

STARK COUNTY METROPOLITAN SEWER DISTRICT

PROJECT NO. 449 – SANITARY SEWER IMPROVEMENTS

CONTRACT NO. 1

TUSCARAWAS TOWNSHIP

STARK COUNTY, OHIO

1993

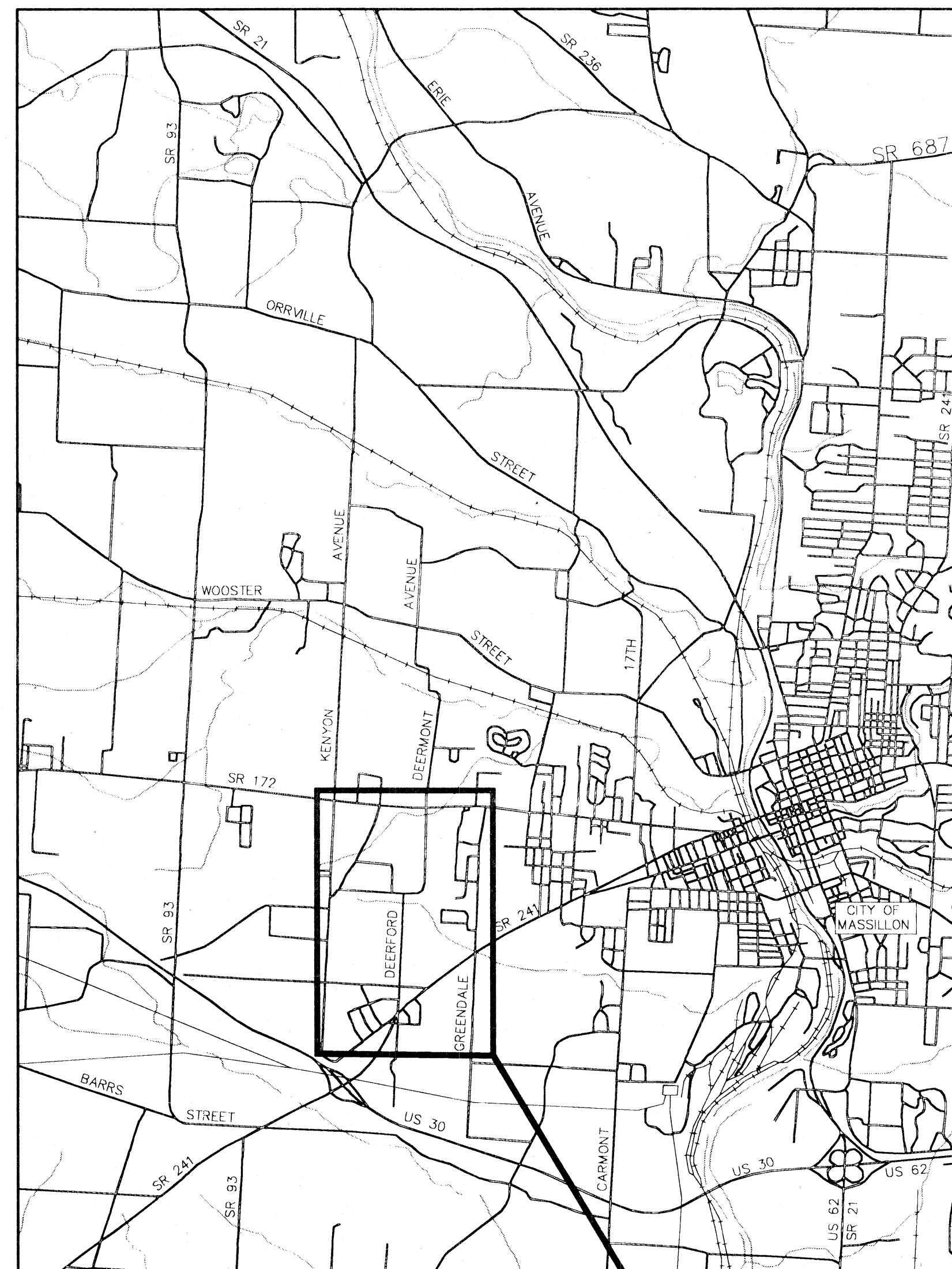
LIST OF DRAWINGS

DESCRIPTION

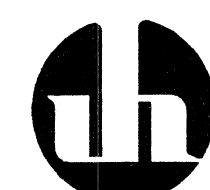
COVER SHEET
 SITE PLAN
 SOIL BORING LOCATIONS
 EASEMENT, EAST OF GREENDALE AVE., STA. 0+00 TO STA. 12+00
 EASEMENT, EAST OF GREENDALE AVE., STA. 12+00 TO STA. 25+00
 EASEMENT, EAST OF GREENDALE AVE., STA. 25+00 TO STA. 33+33
 MILLERSBURG ROAD, GREENDALE AVE. TO CLEMENTZ AVE., STA. 0+00 TO STA. 13+00
 MILLERSBURG ROAD, CLEMENTZ AVE. TO UPLAND AVE., STA. 13+00 TO STA. 28+00
 MILLERSBURG & MOFFIT ROADS, UPLAND AVE. TO MARJORY DR., STA. 28+00 TO 35+27, STA. 0+00 TO 8+00
 MOFFIT ROAD, MARJORY DR. TO VICEROY DR., STA. 8+00 TO STA. 21+70
 CLEMENTZ AVENUE, MILLERSBURG RD. TO SINCLAIR ST. AND RUDY STREET, DEERFORD AVE. TO 650' WEST
 SINCLAIR STREET, MILLERSBURG RD. TO DEERFORD AVE., STA. 0+00 TO STA. 12+00
 SINCLAIR STREET, DEERFORD AVE. TO MARJORY DR., STA. 12+00 TO STA. 24+40
 UPLAND AVENUE, MILLERSBURG RD. TO JULIA ST., STA. 0+00 TO STA. 14+85
 BELLEVUE AVENUE, MILLERSBURG RD. TO JULIA ST., STA. 0+00 TO STA. 11+09
 DEERFORD AVENUE, MILLERSBURG RD. TO SINCLAIR ST., STA. 0+00 TO STA. 9+39
 MARJORY DRIVE, MOFFIT RD. TO RUDY ST., STA. 0+00 TO STA. 9+00
 MARJORY DRIVE, RUDY ST. TO SINCLAIR ST., STA. 9+00 TO STA. 16+72
 BAKERWOOD DRIVE, MOFFIT RD. TO RUDY ST., STA. 0+00 TO STA. 10+45
 VICEROY DRIVE, MOFFIT RD. TO RUDY ST., STA. 0+00 TO STA. 11+77
 GREENDALE AVENUE, MILLERSBURG RD. TO RAYNELL ST., STA. 0+00 TO STA. 10+00
 EASEMENT, GREENDALE AVE. TO DEERFORD AVE., STA. 0+00 TO STA. 13+00
 EASEMENT, GREENDALE AVE. TO DEERFORD AVE., STA. 13+00 TO STA. 25+00
 EASEMENT, GREENDALE AVE. TO DEERFORD AVE., STA. 25+00 TO STA. 34+74
 LOCHWOOD STREET, DEERFORD AVE. TO BONNIE BRAE, STA. 0+00 TO STA. 10+00
 LOCHWOOD STREET, BONNIE BRAE TO HIGHLANDER AVE., STA. 10+00 TO STA. 24+67
 SUNNYBROOK STREET, HARMONY AVE. TO LINK AVE., STA. 0+00 TO STA. 9+44
 MEADOWCREST STREET, HARMONY AVE. TO LINK AVE., STA. 12+00 TO STA. 24+26
 GORDON STREET, GREENDALE AVE. TO 300' WEST AND HARMONY AVENUE, SUNNYBROOK TO MEADOWCREST
 GREENDALE AVENUE, RAYNELL ST. TO STANTON ST., STA. 10+00 TO STA. 25+31
 GREENDALE AVENUE, STANTON ST. TO GORDON ST., STA. 25+31 TO STA. 40+23
 NOBLE AVENUE, STANTON ST. TO GORDON ST., STA. 0+00 TO STA. 11+03
 STANTON STREET, GREENDALE AVE. TO NOBLE AVE., STA. 0+00 TO STA. 8+27
 STARBROOK AVENUE, STANTON ST. TO CREST CIRCLE, STA. 10+00 TO STA. 23+38
 STARBROOK AVENUE, BELMERE ST. TO STANTON ST., STA. 0+00 TO STA. 10+00
 LINCOLN STREET, HIGHLANDER AVE. TO EASEMENT
 EASEMENT, LINCOLN ST. TO HIGHLANDER AVE., STA. 0+00 TO STA. 8+00
 EASEMENT, LINCOLN ST. TO HIGHLANDER AVE., STA. 8+00 TO STA. 13+17
 HIGHLANDER AVENUE, BONNIE BRAE DR. TO EASEMENT, STA. 16+00 TO STA. 29+00
 HIGHLANDER AVENUE, KENYON AVE. TO BONNIE BRAE DR., STA. 1+00 TO STA. 16+00
 BONNIE BRAE DRIVE, EAST OF HIGHLANDER AVE., STA. 10+00 TO STA. 24+56
 BONNIE BRAE DRIVE, NORTH OF LOCHWOOD ST., STA. 0+00 TO STA. 10+00
 MANHOLE SCHEDULE AND PAVEMENT DETAILS
 MISCELLANEOUS DETAILS
 PUMP STATION SITE PLAN
 PUMP STATION DETAILS
 PUMP STATION ELECTRICAL
 GENERAL NOTES
 GENERAL NOTES

DWG. NO.

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PROJECT AREA



Jones & Henry Engineers, Inc.
 TOLEDO, OHIO

APPROVALS

STARK COUNTY COMMISSIONERS

APPROVED BY:

DATE:

MEMBER

MEMBER

MEMBER

STARK COUNTY SANITARY ENGINEER

MASSILLON CITY ENGINEER (ACTING)

STARK COUNTY OFFICIALS

BOARD OF COMMISSIONERS

JOHN P. DOUGHERTY
 GAYLE A. JACKSON
 DONALD R. WATKINS

STEPHEN E. SINGLETON – ADMINISTRATOR

MICHAEL S. ARMOGIDA – SANITARY ENGINEER

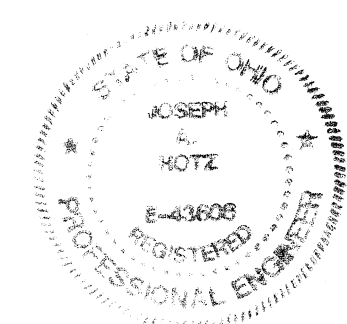
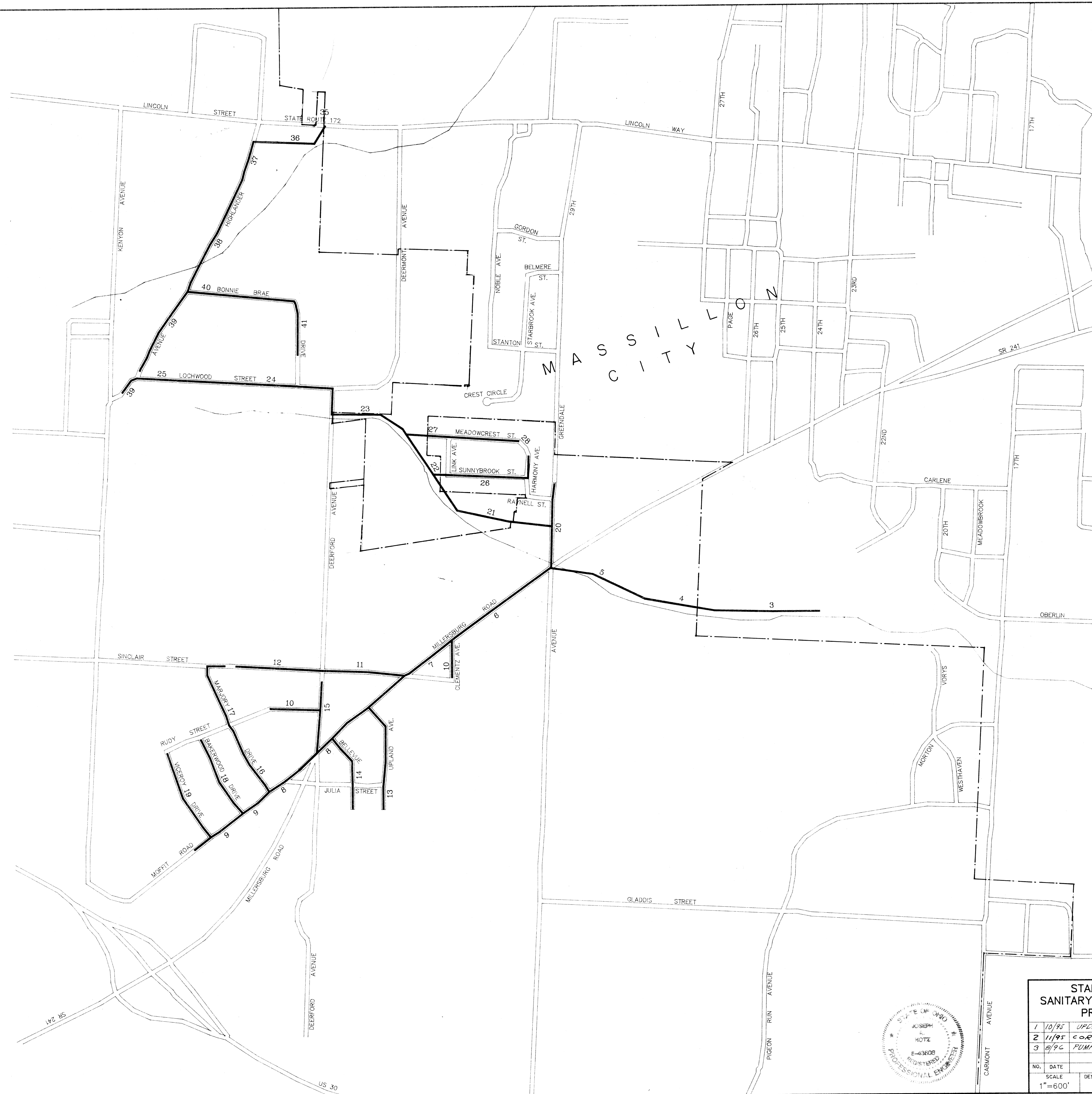
FRANCIS V. FISCHER – COUNTY ENGINEER

JANET WEIR CREIGHTON – AUDITOR

ROBERT D. HOROWITZ – PROSECUTOR

CONSTRUCTION SET

FEB 13 1997

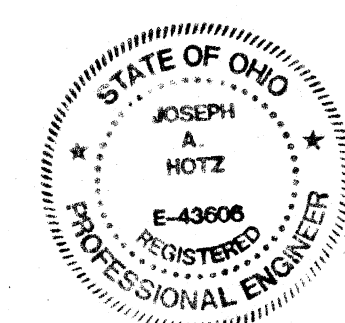


STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1				SITE PLAN	
1	10/95	UPDATE	RLW	JOB NO. 116-3377	
2	11/95	CORP. LINE ADDED	RLW	DATE MARCH 1993	
3	5/96	PUMP STA. DELETED	RLW	JONES & HENRY ENGINEERS, INC.	
NO. DATE		REVISIONS		BY	
SCALE 1"=600'		DESIGN-LAYOUT PR	DRAWN BEF	CHECKED JAH	DATE
				SHEET NO. 1 OF 48	

20-357 SITE
20-24950



NOTE:
SOIL BORINGS 9, 10 AND 11
HAVE BEEN DELETED.

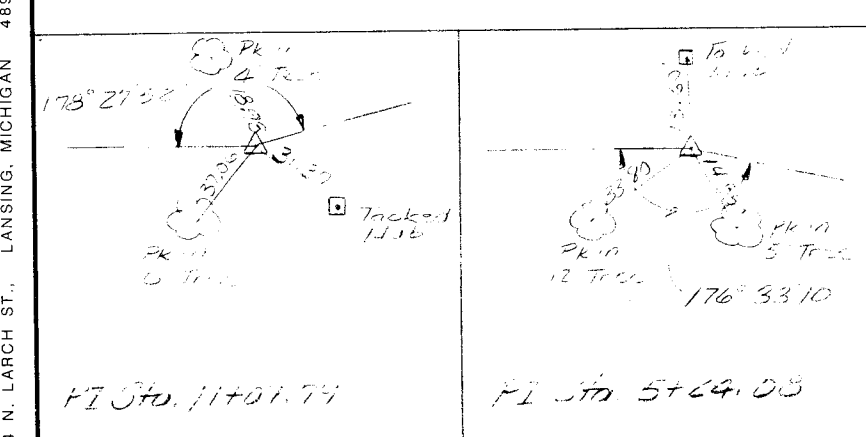
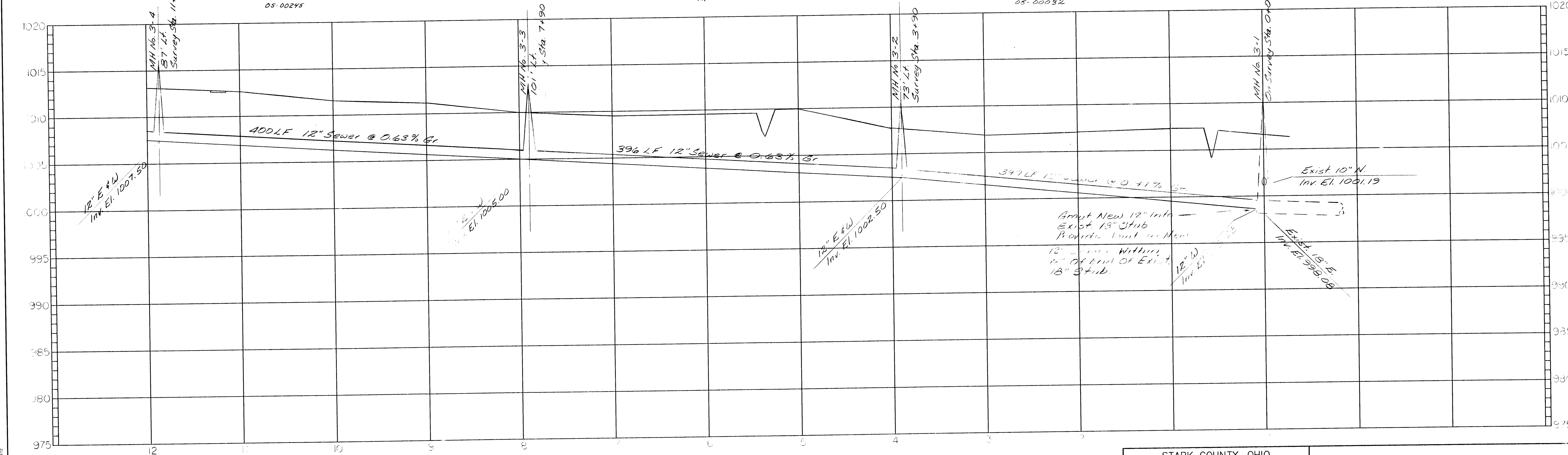
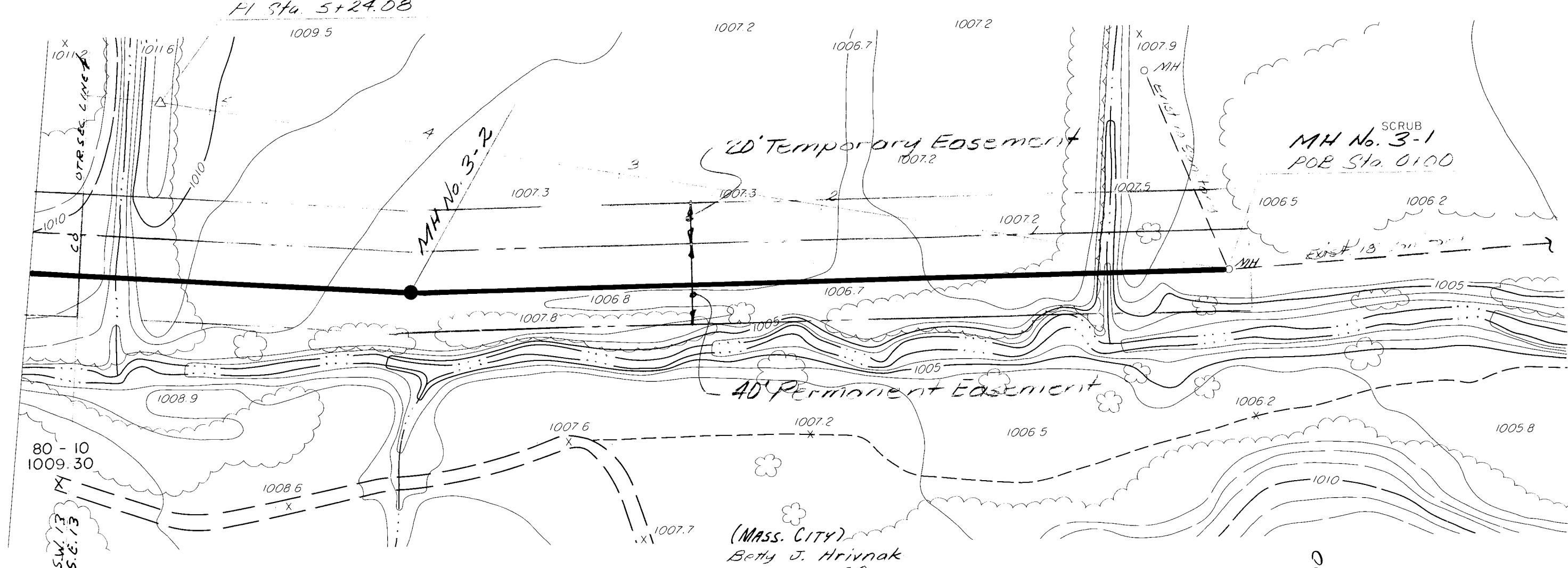
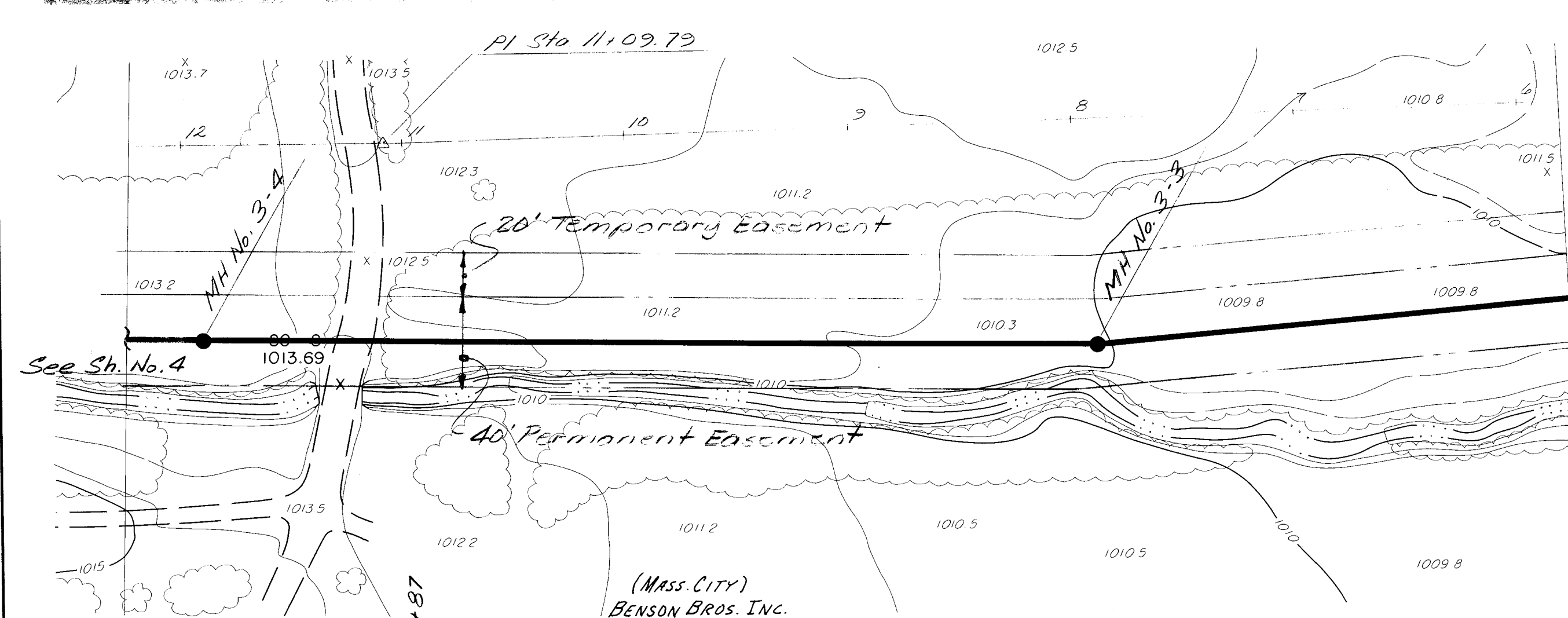
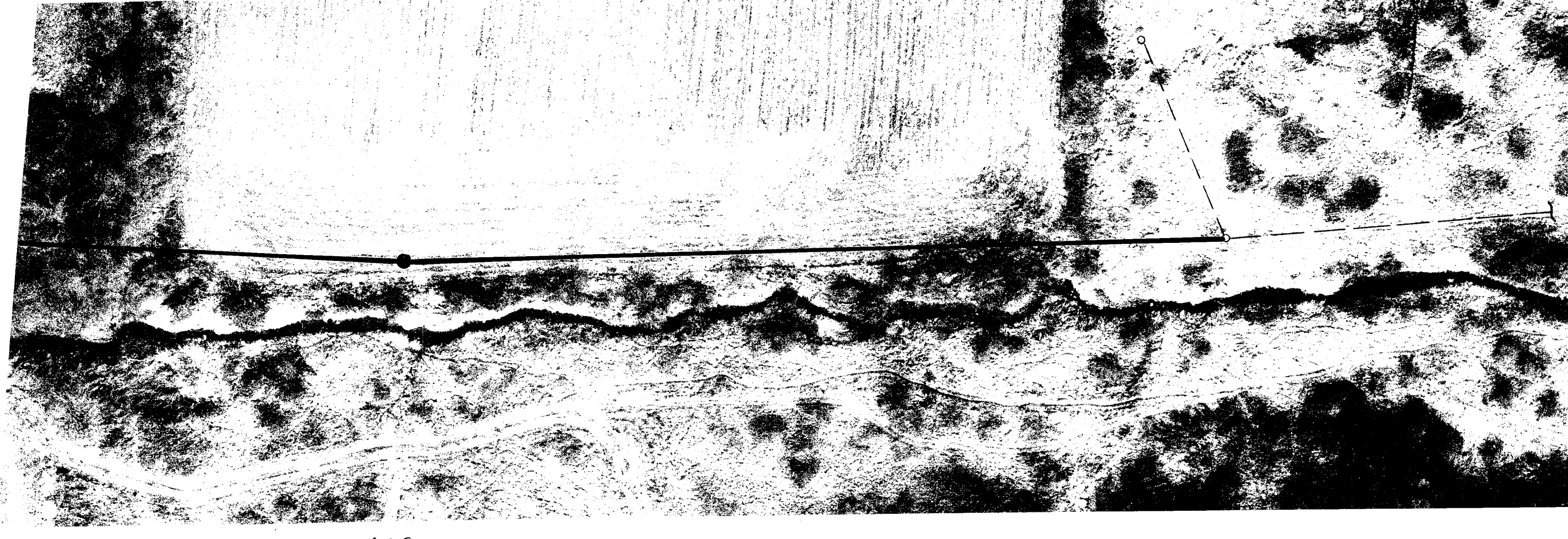
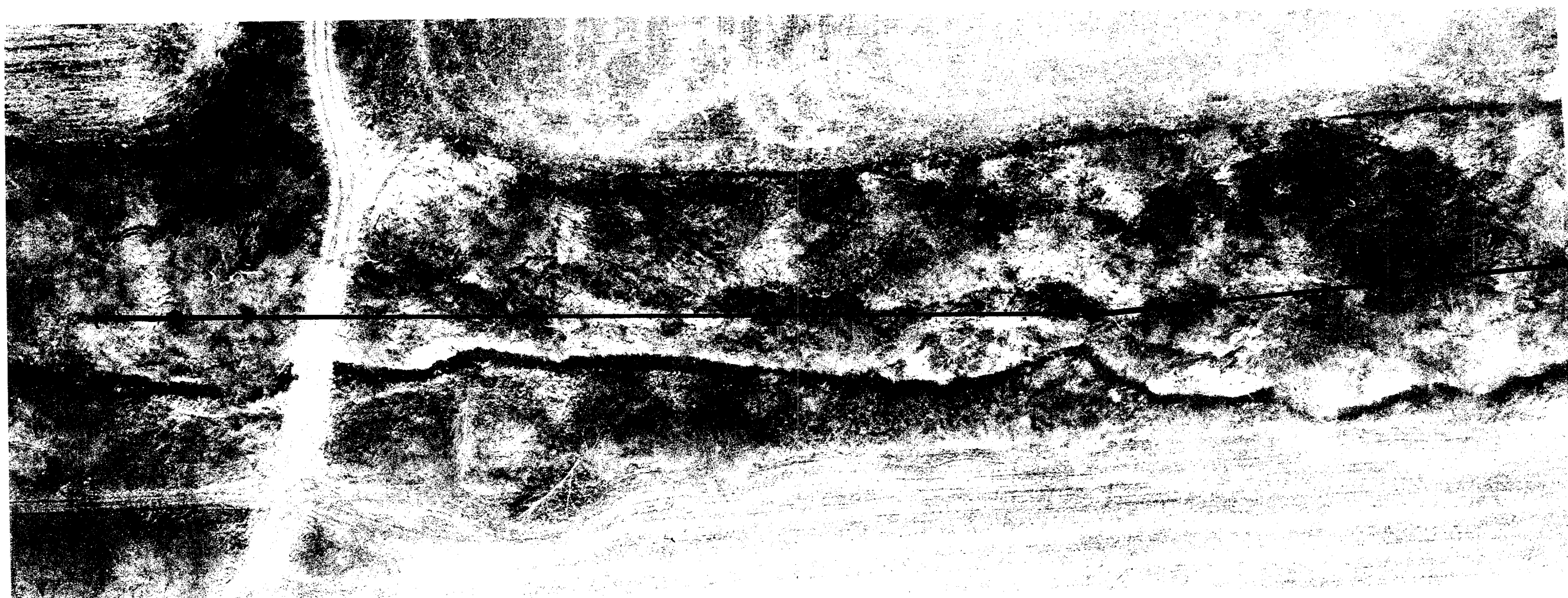


STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1			
NO.	DATE	REVISIONS	BY
1		DESIGN LAYOUT	PR
2		DRAWN	JEH
3		CHECKED	JAH
4		DATE	MARCH 1993

SOIL BORING LOCATIONS

Jones & Henry Engineers, Inc.

SHEET NO.
2
OF 48

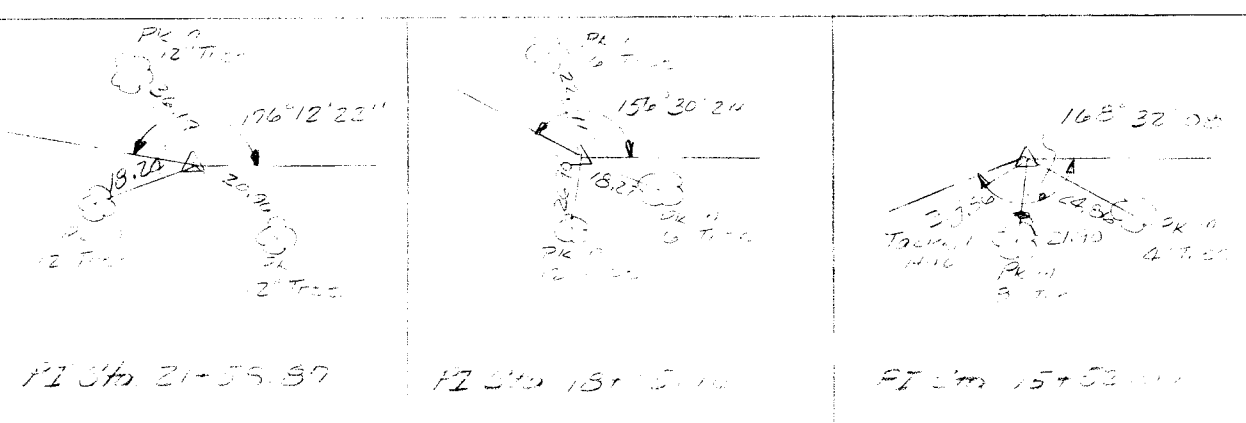
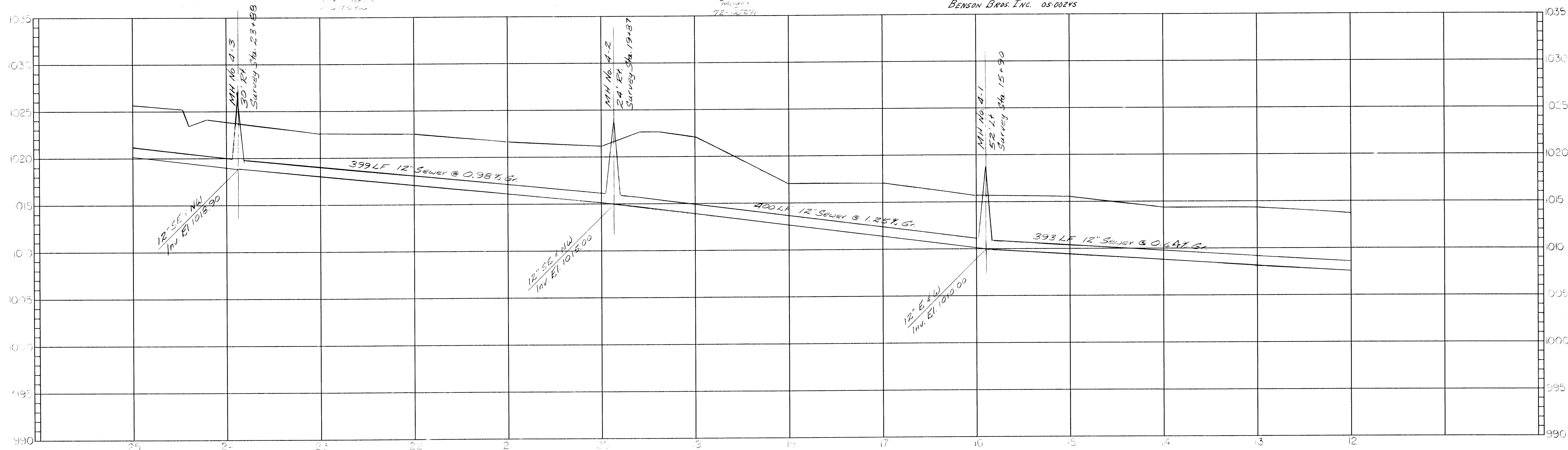
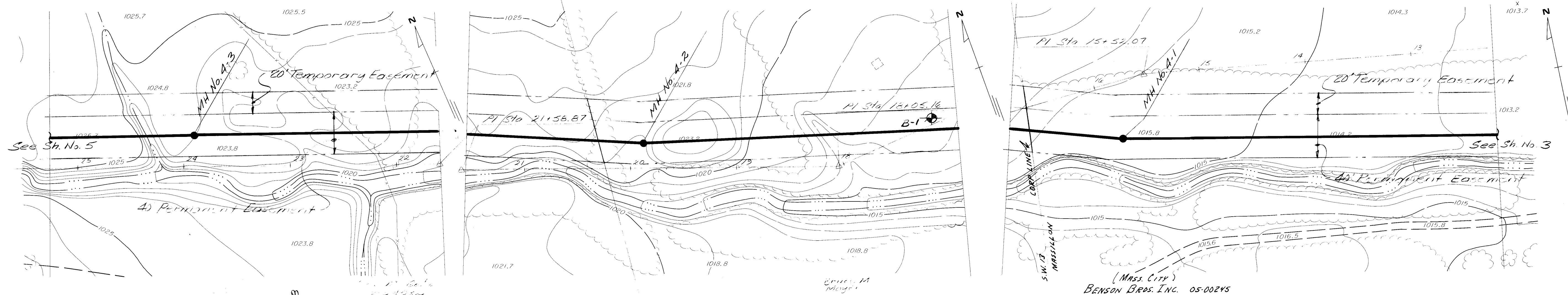
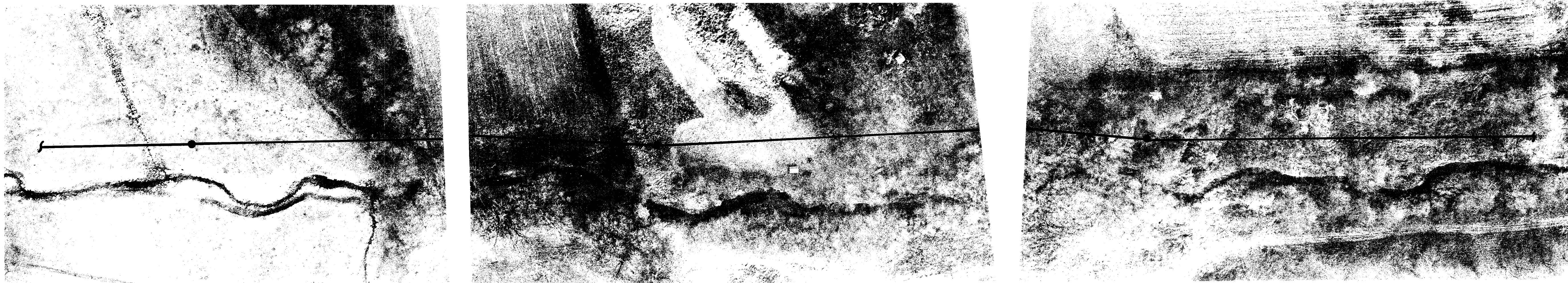


BM No. 81 Top Of Capped 3/4\"/>	BM No. 82 Top Of Capped 3/4\"/>
BM No. 83 N Edge Top Casting On San MH 30' N. Of Creek El. 1009.74	BM No. 84 N Edge Top Casting On San MH 100' NW Of BM No. 83 El. 1011.27

STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1	
1 10/95 UPDATE	R&W
NO. DATE	REVISIONS
SCALE 1\"/>	DESIGN-LAYOUT PR
DRAWN JCH	CHECKED JCH

EASEMENT EAST OF GREENDALE AVE. STA. 0+00 TO STA. 12+00	
JOB NO. 116-3377	SHEET NO. 3
DATE MARCH 1993	Jones & Henry Engineers, Inc.

ABRAMS
AERIAL SURVEY CORPORATION
200 N. CARP ST., FARMINGTON, MICHIGAN 48320



BM No. 78
 Top of Capped 3/4" Rebar, 30' East
 of Tree Line, 14' Sta 22.5 N.
 of Creek, El. 1021.35

BM No. 79
 Top of Capped 3/4" Rebar @ W. Bank
 of N-S Drainage Ditch, 25' N.
 of Creek, El. 1019.07

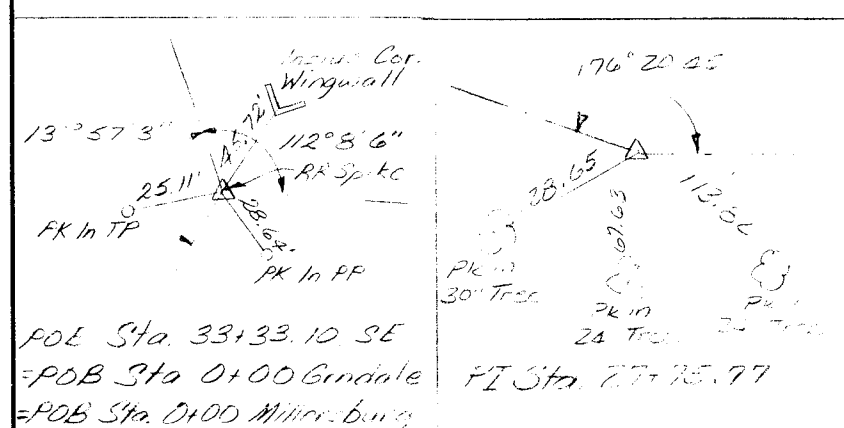
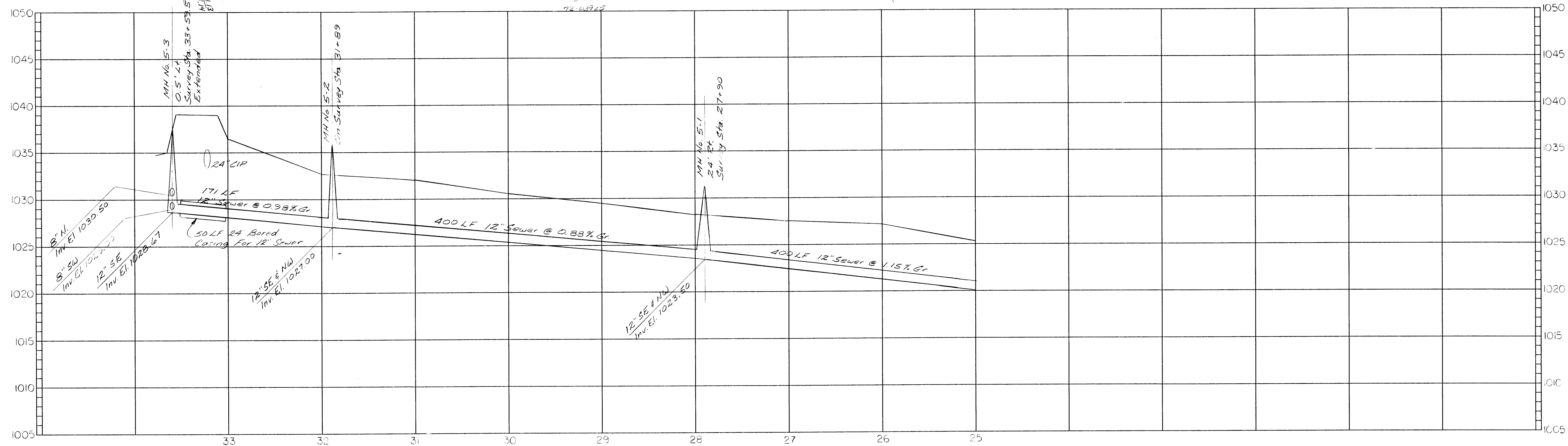
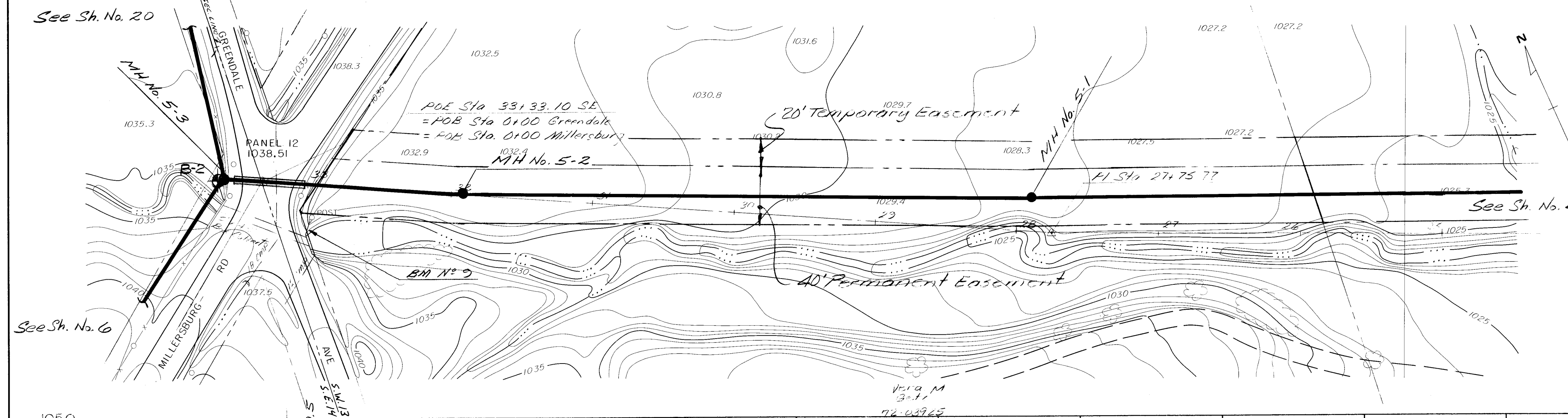
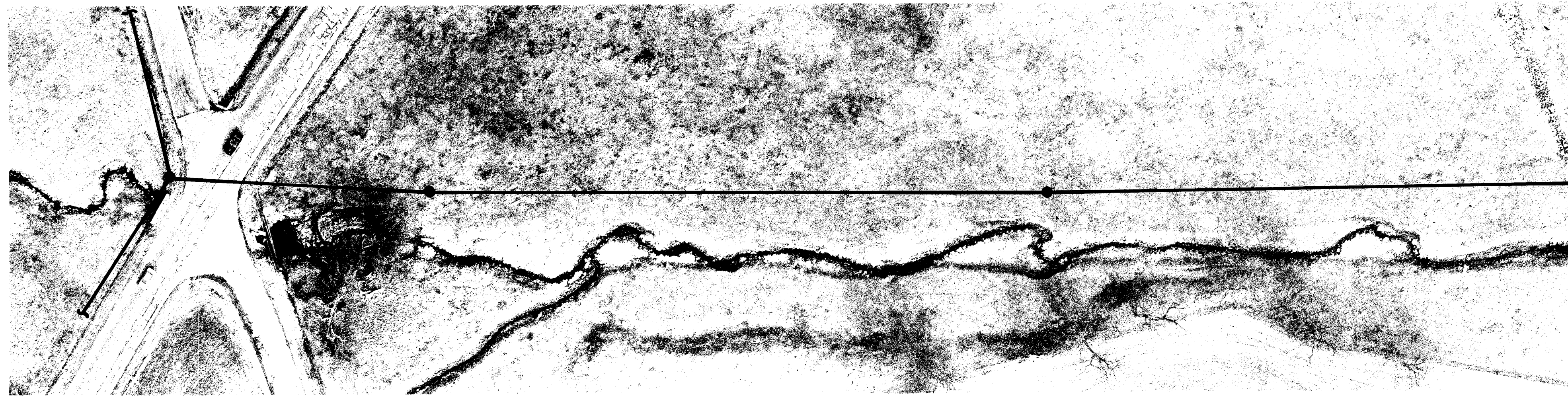
BM No. 80
 Top of Capped 3/4" Rebar, 120' E of
 Tree Line from Mayers Red Barn,
 75' N of Creek, El. 1016.13

STARK COUNTY, OHIO
 SANITARY SEWER IMPROVEMENTS
 PROJECT NO. 449 C-1

EASEMENT
 EAST OF GREENDALE AVE.
 STA. 12+00 TO STA. 25+00

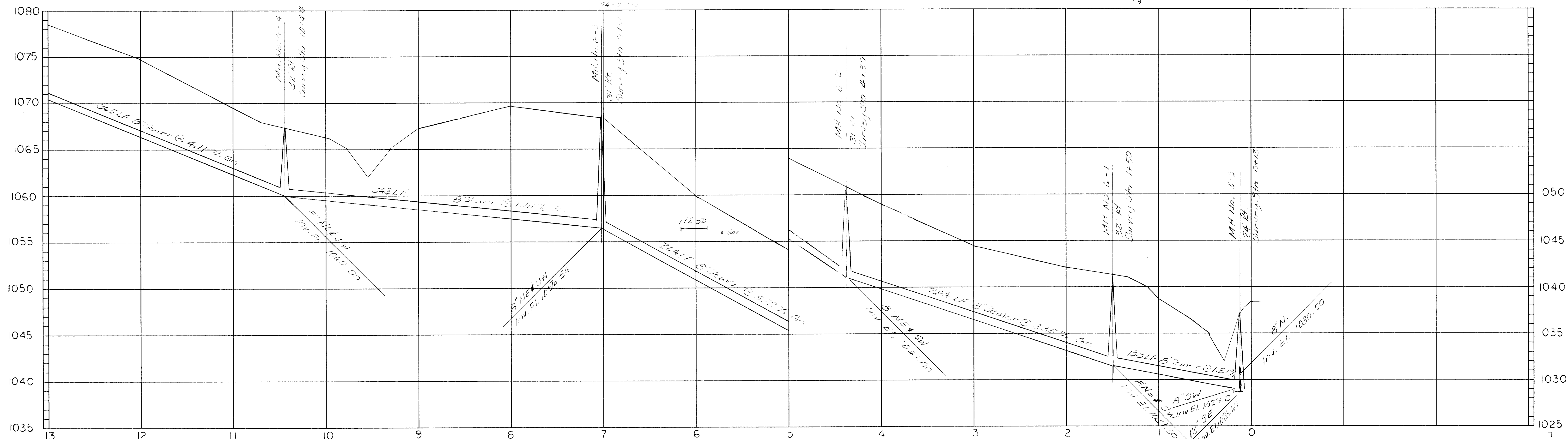
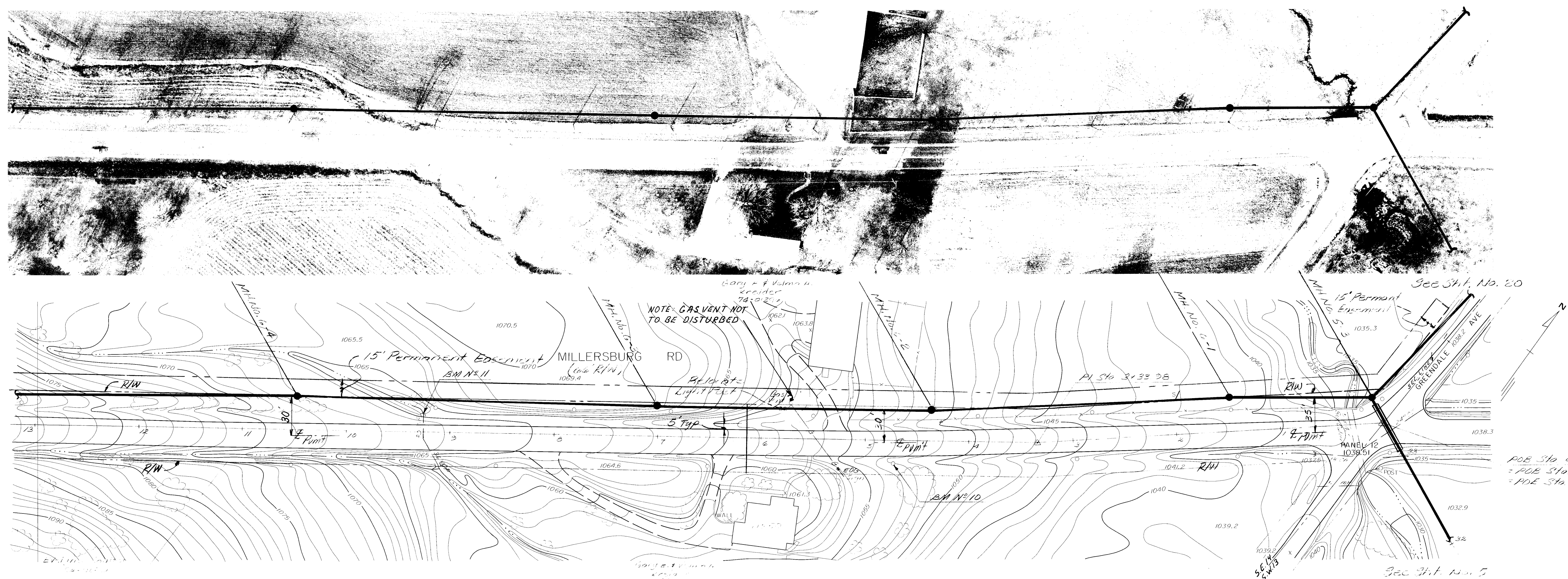
NO.	DATE	REVISIONS	DRAWN	CHECKED	BY
1	10/15	UPDATE	RELW		
2					
3					
4					
5					
6					
7					
8					
9					
10					

JOB NO. 116-3377
 DATE MARCH 1993
 Jones & Henry Engineers, Inc.
 SHEET NO. 4
 OF 48



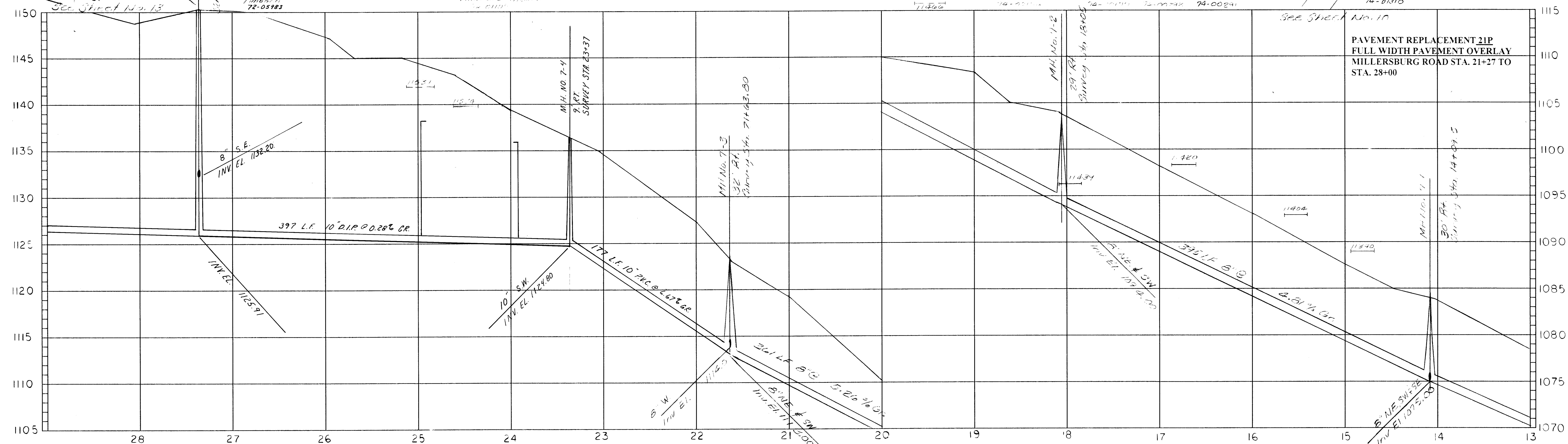
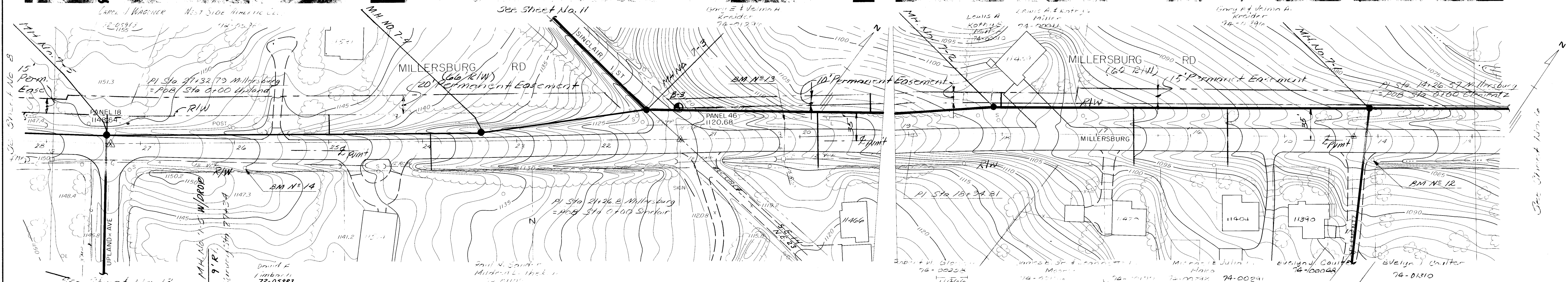
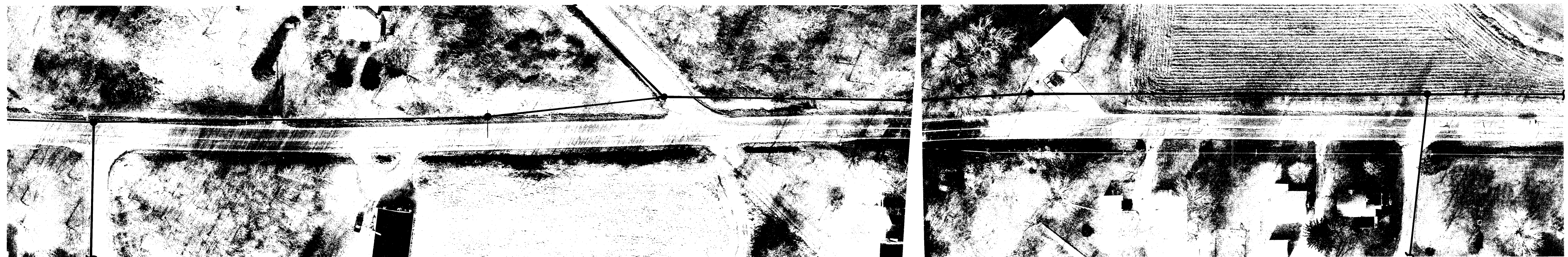
<u>BM N° 9</u> "O" Chiseled In Top Of Endwall Of Box Culvert (N. Corner) EL. 1037.81	<u>BM N° 77</u> Top Of Capped $\frac{1}{2}$ " Rebar. 600' SE Of Greendale - Millersburg. 5' N Of Creek. EL. 1028.34
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STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-I				EASEMENT EAST OF GREENDALE AVE. STA. 25+00 TO STA. 33+33			
1. 10/95 UPDATE				EAW			
NO. DATE REVISIONS BY				JOB NO. 116-3377		SHEET NO. 5	
SCALE 1"=50' HOR. 1"=5' VERT.		DESIGN-LAYOUT PR		DRAWN JCH		CHECKED JCH	
				DATE MARCH 1993		 Jones & Henry Engineers, Inc.	
						OF 40	



MILLERSBURG ROAD
GREENDALE AVE. TO CLEMENTZ AVE.
STA. 0+00 TO STA. 13+00

JOB NO. 116-3377	 Jones & Henry Engineers, Inc.	SHEET NO. 6
DATE MARCH 1992		OF 42



PAVEMENT REPLACEMENT <u>21P</u>
FULL WIDTH PAVEMENT OVERLAY
MILLERSBURG ROAD STA. 21+27 TO STA. 28+00

MILLERSBURG ROAD
CLEMENTZ AVE. TO UPLAND AVE.
STA. 13+00 TO STA. 28+00

STARK COUNTY, OHIO
SANITARY SEWER IMPROVEMENTS
PROJECT NO. 449 CI

1	10/94	2" x 4" x 1/2" x 1/2" x 1/2" x 1/2"	PLW
2	10/95	UPDATE	RLW
3	2/96	REMOVED BORES	RLW
4	7/96	LINE CHANGE	RLW
5	10/96	PAVEMENT NOTE ADDED	RLW
SCALE		DESIGN LAYOUT	DRAWN
1" = 50' HOR.		DR	JEH
1" = 10' VERT.			JAH

JOB NO. 116-3377	 Jones & Henry Engineers, Inc.
DATE MARCH 1993	

SHEET NO
7
OF 48

ABRAMS

AERIAL SURVEY CORPORATION
4 N. LARCH ST., LANSING, MICHIGAN 48912

PK in PP
 178°45'55"
 3.42
 9.00
 PK in PP
 9°57'55"
 PK in Cane Brk
 El Street Sign
 PK in PP

45°13'24"
 135°57'50"
 RE SP 10
 80.55
 30.59
 PK in PP
 PK in PP
 PK in PP

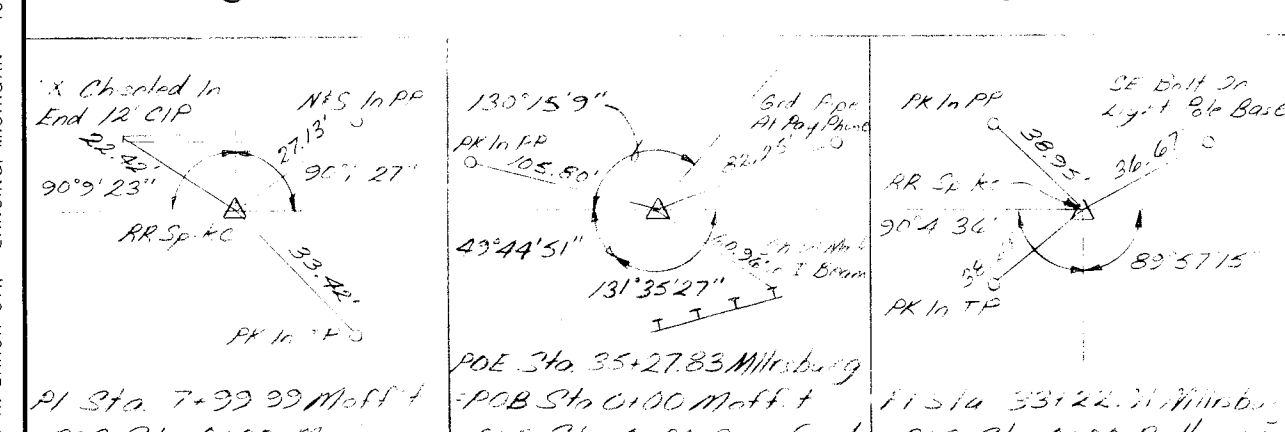
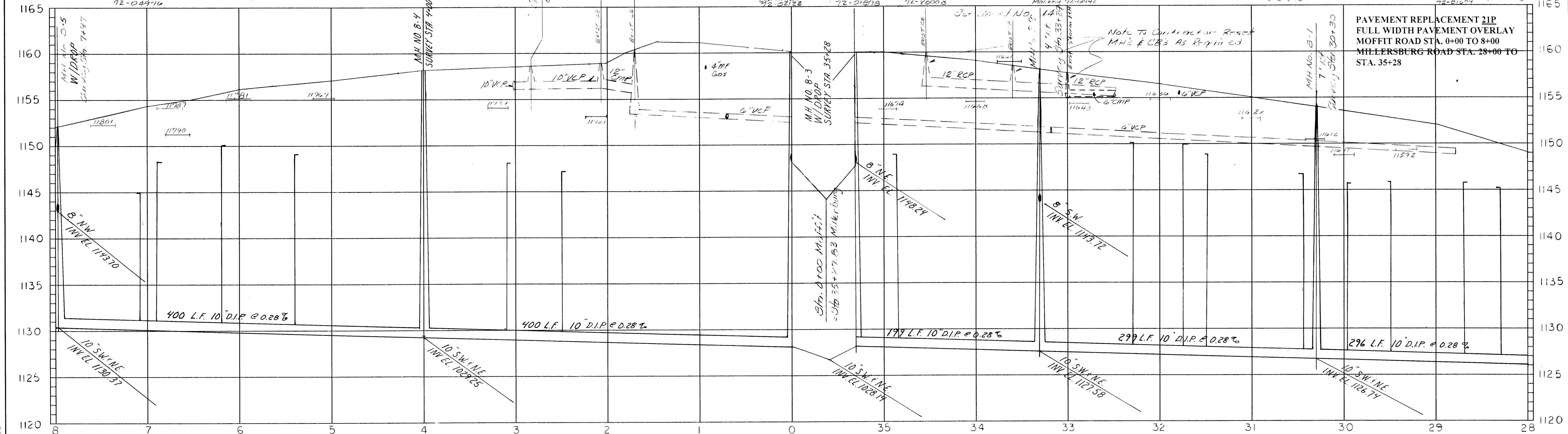
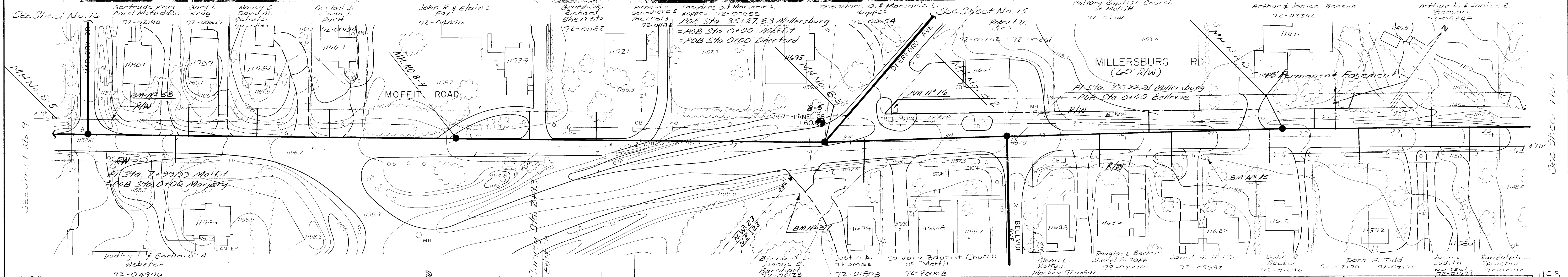
Pl. Sta 271.32 79 Millersburg Pl. Sta 2126.2 Millersburg
 21.26 21.26 21.26 21.26 21.26 21.26 21.26 21.26 21.26 21.26

Hand-drawn surveying diagram showing a traverse with points A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z. The diagram includes bearings and distances for each segment. Key bearings include $172^{\circ} 1' 37''$ for segment AB, $89^{\circ} 41' 53''$ for segment BC, and $35^{\circ} 41' 14''$ for segment CD. Distances are given in feet and inches, such as 14' 26" for segment DE and 14' 26" for segment EF. The diagram also shows a small triangle with a circle around it, and a larger circle with a cross inside it.

BM N° 14
PK Nail 0.5' up S. Side TP
(# 32-3)
EL 1147.31

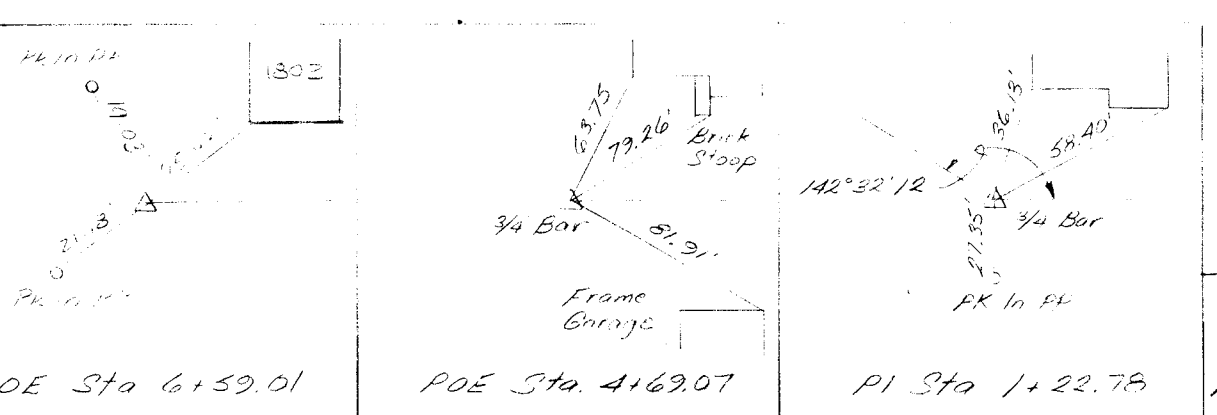
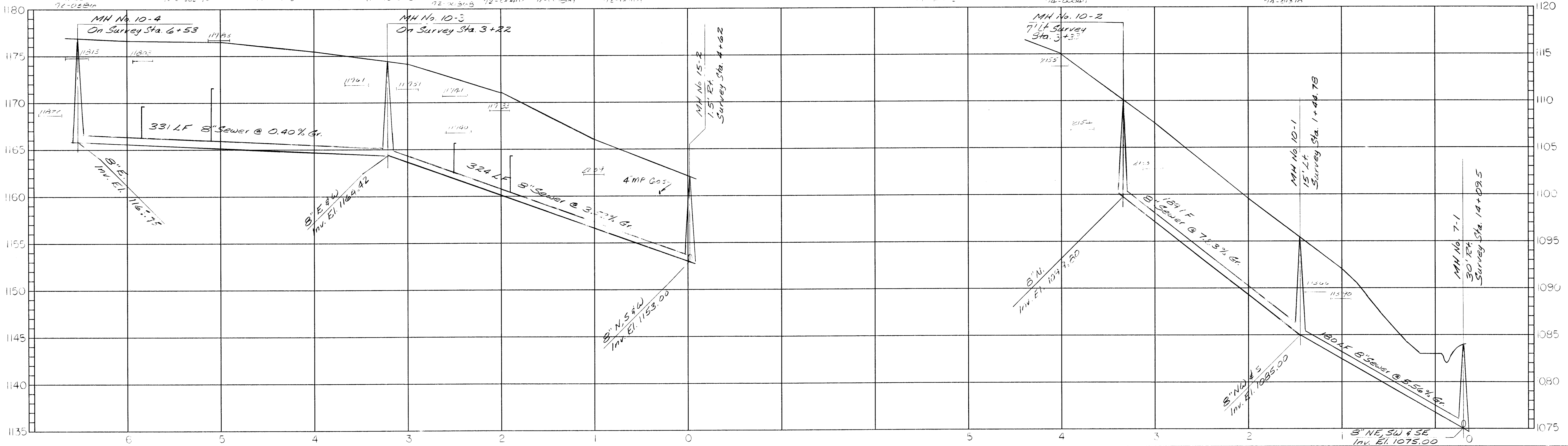
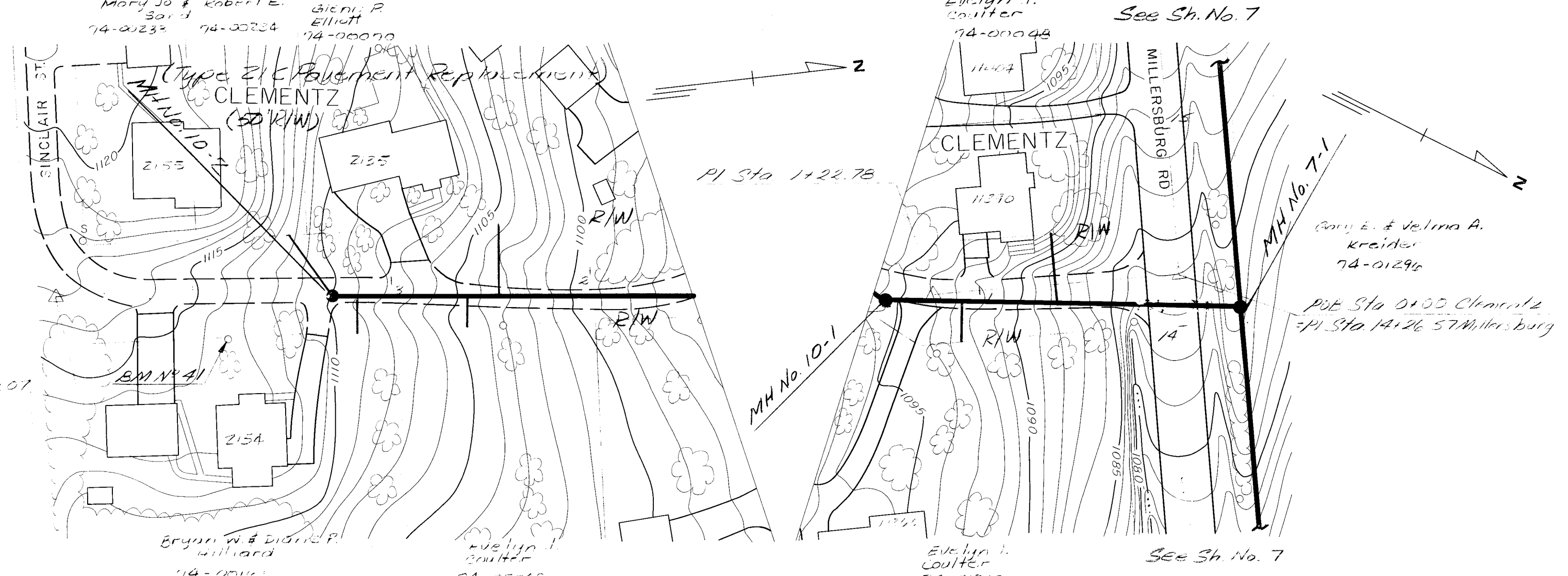
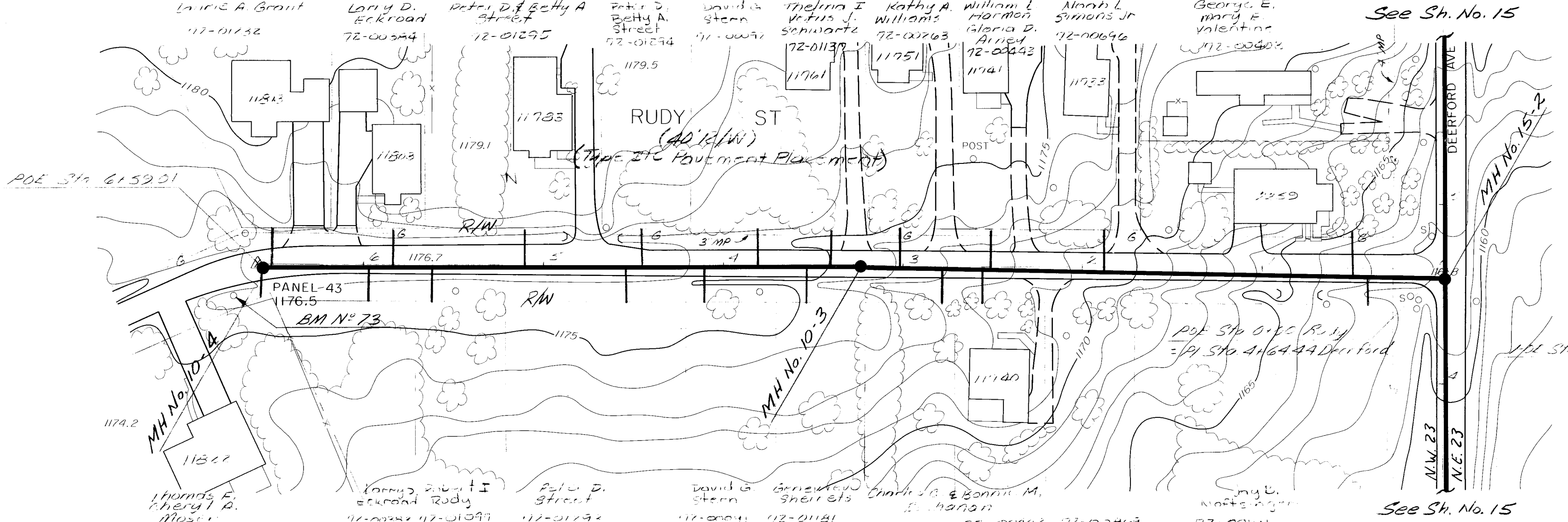
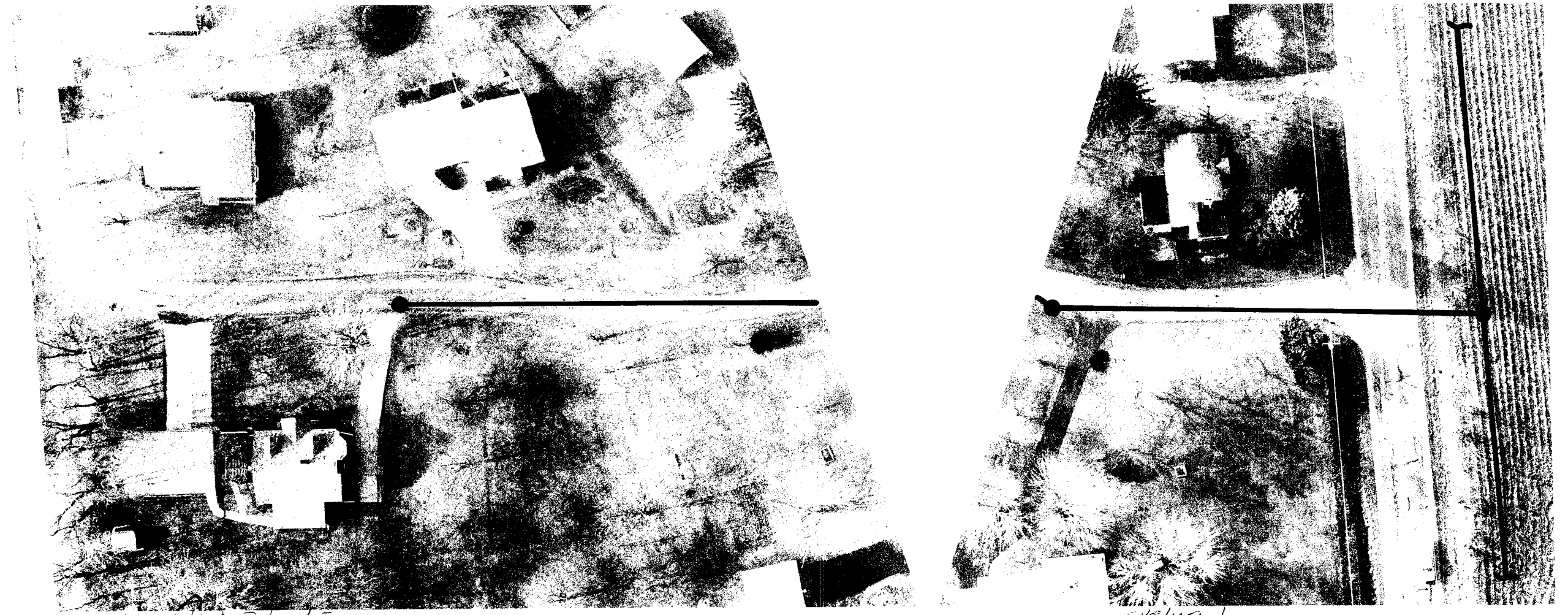
BM No 13
"D" Chiseled In NE Cor Conc
Endwall For 30" CIP
Elev 1112.50

BNI N° 12
PK. Vail 1' Up NE Side PP
(OPS # 2320C-25)
E1 1086.98



BM #16 Top Steel Cap 1 1/4" Dia Ground For Public Phone Elev. 1158.76	BM #15 RR Spike 0.5' Up PP (OP Co. #2219-RI) Elev. 1154.70
BM #5B RR Spike 1' Up N. Side PP NE Cor. Moffitt & Marjory Elev. 1154.23	BM #57 Top Extreme East I-Beam Support For Guardrail Elev. 1160.67

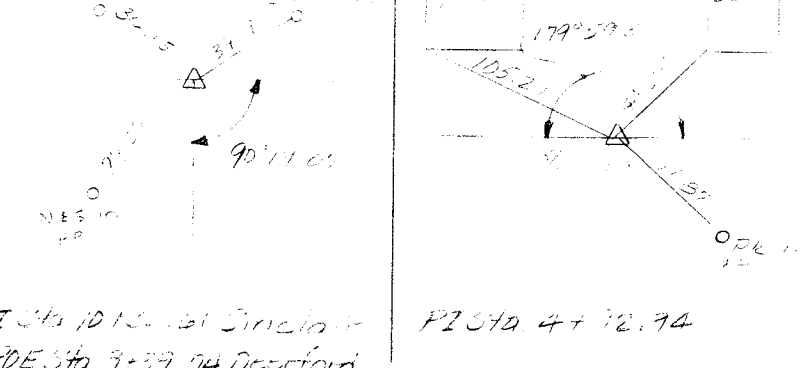
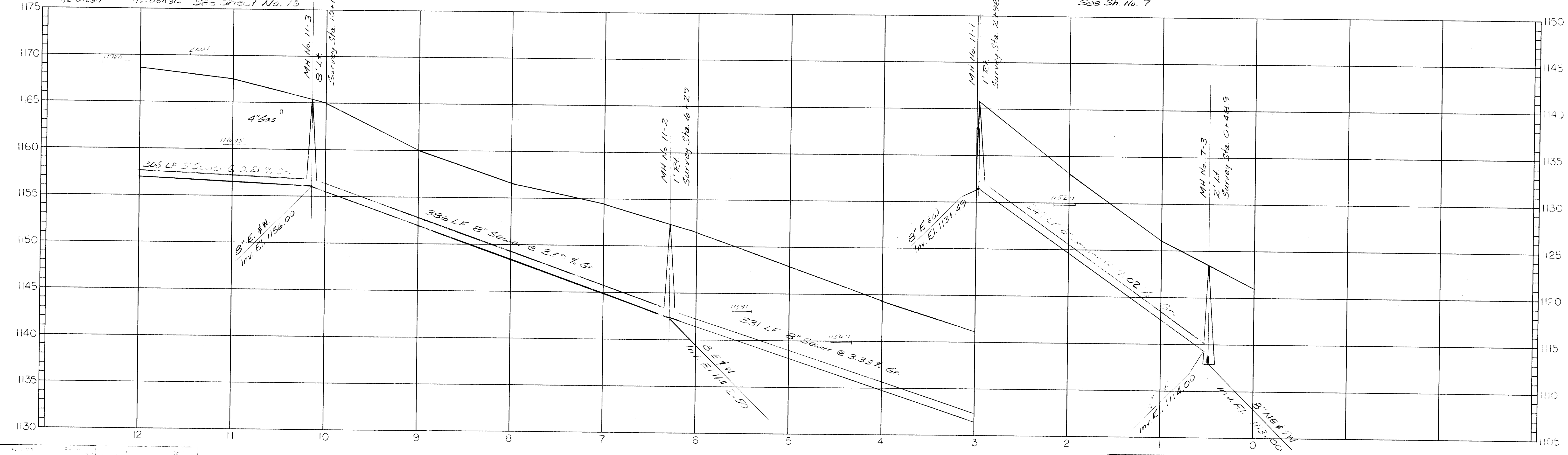
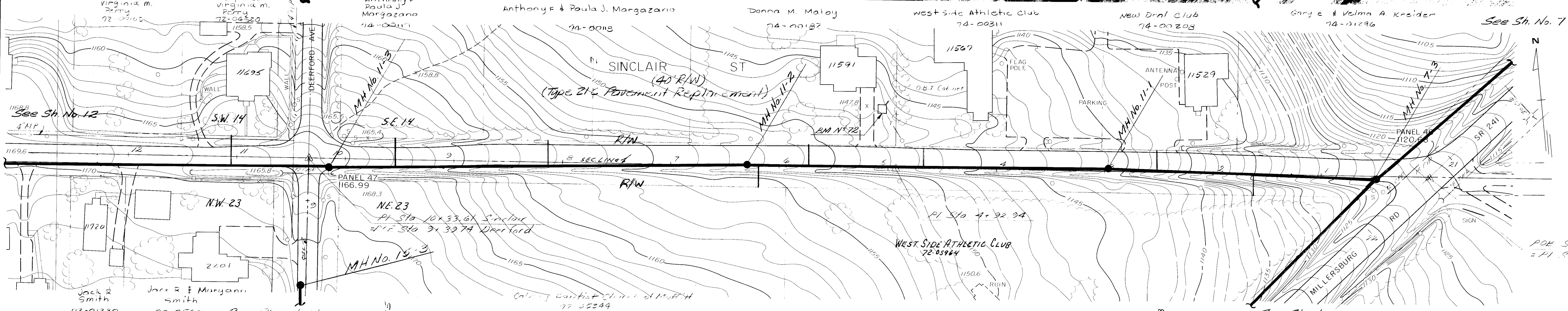
STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1		MILLERSBURG AND MOFFITT ROADS UPLAND AVE. TO MARJORY DR. STA. 28+00 TO STA. 35+27 STA. 0+00 TO STA. 8+00	
1. 10/95 LINE CHANGE & UPDATE	2. 2/96 REMOVED BOBBS	3. 7/96 LINE RELOCATED	4. 10/96 PAVEMENT NOTE ADDED
NO. DATE	DESIGN LAYOUT	DRAWN	CHECKED
1"=50' HOR. 1"=5' VERT.	PR	JCH	JAM
JOB NO. 116-3377		DATE MAY 1993	
JONES & HENRY ENGINEERS, INC.		SHEET NO. 8	



BM No. 73
 PK Nail 0.5' Up NE Side PP
 In Front of House #11322
 EL. 1176.62

BM No. 41
 Boat Spike 0.3' Up W. Side
 PP (No Number)
 EL. 1113.40

STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1				CLEMENTZ AVENUE MILLERSBURG RD. TO SINCLAIR ST. RUDY STREET DEERFORD AVE. TO 650' WEST			
1	10/96	UPDATE	RLW	JOB NO. 118-3377		JH Jones & Henry Engineers, Inc. SHEET NO. 10	
2	8/96	BOBING REMOVED	RLW	DATE MARCH 1996			
3	9/96	STACKS ADDED	RLW	BY		1"=50' HOR. 1"=5' VERT.	
NO. DATE REVISIONS							
SCALE		DESIGN-LAYOUT	DRAWN	CHECKED			
1"=50' HOR.		DR	JCH	JN			



BM No. 72
X Chiselled Into SE Cor. Shim
Plate On S. Side Conc. Slab
El. 1147.89

STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1			
1	10/95	UPDATE	R/LW
NO.	DATE	REVISIONS	BY
1	10/95	DESIGN LAYOUT	DR
2	11/95	DRAWN	CH
3	12/95	CHECKED	CH

SINCLAIR STREET
MILLERSBURG RD. TO DEERFORD AVE.
STA. 0+00 TO STA. 12+00

Jones & Henry Engineers, Inc.

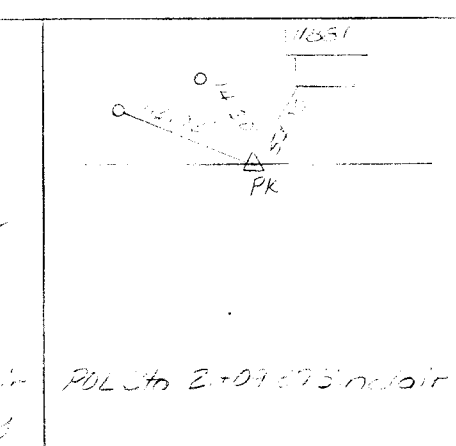
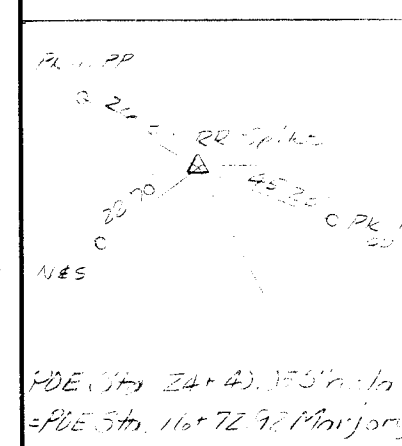
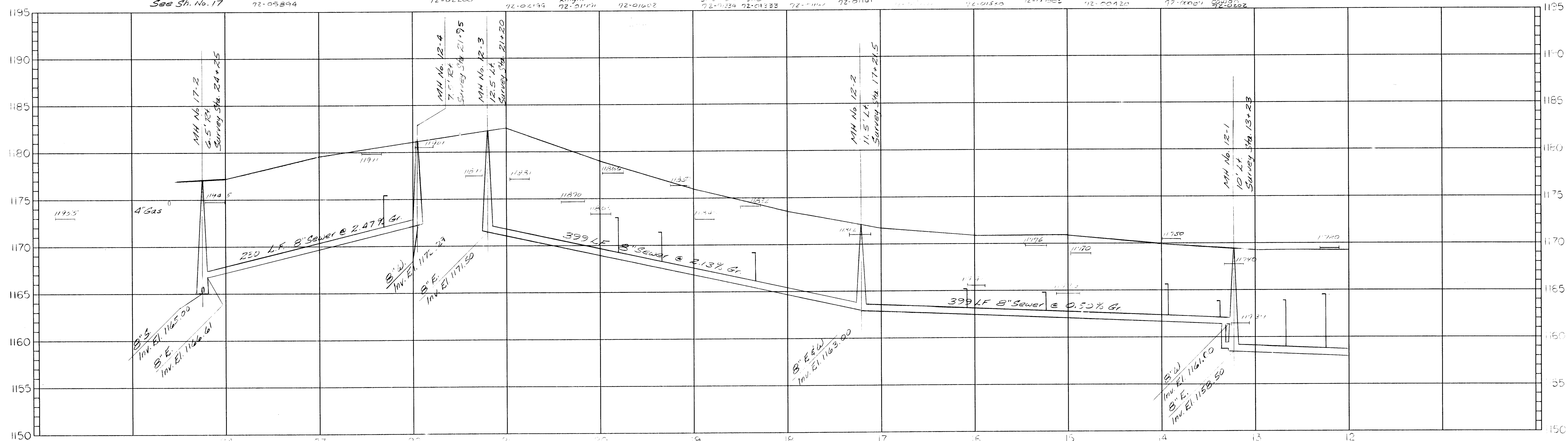
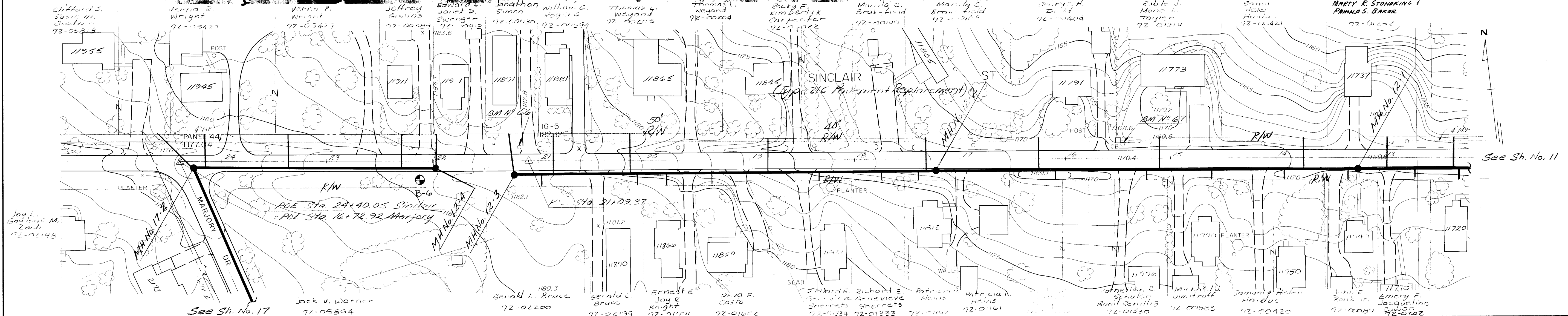
JOB NO.
116-3377

DATE

SHEET NO.
11

Scale = 1" = 40' Horizontal
1" = 10' Vertical

ABRAMS
AERIAL SURVEY CORPORATION
122 N. LARCH ST., LANSING, MICHIGAN 48202



BM No. 66
Boot Spike 0.7' Up S. Side PP
(DE #2220D-3-11)
Elev. 1183.83

BM No. 67
Boot Spike 0.5' Up S. Side PP
(OPS #2220D-4-18)
Elev. 1171.21

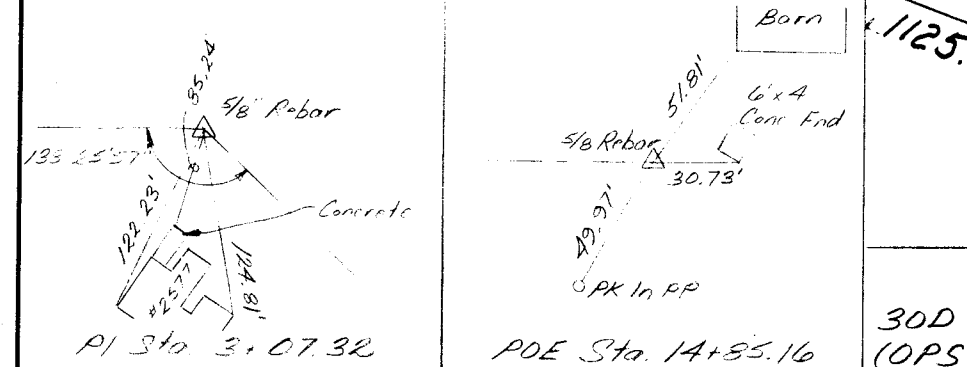
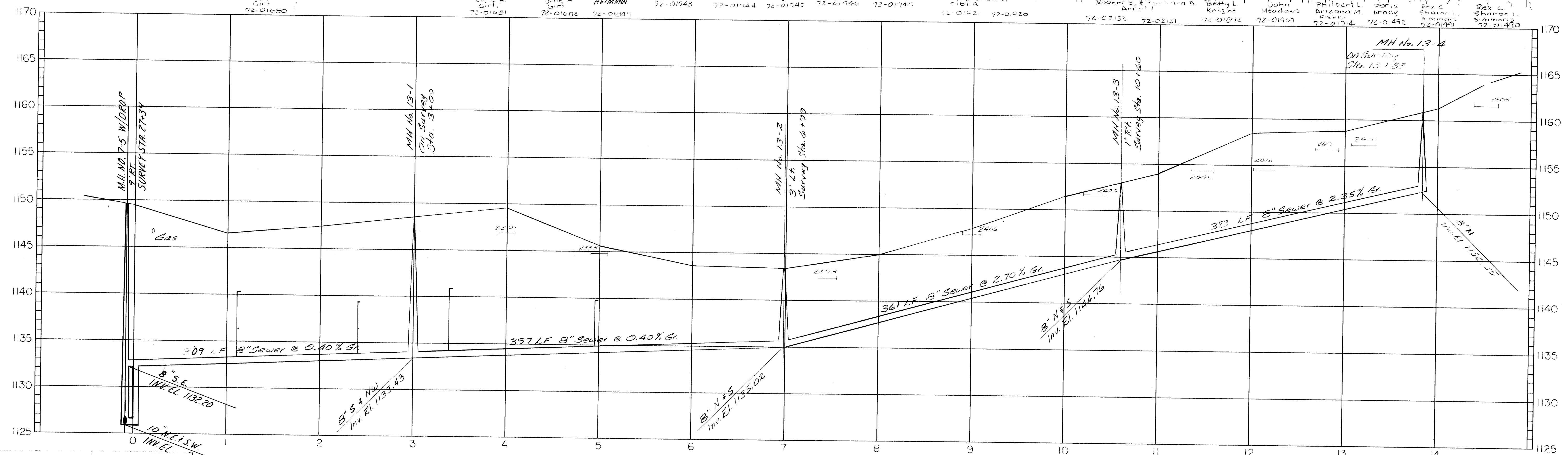
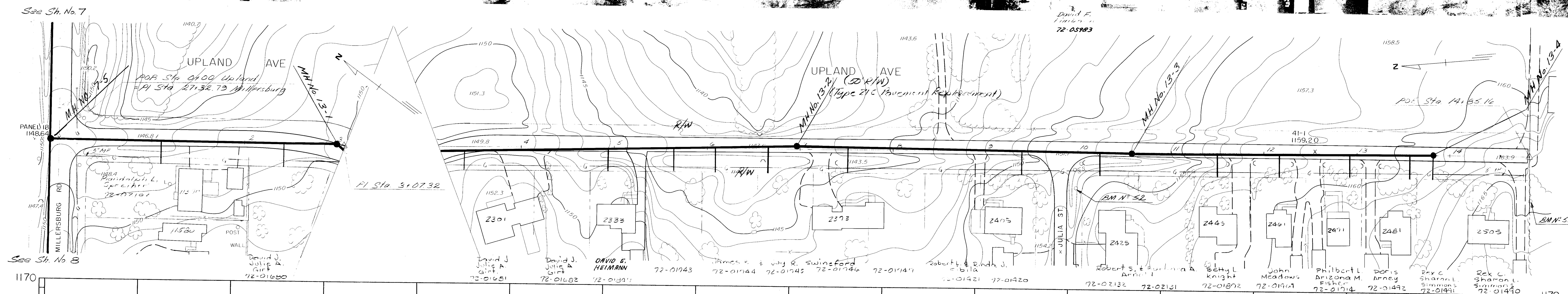
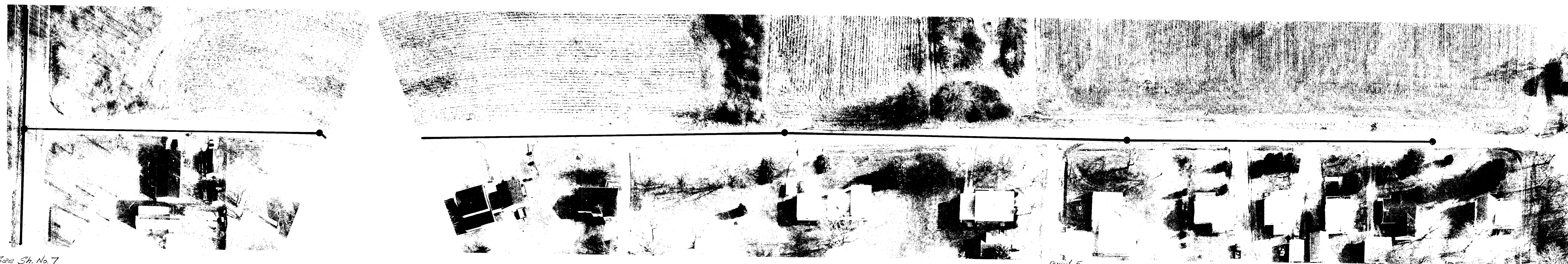
STARK COUNTY, OHIO
SANITARY SEWER IMPROVEMENTS
PROJECT NO. 449 C-1

1 10/95 UPDATE
2 9/96 STACKS ADDED

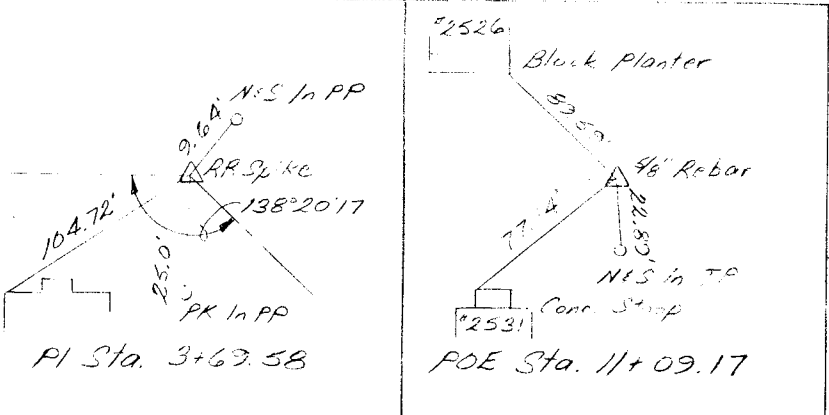
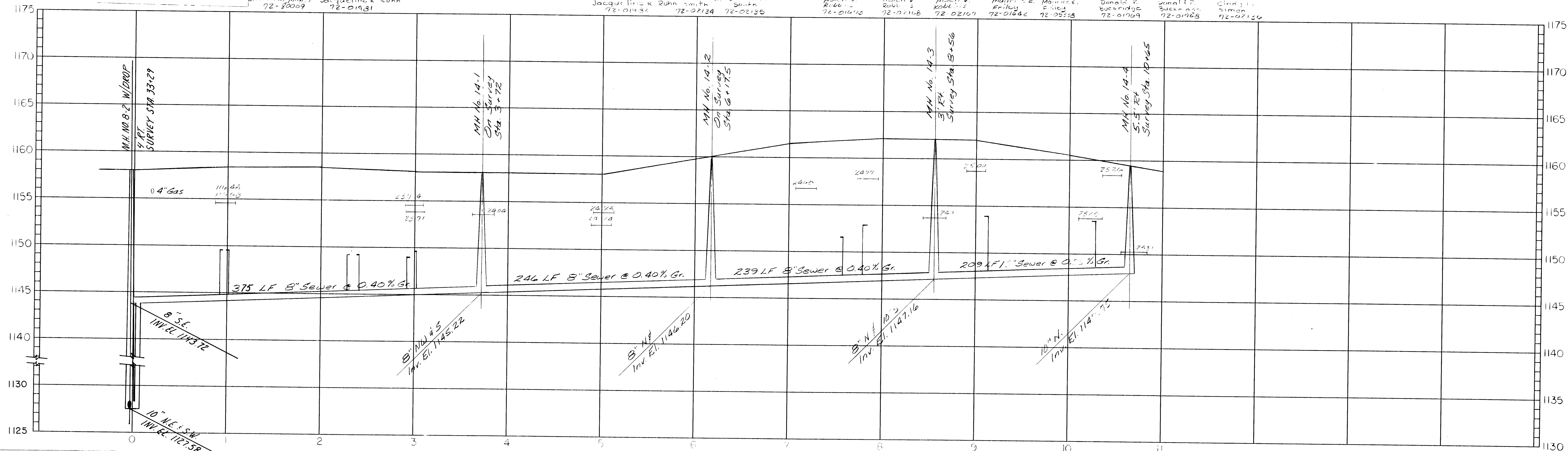
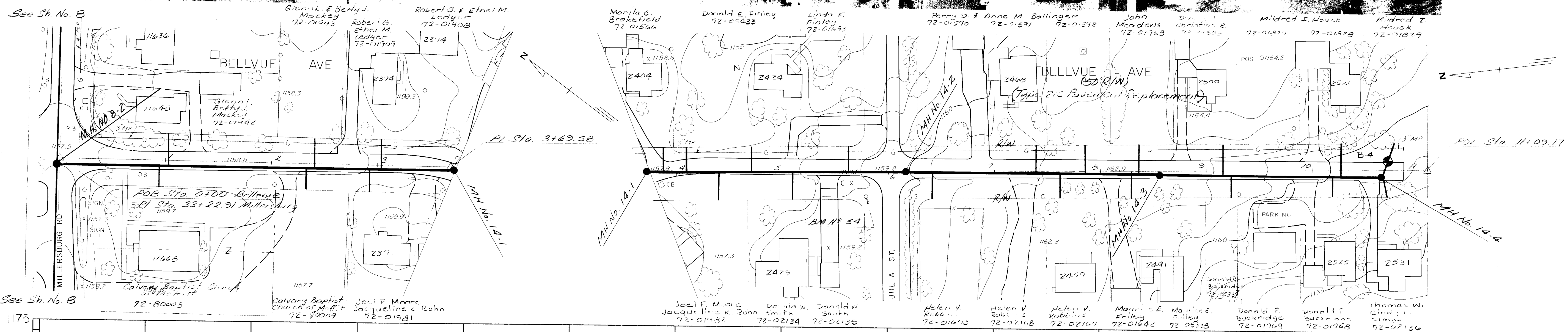
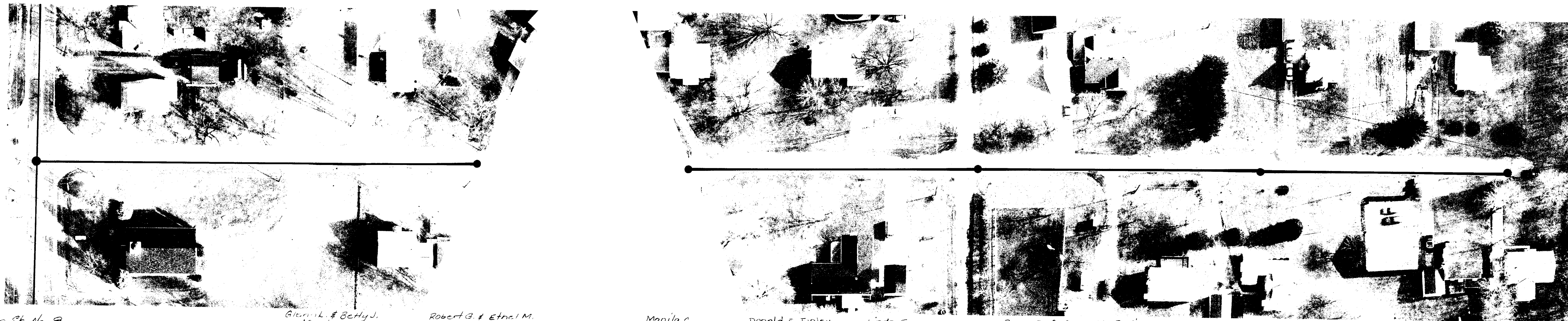
NO. DATE REVISIONS
1 10/95 UPDATE
2 9/96 STACKS ADDED

SINCLAIR STREET
DEERFORD AVE. TO MARJORY DR.
STA. 12+00 TO STA. 24+40

JOB NO. 116-3377
DATE 10/95
Jones & Henry Engineers, Inc.
SHEET NO. 12
OF 4



STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-I		UPLAND AVENUE MILLERSBURG RD. TO JULIA ST. STA. 0+00 TO STA. 14+85	
1	10/95	UPDATE	RLW
2	8/96	LING RELOCATION M.H.# 7-5	RLW
NO.	DATE	REVISIONS	BY
		JOB NO. 116-3377	SHEET NO.

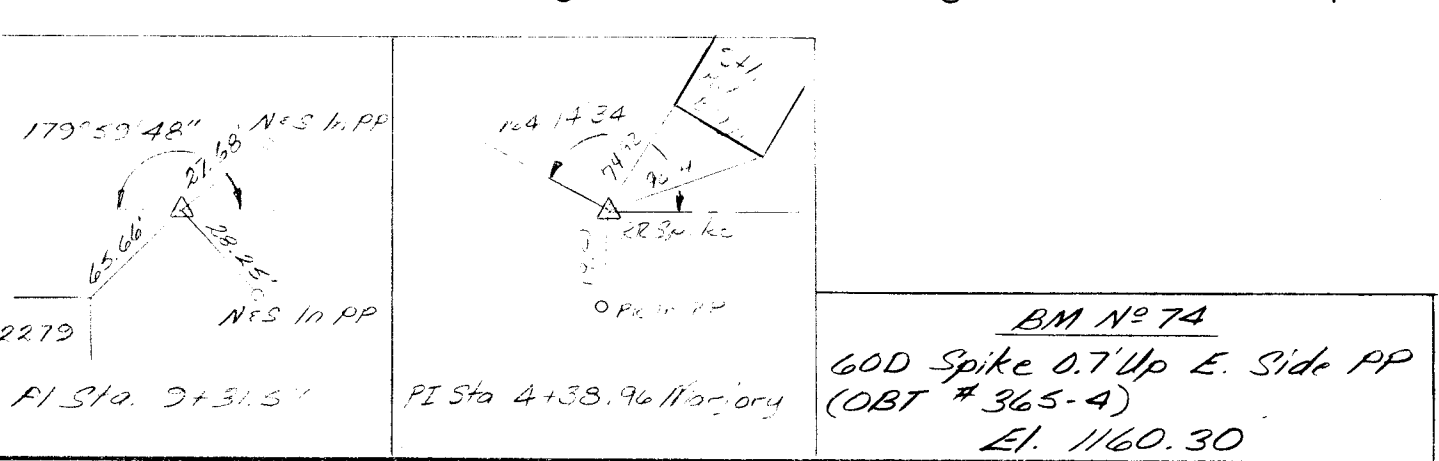
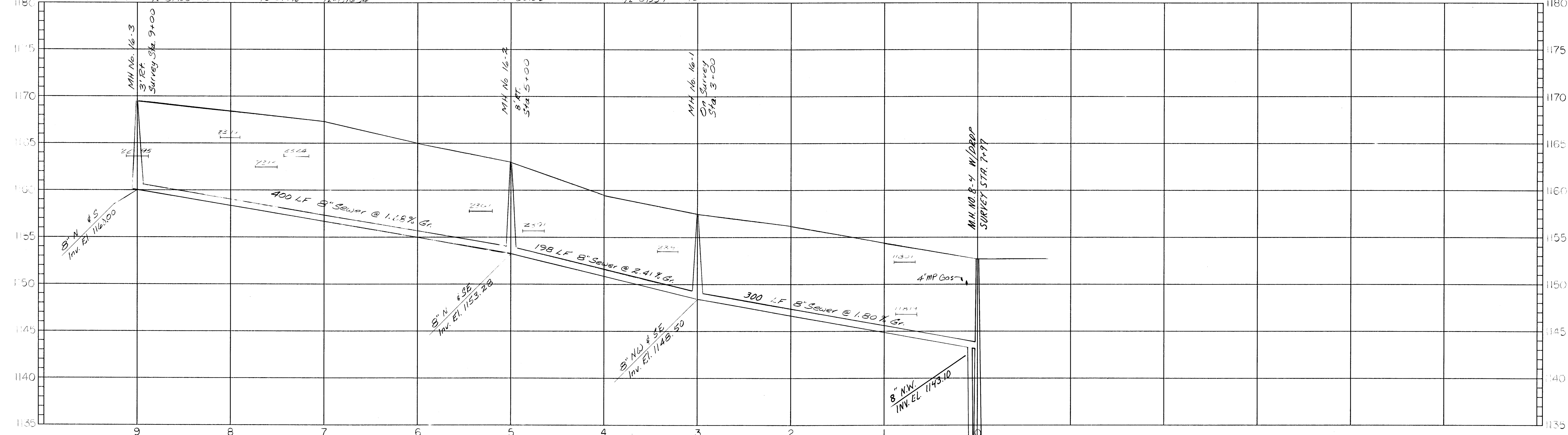
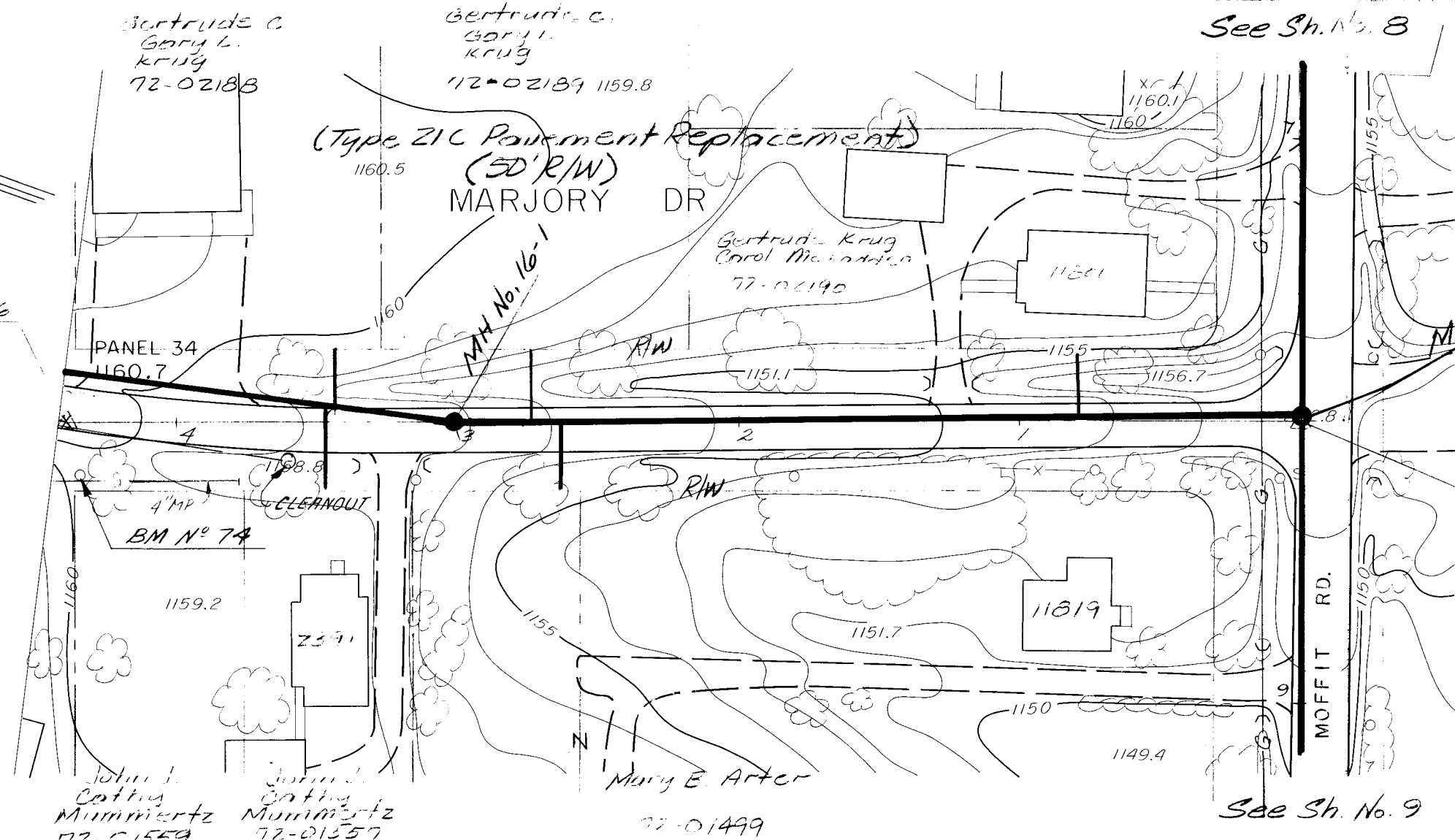
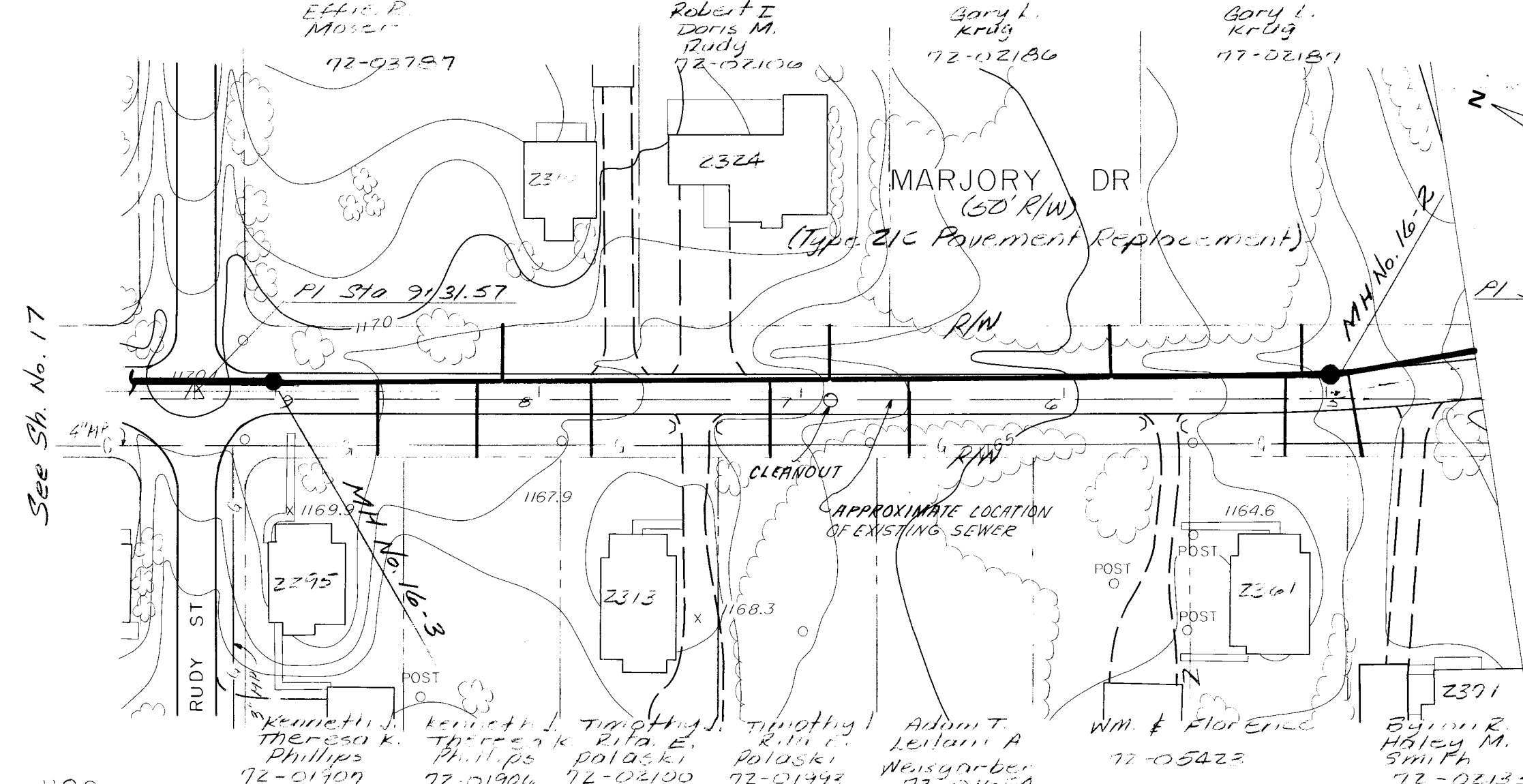
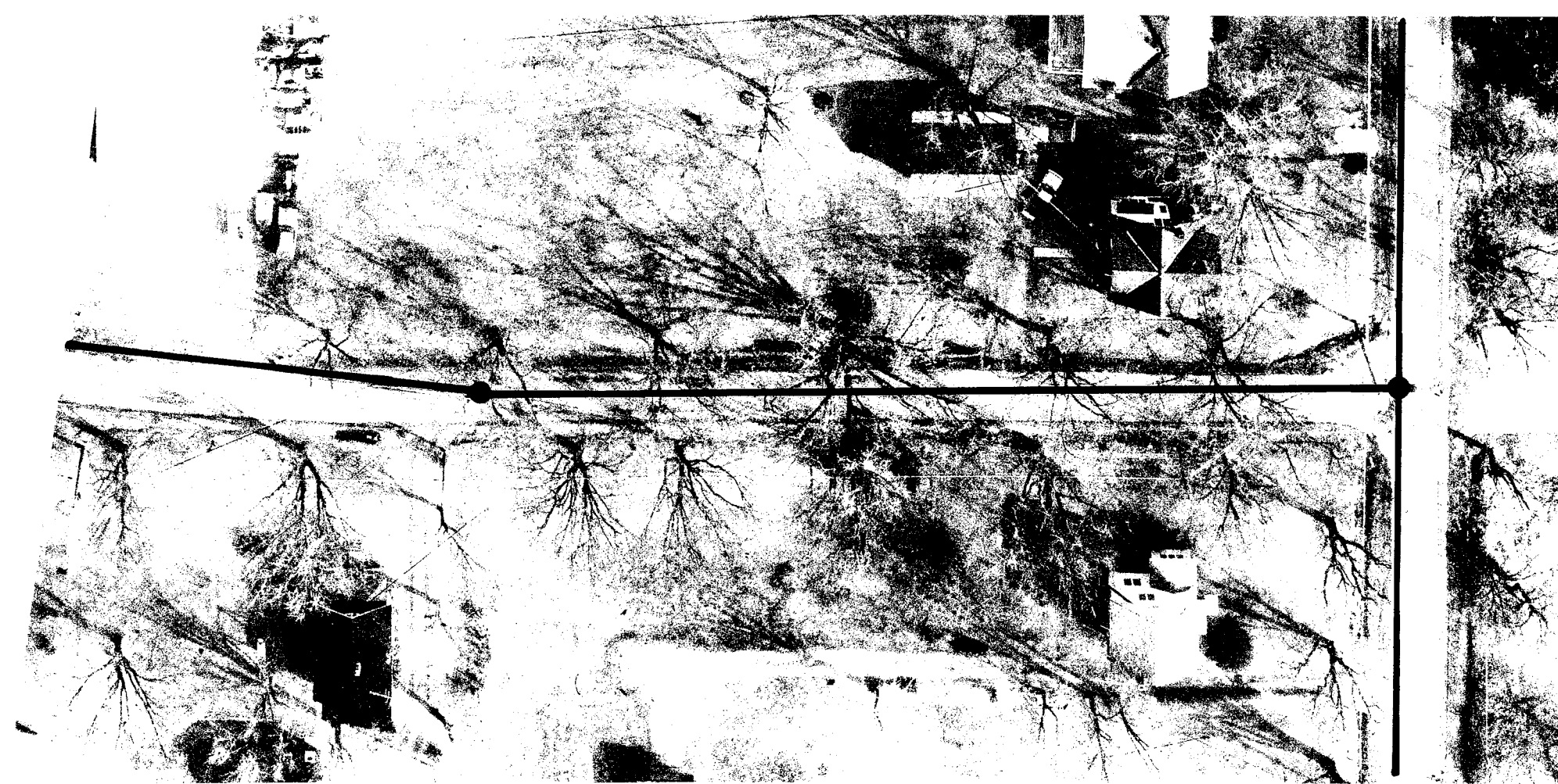
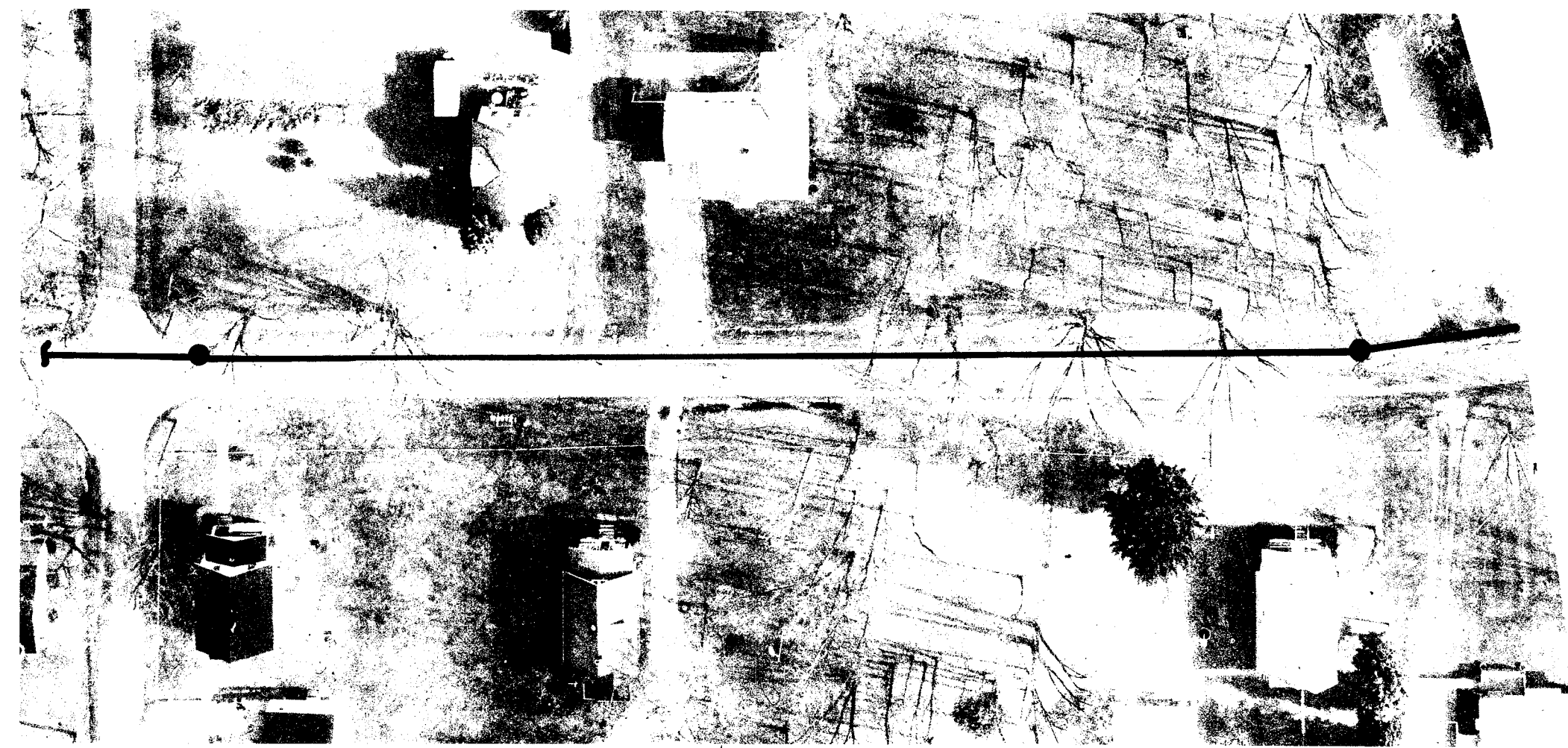


BM No. 54
PK No. 1' Up E. Side PP
(OE # 2219 A1-59)
EL. 1160.49

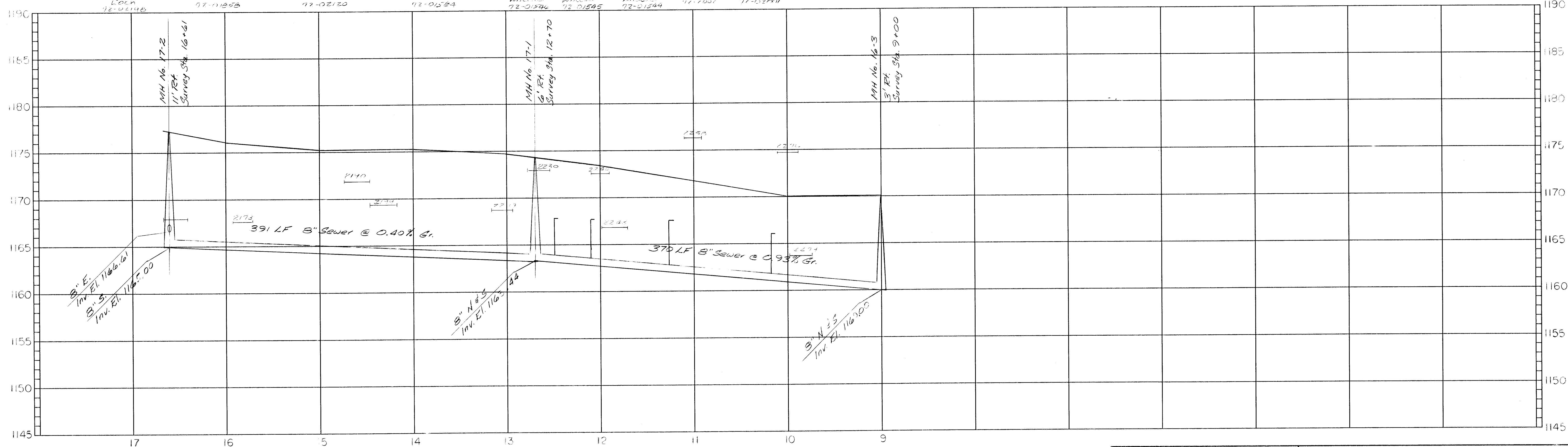
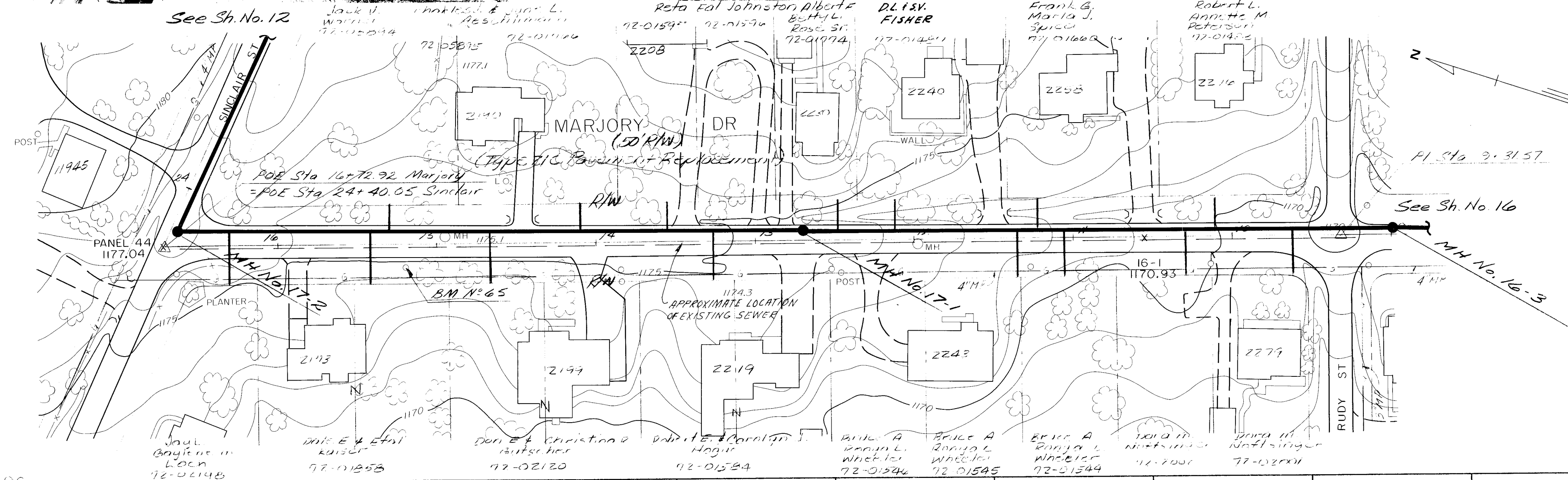
STARK COUNTY, OHIO
SANITARY SEWER IMPROVEMENTS
PROJECT NO. 449 C-1

1	10/95	UPDATE	ELW
2	8/96	LINE RELOCATION M.H. #8-2	ELW

BELLEVUE AVENUE
MILLERSBURG RD. TO JULIA ST.
STA. 0+00 TO STA. 11+09



STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1				MARJORY DRIVE MOFFIT RD. TO RUDY ST. STA. 0+00 TO STA. 9+00					
1	10/95	UPDATE	RLW						
2	8/96	LINE RELOC. ADD EXIST. SEWER	RLW						
NO. DATE REVISIONS BY				JOB NO. 116-3377		 Jones & Henry Engineers, Inc.			
				DATE MARCH 1997					
SCALE: 1" = 30' HOR. 1" = 5' VERT.				DESIGN: LAYOUT 2				DRAWN JCH	
				CHECKED JCH					
				BY JCH					
						SHEET NO. 16			
						OF 48			



BM No. 65
PK Nail 1" Up NE Side PP
(OPS #2220-D3-5)
El. 1175.60

BM No. 64
NE Cor. Top Stone MB Post with
Flow Imbedded. NW Cor Rudy
& Marjory El. 1171.84

STARK COUNTY, OHIO
SANITARY SEWER IMPROVEMENTS
PROJECT NO. 449 C-1

1	10/95	UPDATE	RLW
2	8/96	ADDED EXIST. SEWER	RLW
3	9/96	STACKS ADDED	RLW

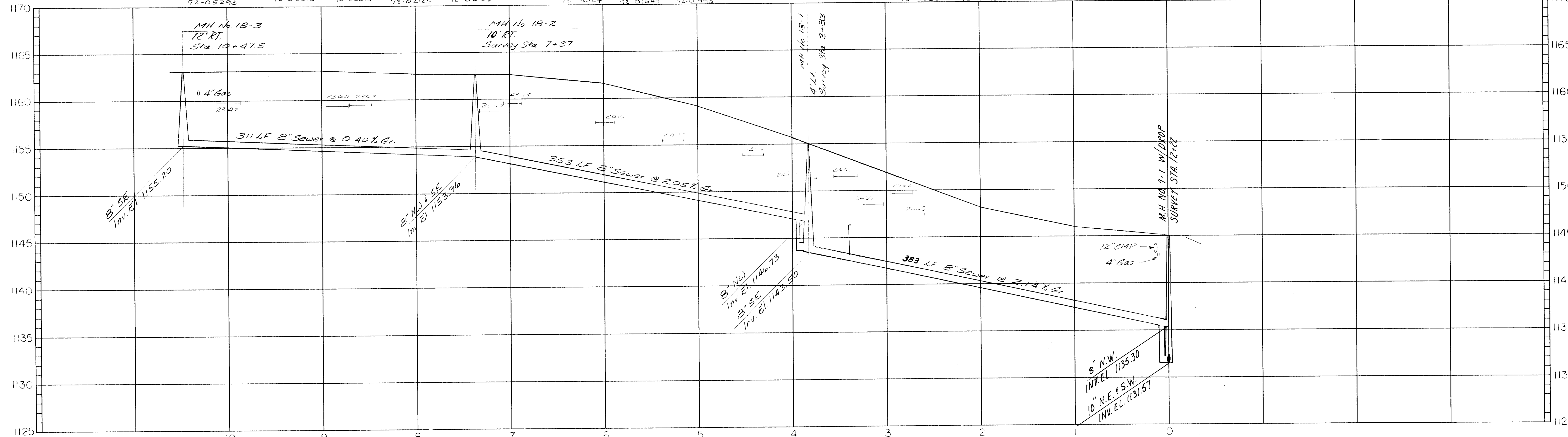
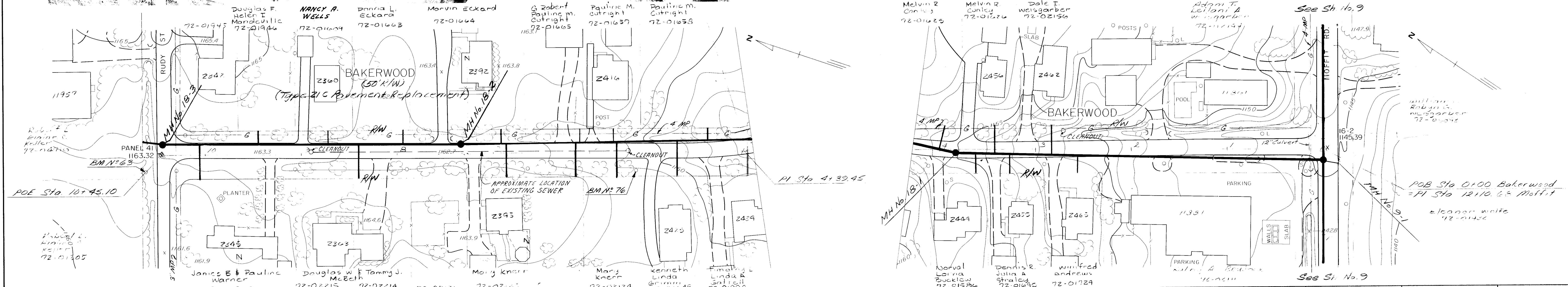
NO.	DATE	REVISIONS	BY
1	10/95	DESIGN LAYOUT	JK
2	8/96	DRAWN	JK
3	9/96	CHECKED	JAH

MARJORY DRIVE
RUDY ST. TO SINCLAIR ST.
STA. 9+00 TO STA. 16+72

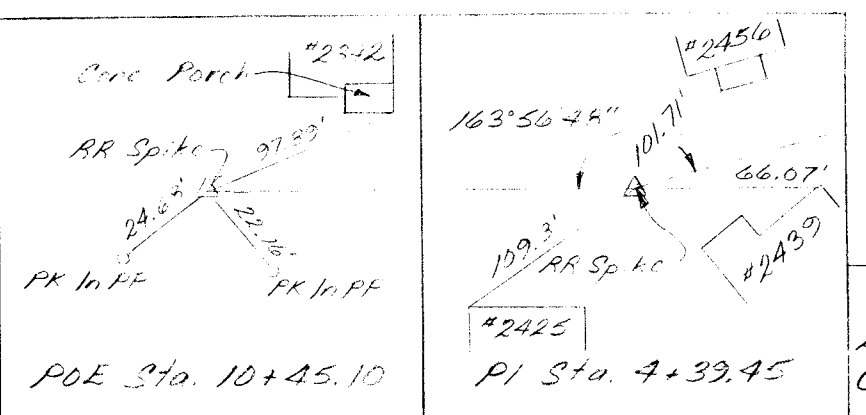
JOB NO.
116-3377
DATE
MARCH 1992

Jones & Henry Engineers, Inc.

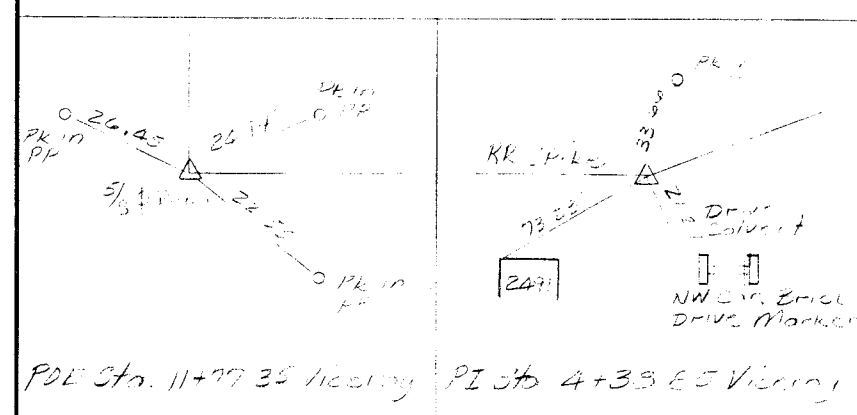
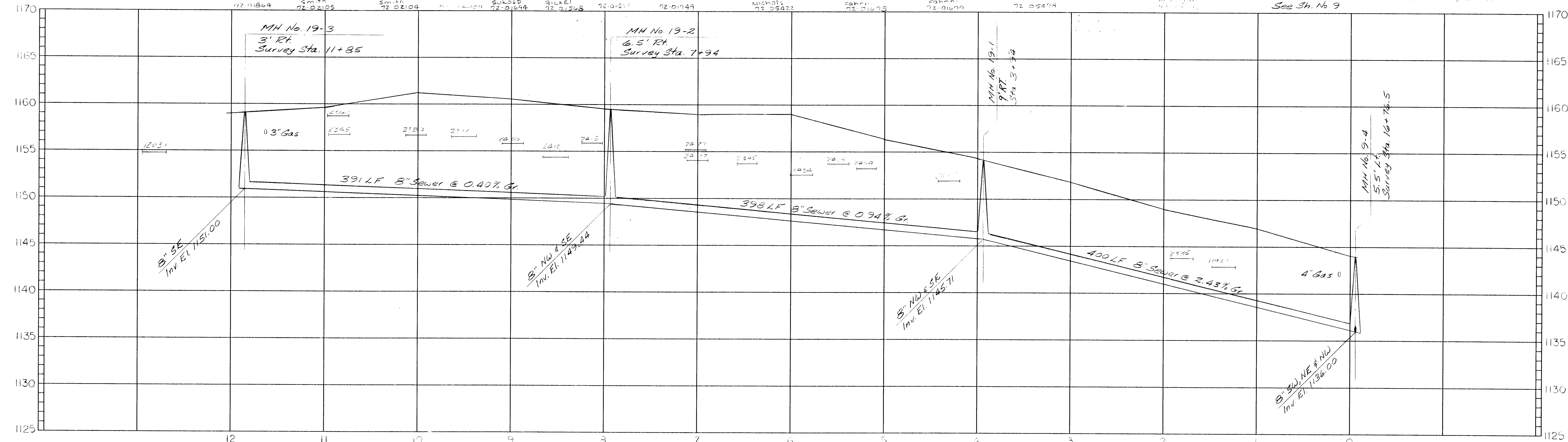
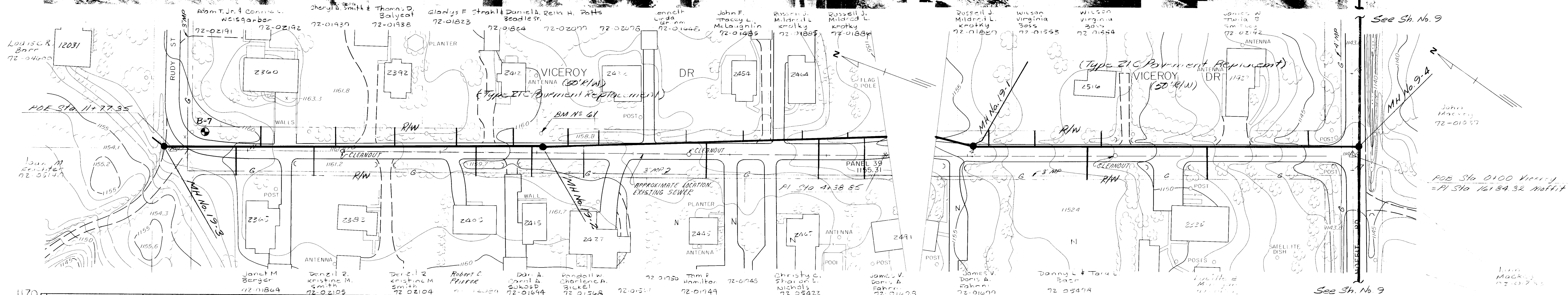
SHEET NO.
17
OF 45



ABRAMS
AERIAL SURVEY CORPORATION
24 N. LARCH ST., EASTLAND, MICHIGAN 48822



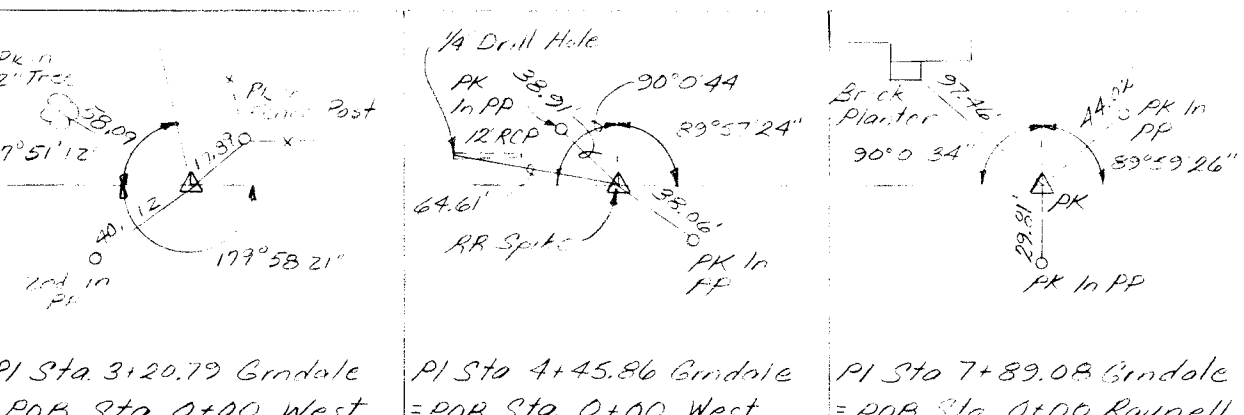
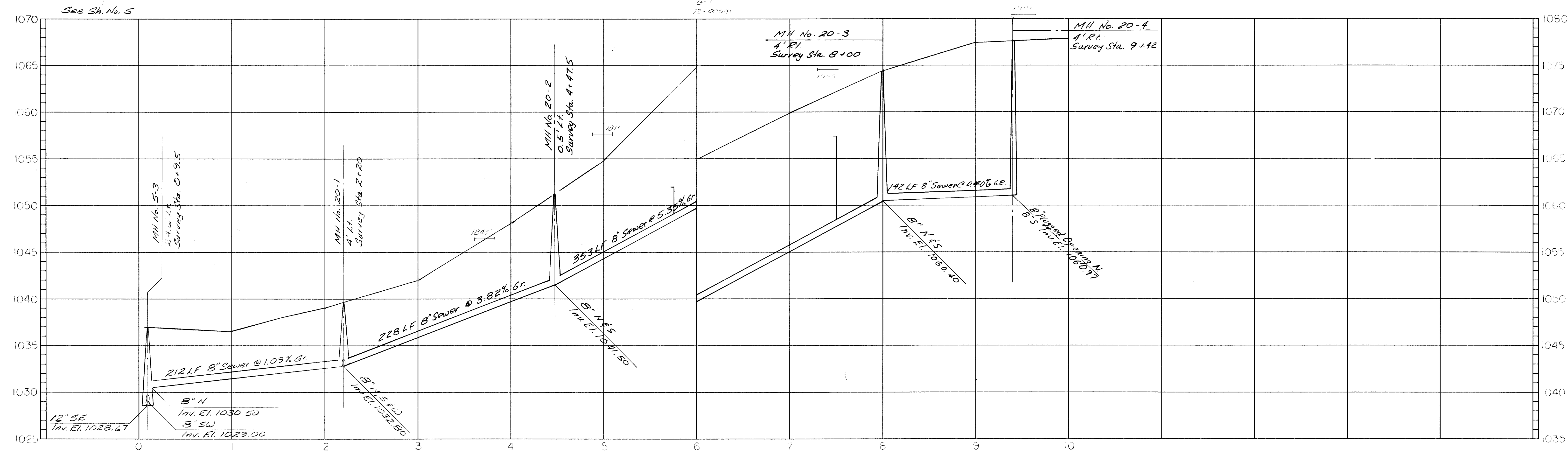
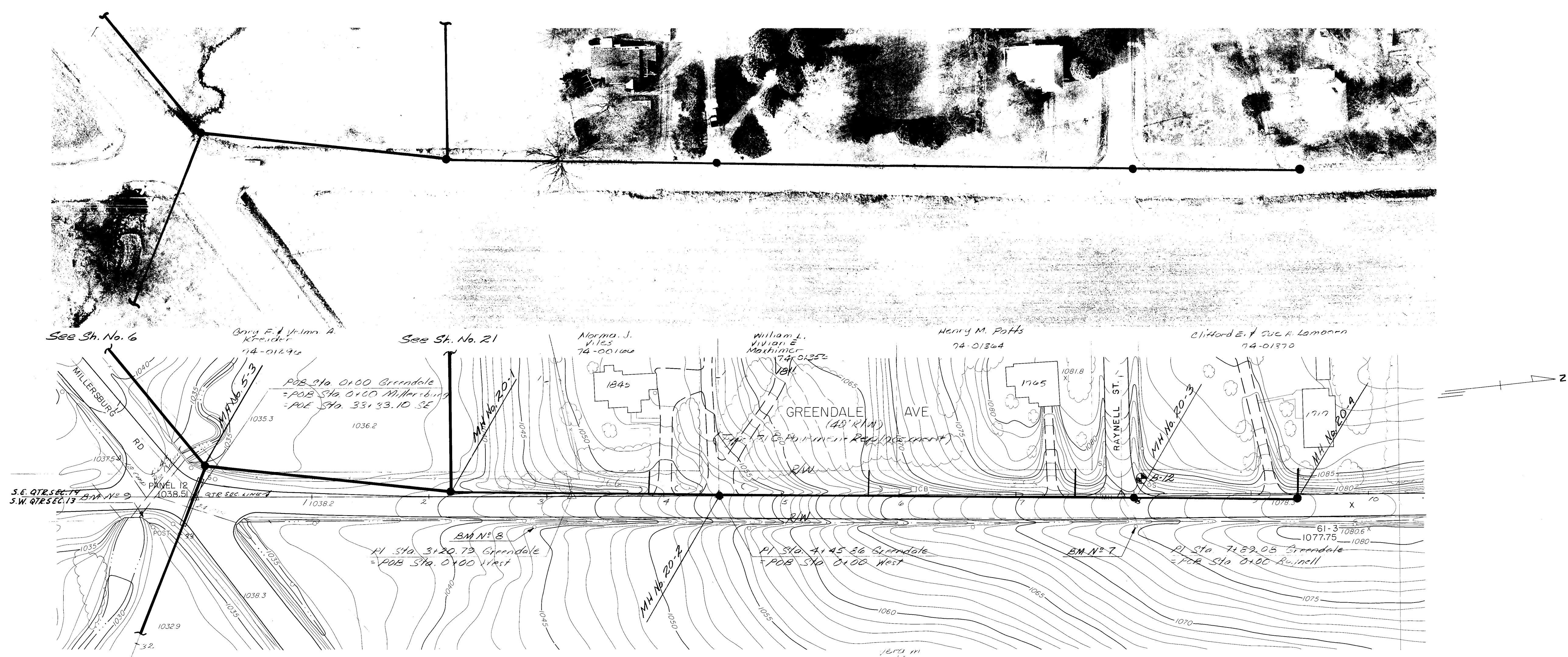
STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-I				BAKERWOOD DRIVE MOFFIT RD. TO RUDY ST. STA. 0+00 TO STA. 10+45	
1	10/95	UPDATE	BLW	JOB NO. 116-3377	
2	8/96	LINE RELOC. & ADDD EXIST SEWER R/W		DATE MARCH 1998	
NO. DATE		REVISIONS	DRAWN	CHECKED	BY
SCALE 1"=50' HOR. 1"=5' VERT.		DESIGN-LAYOUT	JEH	JAH	
JONES & HENRY ENGINEERS, INC.			SHEET NO. 18 OF 48		



BM No. 62
Bolt Spike 0.5' Up SW Side PP
(OBT #34 68) NE Cor. Rudy &
Viceroy
El. 1159.49

BM No. 61
PK Nail 1' Up W. Side PP
(OBT # 61-3)
El. 1160.20

STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-I				VICEROY DRIVE MOFFIT RD. TO RUDY ST. STA. 0+00 TO STA. 11+77			
1	10/95	UPDATE	FLW				
2	8/96	LINE RELOC. & ADDED EXIST. SEWER	RLW				
NO.	DATE	REVISIONS	BY				
1	10/95	DESIGN LAYOUT	JEI	CHECKED	DATE	JOB NO.	SHEET NO.
2	8/96	LINE RELOC. & ADDED EXIST. SEWER	JEI	JA	1993	116-3377	19
				Jones & Henry Engineers, Inc.			



BM No. 8 PK No. 1 1' Up SW Side PP (OPS # 2320 C 4) EL. 1046.07	BM No. 7 RR Spike 1' Up W. Side PP (OE # 2320 C 46) EL. 1075.99
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STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1			
1	10/95	UPDATE	RAW
2	8/96	LINE CHANGE	ELW
3	7/96	STAKES ADDED	RAW
NO.	DATE	REVISIONS	BY
1	10/95	DESIGN LAYOUT	RAW
2	8/96	DRAWN	ELW
3	7/96	CHECKED	RAW

GREENDALE AVENUE
MILLERSBURG RD. TO RAYNELL ST.
STA. 0+00 TO STA. 10+00

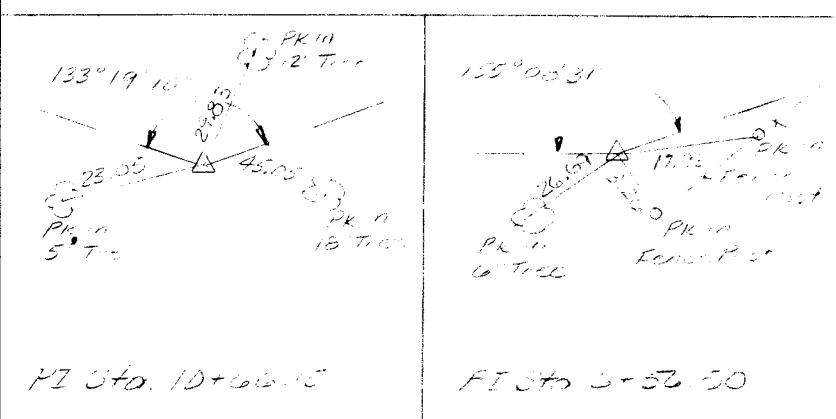
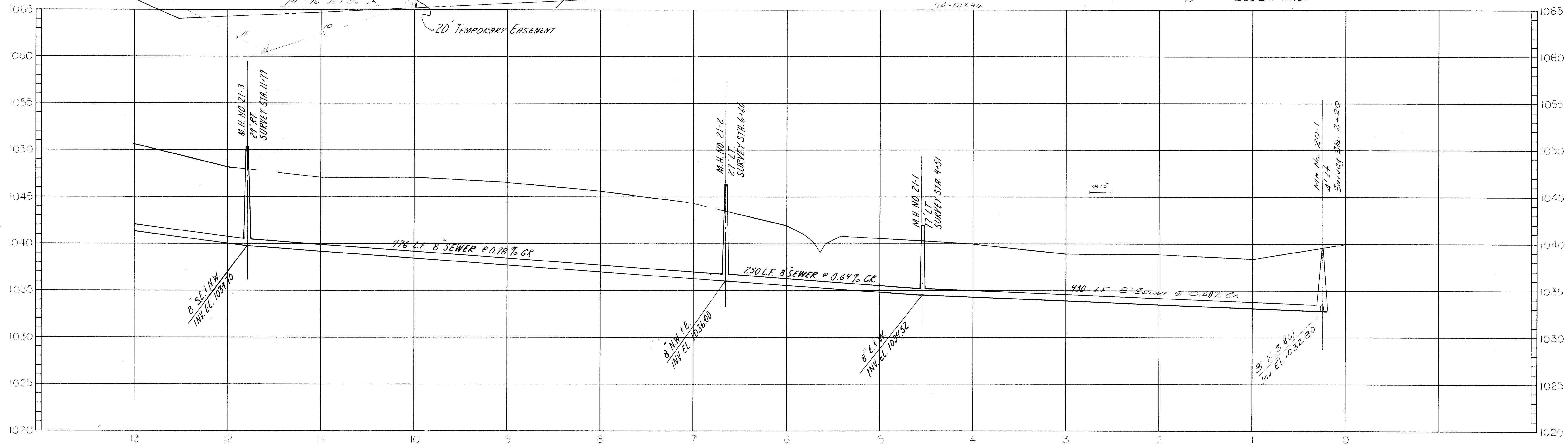
JOB NO.
116-3377

DATE
MARCH 1992

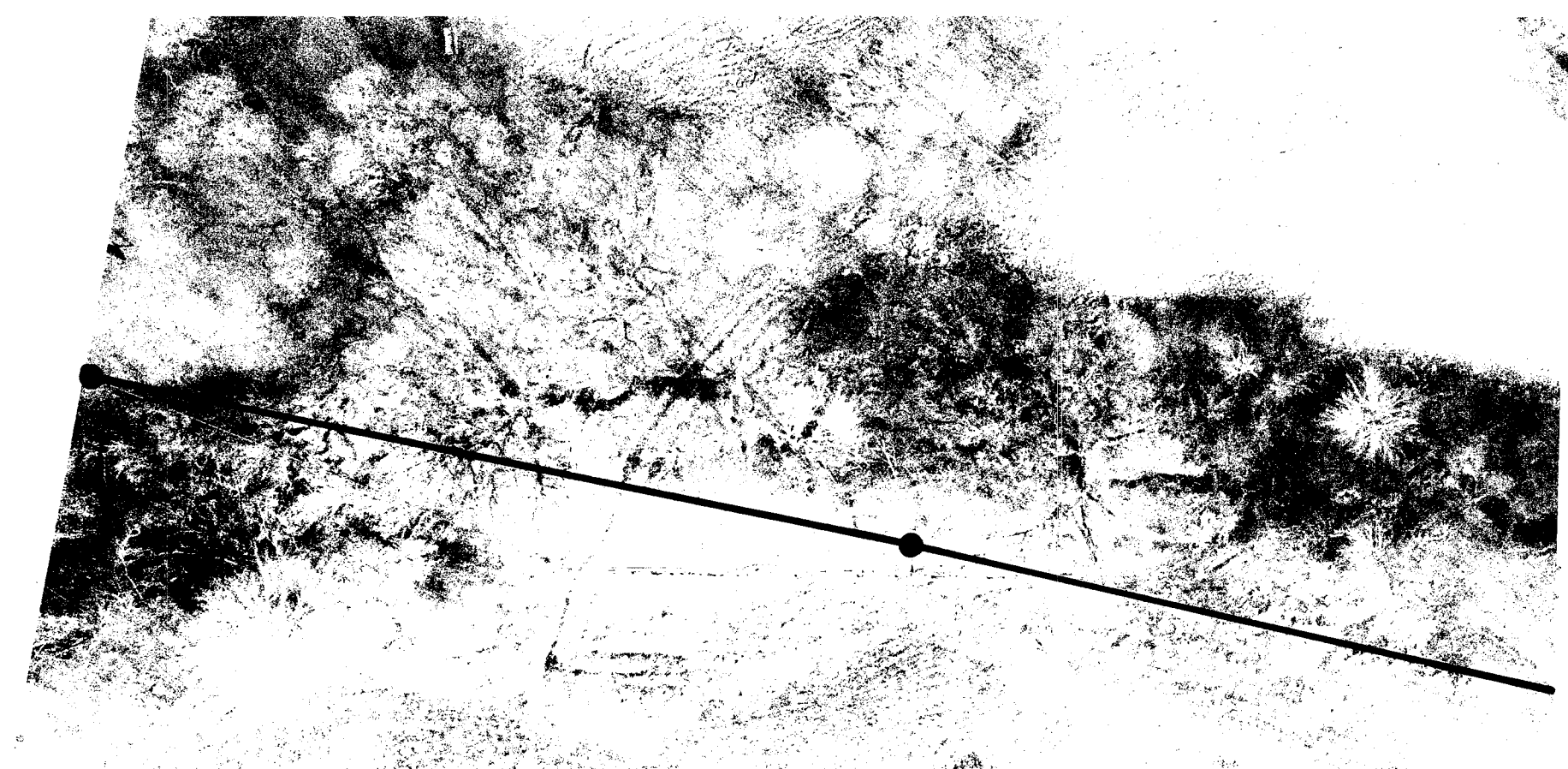
Jones & Henry Engineers, Inc.

SHEET NO.
20

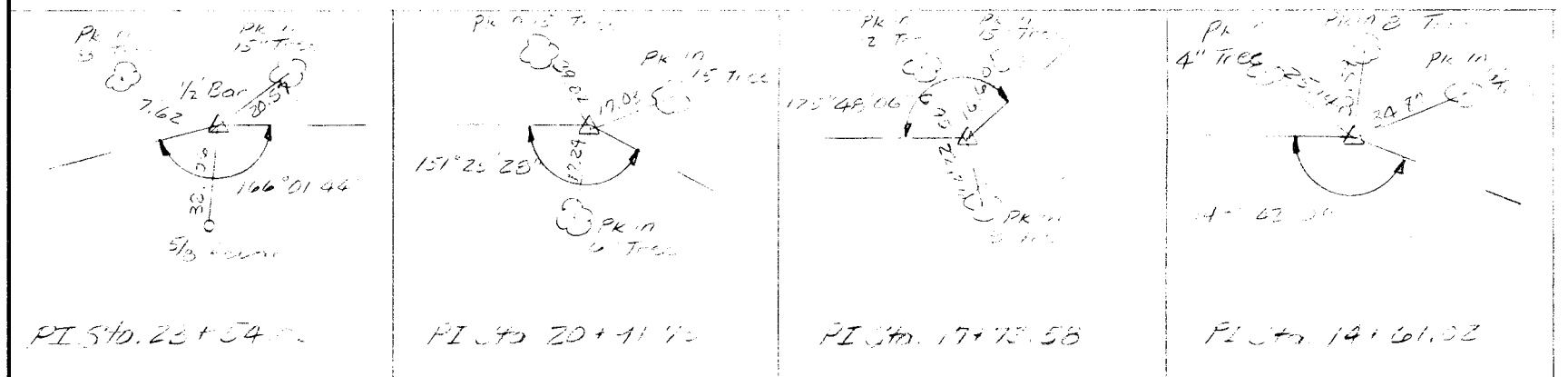
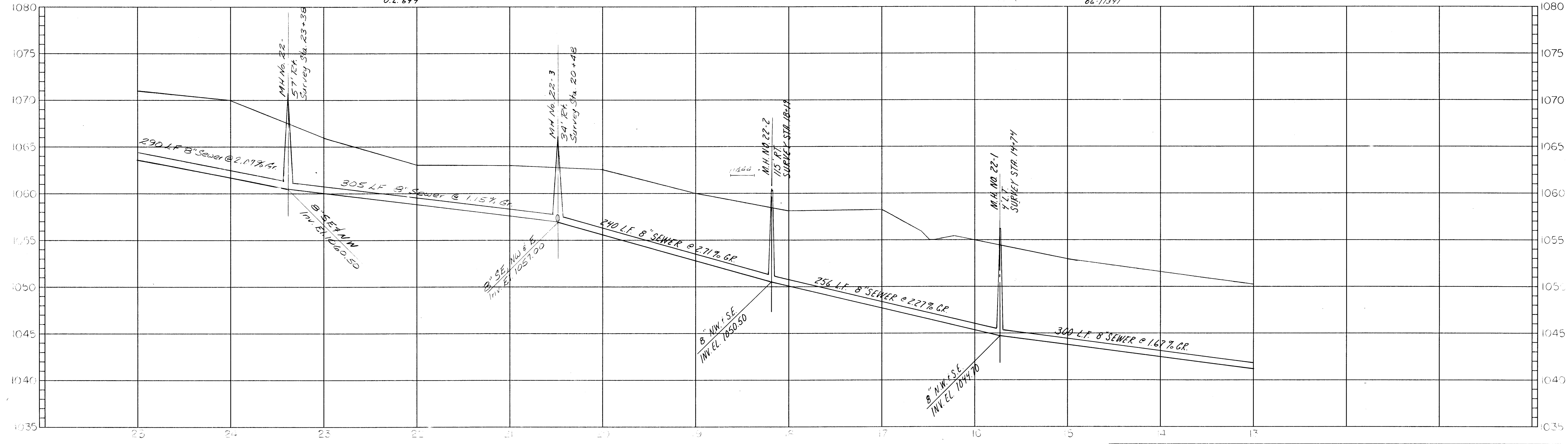
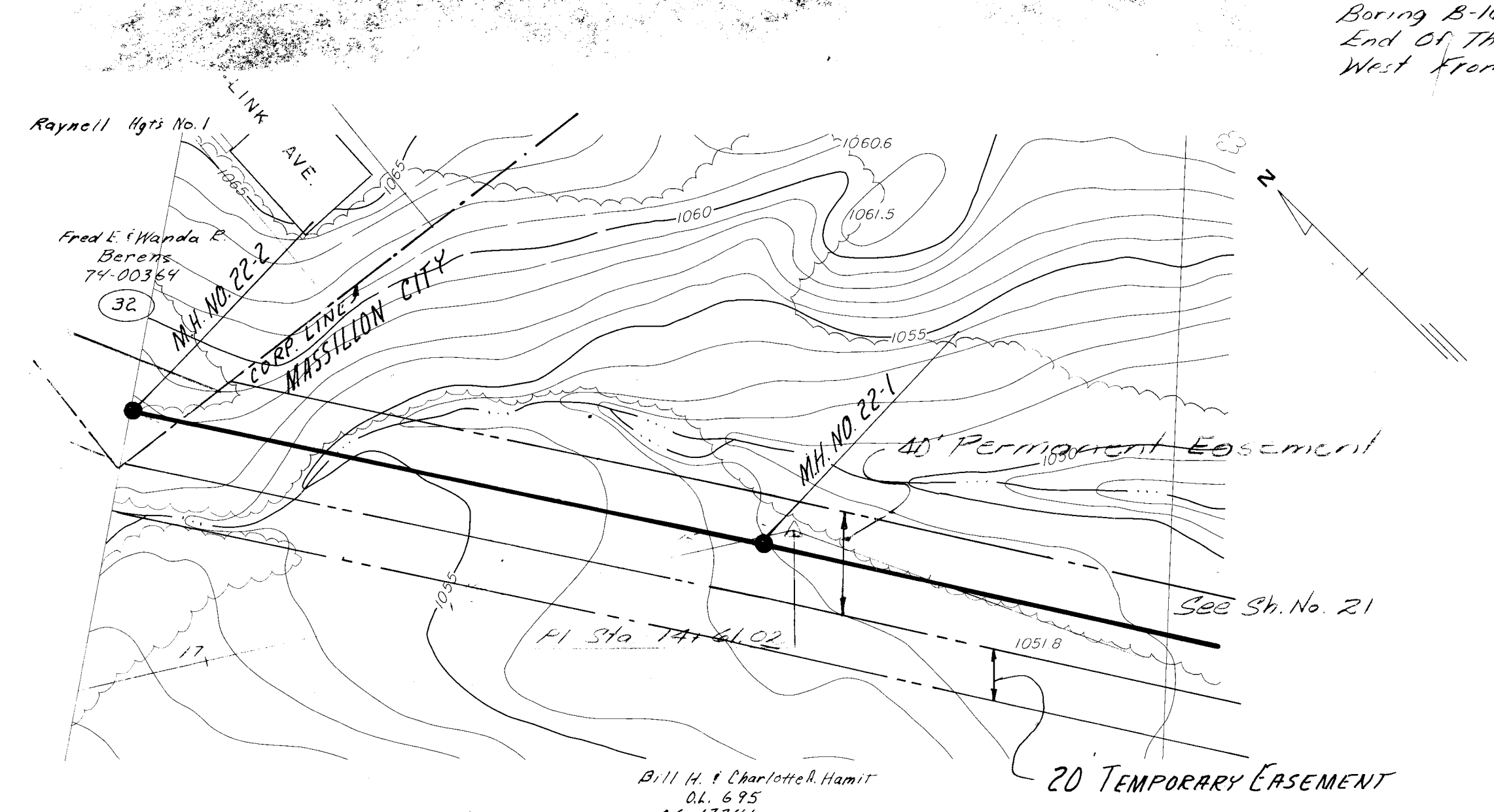
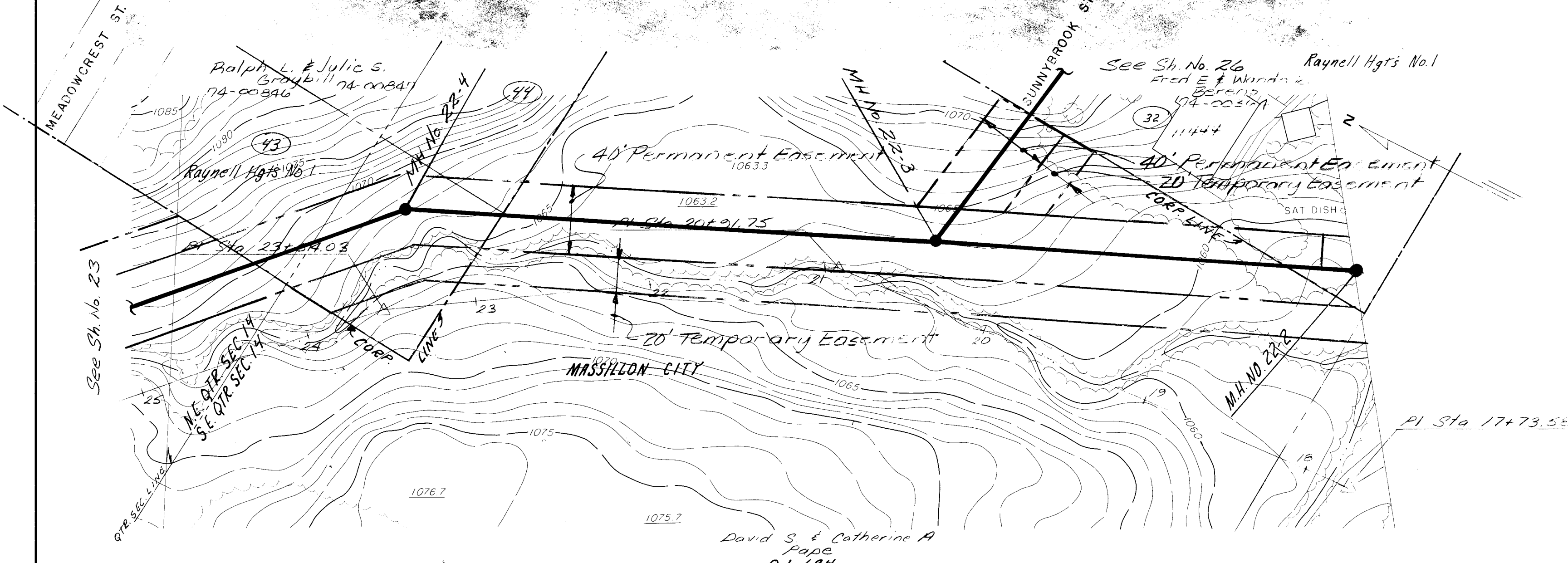
OF 48



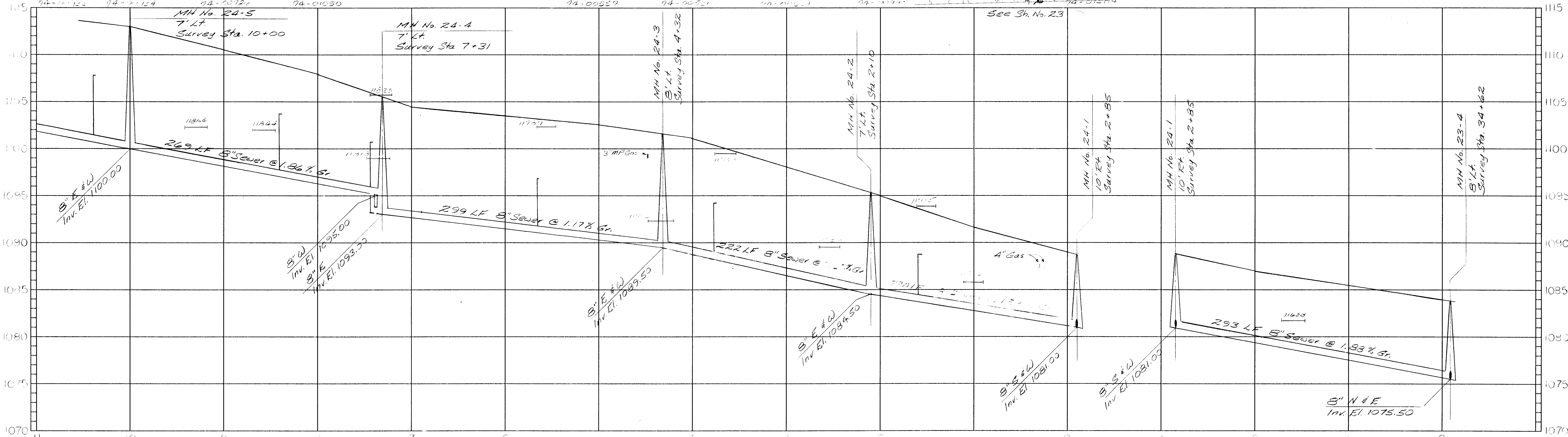
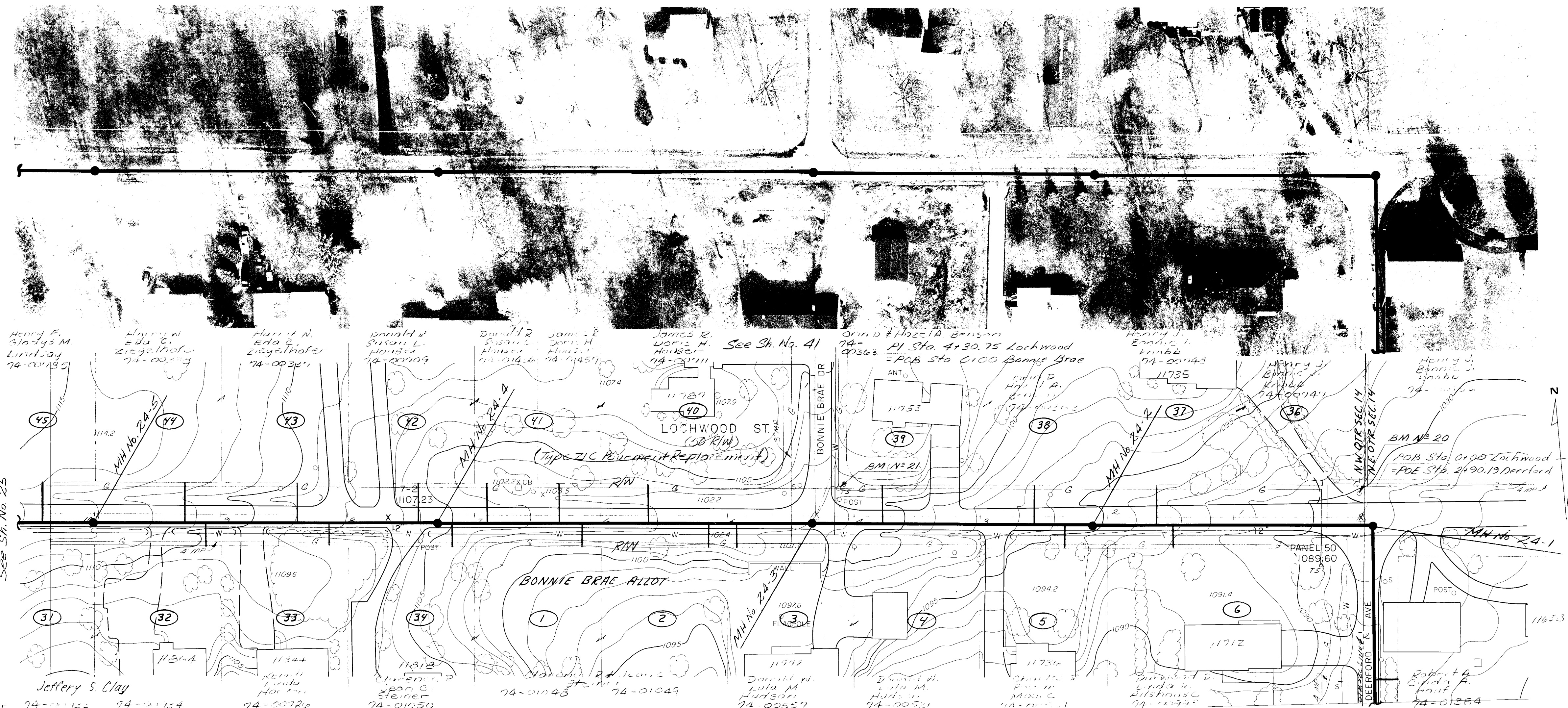
STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1				EASEMENT GREENDALE AVE. TO DEERFORD AVE. STA. 0+00 TO STA. 13+00				
1	10/85	UPDATE	REW	JOB NO. 116-3377		 Jones & Henry Engineers, Inc.		SHEET NO. 21
2	5/96	UPDATE	REW	DATE MAR 21 1997				
3	8/96	LINE RELOCATION M.H. 21-1 TO 21-4	REW	OF 48				
NO. DATE REVISIONS BY				DATE				
SCALE 1"=50' HOR. 1"=5' VERT.				DESIGN LAYOUT PR				
				DRAWN JEH				
				CHECKED JAH				



Note
Boring B-16 Is Located At The West
End Of The Private Drive Running
West From Reynolds Street.



STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1				EASEMENT GREENDALE AVE. TO DEERFORD AVE. STA. 13+00 TO STA. 25+00			
1	10/95	UPDATE	FLW	JOB NO. 116-3377			
2	5/96	UPDATE	FLW	DATE MARCH 1996			
3	8/96	LINE RELOCATION M.H. 22-2	FLW	BY JAH			
NO. DATE		REVISIONS		CHECKED JAH		DATE MARCH 1996	
SCALE 1"=50' HOR. 1"=5' VERT.		DESIGN LAYOUT PR		DRAWN JEH		JONES & HENRY ENGINEERS, INC.	
ABRAMS AERIAL SURVEY CORPORATION 251 N. COLUMBIA ST. COLUMBIA, MISSOURI 65201		PI STA. 23+54		PI STA. 24+11		PI STA. 17+73.58	
PI STA. 14+61.02		PI STA. 14+61.02		PI STA. 14+61.02		PI STA. 14+61.02	



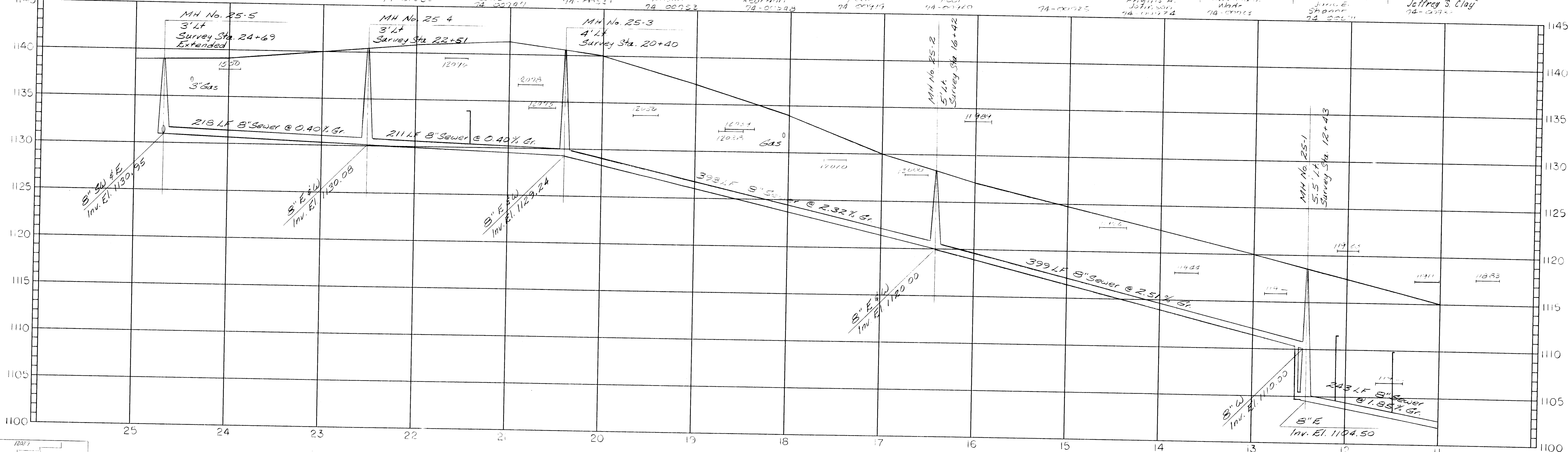
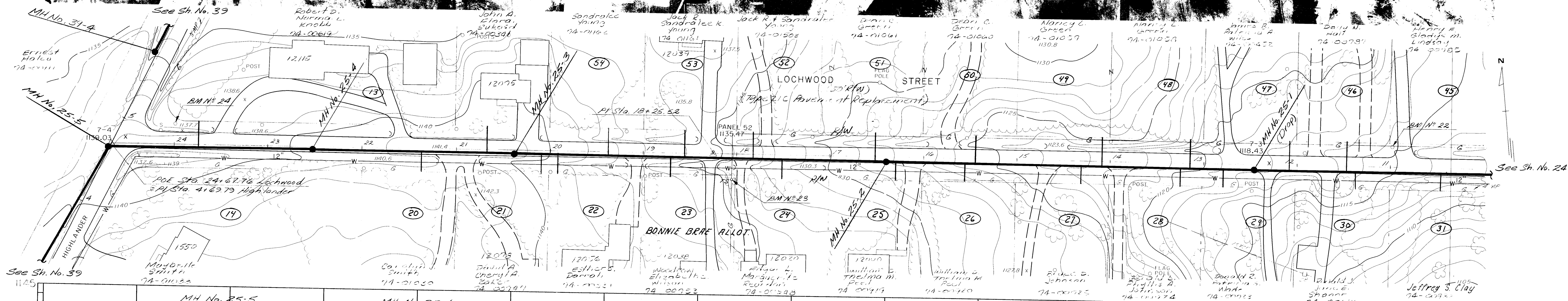
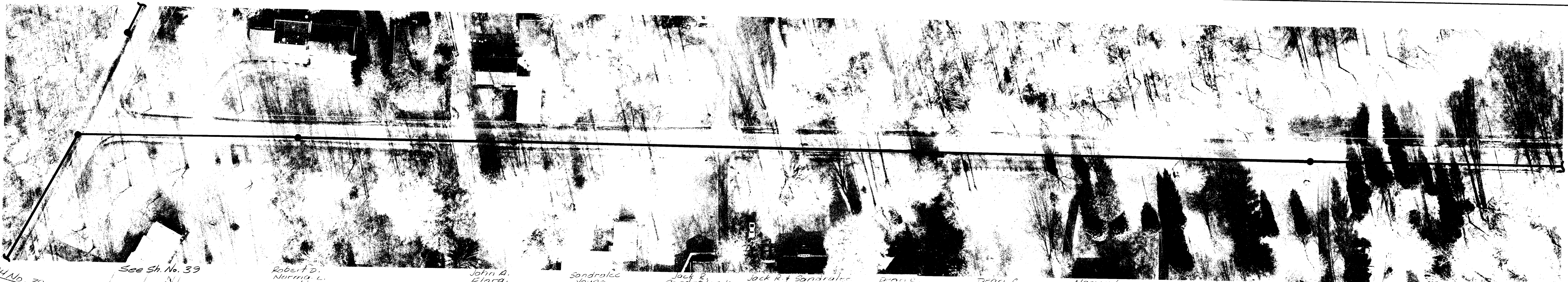
BM No. 21 South Rim of 12" CIP (1/2" Off) E. Ohio Gas Line Test Station Elev. 1102.28	BM No. 20 Boat Spike 0.5' Up S Side PP At Lochwood & Deerford Elev. 1090.51
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STARK COUNTY, OHIO
SANITARY SEWER IMPROVEMENTS
PROJECT NO. 449 C-1

1	10/95	UPDATE	RELW
2	1/96	ADDED WATERLINE	RELW
3	1/96	STACKS ADDED	RELW
NO.	DATE	REVISIONS	BY
1	10/95	DESIGN LAYOUT	JEH
2	1/96	CHECKED	JAH

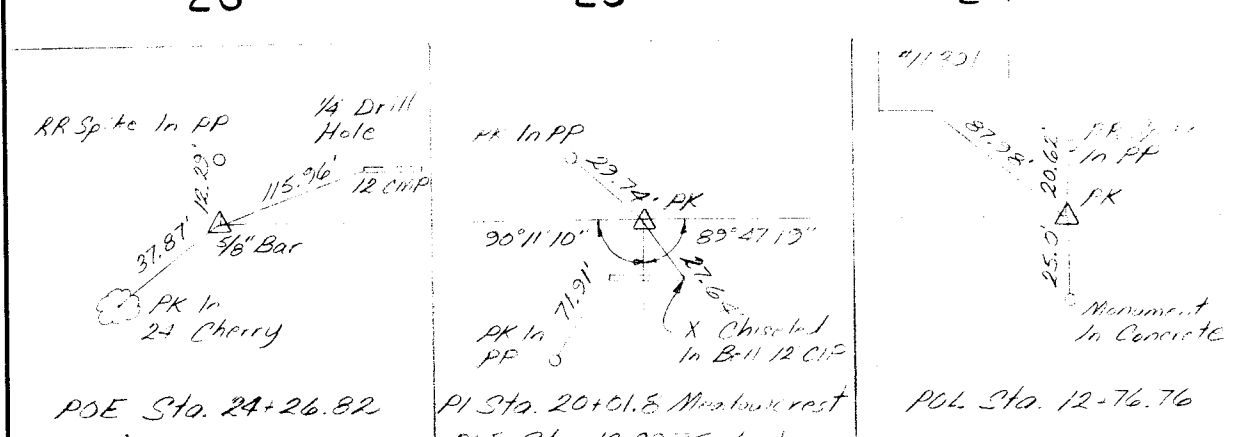
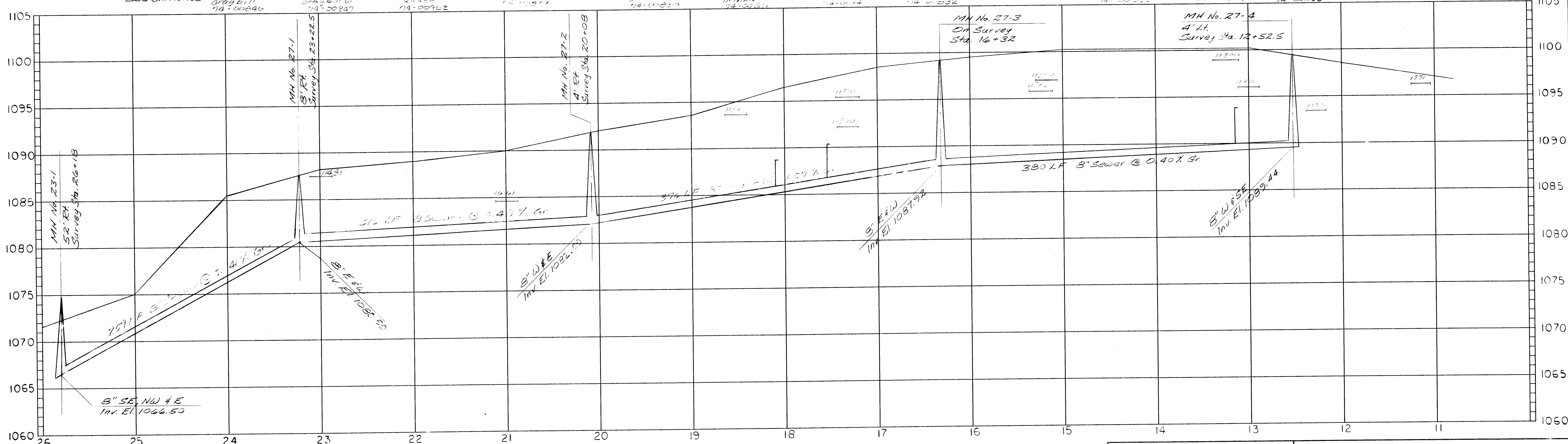
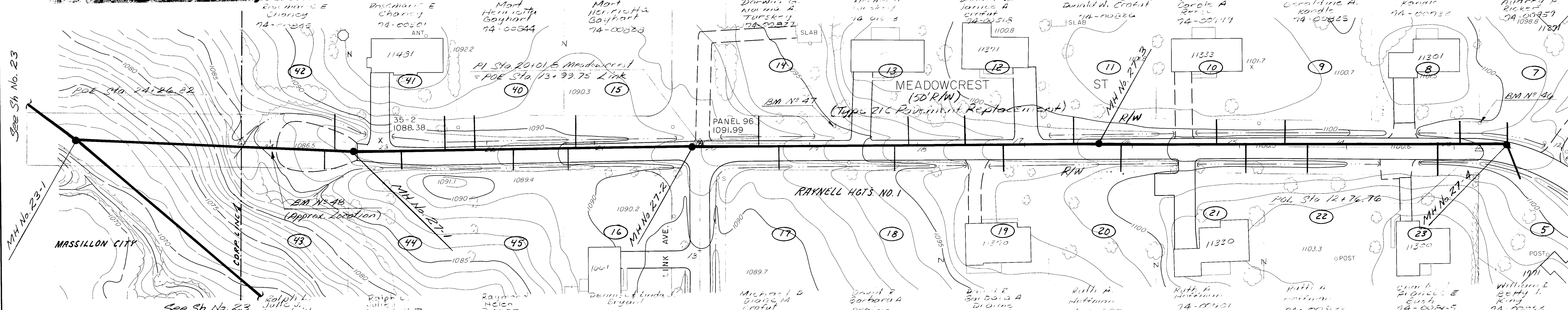
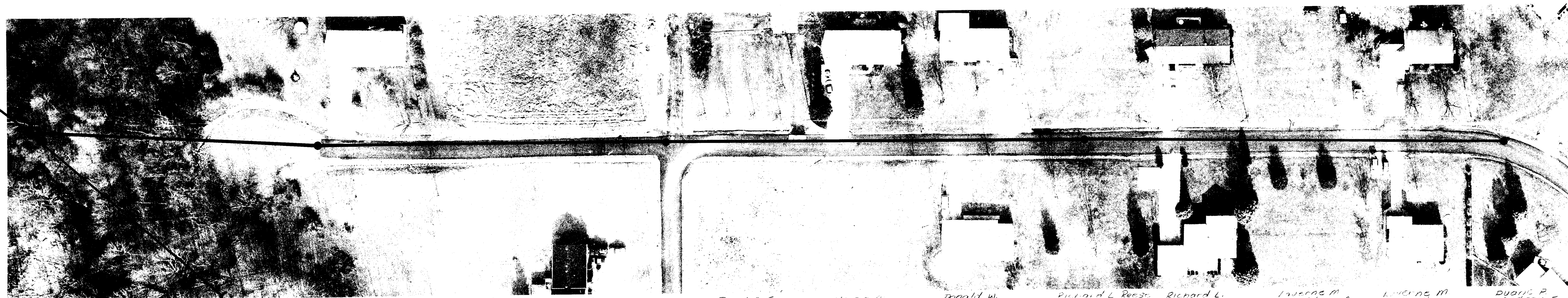
LOCHWOOD STREET
DEERFORD AVE. TO BONNIE BRAE
STA. 0+00 TO STA. 10+00

JOB NO. 116-3377	DATE MARCH 1995	Jones & Henry Engineers, Inc.	SHEET NO. 24
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BM No. 24 Bolt Spike 0.5' Up S. Side PP (OE #22208-18) Elev. 1139.50	BM No. 23 South Rim of 12" CIP (Lid Off) E. Ohio Gas Test Station Elev. 1134.55	BM No. 22 PK Nail 0.5' Up S. Side PP (OE #22208-18) Elev. 1116.38
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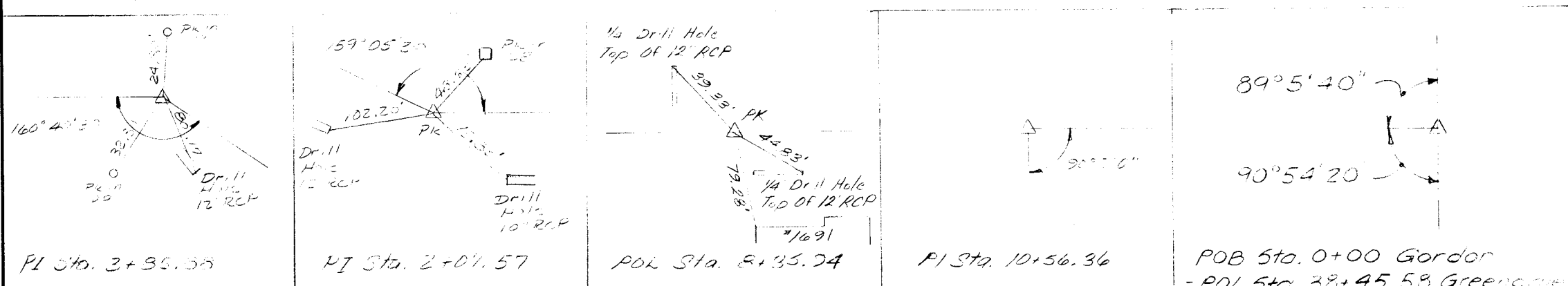
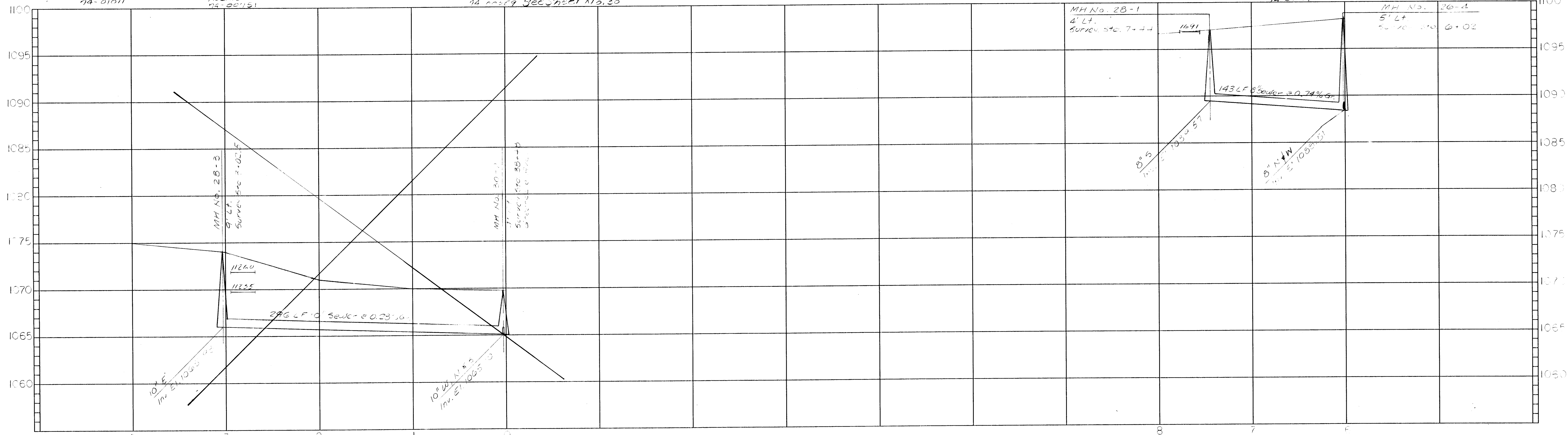
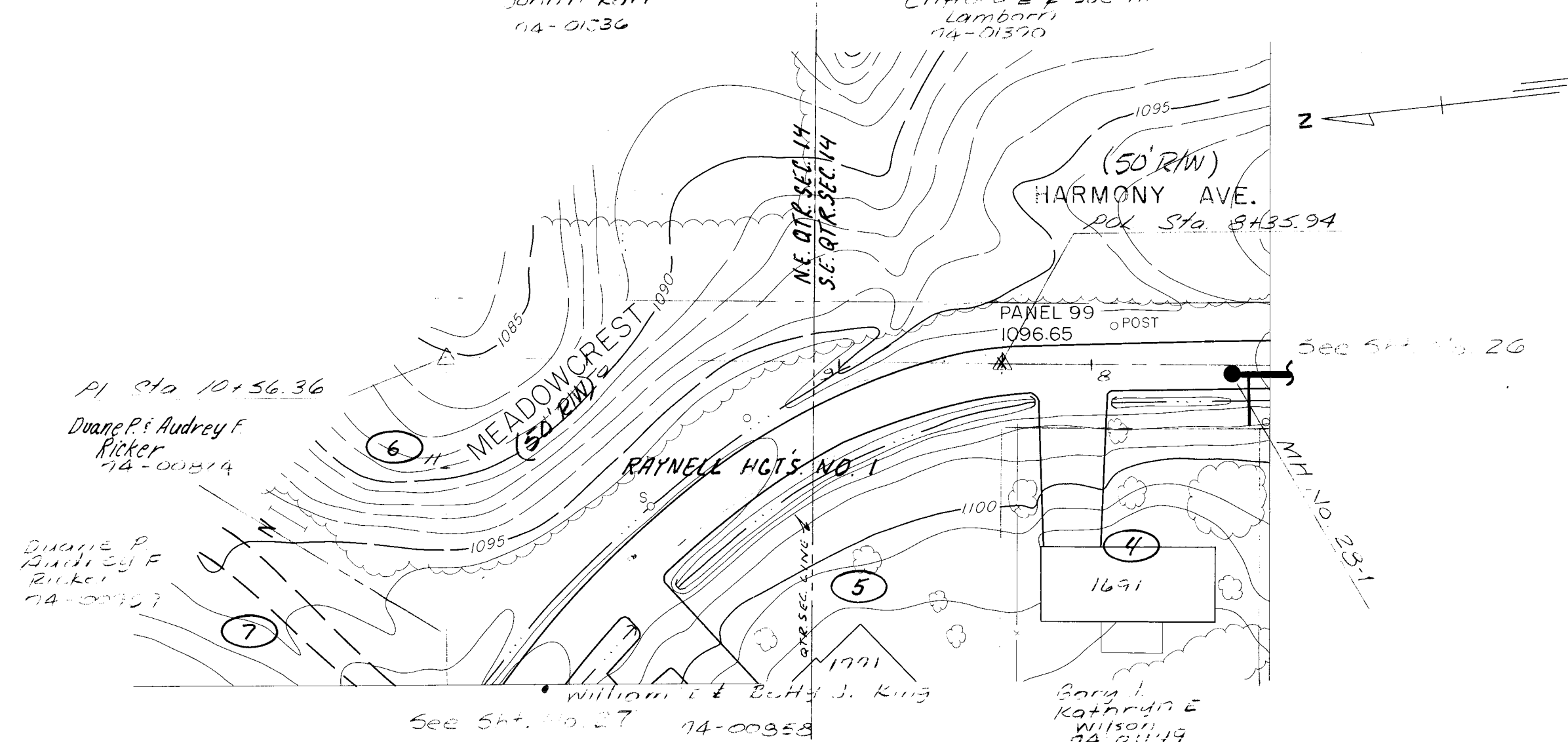
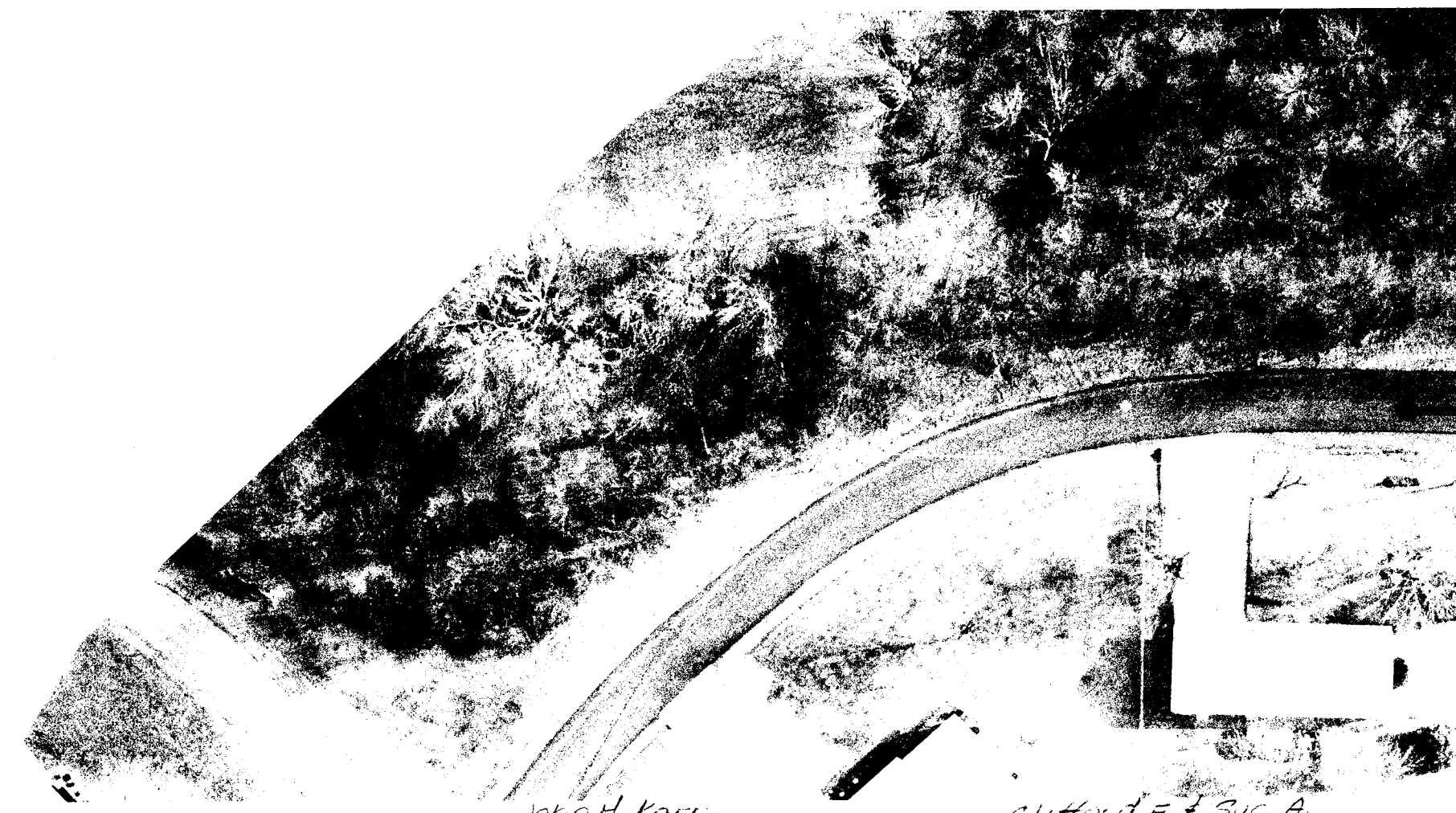
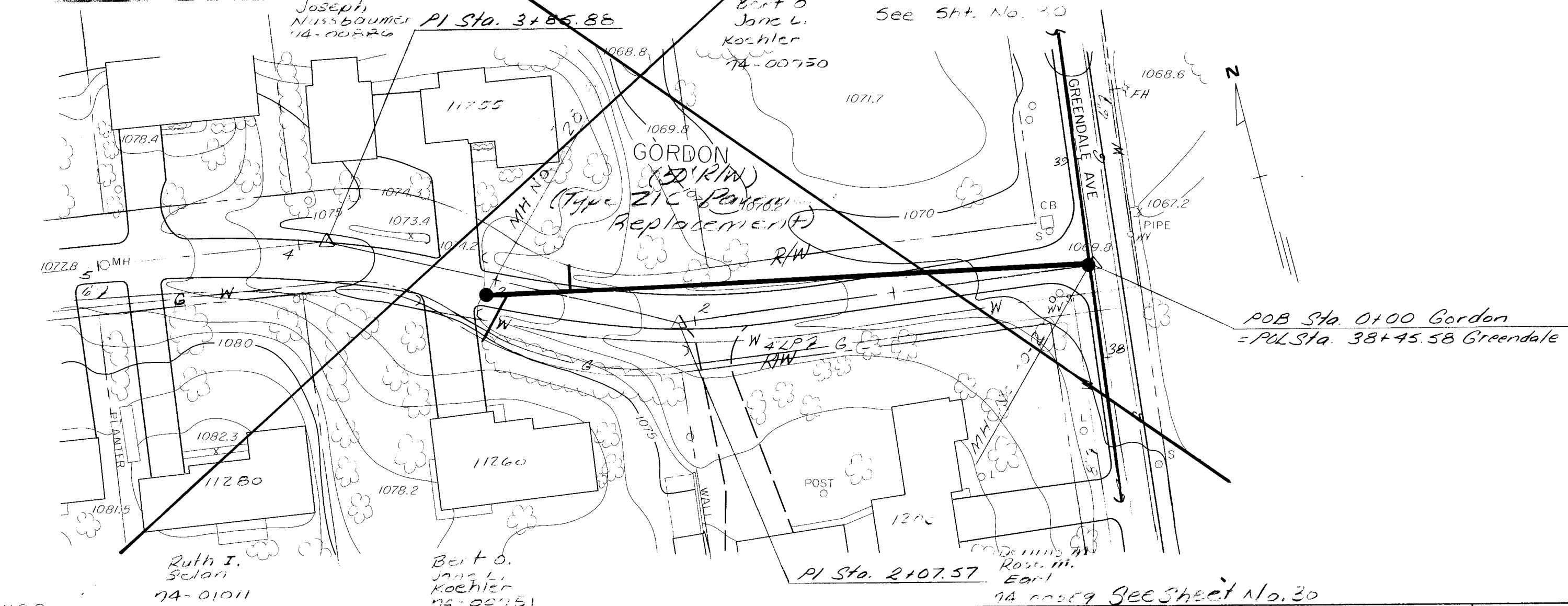
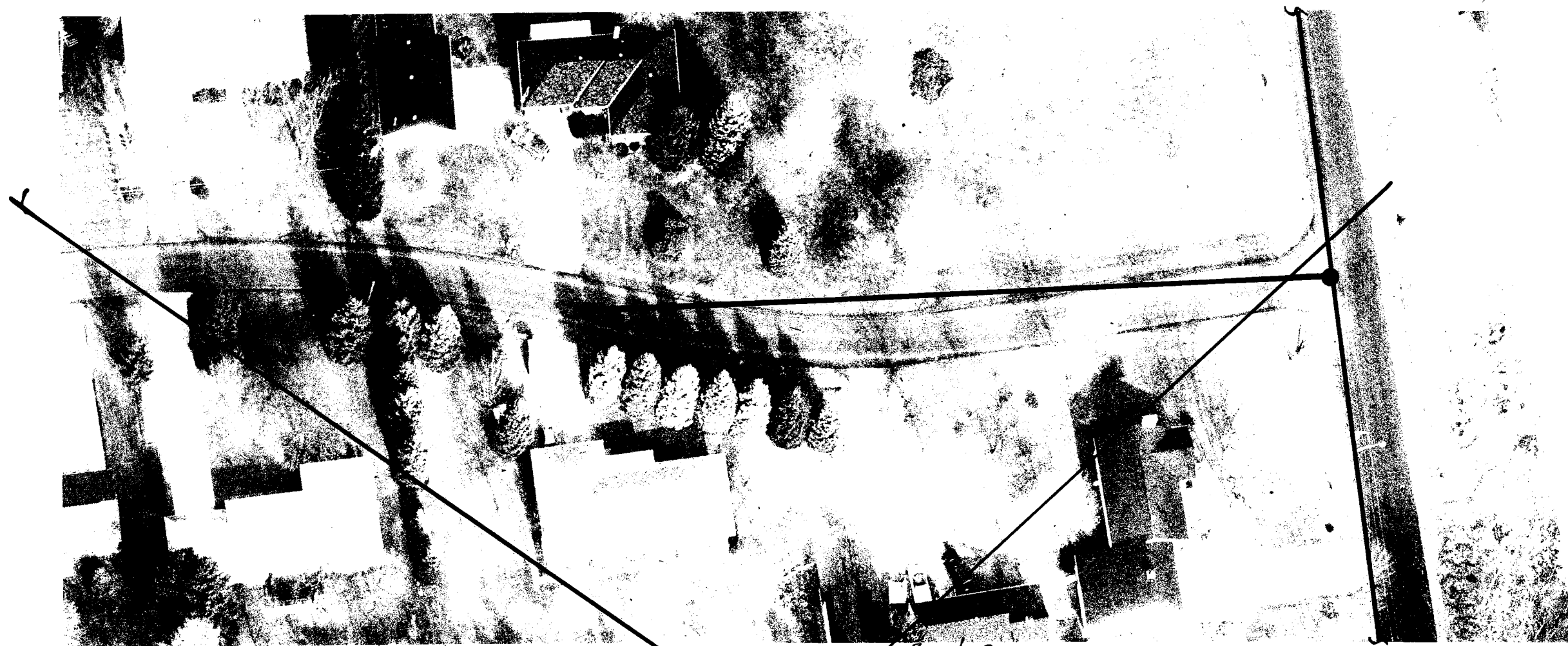
STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1		LOCHWOOD STREET BONNIE BRAE TO HIGHLANDER AVE. STA. 10+00 TO STA. 24+67	
1 10/95 UPDATE	RLW	JOB NO. 116-3377	
2 4/21/96 ADDED WATERLINE	RLW	SHEET NO. 05	
3 9/96 STACKS ADDED	RLW		
NO. DATE	REVISIONS	BY	



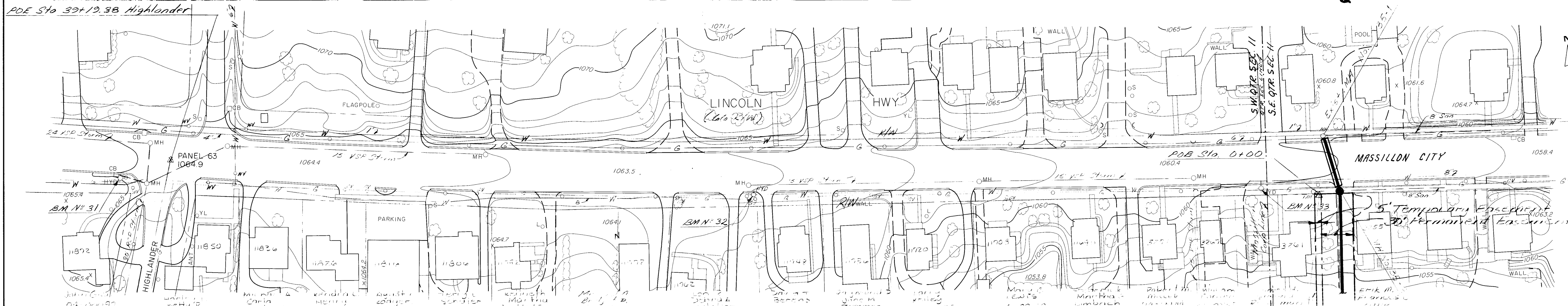
BM No. 48 RR Spike 1' Up S. Side PP (OB # 125-13) Elev. 1085.54	BM No. 47 PK No. 1.5' Up S. Side PP (OB # 125-10) Elev. 1096.47	BM No. 46 RR Spike 1' Up S. Side PP (OB # 2320B-38) Elev. 1101.46
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STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-I				MEADOWCREST STREET HARMONY AVE. TO LINK AVE. STA. 12+00 TO STA. 24+26			
1 10/95 UPDATE RLW		2 9/96 LINE DELETED RLW		3 9/96 STACKS ADDED RLW		JOB NO. 116-3377	
NO. DATE		REVISIONS		BY		DATE	
DESIGN LAYOUT		DRAWN		CHECKED		MARCH 1993	
PR		JEH		JAH		JONES & HENRY ENGINEERS, INC.	
SCALE 1"=50' HOR. 1"=5' VERT.		PR		JEH		SHEET NO. 27	

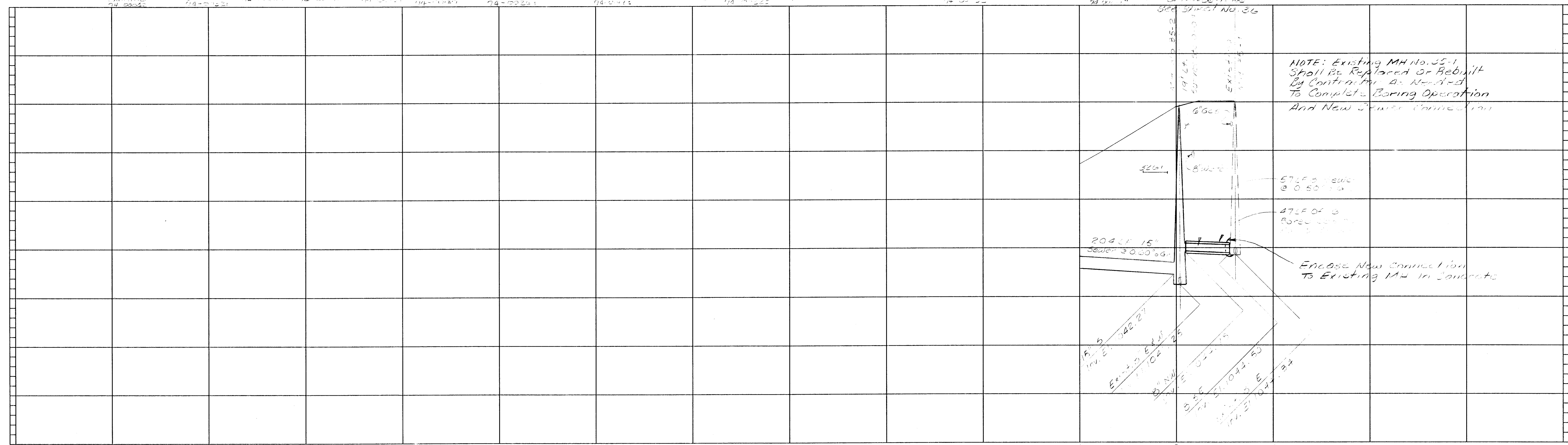
ABRAMS
AERIAL SURVEY CORPORATION
SURVEYING, ENGINEERING, AND
CONSULTING



STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-I				GORDON ST. GREENDALE AVE. TO 300' WEST HARMONY AVENUE SUNNYBROOK TO MEADOWCREST			
1	10/95	UPDATE	R.L.W.	2	9/96	LINE DELETED	R.L.W.
NO. DATE REVISIONS DRAWN BY				JOB NO. 116-3377			
SCALE 1"=50' HOR. 1"=5' VERT.				DATE 10/96			
DESIGN-LAYOUT PIR				CHECKED JAH			
DRAWN JEH				JONES & HENRY ENGINEERS, INC.			
SHEET NO. 28				OF 43			



PAVEMENT REPLACEMENT FOR ZUPP DRIVEWAY AT 3255 LINCOLN WAY SHALL BE ITEM 21P PER DETAIL DRAWING NO. 23. OVERLAY SHALL BE INSTALLED FROM LINCOLN WAY TO ENTRANCE TO GARAGE BEHIND HOUSE AND SHALL BE 10' WIDE. PAYMENT FOR THIS WORK SHALL BE MADE UNDER ITEM 21P. GRANULAR BACKFILL ITEM 6 IS REQUIRED UNDER DRIVEWAY.



NOTE: Existing MH No. 33-1 Shall Be Replaced or Rebuilt By Contractor As Needed To Complete Boring Operation And New Sewer Connection

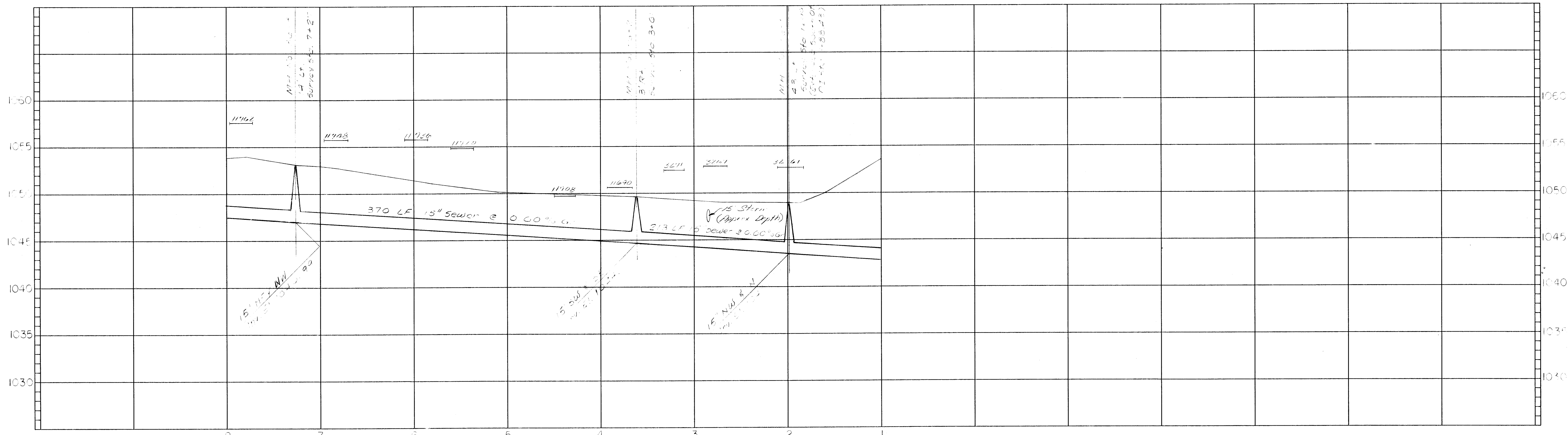
57 LF 6\"/>

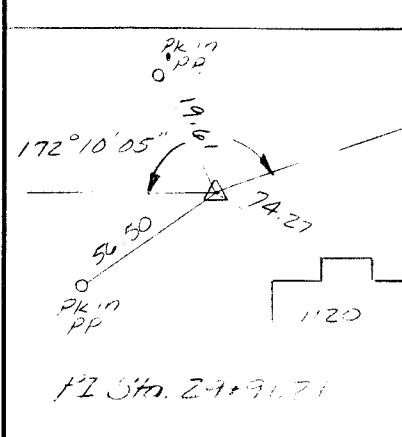
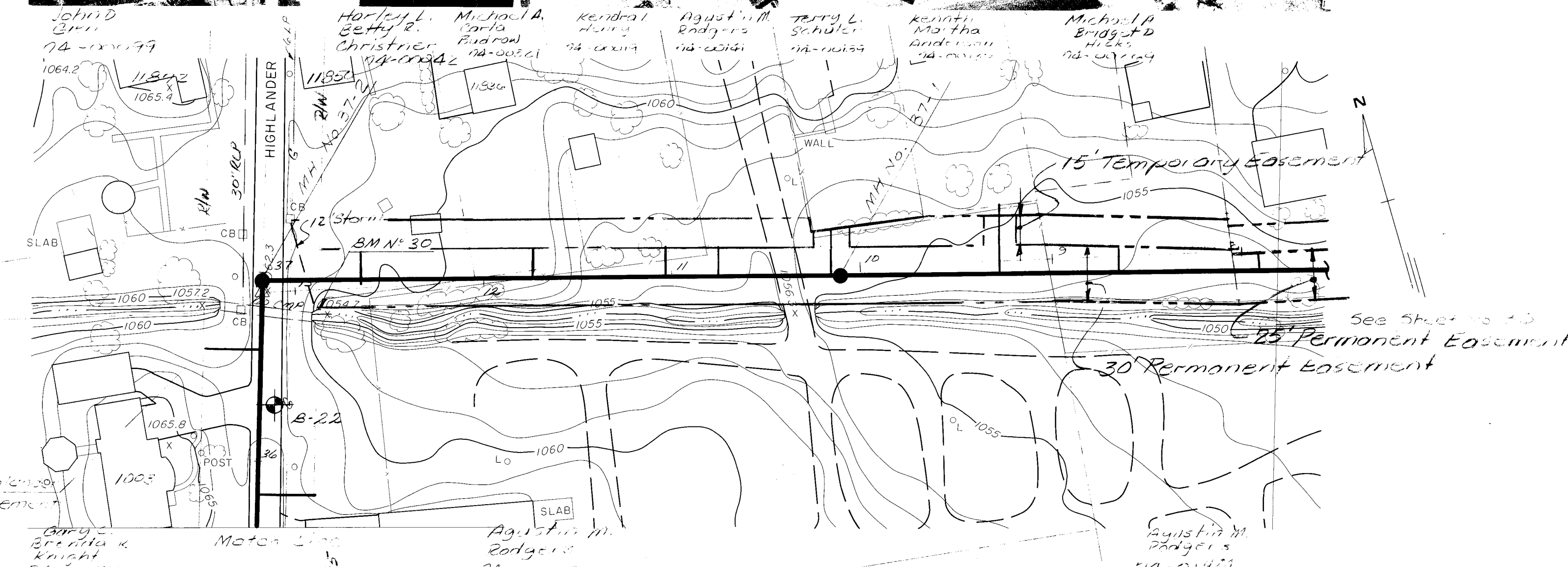
Enclose New Connection To Existing MH in Concrete

BM N° 31 Top NE Cap Bolt On Hydrant 1 st Bolt E. of N. In Matthews Elev. 1066.50	BM N° 32 Top N. Cap Bolt On Hydrant 1 st Bolt W. of N. In Tenn. Elev. 1065.12	BM N° 33 Top Cap Bolt On Top Center of Hydrant Elev. 1062.55
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STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1				LINCOLN STREET HIGHLANDER AVE. TO EASEMENT	
1 10/95	UPDATE	RLW			
2 10/96	PAVEMENT NOTE ADDED	RLW			
NO. DATE			REVISIONS		
BY			BY		
SCALE 1"=50' HOR. 1"=5' VERT.			DESIGN LAYOUT PR		
DRAWN JUH			CHECKED JUH		
DATE MAY 1996			JOB NO. 116-3377		
JONES & HENRY ENGINEERS, INC.			SHEET NO. 35		

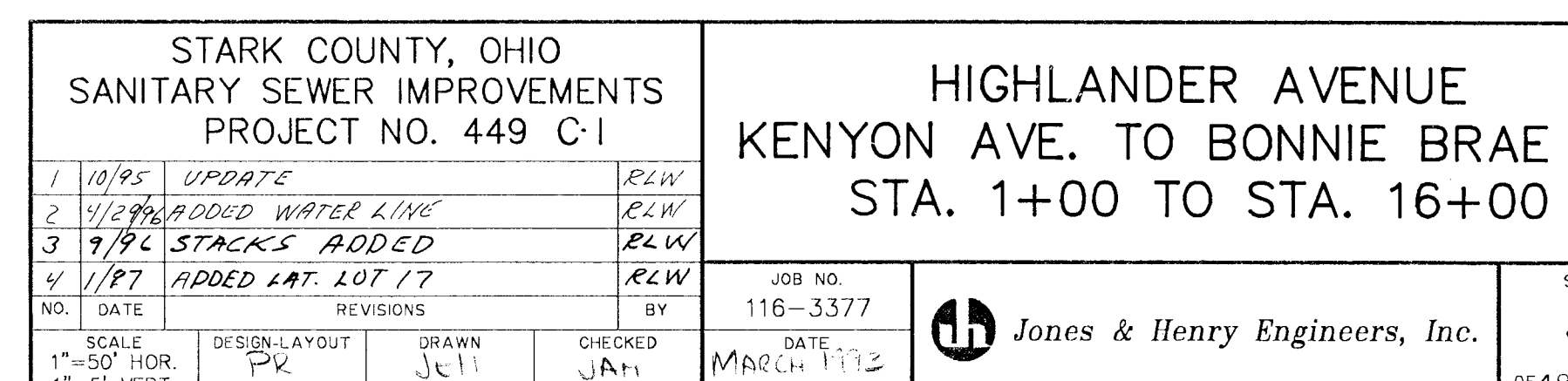
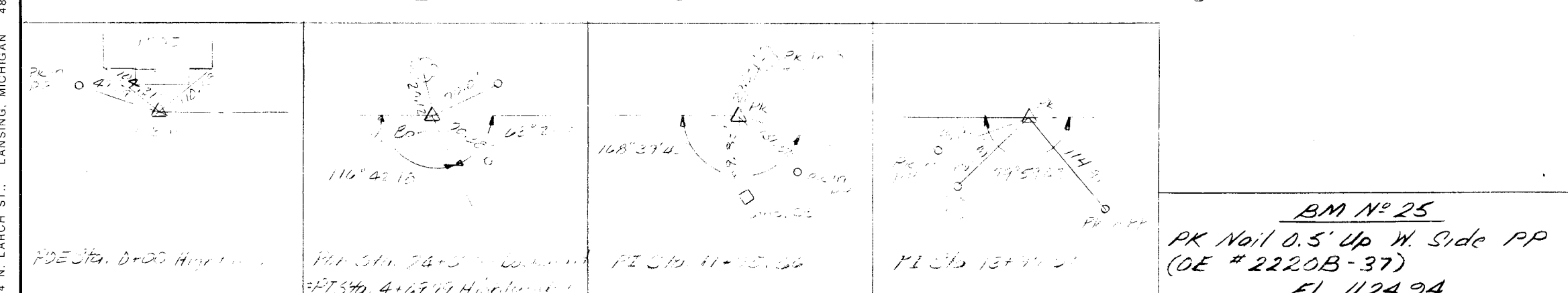
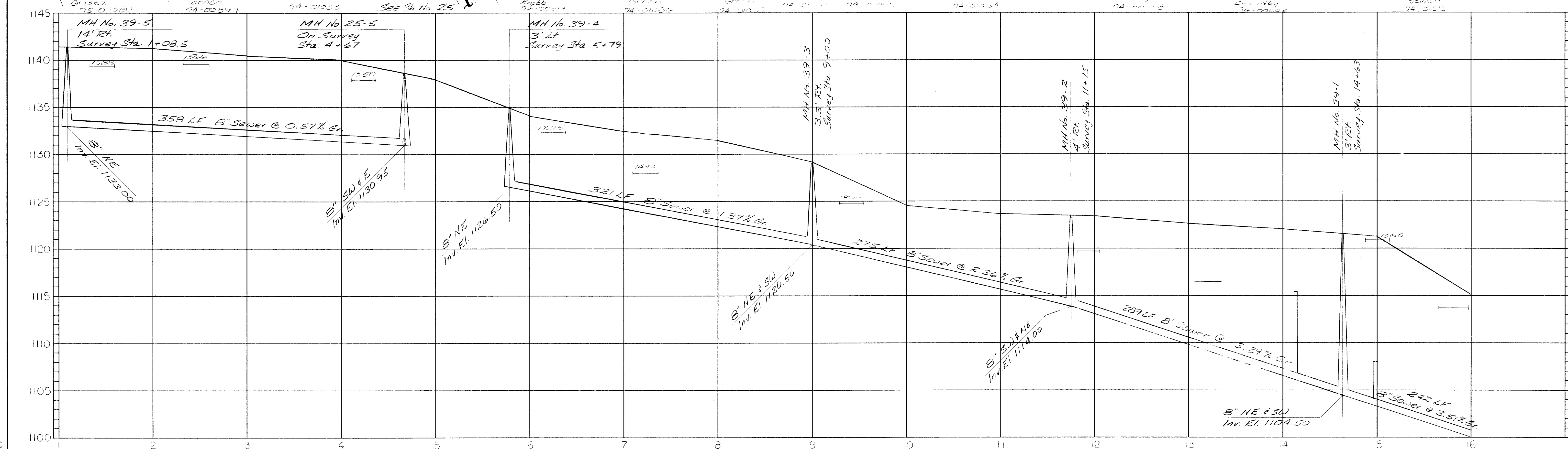
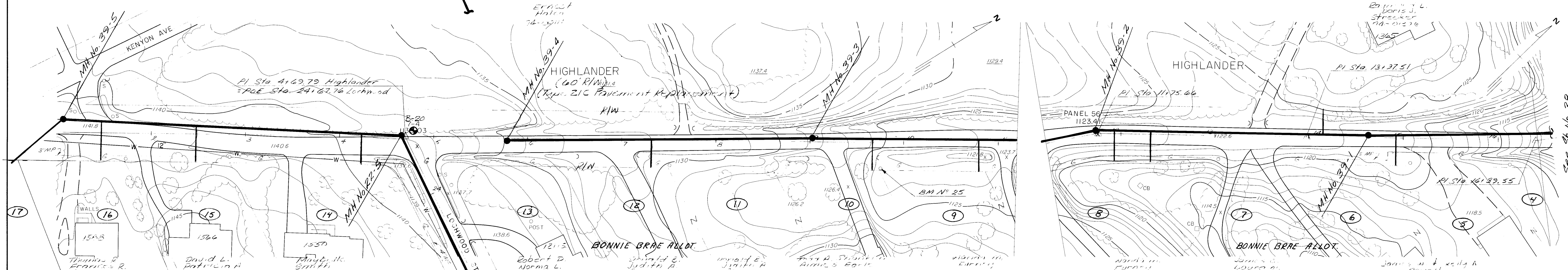
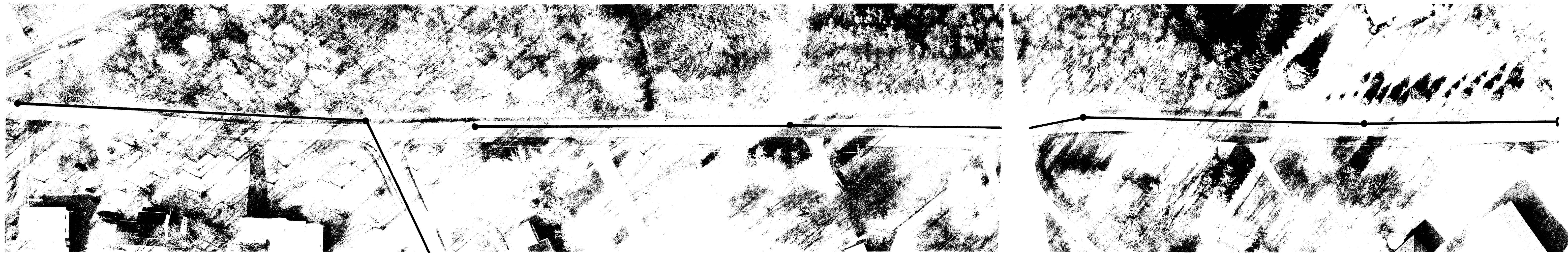
ABRAMS
AERIAL SURVEY CORPORATION
172 N. LARCH ST., LANSING, MICHIGAN 48202



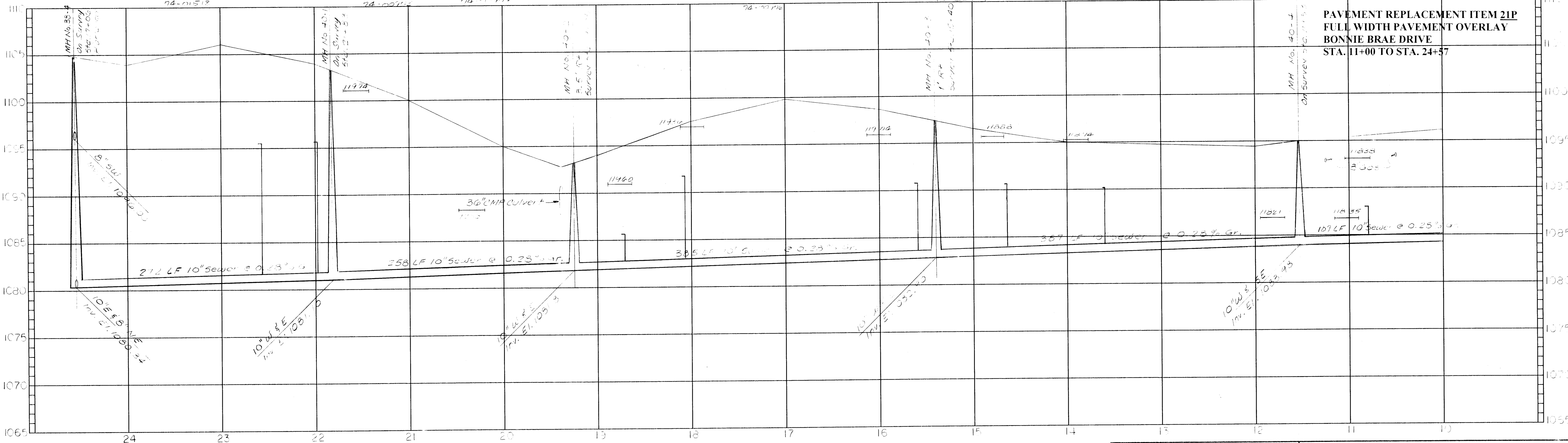
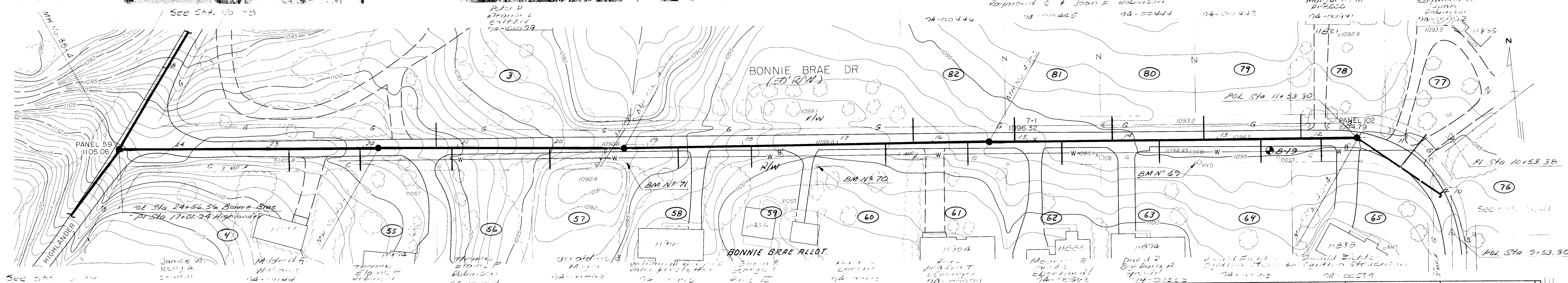


1034
PI Sta. 34+90.29

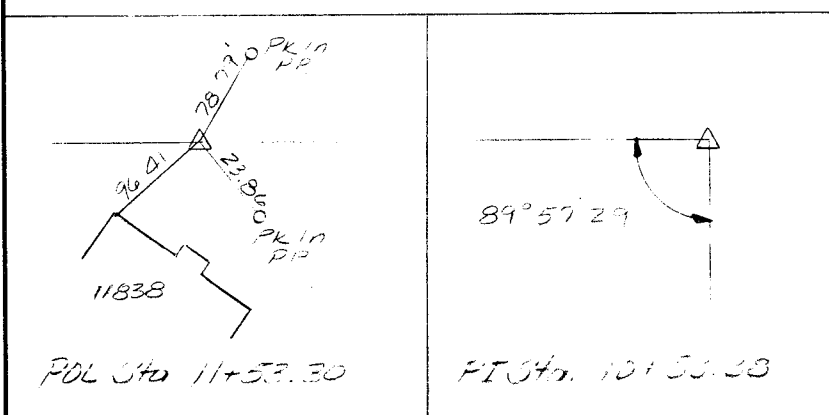
EASEMENT LINCOLN ST. TO HIGHLANDER AVE. STA. 8+00 TO STA. 13+17		
JOB NO. 116-3377	 Jones & Henry Engineers, Inc.	SHEET NO. 37
DATE MAR 21 1972		



STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1				HIGHLANDER AVENUE KENYON AVE. TO BONNIE BRAE DR. STA. 1+00 TO STA. 16+00			
1	10/95	UPDATE	RLW	JOB NO. 116-3377			
2	4/12/96	ADDED WATER LINE	RLW	DATE MARCH 1997			
3	9/96	STACKS ADDED	RLW	BY J. Jones & Henry Engineers, Inc.			
4	1/97	ADDED LAT. LOT 17	RLW	SHEET NO. 39			
SCALE: 1"=50' HOR. 1"=5' VERT.				DESIGN: J. Jones & Henry Engineers, Inc.			
DRAWN: J. Jones & Henry Engineers, Inc.				CHECKED: J. Jones & Henry Engineers, Inc.			



**PAVEMENT REPLACEMENT ITEM 21P
FULL WIDTH PAVEMENT OVERLAY
BONNIE BRAE DRIVE
STA. 11+00 TO STA. 24+57**



BM N° 71 15" Cut In S. End Of 36" RCP S. Side Bonnie Brae Elev. 1092.17	BM N° 70 60D Spike 1' Up N. Side PP (No Number) Elev. 1101.76	BM N° 69 PK Nail 1' Up N. Side PP (OE # 222012-15) Elev. 1096.27
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STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1	
1 10/95 UPDATE	RLW
2 4/27/96 ADDED WATER LINE	RLW
3 9/96 STACKS ADDED	RLW
4 10/96 PUMP NOTE ADDED	RLW
NO. DATE	REVISIONS
SCALE 1"=50' HOR. 1"=5' VERT.	DESIGN-LAYOUT PR
DRAWN JEH	CHECKED JAH

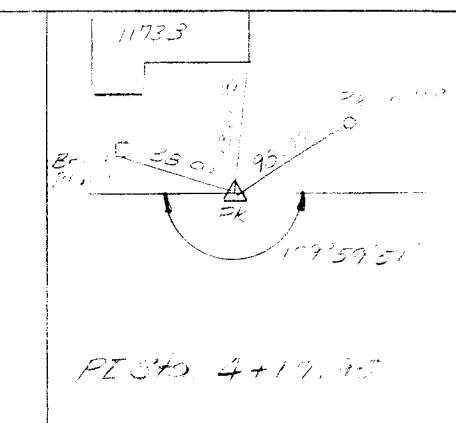
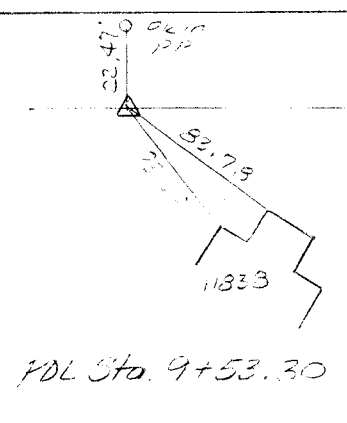
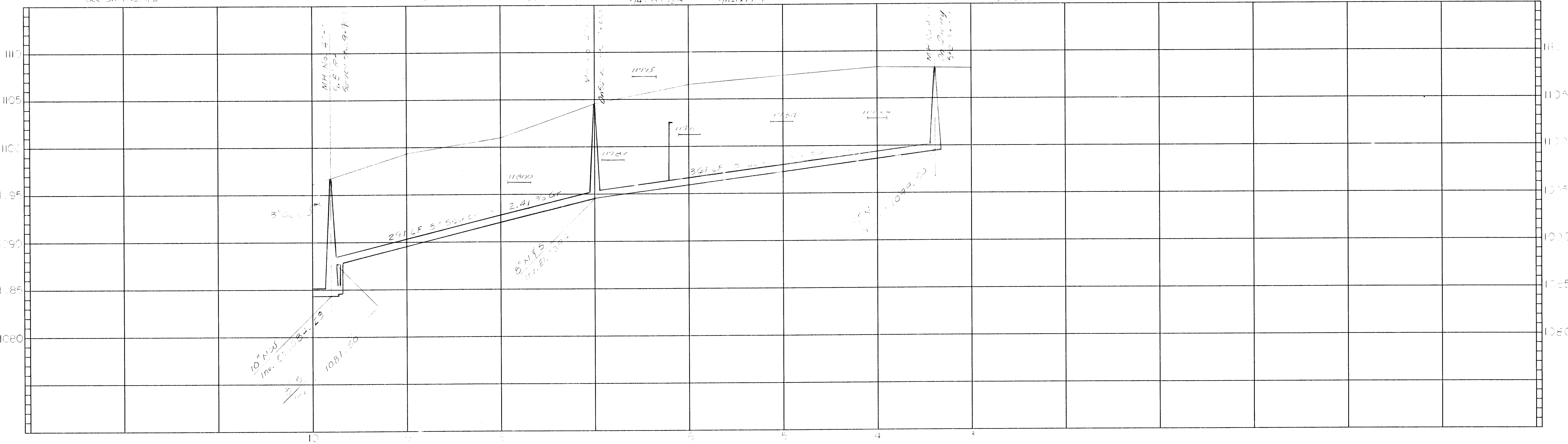
BONNIE BRAE DRIVE
EAST OF HIGHLANDER AVE.
STA. 10+00 TO STA. 24+56

Jones & Henry Engineers, Inc.

JOB NO.
116-3377
DATE
MAR 21 1993

SHEET NO.
40
OF 46

ABRAMS
AERIAL SURVEY CORPORATION
AERIAL PHOTOGRAPHIC SURVEILLANCE



BM No. 68
PK No. 11' 1/2" W Side PP
(OE #2220-1-12)
EL. 1107.08

STARK COUNTY, OHIO
SANITARY SEWER IMPROVEMENTS
PROJECT NO. 449 C-1

1	10/95	UPDATE	RLW
2	4/24/96	ADDED WATER LINE	RLW
3	9/96	STACK ADDED	RLW

NO.	DATE	REVISIONS	DRAWN	CHECKED	BY
1	10/95	UPDATE	JE	JAM	
2	4/24/96	ADDED WATER LINE	JE	JAM	
3	9/96	STACK ADDED	JE	JAM	

BONNIE BRAE DRIVE
NORTH OF LOCHWOOD ST.
STA. 0+00 TO STA. 10+00

Jones & Henry Engineers, Inc.

MANHOLE SCHEDULE					
MH NO.	SHEET NO.	TYPE	ELEVATIONS		REMARKS
			CASTING	INVERT	
3-1	3	Existing	—	—	Grout 12" Into Exist. 18" Stub
3-2	3	A	1010.7	1002.50	Extend MH 3' Above Grade
3-3	3	A	1013.0	1005.00	Extend MH 3' Above Grade
3-4	3	A	1016.1	1007.50	Extend MH 3' Above Grade
4-1	4	A	1018.7	1010.00	Extend MH 3' Above Grade
4-2	4	A	1024.0	1015.00	Extend MH 3' Above Grade
4-3	4	A	1027.0	1018.90	Extend MH 3' Above Grade
5-1	5	A	1031.2	1023.50	Extend MH 3' Above Grade
5-2	5	A	1035.7	1027.00	Extend MH 3' Above Grade
5-3	5	A	1037.5	1028.67	
6-1	6	A	1041.3	1031.50	
6-2	6	A	1051.0	1041.00	
6-3	6	A	1068.5	1056.54	
6-4	6	A	1067.2	1060.00	
7-1	7	A	1084.1	1075.00	
7-2	7	A	1103.5	1094.00	
7-3	7	A	1123.0	1113.00	
7-4	7	A	1136.5	1124.8	
7-5	7	A	1150.4	1125.91	8" Drop SW
8-1	8	A	1154.0	1126.74	
8-2	8	A	1158.0	1127.58	8" Drop S.E.
8-3	8	A	1160.0	1128.14	8" Drop N.
8-4	8	A	1158.0	1129.25	
8-5	8	A	1152.0	1130.37	
9-1	9	A	1145.0	1131.57	
9-2	9	A	1144.0	1132.5	
9-3	9	A	1144.3	1136.00	
9-4	9	A	1148.1	1137.15	
9-5	9	A	1146.8	1137.97	
10-1	10	A	1096.0	1085.00	
10-2	10	A	1116.5	1094.40	
10-3	10	A	1174.4	1096.42	
10-4	10	A	1176.5	1095.75	
11-1	11	A	1140.9	1131.49	
11-2	11	A	1152.2	1142.50	
11-3	11	A	1165.9	1156.00	
12-1	12	A	1169.9	1158.50	8" Drop West
12-2	12	A	1172.0	1163.00	
12-3	12	A	1182.2	1171.50	
12-4	12	A	1182.1	1172.23	
13-1	13	A	1149.8	1133.43	
13-2	13	A	1143.5	1135.02	
13-3	13	A	1153.0	1144.76	
13-4	13	A	1163.9	1152.35	
14-1	14	A	1157.8	1145.22	
14-2	14	A	1159.9	1146.20	
14-3	14	A	1162.5	1147.16	
14-4	14	A	1159.1	1147.75	

MANHOLE SCHEDULE					
MH NO.	SHEET NO.	TYPE	ELEVATIONS		REMARKS
			CASTING	INVERT	
15-1	15	A	1158.8	1150.68	
15-2	15	A	1161.8	1153.00	
15-3	15	A	1170.8	1162.50	
16-1	16	A	1158.1	1148.50	
16-2	16	A	1163.0	1153.28	
16-3	16	A	1169.7	1160.00	
17-1	17	A	1174.3	1163.44	
17-2	17	A	1177.1	1165.00	
18-1	18	A	1155.0	1143.50	8" Drop NW
18-2	18	A	1162.7	1153.06	
18-3	18	A	1163.3	1155.20	
19-1	19	A	1154.5	1145.71	
19-2	19	A	1159.5	1149.44	
19-3	19	A	1159.1	1151.00	
20-1	20	A	1079.9	1071.80	
20-2	20	A	1081.5	1074.50	
20-3	20	A	1074.5	1066.40	
21-1	21	A	1042.0	1034.52	Extend MH 3' Above Grade
21-2	21	A	1046.5	1036.00	Ext MH 3' Above Gr, 8" Drop NW
21-3	21	A	1050.5	1039.70	Extend MH 3' Above Grade
22-1	22	A	1056.2	1044.70	Extend MH 3' Above Grade
22-2	22	A	1060.5	1050.50	Extend MH 3' Above Grade
22-3	22	A	1066.0	1057.00	Extend MH 3' Above Grade
22-4	22	A	1070.5	1060.00	Extend MH 3' Above Grade
23-1	23	A	1074.6	1066.00	Extend MH 3' Above Grade
23-2	23	A	1078.2	1070.09	Extend MH 3' Above Grade
23-3	23	A	1082.3	1073.09	Extend MH 3' Above Grade
23-4	23	A	1084.7	1075.50	
24-1	24	A	1089.3	1081.00	
24-2	24	A	1090.1	1084.00	
24-3	24	A	1101.9	1089.50	
24-4	24	A	1105.5	1092.00	
24-5	24	A	1113.7	1095.00	
25-1	25	A	1178.1	1164.50	8" Drop East
25-2	25	A	1180.5	1168.00	
25-3	25	A	1181.1	1169.04	
25-4	25	A	1180.2	1168.08	
25-5	25	A	1185.9	1170.00	
26-1	26	A	1076.5	1070.00	
26-2	26	A	1086.1	1083.00	8" Drop East
26-3	26	A	1090.1	1089.00	
26-4	26	A	1098.2	1096.00	
27-1	27	A	1088.0	1080.50	
27-2	27	A	1091.8	1084.00	
27-3	27	A	1099.1	1087.00	
27-4	27	A	1099.2	1089.44	
28-1	28	A	1096.9	1089.00	
28-2	28	A	1098.1	1090.00	
28-3	28	A	1095.9	1085.00	

• Use Shallow Type Manhole

MANHOLE SCHEDULE					
MH NO.	SHEET NO.	TYPE	ELEVATIONS		REMARKS
			CASTING	INVERT	
35-1	35	Existing	—	—	Correct ex. 18" Invert. n. 12"
35-2	35	A	1059.2	1041.20	
36-1	36	A*	1048.9	1043.49	Install Pressure Tight Casting
36-2	36	A*	1049.9	1044.77	Install Pressure Tight Casting
36-3	36	A*	1052.5	1046.99	Install Pressure Tight Casting
37-1	37	A*	1055.3	1051.00	Install Pressure Tight Casting
37-2	37	A	1062.3	1051.92	
37-3	37	A	1066.9	1055.00	
37-4	37	A	1075.8	1060.00	
38-1	38	A	1079.4	1069.00	
38-2	38	A	1082.5	1070.48	8" Drop SW
38-3	38	A	1087.7	1078.50	
38-4	38	A	1105.0	1080.34	8" Drop SW
39-1	39	A	1121.7	1104.50	
39-2	39	A	1123.4	1114.00	
39-3	39	A	1126.8	1120.50	
39-4	39	A	1134.9	1126.50	
39-5	39	A	1141.8	1133.00	
40-1	40	A	1103.7	1085.00	
40-2	40	A	1092.0	1081.02	
40-3	40	A	1090.9	1082.00	
40-4	40	A	1094.8	1083.90	
41-1	41	A	1080.2	1064.00	8" Drop South
41-2	41	A	1084.4	1064.50	
41-3	41	A	1085.1	1069.00	

STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C				MANHOLE SCHEDULE			
NO	DATE	DESIGN LAYOUT	REVISIONS	BY	CHECKED	DATE	SHEET NO.
2	12/95	UPDATES		RLW			42
3	8/96	LINE RELOCATION		RLW			
Jones & Henry Engineers, Inc.						42	

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GENERAL NOTES

Sewer and Waterline Separation

Required separations between Sanitary Sewer Lines and Waterlines:

- 10' Horizontal
- 18" Vertical

Existing Septic Systems

Contractor shall relocate and reinstall any septic tankage, aeration system, piping and leach lines distrubed during construction. Cost for this work shall be included in other items. No separate payment for this work will be made.

WETLANDS

Any area of this project designated wetlands shall be returned shall be returned to the elevation that it was prior to construction. The top 12" of soil in this area shall be removed, stockpiled and returned to its original location after construction.

Specifically on P-449-C1 this area shall be along the trunk sewer alignment by the creek between Greendale and Deerford Streets and east of Greendale Street.

EXISTING PRIVATE SEWERS

Existing private sanitary sewer system located in Moffit Heights on Viceroy, Bakerwood, Marjory and Moffit Streets shall be maintained during all construction.

STORM SEWER CATCH BASINS AND PIPES DISTURBED BY CONSTRUCTION SHALL BE REINSTALLED BY CONTRACTOR. COST FOR THIS WORK SHALL BE INCLUDED IN COST FOR OTHER ITEMS. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK.

EROSION/SEDIMENT CONTROL

1. Any site preparation that will involve earthmoving (such as clearing and grubbing(will not begin more than 2 weeks in advance of the start of excavation. The purpose of this restriction is to prevent the existence of large areas of exposed soils for extended periods of time when construction is not proceeding.

2. All disturbed vegetation is to be reseeded as part of restoration, unless the area will be paved or occupied by above ground facilities. Topsoiling for the restoration of vegetated areas disturbed by construction shall average (4) inches in thickness as referenced in Item 25.

3. All dewatering flows shall be silt-free prior to discharge, and discharge shall be directly to stabilized sites such as streams, storm sewers or existing grassed drainages, not onto exposed soils or any other site where flows could cause erosion.

4. Bale filter dikes shall be placed around all storm sewer catch basins located in proximity to construction.

5. If, due to weather, final grading cannot be accomplished immediately, mulching and temporary seeding, if feasible, or some other type of temporary erosion control measures, must be used within 30 days until long-term restoration can occur.

6. Preservation shall take precedence over removal within the temporary easement widths. Remove only those trees, shrubs and structures necessary to complete construction and maintain the new facilities.

7. Stock piled topsoil and fill materials shall be protected with erosion control barriers or temporary seeding.

8. In areas where earthmoving will be extensive a combination of diversion channels (with erosion control barriers) and sedimentation basins shall be used to control runoff and erosion.

9. Excess soil that is stock piled must be either removed or regraded within 15 days of the completion of the construction.

10. If tree removal is necessary, trees shall be felled in a manner that avoids damage to adjacent trees to remain standing. Where root damage cannot be avoided, pruning and painting as appropriate to compensate for the damage shall be done by an authorized arborist.

11. If, during the course of construction, evidence of any deposit of historical and archaeological interest is found, cease operations affecting the find and notify the Ohio Historic Preservation Office (OHPO), (614) 297-3470. No further disturbance of the deposits shall occur until the contractor has been notified by the owner that he may proceed. The owner will issue the notice to proceed only after the State OHPO officials has surveyed the find and made a determination of value and effect and submitted such determination of the owner.

12. Regardless of landowner permission, no excess fill or any other materials from construction activities are to be placed in lowlying areas that are seasonally or habitually damp or wet. Particularly in the flood plain, unless a site survey has been conducted which determines that the site is not a wetland.

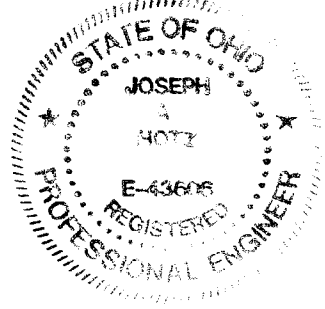
13. Blasting shall be used only as a last resort, when it is impossible to utilize other methods of rock removal. The contractor is required to substantiate the need for blasting through the use of test borings, test pits, etc. Techniques such as trenching machine, ripper buckets on excavators, and hammering shall be use used to remove rock instead.

If blasting does become necessary, twenty-four (24) hours of advance notice shall be given to local residents in the areas to be affected. Backfill and blasting mats must be used to minimize blasting impacts.

14. No fill, topsoil or heavy equipment shall be stored within 200 feet of a stream bank or within the dripline of treed areas.

15. Construction and restoration activities shall not significantly alter existing drainage patterns and or velocity of storm water flow.

16. The contractor shall perform all erosion/sedimentation control during all construction (earthmoving, trench excavation, etc.) The construction shall be governed by Section 650 of the ODOT construction and materials specifications and shall comply with these requirements. Temporary erosion control measures shall be implemented by the construction as outlined in Section 650 and as shown on ODOT standard construction drawings MC-10 & MC-11. No extra or separate payment shall be made for this work, and all costs shall be included in the COSTS bid for this project.



STARK COUNTY, OHIO SANITARY SEWER IMPROVEMENTS PROJECT NO. 449 C-1				GENERAL NOTES	
1	10/1/17	UPDATE	RLW		
2	10/17/18	STORM SEWER NOTE ADDED	RLW		
NO. DATE		REVISIONS		BY	JOB NO.
SCALE		DESIGN-LAYOUT	DRAWN	CHECKED	116-3377
				DATE	Jones & Henry Engineers, Inc.
					SHEET NO. 48
					OF 48