GENERAL NOTES:

PART 1

- 1. APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- 2. ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
- 3. ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATA.
- 4. ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
- 5. CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES
 BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. 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 DAMAGE SHALL BE DEDUCTED FROM MONEY
 OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE
 WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF POLES.
- 6. FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOL. IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. THE CONTRACTOR SHALL HAVE A COPY OF VOL. IV ON THE JOB.
- 7. 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 RESULTS OF THE TEST 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.
- 8. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

STATE HIGHWAY ADMINISTRATION
BGE CONTRACTOR SERVICES
BGE UNDER GROUND DAMAGE CONTROL
MISS UTILITY
COLONIAL PIPELINE CO.

850-4620 291-4607 1-800-257-7777 549-4120

531-5533

BUREAU OF UTILITIES,
HOWARD COUNTY DEPT. OF PUBLIC WORKS 313-4900
BELL ATLANTIC 1-800-446-5266

- 9. TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE DAMAGED OR REMOVED BY THE CONTRACTOR.
- 10. 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.
- 11. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-2450 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CON-NECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COM-PLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.

PART 2

- 1. ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- 2. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3-1/2' COVER UNLESS OTHERWISE NOTED.
- 3. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- 4. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- 5. 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. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- 6. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- 7. ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTINGS UNLESS OTHERWISE NOTED ON THE PLANS OR IN SPECIFICATIONS.
- 8. FOR SPRINKLER SYSTEM FOR ALL TOWNHOMES OR MULTI-FAMILY DWELLING UNITS SHOULD HAVE A MINIMUM OF 1' CONNECTION WITH A 3/4" METER.

TYPE OF BUILDING	COMMERCIAL
NO. OF LOTS/PARCELS	1
NO. OF WATER HOUSE CONNECTIONS	1
NO. OF SEWER HOUSE CONNECTIONS	1
DRAINAGE AREA	DORSEY
TREATMENT PLANT	PATUXENT

QUANTITIES				
ITEM	ESTIMATED	AS BUILT	MATERIAL/SUPPLIER	
8" X 8" TEE	2			
8" X 6" TEE	1			
8" VALVE	4			
8" 45° BEND	2			
8" 11.25° BEND	1			
8" CAP	3			
6" FH VALVE	1			
8" D.I.P.	665 LF (INCL. PRIVATE)			
6" D.I.P.	21 LF			
FH	1			
8" X 8" TAP & SLEEVE	2			

(CONTR. #24-3725) PROP. 8" W 108 (CONTR. #44-3808-D) EX. 8" W (CONTR. #44-1778-D)-TO BE ABANDONED (CONTR. #44-1778-D) (CONTR. #44-3808-D) EX. 8" SAN ĆONTR. #24-1439-D) DR VICINITY MAP

SCALE: 1" = 600'

WATER CODE: E-06 SEWER CODE: 3390000

TEST GRADIENT: 700

BENCH MARKS:

W.R. & A.B.M. #2:

R.R. SPIKE IN BASE OF 14" POPLAR, 90'± RIGHT OF CALEXANDER BELL DRIVE PT STA. 11+23.93.

W.R. & A.B.M. #3: ELEV. 329.26

TOP BOLT @ TOP OLD LIGHT POST FOOTER, 143' OF C

COLUMBIA GATEWAY DRIVE STA. 11+50.

SDP-00-39

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

//12/00 DATE REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

1/12/0

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

SOIL CONSERVATION DISTRICT

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

Robert Bernen 1/4/00
CHIEF, BUREAU OF UTILITIES DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Baker

Michael Baker Jr.,

ANTHON RESOURCES SERVICE

MICHAEL BAKER JR. INC. Consulting Engineers 3601 Eisenhower Avenue, Suite 600 Alexandria, Virginia 22304

703-960-8800

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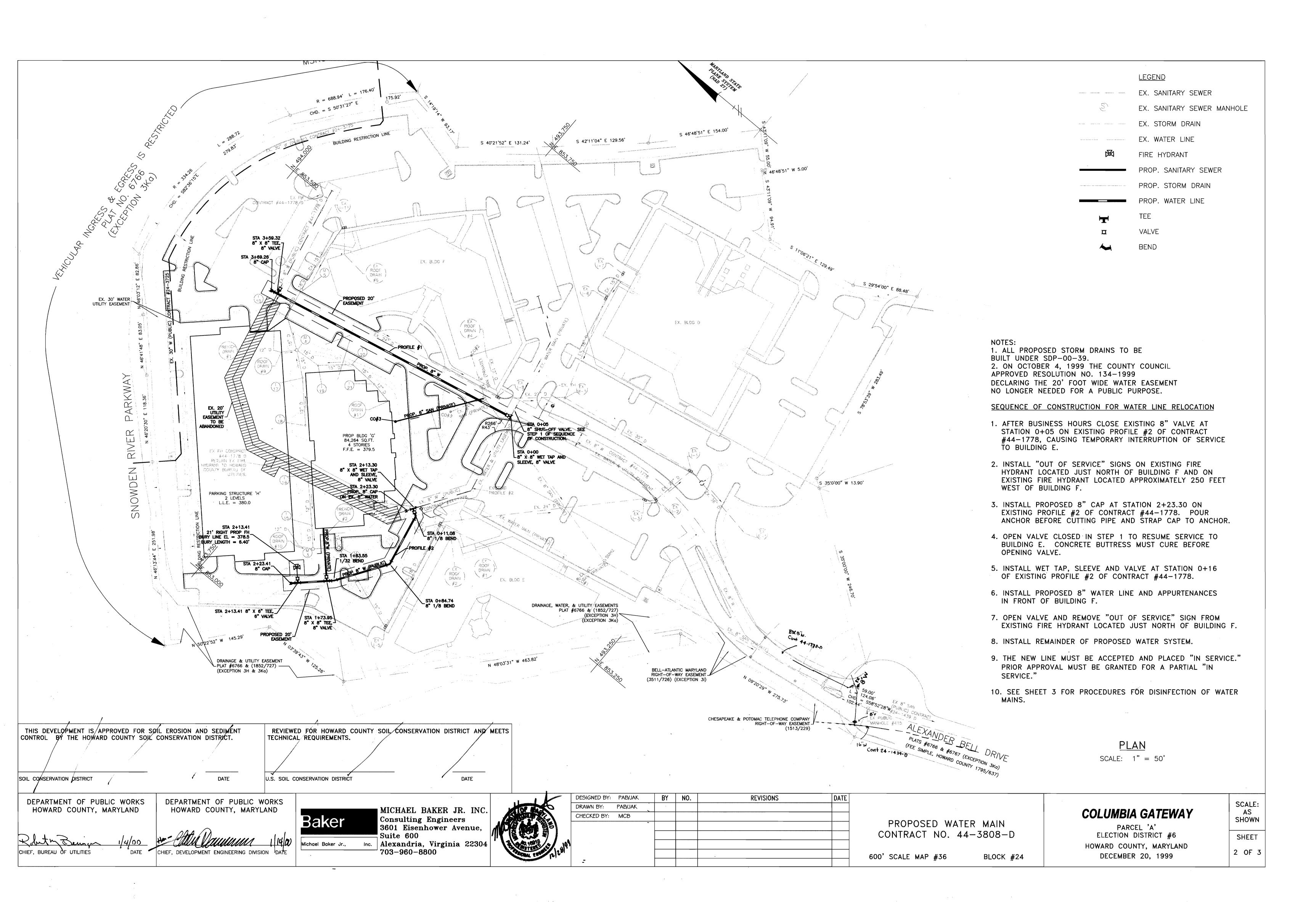
PROPOSED WATER MAIN CONTRACT NO. 44-3808-D

600' SCALE MAP #36 BLOCK #24

COLUMBIA GATEWAY

PARCEL 'A'
ELECTION DISTRICT #6
HOWARD COUNTY, MARYLAND
DECEMBER 20, 1999

SCALE:
AS
SHOWN
SHEET
1 OF 3



SECTION 1006 DISINFECTION OF WATER MAINS

Prior to the beginning of the disinfecting operations, the Contractor shall submit to the Engineer for approval a schedule listing details of disinfecting procedures to be followed.

1006.02 CONTRACTOR'S RESPONSIBILITY.

Disinfecting of water mains shall be done by the contractor as specified herein. The Contractor shall provide and be responsible for all labor, materials, equipment, testing, and required laboratory analysis for the complete disinfecting operations.

1006.03 PROCEDURE.

1006.03.01 CONTINUOUS FEED METHOD.

Disinfecting of water mains shall be done in accordance with AWWA C-651-86 Standard for Disinfecting Water Mains. The method utilized shall be the Continuous Feed Method. The option of placing calcium hypochlorite granules in the main during construction shall not be used. An air gap or a device to prevent backflow of the chlorine solution into the county water system must be approved by the County and used during the testing

1006.03.02 AIR POCKETS.

Before being chlorinated, the main shall be filled to eliminate air pockets. The main shall also be thoroughly flushed to remove dirt and foreign matter. See AWWA C-651-86, Table 3 for required flushing velocity.

1006.03.03 WATER SUPPLY.

Water from the existing distribution system or other approved source of supply shall be made to flow at a constant, measured rate into the newly laid water main. See AWWA C-651-86, Section 5.2.3 for optional methods of measuring the flow rate.

At a point not more than 10 feet downstream from the beginning of the new main, water shall be introduced through a corporation cock fed at a constant rate such that, the initial dose of chlorine will not have less than a 25 ppm (mg/l) or more than a 50 ppm (mg/l) free available chlorine concentration. See AWWA C-651-86, Table 4, which gives the amount of chlorine required for each 100 feet of pipe of various diameters. Use of Calcium Hypochlorite (measured in a dry state of 65% chlorine content prior to preparation of the slurry) would require 1 pound of calcium hypochlorite to each 3,100 gallons of water to produce a 25 ppm (mg/l) chlorine solution, or 1 pound to each 1,550 gallons to produce a 50 ppm (mg/l) chlorine solution. The use of chlorine gas (100%) would require 1 pound of chlorine gas to each 4,800 gallons of water to produce a 25 ppm (mg/l) chlorine solution, or 1 pound to each 2,400 gallons to produce 50 ppm (mg/l) chlorine solution. To assure that this concentration is provided and maintained, the Inspector shall measure the chlorine concentration initially prior to beginning chlorination and at regular intervals using appropriate Chlorine Test Kits. The Inspector shall document the chlorine concentration, See AWWA C-651-86, Appendix "A" for information pertaining to Chlorine

1006.03.05 HYPOCHLORINATOR SYSTEM. The hypochlorite solution (65%) may be applied to the water main utilizing a hypochlorinator system which consists of a chemical solution tank, gasoline or electrically powered chemical feed pump, and check valve. The chlorine gas (100%) may be applied in the water main utilizing a vacuum-operated chlorinator and booster water pump. The vacuum chlorinator mixes the chlorine gas in solution water and the booster pump injects the chlorine gas solution into the water main.

1006.03.06 VALVE POSITION

During the application of chlorine, valves shall be positioned so that the 25-50 ppm (mg/1) chlorine solution in the main being treated will not flow into water mains in active service. The chlorination procedure shall not cease until the entire main is filled with the heavily chlorinated water.

1006.03.07 MINIMUM RETENTION.

The heavily chlorinated water shall be retained in the main for at least a 24 hour period, during which time all valves, fire hydrants and blow off drains in the treated section shall be operated to ensure disinfection of the appurtenances. At the end of this 24-hour period, the treated water in all portions of the main shall have a free residual chlorine concentration of not less than 10 ppm (mg/1). The Inspector shall measure the chlorine concentration to ensure compliance. If the free residual chlorine concentration indicated is less than 10 ppm (mg/1), the water main shall be completely drained and the disinfecting operation repeated.

1006.03.08 MAXIMUM RETENTION.

During initial disinfection, repeated disinfection, or prior to final flushing, it is imperative that the heavily chlorinated water shall not be retained in the water main longer than 48 hours. The scheduling of the chlorination and dechlorination must be approved by the Engineer to ensure that a retention time longer than 48 hours will not occur.

1006.03.09 FLUSHING.

After the 24-hour retention period and the Inspector has ensured the free residual chlorine concentration of not less than 10 ppm (mg/1), the heavily chlorinated water shall take periodic chlorine residual measurements which show that the concentration in the water leaving the main is no higher than that generally prevailing in the existing distribution system or is acceptable for domestic use. The acceptable concentration is 0.5 ppm (mg/1) to 1.5 ppm (mg/1).

State regulations, COMAR 26.08.03.06, require that no chlorine may be added to effluents discharged to Class III, Natural Trout Waters. All effluents discharging to any other water class must be dechlorinated to reduce the total residual chlorine to nondetectable levels. Non-detectable levels are defined as less than 0.1 ppm (mg/l) in the effluent. Any waters used in the disinfection of water mains <u>must not</u> be discharged to Class III streams. Dechlorination of the effluent is acceptable when discharged to Class I and Class IV waters. Dechlorination may be accomplished by the following:

- (A) Chemical addition.
- (B) Adsorption onto activated carbon.
- (C) Control of discharge rates or holding effluent to reduce chlorine residual levels.
- (D) Any other method approved in advance by the Engineer.

1006.04 MEASUREMENT AND PAYMENT. No measurement will be made for disinfecting and testing of water mains. Payment shall be included in the several items bid for furnishing and placing water lines and fire hydrant connections.

STA 1+00 ELEV. 378.62 STA 2+00 ELEV. 380.7 STA 1+50 ELEV. 380.0 STA 0+50 ELEV. 376. STA 0+00 ELEV. 375. STA 3+50 ELEV. 381. STA 3+00 ELEV. 381. PROFILE #1 SCALE HORIZ.: 1" = 50' VERT. : 1" = 5'385 **PROPOSED** GRADE 380 GRADE 5° JOINT DEFL. 375 __STA 1+58.66 5° JOINT DEFL. STA 1+16.74 STA 2+23.41 -8" CAP 370 ELEV. 372.29 STA 0+84.74 STA 2+13.418" 1/8 BEND-└-8" X 6" TEE, 6" VALVE ELEV. 370.82 ELEV. 372.09 365 STA 0+11.08 STA 1+73.95 8" 1/8 BEND, 8" X 8" TEE, 8" VALVE 8" VALVE ELEV. 370.39 360 ELEV. 371.35 STA 0+00 PROFILE #2 STA 1+63.55 -8" X 8" TEE └8" 1/32 BEND ELEV. 370.33 ELEV. 371.29 355 STA 1+37.05 5° JOINT — DEFLECTION 350 STA 2+50 ELEV. 377. +00 STA 0+50 ELEV. 375.

PROPOSED

GRADE

STA 0+00 PROFILE #1

8" X 8" TAP AND

SLEEVE, 8" VALVE

ELEV. 369.66

GRADE

380

365

360

STA 3+69.26

ELEV. 376.33

STA 3+59.32

8" X 8" TEE-

ELEV. 376.33

8" CAP-

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

600' SCALE MAP #36

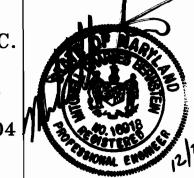
REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEERS THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT TECHNICAL REQUIREMENTS! CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT. U.S. /SOIL CONSERVATION DISTRICT DATE SOIL CONSERVATION DISTRICT

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE CHIEF, BUREAU OF UTILITIES

MICHAEL BAKER JR. INC. Consulting Engineers 3601 Eisenhower Avenue, Suite 600 Alexandria, Virginia 22304 703-960-8800



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PROPOSED WATER MAIN CONTRACT NO. 44-3808-D

BLOCK #24

PARCEL 'A' ELECTION DISTRICT #6 HOWARD COUNTY, MARYLAND DECEMBER 20, 1999

SCALE:

COLUMBIA GATEWAY

AS **SHOWN** SHEET

3 OF 3

GENERAL NOTES:

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THESE PLANS: STATE HIGHWAY ADMINISTRATION 531-5533 850-4620 BGE CONTRACTOR SERVICES BGE UNDER GROUND DAMAGE CONTROL 291-4607 1-800-257-7777 MISS UTILITY COLONIAL PIPELINE CO. 549-4120 BUREAU OF UTILITIES, HOWARD COUNTY DEPT. OF PUBLIC WORKS 313-4900 1-800-446-5266 BELL ATLANTIC

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- 8. FOR SPRINKLER SYSTEM FOR ALL TOWNHOMES OR MULTI-FAMILY DWELLING UNITS SHOULD HAVE A MINIMUM OF 1' CONNECTION WITH A 3/4" METER.

TYPE OF BUILDING	COMMERCIAL
NO. OF LOTS/PARCELS	1
NO. OF WATER HOUSE CONNECTIONS	1
NO. OF SEWER HOUSE CONNECTIONS	1
DRAINAGE AREA	DORSEY
TREATMENT PLANT	PATUXENT

	QUANT	ITIES	
ITEM	ESTIMATED	AS BUILT	MATERIAL/SUPPLIER
8" X 8" TEE	2	2	M.J TEE COMP. UNION FOUNDRY
8" X 6" TEE	1	1	M. J HYDR. TEE COMP. UNION FOUNDRY
8" VALVE	4	2 TAPPING SLEEVE 2 STO.	MULLER RES WEDGE GATE VALUES
8" 45° BEND	2	1	MJ 45 COMP. (UNION FOUNDRY)
8" 11.25° BEND	1	1	MJ 114 COMP (UNION FOUNDRY)
8" CAP	3		M.J 8" UNION FOUNDRY)
6" FH VALVE	1	1	MULLER RES. WEDGE GATE VALVE
8" D.I.P.	665 LF (INCL. PRIVATE)	670 L.F.	8 CL52 DI TYTON JOINT (ATLANTIC)
6" D.I.P.	21 LF	31 L.F.	G" 11 11 11 11 11
FH	1	1	G" A 423 CENTURION FIRE HYDR (MULLER)
8" X 8" TAP & SLEEVE	2	2	H-GIS MJ./MULLER COMP. (FILTER)

	EX. 30" W (CONTR. #24-3725)
SITE	PROP. 8" W (CONTR. #44-3808-D)
EX. 8" W	(CONTR. #44-3808-D)
(CONTR. #44-1778-D) TO BE ABANDONED PROP. 8" W (CONTR. #44-3808-D)	. 8" W ONTR. #44-1778-D)
EX. 8" SAN	PATUAENT EN
(CONTR. #24-1439-D) L+16434 OR.	
5	(175)
	R. C.
	GATEWAY
WATER CODE: E-06 SEWER CODE: 3390000	VICINITY MAP SCALE: 1" = 600'

SEWER CODE: 3390000 TEST GRADIENT: 700

BENCH MARKS: W.R. & A.B.M. #2: ELEV. 365.28 R.R. SPIKE IN BASE OF 14" POPLAR, 90'± RIGHT OF C ALEXANDER BELL DRIVE PT STA. 11+23.93.

W.R. & A.B.M. #3: ELEV. 329.26 TOP BOLT @ TOP OLD LIGHT POST FOOTER, 143' OF C COLUMBIA GATEWAY DRIVE STA. 11+50.

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

SOIL CONSERVATION DISTRICT

SDP-00-39 REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

NATURAL RESOURCES SERVICE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Baker

Michael Baker Jr.,

MICHAEL BAKER JR. INC. Consulting Engineers 3601 Eisenhower Avenue, Suite 600 Alexandria, Virginia 22304

703-960-8800

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PROPOSED WATER MAIN CONTRACT NO. 44-3808-D

600' SCALE MAP #36 BLOCK #24 **COLUMBIA GATEWAY**

PARCEL 'A' ELECTION DISTRICT #6 HOWARD COUNTY, MARYLAND DECEMBER 20, 1999

AS SHOWN SHEET 1 OF 3

SCALE:

