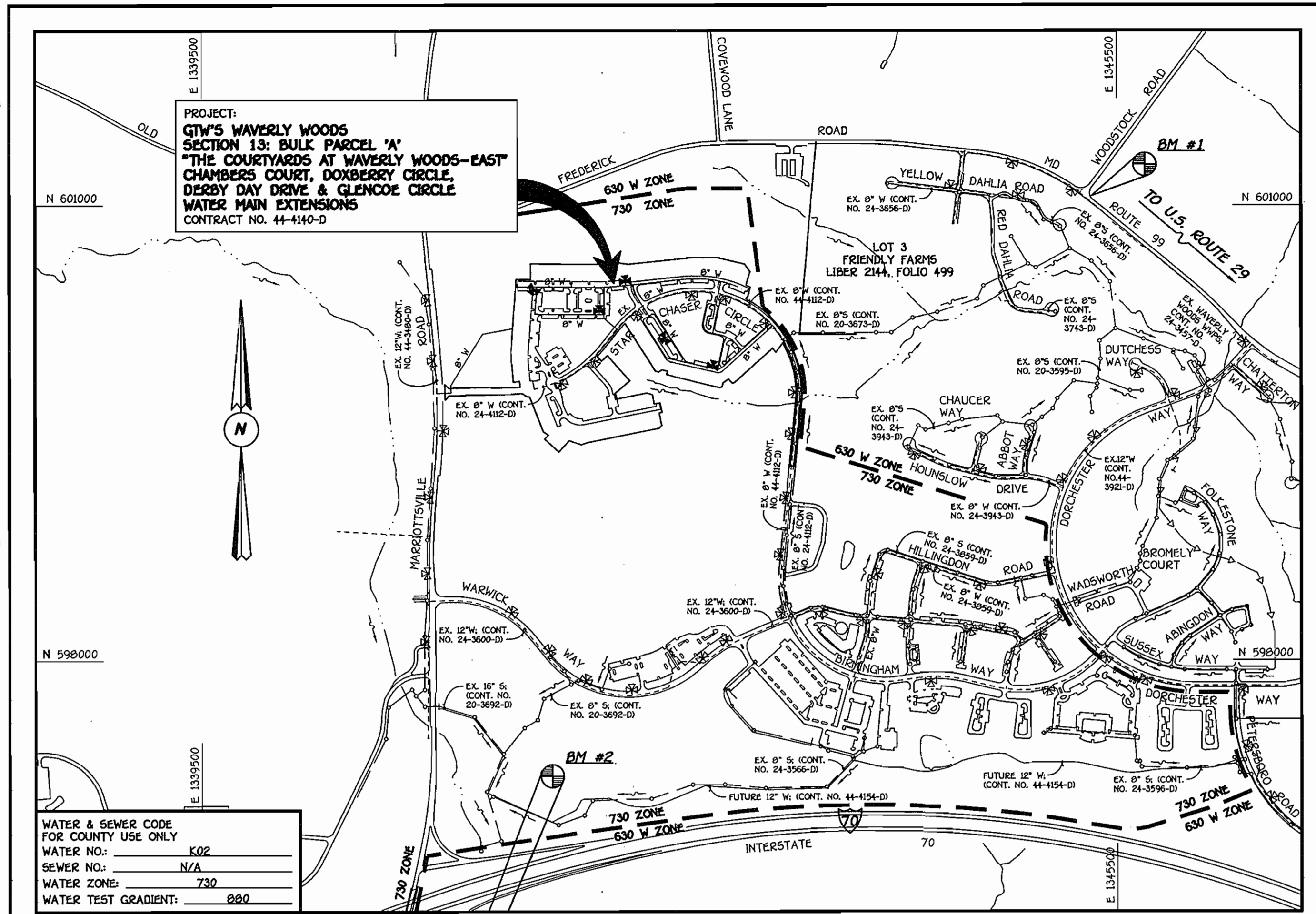


ITEM	ESTIMATED	AS-BUILT		SUPPLIER
		QUANTITIES	TYPE	
8" WATER	6141 L.F.	AS-BUILT	DIP / 2" D.P. / 1" P.V.C.	BRS / SERRIFFIN
6" WATER	175 L.F.	175	"	"
1" WATER	1826 L.F.	2047	COPPER TUBE	BRS / READING
2" WATER	10 L.F.	11	"	"
FIRE HYDRANTS	5 EACH	5	DIP	BRS / MDUELLER
12" X 8" TAPPING SLEEVE & VALVE	1 EACH	1	STAINLESS STEEL	BRS / XCM
8" X 8" TEE	15 EACH	15	DIP	BRS / STAR PIPE
8" X 6" TEE	12 EACH	12	"	"
8" VALVE	16 EACH	16	RSOR GATE VALVE	BRS / MUELLER
6" VALVE	12 EACH	12	"	"
8" 1/8" H.B.	19 EACH	19	DIP	BRS / STAR PIPE
8" 1/16" H.B.	4 EACH	4	"	"
8" 1/32" H.B.	6 EACH	6	"	"
8" PLUG & BUTTRESS	6 EACH	3	"	"
6" PLUG & BUTTRESS	7 EACH	7	"	"
AIR RELEASE MH	2 EACH	2	PRECAST CONC.	ATLANTIC

NAME OF UTILITY CONTRACTOR: CONSOLIDATED CONSTRUCTION SERVICES
SURVEY & DRAFTING DIVISION AS-BUILT DATE:



WATER & SEWER CODE FOR COUNTY USE ONLY	K02
WATER NO.	N/A
SEWER NO.	-0-
WATER ZONE	730
WATER TEST GRADIENT	0.80

VICINITY MAP
SCALE: 1"=600'

GENERAL NOTES

- PART I
- 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.
 - ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES, NAD 83/91.
 - ALL VERTICAL CONTROLS ARE BASED ON NAVD 83.
 - 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 BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF THE ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
 - 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 (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
 - WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL (S) AT THE LOCATIONS OF THE TEST PITS. 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 LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
 - 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 (CONTRACTOR SERVICES) 410-850-4620
 - BGE (UNDERGROUND DAMAGE CONTROL) 410-787-9068
 - BUREAU OF UTILITIES 410-313-4900
 - COLONIAL PIPELINE CO. 410-795-1390
 - MESS UTILITY 1-800-257-7777
 - STATE HIGHWAY ADMINISTRATION 410-531-5533
 - VERIZON 1-800-743-0033/410-224-9210
 - TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE 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 THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE 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 18.114(d) OF THE HOWARD COUNTY CODE.
- PART II: WATER
- ALL WATER MAINS SHALL BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
 - TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
 - VALVES ADJACENT TO TREES SHALL BE STRAPPED TO TREES.
 - 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.
- PART III: SEWER
- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
 - ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
 - FORCE MAINS SHALL BE D.I.P. ONLY.
 - MANHOLES SHOWN WITH 12" AND 18" WALLS ARE FOR BRICK MANHOLES ONLY.
 - MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 - HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.
- * SEE SHEET 9 OF 9 FOR GENERAL NOTES, PART II: WATER, #7 THRU #19, WHICH ARE ONLY APPLICABLE FROM WM #1 STA. 19+01 TO WM #1 STA. 25+44.

BENCHMARK INFORMATION

B.M.#1 - HOWARD COUNTY CONTROL STATION #02 (NAD '83) (NEAR THE INTERSECTION OF MARYLAND ROUTE 99 & WOODSTOCK ROAD) N 601,060.177 E 1,345,336.798 ELEVATION = 445.577
B.M.#2 - HOWARD COUNTY CONTROL STATION #161 (NAD '83) (NEAR THE INTERSECTION OF U.S. ROUTE 40 & MARRIOTTSVILLE ROAD) N 593,250.932 E 1,340,952.711 ELEVATION = 509.924

CONTRACT No. 44-4140-D

GTW'S WAVERLY WOODS

SECTION 13: BULK PARCEL 'A'

"THE COURTYARDS @ WAVERLY WOODS-EAST"

CHAMBERS COURT, DOXBERRY CIRCLE,
DERBY DAY DRIVE & GLENCOE CIRCLE

WATER MAIN EXTENSIONS

HOWARD COUNTY, MARYLAND

DEVELOPER'S CERTIFICATION

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE 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 OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

Paul W. Keidvel FOR:
Waverly Woods Development Corp. 09-03-04
SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT 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.

Paul W. Keidvel 09/03/04
SIGNATURE OF ENGINEER DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Jim M. [Signature] 9/14/04
U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

APPROVED: [Signature] 9/14/04
HOWARD SOIL CONSERVATION DISTRICT DATE

SEDMIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL & STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS AND AS SHOWN ON SDP04-80.

Paul W. Keidvel FOR:
Waverly Woods Development Corp. 09-03-04
SIGNATURE OF DEVELOPER DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND
[Signature] 9-30-04 DATE	[Signature] 10/4/04 DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
10700 WOODBURN ROAD, SUITE 100, BALTIMORE, MD 21286
(410) 481-2000

DESIGNED BY: M.D.T.
DRAWN BY: M.D.T.
CHECKED BY: P.W.K.
DATE: SEPTEMBER, 2004

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER
TERRELL A. FISHER

DESIGNED BY: M.D.T.
DRAWN BY: M.D.T.
CHECKED BY: P.W.K.
DATE: SEPTEMBER, 2004

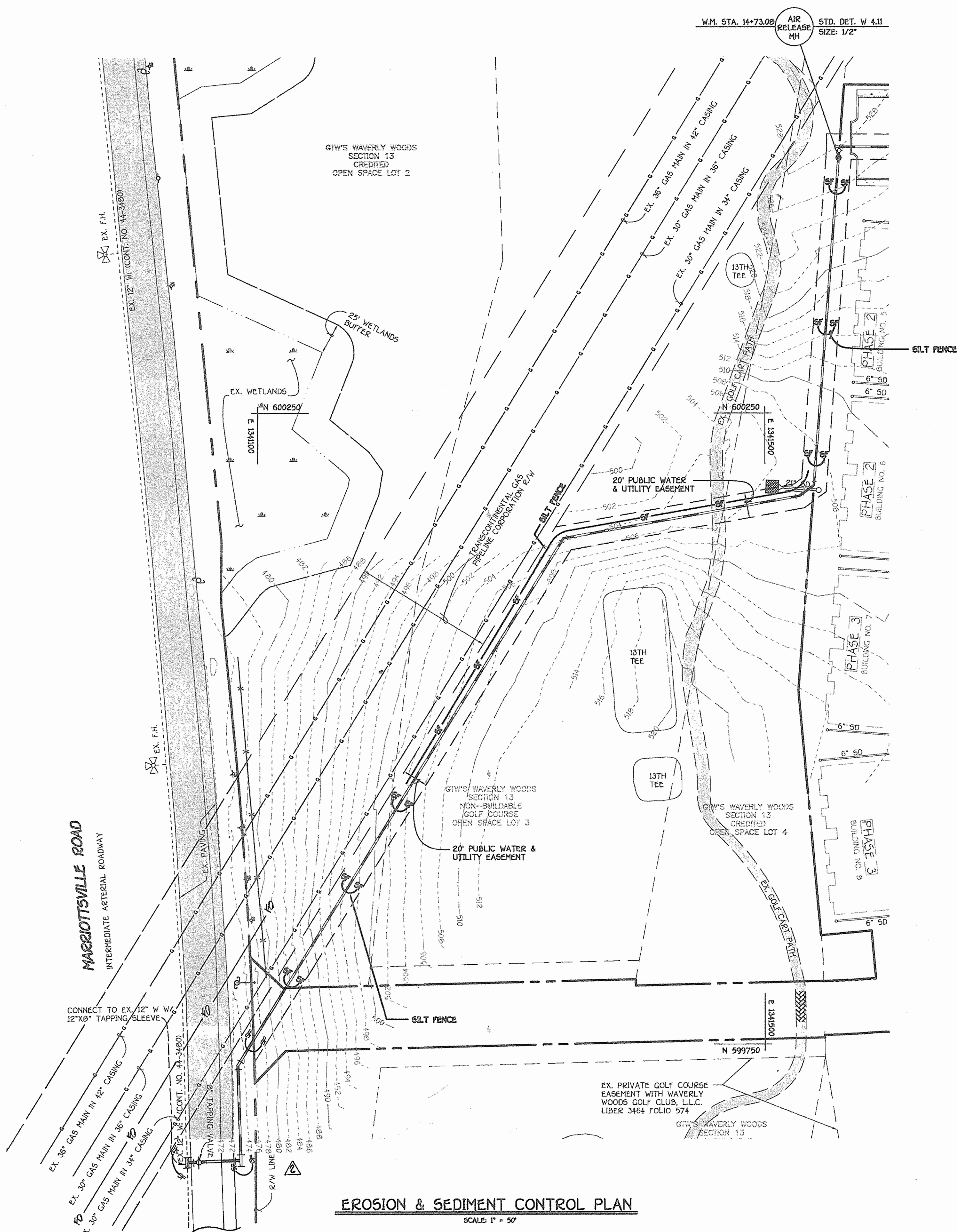
WATER MAINS TITLE SHEET

600' SCALE MAP NO. 16 BLOCK NO. 4 & 5
F.C.C. WORK ORDER NO. 40353
FILE NAME: FINAL WATER MAINS TITLE SHT

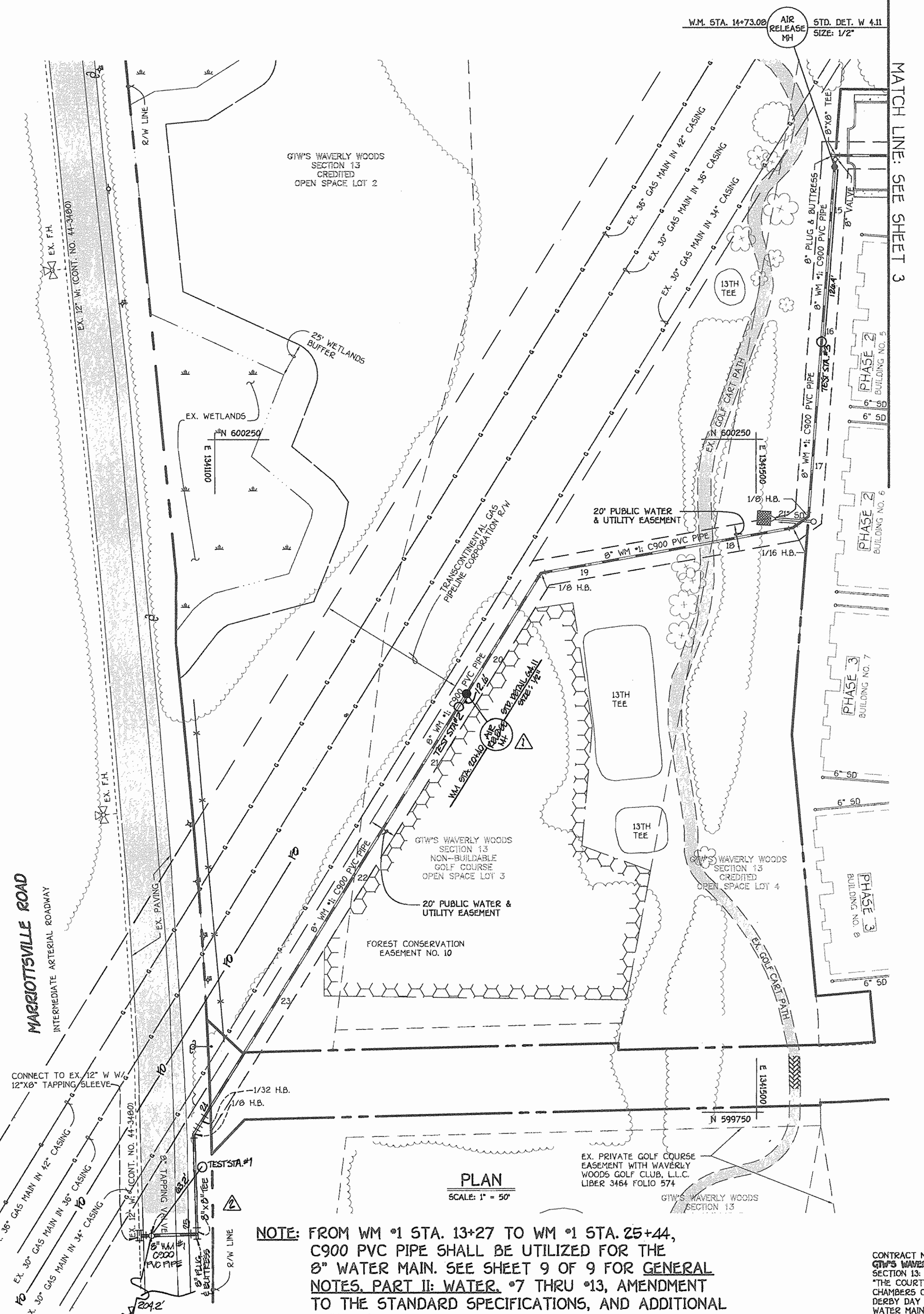
GTW'S WAVERLY WOODS
SECTION 13: BULK PARCEL 'A'
"THE COURTYARDS AT WAVERLY WOODS-EAST"
CHAMBERS COURT, DOXBERRY CIRCLE,
DERBY DAY DRIVE & GLENCOE CIRCLE
CONTRACT NO. 44-4140-D
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 1 OF 9

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EROSION & SEDIMENT CONTROL PLAN
SCALE: 1" = 50'



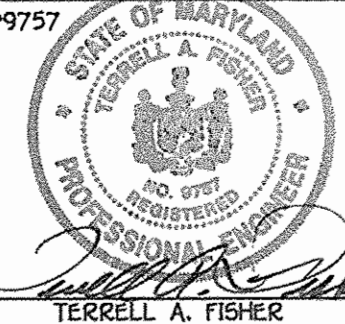
PLAN
SCALE: 1" = 50'

NOTE: FROM WM #1 STA. 13+27 TO WM #1 STA. 25+44, C900 PVC PIPE SHALL BE UTILIZED FOR THE 8" WATER MAIN. SEE SHEET 9 OF 9 FOR GENERAL NOTES. PART II: WATER. #7 THRU #13, AMENDMENT TO THE STANDARD SPECIFICATIONS, AND ADDITIONAL DETAILS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE, OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21842
(410) 461-2955



DESIGNED BY:	D.Y.B.	KCL	AS-BUILT DATA ADDED	11/20/06
DRAWN BY:	D.Y.B.	PLC	MADE CONNECTION TO EX. 12" WATER MAIN IN MARIOTTVILLE RD TO AVOID CONNECTING WITHIN THE EXISTING TRANSCONTINENTAL PIPELINE R/W, REVISED SEDIMENT CONTROL MEASURES AS REQUIRED	4/9/06
CHECKED BY:	P.W.K.	PLC	ADD AIR RELEASE VALVE #1 @ WM STA. 20+40	11/29/06
DATE:	SEPTEMBER, 2004	BY NO.	REVISION	DATE

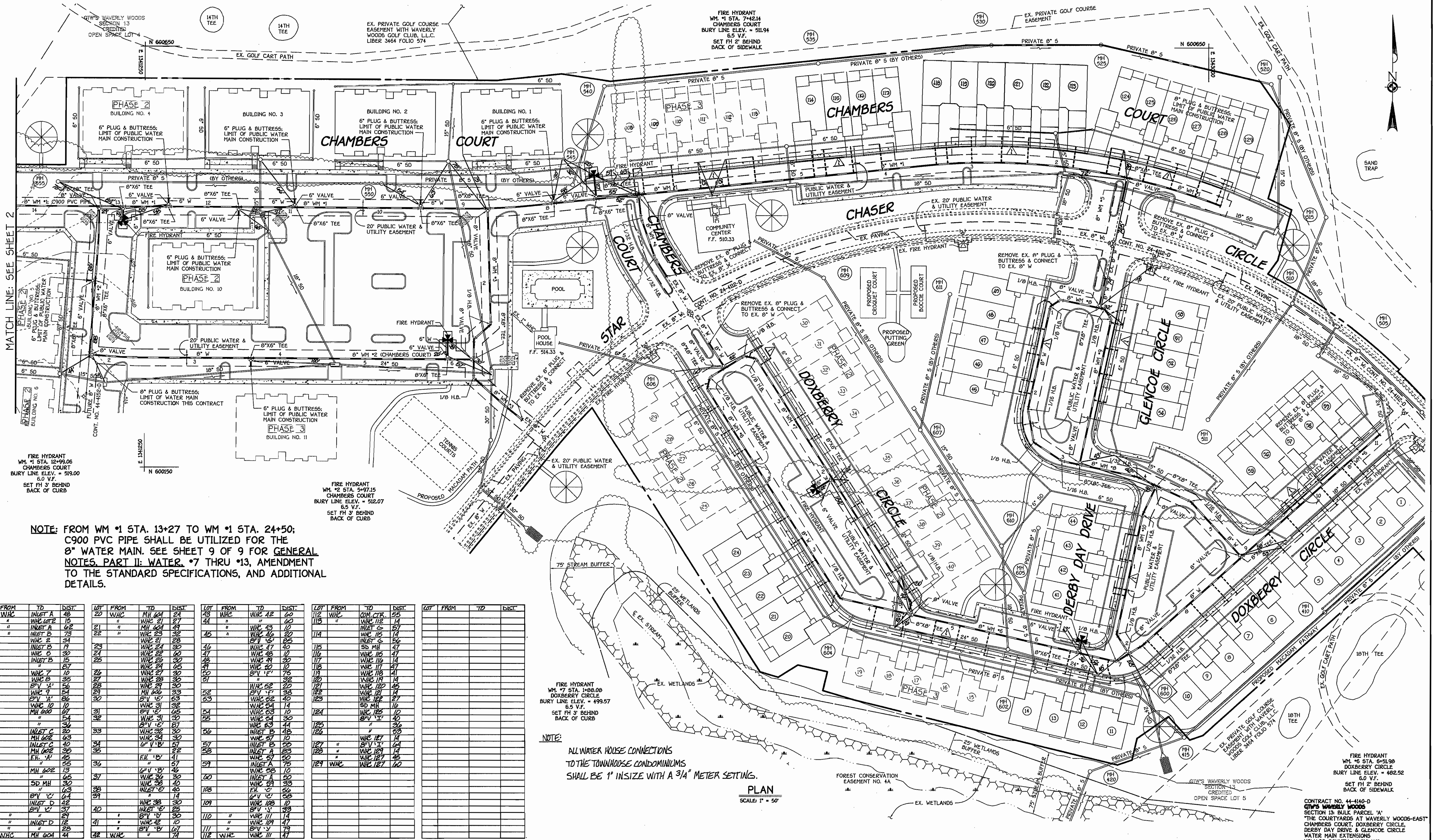
WATER MAINS PLAN VIEW	
60' SCALE MAP NO. 16	BLOCK NO. 4 & 5
F.C.C. WORK ORDER NO. 40353	
FILE NAME: FINAL WATER MAINS PLAN VIEW SHT 2	

GTW'S WAVERLY WOODS
SECTION 13: BULK PARCEL 'A'
"THE COURTYARDS AT WAVERLY WOODS-EAST"
CHAMBERS COURT, DOXBERRY CIRCLE,
DERBY DAY DRIVE & GLENCOE CIRCLE
WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

CONTRACT NO. 44-440-D
GTW'S WAVERLY WOODS
SECTION 13: BULK PARCEL 'A'
"THE COURTYARDS AT WAVERLY WOODS-EAST"
CHAMBERS COURT, DOXBERRY CIRCLE,
DERBY DAY DRIVE & GLENCOE CIRCLE
WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 9

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MATCH LINE: SEE SHEET 2

FIRE HYDRANT
WM #1 STA. 12+99.06
CHAMBERS COURT
BURY LINE ELEV. = 519.00
6.5 V.F.
SET FH 3' BEHIND
BACK OF CURB

FIRE HYDRANT
WM #2 STA. 54+11.15
CHAMBERS COURT
BURY LINE ELEV. = 512.07
6.5 V.F.
SET FH 3' BEHIND
BACK OF CURB

NOTE: FROM WM #1 STA. 13+27 TO WM #1 STA. 24+50;
C900 PVC PIPE SHALL BE UTILIZED FOR THE
8" WATER MAIN. SEE SHEET 9 OF 9 FOR GENERAL
NOTES. PART II: WATER. #7 THRU #13, AMENDMENT
TO THE STANDARD SPECIFICATIONS, AND ADDITIONAL
DETAILS.

FIRE HYDRANT
WM #7 STA. 1498.09
DOXBERRY CIRCLE
BURY LINE ELEV. = 499.57
6.5 V.F.
SET FH 3' BEHIND
BACK OF CURB

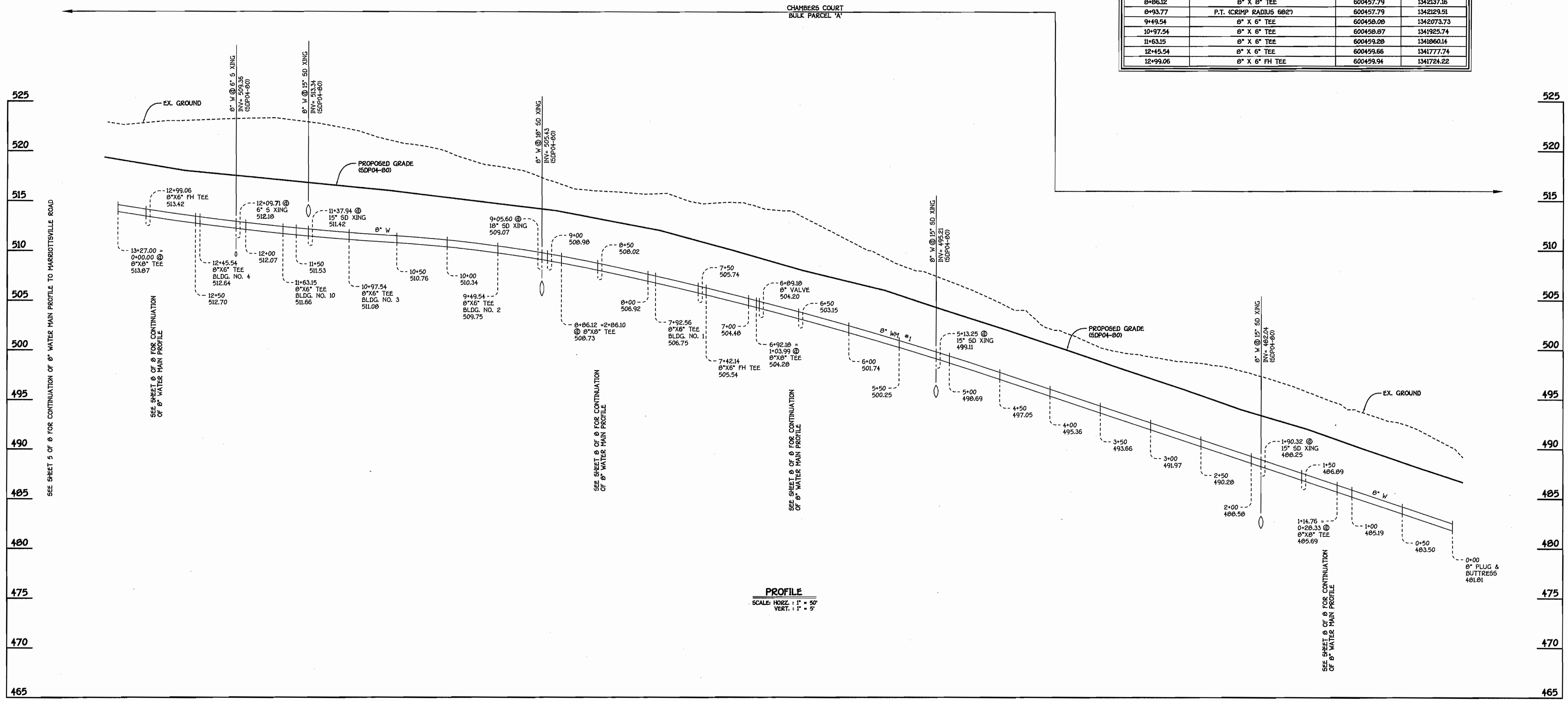
FIRE HYDRANT
WM #5 STA. 6+51.99
DOXBERRY CIRCLE
BURY LINE ELEV. = 482.92
6.0 V.F.
SET FH 2' BEHIND
BACK OF SIDEWALK

NOTE:
ALL WATER HOUSE CONNECTIONS
TO THE TOWNHOUSE CONDOMINIUMS
SHALL BE 1" IN SIZE WITH A 3/4" METER SETTINGS.

PLAN
SCALE: 1" = 50'

LOT	FROM	TO	DIST.	LOT	FROM	TO	DIST.	LOT	FROM	TO	DIST.	LOT	FROM	TO	DIST.	LOT	FROM	TO	DIST.
1	WHC	INLET A	48	20	WHC	MH 604	27	43	WHC	WHC 12	60	112	WHC	COM. CTR.	55				
2	"	INLET B	15	21	"	MH 604	24	44	"	WHC 12	60	113	"	INLET C	57				
3	"	INLET C	73	22	"	WHC 23	32	45	"	WHC 43	10	114	"	WHC 12	60				
4	"	INLET D	34	23	"	WHC 21	28	46	"	WHC 57	20	115	"	INLET D	56				
5	"	INLET E	17	24	"	WHC 22	60	47	"	WHC 47	40	116	"	SD MH	47				
6	"	INLET F	15	25	"	WHC 26	30	48	"	WHC 48	10	117	"	WHC 116	14				
7	"	INLET G	13	26	"	WHC 24	30	49	"	WHC 29	30	118	"	WHC 117	47				
8	"	INLET H	15	27	"	WHC 27	30	50	"	WHC 30	10	119	"	WHC 118	41				
9	"	INLET I	15	28	"	WHC 28	30	51	"	WHC 17	17	120	"	SD MH	16				
10	"	INLET J	15	29	"	WHC 29	30	52	"	WHC 52	30	121	"	WHC 119	14				
11	"	INLET K	15	30	"	WHC 29	30	53	"	WHC 52	30	122	"	WHC 120	45				
12	"	INLET L	15	31	"	WHC 31	30	54	"	WHC 52	40	123	"	WHC 121	14				
13	"	INLET M	15	32	"	WHC 31	30	55	"	WHC 53	10	124	"	WHC 122	27				
14	"	INLET N	15	33	"	WHC 31	30	56	"	WHC 53	10	125	"	WHC 123	10				
15	"	INLET O	15	34	"	WHC 31	30	57	"	WHC 53	10	126	"	WHC 124	40				
16	"	INLET P	15	35	"	WHC 31	30	58	"	WHC 53	10	127	"	WHC 125	10				
17	"	INLET Q	15	36	"	WHC 31	30	59	"	WHC 53	10	128	"	WHC 126	36				
18	"	INLET R	15	37	"	WHC 31	30	60	"	WHC 53	10	129	"	WHC 127	36				
19	"	INLET S	15	38	"	WHC 31	30	61	"	WHC 53	10	130	"	WHC 128	36				
20	"	INLET T	15	39	"	WHC 31	30	62	"	WHC 53	10	131	"	WHC 129	36				
21	"	INLET U	15	40	"	WHC 31	30	63	"	WHC 53	10	132	"	WHC 130	36				
22	"	INLET V	15	41	"	WHC 31	30	64	"	WHC 53	10	133	"	WHC 131	36				
23	"	INLET W	15	42	"	WHC 31	30	65	"	WHC 53	10	134	"	WHC 132	36				
24	"	INLET X	15	43	"	WHC 31	30	66	"	WHC 53	10	135	"	WHC 133	36				
25	"	INLET Y	15	44	"	WHC 31	30	67	"	WHC 53	10	136	"	WHC 134	36				
26	"	INLET Z	15	45	"	WHC 31	30	68	"	WHC 53	10	137	"	WHC 135	36				
27	"	INLET AA	15	46	"	WHC 31	30	69	"	WHC 53	10	138	"	WHC 136	36				
28	"	INLET AB	15	47	"	WHC 31	30	70	"	WHC 53	10	139	"	WHC 137	36				
29	"	INLET AC	15	48	"	WHC 31	30	71	"	WHC 53	10	140	"	WHC 138	36				
30	"	INLET AD	15	49	"	WHC 31	30	72	"	WHC 53	10	141	"	WHC 139	36				
31	"	INLET AE	15	50	"	WHC 31	30	73	"	WHC 53	10	142	"	WHC 140	36				
32	"	INLET AF	15	51	"	WHC 31	30	74	"	WHC 53	10	143	"	WHC 141	36				
33	"	INLET AG	15	52	"	WHC 31	30	75	"	WHC 53	10	144	"	WHC 142	36				
34	"	INLET AH	15	53	"	WHC 31	30	76	"	WHC 53	10	145	"	WHC 143	36				
35	"	INLET AI	15	54	"	WHC 31	30	77	"	WHC 53	10	146	"	WHC 144	36				
36	"	INLET AJ	15	55	"	WHC 31	30	78	"	WHC 53	10	147	"	WHC 145	36				
37	"	INLET AK	15	56	"	WHC 31	30	79	"	WHC 53	10	148	"	WHC 146	36				
38	"	INLET AL	15	57	"	WHC 31	30	80	"	WHC 53	10	149	"	WHC 147	36				
39	"	INLET AM	15	58	"	WHC 31	30	81	"	WHC 53	10	150	"	WHC 148	36				
40	"	INLET AN	15	59	"	WHC 31	30	82	"	WHC 53	10	151	"	WHC 149	36				
41	"	INLET AO	15	60	"	WHC 31	30	83	"	WHC 53	10	152	"	WHC 150	36				
42	"	INLET AP	15	61	"	WHC 31	30	84	"	WHC 53	10	153	"	WHC 151	36				
43	"	INLET AQ	15	62	"	WHC 31	30	85	"	WHC 53	10	154	"	WHC 152	36				
44	"	INLET AR	15	63	"	WHC 31	30	86	"	WHC 53	10	155	"	WHC 153	36				
45	"	INLET AS	15	64	"	WHC 31	30	87	"	WHC 53	10	156	"	WHC 154	36				
46	"	INLET AT	15	65	"	WHC 31	30	88	"	WHC 53	10	157	"	WHC 155	36				
47	"	INLET AU	15	66	"	WHC 31	30	89	"	WHC 53	10	158	"	WHC 156	36				
48	"	INLET AV	15	67	"	WHC 31	30	90	"	WHC 53	10	159	"	WHC 157	36				
49	"	INLET AW	15	68	"	WHC 31	30	91	"	WHC 53	10	160	"	WHC 158	36				
50	"	INLET AX	15	69	"	WHC 31	30	92	"	WHC 53	10	161	"	WHC 159	36				
51	"	INLET AY	15	70	"	WHC 31	30	93	"	WHC 53	10	162	"	WHC 160	36				
52	"	INLET AZ	15	71	"	WHC 31	30	94	"	WHC 53	10	163	"	WHC 161	36				
53	"	INLET BA	15	72	"	WHC 31	30	95	"	WHC 53	10	164	"	WHC 162	36				
54	"	INLET BB	15	73	"	WHC 31	30	96	"	WHC 53	10	165	"	WHC 163	36				
55	"	INLET BC	15	74	"	WHC 31	30	97	"	WHC 53	10	166	"	WHC 164	36				
56	"	INLET BD	15	75	"	WHC 31	30	98	"	WHC 53	10	167	"	WHC 165	36				
57	"	INLET BE	15	76	"	WHC 31	30	99	"	WHC 53	10	168	"	WHC 166	36				
58	"	INLET BF	15	77	"	WHC 31	30	100	"	WHC 53	10	169	"	WHC 167	36				
59	"	INLET BG	15	78	"	WHC 31	30	101	"	WHC 53	10	170	"	WHC 168	36				
60	"	INLET BH	15	79	"	WHC 31	30	102	"	WHC 53	10	171	"	WHC 169	36				
61	"	INLET BI	15	80	"	WHC 31	30	103	"	WHC 53	10	172	"	WHC 170	36				
62	"	INLET BJ	15	81	"	WHC 31	30	104	"	WHC 53	10	173	"	WHC 171	36				
63	"	INLET BK	15	82	"	WHC 31	30	105	"	WHC 53	10	174	"	WHC 172	36				
64	"	INLET BL	15	83	"	WHC 31	30	106	"	WHC 53	10	175	"	WHC 173	36				
65	"	INLET BM	15	84	"	WHC 31	30	107	"	WHC 53	10	176	"	WHC 174	36				
66	"	INLET BN	15	85	"	WHC 31	30	108	"	WHC 53	10	177	"	WHC 175	36				
67	"	INLET BO	15	86	"	WHC 31	30	109	"	WHC 53	10	178	"	WHC 176	36				
68	"	INLET BP	15	87	"	WHC 31	30	110	"	WHC 53	10	179	"	WHC 177	36				
69	"	INLET BQ	15	88	"	WHC 31	30	111	"	WHC 53	10	180	"	WHC 178	36				
70	"	INLET BR	15	89	"	WHC 31	30	112	"	WHC 53	10	181	"	WHC 179	36				
71	"	INLET BS	15	90	"	WHC 31	30	113	"	WHC 53	10	182	"	WHC 180	36				
72	"	INLET BT	15	91	"	WHC 31	30	114	"	WHC 53	10	183	"	WHC 181	36				
73	"	INLET BU	15	92	"	WHC 31	30	115	"	WHC 53	10	184	"	WHC 182	36				
74	"	INLET BV	15	93	"	WHC 31	30	116	"	WHC 53	10	185	"	WHC 183	36				
75	"	INLET BV	15	94	"	WHC 31	30	117	"	WHC 53	10	186	"	WHC 184	36				
76	"	INLET BV	15	95	"	WHC 31	30	118	"	WHC 53	10	187	"	WHC 185	36				
77	"	INLET BV	15	96	"	WHC 31	30	119	"	WHC 53	10	188	"	WHC 186	36				
78	"	INLET BV	15	97	"	WHC 31	30	120	"	WHC 53	10	189	"	WHC 187	36				
79	"	INLET BV	15	98	"	WHC 31	30	121	"	WHC 53	10	190	"	WHC 188	36				
80	"	INLET BV	15	99	"	WHC 31	30	122	"	WHC 53	10	191	"	WHC 189	36				
81	"	INLET BV	15	100	"	WHC 31	30	123	"	WHC 53	10	192	"	WHC 190	36				
82	"	INLET BV	15	101	"	WHC 31	30	124	"	WHC 53	10	193	"	WHC 191	36				
83	"	INLET BV	15	102	"	WHC 31	30	125</											

WATER MAIN TABULATION CHART			
W.M. STATION	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN #1			
0+00.00	P.C. (CRIMP RADIUS 748.32') 8" PLUG & BUTTRESS	600462.10	134304.14
1+14.76	8" X 8" TEE	600459.50	1342904.46
3+56.09	P.T. (CRIMP RADIUS 748.32')	600509.35	1342664.58
6+29.18	8" VALVE	600474.91	1342333.28
6+92.18	8" X 8" TEE	600474.60	1342330.29
7+42.14	8" X 6" FH TEE	600469.43	1342280.60
7+92.56	8" X 6" TEE	600464.22	1342230.45
8+19.51	P.C. (CRIMP RADIUS 682')	600461.43	1342203.64
8+86.12	8" X 8" TEE	600457.79	1342137.16
8+93.77	P.T. (CRIMP RADIUS 682')	600457.79	1342129.51
9+49.54	8" X 6" TEE	600458.08	1342073.73
10+97.54	8" X 6" TEE	600458.07	1341925.74
11+63.15	8" X 6" TEE	600459.28	1341860.14
12+45.54	8" X 6" TEE	600459.68	1341777.74
12+99.06	8" X 6" FH TEE	600459.94	1341724.22



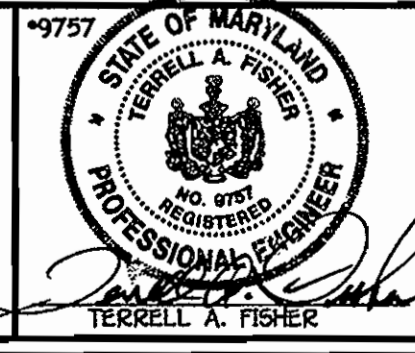
8" WATER MAIN #1: CHAMBERS COURT

CONTRACT NO. 44-4140-D
GTW'S WAVERLY WOODS
 SECTION 13: BULK PARCEL 'A'
 THE COURTYARDS AT WAVERLY WOODS-EAST
 CHAMBERS COURT, DOXBERRY CIRCLE,
 DERBY DAY DRIVE & GLENCOE CIRCLE
 WATER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 R. L. B... 9-30-04
 CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND
 10/6/04
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTURIAL SQUARE OFFICE PARK - 2072 BALTIMORE NATIONAL PEE
 ELKLOTT CITY, MARYLAND 21242
 (410) 461-2955



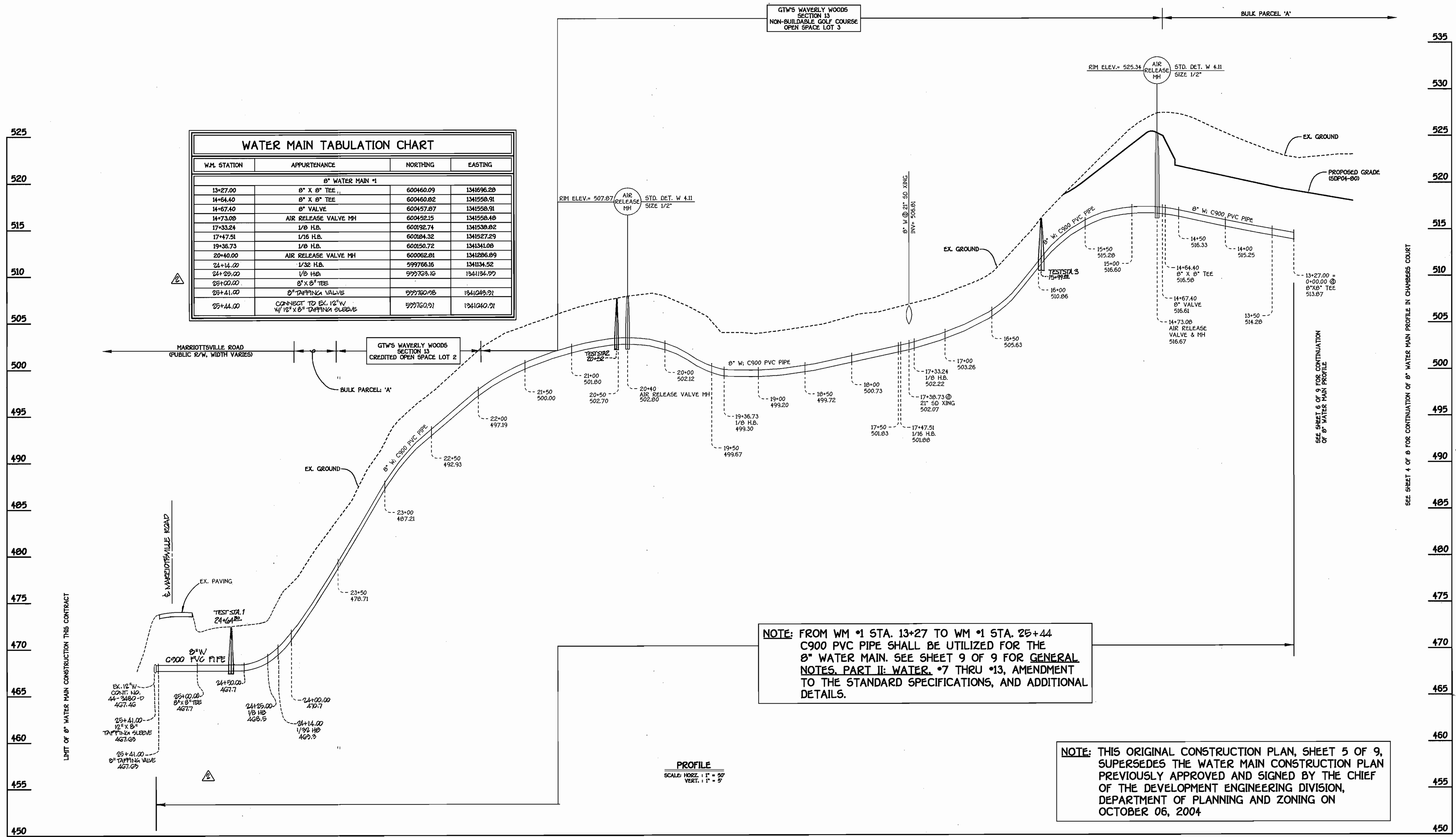
DESIGNED BY: M.D.T.
 DRAWN BY: M.D.T.
 CHECKED BY: P.W.K.
 DATE: SEPTEMBER, 2004

WATER MAINS PROFILES
 800' SCALE MAP NO. 16 BLOCK NO. 4 & 5
 F.C.C. WORK ORDER NO. 40353
 FILE NAME: FINAL WATER MAINS PROFILES SHT 4

GTW'S WAVERLY WOODS
 SECTION 13: BULK PARCEL 'A'
 THE COURTYARDS AT WAVERLY WOODS-EAST
 CHAMBERS COURT, DOXBERRY CIRCLE,
 DERBY DAY DRIVE & GLENCOE CIRCLE
 CONTRACT NO. 44-4140-D
 THIRD ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE AS SHOWN
 SHEET 4 of 9

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WATER MAIN TABULATION CHART			
W.M. STATION	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN #1			
13+27.00	8" X 8" TEE	600460.09	1341696.28
14+64.40	8" X 8" TEE	600460.82	1341598.91
14+67.40	8" VALVE	600457.87	1341598.91
14+73.00	AIR RELEASE VALVE MH	600452.15	1341598.48
17+33.24	1/8 H.B.	600192.74	1341538.82
17+47.51	1/16 H.B.	600184.32	1341527.29
19+36.73	1/8 H.B.	600150.72	1341341.08
20+40.00	AIR RELEASE VALVE MH	600062.81	1341286.89
24+14.00	1/32 H.B.	599766.16	1341134.52
24+25.00	1/8 H.B.	599763.16	1341134.52
25+00.00	8" X 8" TEE	599760.91	1341040.91
25+41.00	8" TAPPING VALVE	599760.96	1341040.91
25+44.00	CONNECT TO EX. 12" W. 1/2" X 8" TAPPING SLEEVE	599760.91	1341040.91



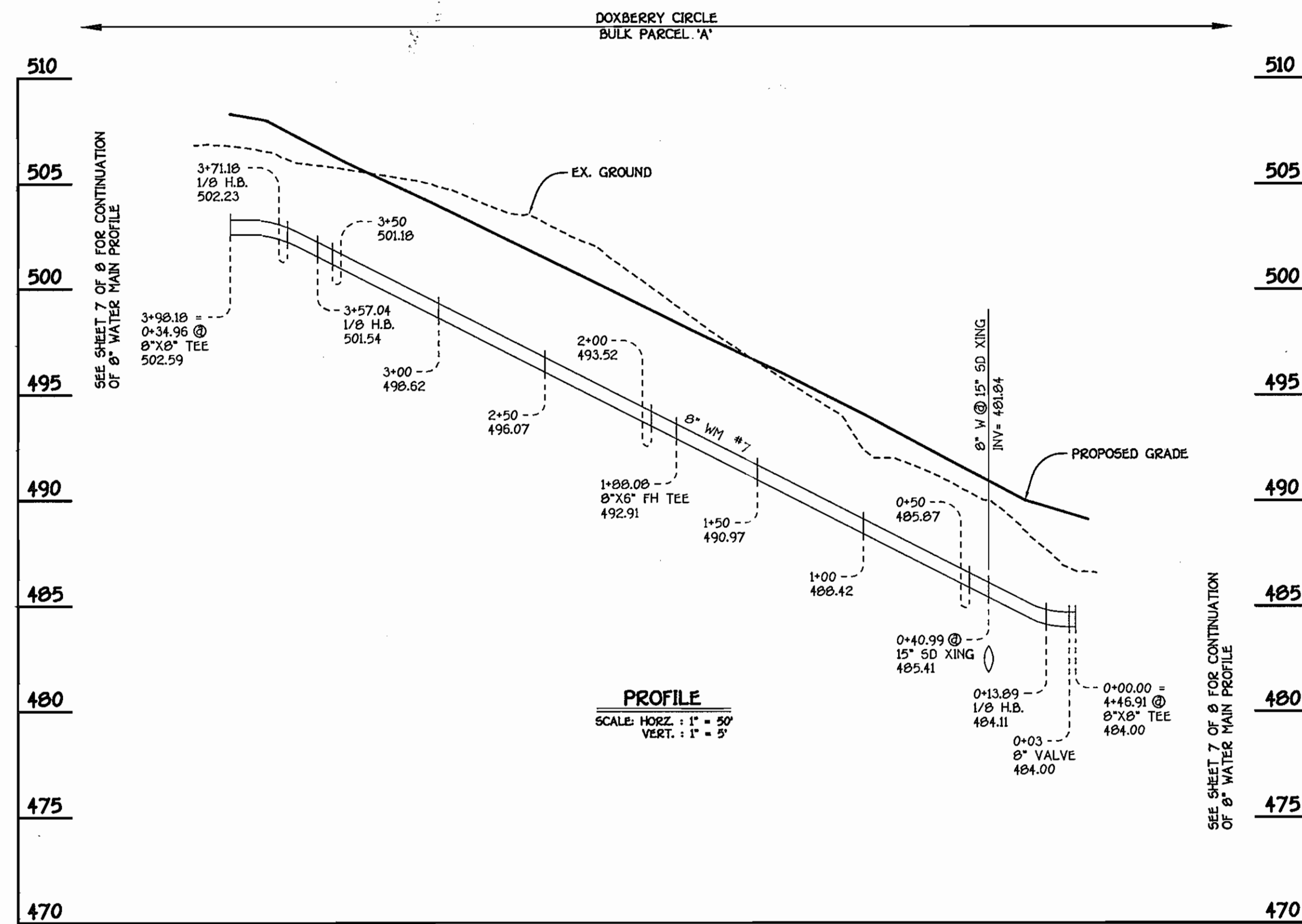
NOTE: FROM WM #1 STA. 13+27 TO WM #1 STA. 25+44 C900 PVC PIPE SHALL BE UTILIZED FOR THE 8" WATER MAIN. SEE SHEET 9 OF 9 FOR GENERAL NOTES, PART II: WATER, #7 THRU #13, AMENDMENT TO THE STANDARD SPECIFICATIONS, AND ADDITIONAL DETAILS.

NOTE: THIS ORIGINAL CONSTRUCTION PLAN, SHEET 5 OF 9, SUPERSEDES THE WATER MAIN CONSTRUCTION PLAN PREVIOUSLY APPROVED AND SIGNED BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION, DEPARTMENT OF PLANNING AND ZONING ON OCTOBER 06, 2004

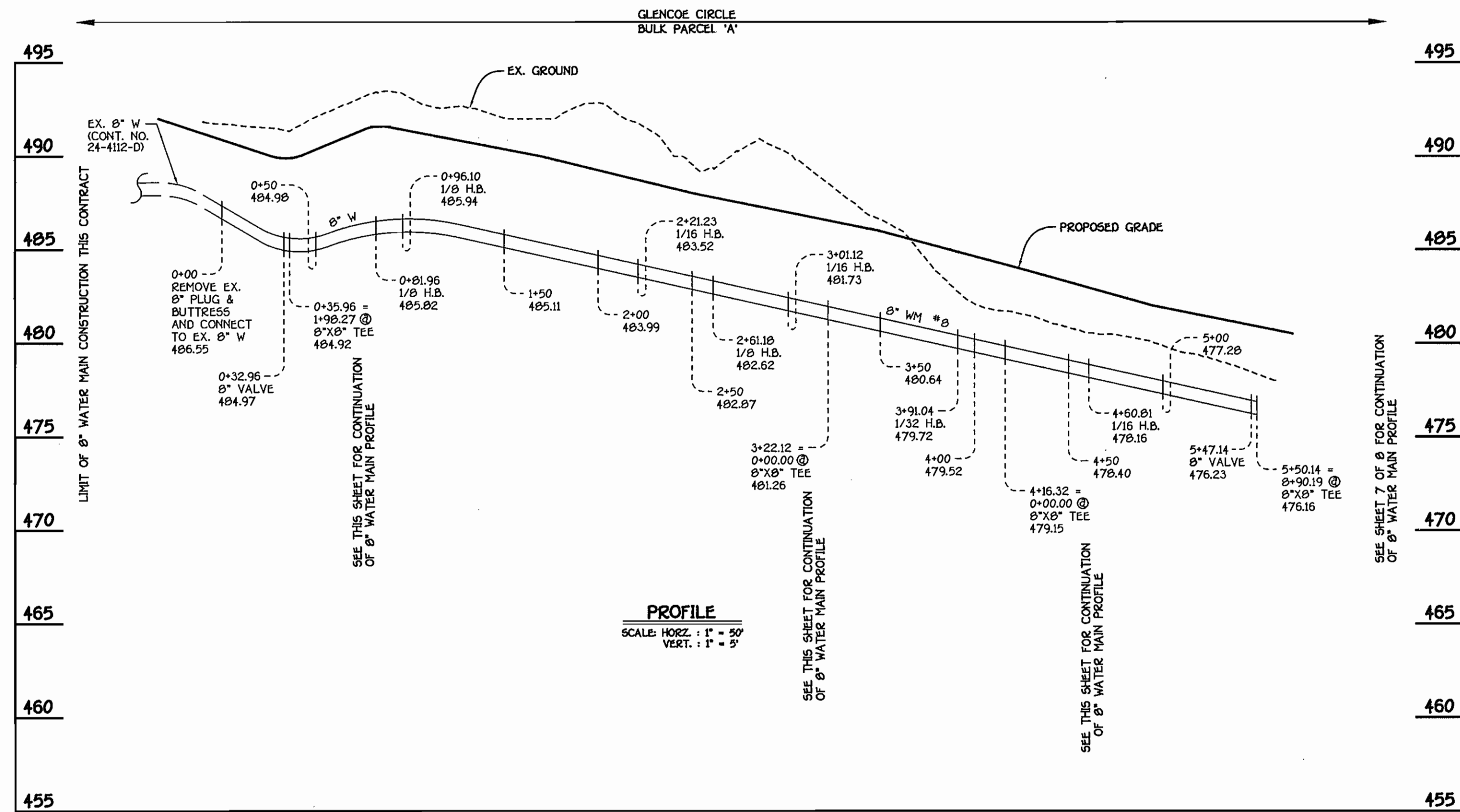
8" WATER MAIN #1: CHAMBERS COURT TO MARRIOTTSVILLE ROAD

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND R. J. B. 12-03-04 CHIEF, BUREAU OF UTILITIES	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND [Signature] 12/13/04 CHIEF, DEVELOPMENT ENGINEERING DIVISION	FISHER, COLLINS & CARTER, INC. CIVIL, ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE ELICOTT CITY, MARYLAND 21042 (410) 461-2255	STATE OF MARYLAND TERRILL A. FISHER PROFESSIONAL ENGINEER NO. 8783	DESIGNED BY: YCU D.Y.B. DRAWN BY: YCU D.Y.B. CHECKED BY: P.W.K. DATE: OCTOBER, 2004	APPROXIMATELY 100 FEET OF 8" WATER MAIN TO PROFILE, REVISION WATER MAIN TAB CHART AS REQUIRED AS-BUILT DATA ADDED 4/9/03 1/2/06	WATER MAINS PROFILES 60' SCALE MAP NO. 16 BLOCK NO. 4 & 5 F.C.C. WORK ORDER NO. 40393 FILE NAME: FINAL WATER MAINS PROFILES SH 5	CONTRACT NO. 44-4140-D GTW'S WAVERLY WOODS SECTION 13: BULK PARCEL 'A' THE COURTYARDS AT WAVERLY WOODS-EAST CHAMBERS COURT, DOXBERRY CIRCLE, DERBY DAY DRIVE & GLENCOE CIRCLE WATER MAIN EXTENSIONS HOWARD COUNTY, MARYLAND SCALE AS SHOWN SHEET 5 OF 9
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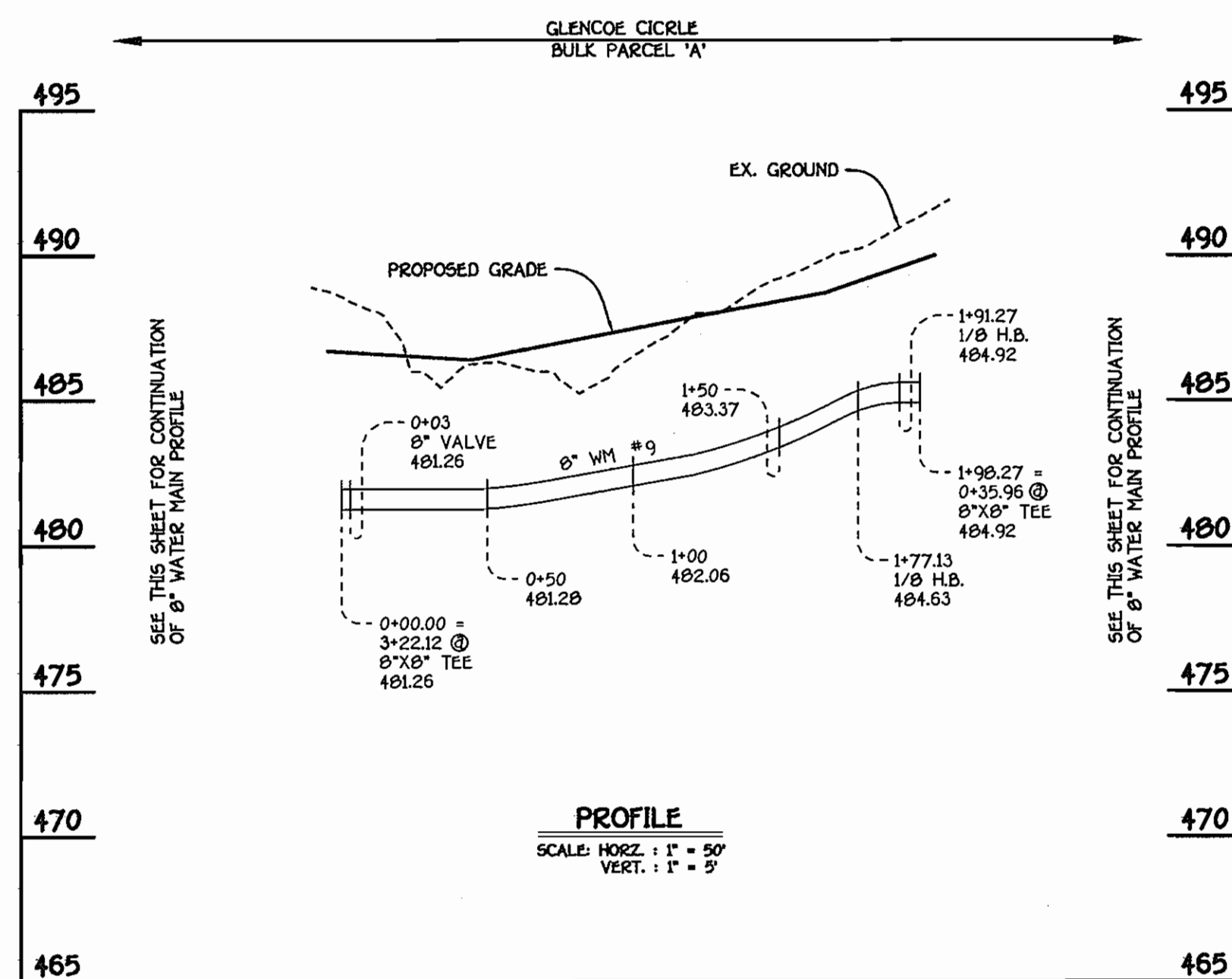
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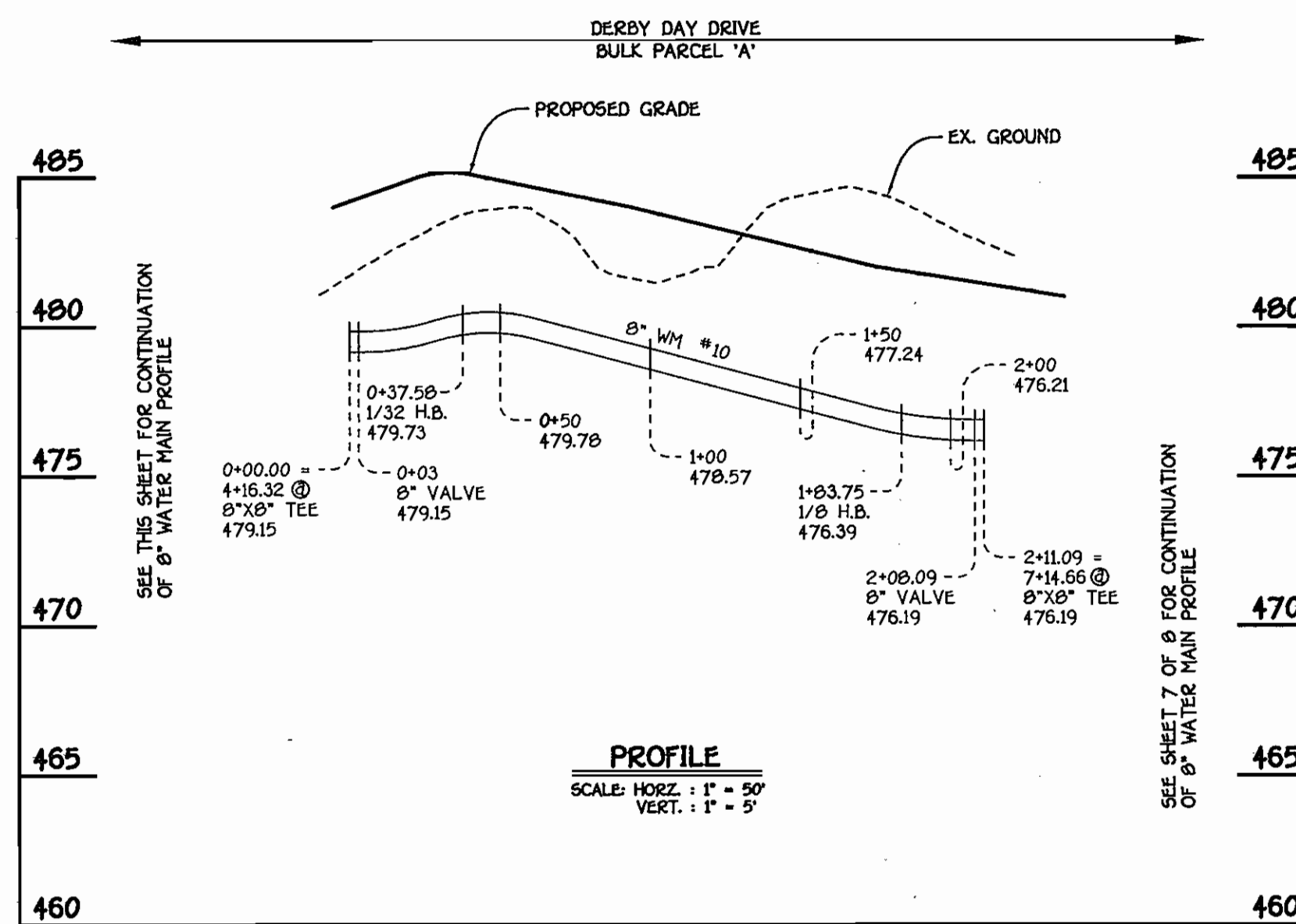
8" WATER MAIN #7: DOXBERRY CIRCLE



8" WATER MAIN #8: GLENCOE CIRCLE



8" WATER MAIN #9: GLENCOE CIRCLE



8" WATER MAIN #10: DERBY DAY DRIVE

W.M. STATION	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN #7			
0+00.00	8" X 8" TEE	599976.12	134269.05
0+03.00	8" VALVE	599979.04	134269.73
0+13.89	1/8" H.B.	599989.65	134262.18
1+00.00	8" X 6" FH TEE	600136.94	134259.20
3+57.04	1/8" H.B.	600279.81	134269.00
3+71.18	1/8" H.B.	600282.93	134255.21
3+98.18	8" X 8" TEE	600268.52	134242.38

W.M. STATION	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN #8			
0+00.00	CONNECT TO EX. 8" W	600375.84	1342879.01
0+32.96	8" VALVE	600343.60	1342872.16
0+35.96	8" X 8" TEE	600340.67	1342871.53
0+61.96	1/8" H.B.	600350.24	1342826.54
0+96.10	1/8" H.B.	600342.54	1342814.68
2+21.23	1/16" H.B.	600220.14	1342788.65
2+61.18	1/8" H.B.	600180.81	1342795.58
3+01.12	1/16" H.B.	600158.46	1342828.69
3+22.12	8" X 8" TEE	600154.10	1342849.23
3+91.04	1/32" H.B.	600139.76	1342916.65
4+16.32	8" X 8" TEE	600129.08	1342939.55
4+60.81	1/16" H.B.	600110.27	1342979.87
5+17.14	8" VALVE	600046.25	1343037.80
5+50.14	8" X 8" TEE	600044.03	1343039.81

W.M. STATION	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN #9			
0+00.00	8" X 8" TEE	600154.10	1342849.23
0+03.00	8" VALVE	600157.03	1342849.86
1+77.13	1/8" H.B.	600327.35	1342886.08
1+91.27	1/8" H.B.	600339.21	1342878.38
1+98.27	8" X 8" TEE	600340.67	1342871.53

W.M. STATION	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN #10			
0+00.00	8" X 8" TEE	600129.08	1342939.55
0+03.00	8" VALVE	600126.36	1342938.28
0+37.58	1/32" H.B.	600095.04	1342923.63
1+03.75	1/8" H.B.	599952.06	1342893.22
2+08.09	8" VALVE	599931.41	1342906.10
2+11.09	8" X 8" TEE	599928.87	1342907.69

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 3272 BALDOR NATIONAL PIKE
ELKORT CITY, MARYLAND 21042
410.461.2000



DESIGNED BY: M.D.T.
DRAWN BY: M.D.T.
CHECKED BY: P.W.K.
DATE: SEPTEMBER, 2004

WATER MAINS
PROFILES

600' SCALE MAP NO. 16 BLOCK NO. 4 & 5
F.C.C. WORK ORDER NO. 40393
FILE NAME: FINAL WATER MAINS PROFILES.SHT 8

GTW'S WAVERLY WOODS
SECTION 13: BULK PARCEL 'A'
"THE COURTYARDS AT WAVERLY WOODS-EAST"
CHAMBERS COURT, DOXBERRY CIRCLE,
DERBY DAY DRIVE & GLENCOE CIRCLE
CONTRACT NO. 44-4140-D
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
8 OF 8

CONTRACT NO. 44-4140-D
GTW'S WAVERLY WOODS
SECTION 13: BULK PARCEL 'A'
"THE COURTYARDS AT WAVERLY WOODS-EAST"
CHAMBERS COURT, DOXBERRY CIRCLE,
DERBY DAY DRIVE & GLENCOE CIRCLE
WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

R. J. B. 9-30-04
DATE: 10/6/04

DATE: 10/6/04

***GENERAL NOTES, PART II: WATER IS AMENDED TO INCLUDE THE FOLLOW NOTES 7 THROUGH 13:**

7. All ductile iron pipes to be used on the public water system shall be class 54. Ductile iron fittings shall meet the requirements of the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction and shall be exterior epoxy coated in accordance with AWWA C116.
8. All water house connections shall be copper meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction.
9. All fire hydrant leads including the tee shall be ductile iron class 54 meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction.
10. All water mains constructed in fill areas shall be restrained ductile iron pipe class 54 meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction.
11. All water mains within casing pipes shall be restrained ductile iron pipe class 54 meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction.
12. The following note is added to Howard County Standard Detail W2.22, Buttresses and Anchorages for Vertical Bends. "When anchoring PVC pipe, the strapping in contact with the pipe surface shall be 1/4-inch wide by 1/4-inch thick steel. The remaining portion of the strap shall be reinforcing bar sized in accordance with the pertinent chart shown on the detail."
13. From WM #1 STA. 13+27 to WM #1 STA. 24+50, the water main shall be polyvinylchloride (PVC) pipe meeting the requirements of AWWA C900 DR18, pressure Class 150 and the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction and all subsequent amendments thereto.

***GENERAL NOTES, PART II: WATER, *7 THRU *13 ARE ONLY APPLICABLE FROM WM #1 STA. 13+27 TO WM #1 STA. 24+50**

AMENDMENT TO THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION

Except as indicated herein, all work shall be in accordance with the pertinent sections of the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction, Article 9, Sections 909 Nonmetallic Pipes and Drainage Pipes and Article 10, Section 1002 Water Mains of the Howard County Standard Specifications are amended to include the following requirements.

GENERAL

1. Polyvinylchloride (PVC) pipe and couplings shall be homogeneous throughout and free from visible cracks, bubbles, blisters, holes, foreign inclusions, cuts, or scrapes on inside or outside surfaces, or other imperfections, which may impair the performance or life of the pipe. Each pipe shall be straight to within 1-1/4-inch per 20-foot length of pipe when uniformly supported along its entire length, and shall have a true circular cross-section to within 1/64 inch.
2. PVC pipe manufactured more than six months prior to work site inspection will not be accepted.
3. Loading, unloading, handling, inspection and storage of PVC pipe and fittings shall be in accordance with AWWA C605. PVC pipe shall be stored such that it does not deform or bend.
4. Submittals: The followings items shall be submitted for review and approval prior to installation. Materials not approved will not be accepted.
 - a. PVC Pipe: Submit manufacturer's literature and certificates of compliance for PVC pipe along with the manufacturer's identification codes for nominal size, dimension ratio, pressure class, production record code and date of manufacture. Submit manufacturer's written transcript of test results, for sustained pressure, pipe dimension, burst pressure, flattening resistance, and extrusion quality test. Frequency of performing the tests and the methods of selecting test specimens shall be in accordance with AWWA C900.
 - b. PVC Pipe Fittings: Submit manufacturer's literature and certificates of compliance for PVC pipe fittings along with the manufacturer's identification codes for nominal size, dimension ratio, pressure class, production record code and date of manufacture. Submit manufacturer's written transcript of results for accelerated-regression test, burst pressure and heat-reversion test in accordance with AWWA C907.
 - c. Miscellaneous for PVC water pipe: Submit manufacturer's literature and certificates of compliance, for joint restraint devices, pipe couplings, tracer wire, wire connector splice kits, detection tape, and service saddles.
 - d. Submit manufacturer's installation instructions for PVC pipe and fittings, joint restraint devices, pipe couplings, wire connector splice kits, service saddles, and manufacturer's instructions for tapping pipe.

MATERIALS

The Engineer will inspect all materials before, during and after installation to ensure compliance with the Contract Documents. When specific tests of materials are called for in the referenced standards and specifications, the Engineer has the option of requiring that any or all of these tests be performed for the specified materials.

1. PVC pipe and fittings:
 - a. PVC pipe 4 inches through 12 inches in diameter shall be manufactured in 20-foot lengths in accordance with AWWA C900 with cast/ductile iron pipe equivalent outside diameters. Pipe shall have a dimension ratio (DR) of 18, pressure class of 150 psi, and shall utilize elastomeric-gasketed push-on joints for joining pipes in accordance with AWWA C900. Pipe, gaskets, and gasket lubricant shall be suitable for potable water systems and shall meet NSF 61. All PVC pipe shall be factory marked on the spigot end for depth of insertion into the bell and factory tested in accordance with AWWA C900. PVC pipe shall be manufactured by one of the following:
 1. Uponor ETI
 2. J-M Pipe
 3. Diamond Plastics Corp
 4. National Pipe and Plastics, Inc.
 - b. Fittings for use with PVC water mains shall be ductile iron in accordance with the Standard Specifications or PVC fittings. PVC fittings shall have push-on rubber gasketed joints, be injection-molded meeting AWWA C907, pressure class 150; or fabricated meeting AWWA C900, Class 200. PVC fittings shall be manufactured by the Harrington Corporation (Harcol) or approved equal. Pipe joints shall be in accordance with the standards specified for the pipe and fittings.
 - c. Pipe couplings for PVC and ductile iron water mains shall be suitable for potable water service and shall have epoxy or nylon coated ductile iron center and end rings. Pipe couplings shall be Romac Style 501, Ford FC2W or approved equal.
2. Joint restraining materials for PVC pipe:
 Horizontal and vertical bends, tees, caps and fittings shall be buttressed or anchored in accordance with the Plans, the Standard Specifications and Details for Construction, or as directed by the Engineer. Valves, when connected to PVC pipes, shall be iron body resilient seat gate valves and anchored in accordance with the detail shown on the Plans and shall have one full length of pipe on each side of the valve.

Joint restraints for harnessing joints shall be in accordance with the Standard Specifications and the requirements below:

- a. All joint restraint devices shall be Factory Mutual approved.
 - b. In restrained joints, PVC pipe shall not be deflected. If deflection is required in a restrained joint, use ductile iron pipe or fittings.
 - c. Where a restrained joint is required between PVC pipe and a fitting, the fitting shall be ductile iron mechanical joint. Joint restraint for this joint shall meet ASTM F1674 and shall be Uniflange Series 1500, EBA Iron Series 2000PV, or approved equal.
 - d. Where a restrained joint is required for PVC push-on joint, joint restraint shall be Uni-B-13, ICM 620 Sur-Grip, EBA Iron Series 1600, Uniflange Series 1390-C, or approved equal.
3. Tracer Wire for Non Metallic Pipelines: Tracer wire shall be 8-gauge, 7-strand continuous copper wire with a 45-mil polyethylene insulation. The wire shall be blue, have "UL" markings and suitable for direct bury applications.
 4. Continuity Test Station: Continuity test stations shall be located adjacent to each fire hydrant within the public easement for locating PVC water mains. The test station shall be housed in a standard Howard County 18-inch diameter meter vault with an 18"x12" metal frame and cover as shown in the details on the Plans. A 1-inch diameter by 30-inch long copper grounding rod imbedded a minimum of 12 inches into the ground shall be used for the attachment of the tracer wire. The tracer wire shall be fastened to the copper rod using two copper clamps.
 5. Detection Tape: Visual Detection Tape shall be 3 inches wide (minimum) metallic blue plastic tape lettered "water" in black graphics.
 6. Connection to PVC waterlines:
 - a. Connections to PVC waterlines shall be by using fittings, such as tees, indicated on the Plans.
 - b. Saddles may be used for 2-inch and smaller connections to PVC waterlines. Saddles with clamps shall provide full support around the circumference of the pipe and shall not distort, scratch, or damage the pipe when tightened. Only tapping saddles manufactured specifically for AWWA C900 PVC pipe shall be used. Saddle and clamps/straps shall be formed to meet the curvature of the pipe. Saddles with clamps shall be manufactured for underground service, shall be rated for a minimum service of 150 psi and shall be brass or bronze alloy meeting ASTM B62 or B584 and AWWA C800 or ductile iron saddles meeting ASTM A536 or A395 with two 18-8 stainless steel straps and shall be epoxy or nylon coated. Saddles shall have watertight gaskets of butyl rubber meeting ASTM D2000 or nitrile around the tap hole. Saddles shall be one of the following:
 1. Ford FC-202
 2. Mueller Series DR25
 3. Romac 232N
 4. Smith Blair 317 Nylon Coated
 5. JCM 406

EXECUTION

All construction methods and details shall be in accordance with the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction and the following Criteria.

1. Installation of PVC Water Mains:
 - a. PVC pipe and fittings shall be handled in accordance with AWWA C605.
 - b. Bedding: Provide 6 inches of stone bedding under the pipe in accordance with Standard Detail G2.01 and the detail shown on the Plans for Trench for PVC Pipe using AASHTO M 43, size number 57 aggregate. The stone bedding shall be installed to grade prior to laying pipe. Excavate bell holes in bedding at each joint to assemble the joint and to insure that the entire length of each pipe barrel, fitting and valve is supported on firm bedding.
 - c. Install PVC AWWA C900 pressure pipe: Installation shall be in accordance with the Standard Specifications and the manufacturer's installation instructions and recommendations except as modified herein. Changes in horizontal and vertical alignment and curved alignments shown on the Plans shall be made by using fittings or high-deflection couplings. Deflecting PVC pipe joints or bending PVC pipe will not be permitted.

Whenever a pipe requires cutting, the work shall be done in a manner that leaves a smooth, square end. Cut PVC pipe ends shall have burrs removed and the end beveled to match factory bevel. To ensure the proper length of insertion of the spigot into the bell, PVC pipe cut in the field shall be beveled and marked on the spigot end to the dimensions specified by the manufacturer prior to assembly.

Prior to making gasketed joints, both mating pipe ends and the gasket shall be cleaned of all foreign material. The rubber gasket shall then be inserted in or stretched over the clean gasket seat and lubricant applied to the gasket and mating pipe end. The method for inserting the spigot into the bell shall be as recommended by the manufacturer and approved by the County. The pipe ends shall be carefully aligned and pushed together to meet the required manufacturer's insertion depth. Insertion of the spigot end of the pipe shall be made to a point where the factory mark is even with the face of the bell.

d. Tracer Wires:
Install tracer wires with the pipe. Tape wire to the top of the pipe with minimum 2-inch wide x 1/2-inch-circumference long PVC tape every 4 feet along the pipe. The copper wire shall be continuous for the full length of the pipeline including all fire hydrant leads and shall terminate at continuity test stations. Continuity test stations shall be located adjacent to all fire hydrants. Where required, splicing shall be done with direct-bury wire connector, wire nut, or splice kit listed and labeled for direct bury, installed as recommended by manufacturer, and taped to the pipe. Connections to continuity test stations shall be in accordance with the detail shown on the Plans.

After backfilling, the Contractor shall test the tracer wire in the presence of the County to demonstrate electrical continuity between test stations through the length of the PVC pipeline installed. The Contractor shall notify the County 48 hours in advance of the tests. Any discontinuity shall be located, repaired and retested at the Contractor's expense until continuity is achieved.

e. Backfill:
Backfill over the PVC pipe in accordance with Standard Detail G2.01 and the detail shown on the Plans for Trench for PVC Pipe using well-compacted AASHTO M 43, size number 57 aggregate to a minimum of 6 inches over the crown of the pipe. Trench backfill shall proceed thereafter in 8-inch layers. Contractor shall provide full trench compaction density of 95% as determined by AASHTO T-190-A.

f. Detection Tape:
Install detection tape directly over the centerline of the water mains on compacted backfill not less than 18 inches or more than 24 inches below finished surface. Tape shall be installed with minimal splices. Splices shall overlap a minimum of 6 inches.

2. Joints:
 - a. Mechanical Joints: For PVC plain-end to be connected to ductile iron mechanical joint bell, assemble the joint in accordance with the Standard Specifications, as modified in AWWA C605, the pipe manufacturer's recommendations and as specified herein. For PVC pipe plain ends to be inserted into mechanical joint bells, cut off the bevel so the plain-end is square cut. Do not deflect PVC pipe at connection to cast or ductile iron pipe or fittings.
 - b. Push-on Joints: For PVC pipe plain ends to be inserted in ductile iron or cast iron push-on bell, the spigot taper shall be cut to 1/4-inch long. Place an identifying mark on pipe that is not furnished with a depth mark on the plain end to show the depth of the socket and to verify that pipe is properly set in the bell. Assemble joints in accordance with AWWA C600 and C605, the manufacturer's recommendations, and as specified herein.

b. Push-on Joints:
For PVC pipe plain ends to be inserted in ductile iron or cast iron push-on bell, the spigot taper shall be cut to 1/4-inch long. Place an identifying mark on pipe that is not furnished with a depth mark on the plain end to show the depth of the socket and to verify that pipe is properly set in the bell. Assemble joints in accordance with AWWA C600 and C605, the manufacturer's recommendations, and as specified herein.

Do not deflect PVC pipe at connection to cast or ductile iron pipe or fittings. The Contractor shall achieve change in alignment as indicated elsewhere herein. Assembly of the plain end into the bell shall be done in accordance with manufacturer's recommendations. The spigot shall not be inserted deeper than manufacturer's recommendations. Install push-on restrained joints in accordance with manufacturer's recommendations.

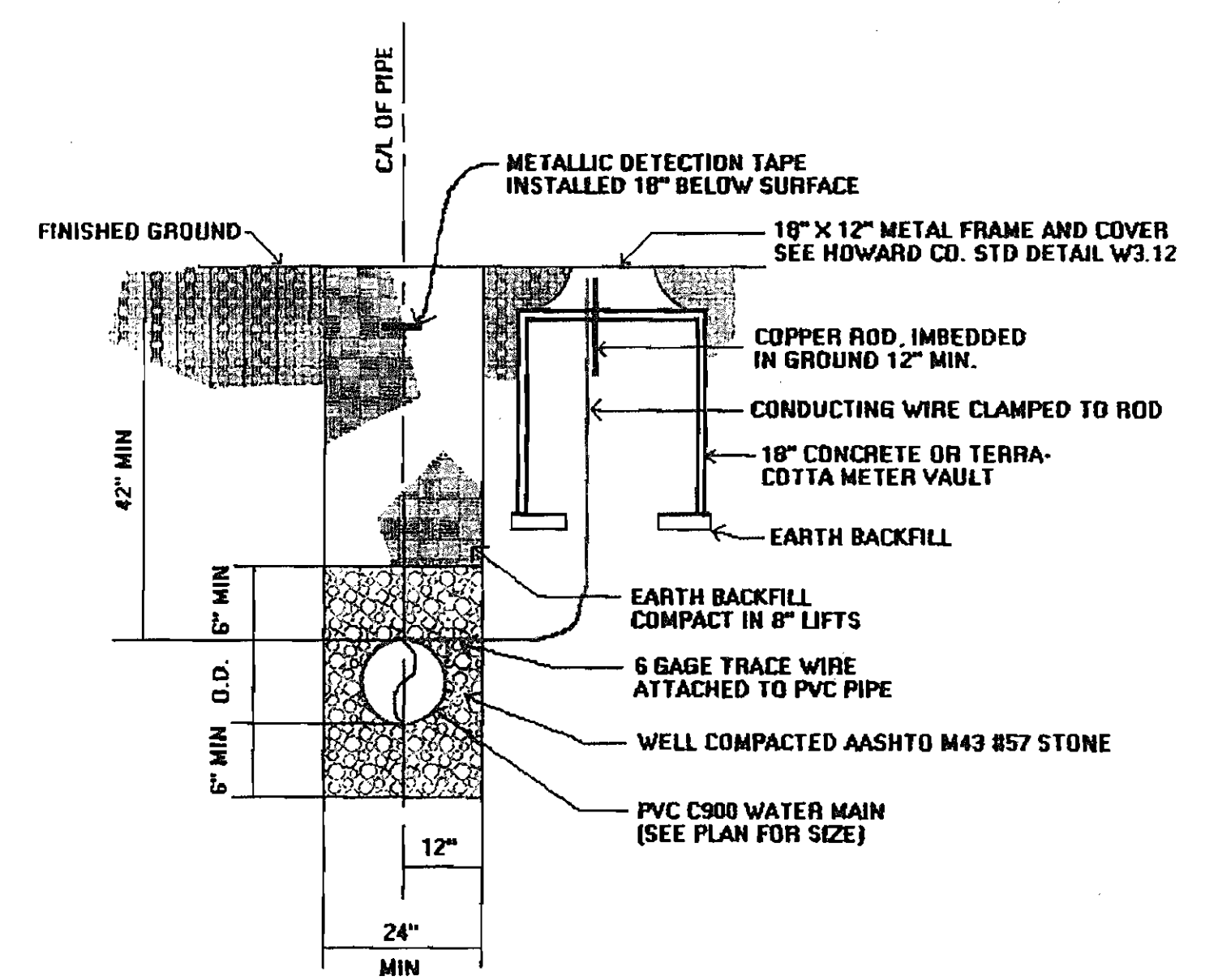
c. Restrained Joint:
In a restrained joint, PVC pipe shall not be deflected. If deflection is required in a restraint joint, use restrained ductile iron pipe.

3. Where the Contractor chooses to use PVC fittings, the pressure class of the fitting shall be the same as, or greater than, the pressure class of the pipe to which it connects. If the pressure class is not available, the Contractor shall use a ductile iron fitting. Where a fitting with restrained joints is required, a ductile iron mechanical joint shall be used.

4. Fire Hydrant lead, including mainline tee, shall be ductile iron only.

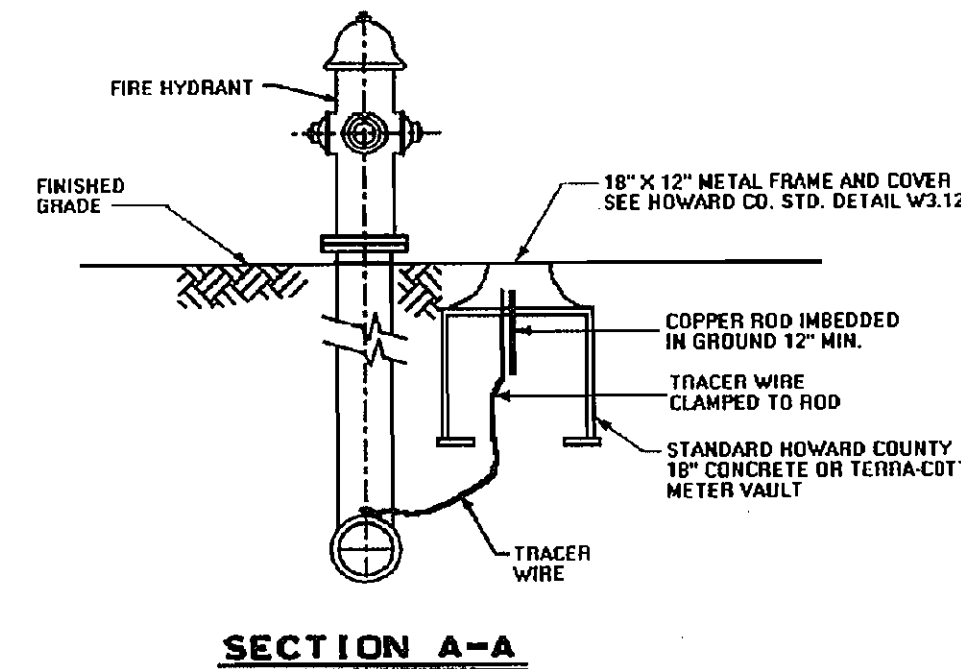
5. Connections to PVC pipe for Water House Connections:

- a. Perform taps on PVC pipe in accordance with AWWA C605, the pipe manufacturer's recommendations, and as indicated herein.
- b. Install a service saddle when tapping a PVC water main. Maintain a minimum of 24 inches between taps and PVC pipe bells.
- c. For PVC water pipe, use only cutting/tapping tools and machines made specifically for cutting AWWA C900 pipe and as described in AWWA C605. The cutting/tapping machine shall be installed so that it does not distort the pipe. The machine shall be supported so that its weight is not carried by the pipe. When tapping PVC pipe, follow the manufacturer's safety precautions and the safety precautions cited in AWWA C605.
- d. Multiple taps in a single pipe shall be staggered around the pipe circumference so they are not on a common line parallel to the longitudinal axis of the pipe and be at least 18-inches apart when measured longitudinally.

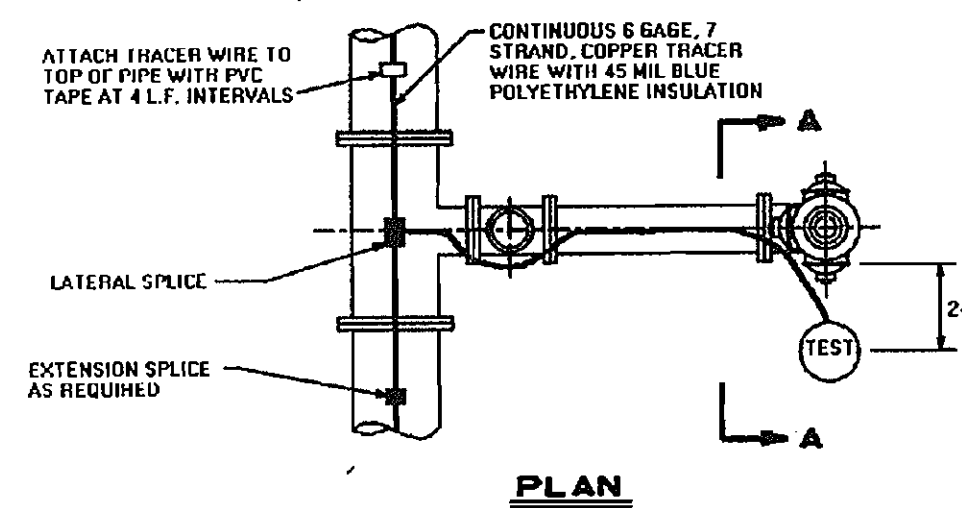


TRENCH FOR PVC PIPE AND CONTINUITY TEST STATION DETAIL

PLAN NO SCALE



SECTION A-A

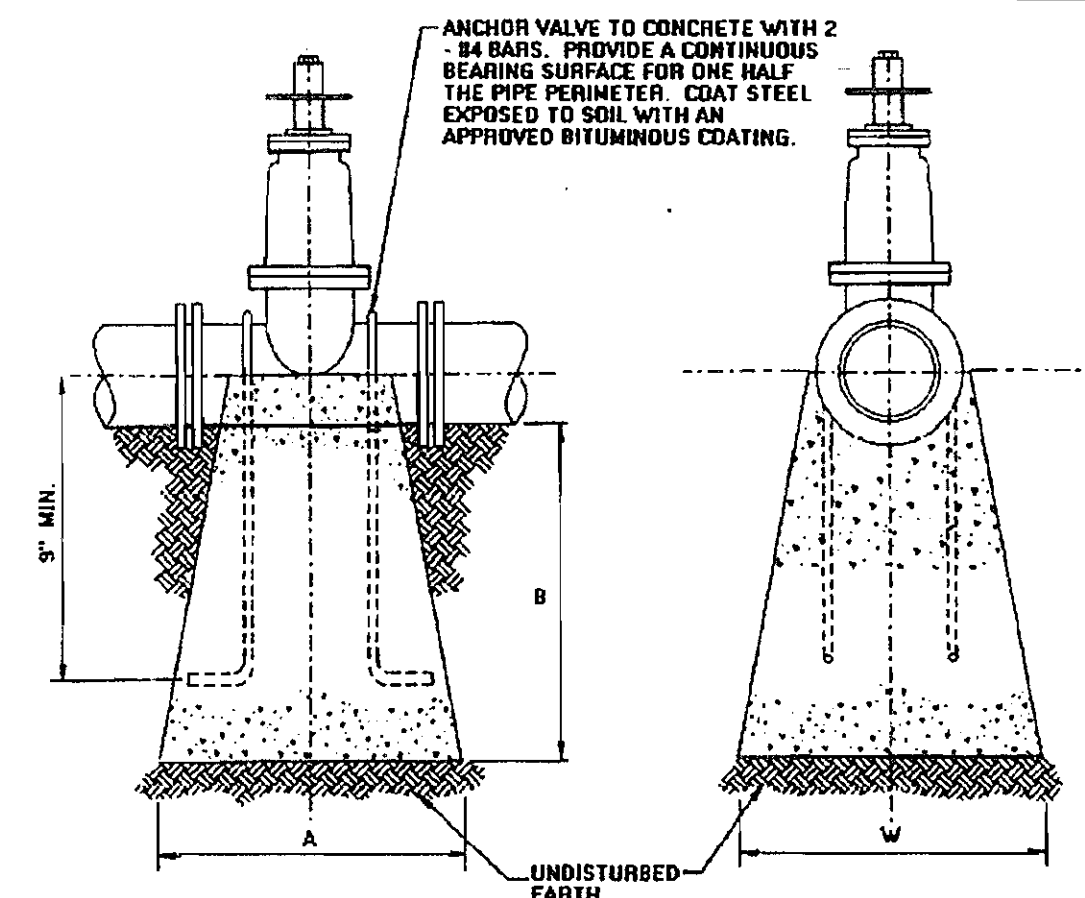


PLAN

- NOTES:
1. TEST STATION MUST BE PLACED TO THE RIGHT OR LEFT SIDE OF THE FIRE HYDRANT.
2. VALVE MOUNT FRAME AND COVER TO BE SET FLUSH WITH FINAL GRADE.
3. BUTTRESSES AND STRAPPING NOT SHOWN FOR CLARITY

CONTINUITY TEST STATION AT FIRE HYDRANT

PLAN NO SCALE



ANCHOR VALVE WHEN NOT ATTACHED TO TEE

PIPE SIZE	A	B	W
4"	9"	1'-0"	1'-0"
6"	10"	1'-6"	1'-0"
8"	1'-0"	2'-0"	2'-0"
12"	1'-0"	2'-0"	3'-0"

ALL CONCRETE TO BE MIX NO. 2

ANCHORAGES FOR VALVES WITH PVC PIPE

PLAN NO SCALE

CONTRACT NO. 44-4140-D
GTW'S WAVERLY WOODS
SECTION 13: BULK PARCEL 'A'
THE COURTYARDS AT WAVERLY WOODS-EAST
CHAMBERS COURT, DOXBERRY CIRCLE,
DERBY DAY DRIVE & GLENCOE CIRCLE
WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CONTINENTAL SQUARE OFFICE PARK - 10772 SALTWATER NATIONAL PARK
ELLIOTT CITY, MARYLAND 20626
(410) 461-2925



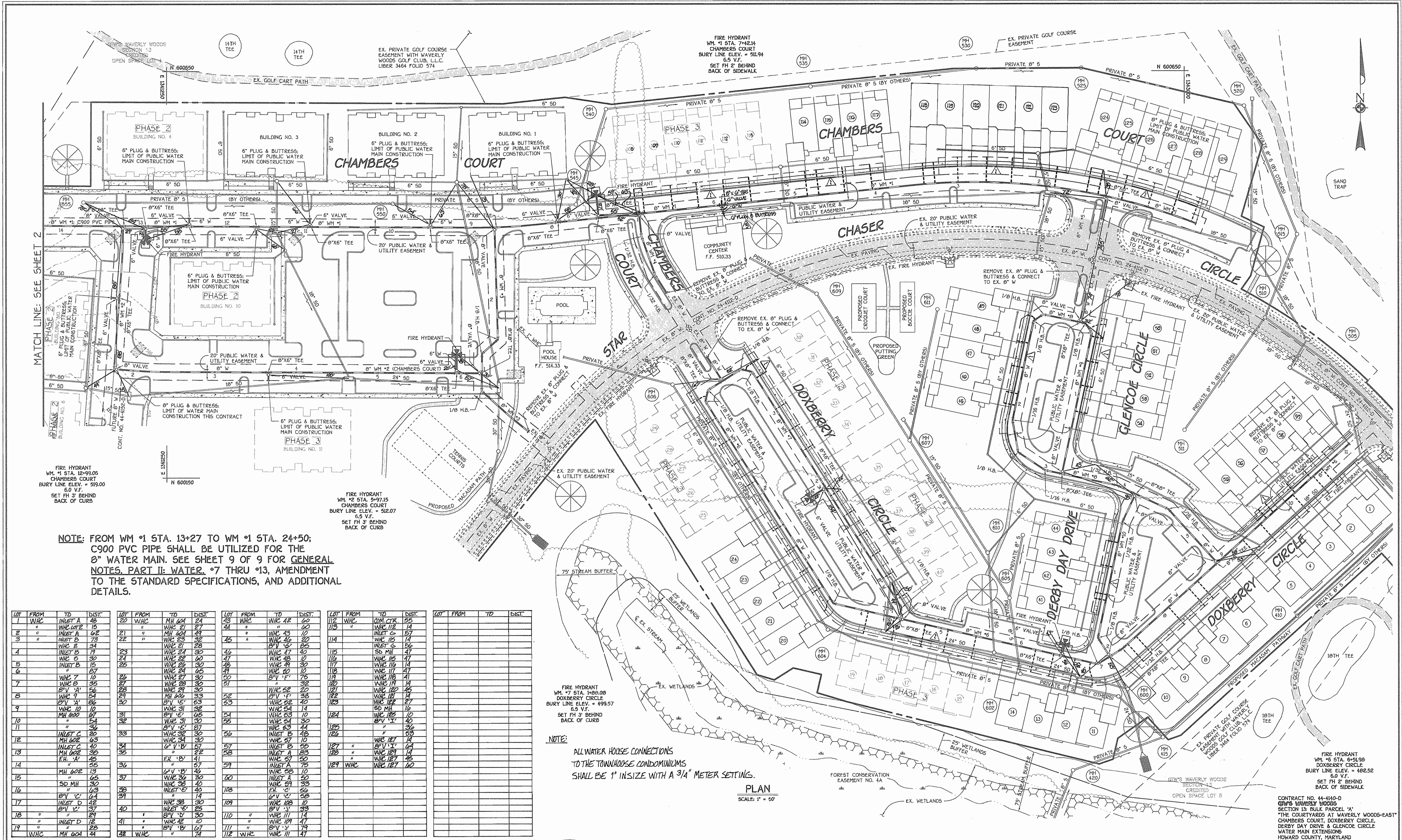
DESIGNED BY:	P.W.K.
DRAWN BY:	D.Y.B.
CHECKED BY:	P.W.K.
DATE:	SEPTEMBER, 2004
BY NO.	
REVISION	
DATE	

AWWA C900 PVC WATER MAINS	
GENERAL NOTES	
AMENDMENT TO STANDARD SPECIFICATIONS	
DETAILS	
600' SCALE MAP NO.	16 BLOCK NO. 4 & 5
F.C.C. WORK ORDER NO.	40353
FILE NAME	FINAL WATER MAINS PLAN VIEW SHT 2

GTW'S WAVERLY WOODS
SECTION 13: BULK PARCEL 'A'
THE COURTYARDS AT WAVERLY WOODS-EAST
CHAMBERS COURT, DOXBERRY CIRCLE,
DERBY DAY DRIVE & GLENCOE CIRCLE
CONTRACT NO. 44-4140-D
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 9 OF 9

Chief, Bureau of Utilities DATE 9-30-04
Chief, Development Engineering Division DATE 10/6/04



NOTE: FROM WM #1 STA. 13+27 TO WM #1 STA. 24+50; C900 PVC PIPE SHALL BE UTILIZED FOR THE 8" WATER MAIN. SEE SHEET 9 OF 9 FOR GENERAL NOTES, PART II: WATER, #7 THRU #13, AMENDMENT TO THE STANDARD SPECIFICATIONS, AND ADDITIONAL DETAILS.

LOT	FROM	TO	DIST.	LOT	FROM	TO	DIST.	LOT	FROM	TO	DIST.	LOT	FROM	TO	DIST.	LOT	FROM	TO	DIST.
1	WHC	INLET A	48	101	WHC	MH 604	24	102	WHC	WHC 12	60	103	WHC	COM. CTR.	55	104	WHC	WHC 12	60
2	"	WHC LOT 2	15	102	"	WHC 21	27	105	"	WHC 43	60	106	"	INLET C	14	107	"	WHC 112	14
3	"	INLET A	62	103	"	MH 604	41	108	"	WHC 40	20	109	"	WHC 115	14	110	"	WHC 115	14
4	"	WHC 2	34	104	"	WHC 23	32	111	"	8" V 1"	75	112	"	INLET C	56	113	"	WHC 117	14
5	"	INLET B	19	105	"	WHC 21	28	114	"	SD MH	47	114	"	WHC 118	14	115	"	WHC 118	14
6	"	WHC 6	30	106	"	WHC 24	30	115	"	WHC 19	32	116	"	WHC 119	14	116	"	WHC 119	14
7	"	INLET B	15	107	"	WHC 22	60	117	"	WHC 17	30	117	"	WHC 120	45	118	"	WHC 120	45
8	"	WHC 9	54	108	"	WHC 20	45	118	"	WHC 16	47	119	"	WHC 121	14	119	"	WHC 121	14
9	"	WHC 10	10	109	"	WHC 24	45	120	"	WHC 10	24	120	"	WHC 122	27	120	"	WHC 122	27
10	"	WHC 8	35	110	"	WHC 27	30	121	"	8" V 1"	75	121	"	WHC 123	10	121	"	WHC 123	10
11	"	8" V 1"	56	111	"	WHC 28	30	122	"	WHC 19	32	122	"	SD MH	40	122	"	WHC 124	10
12	"	WHC 9	54	112	"	WHC 29	30	123	"	WHC 20	30	123	"	WHC 125	10	123	"	WHC 125	10
13	"	8" V 1"	82	113	"	MH 602	33	124	"	WHC 22	40	124	"	WHC 126	14	124	"	WHC 126	14
14	"	WHC 10	10	114	"	WHC 31	32	125	"	WHC 24	40	125	"	WHC 127	14	125	"	WHC 127	14
15	"	MH 602	67	115	"	8" V 1"	65	126	"	WHC 24	30	126	"	WHC 128	10	126	"	WHC 128	10
16	"	5A	50	116	"	WHC 31	30	127	"	WHC 24	30	127	"	WHC 129	14	127	"	WHC 129	14
17	"	3B	30	117	"	WHC 31	30	128	"	WHC 24	30	128	"	WHC 130	10	128	"	WHC 130	10
18	"	INLET C	43	118	"	8" V 1"	87	129	"	WHC 24	30	129	"	WHC 131	14	129	"	WHC 131	14
19	"	INLET C	40	119	"	MH 602	33	130	"	WHC 24	30	130	"	WHC 132	14	130	"	WHC 132	14
20	"	MH 602	30	120	"	WHC 31	32	131	"	WHC 24	30	131	"	WHC 133	14	131	"	WHC 133	14
21	"	WHC 10	10	121	"	8" V 1"	82	132	"	WHC 24	30	132	"	WHC 134	14	132	"	WHC 134	14
22	"	WHC 9	54	122	"	WHC 31	32	133	"	WHC 24	30	133	"	WHC 135	14	133	"	WHC 135	14
23	"	WHC 8	35	123	"	WHC 31	30	134	"	WHC 24	30	134	"	WHC 136	14	134	"	WHC 136	14
24	"	8" V 1"	56	124	"	WHC 31	30	135	"	WHC 24	30	135	"	WHC 137	14	135	"	WHC 137	14
25	"	WHC 9	54	125	"	WHC 31	30	136	"	WHC 24	30	136	"	WHC 138	14	136	"	WHC 138	14
26	"	WHC 10	10	126	"	WHC 31	30	137	"	WHC 24	30	137	"	WHC 139	14	137	"	WHC 139	14
27	"	WHC 8	35	127	"	WHC 31	30	138	"	WHC 24	30	138	"	WHC 140	14	138	"	WHC 140	14
28	"	8" V 1"	56	128	"	WHC 31	30	139	"	WHC 24	30	139	"	WHC 141	14	139	"	WHC 141	14
29	"	WHC 9	54	129	"	WHC 31	30	140	"	WHC 24	30	140	"	WHC 142	14	140	"	WHC 142	14
30	"	WHC 10	10	130	"	WHC 31	30	141	"	WHC 24	30	141	"	WHC 143	14	141	"	WHC 143	14
31	"	WHC 8	35	131	"	WHC 31	30	142	"	WHC 24	30	142	"	WHC 144	14	142	"	WHC 144	14
32	"	8" V 1"	56	132	"	WHC 31	30	143	"	WHC 24	30	143	"	WHC 145	14	143	"	WHC 145	14
33	"	WHC 9	54	133	"	WHC 31	30	144	"	WHC 24	30	144	"	WHC 146	14	144	"	WHC 146	14
34	"	WHC 10	10	134	"	WHC 31	30	145	"	WHC 24	30	145	"	WHC 147	14	145	"	WHC 147	14
35	"	WHC 8	35	135	"	WHC 31	30	146	"	WHC 24	30	146	"	WHC 148	14	146	"	WHC 148	14
36	"	8" V 1"	56	136	"	WHC 31	30	147	"	WHC 24	30	147	"	WHC 149	14	147	"	WHC 149	14
37	"	WHC 9	54	137	"	WHC 31	30	148	"	WHC 24	30	148	"	WHC 150	14	148	"	WHC 150	14
38	"	WHC 10	10	138	"	WHC 31	30	149	"	WHC 24	30	149	"	WHC 151	14	149	"	WHC 151	14
39	"	WHC 8	35	139	"	WHC 31	30	150	"	WHC 24	30	150	"	WHC 152	14	150	"	WHC 152	14
40	"	8" V 1"	56	140	"	WHC 31	30	151	"	WHC 24	30	151	"	WHC 153	14	151	"	WHC 153	14
41	"	WHC 9	54	141	"	WHC 31	30	152	"	WHC 24	30	152	"	WHC 154	14	152	"	WHC 154	14
42	"	WHC 10	10	142	"	WHC 31	30	153	"	WHC 24	30	153	"	WHC 155	14	153	"	WHC 155	14
43	"	WHC 8	35	143	"	WHC 31	30	154	"	WHC 24	30	154	"	WHC 156	14	154	"	WHC 156	14
44	"	8" V 1"	56	144	"	WHC 31	30	155	"	WHC 24	30	155	"	WHC 157	14	155	"	WHC 157	14

FIRE HYDRANT WM #7 STA. 1+88.00 DOXBERRY CIRCLE BURY LINE ELEV. = 499.57 6.5 V.F. SET FH 3' BEHIND BACK OF CURB

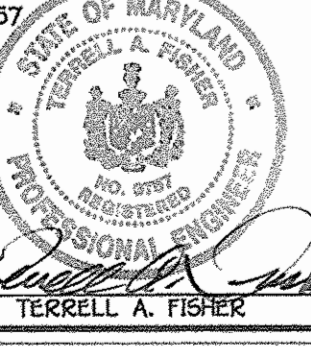
NOTE: ALL WATER HOUSE CONNECTIONS TO THE TOWNHOUSE CONDOMINIUMS SHALL BE 1" IN SIZE WITH A 3/4" METER SETTINGS.

PLAN SCALE: 1" = 50'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION
10/6/04

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
10101 WOODS DRIVE, SUITE 200
ELICOTT CITY, MARYLAND 21042
410-461-2995



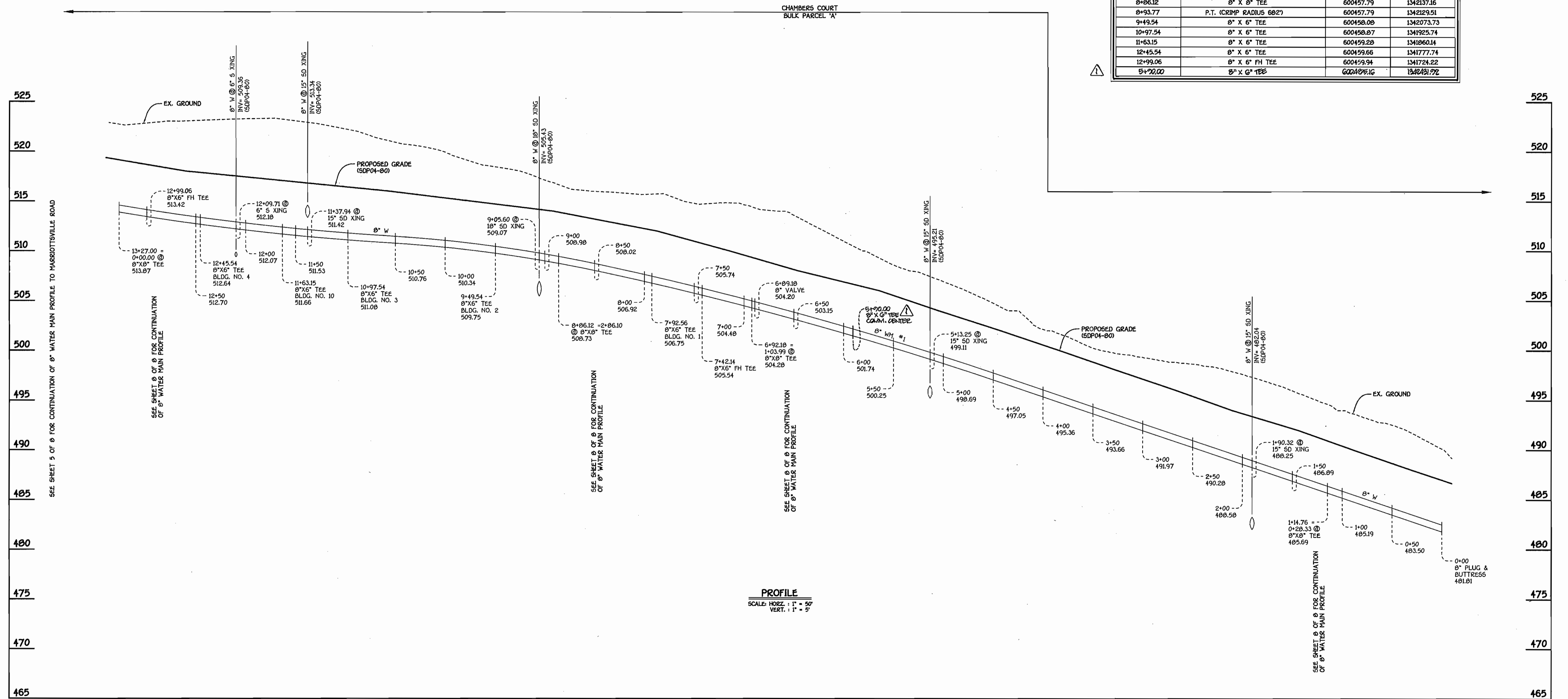
DESIGNED BY:	M.D.T.
DRAWN BY:	M.D.T.
CHECKED BY:	P.W.K.
DATE:	SEPTEMBER, 2004
REVISION:	

600' SCALE MAP NO.	16	BLOCK NO.	4 & 5
F.C.C. WORK ORDER NO.	40353		
FILE NAME:	FINAL WATER MAINS PLAN VIEW SHT 3		

GTW'S WAVERLY WOODS
SECTION 13: BULK PARCEL 'A'
"THE COURTYARDS AT WAVERLY WOODS-EAST"
CHAMBERS COURT, DOXBERRY CIRCLE,
DERBY DAY DRIVE & GLENCOE CIRCLE
CONTRACT NO. 44-4140-D
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 3 OF 9

WATER MAIN TABULATION CHART			
W.M. STATION	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN #1			
0+00.00	P.C. (CRIMP RADIUS 740.32') 8" PLUG & BUTTRESS	600462.10	1343014.14
1+14.76	8" X 8" TEE	600459.50	1342904.46
3+56.09	P.T. (CRIMP RADIUS 740.32')	600509.35	1342664.50
6+09.10	8" VALVE	600474.91	1342333.20
6+92.10	8" X 8" TEE	600474.60	1342330.29
7+42.14	8" X 6" FH TEE	600469.43	1342280.60
7+92.56	8" X 6" TEE	600464.22	1342230.45
8+19.51	P.C. (CRIMP RADIUS 682')	600461.43	1342203.64
8+06.12	8" X 8" TEE	600457.79	1342137.16
8+93.77	P.T. (CRIMP RADIUS 682')	600457.79	1342129.51
9+49.54	8" X 6" TEE	600450.00	1342073.73
10+97.54	8" X 6" TEE	600450.07	1341925.74
11+63.15	8" X 6" TEE	600450.20	1341860.14
12+45.54	8" X 6" TEE	600450.66	1341777.74
12+99.06	8" X 6" FH TEE	600450.94	1341724.22
5+90.00	8" X 8" TEE	600409.16	1342421.72



8" WATER MAIN #1: CHAMBERS COURT

CONTRACT NO. 44-4140-D
 GTW'S WAVERLY WOODS
 SECTION 13: BULK PARCEL 'A'
 THE COURTYARDS AT WAVERLY WOODS-EAST
 CHAMBERS COURT, DOXBERRY CIRCLE,
 DERBY DAY DRIVE & GLENCOE CIRCLE
 WATER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 R. J. B...
 CHIEF, BUREAU OF UTILITIES
 DATE: 9-30-04

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND
 ...
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 10/4/04

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 1100 W. ...
 TERRELL A. FISHER
 PROFESSIONAL ENGINEER



DESIGNED BY: H.D.T.
 DRAWN BY: M.D.T.
 CHECKED BY: P.W.K.
 DATE: SEPTEMBER, 2004
 BY NO. REVISION DATE
 ADD 8" X 6" TEE FOR GO'ING TO COMMUNITY CENTER
 3/20/06

WATER MAINS PROFILES
 50' SCALE MAP NO. 15 BLOCK NO. 4 & 5
 F.C.C. WORK ORDER NO. 40353
 FILE NAME: FINAL WATER MAINS PROFILES SH4

GTW'S WAVERLY WOODS
 SECTION 13: BULK PARCEL 'A'
 THE COURTYARDS AT WAVERLY WOODS-EAST
 CHAMBERS COURT, DOXBERRY CIRCLE,
 DERBY DAY DRIVE & GLENCOE CIRCLE
 CONTRACT NO. 44-4140-D
 THIRD ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE AS SHOWN
 SHEET 4 OF 9