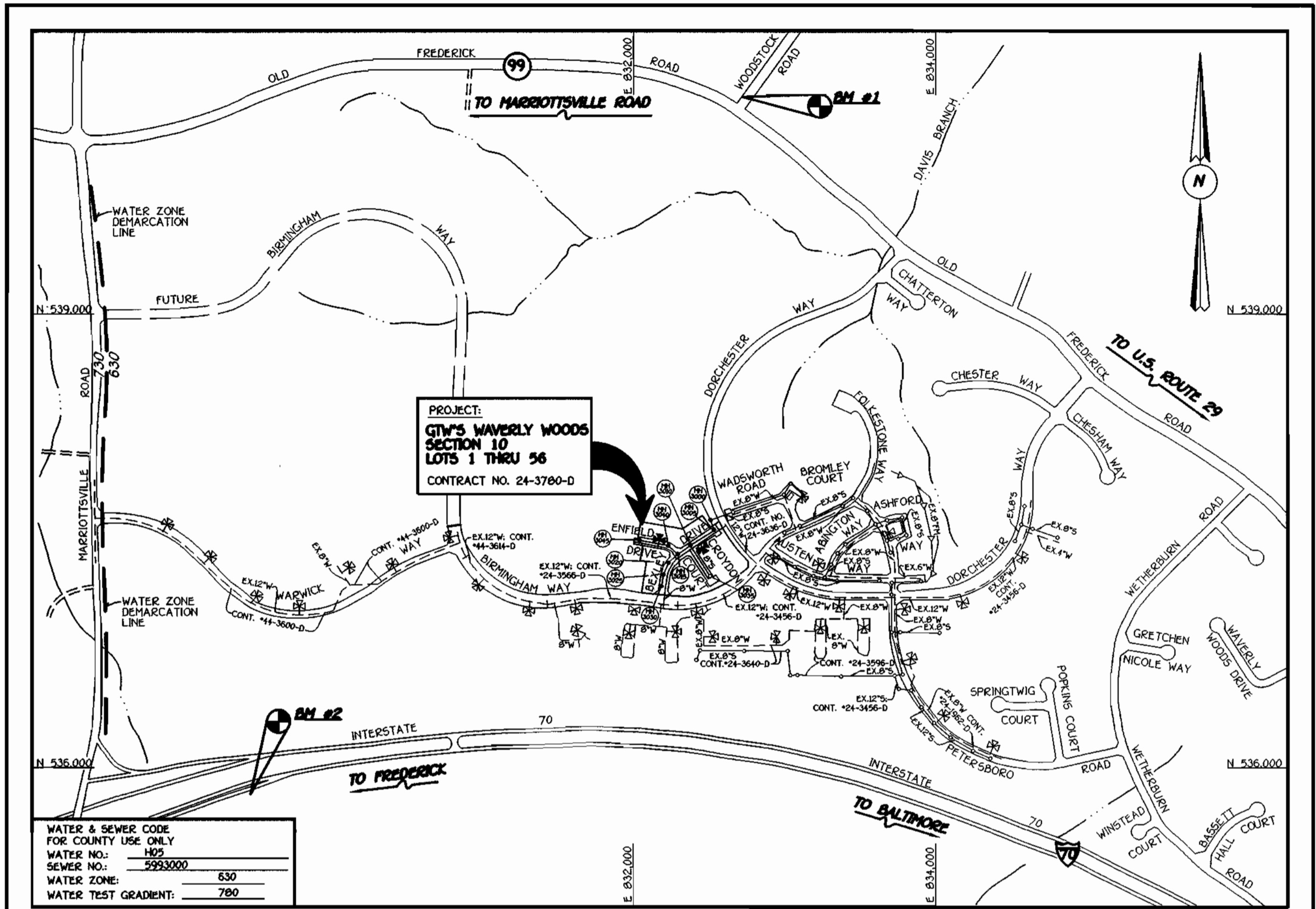


QUANTITIES				
ITEM	ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	SUPPLIER
8" SEWER	1,251.90 L.F.			
4" SEWER	1,776 L.F.			
MANHOLES	10 EACH			
12" WATER	317 L.F.			
8" WATER	1,339.43 L.F.			
6" WATER	38.51 L.F.			
1" WHC	1,896 L.F.			
FIRE HYDRANTS	2 EACH			
12" X 8" TEE	2 EACH			
8" X 8" TEE	2 EACH			
8" X 6" TEE	2 EACH			
8" VALVE	5 EACH			
6" VALVE	2 EACH			
8" - 1/16" H.B.	3 EACH			
8" - 1/32" H.B.	1 EACH			
12" X 8" TAPPING SLEEVE & VALVE	1 EACH			
12" FLUG & BUTTRESS	1 EACH			
8" FLUG & BUTTRESS	2 EACH			
NAME OF UTILITY CONTRACTOR:				
SURVEY & DRAFTING DIVISION AS-BUILT DATE:				



WATER & SEWER CODE FOR COUNTY USE ONLY	WATER NO.: 102
SEWER NO.: 2933000	WATER ZONE: 630
WATER TEST GRADIENT: 780	

TYPE OF BUILDING: RESIDENTIAL: TOWNHOUSES
NUMBER OF LOTS: 56 (53 BUILDABLE)
NO. OF WATER HOUSE CONNECTIONS: 53
NO. OF SEWER HOUSE CONNECTIONS: 53
DRAINAGE AREA: LITTLE PATUXENT
TREATMENT PLANT: PATAPSCO WASTEWATER TREATMENT PLANT VIA THE WAVERLY WOODS WASTEWATER PUMPING STATION

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 ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM.
- 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 (99% AMENDMENTS) 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 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 FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 - STATE HIGHWAY ADMINISTRATION - 531-5533
 - BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES - 850-4820
 - BALTIMORE GAS & ELECTRIC CO. - UNDER GROUND DAMAGE CONTROL - 787-9068
 - MESS UTILITY - 1-800-257-7777
 - COLONIAL PIPELINE CO. - 795-1390
 - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT 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 THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- 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.
- T.B. DENOTES TEST BOKING.
- MANHOLES SHOWN WITH 12" AND 18" WALLS ARE FOR BRICK MANHOLES ONLY.
- 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 PLANS OR IN THE SPECIFICATIONS.
- HOUSES WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- MANHOLES LOCATED WITHIN THE PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAMES AND COVERS, STANDARD DETAIL G5.51.
- WATER MAINS AND WATER HOUSE CONNECTION LINES MUST BE PLACED AS TO HAVE ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
- ALL WATER MAINS SHALL 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 SET TO THE BURY LINE ELEVATION SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS (W111 AND W213). SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1095 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATIONS C-153, DUCTILE IRON COMPACT FITTINGS, 3-INCH THROUGH 12-INCH FOR WATER AND OTHER LIQUIDS.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, @ (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 DPW REQUIREMENTS PER SECTION 18.11(a) OF THE HOWARD COUNTY CODE.

DEVELOPER'S CERTIFICATION

I/WE 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 A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE 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.

Signature of Developer: *[Signature]* DATE: 11/26/99

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.

Signature of Engineer: *[Signature]* DATE: 11/26/99

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

Signature: *[Signature]* DATE: 12/1/99
U.S.D.A. NATIONAL RESOURCES CONSERVATION SERVICE

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

Signature: *[Signature]* DATE: 12/1/99
HOWARD SOIL CONSERVATION DISTRICT

SEDDIMENT 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 AS SHOWN ON THIS PLAN AND ON F 00-06.

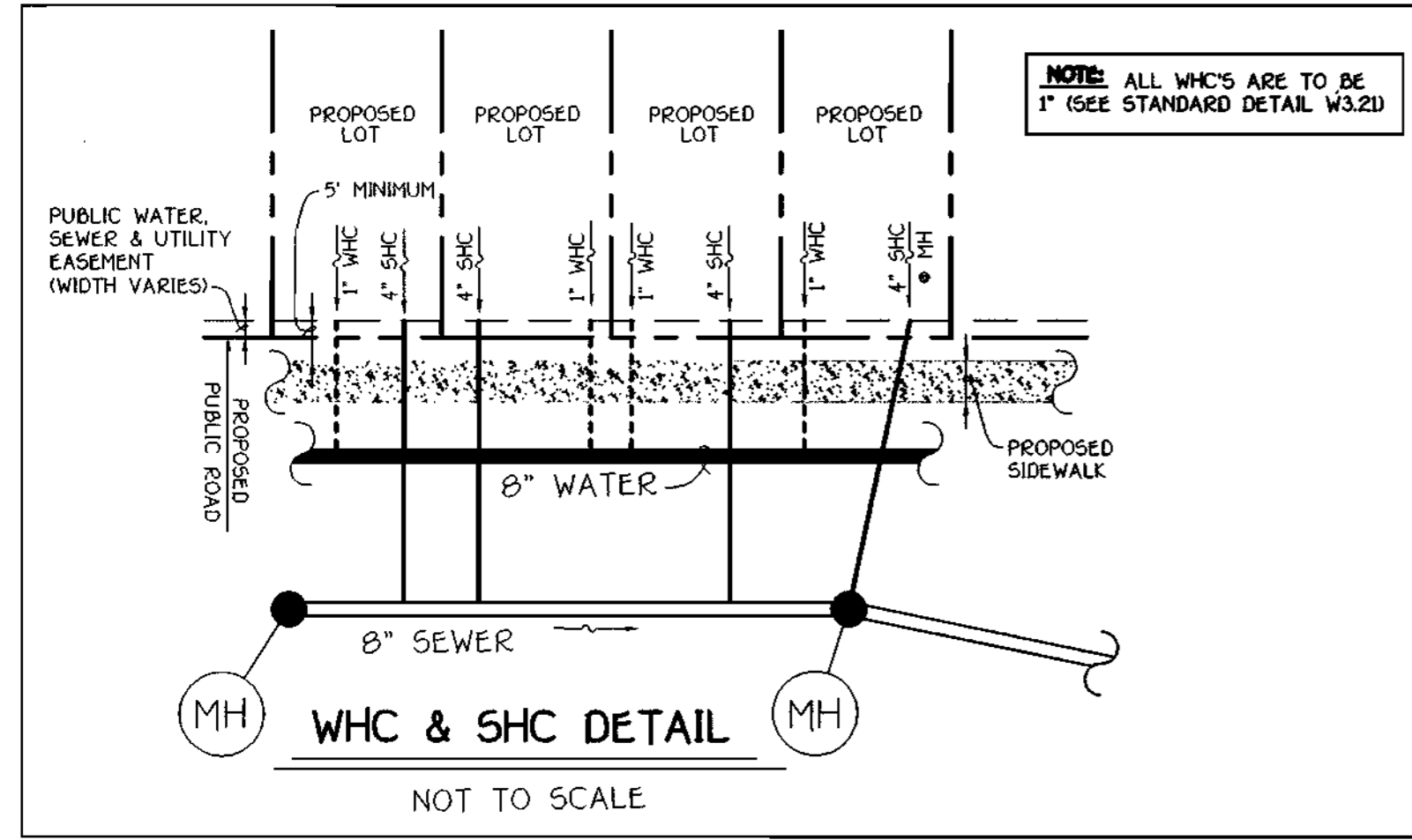
Signature of Developer: *[Signature]* DATE: 11/26/99

CONTRACT No. 24-3780-D
G.T.W.'S WAVERLY WOODS
SECTION 10; LOTS 1 THRU 56
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

BENCHMARK INFORMATION

B.M.#1 - HOWARD COUNTY CONTROL STATION #1012 (ROAD '83) (NEAR THE INTERSECTION OF MARYLAND ROUTE 99 & WOODSTOCK ROAD)	N 601,060.177	E 1,345,336.758	ELEVATION = 445.577
B.M.#2 - HOWARD COUNTY CONTROL STATION #1661 (ROAD '83) (NEAR THE INTERSECTION OF U.S. ROUTE 40 & HARRIOTTSVILLE ROAD)	N 593,250.932	E 1,340,192.711	ELEVATION = 509.924

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Signature: <i>[Signature]</i> DATE: December 3, 1999 CHIEF, BUREAU OF UTILITIES	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND Signature: <i>[Signature]</i> DATE: 12/8/99 CHIEF, DEVELOPMENT ENGINEERING DIVISION	FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELKLOFT CITY, MARYLAND 21042 410-461-2295	*9757 DESIGNER: TERRYLL A. FISHER DRAWN BY: M.J.M. CHECKED BY: M.J.M. DATE: NOVEMBER 23, 1999	TITLE SHEET 600' SCALE MAP NO. 16 BLOCK NO. 5 F.C.C. WORK ORDER NO. 30679 FILE NAME: G/30679/SEC01/TITLE SHEET.DWG	CONTRACT NO. 24-3780-D G.T.W.'S WAVERLY WOODS SECTION 10 LOTS 1 THRU 56 CONTRACT NO. 24-3780-D THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE AS SHOWN SHEET 1 OF 5
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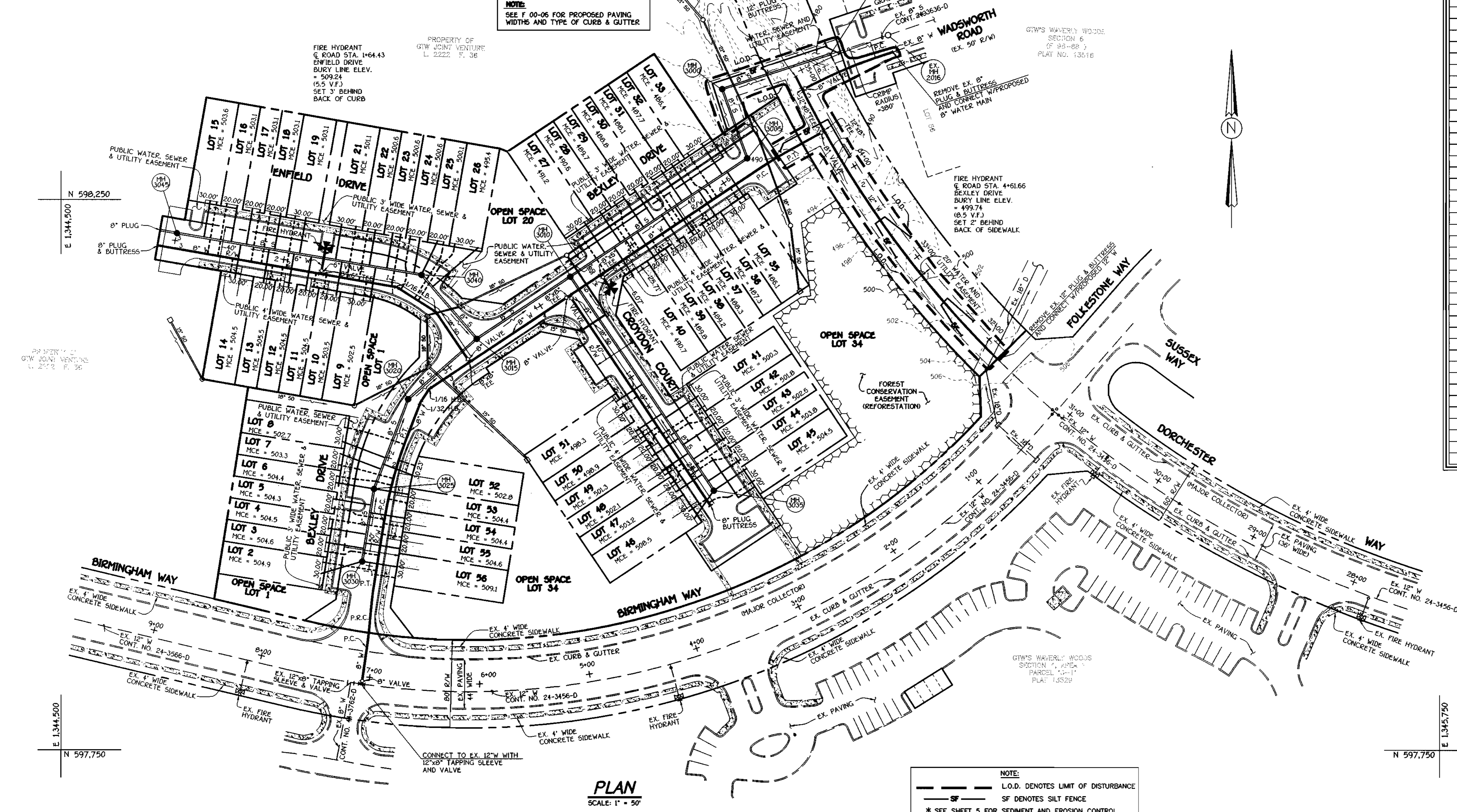


MANHOLE TABULATION CHART

NO.	ROAD STATION	DISTANCE	SLOPE	RIM ELEVATION
3000				487.85
3005	6+30.27 BEXLEY DRIVE	7.00' LT.	-5.00%	490.33
3010	4+37.27 BEXLEY DRIVE	7.00' LT.	-5.00%	499.98
3015	3+35.27 BEXLEY DRIVE	7.00' LT.	-4.26%	504.84
3020	2+54.50 BEXLEY DRIVE	7.98' LT.	-3.34%	507.89
3025	1+70.03 BEXLEY DRIVE	6.84' LT.	-2.72%	510.38
3030	1+03.09 BEXLEY DRIVE	7.00' LT.	-2.72%	512.20
3035	2+27 CROYDON COURT	5.00' LT.	+6.00%	511.84
3040	0+78.76 ENFIELD DRIVE	15.00' RT.	+2.52%	506.28
3045	2+99.66 ENFIELD DRIVE	7.03' RT.	-0.15%	510.73

SHC INVERT • PROPERTY LINE CHART

STATION	LOT	ELEVATION
MH 3005 TO MH 3010		
0+22 LT.	35	482.17
0+27 RT.	33	482.47
0+33 LT.	36	483.33
0+60 RT.	32	483.71
0+71 RT.	31	484.12
0+79 LT.	37	484.30
0+93 LT.	30	484.83
1+01 RT.	38	485.25
1+13 RT.	29	485.70
1+20 LT.	39	485.84
1+37 RT.	28	486.60
1+45 LT.	40	486.78
1+55 RT.	27	487.27
MH 3025 TO MH 3025		
0+57 RT.	8	498.73
0+63 LT.	52	498.89
0+68 RT.	7	499.31
⊙ MH 3025 RT.	6 (SHC ⊙ MH)	500.43
⊙ MH 3025 LT.	53 (SHC ⊙ MH)	500.47
MH 3025 TO MH 3030		
0+15 RT.	5	500.38
0+22 LT.	54	500.47
0+42 RT.	4	500.57
0+50 LT.	55	500.67
0+55 RT.	3	500.67
⊙ MH 3030 LT.	56 (DROP CONN. ⊙ MH)	505.16
⊙ MH 3030 RT.	2 (SHC ⊙ MH)	500.97
MH 3015 TO MH 3040		
0+62 RT.	26	491.44
⊙ MH 3040 RT.	25 (DROP CONN. ⊙ MH)	496.12
MH 3010 TO MH 3045		
0+07 RT.	24 (DHC)	496.60
0+32 RT.	23 (DHC)	496.60
0+42 LT.	9 (DHC)	498.54
0+48 RT.	22 (DHC)	496.60
0+73 LT.	10 (DHC)	499.54
0+79 RT.	21 (DHC)	497.10
1+01 LT.	11 (DHC)	500.54
1+12 RT.	19 (DHC)	499.10
1+17 LT.	12 (DHC)	500.54
1+35 RT.	18 (DHC)	499.10
1+40 LT.	13 (DHC)	501.54
1+61 RT.	17 (DHC)	499.10
1+66 LT.	14 (DHC)	500.54
1+75 RT.	16 (DHC)	499.10
2+00 RT.	15 (DHC)	499.60
MH 3010 TO MH 3035		
1+18 RT.	51	494.38
1+50 RT.	50	495.98
1+55 LT.	41	496.39
1+77 RT.	49	497.33
1+84 LT.	42	497.84
1+93 RT.	48	498.13
2+00 LT.	43	498.63
2+16 RT.	47	499.28
2+24 LT.	44	499.84
⊙ MH 3035 LT.	45 (SHC ⊙ MH)	500.50
⊙ MH 3035 RT.	46 (DROP CONN. ⊙ MH)	504.50



PLAN
SCALE: 1" = 50'

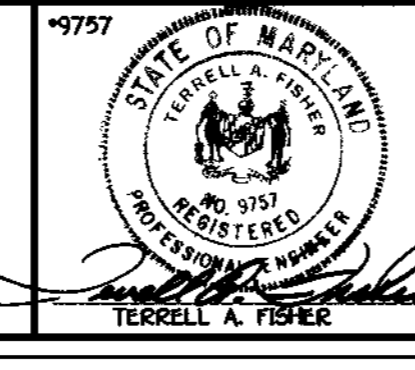
NOTE:
L.O.D. DENOTES LIMIT OF DISTURBANCE
SF DENOTES SILT FENCE
* SEE SHEET 5 FOR SEDIMENT AND EROSION CONTROL NOTES AND DETAILS.

NOTE:
SEE SHEET 3 FOR WATER MAIN TABULATION CHART.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Robert Deering December 3, 1999
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
M. Dawkins 12/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PKWY
ELLICOTT CITY, MARYLAND 21114
(410) 481-2995



DESIGNED BY: M.D.T.
DRAWN BY: M.D.T.
CHECKED BY: M.J.M.
DATE: NOVEMBER 23, 1999
FCC: []
BY: []

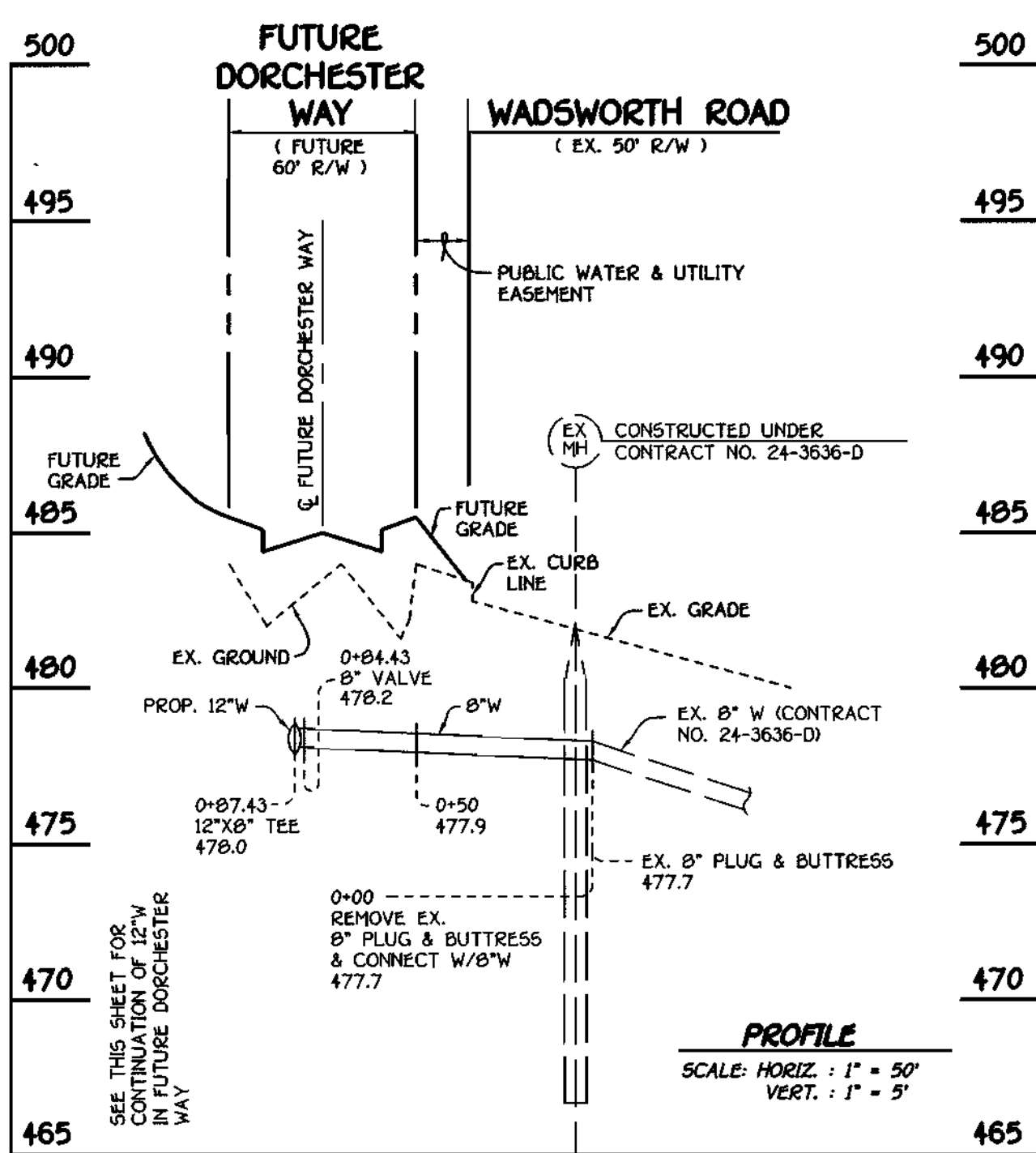
**WATER AND SEWER MAINS
PLAN VIEW**

600' SCALE MAP NO. 16 BLOCK NO. 5
F.C.C. WORK ORDER NO. 30678
FILE NAME: G:\30678\WATER\WATERMAIN\SEC03PLANR12.DWG

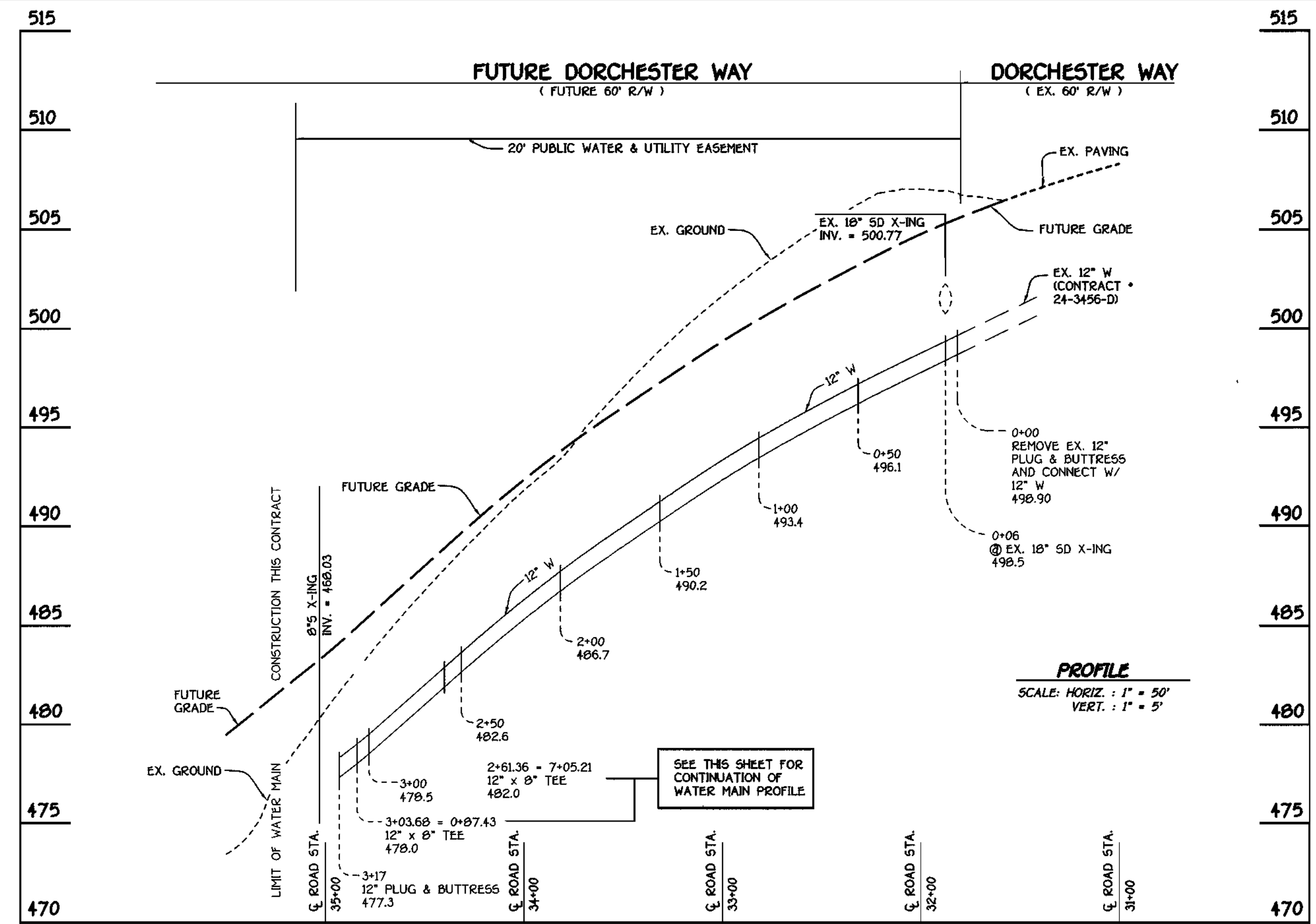
GTW'S WAVERLY WOODS
SECTION 10
LOTS 1 THRU 56
CONTRACT NO. 24-3780-D
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
SHEET: 2 OF 5

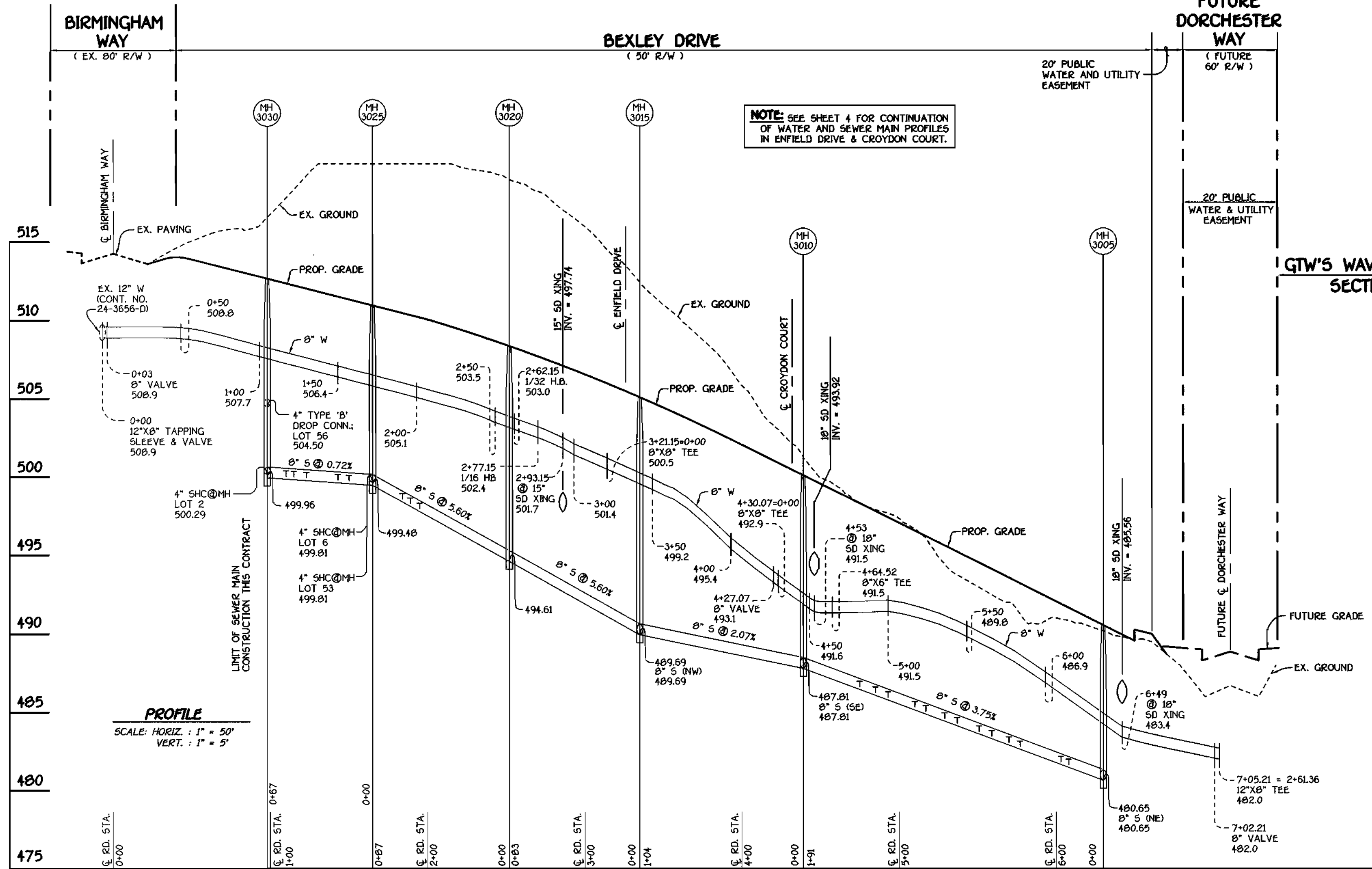
WATER MAIN TABULATION CHART			
WM STATION	APPURTENANCE	ROAD STATION	DISTANCE
0" W. BEXLEY DRIVE			
0+00	12" x 8" TAPPING SLEEVE	-0+07	10' RT.
0+03	8" VALVE	-0+04	10' RT.
0+33.71	P.C. (CRIMP RADIUS = 380')	0+26.78	9.62' RT.
0+60.04	P.E.C. (CRIMP RADIUS = 380')	0+53.07	8.35' RT.
0+92.05	P.T. (CRIMP RADIUS = 380')	0+85.04	7' RT.
1+49.01	P.C. (CRIMP RADIUS = 380')	1+42	7' RT.
2+31.22	P.T. (CRIMP RADIUS = 380')	2+26.89	8.39' RT.
2+62.15	8" 1/32 H.B.	2+58.41	3.01' RT.
2+77.15	8" 1/16 H.B.	2+73.51	1.35' RT.
3+21.15+0+00	8" x 8" TEE	3+18.31	7' RT.
4+27.07	8" VALVE	4+24.22	6.99' RT.
4+30.07+0+00	8" x 8" TEE	4+27.22	6.99' RT.
4+64.52	8" x 8" TEE	4+61.66	6.98' RT.
6+36.49	P.C. (CRIMP RADIUS = 380')	6+33.63	6.98' RT.
6+87.11	P.T. (CRIMP RADIUS = 380')	6+84.25	6.98' RT.
7+92.21	8" VALVE	34+41.33 (DORCHESTER WAY)	10.01' RT.
7+95.21 = 2+61.36	12" x 8" TEE	34+41.33 (DORCHESTER WAY)	7.01' RT.
0" W. ENFIELD DRIVE			
0+00 = 3+21.15	8" x 8" TEE	-0+07	9.24' LT.
0+03	8" VALVE	-0+04	9.24' LT.
0+95.07	8" 1/16 H.B.	0+49.85	5.38' LT.
0+98.76	8" 1/16 H.B.	0+93.47	4.57' LT.
1+66.70	8" x 8" TEE	1+64.43	7' LT.
3+17.07	8" PLUG & BUTTRESS	3+15	7' LT.
0" W. CROYDON COURT			
0+00 = 4+30.07	8" x 8" TEE	0+07	5' RT.
0+03	8" VALVE	0+10	5' RT.
2+29.79	8" PLUG & BUTTRESS	2+36.78	5' RT.
12" W. FUTURE DORCHESTER WAY			
0+00	REMOVE 12" PLUG & CONNECT W/ 12" W (P.C.)	34+81.44	7' RT.
2+61.36+7+95.21	12" x 8" TEE	34+41.33	7' RT.
3+03.68+0+87.43	12" x 8" TEE	34+86	7' RT.
3+17	12" PLUG & BUTTRESS (P.T.)	34+95	7' RT.
0" W. EX. WADSWORTH WAY TO FUTURE DORCHESTER WAY			
0+00	REMOVE EX. 8" PLUG & CONNECT W/ 8" W	---	---
0+16.60	P.C. (CRIMP RADIUS = 380')	---	---
0+70.37	P.T. (CRIMP RADIUS = 380')	---	---
0+84.43	8" VALVE	34+85 (DORCHESTER WAY)	4' LT.
0+87.43 = 3+03.68	12" x 8" TEE	34+85 (DORCHESTER WAY)	7' LT.



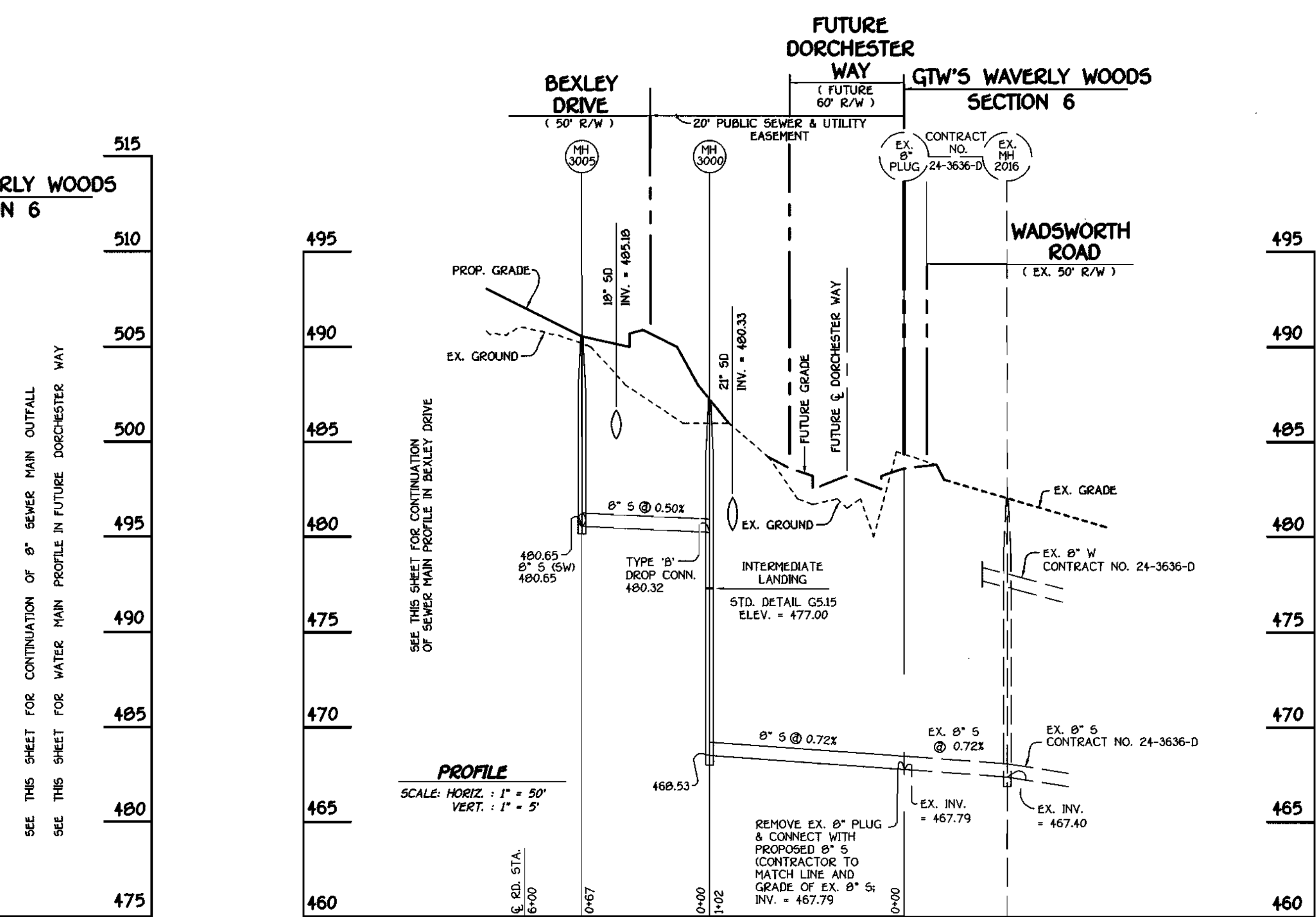
8" WATER MAIN LOOP: WADSWORTH ROAD TO DORCHESTER WAY



FUTURE DORCHESTER WAY: WATER MAIN



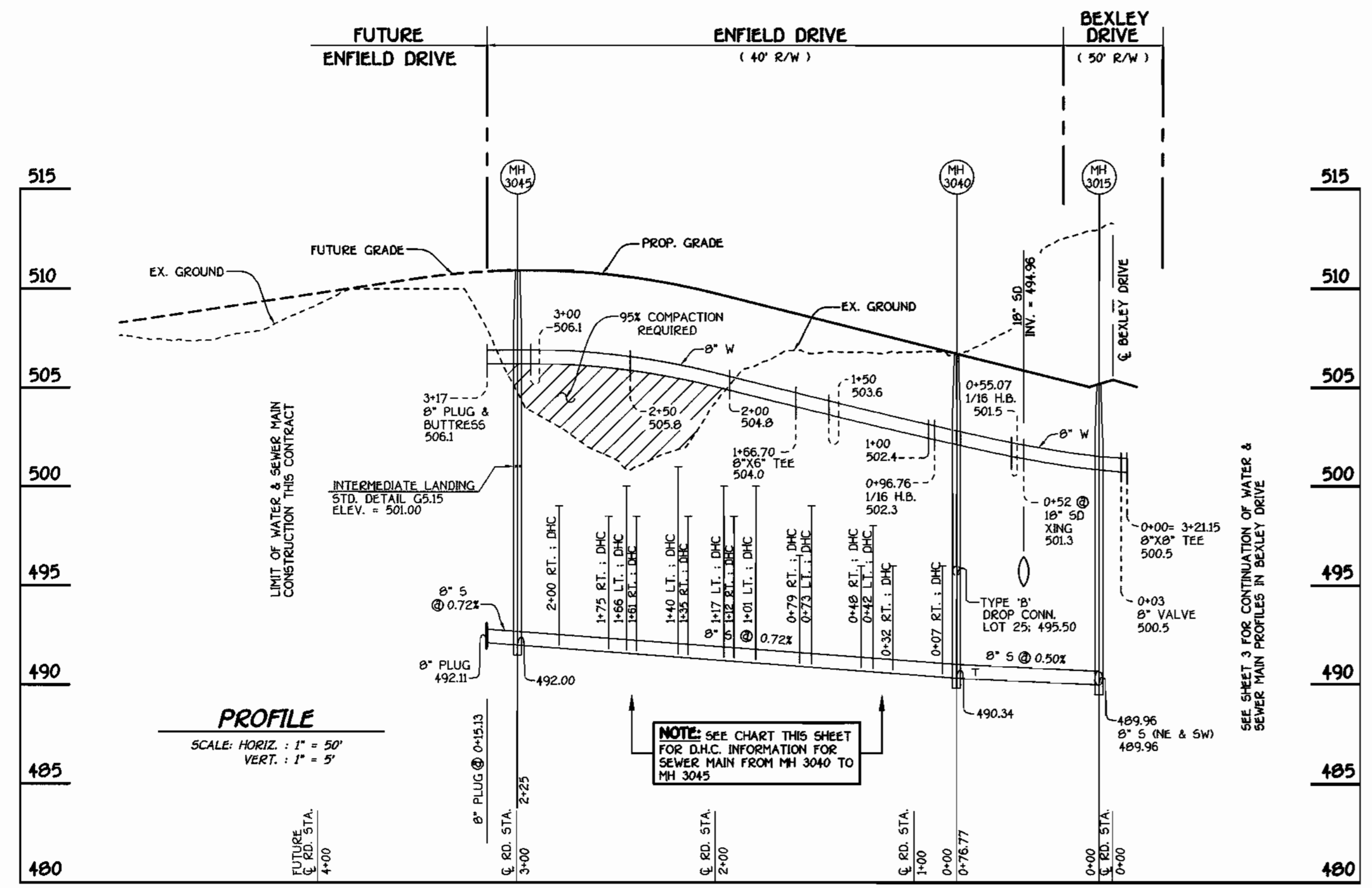
BEXLEY DRIVE: WATER & SEWER MAINS



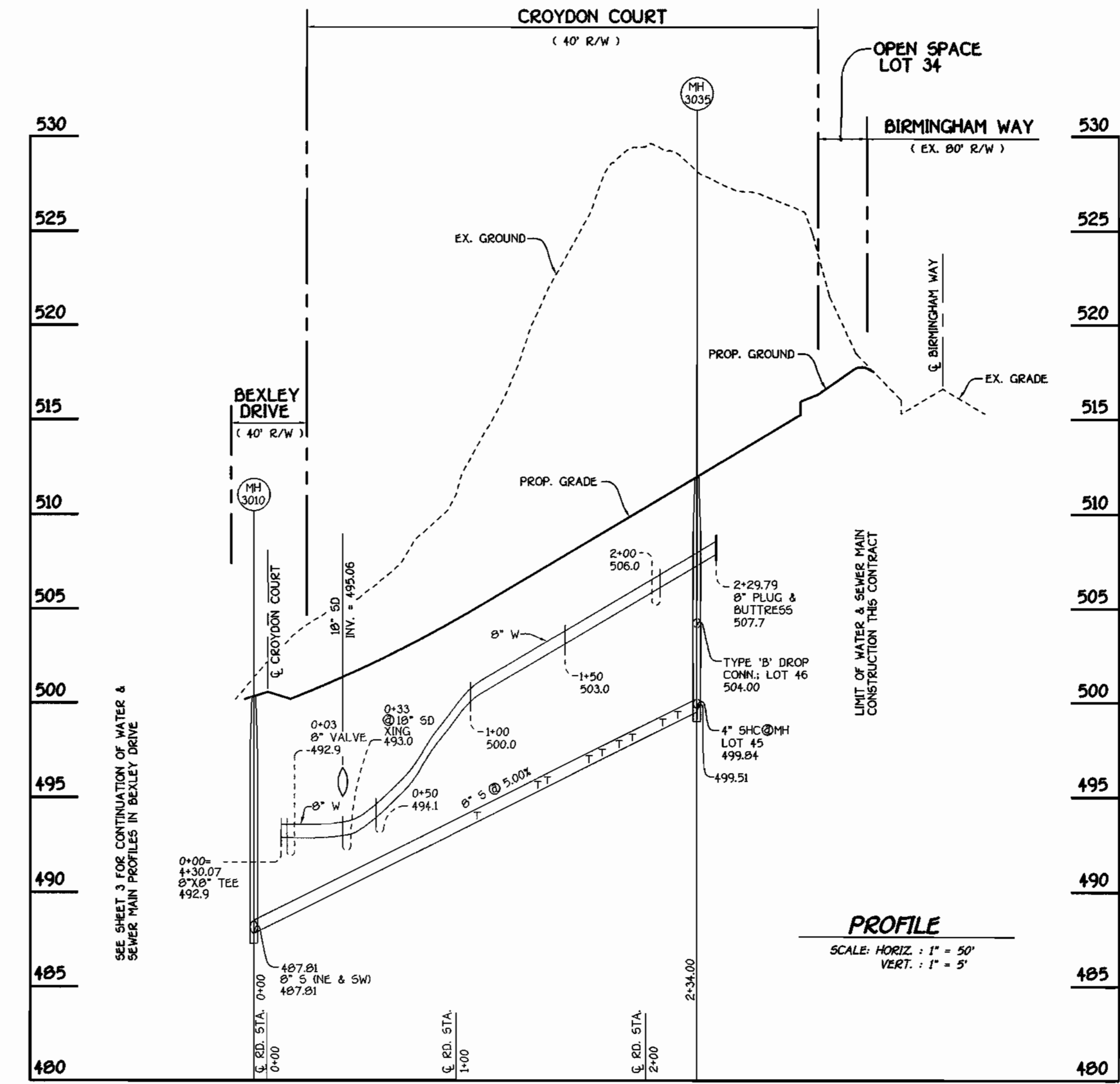
SEWER MAIN OUTFALL FROM BEXLEY DRIVE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Robert Deinger December 3, 1999 CHIEF, BUREAU OF UTILITIES	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND Howard Deinger CHIEF, DEVELOPMENT ENGINEERING DIVISION	FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS 10721 BALTIMORE NATIONAL PKWY ELICOTT CITY, MARYLAND 21042 (410) 461-2855	9757 STATE OF MARYLAND TERRELL A. FISHER PROFESSIONAL ENGINEER	DESIGNED BY: M.D.T. DRAWN BY: M.D.T., J.E.P. CHECKED BY: H.J.M. DATE: NOVEMBER 23, 1999	ADDRESS COUNTY COMMENTS: _____ REVISION: _____ DATE: _____	PROFILES WATER AND SEWER MAINS 600' SCALE MAP NO. 15 BLOCK NO. 5 F.C.C. WORK ORDER NO. 30678 FILE NAME: G/30678/30678SECTION10ANDPROFILESHT3.DWG	G.T.W.'S WAVERLY WOODS SECTION 10 LOTS 1 THRU 56 CONTRACT NO. 24-3780-D THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 3 OF 5
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DROP HOUSE CONNECTION (DHC) CHART			
STATION	TYPE	LOT NO.	ELEVATION
MH 3040 TO MH 3045			
0+07 RT.	TYPE 'A' DHC	24	496.0
0+32 RT.		23	496.0
0+42 LT.		9	498.0
0+48 RT.		22	496.0
0+73 LT.		10	499.0
0+79 RT.		21	496.5
1+01 LT.		11	500.0
1+12 RT.		19	498.5
1+17 LT.		12	500.0
1+35 RT.		18	498.5
1+40 LT.		13	501.0
1+61 RT.		17	498.5
1+66 LT.		14	500.0
1+75 RT.		16	498.5
2+00 RT.	TYPE 'A' DHC	15	499.0



ENFIELD DRIVE: WATER & SEWER MAINS

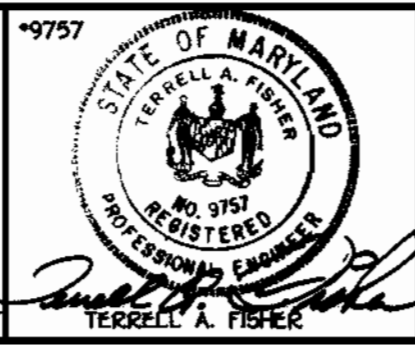


CROYDON COURT: WATER & SEWER MAINS

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
December 3, 1999
DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
12/3/99
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
1400 461 - 2000



DESIGNED BY: M.D.T.
DRAWN BY: M.D.T.
CHECKED BY: M.J.M.
DATE: NOVEMBER 23, 1999
FCC: ---
ADDRESS COUNTY COMMENTS: ---
REVISION: ---

PROFILES
WATER AND SEWER MAINS
600' SCALE MAP NO. 16 BLOCK NO. 5
F.C.C. WORK ORDER NO. 3067B
FILE NAME: G/3067B/WATSEW/FINAL/SECTPROFILESHTA.DWG

G.T.W.'S WAVERLY WOODS
SECTION 10
LOTS 1 THRU 56
CONTRACT NO. 24-3780-D
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 4 OF 5

CONTRACT NO. 24-3780-D
G.T.W.'S WAVERLY WOODS
SECTION 10: LOTS 1 THRU 56
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

SECTION 20 : STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION
Using vegetation as cover for barren soil to protect it from forces that cause erosion. Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES
This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dunes, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY
Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Vegetation over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

- SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS**
- Site Preparation**
 - Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, berms, or sediment control basins.
 - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.
 - Soil Amendments (Fertilizer and Lime Specifications)**
 - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Mature may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
 - Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 90-100% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
 - Seeded Preparation**
 - Temporary Seeding**
 - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or ripers mounted on tractors or other equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
 - Permanent Seeding**
 - Minimum soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 6.0 and 7.0.
 - Soluble salts shall be less than 500 parts per million (ppm).
 - The soil shall contain less than 40% clay, but enough fine grained material (30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if leucaena or sericea lespedeza is to be planted, then a sandy soil (30% silt plus clay) would be acceptable.
 - Soil shall contain 1.5% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
 - Areas previously graded with the driveway shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - Apply soil amendments as per soil test or as included on the plans.
 - Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be rolled to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (S-10).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, 10 TO 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 30), 500 (SEC. 34), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:**

TOTAL AREA OF SITE	6.363 ACRES
AREA DISTURBED	5.290 ACRES
AREA TO BE ROOFED OR PAVED	3.400 ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.890 ACRES
TOTAL CUT	378 CU.YDS.
TOTAL FILL	378 CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A CU.YDS.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TEMPORARY SEEDING NOTES

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- SEEDING PREPARATION:**
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS:**
APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1,000 SQ.FT.)
- SEEDING:**
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 15 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS./ACRE OF WEEPING LOVEGRASS 1.07 LBS./1,000 SQ.FT.) FOR THE PERIOD NOVEMBER 15 THRU FEBRUARY 28. PROTECT SITS BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE 500.
- MULCHING:**
APPLY 1.5 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 210 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES ON SLOPES 8 FEET OR HIGHER. USE 348 GALLONS PER ACRE (16 GAL./1,000 SQ.FT.) FOR ANCHORING.
- REFER TO THE 1990 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDING NOTES

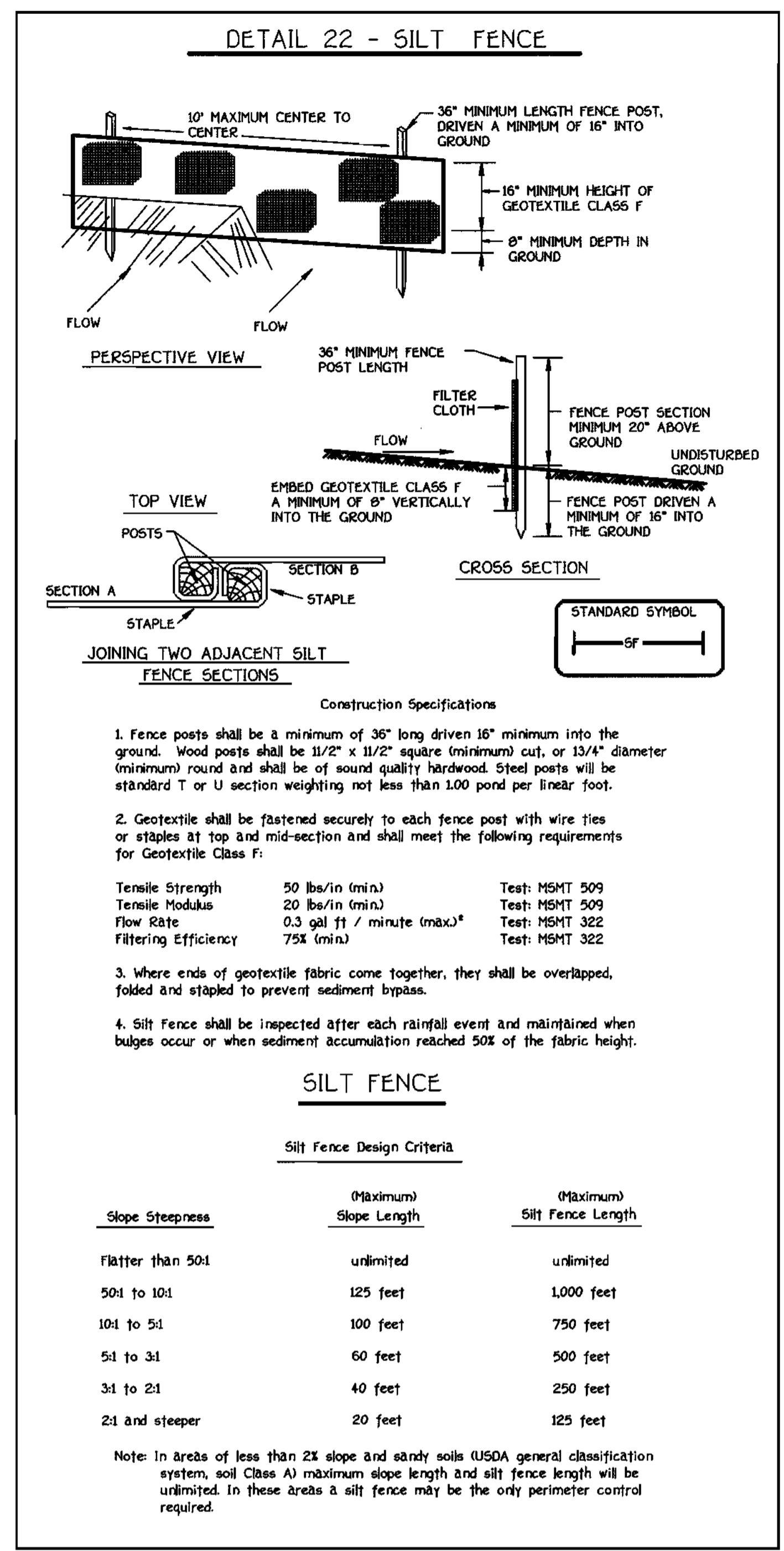
- ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:
- SEEDING PREPARATION:**
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.
- SOIL AMENDMENTS:**
APPLY TWO TONS PER ACRE (100 LBS./1,000 SQ.FT.) OF DOLOMITIC LIMESTONE (92 LBS./1,000 SQ.FT.) AND 600 LBS. PER ACRE 0-20-20 FERTILIZER (14 LBS./1,000 SQ.FT.) BEFORE SEEDING HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 36-0-0 UREAFORM FERTILIZER (9 LBS./1,000 SQ.FT.) AND 500 LBS. PER ACRE (15 LBS./1,000 SQ.FT.) OF 10-20-20 FERTILIZER.
- SEEDING:**
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 100 LBS. PER ACRE (2.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS./ACRE (1.4 LBS./1,000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.05 LBS./1,000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 15 THROUGH FEBRUARY 28, PROJECT SITE BY: OPTION (1) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING; OPTION (2) - USE 500; OPTION (3) - SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE HYDROSEEDED.
- MULCHING:**
APPLY 1 TO 2 TONS PER ACRE (50 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES, ON SLOPES 8 FEET OR HIGHER USE 348 GALLONS PER ACRE (16 GAL./1,000 SQ.FT.) FOR ANCHORING.
- MAINTENANCE:**
INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

SECTION 21 : STANDARD AND SPECIFICATIONS FOR TOPSOIL

- DEFINITION:** PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.
- PURPOSE:** TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.
- SPECIFICATIONS:**
 - A TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND.
 - TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING SUBSOILS.
 - C TOPSOIL SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1.5" IN DIAMETER.
 - A TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4" TO AVOID SURFACE IRREGULARITIES.
 - PLACE TOPSOIL AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION".
 - C TOPSOIL SHALL NOT BE PLACED DURING FROZEN, MUDDY, OR EXCESSIVELY WET CONDITIONS.
- APPLICATION:**

SEQUENCE OF CONSTRUCTION

- OBTAIN THE REQUIRED GRADING PERMIT.
- NOTIFY MISS UTILITY 48 HOURS BEFORE BEGINNING ANY WORK (1-800-257-7777). NOTIFY HOWARD COUNTY CONSTRUCTION/INSPECTION DIVISION 24 HOURS BEFORE STARTING ANY WORK (410)333-1870.
- INSTALL THE REQUIRED SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON SHEET 2 OF THIS CONTRACT (1 DAY).
- CLEAR AND GRUB AS NECESSARY; ONLY AS REQUIRED FOR EXCAVATION AND INSTALLATION OF THE WATER AND SEWER MAINS, AND ONLY WITHIN THE DESIGNATED WATER, SEWER AND UTILITY EASEMENTS (1 DAY).
- NOTE: THE LENGTH OF OPEN WATER AND/OR SEWER MAIN TRENCHES SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED WITHIN ONE (1) WORKING DAY, WHICHEVER IS SHORTER.
- CONSTRUCT THE WATER MAIN, SEWER MAIN AND APPURTENANCES (45 DAYS).
- STABILIZE SEED AND MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES SHOWN ON THIS SHEET (1 DAY) FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS.
- AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES (1 DAY).



- Construction Specifications**
- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 1/2" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 100 pound per linear foot.
 - Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
- | | | |
|----------------------|---------------------------|----------------|
| Tensile Strength | 50 lbs/in (min) | Test: MSMT 509 |
| Tensile Modulus | 20 lbs/in (min) | Test: MSMT 509 |
| Flow Rate | 0.3 gal ft / minute (max) | Test: MSMT 322 |
| Filtering Efficiency | 75% (min) | Test: MSMT 322 |
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
 - Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

Silt Fence Design Criteria

Slope Steepness	Silt Fence Length	
	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2X slope and sandy soils USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Robert M. Baum December 3, 1999
CHIEF, BUREAU OF UTILITIES

Michael J. ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CENTRAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL PARK
GILKOTT CITY, MARYLAND 21042
410-981-2299

TERRELL A. FISHER

DESIGNED BY: M.D.T.

DRAWN BY: M.D.T.

CHECKED BY: M.J.M.

DATE: NOVEMBER 23, 1999

FCC: ---

BY NO.:

ADDRESS COUNTY COMMENTS

11/99

REVISION

SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

60' SCALE MAP NO. 16 BLOCK NO. 5

F.C.C. WORK ORDER NO. 30679

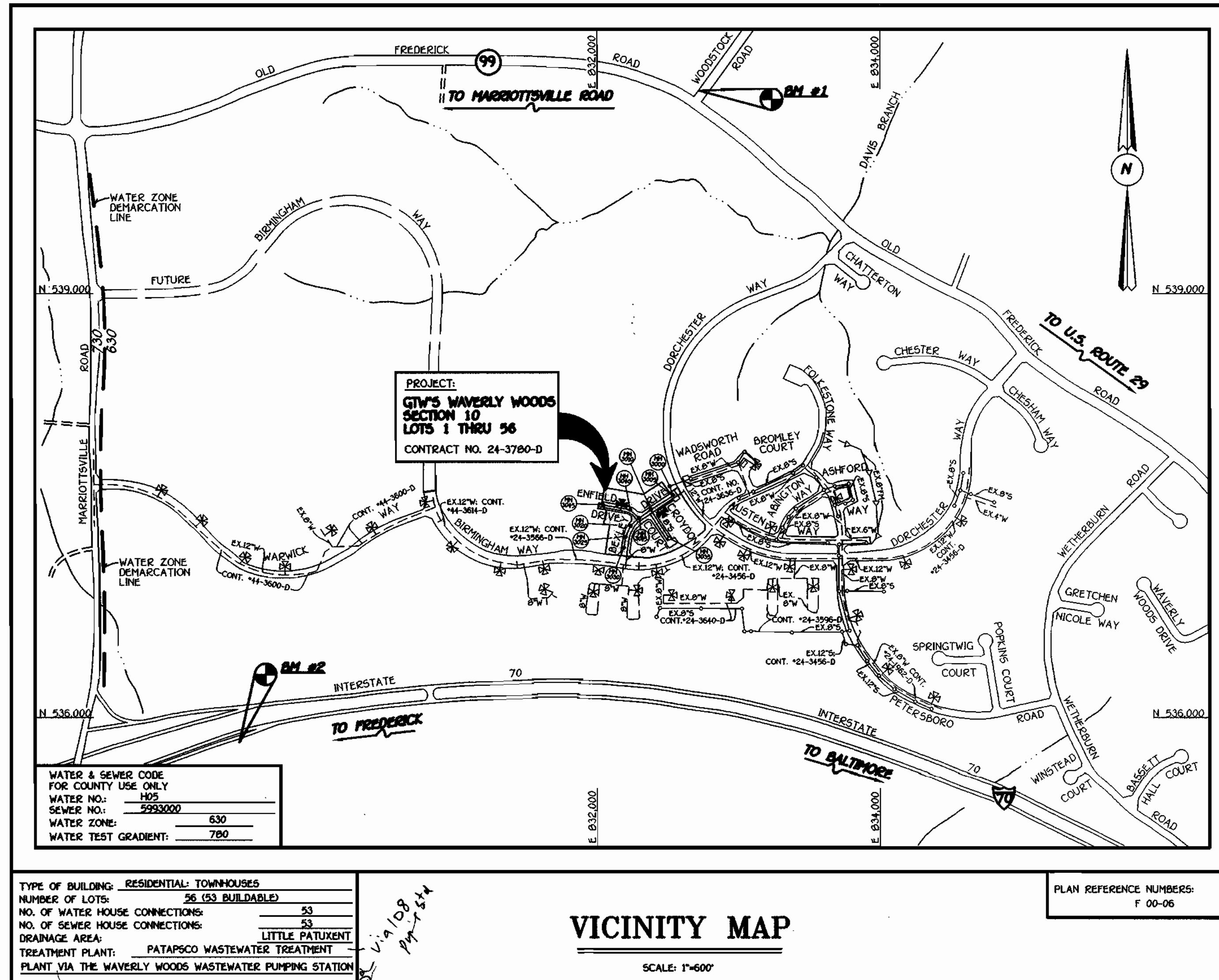
FILE NAME: G:\30679\WATSEW\FINALS\SECTION21.DWG

CONTRACT NO. 24-3780-D
G.T.W.'S WAVERLY WOODS
SECTION 10: LOTS 1 THRU 56
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 5 OF 5

QUANTITIES				
ITEM	ESTIMATED	QUANTITIES	AS-BUILT	SUPPLIER
8" SEWER	1,251.90 L.F.	1200	P.V.C.	J.M. MAJUF
4" SEWER	1,776 L.F.	2010	P.V.C.	J.M. MAJUF
MANHOLES	10 EACH	10	PRE-CAST	ATLANTIC
12" WATER	317 L.F.	275	D.I.	U.S. PIPE
8" WATER	1,339.43 L.F.	1,341	D.I.	U.S. PIPE
6" WATER	38.91 L.F.	36	D.I.	U.S. PIPE
1" W.C.	1,896 L.F.	1,900	K COPPER	READING TUBE
FIRE HYDRANTS	2 EACH	2		MUELLER
12" X 8" TEE	2 EACH	2	M.J.	U.S. PIPE
8" X 8" TEE	2 EACH	2	M.J.	U.S. PIPE
8" X 6" TEE	2 EACH	2	M.J.	U.S. PIPE
8" VALVE	5 EACH	5	GATE	MUELLER
6" VALVE	2 EACH	2	GATE	MUELLER
8" - 1/16" H.B.	3 EACH	2	M.J. D.I.	U.S. PIPE
8" - 1/32" H.B.	1 EACH	0	M.J. D.I.	U.S. PIPE
12" X 8" TAPPING SLEEVE & VALVE	1 EACH	1	STAINLESS STEEL GATE VALVE	MUELLER
12" PLUG & BUTTRESS	1 EACH	1	M.J. D.I.	U.S. PIPE
8" PLUG & BUTTRESS	2 EACH	2	M.J. D.I.	U.S. PIPE
NAME OF UTILITY CONTRACTOR: C.C.S. INC.				
SURVEY & DRAFTING DIVISION AS-BUILT DATE: 3/20/00				



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 ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM.
- 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 (1991 AMENDMENTS) 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 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 FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 - STATE HIGHWAY ADMINISTRATION - 531-5533
 - BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES - 850-4620
 - BALTIMORE GAS & ELECTRIC CO. - UNDER GROUND DAMAGE CONTROL - 787-9068
 - MESS UTILITY - 1-800-257-7777
 - COLONIAL PIPELINE CO. - 795-1990
 - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT 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 THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- 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.
- T.S. DENOTES TEST BORING.
- 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 COVERS, STANDARD DETAIL G 5.52.
- WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- HOUSES WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- MANHOLES LOCATED WITHIN THE PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAMES AND COVERS, STANDARD DETAIL G5.51.
- WATER MAINS AND WATER HOUSE CONNECTION LINES MUST BE PLACED AS TO HAVE ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
- ALL WATER MAINS SHALL 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 SET TO THE BURY LINE ELEVATION SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS (W11) AND (W213). SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATIONS C-153; DUCTILE IRON COMPACT FITTINGS, 3-INCH THROUGH 12-INCH FOR WATER AND OTHER LIQUIDS.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, ☎ (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 DPW REQUIREMENTS PER SECTION 10.14(k) OF THE HOWARD COUNTY CODE.

DEVELOPER'S CERTIFICATION

I/WE 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 A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE 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.

[Signature] 11/26/99
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.

[Signature] 11/26/99
SIGNATURE OF ENGINEER DATE

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

[Signature] 12/1/99
U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

[Signature] 12/1/99
HOWARD SOIL CONSERVATION DISTRICT DATE

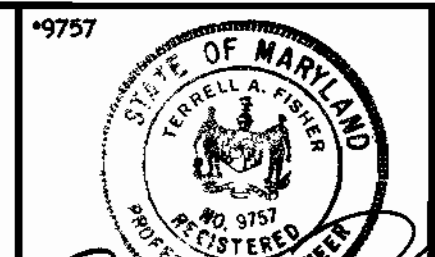
SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL & STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS AS SHOWN ON THIS PLAN AND ON F 00-06.

[Signature] 11/26/99
SIGNATURE OF DEVELOPER DATE

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 - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21041
410 481-2255



DESIGNED BY:	M.D.T.		
DRAWN BY:	M.D.T.		
CHECKED BY:	M.J.M.	AS-BUILT CONDITIONS ADDED TO PLAN	4/21/00
DATE:	11/99	ADDRESS COUNTY COMMENTS	11/99
BY NO.:		REVISION	

TITLE SHEET	
600' SCALE MAP NO. 15	BLOCK NO. 5
F.C.C. WORK ORDER NO. 30678	
FILE NAME: G/30678/SEC10/TITLE\$REV.DWG	

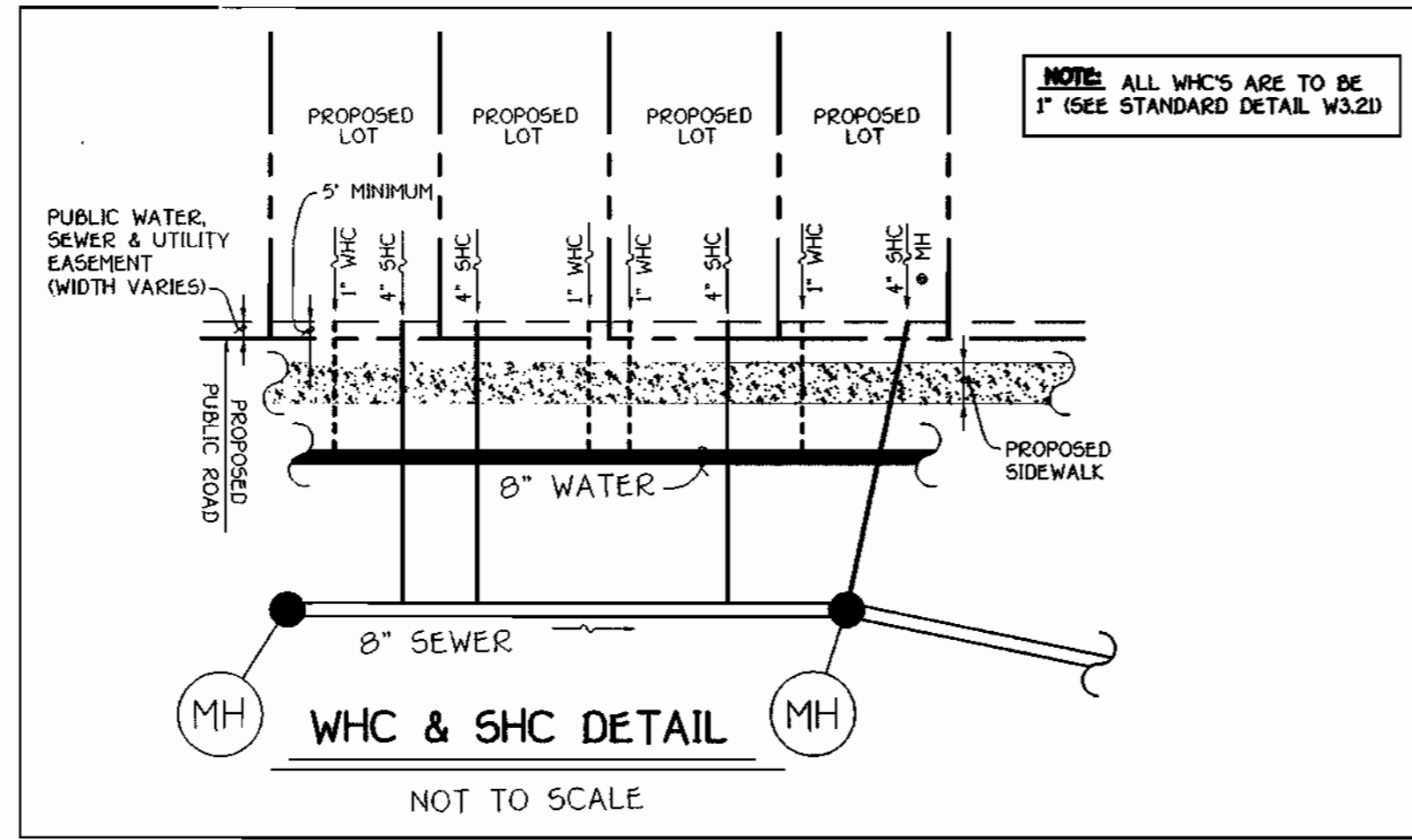
G.T.W.'S WAVERLY WOODS
SECTION 10
LOTS 1 THRU 56
CONTRACT NO. 24-3780-D
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 1 OF 5

[Signature] December 3, 1999
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 12/8/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CONTRACT NO. 24-3780-D
G.T.W.'S WAVERLY WOODS
SECTION 10; LOTS 1 THRU 56
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

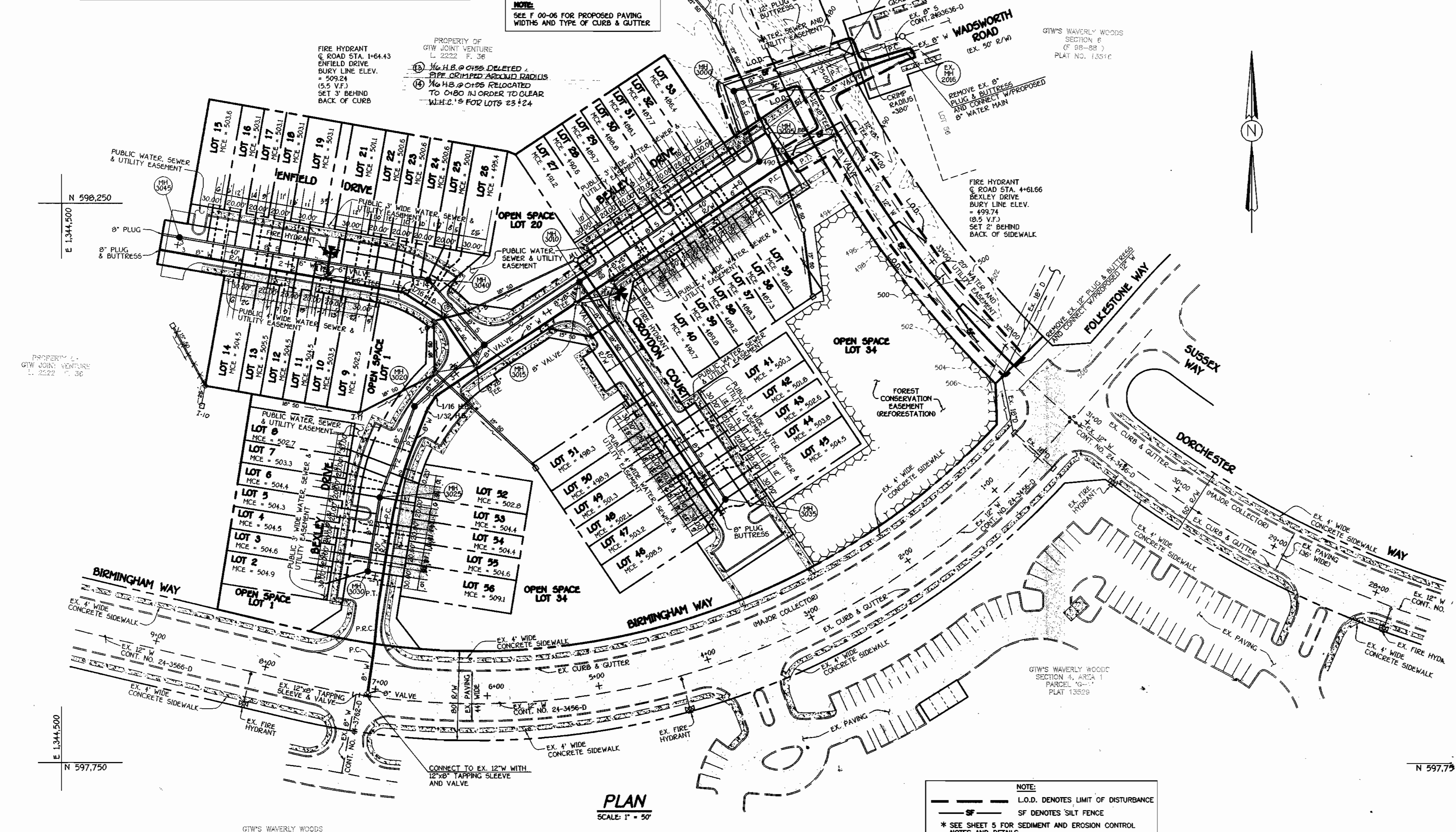


MANHOLE TABULATION CHART

NO.	ROAD STATION	DISTANCE	SLOPE	RIM ELEVATION
3000				487.85
3005	6+30.27 BEXLEY DRIVE	7.00' LT.	-5.00%	490.33
3010	4+37.27 BEXLEY DRIVE	7.00' LT.	-5.00%	499.98
3015	3+35.27 BEXLEY DRIVE	7.10' LT.	-4.25%	504.84
3020	2+54.50 BEXLEY DRIVE	7.98' LT.	-3.34%	507.88
3025	1+70.03 BEXLEY DRIVE	6.64' LT.	-2.72%	510.36
3030	1+03.05 BEXLEY DRIVE	7.00' LT.	-2.72%	512.20
3035	2+27 CROYDON COURT	5.00' LT.	+6.00%	511.84
3040	0+78.76 ENFIELD DRIVE	15.00' RT.	+2.52%	506.26
3045	2+99.66 ENFIELD DRIVE	7.03' RT.	-0.15%	510.73

SHC INVERT • PROPERTY LINE CHART

STATION	LOT	ELEVATION
MH 3005 TO MH 3010		
0+22 LT.	35	482.17
0+27 RT.	33	482.47
0+53 LT.	36	483.33
0+60 RT.	32	483.71
0+71 RT.	31	484.32
0+79 LT.	37	484.30
0+93 LT.	30	484.83
1+01 RT.	26	485.25
1+13 RT.	29	485.70
1+20 LT.	39	485.84
1+37 RT.	28	486.60
1+45 LT.	40	486.78
1+55 RT.	27	487.27
MH 3020 TO MH 3025		
0+57 RT.	8	498.73
0+63 LT.	52	498.89
0+68 RT.	7	499.31
0+75 RT.	6 (SHC @ MH)	500.43
0+82 LT.	53 (SHC @ MH)	500.47
MH 3025 TO MH 3030		
0+15 RT.	5	500.38
0+22 LT.	54	500.47
0+42 RT.	4	500.57
0+50 LT.	55	500.67
0+55 RT.	3	500.67
0+62 RT.	56 (DROP CONN. @ MH)	505.36
0+68 RT.	2 (SHC @ MH)	500.97
MH 3030 TO MH 3040		
0+62 RT.	26	491.44
0+68 RT.	25 (DROP CONN. @ MH)	496.12
MH 3040 TO MH 3045		
0+07 RT.	24 (DHC)	496.60
0+32 RT.	23 (DHC)	496.60
0+42 LT.	9 (DHC)	498.54
0+48 RT.	22 (DHC)	496.60
0+73 LT.	10 (DHC)	499.54
0+79 RT.	21 (DHC)	497.10
1+01 LT.	11 (DHC)	500.54
1+12 RT.	19 (DHC)	499.10
1+17 LT.	12 (DHC)	500.54
1+35 RT.	18 (DHC)	499.10
1+40 LT.	13 (DHC)	501.54
1+61 RT.	17 (DHC)	499.10
1+66 LT.	14 (DHC)	500.54
1+75 RT.	16 (DHC)	499.10
2+00 RT.	15 (DHC)	499.60
MH 3010 TO MH 3035		
1+18 RT.	51	494.38
1+50 RT.	50	495.98
1+55 LT.	41	496.39
1+77 RT.	49	497.33
1+84 LT.	42	497.84
1+93 RT.	48	498.13
2+00 LT.	43	498.63
2+16 RT.	47	499.28
2+24 LT.	44	499.84
0+75 RT.	45 (SHC @ MH)	500.50
0+82 RT.	46 (DROP CONN. @ MH)	504.50



WATER AND SEWER FIELD MEASUREMENT FOR ASBULTS

FROM	NAME OF ITEM	TO	LOT #	SEWER	WATER	FROM	NAME OF ITEM	TO	LOT #	SEWER	WATER
MH 3030	2	42'	28	28'	28'	MH 3030	2	42'	28	28'	28'
"	3	40'	28'	28'	28'	"	3	40'	28	28'	28'
"	4	44'	28'	28'	28'	"	4	44'	28	28'	28'
"	5	64'	28'	28'	28'	"	5	64'	28	28'	28'
"	6	74'	28'	28'	28'	"	6	74'	28	28'	28'
"	7	80'	28'	28'	28'	"	7	80'	28	28'	28'
MH 3025	3	47'	28'	28'	28'	MH 3025	3	47'	28	28'	28'
"	8	51'	28'	28'	28'	"	8	51'	28	28'	28'
"	9	37'	28'	28'	28'	"	9	37'	28	28'	28'
"	10	34'	28'	28'	28'	"	10	34'	28	28'	28'
"	11	32'	28'	28'	28'	"	11	32'	28	28'	28'
"	12	30'	28'	28'	28'	"	12	30'	28	28'	28'
"	13	28'	28'	28'	28'	"	13	28'	28	28'	28'
"	14	27'	28'	28'	28'	"	14	27'	28	28'	28'
"	15	26'	28'	28'	28'	"	15	26'	28	28'	28'
"	16	25'	28'	28'	28'	"	16	25'	28	28'	28'
"	17	24'	28'	28'	28'	"	17	24'	28	28'	28'
"	18	23'	28'	28'	28'	"	18	23'	28	28'	28'
"	19	22'	28'	28'	28'	"	19	22'	28	28'	28'
"	20	21'	28'	28'	28'	"	20	21'	28	28'	28'
"	21	20'	28'	28'	28'	"	21	20'	28	28'	28'
"	22	19'	28'	28'	28'	"	22	19'	28	28'	28'
"	23	18'	28'	28'	28'	"	23	18'	28	28'	28'
"	24	17'	28'	28'	28'	"	24	17'	28	28'	28'
"	25	16'	28'	28'	28'	"	25	16'	28	28'	28'
"	26	15'	28'	28'	28'	"	26	15'	28	28'	28'
"	27	14'	28'	28'	28'	"	27	14'	28	28'	28'
"	28	13'	28'	28'	28'	"	28	13'	28	28'	28'
"	29	12'	28'	28'	28'	"	29	12'	28	28'	28'
"	30	11'	28'	28'	28'	"	30	11'	28	28'	28'
"	31	10'	28'	28'	28'	"	31	10'	28	28'	28'
"	32	9'	28'	28'	28'	"	32	9'	28	28'	28'
"	33	8'	28'	28'	28'	"	33	8'	28	28'	28'
"	34	7'	28'	28'	28'	"	34	7'	28	28'	28'
"	35	6'	28'	28'	28'	"	35	6'	28	28'	28'
"	36	5'	28'	28'	28'	"	36	5'	28	28'	28'
"	37	4'	28'	28'	28'	"	37	4'	28	28'	28'
"	38	3'	28'	28'	28'	"	38	3'	28	28'	28'
"	39	2'	28'	28'	28'	"	39	2'	28	28'	28'
"	40	1'	28'	28'	28'	"	40	1'	28	28'	28'
"	41	0'	28'	28'	28'	"	41	0'	28	28'	28'
"	42	0'	28'	28'	28'	"	42	0'	28	28'	28'
"	43	0'	28'	28'	28'	"	43	0'	28	28'	28'
"	44	0'	28'	28'	28'	"	44	0'	28	28'	28'
"	45	0'	28'	28'	28'	"	45	0'	28	28'	28'
"	46	0'	28'	28'	28'	"	46	0'	28	28'	28'
"	47	0'	28'	28'	28'	"	47	0'	28	28'	28'
"	48	0'	28'	28'	28'	"	48	0'	28	28'	28'
"	49	0'	28'	28'	28'	"	49	0'	28	28'	28'
"	50	0'	28'	28'	28'	"	50	0'	28	28'	28'
"	51	0'	28'	28'	28'	"	51	0'	28	28'	28'
"	52	0'	28'	28'	28'	"	52	0'	28	28'	28'
"	53	0'	28'	28'	28'	"	53	0'	28	28'	28'
"	54	0'	28'	28'	28'	"	54	0'	28	28'	28'
"	55	0'	28'	28'	28'	"	55	0'	28	28'	28'
"	56	0'	28'	28'	28'	"	56	0'	28	28'	28'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert B. Bennett
December 3, 1999
DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Michael J. Bennett
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
10775 BALTIMORE NATIONAL PKWY
ELLSWORTH CITY, MARYLAND 21042
(410) 381-2995

TERRELL A. TIEFER

DESIGNED BY: M.D.T.
DRAWN BY: M.D.T.
CHECKED BY: M.J.M.
DATE: NOVEMBER 23, 1999
BY: NO.

4/21/00
11/99

WATER AND SEWER MAINS
PLAN VIEW

600' SCALE MAP NO. 16 BLOCK NO. 5
F.C.C. WORK ORDER NO. 30072
FILE NAME: G:\30878\WATER\MAIN\W&S\SECTION10.DWG

CONTRACT NO. 24-3780-D
GTW'S WAVERLY WOODS
SECTION 10, LOTS 1 THRU 56
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 5

SECTION 20 : STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION
Using vegetation as cover for barren soil to protect it from forces that cause erosion. Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES
This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Areas for Temporary Seeding are temporary soil stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY
Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect ground water supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

- SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS**
- Site Preparation**
 - Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.
 - Soil Amendments (Filter and Lime Specifications)**
 - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranties of the producer.
 - Lime materials shall be ground limestone (hydrated or burnt lime) may be substituted which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to a fineness that at least 50% will pass through a #100 mesh sieve and 90-100% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
 - Seeded Preparation**
 - Temporary Seeding**
 - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the rough condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
 - Permanent Seeding**
 - Minimum soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 6.0 and 7.0.
 - Soluble salts shall be less than 500 parts per million (ppm).
 - The soil shall contain less than 40% clay, but at least 10% fine grained material (30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or sericea lepedeza is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
 - Soil shall contain 1.5% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
 - Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - Apply soil amendments as per soil test or as included on the plans.
 - Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seeding loosening may not be necessary on newly disturbed areas.

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (315-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERE TO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 31 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, BY 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOIL (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS**

TOTAL AREA OF SITE	6,363 ACRES
AREA TO BE ERODED OR PAVED	5,200 ACRES
AREA TO BE VEGETATIVELY STABILIZED	3,400 ACRES
TOTAL CUT	378 CU.YDS.
TOTAL FILL	378 CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A CUYD.S.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TEMPORARY SEEDING NOTES

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- SEEDING PREPARATION:**
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS:**
APPLY 500 LBS. PER ACRE 10-10-10 FERTILIZER (4 LBS./1,000 SQ.FT.)
- SEEDING:**
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 15 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS./ACRE) OF WEEPING LOVEGRASS (0.7 LBS./1,000 SQ.FT.) FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 25. PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOO.
- MULCHING:**
APPLY 1.5 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 218 GALLONS PER ACRE (9 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (18 GAL./1,000 SQ.FT.) FOR ANCHORING.
- REFER TO THE 1998 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDING NOTES

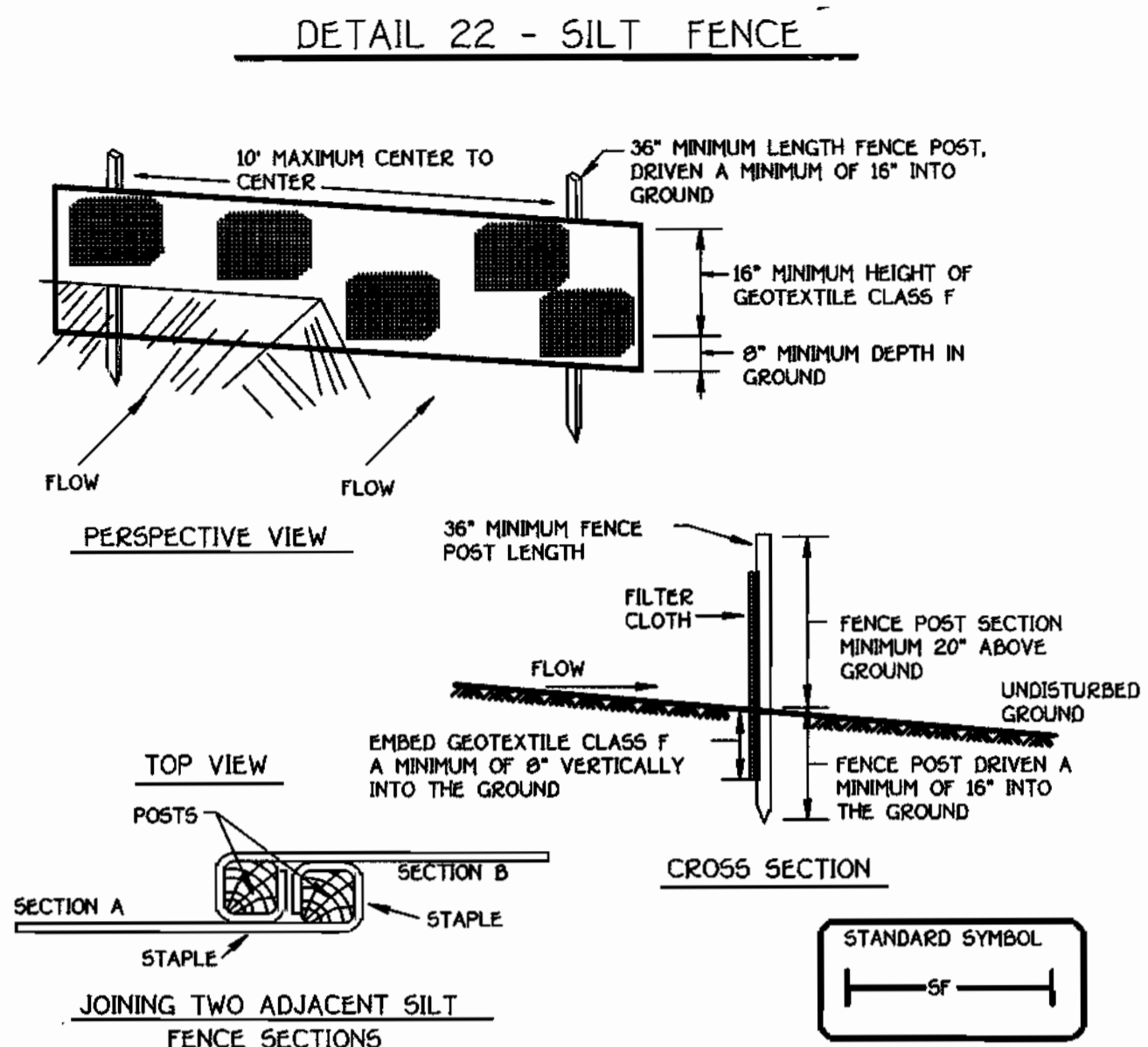
- ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:
- SEEDING PREPARATION:**
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.
- SOIL AMENDMENTS:**
APPLY TWO TONS PER ACRE DOLOMITE LIMESTONE (92 LBS./1,000 SQ.FT.) AND 600 LBS. PER ACRE 0-20-20 FERTILIZER (4 LBS./1,000 SQ.FT.) BEFORE SEEDING HARROW OR DISC INTO UPPER THREE INCHES OF SOIL, AT TIME OF SEEDING. APPLY 400 LBS. PER ACRE 38-0-0 UREAFORM FERTILIZER (9 LBS./1,000 SQ.FT.) AND 500 LBS. PER ACRE (15 LBS./1,000 SQ.FT.) OF 10-20-20 FERTILIZER.
- SEEDING:**
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH OCTOBER 15, SEED WITH 100 LBS. PER ACRE (2.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS./ACRE (1.4 LBS./1,000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.05 LBS./1,000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 25, PROTECT SITE BY OPTION (1) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OPTION (2) - USE SOO, OPTION (3) - SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE HYDROSEDED.
- MULCHING:**
APPLY 1.5 TO 2 TONS PER ACRE (80 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (9 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES, ON SLOPES 8 FEET OR HIGHER USE 348 GALLONS PER ACRE (18 GAL./1,000 SQ.FT.) FOR ANCHORING.
- MAINTENANCE:**
INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

SECTION 21 : STANDARD AND SPECIFICATIONS FOR TOPSOIL

- DEFINITION:** PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.
- PURPOSE:** TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.
- SPECIFICATIONS:**
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND.
 - TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING SUBSOILS.
 - TOPSOIL SHALL CONTAIN LESS THAN 6% BY VOLUME OF CRACKERS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1.5" IN DIAMETER.
 - TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4"; AVOID SURFACE IRREGULARITIES.
 - PLACE TOPSOIL AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION".
 - TOPSOIL SHALL NOT BE PLACED DURING FROZEN, MUDDY, OR EXCESSIVELY WET CONDITIONS.
- APPLICATION:**

SEQUENCE OF CONSTRUCTION

- OBTAIN THE REQUIRED GRADING PERMIT.
- NOTIFY M&S UTILITY 48 HOURS BEFORE BEGINNING ANY WORK (4800-257-7777). NOTIFY HOWARD COUNTY CONSTRUCTION/INSPECTION DIVISION 24 HOURS BEFORE STARTING ANY WORK (410)313-1870.
- INSTALL THE REQUIRED SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON SHEET 2 OF THIS CONTRACT (1 DAY).
- CLEAR AND GRUB AS NECESSARY; ONLY AS REQUIRED FOR EXCAVATION AND INSTALLATION OF THE WATER AND SEWER MAINS, AND ONLY WITHIN THE DESIGNATED WATER, SEWER AND UTILITY EASEMENTS (1 DAY).
- NOTE: THE LENGTH OF OPEN WATER AND/OR SEWER MAIN TRENCH SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED WITHIN ONE (1) WORKING DAY, WHICHEVER IS SHORTER.
- CONSTRUCT THE WATER MAIN, SEWER MAIN AND APPURTENANCES (45 DAYS).
- STABILIZE SEED AND MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES SHOWN ON THIS SHEET (1 DAY). FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS, AND AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES (1 DAY).



- Construction Specifications**
- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
 - Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
- | | | |
|----------------------|---------------------------|----------------|
| Tensile Strength | 50 lbs/in (min) | Test: MSHT 509 |
| Tensile Modulus | 20 lbs/in (min) | Test: MSHT 509 |
| Flow Rate | 0.3 gal ft / minute (max) | Test: MSHT 322 |
| Filtering Efficiency | 75% (min) | Test: MSHT 322 |
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
 - Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2:1 slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Robert M. Berman
CHIEF, BUREAU OF UTILITIES

DATE: December 3, 1999
CHIEF, DEVELOPMENT ENGINEERING DIVISION

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE BLDG. 1877 BALTIMORE NATIONAL PRZ
ELIZOITI CITY, MARYLAND 21042
(410) 481-2895



DESIGNED BY: M.D.T.
DRAWN BY: M.D.T.
CHECKED BY: M.J.M.
DATE: NOVEMBER 23, 1999

FCC: ---
BY NO. ADDRESS COUNTY COMMENTS

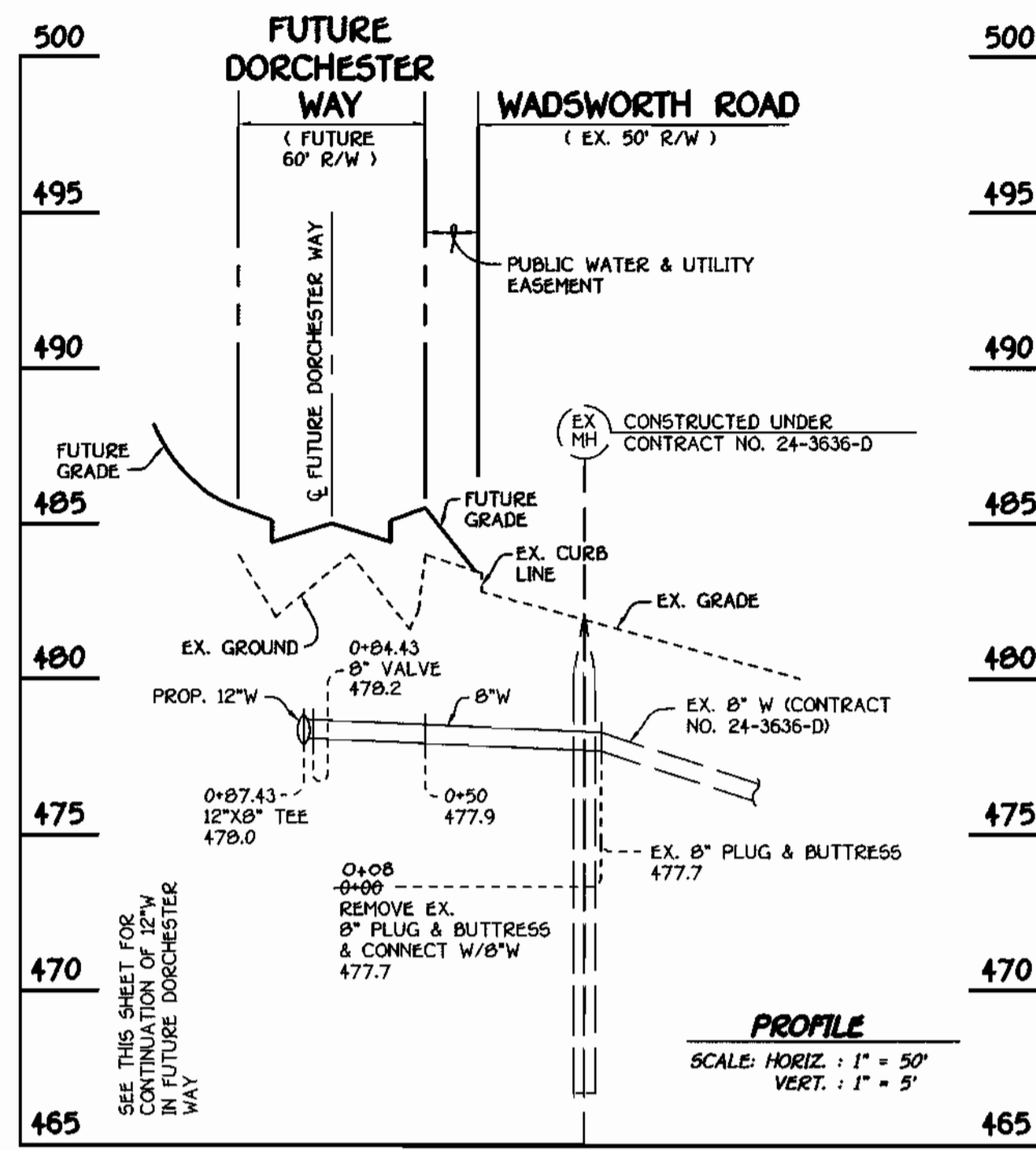
SEDIMENT AND EROSION
CONTROL NOTES AND DETAILS

600' SCALE MAP NO. 16 BLOCK NO. 5
F.C.C. WORK ORDER NO. 3057B
FILE NAME: G:\3067B\WATSEW\FINALS\SECTION21.DWG

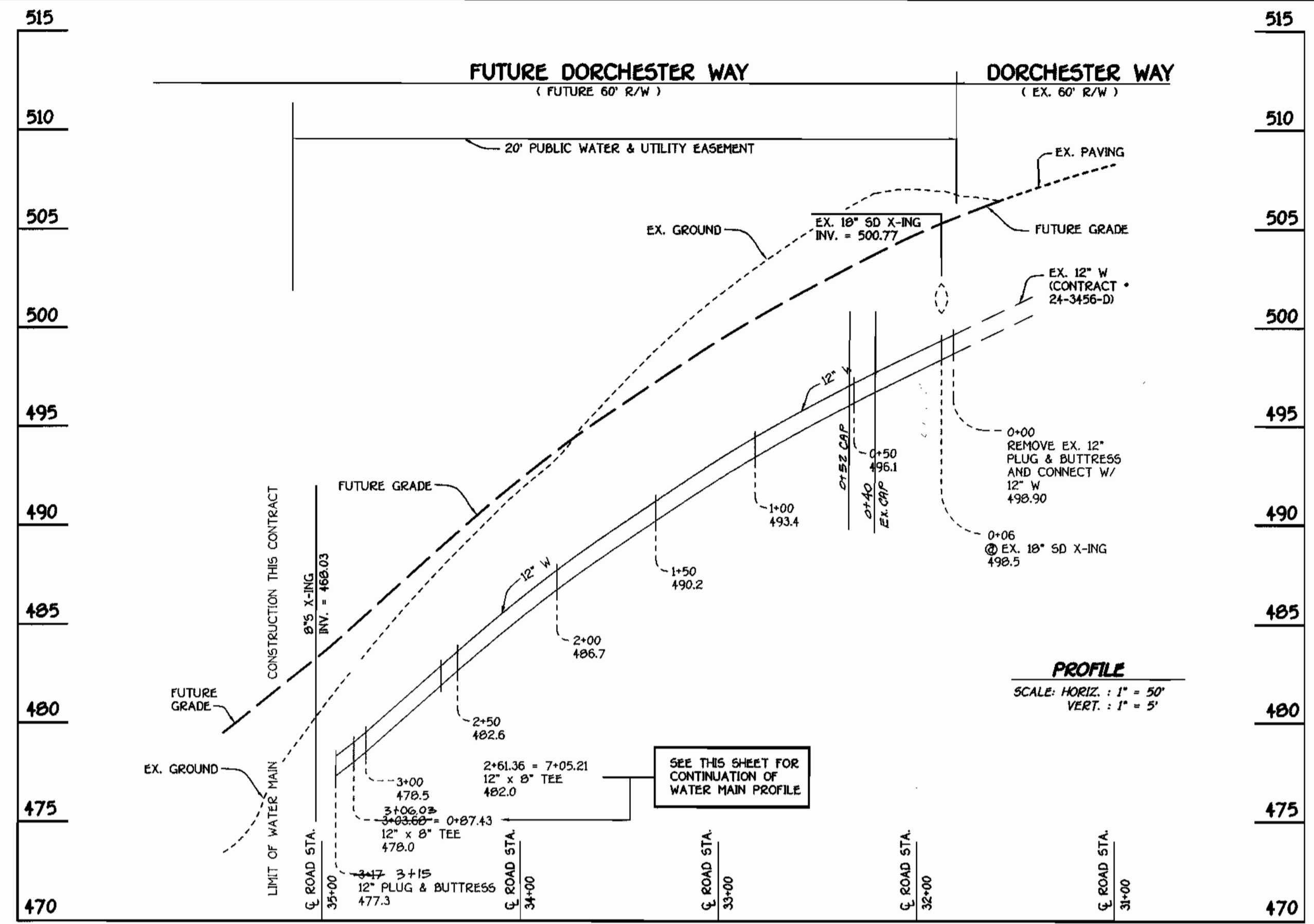
CONTRACT NO. 24-3780-D
G.T.W.'S WAVERLY WOODS
SECTION 10
LOTS 1 THRU 56
CONTRACT NO. 24-3780-D
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
5 of 5

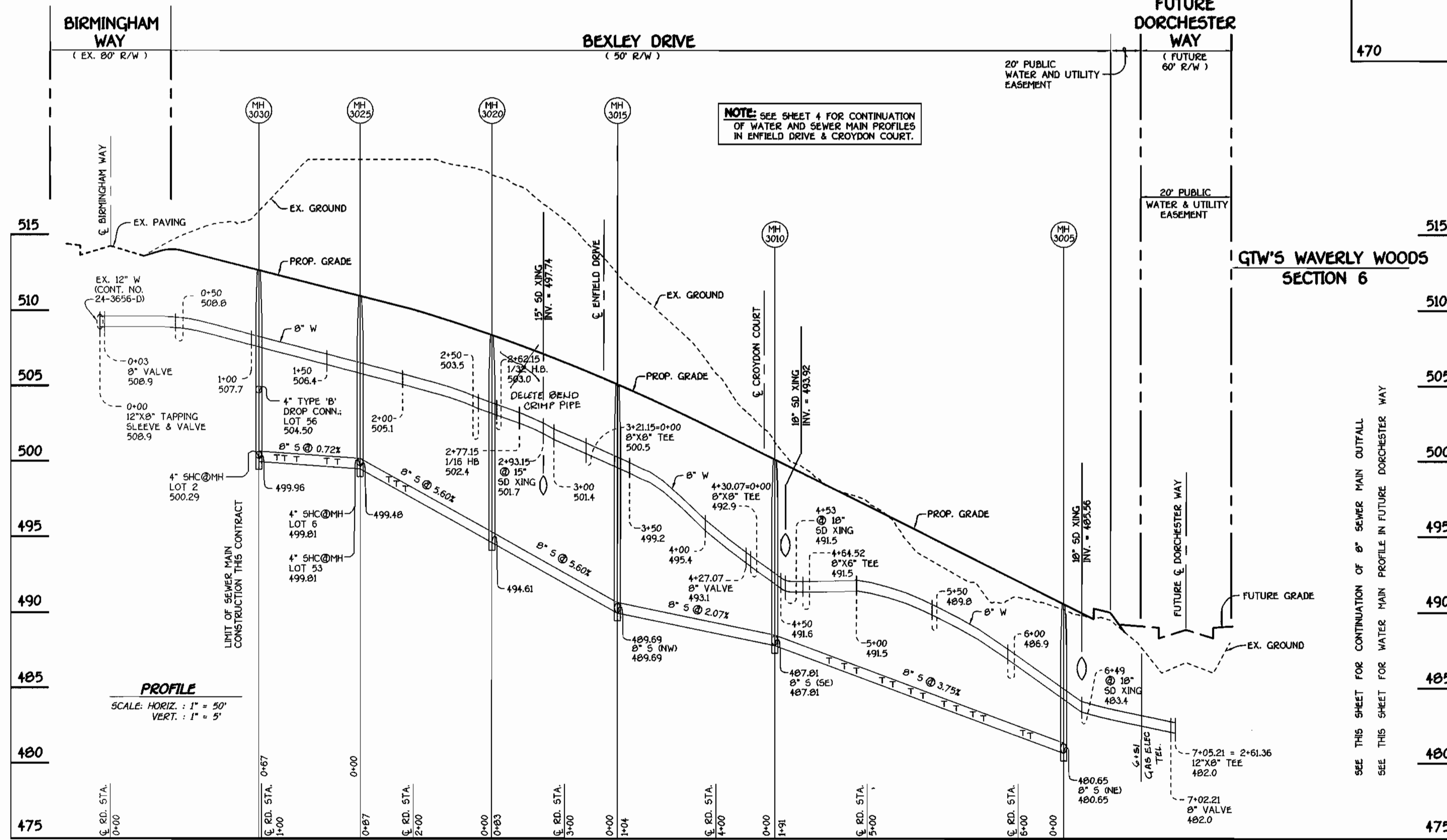
WM STATION	APPURTENANCE	ROAD STATION	DISTANCE
8" W. BEXLEY DRIVE			
0+00	12" x 8" TAPPING SLEEVE	-0+07	10' RT.
0+03	8" VALVE	-0+04	10' RT.
0+33.71	P.C. (CRIMP RADIUS = 380')	0+26.78	9.93' RT.
0+60.04	P.R.C. (CRIMP RADIUS = 380')	0+53.07	8.33' RT.
0+92.05	P.T. (CRIMP RADIUS = 380')	0+85.04	7' RT.
1+19.01	P.C. (CRIMP RADIUS = 380')	1+42	7' RT.
2+31.22	P.T. (CRIMP RADIUS = 380')	2+26.09	8.39' RT.
2+62.15	0" - 1/32 H.B.	2+58.41	3.01' RT.
2+77.15	0" - 1/16 H.B.	2+73.51	1.35' RT.
3+215+0+00	8" x 8" TEE	3+18.31	7' RT.
4+27.07	8" VALVE	4+24.22	6.99' RT.
4+30.07+0+00	8" x 8" TEE	4+27.22	6.99' RT.
4+64.52	8" x 8" TEE	4+61.66	6.90' RT.
6+36.49	P.C. (CRIMP RADIUS = 380')	6+33.63	6.96' RT.
7+02.21	P.T. (CRIMP RADIUS = 380')	---	---
7+05.21 = 2+61.36	8" VALVE	3+41.33 (DORCHESTER WAY)	10.01' RT.
7+05.21 = 2+61.36	12" x 8" TEE	3+41.33 (DORCHESTER WAY)	7.01' RT.
8" W. ENFIELD DRIVE			
0+00 = 3+21.15	8" x 8" TEE	-0+07	9.24' LT.
0+03	8" VALVE	-0+04	9.24' LT.
0+55.07	0" - 1/16 H.B.	0+49.85	5.30' LT.
0+96.76	0" - 1/16 H.B.	0+93.17	4.97' LT.
1+66.70	8" x 6" TEE	1+64.43	7' LT.
3+17.07	8" PLUG & BUTTRESS	3+15	7' LT.
8" W. CROYDON COURT			
0+00 = 4+30.07	8" x 8" TEE	0+07	5' RT.
0+03	8" VALVE	0+10	5' RT.
2+29.79	8" PLUG & BUTTRESS	2+36.78	5' RT.
12" W. FUTURE DORCHESTER WAY			
0+00	REMOVE 12" PLUG & CONNECT W/ 12" W (P.C.)	3+01.44	7' RT.
2+61.36-7+05.21	12" x 8" TEE	3+41.33	7' RT.
3+03.68-0+87.43	12" x 8" TEE	3+48.6	7' RT.
3+17	12" PLUG & BUTTRESS (P.T.)	3+15	7' RT.
8" W. EX. WADSWORTH WAY TO FUTURE DORCHESTER WAY			
0+00	REMOVE EX. 8" PLUG & CONNECT W/ 8" W	---	---
0+16.60	P.C. (CRIMP RADIUS = 380')	---	---
0+70.37	P.T. (CRIMP RADIUS = 380')	---	---
0+84.43	8" VALVE	3+85 (DORCHESTER WAY)	4' LT.
0+87.43 = 3+03.68	12" x 8" TEE	3+85 (DORCHESTER WAY)	7' LT.



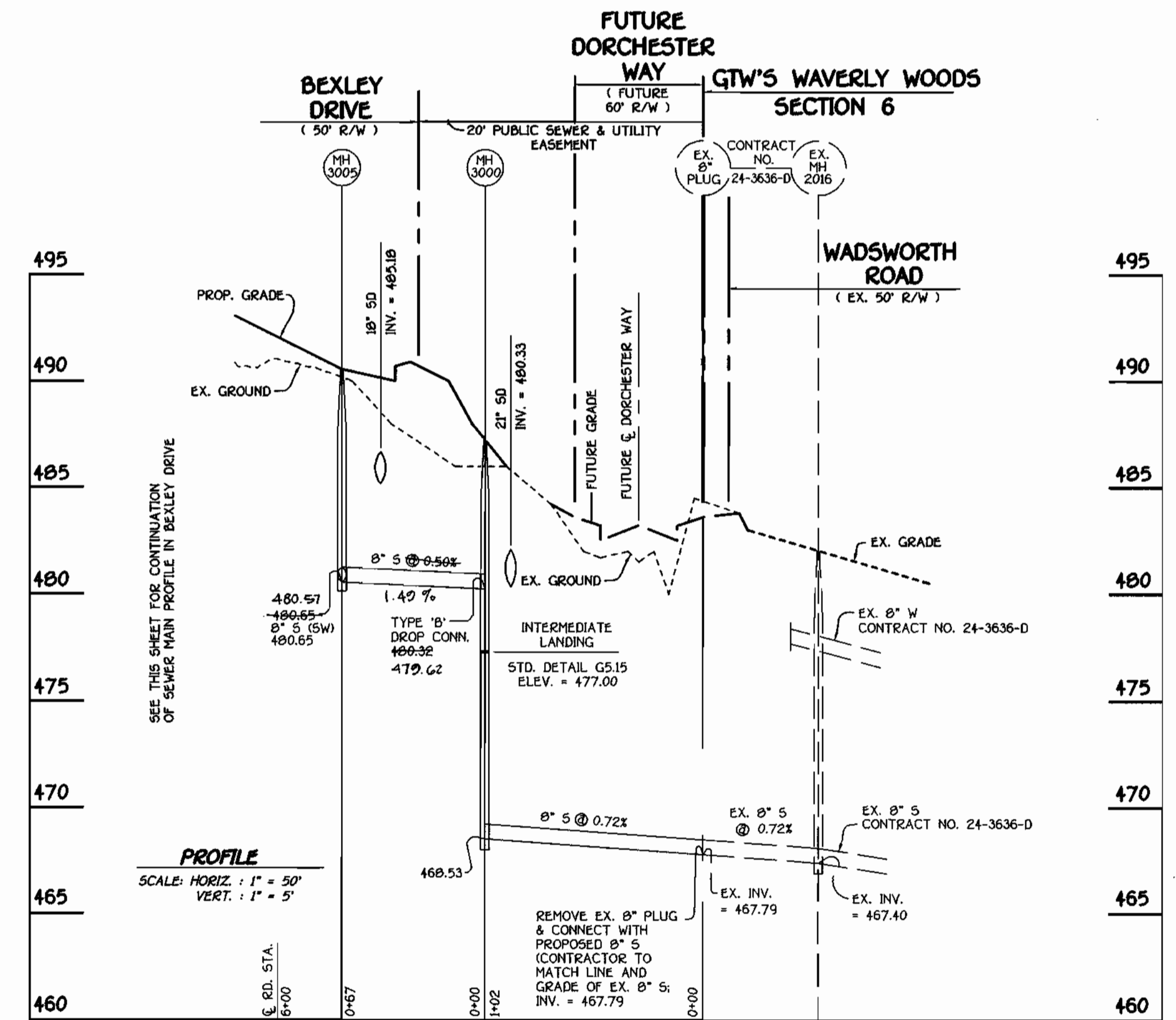
8" WATER MAIN LOOP: WADSWORTH ROAD TO DORCHESTER WAY



FUTURE DORCHESTER WAY: WATER MAIN



BEXLEY DRIVE: WATER & SEWER MAINS

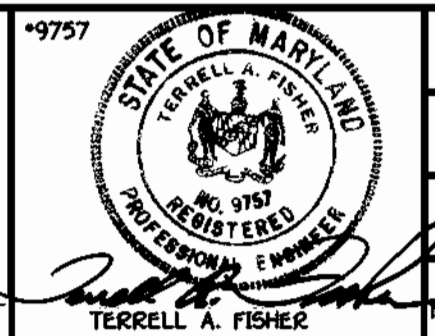


SEWER MAIN OUTFALL FROM BEXLEY DRIVE

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 - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
410 461 - 2255



DESIGNED BY: M.D.T.
DRAWN BY: M.D.T., J.E.P.
CHECKED BY: M.J.M.
DATE: NOVEMBER 23, 1999
BY NO. 11/99

PROFILES
WATER AND SEWER MAINS
600' SCALE MAP NO. 16 BLOCK NO. 3
F.C.C. WORK ORDER NO. 3067B
FILE NAME: G/3067B/3067B/SECTION/PROFILES/SHOTS.DWG

G.T.W.'S WAVERLY WOODS
SECTION 10
LOTS 1 THRU 56
CONTRACT NO. 24-3780-D
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 3 OF 5

Robert Beaman December 3, 1999
CHIEF, BUREAU OF UTILITIES

How...
CHIEF, DEVELOPMENT ENGINEERING DIVISION

12/3/99

TERRELL A. FISHER

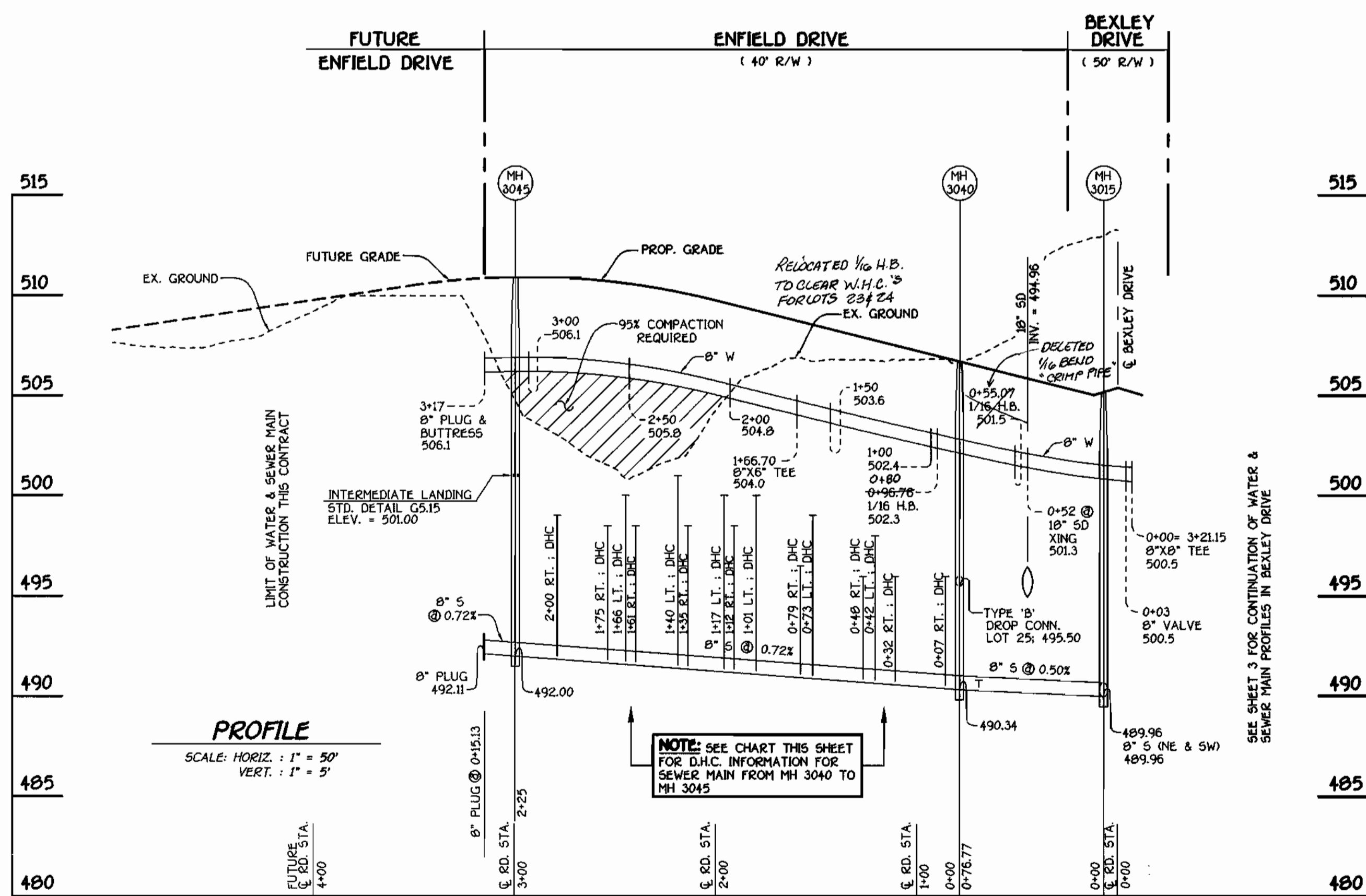
AS BUILT CONDITIONS ADDED TO PLAN
ADDRESS COUNTY COMMENTS

DATE: 11/99

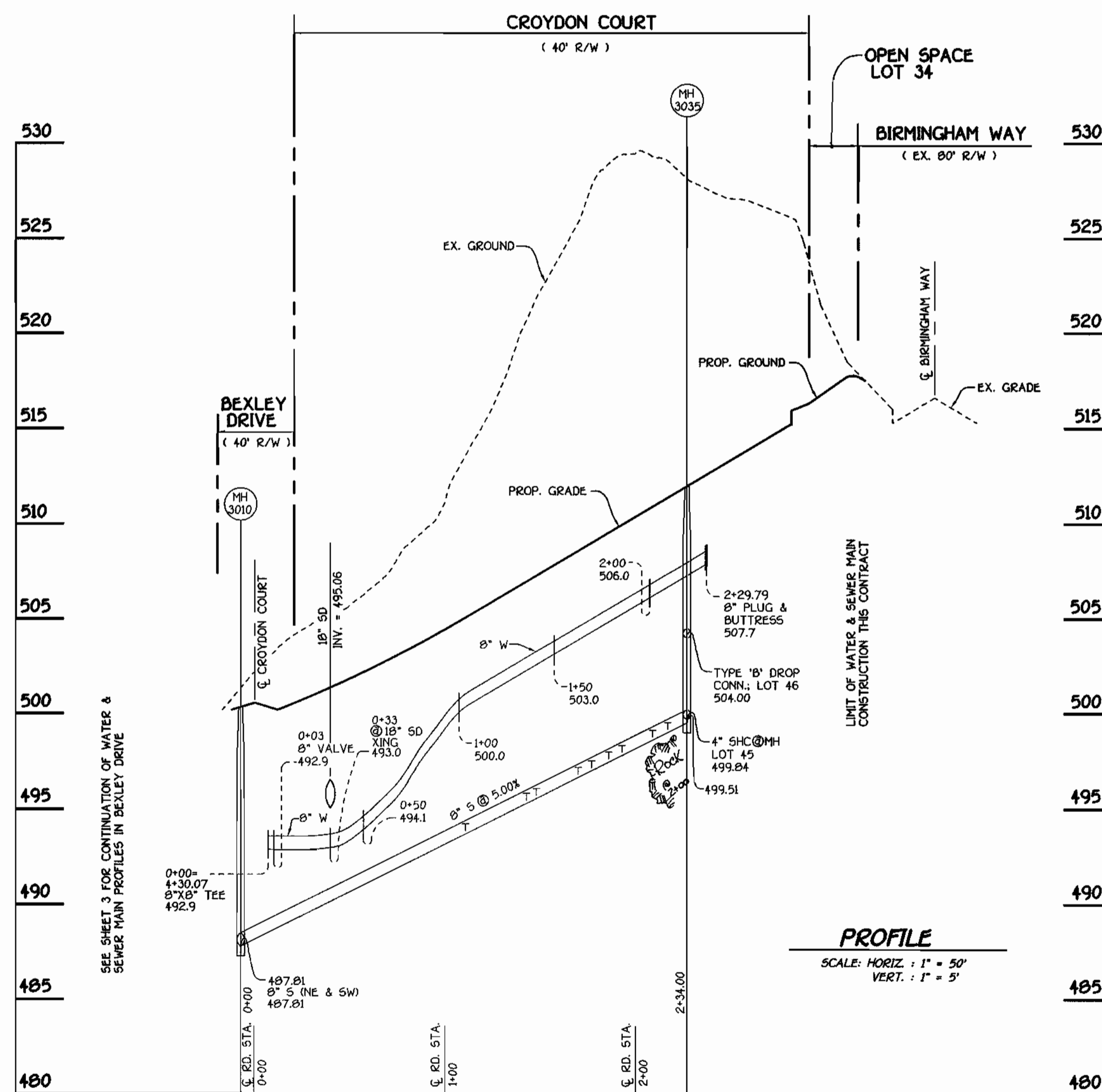
CONTRACT NO. 24-3780-D
G.T.W.'S WAVERLY WOODS
SECTION 10, LOTS 1 THRU 56
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DROP HOUSE CONNECTION (DHC) CHART

STATION	TYPE	LOT NO.	ELEVATION
MH 3040 TO MH 3045			
0+07 RT.	TYPE 'A' DHC	24	496.0
0+32 RT.		23	496.0
0+42 LT.		9	498.0
0+48 RT.		22	495.0
0+73 LT.		10	499.0
0+79 RT.		21	496.5
1+01 LT.		11	500.0
1+12 RT.		19	498.5
1+17 LT.		12	500.0
1+35 RT.		18	498.5
1+40 LT.		13	501.0
1+51 RT.		17	498.5
1+66 LT.		14	500.0
1+75 RT.		16	498.5
2+00 RT.	TYPE 'A' DHC	15	499.0



ENFIELD DRIVE: WATER & SEWER MAINS



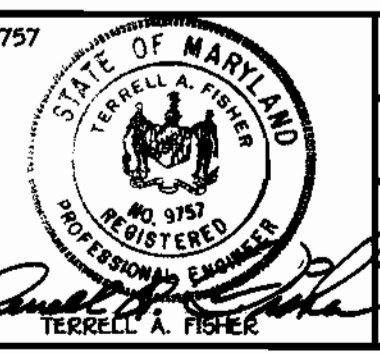
CROYDON COURT: WATER & SEWER MAINS

CONTRACT NO. 24-3780-D
G.T.W.'S WAVERLY WOODS
SECTION 10: LOTS 1 THRU 56
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Robert W. ... December 3, 1999
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
... 12/3/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21117
410 481 - 2855



DESIGNED BY: M.D.T.
DRAWN BY: M.D.T.
CHECKED BY: R.J.M.
DATE: NOVEMBER 23, 1999
BY: NO.

PROFILES
WATER AND SEWER MAINS
60' SCALE MAP NO. 16 BLOCK NO. 5
F.C.C. WORK ORDER NO. 3067B
FILE NAME: G/3067B/MATSEW/FINAL/SECTIOPROFILESHT4.DWG

G.T.W.'S WAVERLY WOODS
SECTION 10
LOTS 1 THRU 56
CONTRACT NO. 24-3780-D
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 4 OF 5