

Dr. 14 BX. 20

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

_____ Plan _____ Survey

_____ JOHNSON AVENUE _____

From ⁴ 6th St. _____ To No of ¹¹ 7th _____

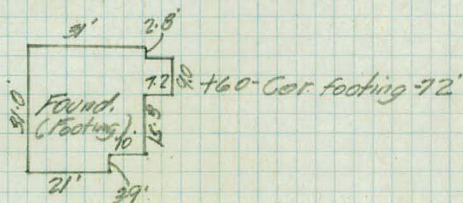
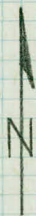
Road Acc't. No. _____

Date Filed. June 1936

File _____

House location at East Ave &
Stillwater Rd. Conn.

Sec- 9-4-46 Survey for align.



+ 0.00 = CROSS
in pos.

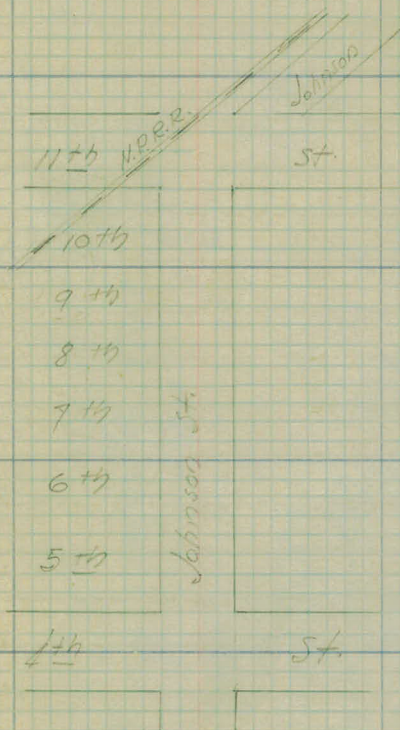
Name of party building house:

F. Haupt
1758 Maryland St.



Plan Survey. Johnson St.

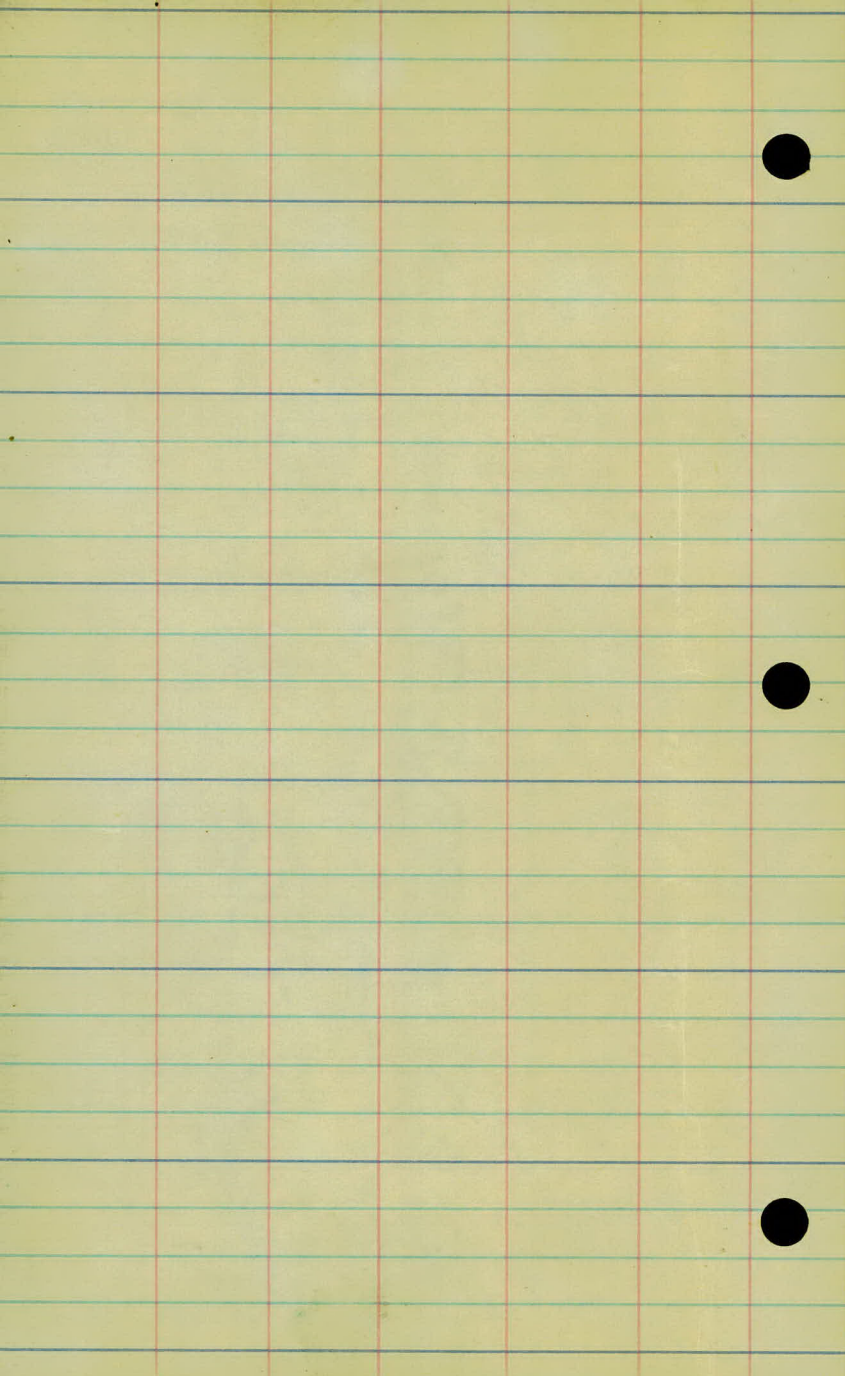
4th St to 11th St.
White Bear Lake.



Index

Orig.	1-2
Topog.	3-7
X-Sec.	8-13
Check Levels	- 14
Drainage.	15-18

W. H. Carlson
Aug 7, 1926



Alignment.

Sta.

Point

28+76.0

± N.P.R.R.

± 11th St.

27+93.6

P.O.T.

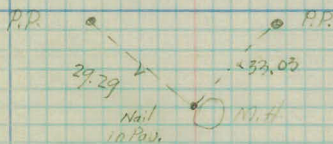
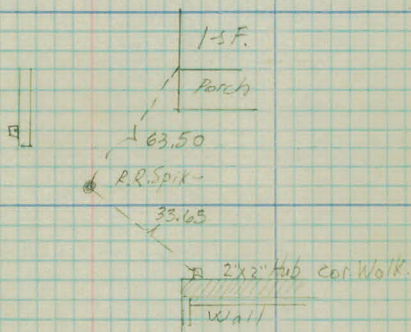
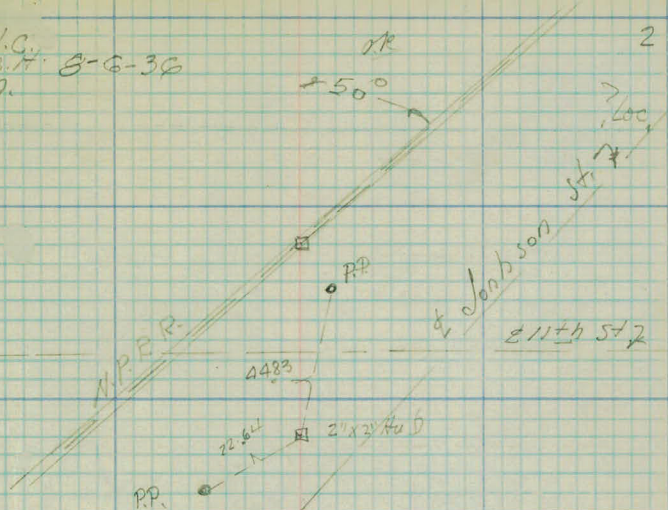
27+

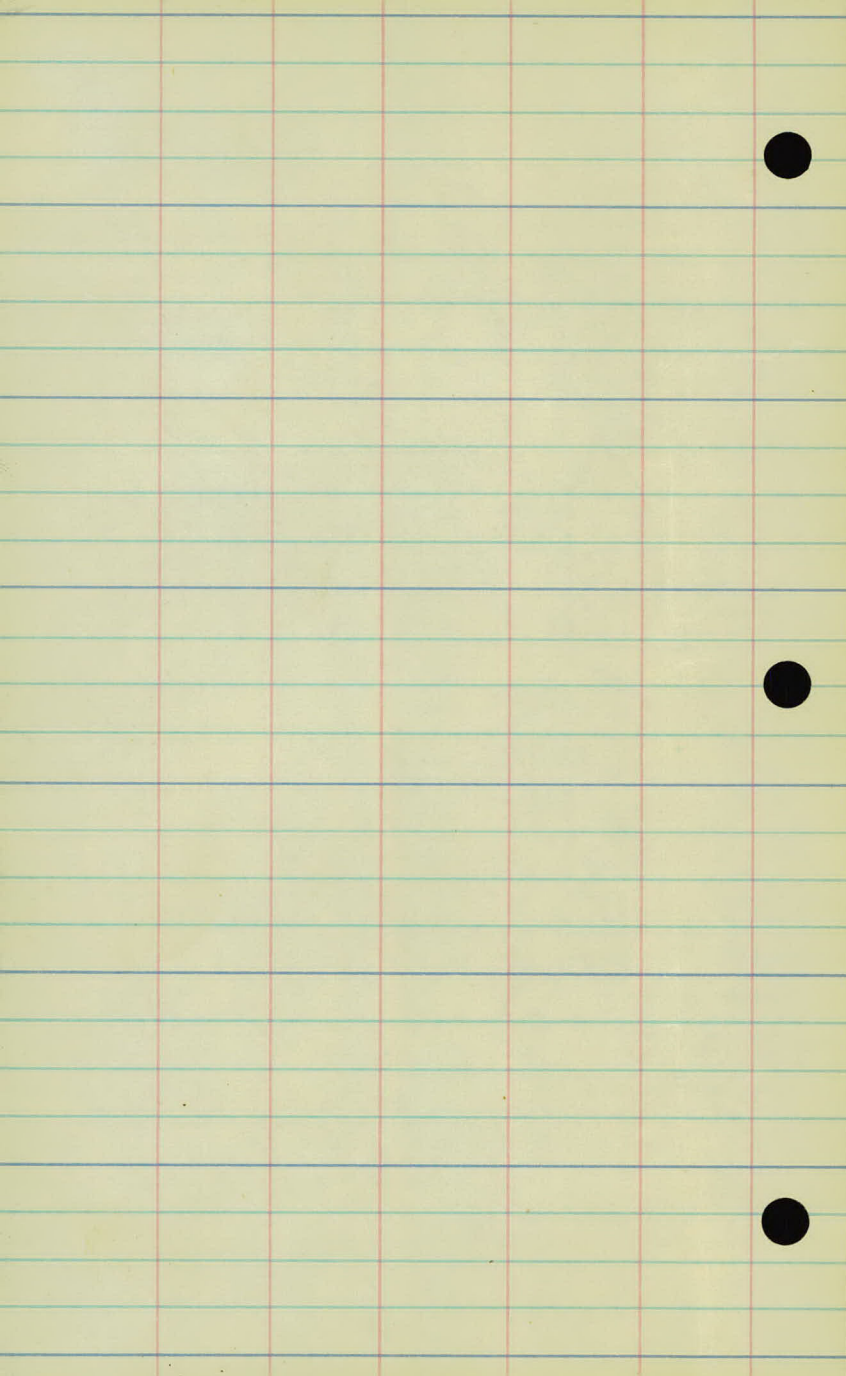
Int. of Lohoson

20+89.0 Approx ± 9th St.

2+46.0 Approx ± 4th St.

W.H.C.
L.B.H. 8-6-36
D.M.





Topography.

~~14-11'~~
~~700/4~~

+63 49 gutter cover 15'

~~+59-10 C.M. 15" x 555~~

~~453/14~~

+53 gutter cover

~~+24-15" x 25~~
C.M.

~~47.5 25'~~

6

~~12 14~~
furniture

5

13-13'

4

13 13'

3

14' 14'

+46- approx @ 4th St

2

1

0

+66-Beg Walk 15.8-30.0

+66-N. edg walk 14.5

Beg Walk

+54-E. Walk 25.5-20

+39-E. Walk 1.0

+14-E. Walk 1.0

+22-Gutter Cover

+53

CM-12"x30" 22'

+23

15.4

6' Walk
concrete

6'x11" 20' 20'

+46-Fit 14'

4

+66-N. edg walk 15.3

+59-Fit 14.22

+58-P.R. 19.8

+63-Gutter Cover 15'

+21-9.R. 19' (28.7)

+08-End Walk 24.2
concrete

+99-20" Maple 21'

+79-18" Maple 21'

+49-14" Maple 21'

+29-12" " 21'

+19-12" Maple 21'

+09-12" Maple 21'

+98-20" Maple 21'

+94-Ent

+24-20" Maple 21'

+23-Ent

+24-18" Maple 21'

+04-18" Maple 21'

+75-Beg Walk 25.4-29.9

+75-E. Curb 15

+66-P.R. 22

+60-Red Curb 30

+88-14" Maple 21.5

Black Top Pavement

5'x11" 24.0'

+97-2 Conc Drive
17'

+75-Beg Walk 24.9-29.3

+75-E. Curb 16

+67-P.R. 20.0

+60-Red Curb 30

~~13/8~~

187 Medge Walk 17.

260 - App. 9 7th

13

~~14/11~~

12

~~13/11~~

11

~~12/10~~

10

9

~~13/11~~

8

~~9/14~~

7

+78-Bog A.S. Walk 30.5
+62-T.N. H 20
+46-Ent A.S. Walk 30.5

+33-S. edge AS Walk
17.8

+49-12" x 30' C.M

+85-Drive
+73-8" Birch 20

+10-6" Ash 21'

+39-45" 12x12 Box 23'

+45-Mountain Ash 20'

+78.5-S.V. 30' AS South

+78.5-12x12 Box 15'

+15-Box over

+00-M.H. 19

+85-Gutter Cover

+79-12" Elm 21'

+70-Propline

75 W. - 9.5 W. K.

25

+38-12" Elm 21'

+06-12" Elm 21'

+71-12" Elm 22'

+38-12" Elm 22'

+73-Ent

+77-4 Gutter Cover

+89-12" Elm 19
+87-No. 20x20 K 4.5
+78-P.P. 19 16'

+32-S. edge AS Walk
+31-7x11 21.5
+22-20' Ox. E. 14
+14-P.P. 19

+79-12" Box 19
+64-12" Box 14
+51-8" Bass Wood 19
+35-8" 20 19' Box
+19-20' Box 19
+04-18" Box 19

+77-Drive to 300
+90-P.P. 19
+79-E. Alley
+65-Drive 500

+80-P.P. 19'

+78.5-N.E. Walk 40
+21-P.P. 21 45 W. K.

+70-Hyd. 27.5

+63-P.P. 19.5

+70-P.P. 20'

+23-Ent.

+14-P.P. 19'

+70-P.P. 19'

+52-Ent

177-90

+84- Approx 2 9th St

+68- Approx S. P/c 9th St.

~~End of Diff~~

20

~~14/5~~

+

19

~~13/8~~

18

~~12/10~~

17

~~14/11~~

+96 Approx S. P/c 8th St.

16

~~12/9~~

15

~~12/9~~

14

+89-M.H. 1.5
+72-End Wall 45
30'

~~108-S. Brg 45-29'~~
+54-Hyd. 19'

+69-8" Elm 20'
+41-12" Elm 21'
+10-8" Elm 21'

+92-P.R. 16

+05-2 Alley.

+83-12" Elm 21'
+58-12" Elm 21'
+30-12" Bx. 21'
+08-12" Bx. Elm 21'

+87-P.R. V.P. 16.5

+31-8" Elm 17'
~~+01-12" Bx. Elm 17'~~
~~+08-12" Bx. Elm 17'~~

+85-8" Elm 21'
+62-12" Elm 22'
+49-0" Elm 22'
+41-Beg 45-S.W. 20.5
+75-M.H. 2'
+08-End 45-S.W. 30.5

+87-12" Bx. Elm 17'
~~+74-14" Bx. Elm 17'~~
+50-P.P. 18'

+54-S.W. Box 22.1

17+11.5 M. 24.9'
12" x 30" C.M.

17+11.5 C.M. 24.3'
12" x 30"

+88-Hyd. 20'

+47-P.R. 17'

+38-8" Bx. Elm 19'

+47-Alley 12'
+24 P.R. 18'

+94-12" Bx. Elm 19'

+47-Ent. Garage

$$+10 - 2 - 30$$

$$+40 - 0 - 15$$

$$10 \times 7$$

27

26

$$13 \times 7$$

25

$$13 \times 6$$

10 to St.

24

$$16 \times 9$$

23

$$15 \times 8$$

22

$$10 \times 10$$

21

183-P.P. 21'

+80

27-56 Manhole 7/10

+58-12" Oak 05

+35-P.P. 22'
~~+1-6" Oak 33'~~

+58-P.P. 21'

104-P.P. 21'

+52-M.H. 10

+35-12" x 30" CM

+33-End 4' Walk R-30'

+33-T.P. 34

+20-U.S.N. Box 23'

+83-L.L. 22'

+61-L.L. 22'

+11-14" Br. Eld. 21'

+81-14" Br. Eld. 22'

+05 Box 40 Walk 30'-16'

245

21'

12" x 30" CM

+35

+84-9" P. 145

+73-Hydr. 185

+69-P.P. 22'

+34-T.P. 21'

+33-12" x 30" CM 12.5

+30-M.H. Box 21' 17'

+97-14" Oak-32'

+77-14" Elm 19

+54-T.P. 15'

+54-8" Butt. 17' 20'

+17-12" Oak 120

+23-10' Elm 18.5

+03-Ent.

+95-2" Walk 30'

+45-6" Oak 20

+46-8" Elm 19.5

+60-T.P. 15'

+49-4" Oak 120

+34-4" T. 127-18' 20' 18.5 18'

+13-Ent.

+99-Ent.

+85-T.P. 15.5

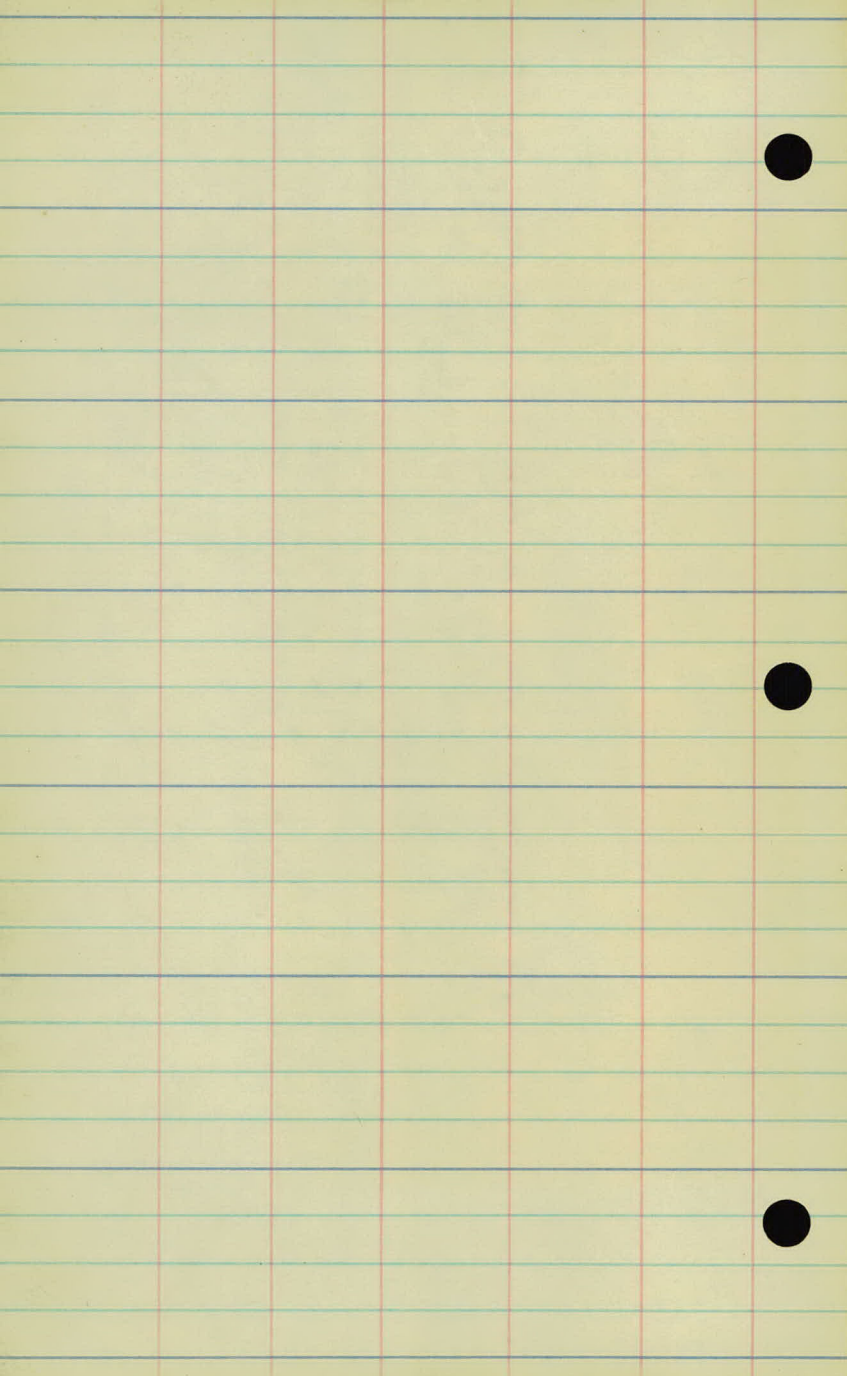
+82-6" Butt. 17' 20'

+63-12" Butt. 17' 20'

+34-14' Elm 19

+07-N. edge 45' Walk

+02-P.P. 16' 28.5



Cross Sections

Sta.	+	$\bar{x}$	-	Etc.
B.M.	0.53	940.79 ✓		939.76
2+46-	Approach to 4th			34.94
2+60	Gutter (Begin Project)			34.5
2+75-	No P.L.			35.1
3+0				35.4
4+0				35.8
5+0				35.98
6+0				36.1
10+6-	App. 5th			
1+20				36.4
+36	App 2 5th			36.7
+66	N. 12			36.6
B.M.	3.21	942.97 ✓	0.53	939.76 ✓

42.38

088

413.26

4151

38.75

H.

E

B1

W.H.C.

9

Top Hyd. N.E. Cor. 5th & Johnson.

L.B.H.

D.M. Aug. 6 - 1936

$$\frac{4.7}{50}$$

$$\frac{5.35}{50}$$

$$\frac{6.3}{50}$$

$$\frac{5.1}{50}$$

$$\frac{5.8}{50}$$

$$\frac{6.7}{50}$$

36.0

35.38

$$\begin{array}{r} \frac{4.2}{30} \quad \frac{4.3}{256} \quad \frac{4.8}{16} \quad \frac{5.1}{15} \quad \frac{5.2}{15} \quad \frac{5.7}{15} \quad \frac{5.8}{16} \quad \frac{4.9}{24} \quad \frac{4.8}{295} \end{array}$$

$$\begin{array}{r} \frac{4.25}{30} \quad \frac{4.42}{26} \quad \frac{4.43}{20} \quad \frac{5.2}{16} \quad \frac{4.9}{17} \quad \frac{5.2}{17} \quad \frac{4.52}{25} \quad \frac{4.52}{25} \end{array}$$

35.89

36.17

$$\begin{array}{r} \frac{4.05}{30} \quad \frac{4.40}{257} \quad \frac{4.7}{17} \quad \frac{5.0}{15} \quad \frac{4.5}{15} \quad \frac{5.1}{15} \quad \frac{4.6}{17} \quad \frac{4.12}{245} \quad \frac{4.08}{29} \end{array}$$

35.87

36.48

$$\begin{array}{r} \frac{4.32}{30.1} \quad \frac{4.42}{256} \quad \frac{4.7}{21} \quad \frac{5.0}{15} \quad \frac{4.31}{15} \quad \frac{4.8}{15} \quad \frac{4.0}{18} \quad \frac{3.8}{245} \quad \frac{3.73}{29} \end{array}$$

36.02

36.64

$$\begin{array}{r} \frac{4.26}{30} \quad \frac{4.27}{255} \quad \frac{4.3}{17} \quad \frac{5.0}{15} \quad \frac{4.2}{16} \quad \frac{4.5}{16} \quad \frac{3.9}{18} \quad \frac{3.65}{249} \quad \frac{3.57}{29d} \end{array}$$

34.54

34.2

$$\begin{array}{r} + 24-15 \times 4.25 \quad \frac{5.75}{17.5} \\ \text{G.M.} \end{array}$$

$$\frac{6.10}{25}$$

36.71

3.58 End Walk

36.04

$$\begin{array}{r} \frac{4.30}{30} \quad \frac{4.25}{255} \quad \frac{4.3}{20} \quad \frac{4.5}{14} \quad \frac{3.9}{14} \quad \frac{4.4}{14} \quad \frac{4.0}{21} \quad \frac{4.3}{20} \end{array}$$

(6429-M.H. 92.524)

Drums

$$\frac{4.2}{50}$$

$$\frac{3.6}{50}$$

$$\frac{4.5}{50}$$

36.44

15' 28.5' 6429

$$\begin{array}{r} \frac{3.82}{30.3} \quad \frac{3.81}{258} \quad \frac{4.0}{19} \quad \frac{4.7}{16} \quad \frac{4.0}{13} \quad \frac{3.7}{11} \quad \frac{4.0}{17} \quad \frac{3.93}{20} \end{array}$$

Hyd. N.E. Cor. 5th & Johnson

Sta.	+	π ✓	-	Elev.
		942.97		

7+0				36.6
-----	--	--	--	------

8+0				37.4
-----	--	--	--	------

+50				38.2
-----	--	--	--	------

9+0				38.5
-----	--	--	--	------

+70 - S.P.				39.5
------------	--	--	--	------

10 - App. L 6th St.				39.8
---------------------	--	--	--	------

+30 N.R.				39.6
----------	--	--	--	------

T.P.	4.89	944.61 ✓	3.25	939.72 ✓
------	------	----------	------	----------

B.M.			0.51	944.10 ✓
------	--	--	------	----------

11+0				39.7
------	--	--	--	------

12+0				39.7
------	--	--	--	------

13+0				40.4
------	--	--	--	------

B.M.	1.59	945.69 ✓	0.51	944.10 ✓
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Lt.

I

Rt.

10

36.62 936.0
 $\begin{array}{r} 632 \\ 304 \end{array} \begin{array}{r} 635 \\ 258 \end{array} \begin{array}{r} 6.5 \\ 20 \end{array} \begin{array}{r} 70 \\ 76 \end{array} \begin{array}{r} 6.5 \\ 7 \end{array} \begin{array}{r} 6.4 \\ 7 \end{array} \begin{array}{r} 6.8 \\ 7 \end{array} \begin{array}{r} 6.6 \\ 17 \end{array} \begin{array}{r} 6.0 \\ 30 \end{array}$

37.53

$\begin{array}{r} 540 \\ 303 \end{array} \begin{array}{r} 540 \\ 258 \end{array} \begin{array}{r} 5.8 \\ 21 \end{array} \begin{array}{r} 6.3 \\ 16 \end{array} \begin{array}{r} 5.8 \\ 10 \end{array} \begin{array}{r} 5.6 \\ 8 \end{array} \begin{array}{r} 6.0 \\ 17 \end{array} \begin{array}{r} 5.3 \\ 30 \end{array} \begin{array}{r} 5.2 \\ 30 \end{array}$

38.22

$\begin{array}{r} 464 \\ 302 \end{array} \begin{array}{r} 475 \\ 257 \end{array} \begin{array}{r} 49 \\ 20 \end{array} \begin{array}{r} 6.0 \\ 15 \end{array} \begin{array}{r} 5.1 \\ 6 \end{array} \begin{array}{r} 4.8 \\ 12 \end{array} \begin{array}{r} 5.4 \\ 21 \end{array} \begin{array}{r} 3.3 \\ 20 \end{array} \begin{array}{r} 3.2 \\ 40 \end{array} \begin{array}{r} 3.5 \\ 40 \end{array}$

38.91

$\begin{array}{r} 408 \\ 303 \end{array} \begin{array}{r} 406 \\ 258 \end{array} \begin{array}{r} 4.2 \\ 21 \end{array} \begin{array}{r} 5.1 \\ 16 \end{array} \begin{array}{r} 4.5 \\ 14 \end{array} \begin{array}{r} 5.0 \\ 22 \end{array} \begin{array}{r} 2.2 \\ 20 \end{array} \begin{array}{r} 2.1 \\ 30 \end{array} \begin{array}{r} 2.1 \\ 40 \end{array}$

39.56

$\begin{array}{r} 3.29 \\ 30.4 \end{array} \begin{array}{r} 3.4 \\ 25.9 \end{array} \begin{array}{r} 3.5 \\ 21 \end{array} \begin{array}{r} 4.9 \\ 15 \end{array} \begin{array}{r} 4.0 \\ 9 \end{array} \begin{array}{r} 3.5 \\ 12 \end{array} \begin{array}{r} 4.2 \\ 24 \end{array} \begin{array}{r} 1.7 \\ 20 \end{array} \begin{array}{r} 1.7 \\ 40 \end{array}$

939.25

$\begin{array}{r} 3.2 \\ 50 \end{array} \begin{array}{r} 3.22 \\ 10 \end{array} \begin{array}{r} 3.2 \\ 15 \end{array} \begin{array}{r} 3.8 \\ 50 \end{array}$

39.91

$\begin{array}{r} 390 \\ 305 \end{array} \begin{array}{r} 306 \\ 26 \end{array} \begin{array}{r} 3.2 \\ 18 \end{array} \begin{array}{r} 4.2 \\ 16 \end{array} \begin{array}{r} 3.5 \\ 14 \end{array} \begin{array}{r} 3.4 \\ 12 \end{array} \begin{array}{r} 3.4 \\ 15 \end{array} \begin{array}{r} 3.8 \\ 18 \end{array} \begin{array}{r} 3.9 \\ 30 \end{array} \begin{array}{r} 3.02 \\ 30 \end{array}$

Hyp. S.E. Cor. 6th r Johnson.

$\begin{array}{r} 450 \\ 305 \end{array} \begin{array}{r} 460 \\ 26 \end{array} \begin{array}{r} 46 \\ 18 \end{array} \begin{array}{r} 5.5 \\ 14 \end{array} \begin{array}{r} 4.9 \\ 13 \end{array} \begin{array}{r} 5.5 \\ 19 \end{array} \begin{array}{r} 4.6 \\ 30 \end{array} \begin{array}{r} 4.5 \\ 30 \end{array}$

40.42

$\begin{array}{r} 409 \\ 305 \end{array} \begin{array}{r} 419 \\ 26 \end{array} \begin{array}{r} 46 \\ 18 \end{array} \begin{array}{r} 5.1 \\ 14 \end{array} \begin{array}{r} 4.9 \\ 12 \end{array} \begin{array}{r} 5.2 \\ 21 \end{array} \begin{array}{r} 4.4 \\ 30 \end{array} \begin{array}{r} 4.2 \\ 30 \end{array}$

40.68

$\begin{array}{r} 482 \\ 304 \end{array} \begin{array}{r} 393 \\ 26 \end{array} \begin{array}{r} 4.2 \\ 20 \end{array} \begin{array}{r} 4.8 \\ 15 \end{array} \begin{array}{r} 4.2 \\ 13 \end{array} \begin{array}{r} 4.7 \\ 18 \end{array} \begin{array}{r} 4.2 \\ 30 \end{array} \begin{array}{r} 3.7 \\ 30 \end{array}$

Hyp. S.E. Cor. 7th r Johnson

Sta. + π - Elev.

94569

13+32.0 App. 50 ft. 7th St. 40.6

+62 2 7th 40.7

+87 40.7

+92-App 2

14+70 40.8

14+60 41.0

15 41.2

+45 41.3

+57 41.5

16 41.8

+50 41.8

B.M. 2.06 947.64 0.11 945.58

17 41.8

+ 75 App. 2 8th 42.0

+50 41.8

4.82 5.1 5.8 5.1 5.7 4.83 4.67
30 50.78 16 11 17-8.10. 30

4.1 5.3 5.05 5.0 5.1
50 16 20 M.H. Ring 50

40.62

4.76 5.07 5.3 5.0 5.2 4.81 4.67
30 50.18 14 9 16 8.10. 30

40.72

4.82 4.97 5.0 5.2 4.9 5.2 4.0 3.6
30 76 18 15 10 19 30

41.02

4.60 4.67 4.7 5.1 4.7 5.1 3.5 3.2
30 76 19 15 12 23 30

41.15

4.42 4.54 4.5 5.0 4.5 4.9 4.5 3.2 2.7
30 76 20 15 11 18 23 30

41.35

4.32 4.34 4.4 4.9 4.4 4.6 3.8 3.4
30 76 20 16 10 22 20

41.37

4.76 4.32 4.3 4.8 4.2 4.5 4.0 3.4 3.4
30 80 76 20 16 10 21 30 40

41.54

4.02 4.15 4.1 4.6 3.9 4.4 3.5 1.4 1.2 1.0
30 76 20 16 11 78 76 30 40

41.64

3.9 4.05 4.1 4.4 3.9 4.4 4.1 3.6 2.4 2.0
30 76 21 16 10 12 16 19 30 40

Hyd. S. E. Cor. 8th Robinson.

5.75 5.85 6.0 6.4 5.8 6.4 6.3 6.7
30 76 19 15 11 18 30

41.79

5.6 5.8 6.2 5.50 5.6 6.1 6.3
50 76 16 20 M.H. Ring 50

41.87

5.65 5.71 5.8 6.1 5.8 6.3 6.1 6.8
30 76 18 14 10 12 30

84

+

✓

-

Elev.

947.64

18

41.9

+70

42.4

19

42.6

+20

42.7

20

42.9

+65

43.2

T.P.

2.22

✓
945.36

4.50

✓
943.14

20+89 App B 9th

43.1

21+07 App A PL

42.8

22

41.0

+50

40.3

23

39.9

+60

39.4

41.95

$$\begin{array}{r} 5.55 \\ 30 \end{array} - \begin{array}{r} 5.69 \\ 76 \end{array} \begin{array}{r} 5.6 \\ 19 \end{array} \begin{array}{r} 6.1 \\ 15 \end{array} \begin{array}{r} 5.7 \\ 9 \end{array} \begin{array}{r} 6.1 \\ 14 \end{array} \begin{array}{r} 6.7 \\ 30 \end{array}$$

42.70

$$\begin{array}{r} 5.22 \\ 30 \end{array} - \begin{array}{r} 5.24 \\ 76 \end{array} \begin{array}{r} 5.4 \\ 19 \end{array} \begin{array}{r} 5.6 \\ 16 \end{array} \begin{array}{r} 5.2 \\ 9 \end{array} \begin{array}{r} 5.5 \\ 13 \end{array} \begin{array}{r} 4.6 \\ 19 \end{array} \begin{array}{r} 4.7 \\ 30 \end{array}$$

42.54

$$\begin{array}{r} 5.01 \\ 30 \end{array} \begin{array}{r} 5.10 \\ 76 \end{array} \begin{array}{r} 5.2 \\ 19 \end{array} \begin{array}{r} 5.5 \\ 15 \end{array} \begin{array}{r} 5.0 \\ 10 \end{array} \begin{array}{r} 4.0 \\ 30 \end{array}$$

42.67

$$\begin{array}{r} 4.89 \\ 30 \end{array} - \begin{array}{r} 4.97 \\ 76 \end{array} \begin{array}{r} 5.0 \\ 19 \end{array} \begin{array}{r} 5.4 \\ 15 \end{array} \begin{array}{r} 4.9 \\ 10 \end{array} \begin{array}{r} 5.1 \\ 16 \end{array} \begin{array}{r} 4.5 \\ 22 \end{array} \begin{array}{r} 3.8 \\ 18 \end{array} \begin{array}{r} 3.8 \\ 40 \end{array}$$

42.98

$$\begin{array}{r} 4.55 \\ 30 \end{array} \begin{array}{r} 4.6 \\ 76 \end{array} \begin{array}{r} 4.5 \\ 21 \end{array} \begin{array}{r} 5.0 \\ 15 \end{array} \begin{array}{r} 4.7 \\ 5 \end{array} \begin{array}{r} 4.7 \\ 8 \end{array} \begin{array}{r} 4.0 \\ 16 \end{array} \begin{array}{r} 3.9 \\ 21 \end{array} \begin{array}{r} 1.7 \\ 29 \end{array} \begin{array}{r} 1.7 \\ 40 \end{array}$$

43.28

$$\begin{array}{r} 4.79 \\ 30 \end{array} - \begin{array}{r} 4.76 \\ 76 \end{array} \begin{array}{r} 4.8 \\ 16 \end{array} \begin{array}{r} 4.4 \\ 7 \end{array} \begin{array}{r} 4.7 \\ 14 \end{array} \begin{array}{r} 4.6 \\ 21 \end{array} \begin{array}{r} 1.8 \\ 28 \end{array} \begin{array}{r} 1.8 \\ 40 \end{array}$$

Top M.H. ± Cover. 69.6

$$\begin{array}{r} 2.6 \\ 30 \end{array} \begin{array}{r} 2.72 \\ 1.2 \text{ M.H.} \end{array} 7.3$$

$$\begin{array}{r} 2.3 \\ 50 \end{array}$$

42.63

$$\begin{array}{r} 2.57 \\ 30 \end{array} - \begin{array}{r} 2.73 \\ 76 \end{array} \begin{array}{r} 2.7 \\ 23 \end{array} \begin{array}{r} 2.9 \\ 16 \end{array} \begin{array}{r} 3.0 \\ 7 \end{array} \begin{array}{r} 2.4 \\ 15 \end{array} \begin{array}{r} 2.0 \\ 15 \end{array} - \text{SW} \begin{array}{r} 1.92 \\ 30 \end{array}$$

41.24

$$\begin{array}{r} 4.08 \\ 30 \end{array} - \begin{array}{r} 4.12 \\ 76 \end{array} \begin{array}{r} 3.8 \\ 22 \end{array} \begin{array}{r} 4.2 \\ 17 \end{array} \begin{array}{r} 4.6 \\ 13 \end{array} \begin{array}{r} 4.4 \\ 9 \end{array} \begin{array}{r} 4.4 \\ 15 \end{array} \begin{array}{r} 4.6 \\ 30 \end{array}$$

40.64

$$\begin{array}{r} 4.63 \\ 30 \end{array} - \begin{array}{r} 4.72 \\ 76 \end{array} \begin{array}{r} 5.0 \\ 19 \end{array} \begin{array}{r} 5.5 \\ 14 \end{array} \begin{array}{r} 5.1 \\ 9 \end{array} \begin{array}{r} 5.4 \\ 14 \end{array} \begin{array}{r} 4.4 \\ 30 \end{array}$$

39.95

$$\begin{array}{r} 5.43 \\ 30 \end{array} - \begin{array}{r} 5.41 \\ 76 \end{array} \begin{array}{r} 5.5 \\ 20 \end{array} \begin{array}{r} 5.8 \\ 13 \end{array} \begin{array}{r} 5.5 \\ 10 \end{array} \begin{array}{r} 5.7 \\ 30 \end{array}$$

39.64

$$\begin{array}{r} 5.72 \\ 30 \end{array} - \begin{array}{r} 5.72 \\ 76 \end{array} \begin{array}{r} 5.8 \\ 20 \end{array} \begin{array}{r} 6.3 \\ 14 \end{array} \begin{array}{r} 6.0 \\ 10 \end{array} \begin{array}{r} 6.6 \\ 15 \end{array} \begin{array}{r} 6.4 \\ 17 \end{array} \begin{array}{r} 5.6 \\ 30 \end{array}$$

St. + A ✓ - Elow

94536

2440

38.8

B. 10.

0.35

94244 ✓

3.27

942.09 ✓

+35 - End Walk H.

38.7

+52 app'd 10th

38.7

+70

38.0

75

37.3

76

35.7

+80

34.7

27

33.7

+50

32.3

+75

30.8

78 to app'd 11th

29.9

+73 No Shldr. 11th

29.4

0.35

942.09 ✓

H.

E

Bt.

13

39.56

$\frac{580}{20}$	$\frac{580}{20}$	$\frac{6.3}{21}$	$\frac{6.6}{17}$	6.6	$\frac{7.0}{9}$	$\frac{6.9}{14}$	$\frac{5.9}{19}$	$\frac{5.7}{20}$
------------------	------------------	------------------	------------------	-----	-----------------	------------------	------------------	------------------

Apd N.E. Cor. 10th & Johnson.

$\frac{360}{30}$	$\frac{360}{30}$	$\frac{3.6}{24}$	$\frac{3.8}{15}$	3.7	$\frac{4.8}{13}$	$\frac{3.8}{19}$	$\frac{3.5}{20}$
------------------	------------------	------------------	------------------	-----	------------------	------------------	------------------

4.73

S. end Culv.

$\frac{40}{50}$	M.H. = $\frac{3.67}{1.0}$	3.7	$\frac{4.1}{50}$
-----------------	---------------------------	-----	------------------

38.4

$\frac{40}{20}$	$\frac{40}{21}$	$\frac{4.3}{14}$	4.4	$\frac{5.3}{8}$	$\frac{5.0}{12}$	$\frac{3.7}{15}$	$\frac{3.2}{20}$	$\frac{3.2}{30}$	39.2
-----------------	-----------------	------------------	-----	-----------------	------------------	------------------	------------------	------------------	------

38.2 $\frac{5.87}{N. end Culv}$

$\frac{4.2}{30}$	$\frac{4.9}{19}$	$\frac{5.5}{17}$	$\frac{5.3}{13}$	$\frac{5.1}{13}$	$\frac{5.3}{14}$	$\frac{5.8}{19}$	$\frac{3.6}{20}$	38.8
------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------

35.5

$\frac{6.9}{30}$	$\frac{6.7}{20}$	$\frac{7.4}{14}$	$\frac{6.6}{6}$	6.7	$\frac{7.5}{10}$	$\frac{6.3}{17}$	$\frac{6.1}{30}$	36.3
------------------	------------------	------------------	-----------------	-----	------------------	------------------	------------------	------

34.5

$\frac{7.9}{20}$	$\frac{8.0}{19}$	$\frac{8.2}{13}$	$\frac{7.7}{8}$	7.7	$\frac{8.0}{6}$	$\frac{8.9}{10}$	$\frac{8.2}{12}$	$\frac{7.3}{17}$	$\frac{7.0}{30}$	35.4
------------------	------------------	------------------	-----------------	-----	-----------------	------------------	------------------	------------------	------------------	------

34.0

$\frac{8.6}{30}$	$\frac{8.5}{23}$	$\frac{9.1}{19}$	$\frac{9.1}{10}$	$\frac{8.7}{5}$	$\frac{8.7}{1}$	$\frac{9.1}{7}$	$\frac{9.8}{12}$	$\frac{8.5}{19}$	$\frac{8.3}{40}$	34.1
------------------	------------------	------------------	------------------	-----------------	-----------------	-----------------	------------------	------------------	------------------	------

31.8

$\frac{10.8}{20}$	$\frac{10.2}{18}$	$\frac{10.9}{14}$	$\frac{10.3}{4}$	10.1	$\frac{9.7}{7-ERD.}$	$\frac{10.8}{21}$	$\frac{9.1}{27}$	$\frac{8.5}{50}$	33.9
-------------------	-------------------	-------------------	------------------	------	----------------------	-------------------	------------------	------------------	------

33.3

30.6

$\frac{11.8}{30}$	$\frac{11.6}{16}$	$\frac{11.6}{1}$	$\frac{10.3}{17}$	$\frac{11.0}{28}$	$\frac{9.5}{44}$	$\frac{9.0}{50}$	31.4
-------------------	-------------------	------------------	-------------------	-------------------	------------------	------------------	------

29.3

$\frac{13.1}{37}$	$\frac{12.5}{15}$	$\frac{12.5}{1}$	$\frac{12.3}{19}$	$\frac{11.4}{35}$	$\frac{11.5}{60}$
-------------------	-------------------	------------------	-------------------	-------------------	-------------------

31.04

29.4

$\frac{12.0}{20}$

28.9

$\frac{12.8}{27}$	$\frac{12.4}{50}$
-------------------	-------------------

Drainage N. & N.E. and N.W.

Sta.	+	π	-	Elev.
Check Levels.				
B.M.	5.90	✓ 947.99		942.09
B.M. 1			4.86	✓ 943.13
"	0.15	✓ 945.72	2.42	✓ 945.57
			1.62	✓ 944.10
			1.62	✓ 944.10

10th Johnson & Hyatt

9th " " M.H. Cover

8th & Johnson Hyatt

7th " "

6th " "

E. on 8th St. Sta. 17+25 = 0+00

B.M.
0+0 = 2 Johnson
0+50

0.57

946.14

945.57

0+95

Top Gate 16' North,

5.5

0+95

Bottom Sump " "

13.5

0+99 - Top Gate 13' South

6.1

Bottom Sump.

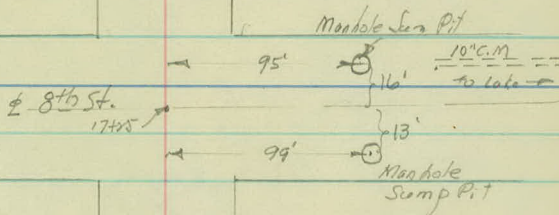
15.1

1416 - Fl Line 10" C.M. to Lake

17' North.

5.6

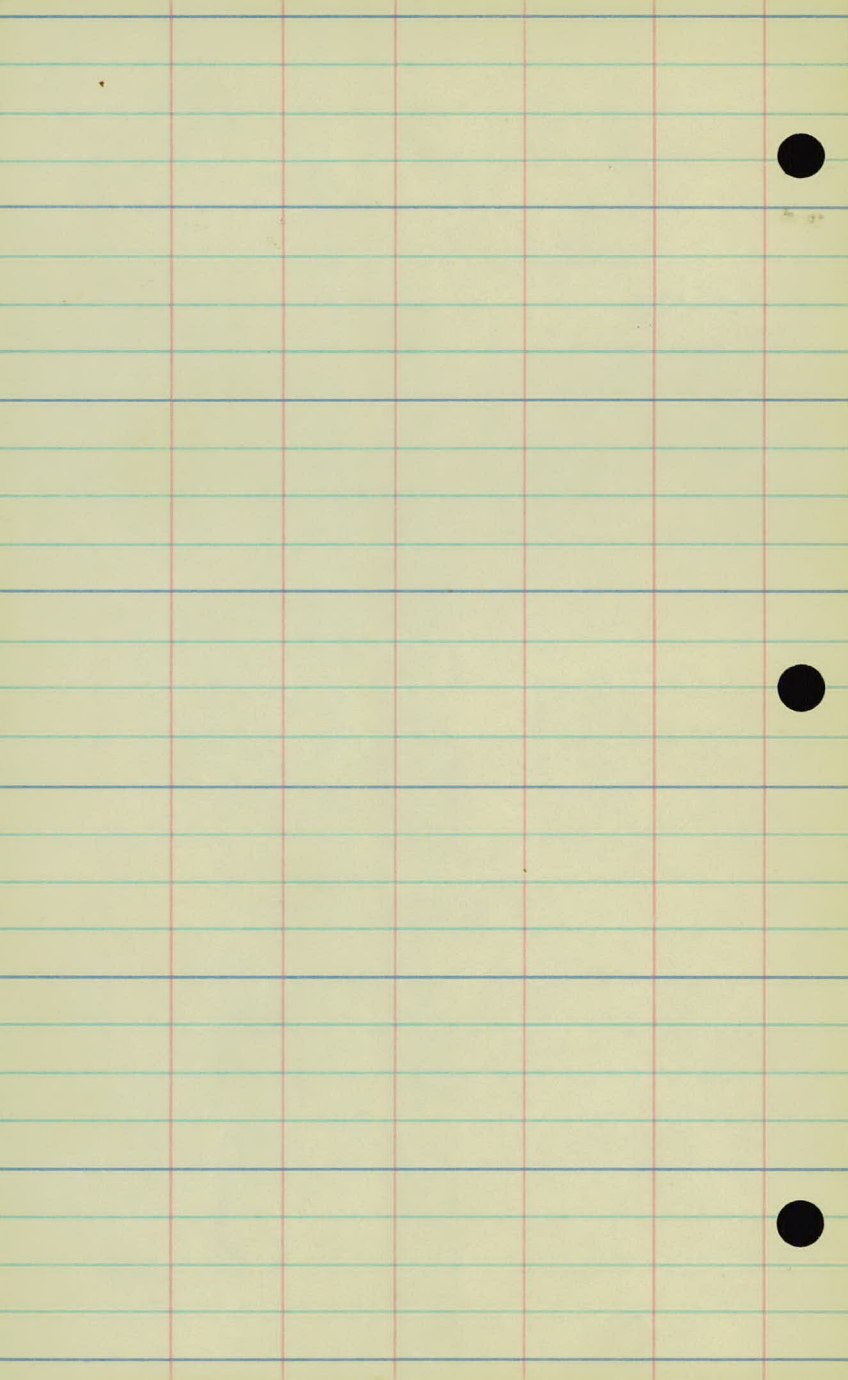
Johnson. 2

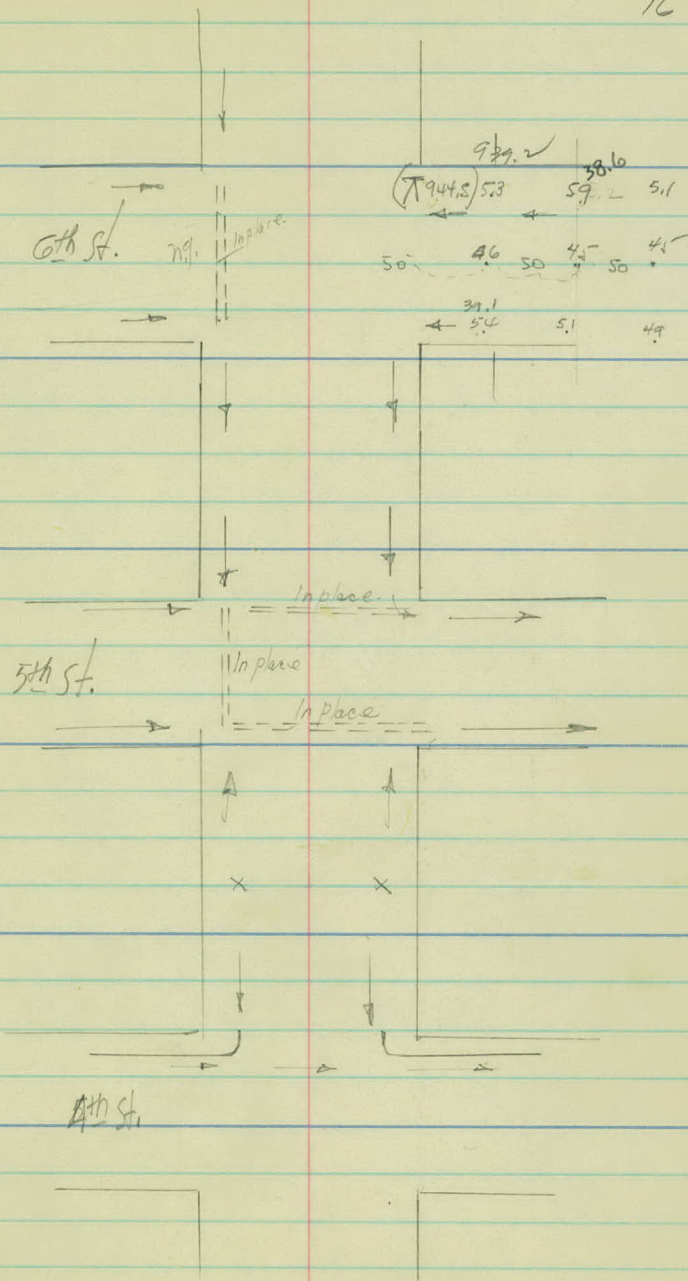


North				±	Rt = South		
46	54	57	53	48	48	54	51
30	24	16	10	—	10	27	30
					40.7		

5.2	5.5	4.7	4.6
29	16	10	0

4.5	5.1	6.1	5.1
0	10	13	30



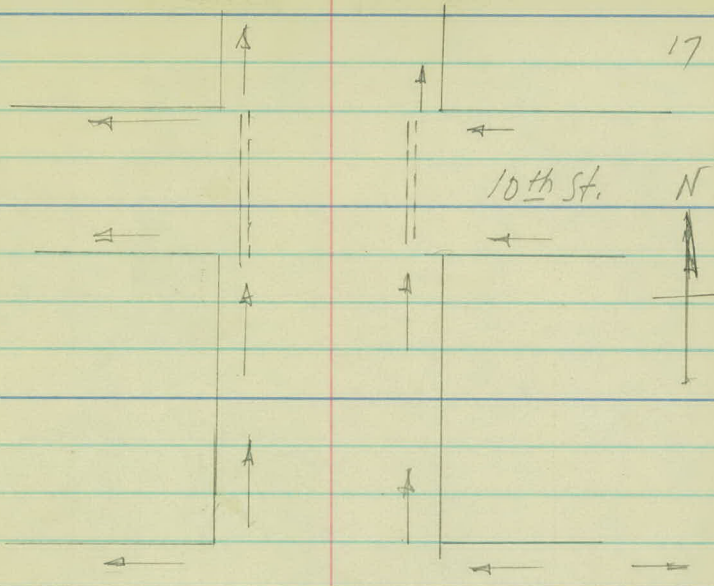


~~Recommended locations:~~

~~Place Storm Sewer on 7th St.
from Johnson to Lake east.~~

~~P. & Catch Basins @~~

~~Johnson + 7th St.~~

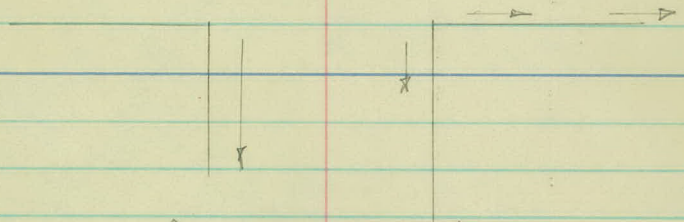


10th St.

N

9th St.

(Make sum mit in grade)



See P. 15 - fr. 8th St.

See P. 18 for 7th St.

110

945.20

944.10

E. on 7th St.

040 = L Johnson 13/62

040

0450

140

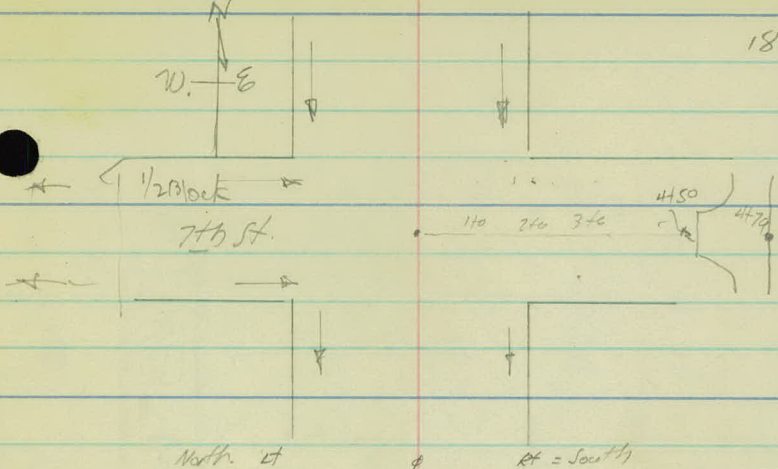
240

340

440

1
+ 50 - W. edge R.O.G.

179 E. edge R.O.G.



940.5

$$\frac{47}{9}$$

A

440

940.2

$$\frac{5.0}{15}$$

$$\frac{34}{76} \quad \frac{80}{22} \quad \frac{34}{21} \quad \frac{4.6}{11}$$

$$4.5 \quad \frac{4.8}{13} \quad \frac{4.2}{21} \quad \frac{3.9}{15} \quad \frac{80}{30} \quad 3.8$$

$$\frac{3.4}{28} \quad \frac{3.1}{22} \quad \frac{3.7}{13}$$

$$3.5 \quad \frac{4.1}{13} \quad \frac{4.1}{17} \quad \frac{3.7}{19} \quad \frac{3.0}{29}$$

$$\frac{1.8}{27} \quad \frac{2.0}{19} \quad \frac{2.6}{12}$$

$$76 \quad \frac{3.0}{13} \quad \frac{2.7}{18}$$

76

440

Dee P. G., Johnson Survey
bet. 6 & 7th as of
June 1936

Over.

Recommendations.
Johnson St.

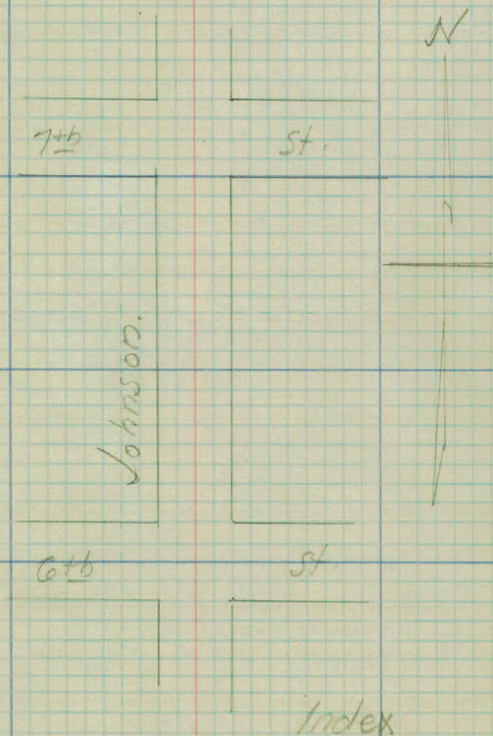
Lay 10.3% grade from 6th St.
Elev. 939.2 to 7th St. Elev. 940.3
this 0.5 of foot lower than
previous record, this to
drain low spot @ 6th and
7th St.

Drainage
Plan Survey.

Johnson St.

from 6th to N. of 7th St.

White Bear, Minn.



Topog.
X-sec.
Reconn.

P. 2
P. 3 - P. 5
P. 6

W. H. Carlson
June 10, 1936

6to

5

4

3

2

1

$\frac{118.5}{124} \} \times 100/k$

oto = $\frac{2}{2} \text{ Gth St.}$

S.W. 30-250

2

+38-8" Br. E. 20

+48-2 Alley E. 11

+123-R.D. 18'

+95-10" Br. E. 20'

+48-4 Ent.

+82.5-N. Prop -

2.5

+79

17.5

+128 R.D. 18'

End - +47 -

+132.5-S. Prop line

17

17.5

+131-Hy. 22'

+14-R.D. 18'

+123-16' E. 20'

Big log

+80-10" Tree 18'

+66-8" Tree 18'

+52-6" " 18'

+36-6" Tree 18'

+70-20" Br. E. 18'

+04-12" Br. E. 18'

+86-Ent.

+97-Ent.

+74-8" Birch 20'

+78-2 Alley

+65-Ent.

+70-8" Ash 21'

45' No. 1

+82-R.D. 18'

+46-10" Ash 20'

+40-Mail 12x U.S. 22

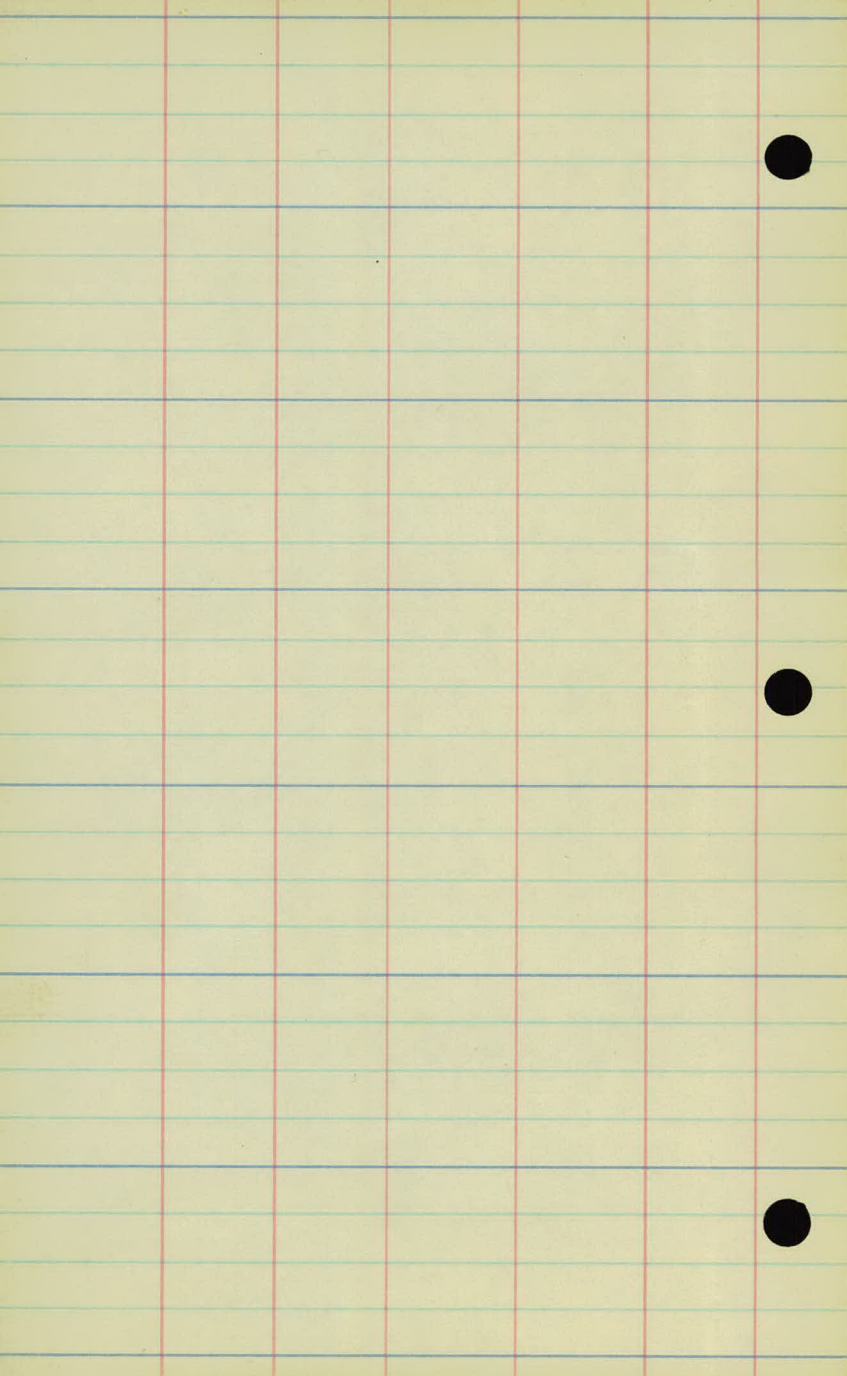
0+14-N. end C. U. 15'

12x 76 N. End

+0+12.5-S. end C. U. 15'

Iron Co. over 15'

+70 R.D. 18'



X-Sections
Johnson St.

Sta.	+	π ✓	-	Elev.
B.M.	0.98	942.79 ✓		941.81
	0.38	941.39 ✓	- 1.78	941.01 ✓
	4.84	944.60 ✓	- 1.63	939.76 ✓
B.M.			0.52	944.08 ✓

0+0 = 2 6th St.

0+40 39.6

1+40 39.7

1+50 39.7

2+40 39.8

5.11 945.70 ✓ 4.01 940.59 ✓

+50 40.4

3+40 40.5

+325 - So. Prop Line 40.7

+60 - 7th

3+87.5 No. Prop Line 40.7

Hyp. Cr. 5th & Stewart.

Top Hyp. S.E. Cr. 6th & Johnson.

$$38.3 \quad \frac{6.35}{15} = \text{Fl. Line} \\ - 0+12.5 \quad \text{Curv.} \quad 934.7$$

38.4

$$0+14 \quad \frac{6.17}{15} = \text{Fl. Line} \\ \text{Curv.}$$

$$\begin{array}{r} 4.58 \\ 30 \end{array} \quad \begin{array}{r} 4.8 \\ 18 \end{array} \quad \begin{array}{r} 5.6 \\ 13 \end{array} \quad \begin{array}{r} 5.0 \\ 8 \end{array} \quad \begin{array}{r} 5.0 \\ - \end{array} \quad \begin{array}{r} 5.2 \\ 8 \end{array} \quad \begin{array}{r} 5.4 \\ 12 \end{array} \quad \begin{array}{r} 4.3 \\ 19 \end{array} \quad \begin{array}{r} 3.8 \\ 26 \end{array} \quad \begin{array}{r} 3.8 \\ 30 \end{array}$$

$$\begin{array}{r} 4.58 \\ 30 \end{array} \quad \begin{array}{r} 4.5 \\ 18 \end{array} \quad \begin{array}{r} 5.4 \\ 14 \end{array} \quad \begin{array}{r} 4.9 \\ 0 \end{array} \quad \begin{array}{r} 5.4 \\ 14 \end{array} \quad \begin{array}{r} 4.6 \\ 19 \end{array} \quad \begin{array}{r} 4.4 \\ 30 \end{array}$$

$$\begin{array}{r} 4.32 \\ 30 \end{array} \quad \begin{array}{r} 4.5 \\ 17 \end{array} \quad \begin{array}{r} 5.3 \\ 14 \end{array} \quad \begin{array}{r} 4.9 \\ - \end{array} \quad \begin{array}{r} 5.2 \\ 13 \end{array} \quad \begin{array}{r} 4.6 \\ 19 \end{array} \quad \begin{array}{r} 4.8 \\ 30 \end{array}$$

$$\begin{array}{r} 4.14 \\ 30 \end{array} \quad \begin{array}{r} 4.6 \\ 18 \end{array} \quad \begin{array}{r} 5.0 \\ 16 \end{array} \quad \begin{array}{r} 4.8 \\ - \end{array} \quad \begin{array}{r} 5.1 \\ 12 \end{array} \quad \begin{array}{r} 4.2 \\ 23 \end{array} \quad \begin{array}{r} 4.0 \\ 30 \end{array}$$

$$\begin{array}{r} 5.09 \\ 30 \end{array} \quad \begin{array}{r} 5.3 \\ 20 \end{array} \quad \begin{array}{r} 6.1 \\ 15 \end{array} \quad \begin{array}{r} 5.6 \\ - \end{array} \quad \begin{array}{r} 6.0 \\ 12 \end{array} \quad \begin{array}{r} 5.2 \\ 24 \end{array} \quad \begin{array}{r} 5.2 \\ 30 \end{array}$$

$$\begin{array}{r} 5.03 \\ 30 \end{array} \quad \begin{array}{r} 5.4 \\ 18 \end{array} \quad \begin{array}{r} 5.4 \\ 15 \end{array} \quad \begin{array}{r} 5.3 \\ - \end{array} \quad \begin{array}{r} 5.8 \\ 12 \end{array} \quad \begin{array}{r} 5.4 \\ 18 \end{array} \quad \begin{array}{r} 4.8 \\ 30 \end{array}$$

$$\begin{array}{r} 4.89 \\ 30 \end{array} \quad \begin{array}{r} 5.2 \\ 19 \end{array} \quad \begin{array}{r} 5.8 \\ 16 \end{array} \quad \begin{array}{r} 5.2 \\ - \end{array} \quad \begin{array}{r} 5.7 \\ 13 \end{array} \quad \begin{array}{r} 4.9 \\ 20 \end{array} \quad \begin{array}{r} 4.7 \\ 30 \end{array}$$

940.7

5.2

5.2

5.2

5.2

5.2

5.2

5.2

5.2

5.2

Top M. H. Cr.

$$\begin{array}{r} 4.80 \\ 30 \end{array} \quad \begin{array}{r} 5.2 \\ 17 \end{array} \quad \begin{array}{r} 5.2 \\ 14 \end{array} \quad \begin{array}{r} 5.0 \\ 0 \end{array} \quad \begin{array}{r} 5.3 \\ 10 \end{array} \quad \begin{array}{r} 4.9 \\ 17 \end{array} \quad \begin{array}{r} 4.72 \\ 30 \end{array}$$

Sta.

+

↑

-

Elev.

945.70^v

4130

40.9

540

40.1

640

41.7

4

8

12

5

$$\frac{4.84}{30}$$

$$\frac{4.9}{18}$$

$$\frac{5.2}{15}$$

$$\frac{4.8}{11}$$

$$\frac{5.2}{11}$$

$$\frac{4.9}{16}$$

$$\frac{3.7}{23}$$

$$\frac{3.2}{30}$$

$$\frac{4.45}{20}$$

$$\frac{4.8}{18}$$

$$\frac{5.0}{15}$$

$$\frac{4.6}{11}$$

$$\frac{4.9}{11}$$

$$\frac{4.4}{18}$$

$$\frac{4.1}{18}$$

$$\frac{3.1}{24}$$

$$\frac{2.6}{20}$$

$$\frac{4.1}{20}$$

$$\frac{4.2}{20}$$

$$\frac{4.6}{15}$$

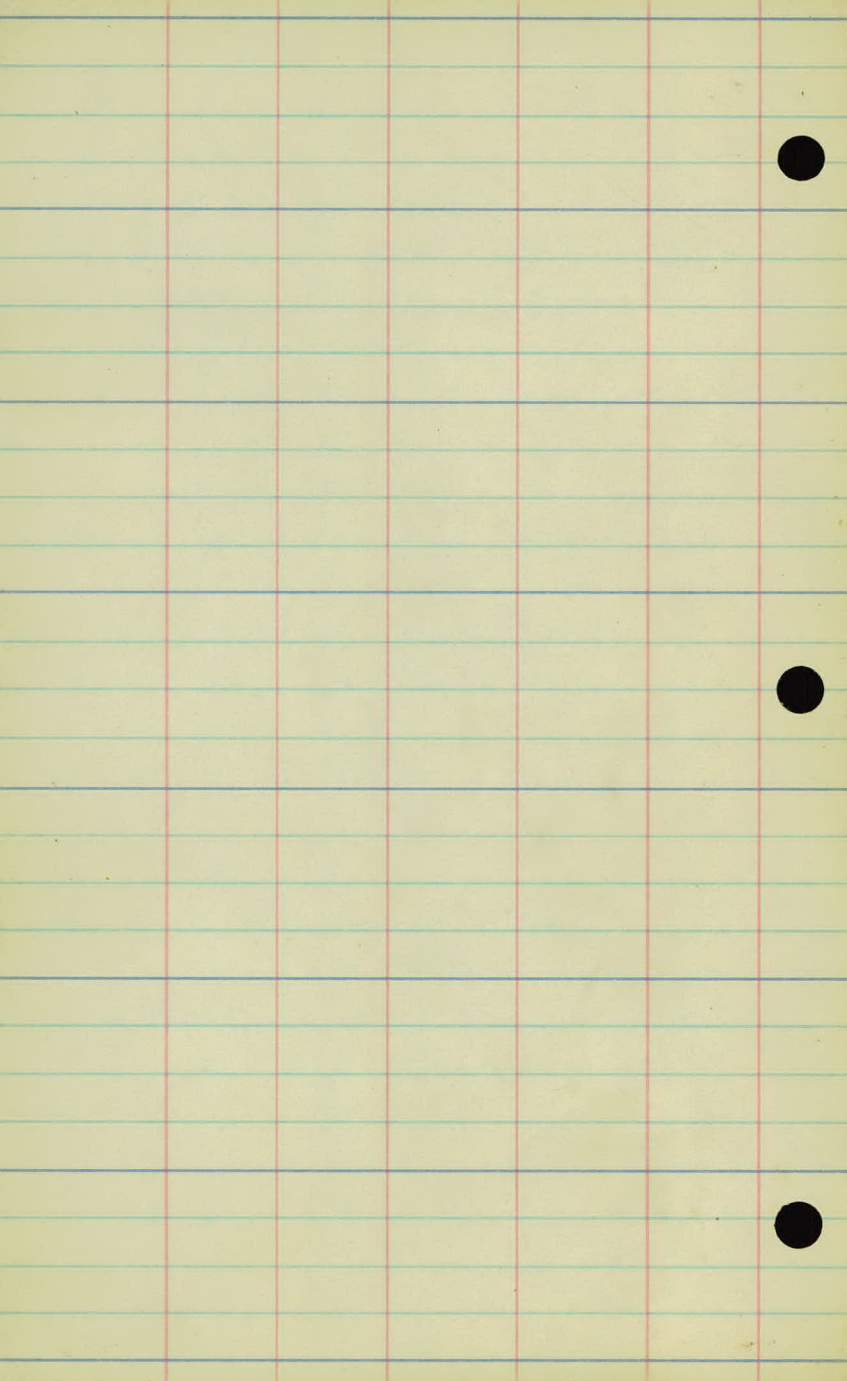
$$\frac{4.0}{11}$$

$$\frac{4.6}{11}$$

$$\frac{3.4}{20}$$

$$\frac{1.5}{26}$$

$$\frac{1.3}{20}$$

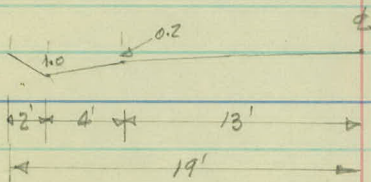


Recommendations.

6

Johnson. between 6th & 7th.

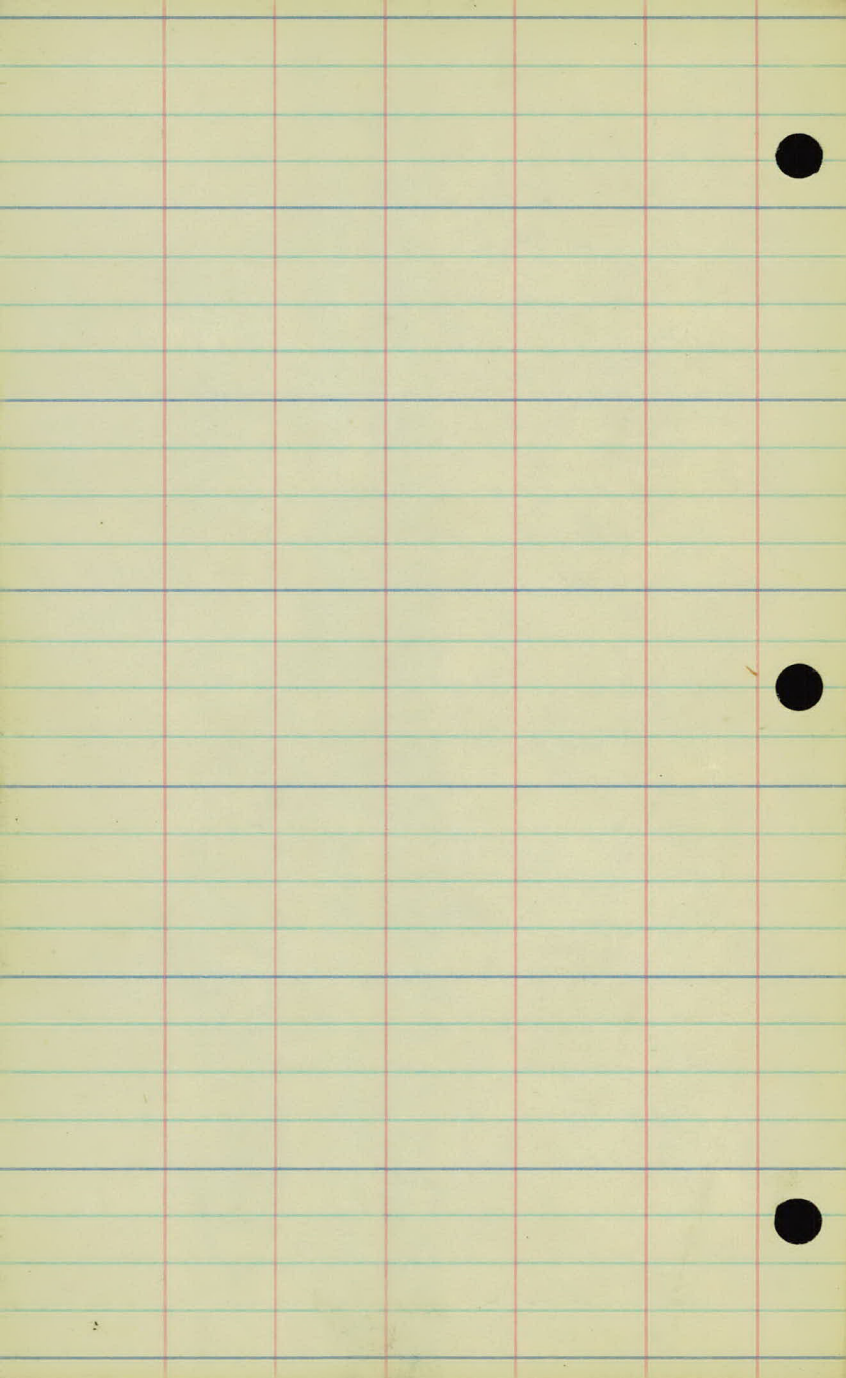
Lay +0.3% grade from 6th St. El. 939.7
to 7th St. El. 940.8



Remove 12" x 26' C.M. @ 6th

Place 2- 12" x 30' C.M. Lt. & Rt. @ 6th
?

W. N. Carlson
June 10, 1936



Johnson St.

Slope Stakes.

4th St. to 11th St.

Sh.

+

 π

-

Grade.

0.72

940.48

939.76

3to

935.53

+50

35.59

4to

35.65

+50

35.71

+0.12 4to

5to

35.77

+50

35.83

6to 5.5 (P.1)

35.89

2.82

942.58

0.72

939.76

5th st

6to 5.5 (P.1)

36.2

7to

36.46

+0.74 4to

Hyd. 5th Johnson.

4.95

$$\begin{array}{r} 5.08 \\ - 0.1 \\ \hline \end{array}$$

$$\begin{array}{r} 4.95 \\ 17 \\ \hline \end{array}$$

4.89

$$\begin{array}{r} 4.9 \\ 0.0 \\ \hline \end{array}$$

$$\begin{array}{r} 4.89 \\ 17 \\ \hline \end{array}$$

4.83

$$\begin{array}{r} 4.7 \\ 10.1 \\ \hline \end{array}$$

4.77

$$\begin{array}{r} 4.66 \\ 70.1 \\ \hline \end{array}$$

4.71

$$\begin{array}{r} 4.50 \\ 10.2 \\ \hline \end{array}$$

4.65

$$\begin{array}{r} 4.4 \\ 10.2 \\ \hline \end{array}$$

4.59

$$\begin{array}{r} 4.4 \\ 10.2 \\ \hline \end{array}$$

6.30

$$\begin{array}{r} 6.0 \\ 10.4 \\ \hline \end{array}$$

6.12

$$\begin{array}{r} 6.0 \\ 10.1 \\ \hline \end{array}$$

$$\begin{array}{r} 6.12 \\ 17 \\ \hline \end{array}$$

$$\begin{array}{r} 5.92 \\ 25 \\ \hline \end{array}$$

Sta.	+	π	-	Grade
7+50	+10.74%	944.58		36.83
8+0	(P.I.)			37.20
+50				37.85
9+0	+11.25%			38.49
9+50				39.14
9+70	(P.I.)			39.40
T.P.	5.30	944.68	3.20	939.38
6+50 ST				
B.M.			-0.59	944.09 (4410)
10+20	(P.I.)			39.60
10+50				39.65
11+0	+10.26%			39.78
+50				39.91
12				40.04

5.75

$$\frac{5.65}{10.4}$$

$$\frac{5.75}{17}$$

$$\frac{5.65}{28}$$

5.28

$$\frac{5.24}{10.2}$$

$$\frac{4.8}{10.6} / 76.2$$

4.73

$$\frac{4.4}{10.3}$$

$$\frac{26}{11.9} / 288$$

4.09 ^{2.84}

$$\frac{4.2}{0}$$

$$\frac{1.8}{+2.1} / 29.2$$

3.44

$$\frac{3.5}{0.0}$$

$$\frac{1.2}{+2.0} / 29.0$$

3.18 ^{2.0}

$$\frac{3.12}{0.0}$$

$$\frac{1.3}{+1.7} / 28.4$$

Sta.

+

T

-

Elev.

12+50

40.17

13+0

40.26%

40.30

+3246

(P.1)

40.40

7th St.

Johnson St.
4th to

Sta.	+	π	-	Grade	
	0.95	946.71			939.76
3+0				35.53	@ P.L. 35.2 35.17 D.H.C. r- Rt. 345
3+50				35.59	35.17
4+0				35.65	35.07 35.07
4+50				35.71	35.02
5+0				35.77	34.97
+50				35.83	34.93
6+5.5				35.90	34.90
B.M.	3.05	942.81	0.95		939.76
6+55.5				36.20	
7+0				36.46	
+50				36.83	
8+0				37.20	x P.1

Cr Rod Lt E Rt

Hyd. @ 5th & Johnson

5.18

X
5.18
17

5.12

5.06

5.00 .

4.94 .

4.88 ~

4.81 .

6.61 .

6.35 .

5.98

5.61

578
75

+86
76.2

Sta	+	π	-	Grade
-----	---	-------	---	-------

942.81

8+50

37.84

9+0

38.49

150

39.13

+20

Pl

39.40

T.P

4.94

944.61

3.14

939.67

0.51

944.61

0.51

944.10

10+30

39.60

11+00

39.78

11+50

39.90

12+0

40.04
13

12+50

40.17

13

40.30

13+6

40.4

1.901

944.00

0.40

944.10

Co. Rod

Lot.

R.

Rt.

4.97.

$\frac{+1.9}{288}$

4.32

$\frac{20}{+2.1} \frac{292}{20}$

3.68

$\frac{1.5}{+2.0} \frac{190}{20}$

3.41

$\frac{1.5}{+1.7} \frac{184}{20}$

Top Walk S.W. Con. Stb & Johnson
Hyd.

5.01

$\frac{4.3}{+0.5} \frac{20}{20}$

4.83

$\frac{4.8}{+0.1} \frac{20}{20}$

4.70

$\frac{4.7}{+0.1} \frac{20}{20}$

4.57

$\frac{4.6}{17}$

$\frac{4.2}{+0.1} \frac{20}{20}$

4.44

$\frac{4.8}{+0.4} \frac{20}{20}$

4.31

$\frac{4.1}{+0.1} \frac{20}{20}$

4.21

Sta	+	x	-	Grade	
		946.09			
13+92.46				40.40	
14+50				40.58	
15				40.75	
+59				40.94	
16				41.08	
+50				41.25	
17+95.86				41.4	
	2.50	948.08	0.54	45.95	945.58
17+55.86	N.P/L.			41.50	
18+0				41.72	
+50				41.97	
18+90				42.17	
					40.870

Cr Rod

Lt

K

Kt

5.69^{5.5} $\frac{54}{10.3}$ $\frac{44}{11.1/80}$ 5.31^{5.3} $\frac{52}{10.3}$ $\frac{5.1}{17}$ $\frac{39}{11.4/30}$ 5.34^{5.1} $\frac{50}{10.3}$ $\frac{30}{12.1/30}$

5.15

 $\frac{46}{10.6}$ $\frac{4.4}{17}$ $\frac{0.8}{14.2/29.5}$

5.01

 $\frac{43}{10.7}$ $\frac{1.7}{13.1/29.5}$

tune

4.84^{4.6} $\frac{43}{10.5}$ $\frac{3.1}{11.5/29.5}$ 4.69^{4.5} $\frac{43}{10.4}$ 6.58^{6.36} $\frac{62}{10.4}$ $\frac{6.8}{17}$ $\frac{7.2}{25}$ 6.36^{6.16} $\frac{59}{10.4}$ $\frac{6.6}{17}$ $\frac{7.1}{25}$ 6.11^{5.91} $\frac{66}{10.5}$ $\frac{5.5}{17}$ $\frac{5.4}{25}$ 5.91^{5.7} $\frac{52}{10.7}$ $\frac{5.1}{17}$

Sta	+	π	-	Grade
		948.08		
19+80				42.47
20+0				42.72
157.96				43.0
21+17.96 ^{N.P.L}				42.2
+80				41.74
22+0				41.03
T.P.	1.84	944.95	5.47	942.61
+50				40.31
23				39.60
+50				39.19
24				38.77
+20.78				38.60
B.M	0.36	942.45	2.33	942.09 942.12

Cor Rod	ht	£	ht	
5.61 ^{5.41}	$\frac{5.4}{17}$	$\frac{5.1}{+0.5}$	$\frac{4.9}{17}$	$\frac{3.1}{+1.5/28}$
5.76	$\frac{5.4}{17}$	$\frac{5.0}{+0.4}$	$\frac{4.2}{17}$	$\frac{2.1}{+2.3/30}$ Over Slope
5.08	$\frac{5.4}{17}$	$\frac{4.7}{+0.4}$	$\frac{3.0}{17}$	$\frac{1.9}{+2.2/30}$ Over Slope
5.88 ^{5.7}		$\frac{5.6}{+0.3}$		$\frac{4.6}{+1.3/27.6}$
6.34 ^{6.14}		$\frac{6.2}{+0.1}$	$\frac{5.7}{17}$	
7.05 ^{6.85}		$\frac{7.1}{+0.0}$		
Nail in P.P.				
4.14 ^{4.94}		$\frac{4.1}{+0.0}$	$\frac{3.4}{17}$	$\frac{3.4}{+0.4/26.0}$
4.85 ^{4.65}		$\frac{4.6}{+0.2}$		$\frac{4.65}{23.0}$
5.26 ^{5.06}		$\frac{4.9}{+0.4}$	$\frac{4.6}{17}$	$\frac{4.7}{+0.4/25.8}$
5.68 ^{5.48}		$\frac{5.7}{+0.0}$	$\frac{5.2}{17}$	$\frac{5.2}{+0.9/25.6}$
5.85 ^{5.65}		$\frac{5.7}{+0.1}$	$\frac{5.5}{17}$	$\frac{5.1}{+0.6/26.2}$

Top Hyd N.E. Cor. 10th & Johnson 942.09

Sta	+	1	-	Grade
-----	---	---	---	-------

B.M.

742.45

24+80.78

37.6

25

37.22

+50

36.22

26

35.22

+50

34.22

27

33.22

+50

32.22

Cr Rod

Lt

L

Rt

$$\begin{array}{r}
 4.65 \\
 4.85 \quad 26.8 / \begin{array}{l} 4.0 \\ +0.6 \end{array} \\
 \hline
 49 \\
 00
 \end{array}
 \quad
 \begin{array}{r}
 9.9 \\
 17.0
 \end{array}
 \quad
 \begin{array}{r}
 3.2 \\
 11.4 / 27.8
 \end{array}$$

$$\begin{array}{r}
 5.08 \\
 5.23 \quad 26.8 / \begin{array}{l} 4.2 \\ +0.9 \end{array} \\
 \hline
 5.2 \\
 00
 \end{array}
 \quad
 \begin{array}{r}
 9.9 \\
 17
 \end{array}
 \quad
 \begin{array}{r}
 3.8 \\
 11.8 / 27.6
 \end{array}$$

$$\begin{array}{r}
 6.08 \\
 6.23 \quad 26.8 / \begin{array}{l} 5.4 \\ +0.6 \end{array} \\
 \hline
 4.9 \\
 +0.3
 \end{array}
 \quad
 \begin{array}{r}
 9.5 \\
 17.0
 \end{array}
 \quad
 \begin{array}{r}
 5.4 \\
 +0.6 / 26.8
 \end{array}$$

$$\begin{array}{r}
 7.08 \\
 7.23 \quad 27.6 / \begin{array}{l} 6.7 \\ +0.9 \end{array} \\
 \hline
 6.9 \\
 17.0
 \end{array}
 \quad
 \begin{array}{r}
 6.9 \\
 17.0
 \end{array}
 \quad
 \begin{array}{r}
 6.0 \\
 11.0 / 27.0
 \end{array}$$

$$\begin{array}{r}
 8.03 \\
 8.28 \quad 28.9 / \begin{array}{l} 7.8 \\ +0.2 \end{array} \\
 \hline
 7.7 \\
 +0.5
 \end{array}
 \quad
 \begin{array}{r}
 7.5 \\
 17.0
 \end{array}
 \quad
 \begin{array}{r}
 7.1 \\
 +0.9 / 26.8
 \end{array}$$

$$\begin{array}{r}
 9.08 \\
 9.23 \quad 8.9 \\
 \hline
 8.7 \\
 +0.5
 \end{array}
 \quad
 \begin{array}{r}
 2.5 \\
 1.05 / 26.0
 \end{array}$$

$$\begin{array}{r}
 10.08 \\
 10.23 \\
 \hline
 10.1 \\
 +0.1
 \end{array}
 \quad
 \begin{array}{r}
 9.8 \\
 1.08 / 26.6
 \end{array}$$

Sta. + A - Grade

24 18678

Re. Cross Section of Johnson Arc.
from 4th to 11th str.

3/38

Plotted 3/22/38
M.B.

Sta	+	-	Elev.
B.M.	1.71	941.47 ✓	939.76

2+46			35.0
------	--	--	------

+60			34.6
-----	--	--	------

+75			35.1
-----	--	--	------

3			35.4
---	--	--	------

+50			35.7
-----	--	--	------

4			35.8
---	--	--	------

T.P.	1.40	941.16 ✓	939.76 ✓
------	------	----------	----------

+50			35.8
-----	--	--	------

5-			36.1
----	--	--	------

+50			36.2
-----	--	--	------

6+00			36.2
------	--	--	------

+06			36.2
-----	--	--	------

24.

104

Rt.

2/

Top of Hyd., NE Cor 5th & Johnson St

55	59	65	74	82
<u>100</u>	<u>50</u>	<u>1</u>	<u>50</u>	<u>100</u>

63	65	69	74	78
<u>50</u>	<u>25</u>	<u>69</u>	<u>25</u>	<u>50</u>

$\frac{5}{50}$	$\frac{5^4}{30}$	$\frac{5^8}{17}$	$\frac{5^9}{14}$	$\frac{6^5}{14}$	$\frac{6^4}{16}$	$\frac{6^8}{18}$	$\frac{6^2}{30}$	$\frac{6^0}{50}$	$\frac{6^6}{50}$
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52	54	55	56	58	66	63	61	65	68	59	57	57	57
50	30	25	31	18	16	10	6	12	16	7	25	30	50

53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																															
44	30	25	18	16	14	8	5.8	11	15	18	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355	360	365	370	375	380	385	390	395	400	405	410	415	420	425	430	435	440	445	450	455	460	465	470	475	480	485	490	495	500	505	510	515	520	525	530	535	540	545	550	555	560	565	570	575	580	585	590	595	600	605	610	615	620	625	630	635	640	645	650	655	660	665	670	675	680	685	690	695	700	705	710	715	720	725	730	735	740	745	750	755	760	765	770	775	780	785	790	795	800	805	810	815	820	825	830	835	840	845	850	855	860	865	870	875	880	885	890	895	900	905	910	915	920	925	930	935	940	945	950	955	960	965	970	975	980	985	990	995	1000

3.5	4	4	5.7	6.4	6.0	5.7	6.0	6.2	6.4	5.9	5.3	5.3	5.0
50	30	25	19	16	13	9	9	11	15	15	25	30	50

	N	N						N	N					
5 ³	5 ³	5 ³	5 ⁴	5 ⁸		6 ⁰	6 ²	4 ⁹	4 ⁸	4 ⁸	4 ⁴	4 ⁵		
<u>50</u>	<u>29</u>	<u>25</u>	<u>17</u>	<u>13</u>	<u>5</u>	<u>12</u>	<u>16</u>	<u>19</u>	<u>24</u>	<u>29</u>	<u>32</u>	<u>50</u>		

	W	N																
54	52	53	54	61	59	55		58	60	49	47	46	27					
50	29	28	18	15	12	8	51	12	18	14	24	29	2					

	$\frac{w}{v}$	$\frac{w}{v}$								$\frac{w}{v}$	$\frac{w}{v}$	
$\frac{5^3}{50}$	$\frac{5^3}{29.5}$	$\frac{5^3}{25}$	$\frac{5^2}{18}$	$\frac{6^2}{16}$	$\frac{5^8}{17}$	$\frac{5^3}{7}$	$\frac{5^{10}}{8}$	$\frac{5^7}{12}$	$\frac{6^1}{10}$	$\frac{4^6}{18}$	$\frac{4^5}{25}$	$\frac{4^5}{29}$

W		W		W		W		W		W		W		W	
30	31	31	31	31	30	29	28	27	26	25	24	23	22	21	20
30	29	25	18	18	14	13	14	10	10	30	8	15	19	25	29

[illegible]

Sta.	+	π	-	Elev.
------	---	-------	---	-------

		941.16		
--	--	--------	--	--

6+20				
------	--	--	--	--

				936.3
--	--	--	--	-------

6+24				
------	--	--	--	--

				36.3
--	--	--	--	------

6+27				
------	--	--	--	--

				36.3
--	--	--	--	------

6+36				
------	--	--	--	--

				36.4
--	--	--	--	------

6+50				
------	--	--	--	--

				36.6
--	--	--	--	------

6+54				
------	--	--	--	--

				36.6
--	--	--	--	------

6+66				
------	--	--	--	--

				36.7
--	--	--	--	------

T.P.				
------	--	--	--	--

	5.36			
--	------	--	--	--

		945.12		
--	--	--------	--	--

			1.40	
--	--	--	------	--

				939.76
--	--	--	--	--------

Lt.

2

Rt.

W W
 $\frac{54}{50}$ $\frac{51}{29}$ $\frac{51}{25}$ $\frac{50}{23}$ $\frac{53}{20}$ $\frac{60}{18}$ $\frac{61}{15}$ $\frac{51}{14}$ $\frac{49}{14}$ $\frac{51}{14}$ $\frac{58}{15}$ $\frac{61}{16}$ $\frac{61}{19}$ $\frac{48}{22}$ $\frac{53}{50}$

$\frac{58}{50}$ $\frac{59}{31}$ $\frac{61}{24}$ $\frac{60}{16}$ $\frac{53}{14}$ $\frac{49}{14}$ $\frac{51}{10}$ $\frac{57}{19}$ $\frac{62}{24}$ $\frac{64}{50}$ $\frac{69}{100}$

$\frac{54}{50}$ $\frac{49}{23}$ $\frac{50}{15}$ $\frac{49}{14}$ $\frac{49}{14}$ $\frac{51}{25}$ $\frac{54}{50}$

$\frac{51}{72}$ $\frac{50}{80}$ $\frac{48}{80}$ $\frac{52}{80}$ $\frac{55}{100}$

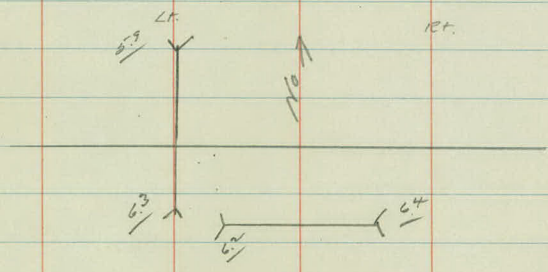
Top Manhole Corer.

0.05

$\frac{53}{50}$ $\frac{52}{31}$ $\frac{49}{25}$ $\frac{46}{13}$ $\frac{46}{16}$ $\frac{50}{16}$ $\frac{55}{28}$ $\frac{57}{50}$

$\frac{55}{75}$ $\frac{57}{50}$ $\frac{53}{31}$ $\frac{59}{25}$ $\frac{53}{18}$ $\frac{51}{17}$ $\frac{46}{13}$ $\frac{46}{14}$ $\frac{48}{14}$ $\frac{56}{15}$ $\frac{58}{37}$ $\frac{59}{50}$ $\frac{59}{100}$

W W
 $\frac{48}{50}$ $\frac{47}{25}$ $\frac{49}{16}$ $\frac{55}{15}$ $\frac{55}{13}$ $\frac{48}{12}$ $\frac{47}{10}$ $\frac{45}{11}$ $\frac{48}{11}$ $\frac{57}{14}$ $\frac{48}{15.5}$ $\frac{50}{50}$



East ->
 5th St.

Sta.	+	κ	-	Elev.
7+00		INS. 1 Y		36.7
+50				36.9
+74		Drain thru walk Rt.		37.1
8+00				37.4
8+24		See thru onto Rt + Lt		37.7
8+50				38.0
9				38.5
+50				38.9
+70				39.2
+83				39.4
+87				39.4
+90				39.5

24.

2

24.

4

	N									
$\frac{85}{50}$	$\frac{85}{25}$	$\frac{85}{15}$	$\frac{81}{15}$	$\frac{88}{11}$	$\frac{84}{11}$	$\frac{87}{7}$	$\frac{89}{14}$	$\frac{87}{17}$	$\frac{80}{39}$	

	N	N								
$\frac{83}{50}$	$\frac{82}{29}$	$\frac{82}{25}$	$\frac{82}{18}$	$\frac{86}{16}$	$\frac{87}{14}$	$\frac{85}{9}$	$\frac{82}{11}$	$\frac{84}{8}$	$\frac{85}{17}$	$\frac{83}{26}$

	N	N								
$\frac{87}{50}$	$\frac{87}{30}$	$\frac{85}{29}$	$\frac{89}{25}$	$\frac{89}{18}$	$\frac{88}{17}$	$\frac{88}{15}$	$\frac{82}{9}$	$\frac{80}{11}$	interpolated section (MR)	

	N	N								
$\frac{86}{25}$	$\frac{86}{30}$	$\frac{86}{29}$	$\frac{86}{25}$	$\frac{87}{18}$	$\frac{84}{15}$	$\frac{84}{13}$	$\frac{81}{9}$	$\frac{77}{11}$	$\frac{81}{8}$	$\frac{84}{13}$

	N	N								
$\frac{77}{30}$	$\frac{72}{29}$	$\frac{72}{25}$	$\frac{74}{24}$	$\frac{82}{13}$	$\frac{78}{9}$	$\frac{74}{11}$	$\frac{78}{10}$	$\frac{83}{15}$	$\frac{74}{27}$	$\frac{65}{50}$

	N	N								
$\frac{53}{50}$	$\frac{58}{29}$	$\frac{68}{29}$	$\frac{69}{25}$	$\frac{21}{18}$	$\frac{81}{14}$	$\frac{75}{9}$	$\frac{71}{11}$	$\frac{76}{10}$	$\frac{82}{15}$	$\frac{72}{17}$

	N	N								
$\frac{36}{50}$	$\frac{49}{29}$	$\frac{62}{29}$	$\frac{62}{25}$	$\frac{67}{17}$	$\frac{76}{15}$	$\frac{70}{9}$	$\frac{66}{11}$	$\frac{70}{8}$	$\frac{77}{13}$	$\frac{67}{14}$

	N	N								
$\frac{32}{50}$	$\frac{44}{29}$	$\frac{56}{29}$	$\frac{58}{25}$	$\frac{61}{16}$	$\frac{70}{14}$	$\frac{64}{8}$	$\frac{62}{11}$	$\frac{65}{8}$	$\frac{72}{15}$	$\frac{60}{18}$

	N	N								
$\frac{52}{50}$	$\frac{52}{32}$	$\frac{51}{29}$	$\frac{56}{25}$	$\frac{60}{17}$	$\frac{66}{14}$	$\frac{62}{8}$	$\frac{59}{11}$	$\frac{62}{8}$	$\frac{70}{14}$	$\frac{58}{17}$

	N	N								
$\frac{56}{50}$	$\frac{55}{29}$	$\frac{55}{25}$	$\frac{55}{21}$	$\frac{65}{19}$	$\frac{61}{9}$	$\frac{57}{11}$	$\frac{62}{11}$	$\frac{62}{20}$	$\frac{66}{24}$	$\frac{51}{30}$

$\frac{55}{100}$	$\frac{56}{80}$	$\frac{60}{31}$	$\frac{67}{25}$	$\frac{61}{19}$	$\frac{58}{10}$	$\frac{57}{11}$	$\frac{58}{10}$	$\frac{59}{25}$	$\frac{63}{30}$	$\frac{68}{40}$

$\frac{55}{50}$	$\frac{55}{24}$	$\frac{58}{15}$	$\frac{56}{10}$	$\frac{56}{11}$	$\frac{60}{11}$	$\frac{57}{20}$	$\frac{56}{30}$			

Sta.	+	K	-	Elev.
		945.12 ✓		
B.M.	1.02 ✓	945.12 ✓	1.02 ✓	944.10 ✓
10+00				39.5
10+17				39.5
10+20				39.5
10+30				39.5
10+50				39.6
11+00				39.6
11+50				39.7
12+00				39.7
B.M.	1.82 ✓	945.92 ✓	1.02 ✓	944.10 ✓

14.

E

Rt.

5

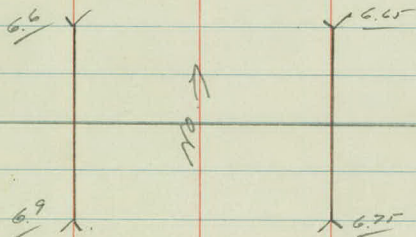
Top Hyd. S.E. Cor. 6th & Johnson

$\frac{52}{100}$	$\frac{51}{50}$	$\frac{51}{26}$	$\frac{56}{51}$	$\frac{60}{17}$	$\frac{53}{20}$	$\frac{53}{100}$
------------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------

$\frac{58}{100}$	$\frac{61}{50}$	$\frac{60}{37}$	$\frac{63}{25}$	$\frac{62}{18}$	$\frac{57}{13}$	$\frac{56}{51}$	$\frac{60}{17}$	$\frac{57}{18}$	$\frac{64}{21}$	$\frac{59}{39}$	$\frac{58}{50}$	$\frac{59}{100}$
------------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------

$\frac{53}{20}$	$\frac{54}{20}$	$\frac{63}{16}$	$\frac{57}{11}$	$\frac{56}{51}$	$\frac{60}{17}$	$\frac{63}{17}$	$\frac{54}{21}$	$\frac{53}{50}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------

$\frac{51}{50}$	$\frac{53}{18}$	$\frac{63}{14}$	$\frac{58}{11}$	$\frac{56}{51}$	$\frac{60}{17}$	$\frac{63}{18}$	$\frac{52}{18}$	$\frac{51}{50}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------



$\frac{20}{50}$	$\frac{25}{29}$	$\frac{51}{29}$	$\frac{57}{25}$	$\frac{52}{20}$	$\frac{55}{17}$	$\frac{62}{16}$	$\frac{62}{14}$	$\frac{57}{9}$	$\frac{55}{51}$	$\frac{58}{9}$	$\frac{63}{15}$	$\frac{55}{18}$	$\frac{53}{20}$	$\frac{45}{27}$	$\frac{41}{50}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	----------------	-----------------	----------------	-----------------	-----------------	-----------------	-----------------	-----------------

$\frac{20}{50}$	$\frac{25}{29}$	$\frac{51}{25}$	$\frac{57}{21}$	$\frac{56}{17}$	$\frac{62}{16}$	$\frac{62}{14}$	$\frac{58}{11}$	$\frac{57}{10}$	$\frac{55}{51}$	$\frac{58}{9}$	$\frac{61}{15}$	$\frac{53}{18}$	$\frac{42}{30}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	----------------	-----------------	-----------------	-----------------

$\frac{20}{50}$	$\frac{24}{29}$	$\frac{49}{29}$	$\frac{49}{25}$	$\frac{50}{17}$	$\frac{60}{15}$	$\frac{55}{5}$	$\frac{54}{51}$	$\frac{57}{7}$	$\frac{58}{15}$	$\frac{53}{17}$	$\frac{50}{50}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	----------------	-----------------	----------------	-----------------	-----------------	-----------------

$\frac{24}{50}$	$\frac{24}{29}$	$\frac{47}{25}$	$\frac{47}{23}$	$\frac{52}{17}$	$\frac{58}{16}$	$\frac{58}{13}$	$\frac{55}{8}$	$\frac{54}{51}$	$\frac{56}{9}$	$\frac{59}{14}$	$\frac{59}{16}$	$\frac{52}{23}$	$\frac{50}{45}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	----------------	-----------------	----------------	-----------------	-----------------	-----------------	-----------------

Top Hyd. S.E. Cor. 7th & Johnson

Sta	+	K	-	Elev.
		945.92		
12+50				940.0
13				40.2
+32				40.3
+43				40.4
+48				40.3
+62				40.3
+77				40.3
+87				40.3
+92				40.3
T.P.	2.64	946.74	1.82	944.10

Lt.

E

Rt.

61

$\frac{37}{50}$ $\frac{34}{30}$ $\frac{54}{26}$ $\frac{56}{19}$ $\frac{61}{17}$ $\frac{65}{16}$ $\frac{65}{14}$ $\frac{61}{10}$ $\frac{60}{8}$ $\frac{59}{7}$ $\frac{61}{8}$ $\frac{65}{14}$ $\frac{65}{16}$ $\frac{59}{17}$ $\frac{51}{32}$ $\frac{51}{50}$

31

$\frac{30}{50}$ $\frac{36}{30}$ $\frac{53}{30}$ $\frac{53}{26}$ $\frac{56}{19}$ $\frac{64}{17}$ $\frac{64}{13}$ $\frac{59}{10}$ $\frac{57}{6}$ $\frac{57}{7}$ $\frac{58}{8}$ $\frac{61}{14}$ $\frac{65}{15}$ $\frac{57}{17}$ $\frac{50}{27}$ $\frac{49}{37}$

$\frac{48}{50}$ $\frac{52}{30}$ $\frac{52}{26}$ $\frac{54}{18}$ $\frac{63}{16}$ $\frac{64}{14}$ $\frac{61}{14}$ $\frac{57}{7}$ $\frac{56}{7}$ $\frac{57}{7}$ $\frac{59}{10}$ $\frac{63}{15}$ $\frac{63}{17}$ $\frac{51}{18}$ $\frac{49}{50}$

$\frac{50}{50}$ $\frac{52}{30}$ $\frac{52}{26}$ $\frac{55}{21}$ $\frac{63}{18}$ $\frac{63}{15}$ $\frac{59}{10}$ $\frac{56}{7}$ $\frac{55}{7}$ $\frac{57}{6}$ $\frac{60}{13}$ $\frac{64}{15}$ $\frac{64}{17}$ $\frac{52}{21}$ $\frac{49}{50}$

$\frac{48}{100}$ $\frac{51}{50}$ $\frac{53}{36}$ $\frac{55}{30}$ $\frac{62}{26}$ $\frac{63}{19}$ $\frac{59}{14}$ $\frac{56}{7}$ $\frac{56}{7}$ $\frac{58}{7}$ $\frac{59}{16}$ $\frac{63}{18}$ $\frac{64}{25}$ $\frac{58}{50}$ $\frac{55}{100}$

$\frac{45}{100}$ $\frac{50}{50}$ $\frac{54}{34}$ $\frac{58}{13}$ $\frac{57}{8}$ $\frac{56}{7}$ $\frac{60}{14}$ $\frac{55}{21}$ $\frac{53}{50}$ $\frac{52}{100}$

$\frac{51}{50}$ $\frac{56}{26}$ $\frac{65}{27}$ $\frac{61}{22}$ $\frac{57}{20}$ $\frac{59}{14}$ $\frac{56}{7}$ $\frac{56}{7}$ $\frac{58}{7}$ $\frac{60}{14}$ $\frac{55}{18}$ $\frac{62}{23}$ $\frac{62}{27}$ $\frac{54}{27}$ $\frac{52}{34}$ $\frac{53}{50}$

$\frac{49}{20}$ $\frac{53}{20}$ $\frac{61}{16}$ $\frac{61}{14}$ $\frac{58}{11}$ $\frac{56}{6}$ $\frac{56}{7}$ $\frac{57}{7}$ $\frac{61}{13}$ $\frac{61}{15}$ $\frac{51}{18}$ $\frac{49}{50}$

$\frac{38}{50}$ $\frac{39}{34}$ $\frac{50}{30}$ $\frac{51}{26}$ $\frac{54}{18}$ $\frac{62}{15}$ $\frac{62}{13}$ $\frac{60}{14}$ $\frac{56}{7}$ $\frac{56}{7}$ $\frac{57}{8}$ $\frac{61}{14}$ $\frac{61}{15}$ $\frac{50}{20}$ $\frac{48}{21}$ $\frac{44}{26}$ $\frac{40}{50}$

N

61

61

61

61

→ East
7th

Sta.	+	Σ	-	Elev.
		946.74		
14+00				940.3
+50				40.6
+60				40.6
15				40.7
+45				40.9
+57				40.9
16				41.0 41.0
+50				41.3
17				41.4
B.M.	1.87	947.45 ✓	1.16	945.58 ✓

LH

E

RT.

7

46	44	61	63	70	64	64	66	68	69	62	57	49	44
50	34	30	25.6	17	14	5	6	8	13	15	19	25	27

39	40	58	58	58	61	69	62	61	64	63	60	43	40
50	34	29.5	25.5	19	16	13	6	6	12	18	30	36	50

Cone Drive

39	40	57	57	57	65	65	61	65	63	60	58	43	38
50	34	29.5	25.5	19	15	12	6	13	16	19.5	25	27	50

39	40	55	56	56	65	66	61	60	62	65	60	58	39	34
50	34	30	25.5	19	16	12	7	6	9	13	18	25	27	50

18	16	54	54	54	64	65	60	58	59	63	62	50	35	33
50	30	30	26	18	15	13	7	5	9	12	17	34	45	50

18	16	54	54	54	65	64	59	58	60	62	62	51	14	19
50	30	30	26	19	15	12	6	5	10	13	16	26	31	50

12	13	52	52	54	63	62	59	57	56	62	59	53	23	28
50	30	29.5	25.5	19	15	13	8	5	10	14	18	25	30	50

15	12	51	51	51	62	63	56	54	57	62	61	54	52	36	37
50	30	29.5	25.5	19	16	14	7	5	8	13	16	19	25	29	50

30	43	49	49	51	60	60	53	53	56	60	59	53	50	57	58
50	33	29.5	25.5	18	16	13	6	5	10	13	16	18	29	34	50

Top of Hyd. S.E. Cor. 8th & Johnson

107

Inv.
6.95

Top. Manhole Cover

54
0Inv.
7.0Inv.
6.95

East.

8th St.Inv.
6.95

Sta.	+	π	-	Elev.
17+10		947.45		941.6
+25				41.8
+44				41.7
157				41.5
18				41.7
+50				41.9
T.P.	4.53	948.67	3.31	944.14
+70				42.0
19				42.1
+05	Alley Rt.	No Section		42.1
+20				42.1
+50				42.3
20				42.8

Lt.

Et

Rt.

8

$\frac{49}{50} \frac{59}{26} \frac{67}{25} \frac{68}{21} \frac{67}{17} \frac{64}{12} \frac{59}{7} \frac{59}{6} \frac{64}{16} \frac{68}{21} \frac{70}{50} \frac{70}{100} \frac{63}{150}$ (water stands)

$\frac{54}{100} \frac{53}{50} \frac{57}{23} \frac{64}{14} \frac{59}{6} \frac{57}{5} \frac{61}{12} \frac{57}{21} \frac{60}{50} \frac{58}{100}$

$\frac{57}{50} \frac{61}{26} \frac{67}{26} \frac{68}{19} \frac{64}{15} \frac{65}{12} \frac{60}{7} \frac{58}{5} \frac{59}{6} \frac{62}{12} \frac{62}{17} \frac{62}{22} \frac{67}{25} \frac{63}{31} \frac{63}{37} \frac{65}{50}$

$\frac{54}{50} \frac{54}{30.5} \frac{54}{25.5} \frac{58}{18} \frac{67}{15} \frac{67}{13} \frac{63}{10} \frac{61}{7} \frac{60}{7} \frac{65}{12} \frac{64}{16} \frac{58}{18} \frac{58}{24} \frac{66}{28} \frac{68}{50}$

$\frac{46}{50} \frac{54}{30} \frac{55}{26} \frac{56}{18} \frac{64}{15} \frac{64}{13} \frac{59}{8} \frac{58}{5} \frac{59}{7} \frac{64}{13} \frac{64}{15} \frac{57}{18} \frac{57}{25} \frac{62}{28} \frac{62}{50}$

$\frac{42}{50} \frac{45}{31} \frac{50}{30} \frac{50}{26} \frac{51}{18} \frac{62}{15} \frac{61}{13} \frac{57}{9} \frac{56}{5} \frac{55}{11} \frac{60}{14} \frac{60}{12} \frac{54}{18} \frac{52}{25} \frac{47}{27} \frac{60}{50}$

$\frac{42}{50} \frac{40}{40} \frac{46}{33} \frac{46}{30} \frac{62}{30} \frac{62}{26} \frac{64}{17} \frac{73}{15} \frac{73}{13} \frac{69}{9} \frac{67}{5} \frac{65}{10} \frac{74}{13} \frac{74}{16} \frac{66}{19} \frac{64}{25} \frac{54}{27} \frac{54}{50}$

$\frac{38}{50} \frac{38}{39} \frac{43}{30} \frac{60}{30} \frac{60}{25} \frac{63}{18} \frac{70}{15} \frac{70}{12} \frac{67}{6} \frac{66}{5} \frac{65}{9} \frac{71}{16} \frac{70}{19} \frac{66}{21} \frac{62}{25} \frac{48}{27} \frac{42}{33} \frac{42}{50}$

$\frac{66}{5} \frac{64}{7} \frac{64}{10} \frac{66}{16} \frac{49}{41} \frac{46}{50}$

$\frac{38}{50} \frac{47}{30} \frac{58}{30} \frac{59}{26} \frac{60}{18} \frac{70}{16} \frac{70}{14} \frac{66}{8} \frac{66}{5} \frac{66}{8} \frac{63}{10} \frac{66}{13} \frac{67}{20} \frac{62}{25} \frac{39}{30} \frac{39}{50}$

$\frac{36}{50} \frac{41}{30} \frac{58}{30} \frac{58}{26} \frac{61}{18} \frac{69}{15} \frac{69}{13} \frac{65}{6} \frac{64}{5} \frac{62}{10} \frac{65}{13} \frac{67}{16} \frac{63}{18} \frac{60}{25} \frac{37}{29} \frac{32}{50} \frac{27}{50}$

$\frac{35}{50} \frac{38}{36} \frac{56}{30} \frac{56}{26} \frac{59}{18} \frac{65}{15} \frac{65}{13} \frac{62}{14} \frac{59}{5} \frac{57}{8} \frac{64}{13} \frac{65}{18} \frac{62}{16} \frac{57}{25} \frac{27}{29} \frac{24}{50}$

Sta	+	K	-	Elev.
		948.67		
20+50				943.0
+65				43.0
+69				42.9
+76				42.8
+89				42.5
21				42.5
+07				42.4
+50				41.7
22				41.0
+50				40.3
23				39.5
+60				39.0

Lt.

E

Rt.

9

$$\begin{array}{cccccccccccccccc} & W & & W & & & & & & & & & & & & & & \\ \frac{33}{20} & \frac{26}{28} & \frac{54}{30} & \frac{54}{26} & \frac{56}{19} & \frac{63}{16} & \frac{63}{14} & \frac{59}{10} & \frac{57}{5} & \frac{58}{9} & \frac{61}{14} & \frac{56}{17} & \frac{52}{25} & \frac{24}{29} & \frac{23}{50} \end{array}$$

$$\begin{array}{cccccccccccccccc} & W & & W & & & & & & & & & & & & & \\ \frac{51}{50} & \frac{50}{33} & \frac{53}{30} & \frac{53}{26} & \frac{58}{18} & \frac{64}{16} & \frac{64}{13} & \frac{60}{9} & \frac{57}{5} & \frac{59}{12} & \frac{62}{14} & \frac{62}{16} & \frac{57}{18} & \frac{52}{25} & \frac{28}{30} & \frac{25}{50} \end{array}$$

$$\begin{array}{cccccccccccccccc} & W & & W & & & & & & & & & & & & & \\ \frac{53}{50} & \frac{53}{30} & \frac{53}{26} & \frac{58}{19} & \frac{63}{18} & \frac{63}{14} & \frac{62}{10} & \frac{58}{5} & \frac{59}{11} & \frac{61}{14} & \frac{61}{16} & \frac{56}{18} & \frac{53}{29} & \frac{52}{50} \end{array}$$

$$\begin{array}{cccccccc} \frac{60}{50} & \frac{58}{25} & \frac{63}{14} & \frac{63}{11} & \frac{59}{5} & \frac{60}{13} & \frac{57}{17} & \frac{56}{25} & \frac{57}{50} \end{array}$$

$$\begin{array}{cccccccccccccccc} \frac{61}{100} & \frac{58}{50} & \frac{56}{28} & \frac{60}{19} & \frac{64}{12} & \frac{62}{7} & \frac{62}{5} & \frac{62}{9} & \frac{63}{12} & \frac{55}{20} & \frac{56}{50} & \frac{54}{100} \end{array}$$

Top Manhole

$$\begin{array}{cccccccc} \frac{61}{50} & \frac{61}{50} & \frac{60}{22} & \frac{66}{13} & \frac{64}{10} & \frac{62}{5} & \frac{63}{13} & \frac{59}{27} & \frac{57}{50} \end{array}$$

$$\begin{array}{cccccccccccccccc} & W & & W & & & & & & & & & & W & & W & \\ \frac{59}{50} & \frac{60}{30} & \frac{60}{26} & \frac{61}{19} & \frac{67}{16} & \frac{68}{13} & \frac{63}{7} & \frac{63}{5} & \frac{65}{7} & \frac{65}{13} & \frac{63}{24} & \frac{52}{28} & \frac{52}{50} \end{array}$$

$$\begin{array}{cccccccccccccccc} & W & & W & & & & & & & & & & & & & \\ \frac{60}{50} & \frac{67}{30} & \frac{67}{26} & \frac{69}{18} & \frac{76}{16} & \frac{76}{13} & \frac{72}{8} & \frac{70}{5} & \frac{73}{9} & \frac{77}{16} & \frac{69}{18} & \frac{67}{25} & \frac{63}{25} & \frac{60}{40} \end{array}$$

$$\begin{array}{cccccccccccccccc} & W & & W & & & & & & & & & & & & & \\ \frac{86}{50} & \frac{74}{30} & \frac{74}{26} & \frac{75}{18} & \frac{84}{16} & \frac{84}{13} & \frac{78}{7} & \frac{77}{5} & \frac{80}{9} & \frac{81}{14} & \frac{74}{23} & \frac{74}{50} \end{array}$$

$$\begin{array}{cccccccccccccccc} & W & & W & & & & & & & & & & & & & \\ \frac{93}{46} & \frac{80}{30} & \frac{80}{26} & \frac{82}{18} & \frac{90}{16} & \frac{90}{14} & \frac{87}{10} & \frac{84}{5} & \frac{89}{14} & \frac{90}{15} & \frac{83}{17} & \frac{79}{25} & \frac{76}{25} & \frac{75}{41} \end{array}$$

$$\begin{array}{cccccccccccccccc} & W & & W & & & & & & & & & & & & & \\ \frac{99}{50} & \frac{93}{35} & \frac{87}{30} & \frac{87}{26} & \frac{90}{18} & \frac{97}{13} & \frac{93}{9} & \frac{92}{5} & \frac{93}{7} & \frac{97}{13} & \frac{97}{15} & \frac{93}{18} & \frac{90}{27} & \frac{91}{50} \end{array}$$

$$\begin{array}{cccccccccccccccc} & W & & W & & & & & & & & & & & & & \\ \frac{85}{43} & \frac{87}{30} & \frac{90}{36} & \frac{90}{26} & \frac{94}{18} & \frac{102}{16} & \frac{102}{13} & \frac{97}{10} & \frac{97}{5} & \frac{97}{8} & \frac{102}{13} & \frac{102}{15} & \frac{96}{18} & \frac{94}{25} & \frac{90}{26} & \frac{84}{47} \end{array}$$

Sta.	+	π	-	Elev.
24		948.67		938.7

B.M	1.89	943.98 ✓	6.58	947.09 ✓
-----	------	----------	------	----------

+35				38.4 .
-----	--	--	--	--------

+ 37				38.6 .
------	--	--	--	--------

+ 52				38.2 .
------	--	--	--	--------

+65				38.0 .
-----	--	--	--	--------

+70				37.9 .
-----	--	--	--	--------

25				36.9 .
----	--	--	--	--------

+50				36.1 .
-----	--	--	--	--------

Lt.

E

Rt.

10

$\frac{8.6}{45}$ $\frac{9.2}{30}$ $\frac{9.2}{26}$ $\frac{9.7}{18}$ $\frac{10.1}{15}$ $\frac{10.5}{13}$ $\frac{10.2}{9}$ $\frac{10.0}{11}$ $\frac{10.4}{13}$ $\frac{10.5}{15}$ $\frac{10.0}{17}$ $\frac{9.5}{25}$ $\frac{9.0}{26}$ $\frac{8.4}{50}$

Top of Hydrant N.E. Cor 10th & Johnson

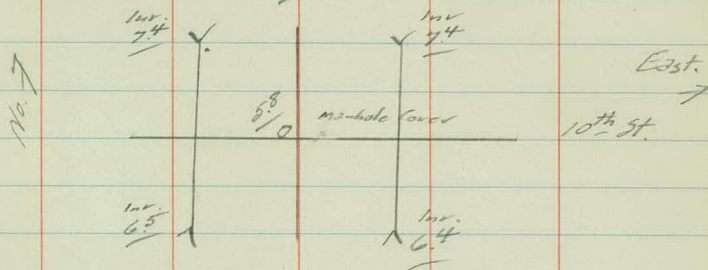
$\frac{5.4}{50}$ $\frac{5.3}{30}$ $\frac{5.3}{26}$ $\frac{6.1}{25}$ $\frac{6.3}{18}$ $\frac{5.6}{16}$ $\frac{5.4}{9}$ $\frac{5.7}{9}$ $\frac{5.7}{18}$ $\frac{6.2}{20}$ $\frac{6.1}{27}$ $\frac{5.2}{30}$ $\frac{5.0}{50}$

$\frac{5.7}{50}$ $\frac{5.5}{32}$ $\frac{5.5}{19}$ $\frac{5.4}{9}$ $\frac{5.6}{9}$ $\frac{5.7}{21}$ $\frac{5.9}{29}$ $\frac{5.9}{50}$

$\frac{5.7}{100}$ $\frac{5.5}{50}$ $\frac{5.5}{26}$ $\frac{5.8}{19}$ $\frac{5.5}{50}$ $\frac{5.6}{50}$ $\frac{5.3}{100}$

$\frac{5.6}{50}$ $\frac{5.2}{27}$ $\frac{7.4}{25}$ $\frac{6.9}{22}$ $\frac{6.4}{18}$ $\frac{5.9}{13}$ $\frac{6.0}{6}$ $\frac{6.2}{18}$ $\frac{7.3}{25}$ $\frac{6.2}{50}$

$\frac{5.2}{50}$ $\frac{5.3}{26}$ $\frac{6.0}{25}$ $\frac{6.1}{19}$ $\frac{7.0}{17}$ $\frac{7.0}{16}$ $\frac{6.2}{13}$ $\frac{6.1}{9}$ $\frac{6.5}{9}$ $\frac{7.2}{15}$ $\frac{7.2}{18}$ $\frac{6.2}{20}$ $\frac{6.0}{26}$ $\frac{4.8}{29}$ $\frac{4.7}{50}$



$\frac{5.5}{50}$ $\frac{5.7}{27}$ $\frac{6.8}{25}$ $\frac{6.8}{18}$ $\frac{7.7}{15}$ $\frac{7.7}{13}$ $\frac{7.2}{12}$ $\frac{7.1}{14}$ $\frac{7.2}{14}$ $\frac{7.9}{15}$ $\frac{6.8}{17}$ $\frac{6.5}{25}$ $\frac{5.3}{28}$ $\frac{5.0}{50}$

$\frac{6.8}{50}$ $\frac{6.9}{27}$ $\frac{7.6}{25}$ $\frac{7.9}{17}$ $\frac{8.6}{16}$ $\frac{8.6}{14}$ $\frac{8.3}{13}$ $\frac{7.9}{14}$ $\frac{8.1}{14}$ $\frac{8.8}{15}$ $\frac{8.8}{17}$ $\frac{7.8}{25}$ $\frac{7.7}{26}$ $\frac{7.0}{50}$

Sta + K - Elev.

943.98

26 935.2

+50 34.4

27 33.5

T.P. 4.29 937.15 11.12 ✓ 935.86 :

+50 32.1

+75 935.12 ✓ 30.8

$$\begin{array}{r}
 935.12 \\
 8.12 \\
 \hline
 943.24 \\
 1.12 \\
 \hline
 942.12
 \end{array}$$

28 30.1

+27 30.1

+34 27.0

B.M. 8.12 943.24 2.03 935.12 ✓

B.M. 1.13 942.11

942.09

Lt.

L

Rt.

11

84	82	85	87	94	90	88	87	95	97	97	88	86	76	76
50	26	25	17	15	13	11	5	13	14	15	17	25	27	50

93	93	96	98	103	103	98	96	103	108	108	99	95	86	85
50	26	25	17	15	13	11	17	14	16	18	25	27	50	50

100	100	105	108	113	113	110	105	106	110	113	113	109	106	100	97
50	26	25	17	15	13	11	7	14	15	17	18	25	26	50	50

56	51	51	54	54	51	45	53	57	57	53	38	32
50	24	17	14	10	10	20	21	23	25	28	50	50

78	71	66	64	50	57	60	60	54	43	37
50	27	14	64	19	31	32	36	38	41	50

Manhole cover

7.0

Top Rail

75	72	75	75	71	68	58	62	66	66	57	50
100	83	50	22	23	36	50	56	58	78	100	100

Top Rail

7.7

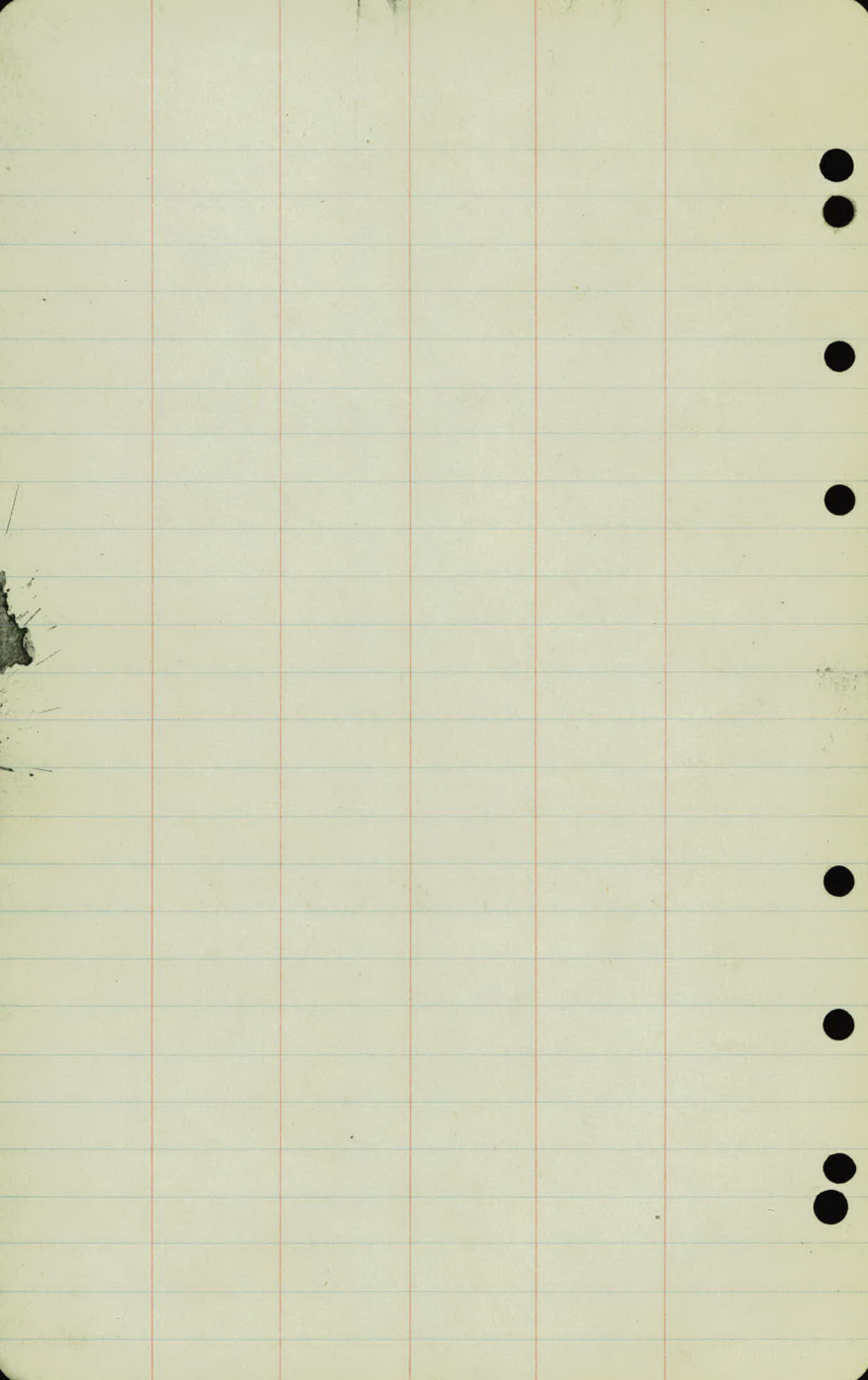
83	83	85	72	71	70	69
50	44	25	17	50	75	75

Top Rail

84	91	98	102	103	94	80	75
79	43	36	18	20	34	38	50

Spike in 14" Oak 60' Rt 27+55

Top Hyd. 10th + Johnson



Levels over base line from
proposed manhole at 4th & Johnson Sts.
White Bear to White Bear Lake @
Right L's to Lake Ave.

5/9/38

16 →

Mr. Crampton
you said Rt. 43 to Lake Ave

To Union

5th of 00
Proposed Manhole

4th St.

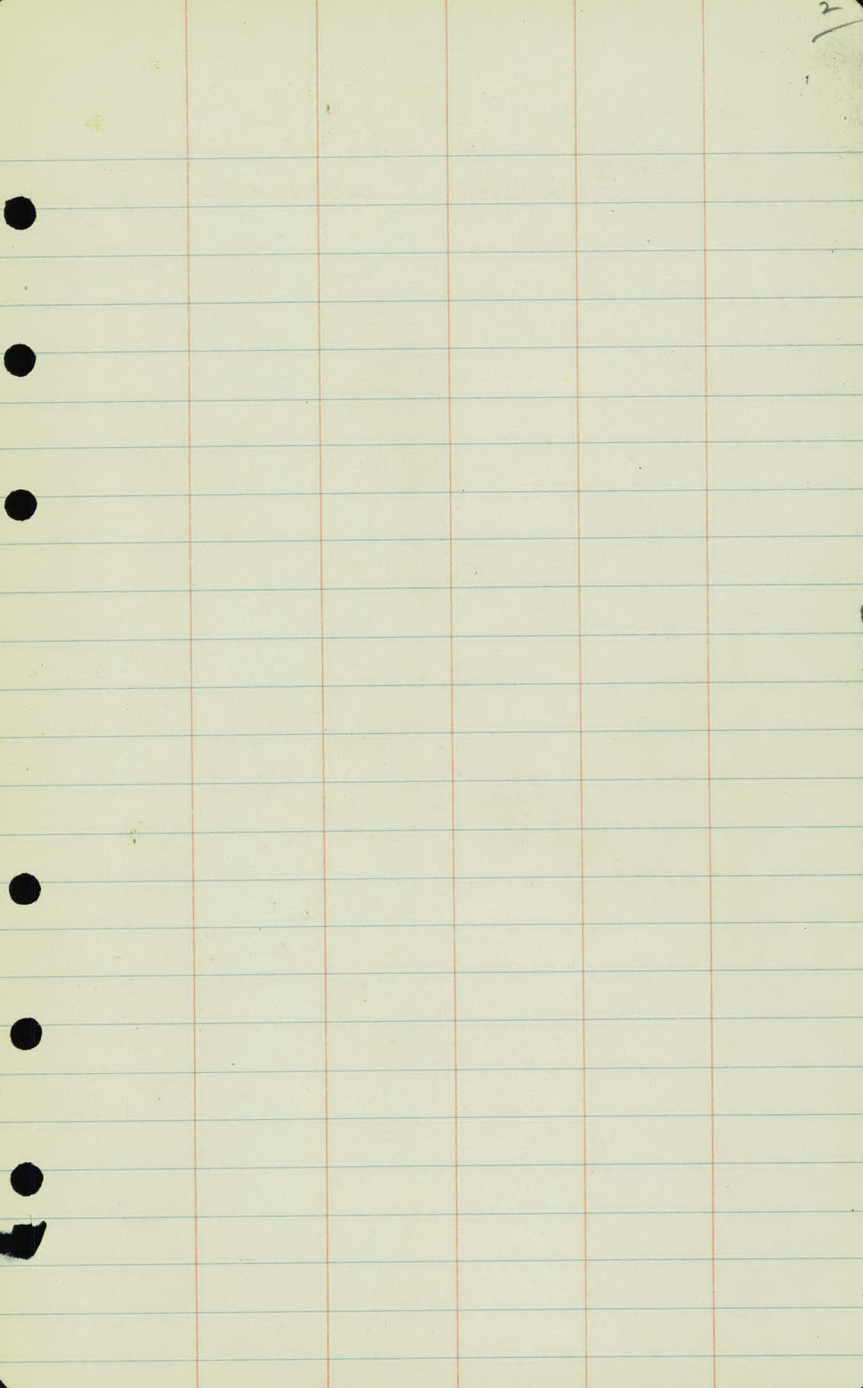
Manhole

South Street

90°

125
outlet

Lake Ave.



Sta.	+	π	-	Elev.
B.M.	1.03	940.79		939.76
0+00			5.78	35.01
0+10			6.4	34.39
0+22			6.7	34.09
0+43	Approx $\pm 4^{\text{th}}$		6.6	34.19
0+66			7.35	33.44
0+71	Grate Drain Lake Ave.		7.6	33.19
0+85	$\pm$ Lake Ave.		7.30	33.49
0+96	Cultry Lake Ave.		7.70	33.09
1+16	Top Head wall		8.14	32.65 Drain Outlet
1+16	Flow line		10.25	30.54
1+50			10.7	30.09

Lt.

E

Ref.

3

Top of Hydrant - 5th Johnson

Sta.	+	π	-	Elev.
------	---	-------	---	-------

		940.79		
--	--	--------	--	--

2+00			12.6	28.19
------	--	--	------	-------

+39			14.2	26.59
-----	--	--	------	-------

+65			17.5	23.29
-----	--	--	------	-------

3+00			18.0	22.79
------	--	--	------	-------

WHITE BEAR CITY.

Johnson Ave.
Sanitary Sewer

4th Laterals N & W

5th St. " W. Invert 8.4

N " 10.45

E " 10.45

S " 10.45

6th St.

W " 8.6 & 13.0

N " 14.55

S " 14.55

E " 11.58 & 14.55

7th St.

N " 15.6

8th St

S " 18.6

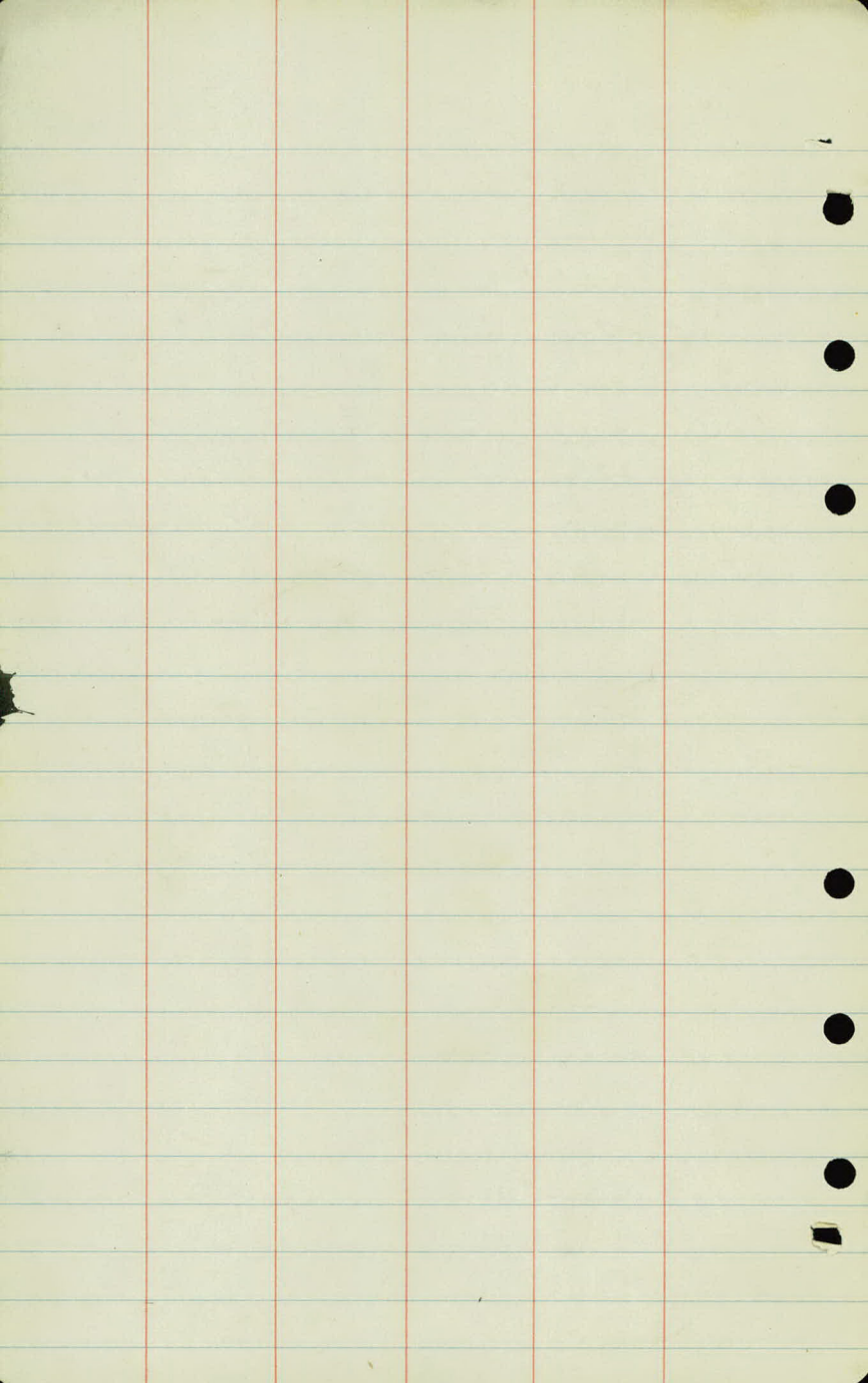
N " 18.6

E " 7.6 & 18.6

NOTE.

These Inverts Are Depths Below

Manhole Rings.



Johnson Ave.
Curb stakes.

Sta.	+	π	-	Grade.
B.M.	1.47	945.57		944.10

13	+92.46			940.48
----	--------	--	--	--------

14				40.51
----	--	--	--	-------

	+25			40.60
--	-----	--	--	-------

	+39	RL.		40.65
--	-----	-----	--	-------

	+50			40.69
--	-----	--	--	-------

	+55	RL.		40.71
--	-----	-----	--	-------

	+75			40.78
--	-----	--	--	-------

15				40.87
----	--	--	--	-------

	+25			40.96
--	-----	--	--	-------

	+29.16	RL.		40.97
--	--------	-----	--	-------

	+30			41.05
--	-----	--	--	-------

Lt

L

Rt

Top Hyd S.E. Cor 7 ^{1/2}

5.09

5.06 ✓

4.97 ✓

4.92

4.88 ✓

4.76

4.79 ✓

4.70 ✓

4.61 ✓

4.60

4.52 ✓

Sta.	+	π	-	Grade
		945.57		
15	+59.16 Rod.			41.08
	+75			41.14
16				41.23
	+25			41.32
	+50			41.41
	+75			41.50
17				41.59
B.M.	D.O.G.	945.54	0.06	945.51
	+50.86 Rod.			41.65
	+75			41.76
18				41.87
	+25			41.98

945.48

4.99

✓
4.43

✓
4.34

✓
4.25

✓
4.16

✓
4.07

4.14

4.13

✓
3.98

412 C.B.Lt.

410 C.B. Rt.

Top Hyd. 3 E. Cor 8th

✓
3.89

400 C.B.Lt.

3.97 R.d

✓
3.78

✓
3.67

✓
3.56

Sta.	+	π	-	Grade.
		795.54		
18	+50			42.10
	+75			42.21
T.P.	5.96	948.17	3.33	942.21
	+91.91 R.L.			42.28
19				42.32
	+21.91 R.L.			42.42
	+25			42.43
	+50			42.55
	+75			42.66
20				42.77
	+25			42.88
	+50			43.00
B.M.	0.05	⁴⁶ 947.54	0.68	947.49

✓
3.44

3.33

5.89

✓
5.85

5.75

✓
5.74

✓
5.62

✓
5.51

✓
5.40

✓
5.29

5.17

Top Hyd S.E. Cor 9¹².

Sta.	+	x	-	Grade.
------	---	---	---	--------

847.54

20 +62.96 Rad.

43.05

B.M.

(947.41)

21 +12.96 Rad.

42.34

+25

42.18

+50

41.83

+75

41.48

22

41.13

+05 R.L.

41.06

+21

40.84

+25

40.78

+50

40.43

+84.37

40.37

+75

40.09

✓
4.49

Top Hyd S.E. Cor Hyd

✓
5.20

5.36

✓
5.71

✓
6.06

6.41

83
35
118

✓
6.76

✓
7.11

7.17

7.45

747.54

22 189.97

39.96

+9.5

39.81

23

39.74

+11

39.66

T.P.

4.80

943.61

8.23

939.31

+2.5

39.56

+50

39.39

+7.5

39.21

24

39.04

+25.78

38.85

B.M.

1.57

943.66

1.57

942.04

(942.09)

+75.78

37.8

7.50

$\frac{15}{4170}$

Pt. 1780 ✓

7.12

9.05 ✓

9.22 ✓

9.40

9.57

9.76

Top Hyd NE Cor 10th St.

5.86

943.66

2.5

37.3

+25

36.78

+50

36.26

+75

35.74

2.6

35.22

+25

34.70

+26.7

34.66

+50

34.18

+51.7

34.14

+75

33.66

B.M.

937

942.96

942.09

2.7

33.14

6.36

✓
6.88

✓
7.40

✓
7.92

✓
8.44

✓
8.96

9.48

10.00

Hyd 10th St.
10-52

9.32

74246

27 +25

32.62

+50

32.1

+59

31.76

+75

31.15

+8578

30.74

Gr. Red.

lt

to

pt.

9.84

TP

10.36

413.5^{.95}

32.1
31.95
31.15

11-31

3,1916
20
628,320

628 13600^{5.73}
3190
4600
4388
2120

5.73
10
5730

10,580

3600

