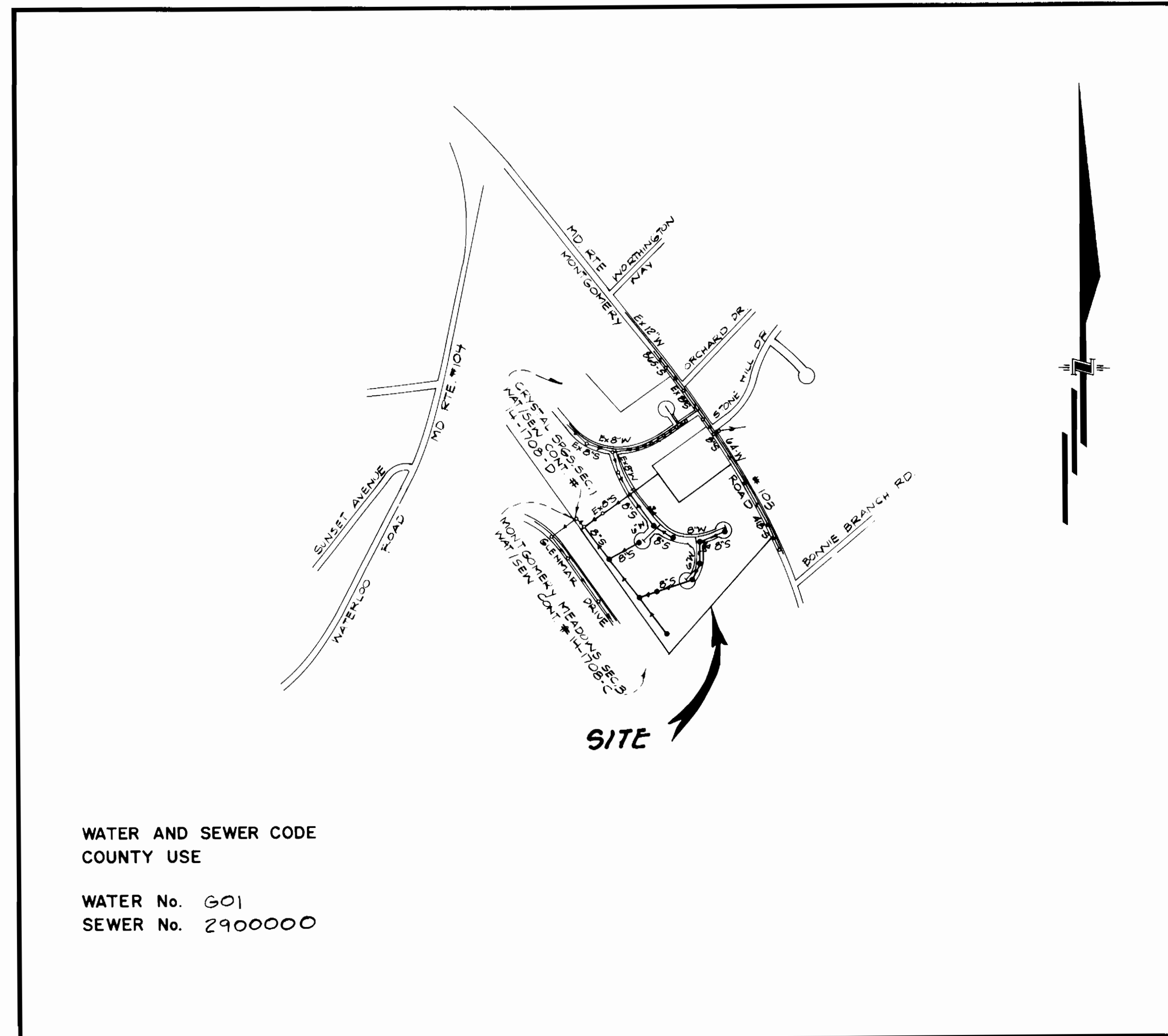


TYPE OF BUILDING	Single Family Detached
NUMBER OF UNITS	36
NUMBER OF SHC's	37
NUMBER OF WHC's	36
DRAINAGE AREA	PATAP SCO

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 supply. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer, at the contractor's expense.
- All horizontal controls are based on Maryland State Coordinates.
- All vertical controls are based on U.S.G.S Datum
- All pipe elevations shown are invert elevations.
- Clear all utilities by a minimum of 6". Clear all poles by 2'-0" minimum or tunnel as required. Any cost incurred by the contractor for tunnelling or bracing of poles shall be included in unit prices bid for construction of the main.
- For details not shown on the drawings, use Howard County Standard Details.
- For materials and construction methods, use Howard County Standard Specifications & Howard County Design Manual, Volume IV. The Contractor shall have a copy of Volume IV on the job.
- Contractor shall locate existing utilities a minimum of two (2) weeks in advance of construction operations in the vicinity of proposed utilities, at his own expense.
- Contractor shall notify the following utilities or agencies at least five (5) working days before starting work shown on these plans.

State Highway Administration	531-5533	Baltimore Gas & Electric Company	
"Miss Utility"	1-559-0100	Contractor Services	561-2585
Chesapeake & Potomac (C&P)		Underground Damage Control	234-5621
Telephone Company	725-9976	Trouble-shooting	298-9013
Colonial Pipeline Company	795-1390	Bureau of Utilities, Howard County	992-2366
- Trees are to be protected from damage to maximum extent. Trees located within the construction strip are not to be removed or damaged by the contractor.
- Contractor shall remove trees, stumps and roots along line of excavation as directed by the Engineer. Payment for such removal shall be included in the unit price bid for construction of the main.
- Place regulation "Men Working" and warning signs as required to comply with Maryland State Highway Administration Manual of Traffic Control for Highway Construction and Maintenance Operations.
- All water mains to be D.I.P., Class 52 Only.
- Top of all water mains to have a minimum of 3-1/2' cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- Block all fittings with concrete.
- Bury line elevations on fire hydrants shall be set to the elevations shown on the drawings. All fire hydrants shall be strapped and buttressed with concrete in accordance with standard details. Soil around the fire hydrant to be compacted in accordance with Sections 1005 and 1006 of the Standard Specifications.
- All water house connections shall be for an inside meter setting.
- The contractor shall not operate any water main valves on the existing system.
- For all Copper Water House Connections, utilize flared type fittings only.
- All sewer mains shall be CSPX, VCPX, R.C.S.P., PVC or ACP - Class 2400 unless otherwise noted.
- The contractor shall provide a joint in all sewer mains within 2'-0" of exterior manhole wall.
- All manholes shall be 4'-0" inside diameter, unless otherwise noted.
- 12" and 16" manhole wall thicknesses shown on profiles pertain to brick manholes only.
- Manholes designated W.T. in plan and profile shall have watertight frames and covers. (See Standard Detail G 5 52) Where watertight manhole frame and cover is used, set top of frame 1'-6" above finished grade. (See Standard Detail G 5 41)
- House(s) with the symbol "CNS" indicates that cellar cannot be served.
- Water main and water house connection lines must have a minimum of one foot separation from either sanitary sewer or sewer house connections as they cross. Except at crossings, water and sewer lines shall have a minimum horizontal separation of 10'.
- All D.I.P. Fittings shall be in accordance with A.W.W.A. specification C-153 ductile iron compact fittings, 3-inch through 12-inch for water and other liquids.



WATER AND SEWER CODE
COUNTY USE

WATER No. 601
SEWER No. 2900000

VICINITY MAP
SCALE: 1" = 600'

CONTRACT NO.14-1825-D

CRYSTAL SPRINGS ESTATES

SECTION 2 AREA 1

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

Sediment Control Measures will be implemented in accordance with Section 219 of the Specifications B with Road Construction Plan F 09-22; Drawings 446 of 6 for Sediment & Erosion Control and this plan.

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENT.

James M. Helms / *MM* 6/2/90
SIGNATURE DATE

U.S. SOIL CONSERVATION SERVICE

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

APPROVED:
John R. Robertson 6/6/90
HOWARD S.C.D. DATE

QUANTITIES			
ITEM	ESTIMATED	AS-BUILT	MATERIAL / SUPPLIER
8" S	2390 L.F.	2390 LF	SDR 35 J.M. PIPE
8" W	909 L.F.	909 LF	CL 52 GRIFFIN PIPE
6" W	448 L.F.	448 LF	CL 52 GRIFFIN PIPE
4'Dia. MH	13 EA.	13 EACH	4' Ø MH DEWEY BROS
F.H.	4 EA.	4 EACH	
8" V.	3 EA.	3 EACH	MUELLER CO
6" V. (Excl. F.H.V.)	1 EA.	1 EACH	MUELLER CO
6" S.H.C.	305 L.F.	305 LF	J.M. PIPE
1" W.H.C.	602 L.F.	602 LF	HOWELL METALS
3/4" W.H.C.	257 L.F.	257 LF	HOWELL METALS
8"x6" TEE	1 EA.	1 EACH	J.M. PIPE
6"x4 TEE	1 EA.	1 EACH	GRIFFIN PIPE
4" S.H.C.	1140 L.F.	1140 LF	J.M. PIPE
3" Blowoff	1 EA.	1 EACH	MUELLER CO
8"x8" Tee	1 EA.	1 EACH	GRIFFIN PIPE
1 1/2" W.H.C.	72 L.F.	72 LF	HOWELL METALS

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James M. Helms 6/2/90
DIRECTOR OF PUBLIC WORKS DATE

John R. Robertson 6-4-90
CHIEF, BUREAU OF UTILITIES DATE

John M. Longman 6/1/90
CHIEF, LAND DEVELOPMENT DIV DATE

GW GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS

1909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK
BURTONSVILLE, MD 20886
(301) 421-4024



DES: GPM
DRN: R.R.S.
CHK: C.K.G.
DATE: MAY 1990

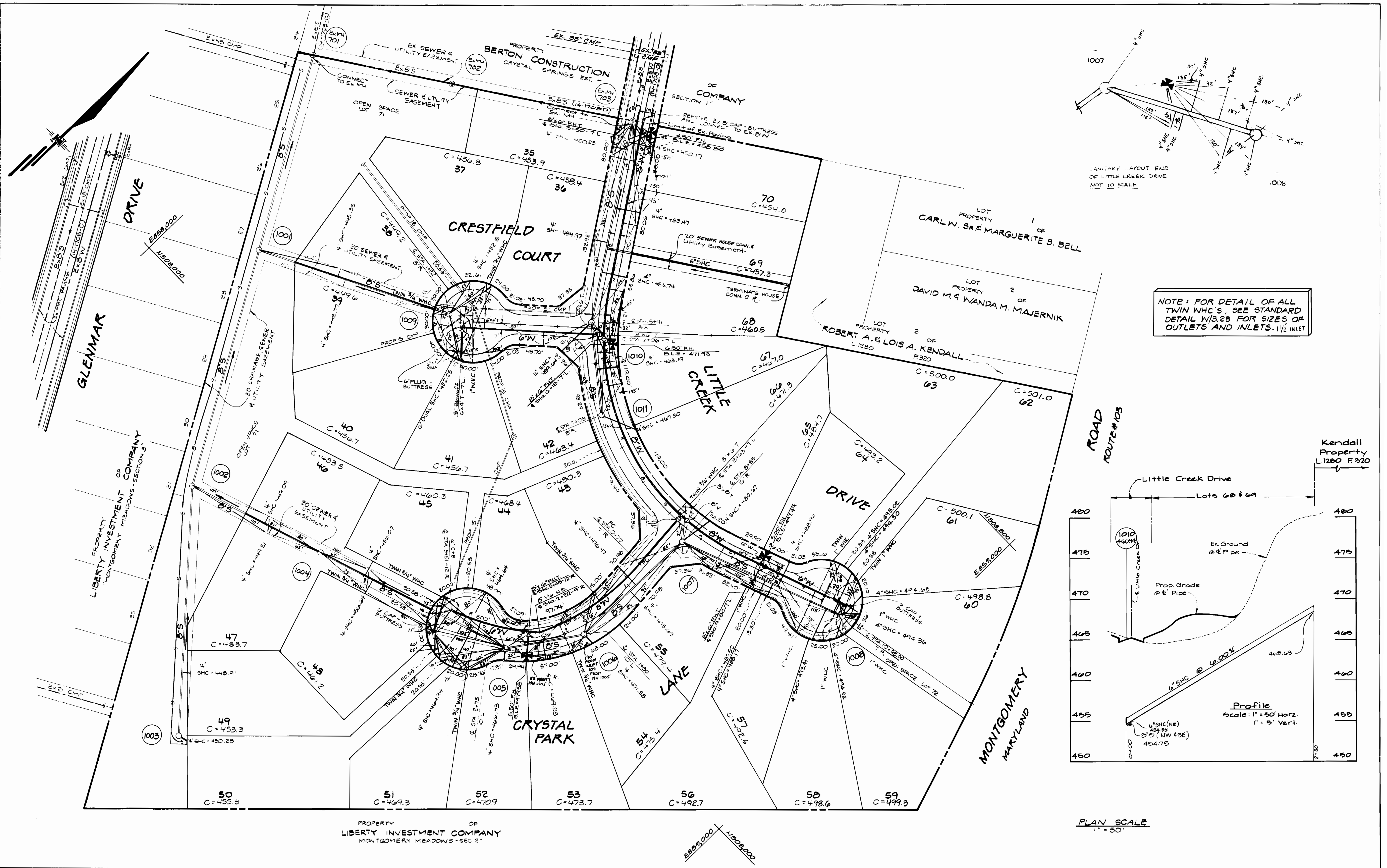
TITLE SHEET

600' SCALE MAP NO. 21 BLOCK NO. 14

CRYSTAL SPRINGS ESTATES
SECTION 2 AREA 1
LOTS 35 THRU 72
1ST ELECTION DISTRICT
CONTRACT NO. 14-1825-D

SCALE AS SHOWN

SHEET 1 OF 3



NOTE: FOR DETAIL OF ALL TWIN WMC'S, SEE STANDARD DETAIL W/3.23 FOR SIZES OF OUTLETS AND INLETS. 1 1/2" INLET

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

GW GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3908 NATIONAL DRIVE, SUITE 200, BURTONTOWNE OFFICE PARK
 BURTONTOWNE, MD. 20866
 (301) 421-4024

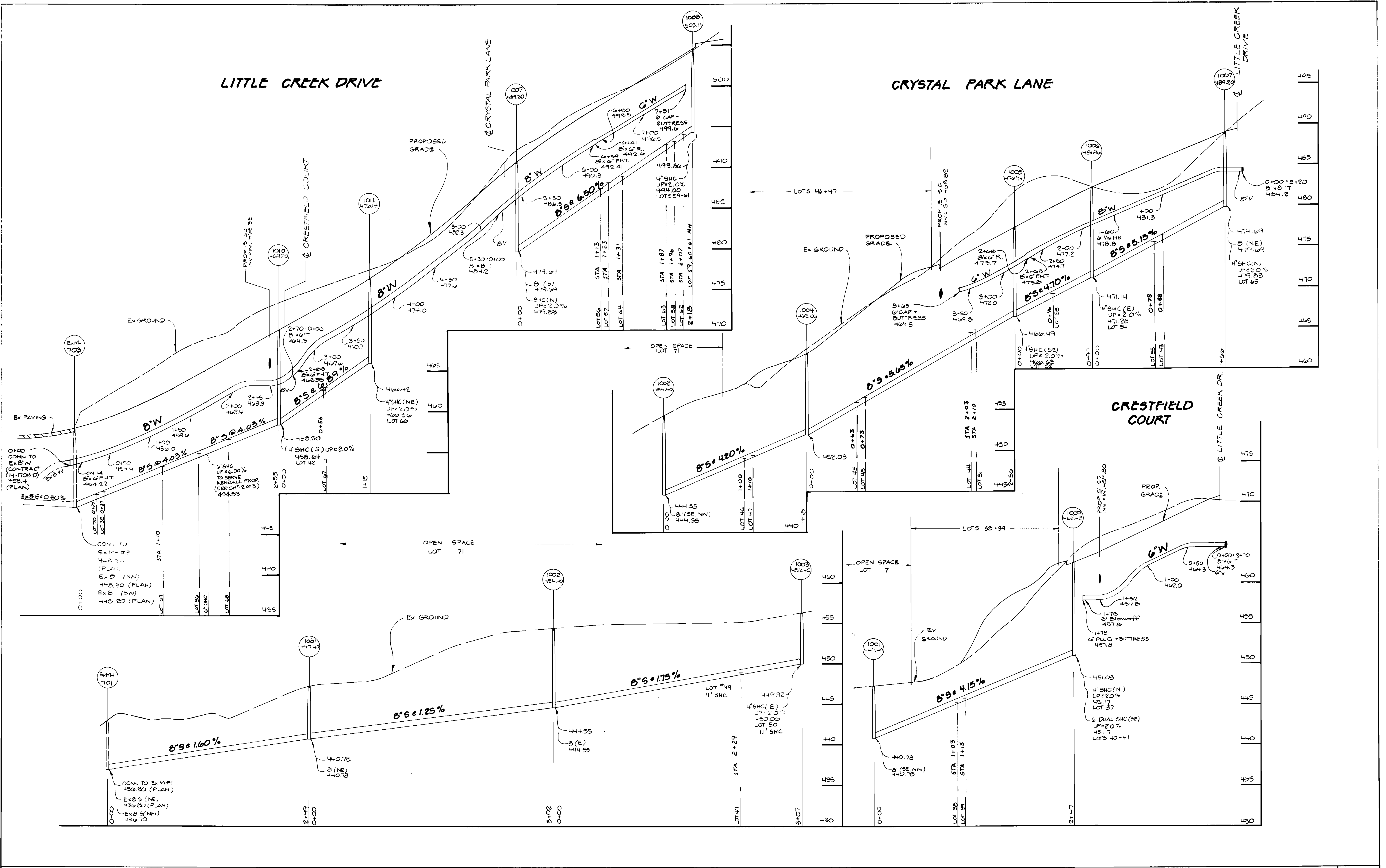


DES: G.P.M.			
DRN: R.R.G.			
CHK: C.K.G.			
DATE: MAY 1990	BY: NO.	REVISION	DATE

PLAN WATER & SEWER MAINS

CRYSTAL SPRINGS ESTATES
 SECTION 2 AREA 1
 LOTS 35 THRU 72
 CONTRACT NO. 14-1825-D
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 2 OF 3



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

James W. ... 6/13/90
 DIRECTOR OF PUBLIC WORKS DATE

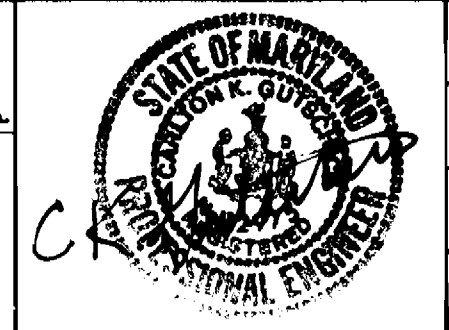
Robert M. Benjamin 6-4-90
 CHIEF, BUREAU OF UTILITIES DATE

... 6/12/90
 CHIEF, BUREAU OF ENGINEERING DATE

... 6/12/90
 CHIEF, LAND DEVELOPMENT DIV DATE

GW GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS

1909 NATIONAL DRIVE SUITE 250 BURTONTOWNE OFFICE PARK
 BURTONTOWNE, MD 20866
 (301) 421-4024



DES: GPM	BY NO.	REVISION	DATE
DRN: R.R.S.			
CHK: C.K.G.			
DATE: MAY 1990			

PROFILES WATER & SEWER MAINS

600' SCALE MAP NO. 21 BLOCK NO. 14

CRYSTAL SPRINGS ESTATES
 SECTION 2 AREA 1
 LOTS 35 THRU 72
 CONTRACT NO. 14-1825-D
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 3 OF 3