

BILL OF MATERIALS				
ITEM	AS-BUILT			
	ESTIMATED QUANTITY	QUANTITY	MATERIALS	MANUFACTURER
4" SDR 35 PVC SEWER	27 LF	27 L.F.		NATIONAL PIPE
2" TYPE-K COPPER WATER	100 LF	47 L.F.		CAMBRIDGE LEE
10" PVC C900 DR-18 WATER	1075 LF	1075 L.F.		NATIONAL PIPE
8" PVC C900 DR-18 WATER	548 LF	430 L.F.		NATIONAL PIPE
6" PVC C900 DR-18C WATER	113 LF	109 L.F.		NATIONAL PIPE
8" X 8" TAPPING SLEEVE & VALVE	1 EA	1 EA.		FORD METER BOX
10" 1/8 HORIZONTAL BEND	6 EA	6 EA.		TYLER UNION
10" 1/16 HORIZONTAL BEND	2 EA	2 EA.		TYLER UNION
10" 1/32 HORIZONTAL BEND	1 EA	1 EA.		TYLER UNION
10" 1/16 VERTICAL BEND	2 EA	6 EA.		TYLER UNION
10" HIGH DEFLECTION COUPLING	5 EA	5 EA.		NORTH AMERICAN SPECIALTY
8" HIGH DEFLECTION COUPLING	4 EA	4 EA.		NORTH AMERICAN SPECIALTY
8" 1/8 HORIZONTAL BEND	1 EA	3 EA.		TYLER UNION
10" X 6" TEE	6 EA	6 EA.		FORD METER BOX
10" X 2" SADDLE	1 EA	1 EA.		TYLER UNION
10" X 8" REDUCER	2 EA	2 EA.		TYLER UNION
8" CAP AND BUTTRISS	1 EA	1 EA.		TYLER UNION
6" CAP AND BUTTRISS	1 EA	1 EA.		AMERICAN FLOW CONTROL
6" VALVE	5 EA	6 EA.		AMERICAN FLOW CONTROL
8" VALVE	1 EA	1 EA.		AMERICAN FLOW CONTROL
10" VALVE	3 EA	3 EA.		AMERICAN FLOW CONTROL
2" METER VAULT	1 EA	1 EA.		A Y MC DONALD
FIRE HYDRANT	4 EA	4 EA.		AMERICAN FLOW CONTROL
NAME OF UTILITY CONTRACTOR: HARLAND SHOEMAKER & SON				

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 MARCH 2008 BY WHITMAN, REQUARDT & ASSOCIATES. ADDITIONAL UTILITY INFORMATION WAS PROVIDED BY HOWARD COUNTY RECORD AND MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION.
- THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM MAD '83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 30HA AND NO. 36BC.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD '88 AS WELL AS THE HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 30HA AND NO. 36BC.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- SEDIMENT CONTROL MEASURES FOR THIS CONTRACT SHALL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE DESIGN MANUAL VOLUME IV AND AS SHOWN ON CAPITAL PROJECT# N-3965 SEDIMENT CONTROL DRAWINGS.
- 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.

ENGINEER'S CERTIFICATION

"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Anthony U. Olson 2/20/17
 SIGNATURE OF ENGINEER DATE
 (PRINT NAME BELOW SIGNATURE)

DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

John L. Blanton 3/22/17
 SIGNATURE OF DEVELOPER DATE
 (PRINT NAME BELOW SIGNATURE)

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

John L. Blanton 3/22/17
 HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE: 3/15/17
 CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND
 DATE: 11/29/17
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

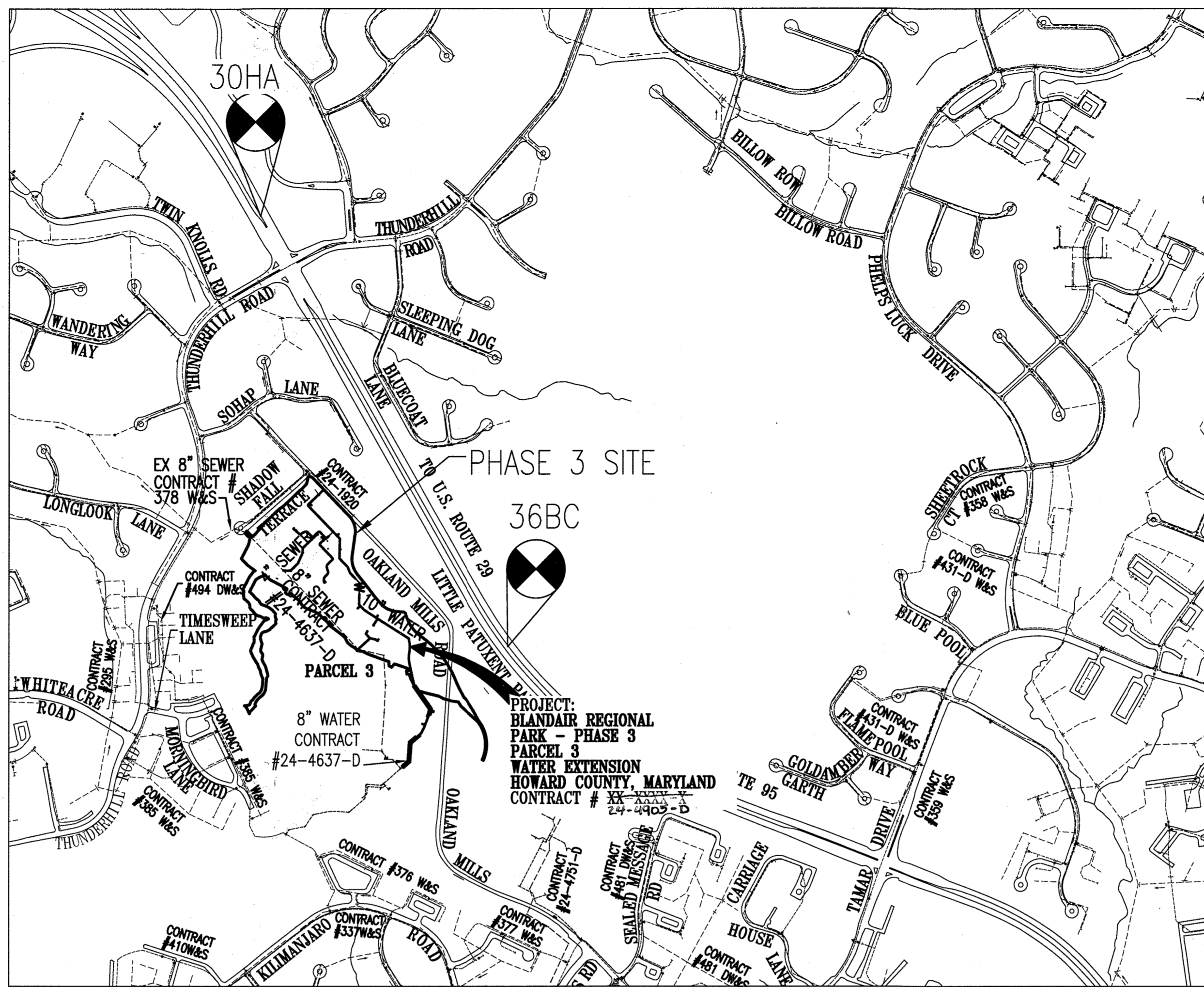
PREPARED BY:
WRA
 Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

DES: BWJ	
DRN: AKC	
CHK: AUO	
DATE: 02/02/2017	
BY NO.	
REVISION	
DATE	

VICINITY MAP, TITLE, BILL OF MATERIALS, SHEET INDEX

BLANDAIR PHASE 3
 WATER AND SEWER EXTENSION
 CONTRACT NO. 24-4905-D
 ELECTION DISTRICT 5
 HOWARD COUNTY, MARYLAND

DWG. WSO.1
 SCALE AS SHOWN
 SHEET 1 OF 3



SITE INFORMATION

BUILDING TYPE(S): COMFORT STATION AND MAINTENANCE BUILDING
 NO. OF LOTS: 1
 NO. OF WATER HOUSE CONNECTIONS: 2
 NO. OF SEWER HOUSE CONNECTIONS: 2
 DRAINAGE AREA: LITTLE PATUXENT
 TREATMENT PLANT: LITTLE PATUXENT WASTEWATER RECLAMATION PLANT
 SITE AREA: 14.03 AC
 WATER ZONE: 550
 WATER TEST GRADIENT: 700

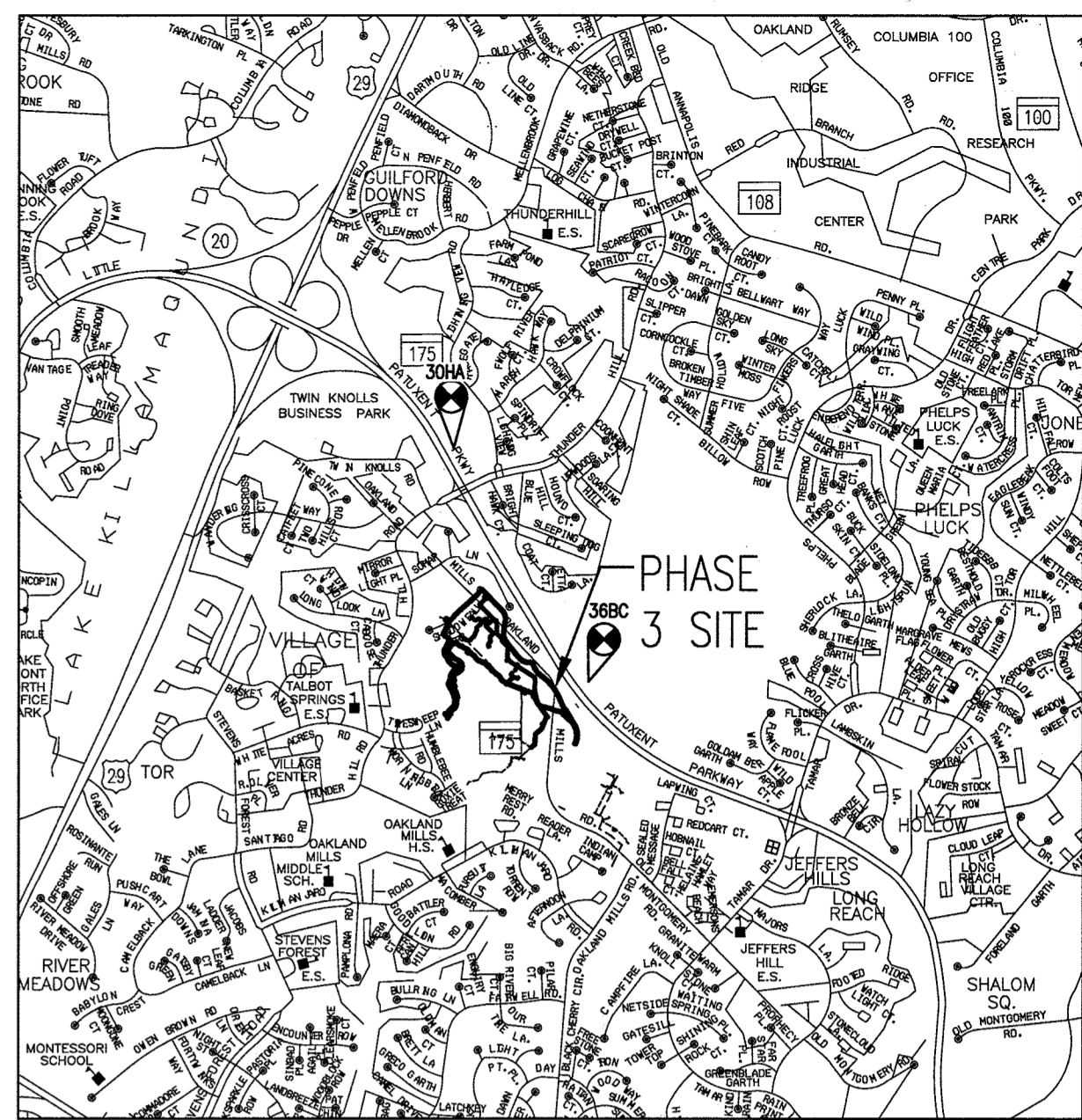
LOCATION MAP
 1" = 600'

BENCHMARK DATA

30HA: N 566030.6258, E 1357989.5444, ELEV. 386.983
 36BC: N 563264.1261, E 1359585.7197, ELEV. 409.981

LIST OF DRAWINGS

- WSO.1 VICINITY MAP, TITLE, BILL OF MATERIALS, SHEET INDEX
- WSO.2 WATER AND SEWER PLAN
- WSO.3 WATER AND SEWER PROFILES



COPYRIGHT ADC THE MAP PEOPLE
 PERMITTED USE NUMBER 21002217
VICINITY MAP
 1" = 2000'
 ADC MAP: 14 GRID: H6

GENERAL NOTES (CONTINUED)

- 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:
 - AT&T 1-800-252-1133
 - BGE (CONSTRUCTION SERVICES) 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 TREE PROTECTION AREAS 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/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 SHALL BE PVC C-900 DR-18, UNLESS OTHERWISE NOTED.
 - TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF 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 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 STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
 - THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
 - TRACER WIRES 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 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

AS-BUILT

John L. Blanton Date: 11/21/17

WATER MAIN EXTENSION STAKEOUT

FIRE HYDRANT AND WHC STAKEOUT

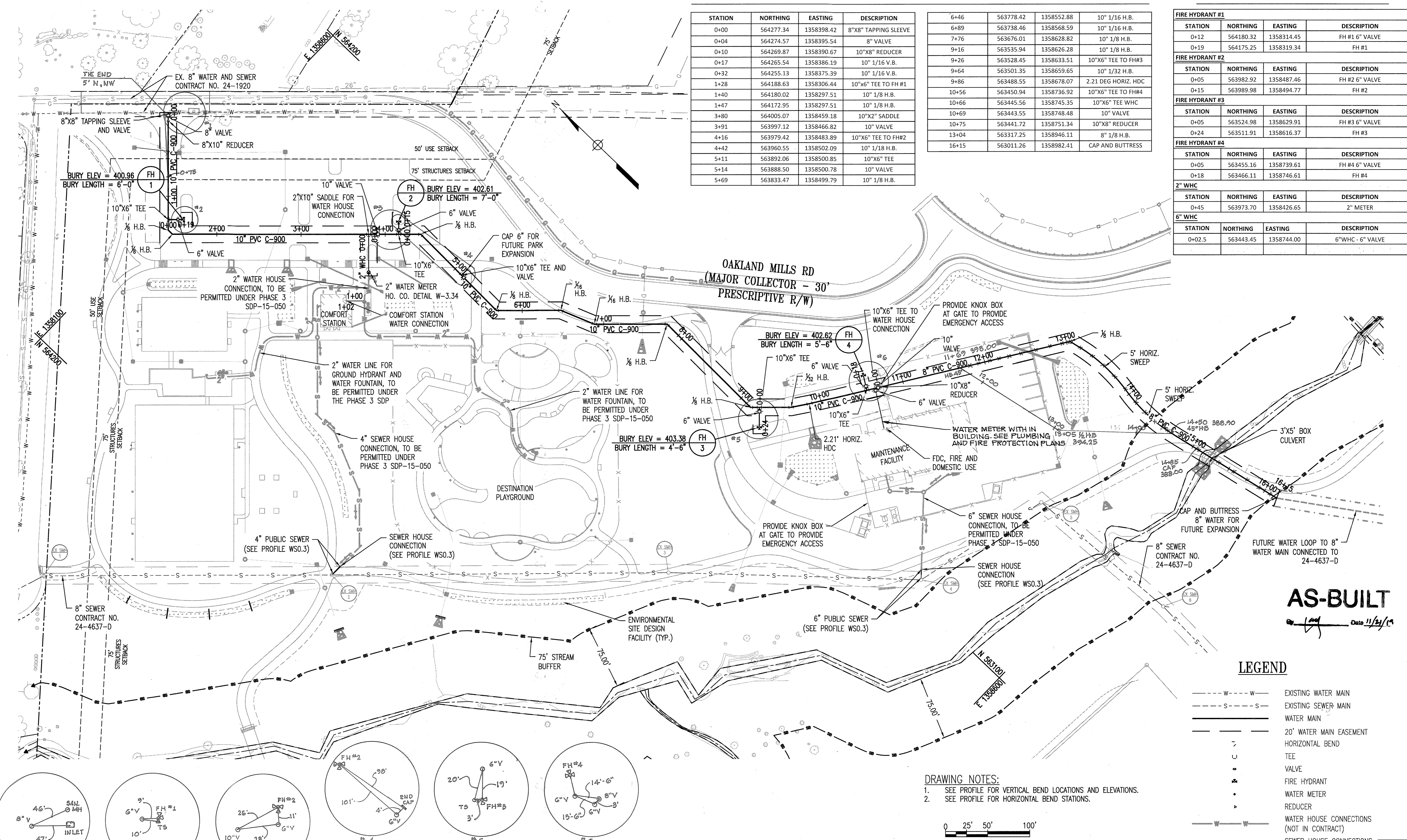
STATION	NORTHING	EASTING	DESCRIPTION
0+00	564277.34	1358398.42	8"X8" TAPPING SLEEVE
0+04	564274.57	1358395.54	8" VALVE
0+10	564269.87	1358390.67	10"X8" REDUCER
0+17	564265.54	1358386.19	10" 1/16 V.B.
0+32	564255.13	1358375.39	10" 1/16 V.B.
1+28	564188.63	1358306.44	10"X6" TEE TO FH#1
1+40	564180.02	1358297.51	10" 1/8 H.B.
1+47	564172.95	1358297.51	10" 1/8 H.B.
3+80	564005.07	1358459.18	10"X2" SADDLE
3+91	563997.12	1358466.82	10" VALVE
4+16	563979.42	1358483.89	10"X6" TEE TO FH#2
4+42	563960.55	1358502.09	10" 1/18 H.B.
5+11	563892.06	1358500.85	10"X6" TEE
5+14	563888.50	1358500.78	10" VALVE
5+69	563833.47	1358499.79	10" 1/8 H.B.

6+46	563778.42	1358552.88	10" 1/16 H.B.
6+89	563738.46	1358568.59	10" 1/16 H.B.
7+76	563676.01	1358628.82	10" 1/8 H.B.
9+16	563535.94	1358626.28	10" 1/8 H.B.
9+26	563528.45	1358633.51	10"X6" TEE TO FH#3
9+64	563501.35	1358659.65	10" 1/32 H.B.
9+86	563488.55	1358678.07	2.21 DEG HORIZ. HDC
10+56	563450.94	1358736.92	10"X6" TEE TO FH#4
10+66	563445.56	1358745.35	10"X6" TEE WHC
10+69	563443.55	1358748.48	10" VALVE
10+75	563441.72	1358751.34	10"X8" REDUCER
13+04	563317.25	1358946.11	8" 1/8 H.B.
16+15	563011.26	1358982.41	CAP AND BUTTRESS

FIRE HYDRANT #1			
STATION	NORTHING	EASTING	DESCRIPTION
0+12	564180.32	1358314.45	FH #1 6" VALVE
0+19	564175.25	1358319.34	FH #1
FIRE HYDRANT #2			
STATION	NORTHING	EASTING	DESCRIPTION
0+05	563982.92	1358487.46	FH #2 6" VALVE
0+15	563989.98	1358494.77	FH #2
FIRE HYDRANT #3			
STATION	NORTHING	EASTING	DESCRIPTION
0+05	563524.98	1358629.91	FH #3 6" VALVE
0+24	563511.91	1358616.37	FH #3
FIRE HYDRANT #4			
STATION	NORTHING	EASTING	DESCRIPTION
0+05	563455.16	1358739.61	FH #4 6" VALVE
0+18	563466.11	1358746.61	FH #4

2" WHC			
STATION	NORTHING	EASTING	DESCRIPTION
0+45	563973.70	1358426.65	2" METER

6" WHC			
STATION	NORTHING	EASTING	DESCRIPTION
0+02.5	563443.45	1358744.00	6"WHC - 6" VALVE

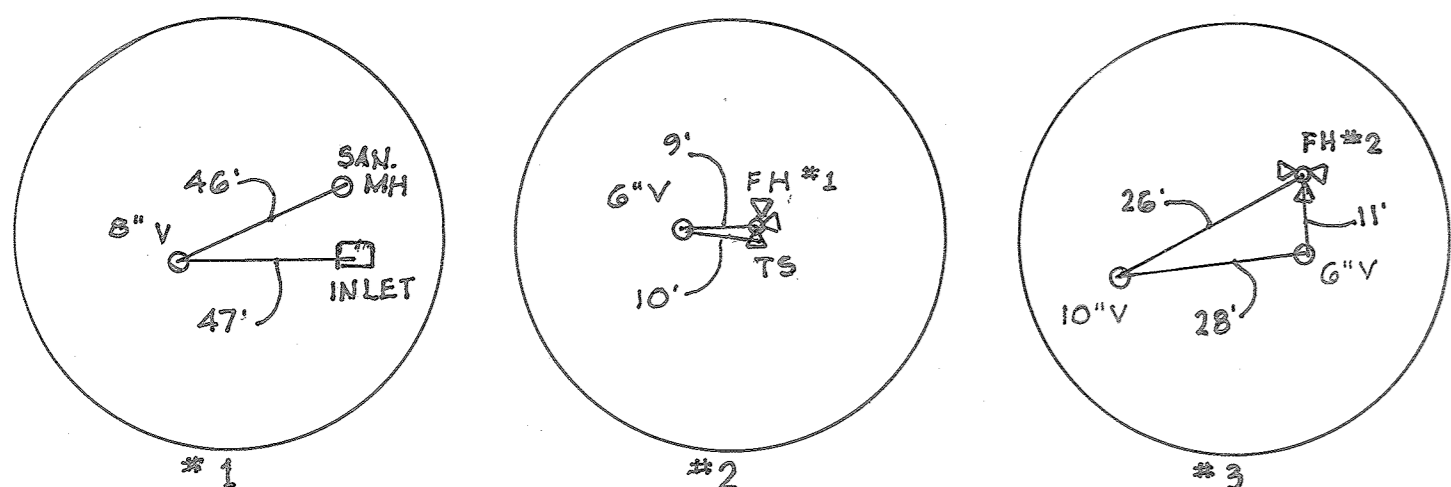
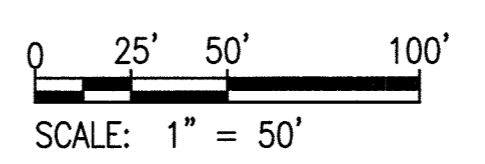


AS-BUILT
Date 11/21/17

LEGEND

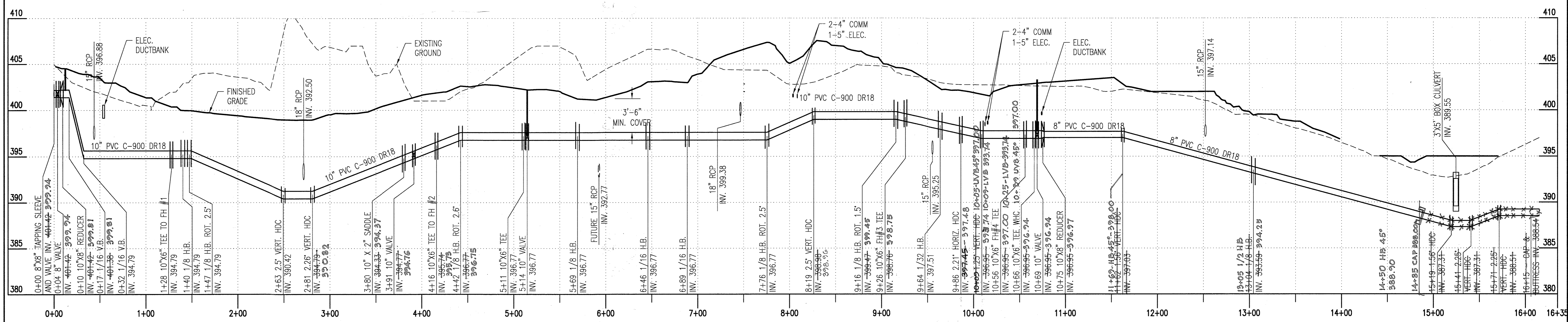
- W --- W --- EXISTING WATER MAIN
- S --- S --- EXISTING SEWER MAIN
- — — — — WATER MAIN
- — — — — 20" WATER MAIN EASEMENT
- — — — — HORIZONTAL BEND
- — — — — TEE
- — — — — VALVE
- — — — — FIRE HYDRANT
- — — — — WATER METER
- — — — — REDUCER
- — — — — WATER HOUSE CONNECTIONS (NOT IN CONTRACT)
- — — — — SEWER HOUSE CONNECTIONS (NOT IN CONTRACT)
- — — — — STORM DRAIN

DRAWING NOTES:
1. SEE PROFILE FOR VERTICAL BEND LOCATIONS AND ELEVATIONS.
2. SEE PROFILE FOR HORIZONTAL BEND STATIONS.



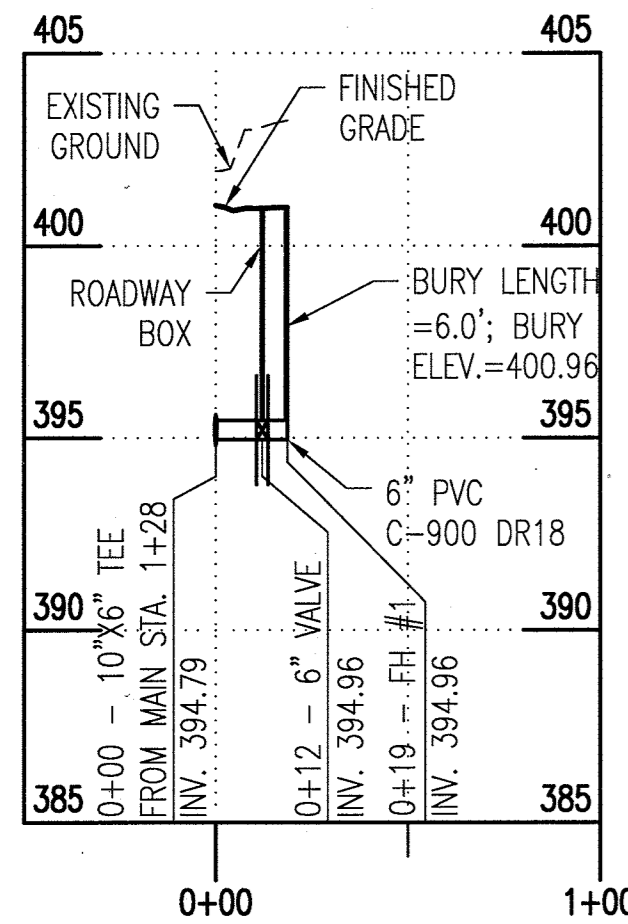
"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376, EXPIRATION DATE: 9/22/2017."

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Chief, Bureau of Utilities 3/15/18	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND Chief, Development Engineering Division 1/29/17	PREPARED BY: WRA Whitman, Requardt & Associates, LLP 801 South Caroline Street, Baltimore, Maryland 21231	DES: BWJ DRN: AKC CHK: AUO DATE: 02/02/2017	BY: NO. _____ REVISION _____ DATE _____	TAX MAP 36, GRID 5, PARCEL 3, 72	ELECTION DISTRICT 5	BLANDAIR PHASE 3 WATER AND SEWER EXTENSION CONTRACT NO. 24-4905-D HOWARD COUNTY, MARYLAND	DWG. WSO.2
								SCALE AS SHOWN SHEET 2 OF 3



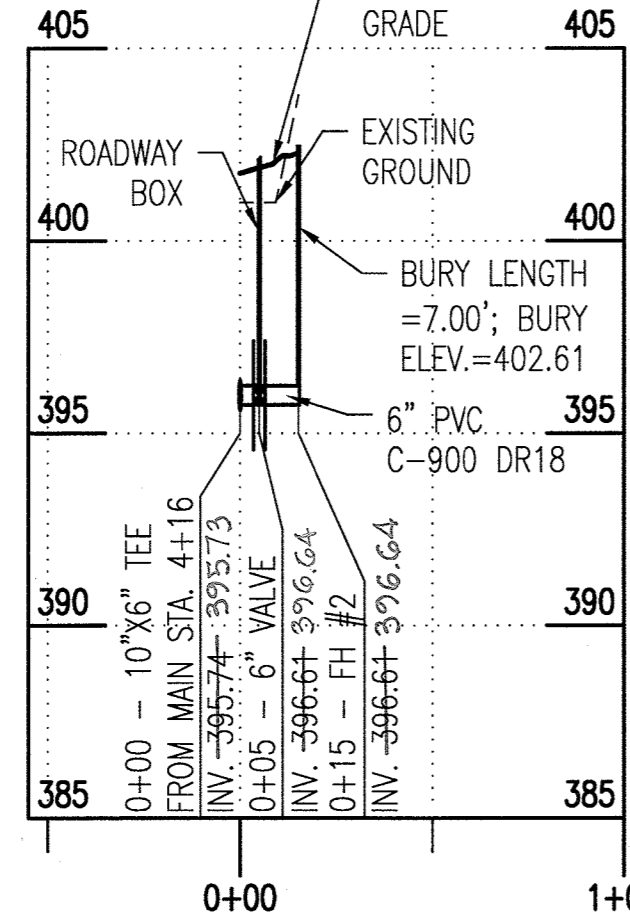
WATERLINE PROFILE "WATER MAIN EXTENSION"

SCALE: 1" = 50' HORIZ.
1" = 5' VERT.



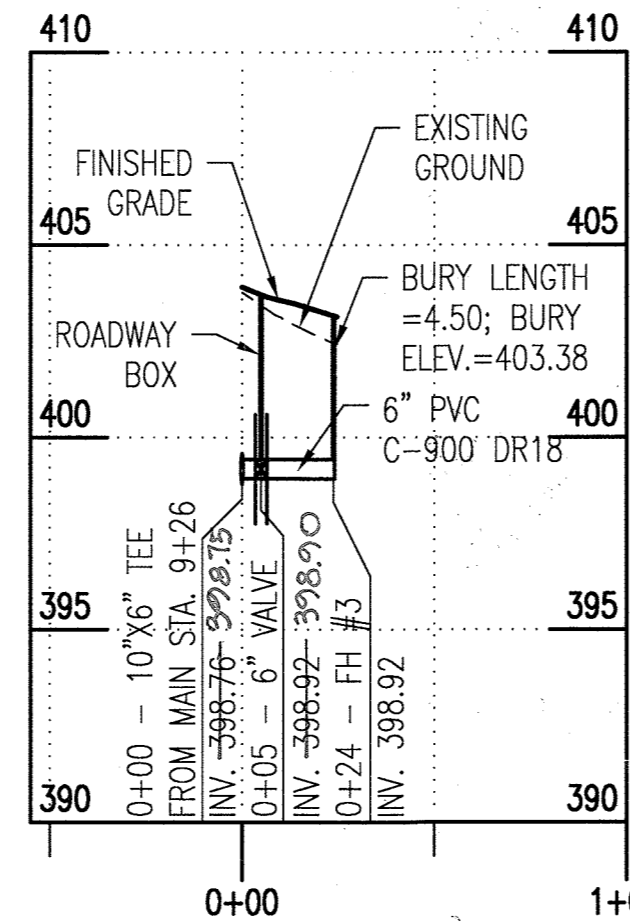
WATERLINE PROFILE "FH #1"

SCALE: 1" = 50' HORIZ.
1" = 5' VERT.



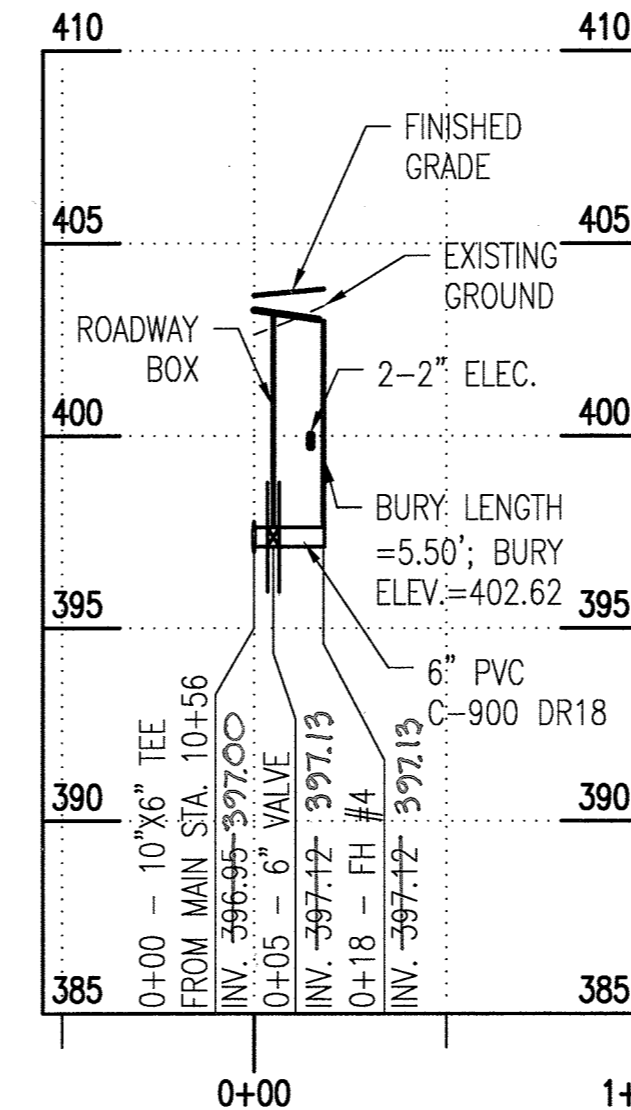
WATERLINE PROFILE "FH #2"

SCALE: 1" = 50' HORIZ.
1" = 5' VERT.



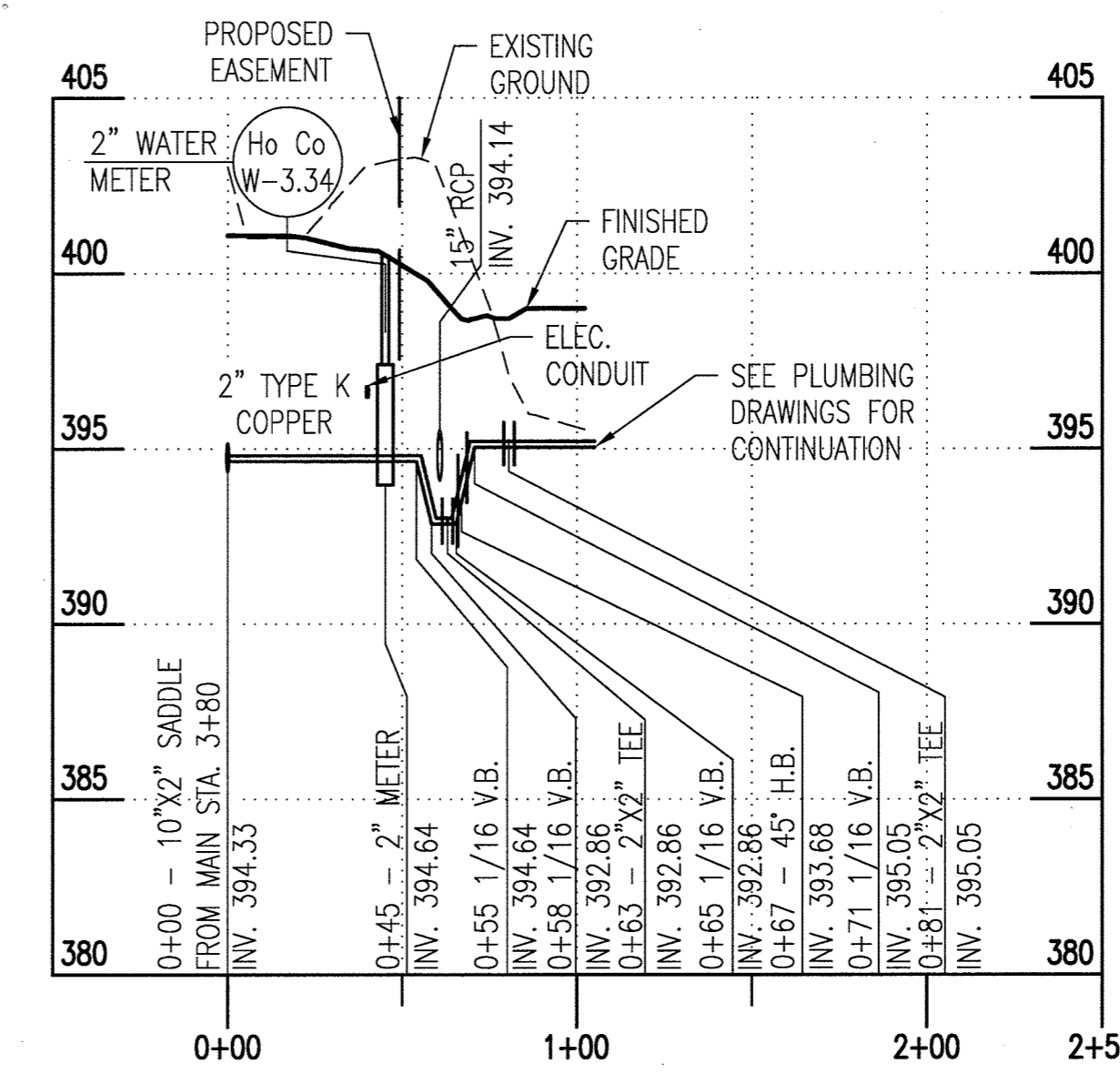
WATERLINE PROFILE "FH #3"

SCALE: 1" = 50' HORIZ.
1" = 5' VERT.



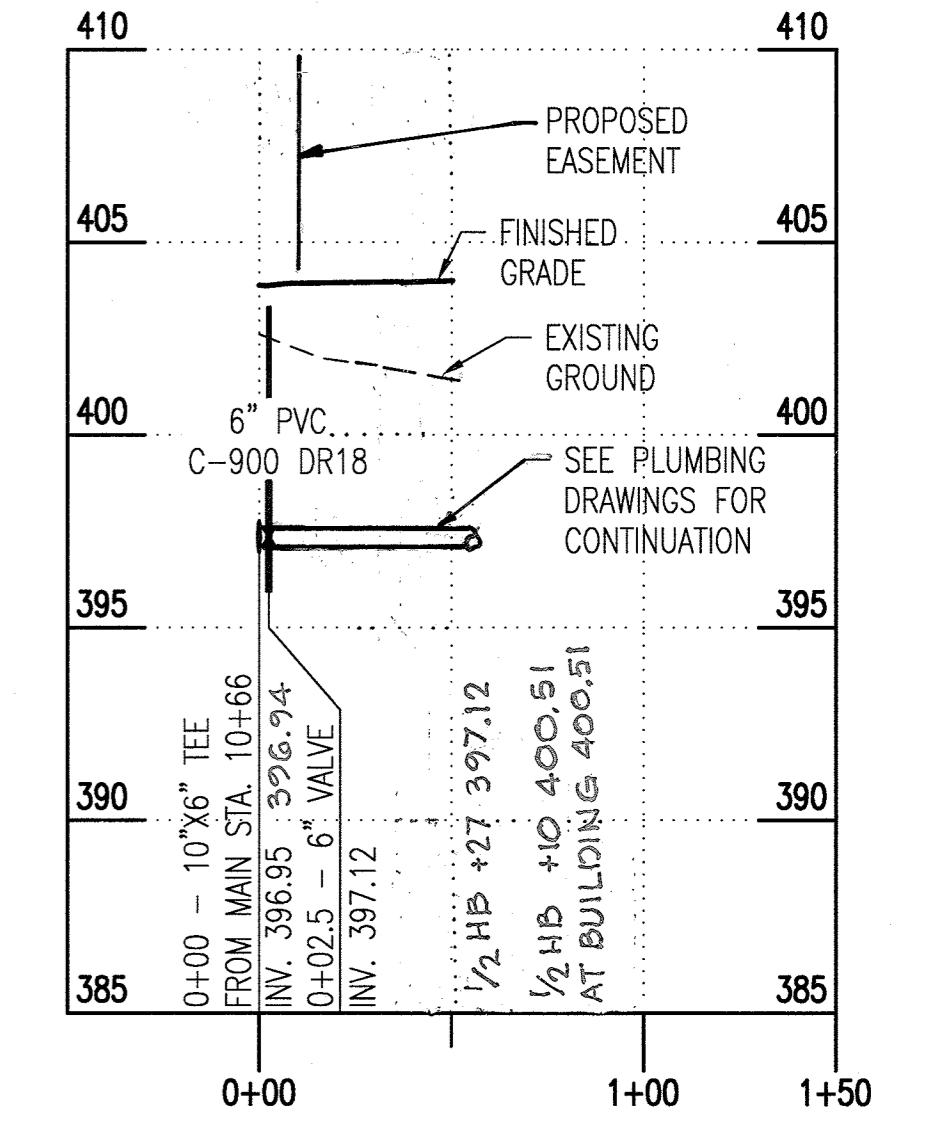
WATERLINE PROFILE "FH #4"

SCALE: 1" = 50' HORIZ.
1" = 5' VERT.



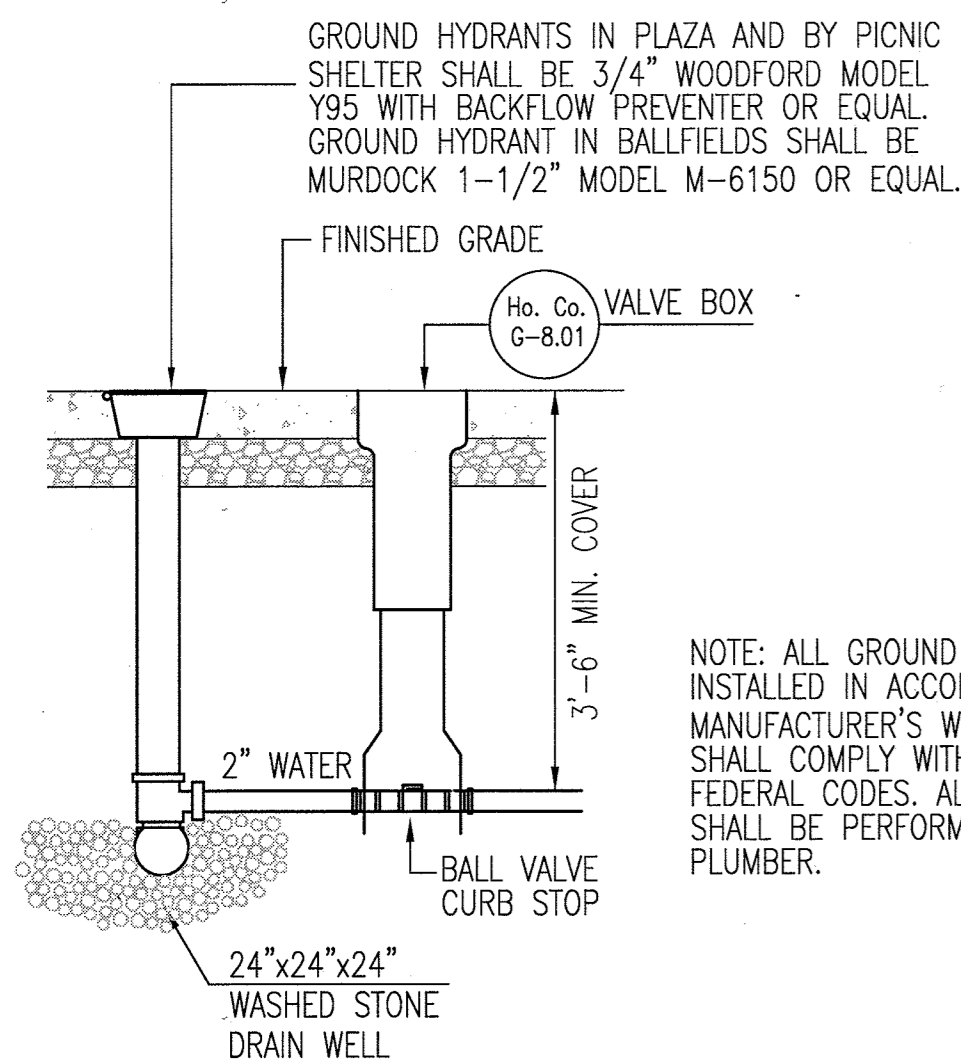
WATERLINE PROFILE "2 IN WHC"

SCALE: 1" = 50' HORIZ.
1" = 5' VERT.



WATERLINE PROFILE "6 IN WHC"

SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

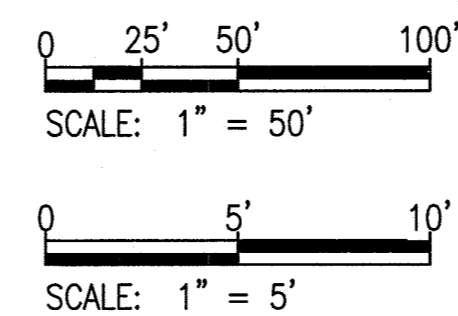


A GROUND HYDRANT
WSO.4 NOT TO SCALE

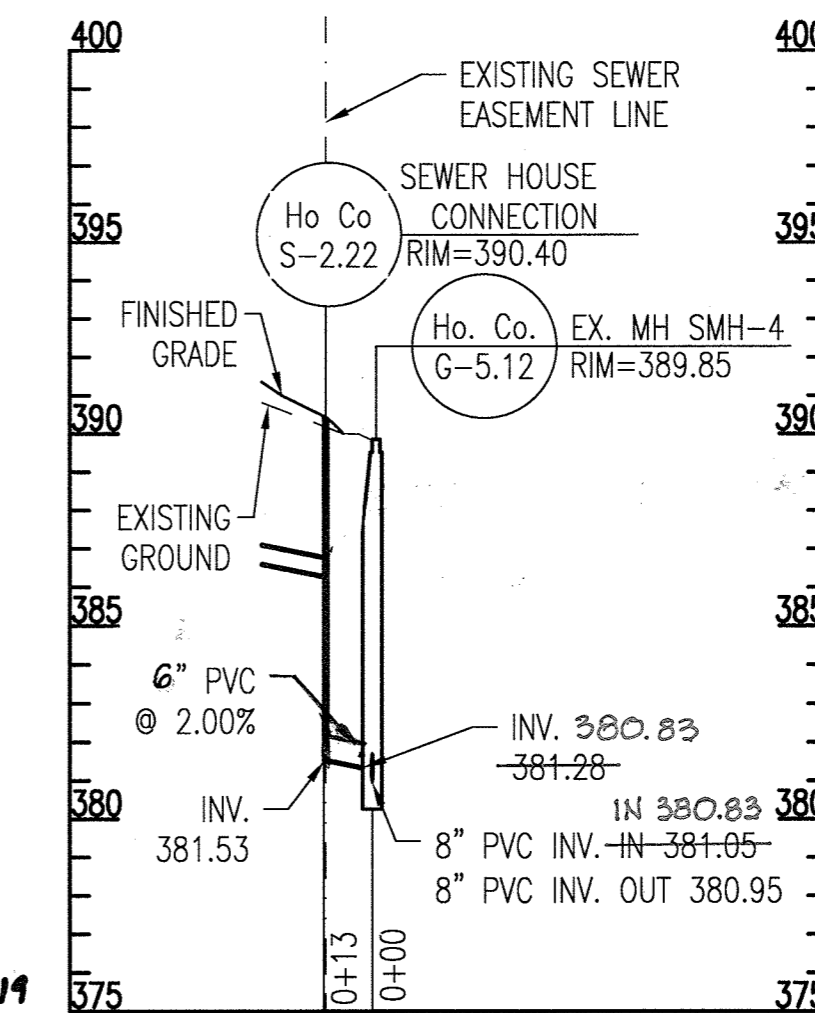
NOTE: ALL GROUND HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL CODES. ALL WATER CONNECTIONS SHALL BE PERFORMED BY A QUALIFIED PLUMBER.

NOTES:

1. ALL STATIONING IS BASED ON WATERLINE STATIONING. AS SHOWN ON WSO.2

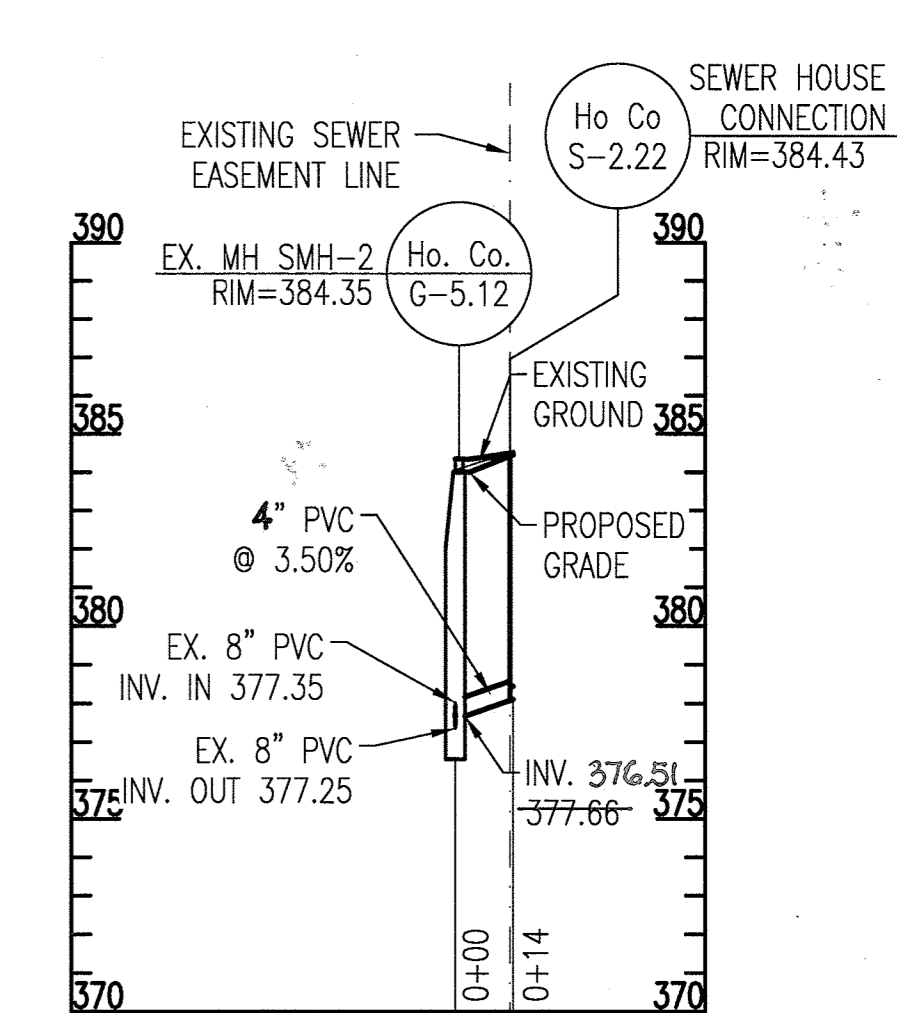


AS-BUILT



EX. SMH 4 PUBLIC SEWER PROFILE

SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

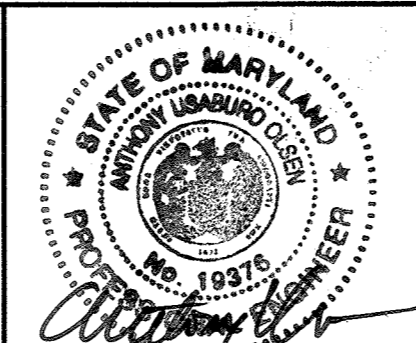


EX. SMH 2 PUBLIC SEWER PROFILE

SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

"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. 19376, EXPIRATION DATE: 9/22/2017."

PREPARED BY:
WRA
Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



DES: BWJ	
DRN: AKC	
CHK: AUO	
DATE: 02/02/2017	
BY NO.	
REVISION	
DATE	

WATER AND SEWER PROFILE

TAX MAP 36, GRID 5, PARCEL 3, 72

ELECTION DISTRICT 5

**BLANDAIR PHASE 3
WATER AND SEWER EXTENSION
CONTRACT NO. 24-4905-D**

HOWARD COUNTY, MARYLAND

DWG. **WSO.3**

SCALE AS SHOWN
SHEET 3 OF 3

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Steve C...
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
...
CHIEF, DEVELOPMENT ENGINEERING DIVISION