

QUANTITIES			
ITEM	EST'D	AS BUILT	SUPPLIER
8" WATER	1663 L.F.	1246 L.F.	ATLANTIC STATE
6" WATER	160 L.F.	181 L.F.	ATLANTIC STATE
3/4" W.H.C.	387 L.F.	236 L.F.	HOWELL METAL
1" W.H.C.	207 L.F.	280 L.F.	HOWELL METAL
FIRE HYDRANTS	3 EA.	3 EA.	MULLER
8" SEWER	2467 L.F.	2344 L.F.	BEAUMONT ROAD SUPPLY
12" TAPPING SLEEVE & 8" VALVE	1 EA.	1 EA.	BEAUMONT ROAD SUPPLY
MANHOLES	16 EA.	16 EA.	ATLANTIC STATE
6"	122 L.F.	80 L.F.	BEAUMONT ROAD SUPPLY
8" VALVES	EA.	2 EA.	MULLER
6" VALVES (EXCLUDING F.H.)	1 EA.	1 EA.	MULLER
6" F.H. VALVES	3 EA.	3 EA.	MULLER
8x6" TEE	1 EA.	1 EA.	GRIFFIN PIPE
8x8" TEE	1 EA.	1 EA.	GRIFFIN PIPE
3"	3 EA.	3 EA.	GRIFFIN PIPE
1"	1 EA.	1 EA.	GRIFFIN PIPE
2"	1 EA.	1 EA.	GRIFFIN PIPE
4"	932 L.F.	932 L.F.	BEAUMONT ROAD SUPPLY

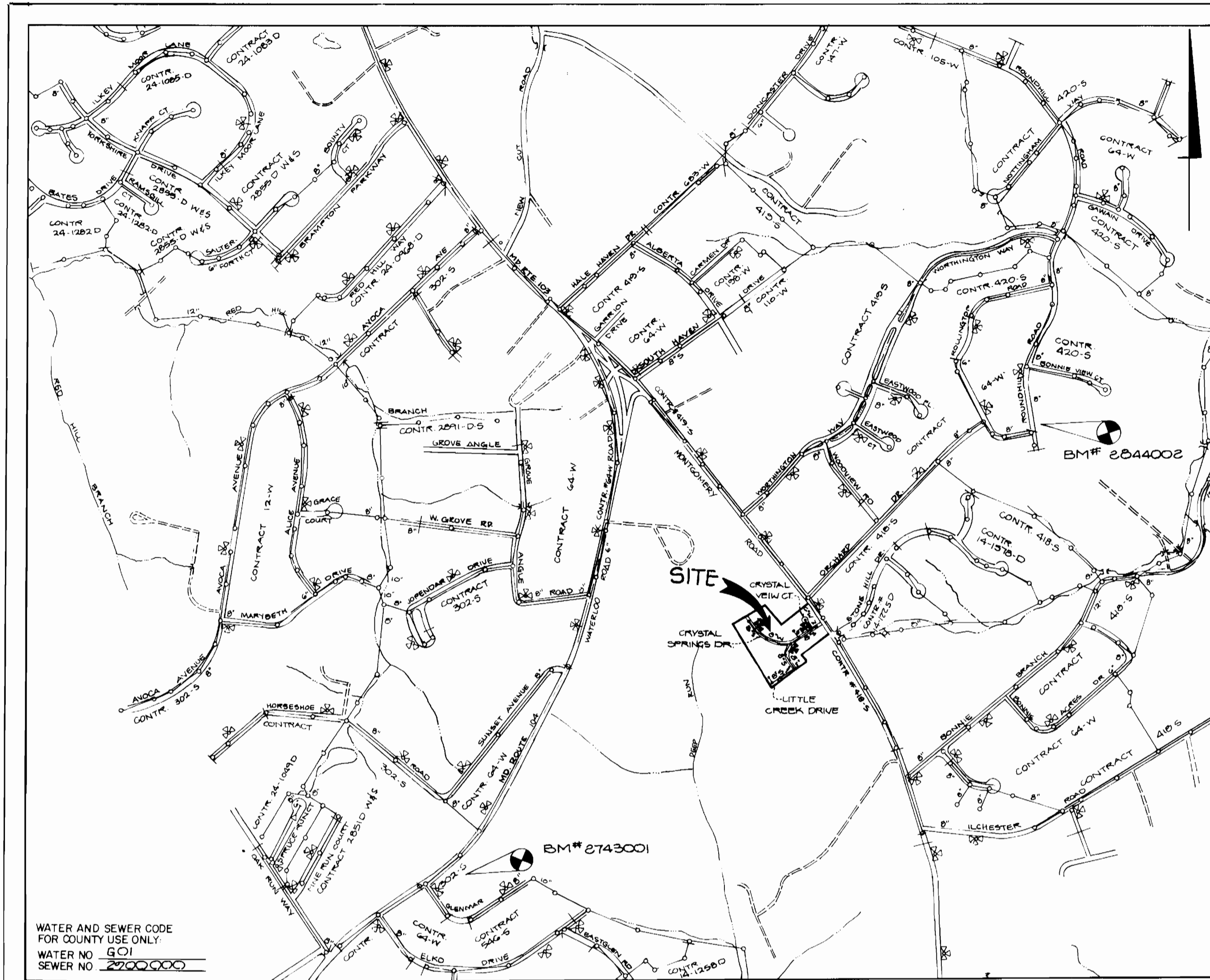
BENCH MARKS

BM#1 ELEV 415.967
 3/4" REBAR 0.5' BELOW SURFACE 7' WEST OF ROUTE 103 & 1400' SOUTH OF INTERSECTION OF ILCHESTER ROAD. (NOT SHOWN)

BM#2 ELEV 419.625
 3/4" REBAR 0.6' BELOW SURFACE 10' WEST EDGE OF ROUTE 103 & 80' NORTH OF KERGE ROAD. (NOT SHOWN)

HOWARD COUNTY MON.#2743001 ELEV 501.272
 3/4" REBAR 0.5' BELOW SURFACE AT TOP OF BANK ON GLEN MAR CHURCH LAWN.

HOWARD COUNTY MON.#2844002 ELEV 494.838
 CONCRETE MON. AT SURFACE 13' N.W. OF TWIN 12" APPLE 70'x9' OF GRAVEL DRIVE ACROSS POWER LINE FROM INTERSECTION OF ROUND HILL ROAD AND ROLLING TOP ROAD.



TYPE OF BUILDING SINGLE FAMILY RESIDENTIAL
 NUMBER OF LOTS 33 (32 BUILDABLE)
 NO OF WATER HOUSE CONNECTIONS 32
 NO OF SEWER HOUSE CONNECTIONS 22
 DRAINAGE AREA PATAPSCO

SCALE: 1" = 600'

**CONTRACT NO. 14-1708-D
 CRYSTAL SPRINGS ESTATES, SECTION I
 WATER & SEWER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND
 DEPARTMENT OF PUBLIC WORKS**

GENERAL NOTES

- 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.
- 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 TO THE CONTRACTOR FOR TUNNELING OR BRACING AT 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.
- 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 AND ELECTRIC COMPANY - UNDERGROUND ELECTRIC DISTRIBUTION CUSTOMER SERVICE 685-0123
 - BALTIMORE GAS AND ELECTRIC COMPANY - UNDERGROUND GAS DISTRIBUTION CUSTOMER SERVICE 685-0123
 - ENGINEERING - "DAMAGE CONTROL" 234-5611
 - "MISS UTILITY" 1-559-0100
 - CHESAPEAKE & POTOMAC (C&P) TELEPHONE COMPANY 725-9976
 - AMERICAN TELEPHONE AND TELEGRAPH - CABLE LOCATION DIVISION 393-3533
 - 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.
- ALL WATER MAINS AND FITTINGS 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.
- BURYLINE ELEVATIONS ON ALL 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 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING SYSTEM.
- ALL SEWER MAINS SHALL BE C.S.P.X., F.C.S.P., V.C.P.X., A.C.P. CLASS 2400 OR PVC UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 20' OF EXTERIOR MANHOLE WALL.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER, UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE D.I.P. ONLY.
- ALL SEWER HOUSE CONNECTIONS ARE AT 2% SLOPE.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G 5 52. WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE, STANDARD DETAIL G 5 41.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CAN NOT BE SERVED.
- ALL CONSTRUCTION TO BE DONE AS PER THIS PLAN AND HOWARD COUNTY DESIGN MANUAL VOL. IV.
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATIONS C 153. DUCTILE IRON COMPACT FITTINGS 3 INCH THROUGH 12 INCH WATER AND OTHER LIQUIDS.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH ARTICLE 15 OF THE HOWARD COUNTY DESIGN MANUAL AND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS AND ALSO AS SHOWN ON THE GRADING AND SEDIMENT CONTROL PLAN F-38-278.

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

STABILIZATION NOTES

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT STABILIZATION SHALL BE COMPLETED WITHIN 17 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1. 2) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

APPROVED: *Stephen L. Rubin* 9/21/89
 HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
Robert J. Bauninger 9/22/89
 U.S. SOIL CONSERVATION SERVICE DATE

CONTRACT NO. 14-1708-D
 CRYSTAL SPRINGS ESTATES, SEC. I
 WATER AND SEWER EXTENSION

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

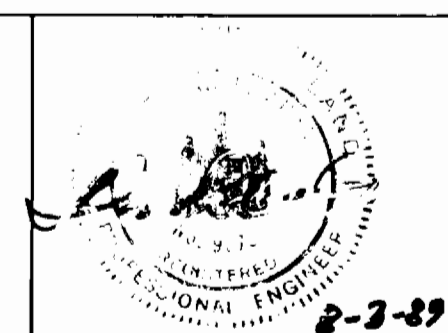
Robert J. Bauninger 9/25/89
 DIRECTOR OF PUBLIC WORKS DATE

Franklin E. Johnson 9/25/89
 CHIEF, BUREAU OF ENGINEERING DATE

Franklin E. Johnson 9/25/89
 CHIEF, LAND DEVELOPMENT DIVISION DATE

DEWBERRY & DAVIS
 ARCHITECTS ENGINEERS PLANNERS SURVEYORS

3300 N. RIDGE ROAD
 SUITE 100
 ELLICOTT CITY, MD 21043
 (301) 461-7478



DES: 10/5	D&P	REVISE GENERAL NOTE #17 TO READ SECTIONS 1000 & 1005 5-1-90
DRN: 10/5	WED	REVISE GENERAL NOTE #17 FROM 1000 & 1005 TO 1000 & 1005 5-1-90
CHK: 10/5		
DATE:	BY NO.	REVISION

TITLE SHEET

600' SCALE MAP NO. 31 BLOCK NO. 12

CRYSTAL SPRINGS ESTATES, SEC. I

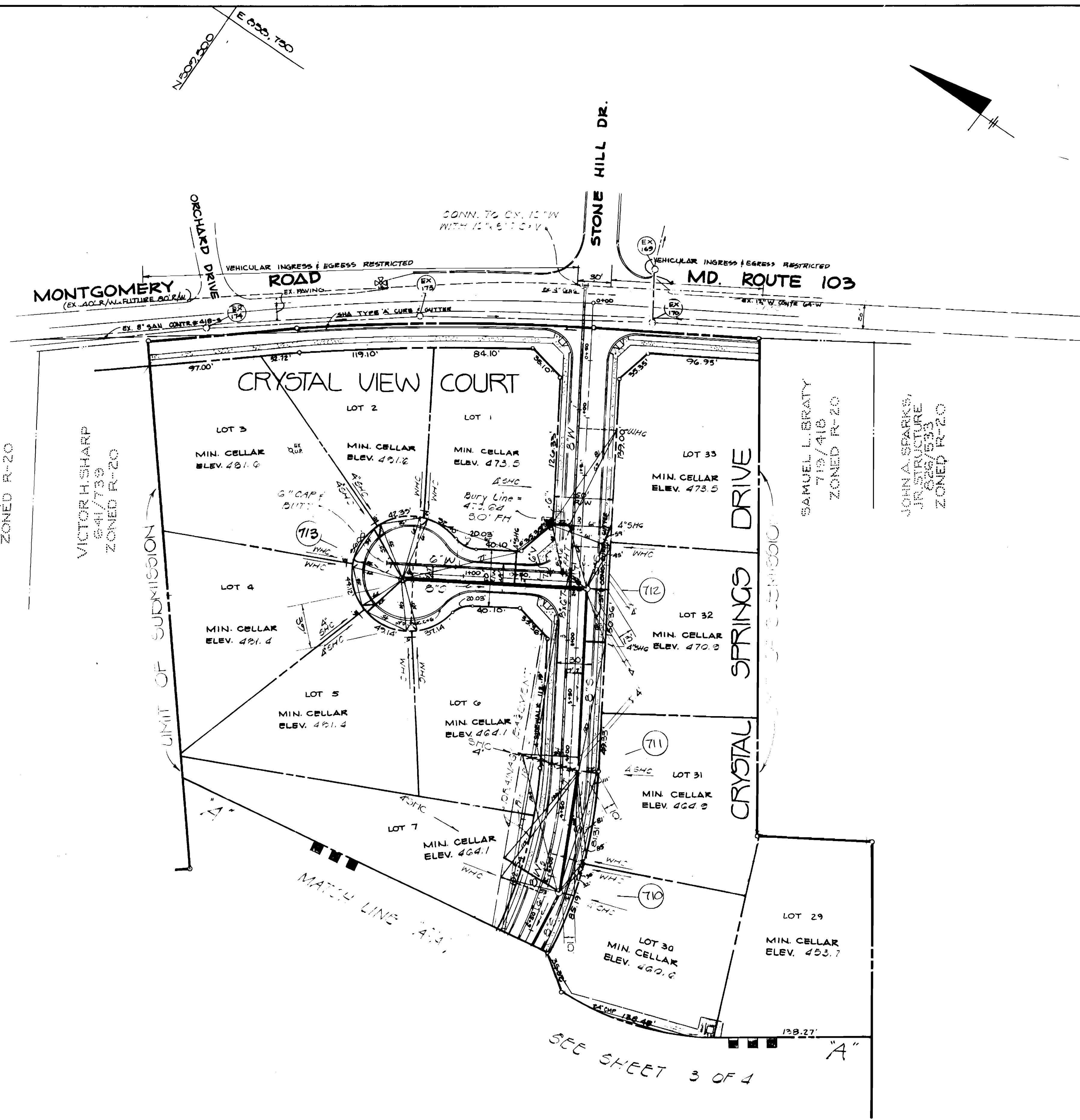
TAX MAP 31 PARCEL 175
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 14-1708-D

SCALE AS SHOWN
 SHEET 1 OF 1

SEWER HOUSE CONNECTION INVERT ELEV. @

LOT #	LOCATION	INVERT	LOT #	LOCATION	INVERT
CRYSTAL SPRING DR.					
1	MH 712-MH 713	471.89	20	MH 702-703	445.98
33	MH 712	469.36	28	MH 703	448.72
32	MH 711-712	464.56	27	MH 703-704	442.08
31	MH 711	462.76	26	MH 704	442.92
30	MH 710	461.10	25	MH 704-705	450.96
CRYSTAL SPRING COURT					
8	MH 705	458.39	23	MH 713	477.52
9	MH 706	453.09	24	MH 713	477.44
24	MH 706-707	455.33	7	MH 710	457.20
19	MH 706	453.33			
23	MH 715-714	445.35			
22	MH 714	446.11			
11	MH 707	454.41			
21	MH 707	453.81			
20	MH 708	453.34			
18	MH 708-709	456.92			
19	MH 708	454.75			
13	MH 707	455.72			
12	MH 707	456.18			
14	MH 707	456.16			
16	MH 707	456.93			
15	MH 707	457.15			
17	MH 707	456.25			

MH NO	Q. RD. STATION	DISTANCE	RIM	GRADE
OUTFALL				
701			442.82	
702			452.49	
LITTLE CREEK DRIVE				
703	3+40	7' LEFT	457.87	2.4%
704	1+30	18' LEFT	459.39	5.8%
CRYSTAL SPRING DRIVE				
705	6+14	7' LEFT	466.44	1.5%
706	7+18	11' LEFT	461.74	1.5%
707	8+63	11' LEFT	462.93	1.7%
708	9+69	11' LEFT	461.31	1.7%
709	13+17	7' LEFT	467.40	1.7%
710	5+11	11' LEFT	465.55	1.5%
711	4+05	7' LEFT	470.52	6.5%
712	2+38	7' LEFT	479.79	6.5%
CRYSTAL VIEW COURT				
713	1+52	7' LEFT	485.64	4.0%



PLAN SCALE: 1"=50'

CONTRACT NO. 14-1708-D
CRYSTAL SPRINGS ESTATES, SEC. I
WATER AND SEWER EXTENSION

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. ... 9/25/89
CHIEF, LAND DEVELOPMENT DIVISION DATE

Robert ... 9-19-89
CHIEF, BUREAU OF UTILITIES DATE

James P. ... 9-25-89
CHIEF, BUREAU OF ENGINEERING DATE

Robert ... 9/25/89
DIRECTOR OF PUBLIC WORKS DATE

DEWBERRY & DAVIS
ARCHITECTS-ENGINEERS-PLANNERS-SURVEYORS

3300 N. RIDGE ROAD
SUITE 100
ELLCOTT CITY, MD. 21043
(301) 461-7478



DES.	CHK.	DATE	BY	NO.	REVISION	DATE
M.L.C.					REVISE CONSTRUCTION TABLE & DELETE MH 713	3/1/91
M.S.O.						
SK.W.						
		9/28				

PLAN WATER & SEWER

SCALE: 1" = 50'

600' SCALE MAP NO. 31 BLOCK NO. 12

CRYSTAL SPRINGS ESTATES SECTION I

TAX MAP 31 PARCEL 175

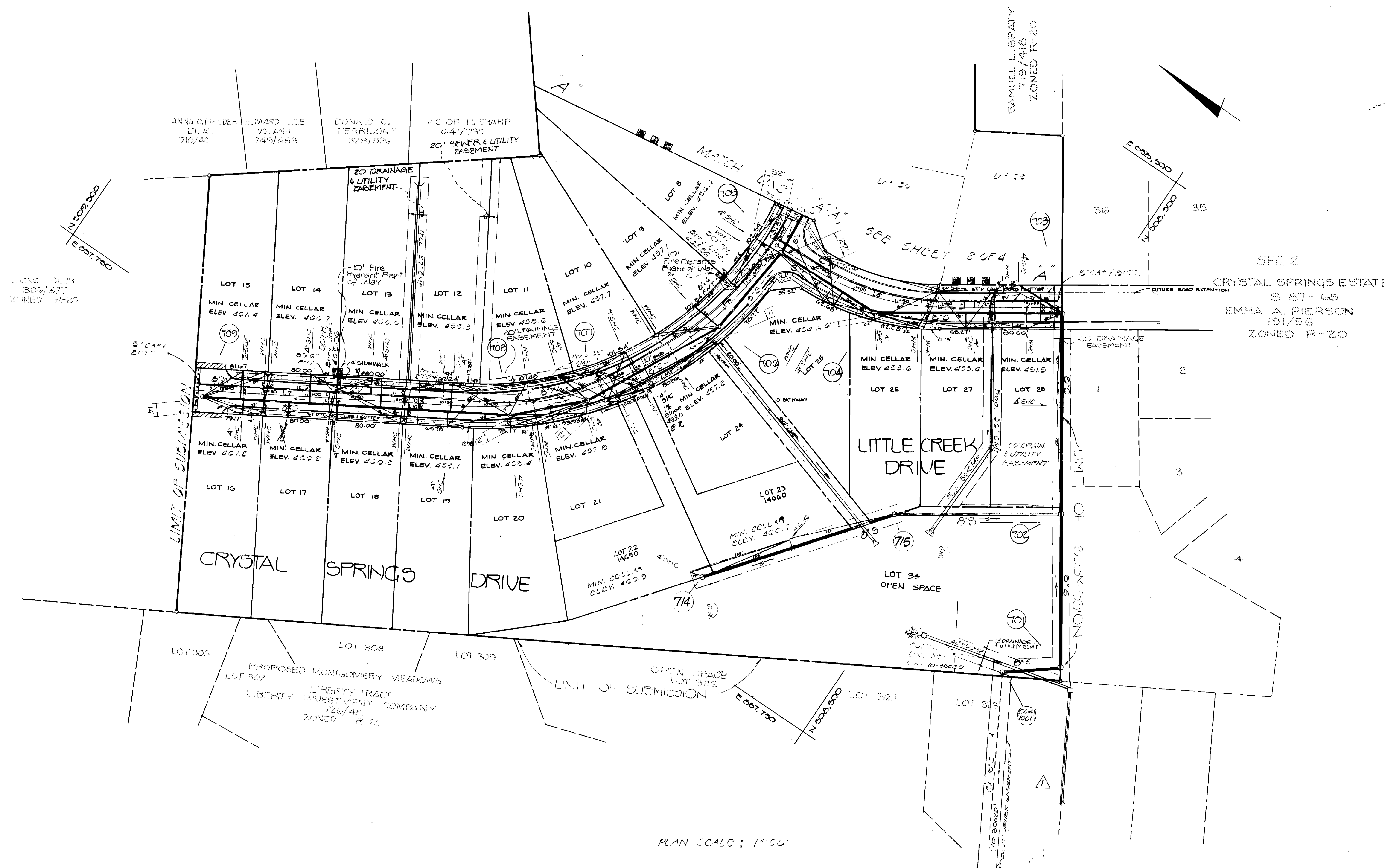
1ST ELECTION DISTRICT HOWARD CO. MD.

CONTRACT NO. 14-1708-D

SCALE AS SHOWN

SHEET 2 OF 5

AS-BUILT 8-9-89 WSPD-BC



CONTRACT NO 14-1708-D
 CRYSTAL SPRINGS ESTATES
 WATER AND SEWER EXTENSION

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

James A. ... 9/25/89
 CHIEF, LAND DEVELOPMENT DIVISION DATE

Robert ... 9-19-89
 CHIEF, BUREAU OF UTILITIES DATE

DEWBERRY & DAVIS
 ARCHITECT-ENGINEERS-PLANNERS-SURVEYORS

3300 N. RIDGE ROAD
 SUITE 100
 ELLICOTT CITY, MD. 21043
 (301) 461-7478



DES: W.L.C.	DATE: 9/88
DRN: W.E.G.	
CHK: S.K.W.	
BY: NO.	REVISION

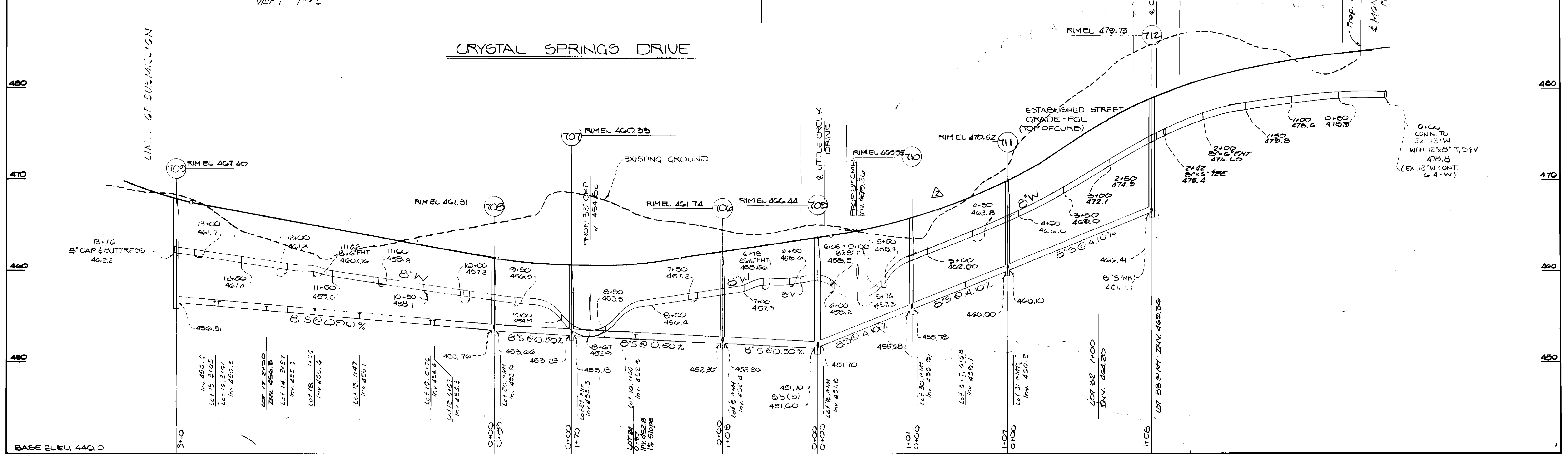
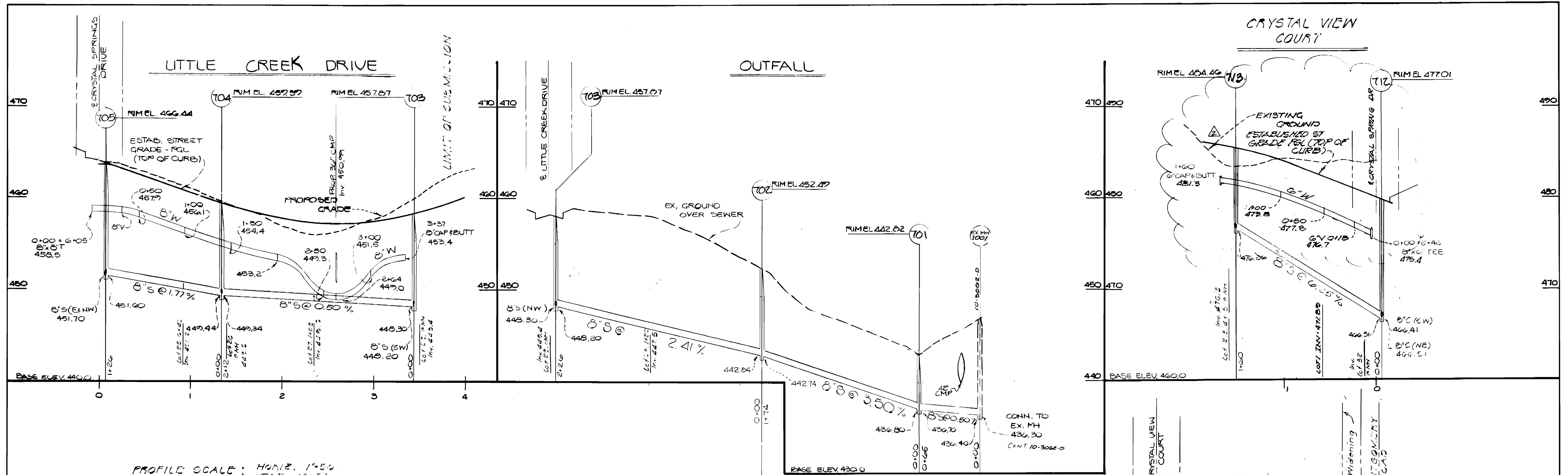
PLAN
 WATER & SEWER
 SCALE: 1" = 50'

60' SCALE MAP NO. 31 BLOCK NO. 12

CRYSTAL SPRINGS ESTATES
 SECTION I
 TAX MAP 31 PARCEL 175
 1ST ELECTION DISTRICT HOWARD CO. MD
 CONTRACT NO. 14-1708-D

SCALE AS SHOWN
 SHEET 3 OF 6

AS SHOWN 8-9-91 W6010 EG



CONTRACT NO. 14-1708-D
CRYSTAL SPRINGS ESTATES
WATER AND SEWER EXTENSION

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. St...
DIRECTOR OF PUBLIC WORKS
DATE: 9/25/09

Robert...
CHIEF, BUREAU OF UTILITIES
DATE: 9/19/09

DEWBERRY & DAVIS
ARCHITECTS-ENGINEERS-PLANNERS-SURVEYORS

3300 N. RIDGE ROAD
SUITE 100
ELLICOTT CITY, MD. 21043
(301) 461-7478



DES: W.L.P.	DATE: 6/08	REVISION	DATE
DRN: W.E.O.			
CHK: S.K.W.			
BY	NO.	REVISION	DATE
		REMOVED SHC FOR LOT# 20223	5-18
		REVISE STREET GRADE & WATER MAIN	3-8-01

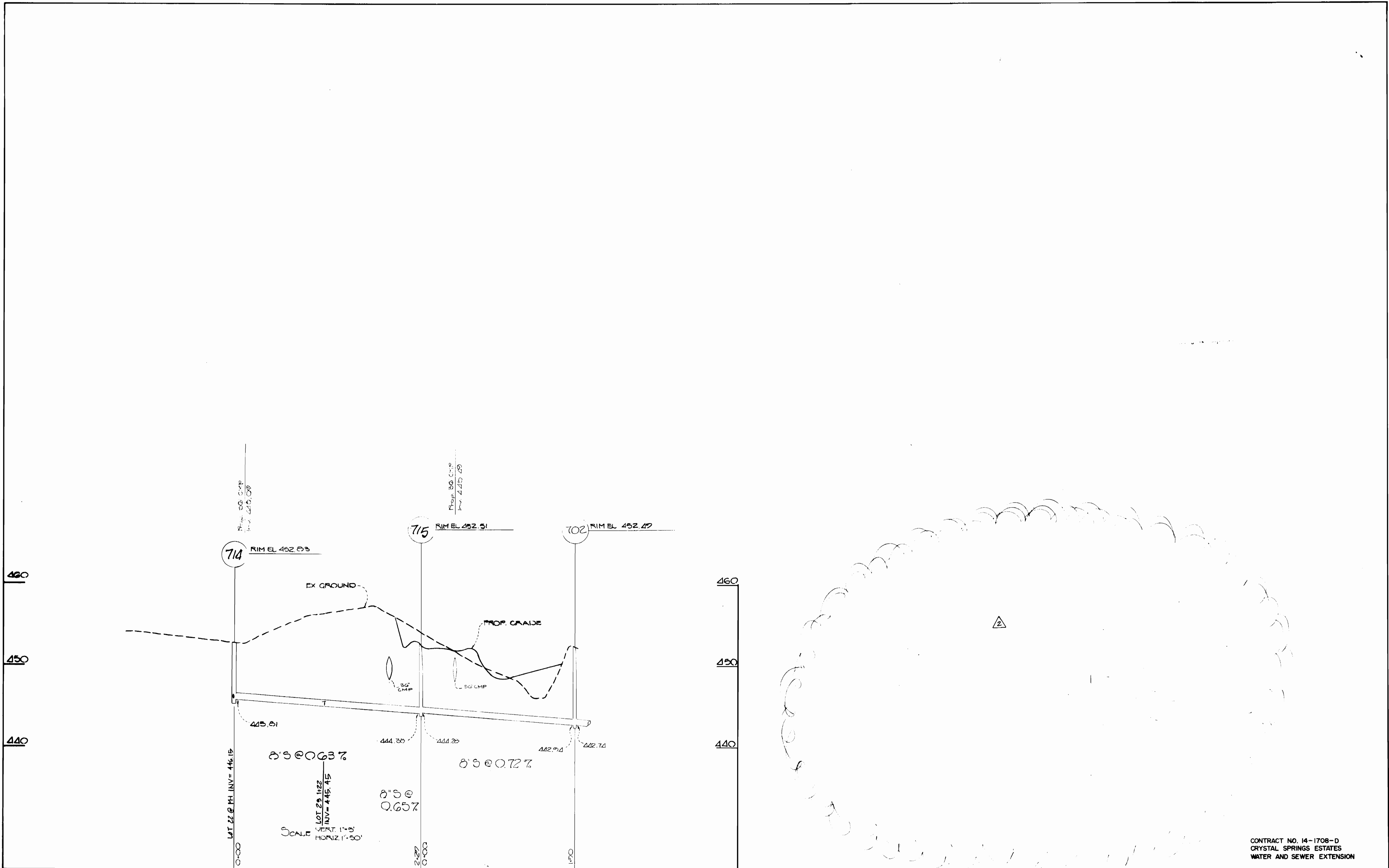
PROFILES
SEWER AND WATER

600' SCALE MAP NO. 31 BLOCK NO. 12

CRYSTAL SPRINGS ESTATES
SECTION I

TAX MAP 31 PARCEL 175
1ST. ELECTION DISTRICT HOWARD CO. MD
CONTRACT NO. 14-1708-D

SCALE AS SHOWN
SHEET 8 OF 8



CONTRACT NO. 14-1708-D
CRYSTAL SPRINGS ESTATES
WATER AND SEWER EXTENSION

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James W. Clark
DIRECTOR OF PUBLIC WORKS
DATE: 9/25/09

Robert J. DeWberry
CHIEF, BUREAU OF UTILITIES
DATE: 9-19-09

Thomas T. Wynn
CHIEF, BUREAU OF ENGINEERING
DATE: 9-25-09

Robert J. DeWberry
CHIEF, LAND DEVELOPMENT DIVISION
DATE: 9/25/09

DEWBERRY & DAVIS
ARCHITECTS-ENGINEERS-PLANNERS-SURVEYORS

3300 N. RIDGE ROAD
SUITE 100
ELLCOTT CITY, MD 21043
(301) 461-7478



DES:	PEP	ADD SHL FOR LOTS 22 & 23	5-1-90
DRN:	WED	REMOVE SEWER HOUSE CONNECTION PROFILE 5 B 91	
CHK:			
DATE:	BY	NO.	REVISION

**PROFILE
WATER & SEWER**

600' SCALE MAP NO. 31 BLOCK NO. 12

**CRYSTAL SPRINGS ESTATES
SECTION I**

TAX MAP 31 PARCEL 175
1ST ELECTION DISTRICT HOWARD CO. MD
CONTRACT NO. 14-1708-D

SCALE
AS
SHOWN

SHEET
5 OF 5

AS-BUILT 8-9-91 W9010-EC