

BILL OF MATERIALS				
ITEM	ESTIMATED QUANTITY	QUANTITY	AS-BUILT	
			MATERIALS	MANUFACTURER
8" PVC WATER	300 LF			
6" PVC WATER	21 LF			
1-1/2" COPPER WATER	23 LF			
8"x8" TAPPING SLEEVE	1 EA			
8" 1/16 BEND	2 EA			
8" 1/32 BEND	3 EA			
8" X 1-1/2" SADDLE	1 EA			
8" X 6" TEE	1 EA			
6" VALVE	1 EA			
1-1/2" VALVE	1 EA			
1-1/2" VALVE	1 EA			
1" METER VAULT	1 EA			
8" CAP AND BUTTRISS	1 EA			
FIRE HYDRANT	1 EA			
NAME OF UTILITY CONTRACTOR:				

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 2007 BY KCI. 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 NAD '83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 35AA AND NO. 35BB.
ALL VERTICAL CONTROLS ARE BASED ON NAVD '88 AS WELL AS THE HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 35AA AND NO. 35BB.
ADDITIONAL BENCHMARKS USED FOR THIS PROJECT:
KCI 5: N 562367.39, E 1335373.4
KCI 6: N 562794.28, E 1335445.76
KCI 11: N 562850.49, E 1336162.86
- 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 TO 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.
- 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 18.11(A) OF THE HOWARD COUNTY CODE.

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 V. Olson 9/11/14
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 C. Olson 9/19/14
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 C. Olson 9/23/14
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Sally C. Green 9/23/14
CHIEF, BUREAU OF UTILITIES DATE

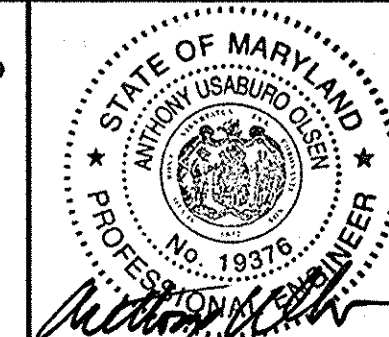
DEPARTMENT OF
PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Thomas E. Butler 10/2/14
CHIEF, BUREAU OF ENGINEERING DATE

Chad E. Olson 10-3-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION 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: 9/22/2015."

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



DES:	BWJ				
DRN:	SAD				
CHK:	AUO				
DATE:	09/12/2014	BY:	NO.	REVISION	DATE

VICINITY MAP, TITLE,
BILL OF MATERIALS, SHEET INDEX

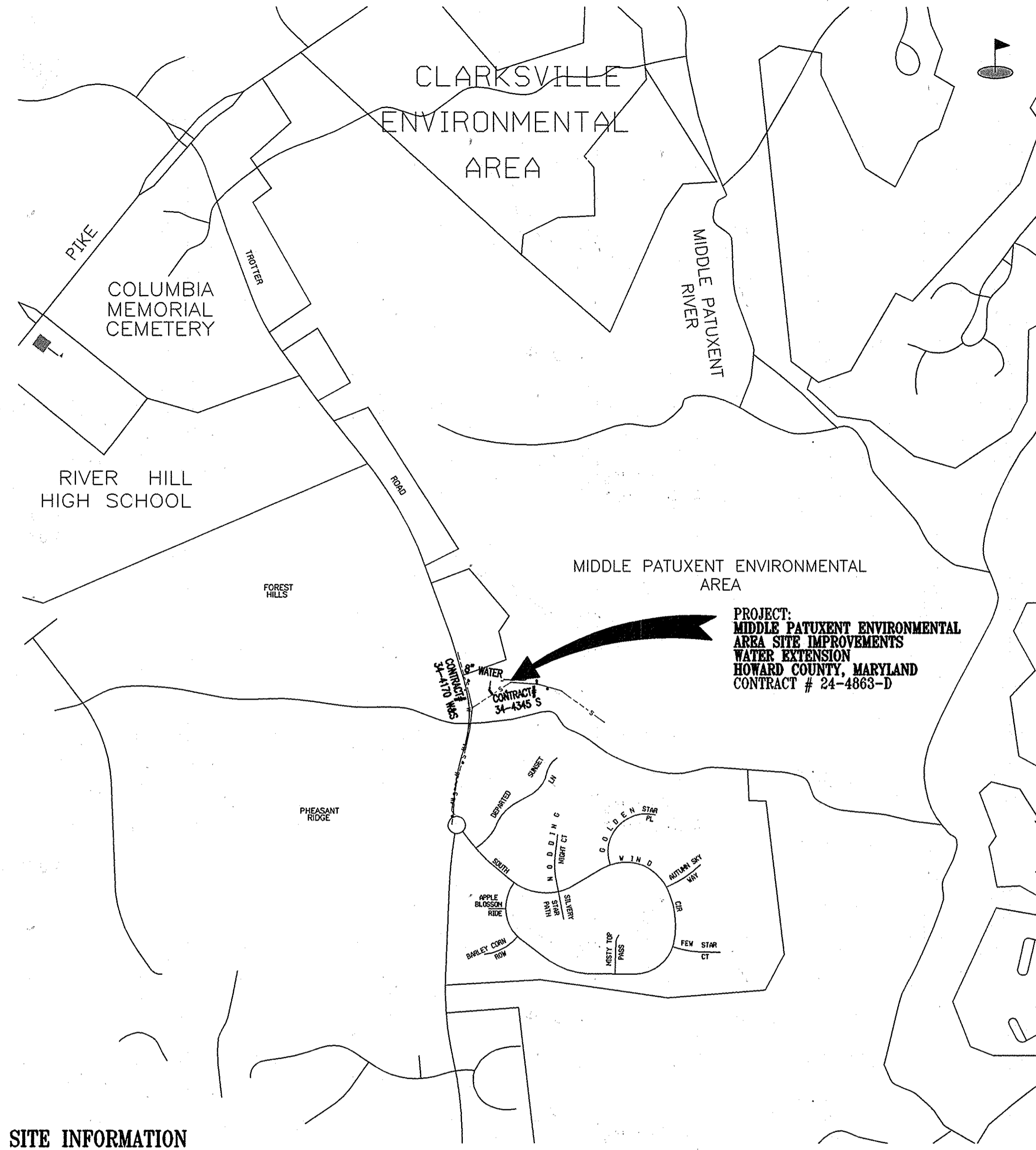
ELECTION DISTRICT 5 HOWARD COUNTY, MARYLAND

SITE INFORMATION

BUILDING TYPE(S): STORAGE BUILDING, COMFORT STATION
NO. OF LOTS: 1
NO. OF WATER HOUSE CONNECTIONS: 2
NO. OF SEWER HOUSE CONNECTIONS: 2
DRAINAGE AREA: PATUXENT-TREATMENT PLANT LITTLE PATUXENT WRP
SITE AREA: 2.44 AC

LOCATION MAP

1" = 600'

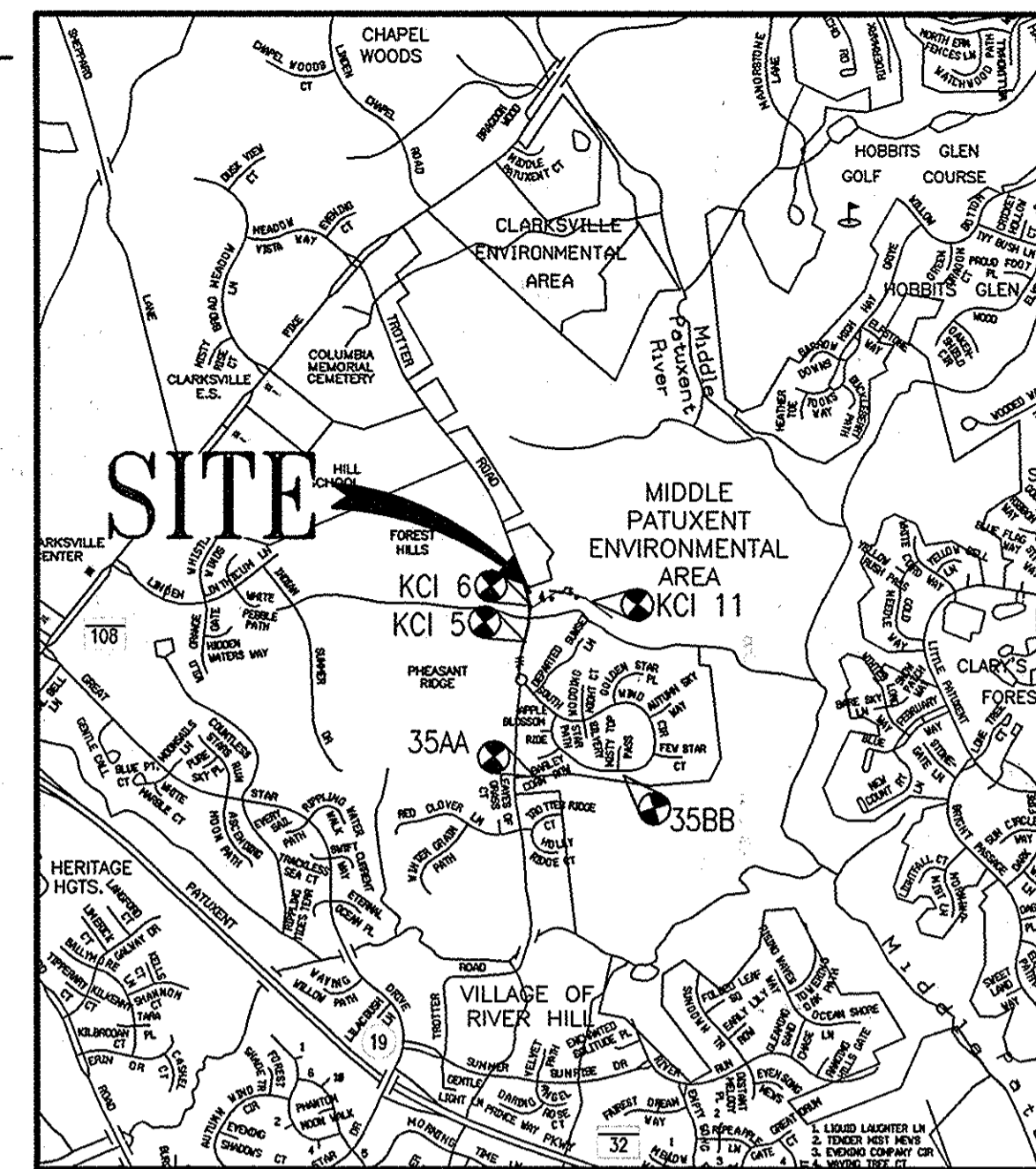


BENCHMARK DATA

- 35AA: N 560767.7, E 1335483.83, ELEV. 430.95
 - 35BB: N 560790.42, E 1336537.22, ELEV. 394.26
 - KCI 5: N 562367.39, E 1335373.4, ELEV. 380.99
 - KCI 6: N 562794.28, E 1335445.76, ELEV. 371.28
 - KCI 11: N 562850.49, E 1336162.86, ELEV. 363.65
- NOTE: KCI BENCHMARKS USED TO ESTABLISH THE PROJECT CONTROL

LIST OF DRAWINGS

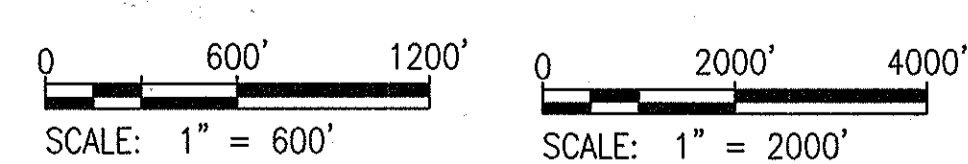
- WS0.1 VICINITY MAP, TITLE, BILL OF MATERIALS, SHEET INDEX
- WS0.2 WATER AND SEWER PLAN



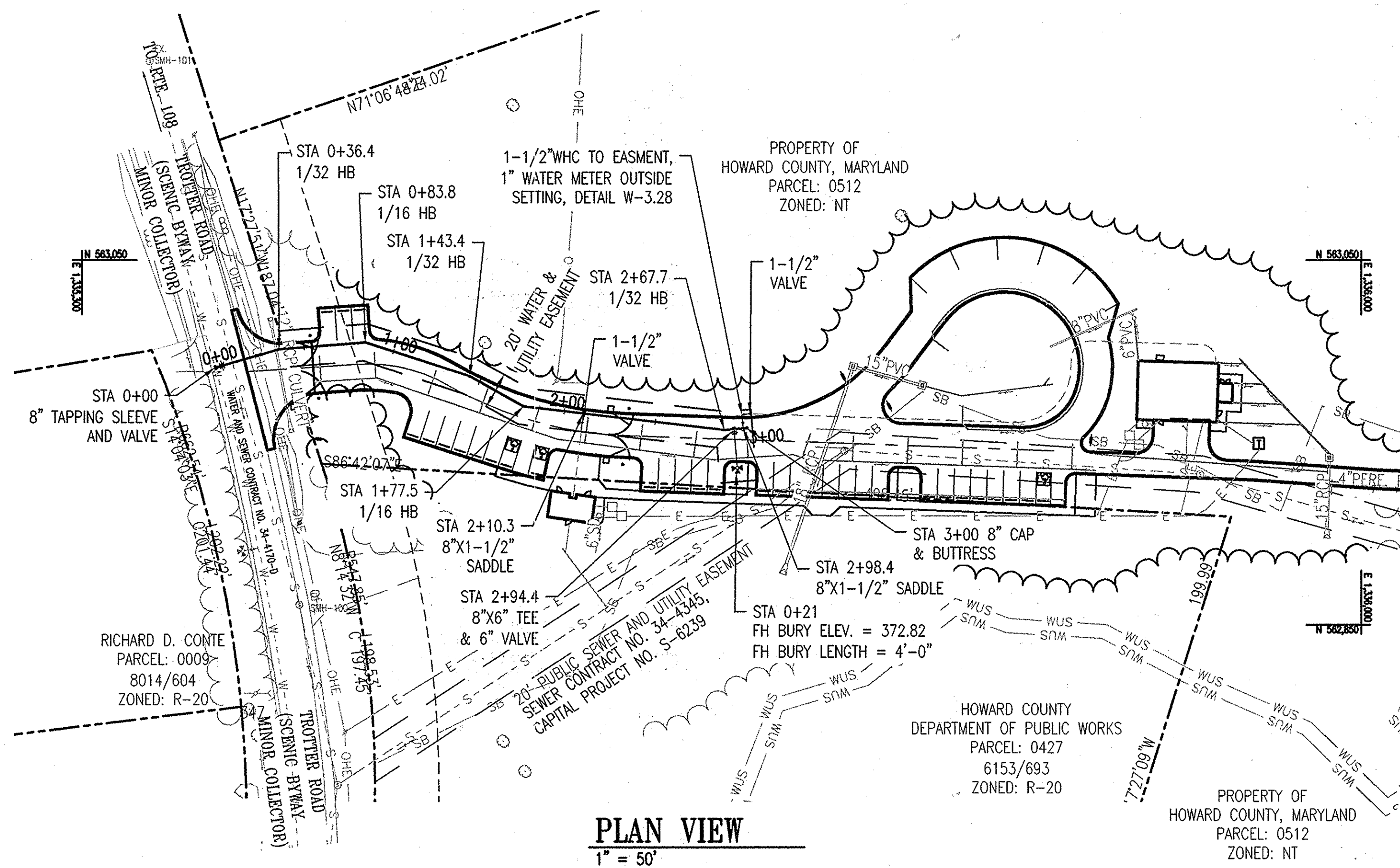
VICINITY MAP
1" = 2000'
ADC MAP: 14 GRID: H6

GENERAL NOTES (CONTINUED)

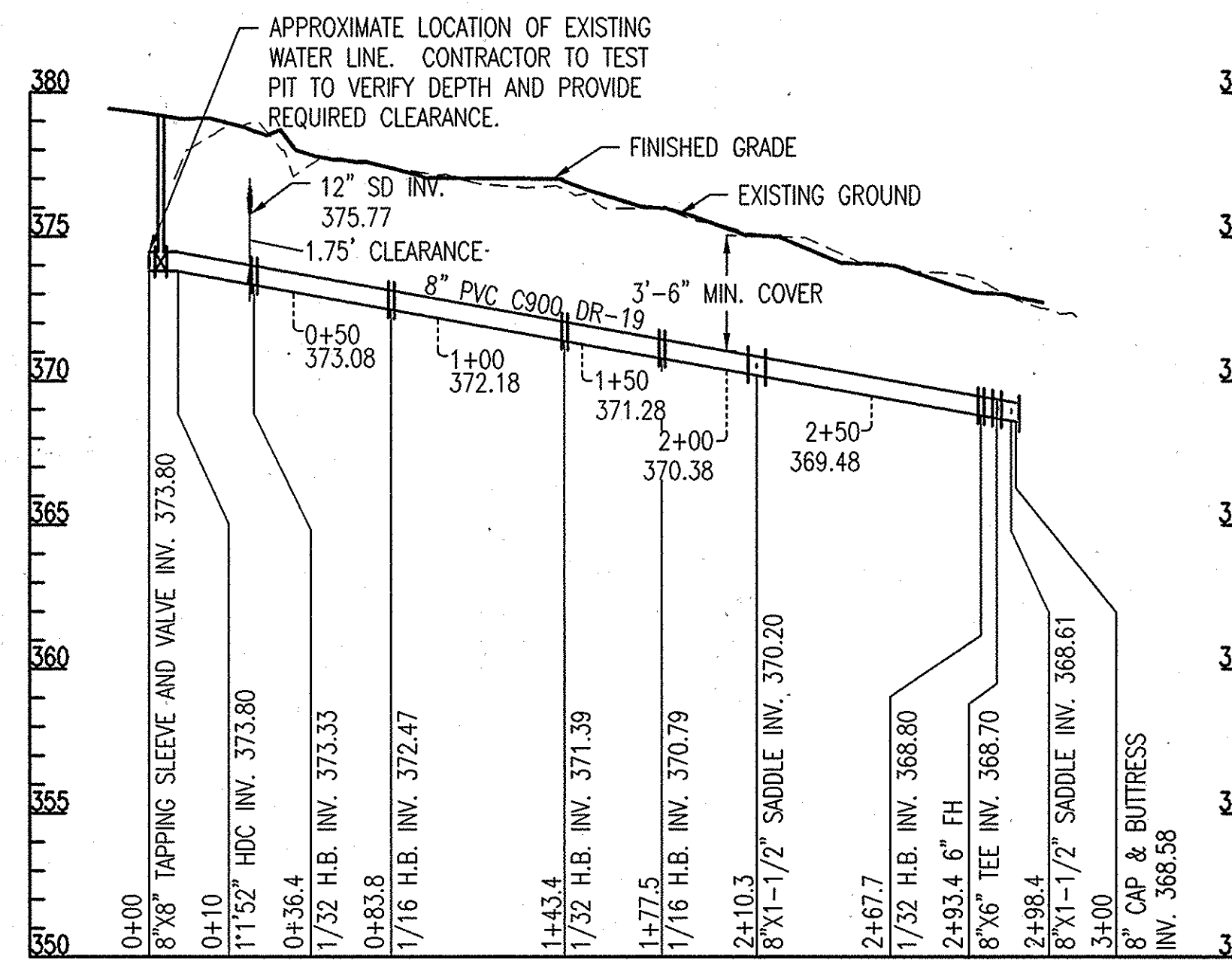
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL 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 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. SEVENTEEN (17) POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. TWELVE (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 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 LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOP. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL.
FIVE DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL MULTI FITTINGS (IPEX) BLUE BRUTE DR18 OR EQUAL.
- WHEN PVC HIGH DEFLECTION COUPLINGS OF 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 INCORPORATE AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELL STOPS SHALL BE SERIES 5000 MEGA-STOP, AS MANUFACTURED BY EBAA IRON, INC. OR APPROVED EQUAL.



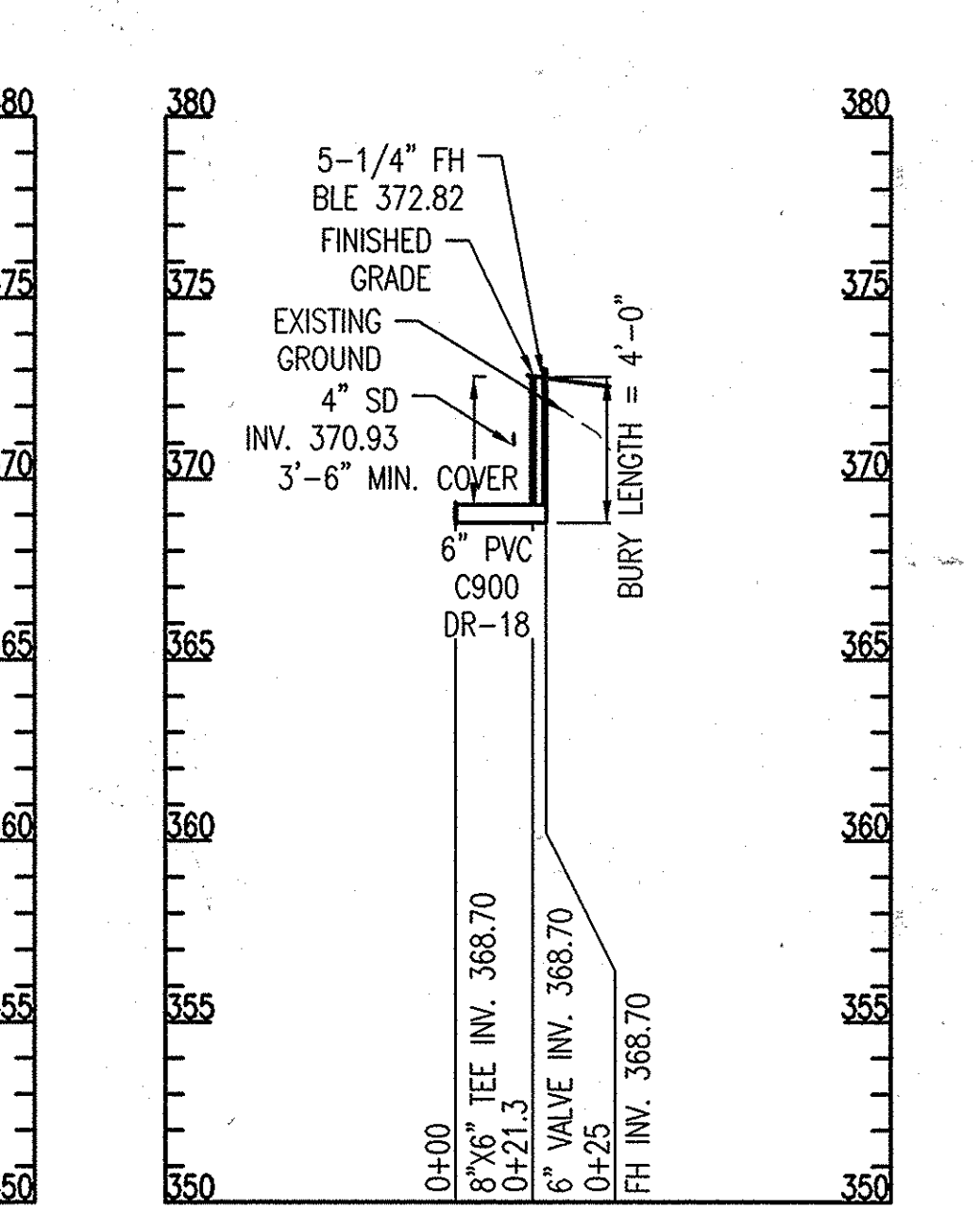
DWG. WS0.1
SCALE AS SHOWN
SHEET 1 OF 2



Station	Fitting	Northing	Eastng
0+00	Tapping Sleeve and Valve	562990.95	1335372.90
0+10	HDC	562993.67	1335382.52
0+36.4	1/32 HB	563000.87	1335407.92
0+83.8	1/16 HB	563004.64	1335455.19
1+43.4	1/32 HB	562986.16	1335512.28
1+77.5	1/16 HB	562969.73	1335541.70
2+10.3	Saddle	562965.92	1335574.27
2+67.7	1/32 HB	562956.88	1335651.36
2+94.4	FH Tee & Valve	562957.31	1335656.77
2+98.4	Saddle	562957.71	1335661.75
3+00	Cap and Buttress	562957.87	1335663.75
WHC	Valve	562960.95	1335573.69
WHC	Meter	562960.70	1335661.52
WHC	Valve	562965.58	1335665.39



PROFILE VIEW
1" = 50'



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Esther Conn 9/22/14
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF
PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

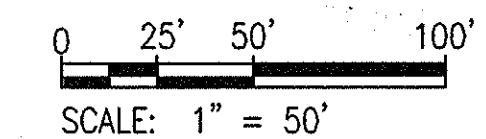
Chris Conn 10-3-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

"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: 9/22/2015."

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



DES:	BWJ				
DRN:	SAD				
CHK:	AUO				
DATE:	09/12/2014	BY	NO.	REVISION	DATE



WATER AND SEWER PLAN

MPEA SITE IMPROVEMENTS
WATER EXTENSION
CONTRACT NO. 24-4863-D

ELECTION DISTRICT 5 HOWARD COUNTY, MARYLAND

DWG.
WS0.2
SCALE
AS
SHOWN
SHEET
2 OF 2