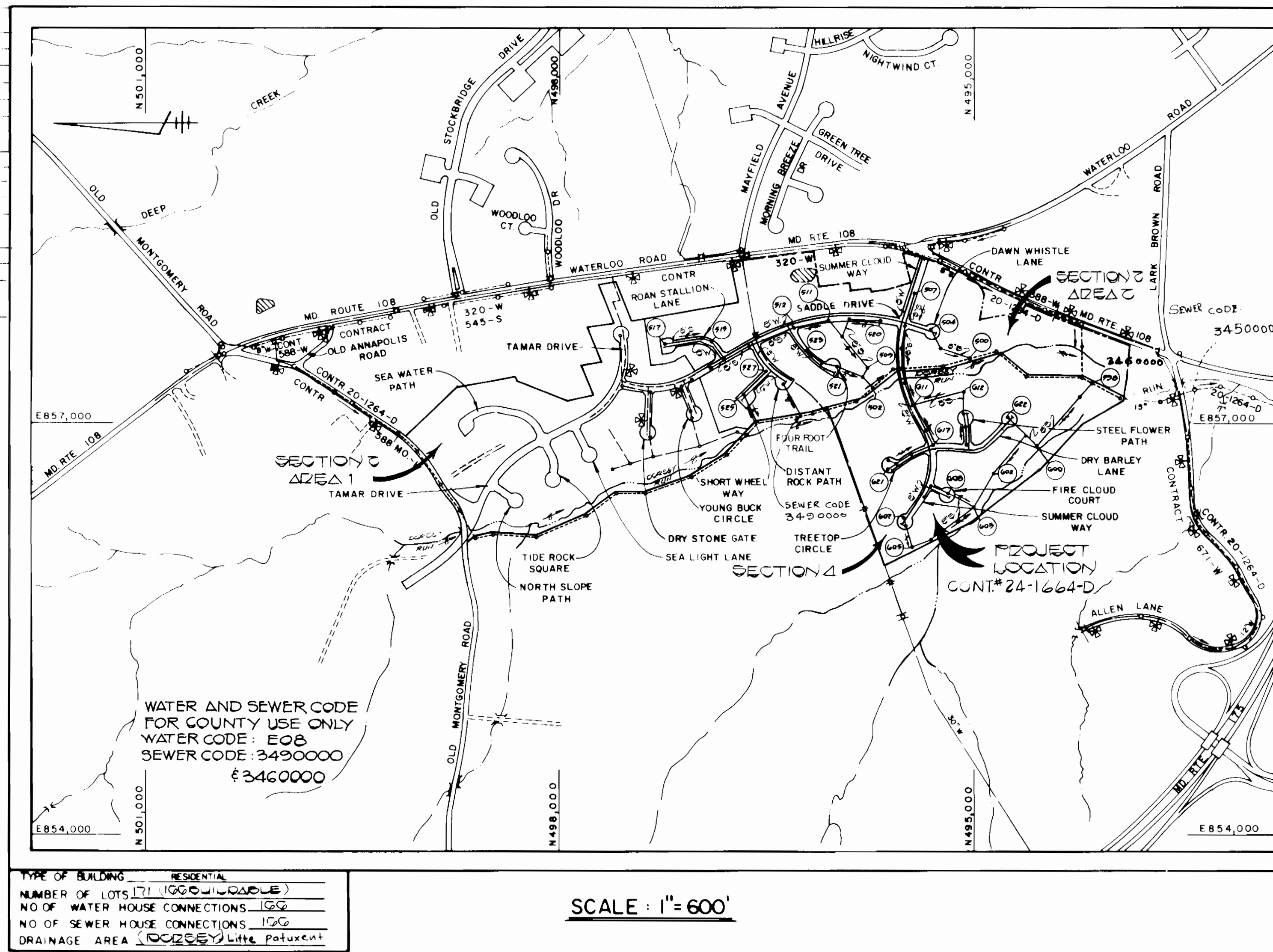


QUANTITIES			
ITEM	EST'D	AS BUILT	SUPPLIER
MANHOLES	51 EA.		
8" SEWER	5700 LF.	5713	
6" S.H.C.	4700 LF.	4681	
8" WATER	4850 LF.		
6" WATER	2475 LF.		
3" WATER	15 EA.		
F.H.W. VALVE	13 EA.		
1" W.H.C.	2435 LF.		
3/4" W.H.C.	1500 LF.		
8" VALVES	7 EA.		
6" VALVES	5 EA.		
8" REDUCERS	7 EA.		
BLOW-OFF ASSEMBLY	5 EA.		



TYPE OF BUILDING: RESIDENTIAL  
 NUMBER OF LOTS: 171 (1000-10000)  
 NO OF WATER HOUSE CONNECTIONS: 152  
 NO OF SEWER HOUSE CONNECTIONS: 150  
 DRAINAGE AREA: 1002557 Liters Per Second

SCALE: 1" = 600'

# CONTRACT NO. 24-1664-D

## VILLAGE OF LONGREACH

### SECTION 2 AREA 2 & SECTION 4

### WATER AND SEWER MAIN EXTENSIONS

# HOWARD COUNTY, MARYLAND

## DEPARTMENT OF PUBLIC WORKS

### GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE TO MAINS 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 5.565' DATUM.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6".
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL [ ] AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS SHALL BE INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN MADE 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. - UNDERGROUND DAMAGE CONTROL: 859-9004
  - BALTIMORE GAS & ELECTRIC CO. - TROUBLE SHOOTING: 248-9001
  - MISS UTILITY: 1-559-0100
  - COLONIAL PIPELINE COMPANY: 795-1390
  - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS: 992-2366
  - C & P TELEPHONE COMPANY: 1-800-257-7777
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-1/2" COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TREES SHALL BE STRAPPED TO TREES.
- 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 ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1003 AND 1008 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS. (STD. DETAIL W.3.21).
- WATER MAINS AND WATER HOUSE CONNECTION LINES MUST BE PLACED SO AS TO HAVE AT LEAST ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATER-TIGHT FRAME AND COVERS STANDARD DETAIL 65.52 WHERE WATER-TIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL SEWER MAINS SHALL BE C.S.P.X., R.C.S.P., V.C.P.X., A.C.P. CLASS 2400 UP TO 12' DEPTH AND 3300 MORE THAN 12' DEPTH OR P.V.C. UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES LOCATED WITHIN PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAME AND COVER, STANDARD DETAIL 65.51.
- ALL DIP FITTINGS SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATION C-153 DUCTILE IRON COMPACT FITTINGS, 3" THROUGH 12" FOR WATER AND OTHER LIQUIDS.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL AND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS AND ALSO AS SHOWN ON THE GRADING AND SEDIMENT CONTROL PLAN F 88-76

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS  
 DATE: 2-5-88  
 US SOIL CONSERVATION SERVICE

PLAN REFERENCE NUMBER:  
 F 88-76

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

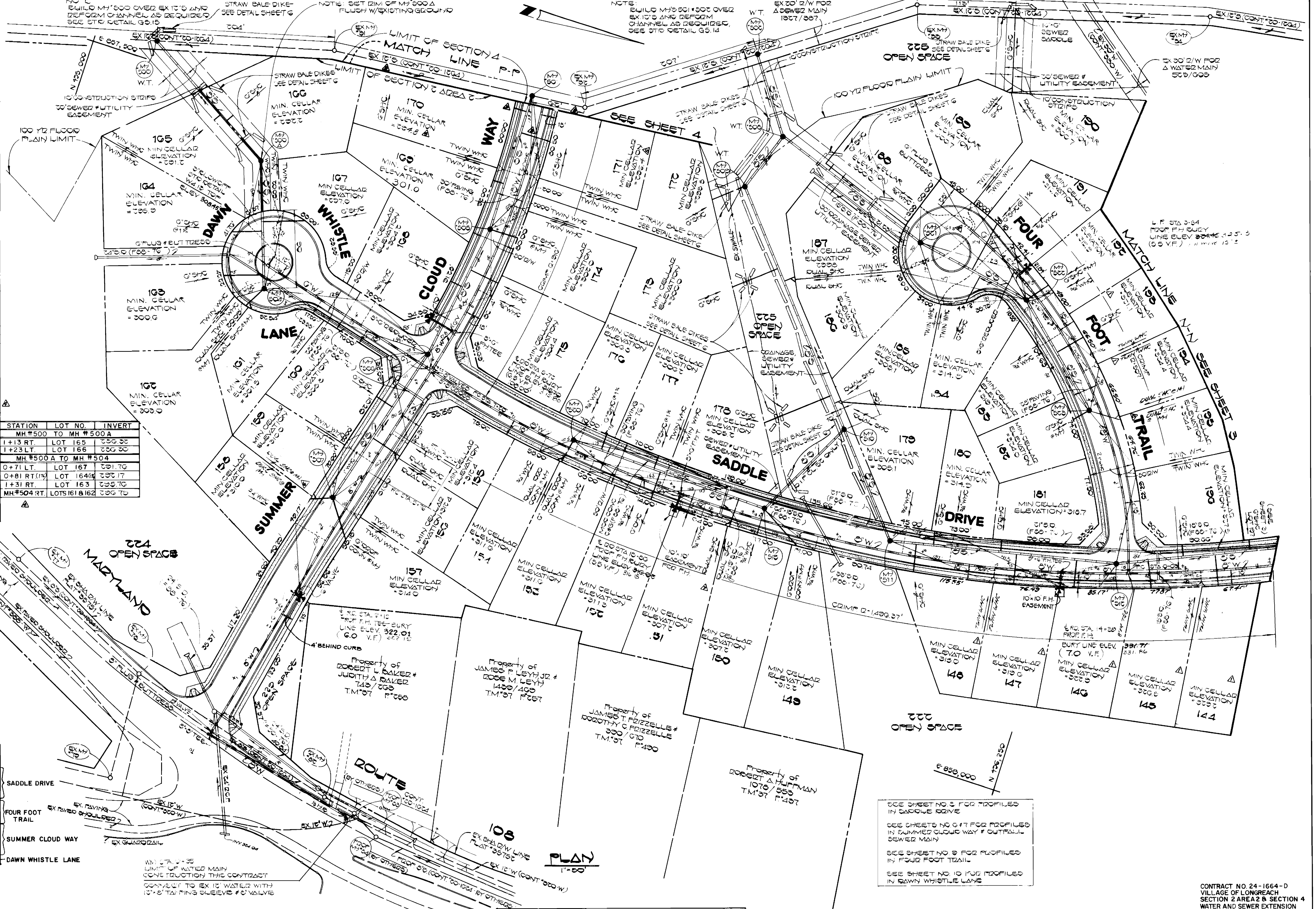
APPROVED  
 DATE: 2/3/88  
 HOWARD COUNTY SOIL CONSERVATION DISTRICT

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 2/3/88 CHIEF, BUREAU OF UTILITIES	FISHER, COLLINS AND CARTER, INC. CONSULTING ENGINEERS AND LAND SURVEYORS 8388 COURT AVENUE ELLICOTT CITY, MARYLAND 21043 DATE: 01/28/88 TERRELL A. FISHER	DES. D.B.S. DRN. D.B.S. CHK. T.A.F. DATE: 01/28/88	TITLE SHEET VILLAGE OF LONGREACH SECTION 2 AREA 2 & SECTION 4 CONTRACT NO. 24-1664-D SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 1 OF 10
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STATION	LOT NO.	INVERT
MH#512 TO MH#513		
0+37 RT.	LOT 145	321.62
0+78 LT.	LOT 196	322.83
1+14 RT.	LOT 144	324.64
1+52 LT.	LOT 197	325.61
1+89 RT. @ 1%	LOT 143 (1%)	327.12
2+92 RT.	LOT 142	331.33
MH#513 RT(DHC)	LOT 141	335.31
MH#511 TO MH#512		
0+31 RT.	LOT 148	309.66
0+48 LT.	LOT 180	310.10
1+28 LT(DHC)	LOT 181	317.28
1+46 RT.	LOT 147	314.99
2+16 RT.	LOT 146	318.13
MH#519 TO MH#520		
MH#519 LT(DHC)	LOT 149	306.29
0+31 LT.	LOTS 150 & 151	302.40
1+26 LT(DHC)	LOT 152	306.66
1+34 RT. @ 1%	LOT 177 (1%)	302.64
1+89 RT. @ 1%	LOT 176 (1%)	303.14
MH#520 LT(DHC)	LOTS 153 & 154	306.58
MH#508 TO MH#521		
0+66 LT.	LOT 188	295.16
MH#521 TO MH#522		
0+68 LT. @ 1%	LOT 191 (1%)	308.81
0+79 RT.	LOT 184	309.80
MH#522 LT.	LOT 192	314.43
MH#522 RT.	LOT 183	314.27
MH#522 TO MH#523		
MH#522 LT.	LOT 192	314.43
MH#522 RT.	LOT 183	314.27
0+70 LT.	LOT 193	316.91
MH#523 LT.	LOTS 194 & 195	319.61
MH#523 RT.	LOT 182	319.39
MH#509 TO MH#510		
MH#509 RT.	LOT 172	291.63
1+02 RT.	LOT 173	295.09
1+20 LT.	LOTS 186 & 187	294.78
2+61 RT.	LOT 178	300.61
2+70 LT.	LOTS 179 & 185	299.39
MH#501 TO MH#505		
0+20 RT.	LOT 170	289.67
0+45 RT.	LOT 171	291.30
1+06 RT.	LOT 169	295.59
MH#505 LT.	LOT 174	297.47
MH#505 TO MH#506		
MH#505 LT.	LOT 174	297.47
0+51 LT.	LOT 175	299.43
0+74 RT.	LOT 168	299.90
MH#506 TO MH#507		
0+73 RT.	LOT 160	304.11
1+15 LT(DHC)	LOTS 155 & 156	308.08
MH#507 LT(DHC)	LOT 157	309.50
MH#507 RT.	LOTS 158 & 159	305.15
EX. MH#33 TO EX. MH#34		
1+13 RT.	LOTS 189 & 190	293.52

STATION	LOT NO.	INVERT
MH#500 TO MH#500A		
1+13 RT.	LOT 165	299.30
1+23 LT.	LOT 166	299.30
MH#500A TO MH#504		
0+71 LT.	LOT 167	299.70
0+81 RT(1%)	LOT 164 (1%)	299.17
1+31 RT.	LOT 163	299.70
EX. MH#504 RT.	LOTS 161 & 162	299.70

NO.	RD. STATION	DISTANCE	RIM	SLOPE
512	13+77	4' RT.	333.93	-0.00%
511	16+39	5' RT.	320.08	-5.10%
519	17+89	7' RT.	315.45	-1.00%
520	20+23	4' RT.	317.62	-1.00%
521	--	--	315.20	--
522	3+37	4' LT.	326.70	-1.00%
523	1+89	4' LT.	332.66	-1.00%
501	8+60	7' LT.	305.82	-0.40%
505	6+97	8' LT.	309.55	-1.40%
506	5+36	7' LT.	316.27	-3.00%
507	3+37	7' LT.	319.09	-1.00%
504	--	--	308.00	--



SEE SHEET NO. 3 FOR PROFILES IN SADDLE DRIVE  
 SEE SHEETS NO. 6 & 7 FOR PROFILES IN SUMMER CLOUD WAY & FOUR FOOT TRAIL  
 SEE SHEET NO. 8 FOR PROFILES IN FOUR FOOT TRAIL  
 SEE SHEET NO. 10 FOR PROFILES IN DAWN WHISTLE LANE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*James M. Clavin*  
 DIRECTOR OF PUBLIC WORKS  
 DATE 2-3-98

*Robert W. Benjamin*  
 CHIEF, BUREAU OF UTILITIES  
 DATE 2-3-98

FISHER, COLLINS AND CARTER, INC.  
 CONSULTING ENGINEERS AND LAND SURVEYORS

8388 COURT AVENUE  
 ELLICOTT CITY, MARYLAND 21043

*Terrell A. Fisher*  
 DATE 01/28/88

DES.	DRN.	CHK.	BY	NO.	REVISION	DATE
D.B.S.	D.A.N.	T.A.F.	D.A.N.	1	REVISE LOT LINE BETWEEN LOTS 150/151	5/3/88
D.B.S.	D.A.N.	T.A.F.	D.A.N.	2	REVISE LOT LINE & DUAL S/C BETWEEN LOTS 188/189	5/3/88
T.A.F.	D.A.N.	T.A.F.	D.A.N.	3	REVISE MIN. CELLAR ELEVATION LOTS 170/171	11/20/88
T.A.F.	D.A.N.	T.A.F.	D.A.N.	4	CORRECT MINOR ERRORS	11/20/88
T.A.F.	D.A.N.	T.A.F.	D.A.N.	5	DELETE S/C 200' FROM 170' FROM AT SUMMER MAIN	11/20/88
T.A.F.	D.A.N.	T.A.F.	D.A.N.	6	DELETE S/C 200' FROM 170' FROM AT SUMMER MAIN	11/20/88
T.A.F.	D.A.N.	T.A.F.	D.A.N.	7	REVISE LOT LINE	11/20/88

PLAN  
 WATER AND SEWER MAINS

600 SCALE MAP NO. 37 BLOCK NO.

VILLAGE OF LONGREACH  
 SECTION 2 AREA 2 & SECTION 4  
 CONTRACT NO. 24-1664-D  
 SIXTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 2 OF 13



SEWER AS-BUILT			
BY: MARY K WILSON	DATE: 8-29-88		
LOT NO.	MH / DIST	MH / DIST	
196	512 82.2	518 289.9	
197	512 157.7	513 161.8	
141	512	513 36.4	
142	512 297	513 38.5	
143	512 197.1	513 18.2	
144	512 285	513 205.7	
145	512 50.6	513 285.5	
NOTE: NO SHE FOR LOT 188	NO LOCATION	24	
PLAN 8-29-88			

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

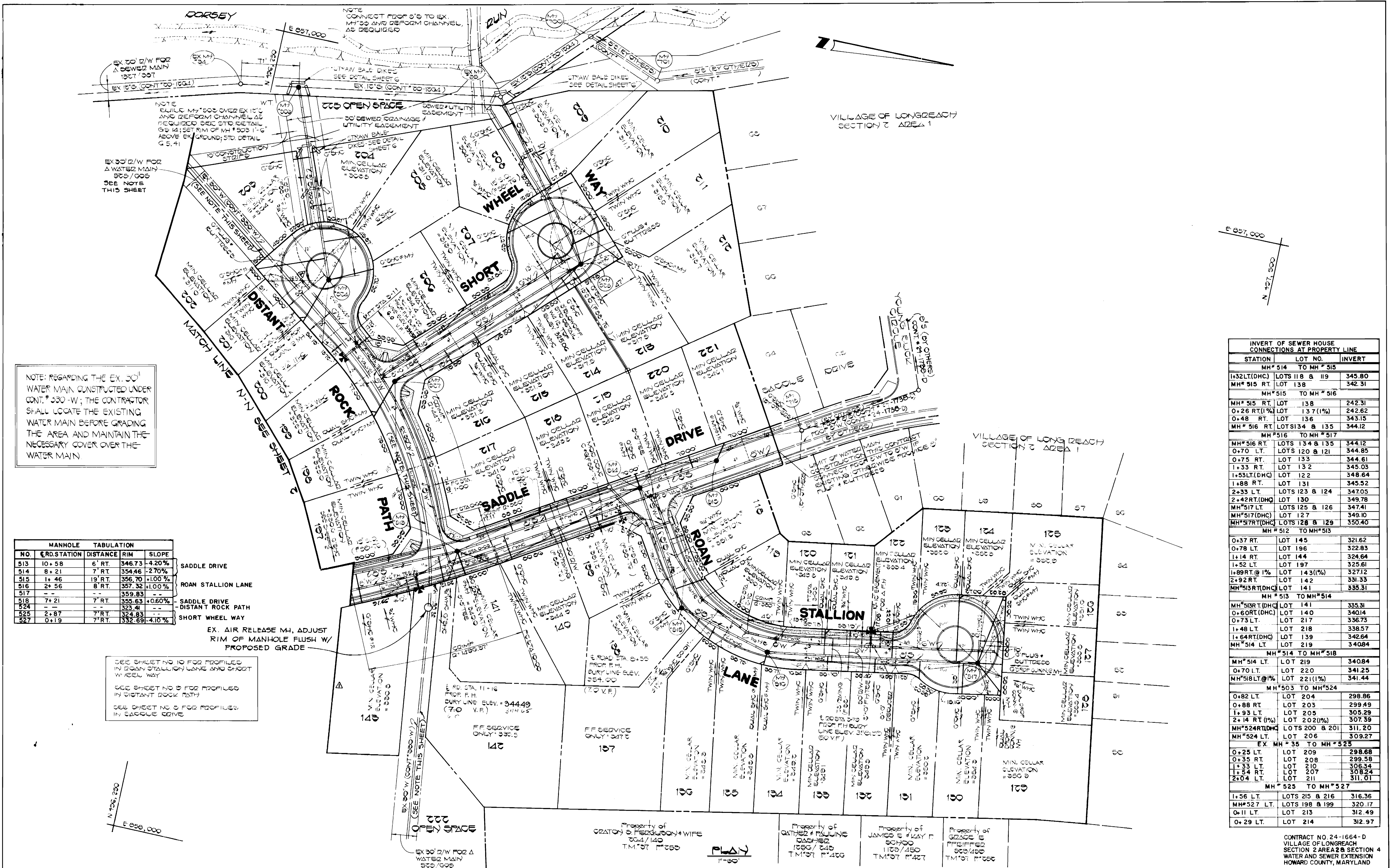
DIRECTOR OF PUBLIC WORKS \_\_\_\_\_ DATE \_\_\_\_\_ CHIEF, BUREAU OF ENGINEERING \_\_\_\_\_ DATE \_\_\_\_\_

DES:					
DRN:					
CHK:					
DATE:	BY	NO.	REVISION	DATE	600' SCALE MAP NO. _____ BLOCK NO. _____

VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
CONTRACT NO 29-1664-D

SCALE AS SHOWN

SHEET 2A OF 13



NOTE: REGARDING THE EX. 30" WATER MAIN CONSTRUCTED UNDER CONT. # 330-W; THE CONTRACTOR SHALL LOCATE THE EXISTING WATER MAIN BEFORE GRADING THE AREA AND MAINTAIN THE NECESSARY COVER OVER THE WATER MAIN.

NO.	MANHOLE	TABULATION	RD. STATION	DISTANCE	RIM	SLOPE
513	10+58	6' RT.	346.73	-4.20%		
514	8+21	7' RT.	354.46	-2.70%		
515	1+46	19' RT.	356.70	+1.00%		
516	2+56	8' RT.	357.32	+1.00%		
517	-	-	359.83	-		
518	7+21	7' RT.	359.63	+0.60%		
524	-	-	323.41	-		
525	2+87	7' RT.	324.83	-		
527	0+19	7' RT.	332.69	-4.10%		

SADDLE DRIVE  
ROAN STALLION LANE  
SADDLE DRIVE  
DISTANT ROCK PATH  
SHORT WHEEL WAY

EX. AIR RELEASE MH, ADJUST RIM OF MANHOLE FLUSH W/ PROPOSED GRADE

SEE SHEET NO. 10 FOR PROFILES IN ROAN STALLION LANE AND SHORT WHEEL WAY  
SEE SHEET NO. 9 FOR PROFILES IN DISTANT ROCK PATH  
SEE SHEET NO. 8 FOR PROFILES IN SADDLE DRIVE

INVERT OF SEWER HOUSE CONNECTIONS AT PROPERTY LINE		
STATION	LOT NO.	INVERT
MH # 514 TO MH # 515		
1+32L(DHC)	LOTS 118 & 119	345.80
MH # 515 RT.	LOT 138	342.31
MH # 515 TO MH # 516		
MH # 515 RT.	LOT 138	242.31
0+26 RT.(1%)	LOT 137	242.62
0+48 RT.	LOT 136	343.15
MH # 516 RT.	LOTS 134 & 135	344.12
MH # 516 TO MH # 517		
MH # 516 RT.	LOTS 134 & 135	344.12
0+70 LT.	LOTS 120 & 121	344.85
0+75 RT.	LOT 133	344.61
1+33 RT.	LOT 132	345.03
1+53L(DHC)	LOT 122	348.64
1+88 RT.	LOT 131	345.52
2+33 LT.	LOTS 123 & 124	347.05
2+42 RT.(DHC)	LOT 130	349.78
MH # 517 LT.	LOTS 125 & 126	347.41
MH # 517(DHC)	LOT 127	349.10
MH # 517 RT(DHC)	LOTS 128 & 129	350.40
MH # 512 TO MH # 513		
0+37 RT.	LOT 145	321.62
0+78 LT.	LOT 196	322.83
1+14 RT.	LOT 144	324.64
1+52 LT.	LOT 197	325.61
1+89 RT.@ 1%	LOT 143(1%)	327.12
2+92 RT.	LOT 142	331.33
MH # 513 RT(DHC)	LOT 141	335.31
MH # 513 TO MH # 514		
MH # 513 RT(DHC)	LOT 141	335.31
0+60 RT(DHC)	LOT 140	340.14
0+73 LT.	LOT 217	336.73
1+48 LT.	LOT 218	338.57
1+64 RT(DHC)	LOT 139	342.64
MH # 514 LT.	LOT 219	340.84
MH # 514 TO MH # 518		
MH # 514 LT.	LOT 219	340.84
0+70 LT.	LOT 220	341.25
MH # 518 LT.@ 1%	LOT 221(1%)	341.44
MH # 503 TO MH # 524		
0+82 LT.	LOT 204	298.86
0+88 RT.	LOT 203	299.49
1+93 LT.	LOT 205	305.29
2+14 RT (1%)	LOT 202(1%)	307.39
MH # 524 RT(DHC)	LOTS 200 & 201	311.20
MH # 524 LT.	LOT 206	309.27
EX. MH # 35 TO MH # 525		
0+25 LT.	LOT 209	298.68
0+35 RT.	LOT 208	299.58
1+33 LT.	LOT 210	306.34
1+54 RT.	LOT 207	308.24
2+04 LT.	LOT 211	311.01
MH # 525 TO MH # 527		
1+56 LT.	LOTS 215 & 216	316.36
MH # 527 LT.	LOTS 198 & 199	320.17
0+11 LT.	LOT 213	312.49
0+29 LT.	LOT 214	312.97

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>James M. Lewis</i> 2/6/88 Chief, Bureau of Engineering: <i>William H. Fisher</i> 2/8/88 Chief, Bureau of Utilities: <i>Robert Beniger</i> 2-3-88 Chief, Land Development Division: <i>William H. Fisher</i> 2/8/88	FISHER, COLLINS AND CARTER, INC. CONSULTING ENGINEERS AND LAND SURVEYORS 8388 COURT AVENUE ELLICOTT CITY, MARYLAND 21043 Terrell A. Fisher DATE	DES. D.B.S.	DRN. D.B.S.	CHK. T.A.F.	DATE: 01/28/88	PLAN WATER AND SEWER MAINS	VILLAGE OF LONGREACH SECTION 2 AREA 2 & SECTION 4 CONTRACT NO. 24-1664-D SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 3 OF 12
		PROPERTY OF GRAYSON & FERGUSON & WIFE 004/140 T.M. 07/14/85	PROPERTY OF GATHEIS & PAULINE 004/140 T.M. 07/14/85	PROPERTY OF JAMES E & KAY F 004/140 T.M. 07/14/85	PROPERTY OF GEORGE E 004/140 T.M. 07/14/85			



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

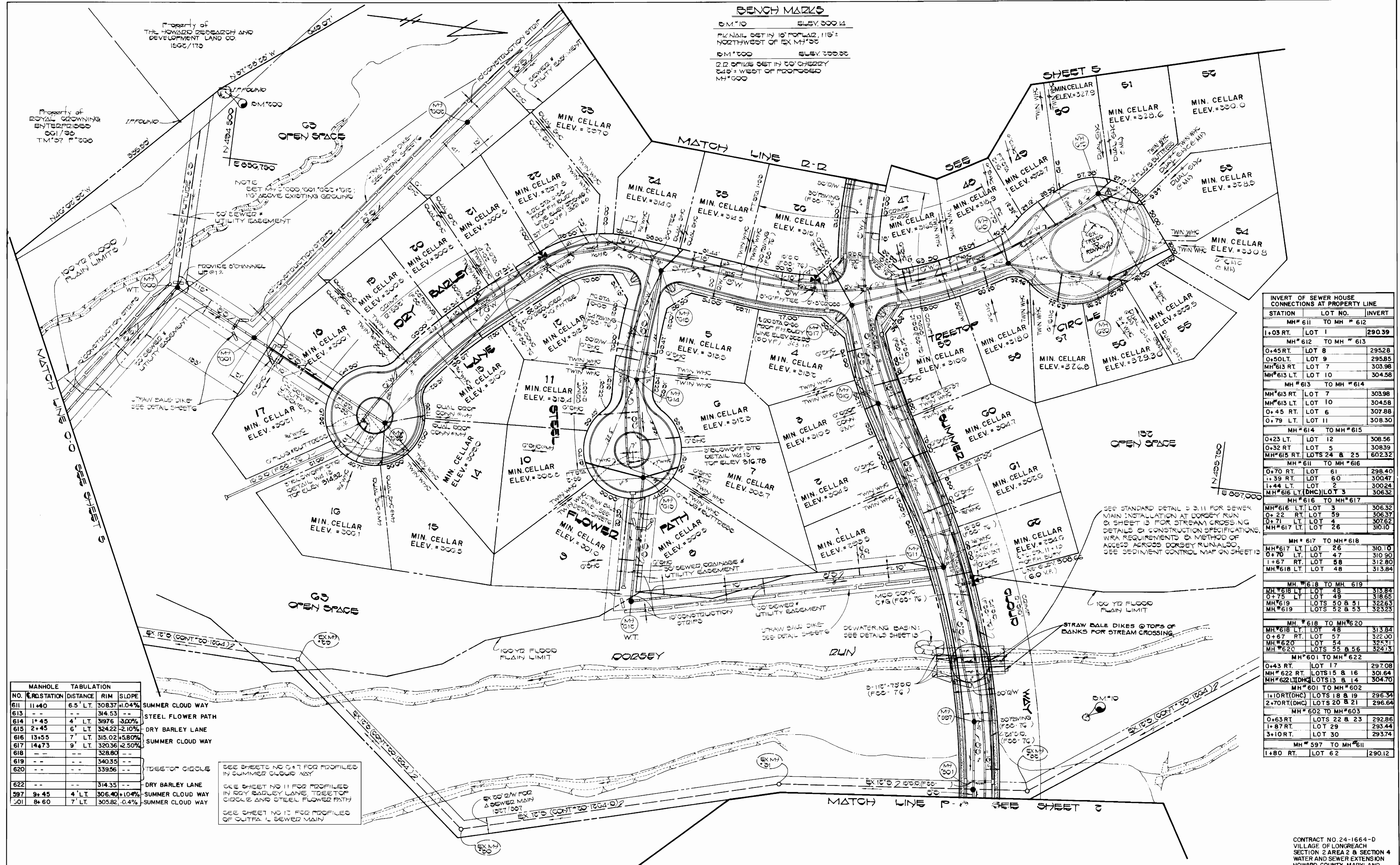
DIRECTOR OF PUBLIC WORKS \_\_\_\_\_ DATE \_\_\_\_\_  
CHIEF, BUREAU OF ENGINEERING \_\_\_\_\_ DATE \_\_\_\_\_

DES:					
DRN:					
CHK:					
DATE:					
BY:	NO.	REVISION	DATE	600' SCALE MAP NO.	BLOCK NO.

SEWER AS-BUILT  
VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
CONTRACT NO 24-1664-D

SCALE  
AS  
SHOWN

SHEET  
3A OF 13



**BENCH MARKS**  
 BM\*10 ELEV. 300.14  
 RAIL NAIL SET IN 10' POPLAR, 115' NORTHWEST OF EX MH\*00  
 BM\*000 ELEV. 300.00  
 D.D. OFFICE SET IN 10' CHERRY 145' WEST OF PROPOSED MH\*000

**INVERT OF SEWER HOUSE CONNECTIONS AT PROPERTY LINE**

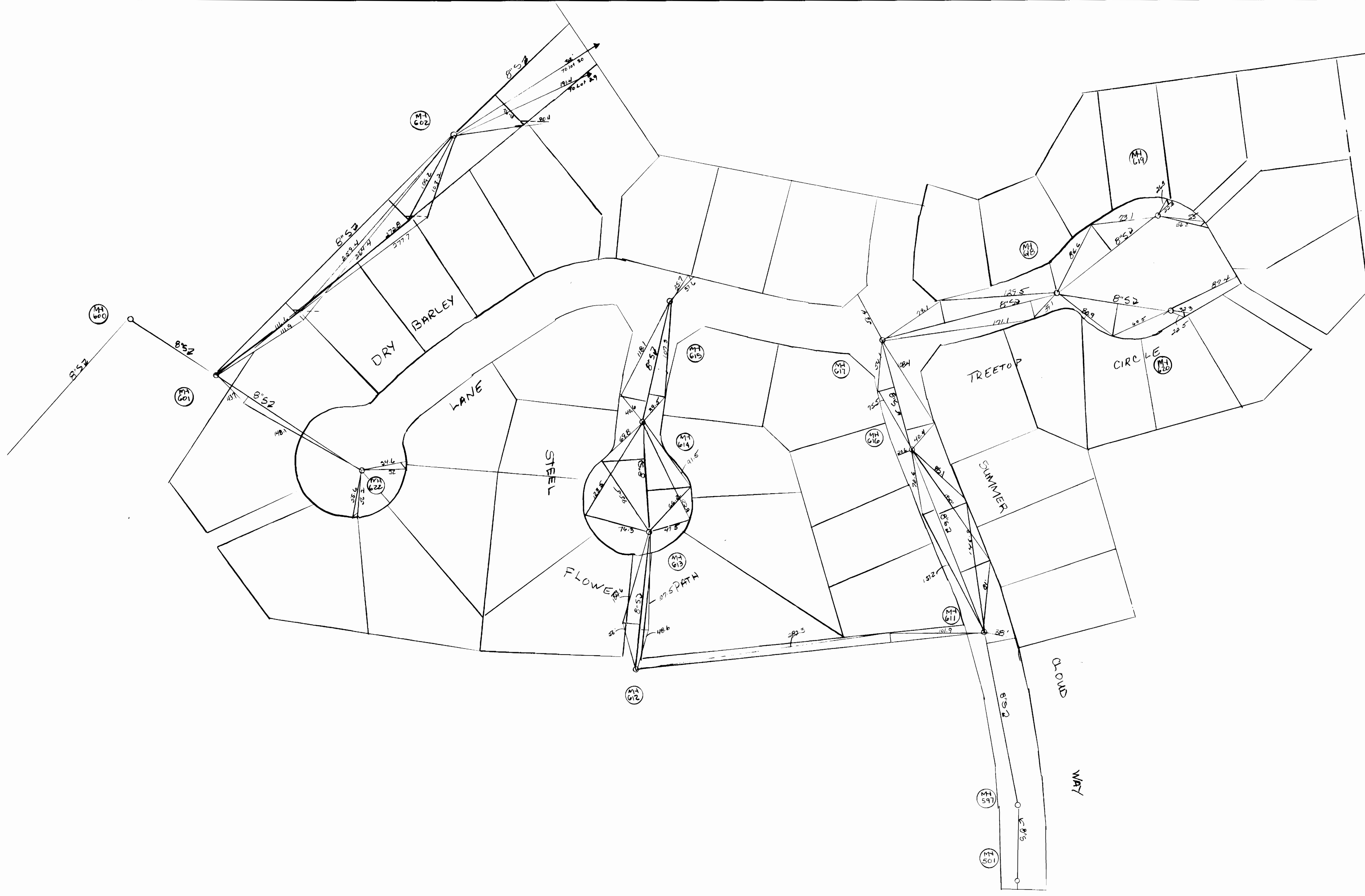
STATION	LOT NO.	INVERT
MH*611 TO MH*612		
1+03 RT. LOT 1		290.39
MH*612 TO MH*613		
0+45 RT. LOT 8		295.28
0+50 LT. LOT 9		295.85
MH*613 RT. LOT 7		303.98
MH*613 LT. LOT 10		304.58
MH*613 TO MH*614		
MH*613 RT. LOT 7		303.98
MH*613 LT. LOT 10		304.58
0+45 RT. LOT 6		307.88
0+79 LT. LOT 11		308.30
MH*614 TO MH*615		
0+23 LT. LOT 12		308.56
0+32 RT. LOT 5		308.39
MH*615 RT. LOTS 24 & 25		602.32
MH*611 TO MH*616		
0+70 RT. LOT 61		298.40
1+39 RT. LOT 60		300.47
1+44 LT. LOT 2		300.24
MH*616 LT. (DHC) LOT 3		306.32
MH*616 TO MH*617		
MH*616 LT. LOT 3		306.32
0+22 RT. LOT 59		306.37
0+71 LT. LOT 4		307.62
MH*617 LT. LOT 26		310.10
MH*617 TO MH*618		
MH*617 LT. LOT 26		310.10
0+70 LT. LOT 47		310.90
1+67 RT. LOT 58		312.80
MH*618 LT. LOT 48		313.84
MH*618 TO MH*619		
MH*618 LT. LOT 48		313.84
0+75 LT. LOT 49		316.65
MH*619 LOTS 50 & 51		322.63
MH*619 LOTS 52 & 53		323.23
MH*618 TO MH*620		
MH*618 LT. LOT 48		313.84
0+67 RT. LOT 57		322.00
MH*620 LOT 54		325.71
MH*620 LOTS 55 & 56		324.13
MH*601 TO MH*622		
0+43 RT. LOT 17		297.08
MH*622 RT. LOTS 15 & 16		301.64
MH*622 LT. (DHC) LOTS 13 & 14		304.70
MH*601 TO MH*602		
1+10 RT. (DHC) LOTS 18 & 19		296.34
2+70 RT. (DHC) LOTS 20 & 21		296.64
MH*602 TO MH*603		
0+63 RT. LOTS 22 & 23		292.86
1+87 RT. LOT 29		295.44
3+10 RT. LOT 30		293.74
MH*597 TO MH*611		
1+80 RT. LOT 62		290.12

**MANHOLE TABULATION**

NO.	END STATION	DISTANCE	RIM	SLOPE
611	1+40	6.5' LT.	308.37	11.04%
613	--	--	314.53	--
614	1+45	4' LT.	319.76	3.00%
615	2+45	6' LT.	324.22	-2.10%
616	13+55	7' LT.	315.02	15.80%
617	14+73	9' LT.	320.36	12.50%
618	--	--	328.80	--
619	--	--	340.35	--
620	--	--	339.56	--
622	--	--	314.33	--
597	9+45	4' LT.	306.40	11.04%
501	8+60	7' LT.	305.82	-0.4%

SEE SHEETS NO. 0-17 FOR PROFILES IN SUMMER CLOUD WAY  
 SEE SHEET NO. 11 FOR PROFILES IN DRY BARLEY LANE, TREETOP CIRCLE AND STEEL FLOWER PATH  
 SEE SHEET NO. 12 FOR PROFILES OF OUTFALL SEWER MAIN

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works Chief, Bureau of Utilities	FISHER, COLLINS AND CARTER, INC. CONSULTING ENGINEERS AND LAND SURVEYORS 8388 COURT AVENUE ELLICOTT CITY, MARYLAND 21043	DES. D.B.S.		PLAN WATER AND SEWER MAINS	VILLAGE OF LONGREACH SECTION 2 AREA 2 & SECTION 4 CONTRACT NO. 24-1664-D SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
		DRN. D.B.S.				SHEET 4 OF 13
DATE: 2-3-88 DATE: 2/28/88	DATE: 01/28/88	DATE: 01/28/88	DATE: 01/28/88	600 SCALE MAP NO. 37	BLOCK NO.	AS BUILT



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS \_\_\_\_\_ DATE \_\_\_\_\_ CHIEF, BUREAU OF ENGINEERING \_\_\_\_\_ DATE \_\_\_\_\_

DES:					
DRN:					
CHK:					
DATE:	BY	NO.	REVISION	DATE	600' SCALE MAP NO. _____ BLOCK NO. _____

SEWER AS BUILT  
VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
CONTRACT NO 24-1664-D

SCALE AS SHOWN  
SHEET 4 OF 13

**BENCH MARKS**

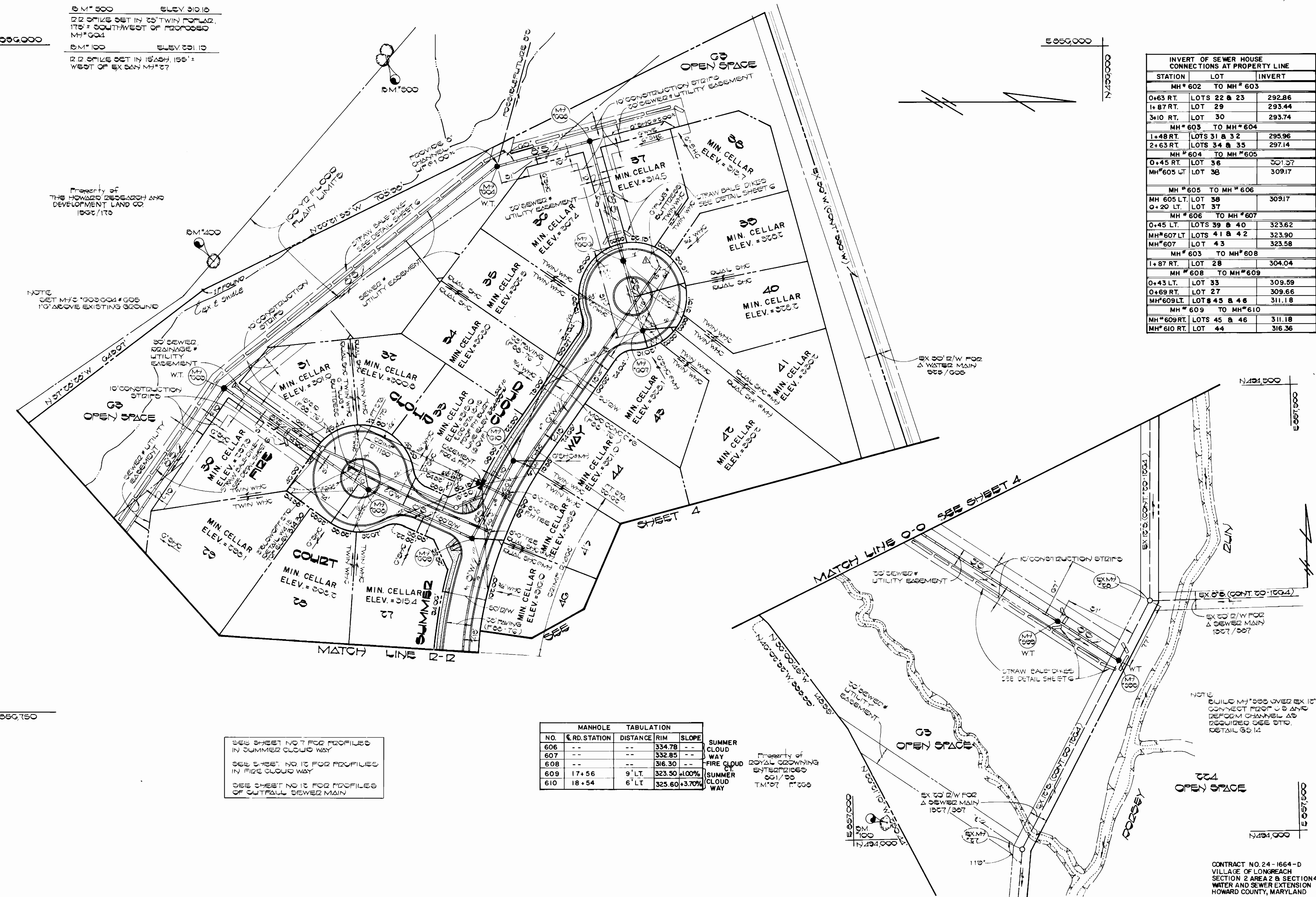
BM 100	ELEV 309.04
R.D. SPIKE SET IN 15' P.O.P.L.A.R. 145'	WEST OF PROPOSED MH#603
BM 500	ELEV 310.18
R.D. SPIKE SET IN 25' TWIN P.O.P.L.A.R. 175'	SOUTHWEST OF PROPOSED MH#604
BM 100	ELEV 301.10
R.D. SPIKE SET IN 15' A.S.H. 155'	WEST OF EX SAN MH#27

E 056,000  
N 424,750

E 056,000  
N 424,750

Property of THE HOWARD RESEARCH AND DEVELOPMENT LAND CO 1532/173

NOTE: SET MH# 27, 30, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000



**INVERT OF SEWER HOUSE CONNECTIONS AT PROPERTY LINE**

STATION	LOT	INVERT
<b>MH# 602 TO MH# 603</b>		
0+63 RT.	LOTS 22 & 23	292.86
1+87 RT.	LOT 29	293.44
3+10 RT.	LOT 30	293.74
<b>MH# 603 TO MH# 604</b>		
1+48 RT.	LOTS 31 & 32	295.96
2+63 RT.	LOTS 34 & 35	297.14
<b>MH# 604 TO MH# 605</b>		
0+45 RT.	LOT 36	301.37
MH# 605 LT.	LOT 38	309.17
<b>MH# 605 TO MH# 606</b>		
MH 605 LT.	LOT 38	309.17
0+20 LT.	LOT 37	309.17
<b>MH# 606 TO MH# 607</b>		
0+45 LT.	LOTS 39 & 40	323.62
MH# 607 LT.	LOTS 41 & 42	323.90
MH# 607	LOT 43	323.58
<b>MH# 603 TO MH# 608</b>		
1+87 RT.	LOT 28	304.04
<b>MH# 608 TO MH# 609</b>		
0+43 LT.	LOT 33	309.59
0+69 RT.	LOT 27	309.66
MH# 609 LT.	LOTS 45 & 46	311.18
<b>MH# 609 TO MH# 610</b>		
MH# 609 RT.	LOTS 45 & 46	311.18
MH# 610 RT.	LOT 44	316.36

SEE SHEET NO 7 FOR PROFILES IN SUMMER CLOUD WAY  
SEE SHEET NO 10 FOR PROFILES IN FIRE CLOUD WAY  
SEE SHEET NO 12 FOR PROFILES OF CULVERT SEWER MAIN

**MANHOLE TABULATION**

NO.	RD. STATION	DISTANCE	RIM	SLOPE	WAY
606	--	--	334.78	--	SUMMER CLOUD WAY
607	--	--	332.85	--	FIRE CLOUD WAY
608	--	--	316.30	--	FIRE CLOUD WAY
609	17+56	9' LT.	323.50	1.00%	SUMMER CLOUD WAY
610	18+54	6' LT.	325.60	3.70%	SUMMER CLOUD WAY

Property of ROYAL CROWNING ENTERPRISES 06/1/00 TM'07 P'000

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND James J. Chen DIRECTOR OF PUBLIC WORKS DATE: 2/1/00 Robert W. Benjmin CHIEF, BUREAU OF UTILITIES DATE: 2-3-00	FISHER, COLLINS AND CARTER, INC. CONSULTING ENGINEERS AND LAND SURVEYORS 8388 COURT AVENUE ELLICOTT CITY, MARYLAND 21043 Terrell A. Fisher DATE: 01/28/00	DES: D.B.S. DRN: D.B.S. CHK: T.A.F.	PLAN: 06/27/03 WATER MAIN BELOW G.F. BY: NO. REVISION DATE: 4-7-00	<b>PLAN</b> <b>WATER AND SEWER MAINS</b>	<b>VILLAGE OF LONGREACH</b> SECTION 2 AREA 2 & SECTION 4 CONTRACT NO. 24-1664-D SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 5 OF 13
		CONTRACT NO. 24-1664-D VILLAGE OF LONGREACH SECTION 2 AREA 2 & SECTION 4 WATER AND SEWER EXTENSION HOWARD COUNTY, MARYLAND	AS-BUILT 30-56			





DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

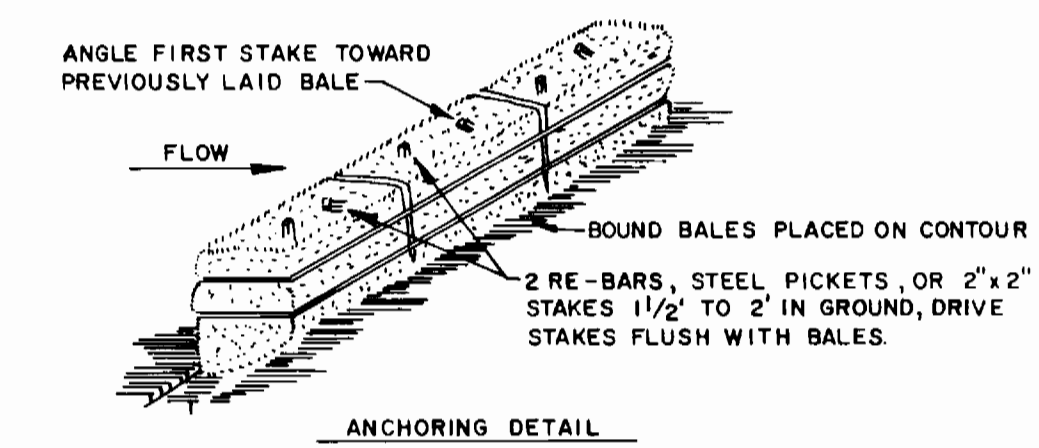
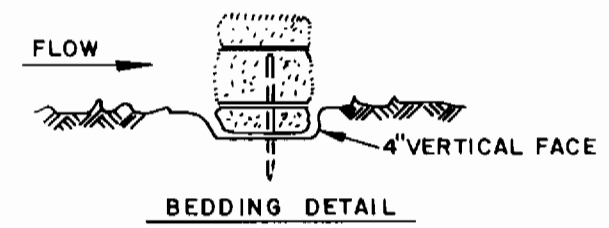
DIRECTOR OF PUBLIC WORKS \_\_\_\_\_ DATE \_\_\_\_\_ CHIEF, BUREAU OF ENGINEERING \_\_\_\_\_ DATE \_\_\_\_\_

DES:					
DRN:					
CHK:					
DATE:					
BY	N.O.		REVISION		DATE

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

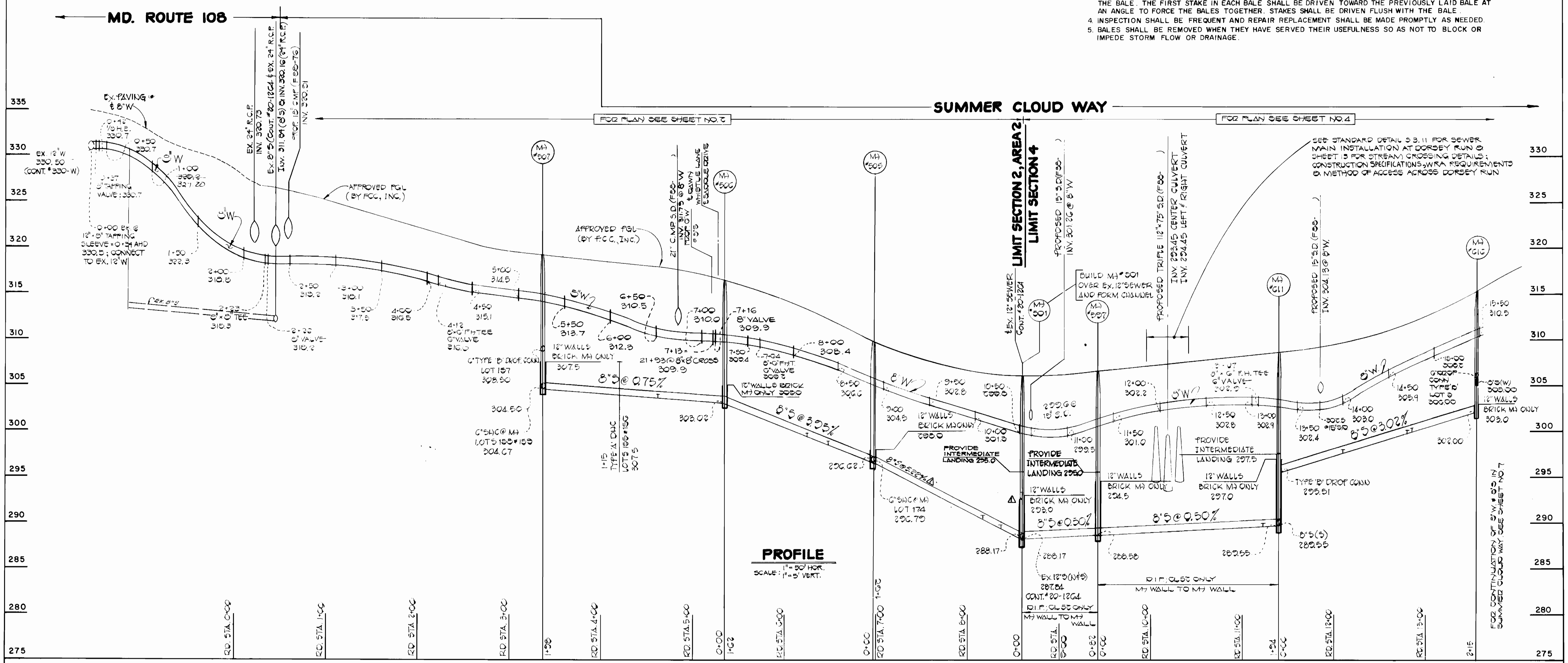
SEWER AS-BUILT  
VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
CONTRACT NO 24-1664-D

SCALE AS SHOWN  
SHEET 5A OF 13

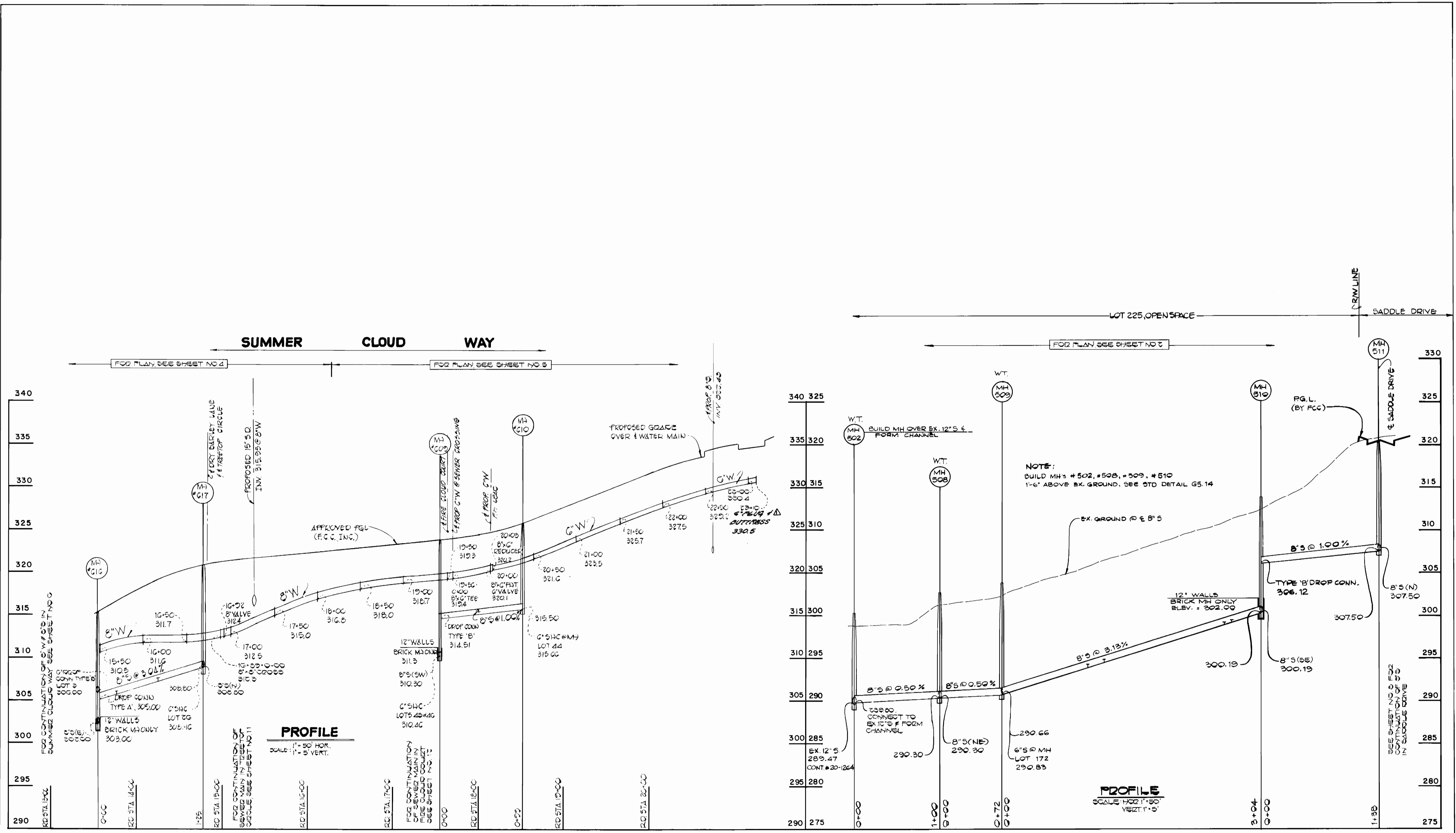


**STRAW BALE DIKE**

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4 INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.



<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>[Signature]</i> DIRECTOR OF PUBLIC WORKS DATE: 2-3-88</p> <p><i>[Signature]</i> CHIEF, BUREAU OF UTILITIES DATE: 2-3-88</p>	<p>FISHER, COLLINS AND CARTER, INC. CONSULTING ENGINEERS AND LAND SURVEYORS</p> <p>8388 COURT AVENUE ELLCOTT CITY, MARYLAND 21043</p> <p><i>[Signature]</i> TERRELL A. FISHER DATE: 01/28/88</p>	<p>DES: D.B.S.</p> <p>DRN: D.B.S.</p> <p>CHK: T.A.F.</p> <p>DATE: 01/28/88</p>	<p style="text-align: center;"><b>PROFILES &amp; DETAILS</b></p> <p style="text-align: center;"><b>WATER AND SEWER MAINS</b></p> <p>600 SCALE MAP NO. 37 BLOCK NO. _____</p>	<p style="text-align: center;"><b>VILLAGE OF LONGREACH</b></p> <p style="text-align: center;">SECTION 2 AREA 2 &amp; SECTION 4 CONTRACT NO. 24-1664-D SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 6 OF 13</p>
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BRUNING 68150

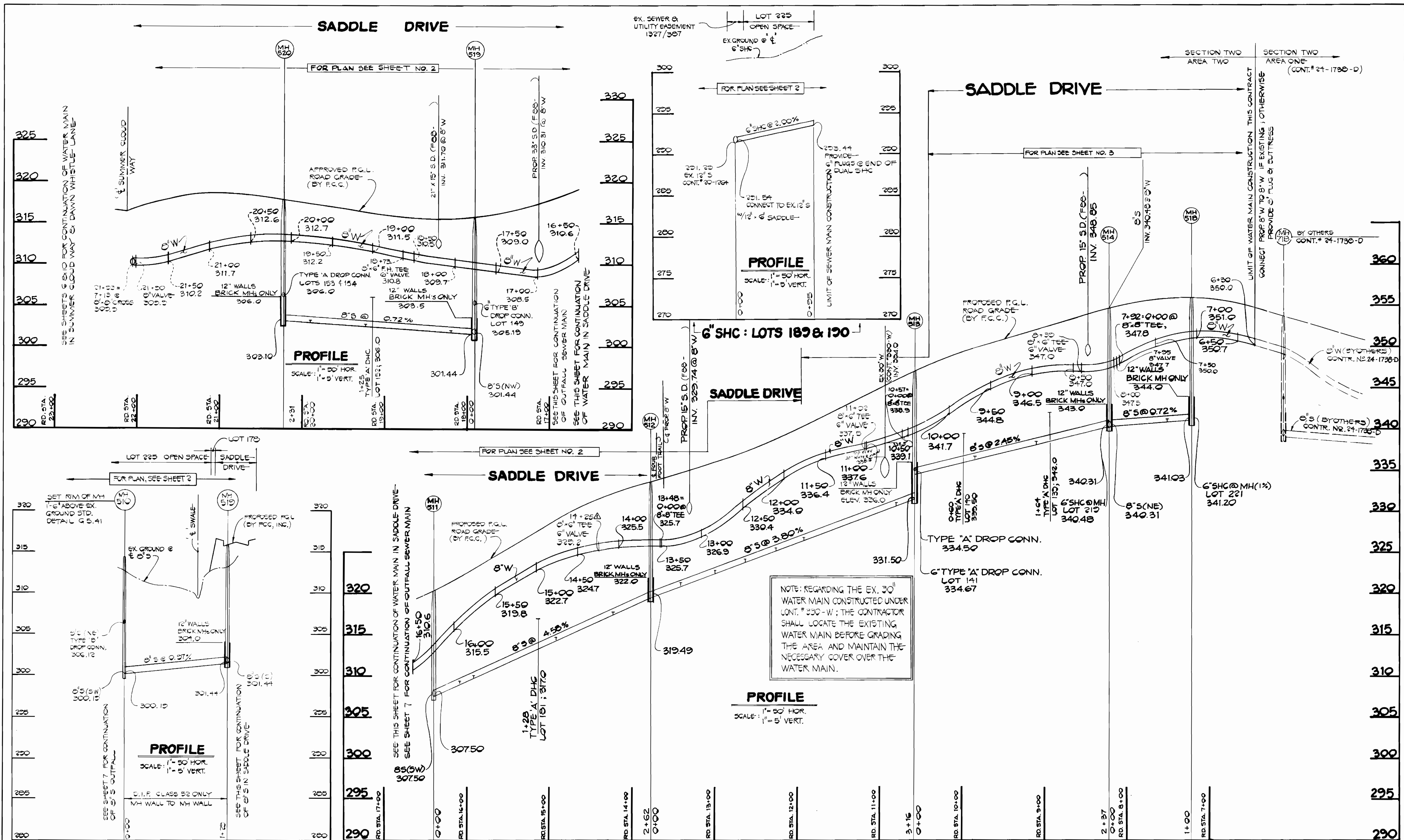
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		FISHER, COLLINS AND CARTER, INC. CONSULTING ENGINEERS AND LAND SURVEYORS 8388 COURT AVENUE ELLICOTT CITY, MARYLAND 21043		DES: D.B.S. DRN: D.B.S. CHK: T.A.F. DATE: 01/28/88	
Director of Public Works <i>[Signature]</i> DATE: 2-3-88	Chief, Bureau of Utilities <i>[Signature]</i> DATE: 2-3-88	Chief, Bureau of Engineering <i>[Signature]</i> DATE: 2-8-88	Chief, Land Development Division <i>[Signature]</i> DATE:	TERRELL A. FISHER DATE:	

NO.	REVISION	DATE
1	CHANGE 6" S TO 8" S VALVE	1-2-88

PROFILES  
 WATER AND SEWER MAINS  
 600 SCALE MAP NO. 37 BLOCK NO.

VILLAGE OF LONGREACH  
 SECTION 2 AREA 2 & SECTION 4  
 CONTRACT NO. 24-1664-D  
 SIXTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN  
 SHEET 7 OF 13

AC 1111 - 8 30 86



BRUNING 44-132-69150

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

*James J. Lewis* 2/10/88  
DIRECTOR OF PUBLIC WORKS DATE

*Robert M. Benjamin* 2-3-88  
CHIEF, BUREAU OF UTILITIES DATE

*William B. Collins* 2-8-88  
CHIEF, BUREAU OF ENGINEERING DATE

*Terrell A. Fisher* 2-8-88  
BRIEF, LAND DEVELOPMENT DIVISION DATE

**FISHER, COLLINS AND CARTER, INC.**  
CONSULTING ENGINEERS AND LAND SURVEYORS

8388 COURT AVENUE  
ELLCOTT CITY, MARYLAND 21043

*Terrell A. Fisher* 2/8/88  
DATE



DES: D.B.S.	
DRN: D.B.S.	
CHK: T.A.F.	
DATE: 01/28/88	
BY: DAN	REVISION: REVISE PROFILE STATION AND ELEVATION 4/28
NO:	REVISION:
DATE:	DATE:

**PROFILES**  
**WATER AND SEWER MAINS**

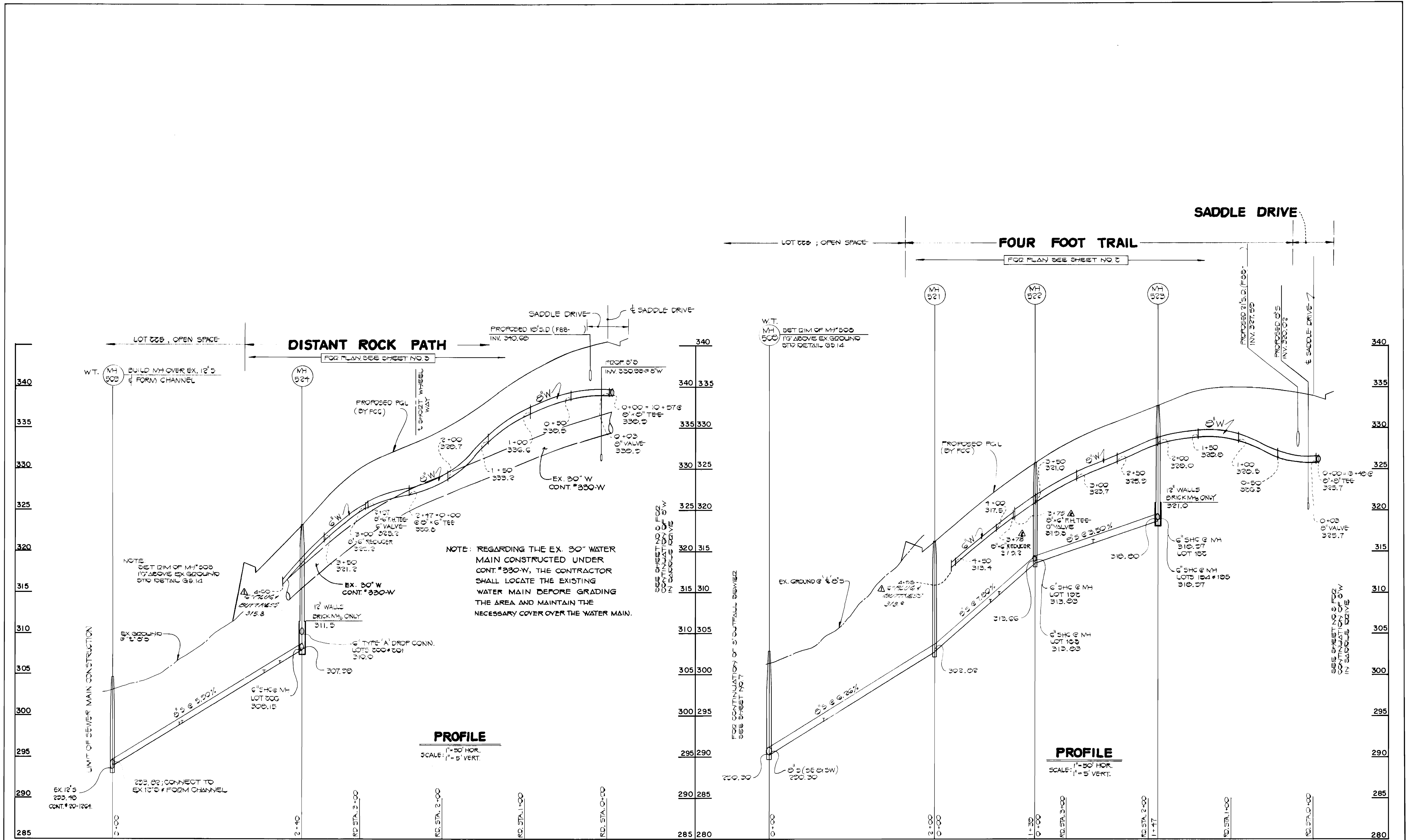
600' SCALE MAP NO. 37 BLOCK NO.

**VILLAGE OF LONGREACH**  
SECTION 2 AREA 2 & SECTION 4  
CONTRACT NO. 24-1664-D  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

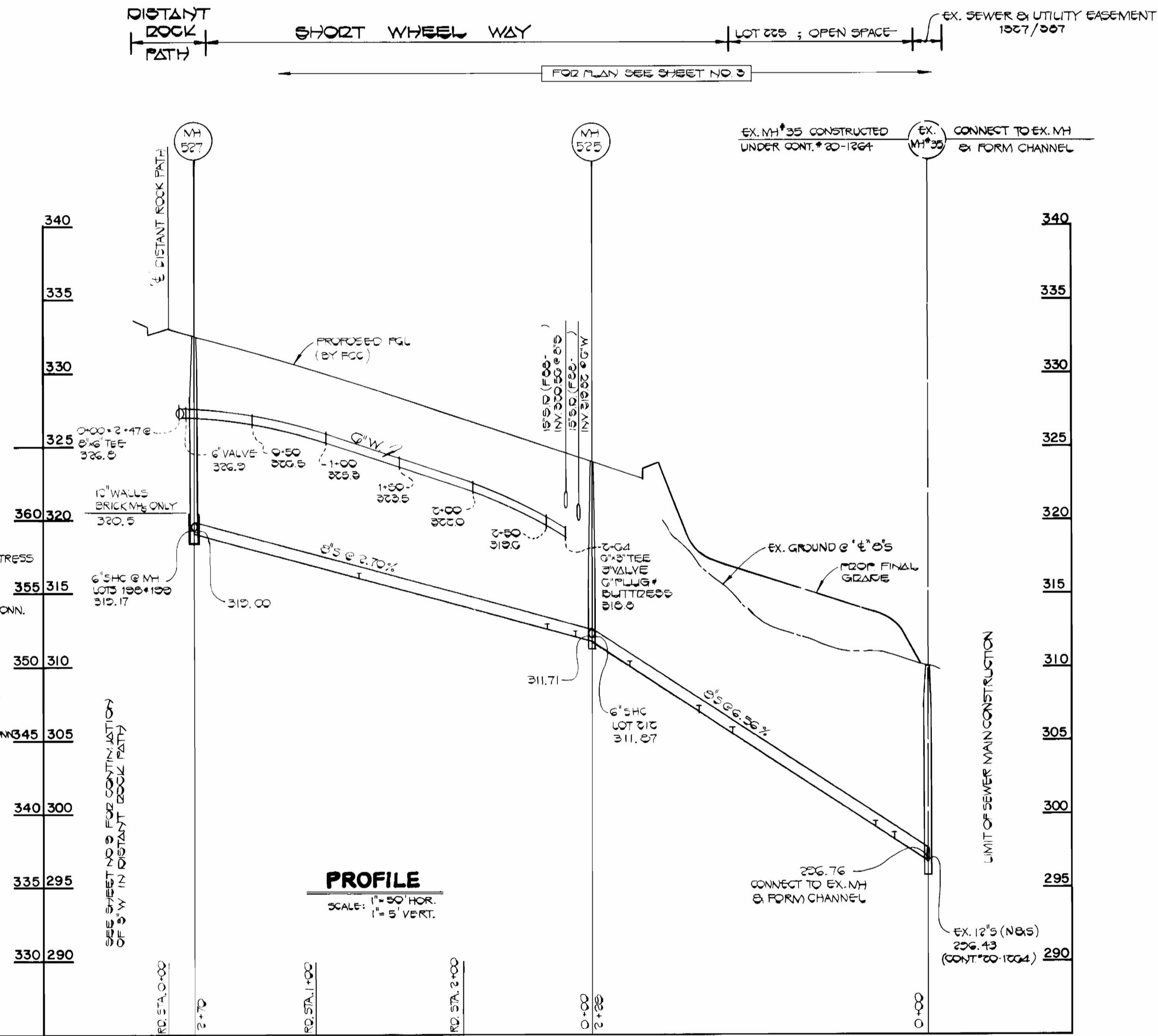
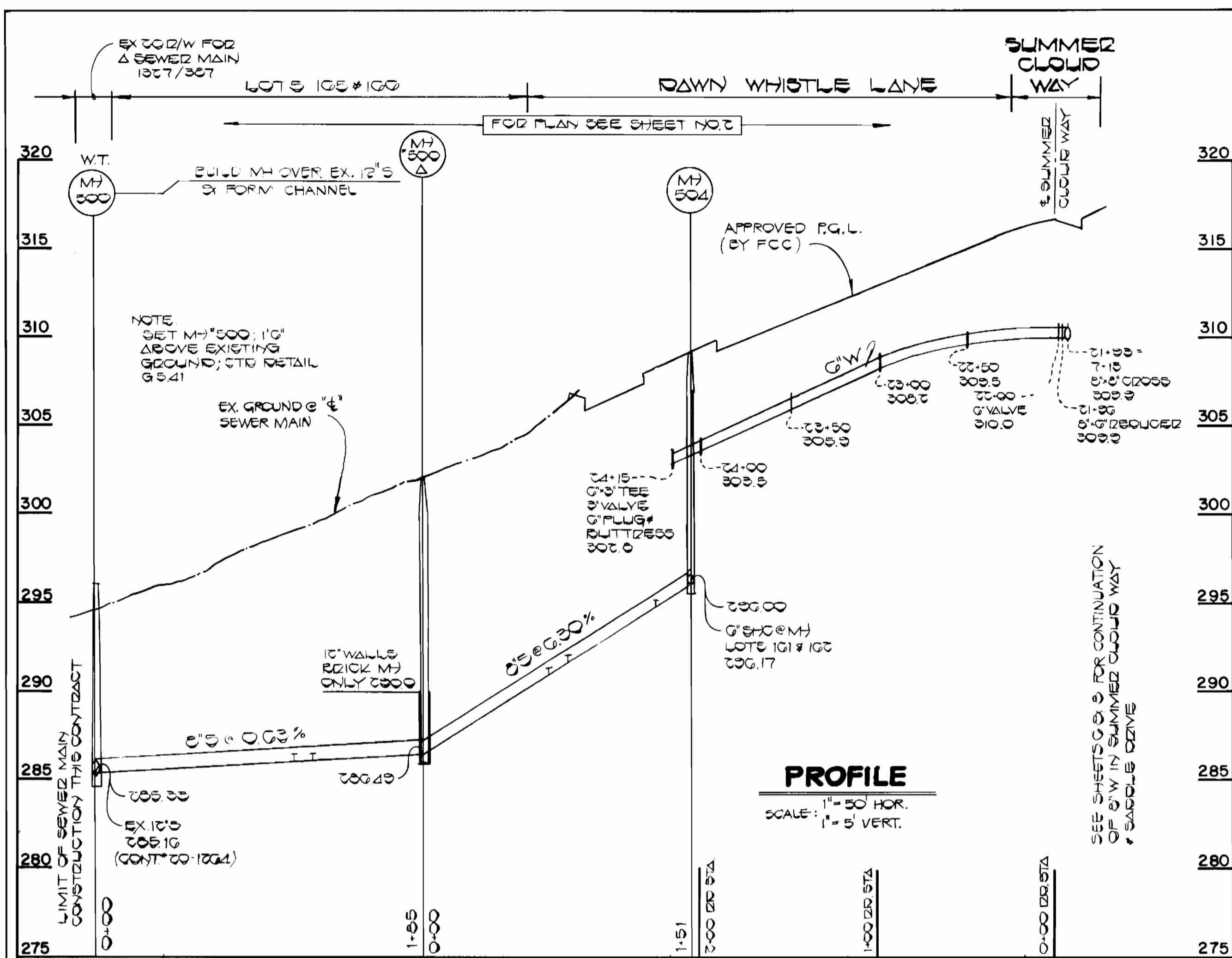
SHEET 8 OF 13

AS-BU' E-30 56



<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>James H. Lewis</i> DIRECTOR OF PUBLIC WORKS DATE: 2-3-88</p>	<p>FISHER, COLLINS AND CARTER, INC. CONSULTING ENGINEERS AND LAND SURVEYORS 8388 COURT AVENUE ELLICOTT CITY, MARYLAND 21043</p> <p><i>Terrell A. Fisher</i> DATE: 01/28/88</p>	<p>DES: D.B.S. ORN: D.B.S. CHK: T.A.F.</p> <p>DATE: 01/28/88</p>	<p style="text-align: center;"><b>PROFILES</b> WATER AND SEWER MAINS</p>	<p style="text-align: center;"><b>VILLAGE OF LONGREACH</b> SECTION 2 AREA 2 &amp; SECTION 4 CONTRACT NO. 24-1664-D SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 9 OF 13</p>
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CONTRACT NO. 24-1664-D  
VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
WATER AND SEWER EXTENSION  
HOWARD COUNTY, MARYLAND



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James A. Shaw* 2-8-88  
DIRECTOR OF PUBLIC WORKS DATE

*Robert D. Quinn* 2-3-88  
CHIEF, BUREAU OF UTILITIES DATE

*William B. Riley* 2-8-88  
CHIEF, BUREAU OF ENGINEERING DATE

*Lucy L. Fisher* 2-8-88  
CHIEF, LAND DEVELOPMENT DIVISION DATE

FISHER, COLLINS AND CARTER, INC.  
CONSULTING ENGINEERS AND LAND SURVEYORS

8388 COURT AVENUE  
ELLICOTT CITY, MARYLAND 21043

*Terrell A. Fisher* 2-28-88  
TERRELL A. FISHER DATE

DES: D.B.S.					
DRN: D.B.S.					
CHK: T.A.F.					
DATE: 01/28/88	BY:	NO.:	REVISION:	DATE:	

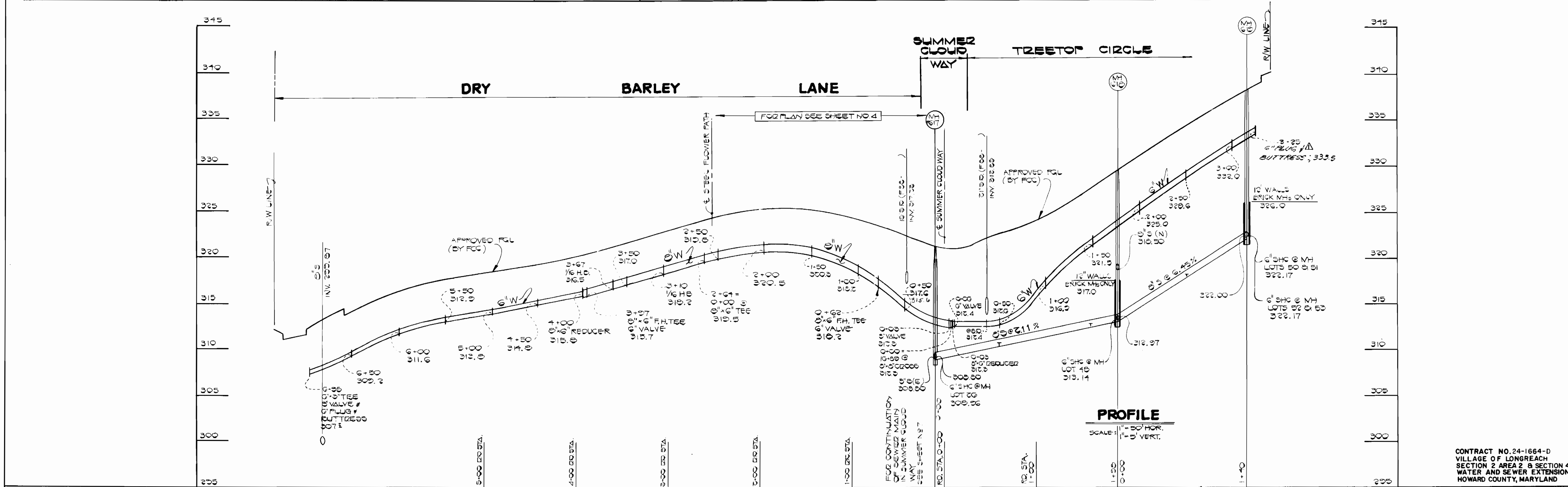
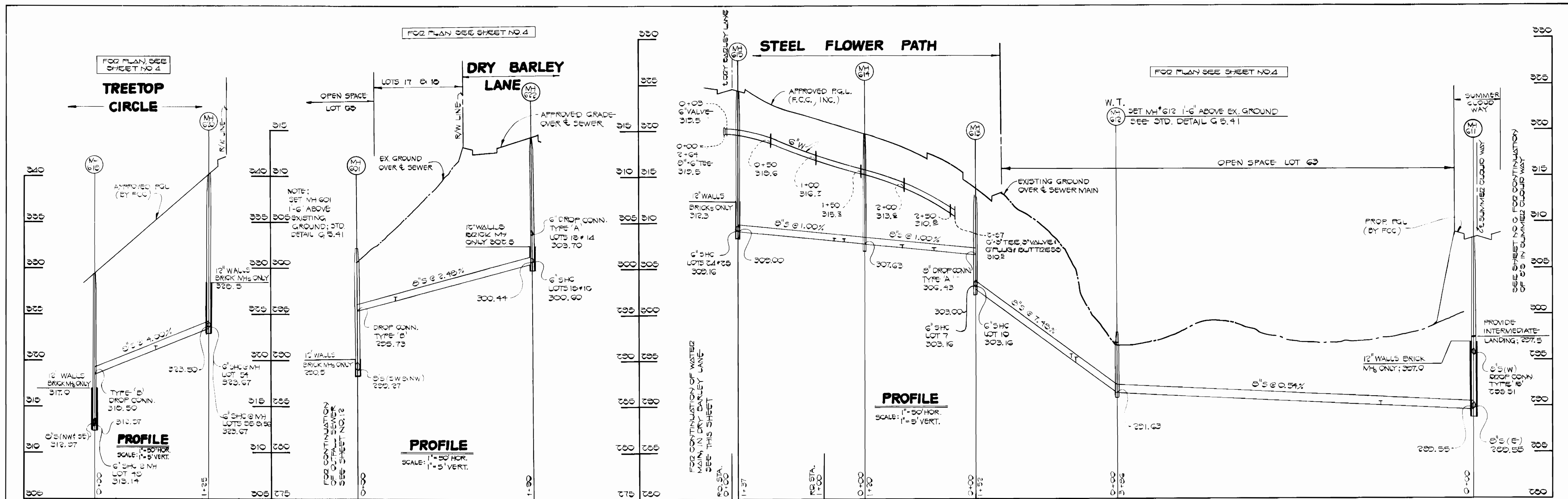
PROFILES  
WATER AND SEWER MAINS

600' SCALE MAP NO. 37 BLOCK NO.

VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
CONTRACT NO. 24-1664-D  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 10 OF 13

CONTRACT NO. 24-1664-D  
VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
WATER AND SEWER EXTENSION  
HOWARD COUNTY, MARYLAND



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James M. Lewis* 2-3-88  
DIRECTOR OF PUBLIC WORKS DATE

*Robert H. Reimer* 2-3-88  
CHIEF, BUREAU OF UTILITIES DATE

FISHER, COLLINS AND CARTER, INC.  
CONSULTING ENGINEERS AND LAND SURVEYORS

8388 COURT AVENUE  
ELLCOTT CITY, MARYLAND 21043

*Terrell A. Fisher*  
TERRELL A. FISHER DATE

DES: D.B.S.  
DRN: D.B.S.  
CHK: T.A.F.

DATE: 01/28/88

PROFILES  
WATER AND SEWER MAINS

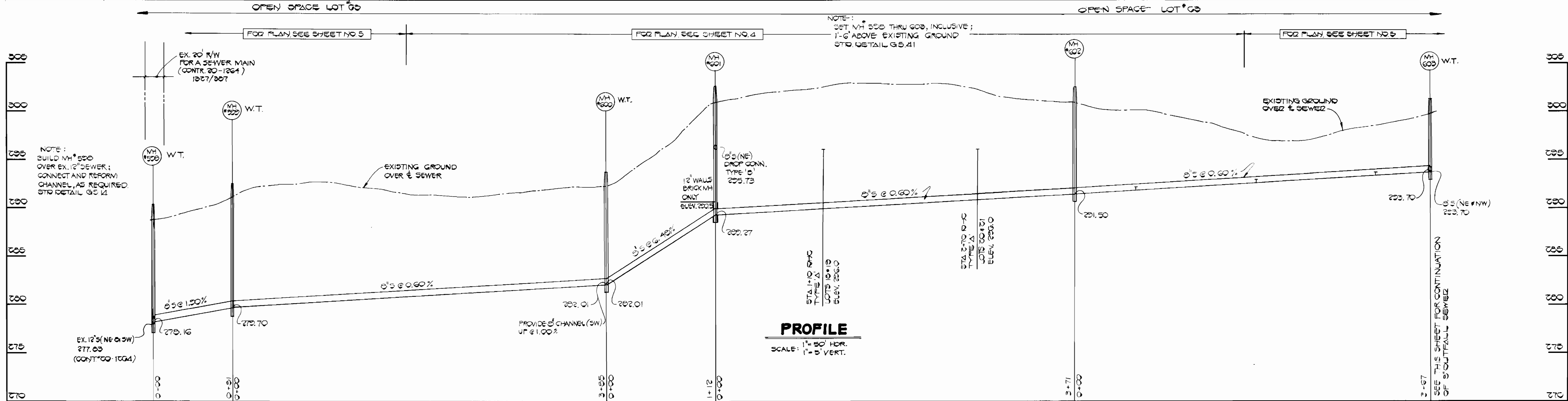
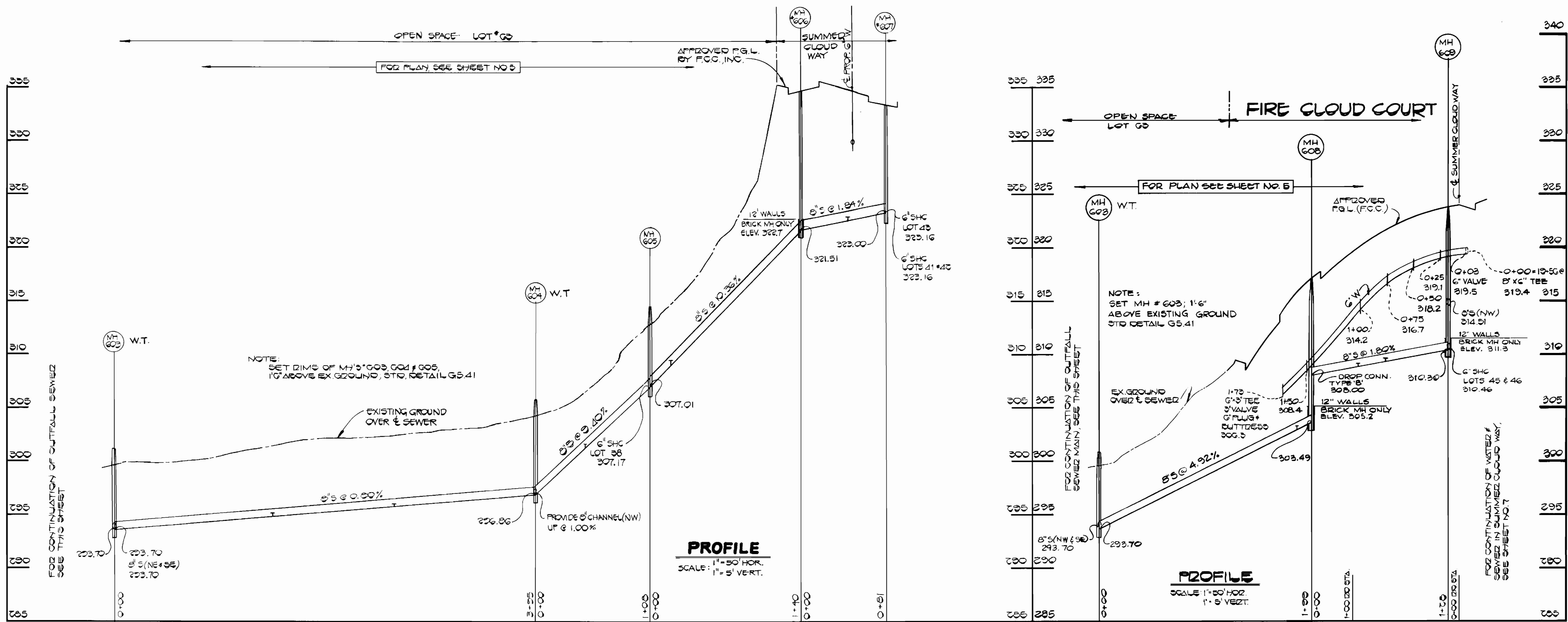
DATE: 01/28/88

VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
CONTRACT NO. 24-1664-D  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 11 OF 13

CONTRACT NO. 24-1664-D  
VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
WATER AND SEWER EXTENSION  
HOWARD COUNTY, MARYLAND

AS-BUILT 8-20-86



CONTRACT NO. 24-1664-D  
VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
WATER AND SEWER EXTENSION  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James A. Kelly*  
DIRECTOR OF PUBLIC WORKS  
DATE: 2-3-88

*Robert A. Fisher*  
CHIEF, LAND DEVELOPMENT DIVISION  
DATE: 2-8-88

FISHER, COLLINS AND CARTER, INC.  
CONSULTING ENGINEERS AND LAND SURVEYORS  
8388 COURT AVENUE  
ELLCOTT CITY, MARYLAND 21043

*Terrell A. Fisher*  
DATE: 01/28/88

DES: D.B.S.	
DRN: D.B.S.	
CHK: T.A.F.	
DATE: 01/28/88	
BY: NO.	
REVISION	
DATE	

PROFILES  
WATER AND SEWER MAINS

600' SCALE MAP NO. 37 BLOCK NO.

VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
CONTRACT NO. 24-1664-D  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 12 OF 12

BRUNING 63150

20-48



- EROSION AND SEDIMENT CONTROL NOTES:**
1. ALL SEDIMENT CONTROL OPERATIONS ARE TO BE DONE IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL AND THE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL IN DEVELOPING AREAS.
  2. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF BUSINESS.
  3. ALL EXCAVATED MATERIALS SHALL BE STOCKPILED ON THE UPGRADE SIDE OF THE SEWER MAIN TRENCH.
  4. IMMEDIATELY FOLLOWING BACKFILL OF THE SEWER MAIN TRENCH, ALL DISTURBED AREAS ARE TO BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION AND SEEDING NOTES SHOWN ON THIS SHEET.
  5. THROUGHOUT THE PROJECT, THE CONTRACTOR SHALL REGULARLY INSPECT ALL SEDIMENT CONTROL DEVICES AND PROVIDE ALL NECESSARY MAINTENANCE TO INSURE THAT ALL DEVICES ARE IN OPERATIVE CONDITION.
  6. ALL SEDIMENT CONTROL FACILITIES SHALL REMAIN IN PLACE UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
  7. SEE SEWER MAIN CONSTRUCTION SEQUENCE THIS SHEET.
  8. SEE STREAM CROSSING DETAIL AND CONSTRUCTION REQUIREMENTS AND SPECIFICATIONS THIS SHEET FOR SEWER MAIN INSTALLATION AND ACCESS ACROSS THE LITTLE PATUXENT RIVER.
  9. SEE SEDIMENT CONTROL MAP (SCALE 1"=200') ON THIS SHEET FOR SEDIMENT CONTROL DEVICES ALONG THE SEWER MAIN INSTALLATION.

**CONSTRUCTION REQUIREMENTS & SPECIFICATIONS FOR STREAM CROSSING**

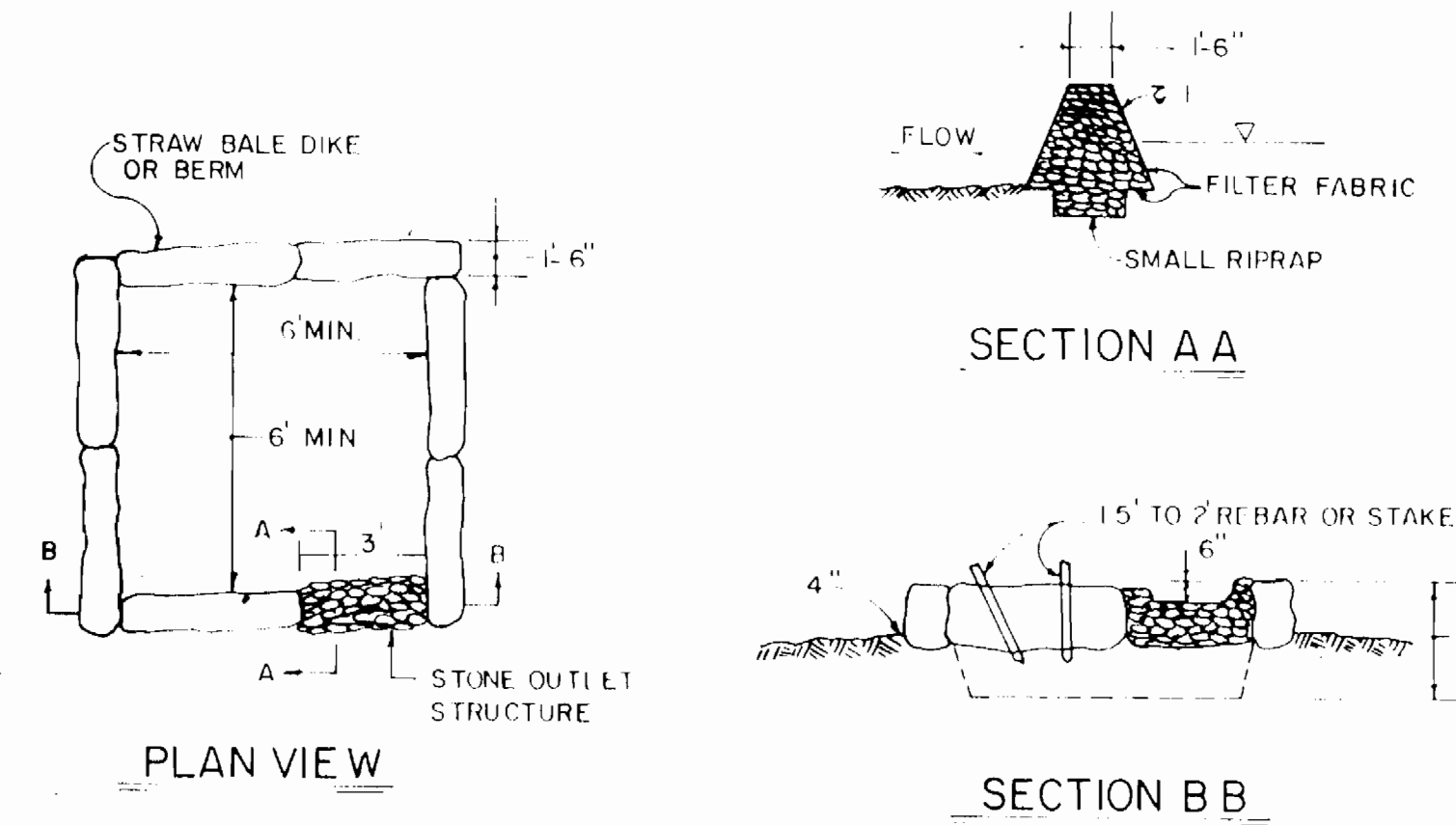
1. INSTALLATION OF ALL REQUIRED EROSION & SEDIMENT CONTROL DEVICES SHALL BE THE FIRST ORDER OF BUSINESS.
2. THE FLOW DIVERSION CULVERTS MUST BE SIZED TO ACCOMMODATE NORMAL STREAM FLOW.
3. THE FLOW BARRIER SHALL BE CONSTRUCTED OF IMPERVIOUS SANDBAGS, WASHED RIP-RAP OR OTHER APPROVED MATERIAL IN ACCORDANCE WITH WPD 2.3. THE MATERIALS SHALL BE SIZED TO WITHSTAND NORMAL STREAM FLOW VELOCITIES.
4. ALL DEWATERING OF THE CONSTRUCTION AREAS SHALL BE PUMPED TO A DEWATERING BASIN (WPD 1.1) PRIOR TO RE-ENTERING THE STREAM. SEE DETAILS OF THE DEWATERING BASIN THIS SHEET.
5. THE TEMPORARY CULVERT CROSSING SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DETAIL TAG-1 OF THE 1983 MARYLAND STANDARDS & SPECIFICATIONS FOR SEDIMENT AND EROSION CONTROL.
6. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN SEDED, MULCHED & STABILIZED IN ACCORDANCE WITH THE APPROVED SEDIMENT & EROSION CONTROL PLAN AND ALSO UNTIL THE INSPECTING AUTHORITY APPROVES THEIR REMOVAL.

**PERMANENT STABILIZATION AND SEEDING NOTES**

1. REFERENCE SECTION 219 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS FOR COMPLETE REQUIREMENTS REGARDING PERMANENT STABILIZATION AND SEEDING OF ALL DISTURBED AREAS REGARDING PERMANENT SEEDING.
2. REFERENCE PARAGRAPH 219.11 FOR EXECUTION REQUIREMENTS REGARDING PERMANENT SEEDING.
3. LIMESTONE: APPLY LIMESTONE AT THE RATE OF 1 1/2 TONS PER ACRE ON SANDY AND SILTY SOILS AND 2.3 TONS PER ACRE ON CLAY OR LOAM SOILS.
4. FERTILIZER: APPLY FERTILIZER AT THE RATE OF 600 POUNDS OF 0-20-20 PER ACRE WITH LIMESTONE APPLICATION. (SEE ABOVE) IMMEDIATELY PRIOR TO SEEDING, APPLY 400 POUNDS OF 38-0-0 UREAFORM AND 500 POUNDS OF 10-20-20 PER ACRE.
5. PERMANENT SEED SHALL CONFORM TO THE REQUIREMENTS, MIXTURES AND APPLICATION RATES AS SPECIFIED IN SUBPARAGRAPH 219.10-2.
6. MULCH SHALL BE CLEAN, WEED-FREE UNROTTED STRAW APPLIED AT THE RATE OF NOT LESS THAN 1 1/2 TONS PER ACRE OR WOOD CHIPS WITH A COVERAGE OF 1 1/2 INCHES IN DEPTH.
7. MULCH SHALL BE ANCHORED WITH CUT BACK AND EMULSIFIED ASPHALT APPLIED AT A RATE OF 5 GALLONS PER 1000 SQUARE FEET. REFERENCE SUBPARAGRAPH 219.10-6 FOR MULCH ANCHORING ALTERNATIVES.

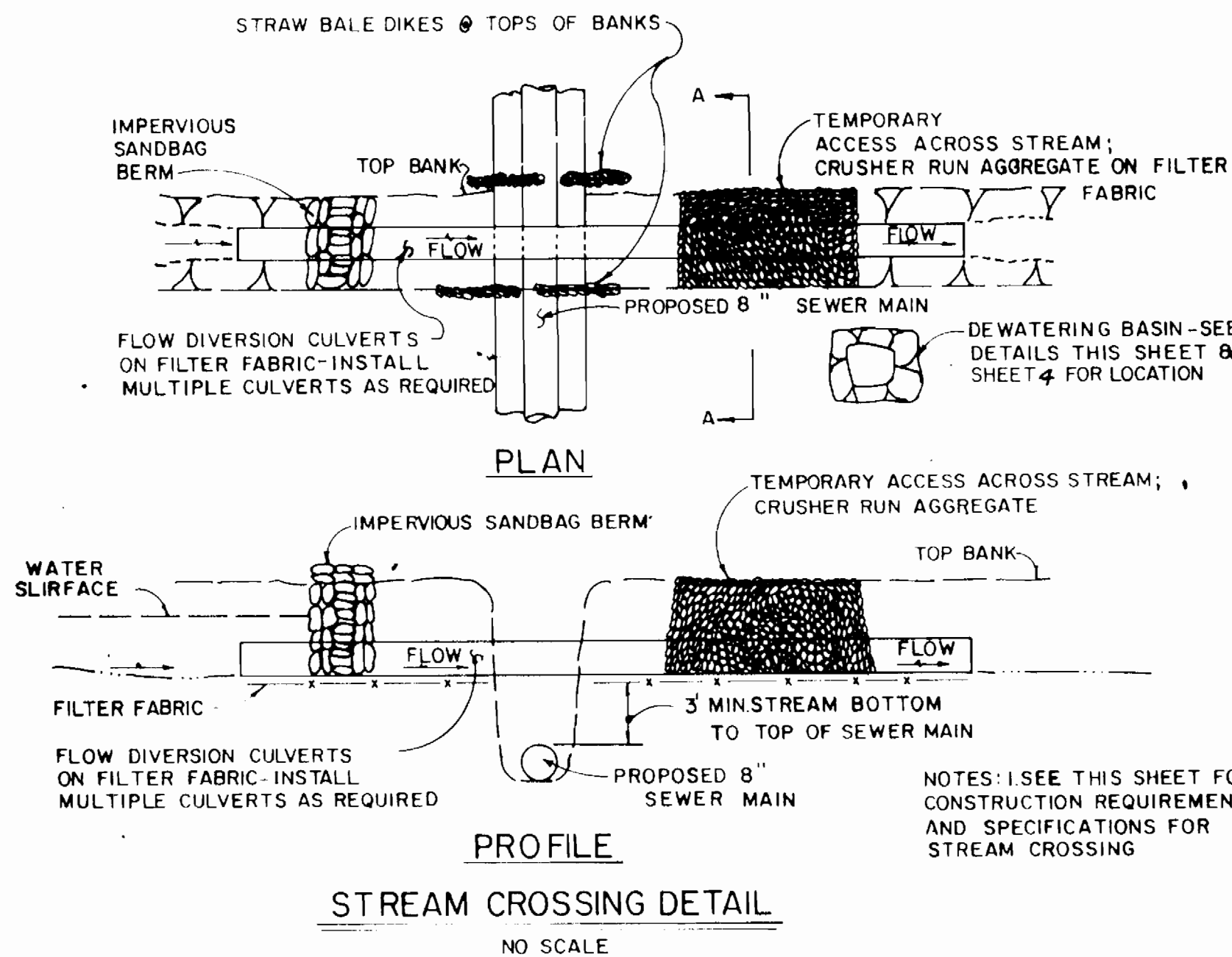
**STABILIZATION NOTES**

- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
1. 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
  2. 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.



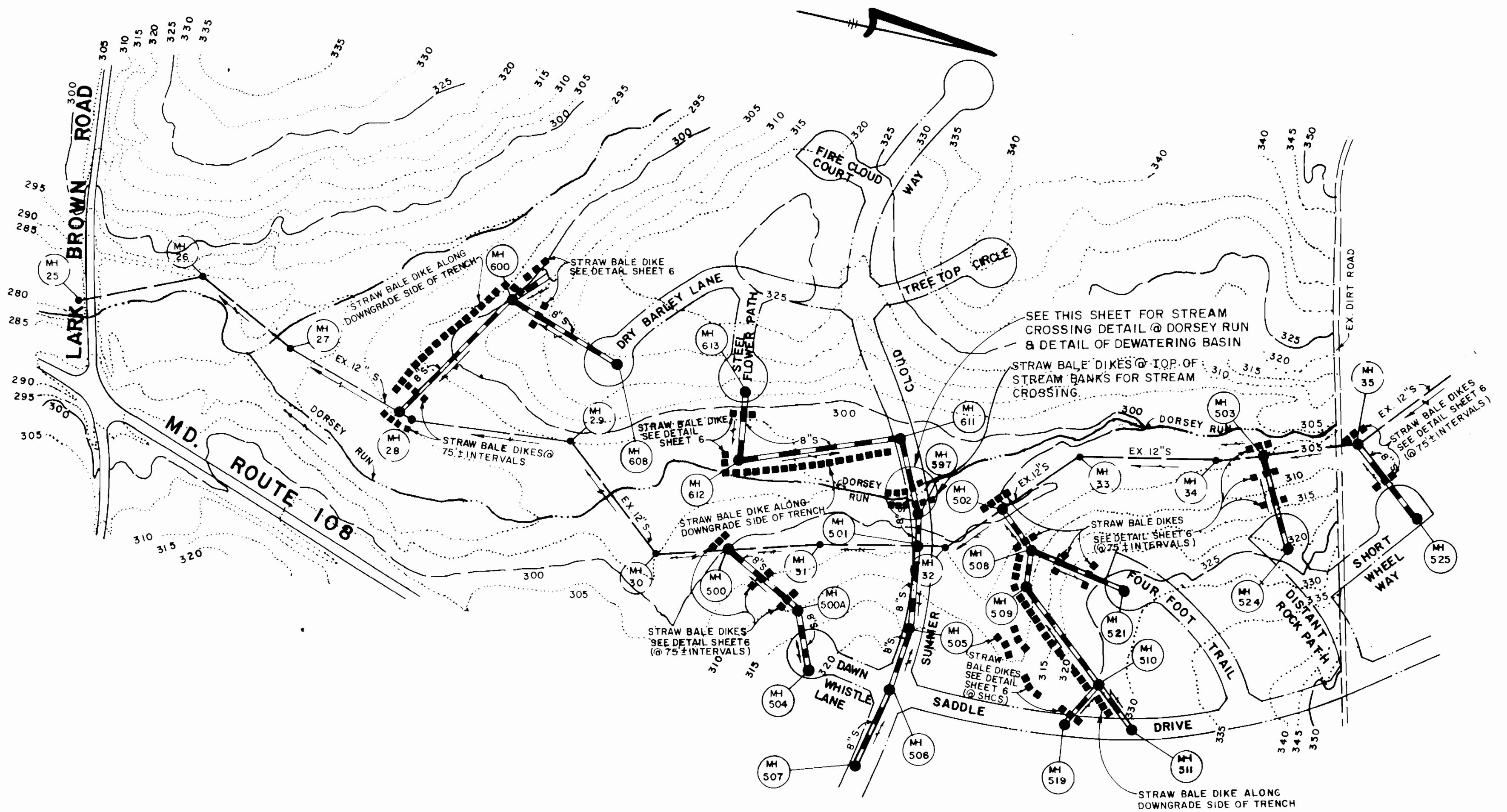
- NOTES:**
1. ALL DEWATERING OF THE CONSTRUCTION AREA DURING THE SEWER MAIN INSTALLATION SHALL BE PUMPED TO A DEWATERING BASIN (WPD 1.1) AS SHOWN ABOVE PRIOR TO RE-ENTERING THE STREAM.
  2. SEE PLAN SHEET NO. 4 FOR LOCATION OF DEWATERING BASIN.

**DETAILS: DEWATERING BASIN**



**SEWER MAIN CONSTRUCTION SEQUENCE**

1. Implement conditions & requirements of the temporary waterway construction permit - see contract specifications.
2. Install required sediment & erosion control devices - see plan this sheet & plan sheets for locations.
3. Clear and grub as necessary - within the limits of the sewer main right-of-way only.
4. Excavate trench; place excavated material on the upgrade side of the sewer main trench.
5. Install sewer main, backfill & compact trench in accordance with the contract specifications.
6. For installation of the sewer main at Dorsey Run, see the stream crossing detail this sheet.
7. Stabilize, seed and mulch all disturbed areas in accordance with the permanent stabilization and seeding notes shown on this sheet.
8. Following successful stabilization of all disturbed areas and upon approval of the Soil Conservation District inspector, remove the erosion & sediment control devices.



**SEDIMENT CONTROL MAP**

SCALE 1"=200'

**NOTES:**

1. SEE SHEET 6 FOR DETAIL OF STRAW BALE DIKE
2. SEE THIS SHEET FOR STREAM CROSSING DETAIL @ DORSEY RUN & CONSTRUCTION REQUIREMENTS & SPECIFICATIONS FOR STREAM CROSSING DETAIL.
3. SEDIMENT CONTROL FOR UTILITY CONSTRUCTION WITHIN THE LIMITS OF THE SUBDIVISION SHALL BE AS SHOWN ON THE STREET TREE, GRADING & SEDIMENT CONTROL PLAN OF THE ROADS & STORM DRAIN CONSTRUCTION PLANS, F 88-33.
4. SEE SHEET 4 OF 12 FOR 50' SCALE PLAN LOCATION OF THE 8" SEWER MAIN CROSSING @ DORSEY RUN.
5. SEE THIS SHEET FOR DETAILS OF THE REQUIRED DEWATERING BASIN - SEE SHEET 4 OF 12 FOR PLAN LOCATION.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

FISHER, COLLINS AND CARTER, INC.  
CONSULTING ENGINEERS AND LAND SURVEYORS  
8388 COURT AVENUE  
ELLICOTT CITY, MARYLAND 21043



DES: D.B.S.  
DRN: D.B.S.  
CHK: T.A.F.  
DATE: 01/28/88

STREAM CROSSING AND  
SEDIMENT CONTROL DETAILS

VILLAGE OF LONGREACH  
SECTION 2 AREA 2 & SECTION 4  
CONTRACT NO. 24-1664-D  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 13 OF 13