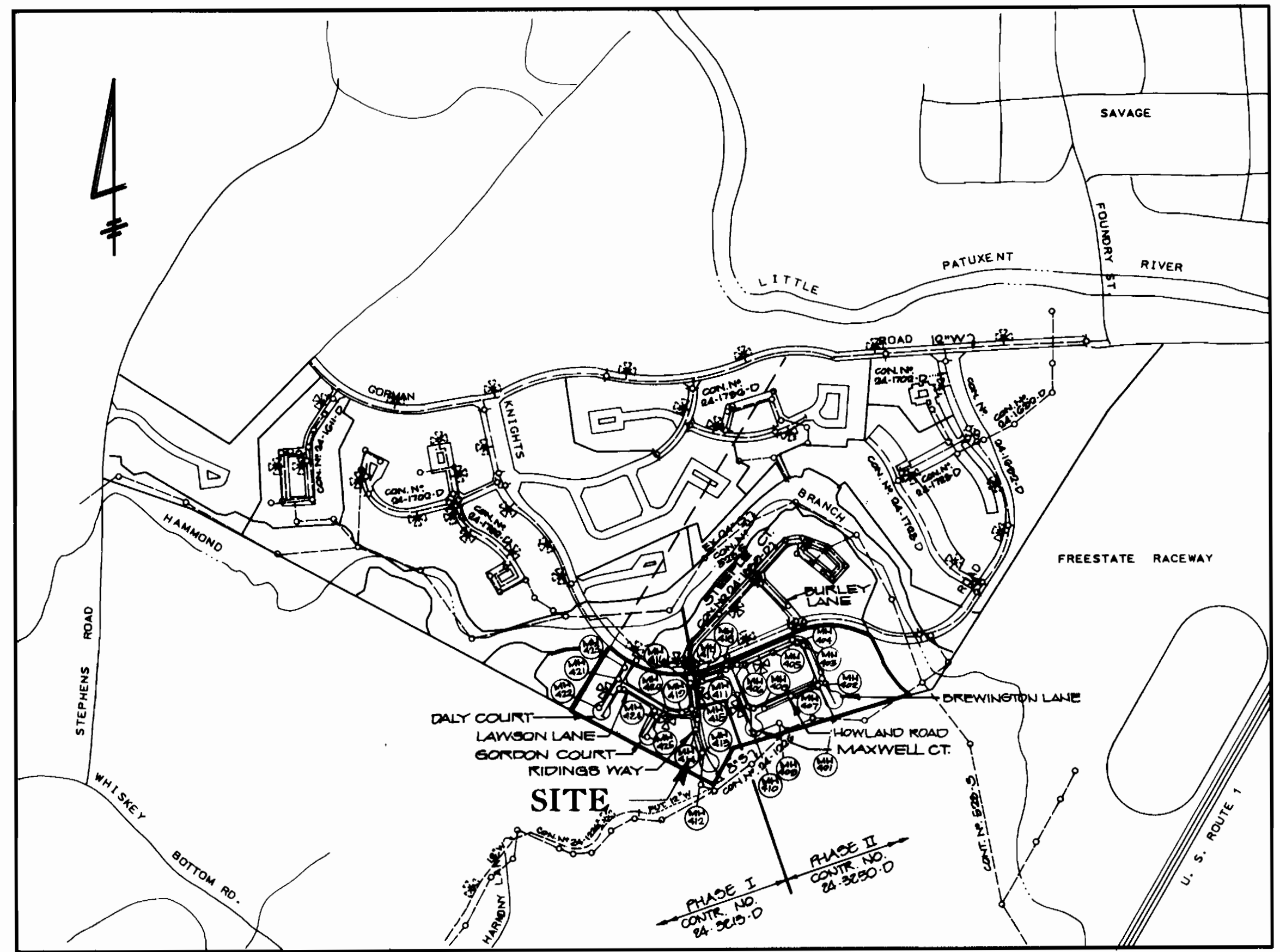


QUANTITIES				
ITEMS	QUANTITIES ESTIMATES	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
SANITARY MANHOLE	28 EA.	13	Pre-Cast	Amalgam Concrete Products Inc.
8" S	2703 L.F.	1000 L.F.	P.C.P.	J.M. Manuella Co.
4" S	4545 L.F.	1636 L.F.	P.C.P.	Belair Rd. Supply Co.
12" W	1406 L.F.	822 L.F.	D.I.P.	Griffin Pipe Products Co.
12" W	600 L.F.	600 L.F.	D.I.P.	Griffin Pipe Products Co.
12" W	2441 L.F.	751 L.F.	D.I.P.	Griffin Pipe Products Co.
6" W	713 L.F.	384.75 L.F.	D.I.P.	Griffin Pipe Products Co.
12" V	2 EA.	2	R.S.P.R.	Mueller Co.
8" V	12 EA.	4	R.S.P.R.	Mueller Co.
6" V	6 EA.	4	R.S.P.R.	Mueller Co.
P.H.	6 EA.	0	U.S. Pipe & Foundry Co.	
TRAPPING	2 EA.	1	U.S. Pipe & Foundry Co.	
REDUCER	2 EA.	1	Mueller Co.	
1 1/2" W.H.C.	2010 L.F.	1008.5 L.F.	Copper	Howell Metals
1" W.H.C.	2000 L.F.	1243.5 L.F.	Copper	Howell Metals
4" VALVE	2 EA.	1 EA.	R.S.P.R.	Mueller Co.
4" W.	126 L.F.	75 L.F.	D.I.P.	Griffin Pipe Products Co.
BLOWOFF	2 EA.	1	Hydrant	Mueller Co.
BLOWOFF	1 EA.	1	Ball valve	Mueller Co.
12" V	2 EA.	4	8" D.I.P.	Griffin Pipe Products Co.
4" V	4 EA.	2	D.I.P.	Griffin Pipe Products Co.
TRAPPING	1 EA.	1	Trapping	Mueller Co.
4" W.	860 L.F.	735.5 L.F.	D.I.P.	Griffin Pipe Products Co.
4" W.	102 V.F.	1	D.I.P.	Griffin Pipe Products Co.
4" W.	1	1	D.I.P.	Mueller Co.

NAME OF UTILITY CONTRACTOR: **CROUSE CONSTR.**

SURVEY AND DRAFTING DIVISION AS-BUILT DATE:

REMOVE	126 L.F.	1 EA.	D.I.P.
REMOVE	107 L.F.	1 EA.	D.I.P.
REMOVE	1 EA.	1 EA.	D.I.P.



VICINITY MAP
SCALE: 1" = 600'

WATER CODE: C05
SEWER CODE: T210000
TEST GRADIENT 550

TYPE OF BUILDING - TOWNHOUSES
NO. OF LOTS - 168
NO. OF WATER HOUSE CONNECTIONS 168
NO. OF SEWER HOUSE CONNECTIONS 168
DRAINAGE AREA - LITTLE PATUXENT
TREATMENT PLANT - LITTLE PATUXENT WATER
QUALITY MANAGEMENT CENTER, SAVAGE, HO CO.

CONTRACT NO. 24-3213-D
PARCEL 'C'
LOTS 1 THRU 168
BOWLING BROOK FARMS
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

B.M. HOWARD COUNTY CONTROL STATIONS
1941002 ELEV. 291.797
1941003 ELEV. 299.438



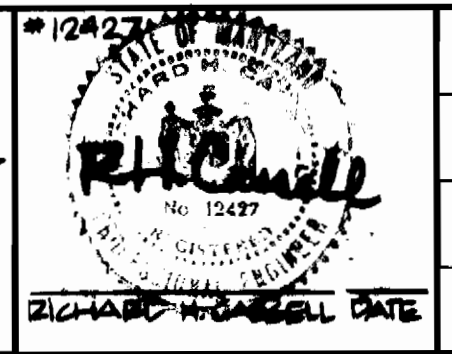
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James M. Hahn 9/18/92
DIRECTOR OF PUBLIC WORKS DATE

John R. Robinson 9/18/92
CHIEF, BUREAU OF UTILITIES DATE

John R. Robinson 9/18/92
CHIEF, LAND DEVELOPMENT DIVISION DATE

HARRIS, SMARIGA, MATZ, INC.
PLANNERS / ENGINEERS / SURVEYORS
104 CHURCH LANE, SUITE 100
BALTIMORE, MARYLAND 21208
(410) 486-1511
FAX (410) 486-2513



DES: DCG			
DRN: GADD	WAD	REV. QUANTITIES	9/22/92
CHK: AMV	WAD	REV. VICINITY MAP, NO. OF LOTS	10/1/92
	KAS	RE-ALIGNMENT	10/9/92
	DAG	PER STATE HEALTH DEPT. COMMENTS	11/24/92
DATE: 6/1/92	BY: NO.	REVISION	DATE

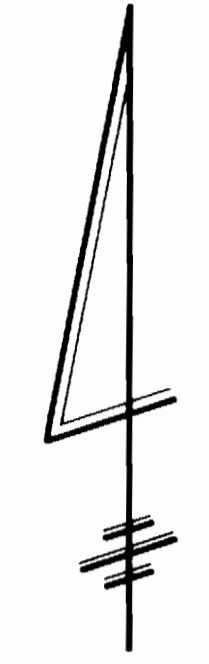
PLAN
WATER & SEWER

600' SCALE NO. 47 BLOCK NO. 10, 11

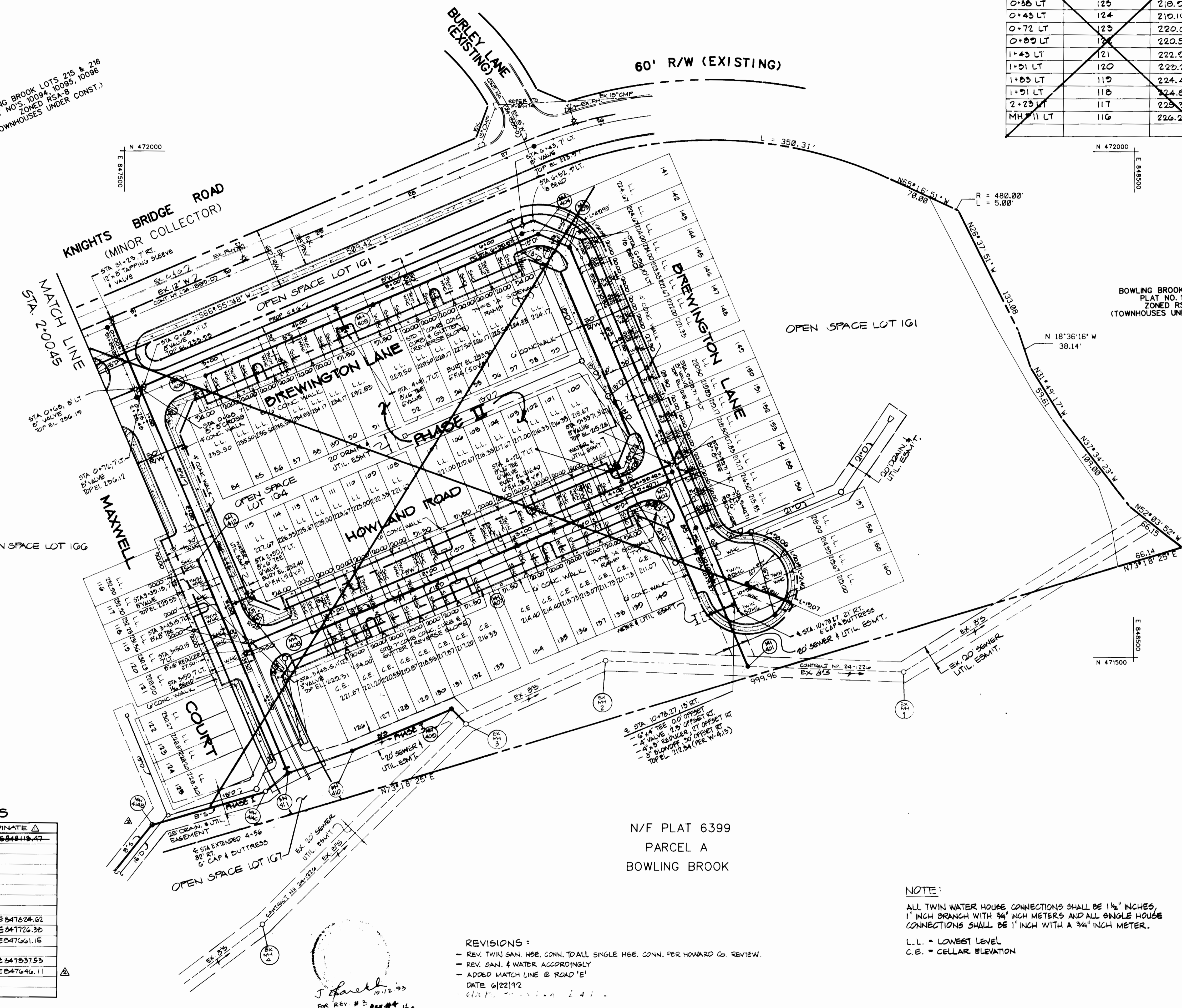
BOWLING BROOK FARMS
PARCEL 'C' PHASE I
 LOTS 1-168, 168 & 169
CONTRACT NO. 24-3213-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 1 OF 3
 AS-BUILT

- 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".
 - FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. 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 LOCATION OF THE TEST PIT. 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 VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
 - CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST 15 WORKING DAYS BEFORE STARTING WORK SHOWN IN THESE PLANS:
 - STATE HIGHWAY ADMINISTRATION: 531-5533
 - BALTIMORE GAS & ELECTRIC CO.-CONTRACTOR SERVICES: 850-4620
 - G & P - TELEPHONE CO. 1-800-257-7777
 - BALTIMORE GAS & ELECTRIC CO. UNDERGROUND DAMAGE CONTROL: 859-9004
 - BALTIMORE GAS & ELECTRIC CO. TROUBLE SHOOTING: 298-9001
 - MISS UTILITY: 1-559-0100
 - COLONIAL PIPELINE CO.: 795-1390
 - BUREAU OF UTILITIES, HOWARD COUNTY
 - DEPT. OF PUBLIC WORKS: 313-4900
 - TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS 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. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
 - ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
 - TOPS 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.
 - ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
 - FIRE HYDRANTS SHALL BE IN PLAN AND PROFILE SHALL HAVE WATER TIGHT FRAME AND COVERS STANDARD DETAIL G-5-52. WHERE BUTTRESSED AS PER STANDARD DETAIL W-213 AND W-111, SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1008 OF THE STANDARD SPECIFICATIONS.
 - THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
 - ALL WATER HOUSE CONNECTION SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS (STD-DETAIL W-3-21).
 - WATER MAINS AND WATER HOUSE CONNECTION LINES MUST BE PLACED SO AS TO HAVE AT LEAST ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
 - MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATER TIGHT FRAME AND COVERS STANDARD DETAIL G-5-52. WHERE WATER TIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 - ALL SEWER MAINS SHALL BE C.S.P.X., R.C.S.P., V.C.P.X., OR P.V.C. UNLESS OTHERWISE NOTED.
 - THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR WALL.
 - ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
 - MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
 - MANHOLES LOCATED WITHIN PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAME AND COVER, STANDARD DETAIL G-5-51.
 - MINIMUM CELLAR ELEVATION = M.C.E.
 - THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-2450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH OPW REQUIREMENTS PER SECTION 18.114 (a) OF THE HOWARD COUNTY CODE.
 - THE SEWER HOUSE CONNECTION FOR LOT 5 IS TO BE CONSTRUCTED THROUGH A SLEEVE IN THE FOOTER PER DETAIL SHEET E OF B.
 - LOT 1-4 TO BE SERVED BY EJECTOR PUMPS.



BOWLING BROOK LOTS 215 & 216
PLAT NO. 10094, 10095, 10096
ZONED RSA-8
(TOWNHOUSES UNDER CONST.)



SANITARY HOUSE CONNECTION LOCATIONS CONTINUATION				SANITARY HOUSE CONNECTION LOCATIONS			
STATION	LOT	INVERT & PROPERTY LINE	STATION	LOT	INVERT & PROPERTY LINE	STATION	LOT
0+38 LT	125	218.50	0+47 RT	MH#401 TO MH#402			203.50
0+43 LT	124	219.16		1004 150 SPHC			203.10
0+72 LT	123	220.00	0+57 RT	158 & 157 SPHC			203.10
0+89 LT	122	220.50					
1+43 LT	121	222.00	1+56 RT	156			200.94
1+51 LT	120	222.22	1+61 RT	155			201.21
1+85 LT	119	224.48	1+96 RT	154			200.50
1+91 LT	118	224.80	MH#2 RT	153			204.14
2+23 LT	117	225.94		MH#402 TO MH#403			
MH#11 LT	116	226.24	0+36 RT	152			205.51
			0+41 RT	151			205.15
			0+76 RT	150			207.13
			0+82 RT	149			207.97
			1+43 RT	148			209.77
			1+48 RT	147			209.57
			1+85 RT	146			211.34
			1+88 RT	145			211.54
			2+24 RT	144			212.96
			2+29 RT	143			213.15
			MH#3 RT	142			214.16
				MH#403 TO MH#404			
			1+05 RT	141			214.28
				MH#404 TO MH#405			
			0+40 LT	99			216.34
			0+48 LT	98			217.23
			0+80 LT	97			218.02
			0+88 LT	96			219.31
			1+20 LT	95			220.70
			1+28 LT	94			221.29
			1+60 LT	93			222.87
			1+72 LT	92			223.46
				MH#405 TO MH#406			
			0+56 LT	91			225.70
			0+65 LT	90			226.00
			0+96 LT	89			226.94
			1+05 LT	88			227.24
			1+36 LT	87			228.25
			1+45 LT	86			228.55
			1+76 LT	85			229.62
			MH#6 LT	84			229.76
				MH#402 TO MH#407			
			0+32 LT	140			205.68
			0+64 RT	100			206.19
			0+69 RT	101			206.26
			0+75 LT	139			206.15
			0+99 LT	138			206.79
			1+04 RT	102			207.20
			1+09 RT	103			207.23
			1+15 LT	91			207.21
			1+39 RT	104			208.14
			1+44 LT	106			208.00
			1+49 RT	105			208.40
			1+54 LT	135			208.26
			1+54 LT	134			208.65
			1+54 RT	106			209.34
			1+90 RT	107			209.50
				MH#407 TO MH#408			
			0+14 LT	133			210.18
			0+4 LT	132			211.46
			0+54 RT	108			211.02
			0+59 RT	109			212.41
			0+64 LT	131			212.12
			0+88 LT	130			213.05
			0+94 RT	110			213.97
			0+99 RT	111			213.76
			1+04 LT	129			213.68
			1+29 RT	112			214.92
			1+34 LT	128			214.84
			1+39 RT	113			215.21
			1+44 LT	127			215.29
			1+69 LT	126			216.29
			1+75 RT	114			216.71
			MH#8 RT	115			217.12

BOWLING BROOK LOT
PLAT NO. 10097
ZONED RSA-8
(TOWNHOUSES UNDER
CONST.)

SANITARY MANHOLE LOCATIONS

MH #	ROAD	STATION	OFFSET	TOPELEV.	COORDINATE
401	BREWINGTON	0+47.74	7.15 FT.	214.01	N471402.21 E847119.47
402	BREWINGTON	6+94	5.15 FT.	202.60	
403	BREWINGTON	6+55	4.15 FT.	223.07	
404	BREWINGTON	4+77	7.15 FT.	231.45	
405	BREWINGTON	4+95	7.15 FT.	236.95	
407	HOWARD RD.	2+50	7.15 FT.	230.94	
408	HOWARD RD.	0+60	7.15 FT.	236.84	
409	—	—	—	215.50	N471443.11 E847824.62
410	—	—	—	221.00	N471407.27 E847726.36
411	MAXWELL CT.	—	—	225.65	N471389.43 E847661.15
412	MAXWELL CT.	2+46	7.15 FT.	233.85	
EX MH-B	—	—	—	208.45	N471435.02 E847837.53
414.C	—	—	—	208.45	N471367.64 E847646.11

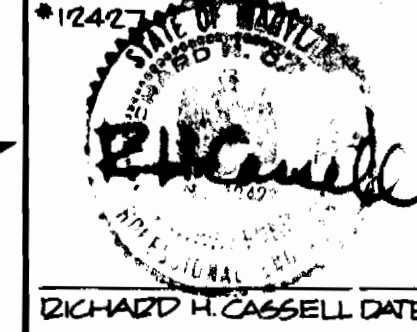
REVISIONS:
 - REV. TWIN SAN. HSE. CONN. TO ALL SINGLE HSE. CONN. PER HOWARD CO. REVIEW.
 - REV. SAN. & WATER ACCORDINGLY
 - ADDED MATCH LINE @ ROAD 'E'
 DATE 6/22/92
 FOR REV. # 3 6/24/92

NOTE:
 ALL TWIN WATER HOUSE CONNECTIONS SHALL BE 1 1/2" INCHES,
 1" INCH BRANCH WITH 3/4" INCH METERS AND ALL SINGLE HOUSE
 CONNECTIONS SHALL BE 1" INCH WITH A 3/4" INCH METER.
 L.L. = LOWEST LEVEL
 C.E. = CELLAR ELEVATION

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works: *James M. ...* DATE: 9/18/92
 Chief, Bureau of Engineering: *...* DATE: 9/18/92
 Chief, Bureau of Utilities: *...* DATE: 9/11/92
 Chief, Land Development Division: *...* DATE: 9/11/92

HARRIS SMARIGA, MATZ, INC.
 PLANNERS / ENGINEERS / SURVEYORS
 104 CHURCH LANE, SUITE 100
 BALTIMORE, MARYLAND 21202
 (410) 488-1511
 FAX (410) 488-2573

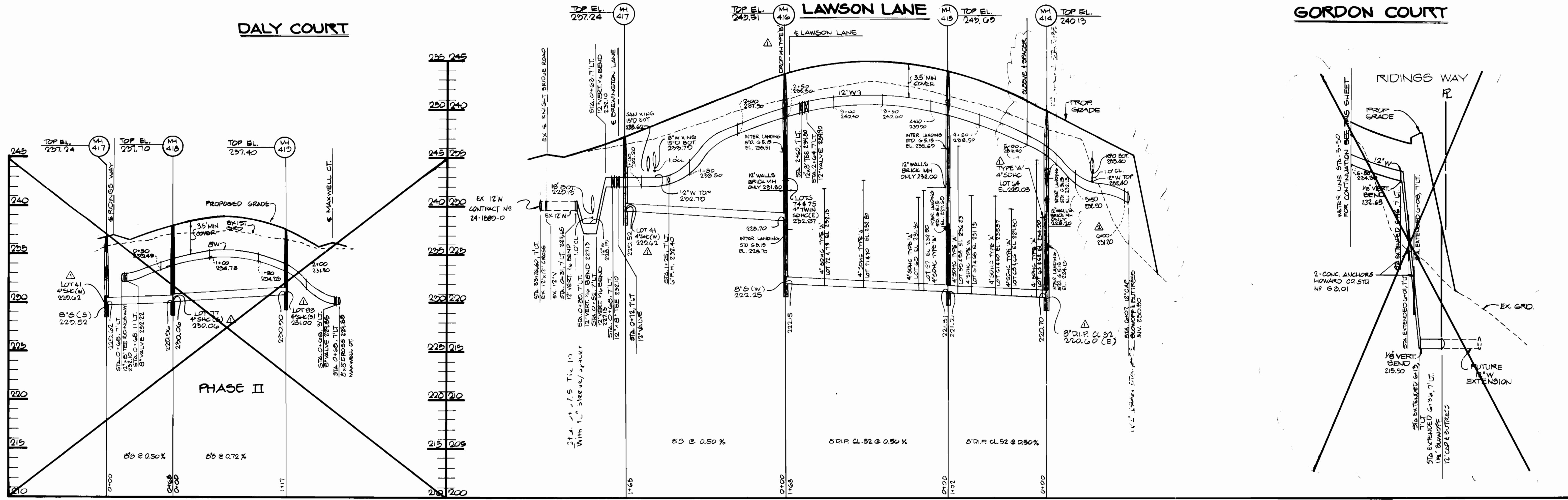
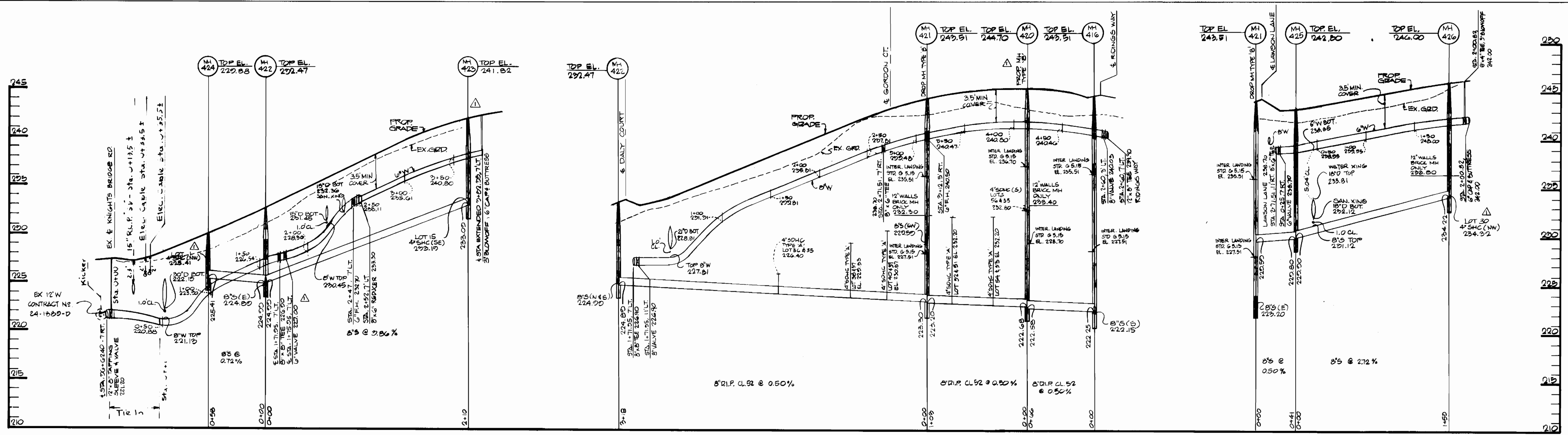


DES: DASH	DATE: 6/4/92		
DRN: KAS	WAD 4	REPLACED MAXWELL CT. CURB & SIDE WALK TURNAROUND.	5/22/92
CHK: DASH/AMV	WAD 5	DELETED PHASE II	5/13/92
	KAS	RE-ALIGNMENT	10/2/92
	DAG	PER STATE HEALTH DEPT. COMMENTS	9/23/92
	BY NO.	REVISION	DATE

PLAN
 WATER & SEWER

BOWLING BROOK FARMS
 PARCEL 'C'
 CONTRACT NO. 24-3213-D
 SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE
 AS
 SHOWN
 SHEET
 2 OF 5



DALY COURT

GORDON COURT

BREWINGTON LANE

RIDINGS WAY

J. Casella
10.12.93
FOR REV #3 REV #4 9/23/94

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

HARRIS SMARIGA MATZ, INC.
PLANNERS / ENGINEERS / SURVEYORS
104 CHURCH LANE, SUITE 100
BALTIMORE, MARYLAND 21208
FAX (410) 486-2573

R.A. Cassell

RICHARD H. CASSELL DATE

DES: DAG			
DRN: DAG/KLS	WAD 4	ADJUST RIDINGS WAY GRADE & WATER MAIN	3/22/94
CHK: DAG	WAD 5	DELETED PHASE II PROFILE	2/10/93
	KAS	RE-ALIGNMENT	11/21/92
	DAG	PER STATE HEALTH DEPT. COMMENTS	9/28/92
DATE: 6/4/92	BY NO.	REVISION	DATE

PROFILES
WATER & SEWER MAINS

600' SCALE NO. 47 BLOCK NO. 11

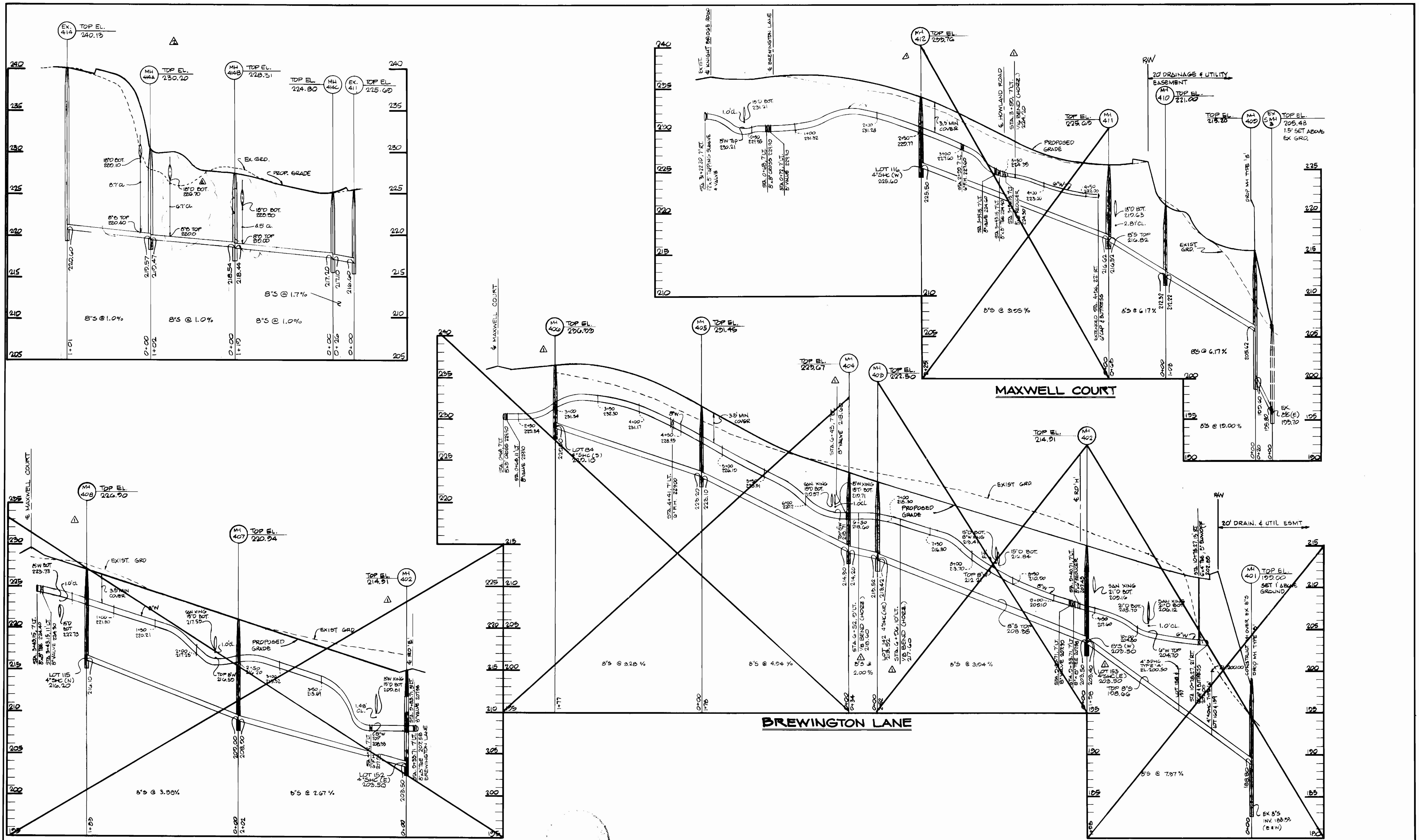
BOWLING BROOK FARMS

PARCEL 'C'
CONTRACT NO. 24-3213-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 4 OF 5

F-02-150



J. Farrell
10-12-93
FOR REV #3 Rev #4
3/29/94

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James H. Shaw 9/16/92
DIRECTOR OF PUBLIC WORKS DATE

Richard W. Cassell 9/18/92
CHIEF, BUREAU OF ENGINEERING DATE

Richard W. Cassell 9/16/92
CHIEF, BUREAU OF UTILITIES DATE

Richard W. Cassell 9/16/92
CHIEF, LAND DEVELOPMENT DIVISION DATE

12427

R.H. Cassell

RICHARD W. CASSELL DATE

DES:	D.A.G.	DATE:	6/14/92
DRN:	K.L.S.	WAD	ADDED NEW SD KING TO SEWER PROFILE 3-22-92
CHK:	D.A.G./A.M.V.	WAD	DELETED PHASE II PROFILES 4/21/92
DWG:		KAS	RE-ALIGNMENT 9/24/92
BY:	NO.	DAG	PER STATE HEALTH DEPT. COMMENTS 9/24/92
REVISION			

PROFILES
WATER AND SEWER MAINS

DATE 600 SCALE MAP NO. 47 BLOCK NO. 10.11

BOWLING BROOK FARMS
PARCEL 'C'
CONTRACT NO 24-3213-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 5 OF 5