

BK. 77 Dr. 16

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

Drainage Survey

Ditch # 10

From..... To.....

Road Acc't. No.....

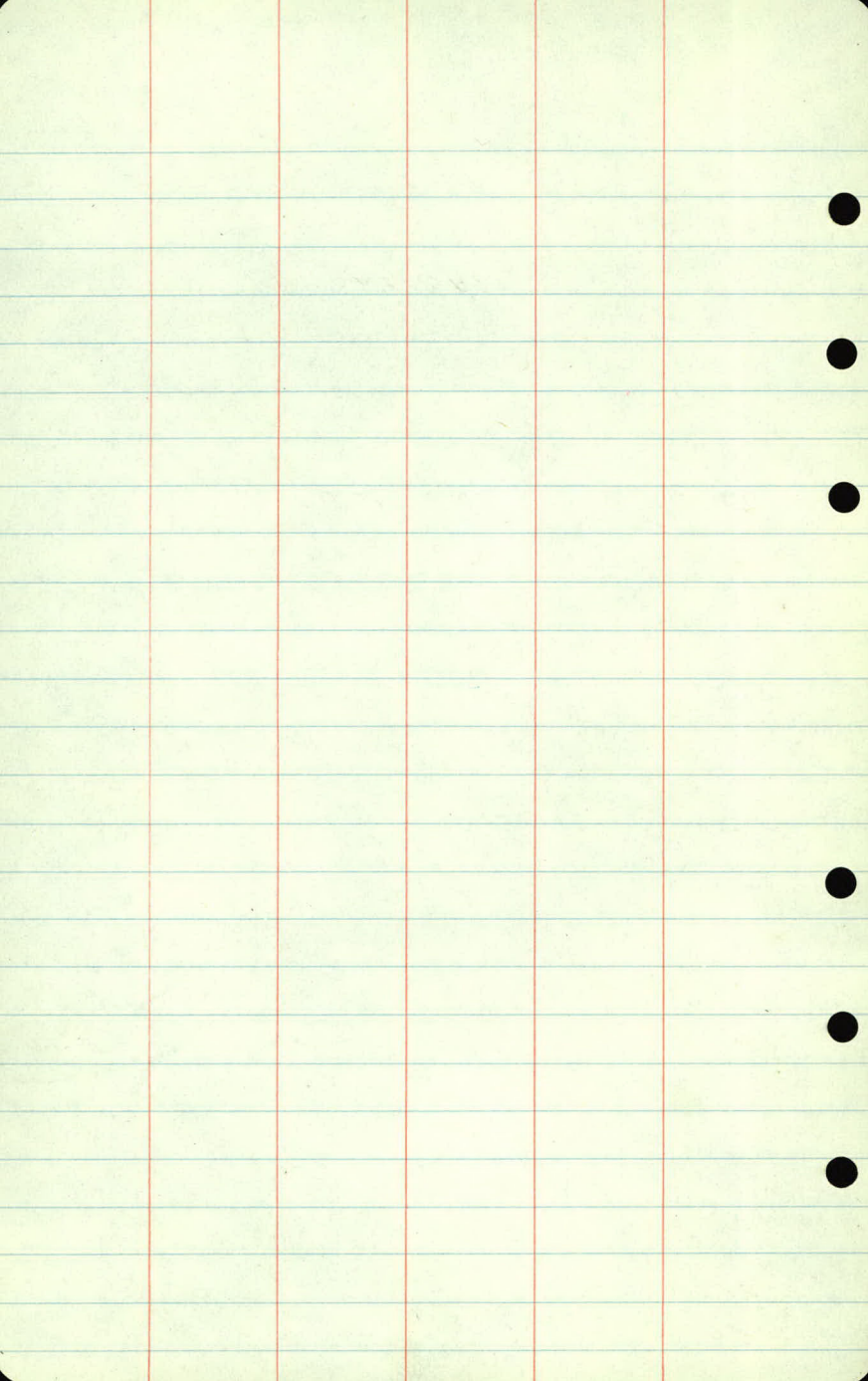
Date Filed 6-11-41

File.....

SURVEY
Ditch No. 10

Align - 1-5
Topog. - 6-11
" Corp. Ave - 12-13
& Levels - 14-26

11/11



1

Alignment.

Sta.	Point	Alt.	Δ Rt
2	+61.9	P.I.	11°47'
2	+39.5	P.I.	15°21'
1	+61.2	P.I.	14°29'
0	+08.4	P.I.	84°57'
0	-20.55	P.I.	87°10'
0	-14.85 = E. Bridge on Hoyt Ave.		

Sta.	Point	$\Delta Lt.$	$\Delta Rt.$
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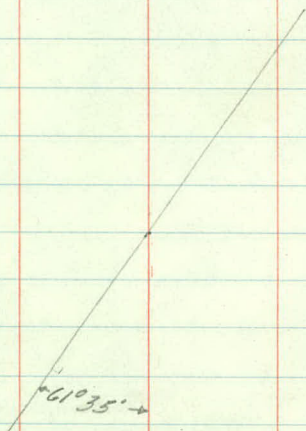
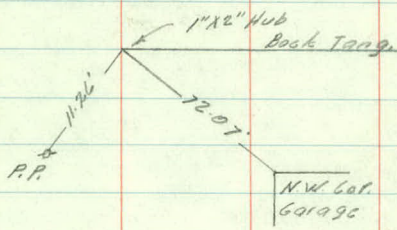
10	+92.8	P.I.	92°11'
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7	+92	P.I.	87°54'
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5	+63.6	P.O.T = E. Wheelock Pkwy 30' Par.	
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2	+90.2	P.I.	91°10'
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12/19/39
K. A.
L. C.
M. B.
C. N.



Sta	Point	ΔL	ΔR
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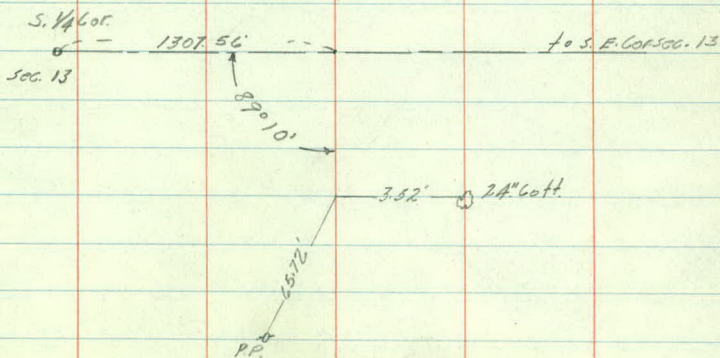
31 +75	} Equation		
32 +06.63		P.I.	$27^{\circ}44'$

24 +00	P.I.		$1^{\circ}27'$
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17 +29.98	P.I.		$65^{\circ}04'$
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17 +25.38	P.O.T.		
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12 +82.35	P.I.		$1^{\circ}11'$
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Sta	Point	ΔL	ΔR
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51 +15	P.I.	17°00'	
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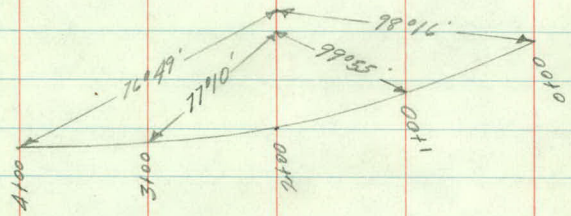
45 +31.8' = E Branch Ditch

44 +86.8' = P.I., 0°26' = Sta 2+00 Approx. to L & p. Ave.

44 +54.74 P.O.T.

38 +00 = P.I. 87°54'

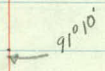
parallel to Harper Ave.
Branch Ditch

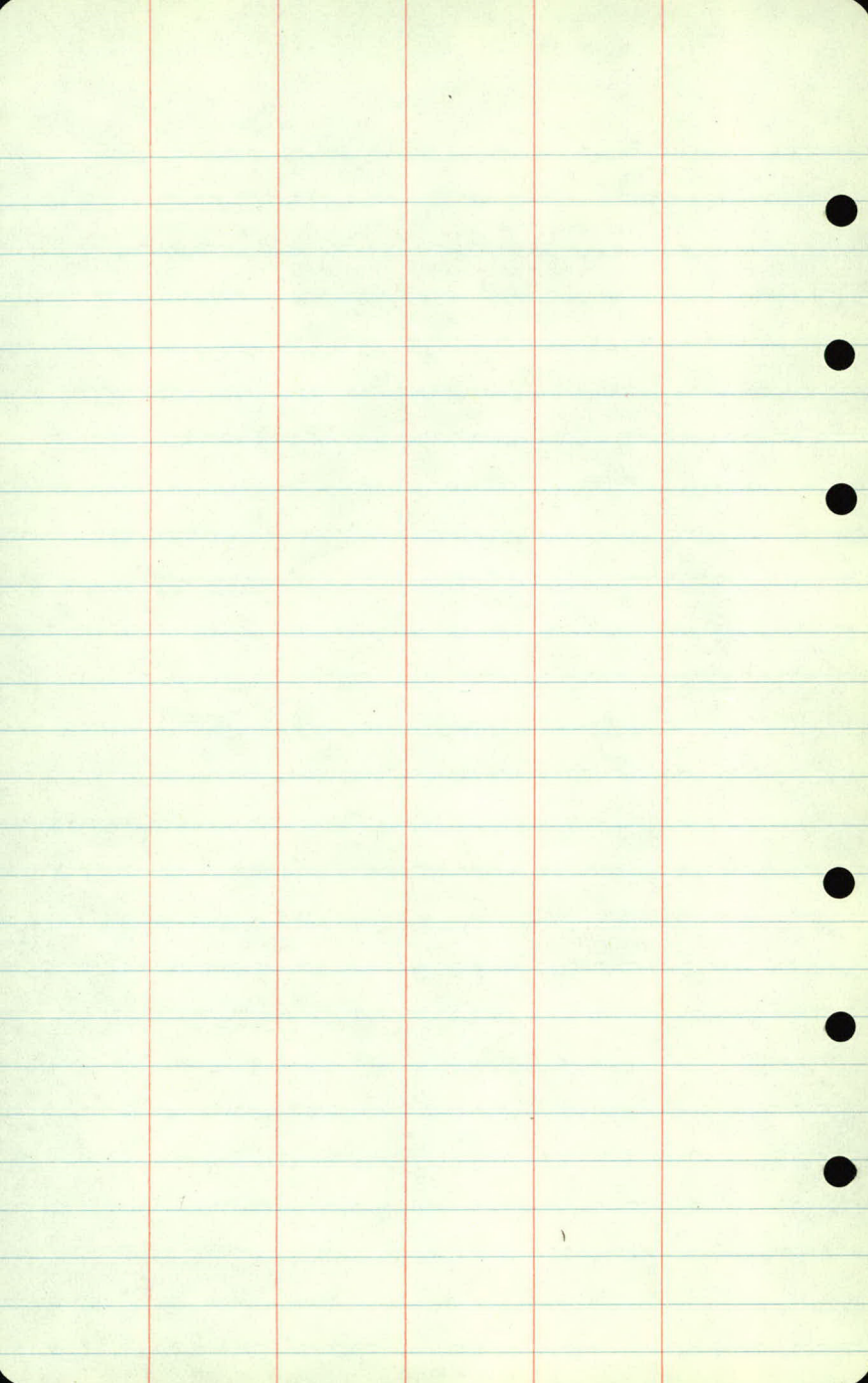


Found Iron 3 1/4 Cor.
assumed it

To be Corner. Sec 13 656.02'

to SW Cor. Sec. 13





6

Topography

+30-M.H.-26'

5

+73-End 24" C.M.-2'

+73-End 24" C.M.-15'

4

Ditch-2'

3

Ditch 0.0

+89-End 18" Vit. Culv. 0.0

+64-End 24" C.M.-0.0 (Poor Cond.)

+40-Ditch-0.0

2

Ditch 0.0

+61-Ditch-3'

+40-Ditch-0.0

1

+25-Fs. Cor-5'

Ditch 2'

0+0.0

+27-Beg. Ditch 1' Wide-1'

+21-Fs. Cor-4'

-20-End of Ditch

-44.85 - 20' Wide Bridge Plank.
14' Long.

Q

H.W. 1' x 8'

Marion

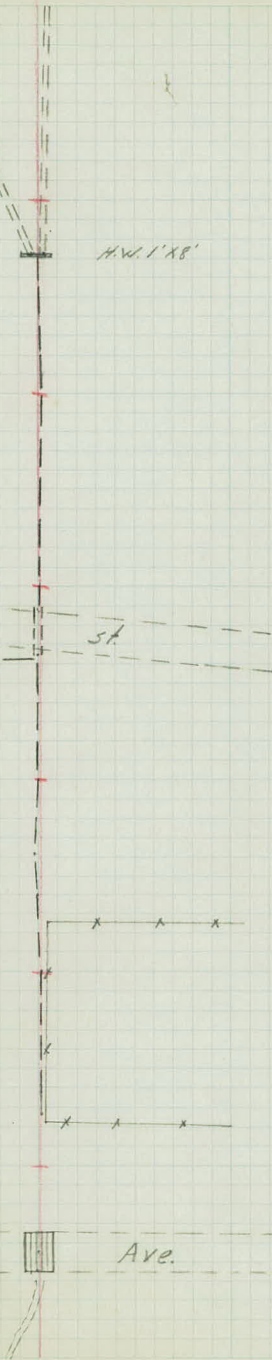
St

Ditch

Raspberries

Hoyt

Ave.



Sta 28 - End of Defined ditch
Sta. 25 - Beg. Flooding Swamp.

17 Ditch 00

12' Long - 10' Wide. Floor is Cured.
+60 - Plank Bridge - 6

+40 - Ditch - 8'

16 +42 - Ditch - 00

8 +80 - End 24" V.I.T. - 00

+49 - End 24" V.I.T. - 00

+42 - End of 12' 6" V.I.T. - 37'

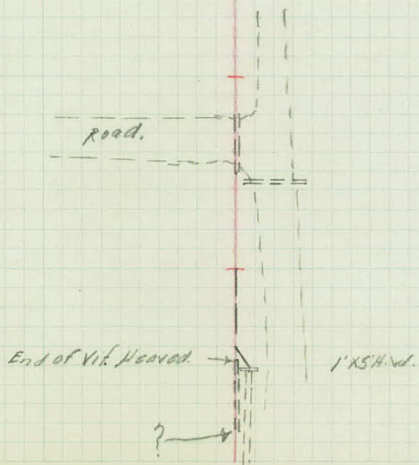
7

+60 - Ditch 00

+53 - End 18" V.I.T. - 1'

+47 - End 24" C.M. - 7'

6



36 Fc-5'

Ditch-00

35 Fc-6'

34 Fc-6'

33 Fc-6'

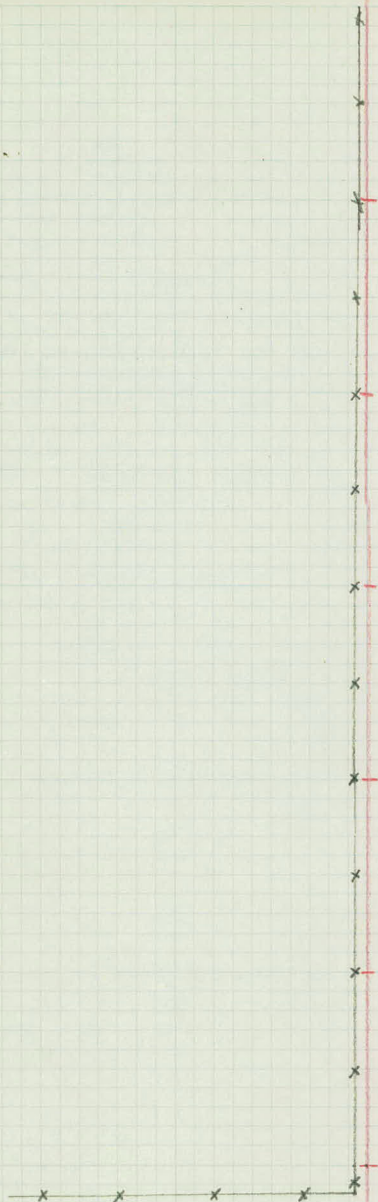
Ditch-0.0

32 Fc-7'

Equation

32 Fc-7'
+88-Range Tie.
+90-Fc-6 or -7'

End of Flooding Swamp.
Beg Ditch 00



43 Fc - 5' Ditch - 0.0

42

41 Fc - 4' Ditch - 0.0

40

39 Fc - 4' Ditch - 0.0

132-20" Willow - 3'

128-15" Willow - 3'

115 - Fc Cor - 4'

107 - Plank Xing - 3'

5' long 10' wide

194 - Fc Cor - 2'

195 - Ditch - 0.0

150-15" Willow - 1'

103 - Ditch - 23'

38

37



10



+20 End of ditch - 11'

53

ditch - 10'

+50 - Ditch - 12'

52

ditch - 11'

+60 - Ditch - 4'

+35 - End 36" C.M. - 4'

51

+21 - End of 36" C.M. - 7'

Ditch - 3'

+60 - Ditch - 0.0'

50

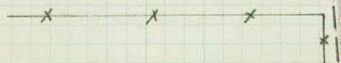
+28 - S. End 30" C.M. - 0.0

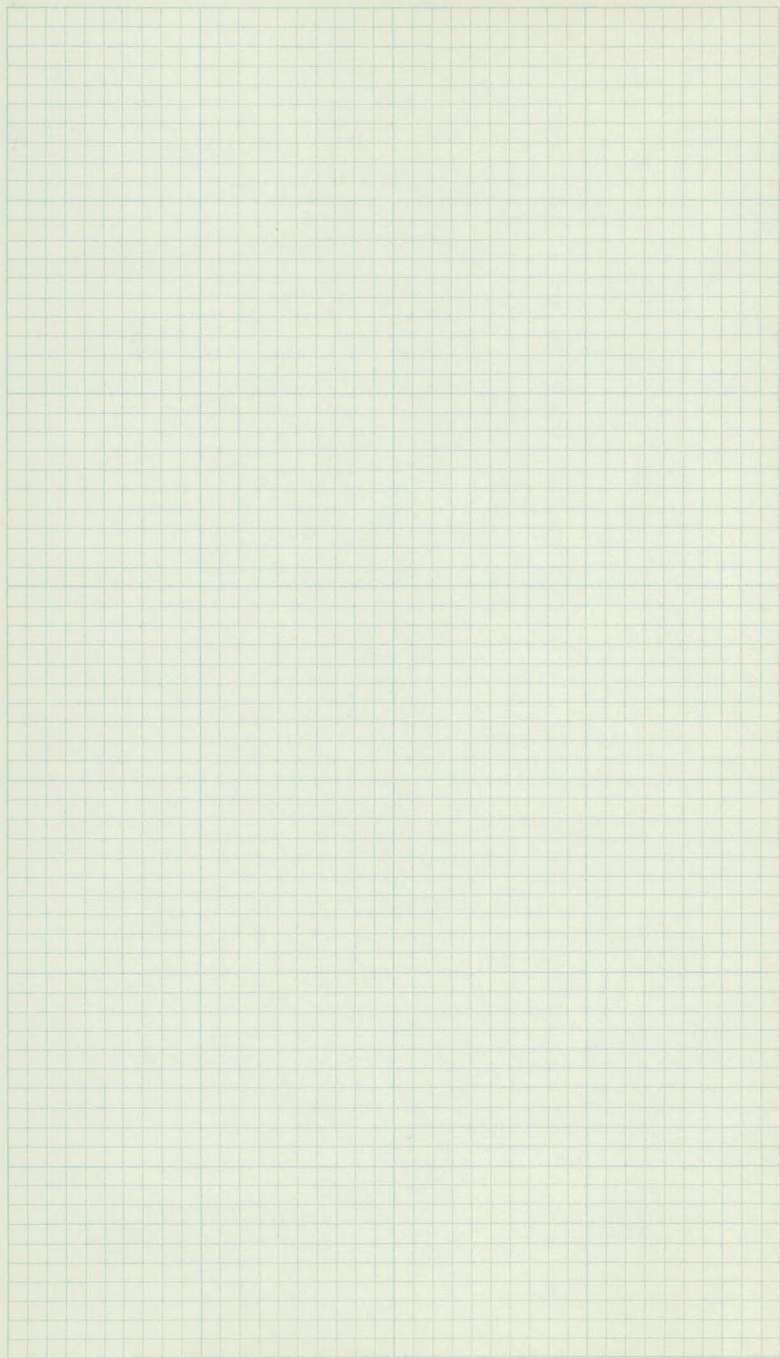
45

+46 - End 24" C.M. - 5'

+24 - Ft. Cor. - 9'

44





Topography
Larper Avenue.

4 G.R. 15' G.R. 15'

+31-A 30" X 62' Long. 32.5' 29.5'

3 G.R. 15' G.R. 15'

2 +02-Δ 10 G.R. 16'

+95-Beg. G.R. 15'

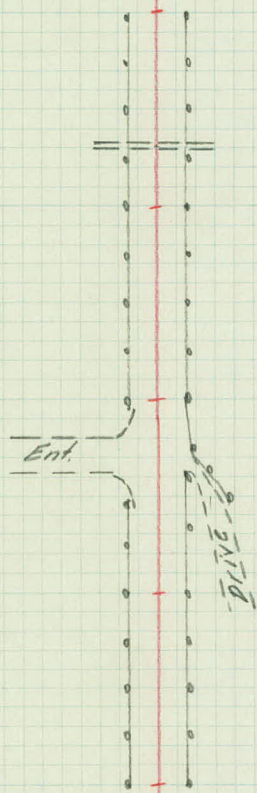
+72-Ent

+48-End G.R. 15'

+75- G.R. 19'
+63-Ent G.R. 16'
+50-R. DRIVE - 28'
+49-Beg. G.R. 16'

1 G.R. 15' G.R. 15'

0400 G.R. 15' G.R. 15'





Levels
E of ditch

Sta.	+	Σ	-	L Ditch Elev.	
B.M.	0.81	854.04			(853.23)
B.M.	0.20	847.17	7.07	846.97	
- 1 +00			10.7	36.5	
0 - 54.85			10.0	37.2	
- 54.85			6.4	40.8	
- 34.85			6.4	40.8	
- 34.85			9.6	37.6	
- 20			9.2	38.0	
0 +27			9.0	38.2	
+60			8.4	38.8	
1			7.8	39.4	
+50			7.9	39.3	
2			7.1	40.1	

Top Hyd. N.E. Cor Marion St & Wheelock Pkwy.

Top Hyd. N.W. Cor. " " & Hoyt Ave.

Flow Line of Ditch Under Bridge

Top Plank Bridge

" " "

Flow Line Ditch Under Bridge

Beg. Ditch

R. Ditch

Sta.	+	-	Elev.
		847.17	
2	+50		6.2 41.0
	+64		6.33 40.9
	+66		40 43.2
	+76		3.9 43.2
	+87		3.8 43.4
	+89		5.00 41.8
3			5.4 41.8
	+50		4.9 42.3
4			4.6 42.6
T.P.	10.83	855.24	2.76 844.41
	+73		10.13 43.1
"			9.45 45.8

End Culv.

Shoulder Line

Shoulder Line

End of Culv.

End of 24" G.P.R.

Top H. W.

A.Ditch

Sta	+	π	-	Elev.	
		855.24			
4	+83		8.9	46.2	
	194		41	51.1	
5			3.8	51.4	
	1636		5.05	50.1	
6			47	50.5	
B.M.			2.02	953.22	(953.23)
	+35		4.6	50.6	
	147		9.17	46.0	
	147		12.22	843.02	
	160		12.1	43.1	
7			12.4	42.8	
	112		11.71	43.5	

to Whetlock Pkwy.

Top Hyd. N.E. Cor. Marion St + Whetlock Pkwy.

Top H.W.

Flow Line 2A" G.M.

FL 12" G.M. Pt.

& Ditch

Sta	+	π	-	Elev.
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855.24

7	+49		13.4	41.8
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	+49		12.5	42.7
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	+33		9.9	45.3
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	+71		9.3	45.9
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	+80		13.5	41.7
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	+80		12.3	42.9
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	+92		12.4	42.8
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8			12.4	42.8
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	+50		12.7	42.5
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9			12.7	42.5
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	+50		12.6	42.6
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F.L. 24" Vit Cult.

Ground at Cult.

F.L. 24" Vit Cult.

Ground at Cult.

Sta	+	π	-	Elev.
		855.24		
10			12.4	42.8
+50			12.1	43.1
+93			12.1	43.1
11			12.1	43.1
T.P.	924	855.09	9.39	845.85
+50			12.3	42.8
12			12.8	42.3
+50			12.4	42.7
13			12.2	42.9
+50			11.9	43.2
14			11.8	43.3
+50			12.0	43.1

Sta	+	T	-	Elev.
		855.09		
15			11.9	43.2
	+50		12.0	43.1
16			12.2	42.9
	+50		12.0	43.1
17			12.1	43.0
	+30		12.2	42.8
T.P.	3.80	850.57	8.32	846.77
	+60		7.2	43.4
18			7.8	42.8
	+50		7.8	42.8
19			7.9	42.7
	+50		8.0	42.6

Top P.L. Hub

Sta.	+	π	-	Elev
		850.57		
20			7.6	43.0
	+50		7.9	42.7
21			7.9	42.7
	+50		7.8	42.8
22			8.0	42.6
	+50		7.9	42.7
23			8.0	43.6
	+50		7.3	43.3
24			7.4	43.2
	+50		7.7	42.9
25			7.9	42.7
T.P.	5.92	849.43	7.06	843.51

Top Pl. Hab.

Sta.	+	Σ	-	Elev.
		847.43		
25	+50		7.6	41.8
26			7.6	41.8
	+50		7.8	41.6
27			8.3	41.1
	+50		9.5	39.9
28			8.1	41.3
	+50		7.8	41.6
29			8.0	41.4
T.P.	585	848.73	6.55	842.88
	+50		7.4	41.3
30			7.0	41.7
	+50		6.7	42.0

$$\text{Water} = 6.8 = 42.8 = E/66$$

Sta.	+	π	-	Elev.
		848.73		
31			6.8	41.9
32	+50		7.3	41.4
32			7.7	41.0
32			6.7	42.0
33			6.5	42.2
34			6.8	41.9
35			7.0	41.7
36			7.0	41.7
I.P.	5.48	850.46	3.75	844.98
37			9.2	41.3
	+95		8.3	42.2
38	+12		7.9	42.6

So. End of Bridge

Sta.	+	π	-	Elev.
		850.46		
39			8.4	42.1
40			7.0	43.5
41			7.2	43.3
42			7.4	43.1
43			8.0	42.5
44			7.8	42.7
+46			7.13	43.36
T.P.	11.04	857.40	4.13	846.36
+59			8.7	48.7
			13.06	44.3
			12.50	44.9
+69			1.3	56.1

Flow Line 36" G.M.

F.L. 30" Gens. Culv. Lt Sta. 3+31 Larp Avg

" " " " Rt Sta. 3+31 Larp Avg

Sta.	+	π	-	Elev.
		857.40		
44	+86.8		0.40	57.0
45	+04		1.6	55.8
	+13		6.5	50.9
	+24		8.3	49.1
	+28		13.12	44.28
+32 & Ditch Along Larp Ave.				
46			13.1	44.3
47			13.4	44.0
48			12.6	44.8
T.P.	8.62	856.35	9.67	847.73
49			10.2	46.2
50			9.2	47.2

Lt

-

Rt

6 Lerp Ave.



$$\frac{125}{100}$$

$$\frac{11.8}{100}$$

$$\frac{12.42}{1.87}$$

FL 2.4" C.M.

12/26/39
R.A.
L.C.
M.B.
C.N.

Sta.	+	π	-	Elev.
		856.35		
51			8.1	48.3
	+15			
	+21		8.27	48.1
	+35		8.03	48.4
52			6.7	49.7
53			5.7	50.7
	+20		5.7	50.7
54			4.9	51.5
T.P.	7.59	855.93	8.01	848.34
T.P.	2.73	857.66	1.00	854.93
T.P.	5.37	849.48	13.55	844.11
T.P.	4.96	852.19	2.25	847.23
T.P.	7.22	855.96	3.45	848.74
B.M.			2.71	853.25

853.23

} F.L. 36" C.M.

End of Ditch

S.W. of End of Ditch

Top Hyd. N.E. Cor. Marion & Wheelock Pkwy

Sta

+

π

-

Elev.