

Dr. 11A-Bk. 15

OFFICE OF COUNTY ENGINEER  
RAMSEY CO. MINN.

PLAN ..... Survey •

Fredeen Road .....

From Long Lake Rd. To 500' East .....

Road Acc't. No. ....

Date Filed 1937 .....

File .....

# PLAN

Fredeen Road.

Location

See 12" x 18" print of survey  
of part of the N.W.  $\frac{1}{4}$  of the  
S.W.  $\frac{1}{4}$  of section 20 T30N-R23W  
by F.T. Armstrong dated  
Nov. 26<sup>th</sup> 1935. This print is  
borrowed from Mr. Fredeen.

FB. 8/4/37

Refer also to W.P.A. survey New  
Brighton, West Village Limits  
S.W.  $\frac{1}{4}$  Sec. 20-30-23.

Refer also to Auditors Sub. #79

Point.

Sta.

3+68.54 P.O.T. Iron pipe found ss.  
on print

0+35.74 P.O.T. Iron pipe <sup>found</sup> ss on print

0+00. P.I. Long Lake Road.

# Reference Points

Nail in 24" Cotton wood  
Approx 300'

✓

Garage, No. Wall  
Upstairs Door  
East Edge of door  
Frame Approx  
300'

Nail in 6" oak  
Approx 400'

93°50'

58°50'

Chicken Coop with  
Red Roof 1/4 Mile

ad. Rail Post

29.37

70.88

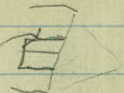
58.81

T.P.

T.P.



37.54



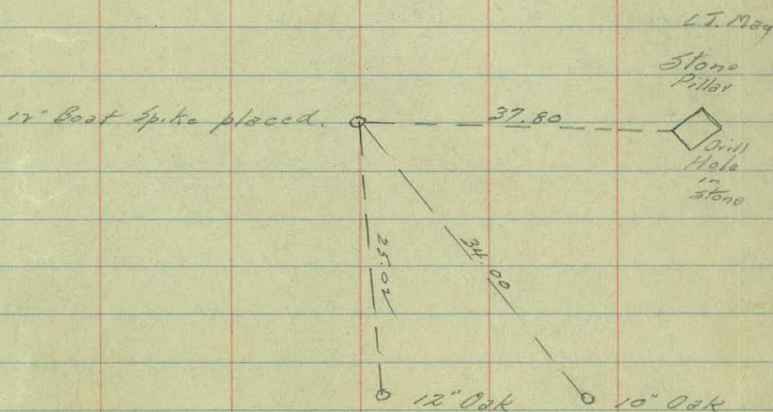
Point.

5/2.

5405.<sup>45</sup> P.I. with E. Line of N.W.  $\frac{1}{4}$   
of S.W.  $\frac{1}{4}$  Sec. 20-30-23.  
see print.

24" culvert required at Sta. 3+68

recommend concrete if heavy fill.



368.5  
136.9  
35.7  
1

↑ North.

Stone Mon.

1/4 Line Sec. 20-20-23

Also Record 1873

Stone Marker Cor.

90°44'

Found Iron Pin

Placed 12" Best Spike

Found Irons in Place.

Placed 12" Best Spike

35.74

368.32

135.58

136.93

94°0'

94°16'

345.35  
367.31

352.05  
352.01

Long Lake Road.

1/4 Line

Found Iron Pin

1/4 Line

S.W. Cor. Stone Mon.

South Line 20

Found Iron Pin

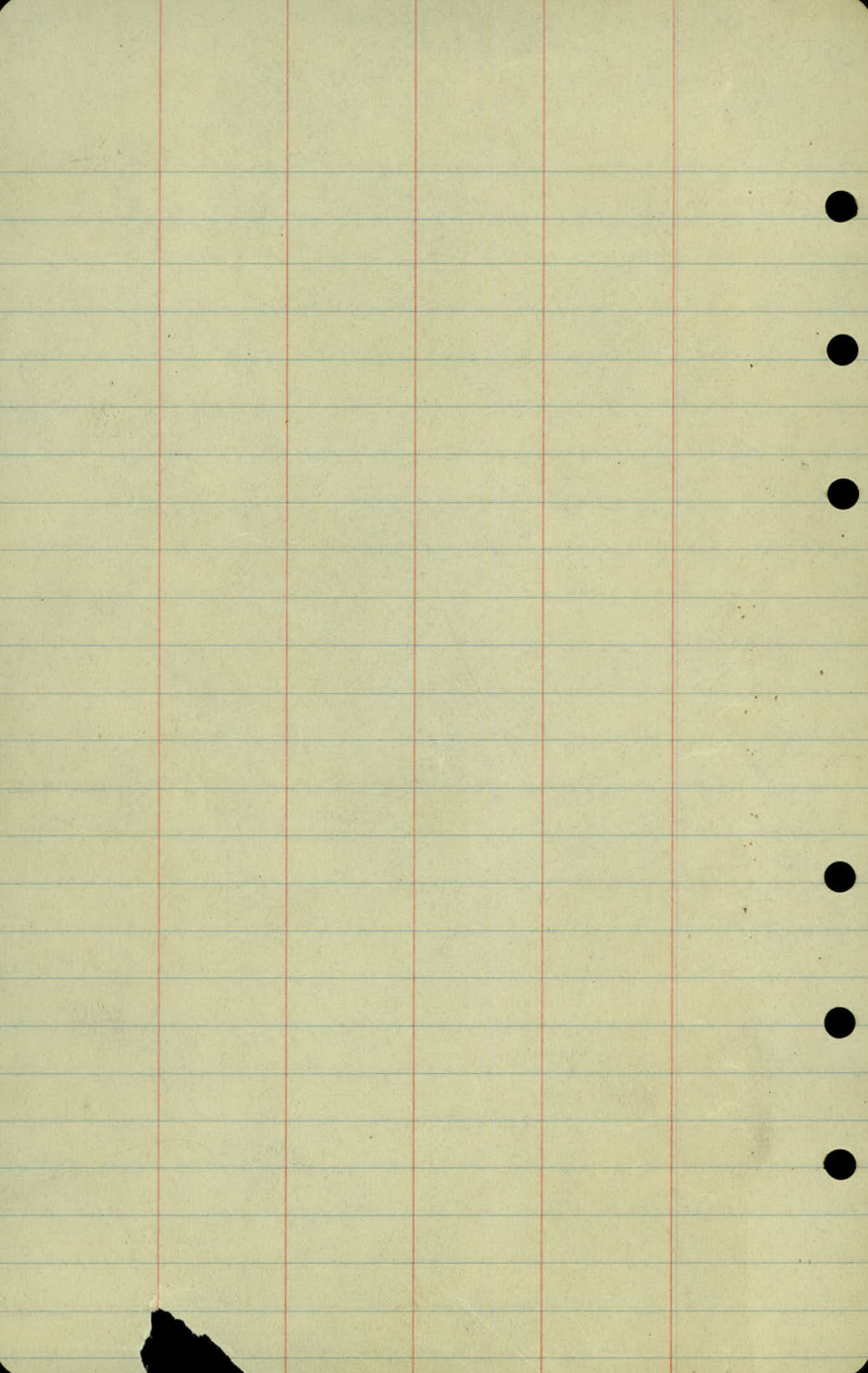
1306.4

by ch.

S.E. Cor.

Stone Mon.

8/4/37



# Reference Points

See pg. 4.

57

Twin 12" oak

42.33

25.05

30 Poplar

1/4" 4 with 1/4" 4

Cor Four } oak  
65.16

38.85

Twin 12"

12" oak

Triple oak

24.04

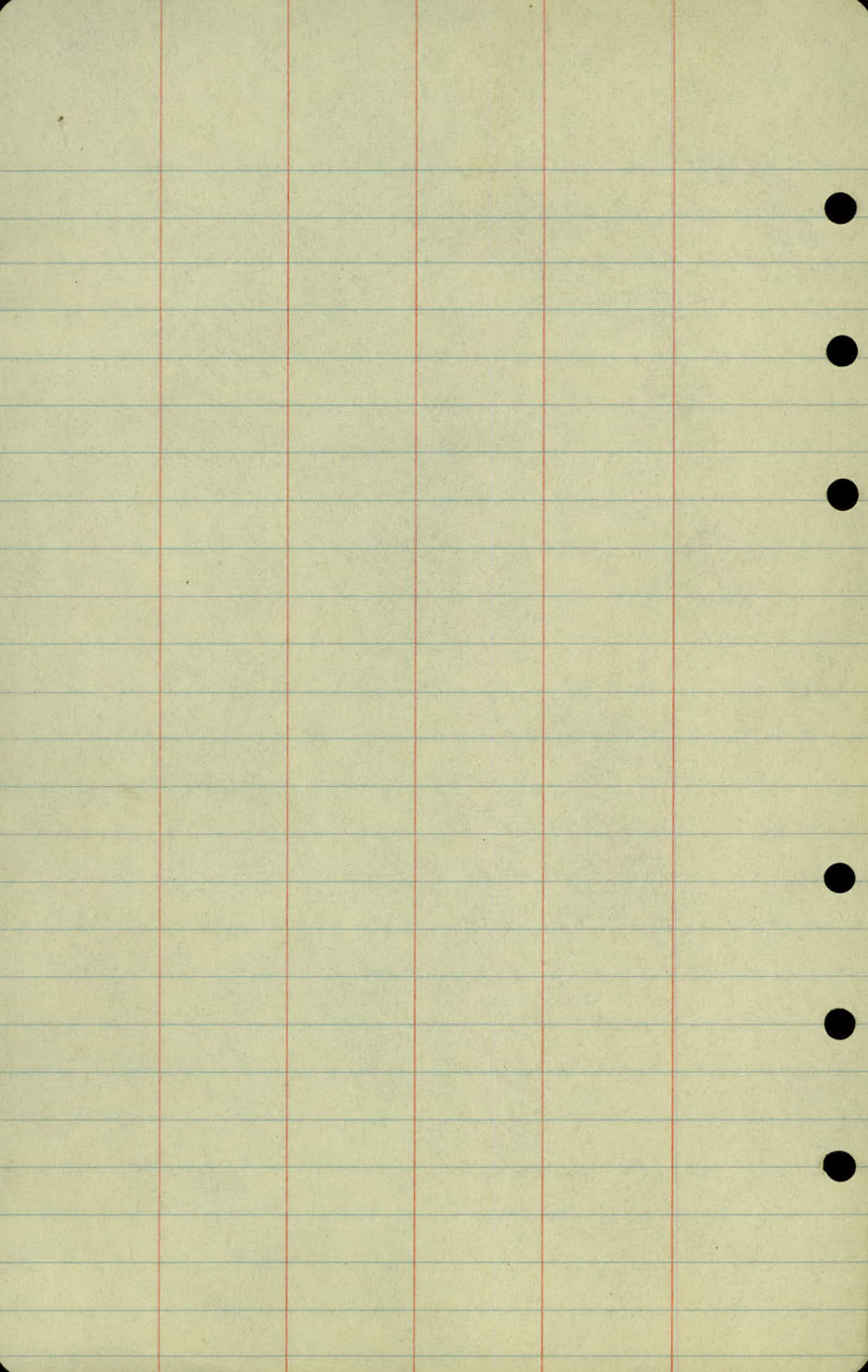
45.33

2x2 Hub  
Base of Willows

South Sec Line 20  
with 1/4" 4

41.32

3" oak



Topography  
"Fredeon Rd."

5+00

4+00

+68 57.11  
+50 32'-17" R/L  
+33 R/L  
10.0  
R/L  
5-5

3+00

2+00

R/L  
5-5

1+00

R/L  
5-5

0+00

+19 15" x 20 CM  
x Drain

Note For Topog on 1/4 1/4 Line

See W.P.A Plan West Village Limits  
of New Brighton SW 1/4 Sect 20 Sheet 1 of 2 Sheets  
+06 Retaining Wall 58' 1/4 1/4 Line

12' Black Top Rd

+97 Woodpile  
Retaining Wall 7'

+97 Edge Rd

Garden  
Patch

10' Dirt Cartway

Waste

Grain Field  
Cultivated

Waste

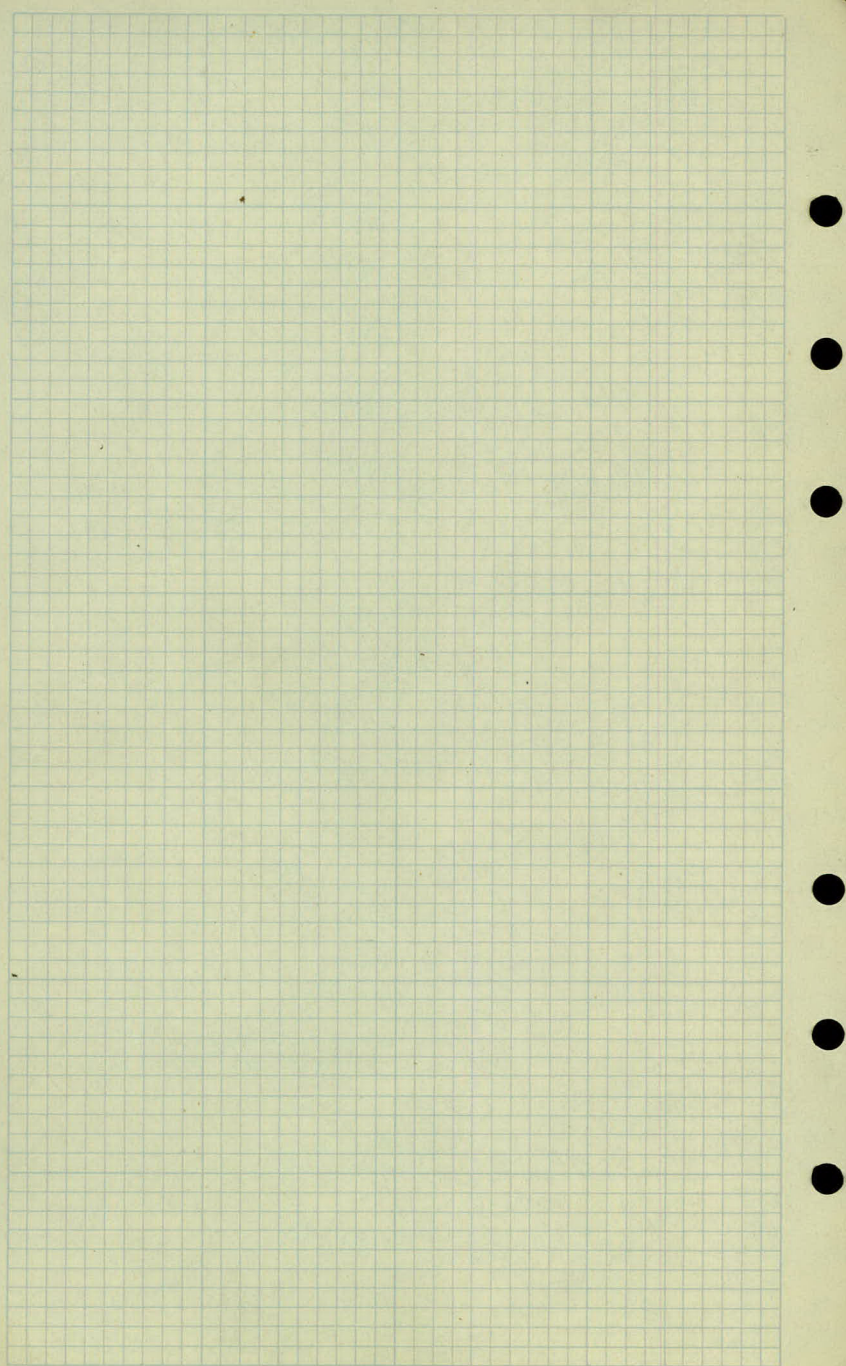
10' Cartway

+29 E Cor

+20 E Cor

0+33 PP 11'

20' Black Top Long Lake Rd



Bench Marks.

Refer to W.P.A. plan  
sheet 1 of 2 of West Village  
limits of New Brighton S.W. 1/4  
Section 20

| Sta. | + | ∓ | - | Elev. |
|------|---|---|---|-------|
|------|---|---|---|-------|

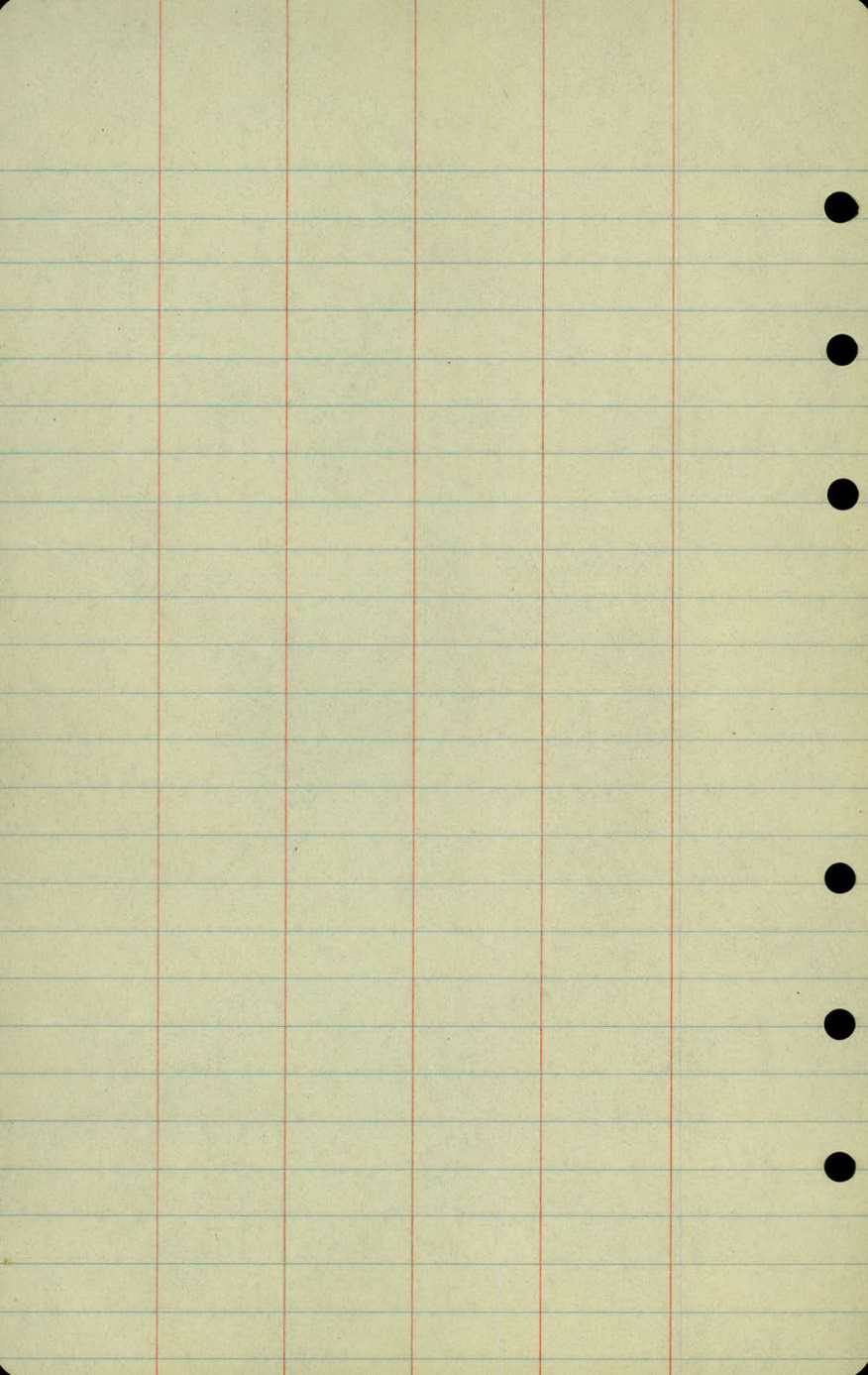
|      |      |        |  |        |
|------|------|--------|--|--------|
| B.M. | 1.09 | 902.52 |  | 901.43 |
|------|------|--------|--|--------|

|      |      |        |       |        |
|------|------|--------|-------|--------|
| T.P. | 0.17 | 889.47 | 13.22 | 889.30 |
|------|------|--------|-------|--------|

|      |  |  |       |        |
|------|--|--|-------|--------|
| B.M. |  |  | 11.52 | 877.95 |
|------|--|--|-------|--------|

Nail in T.P. @ Sta. 12+06

Nail in T.P. West side Long Lake road  
at intersection with proposed  
Fredeen Road.



Preliminary Cross Section of  
proposed Fredeen Road from  
Sta 0+00 intersection with Long  
Lake road to Sta. 5+05.45 intersection  
with N & S.  $\frac{1}{4}$  line.

8/37

| Sta. | + | $\Delta$ | - | Elev. |
|------|---|----------|---|-------|
|------|---|----------|---|-------|

|     |      |        |  |        |
|-----|------|--------|--|--------|
| BM. | 9.02 | 886.97 |  | 877.95 |
|-----|------|--------|--|--------|

|      |  |                      |  |      |
|------|--|----------------------|--|------|
| 0+00 |  | Along & Long Lake Rd |  | 77.3 |
|------|--|----------------------|--|------|

|     |  |                            |  |      |
|-----|--|----------------------------|--|------|
| +14 |  | East Shoulder Long Lake Rd |  | 77.0 |
|-----|--|----------------------------|--|------|

|     |  |                         |  |      |
|-----|--|-------------------------|--|------|
| +21 |  | East Ditch Long Lake Rd |  | 77.1 |
|-----|--|-------------------------|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +50 |  |  |  | 77.1 |
|-----|--|--|--|------|

|      |  |  |  |      |
|------|--|--|--|------|
| 1+00 |  |  |  | 78.6 |
|------|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +50 |  |  |  | 79.4 |
|-----|--|--|--|------|

|      |  |  |  |      |
|------|--|--|--|------|
| 2+00 |  |  |  | 80.2 |
|------|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +50 |  |  |  | 79.9 |
|-----|--|--|--|------|

|    |      |        |      |        |
|----|------|--------|------|--------|
| TP | 3.16 | 883.20 | 6.93 | 880.04 |
|----|------|--------|------|--------|

|   |  |  |  |      |
|---|--|--|--|------|
| 3 |  |  |  | 77.9 |
|---|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +50 |  |  |  | 74.6 |
|-----|--|--|--|------|

Lt.

E

Rt

11

Nail in T.P. West side of Long  
Lake road at intersection with  
proposed Fredeen road.

$$\frac{11.2}{100} \quad \frac{10.5}{50} \quad 9.7 \quad \frac{8.7}{50} \quad \frac{8.0}{100}$$

$$\frac{11.3}{100} \quad \frac{10.7}{50} \quad 10.0 \quad \frac{9.3}{50} \quad \frac{8.5}{100}$$

$$\frac{15.2}{100} \quad \frac{13.3}{50} \quad \frac{12.6}{10} \quad \frac{10.2}{7} \quad 9.9 \quad \frac{10.0}{7} \quad \frac{12.2}{11} \quad \frac{10.3}{50} \quad \frac{9.0}{100}$$

Flow Out/In  
2.190

$$\frac{17.0}{100} \quad \frac{14.0}{60} \quad \frac{13.3}{50} \quad \frac{11.8}{38} \quad \frac{9.5}{10} \quad 9.9 \quad \frac{9.1}{5} \quad \frac{8.3}{17} \quad \frac{4.8}{47} \quad \frac{6.6}{50} \quad \frac{9.2}{78} \quad \frac{9.0}{72} \quad \frac{8.1}{100}$$

$$\frac{18.0}{100} \quad \frac{17.3}{87} \quad \frac{13.7}{50} \quad \frac{11.2}{34} \quad \frac{8.4}{4} \quad 8.4 \quad \frac{8.3}{4} \quad \frac{7.8}{5} \quad \frac{4.3}{50} \quad \frac{0.0}{100}$$

$$\frac{17.6}{100} \quad \frac{12.4}{50} \quad \frac{7.5}{6} \quad 7.6 \quad \frac{7.3}{5} \quad \frac{4.9}{28} \quad \frac{2.0}{50} \quad \frac{0.0}{68} \quad \frac{+3.8}{100}$$

$$\frac{13.6}{100} \quad \frac{10.5}{50} \quad \frac{6.6}{7} \quad 6.8 \quad \frac{6.0}{5} \quad \frac{5.6}{17} \quad \frac{1.1}{50} \quad \frac{+3.7}{79} \quad \frac{+2.7}{100}$$

$$\frac{13.3}{100} \quad \frac{10.0}{50} \quad \frac{6.6}{9} \quad \frac{7.3}{5} \quad 7.1 \quad \frac{6.7}{4} \quad \frac{4.5}{29} \quad \frac{2.5}{50} \quad \frac{0.0}{68} \quad \frac{+3.0}{100}$$

$$\frac{12.7}{100} \quad \frac{8.3}{50} \quad \frac{4.6}{10} \quad \frac{5.7}{7} \quad 5.3 \quad \frac{5.1}{2} \quad \frac{4.3}{6} \quad \frac{1.7}{50} \quad \frac{0.4}{86} \quad \frac{0.0}{100}$$

$$\frac{13.6}{100} \quad \frac{12.0}{50} \quad \frac{10.0}{18} \quad \frac{8.4}{7} \quad 8.6 \quad \frac{6.7}{26} \quad \frac{6.6}{50} \quad \frac{5.7}{100}$$

Sta.      +       $\pi$       -      Elev.

883.20

3+68.52

Place Culvert

73.9

4

77.0

+25

80.7

T.P.

11.71

893.01

1.90

881.30

+30

85.2

+75

88.9

T.P.

10.94

900.44

3.51

889.50

+88

91.8

+98

Shoulder Line

96.7

5+05.45

& at Road

97.1

T.P.

7.24

903.15

4.53

895.91

B.M.

1.71

901.44

901.43

Lt.

E

Et

12

$$\frac{12.7}{150} \quad \frac{11.8}{100} \quad \frac{11.2}{50} \quad \frac{11.0}{38} \quad \frac{9.5}{9} \quad 9.3 \quad \frac{7.8}{38} \quad \frac{7.2}{50} \quad \frac{5.5}{100}$$

$$\frac{6.3}{100} \quad \frac{6.5}{50} \quad \frac{5.5}{13} \quad \frac{6.3}{5} \quad 6.2 \quad \frac{6.1}{30} \quad \frac{6.1}{50} \quad \frac{4.1}{100}$$

$$\frac{3.1}{100} \quad \frac{3.0}{50} \quad \frac{1.8}{14} \quad \frac{2.5}{5} \quad 2.5 \quad \frac{3.4}{50} \quad \frac{2.0}{90} \quad \frac{1.2}{100}$$

$$\frac{6.8}{100} \quad \frac{7.2}{50} \quad \frac{6.5}{11} \quad \frac{7.6}{8} \quad 7.8 \quad \frac{7.2}{20} \quad \frac{7.1}{50} \quad \frac{7.2}{88} \quad \frac{8.7}{100}$$

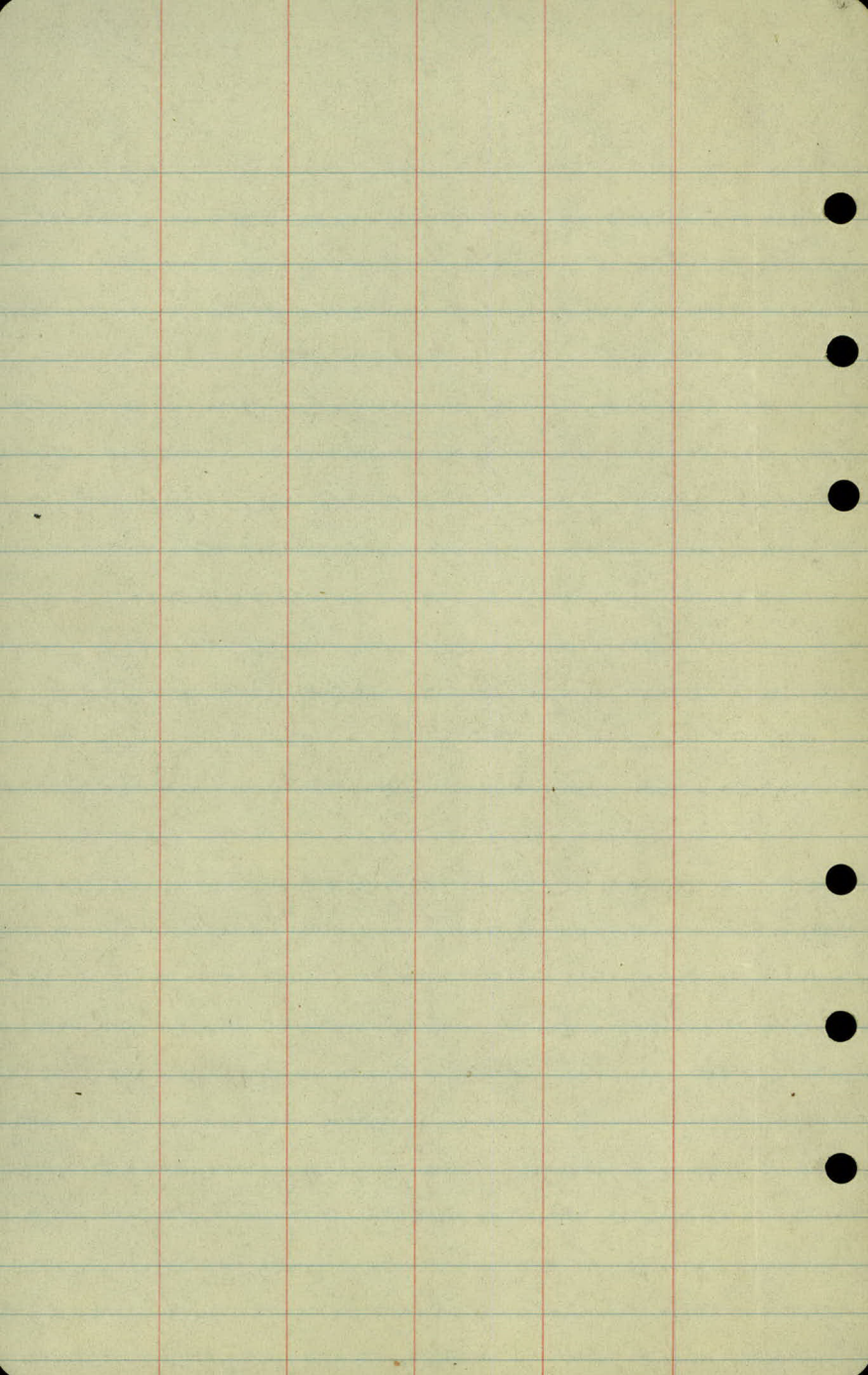
$$\frac{2.3}{100} \quad \frac{2.4}{50} \quad \frac{2.5}{16} \quad \frac{3.8}{8} \quad 4.1 \quad \frac{4.5}{50} \quad \frac{4.4}{100}$$

$$\frac{4.3}{100} \quad \frac{5.7}{50} \quad \frac{7.2}{18} \quad \frac{7.8}{13} \quad 8.6 \quad \frac{8.8}{8} \quad \frac{7.2}{27} \quad \frac{10.5}{37} \quad \frac{11.8}{100}$$

$$\frac{1.7}{100} \quad \frac{2.0}{50} \quad \frac{2.1}{46} \quad \frac{2.4}{20} \quad 3.7 \quad \frac{5.8}{50} \quad \frac{6.1}{70} \quad \frac{6.3}{100}$$

$$\frac{1.9}{100} \quad \frac{2.0}{50} \quad \frac{2.4}{20} \quad 3.3 \quad \frac{5.6}{50} \quad \frac{5.9}{77} \quad \frac{5.8}{100} \quad \frac{4.7}{150}$$

Nail in PP 15' Lt Sta 12406 on West  
 Limits of New Brighton Village 1/4 Line Sec 20  
 W.P.A. Plan



Notes at location of proposed  
borrow pit Long Lake  
Road near proposed Fredeen  
Road.

H.B.

H.A. Wilke

L. Goldberg

A. Meeschter

3/25/  
38

Sta.  
7+06.28 P.O.T. = P.I. Freedom Rd.

Note.

E Long Lake road established by  
(A.L.B.) 33' from iron pipes at Sta.  
0+00 & Sta. 4+65 which produced  
intersects 12" boat spike at Sta  
7+06.28 set at Time of Freedom  
Road Survey.

0+11.63 P.I. - assumed property line Rt.  
0+00 P.O.T.

7+06.28

12" Boat Spike = Sta. 0+00 Freedom Road.

See Notes Sk. 15 Dr. 11 R.

67°37'

4+65 23.0 @ Iron Pipe

Reposed Freedom Road

3+60

33.7 x Stake

Frame Garage on Conc. Fdn.

3+00

2+90

197.0

21  
20

3+08

Ent. 12' Dirt Drive

2+60

34.0 x Stake

61°41'

228.2

6' x 6' Conc. Walk or Entr.

34.3  
6.3  
8.5  
16  
36.0  
12

New Dr. 22' F.

Long 20' Backlog Road.

52°18'

251.0

0+91

34.0 x Stake

108°30'

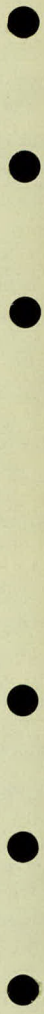
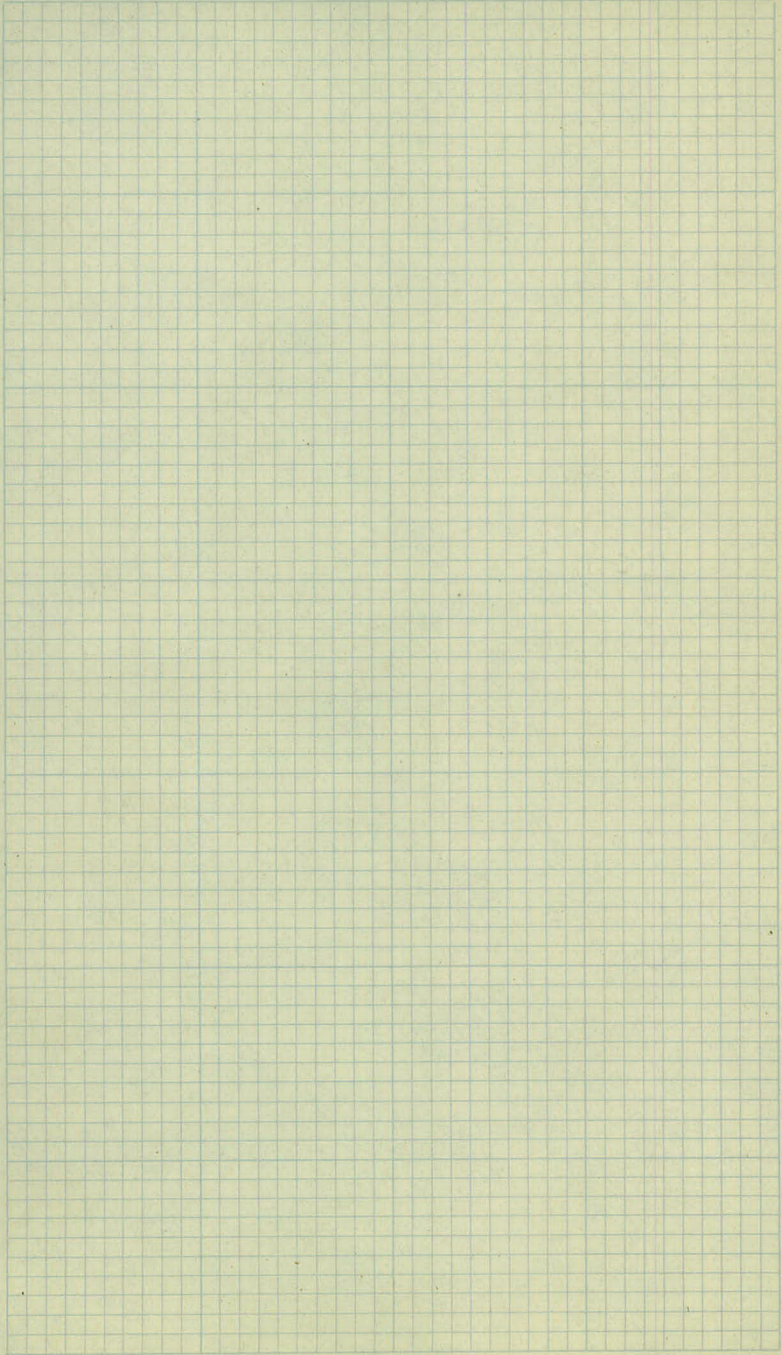
0+11.63

33.0

Iron Pipe

No Verifications made of this line

Iron Pipe



Cross Sections of proposed  
borrow pit Rt. side of Long  
Lake Road near proposed  
Fredeen Road.

5/25/38

Limits of X-sec. as directed  
by A.L.B.

| Sta.    | +                                       | $\pi$  | -     | Elev.    |
|---------|-----------------------------------------|--------|-------|----------|
| B.M.    | 17.11                                   | 890.06 |       | 877.95   |
| B.M.    |                                         |        | 4.67  | 885.39   |
|         | 17.87                                   | 898.26 |       |          |
| 0+11.63 | Sec. on angle approx prop. line 108°30' |        |       |          |
|         |                                         |        | 86.4  |          |
| 0+00    |                                         |        |       | 86.4     |
| 0+50    |                                         |        |       | 86.3     |
| 1+00    |                                         |        |       | 86.2     |
| 1+50    |                                         |        |       | 85.8     |
| 2+00    |                                         |        |       | 85.3     |
| 2+50    |                                         |        |       | 84.9     |
| 3+00    |                                         |        |       | 84.2     |
|         | Sec. thru dist. Ent. Rt.                |        |       |          |
| 3+00    |                                         |        |       | 84.1     |
| T.P.    | 5.11                                    | 890.50 | 17.87 | 885.39   |
| B.M.    |                                         |        | 17.55 | 877.95   |
|         |                                         |        |       | (877.95) |

2RT.4

Nail in T.P. West side Long Lake road at  
intersection with proposed Fradeen Road. (See Book 15  
Dr. 4A)

Spike in T.P. 28' 4". Sta. 1430

$$\begin{array}{r} 11.9 \quad 12.2 \quad 13.5 \quad 13.9 \quad 12.8 \quad 97 \quad 93 \quad 7.4 \quad 6.3 \quad 3.9 \quad 0.9 \quad +1.0 \\ \hline 13 \quad 17 \quad 60 \quad 85 \quad 31 \quad 51 \quad 85 \quad 100 \quad 126 \quad 169 \quad 200 \end{array}$$

$$\begin{array}{r} 11.9 \quad 12.1 \quad 13.6 \quad 13.9 \quad 12.5 \quad 97 \quad 8.3 \quad 6.3 \quad 3.2 \quad 0.4 \quad +1.0 \\ \hline 14 \quad 17 \quad 60 \quad 25 \quad 29 \quad 68 \quad 100 \quad 145 \quad 179 \quad 200 \end{array}$$

$$\begin{array}{r} 12.0 \quad 12.3 \quad 12.4 \quad 13.5 \quad 12.5 \quad 90 \quad 8.0 \quad 6.0 \quad 5.0 \quad 2.3 \quad 0.6 \\ \hline 13 \quad 16 \quad 17 \quad 24 \quad 30 \quad 66 \quad 100 \quad 129 \quad 170 \quad 200 \end{array}$$

$$\begin{array}{r} 12.1 \quad 12.5 \quad 13.5 \quad 12.2 \quad 6.2 \quad 6.0 \quad 5.0 \quad 4.5 \quad 2.4 \quad 1.5 \quad 1.0 \\ \hline 13 \quad 15 \quad 24 \quad 34 \quad 68 \quad 100 \quad 130 \quad 176 \quad 185 \quad 100 \end{array}$$

$$\begin{array}{r} 12.5 \quad 12.8 \quad 13.8 \quad 12.8 \quad 4.8 \quad 5.0 \quad 4.3 \quad 4.1 \quad 4.5 \quad 4.3 \quad 3.4 \quad 2.8 \quad 0.6 \quad 0.5 \\ \hline 12 \quad 15 \quad 21 \quad 34 \quad 62 \quad 89 \quad 100 \quad 123 \quad 152 \quad 161 \quad 180 \quad 191 \quad 200 \end{array}$$

$$\begin{array}{r} 13.0 \quad 13.4 \quad 14.5 \quad 13.8 \quad 5.4 \quad 5.2 \quad 4.5 \quad 4.8 \quad 3.3 \quad 0.9 \quad 0.8 \\ \hline 13 \quad 15 \quad 23 \quad 35 \quad 55 \quad 100 \quad 148 \quad 168 \quad 175 \quad 200 \end{array}$$

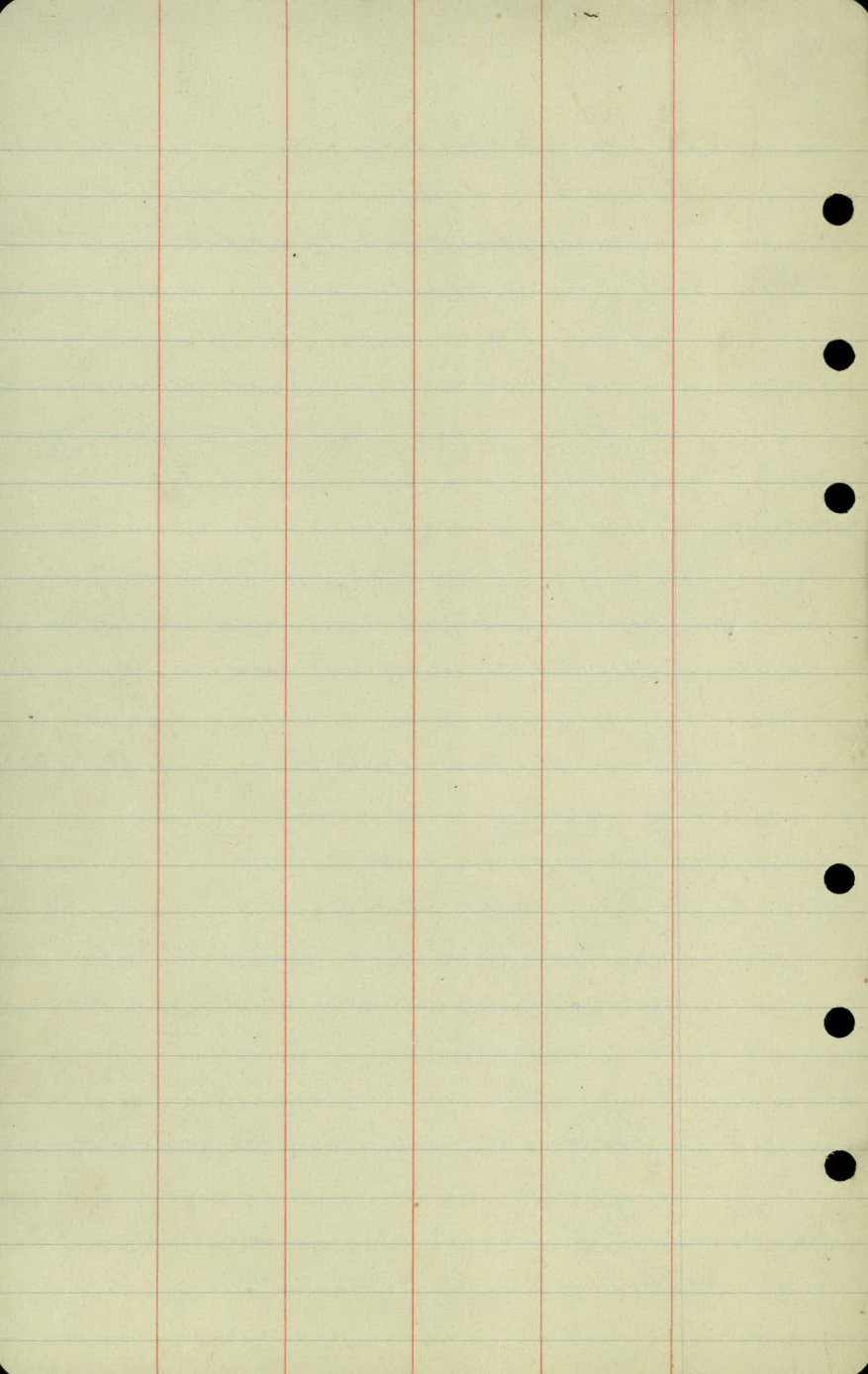
Floor  
conc. Parch  
140  
0.1

$$\begin{array}{r} 13.4 \quad 14.0 \quad 15.1 \quad 14.7 \quad 10.1 \quad 10.8 \quad 10.3 \quad 7.9 \quad 7.4 \quad 6.8 \quad 7.0 \quad 5.8 \quad 4.2 \quad 4.2 \\ \hline 14 \quad 16 \quad 22 \quad 30 \quad 33 \quad 50 \quad 80 \quad 100 \quad 136 \quad 144 \quad 153 \quad 191 \quad 200 \end{array}$$

$$\begin{array}{r} 14.1 \quad 13.7 \quad 11.3 \quad 5.2 \quad 6.8 \quad 4.2 \\ \hline 37 \quad 54 \quad 100 \quad 137 \quad 200 \end{array}$$

Floor Garage  
4.2

$$\begin{array}{r} 14.2 \quad 14.6 \quad 15.4 \quad 15.5 \quad 14.5 \quad 12.2 \quad 11.0 \quad 9.5 \quad 8.5 \quad 6.4 \\ \hline 14 \quad 14 \quad 26 \quad 30 \quad 56 \quad 100 \quad 130 \quad 164 \quad 197 \end{array}$$



Fredeen Road.  
Slope Stakes 6/6/38

21' to back ditch  
25'

26' Crown  
2 to 1 Slopes  
2' Deep Ditch  
2 to 1 Cor Slopes

| Sta.  | +    | K      | - | Grade  |
|-------|------|--------|---|--------|
| B.M.  | 8.76 | 886.71 |   | 877.95 |
| 0+50  |      |        |   | 77.2   |
| 1+00  |      |        |   | 77.8   |
| +50   |      |        |   | 79.2   |
| 2+00  |      |        |   | 81.1   |
| +50   |      |        |   | 83.8   |
| 3+00  |      |        |   | 86.8   |
| 3+50  |      |        |   | 89.8   |
| +68.5 |      |        |   | 90.5   |

Lt.

E

Rt.

9.5  
11.5

31

$$\begin{array}{r} 11.5 \\ \text{Daylight} \\ \hline \text{D.C. } 0.0 \\ 34.1 \end{array}$$

$$\begin{array}{r} 9.6 \\ \hline \text{F}0.1 \end{array}$$

$$\begin{array}{r} 6.4 \\ \hline \text{C}3.1 \\ \hline 31.2 \end{array}$$

32

8.9  
10.9

29

$$\begin{array}{r} 10.9 \\ \hline \text{D.C. } 0.0 \\ \text{Daylight} \\ \hline 29 \end{array}$$

$$\begin{array}{r} 8.2 \\ \hline \text{C}0.7 \end{array}$$

$$\begin{array}{r} 5.3 \\ \hline \text{C}3.6 \\ \hline 32.2 \end{array}$$

32.5

7.5  
9.5

28

$$\begin{array}{r} 9.5 \\ \hline \text{D.C. } 0.0 \\ \text{Daylight} \\ \hline 24.7 \end{array}$$

$$\begin{array}{r} 7.3 \\ \hline \text{C}0.2 \end{array}$$

$$\begin{array}{r} 4.1 \\ \hline \text{C}3.4 \\ \hline 31.8 \end{array}$$

32

5.6  
7.6

22

$$\begin{array}{r} 7.6 \\ \hline \text{F}2.0 \\ \hline 17.0 \end{array}$$

$$\begin{array}{r} 6.5 \\ \hline \text{F}0.9 \end{array}$$

$$\begin{array}{r} 4.0 \\ \hline \text{C}1.6 \\ \hline 28.2 \end{array}$$

30

2.9  
4.9
$$\begin{array}{r} 6.9 \\ \hline \text{F}4.0 \end{array}$$

$$\begin{array}{r} 5.1 \\ \hline \text{F}2.2 \\ \hline 17.4 \end{array}$$

17.5

+0.1

$$\begin{array}{r} 8.8 \\ \hline \text{F}8.9 \end{array}$$

$$\begin{array}{r} 6.7 \\ \hline \text{F}6.8 \\ \hline 26.6 \end{array}$$

26

+3.1

$$\begin{array}{r} 12.1 \\ \hline \text{F}15.2 \end{array}$$

$$\begin{array}{r} 10.2 \\ \hline \text{F}13.3 \\ \hline 39.6 \end{array}$$

40

+3.8

31

$$\begin{array}{r} 14.8 \\ \hline \text{F}18.6 \\ \hline 50.2 \end{array}$$

$$\begin{array}{r} 12.8 \\ \hline \text{F}16.6 \end{array}$$

$$\begin{array}{r} 11.0 \\ \hline \text{F}14.8 \\ \hline 47.6 \end{array}$$

43

| Sta. | + | $\pi$  | - | Grade |
|------|---|--------|---|-------|
|      |   | 886.71 |   |       |

|      |  |  |  |      |
|------|--|--|--|------|
| 4+00 |  |  |  | 92.8 |
|------|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +25 |  |  |  | 94.0 |
|-----|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +50 |  |  |  | 95.3 |
|-----|--|--|--|------|

|      |       |        |      |        |
|------|-------|--------|------|--------|
| T.P. | 10.24 | 895.88 | 1.05 | 885.66 |
|------|-------|--------|------|--------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +75 |  |  |  | 95.9 |
|-----|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +88 |  |  |  | 96.5 |
|-----|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +98 |  |  |  | 96.8 |
|-----|--|--|--|------|

|         |  |  |  |      |
|---------|--|--|--|------|
| 5+05.45 |  |  |  | 96.8 |
|---------|--|--|--|------|

|      |      |        |      |        |
|------|------|--------|------|--------|
| T.P. | 7.77 | 901.18 | 1.47 | 894.41 |
|------|------|--------|------|--------|

|      |  |  |      |        |
|------|--|--|------|--------|
| B.M. |  |  | 0.75 | 901.43 |
|------|--|--|------|--------|

OK

901.43

Lt.

E

Rt.

+6.1

44

$$\begin{array}{r} 10.1 \\ F.16.2 \\ \hline 44.6 \end{array}$$

$$\begin{array}{r} 9.9 \\ F.16.0 \\ \hline \end{array}$$

$$\begin{array}{r} 9.7 \\ F.15.8 \\ \hline 44.6 \end{array}$$

43

+7.3

40

$$\begin{array}{r} 5.8 \\ F.13.1 \\ \hline 39.2 \end{array}$$

$$\begin{array}{r} 6.0 \\ F.13.3 \\ \hline \end{array}$$

$$\begin{array}{r} 7.1 \\ F.14.4 \\ \hline 41.8 \end{array}$$

41

+8.6

31.5

$$\begin{array}{r} 0.9 \\ F.9.5 \\ \hline 32.0 \end{array}$$

$$\begin{array}{r} 1.5 \\ F.10.1 \\ \hline \end{array}$$

$$\begin{array}{r} 3.1 \\ F.11.7 \\ \hline 36.4 \end{array}$$

36

0.0

24

$$\begin{array}{r} 5.1 \\ F.5.1 \\ \hline 23.2 \end{array}$$

$$\begin{array}{r} 6.8 \\ F.6.8 \\ \hline \end{array}$$

$$\begin{array}{r} 7.3 \\ F.7.3 \\ \hline 27.6 \end{array}$$

27.5

+0.6

19

X

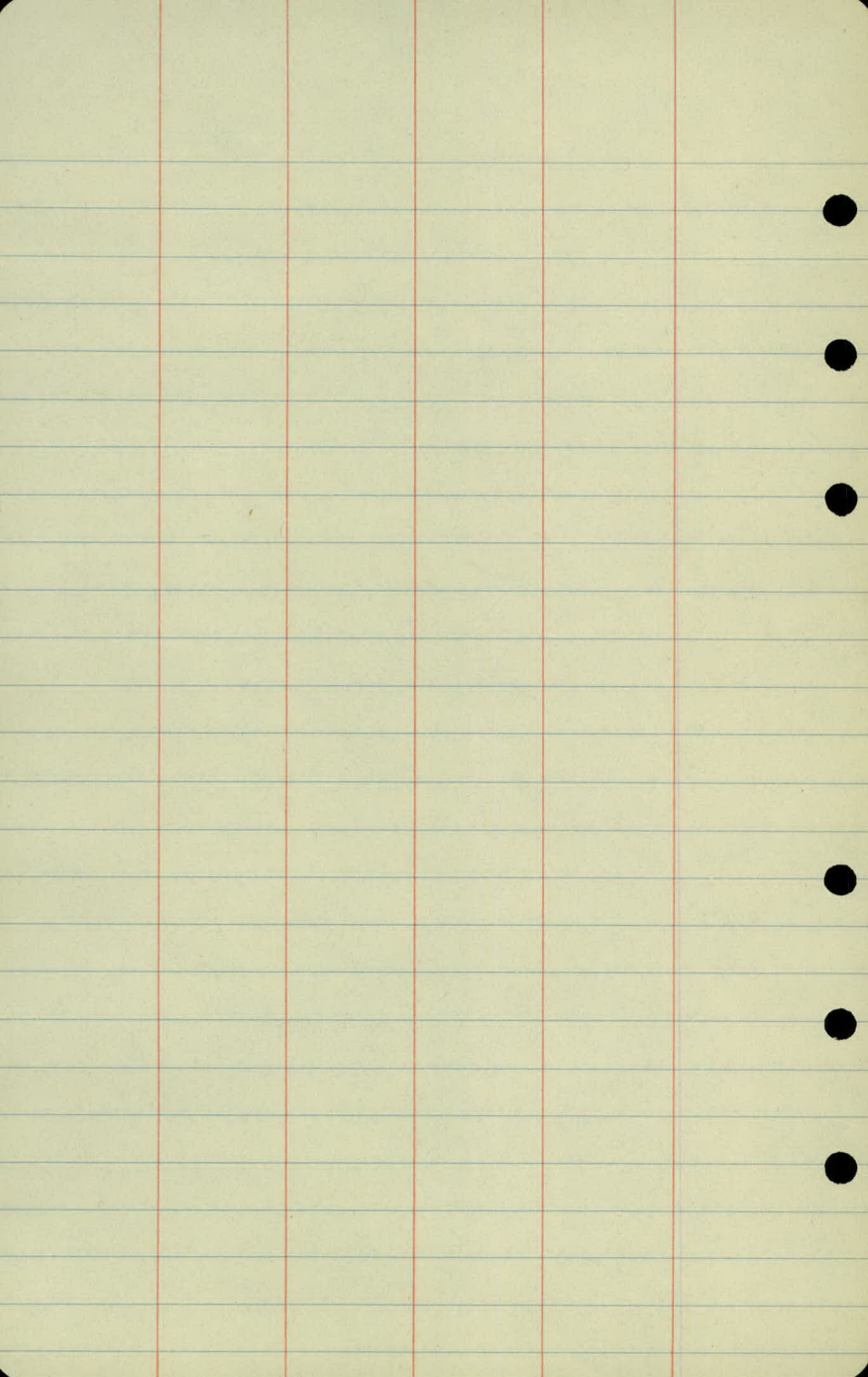
X

20

+0.9

$$\begin{array}{r} F.0.0 \\ \hline 13 \end{array}$$

Nail in P.P. 15' Lt. 12' 00"



Proposed Driveway  
(Fredeen Road)  
(Lt.) 6/6/38

83° 45'  
22.5

| Sta. | +    | K      | - | Grade. |
|------|------|--------|---|--------|
| B.M. | 8.76 | 886.71 |   | 877.95 |
| 2+50 |      |        |   | 80.4   |
| 3+00 |      |        |   | 79.3   |
| 4+50 |      |        |   | 78.4   |
| 0+00 |      |        |   | 78.4   |
| 0+50 |      |        |   | 75.4   |
| 1+00 |      |        |   | 72.4   |
| 1+50 |      |        |   | 69.4   |

6% Grade  
Down

K

Lt.

C

Rt.

10  
36

6.5

$$\begin{array}{r} 8.8 \\ \hline F2.3 \\ \hline 10.6 \end{array}$$

$$\begin{array}{r} 8.0 \\ \hline F1.5 \\ \hline \end{array}$$

7.4

48  
14

$$\begin{array}{r} 10.7 \\ \hline F3.3 \\ \hline 14.6 \end{array}$$

$$\begin{array}{r} 9.9 \\ \hline F2.5 \\ \hline \end{array}$$

8.3

$$\begin{array}{r} 15.0 \\ \hline F6.7 \\ \hline \end{array}$$

8.3

$$\begin{array}{r} 15.0 \\ \hline F6.7 \\ \hline \end{array}$$

11.3

$$\begin{array}{r} 14.6 \\ \hline F5.3 \\ \hline \end{array}$$

$$\begin{array}{r} 14.8 \\ \hline F3.5 \\ \hline 13.0 \end{array}$$

14.3

$$\begin{array}{r} 17.0 \\ \hline F2.7 \\ \hline 11.4 \end{array}$$

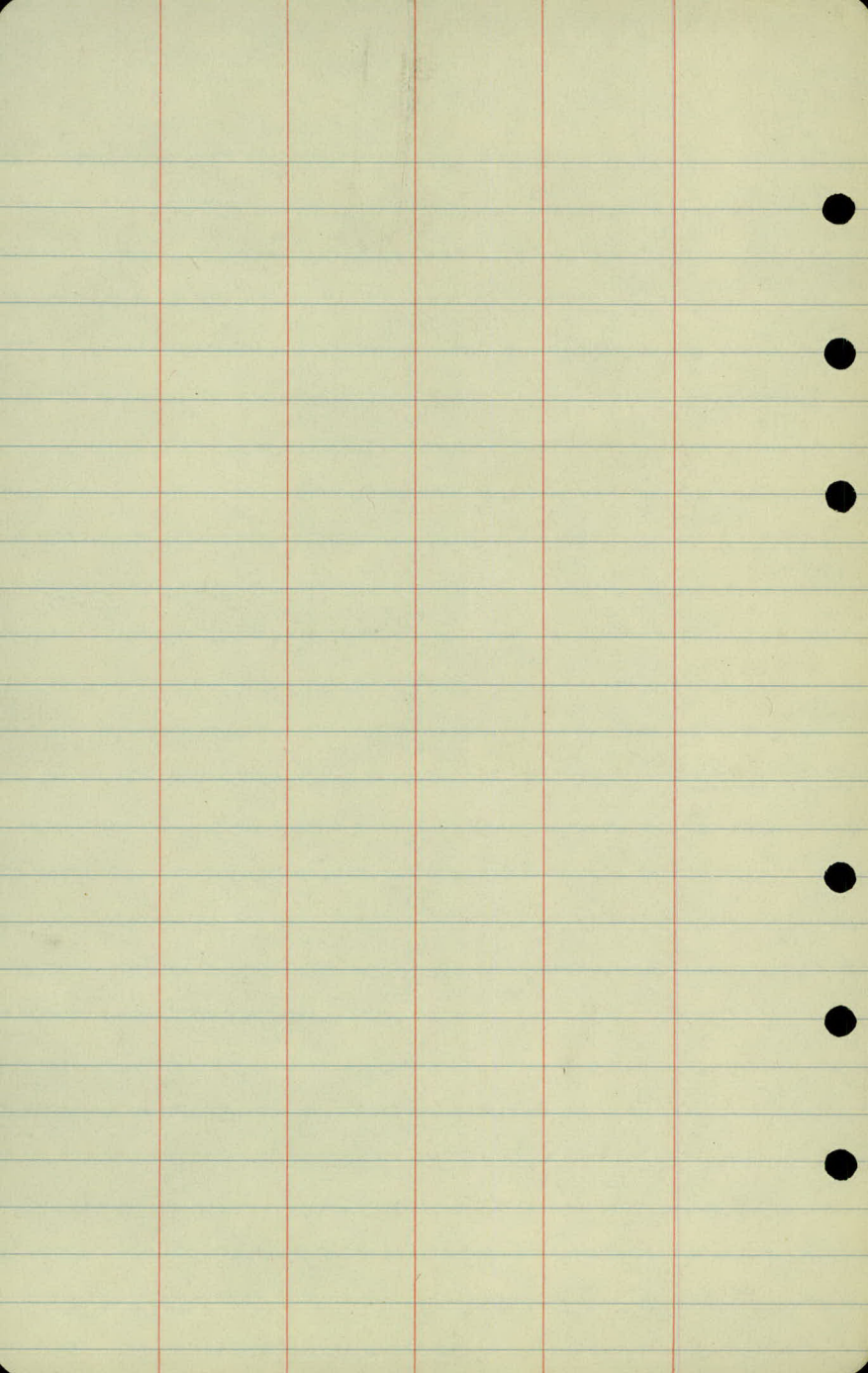
$$\begin{array}{r} 16.8 \\ \hline F2.5 \\ \hline \end{array}$$

$$\begin{array}{r} 16.2 \\ \hline F1.9 \\ \hline 98 \end{array}$$

17.3

$$\begin{array}{r} 17.3 \\ \hline F0.0 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 17.0 \\ \hline F0.0 \\ \hline \end{array}$$



Fradeen Road Borrow Pit.

9/6/38

| Sta. | + | $\pi$ | - | Elev. |
|------|---|-------|---|-------|
|------|---|-------|---|-------|

2920

|      |       |        |  |        |
|------|-------|--------|--|--------|
| B.M. | 17.01 | 897.40 |  | 885.39 |
|------|-------|--------|--|--------|

|         |  |  |  |           |
|---------|--|--|--|-----------|
| 0+11.63 |  |  |  | 86.4 87.4 |
|---------|--|--|--|-----------|

|      |  |  |  |           |
|------|--|--|--|-----------|
| 0+00 |  |  |  | 86.4 87.4 |
|------|--|--|--|-----------|

|      |  |  |  |           |
|------|--|--|--|-----------|
| 0+50 |  |  |  | 86.3 87.3 |
|------|--|--|--|-----------|

|      |  |  |  |           |
|------|--|--|--|-----------|
| 1+00 |  |  |  | 86.2 87.2 |
|------|--|--|--|-----------|

|     |  |  |  |           |
|-----|--|--|--|-----------|
| +50 |  |  |  | 85.3 86.3 |
|-----|--|--|--|-----------|

|      |  |  |  |           |
|------|--|--|--|-----------|
| 2+00 |  |  |  | 85.3 86.3 |
|------|--|--|--|-----------|

|      |  |  |  |           |
|------|--|--|--|-----------|
| 2+35 |  |  |  | 84.9 85.9 |
|------|--|--|--|-----------|

Lt.

E

Rt.

28' Lt. 572.0 + 30

$$\begin{array}{r} 88.56 \checkmark \\ 10.0 \\ \hline 8.8 \end{array}$$

$$\begin{array}{r} 8.4 \\ \hline 1.6 \\ 28 \\ \hline \end{array} \quad \begin{array}{r} 0.6 \\ \hline 6.8 \\ 137 \\ \hline \end{array}$$

$$\begin{array}{r} 88.46 \checkmark \\ 10.1 \\ \hline 8.9 \end{array}$$

$$\begin{array}{r} 8.0 \\ \hline 2.1 \\ 28 \\ \hline \end{array} \quad \begin{array}{r} 1.7 \\ \hline 6.7 \\ 137 \\ \hline \end{array}$$

$$\begin{array}{r} 88.36 \checkmark \\ 10.2 \\ \hline 9.0 \end{array}$$

$$\begin{array}{r} 8.5 \\ \hline 1.7 \\ 28 \\ \hline \end{array} \quad \begin{array}{r} 1.6 \\ \hline 7.4 \\ 137 \\ \hline \end{array}$$

$$\begin{array}{r} 87.45 \\ 11.1 \\ \hline 10.0 \\ 11.1 \end{array}$$

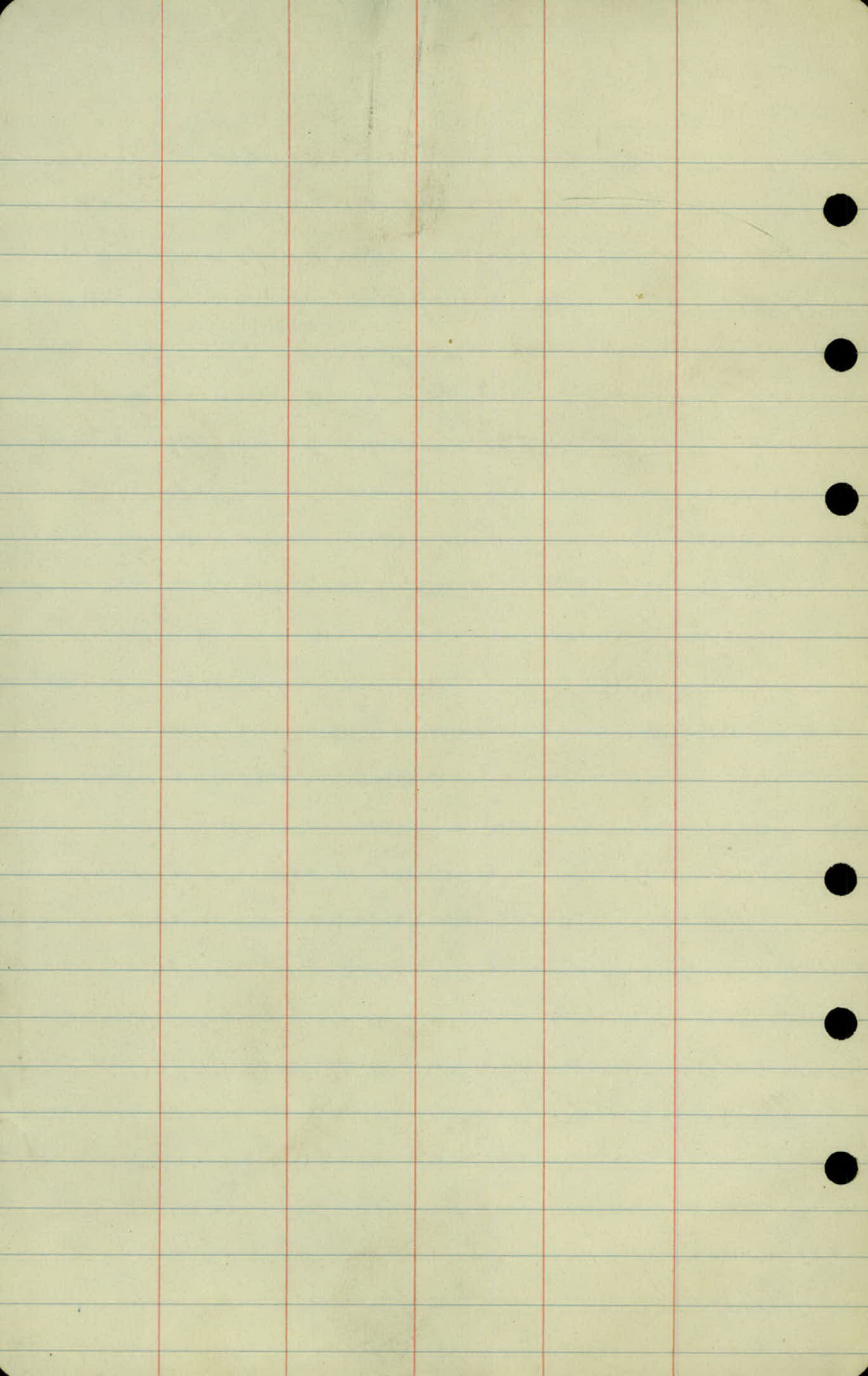
$$\begin{array}{r} 8.0 \\ \hline 3.1 \\ 28 \\ \hline \end{array} \quad \begin{array}{r} 2.5 \\ \hline 6.5 \\ 137 \\ \hline \end{array}$$

$$\begin{array}{r} 87.45 \\ 11.1 \\ \hline 10.0 \end{array}$$

$$\begin{array}{r} 8.9 \\ \hline 2.2 \\ 28 \\ \hline \end{array} \quad \begin{array}{r} 2.3 \\ \hline 7.7 \\ 137 \\ \hline \end{array}$$

$$\begin{array}{r} 87.09 \\ 11.3 \\ \hline 10.3 \end{array}$$

$$\begin{array}{r} 9.5 \\ \hline 2.0 \\ 28 \\ \hline \end{array} \quad \begin{array}{r} 3.5 \\ \hline 6.8 \\ 137 \\ \hline \end{array}$$



Slope Stakes

FREDEEN ROAD

Long Lake Road 500' East.

Staked 9-26-39 - 3 sheets

Party  
R.O.P.  
A.M.  
L.G.  
G.R.

| Sta  | +    | $\pi$  | - | Elev.  |
|------|------|--------|---|--------|
| B.M. | 6.76 | 884.71 |   | 877.95 |

|   |  |  |  |      |
|---|--|--|--|------|
| 0 |  |  |  | 76.9 |
|---|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +50 |  |  |  | 77.1 |
|-----|--|--|--|------|

|   |  |  |  |      |
|---|--|--|--|------|
| 1 |  |  |  | 77.4 |
|---|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +50 |  |  |  | 77.7 |
|-----|--|--|--|------|

|   |  |  |  |      |
|---|--|--|--|------|
| 2 |  |  |  | 78.0 |
|---|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +50 |  |  |  | 79.4 |
|-----|--|--|--|------|

|   |  |  |  |      |
|---|--|--|--|------|
| 3 |  |  |  | 82.1 |
|---|--|--|--|------|

|      |      |        |      |        |
|------|------|--------|------|--------|
| T.P. | 5.81 | 883.26 | 7.26 | 877.45 |
|------|------|--------|------|--------|

|       |  |  |  |      |
|-------|--|--|--|------|
| +68.5 |  |  |  | 87.6 |
|-------|--|--|--|------|

|   |  |  |  |      |
|---|--|--|--|------|
| 4 |  |  |  | 90.8 |
|---|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +25 |  |  |  | 93.0 |
|-----|--|--|--|------|

|      |       |        |      |        |
|------|-------|--------|------|--------|
| T.P. | 11.57 | 894.54 | 0.29 | 882.97 |
|------|-------|--------|------|--------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +50 |  |  |  | 94.8 |
|-----|--|--|--|------|

|     |  |  |  |      |
|-----|--|--|--|------|
| +75 |  |  |  | 96.0 |
|-----|--|--|--|------|

Nail in T.P. W. Side Long Lake Road

7.8

|     |                                                             |                                                      |                                                            |
|-----|-------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------|
| 7.6 | $\begin{array}{r} 8.5 \\ DC 1.1 \\ \hline 23.2 \end{array}$ | $\begin{array}{r} 7.2 \\ CO.4 \\ \hline \end{array}$ | $\begin{array}{r} 4.6 \\ C 3.0 \\ \hline 31.0 \end{array}$ |
|-----|-------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------|

|     |                                                             |                                                       |                                                            |
|-----|-------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------|
| 7.3 | $\begin{array}{r} 8.3 \\ DC 1.0 \\ \hline 23.0 \end{array}$ | $\begin{array}{r} 6.0 \\ C 1.3 \\ \hline \end{array}$ | $\begin{array}{r} 3.5 \\ C 3.8 \\ \hline 32.6 \end{array}$ |
|-----|-------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------|

|     |                                                             |                                                       |                                                            |
|-----|-------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------|
| 7.0 | $\begin{array}{r} 7.5 \\ DC 1.5 \\ \hline 24.0 \end{array}$ | $\begin{array}{r} 5.3 \\ C 1.7 \\ \hline \end{array}$ | $\begin{array}{r} 2.1 \\ C 4.9 \\ \hline 33.0 \end{array}$ |
|-----|-------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------|

|     |                                                           |                                                       |                                                            |
|-----|-----------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------|
| 6.7 | $\begin{array}{r} 6.2 \\ CO.5 \\ \hline 26.0 \end{array}$ | $\begin{array}{r} 4.4 \\ C 2.3 \\ \hline \end{array}$ | $\begin{array}{r} 1.3 \\ C 5.4 \\ \hline 33.0 \end{array}$ |
|-----|-----------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------|

|     |                                                             |                                                      |                                                            |
|-----|-------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------|
| 5.4 | $\begin{array}{r} 5.8 \\ DC 1.6 \\ \hline 24.2 \end{array}$ | $\begin{array}{r} 4.6 \\ CO.8 \\ \hline \end{array}$ | $\begin{array}{r} 2.0 \\ C 3.4 \\ \hline 31.8 \end{array}$ |
|-----|-------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------|

|     |                                                            |                                                       |                                                            |
|-----|------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------|
| 2.6 | $\begin{array}{r} 7.2 \\ F 4.6 \\ \hline 22.2 \end{array}$ | $\begin{array}{r} 6.6 \\ F 4.0 \\ \hline \end{array}$ | $\begin{array}{r} 5.2 \\ F 2.6 \\ \hline 18.2 \end{array}$ |
|-----|------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------|

|      |                                                              |                                                        |                                                             |
|------|--------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| +4.3 | $\begin{array}{r} 10.9 \\ F 15.2 \\ \hline 43.4 \end{array}$ | $\begin{array}{r} 9.3 \\ F 13.6 \\ \hline \end{array}$ | $\begin{array}{r} 7.7 \\ F 12.0 \\ \hline 37.0 \end{array}$ |
|------|--------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|

|      |                                                             |                                                        |                                                             |
|------|-------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| +7.5 | $\begin{array}{r} 6.4 \\ F 13.9 \\ \hline 40.8 \end{array}$ | $\begin{array}{r} 6.4 \\ F 13.9 \\ \hline \end{array}$ | $\begin{array}{r} 6.1 \\ F 13.6 \\ \hline 40.2 \end{array}$ |
|------|-------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|

|      |                                                             |                                                        |                                                             |
|------|-------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| +9.7 | $\begin{array}{r} 2.0 \\ F 11.7 \\ \hline 36.4 \end{array}$ | $\begin{array}{r} 2.6 \\ F 12.3 \\ \hline \end{array}$ | $\begin{array}{r} 3.4 \\ F 13.1 \\ \hline 39.2 \end{array}$ |
|------|-------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|

|      |                                                            |                                                       |                                                              |
|------|------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------|
| +0.3 | $\begin{array}{r} 8.7 \\ F 9.0 \\ \hline 31.0 \end{array}$ | $\begin{array}{r} 9.2 \\ F 9.5 \\ \hline \end{array}$ | $\begin{array}{r} 10.6 \\ F 10.9 \\ \hline 34.8 \end{array}$ |
|------|------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------|

|      |                                                            |                                                       |                                                           |
|------|------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------|
| +4.5 | $\begin{array}{r} 3.7 \\ F 5.2 \\ \hline 23.4 \end{array}$ | $\begin{array}{r} 5.4 \\ F 6.9 \\ \hline \end{array}$ | $\begin{array}{r} 6.0 \\ +7.5 \\ \hline 28.0 \end{array}$ |
|------|------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------|

| Sta  | +     | $\pi$  | -    | Elev.  |
|------|-------|--------|------|--------|
|      |       | 894.54 |      |        |
| 4+88 |       |        |      | 96.5   |
| T.P. | 10.02 | 902.52 | 2.04 | 892.50 |
| +98  |       |        |      | 96.7   |

Ent Left  
Sta. 3+68.52  
883<sup>3</sup>/<sub>26</sub>

|      |  |  |  |      |
|------|--|--|--|------|
| 0+00 |  |  |  | 87.6 |
| 250  |  |  |  | 80.6 |
| 1    |  |  |  | 73.6 |
| 420  |  |  |  | 70.8 |

12.0

$$\begin{array}{r} 0.9 \\ F2.9 \\ \hline 18.8 \end{array}$$

$$\begin{array}{r} 2.4 \\ F4.4 \\ \hline \end{array}$$

$$\begin{array}{r} 2.1 \\ F4.1 \\ \hline 21.2 \end{array}$$

5.8

$$\begin{array}{r} 5.2 \\ C.04 \\ \hline \end{array}$$

$$\begin{array}{r} 6.1 \\ F0.3 \\ \hline 19.6 \end{array}$$

2.7

$$\begin{array}{r} 12.0 \\ F9.3 \\ \hline 25.6 \end{array}$$

$$\begin{array}{r} 11.2 \\ F8.5 \\ \hline \end{array}$$

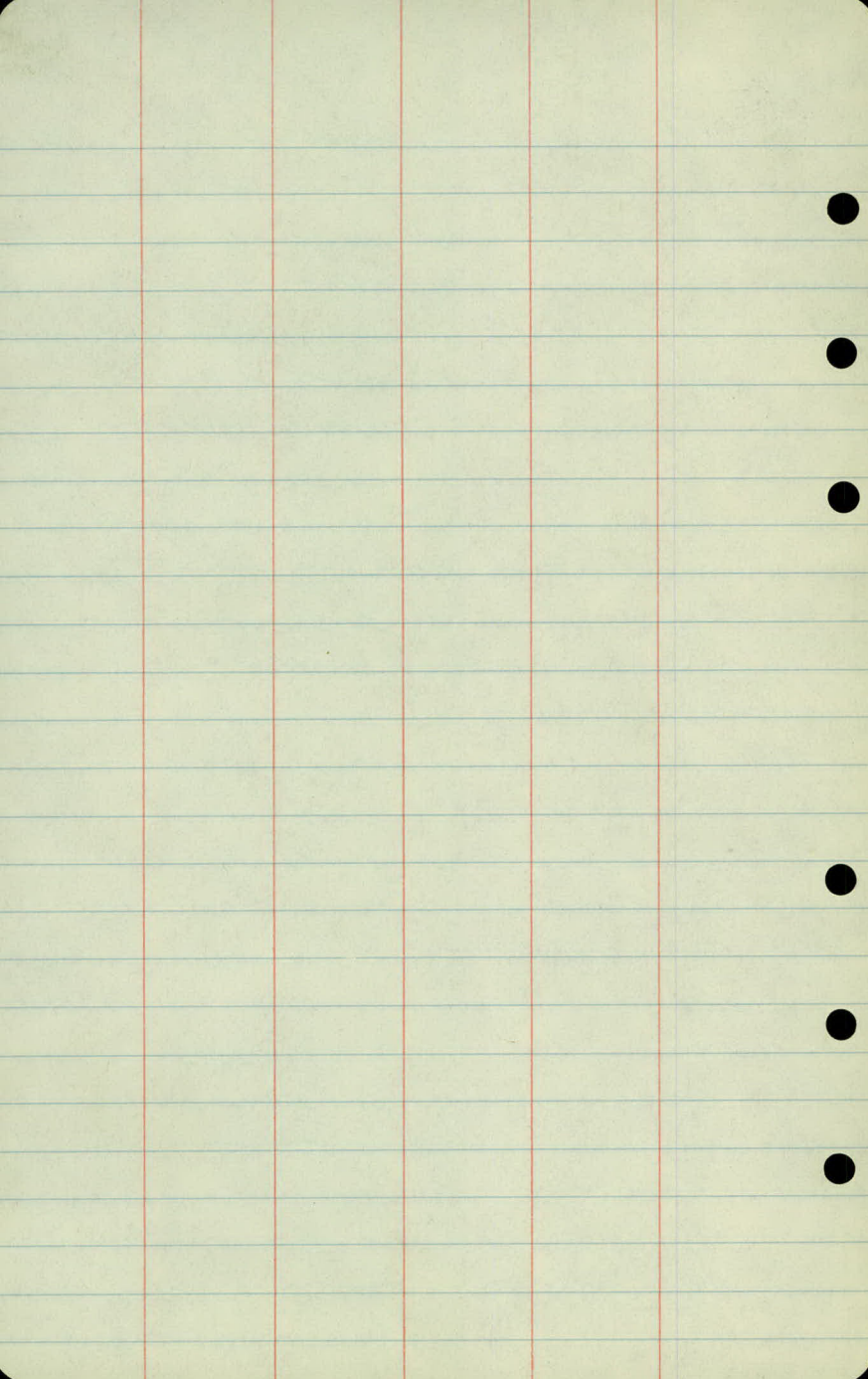
$$\begin{array}{r} 9.1 \\ F6.4 \\ \hline 19.8 \end{array}$$

9.7

$$\begin{array}{r} 13.4 \\ F3.7 \\ \hline 14.4 \end{array}$$

$$\begin{array}{r} 12.1 \\ F2.4 \\ \hline \end{array}$$

$$\begin{array}{r} 10.9 \\ F1.2 \\ \hline 9.4 \end{array}$$



Blue Tops 1  
Fredeen Road

12/40

| Sta.   | t     | $\bar{A}$ | -    | Elev.  |     |
|--------|-------|-----------|------|--------|-----|
| B.M.   | 5.69  | 883.64    |      | 877.95 |     |
| 0 + 50 |       |           |      | 77.1   | 6.5 |
| 1      |       |           |      | 77.4   | 6.2 |
| + 50   |       |           |      | 77.7   | 5.9 |
| 2      |       |           |      | 78.0   | 5.6 |
| + 50   |       |           |      | 79.4   | 4.2 |
| 3      |       |           |      | 82.1   | 1.5 |
| T.P.   | 10.90 | 894.21    | 033  | 883.31 |     |
| + 69   |       |           |      | 87.6   | 8.6 |
| 4      |       |           |      | 90.8   | 3.8 |
| + 25   |       |           |      | 93.0   | 1.2 |
| T.P.   | 10.64 | 903.64    | 1.21 | 893.00 |     |
| + 50   |       |           |      | 94.8   | 8.8 |
| + 75   |       |           |      | 96.0   | 7.6 |
| + 88   |       |           |      | 96.5   | 7.1 |

Spk. T.P. W. side Long Lake Rd.

$$\begin{array}{r} 6.5 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 5.5 \\ \text{C.L.O.} \\ 13 \end{array}$$

$$\begin{array}{r} 6.2 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 6.2 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 5.9 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 5.9 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 5.6 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 5.6 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 4.2 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 4.2 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 1.5 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 1.5 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 6.6 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 6.6 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 3.8 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 3.8 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 1.2 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 1.2 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 8.8 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 8.8 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 7.6 \\ \text{B.T.} \\ 13 \end{array}$$

$$\begin{array}{r} 7.6 \\ \text{B.T.} \\ 13 \end{array}$$

Entrance Lt. 3468.5

0+00

87.6

883.64

+50

80.6

3.0

1

73.6

10.0

+50

70.8

12.8

$$\frac{3.0}{B.T.}$$

$$\frac{3.0}{B.T.}$$

$$\frac{9.0}{C.T.}$$

$$\frac{10.0}{B.T.}$$

$$\frac{12.8}{B.T.}$$

$$\frac{14.8}{C.T.}$$

