

Dr. 12A-BK. 19

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

Plat Survey

FLANDRAU ST.

From Leopoldeur Co. To Frost

Also New Notes Sta 11-17 & Sewer

Road Acc't. No. 1946

Sewer Grades

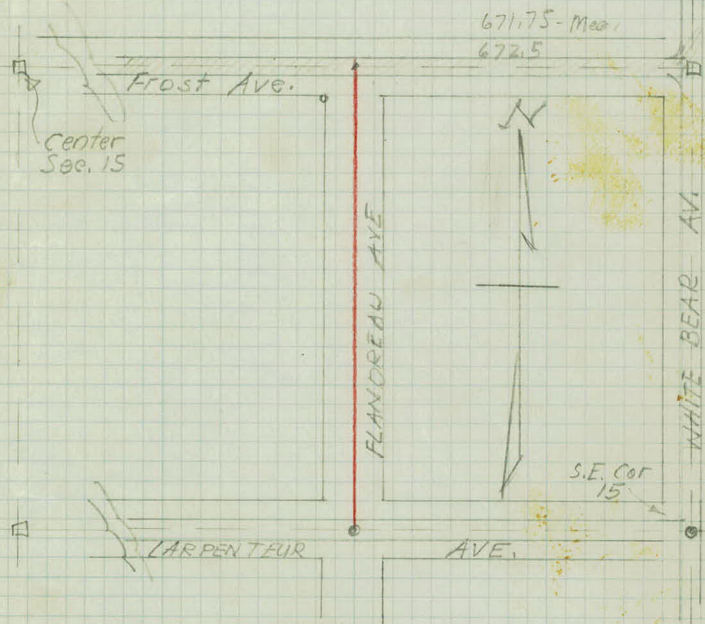
Date Filed 1936

File D. 12A. 19

Plans Survey

Flandreau Ave

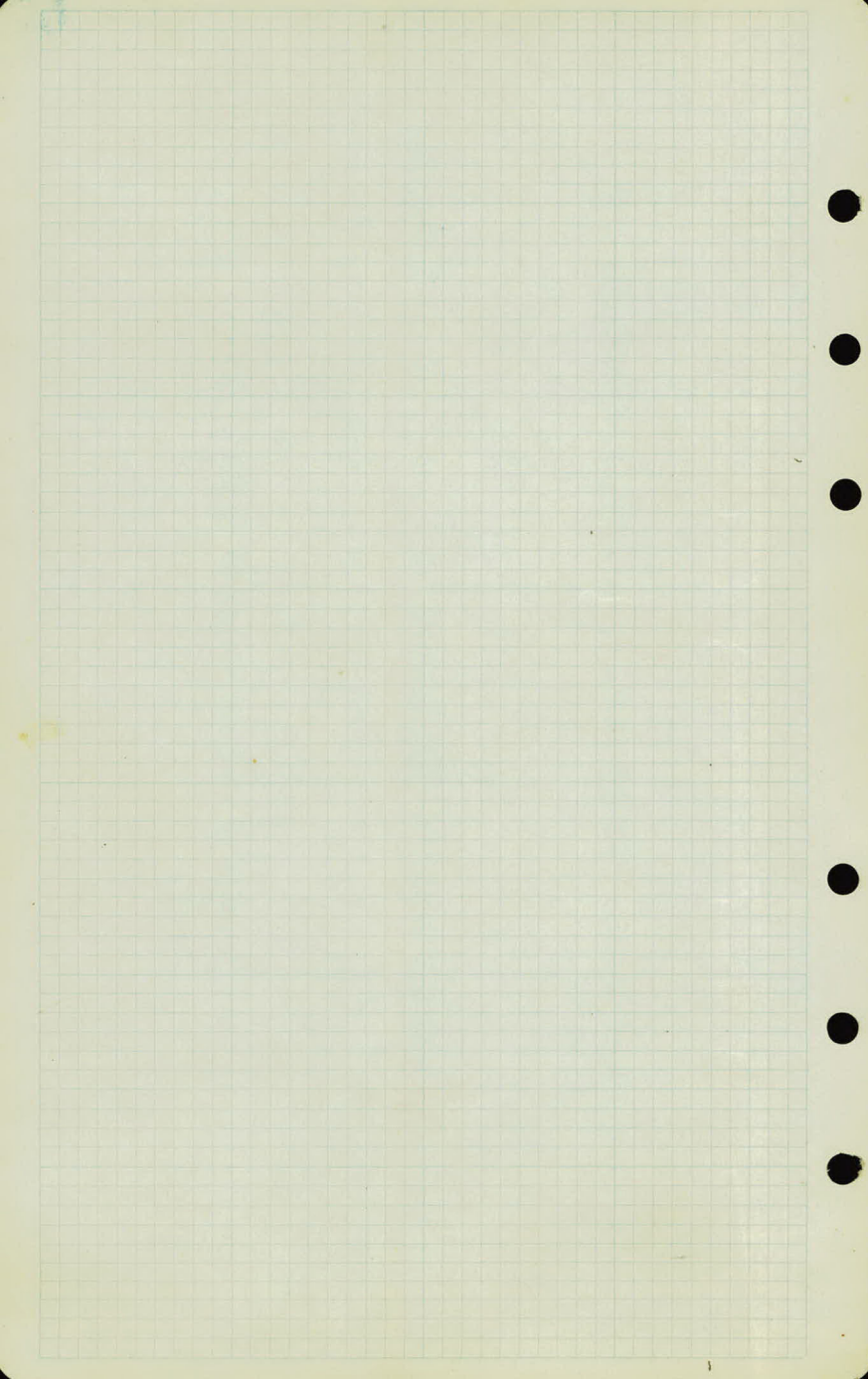
Larpenteur to Frost Ave.



Index

alignment	3
Topography	4-8
X-Sections	9-17
Recommendations	18
Lot Lay out	19

W. H. Carlson
Oct. 5, 1936



Alignment
Flandreau

Larpenteur - Co. Rd. A-2

Station Point.

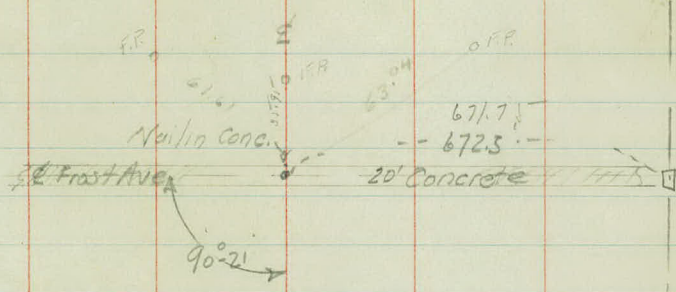
26+27.2

22+78.4 P.O.T.

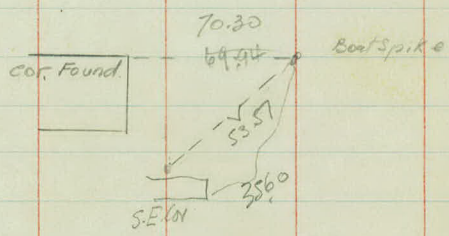
18+28.6 P.O.T.

11+00 P.O.T.

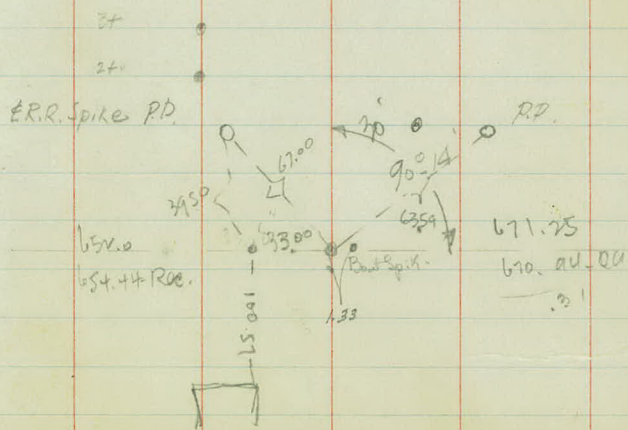
0+00 = 2 Lorpenteur

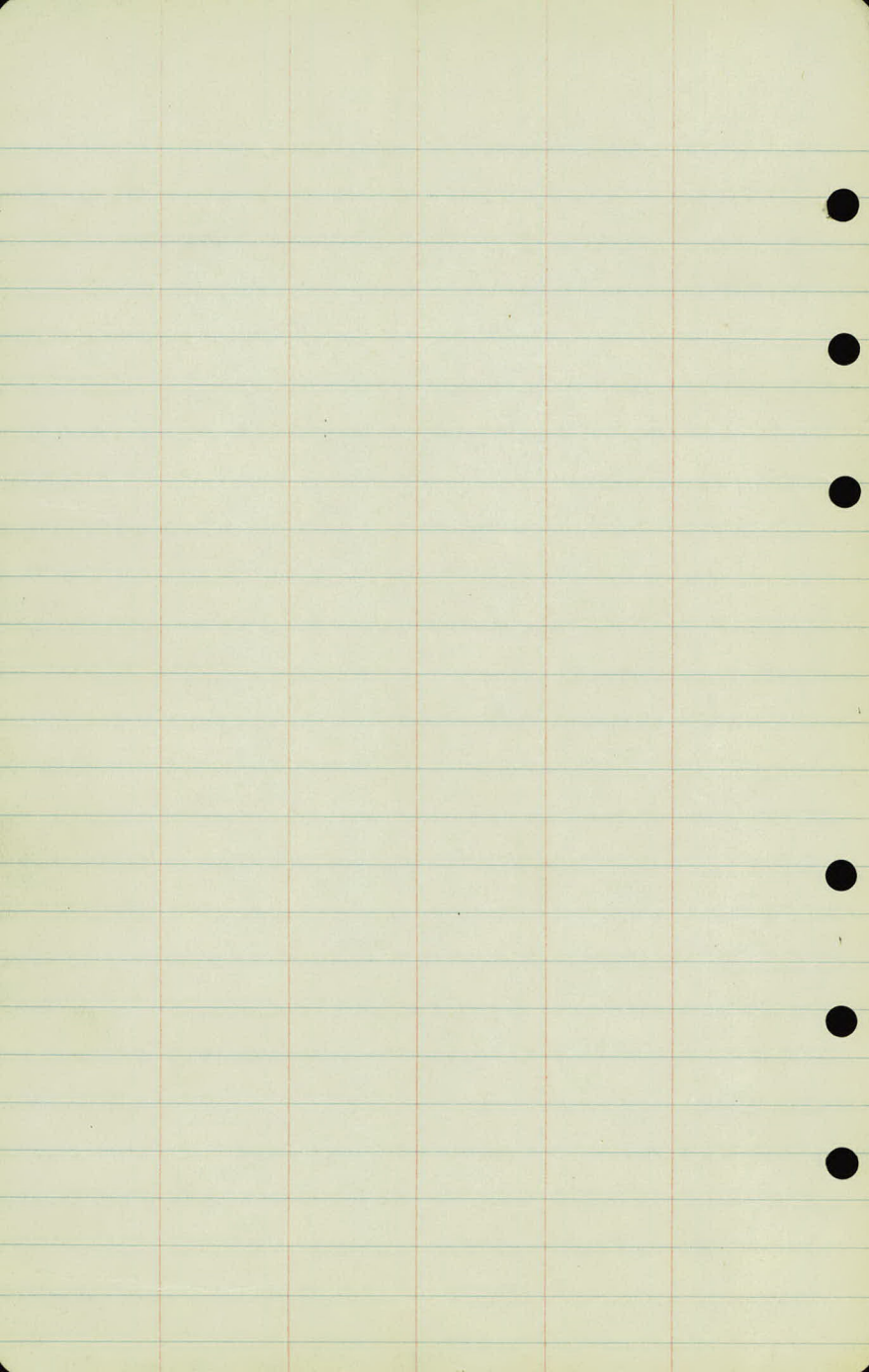


Hub 1x2



White Bear Ave.





Topography.

5

4

3

2

1

oto = Larpenteur

+82-Fire Hydr. 15'

5

+82-1r. Man. 28.8'

3+46- N.E. cor. 20.5'

1+S.F. 26' E.W.

3+20-S.E. Cor. 10.5'

+82-1r. Man. 28.8'

at 58-Fire Hydr. - 16'

at 50-Gate Valve - 5'

12

11

10

9

8

7

6

+77- Fire Hyd. No. 7



+73 - N.W. Cor. 55'
1-S.F.

+43 - S.W. Cor. 55'
+25 - 1/4 Mon. 30.5

19

124.5 - Tr, mon 30' L

18

17

16

15

14

13

+84.5 • 30'
1004 11/2

+79- N.E. Cor. 70

+05- S.E. Cor. 70

1-S.
Sturo.

+845 • 30'
10. Mon

+89- Fire Hyd. 18'
+83- 10. Mon 79.5

+83- 10. Mon. 79.5

27

+27.2 = $\frac{1}{2}$ Frost Ave
+0.5 = 15' X 32' C.M. Culv. (8 ft.)
26 $\frac{15' - 17'}$

25

24

23

22

21

20

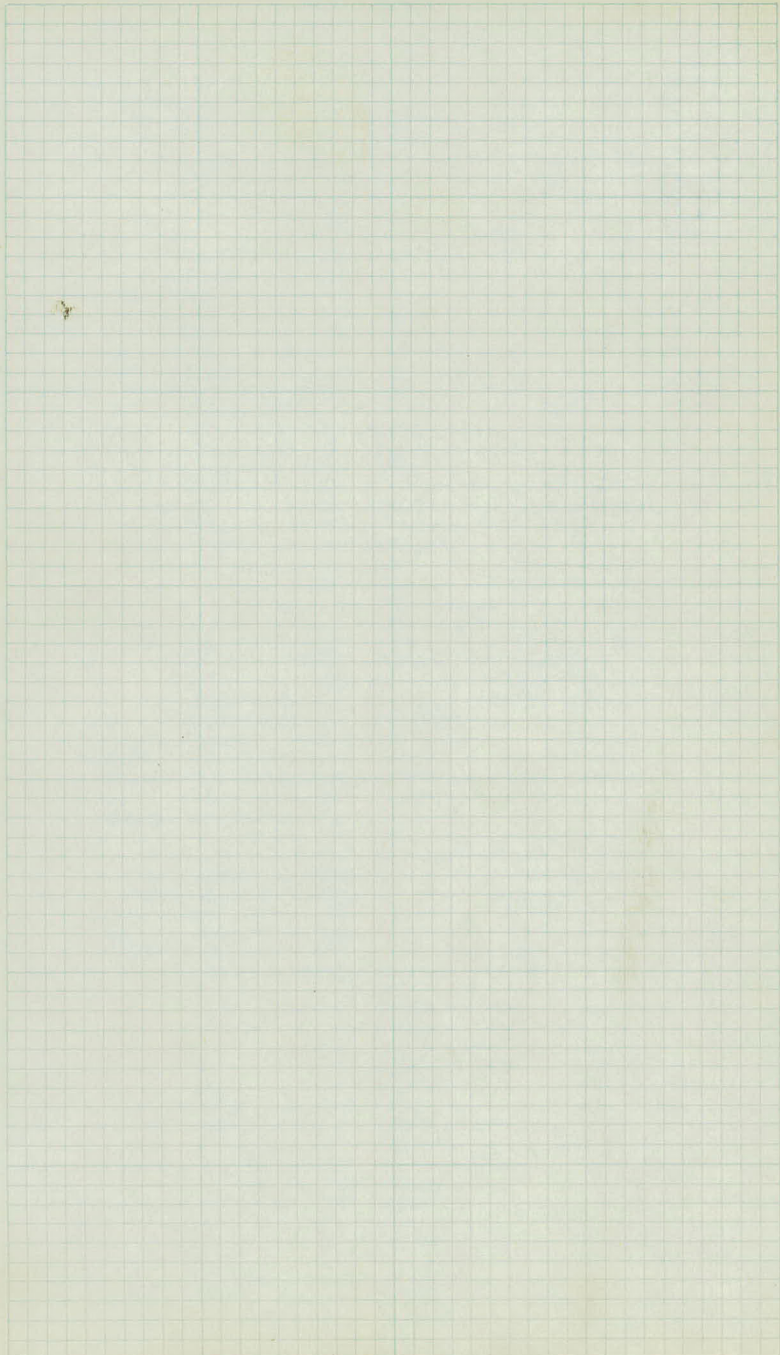
Sloping Curb.

+17.2 - Edge Pav.

+78 - Fire Hyd. 19'

• 30'

+84 Fire Hyd. 16.4



X-sections.
(Flinders St.)

(Bench Levels)

Sta. + - Elev.

B.M.

941.97

T.P. 7.76 949.73 0.32 949.41

B.M. 10.68 960.09 6.01 954.08

T.P. 0.73 959.36

B.M. 11.23 970.59 0.66 969.93

B.M. 8.55 978.48 0.74 977.74

B.M. 0.28 978.01 3.95 974.07

B.M. 2.83 976.90 10.49 966.41

T.P. 0.94 967.35 11.75 955.60

B.M. 2.61 958.21 7.82 948.39

{ Bratzer
{ Ellen

Lt. & Rt.

Top Fire Hyd. S.W. Cor. carpenteur & White Bear Rd.

← { Spike in Power pole N.W. cor.
 Flandreau & Carpenteur

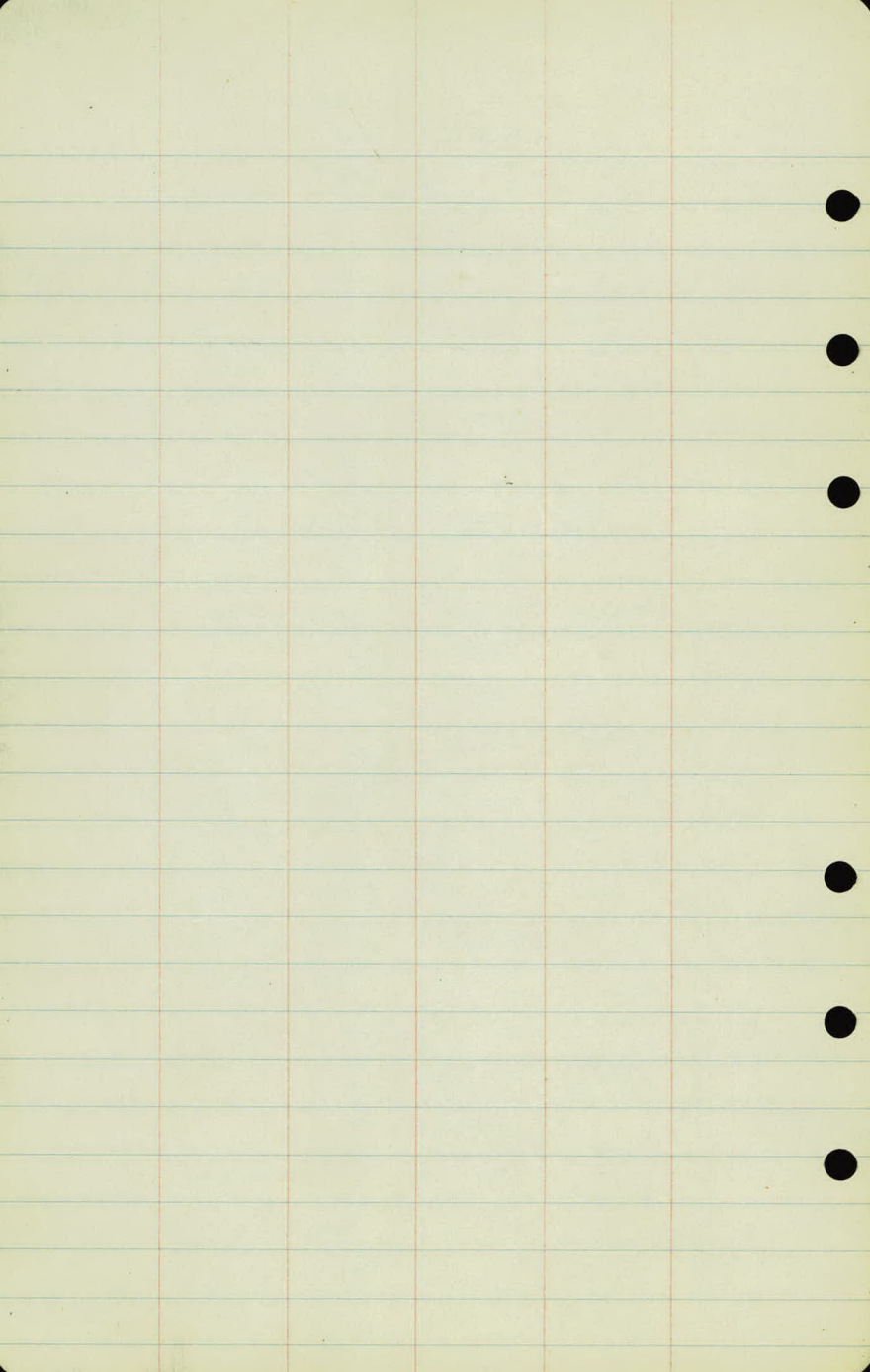
Top Fire Hyd. 15' Lt. Sts. 5+82

Top Fire Hyd. 17' Lt. Sts. 10+77

Top Fire Hyd. 17' Lt. Sts. 15+89

Top Fire Hyd. 17' Lt. Sts. 20+84

Top Fire Hyd. 19' Lt. Sts. 25+78



Preliminary
Cross Sections
(Flandreau St)

Bratager

Wilke

Gillen

Sta	+	π	-	Elev
B.M.	10.03	964.11 ✓		954.09

0 + 00

0 + 16

52.1

0 + 21

52.1

0 + 45

56.0

+51 - Gate Valve 5' Lt. 7.25

+58 Top Hydr. 15' Lt. 3.29

1 + 00

61.1

T.P

8.32 970.64 ✓ 1.79

962.32 ✓

+50

62.3

2

62.0

+50

61.2

3

61.4

+50

62.4

4

64.0

Lt ✕ Rt

See ✕ Larp Ave 120

$$\frac{12.2}{50} \quad \frac{11.9}{14} \quad 12.0 \quad \frac{11.9}{16} \quad \frac{12.0}{50}$$

$$\frac{13.5}{50} \quad \frac{12.4}{13} \quad 12.0 \quad \frac{12.7}{22} \quad \frac{13.2}{50}$$

$$\frac{5.6}{50} \quad \frac{3.2}{18} \quad \frac{8.0}{10} \quad 8.1 \quad \frac{8.5}{8} \quad \frac{7.2}{9} \quad \frac{7.1}{15} \quad \frac{3.5}{19} \quad \frac{4.6}{50}$$

$$\frac{4.3}{50} \quad \frac{1.3}{16} \quad \frac{3.4}{12} \quad 3.0 \quad \frac{2.8}{10} \quad \frac{+1.2}{17} \quad \frac{+0.5}{50}$$

$$\frac{11.8}{50} \quad \frac{10.9}{30} \quad \frac{9.2}{12} \quad 8.3 \quad \frac{8.4}{14} \quad \frac{7.0}{17} \quad \frac{7.0}{30} \quad \frac{7.4}{50}$$

$$\frac{12.6}{50} \quad \frac{11.5}{30} \quad \frac{10.4}{14} \quad \frac{9.3}{6} \quad 8.6 \quad \frac{8.5}{10} \quad \frac{9.0}{14} \quad \frac{8.1}{19} \quad \frac{7.8}{30} \quad \frac{7.1}{50}$$

$$\frac{12.4}{50} \quad \frac{12.1}{30} \quad \frac{11.2}{12} \quad \frac{9.7}{7} \quad 9.4 \quad \frac{9.4}{9} \quad \frac{10.8}{16} \quad \frac{9.9}{30} \quad \frac{8.7}{50}$$

$$\frac{9.3}{50} \quad \frac{9.7}{34} \quad \frac{10.3}{25} \quad \frac{10.6}{9} \quad \frac{9.5}{4} \quad 9.2 \quad \frac{9.5}{10} \quad \frac{10.4}{15} \quad \frac{9.8}{17} \quad \frac{9.7}{30} \quad \frac{8.8}{50}$$

$$\frac{6.8}{50} \quad \frac{7.5}{30} \quad \frac{8.4}{14} \quad 8.2 \quad \frac{8.4}{11} \quad \frac{9.0}{16} \quad \frac{7.8}{20} \quad \frac{7.3}{30} \quad \frac{6.5}{50}$$

$$\frac{6.8}{50} \quad \frac{6.2}{30} \quad \frac{6.2}{13} \quad \frac{6.9}{9} \quad \frac{6.6}{4} \quad 6.6 \quad \frac{6.8}{13} \quad \frac{7.2}{16} \quad \frac{5.7}{19} \quad \frac{5.5}{30} \quad \frac{6.3}{50}$$

Sta	+	π	-	Elev
		970.64 ✓		
4+50				64.6
5				64.7
B.M	5.87	975.80 ✓	0.69	969.95 ✓
+50				65.1
6				67.4
+50				69.7
7				70.7
+50				70.8
8				70.8
+50				72.2
9				73.3
+50				73.3
10				74.4
T.P	4.45	979.13 ✓	1.12	974.68 ✓

L+

X

R+

$$\frac{7.9}{50} \frac{7.2}{80} \frac{6.7}{8} \frac{6.0}{5} 6.0 \frac{5.8}{17} \frac{4.4}{20} \frac{4.5}{30} \frac{4.6}{50}$$

$$\frac{7.3}{50} \frac{9.0}{30} \frac{8.4}{16} \frac{6.0}{5} 5.9 \frac{6.1}{18} \frac{5.4}{20} \frac{5.0}{30} \frac{5.1}{50}$$

969.93

Top of H/H L+Sta 5+82

$$\frac{10.5}{50} \frac{11.2}{21} \frac{10.7}{6} 10.7 \frac{11.0}{17} \frac{11.3}{50}$$

$$\frac{6.0}{50} \frac{6.2}{28} \frac{7.0}{16} \frac{8.3}{10} 8.4 \frac{8.8}{13} \frac{9.2}{20} \frac{9.7}{23} \frac{9.9}{33} \frac{10.9}{45} \frac{10.6}{50}$$

$$\frac{6.5}{50} \frac{6.0}{28} \frac{5.9}{17} \frac{6.3}{14} \frac{6.5}{10} \frac{6.1}{7} 6.1 \frac{6.1}{8} \frac{6.3}{13} \frac{6.8}{16} \frac{6.3}{18} \frac{7.0}{23} \frac{7.5}{36} \frac{8.3}{45} \frac{8.8}{50}$$

$$\frac{7.7}{50} \frac{6.2}{21} \frac{5.4}{12} \frac{5.0}{8} 5.1 \frac{5.4}{13} \frac{6.7}{16} \frac{5.3}{19} \frac{6.7}{43} \frac{6.3}{50}$$

$$\frac{8.1}{50} \frac{7.6}{33} \frac{6.5}{20} \frac{5.6}{11} \frac{5.1}{8} 5.0 \frac{4.4}{12} \frac{4.8}{16} \frac{3.9}{18} \frac{4.2}{23} \frac{5.1}{50}$$

$$\frac{6.4}{50} \frac{6.7}{45} \frac{6.5}{33} \frac{5.8}{19} \frac{5.0}{8} 5.0 \frac{4.4}{13} \frac{4.5}{16} \frac{4.0}{18} \frac{4.0}{50}$$

$$\frac{4.2}{50} \frac{3.8}{22} \frac{4.0}{17} \frac{3.0}{8} 3.6 \frac{3.2}{12} \frac{3.5}{25} \frac{2.8}{50} \frac{4.0.3}{154 \text{ Floor House}}$$

$$\frac{2.2}{50} \frac{2.3}{23} \frac{2.5}{16} \frac{2.0}{8} 2.5 \frac{2.4}{12} \frac{2.7}{16} \frac{2.2}{19} \frac{2.7}{23} \frac{3.5}{50}$$

$$\frac{2.4}{50} \frac{2.6}{21} \frac{2.1}{16} \frac{2.2}{8} 2.5 \frac{2.5}{12} \frac{2.8}{16} \frac{2.4}{18} \frac{3.1}{22} \frac{4.1}{50}$$

$$\frac{1.9}{50} \frac{2.0}{21} \frac{1.3}{17} \frac{1.6}{14} \frac{1.1}{8} 1.4 \frac{1.4}{16} \frac{1.0}{19} \frac{1.5}{23} \frac{2.1}{50}$$

Station	+	π	-	Elev.
		979.13 ✓		
10 + 50				74.8
B.M.			1.39	977.74 ✓
11				73.7
+ 50				71.5
12				68.8
+ 50				68.6
13				69.9
+ 50				71.4
14				72.7
+ 50				72.4
15				71.3
+ 50				70.8
B.M.			5.08	974.05 ✓
16				70.4

Lt. E 121

$$\begin{array}{r} 3.8 \ 4.2 \ 4.9 \ 4.4 \ 4.0 \\ 50 \ 44 \ 21 \ 17 \ 10 \end{array} \ 43 \ \begin{array}{r} 4.1 \ 4.2 \ 3.6 \ 4.2 \ 5.5 \\ 8 \ 16 \ 18 \ 23 \ 50 \end{array}$$

977.74 Top Hyd 17' Lt Sta 10777

$$\begin{array}{r} 3.7 \ 4.5 \ 5.5 \ 6.0 \ 5.4 \\ 50 \ 40 \ 18 \ 15 \ 10 \end{array} \ 5.4 \ \begin{array}{r} 5.8 \ 4.8 \ 6.6 \\ 16 \ 18 \ 50 \end{array}$$

$$\begin{array}{r} 6.4 \ 7.6 \ 7.7 \ 8.4 \ 8.4 \ 7.7 \\ 50 \ 38 \ 17 \ 15 \ 13 \ 9 \end{array} \ 7.6 \ \begin{array}{r} 7.7 \ 8.0 \ 7.5 \ 9.3 \\ 12 \ 16 \ 19 \ 50 \end{array}$$

$$\begin{array}{r} 9.4 \ 9.8 \ 9.8 \ 10.5 \ 10.1 \\ 50 \ 39 \ 15 \ 12 \ 7 \end{array} \ 10.3 \ \begin{array}{r} 10.4 \ 10.6 \ 10.4 \ 11.7 \\ 11 \ 16 \ 19 \ 50 \end{array}$$

$$\begin{array}{r} 9.6 \ 9.8 \ 10.3 \ 9.8 \\ 50 \ 26 \ 12 \ 8 \end{array} \ 10.5 \ \begin{array}{r} 10.8 \ 10.6 \ 11.1 \ 11.8 \ 12.0 \\ 16 \ 19 \ 30 \ 42 \ 50 \end{array}$$

$$\begin{array}{r} 8.3 \ 8.9 \ 9.3 \ 9.2 \ 8.7 \\ 50 \ 17 \ 14 \ 11 \ 9 \end{array} \ 9.2 \ \begin{array}{r} 9.3 \ 9.8 \ 9.2 \ 9.7 \ 9.5 \ 10.0 \ 9.5 \\ 9 \ 16 \ 17 \ 22 \ 30 \ 39 \ 50 \end{array}$$

$$\begin{array}{r} 6.7 \ 7.4 \ 7.4 \ 7.7 \ 7.4 \\ 50 \ 33 \ 16 \ 13 \ 5 \end{array} \ 7.7 \ \begin{array}{r} 7.9 \ 7.2 \ 7.5 \ 7.5 \\ 14 \ 18 \ 23 \ 50 \end{array}$$

$$\begin{array}{r} 5.3 \ 5.8 \ 6.2 \\ 50 \ 18 \ 14 \end{array} \ 6.4 \ \begin{array}{r} 6.6 \ 6.2 \ 5.8 \\ 15 \ 20 \ 50 \end{array}$$

$$\begin{array}{r} 5.6 \ 6.0 \ 6.7 \ 6.9 \\ 50 \ 17 \ 14 \ 8 \end{array} \ 6.7 \ \begin{array}{r} 6.9 \ 6.3 \ 6.6 \ 6.2 \ 6.2 \\ 15 \ 18 \ 24 \ 34 \ 50 \end{array}$$

$$\begin{array}{r} 6.6 \ 7.7 \ 8.2 \ 8.0 \\ 50 \ 18 \ 15 \ 7 \end{array} \ 7.8 \ \begin{array}{r} 8.1 \ 8.4 \ 8.5 \ 8.7 \\ 12 \ 19 \ 24 \ 50 \end{array}$$

$$\begin{array}{r} 8.8 \ 8.4 \ 8.9 \ 8.9 \ 8.2 \\ 50 \ 18 \ 16 \ 11 \ 7 \end{array} \ 8.3 \ \begin{array}{r} 8.8 \ 9.2 \ 8.9 \ 9.4 \ 9.1 \ 8.9 \\ 11 \ 16 \ 19 \ 21 \ 27 \ 50 \end{array}$$

974.07 Top of Hyd 17' Lt Sta 15789

$$\begin{array}{r} 9.3 \ 9.1 \ 8.8 \\ 50 \ 30 \ 16 \end{array} \ 8.7 \ \begin{array}{r} 8.7 \ 8.6 \ 9.1 \ 8.7 \ 9.6 \\ 9 \ 17 \ 21 \ 26 \ 50 \end{array}$$

Station	+	π	-	Elev.
		979.13 ✓		
16 + 50				70.7
17				71.1
+ 50				72.2
18				72.4
+ 50				72.2
T.P.	1.03	973.37 ✓	6.79	972.34 ✓
19				70.7
+ 50				67.9
20				65.1
+ 50				63.5
B.M.			6.97	966.40 ✓
21				63.2
+ 50				64.2
22				64.4

Lt. E Rt.

98	98	93	8.7	9.2	9.2	8.1		8.5	7.6	7.2	7.4	7.2
50	40	22	17	15	13	11	8.4	15	17	23	34	50

9.1	8.8	8.2		8.3	7.5	9.1	7.3	7.3
50	30	13	8.0	14	17	22	31	50

6.7	6.5	7.2	6.9		6.9	7.4	6.8	7.2	7.0	7.2
50	17	14	8	6.9	8	16	18	23	32	50

6.6	6.8	6.7	7.4	7.0		6.9	6.4	6.6	6.4
50	44	18	14	9	6.7	14	17	41	50

9.1	7.5	6.9	7.5	7.2		7.2	6.7	5.5	5.9	5.2
50	23	18	12	10	6.9	7	17	19	22	50

4.1	3.0	2.4	2.9	2.7	2.5		2.6	1.1	0.8	0.7
50	33	17	15	10	8	2.7	17	20	27	50

7.9	5.6	5.9	5.0		5.5	3.4	4.0	3.1	3.1
50	18	15	10	5.5	14	17	22	32	50

15.5	13.4	12.9	9.4	8.3		8.0	8.2	6.2	5.2
50	28	21	12	6	8.3	9	22	31	50

16.8	14.9	14.4	10.7		10.0	9.5	9.5	7.9	6.5
50	24	20	12	9.9	16	18	23	32	50

966.41

Top of Hyl Lt 11. Sta 20+84

14.2	12.7	11.4	10.7	10.2		10.3	9.4	9.8	9.4	7.9
50	36	17	14	10	10.2	16	18	23	26	50

12.9	10.8	10.0	9.8	9.5		9.3	7.4	7.9	7.1	7.1
50	32	21	15	13	9.2	14	18	22	33	50

12.0	10.6	9.8	9.0		9.1	7.6	7.7	7.3	5.8
50	34	15	12	9.0	14	17	24	27	50

Station	+	π	-	Elev.
		973.37 ✓		
22+50				64.4
23				62.9
T.P	0.21	960.11 ✓	13.47	959.90 ✓
+50				59.0
24				54.3
+50				50.1
25				48.4
B.M	0.89	949.28 ✓	11.73	948.38 ✓
+50				46.7
+76				45.1
+91				43.2
26+00				42.0
+06	Ditch			41.2
+11	Shoulder			40.8

Lt R Rt

$$\frac{13.8}{50} \frac{11.9}{34} \frac{11.1}{23} \frac{10.7}{17} \frac{9.5}{11} \frac{9.0}{9.0} \frac{8.1}{14} \frac{8.1}{17} \frac{7.3}{23} \frac{6.9}{32} \frac{6.9}{50}$$

$$\frac{14.7}{50} \frac{13.7}{37} \frac{12.7}{23} \frac{12.7}{16} \frac{11.2}{11} \frac{10.5}{10.5} \frac{9.8}{8} \frac{9.9}{15} \frac{9.0}{17} \frac{8.8}{25} \frac{8.3}{33} \frac{8.3}{50}$$

$$\frac{4.8}{50} \frac{3.4}{35} \frac{2.5}{22} \frac{2.5}{17} \frac{1.2}{12} \frac{1.1}{1.1} \frac{0.8}{8} \frac{1.3}{16} \frac{0.3}{18} \frac{0.5}{25} \frac{+0.7}{50}$$

$$\frac{10.3}{50} \frac{8.5}{36} \frac{7.7}{17} \frac{6.2}{13} \frac{5.8}{5.8} \frac{5.6}{6} \frac{5.7}{15} \frac{4.4}{18} \frac{3.6}{31} \frac{3.3}{50}$$

$$\frac{13.6}{50} \frac{12.4}{35} \frac{12.0}{21} \frac{10.7}{14} \frac{10.0}{10.0} \frac{9.8}{11} \frac{10.3}{15} \frac{9.1}{17} \frac{9.1}{23} \frac{8.1}{32} \frac{7.2}{50}$$

$$\frac{14.4}{50} \frac{13.3}{34} \frac{12.7}{18} \frac{11.7}{11.7} \frac{11.8}{10} \frac{12.3}{14} \frac{12.2}{15} \frac{11.6}{17} \frac{10.8}{31} \frac{10.0}{50}$$

948.39 Top of Hyd 19' Lt Sta 25+78

$$\frac{4.6}{50} \frac{3.7}{27} \frac{4.0}{26} \frac{3.6}{21} \frac{3.2}{14} \frac{2.6}{2.6} \frac{2.2}{7} \frac{2.4}{15} \frac{1.5}{19} \frac{+0.2}{50}$$

$$\frac{5.8}{50} \frac{4.2}{16} \frac{5.3}{13} \frac{5.2}{11} \frac{4.6}{9} \frac{4.2}{4.2} \frac{4.3}{8} \frac{5.1}{10} \frac{4.9}{13} \frac{3.4}{15} \frac{2.6}{18} \frac{0.9}{50}$$

$$\frac{5.6}{50} \frac{4.4}{28} \frac{5.7}{26} \frac{6.2}{18} \frac{7.2}{16} \frac{7.0}{13} \frac{7.0}{12} \frac{6.1}{9} \frac{8.0}{12} \frac{7.9}{17} \frac{1.7}{19} \frac{+0.5}{50}$$

$$\frac{13.0}{50} \frac{10.8}{16} \frac{7.7}{10} \frac{7.3}{7.3} \frac{7.5}{15} \frac{9.1}{18} \frac{8.4}{50}$$

$$\frac{13.0}{50} \frac{10.6}{17} \frac{9.2}{14} \frac{8.1}{8.1} \frac{7.6}{15} \frac{9.6}{19} \frac{8.4}{50}$$

$$\frac{14.1}{100} \frac{11.1}{50} \frac{8.5}{8.5} \frac{6.0}{50} \frac{3.4}{100}$$

Sta + π - Elev

94928 ✓

26+27.2 ✓

± Frost Ave 40.7

B.M

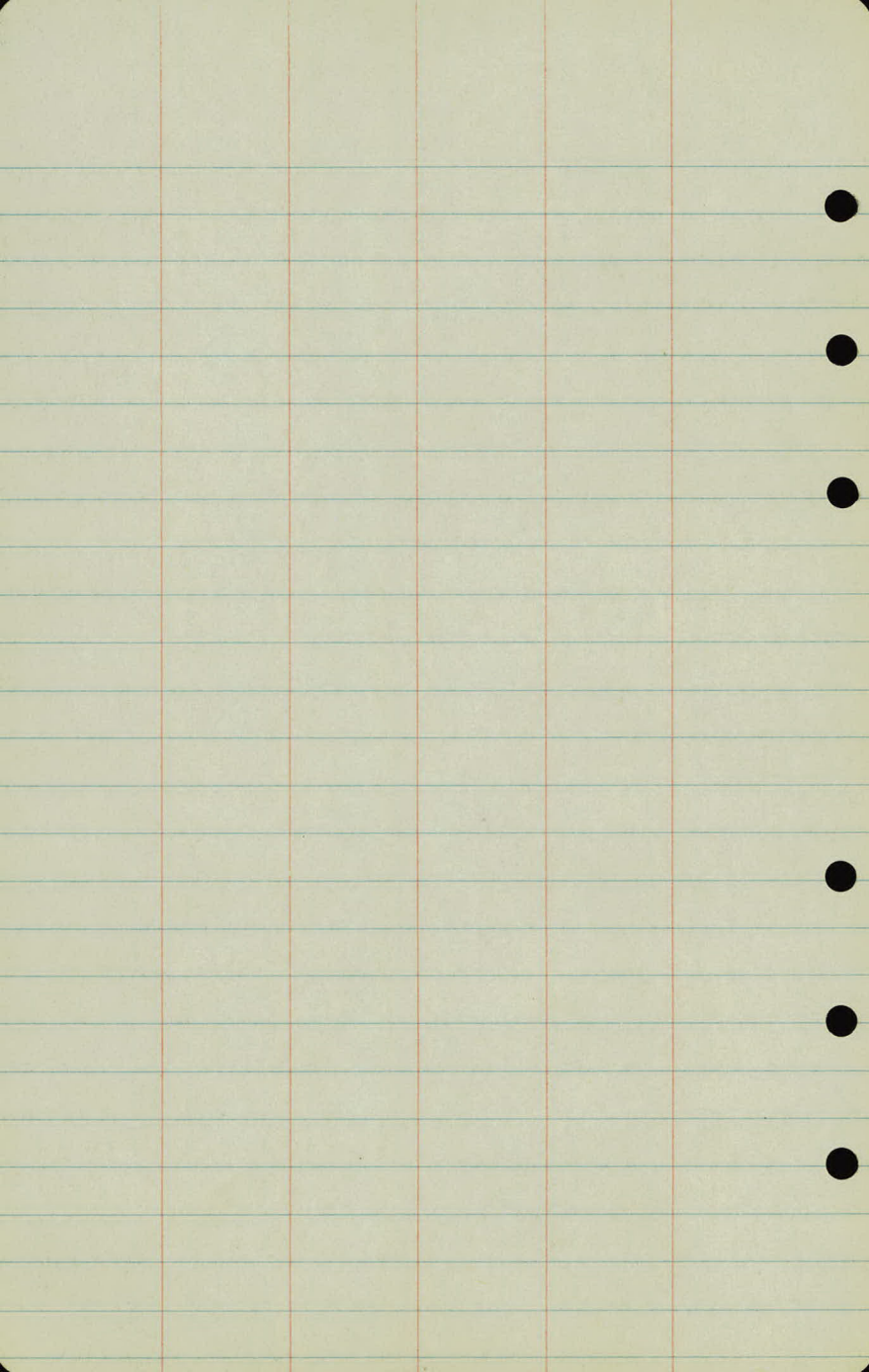
0.89

948.39 ✓

LT Z RT

$$\frac{14.0}{50} \quad \frac{11.3}{50} \quad 86 \quad \frac{6.0}{50} \quad \frac{3.4}{100}$$

Top of Hyd 19' LT 54 25+84



Larp Ave

52 + 98.47 - Wh. Beer

39 + 75.25 meat

13 23.22

76 49.82

13 24 77 - Rec.

13 23.22 plan

1.55

295.72

295.72

59144

63.

65444

Rec.

670.94

654.44

1325.38

Meas.

671.25

652

1323.25

Plan

1323.22

(old Record)
1325.33

12470-

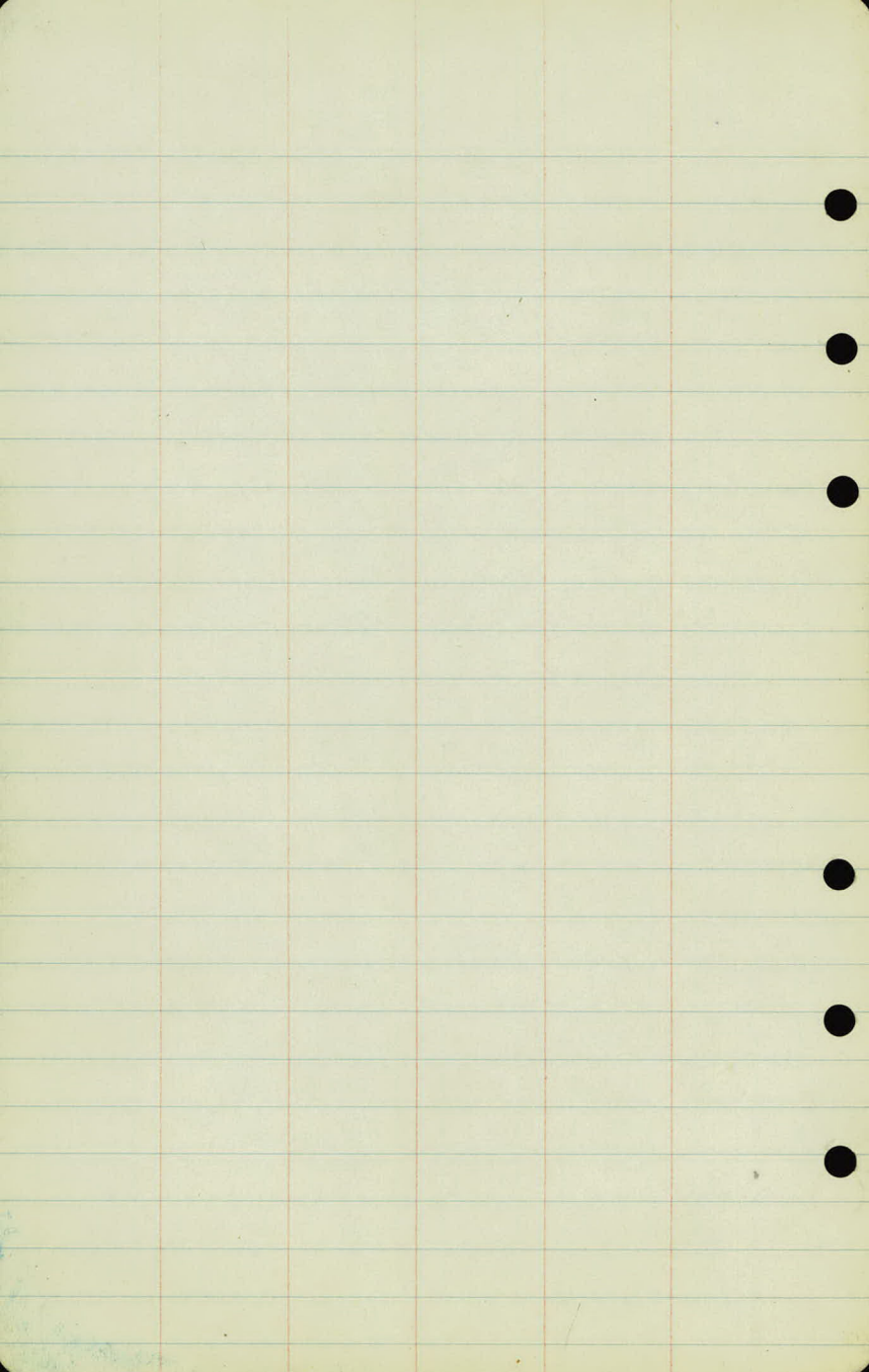
Recommendations.

Make grade to Drain Low Spot
on the Left Side 3+50

Hydrants: -

All Hydrant Top Elev.
are taken, suggest grade line
to be 4.0' below top of
Hydrants,

See Lorpenteur Ave for grade
at Sta 0+00



Frost

Ave

67.5

43'

43'

296.07'
50

296.07'
1

100'

60'

100'

296.07'
50

296.07'
1

100'

49.5

33'

Ave.

Flandreau

2031.32
-49.5
2080.82

2623.82

2636.5

2635.08

White Bear Ave.

~~257.0~~
2640.6

33'

26

25

133.26

60'

133.26

26
295.72

25

295.72

131.32

49.5

49.5

Carpenters Ave

SE Cor.
300.15

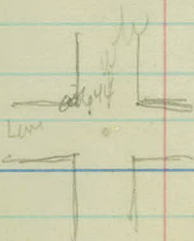
$$\begin{array}{r} 796.07 \\ 296.07 \\ 49.5 \\ \hline 20 \\ 671.64 \end{array}$$

Frost M_g. 2652.72
 1320.36

$$\begin{array}{r} 295.72 \checkmark \\ 295.72 \checkmark \\ \hline 591.44 \\ 49.5 \\ 30 \\ \hline 670.94 \end{array}$$

$$\begin{array}{r} 296.07 \\ 296.07 \\ \hline 592.14 \\ 63 \\ \hline 655.14 \text{ Rec.} \\ 671.64 \\ \hline 1326.78 \text{ Rec.} \end{array}$$

$$\begin{array}{r} 672.50 \\ 671.64 \\ \hline 86 \end{array}$$



$$\begin{array}{r} 671.75 \\ 70.94 \\ \hline 742.69 \end{array}$$

$$\begin{array}{r} 52+9847 \\ 6+70.94 \\ \hline 46+27.53 \end{array}$$

$$\begin{array}{r} 46+27.53 \\ 45+94.75 \\ \hline 33.28 \end{array}$$

$$\begin{array}{r} 795.72 \\ 295.72 \\ \hline 591.44 \\ 671.64 \\ \hline 654.44 \end{array}$$

$$\begin{array}{r} 795.72 \\ 295.72 \\ \hline 591.44 \\ 671.64 \\ \hline 654.44 \end{array}$$

$$\begin{array}{r} 654.44 \\ 670.94 \\ \hline 1325.38 \\ 22.70 \\ \hline 2.13 \end{array}$$

$$\begin{array}{r} 2049.20 \\ 1874.16 \\ \hline 676.28 \\ 652 \\ \hline 1323.28 \end{array}$$

Flandrau St.
Carpenteur - Frost Ave.

Slope Stakes.

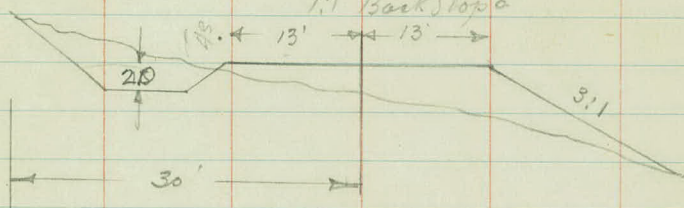
26' Top.

3:1 Slope.

2.0 Ditch.

Var. Bot.

1:1 Back Slope



Rev. Sec. Apr. 1937

W. H. Carlson
April 21, 1937

Sta.	+	π	-	grade
B.M.	14.37	968.45		954.08

0+0				52.0
-----	--	--	--	------

0+16				}
------	--	--	--	---

0+21				
------	--	--	--	--

0+50				52.0
------	--	--	--	------

1				55.5
---	--	--	--	------

+50				58.3
-----	--	--	--	------

2				60.3
---	--	--	--	------

+50				61.7
-----	--	--	--	------

3				62.7
---	--	--	--	------

+50				63.7
-----	--	--	--	------

4				64.7
---	--	--	--	------

W. H. Carlson 21
K. Anker
L. B. Hendrix
A. Moschler
C. J. Gottlieb

At E Pt.

P.D. N.W. Co

$$16.5 \quad 30 \overline{) 7.5} \quad \begin{array}{r} 1.5 \\ +2.5 \\ \hline \end{array} \quad \begin{array}{r} 7.6 \\ +8.9 \\ \hline 30 \end{array}$$

$$13.0 \quad 30 \overline{) 7.0} \quad \begin{array}{r} 9.0 \\ +4.0 \\ \hline \end{array} \quad \begin{array}{r} 3.6 \\ +9.4 \\ \hline 30 \end{array}$$

$$10.2 \quad 30 \overline{) 8.7} \quad \begin{array}{r} 6.3 \\ +3.9 \\ \hline \end{array} \quad \begin{array}{r} 4.7 \\ +5.5 \\ \hline 30 \end{array}$$

$$8.2 \quad 30 \overline{) 9.2} \quad \begin{array}{r} 6.4 \\ +1.8 \\ \hline \end{array} \quad \begin{array}{r} 5.2 \\ +2.6 \\ \hline 30 \end{array}$$

$$6.8 \quad 1.8 \quad 211 \overline{) 9.8} \quad \begin{array}{r} 7.1 \\ -0.3 \\ \hline \end{array} \quad \begin{array}{r} 7.6 \\ +1.2 \\ \hline 30 \end{array}$$

$$5.8 \quad 7.8 \quad 30 \overline{) 6.5} \quad \begin{array}{r} 7.0 \\ -1.2 \\ \hline \end{array} \quad \begin{array}{r} 7.4 \\ +0.4 \\ \hline 30 \end{array}$$

$$4.8 \quad 6.8 \quad 30 \overline{) 5.3} \quad \begin{array}{r} 6.0 \\ -1.2 \\ \hline \end{array} \quad \begin{array}{r} 5.2 \\ +1.6 \\ \hline 30 \end{array}$$

$$3.8 \quad 5.8 \quad 30 \overline{) 4.0} \quad \begin{array}{r} 4.4 \\ -0.6 \\ \hline \end{array} \quad \begin{array}{r} 3.8 \\ +0.2 \\ \hline 30 \end{array}$$

Sta.	+	π	-	grade.
		968.45		
4+50				25.7
T.P.	8.94	975.08	7.31	966.14
5				66.7
+50				67.7
B.M.			5.12	969.93
6				68.7
+50				69.7
7				70.7
+50				71.6
8				72.4
+50				73.0
9				73.5
	5.27	979.11	1.24	973.84
+50				73.9

H.

E

R1.

2.8

$$190 \overline{) 4.8} \\ - 20$$

$$\frac{3.8}{-1.0}$$

$$\frac{2.3}{10.5/30}$$

8.4

10.4

$$\frac{10.4}{-20}$$

$$\frac{9.6}{20.8/30}$$

7.4

9.4

$$223 \overline{) 10.5} \\ - 3.1$$

$$\frac{10.0}{-2.6}$$

$$\frac{10.4}{-2.0/22.0}$$

Top H/O. 15' Lt. Sta. 5+82

6.4

$$30 \overline{) 6.1} \\ - 4.3$$

$$\frac{7.7}{-1.3}$$

$$\frac{8.4}{2.0/19.0}$$

5.4

7.4

$$30 \overline{) 5.4} \\ - 2.0$$

$$\frac{5.4}{3.0}$$

$$\frac{6.6}{20.8/30}$$

4.4

6.4

$$30 \overline{) 5.7} \\ - 2.7$$

$$\frac{4.4}{0}$$

$$\frac{4.9}{10.5/30}$$

3.5

$$190 \overline{) 4.5} \\ - 20$$

$$\frac{4.1}{-0.6}$$

$$\frac{3.4}{10.1/30}$$

2.7

4.7

$$205 \overline{) 5.7} \\ - 2.5$$

$$\frac{4.3}{-2.6}$$

$$\frac{3.2}{11.5/30}$$

2.1

4.1

$$30 \overline{) 3.4} \\ - 1.7$$

$$\frac{2.8}{-0.7}$$

$$\frac{2.4}{11.7/30}$$

1.6

3.6

$$30 \overline{) 1.6} \\ - 2.0$$

$$\frac{1.8}{-0.2}$$

$$\frac{2.2}{11.4/30}$$

5.2

7.2

$$30 \overline{) 5.8} \\ - 1.4$$

$$\frac{5.9}{-0.7}$$

$$\frac{6.5}{10.7/30}$$

Sta.	+	π	-	Grade.
		979.11		
10				74.1
±50				74.1
B.M.			1.27	977.74
"				74.1
±50				74.0
12				73.8
±50				73.6
13				73.5
±50				73.4
14				73.2
T.R.	3.61	977.13	5.89	973.52
±50				73.0
15				72.9

Lt.

2

Bt.

5.0

$$\begin{array}{r} 50 \\ 20 \overline{) 1020} \end{array}$$

$$\begin{array}{r} 46 \\ 10 \overline{) 46} \end{array}$$

$$\begin{array}{r} 50 \\ 1220 \overline{) 30} \end{array}$$

5.0

$$\begin{array}{r} 48 \\ 20 \overline{) 102} \end{array}$$

$$\begin{array}{r} 43 \\ 10 \overline{) 43} \end{array}$$

$$\begin{array}{r} 44 \\ 106 \overline{) 30} \end{array}$$

Kings 17 Lt. 10 + 77

5.0

7.0

$$\begin{array}{r} 51 \\ 20 \overline{) 1019} \end{array}$$

$$\begin{array}{r} 53 \\ 10 \overline{) 53} \end{array}$$

$$\begin{array}{r} 56 \\ 114 \overline{) 30} \end{array}$$

5.1

$$\begin{array}{r} 82 \\ 23 \overline{) 82} \\ -81 \end{array}$$

$$\begin{array}{r} 77 \\ 77 \\ -76 \end{array}$$

$$\begin{array}{r} 77 \\ 76 \overline{) 30} \end{array}$$

5.3

$$\begin{array}{r} 98 \\ 205 \overline{) 98} \\ -98 \end{array}$$

$$\begin{array}{r} 103 \\ 50 \overline{) 103} \end{array}$$

$$\begin{array}{r} 110 \\ 57 \overline{) 30} \end{array}$$

5.5

$$\begin{array}{r} 99 \\ 202 \overline{) 99} \\ -94 \end{array}$$

$$\begin{array}{r} 105 \\ 50 \overline{) 105} \end{array}$$

$$\begin{array}{r} 110 \\ 55 \overline{) 295} \end{array}$$

5.6

$$\begin{array}{r} 87 \\ 203 \overline{) 87} \\ -81 \end{array}$$

$$\begin{array}{r} 93 \\ 37 \overline{) 93} \end{array}$$

$$\begin{array}{r} 96 \\ 40 \overline{) 750} \end{array}$$

5.7

$$\begin{array}{r} 75 \\ 20 \overline{) 1002} \end{array}$$

$$\begin{array}{r} 77 \\ 70 \overline{) 77} \end{array}$$

$$\begin{array}{r} 78 \\ 1202 \overline{) 20} \end{array}$$

5.9

$$\begin{array}{r} 57 \\ 20 \overline{) 102} \end{array}$$

$$\begin{array}{r} 64 \\ 10 \overline{) 64} \end{array}$$

$$\begin{array}{r} 61 \\ 108 \overline{) 30} \end{array}$$

4.1

$$\begin{array}{r} 38 \\ 20 \overline{) 102} \end{array}$$

$$\begin{array}{r} 48 \\ 10 \overline{) 48} \end{array}$$

$$\begin{array}{r} 42 \\ 119 \overline{) 20} \end{array}$$

4.2 69

$$\begin{array}{r} 34 \\ 20 \overline{) 108} \end{array}$$

$$\begin{array}{r} 59 \\ 11 \overline{) 59} \end{array}$$

$$\begin{array}{r} 64 \\ 12 \overline{) 196} \end{array}$$

Sta.

+

A

-

Grade

972.13

15+50

72.8

3.05

974.07

16

72.6

+50

72.4

17

72.1

+50

71.6

18

71.1

+50

70.6

19

69.8

+50

69.0

20

68.0

+50

67.0

10.71

10.71

966.41

Gr. Rod

Lt.

L

Dt.

4.3

19.0 / $\frac{6.5}{-2.4}$ $\frac{6.8}{-2.0}$ $\frac{7.4}{-2.1} / 22.3$

Hd. 17' Lt. Sta. 15+89

4.5

19.3 / $\frac{6.6}{-2.1}$ $\frac{6.6}{-2.1}$ $\frac{6.9}{-2.4} / 22.2$

4.7

6.1

19.1 / $\frac{6.7}{-2.0}$ $\frac{6.3}{-1.6}$ $\frac{5.5}{-2.2} / 30$

5.0

20.1 / $\frac{6.9}{-20.1}$ $\frac{6.0}{-1.0}$ $\frac{5.6}{-21.2} / 20$

5.5

20.1 / $\frac{4.4}{-11.1}$ $\frac{4.8}{-10.7}$ $\frac{5.2}{-10.3} / 20$

6.0

20.1 / $\frac{5.0}{-11.0}$ $\frac{4.6}{-11.4}$ $\frac{4.6}{-11.4} / 20$

6.5

20.1 / $\frac{5.8}{-10.7}$ $\frac{4.8}{-11.7}$ $\frac{3.4}{-12.1} / 20$

7.3

20.1 / $\frac{6.7}{-10.6}$ $\frac{6.8}{-10.8}$ $\frac{4.6}{-12.7} / 20$

8.1

10.1

20.1 / $\frac{9.9}{-10.02}$ $\frac{9.2}{-11.1}$ $\frac{7.0}{-11.1} / 20$

8.6

9.1

20.1 / $\frac{17.3}{-8.2}$ $\frac{11.9}{-7.8}$ $\frac{12.1}{-7.0} / 22$ $\frac{12.7}{-10.4} / 20$

10.1

12.1

20.1 / $\frac{17.4}{-7.1}$ $\frac{13.5}{-7.4}$ $\frac{12.1}{-12.6} / 20$

Hd. 17' Lt. Sta. 20+84

Sta.	+	-	grade	
	2.27	968.68		966.41
21			66.0	
+50			65.0	
22			64.0	
+50			62.7	
23			60.7	
+50			58.1	
24			54.8	
	2.91	957.97	136.2	955.06
+50			51.2	
25			47.6	
+50			44.0	
	0.75	949.15	9.57	948.40
+76			42.1	

Lt.

E

Et.

Lt. 20484 Hyd.

$$2.7 \quad 4.7 \quad 28.0 \left| \begin{array}{r} 3.7 \\ 120.0 \end{array} \right.$$

$$\frac{5.4}{-2.7}$$

$$\frac{4.1}{120.6/30}$$

$$3.7 \quad 5.7 \quad 25.5 \left| \begin{array}{r} 5.7 \\ 120.0 \end{array} \right. \text{ say Lt.}$$

$$\frac{2.7}{-4.0}$$

$$\frac{2.5}{+1.2/30}$$

$$4.7 \quad 6.7 \quad 20.0 \left| \begin{array}{r} 5.5 \\ 121.2 \end{array} \right.$$

$$\frac{8.8}{-4.1}$$

$$\frac{2.2}{+2.5/30}$$

$$6.1 \quad 8.1 \quad 20.0 \left| \begin{array}{r} 6.8 \\ 121.3 \end{array} \right.$$

$$\frac{2.8}{+3.3/30}$$

$$8.1 \quad 20.0 \left| \begin{array}{r} 8.4 \\ 121.7 \end{array} \right.$$

$$\frac{4.0}{+4.1/30}$$

$$10.6 \quad 11.0 \quad 20.0 \left| \begin{array}{r} 11.7 \\ 120.9 \end{array} \right.$$

$$\frac{8.6}{+2.0/20}$$

$$13.9 \quad 15.4 \quad 20.8 \left| \begin{array}{r} 16.5 \\ 120.1 \end{array} \right.$$

$$\frac{12.4}{+1.5/30}$$

$$6.8 \quad 22.0 \left| \begin{array}{r} 9.8 \\ -2.0 \end{array} \right.$$

$$\frac{9.1}{-2.3}$$

$$\frac{6.2}{+0.6/30}$$

$$10.4 \quad 12.4 \quad 20 \left| \begin{array}{r} 11.1 \\ 121.3 \end{array} \right.$$

—

$$\frac{8.6}{+1.8/30}$$

$$14.0 \quad 20 \left| \begin{array}{r} 12.2 \\ +1.8 \end{array} \right.$$

137

$$\frac{9.4}{+1.6/30}$$

7.1

Sta.

+

π

-

Grade.

49.15

25+91

41.5

26+06

46.0

+11

+27.2

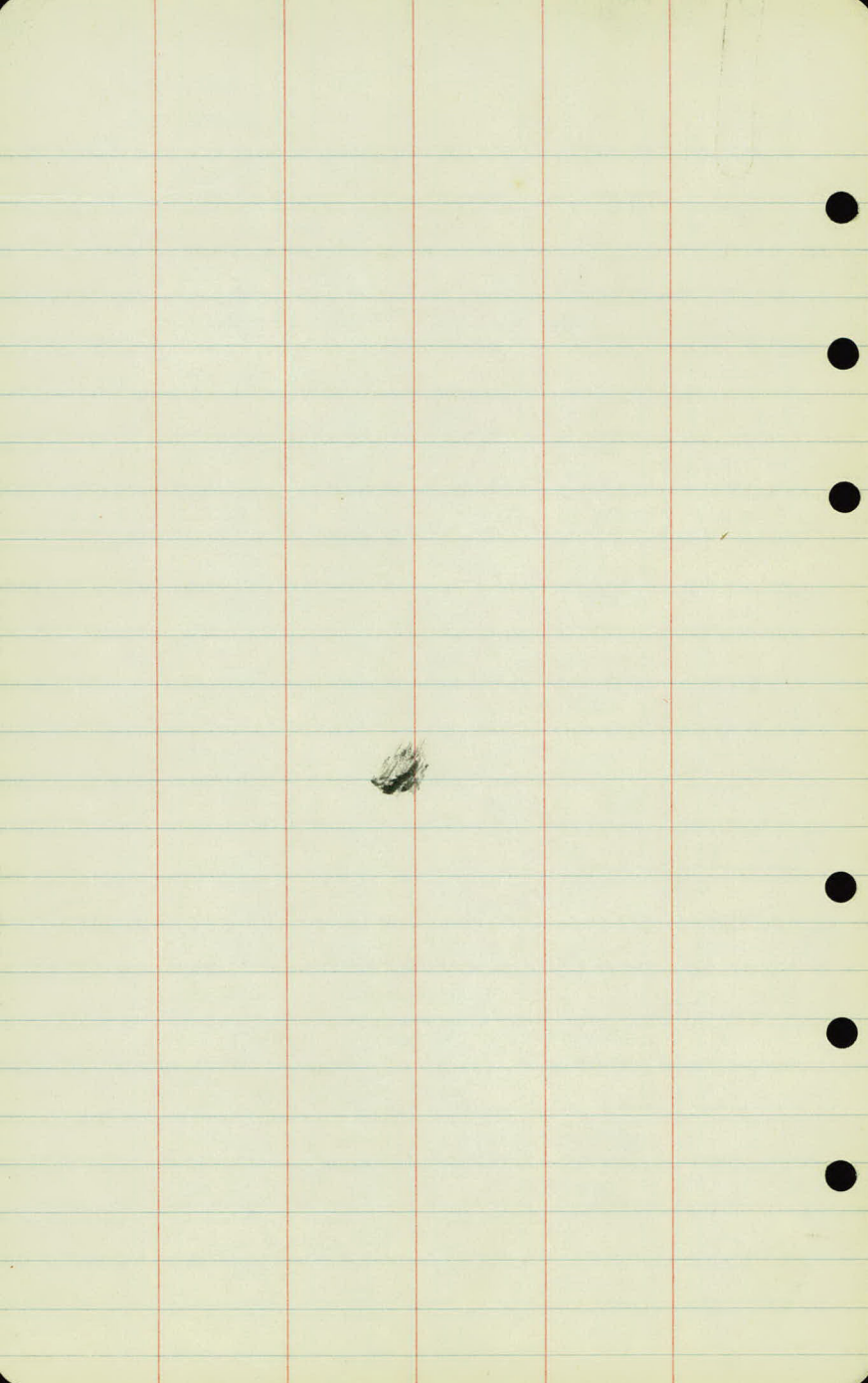
Gr. Red.

Lt

E

10

9.2



Elandrau St.

staking Notes.

stone gutter

Sta.	+	π	-	Grade	
B.M.					969.93
0	+50			52.0	
1				54.5	
	+50			57.0	
	+75			58.2	
2				59.2	
	+25			60.2	
	+50			61.0	
	+75			61.75	
3				62.2	
	+25			62.7	
	+50			63.0	

Shoulder

Grade Rod to Rod.

Top Hyd. 15' 4" sta 5482

Sta	+	π	-	Grade
4				63.5
+25				63.80
+50				64.2
+75				64.6
5				65.1
+25				65.7
+50				66.3
+75				67.1
B.M.				969.73
6				67.9
+25				68.75
+50				69.4

Gr. Rod.

Shoulder
Gr. Rod.

Top Hyd. 15' Lt. 3195182

Sta.	+	x	-	Grade
6	+75			69.95
7				70.4
	+50			71.1
8				71.9
	+50			72.6
9				73.4
	+50			74.1
	+75			74.4
10				74.6
	+25			74.39
	+50			74.4

should be

Gr Rod.

Gr Rod.

Sta.	+	π	-	Grade
10	+75			74.05
B.M.				977.74
11				73.6
	+25			72.95
	+50			72.2
	+75			71.95
12				70.9
	+25			70.45
	+50			70.3
	+75			70.20
13				70.4
	+25			70.7

shoulder

Gr. Rod.

Gr. Rod.

Top Hyd. 17' Lt. Sta 10+77

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

13	+50			71.2
----	-----	--	--	------

	+75			71.7
--	-----	--	--	------

14				72.0
----	--	--	--	------

	+25			72.95
--	-----	--	--	-------

	+50			71.9
--	-----	--	--	------

15				71.4
----	--	--	--	------

	+25			71.2
--	-----	--	--	------

	+50			71.0
--	-----	--	--	------

	+75			71.0
--	-----	--	--	------

B.M.

974.07

16				70.9
----	--	--	--	------

	+25			71.0
--	-----	--	--	------

shoulder

Gr. Rod.

Gr. Rod.

Top Hyd 17' 41 54 15 + 89

Sta.	+	π	-	Grade
16	+50			71.0
	+75			71.2
17				71.4
	+50			71.7
18				72.4
	+25			72.6
	+50			72.1
	+75			71.65
19				70.4
	+50			67.9
I.P.	1.94	969.00		71.06
	+75			66.70

Gr. Rod

Shoulder
Gr. Rod.

103
11

1.7
2.3

1.95

Sta.	+	π	-	Grade
20				65.7
+25				64.8
+50				64.0
+75				63.3
B.M.		969.00	2.58	(966.92)
21				62.8
+25				62.35
+50				62.1
+75				61.8
22				61.4
+25				60.8
T.P.	1.58	961.33	9.25	959.75
+50				60.0

Gr. Rod.

Shoulder
Gr. Rod.

2.7

2.95

3.3

3.6

3.85

4.2

4.2

4.45

5.0

4.75

5.00

5.7

Top Hyd. 17' Lt. Sta. 20+84

5.9

5.65

6.2

6.45

6.0

6.25

6.65

6.90

10.7

6.5

6.75

6.9

7.15

1.0

7.2

7.45

7.6

7.85

8.2

8.45

1.33

1.58

to Traveler Rd

Sta	+	π	-	Grade
		961.33		

22	+75			59.1
----	-----	--	--	------

23				58.0
----	--	--	--	------

	+25			56.7
--	-----	--	--	------

	+50			55.3
--	-----	--	--	------

24				52.3
----	--	--	--	------

I.P.	3.08	952.13	12.28	949.05
------	------	--------	-------	--------

	+50			49.3
--	-----	--	--	------

25				46.3
----	--	--	--	------

	+50			43.3
--	-----	--	--	------

26				40.3
----	--	--	--	------

B.M.			11.43	
------	--	--	-------	--

(9407)

shoulder

Gr. Rod.

Gr. Rod.

2.23

2.48 ✓

3.23

3.58 ✓

4.63

4.88 ✓

6.03

6.28 ✓

9.03

9.28 ✓

2.83

3.08 ✓

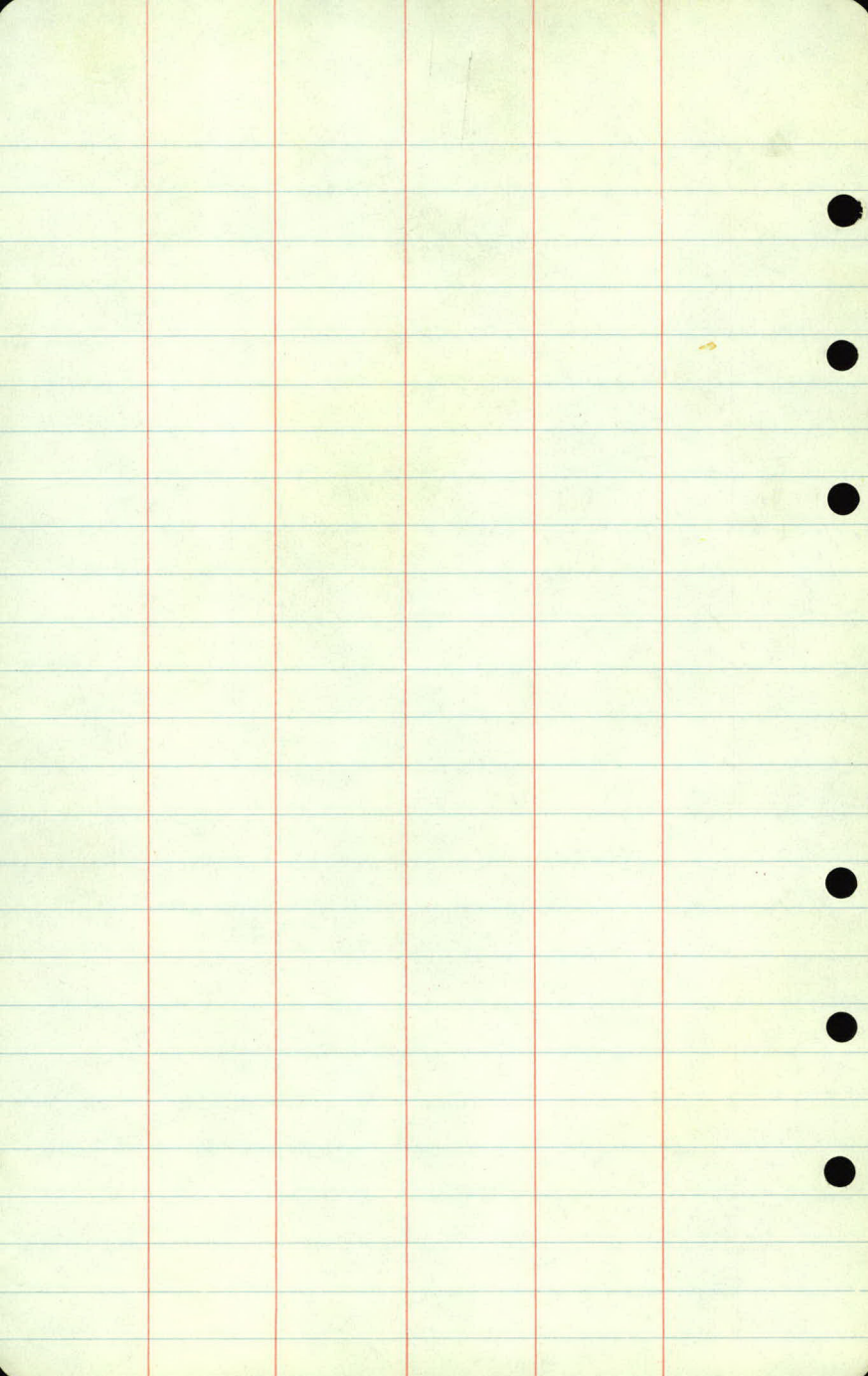
5.83

6.08 ✓

8.83

9.08 ✓

h. Pav. Frost Ave + Flandreau



Profile Levels

Flandrau St.

From Larp. To Frost Ave

Also

Levels West along
Prop. Line To Kennard St

HAW

AM

2 L

10/28/46

Sta	+	Δ	-	Elev
B.M.	0.29	970.22		969.93
0+00				52.4

+50				53.2
-----	--	--	--	------

1				54.7
---	--	--	--	------

+50				56.9
-----	--	--	--	------

2				59.2
---	--	--	--	------

+50				60.8
-----	--	--	--	------

3				62.2
---	--	--	--	------

+50				63.0
-----	--	--	--	------

4				63.9
---	--	--	--	------

+50				64.6
-----	--	--	--	------

5				65.2
---	--	--	--	------

+50				66.4
-----	--	--	--	------

Lt

L

Rt

2

Top Hyd 15' Lt Sta 5482

17.8

17.0

15.5

13.3

11.8

9.4

8.0

7.2

6.3

5.6

5.0

3.8

Sta + Δ - Elev

990.22

6 68.0

+50 69.5

T.P. 889 978.48 0.63 969.59

7 70.6

+50 71.4

8 72.2

+50 73.0

9 73.8

+50 74.3

10 74.6

+50 74.5

B.M. 0.73 978.48 0.73 977.75 977.74

11 73.7

+50 72.4

Lt

Z

Rt

2.2

0.7

7.9

7.1

6.3

5.5

4.7

4.2

3.9

4.0

Top Hyd 17' Lt Sta 10177

4.8

6.1

Sta + X - Elev

978.48

12 71.2

T.P. 6.08 977.15 7.41 971.07

12+01 X Drain 15' 71.1

+60 70.6

+85.5 Prop Line Bet. Lots 13+14 70.8

13 71.0

+50 71.7

14 72.2

+50 72.1

15 71.6

+50 71.4

B.M. 3.11 977.15 3.11 974.04 974.07

16 71.3

+50 71.2

Lt

Z

Rt

4

68.75
8.40
Inv

7.3

68.10
9.05
Inv

6.1

6.6

6.4

6.2

5.5

5.0

5.1

5.6

5.8

Top Hyd 17' Lt sta 15489

5.9

6.0

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

977.15

17

71.6

+50

72.1

T.P.	295	974.86	5.24	971.91
------	-----	--------	------	--------

18

72.3

+50

72.0

19

70.5

+50

68.5

20

66.5

+50

64.9

21

63.7

+50

62.7

22

61.7

T.P.	1.70	963.19	13.39	961.47
------	------	--------	-------	--------

+50

60.1

Lt

 $\pm$

Rt

5.6

5.1

2.6

2.9

4.4

6.4

8.4

10.0

11.2

12.2

13.2

3.1

Sta	+	π	-	Elev
		963.17		
23				57.9
+50				55.5
24				52.7
+50				49.7
T.P.	2.32	952.17	13.32	949.85
25				46.4
+50				43.6
26				41.4
+30		Σ	Frost Ave	40.8
B.M			8.63	943.54

Lt

Z

Rt

L

5.3

7.7

10.5

13.5

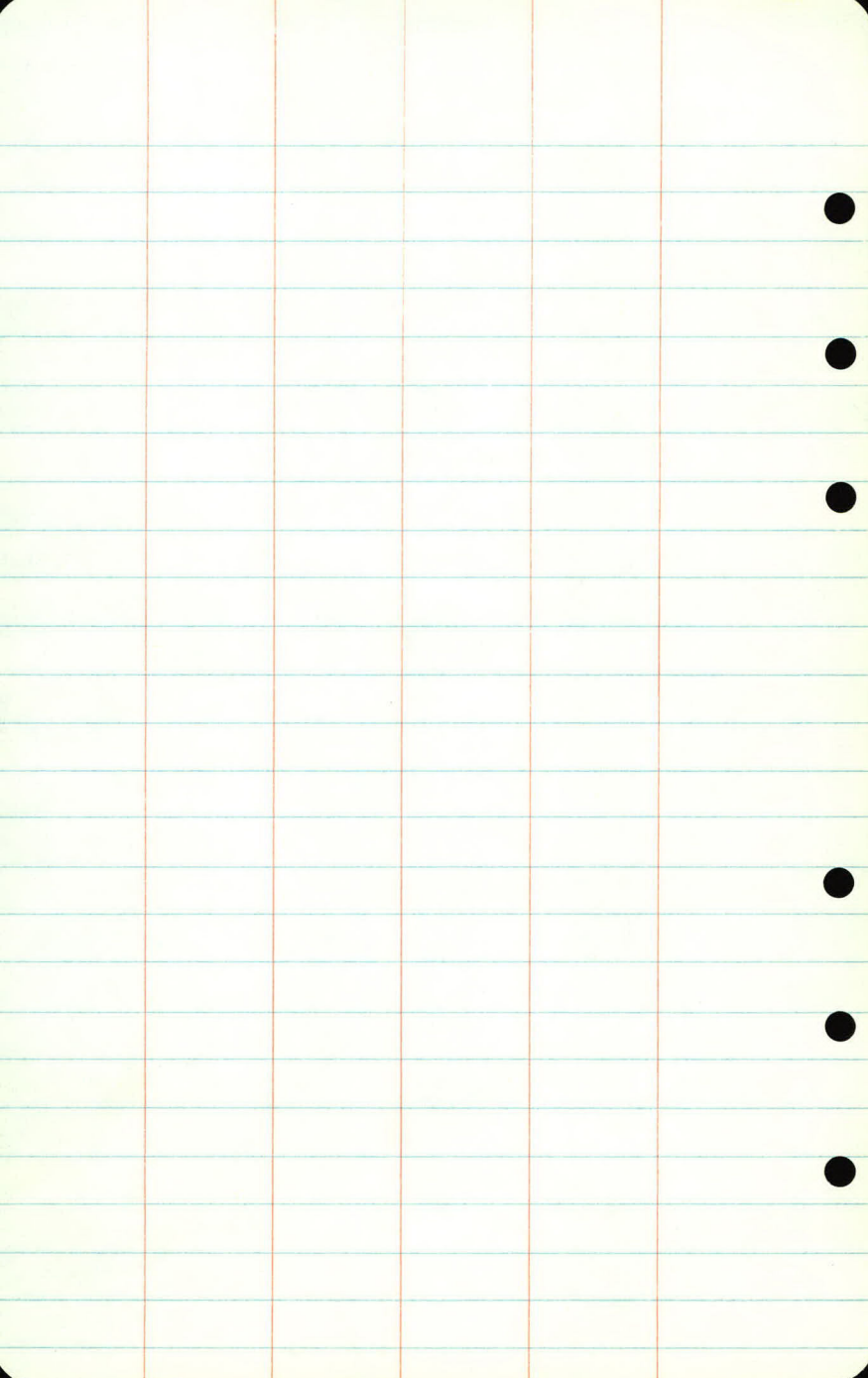
5.8

8.6

10.8

11.40

Top Hyd S.W Cor Frost Avr + Flandran.



Profile

West along Prop To Kennard

Between Lots 13 & 14

Sta	+	+	+	Elev
B.M	3.54	977.61		974.07
0+00 =				70.8
12+85.5	Flandreau St.			
+21				69.2
+30				70.8
+50				71.7
/				72.3
+50				70.8
2				69.5
+50				67.4
3				64.6
T.P.	2.40	968.90	11.11	966.50
+50				64.8
4				65.4
+50				65.7

±

1

Top Hyd 17' Lt Sta 15189

6.8

8.4

6.8

5.9

5.3

6.8

8.1

10.2

13.0

4.1

3.5

3.2

Sta + A - Elev

96890

5 64.9

+50 62.5

6 59.5

+24 57.8

+27 56.8

+33 56.5

+36 55.3

+39 55.3

+41 56.5
Shoulder Kennard

+55 57.0
Kennard St ✓

T.P.	11.27	980.10	0.07	968.83	
B.M.			2.34	977.76	977.74

Σ

4.0

6.4

9.4

11.5

12.1

12.4

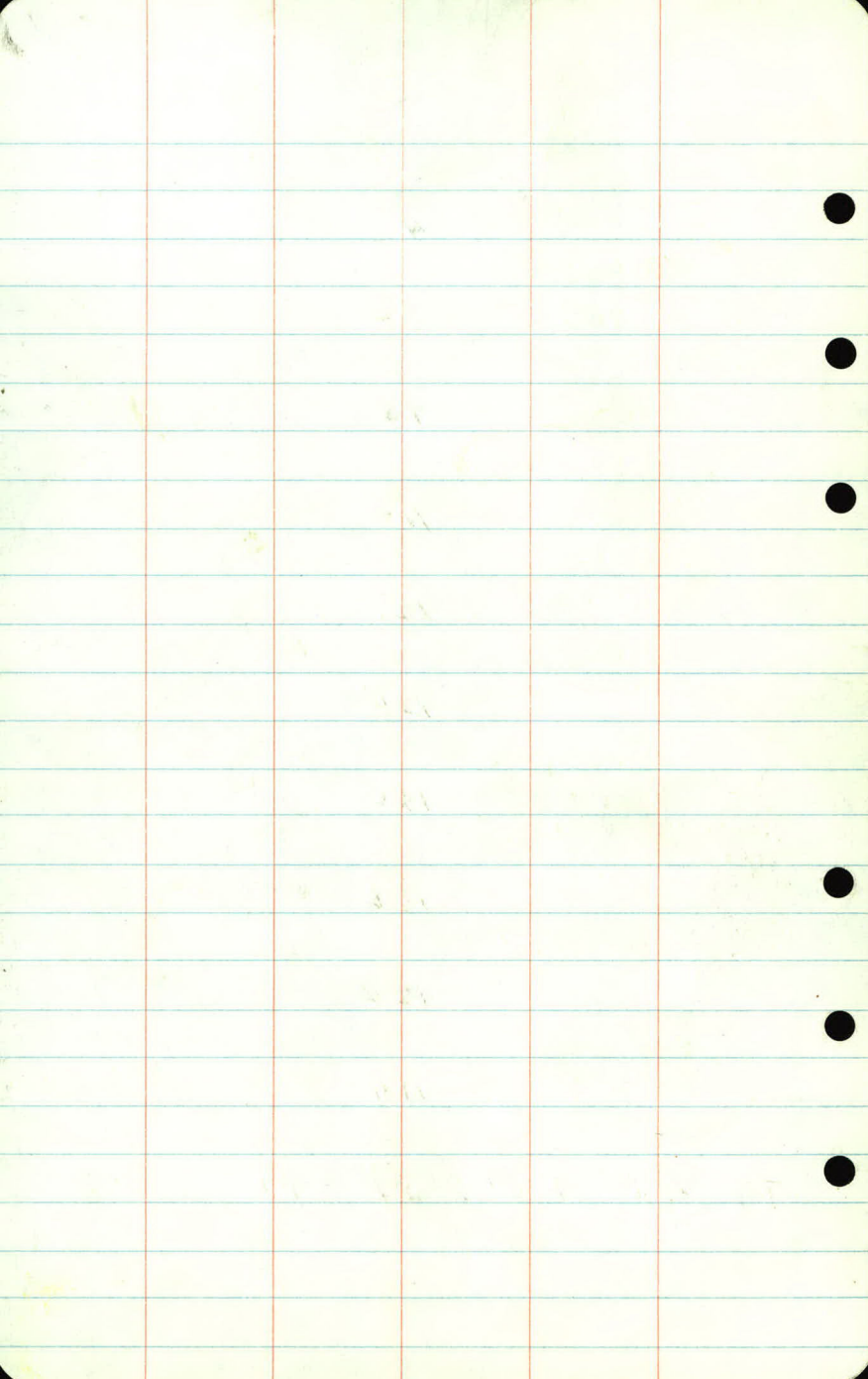
13.6

13.6

12.4

11.9

Top Hyd 17' Lt Sta 10 + 77



Flandran Str

From Sta 10+00 To Sta 18+00

Profile, Ditch + Elev
of Yards

8-15-42

HAW

LC

GF

Sta	+	Δ	-	Elev
B.M	1.07	978.81		977.74
10+00				74.4
+50				74.3
11				73.5
+50				72.2
12		15" X DRAIN		71.0
+50				70.5
13				70.7
+50				71.5
14				72.1
+50				72.0
15				71.5
+50				71.3
B.M	4.74	978.81	4.74	974.07

LT ♀ RT

Top Hyd Lt St 10+77

$\frac{32}{50}$ $\frac{31}{33}$ $\frac{5.2}{23}$ $\frac{5.8}{21-19}$ $\frac{4.9}{16}$ 4.4 $\frac{4.7}{13}$ $\frac{5.6}{16-18}$ $\frac{5.2}{20}$ $\frac{4.4}{29}$ $\frac{5.1}{50}$

$\frac{3.4}{50}$ $\frac{4.1}{31}$ $\frac{5.1}{22}$ $\frac{5.9}{24-19}$ $\frac{5.0}{15}$ 4.5 $\frac{5.0}{14}$ $\frac{5.1}{16-19}$ $\frac{4.9}{21}$ $\frac{3.9}{29}$ $\frac{5.2}{50}$

$\frac{3.2}{50}$ $\frac{4.4}{34}$ $\frac{5.5}{23}$ $\frac{6.1}{18}$ $\frac{5.8}{15}$ 5.3 $\frac{5.8}{12}$ $\frac{6.9}{17-19}$ $\frac{5.7}{23}$ $\frac{5.1}{50}$

$\frac{6.8}{50}$ $\frac{7.3}{27}$ $\frac{7.7}{20}$ $\frac{7.2}{14}$ 6.6 $\frac{7.3}{14}$ $\frac{7.8}{17}$ $\frac{7.9}{22}$ $\frac{6.1}{29}$ $\frac{5.5}{50}$

$\frac{7.4}{50}$ $\frac{8.2}{25}$ $\frac{9.7}{22}$ $\frac{10.5}{19}$ $\frac{8.1}{14}$ 7.8 $\frac{8.6}{16}$ $\frac{10.0}{19-20}$ $\frac{10.70}{21}$ $\frac{7.3}{26}$ $\frac{6.7}{50}$

$\frac{6.7}{50}$ $\frac{8.0}{21}$ $\frac{9.8}{22-20}$ $\frac{8.7}{15}$ 8.3 $\frac{8.5}{16}$ $\frac{9.2}{18-20}$ $\frac{8.2}{23}$ $\frac{7.0}{50}$

$\frac{6.7}{50}$ $\frac{7.2}{31}$ $\frac{7.9}{22}$ $\frac{9.2}{22-20}$ $\frac{8.3}{17}$ 8.1 $\frac{8.2}{16}$ $\frac{9.0}{18-20}$ $\frac{7.7}{21}$ $\frac{6.7}{30}$ $\frac{6.2}{50}$

$\frac{4.9}{50}$ $\frac{5.3}{30}$ $\frac{8.2}{22-20}$ $\frac{7.7}{17}$ 7.3 $\frac{7.7}{14}$ $\frac{8.5}{18-20}$ $\frac{7.9}{21}$ $\frac{6.6}{29}$ $\frac{5.3}{33}$ $\frac{4.8}{50}$

$\frac{4.8}{50}$ $\frac{5.1}{30}$ $\frac{7.3}{21}$ $\frac{6.9}{15}$ 6.7 $\frac{6.7}{14}$ $\frac{8.0}{18-20}$ $\frac{6.9}{21}$ $\frac{5.6}{29}$ $\frac{4.3}{33}$ $\frac{3.7}{50}$

$\frac{5.3}{50}$ $\frac{5.3}{31}$ $\frac{7.4}{20}$ $\frac{7.5}{15}$ 6.8 $\frac{7.0}{15}$ $\frac{8.5}{18-20}$ $\frac{6.4}{25}$ $\frac{6.1}{29}$ $\frac{4.4}{33}$ $\frac{4.1}{50}$

$\frac{6.6}{50}$ $\frac{6.8}{30}$ $\frac{7.7}{23}$ $\frac{7.8}{16}$ 7.3 $\frac{7.6}{15}$ $\frac{8.8}{18-20}$ $\frac{7.5}{24}$ $\frac{6.2}{34}$ $\frac{6.1}{50}$

$\frac{8.2}{50}$ $\frac{8.1}{29}$ $\frac{8.5}{17}$ $\frac{8.2}{16}$ 7.5 $\frac{7.5}{14}$ $\frac{8.9}{17-20}$ $\frac{6.2}{29}$ $\frac{5.6}{50}$

Top Hyd 20' Lt Sta 15+89

Sta + Δ - Elev

978.81

16+00

71.1

+50

71.1

17

71.4

+50

71.9

18

72.1

+50

71.7

B.M

4.74 974.07 974.07✓

Lt

K

Rt

$$\frac{8.8}{50} \quad \frac{8.7}{29} \quad \frac{8.6}{16} \quad \frac{8.1}{14} \quad 7.7 \quad \frac{7.8}{13} \quad \frac{8.9}{15-17} \quad \frac{7.0}{22} \quad \frac{5.2}{50}$$

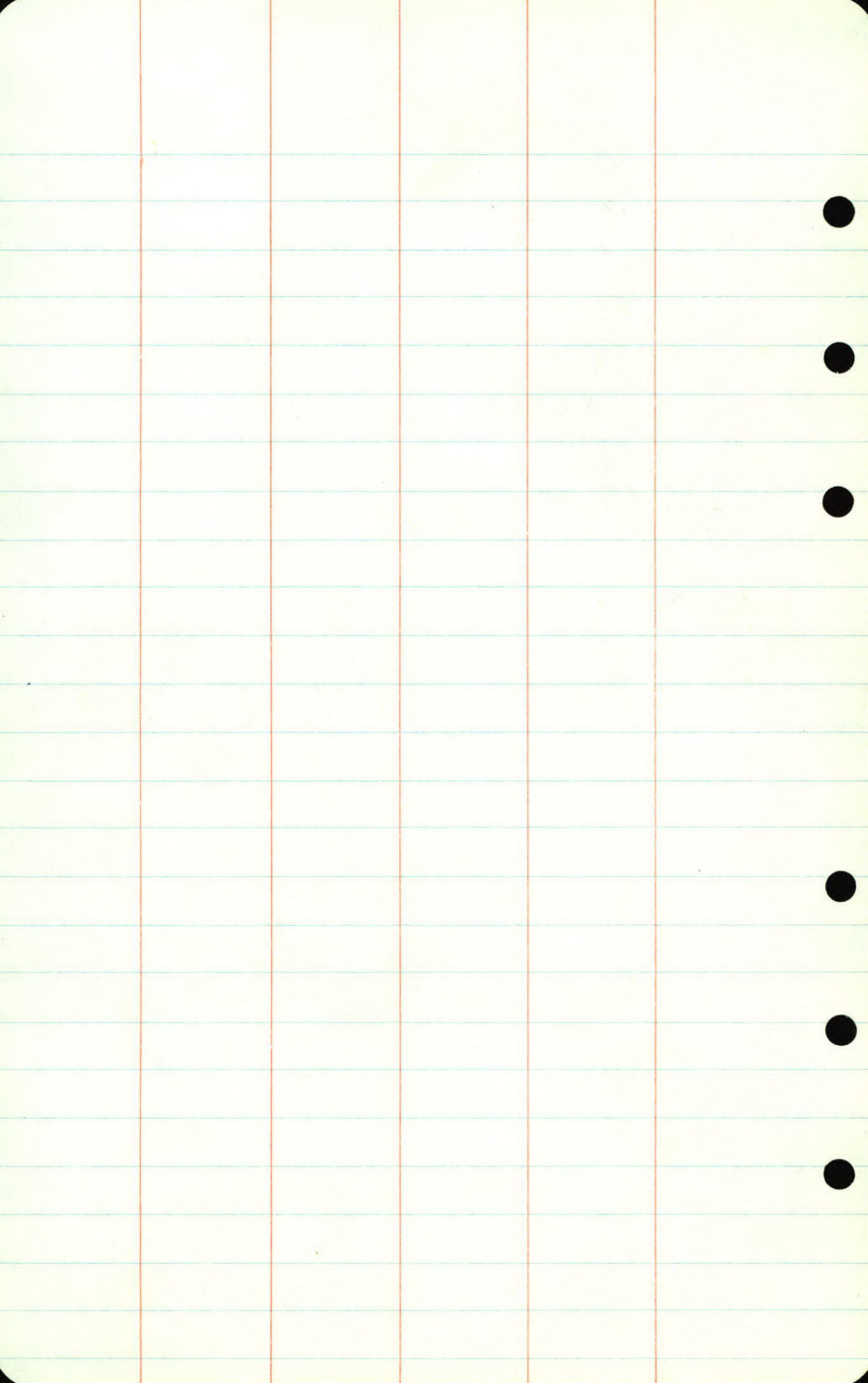
$$\frac{9.4}{50} \quad \frac{9.0}{23} \quad \frac{8.7}{16} \quad \frac{8.3}{15} \quad 7.7 \quad \frac{7.9}{14} \quad \frac{8.6}{16-18} \quad \frac{8.0}{20} \quad \frac{6.5}{30} \quad \frac{5.1}{50}$$

$$\frac{6.7}{30} \quad \frac{6.9}{30} \quad \frac{8.5}{20-17} \quad \frac{7.7}{15} \quad 7.4 \quad \frac{7.5}{14} \quad \frac{8.5}{16-18} \quad \frac{7.3}{20} \quad \frac{7.0}{27} \quad \frac{5.4}{31} \quad \frac{4.1}{50}$$

$$\frac{5.7}{50} \quad \frac{5.9}{31} \quad \frac{7.2}{21} \quad \frac{7.3}{14} \quad 6.9 \quad \frac{7.4}{14} \quad \frac{8.2}{16-18} \quad \frac{6.9}{19} \quad \frac{6.4}{27} \quad \frac{4.2}{32} \quad \frac{3.5}{50}$$

$$\frac{6.0}{50} \quad \frac{6.2}{32} \quad \frac{7.2}{21} \quad \frac{7.0}{15} \quad 6.7 \quad \frac{7.0}{13} \quad \frac{7.9}{16-18} \quad \frac{6.2}{21} \quad \frac{3.4}{50}$$

$$\frac{8.6}{30} \quad \frac{7.4}{31} \quad \frac{7.8}{16} \quad \frac{7.5}{14} \quad 7.1 \quad \frac{7.4}{14} \quad \frac{8.1}{16-18} \quad \frac{7.3}{19} \quad \frac{5.3}{30} \quad \frac{3.2}{50}$$



8/8/42

Flandrau st.

X Section Sta 19+00 to Sta 21+00

Sta	+	Δ	-	Elev
B.M.	3.21	977.28		974.07
19 + 00				70.3
+ 50				68.3
20				66.3
+ 50				64.7
21				63.5
B. M.		10.90	966.38	966.41

Lt.

E

Rt.

Top Hyd 17' Lt. Sta 15+89

7.0	7.2	8.5	8.5	7.4	7.0	7.1	7.5	7.5	3.7	2.7
50	24	18	16	13		13	15	18	37	50

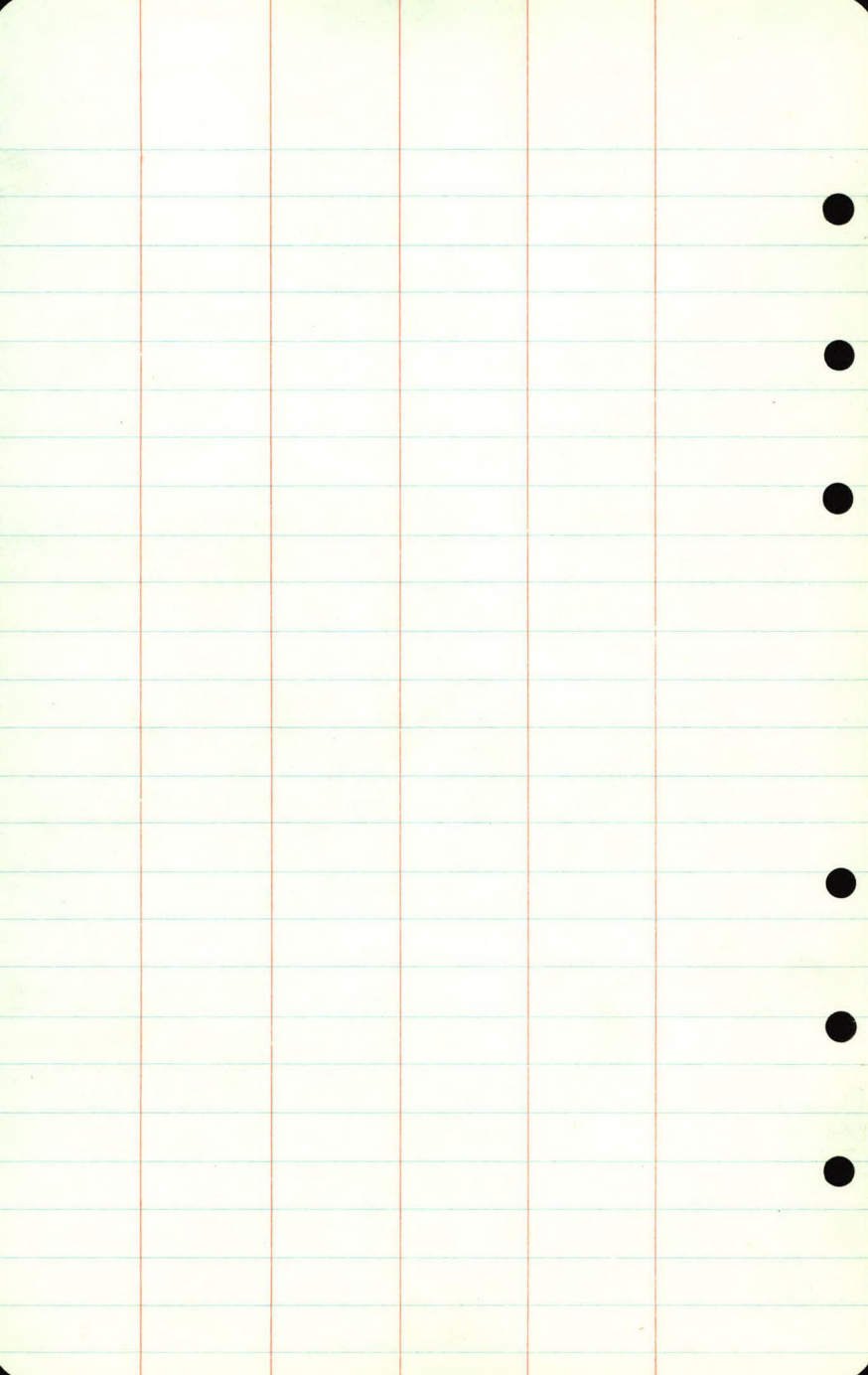
11.4	10.2	10.0	10.3	10.3	9.4	9.0	9.3	9.9	9.9	7.7	6.9
50	35	27	19	16	13		13	16	19	31	50

19.3	17.2	11.6	11.0	11.4	11.8	11.8	10.7	8.4	7.3
50	29	13		12	16	19	27	35	50

18.6	18.5	13.1	12.6	12.7	13.7	13.7	12.6	8.4
50	28	14		11	17	20	25	50

15.2	15.2	14.0	13.8	13.8	14.1	10.4	9.8
50	17	12		13	20	40	50

Top Hyd. 17' Lt. Sta 20+84



5/13/46

Flandrau St.

X Sections

Sta. 11+00 to 17

Profile of sewer 17 to 19+

Drawn up 5/14/46
1946

McCarty took plan with him

Sta	+	π	-	Elev.
B.M.	0.02	977.76 [✓]		977.74

11				73.4
----	--	--	--	------

+50				72.2
-----	--	--	--	------

12				71.4
----	--	--	--	------

+50				71.2
-----	--	--	--	------

13				71.3
----	--	--	--	------

+50				71.7
-----	--	--	--	------

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

14				72.1
----	--	--	--	------

T.P.	422	976.81 [✓]	517	972.59
------	-----	---------------------	-----	--------

+50				71.8
-----	--	--	--	------

5-13-46
K.A.
A.M.
M.B.
C.F.
Lt

E

Et

Top Hyd. Lt. Sta 10477

1.8 34 42 5.5 49 44 47 58 47 44 42 ✓
50 34 23 19-17 16 15 19-21 23 30 50

55 65 61 69 62 56 63 68 65 53 46 ✓
50 32 21 19-17 15 16 17 24 29 50

66 72 72 66 64 65 7.0 72 64 58 ✓
50 25 15 8 6 19 17-22 27 50

58 72 74 71 67 66 68 71 74 65 59 ✓
50 19 18-17 15 7 7 15 17-19 20 50

57 65 73 77 74 67 65 67 68 76 66 57 54 ✓
50 26 19 18-17 16 9 8 15 17-19 20 29 50

40 44 76 67 62 61 66 74 69 57 44 41 ✓
50 29 19-17 15 6 15 17-19 20 29 33 50

39 43 75 60 57 58 7.6 51 47 34 2.9 ✓
50 29 19-17 16 15 17-19 25 29 33 50

33 35 43 67 5.6 50 5.2 68 62 45 41 2.5 2.2 ✓
50 30 24 19-17 15 15 17-19 20 26 29 34 50

Sta	+	π	-	Elev.
		976.81		

15				71.3
----	--	--	--	------

+50				71.1
-----	--	--	--	------

16				71.1
----	--	--	--	------

+50				71.0
-----	--	--	--	------

+76 12" C.M. X DRAIN				71.1
----------------------	--	--	--	------

+79 Beg. sewer rt.				71.1
--------------------	--	--	--	------

+79				
-----	--	--	--	--

17				71.3
----	--	--	--	------

L.F.

E

R.F.

49 4.9 6.1 7.0 5.9
50 30 20 19-17 15

55 57 7.2 6.3 4.4 4.0 ✓
15 17-19 21 30 50

64 6.3 6.6 7.0 6.4 5.7 5.9 5.8 7.2 4.6 3.6 ✓
50 30 20 19-17 16 10 15 18-20 27 50

7.0 6.3 7.5 6.4 5.9
50 22 19-17 15 5

57 5.8 6.1 7.5 4.9 3.4 ✓
12 15 17-19 23 50

6.9 6.6 7.6 7.6 6.6 6.0 5.8
50 23 20 19 16 7

6.0 7.5 5.7 4.2 3.2 ✓
13 17-19 23 35 50

F.L.

7.3 6.8 7.6 7.4 6.3 5.8
50 22 20 18 17 5

57 5.9 7.4 9 7.5 5.6 3.3 ✓
14 16 19 22 50

F.L.

F.L.

7.3 6.8 7.6 7.4 6.3 5.8
50 22 20 18 17 5

57 5.9 7.6 3 5.4 3.3 ✓
14 18 22 50

71.21

56
18

71.31

55
18

Profile over sewer

Sta	+	π	-	Elev
		976.81		

17	+50			71.8
----	-----	--	--	------

18				72.0
----	--	--	--	------

	+30			71.9
--	-----	--	--	------

	+60			71.3
--	-----	--	--	------

19				70.2
----	--	--	--	------

	+41	68.5		73.5
--	-----	------	--	------

BM		2.77	974.04	974.07
----	--	------	--------	--------

277

Lt.

E.

Et

50

5.1
18

48

5.2
18

49

47
18

55

59
18

6.6

6.9
18

WJB
8.3

33

H.W.

8.75

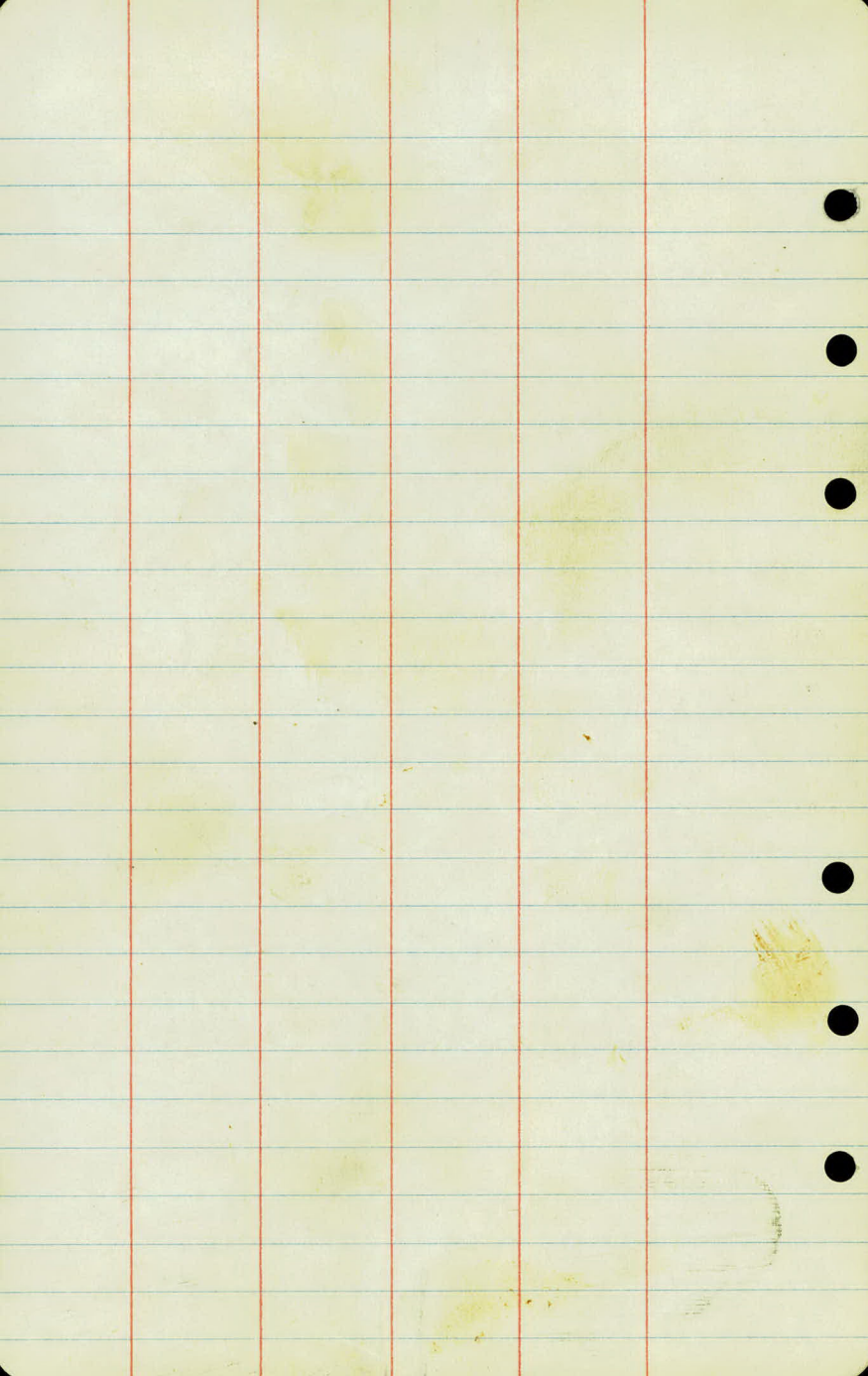
F.L.
↘

1032
18

68.06

66.49

Top Hyd. Lt. sta. 15189



Flandrau St.

Sewer Grades

Sta	+	π	-	Grade	
B.M.	193	976.00			974.07
12	+50			67.2	
13				67.1	
	+50			67.0	
14				66.9	
	+50			66.8	
15				66.7	
	+50			66.6	
B.M.	0.87	974.94	48	66.55	974.07
16				66.5	
	+50			66.4	
B.M.	2.09	976.16			974.07
17				66.3	
	+50			66.2	

Gr. Rod
1' above

Gr. Rod

SEWER FL.

Top Hyd. Lt. sta. 15+89

8.80 - 2.08 = 6.72

- 2.08

- 2.08 =

9.40

7.32

8.39

6.31 = +75

8.44

- 2.08 =

6.36 ✓ 76

8.49

6.41 ✓ 75

8.54

6.46 ✓ 750

8.59

6.51 ✓ 75

8.64

6.56 ✓

9.86

- 2.08

7.78 ✓ 51' LOW

+25 7.83 ✓

9.96

- 2.08 =

7.88 ✓

+75 7.93 ✓

Stakes fixed in

Sta	+	π	-	Grade
		976.16		
18				66.1
B.M.	1.47	975.54		974.07
+50				66.0
B.M.	0.55	974.62 ✓		974.07
19				65.9
+91	= End of sewer			65.8

B.M.	2.14	976.21		974.07
15	+25 = M.H. RATTLE			

16 +75 X Drain

B.M.	2.24	976.31		(974.07)
------	------	--------	--	----------

12 +46

Gr. Rod &
1' above

Gr. Rod

SEWER, FL.

672

$$10.06 - 2.08 = 7.98$$

$$9.54 - 2.08 = 7.46$$

7.08
7.51

$$8.72 - 2.08 = 6.64$$

7.56

$$8.82 - 2.08 = 6.74$$

10' 05"
8.92
C.50
BT = 3.92

Lt.

9.06

67.15

9.63

892

71

E

Rt.

9.56

66.65

5' 05"
9.63
C.50
BT = 4.63

10' 05"
9.21
C.50
BT = 4.21

9.36

66.85

9.86

66.25

5' 05"
9.93
BT = 4.93
C.50

$$6.82$$
$$BT = 1.82$$
$$C = 5.00$$

71

69.21

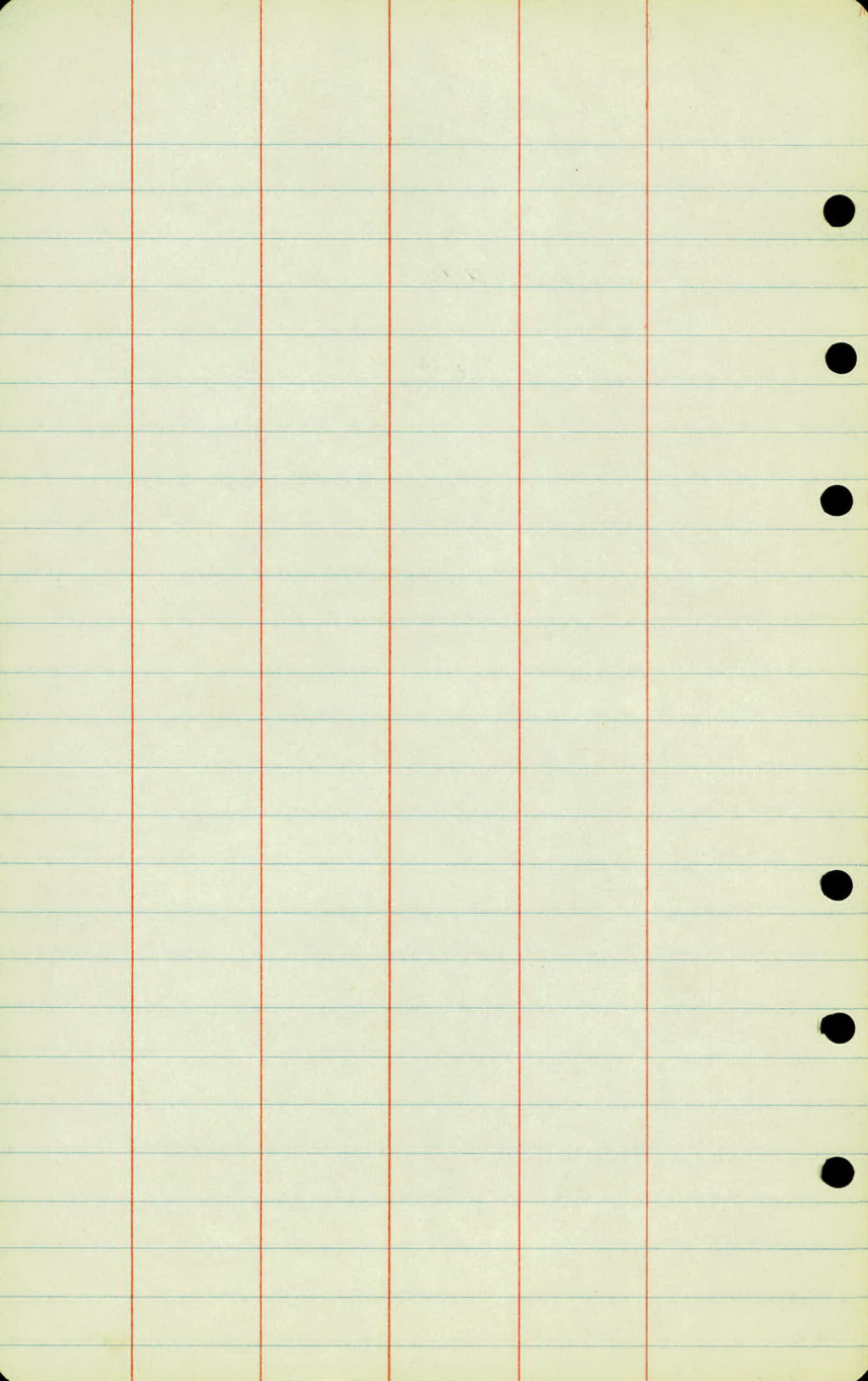
5.44%

9.10

9.38

67.21 BT = 4.38

C = 5.02



Flandrau St.

Grade stakes

Sta	+	π	-	Grade
B.M.	2.94	977.01		(974.07)

12	+50			67.2
----	-----	--	--	------

13				67.1
----	--	--	--	------

	+50			67.0
--	-----	--	--	------

14				66.9
----	--	--	--	------

	+50			66.8
--	-----	--	--	------

15				66.7
----	--	--	--	------

	+50			66.6
--	-----	--	--	------

16				66.5
----	--	--	--	------

	+50			66.4
--	-----	--	--	------

17				66.3
----	--	--	--	------

	+50			66.2
--	-----	--	--	------

Gr. Rod

Lt

#

Rt

Top Hyd Lt sta 15+89

9.8

$\frac{6.5}{+3.3}$

9.9

$\frac{6.8}{+3.1}$

10.0

$\frac{6.6}{+3.4}$

10.1

$\frac{4.6}{+5.5}$

10.2

$\frac{6.8}{+3.4}$

10.3

$\frac{7.3}{+2.0}$

10.4

$\frac{6.0}{+4.4}$

10.5

$\frac{7.5}{+3.0}$

10.6

$\frac{7.6}{+3.0}$

10.7

10.8

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

18				661
----	--	--	--	-----

+50				660
-----	--	--	--	-----

19				659
----	--	--	--	-----

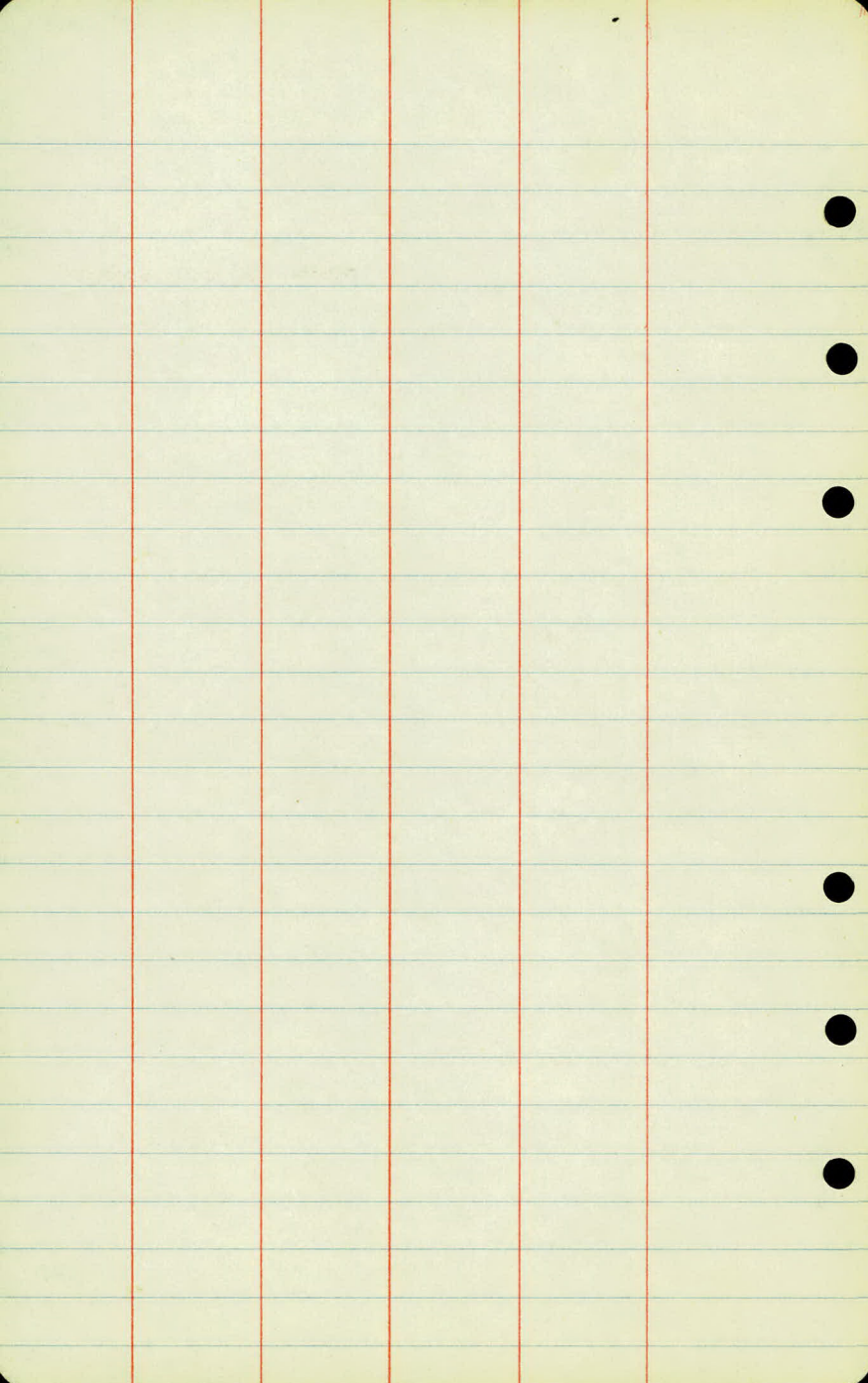
+41				658
-----	--	--	--	-----

Gr. Rod

Lt.

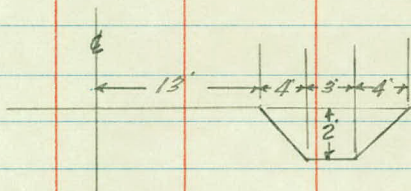
£

Bt



Vanderbie Rd.

slope stakes



4-Pages

Sta.	PG	PR	DGR
------	----	----	-----

B.M.	4.38	911.19	
------	------	--------	--

906.81

0 +33	05.5	5.7	7.7
-------	------	-----	-----

+65	05.6	5.6	7.6
-----	------	-----	-----

1	05.6	5.6	7.6
---	------	-----	-----

+50	05.7	5.5	7.5
-----	------	-----	-----

2	05.9	5.3	7.3
---	------	-----	-----

+50	06.0	5.2	7.2
-----	------	-----	-----

3	06.1	5.1	7.1
---	------	-----	-----

+50	06.2	5.0	7.0
-----	------	-----	-----

9-9-46
K.A.
A.M.
M.B.
C.F.

Fair + Windy

L

E

R

Spt in P.P. S.E. Cor. Vanderbie + La Bore Ave.

R 34

43

268

R 26

51

252

R 30

46

260

R 24

54

248

R 26

50

252

R 24

54

248

R 21

54

242

R 25

50

250

R 17

56

234

R 19

54

238

R 22

50

244

R 19

53

238

R 21

50

242

R 23

48

246

R 17

53

234

R 20

50

240

S/O	PG	PER	DGR	
		911.19		
4	06.3	4.9	6.9	
+50	06.5	4.7	6.7	
5	06.6	4.6	6.6	
+50	06.7	4.5	6.5	
6	06.8	4.4	6.4	
T.P.	5.26	912.24	4.21	906.98
+50	06.9	5.3	7.3	
7	07.1	5.1	7.1	
+50	07.2	5.0	7.0	

L

E

R

R. 1.1
5.8
22.2

R. 1.9
5.0
23.8

R. 1.0
5.7
22.0

R. 1.4
5.3
22.8

R. 1.4
5.2
22.8

R. 1.8
5.9
22.6

R. 1.0
5.5
22.0

R. 1.4
5.1
22.8

R. 0.8
5.6
21.6

R. 1.2
5.2
22.4

R. 0.4
6.9
20.8

R. 1.0
6.3
22.0

R. 0.6
6.5
21.2

R. 0.8
6.3
21.6

R. 0.5
6.5
21.0

R. 1.1
5.9
22.2

Sta.	PG	PGR	DGR
------	----	-----	-----

912.24

8	07.3	4.9	6.9
---	------	-----	-----

+50	07.4	4.8	6.8
-----	------	-----	-----

9	07.5	4.7	6.7
---	------	-----	-----

+50	07.7	4.5	6.5
-----	------	-----	-----

10	07.8	4.4	6.4
----	------	-----	-----

+50	07.9	4.3	6.3
-----	------	-----	-----

11	08.0	4.2	6.2
----	------	-----	-----

B.M. +50	08.1	4.1	6.1
----------	------	-----	-----

T.P.	4.69	911.31	5.62
------	------	--------	------

B.M.			4.49
------	--	--	------

908.07 = B.M.

906.62

906.82

(906.81)

L

E

R

18.04
6.5
20.8

18.08
6.1
21.6

18.01
6.8
20.2

18.04
6.4
20.8

18.00
6.7
17.0

18.01
6.6
20.2

18.00
6.5
17.0

18.01
6.4
20.2

18.01
6.9
20.2

18.04
6.0
20.8

18.11
5.2
22.2

18.13
5.0
22.6

18.11
5.1
22.2

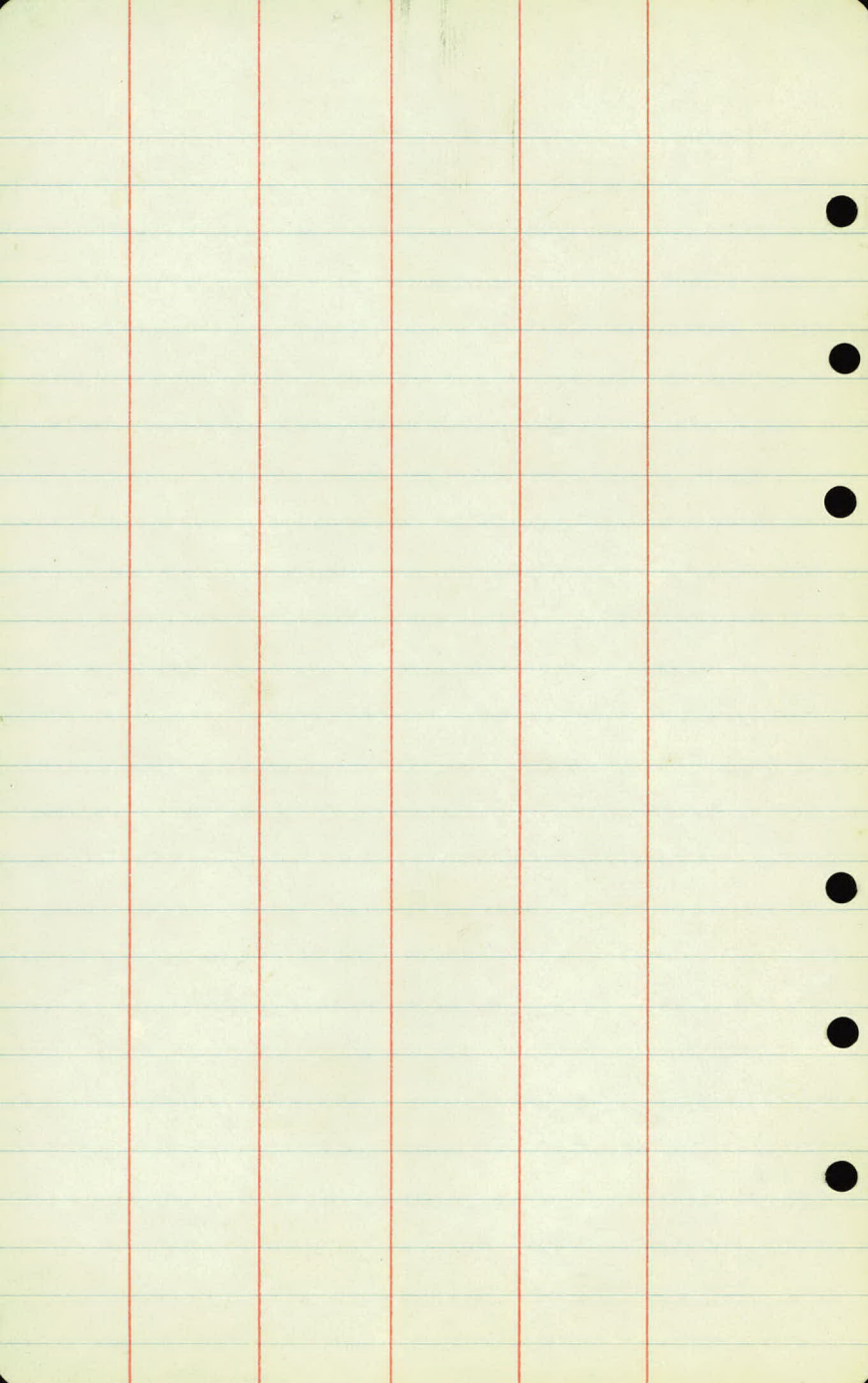
18.15
4.7
23.0

18.11
5.0
22.2

18.17
4.4
23.4

Spk. in P.P. rt. sta 12+00

Spk. in P.P. S.E. Cor. Vanderbilt + La Bore Ave.



Just a w.

Max. 7653.00

7652.72

1376.36

1376.36

$$\begin{array}{r} 296.07 \\ 296.07 \\ \hline \sqrt{92.14} \\ 63 \\ \hline 655.14 \end{array}$$

$$\begin{array}{r} 296.07 \\ 296.07 \\ \hline \sqrt{92.14} \\ 495 \\ 30 \\ \hline 671.64 \end{array}$$

30 • Iron Mon.

BrS.33

