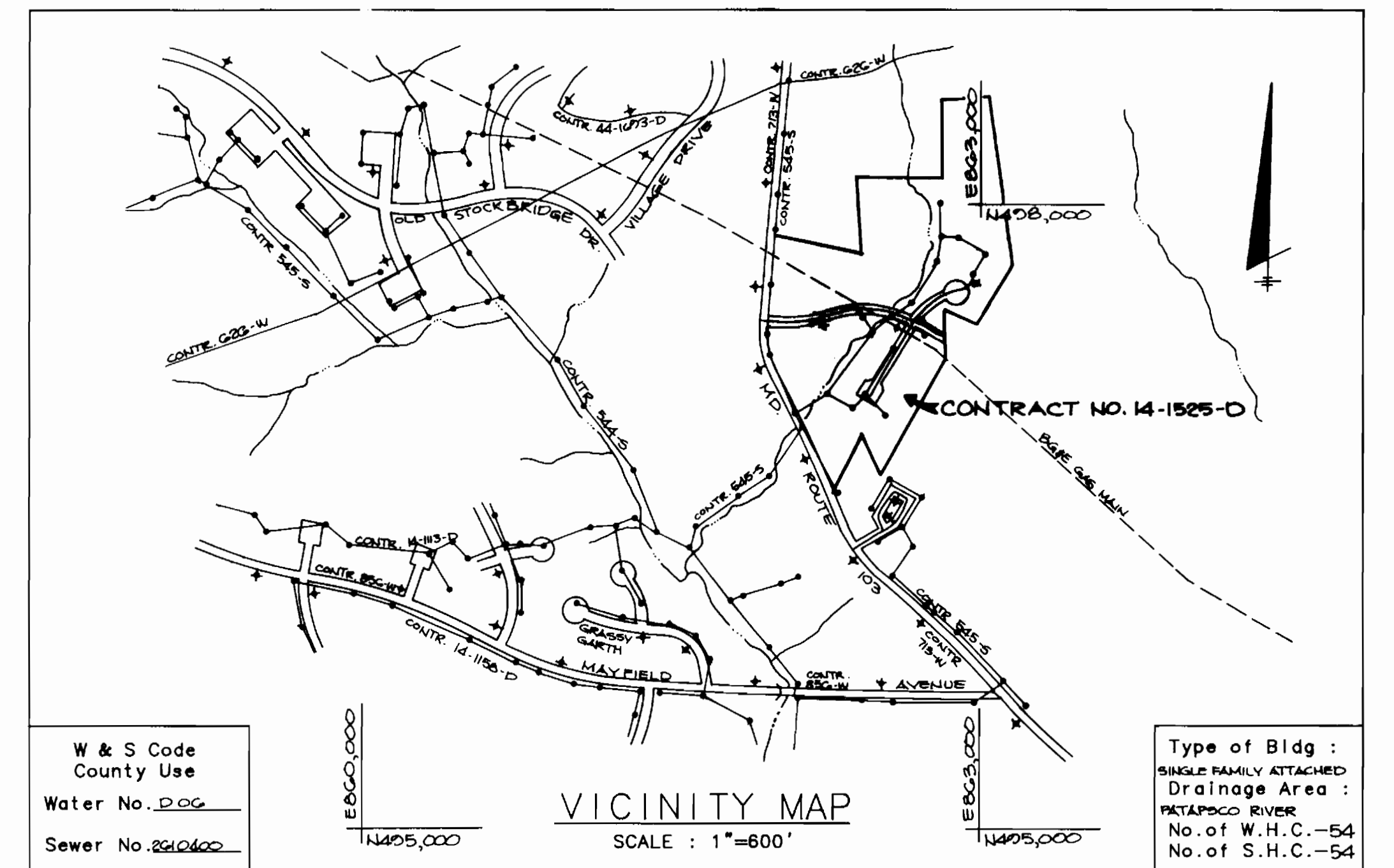


SHEET INDEX	
SHEET NO.	ITEM
1	TITLE SHEET
2	PLAN OF WATER AND SEWER MAINS
3	PROFILE OF WATER AND SEWER MAINS
4	PROFILE OF WATER AND SEWER MAINS



WILLOWOOD SECTION ONE

CONTRACT NO. 14-1525-D

HOWARD COUNTY, MARYLAND

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. data.
- All pipe elevations shown are \ominus 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 Constructions. 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 \boxplus 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 personal satisfaction. Any damage to existing facilities due to the contractor's negligence shall be repaired at the contractor's expense.
- The 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 and Electric Co. - Contractor Services	850-4820
Baltimore Gas and Electric Co. - Underground Damage Control	859-8004
Baltimore Gas and Electric Co. - Trouble Shooting	298-0001
Miss Utility	1-558-0100
Colonial Pipeline Co.	795-1390
Bureau of Utilities, Ho.Co. Department of Public Works	992-2386
C & P Telephone Co.	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.
- The contractor shall remove trees, stumps and roots along line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.
- All water mains to be D.I.P. Class 52 unless otherwise noted.
- Tops of all water mains to have a minimum of 3'-1/2' cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be buttressed or anchored with concrete in accordance with the Standard Details unless otherwise provided for on the drawings.
- Fire hydrants shall be set to the bury line elevation shown on the drawings. All fire hydrants shall be strapped and buttressed with concrete in accordance with the Standard Details. Soil around the fire hydrant shall be compacted in accordance with Section 1003 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.
- All service clamps are to have stainless straps.
- All D.I.P. fittings shall be in accordance with A.W.W.A. specifications C-153 Ductile Iron Compact Fittings, 3" through 12" for water and other liquids.
- All sewer mains shall be C.S.P.X., R.C.S.P., V.C.P.X., A.C.P. Class 2400 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.
- Force mains shall be D.I.P. only.
- Manholes shown with 12" and 18" walls are for brick manholes only.
- Manholes designated W.T. in plan and profile shall have watertight frame and covers, Standard Detail 05.52. Where watertight manhole frame and cover is used, set top of frame 1'-6" above finished grade unless otherwise noted on the drawings.
- House(s) with the symbol "C.N.S." indicates that the cellar cannot be served.

~~REVISED CONSTRUCTION PLAN TO SUPERSEDE~~
THE CONSTRUCTION PLANS APPROVED ON DEC. 10, 1988.

INVERT ELEVATIONS OF S.H.C. AT PROPERTY LINE FOR TOWNHOUSES

MH TO MH	LOT NOs	TYPE	INV. ELEV.	MINIMUM SERVICEABLE ELEV.
9-10	107	SINGLE	274.07	277.27
	105#108	DOUBLE	274.72	277.92
	108#109	DOUBLE	274.60	278.00
	112	SINGLE	270.10	282.30
10-12	110#111	DOUBLE	270.50	283.70
	113#114	DOUBLE	251.75	285.15
	115	SINGLE	270.58	282.98
	109#104	DOUBLE	275.82	279.02
10-11	112#117	DOUBLE	276.18	279.38
	101#102	DOUBLE	276.42	279.62
	118	SINGLE	276.78	279.98
	119#120	DOUBLE	277.22	280.42
	100	SINGLE	276.94	280.14
	121#122	DOUBLE	278.02	281.22
	28#29	DOUBLE	277.82	281.02
22-23	123#124	DOUBLE	280.04	289.44
	26#27	DOUBLE	278.68	281.88
	125#126	DOUBLE	280.14	289.54
	24#25	DOUBLE	279.70	282.90
	127#128	DOUBLE	286.42	289.62
	22#23	DOUBLE	280.85	284.05
	128#130	DOUBLE	286.23	289.43
	130#140	DOUBLE	280.56	283.96
	141#142	DOUBLE	280.77	284.17
	143#144	DOUBLE	280.98	284.38
23-24	145	SINGLE	281.94	284.94
	137#138	DOUBLE	281.68	285.08
	135#136	DOUBLE	281.88	285.08
	133#134	DOUBLE	282.09	285.29
131#132	DOUBLE	282.62	285.82	

BENCHMARKS

BM #1 ELEV. 913.42
RAILROAD SPIKE IN G&E POLE #149652
EAST SIDE OF PAVING ON MD ROUTE 103
2600'± NORTH OF MAYFIELD AVENUE

BM #2 ELEV. 287.06
N.497.942.53 E. 062.770.90
IRON PIN AT PROPERTY CORNER, 600'±
EAST OF MD ROUTE 103 2,950'±
NORTH OF MAYFIELD AVENUE

Item	Quantities		Material Supplier
	Estimated	As Built	
12" WATER PIPE	870 LF	869.91	Griffing Pipe Div.
8" WATER PIPE	796 LF	303	"
6" WATER PIPE	411 LF	403	"
12" VALVES	1	0	Pot Air Road Supply
8" VALVES	3	3	"
6" VALVES (EXCL. FH)	3	3	"
FIRE HYDRANTS	4	4	"
1" W.H.C.	227 LF	724	"
3/4" W.H.C.	709 LF	1026	"
1 1/2" DRAIN	1	2	"
6" SEWER PIPE	2808 LF	2600.53	"
6" S.H.C.	1321 LF	1223	"
MANHOLE	226 S.V.P.	168.17	Atlantic Concrete Products
6" D.I.P.	77 LF	77	Pot Air Rd. Supply

Sediment control measures for this contract will be implemented in accordance with Section 219 of the Specifications and as shown on SDP-87-81.


HOWARD SOIL CONSERVATION DISTRICT:

Review for Howard Soil Conservation District and meets technical requirements.

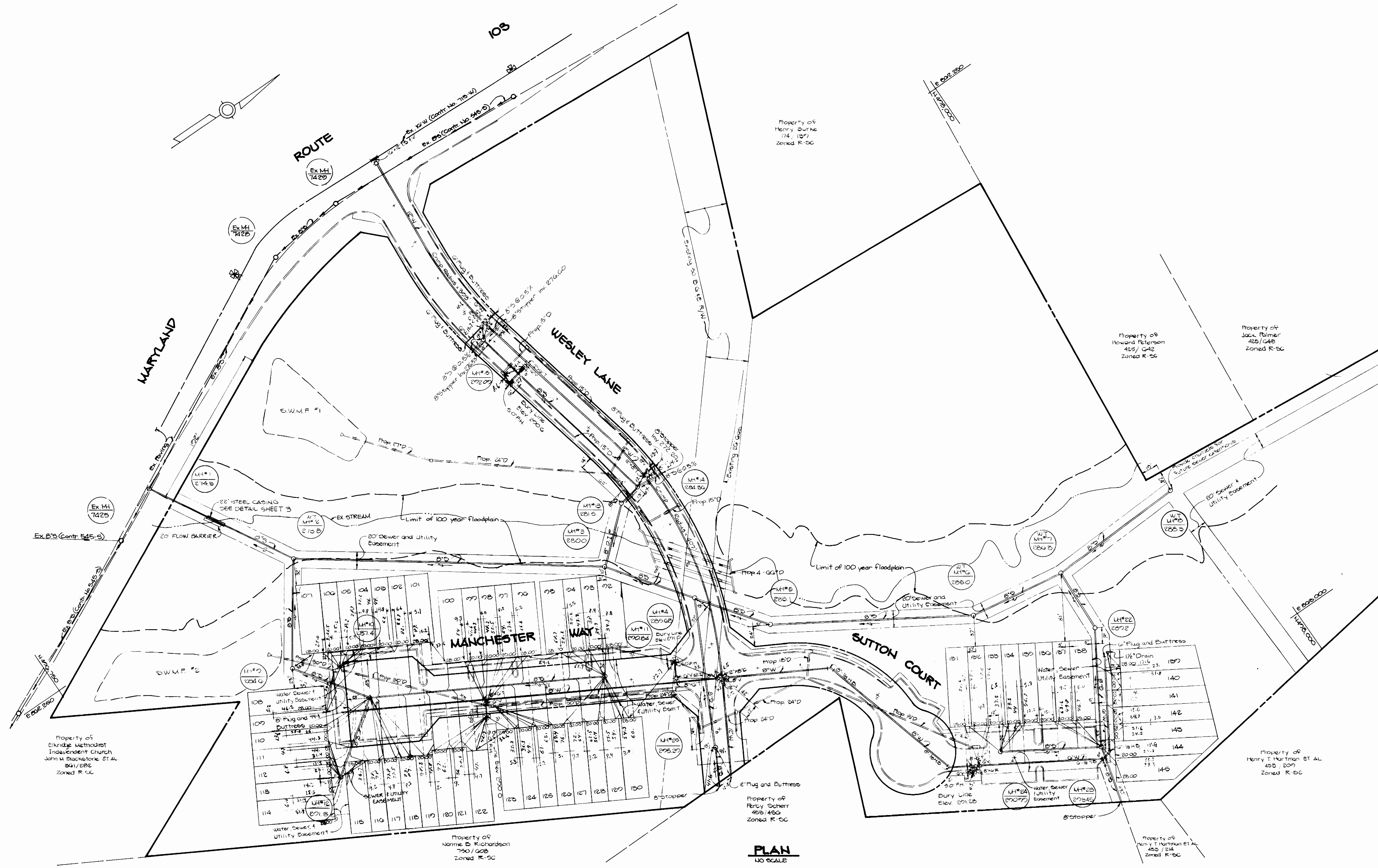
James Helm 6/5/89
U.S. SOIL CONSERVATION SERVICE DATE

The plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Arthur E. Muegge 6/6/89
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>James Helm</i> 6/5/89 DIRECTOR OF PUBLIC WORKS DATE <i>Arthur E. Muegge</i> 6/6/89 CHIEF, BUREAU OF UTILITIES DATE	THE RIEMER GROUP INC. 3105 NORTH RIDGE ROAD ELLICOTT CITY, MARYLAND (301) 461-2690  ARTHUR E. MUEGGE 48707	DES: DAM DRN: DAM CHK: DATE: BY NO. REVISION	TITLE SHEET 600' SCALE MAP NO. 37 BLOCK NO.	WILLOWOOD SECTION ONE 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 14-1525-D SCALE AS SHOWN SHEET 1 OF 4
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------	------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------

REBUILT 9/21/89



PLAN
NO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature]
DIRECTOR OF PUBLIC WORKS
DATE

[Signature]
CHIEF BUREAU OF ENGINEERING
DATE

[Signature]
CHIEF, BUREAU OF UTILITIES
DATE

[Signature]
CHIEF, LAND DEVELOPMENT DIVISION
DATE

THE RIEMER GROUP, INC.
3105 NORTH RIDGE ROAD
ELLCOTT CITY, MARYLAND

[Signature]
ARTHUR E. MUEGGE
#8707

DES: P.A.M.					
DRN: M.A.D.					
CHK:					
DATE:	J.V.	1	ADDED SEWER & UTILITY EASEMENT	4-15-89	
BY:	NO.		REVISION	DATE	

PLAN OF
WATER AND SEWER MAIN

600' SCALE MAP NO. 37 BLOCK NO.

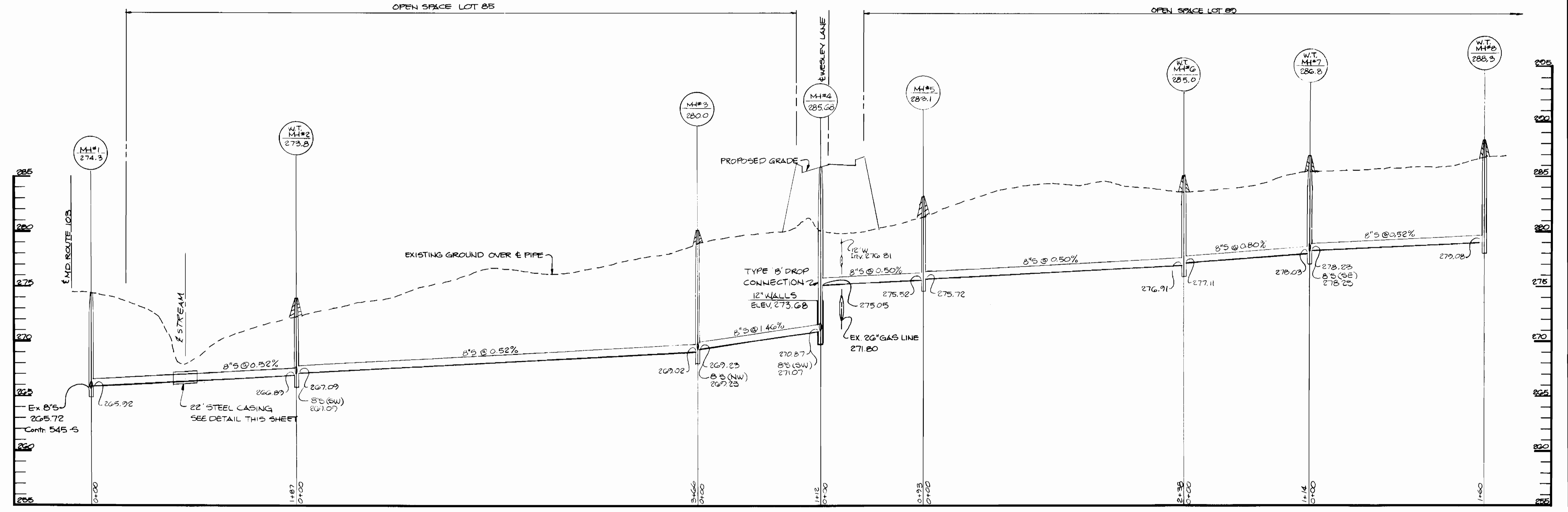
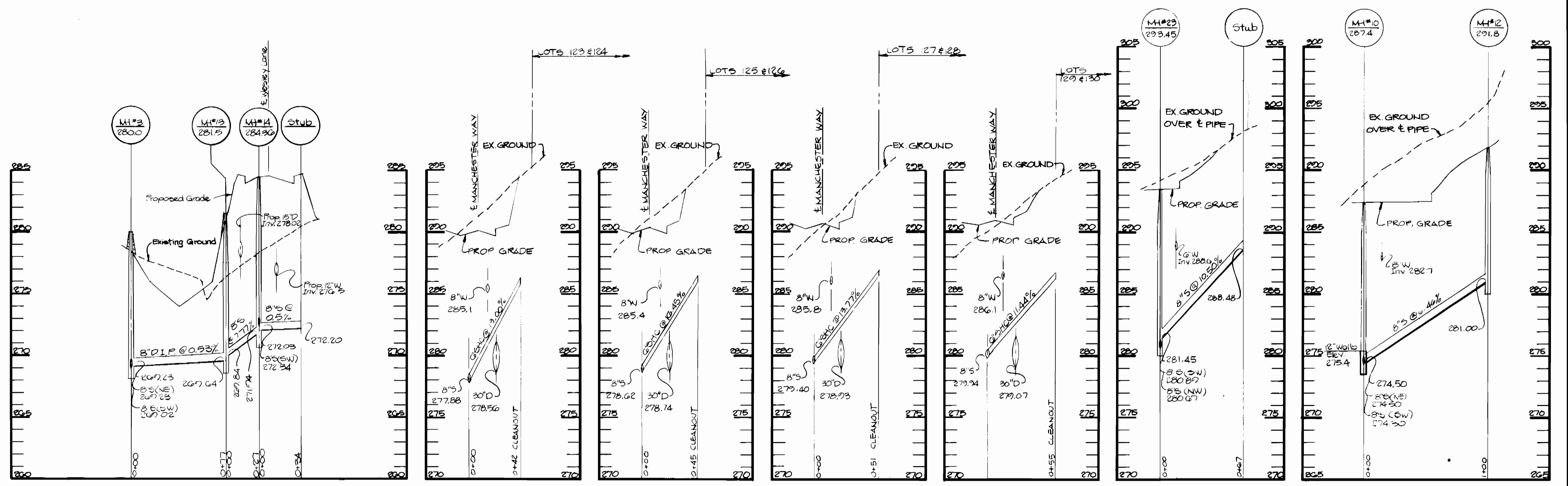
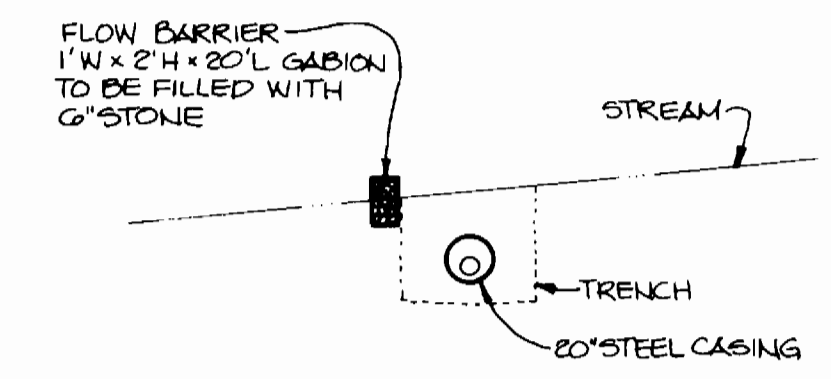
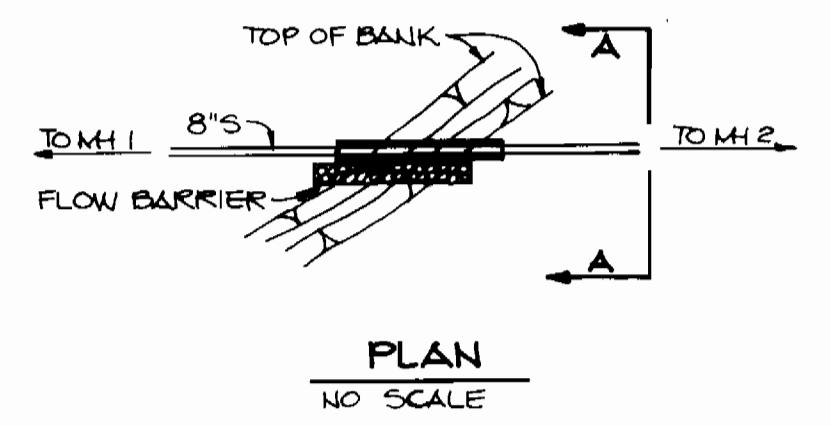
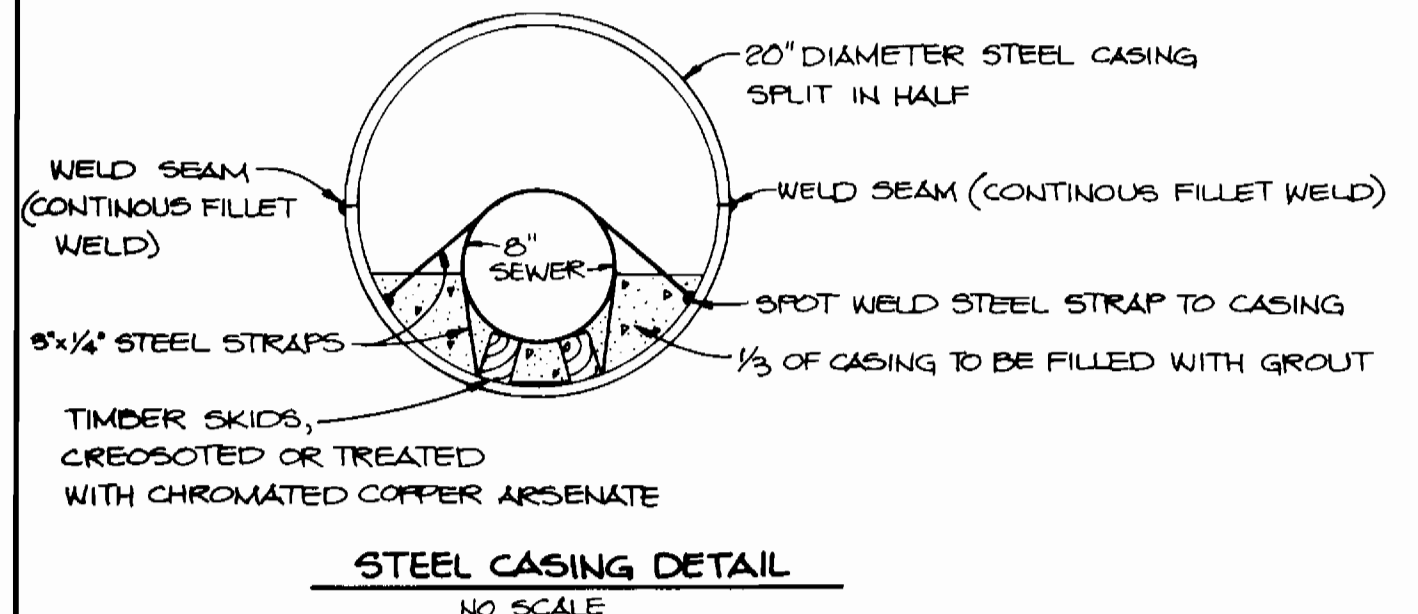
WILLOWOOD
SECTION ONE
1 ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 14-1525-D

SCALE AS SHOWN

SHEET 2 OF 4

AS-BUILT 9/21/89

NOTE: UPPER HALF OF STEEL CASING TO BE WELDED TO LOWER HALF AFTER GROUT HAS BEEN FLOURED.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

THE RIEMER GROUP, INC.
3105 NORTH RIDGE ROAD
ELLCOTT CITY, MARYLAND



DES: DAM					
DRN: DAM					
CHK:					
DATE:	BY	NO.	REVISION	DATE	

PROFILE OF
WATER AND SEWER MAINS

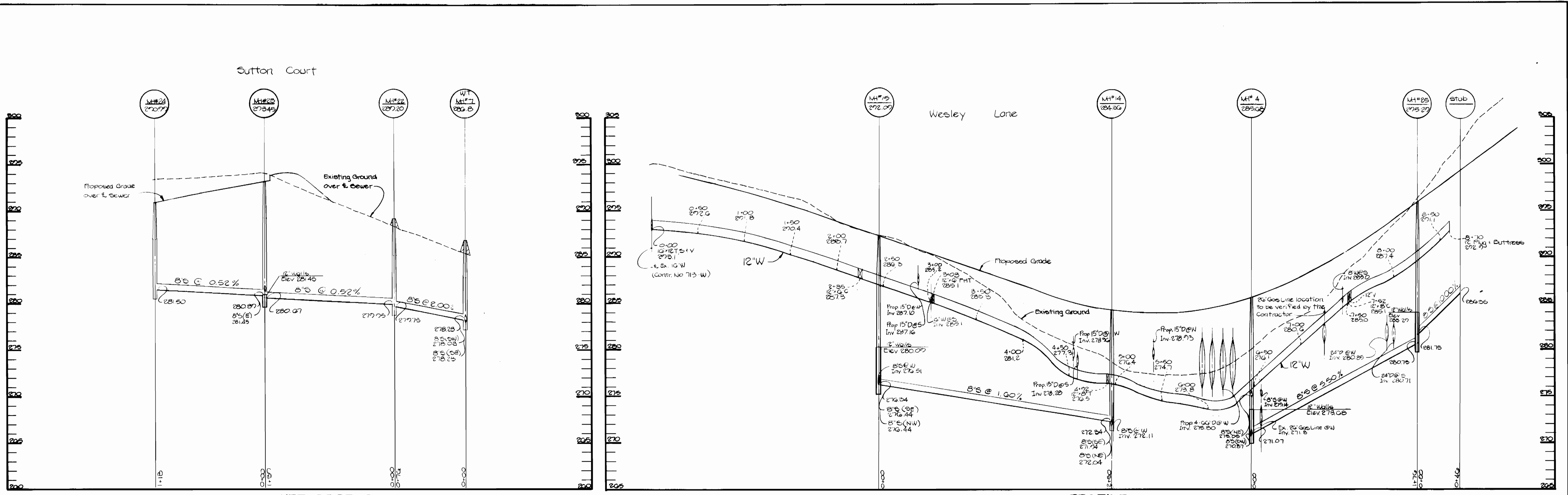
WILLOWOOD
SECTION ONE
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 14-1525-D

SCALE
AS
SHOWN

SHEET
3 OF 4

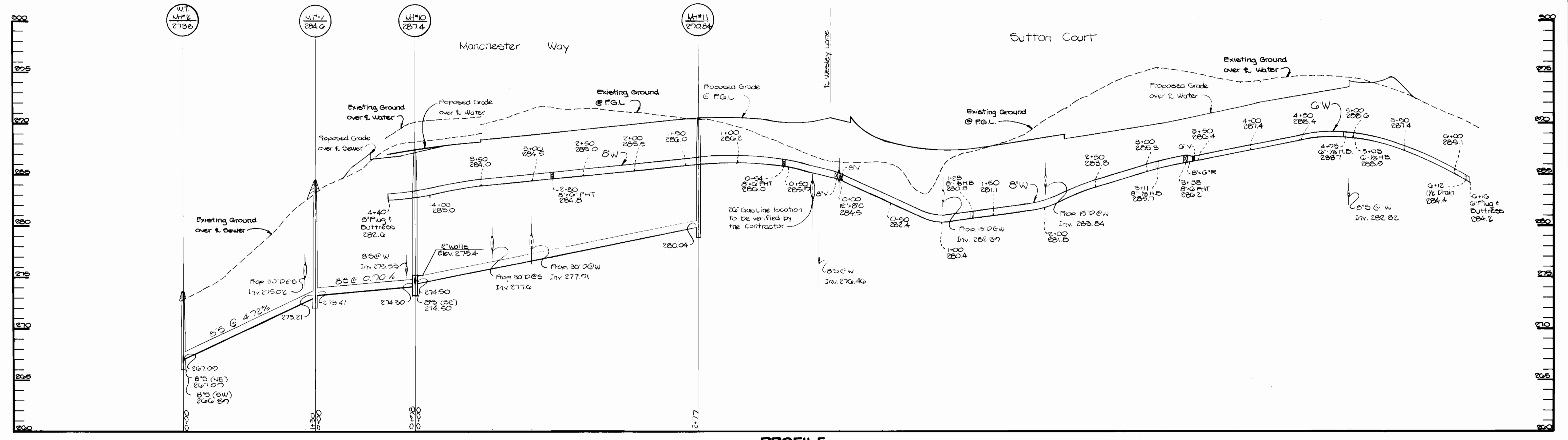
AS-BUILT 9/21/89

BRUNING 44 132 091 950



SEWER PROFILE
 HOR: 1"=50'
 VERT: 1"=5'

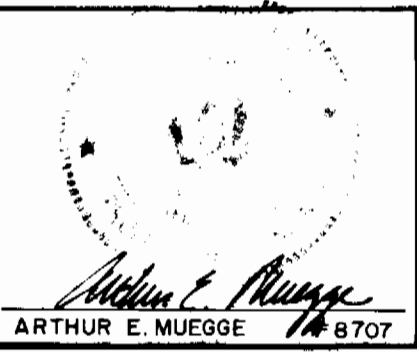
PROFILE
 HOR: 1"=50'
 VERT: 1"=5'



PROFILE
 HOR: 1"=50'
 VERT: 1"=5'

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *[Signature]*
 Chief, Bureau of Engineering: *[Signature]*
 Chief, Bureau of Utilities: *[Signature]*
 Chief, Land Development Division: *[Signature]*

THE RIEMER GROUP, INC.
 3105 NORTH RIDGE ROAD
 ELLICOTT CITY, MARYLAND
 Arthur E. Muegge



DES: DAM					
DRN: M.A.D.					
CHK:					
DATE:	BY	NO.	REVISION	DATE	

PROFILE OF
 WATER AND SEWER MAINS
 600' SCALE MAP NO. 37 BLOCK NO.

WILLOWOOD
 SECTION ONE
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 14-1525-D

SCALE
 AS
 SHOWN
 SHEET
 4 OF 4