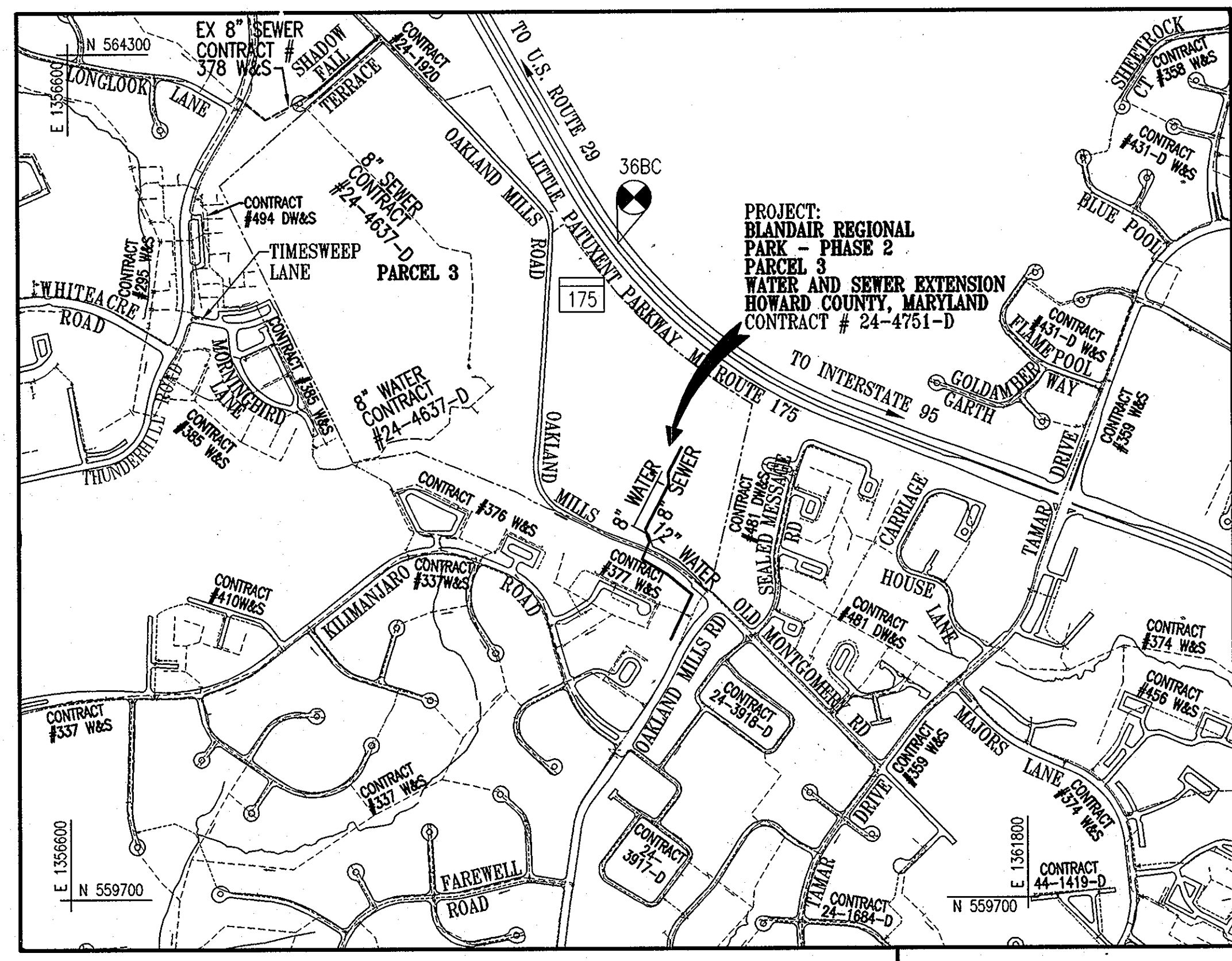


BILL OF MATERIALS				
ITEM	ESTIMATED QUANTITY	AS-BUILT		
		QUANTITY	MATERIALS	MANUFACTURER
12" PVC WATER	556 LF			
8" PVC WATER	416 LF			
6" PVC WATER	57 LF			
2-1/2" COPPER WATER	201 LF			
2" COPPER WATER	274 LF			
1" COPPER WATER	40 LF			
12"x12" TAPPING SLEEVE	1 EA			
12" 1/8 BEND	2 EA			
12" 1/16 BEND	5 EA			
2-1/2" 1/8 BEND	4 EA			
2" 1/8 BEND	4 EA			
12" X 8" TEE	2 EA			
8" X 2-1/2" SADDLE	1 EA			
2-1/2" X 2" TEE	3 EA			
8" X 6" TEE	2 EA			
2" X 1" TEE	7 EA			
12" VALVE	2 EA			
8" VALVE	3 EA			
6" VALVE	2 EA			
2" METER VAULT	1 EA			
2 1/2" CURB STOP & VALVE BOX	1 EA			
1" CURB STOP & VALVE BOX	7 EA			
WATER FOUNTAIN	3 EA			
GROUND HYDRANT	4 EA			
12" RESTRAINED CAP	1 EA			
8" CAP AND BUTTRESS	2 EA			
FIRE HYDRANT	2 EA			
8" PVC SEWER	706 LF			
4" PVC SEWER	566 LF			
48" DIA. DOGHOUSE MANHOLE	1 EA			
48" I.D. PRECAST MANHOLE < 6'	8 EA			
48" DIA. MANHOLE ADDITIONAL DEPTH > 6'	16 VF			

NAME OF UTILITY CONTRACTOR:



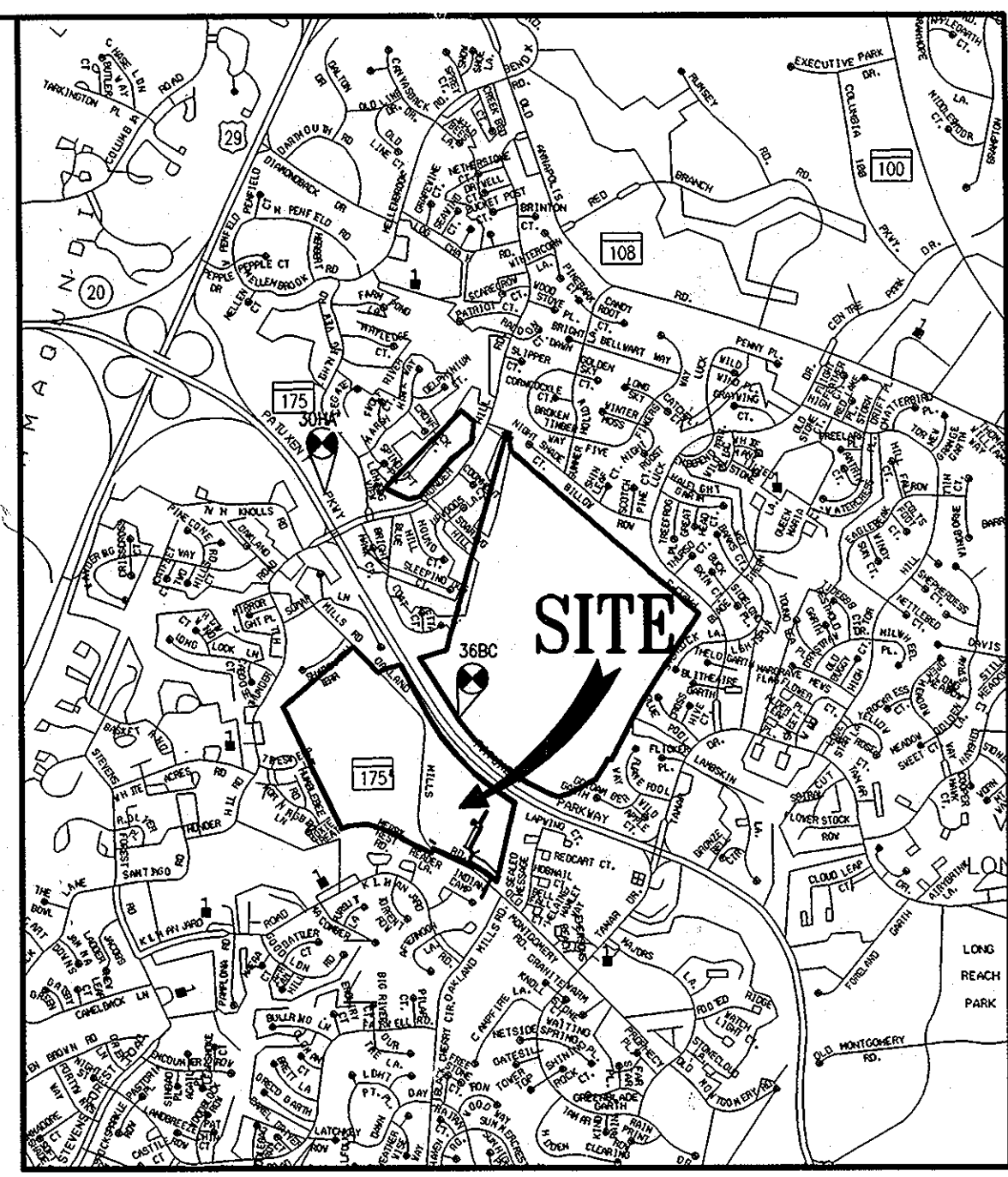
TYPE OF BUILDING: COMFORT STATION  
 NUMBER OF PARCELS: 1  
 WATER HOUSE CONNECTIONS: 1  
 SEWER HOUSE CONNECTIONS: 1  
 DRAINAGE AREA: LITTLE PATUXENT  
 TREATMENT PLANT: LITTLE PATUXENT  
 WASTEWATER RECLAMATION PLANT  
 WATER ZONE: 55  
 WATER TEST GRADIENT: 700

**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
- WSO.4 WATER PROFILES AND DETAILS



ADC MAP: 4935  
 GRID: 67  
**VICINITY MAP**  
 1" = 2000'

**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, LLP.
- 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 NO. 30HA AND NO. 36BC. ALL VERTICAL CONTROLS ARE BASED ON NAVD '83. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE REBAR AND CAP.
- 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 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) 410-850-4620  
 BGE (UNDERGROUND DAMAGE CONTROL) 410-787-9068  
 BUREAU OF UTILITIES 410-313-4900  
 COLONIAL PIPELINE 410-795-1900  
 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 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.

# BLANDAIR REGIONAL PARK PHASE 2 WATER AND SEWER EXTENSION CONTRACT NO. #24-4751-D HOWARD COUNTY, MARYLAND

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT SHALL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND AS SHOWN ON CAPITAL PROJECT# J-4237. SEDIMENT CONTROL DRAWINGS: SD-12-034 + SD-12-063

**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 Wills* 1/11/13  
 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.  
*Mark Kovach* 1/11/13  
 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 R. Roberts* 3/19/13  
 HOWARD SOIL CONSERVATION DISTRICT DATE

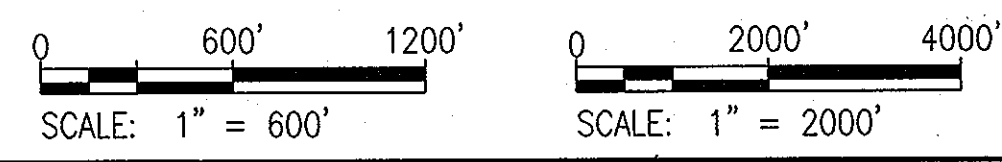
"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376, EXPIRATION DATE: 9/22/2013."  
*Anthony Wills*  
 PROFESSIONAL ENGINEER

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*Silvia C. Chen* 02/11/13  
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND  
*William J. ...* 02/11/13  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

PREPARED BY:  
 WHITMAN, REQUARDT & ASSOCIATES, LLP  
 801 South Caroline Street, Baltimore, MD 21231  
**WR&A**

DES: RBC  
 DRN: SAD  
 CHK: AUC  
 DATE: 1/11/2013  
 BY NO. REVISION DATE



VICINITY MAP, TITLE, BILL OF MATERIALS, SHEET INDEX

BLANDAIR REGIONAL PARK - PHASE 2  
 WATER AND SEWER EXTENSION  
 CONTRACT NO. 24-4751-D

ELECTION DISTRICT 3/7 HOWARD COUNTY, MARYLAND

DWG. **WSO.1**  
 SCALE AS SHOWN  
 SHEET 1 OF 4



**PUBLIC 12" WATER LINE STAKEOUT**

STA	NORTHING	EASTING	DESCRIPTION
0+00	561369.04	1360058.70	12"x12" TAPPING SLEEVE
0+04	561371.89	1360055.89	12" TAPPING VALVE
0+28	561389.00	1360039.06	12" 1/16 H.B.
0+58	561416.81	1360027.81	12" 1/16 H.B.
0+75	561428.79	1360016.02	12" VERTICAL HIGH DEFLECTION COUPLING
1+22	561462.42	1359982.93	12" HORIZONTAL HIGH DEFLECTION COUPLING
1+71	561462.42	1359982.93	12" HORIZONTAL HIGH DEFLECTION COUPLING
2+31	561536.48	1359903.13	12" 1/16 H.B.
3+28	561585.23	1359819.61	12" HORIZONTAL HIGH DEFLECTION COUPLING
3+85	561611.36	1359768.91	12" 1/8 H.B.
4+16	561641.16	1359759.43	12"x8" TEE
4+20	561645.86	1359758.94	12" 1/16 V.B.
4+48	561671.34	1359755.76	12" 1/16 V.B.
4+53	561676.10	1359748.31	12" 1/8 H.B.
5+46	561719.06	1359664.98	12" x 8" TEE
5+51	561721.46	1359660.33	12" VALVE
5+56	561723.69	1359656.02	12" RESTRAINED CAP

**PUBLIC 8" WATER LINE STAKEOUT**

STA	NORTHING	EASTING	DESCRIPTION
0+00	561719.06	1359664.98	12" x 8" TEE
0+05	561723.71	1359667.38	8" VALVE
0+28	561743.67	1359677.70	8" VERTICAL HIGH DEFLECTION COUPLING
0+96	561804.59	1359709.21	8" VERTICAL HIGH DEFLECTION COUPLING
2+78	561965.88	1359792.63	8" x 6" F.H. TEE
3+27	562009.73	1359815.31	8" x 2.5" SADDLE
3+33	562014.60	1359817.82	8" VALVE
3+36	562017.26	1359819.20	8" CAP & BUTTRESS

**FIRE HYDRANT #1 STAKEOUT**

STA	NORTHING	EASTING	DESCRIPTION
0+00	561641.16	1359759.43	12"x6" FH TEE
0+05	561642.61	1359764.22	8" VALVE
0+10	561644.13	1359768.98	8" VERTICAL HIGH DEFLECTION COUPLING
0+75	561663.86	1359830.97	8"x6" FH TEE

**FIRE HYDRANT #2 STAKEOUT**

STA	NORTHING	EASTING	DESCRIPTION
0+00	561965.88	1359792.63	8" x 6" FH TEE
0+05	561963.48	1359797.28	Ø 5.0" 6" VALVE
0+44	561945.70	1359831.73	Ø 44.0" FIRE HYDRANT 2

**PRIVATE WATER LINE STAKEOUT**

POINT	NORTHING	EASTING	DESCRIPTION
1	562001.32	1359831.47	2.5" 1/8 H.B.
2	562001.93	1359833.48	2.5" 1/8 H.B.
3	562017.55	1359841.56	2.5"x2" TEE
4	562047.75	1359857.18	2.5"x2" TEE
5	562110.52	1359889.64	2.5" 1/8 H.B.
6	562142.03	1359879.61	2.5" 1/8 H.B.
7	562146.48	1359881.91	2.5"x2" TEE
8	562153.80	1359842.24	2"x1" TEE
9	562183.74	1359810.31	TO WATER FOUNTAIN
10	562032.27	1359809.86	2" 1/8 H.B.
11	562024.12	1359787.49	2" 1/8 H.B.
12	562032.85	1359770.61	2"x1" TEE
13	562027.52	1359767.86	GROUND HYDRANT
14	562038.37	1359759.93	2"x1" TEE
15	562048.45	1359740.45	TO WATER FOUNTAIN
16	561997.41	1359954.50	2" 1/8 H.B.
17	561959.73	1359966.49	2" 1/8 H.B.
18	561958.28	1359969.30	WATER FOUNTAIN
19	561965.31	1359964.76	2" x 1" TEE
20	561968.15	1359973.70	1" 1/8 H.B.
21	561957.87	1359993.58	GROUND HYDRANT

**PUBLIC SEWER LINE STAKEOUT**

STRUCTURE	NORTHING	EASTING	DESCRIPTION
S-1	561103.45	1359865.17	SAN MANHOLE
S-2	561348.61	1359980.65	SAN MANHOLE
S-3	561457.35	1359849.98	SAN MANHOLE
S-4	561540.73	1359711.21	SAN MANHOLE
S-5	561635.44	1359750.76	SAN MANHOLE
S-6	561703.64	1359729.05	SAN MANHOLE
S-7	561950.74	1359856.85	SAN MANHOLE
S-8	562012.51	1359855.51	SAN MANHOLE
S-9	562147.98	1359825.57	SAN MANHOLE

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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Silvia C. Cream*  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*Michael M. ...*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

PREPARED BY:  
WHITMAN, REQUARDT & ASSOCIATES, LLP  
801 South Caroline Street, Baltimore, MD 21231

**WR&A**



DES:	CYH
DRN:	SAD
CHK:	AUO
DATE:	1/11/2013
BY:	NO.
REVISION:	
DATE:	

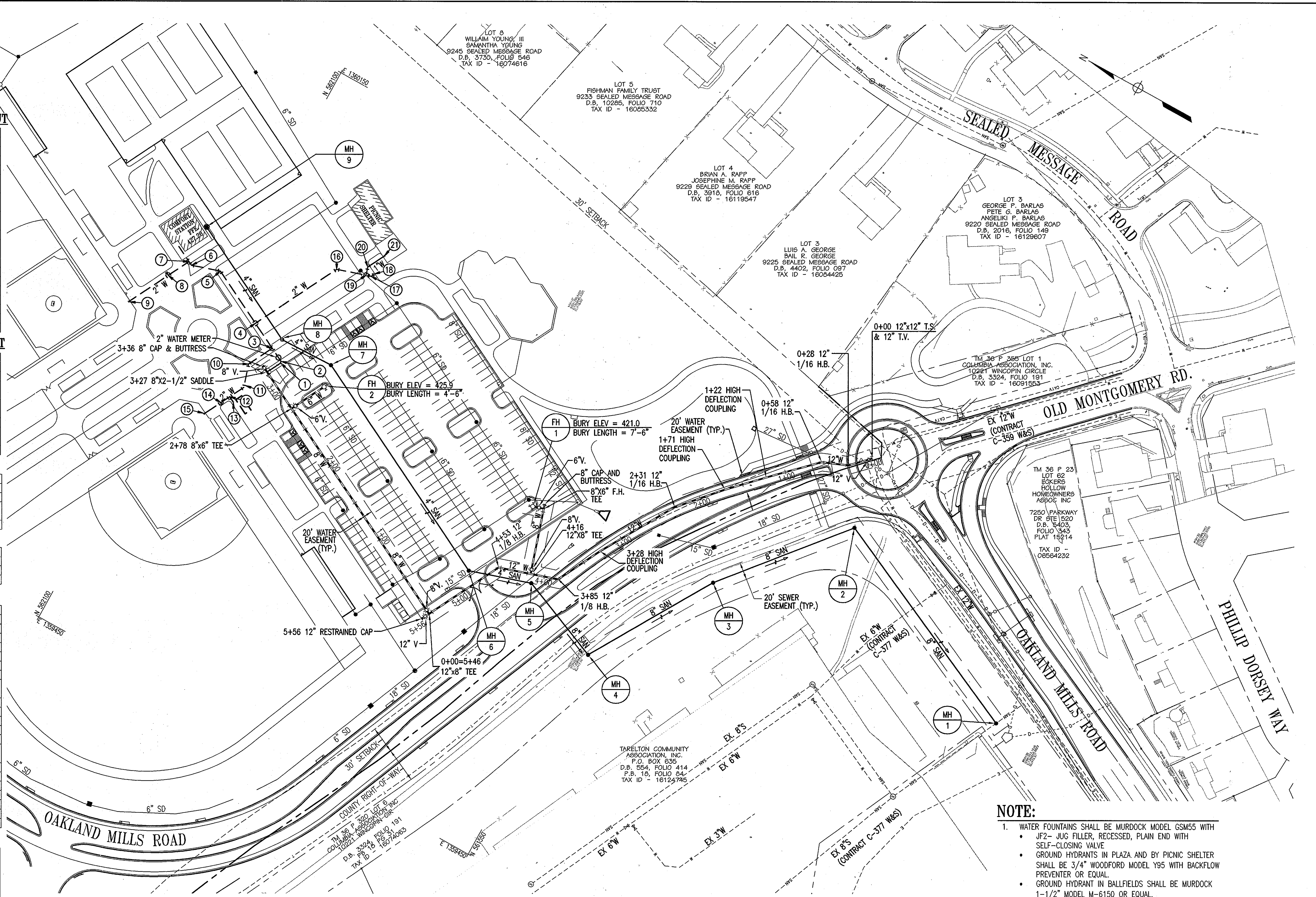
**WATER AND SEWER PLAN**

600' SCALE MAP NO. 36 BLOCK NO. 5

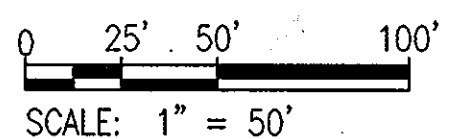
BLANDAIR REGIONAL PARK - PHASE 2  
WATER AND SEWER EXTENSION  
CONTRACT NO. 24-4751-D

ELECTION DISTRICT 3/7 HOWARD COUNTY, MARYLAND

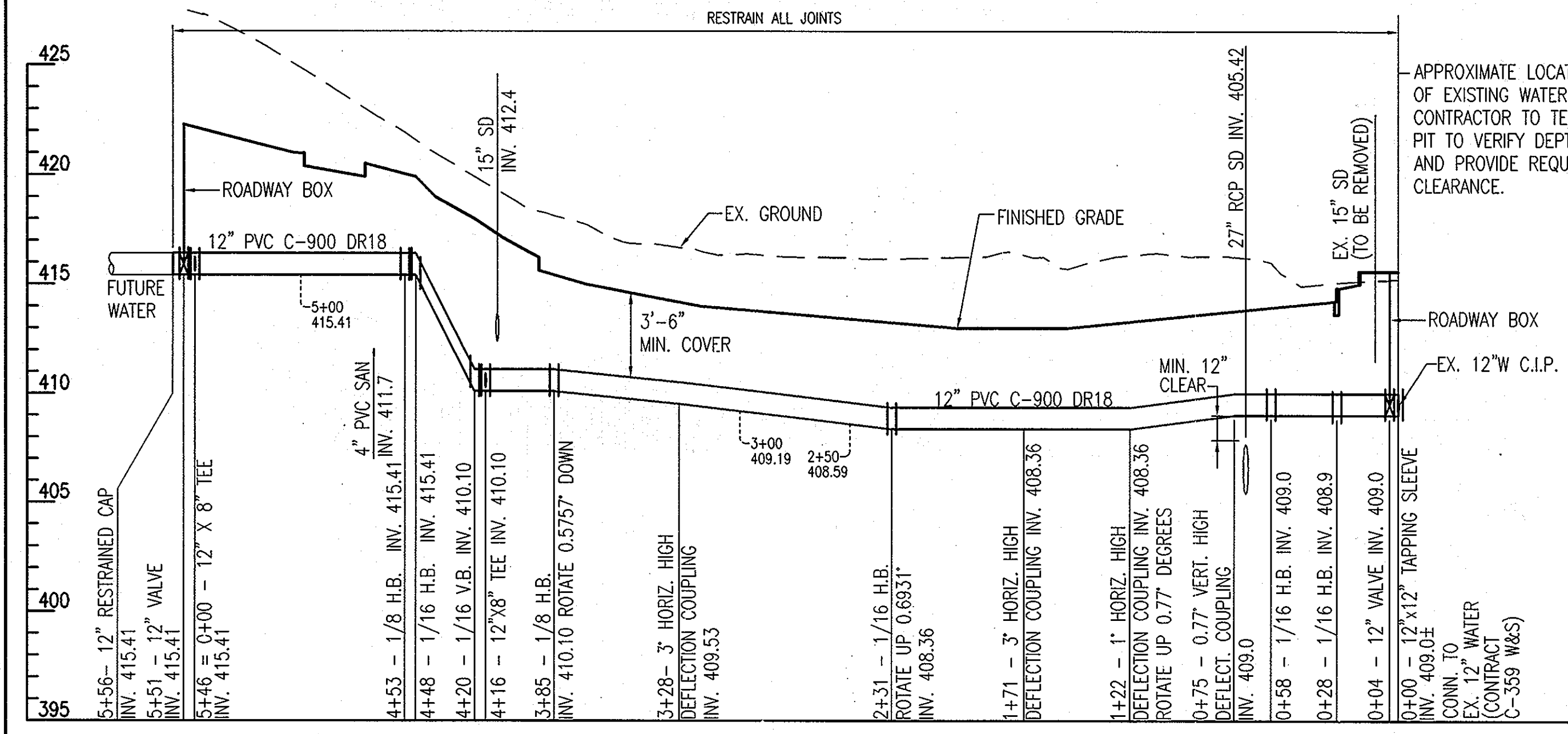
DWG. WSO.2  
SCALE AS SHOWN  
SHEET 2 OF 4



- NOTE:**
- WATER FOUNTAINS SHALL BE MURDOCK MODEL GSM55 WITH JF2- JUG FILLER, RECESSED, PLAIN END WITH SELF-CLOSING VALVE  
GROUND HYDRANTS IN PLAZA AND BY PICNIC SHELTER SHALL BE 3/4" WOODFORD MODEL Y95 WITH BACKFLOW PREVENTER OR EQUAL.  
GROUND HYDRANT IN BALLFIELDS SHALL BE MURDOCK 1-1/2" MODEL M-6150 OR EQUAL.
  - SEE DETAIL W-3.34 FOR THE 2" METER VAULT.

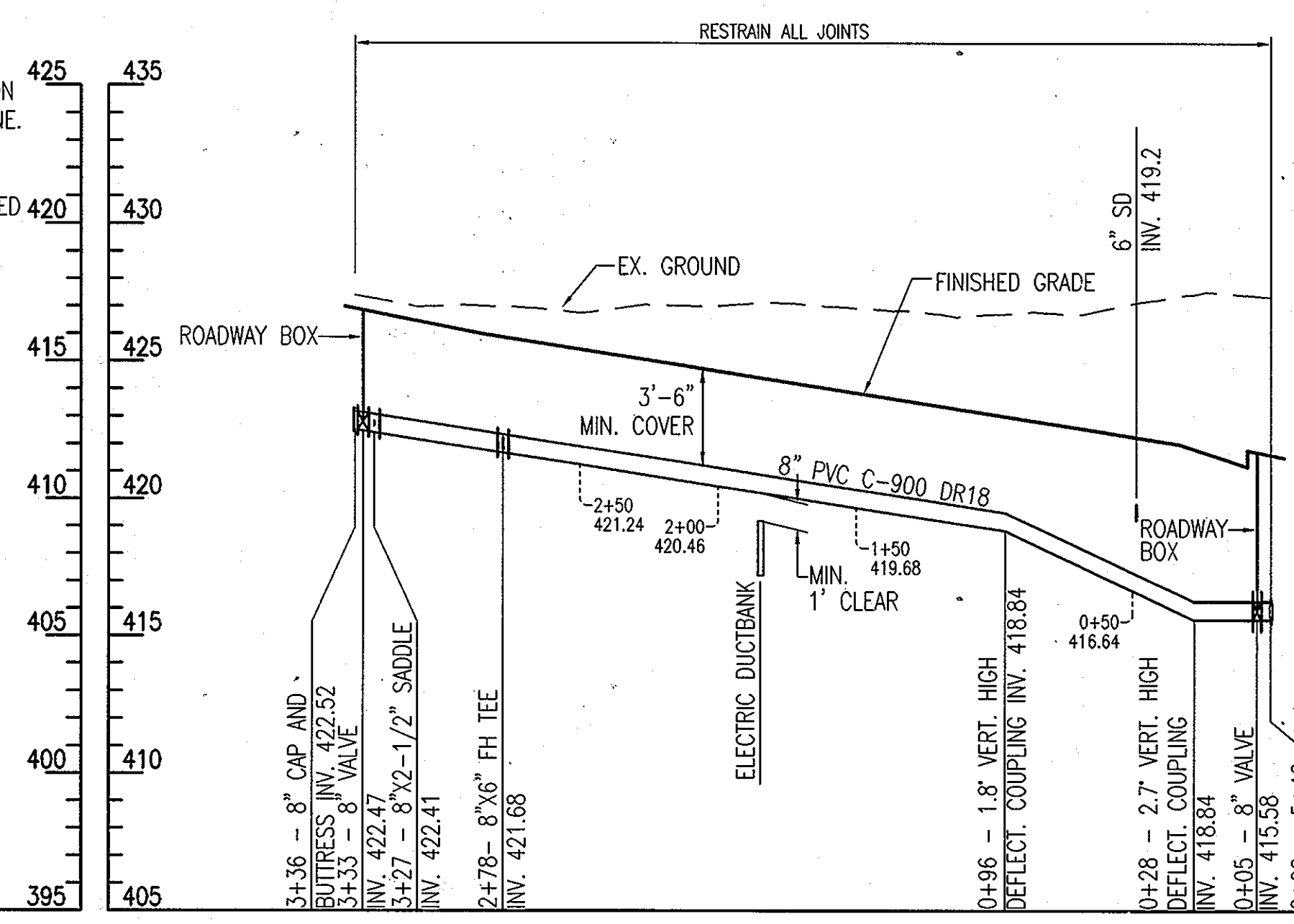






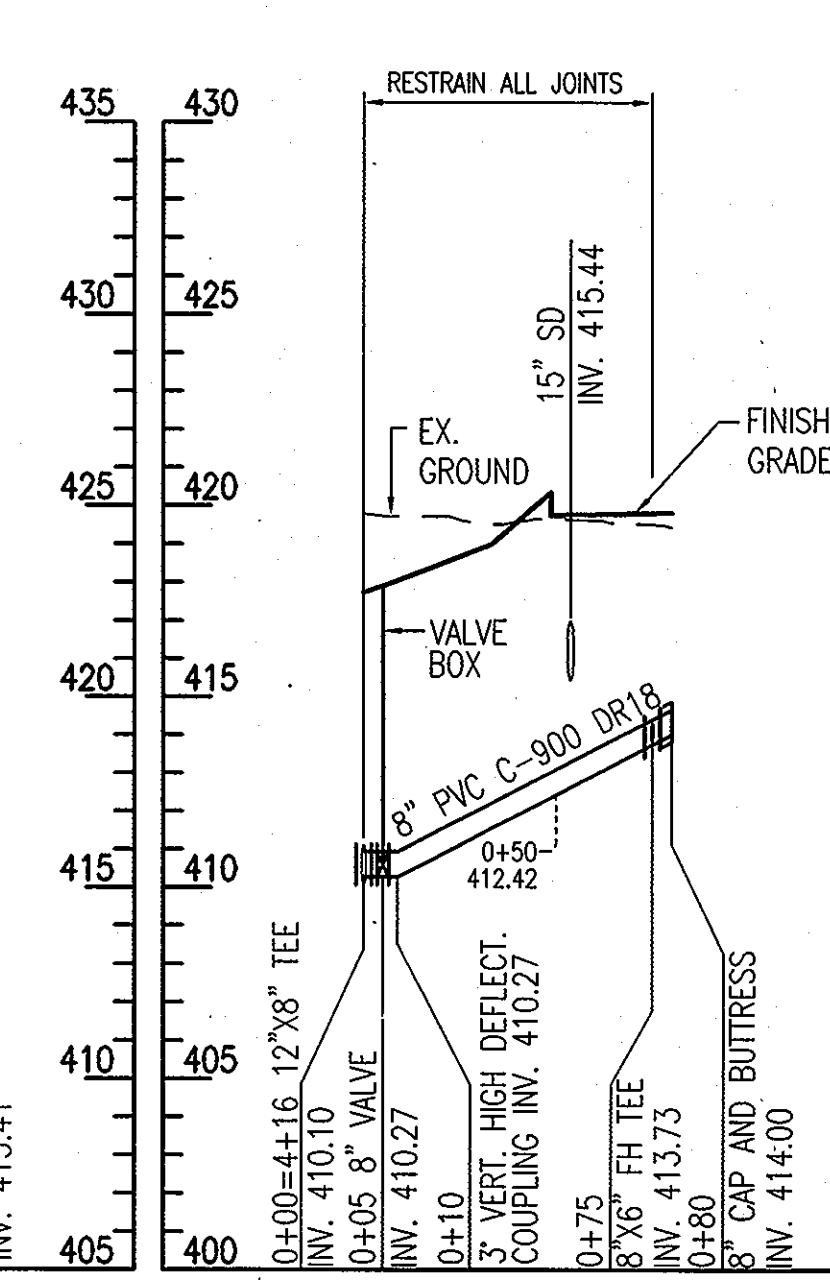
**PROFILE 12" WATER MAIN**

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



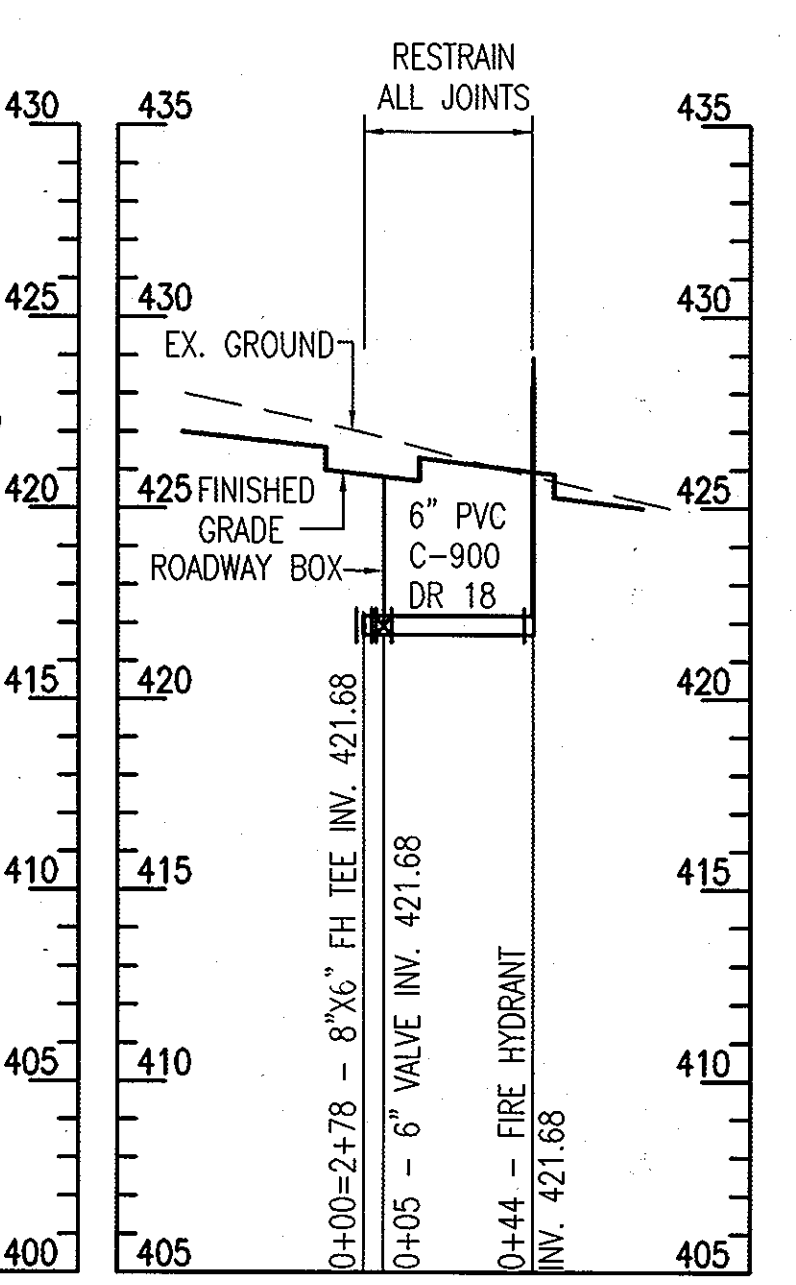
**PROFILE 8" WATER MAIN**

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



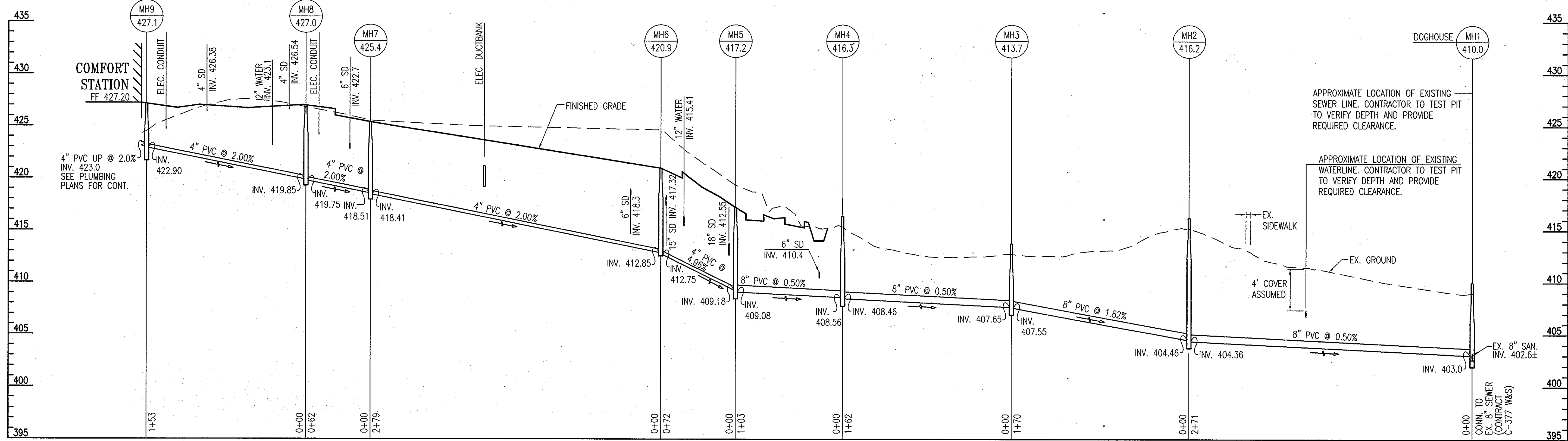
**PROFILE 6" WATER TO FH#1**

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



**PROFILE OF 6" WATER TO FH#2**

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

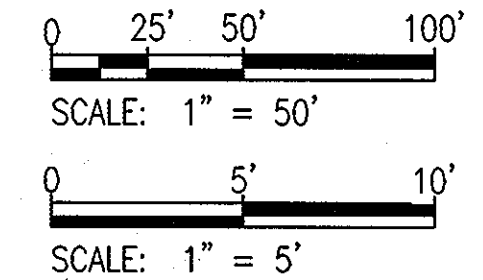


**PROFILE 8" PVC SANITARY SEWER**

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

**WATER PRESSURE**

WATER ZONE:	550
STATIC:	48 PSI
RESIDUAL:	37 PSI
FLOW:	1837 GPM
@ 20 PSI:	3042 GPM



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PREPARED BY:  
**WHITMAN, REQUARDT & ASSOCIATES, LLP**  
801 South Caroline Street, Baltimore, MD 21231



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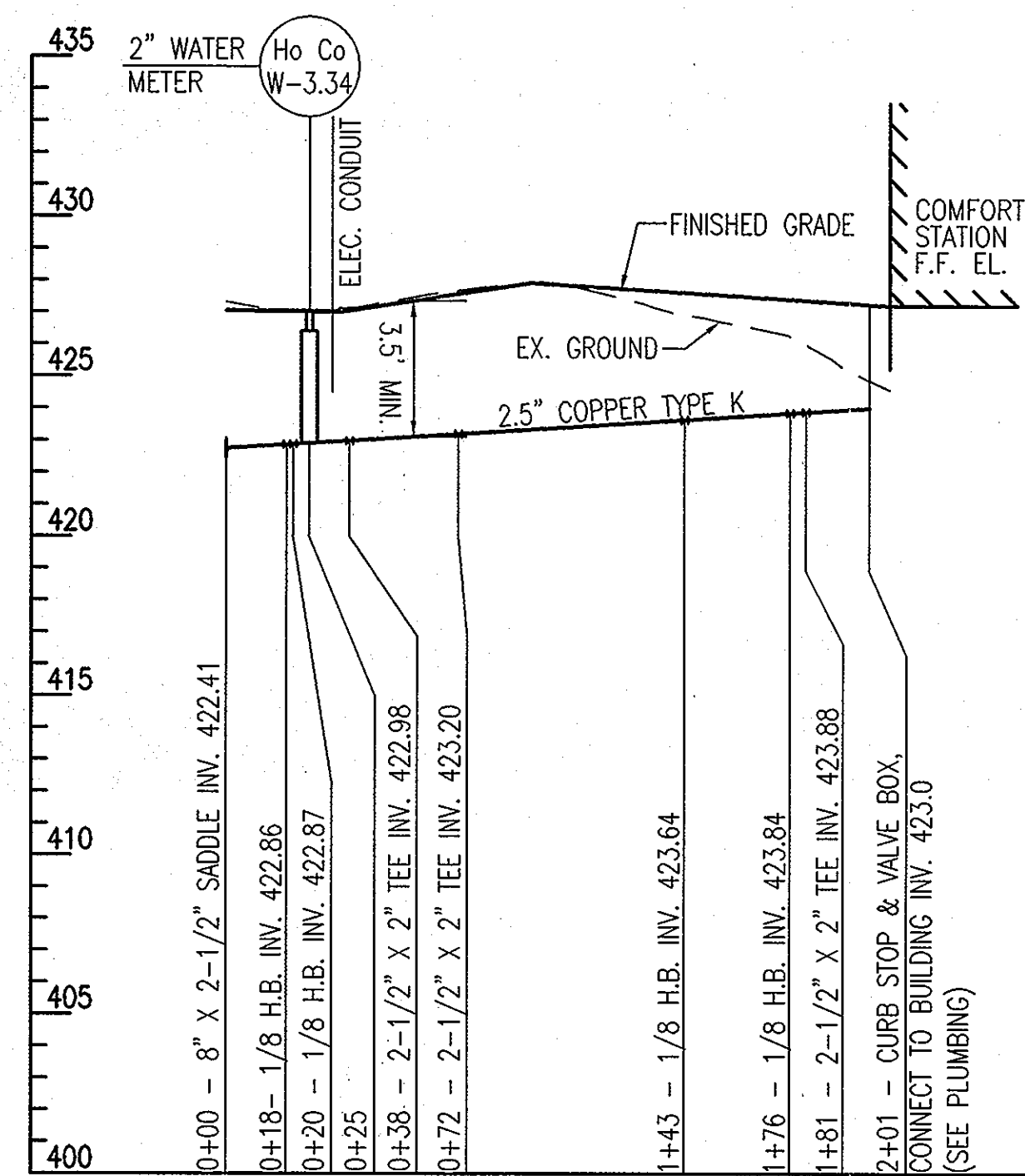
**WATER AND SEWER PROFILES**

BLANDAIR REGIONAL PARK - PHASE 2  
WATER AND SEWER EXTENSION  
CONTRACT NO. 24-4751-D  
ELECTION DISTRICT 3/7  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

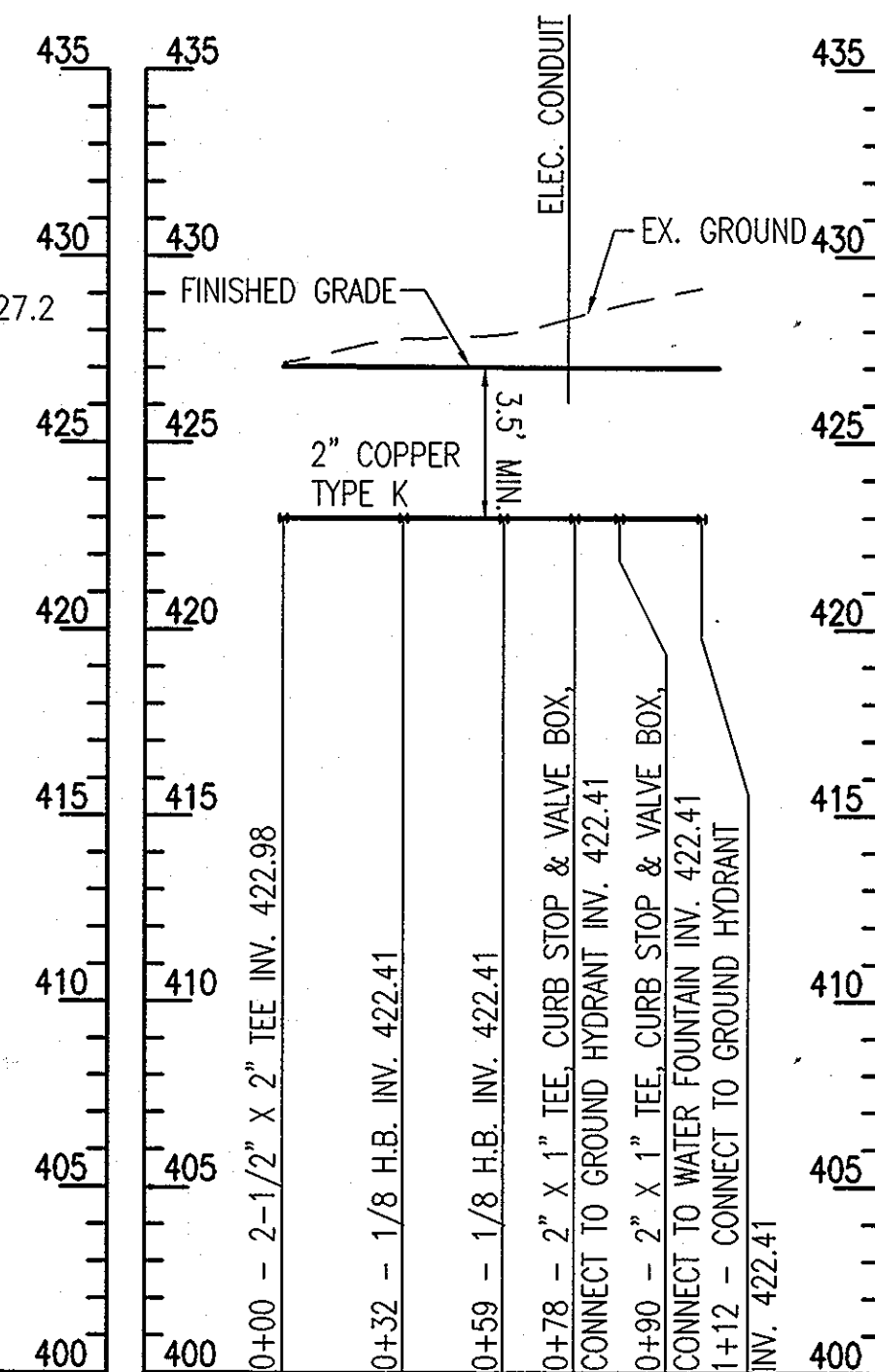
DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

DWG.  
**WS.03**  
SCALE AS SHOWN  
SHEET  
**3 OF 4**



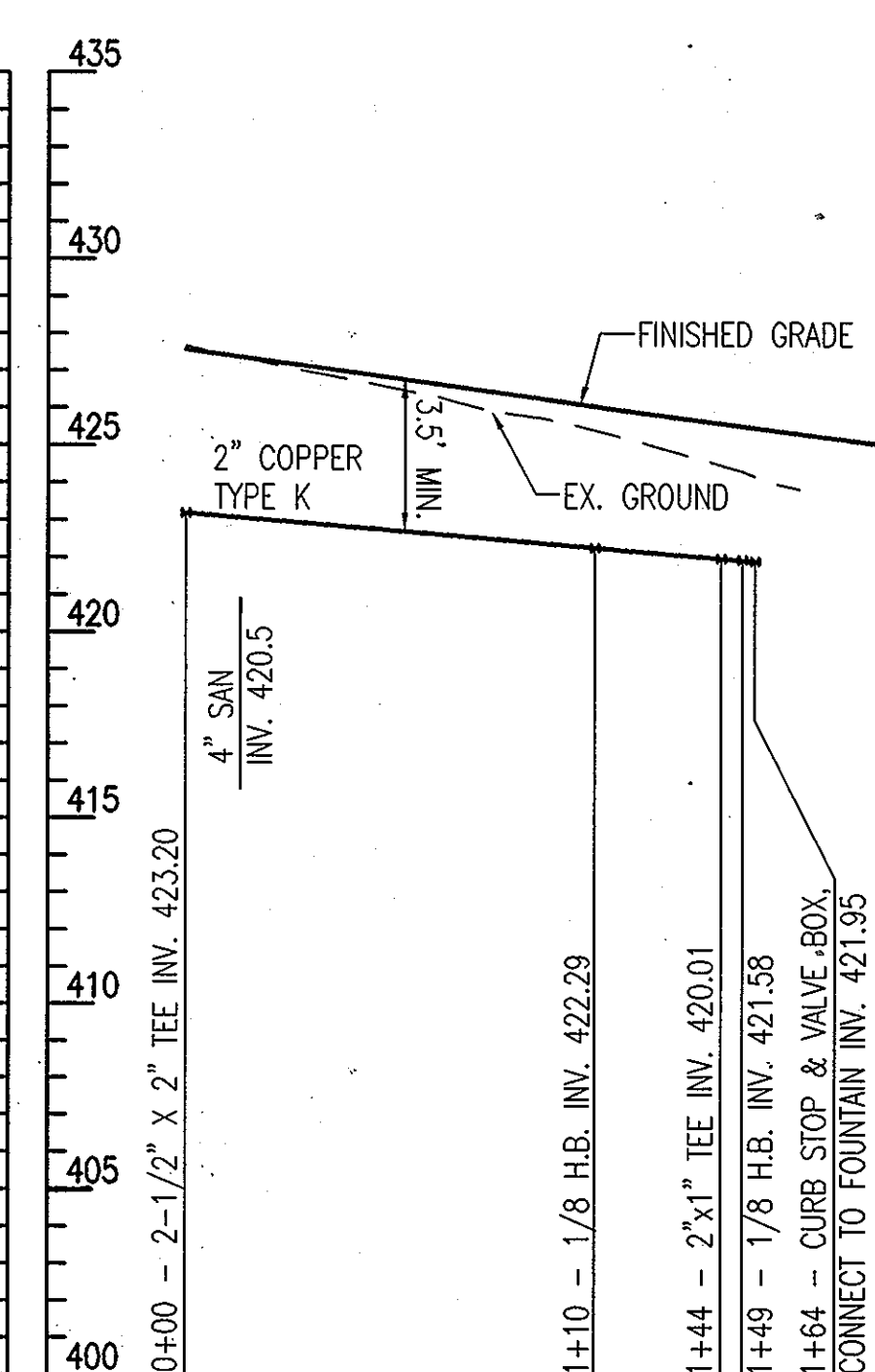
**PROFILE 2-1/2" WATER TO COMFORT STATION**

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



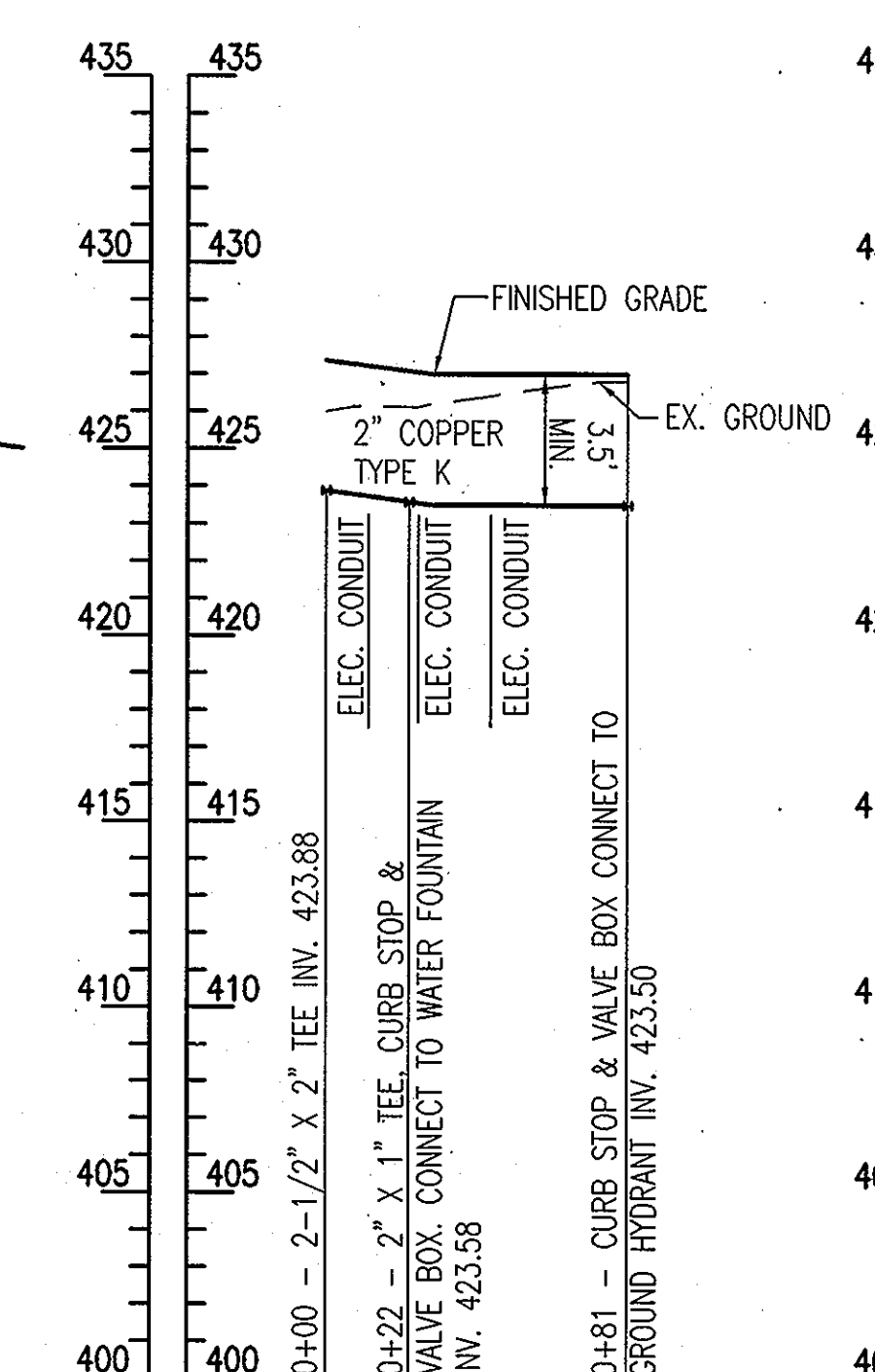
**PROFILE 2" WATER TO SOUTH BASEBALL FIELD**

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



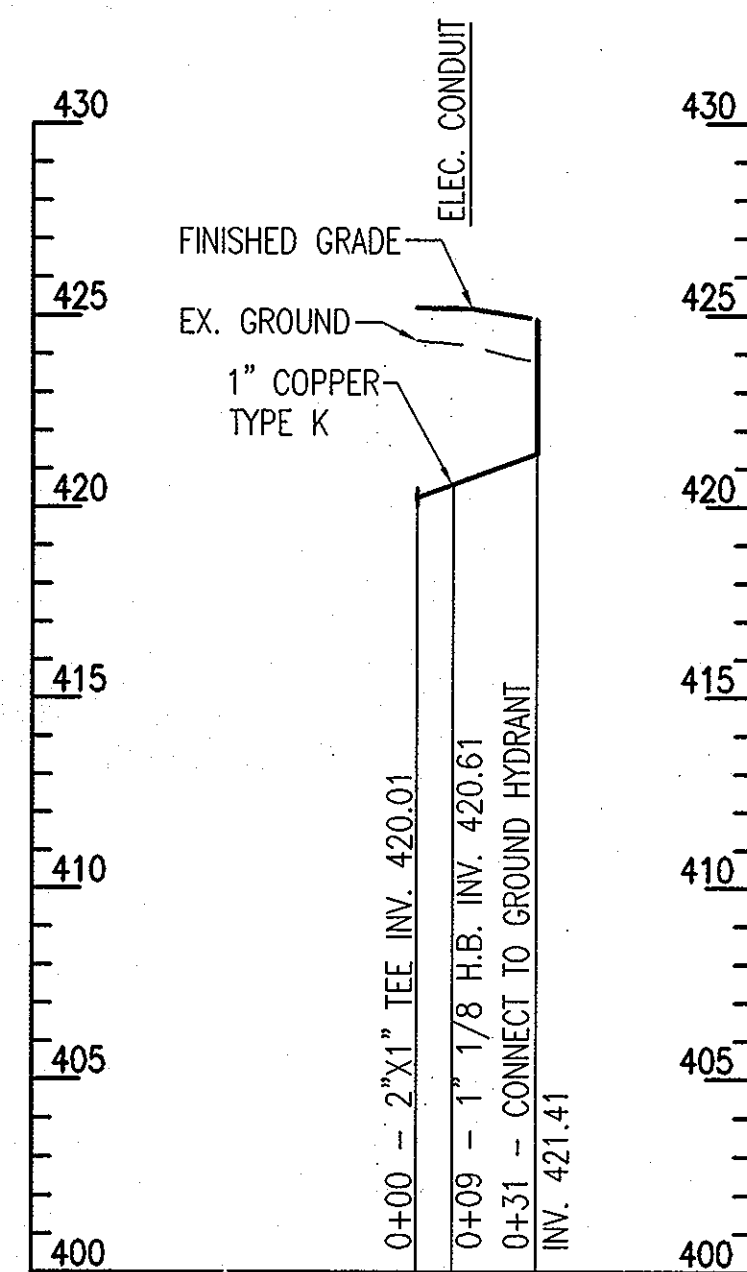
**PROFILE 2" WATER TO PICNIC SHELTER**

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



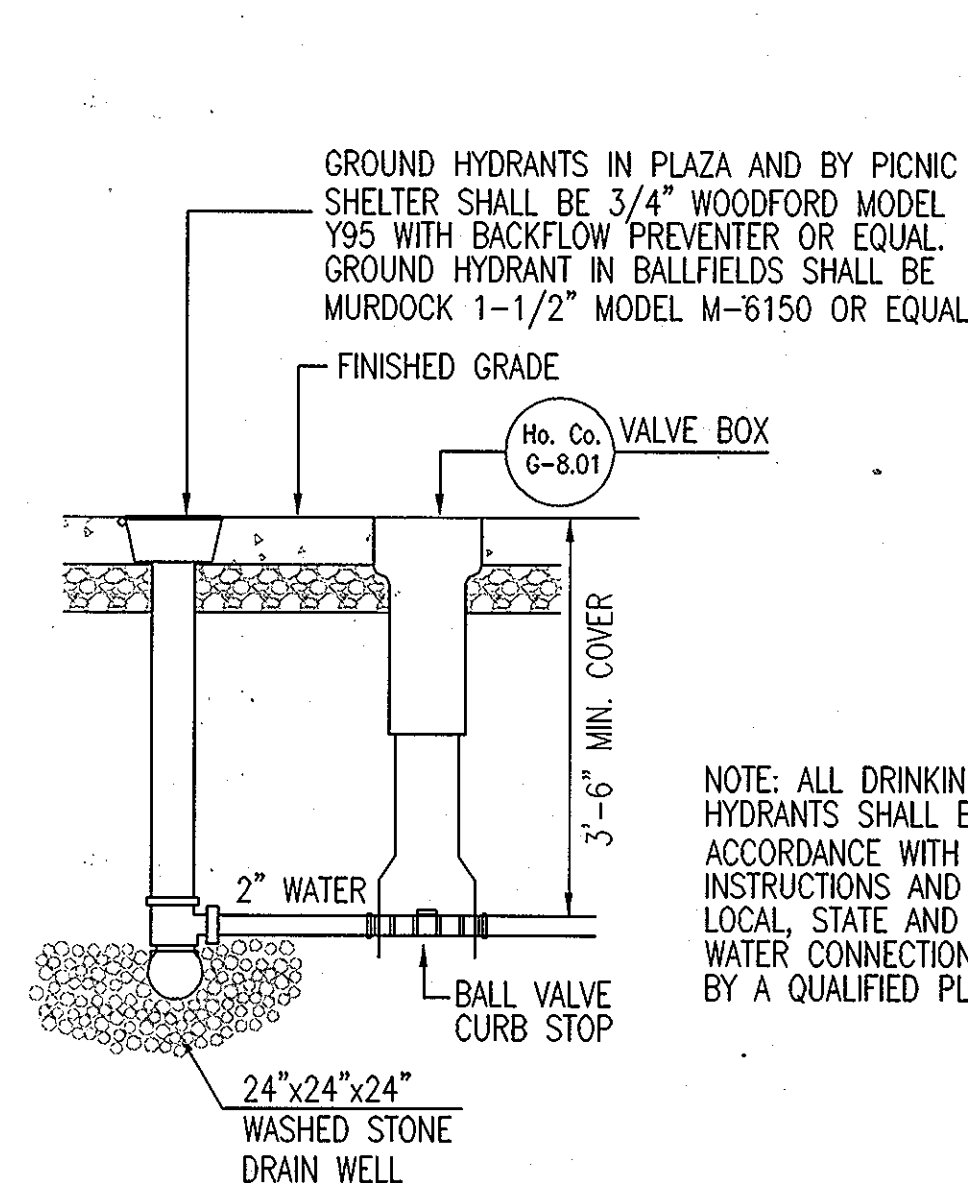
**PROFILE 2" WATER TO NORTH BASEBALL FIELD**

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

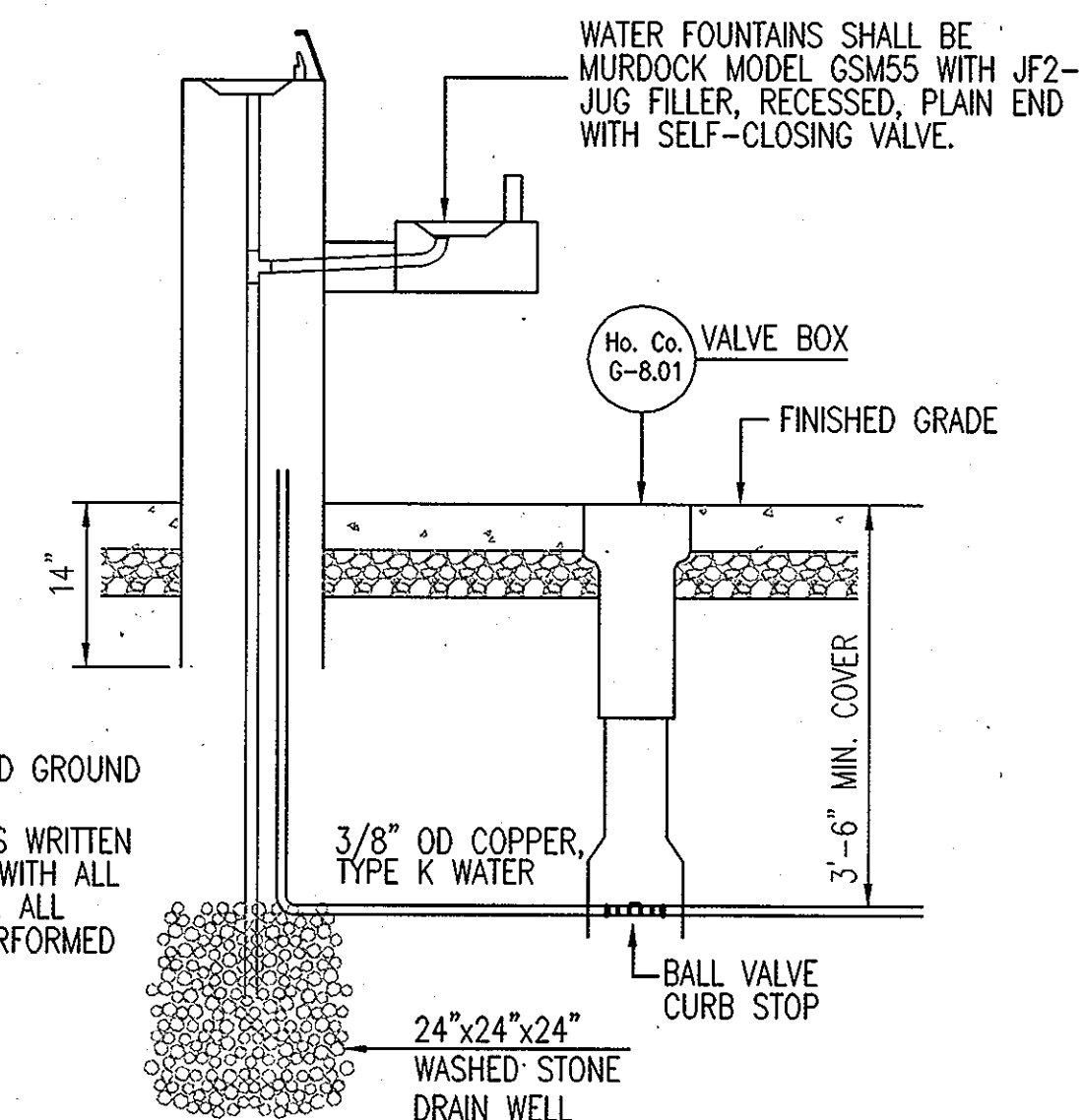


**PROFILE 1" WATER TO PICNIC SHELTER GROUND HYDRANT**

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



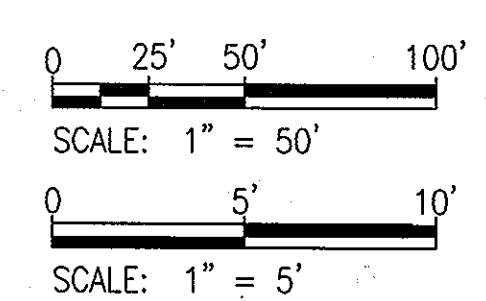
**A GROUND HYDRANT**  
WSO.4 NOT TO SCALE



**B WATER FOUNTAIN**  
WSO.4 NOT TO SCALE

NOTE: ALL DRINKING FOUNTAINS AND 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.

WATER FOUNTAINS SHALL BE MURDOCK MODEL GSM55 WITH JF2-JUG FILLER, RECESSED, PLAIN END WITH SELF-CLOSING VALVE.

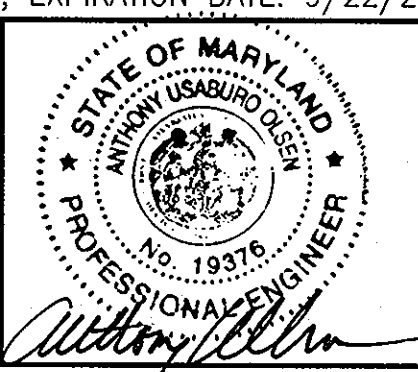


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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*William Cleary*  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
*William Cleary*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

PREPARED BY:  
WHITMAN, REQUARDT & ASSOCIATES, LLP  
801 South Caroline Street, Baltimore, MD 21231  
**WR&A**



DES:	CYH
DRN:	SAD
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BY:	NO.
REVISION:	
DATE:	

WATER PROFILES AND DETAILS  
600' SCALE MAP NO. 38 BLOCK NO. 5

BLANDAIR REGIONAL PARK - PHASE 2  
WATER AND SEWER EXTENSION  
CONTRACT NO. 24-4751-D  
ELECTION DISTRICT 3/7 HOWARD COUNTY, MARYLAND

DWG. **WSO.4**  
SCALE AS SHOWN  
SHEET 4 OF 4