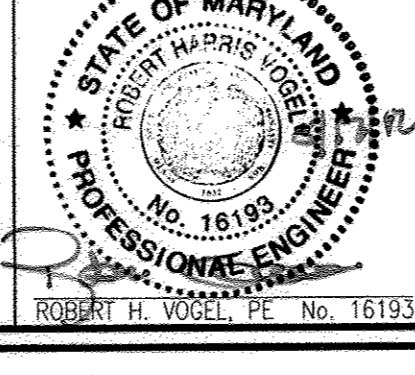


Howard County, Maryland Department of Public Works	WATER SERVICE CONNECTION 3", 4", 6", 8", 10", & 12" Inside Meter Settings	Detail W-3.24
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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

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FAX: 410.461.8911



PROFESSIONAL CERTIFICATE I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME OR BY A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2012	4 AS-BUILTS 3 RELOCATE 6" WHC FOR PROPOSED BUILDING 'A' 2 REVISE SEWER CONNECTION SIZE ON THE PLAN VIEW TO MATCH THE SDP AND PROFILE.	6/20/12 06/05/13 10/18/12
DES: DZ DRN: DZ W/O NO.: 05-52 CHK: RHV DATE: MAY 2012	1 MODIFIED DESIGN PER CHANGES TO SDP-07-102	05/16/12
NO.	REVISION	DATE

**FINAL WATER & SEWER PLAN
PLAN VIEW**

600' SCALE MAP NO. 37
BLOCK NO. 1&7

DEVELOPER
WATERLOO LAND NO. 1, LLC
301 TRANSYLVANIA AVE
RALEIGH, NC 27609
(919) 789-9289

WATERLOO LAND NO. 2, LLC
301 TRANSYLVANIA AVE
RALEIGH, NC 27609
(919) 789-9289

**WATERLOO CROSSING
PARCEL A
CONTRACT 14-4488-D**

TAX MAP 37 PARCEL 1&7
6TH ELECTION DISTRICT

PARCEL 548 AND 227
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 2

SDP-07-102