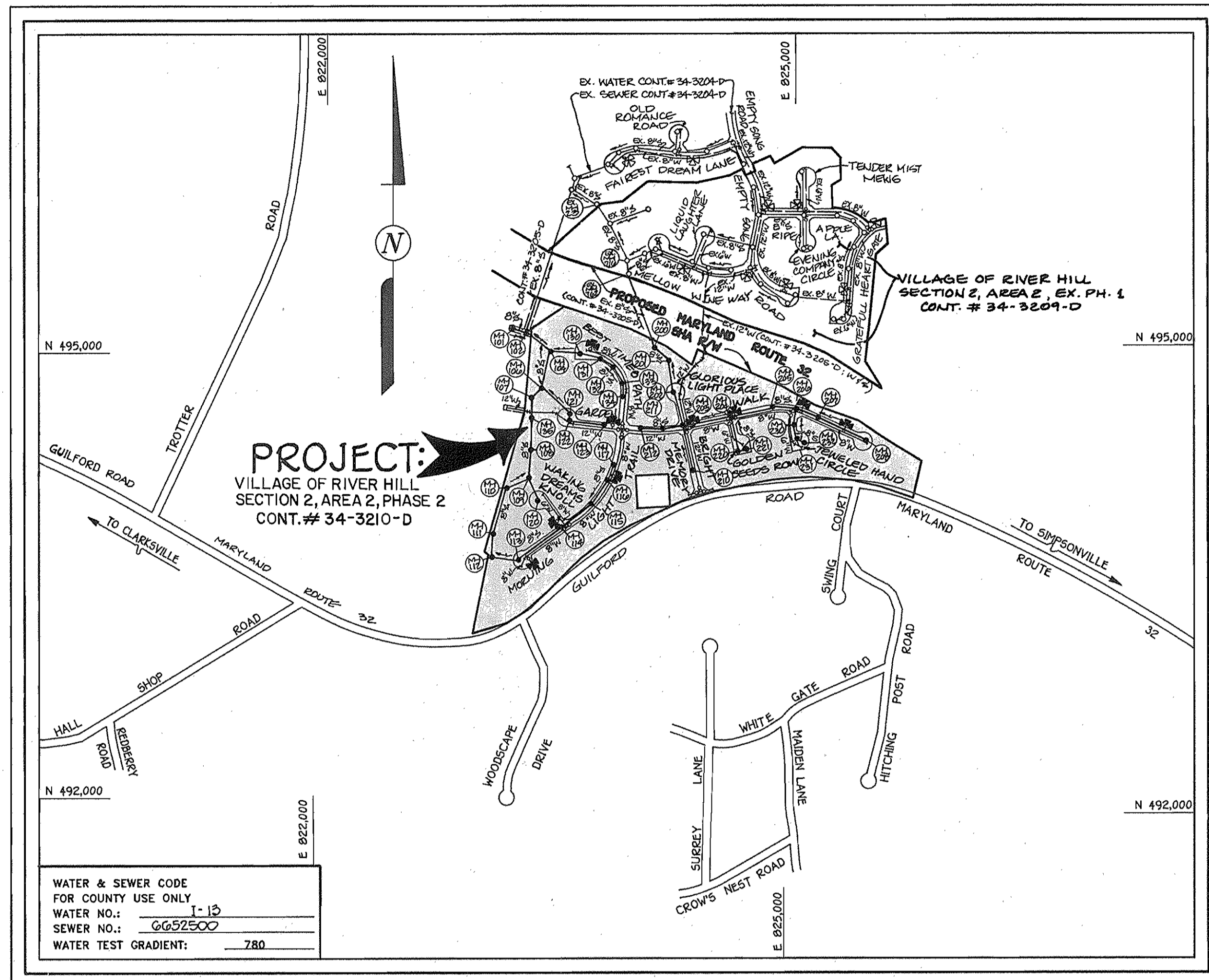


QUANTITIES				
ITEM	ESTIMATED	QUANTITIES	AS-BUILT TYPE	SUPPLIER MFG.
12" WATER	2271 L.F.	2255 L.F.	CLASS 82	ATLANTIC STATES
8" WATER	3057 L.F.	3216 L.F.	CLASS 82	ATLANTIC STATES
6" WATER	973 L.F.	1160 L.F.	CLASS 82	ATLANTIC STATES
1" WHC	1567 L.F.	1203 L.F.	TYPE K	CAMBRIDGE-LEE
3/4" WHC	1718 L.F.	1728 L.F.	TYPE K	CAMBRIDGE-LEE
FIRE HYDRANTS	10 EACH	10 EACH		MUELLER CO.
BLOWOFFS	1 EACH	1 EACH	# 25	EQUIPE
AIR RELEASE	1 EACH	1 EACH	UL 20	CRISPIN
8" SEWER	5074 L.F.	4020 L.F.	SDR 35	J-M MFG
8" D.I.P. SEWER	2245 L.F.	2252 L.F.	CLASS 52	ATLANTIC STATES
4" SEWER	4402 L.F.	5280 L.F.	SDR 35	J-M MFG
MANHOLES	42 EACH	42 EACH	CLASS 52	ATLANTIC STATES

NAME OF UTILITY CONTRACTOR: GAINES & CO.  
SURVEY & DRAFTING DIVISION AS-BUILT DATE:

SUPPLIER  
A-T PIPE, INC.



WATER & SEWER CODE  
FOR COUNTY USE ONLY  
WATER NO.: 1-15  
SEWER NO.: 6652500  
WATER TEST GRADIENT: .780

TYPE OF BUILDING: RESIDENTIAL, DETACHED  
NUMBER OF LOTS: 130 (BUILDABLE 127)  
NO. OF WATER HOUSE CONNECTIONS: 127  
NO. OF SEWER HOUSE CONNECTIONS: 127  
DRAINAGE AREA: MIDDLE PATUXENT  
TREATMENT PLANT: LITTLE PATUXENT WATER  
QUALITY MANAGEMENT CENTER

**VICINITY MAP**

SCALE: 1"=600'

**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.C.S. DATUM.
- ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED.
- 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
  - MISS UTILITY - 1-800-257-7777
  - COLONIAL PIPELINE CO. - 795-1390
  - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 313-4800
- 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., R.C.P., C.S.P.X., R.C.G.P., V.C.P.X. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- T.B. 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.
- HOUSE(S) 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.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
- 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 SHALL 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. 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 ANWA 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 18.114(c) OF THE HOWARD COUNTY CODE.

**CONTRACT No. 34-3210-D**  
**VILLAGE OF RIVER HILL**  
**SECTION 2 AREA 2**  
**PHASE 2**  
**WATER AND SEWER MAIN EXTENSIONS**  
**HOWARD COUNTY, MARYLAND**  
**DEPARTMENT OF PUBLIC WORKS**

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

APPROVED: *John R. Robertson* 7/6/93  
HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE  
IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF  
HOWARD COUNTY DESIGN MANUAL & STANDARDS AND  
SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
IN DEVELOPING AREAS AND ALSO AS SHOWN ON THE GRADING  
AND SEDIMENT CONTROL PLAN F-93-81  
REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT  
AND MEETS TECHNICAL REQUIREMENTS.

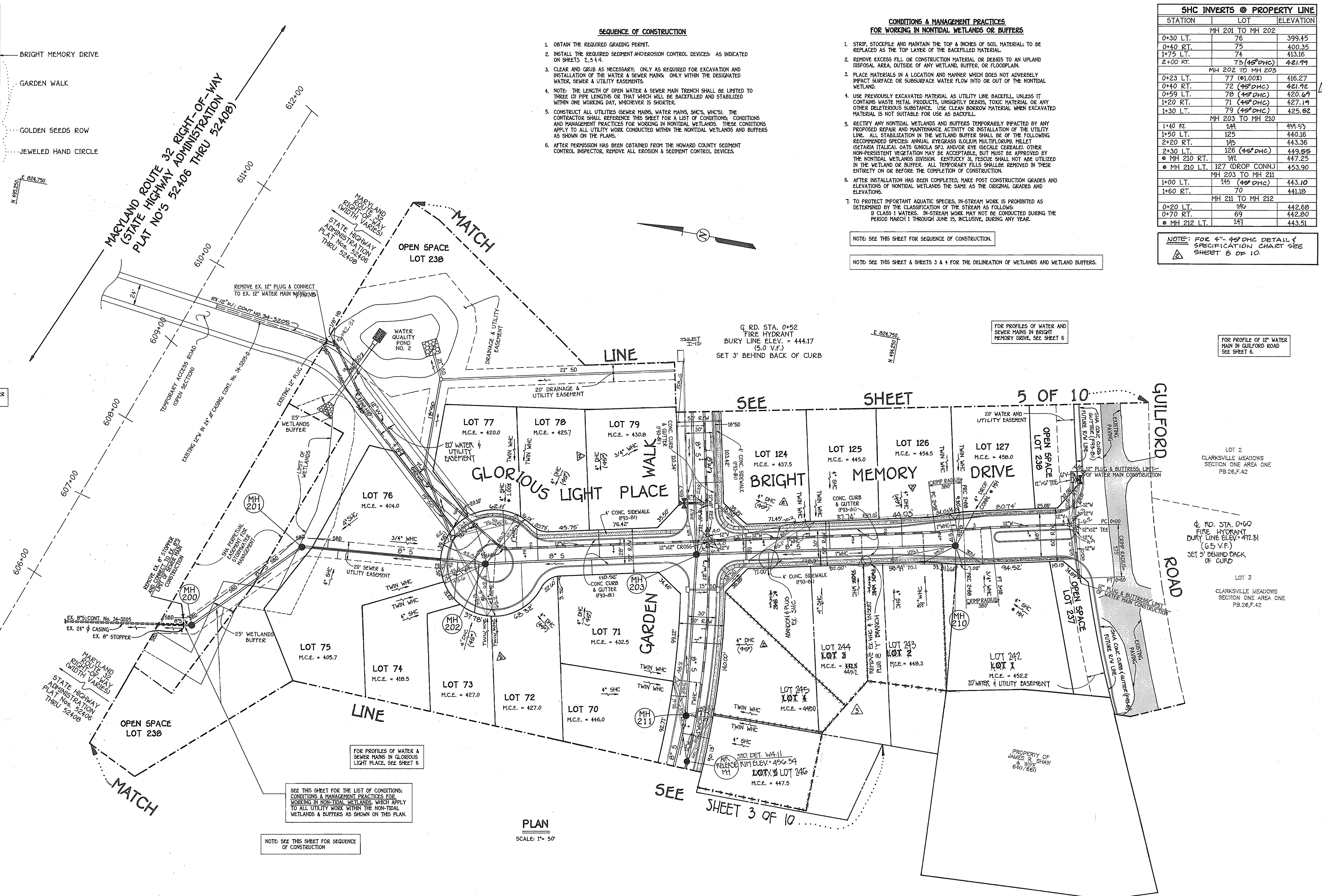
*James M. Nelson* 7/6/93  
U.S. SOIL CONSERVATION SERVICE DATE

PLAN REFERENCE NUMBERS:  
P 92-15  
F 93-81

CONTRACT NO. 34-3210-D  
VILLAGE OF RIVER HILL  
SECTION 2, AREA 2, PHASE 2  
WATER AND SEWER EXTENSIONS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>James M. Nelson</i> 7/22/93 DIRECTOR OF PUBLIC WORKS DATE <i>Robert W. Benner</i> 6-29-93 CHIEF, BUREAU OF UTILITIES DATE		FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS SUITE 100, 9171 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2855 <i>Terrell A. Fisher</i> TERRELL A. FISHER		DES: P.W.K./M.J.M. DRWN: D.A.N. CHK: P.W.K. DATE: 2-24-93		TITLE SHEET 600' SCALE MAP NO. 35 BLOCK NO. 15		VILLAGE OF RIVER HILL SECTION 2, AREA 2, PHASE 2 LOTS 1-127, 237-239 CONTRACT NO. 34-3210-D FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND		SCALE AS SHOWN  SHEET 1 OF 10
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MANHOLE TABLE			
No.	Q RD STA.	DISTANCE	RIM ELEV. SLOPE
200	-----	-----	401.50 -----
201	-----	-----	406.00 -----
202	IN CUL-DE-SAC	-----	430.50 -----
210	1+83	10' LT.	463.95 -7.38%
203	-0+07	7' RT.	446.66 -5.60%
211	-1+90	6' RT.	455.70 -2.20%
212	-2+70	7' RT.	456.37 +0.64%
204	3+07	7' LT.	441.47 +1.00%
205	5+06	8' LT.	444.25 +1.00%
206	7+31	7' LT.	445.75 +1.00%
207	9+33	7' LT.	446.34 -2.60%
208	IN CUL-DE-SAC	-----	426.50 -----
220	IN CUL-DE-SAC	-----	451.67 -----
221	IN CUL-DE-SAC	-----	452.41 -----
230	1+07	6' LT.	448.11 +2.45%
231	IN CUL-DE-SAC	-----	449.70 -----
232	IN CUL-DE-SAC	-----	451.45 -----



**SEQUENCE OF CONSTRUCTION**

1. OBTAIN THE REQUIRED GRADING PERMIT.
2. INSTALL THE REQUIRED SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON SHEETS 2, 3 & 4.
3. CLEAR AND GRUB AS NECESSARY, ONLY AS REQUIRED FOR EXCAVATION AND INSTALLATION OF THE WATER & SEWER MAINS, ONLY WITHIN THE DESIGNATED WATER, SEWER & UTILITY EASEMENTS.
4. NOTE: THE LENGTH OF OPEN WATER & SEWER MAIN TRENCH SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
5. CONSTRUCT ALL UTILITIES (SEWER MAINS, WATER MAINS, SHC'S, WHC'S). THE CONTRACTOR SHALL REFERENCE THIS SHEET FOR A LIST OF CONDITIONS, CONDITIONS AND MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS. THESE CONDITIONS APPLY TO ALL UTILITY WORK CONDUCTED WITHIN THE NONTIDAL WETLANDS AND BUFFERS AS SHOWN ON THE PLANS.
6. AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION & SEDIMENT CONTROL DEVICES.

**CONDITIONS & MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS OR BUFFERS**

1. STRIP, STOCKPILE AND MAINTAIN THE TOP 2 INCHES OF SOIL MATERIAL TO BE REPLACED AS THE TOP LAYER OF THE BACKFILLED MATERIAL.
2. REMOVE EXCESS FILL OR CONSTRUCTION MATERIAL OR DEBRIS TO AN UPLAND DISPOSAL AREA OUTSIDE OF ANY WETLAND, BUFFER, OR FLOODPLAIN.
3. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF THE NONTIDAL WETLAND.
4. USE PREVIOUSLY EXCAVATED MATERIAL AS UTILITY LINE BACKFILL, UNLESS IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL OR ANY OTHER DELETERIOUS SUBSTANCE. USE CLEAN BORROW MATERIAL WHEN EXCAVATED MATERIAL IS NOT SUITABLE FOR USE AS BACKFILL.
5. RECTIFY ANY NONTIDAL WETLANDS AND BUFFERS TEMPORARILY IMPACTED BY ANY PROPOSED REPAIR AND MAINTENANCE ACTIVITY OR INSTALLATION OF THE UTILITY LINE. ALL STABILIZATION IN THE WETLAND BUFFER SHALL BE OF THE FOLLOWING RECOMMENDED SPECIES: ANNUAL EYEGRASS (LOLUM MULTIFLORUM), MILLET (SETARIA ITALICA), OATS (UNIOIA SP.) AND/OR RYE (SECALE CEREALE). OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS DIVISION, KENTUCKY 31. PESTICIDE SHALL NOT BE UTILIZED IN THE WETLAND OR BUFFER. ALL TEMPORARY FILLS SHALL BE REMOVED IN THEIR ENTIRETY ON OR BEFORE THE COMPLETION OF CONSTRUCTION.
6. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS OF NONTIDAL WETLANDS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS.
7. TO PROTECT IMPORTANT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM AS FOLLOWS:  
 D CLASS 1 WATERS. IN-STREAM WORK MAY NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.

NOTE: SEE THIS SHEET FOR SEQUENCE OF CONSTRUCTION.

NOTE: SEE THIS SHEET & SHEETS 3 & 4 FOR THE DELINEATION OF WETLANDS AND WETLAND BUFFERS.

**SHC INVERTS @ PROPERTY LINE**

STATION	LOT	ELEVATION
MH 201 TO MH 202		
0+30 LT.	76	399.45
0+40 RT.	75	400.35
1+75 LT.	74	413.16
2+00 RT.	73 (45°DHC)	421.99
MH 202 TO MH 203		
0+23 LT.	77 (0.00%)	416.27
0+40 RT.	72 (45°DHC)	421.92
0+59 LT.	78 (45°DHC)	420.69
1+20 RT.	71 (45°DHC)	427.19
1+30 LT.	79 (45°DHC)	425.82
MH 202 TO MH 210		
1+40 RT.	24	491.97
1+50 LT.	125	440.16
2+20 RT.	145	443.36
2+30 LT.	126 (45°DHC)	443.55
2+30 RT.	141	447.25
2+30 LT.	127 (DROP CONNJ)	453.90
MH 210 TO MH 211		
1+00 LT.	149 (45°DHC)	443.10
1+60 RT.	70	441.18
MH 211 TO MH 212		
0+20 LT.	146	442.68
0+70 RT.	69	442.80
1+30 LT.	247	443.51

NOTE: FOR 4" 45°DHC DETAIL & SPECIFICATION CHART SEE SHEET 8 OF 10.

**PLAN**  
SCALE: 1" = 50'

CONTRACT NO. 34-3210-D  
VILLAGE OF RIVER HILL  
SECTION 2, AREA 2, PHASE 2  
WATER AND SEWER EXTENSIONS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James M. Lewis* 7/22/93  
DIRECTOR OF PUBLIC WORKS DATE  
*Robert L. Benner* 6-29-93  
CHIEF, BUREAU OF UTILITIES DATE

*Paul J. Deppa* 7/22/93  
CHIEF, BUREAU OF ENGINEERING  
*Mark D. Dawson* 7/2/93  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**FISHER, COLLINS & CARTER, INC.**

CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
SUITE 100, 9171 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21042  
(410) 461-2855

#9757

TERRELL A. FISHER

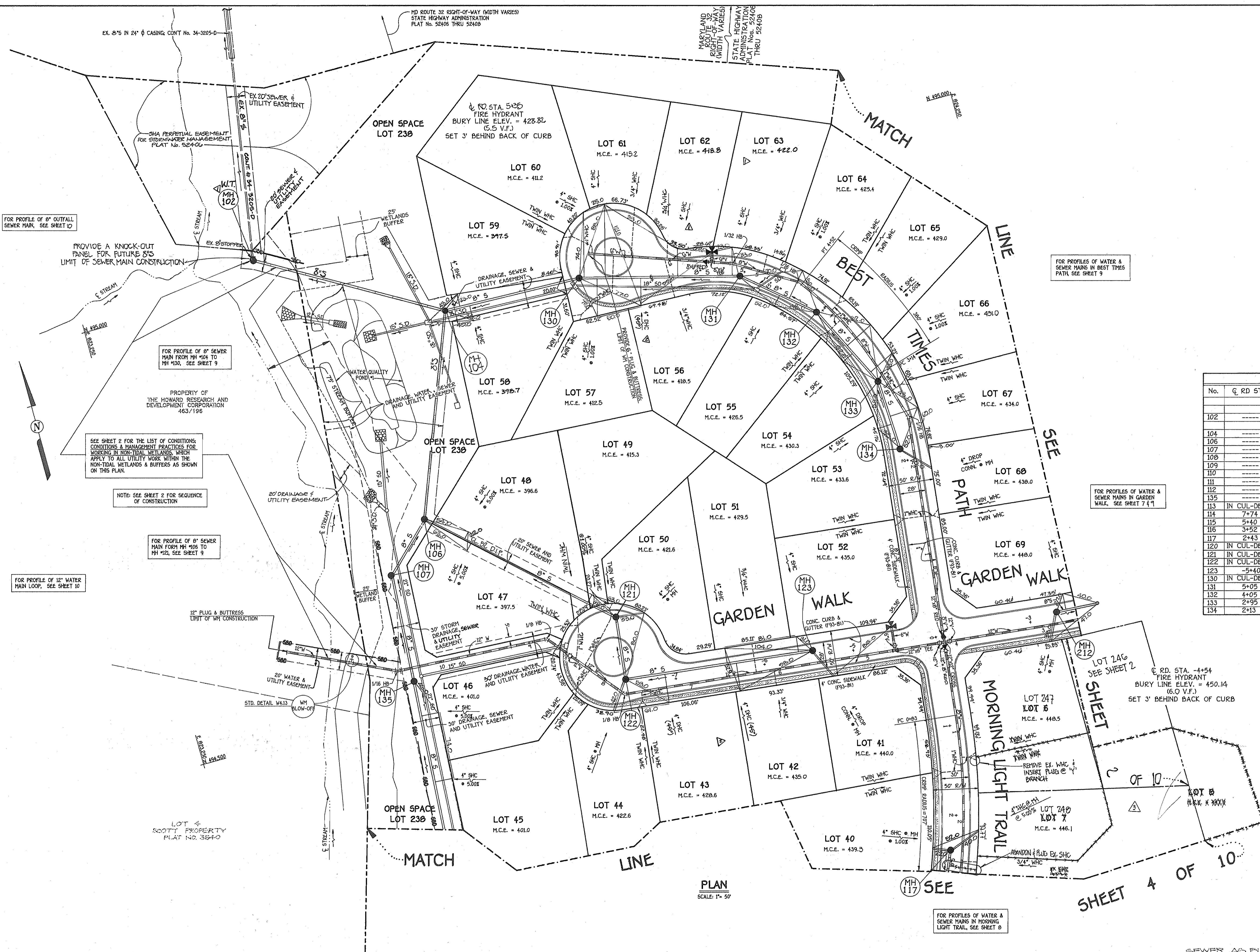
DES:	P.W.K./M.J.M.	FC/c	FC/c	ADJUST 45°DHC'S - ADDED CHART & DETAIL	9/93
DRWN:	D.A.N.			CHANGE LOT LINES & REVISE APPROPRIATE WHC'S & SHC'S	2/94
CHK:	P.W.K.				
DATE:	2-24-93				
BY	NO.			REVISION	DATE

**PLAN**  
**WATER & SEWER MAINS**

600' SCALE MAP NO. 35 BLOCK NO. 15

VILLAGE OF RIVER HILL  
SECTION 2, AREA 2, PHASE 2  
LOTS 1 - 127, 237 - 239  
CONTRACT NO. 34-3210-D  
FIFTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 2 OF 10



**SHC INVERTS @ PROPERTY LINE**

STATION	LOT	ELEVATION
MH 106 TO MH 121		
0+50 LT.	48 (5.00X)	389.27
0+60 RT.	47 (5.00X)	390.68
2+05 LT.	49 (1.00X)	410.80
• MH 121 LT.	50	416.62
MH 104 TO MH 130		
0+18 LT.	59	392.39
0+26 RT.	58	398.15
MH 122 TO MH 123		
• MH 122 RT.	44	417.07
0+44 RT.	43 (45° DHC)	423.56
1+15 LT.	51	424.41
1+25 RT.	42 (45° DHC)	429.56
1+95 LT.	52	430.01
• MH 123 RT.	41 (DROP CONN.)	434.76
MH 130 TO MH 131		
0+05 LT.	60 (1.00X)	407.52
0+20 RT.	57 (1.00X)	408.04
0+30 LT.	61	409.81
0+70 RT.	56 (45° DHC)	413.59
1+10 LT.	62	419.28
1+70 LT.	63	416.61
MH 122 TO MH 132		
0+50 RT.	55	421.27
0+60 LT.	64 (1.00X)	421.52
MH 132 TO MH 133		
0+50 LT.	65 (1.00X)	424.84
0+60 RT.	54	425.31
0+90 LT.	66 (1.00X)	426.93
MH 133 TO MH 134		
0+40 LT.	67	428.88
0+50 RT.	53	428.74
• MH 134 LT.	68 (DROP CONN.)	432.84
MH 135 TO MH 108		
0+40 LT.	48 (5.00X)	391.65
1+15 LT.	45 (5.00X)	393.23

NOTE: FOR 4" 45° DHC DETAIL & SPECIFICATION CHART SEE SHEET B OF 10.

**MANHOLE TABLE**

No.	€ RD STA.	DISTANCE	RIM ELEV.	SLOPE
102	-----	-----	372.50	-----
104	-----	-----	394.25	-----
106	-----	-----	390.00	-----
107	-----	-----	388.10	-----
108	-----	-----	410.00	-----
109	-----	-----	409.00	-----
110	-----	-----	403.00	-----
111	-----	-----	412.00	-----
112	-----	-----	429.00	-----
135	-----	-----	394.60	-----
113	IN CUL-DE-SAC	-----	446.15	-----
114	7+74	7' RT.	449.82	-1.00%
115	5+40	6' RT.	447.17	+1.50%
116	3+52	4' RT.	445.15	-1.00%
117	2+43	7' RT.	447.67	3.84%
120	IN CUL-DE-SAC	-----	431.65	-----
121	IN CUL-DE-SAC	-----	429.15	-----
122	IN CUL-DE-SAC	-----	431.35	-----
123	-5+40	7' RT.	444.59	-6.30%
130	IN CUL-DE-SAC	-----	420.50	-----
131	5+05	6' LT.	430.45	-6.00%
132	4+05	6' LT.	436.15	-5.04%
133	2+95	6' LT.	440.71	-3.11%
134	2+13	7' LT.	443.95	-3.11%

FOR PROFILE OF 8" OUTFALL SEWER MAIN, SEE SHEET 10

FOR PROFILES OF WATER & SEWER MAINS IN BEST TIMES PATH, SEE SHEET 9

FOR PROFILE OF 8" SEWER MAIN FROM MH 104 TO MH 103, SEE SHEET 9

FOR PROFILES OF WATER & SEWER MAINS IN GARDEN WALK, SEE SHEET 7 & 7

SEE SHEET 2 FOR THE LIST OF CONDITIONS, CONDITIONS & MANAGEMENT PRACTICES FOR WORKING IN NON-TIDAL WETLANDS, WHICH APPLY TO ALL UTILITY WORK WITHIN THE NON-TIDAL WETLANDS & BUFFERS AS SHOWN ON THIS PLAN.

NOTE: SEE SHEET 2 FOR SEQUENCE OF CONSTRUCTION

FOR PROFILE OF 8" SEWER MAIN FROM MH 106 TO MH 102, SEE SHEET 9

FOR PROFILE OF 12" WATER MAIN LOOP, SEE SHEET 10

CONTRACT NO. 34-3210-D  
VILLAGE OF RIVER HILL  
SECTION 2, AREA 2, PHASE 2  
WATER AND SEWER EXTENSIONS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 7/22/03  
Date: 7/22/03

Chief, Bureau of Engineering: *[Signature]* 7/21/03  
Date: 7/21/03

Chief, Bureau of Utilities: *[Signature]* 6-29-03  
Date: 6-29-03

Chief, Land Development Division: *[Signature]* 7/21/03  
Date: 7/21/03

**FISHER, COLLINS & CARTER, INC.**  
#9757  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
SUITE 100, 9171 BALTIMORE NATIONAL PIKE  
ELLICOTT CITY, MARYLAND 21042  
(410) 461-2855

TERRELL A. FISHER

DES: P.W.K./M.J.M.	EC/C	REV. MCE ELEV @ RE-LOTS 62 & 63. MH #102 TO BE WATER TIGHT	8/93
DRWN: D.A.N.	EC/C	ADJUST 45° DHC'S - ADDED CHART & DETAIL	9/93
CHK: P.W.K.	EC/C	CHANGE LOT LINES & REVISE APPROPRIATE WHC'S & SHC'S	2/14
DATE: 2-24-93			

PLAN  
WATER & SEWER MAINS

600' SCALE MAP NO. 35 BLOCK NO. 15

VILLAGE OF RIVER HILL  
SECTION 2, AREA 2, PHASE 2  
LOTS 1 - 127, 237 - 239  
CONTRACT NO. 34-3210-D  
FIFTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 3 OF 10

SEE SHEET 2 FOR THE LIST OF CONDITIONS, CONDITIONS & MANAGEMENT PRACTICES FOR WORKING IN NON-TIDAL WETLANDS, WHICH APPLY TO ALL UTILITY WORK WITHIN THE NON-TIDAL WETLANDS & BUFFERS AS SHOWN ON THIS PLAN.

NOTE: SEE SHEET 2 FOR SEQUENCE OF CONSTRUCTION.

FOR PROFILE OF 8" OUTFALL SEWER MAIN SEE SHEETS 8 & 10

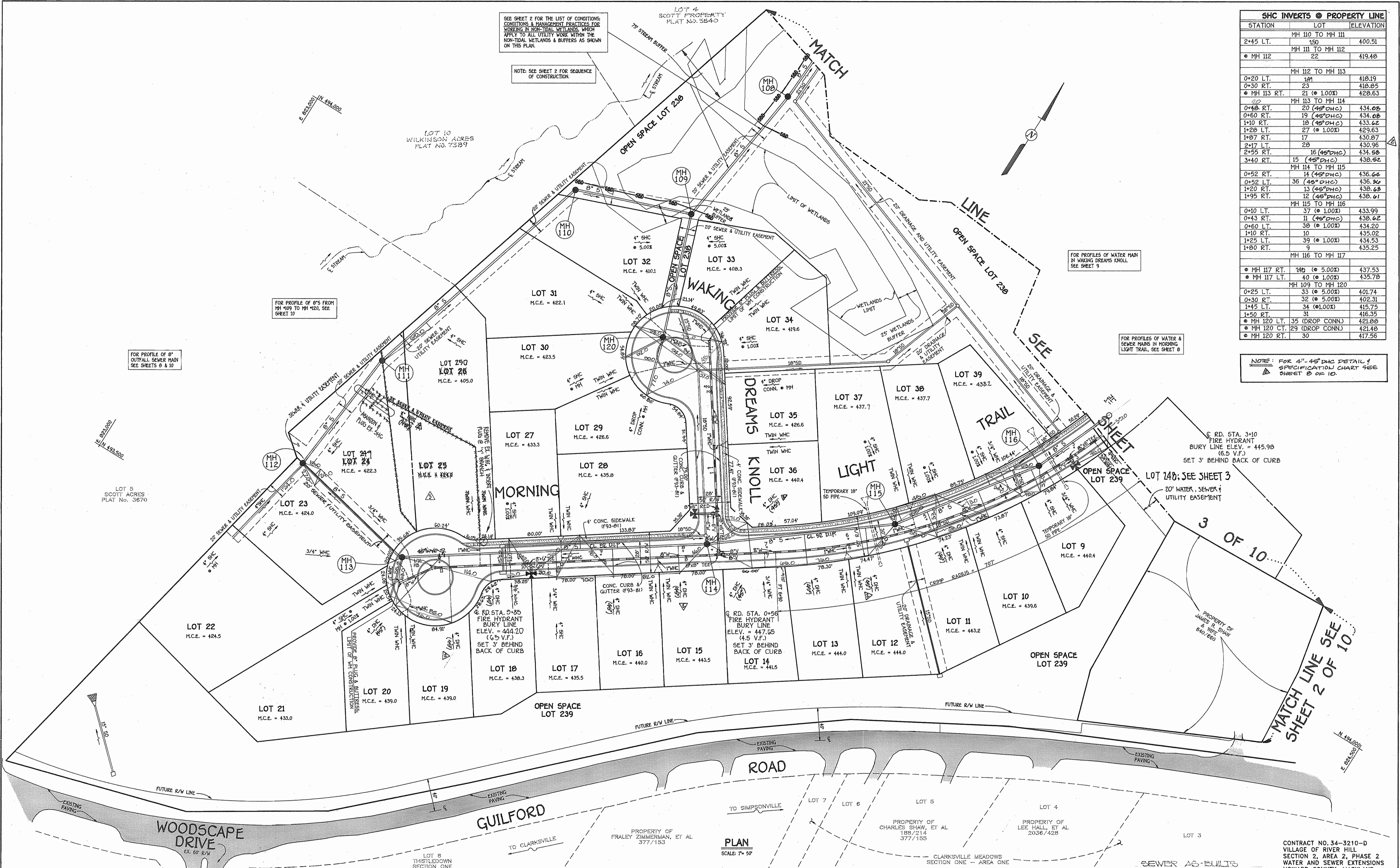
FOR PROFILE OF 8" OUTFALL SEWER MAIN SEE SHEETS 8 & 10

FOR PROFILES OF WATER MAIN IN WAKING DREAMS KNOLL SEE SHEET 9

FOR PROFILES OF WATER & SEWER MAINS IN MORNING LIGHT TRAIL SEE SHEET 8

NOTE: FOR 4" 45° DHC DETAIL & SPECIFICATION CHART SEE SHEET 2 OF 10

SHC INVERTS @ PROPERTY LINE		
STATION	LOT	ELEVATION
2+45 LT.	MH 110 TO MH 111	400.51
	MH 111 TO MH 112	419.48
	MH 112	22
	MH 112 TO MH 113	
0+20 LT.	24	418.19
0+30 RT.	23	418.85
• MH 113 RT.	21 (• 1.00X)	428.63
	MH 113 TO MH 114	
0+48 RT.	20 (45° DHC)	434.08
0+60 RT.	19 (45° DHC)	434.08
1+10 RT.	18 (45° DHC)	433.62
1+28 LT.	27 (• 1.00X)	429.63
1+87 RT.	17	430.87
2+17 LT.	28	430.96
2+55 RT.	16 (45° DHC)	434.58
3+40 RT.	15 (45° DHC)	438.82
	MH 114 TO MH 115	
0+52 RT.	14 (45° DHC)	436.64
0+52 LT.	38 (45° DHC)	436.36
1+20 RT.	13 (45° DHC)	438.68
1+95 RT.	12 (45° DHC)	438.01
	MH 115 TO MH 116	
0+10 LT.	37 (• 1.00X)	433.99
0+43 RT.	11 (45° DHC)	438.62
0+60 LT.	38 (• 1.00X)	434.20
1+10 RT.	10	435.02
1+25 LT.	39 (• 1.00X)	434.53
1+80 RT.	9	435.25
	MH 116 TO MH 117	
• MH 117 RT.	24b (• 5.00X)	437.53
• MH 117 LT.	40 (• 1.00X)	435.78
	MH 109 TO MH 120	
0+25 LT.	33 (• 5.00X)	401.74
0+30 RT.	32 (• 5.00X)	402.31
1+45 LT.	34 (• 1.00X)	415.75
1+50 RT.	31	416.35
• MH 120 LT.	35 (DROP CONN.)	421.88
• MH 120 RT.	29 (DROP CONN.)	421.48
	MH 120 RT.	30
		417.56



C.R.D. STA. 3+10  
FIRE HYDRANT  
BURY LINE ELEV. = 445.98  
(6.5 V.F.)  
SET 3' BEHIND BACK OF CURB

LOT 24b; SEE SHEET 3  
20' WATER, SEWER &  
UTILITY EASEMENT

C.R.D. STA. 0+56  
FIRE HYDRANT  
BURY LINE  
ELEV. = 447.65  
(4.5 V.F.)  
SET 3' BEHIND  
BACK OF CURB

MATCH LINE SEE SHEET 2 OF 10

CONTRACT NO. 34-3210-D  
VILLAGE OF RIVER HILL  
SECTION 2, AREA 2, PHASE 2  
WATER AND SEWER EXTENSIONS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert W. Bennett* 7/22/93  
DIRECTOR OF PUBLIC WORKS DATE

*David J. DeLeon* 7/22/93  
CHIEF, BUREAU OF ENGINEERING DATE

*Robert W. Bennett* 6-29-93  
CHIEF, BUREAU OF UTILITIES DATE

*David J. DeLeon* 7/19/93  
CHIEF, LAND DEVELOPMENT DIVISION DATE

#9757

**FISHER, COLLINS & CARTER, INC.**

CIVIL ENGINEERING CONSULTANTS &  
LAND SURVEYORS  
SUITE 100, 9171 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21042  
(410) 461-2855

TERRELL A. FISHER

DES:	P.W.K./M.J.M.	FC/PC	ADJUST 45° DHC'S - ADDED CHART & DETAIL	7/93
DRWN:	D.A.N.		REVISE LOT LINES & REVISE APPROPRIATE WHC'S & SHC'S	2/94
CHK:	P.W.K.			
DATE:	2-24-93	BY NO.	REVISION	DATE

PLAN  
SCALE: 1" = 50'

WATER & SEWER MAINS

600' SCALE MAP NO. 35 BLOCK NO. 15

VILLAGE OF RIVER HILL  
SECTION 2, AREA 2, PHASE 2  
LOTS 1 - 127, 237 - 239

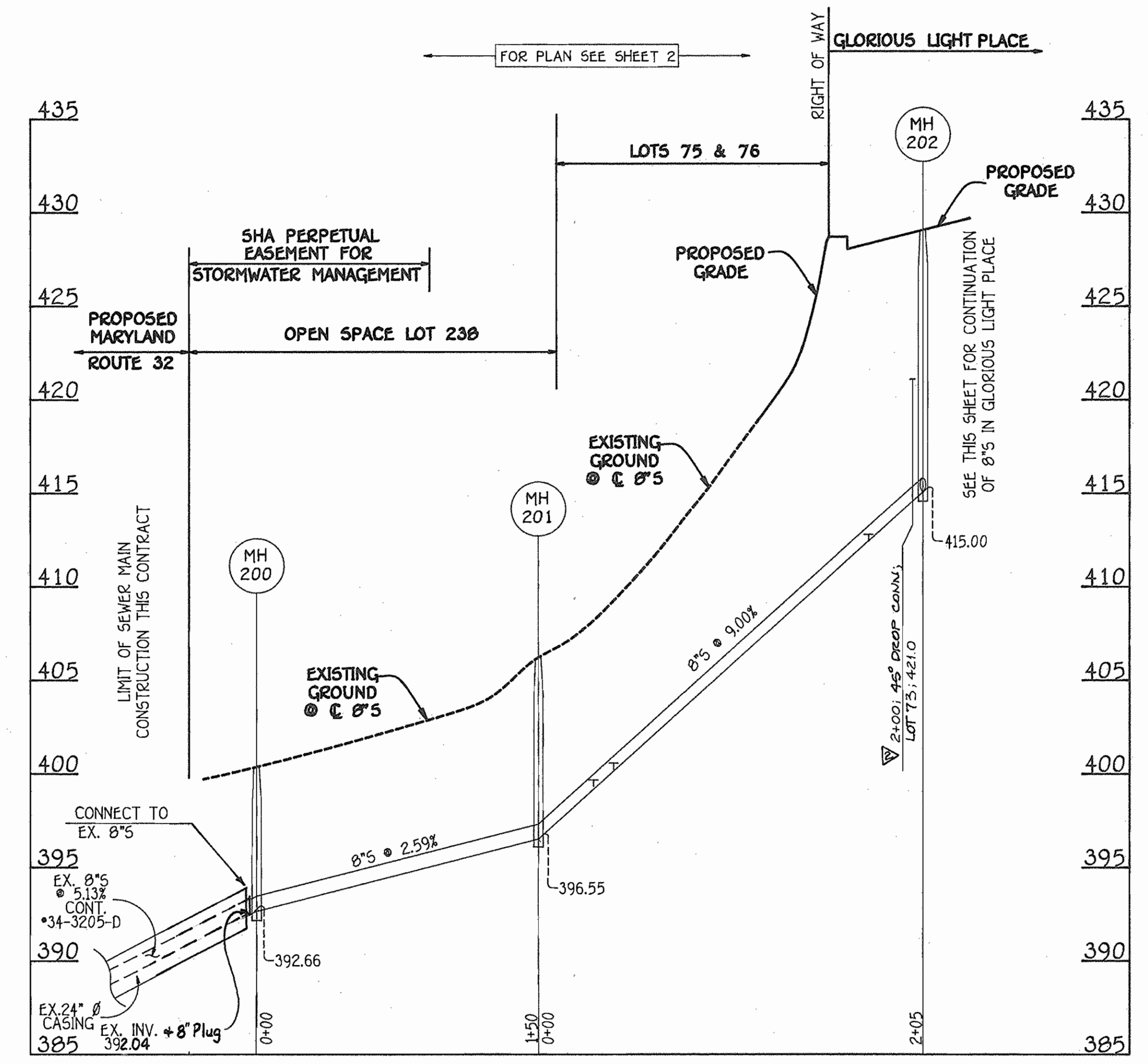
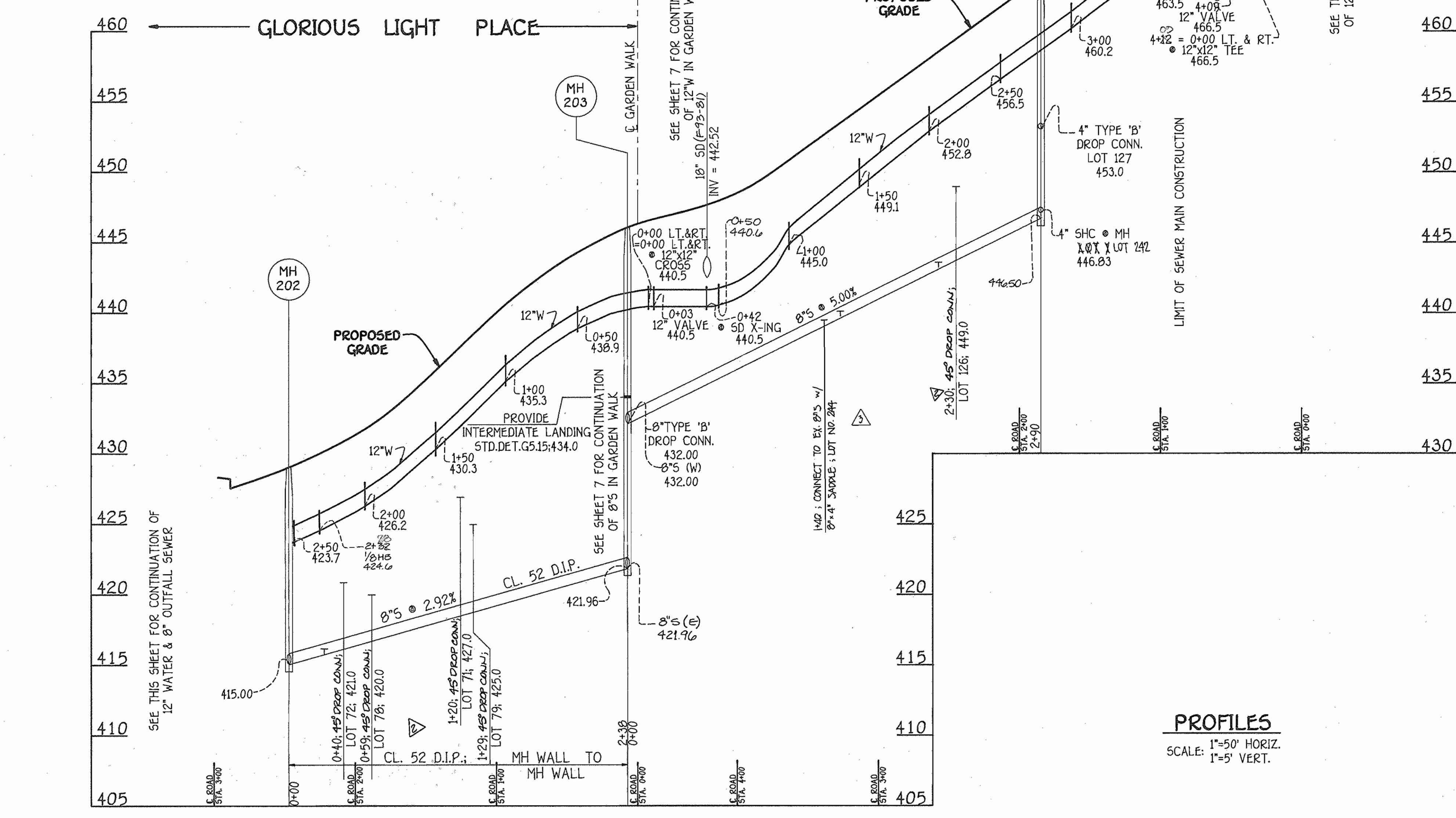
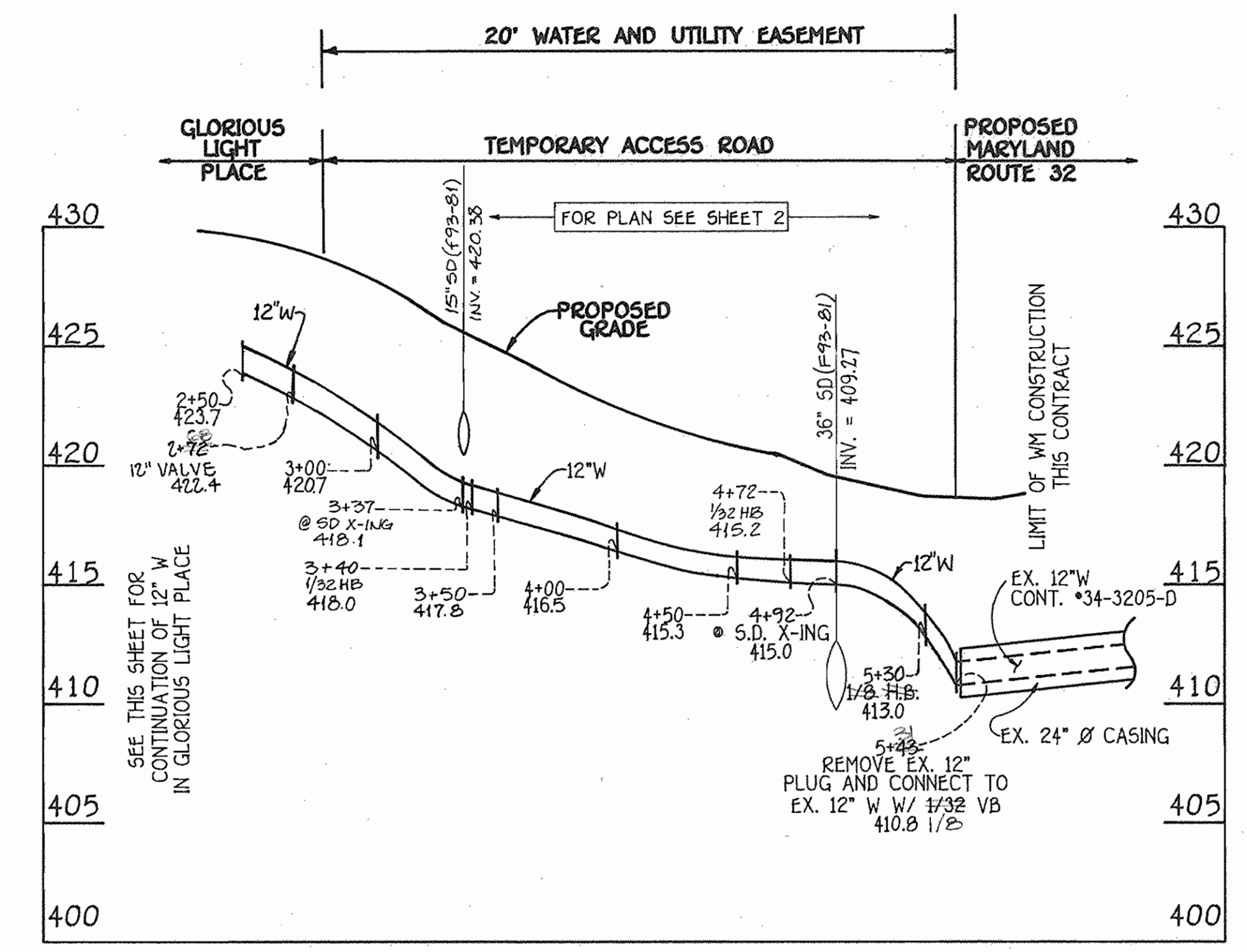
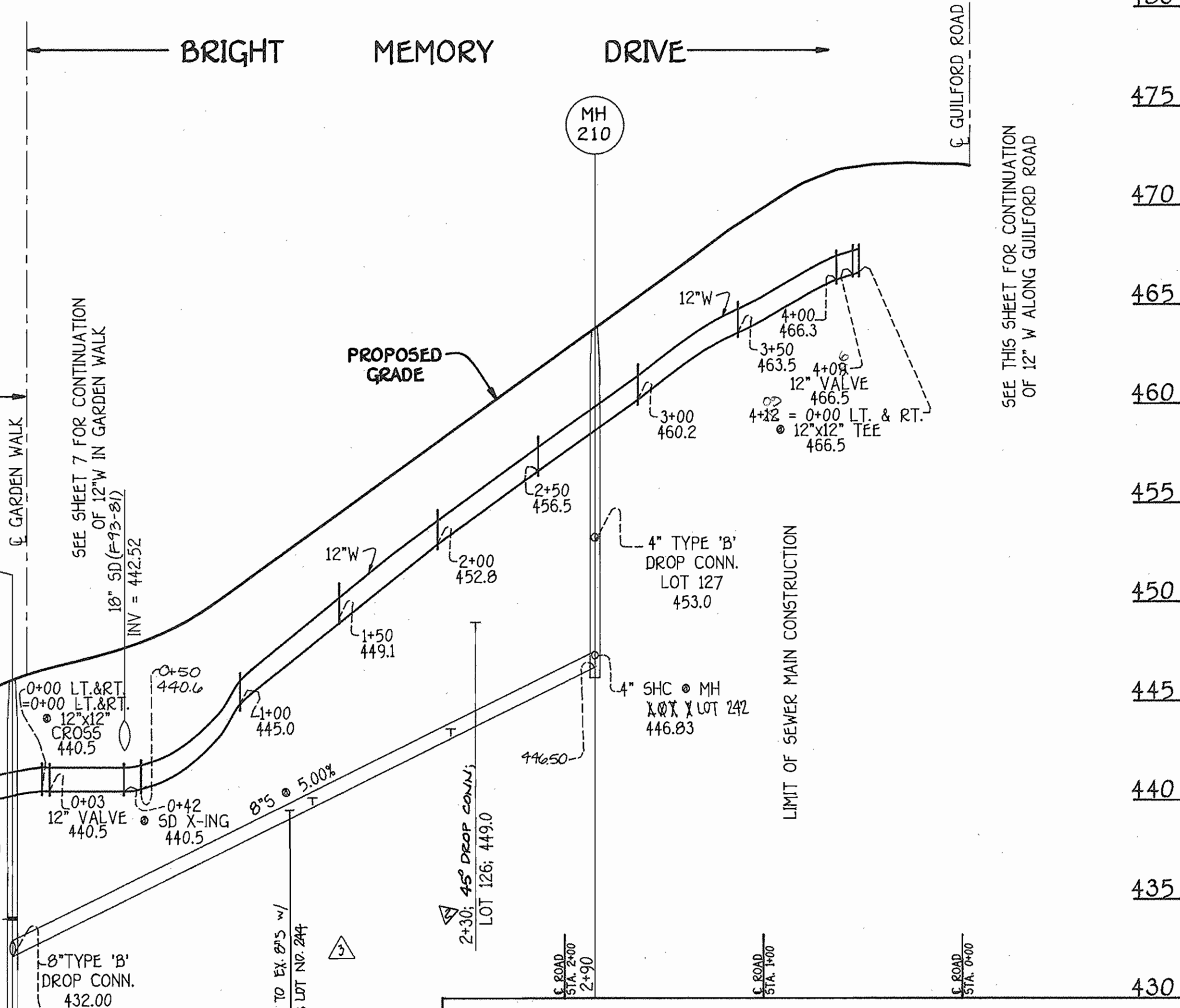
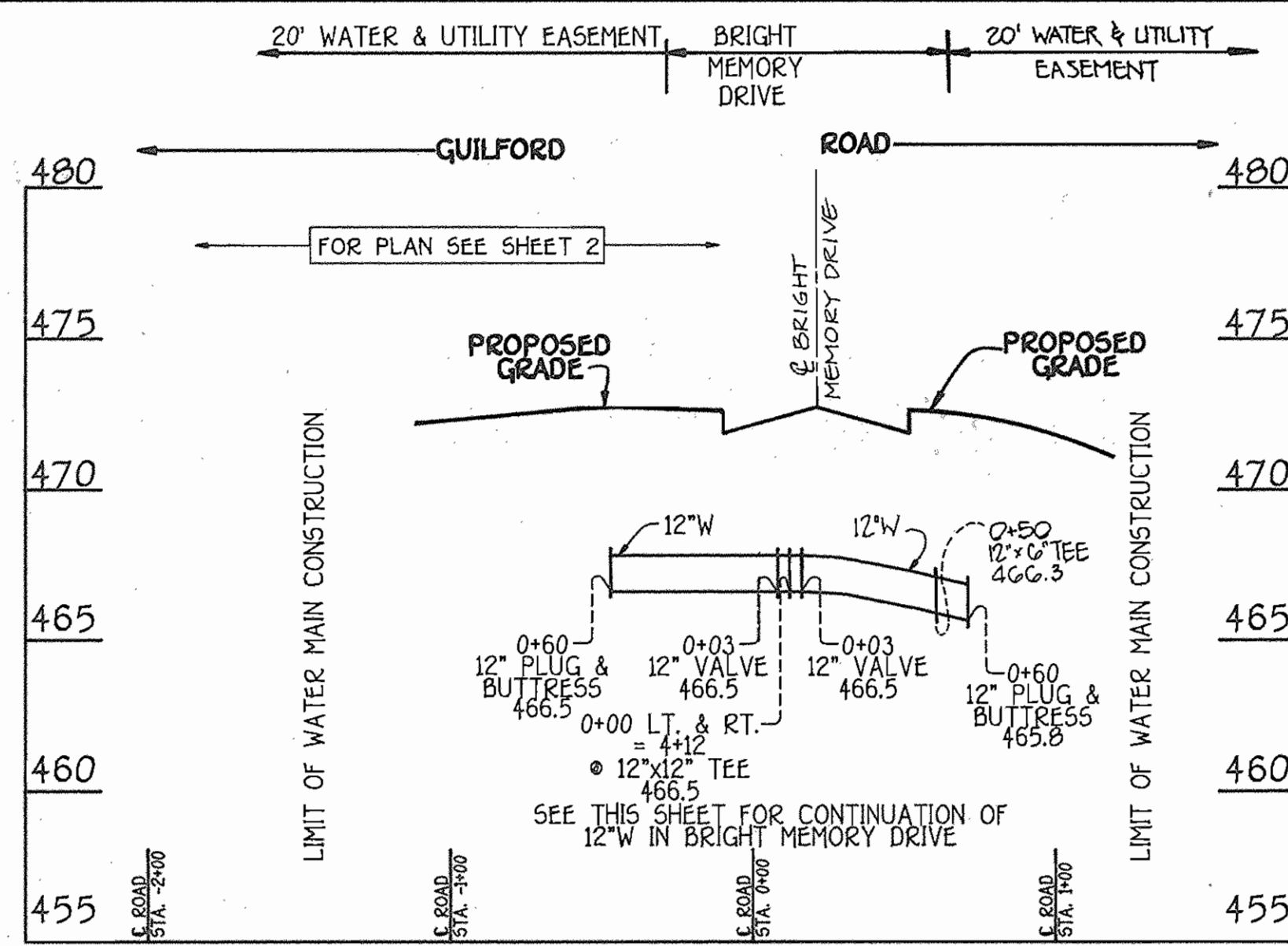
CONTRACT NO. 34-3210-D  
FIFTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 4 OF 10

93039W24.DWG

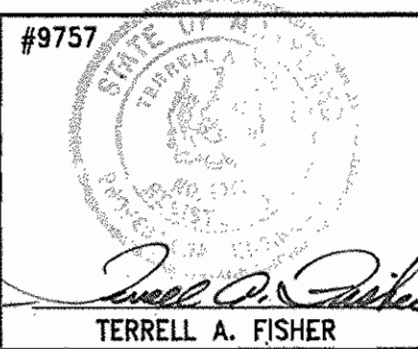




**PROFILES**  
SCALE: 1"=50' HORIZ.  
1"=5' VERT.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
7/22/93  
7/22/93

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
SUITE 100, 9171 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21042  
(410) 461-2855

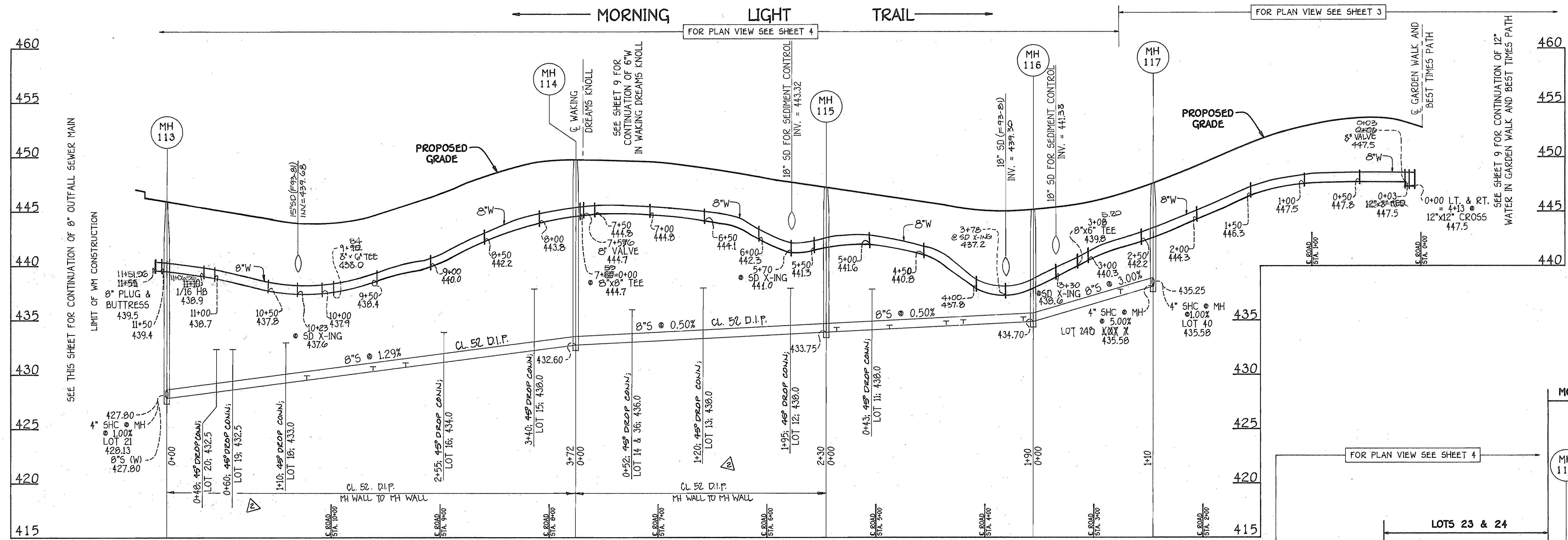


DES: P.W.K./M.J.M.	FC: 10/2	ADJUST 46' DHC'S - ADDED CHART & DETAIL	9/93
DRWN: D.A.N.	FC: 10/2	REVISE APPROPRIATE SHC & REVISE LOT NUMBERS	2/94
CHK: P.W.K.			
DATE: 2-24-93	BY: NO.	REVISION	DATE

**PROFILES**  
WATER & SEWER MAINS  
600' SCALE MAP NO. 35 BLOCK NO. 15

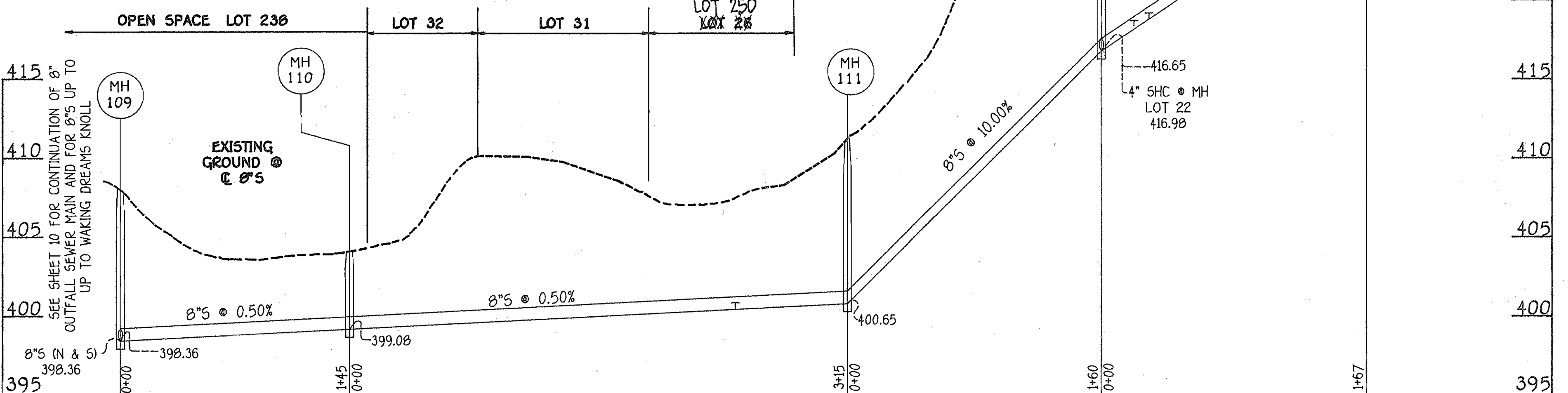
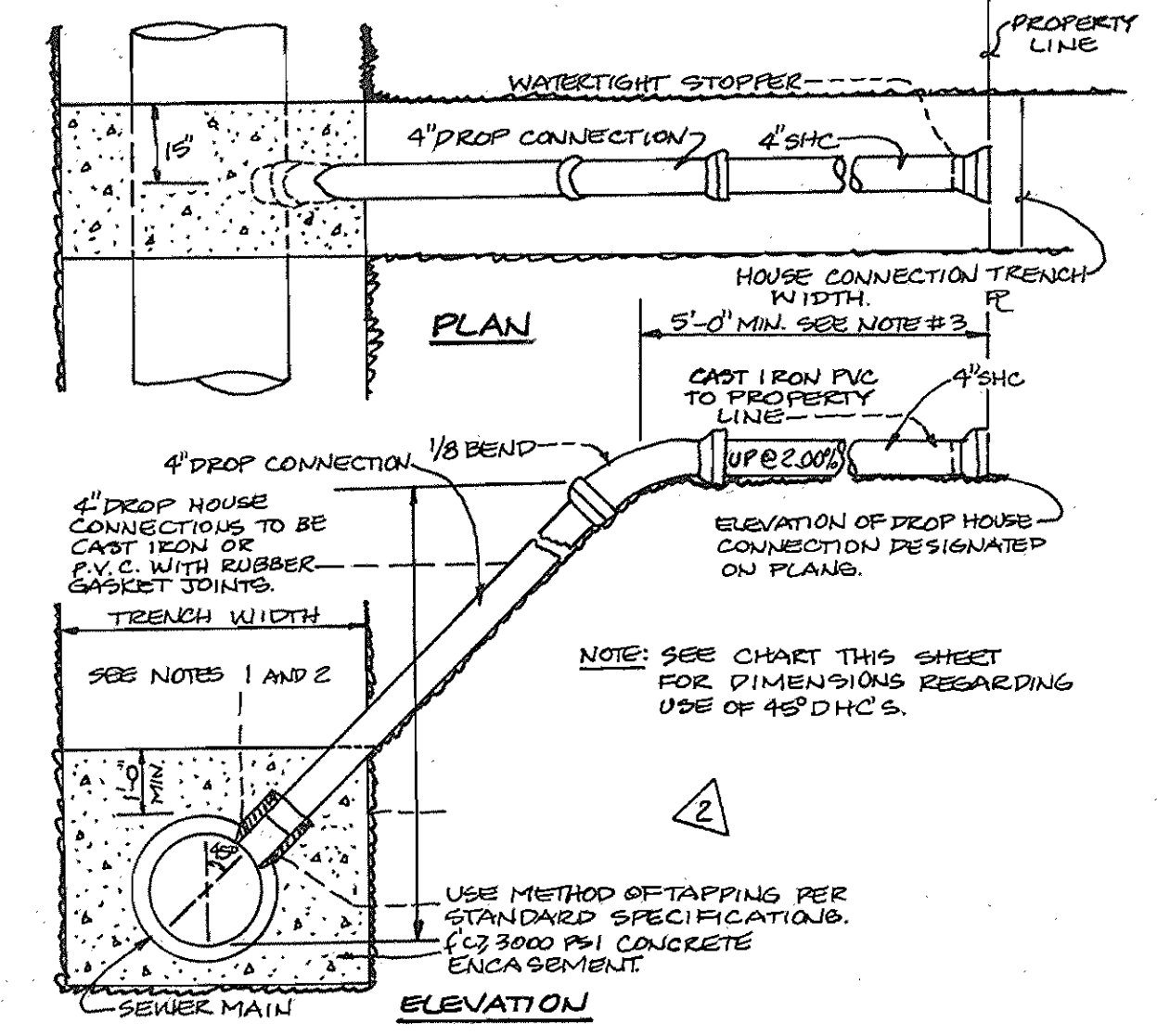
CONTRACT NO. 34-3210-D  
VILLAGE OF RIVER HILL  
SECTION 2, AREA 2, PHASE 2  
LOTS 1 - 127, 237 - 239  
CONTRACT NO. 34-3210-D  
FIFTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
SCALE AS SHOWN  
SHEET 6 OF 10





**4" - 45° DROP HOUSE CONNECTION CHART**

LOT NO.	INV. @ 8" SEWER	INV. @ 1/8 BEND	DISTANCE @ 8" MAIN TO 1/8 BEND	DISTANCE @ 2% 1/8 BEND TO R.C.
145	437.51	432.50	4.99'	30.01'
11	433.97	428.00	4.03'	30.97'
12	433.58	428.00	4.42'	30.58'
13	432.20	428.00	4.20'	34.20'
14	432.86	424.00	3.14'	31.86'
15	432.19	428.00	5.81'	26.19'
16	431.09	424.00	2.91'	29.09'
18	429.22	423.00	3.78'	31.22'
19	428.57	422.50	3.93'	29.07'
20	428.42	422.50	4.08'	28.92'
36	432.86	424.00	3.14'	17.86'
42	424.75	429.00	4.25'	27.75'
43	419.08	423.00	3.92'	28.08'
56	410.39	412.00	2.61'	29.39'
71	418.50	422.00	3.50'	9.50'
72	416.17	421.00	4.83'	46.17'
73	414.55	421.00	6.45'	49.55'
78	416.72	420.00	3.28'	34.72'
79	418.17	425.00	6.23'	25.77'
80	423.11	427.00	3.89'	14.11'
82	423.77	428.00	4.23'	12.77'
83	424.08	428.00	3.92'	14.08'
84	424.28	429.00	4.72'	13.28'
85	424.58	430.00	5.42'	13.58'
95	424.97	420.00	3.03'	28.97'
104	424.18	428.00	3.82'	32.18'
107	423.29	424.00	2.71'	31.29'
109	424.58	420.00	4.58'	28.58'
110	424.28	429.00	4.72'	27.28'
111	423.77	428.00	4.23'	27.77'
123	422.91	421.00	8.09'	23.91'
124	422.36	422.00	9.04'	22.36'
126	443.50	449.00	5.50'	27.50'



NOTE: FOR 4" - 45° DHC SPECS, SEE DETAIL ABOVE THIS SHEET.

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

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James M. Lewis* 7/22/93  
DIRECTOR OF PUBLIC WORKS DATE

*Robert J. Reinger* 6-29-93  
CHIEF, BUREAU OF UTILITIES DATE

*Paul J. Reinger* 7/22/93  
CHIEF, BUREAU OF ENGINEERING

*Michael J. Reinger* 7/22/93  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**FISHER, COLLINS & CARTER, INC.**

CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

SUITE 100, 9171 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21042  
(410) 461-2855

*Terrell A. Fisher*  
TERRELL A. FISHER

DES: P.W.K./M.J.M.	FC/C	ADJUST 45° DHC'S - ADDED CHART & DETAIL	9/93
DRWN: D.A.N.			
CHK: P.W.K.			
DATE: 2-24-93	BY NO.	REVISION	DATE

**PROFILES**  
**WATER & SEWER MAINS**

600' SCALE MAP NO. 35 BLOCK NO. 15

VILLAGE OF RIVER HILL  
SECTION 2, AREA 2, PHASE 2  
LOTS 1 - 127, 237 - 239

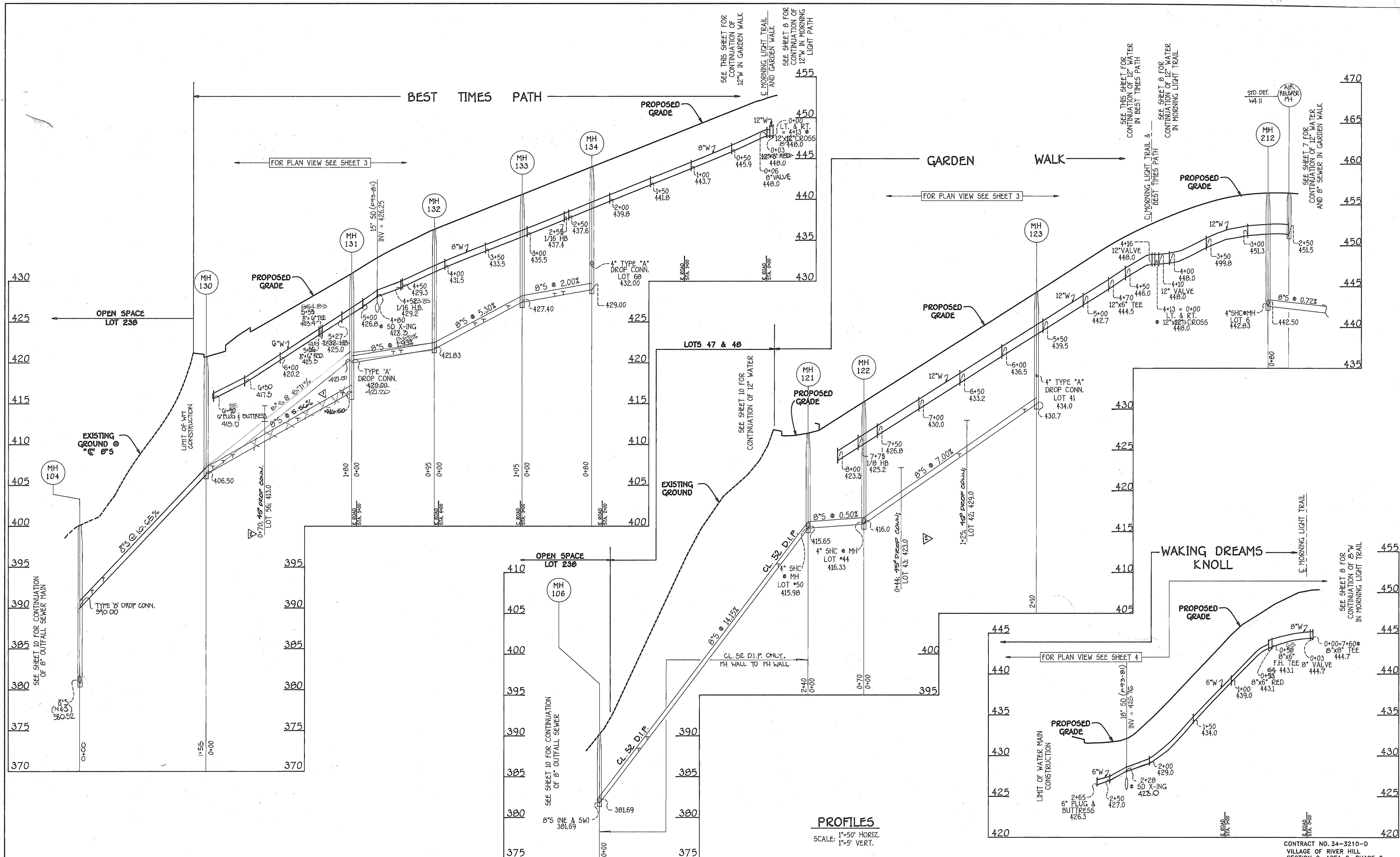
CONTRACT NO. 34-3210-D  
FIFTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 8 OF 10

30396W28.DWG





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

CONTRACT NO. 34-3210-D  
VILLAGE OF RIVER HILL  
SECTION 2, AREA 2, PHASE 2  
WATER AND SEWER EXTENSIONS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
7/22/93  
7/22/93  
6-29-93  
7/16/93

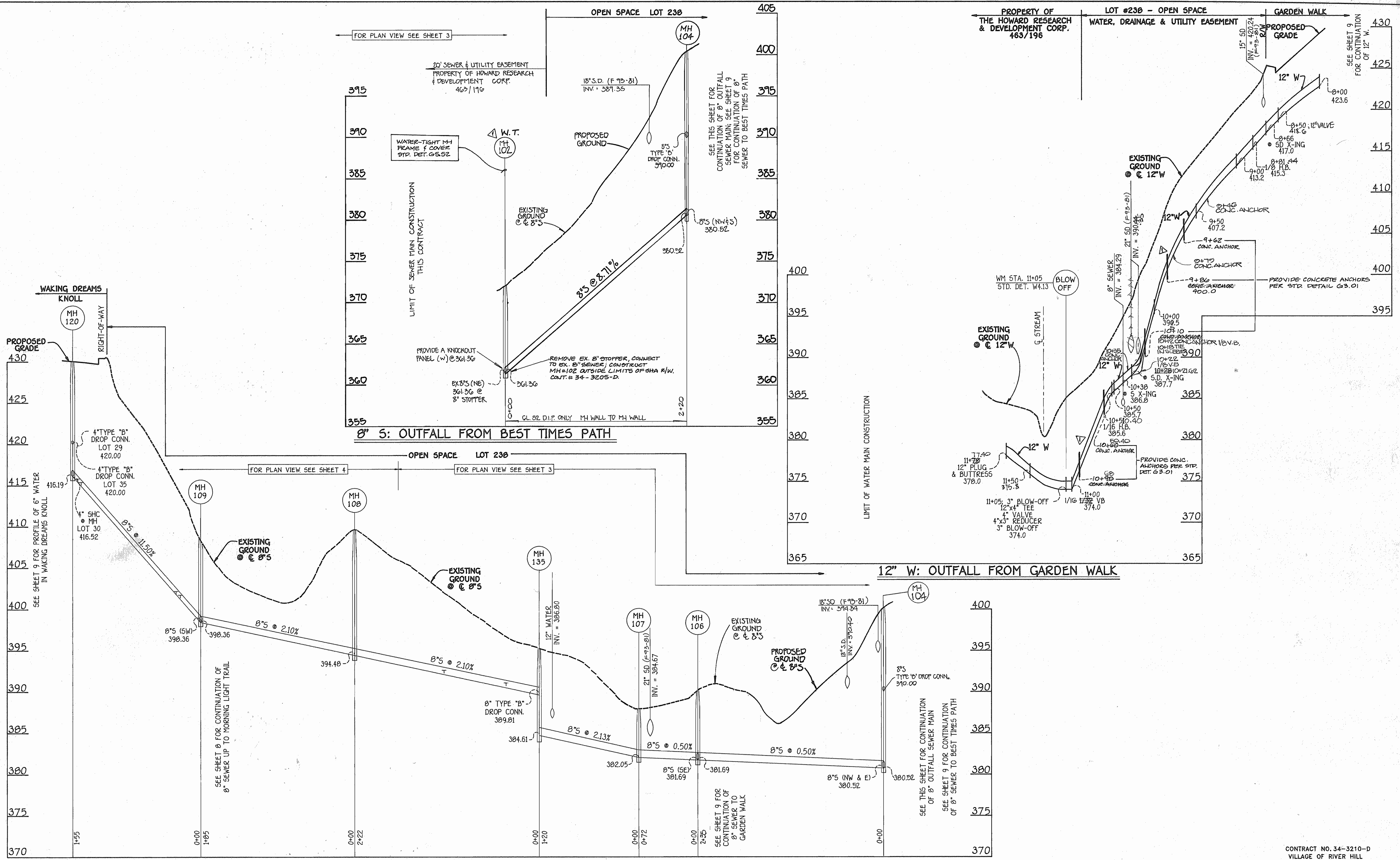
**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
SUIITE 100, 9171 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21042  
(410) 461 - 2855

#9757  
TERRELL A. FISHER

DES:	P.W.K./M.J.M.	EC:fc	REVISED PIPE SLOPE 4 IN. @ MH #131	8/93
DRWN:	D.A.N.	EC:fc	ADJUST 4" 45° D.C.'S - ADDED CHART & DETAIL	9/93
CHK:	P.W.K.			
DATE:	2-24-93	BY:	NO.	REVISION

**PROFILES**  
WATER & SEWER MAINS  
600' SCALE MAP NO. 35 BLOCK NO. 15

VILLAGE OF RIVER HILL  
SECTION 2, AREA 2, PHASE 2  
CONTRACT NO. 34-3210-D  
FIFTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
SCALE AS SHOWN  
SHEET 9 OF 10



8" 5: OUTFALL FROM WAKING DREAMS KNOLL

12" W: OUTFALL FROM GARDEN WALK

8" 5: OUTFALL FROM BEST TIMES PATH

CONTRACT NO. 34-3210-D  
 VILLAGE OF RIVER HILL  
 SECTION 2, AREA 2, PHASE 2  
 WATER AND SEWER EXTENSIONS  
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *Ramon M. Lewis* 7/22/93  
 Chief, Bureau of Engineering: *Paul M. Brown* 7/22/93  
 Chief, Bureau of Utilities: *Robert J. Brown* 6-29-93  
 Chief, Land Development Division: *John J. Brown* 7/21/93

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERS AND LAND SURVEYORS  
 SUITE 100, 3171 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2855  
 TERRELL A. FISHER

DES:	P.W.K./M.J.M.	DATE:	2-24-93
DRWN:	D.A.N.	BY:	NO.
CHK:	P.W.K.	REVISION:	
DATE:	2-24-93	DATE:	

PROFILES  
 WATER & SEWER MAINS  
 600' SCALE MAP NO. 35 BLOCK NO. 15

VILLAGE OF RIVER HILL  
 SECTION 2, AREA 2, PHASE 2  
 LOTS 1 - 127, 237 - 239  
 CONTRACT NO. 34-3210-D  
 FIFTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN  
 SHEET 10 OF 10