

Bk.9-Dr.16

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

Plan.....Survey

LONG LAKE ROAD

From Co. Rd. H2 To S.T.H. #10

Road Acc't. No.

Date Filed 10/24/39

File.

Plan Survey
Long Lake Rd.

from H² to S.T.H. #10

6/7/39 Party

R. D. Pease

H. Wilke

Index

A. Moeschter

Alignment 1-2

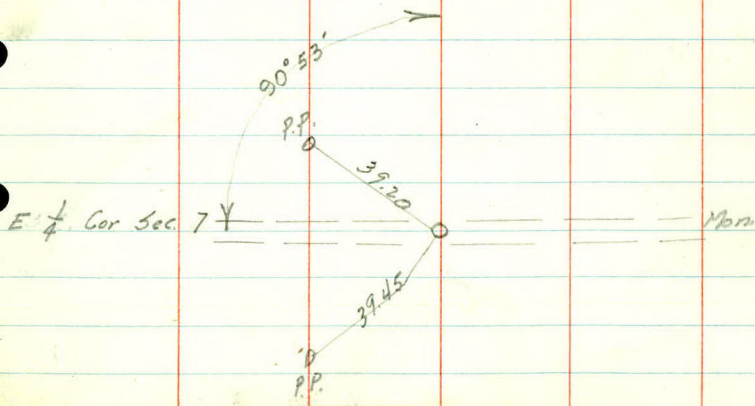
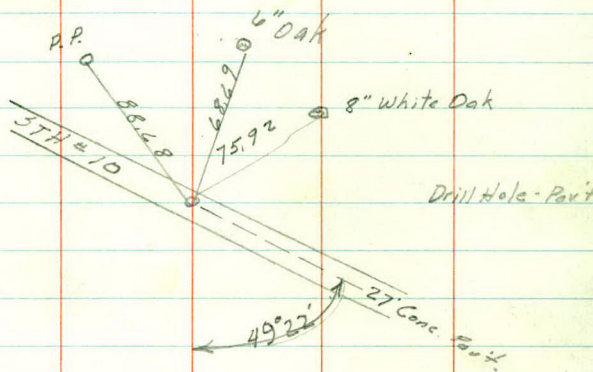
Topography 3-6

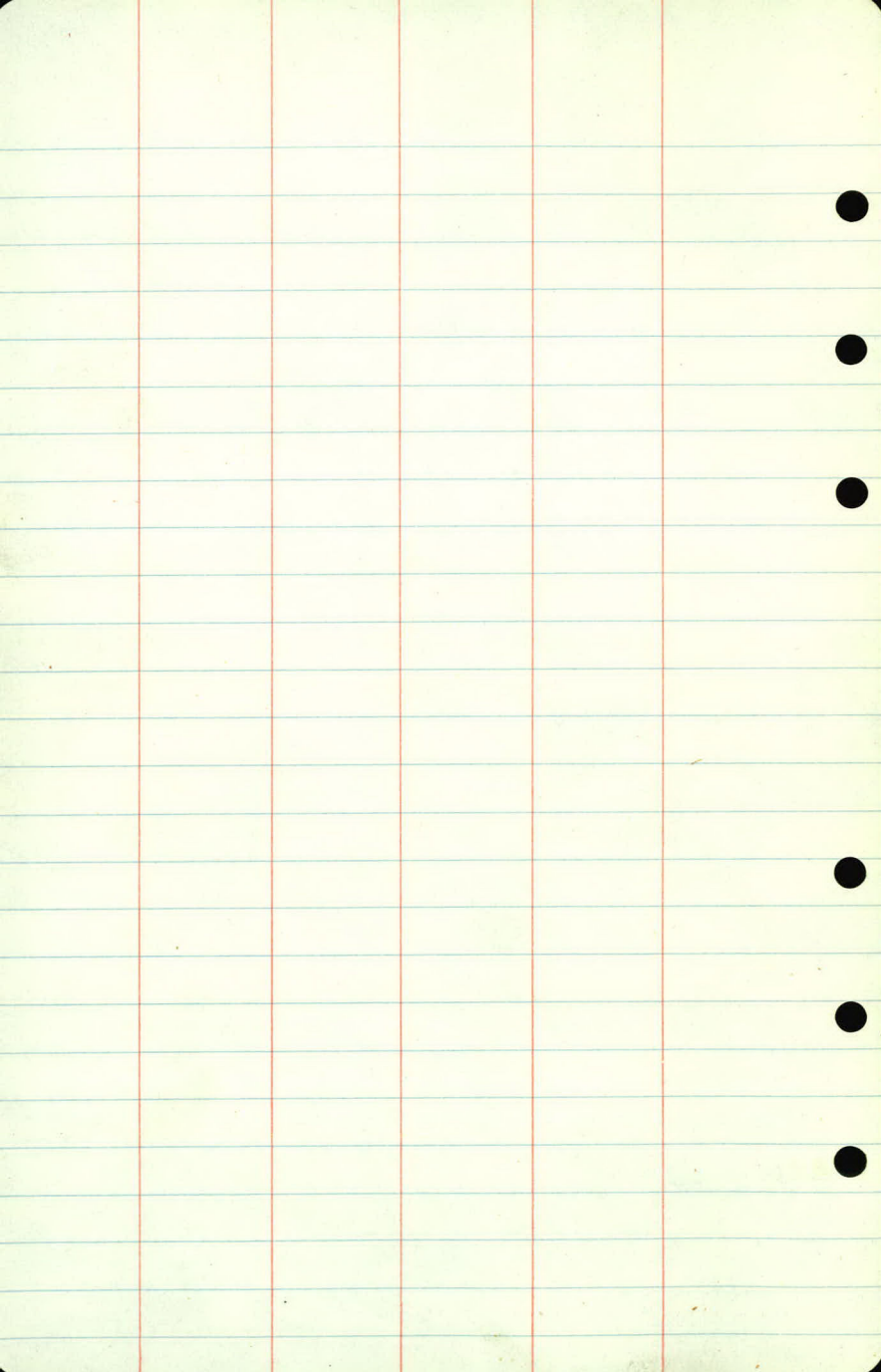
Cross Sections 7-10

Sta	Pt	Angle	Lt	Rt
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15+16.74 15+15	P.O.T.			± S.T.H. #10
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0+00	P.O.T			± Co. Rd H ²
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Topography

LONG LAKE ROAD

H² TO S.T.H¹⁰

12 8

6 12 8

5 12 8

4 12 8

3 12 8

2 20.5 + 11-15" x 36" CM 15.5
12 10

1 12 10

0

+44 PP-28

8

+72 PP 28

8

Hay Meadow

Hay Meadow

+01 PP 27'
+08 Rge Tie Ditch
+95 2 Ditch 25

+12 Ditch 16'
+08 Rge tie Ditch

+37 Encl Rod-14
+26 PP-29
+09 Rod Pt 27

+31 Rod Pt. 12
+11 Rod Pt 27

Co Rd A²

20' Graveled

14 7

13 13 7

12 14 7

11 14 7

10 13 7

9 13 7

8 13 7

7 12 8

Cult

+98 Fe Cor. 36*

+36 PP 31

Fe 37

Fe. 36

Wooded
Pasture

+56 PP. 30'
+46 Ege Tie Fe.
+32 Fe Cor. 35

Wooded
Oaks

+34 Beg Woods 20'

+89 PP 30

Hay
Meadow

Hay
Meadow

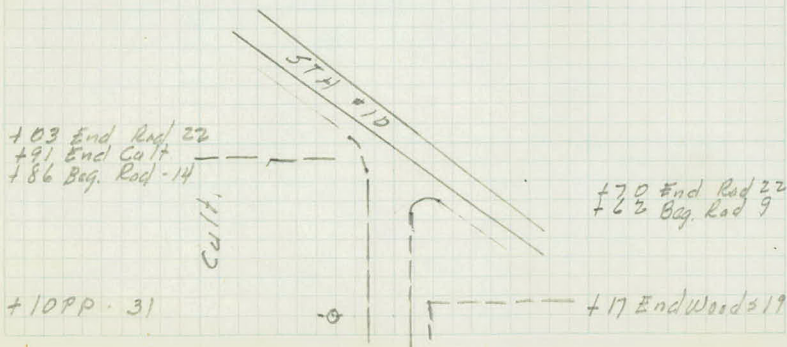
+15 PP. 29

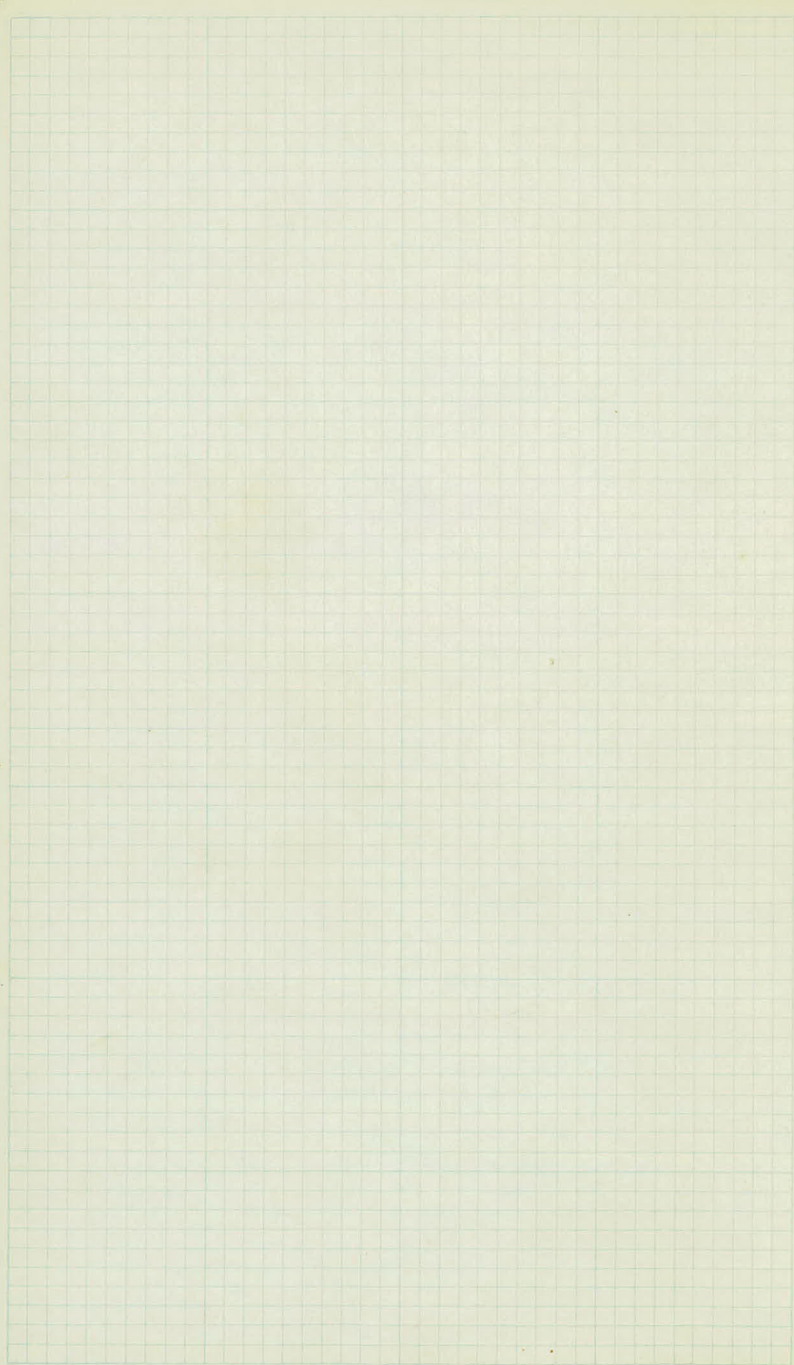
15

14199 Edge Pavet.

14

14 7





Cross Sections

Long Lake Rd.

H² to S.T.H. #10

Sta	+	⌈	-	Elev.
B.M.	1.55	915.51 ✓		913.96 ✓
T.P.	0.33	906.88 ✓	8.96	906.55 ✓
T.P.	4.28	902.14 ✓	9.02	897.86 ✓
T.P.	4.83	902.35 ✓	4.62	897.52 ✓
0			3.6	98.75
B.M.			3.62	898.73 ✓
+50			4.0	98.4
1			4.2	98.2
+50			4.2	98.2
		Ditch Lt. & Rt.		
2 + 11		± Culv.	4.5	97.9
+50			4.7	97.7
3			4.9	97.5
+50			5.0	97.4
4			4.8	97.6
+50			5.1	97.3
5			5.2	97.2
T.P.	5.58	902.88 ✓	5.05	897.30 ✓

Drill Hole in Pavement Sta. 15+16.74

$\frac{3.7}{50}$ 3.6 $\frac{3.6}{50}$

Top Mon. H²E Long Lake Rd

$\frac{3.4}{50}$ $\frac{3.7}{42}$ $\frac{6.3}{34}$ $\frac{5.8}{23}$ $\frac{4.4}{15}$ 4.0 $\frac{4.6}{13}$ $\frac{5.4}{12}$ $\frac{5.2}{25}$ $\frac{2.7}{29}$ $\frac{2.6}{50}$

$\frac{3.6}{50}$ $\frac{3.9}{38}$ $\frac{6.1}{33}$ $\frac{6.2}{21}$ $\frac{4.7}{14}$ 4.2 $\frac{4.7}{13}$ $\frac{5.7}{18}$ $\frac{5.5}{25}$ $\frac{3.2}{30}$ $\frac{3.3}{50}$

$\frac{4.9}{50}$ $\frac{4.7}{37}$ $\frac{6.2}{32}$ $\frac{5.5}{22}$ $\frac{4.7}{16}$ 4.2 $\frac{4.7}{10}$ $\frac{5.8}{17}$ $\frac{5.7}{24}$ $\frac{4.5}{27}$ $\frac{4.7}{50}$
 $\frac{7.2}{100}$ $\frac{7.0}{50}$ 51.9505 95257 F.L. $\frac{7.1}{50}$ $\frac{6.8}{100}$

$\frac{5.7}{50}$ $\frac{5.5}{24}$ $\frac{7.0}{23-20}$ $\frac{7.3}{20}$ $\frac{4.8}{15}$ 4.5 $\frac{4.9}{10}$ $\frac{7.1}{16}$ $\frac{7.2}{16}$ $\frac{5.8}{18}$ $\frac{6.2}{50}$

$\frac{6.3}{50}$ $\frac{6.4}{23}$ $\frac{7.1}{21}$ $\frac{6.0}{20}$ $\frac{5.2}{14}$ 4.7 $\frac{5.3}{9}$ $\frac{6.3}{13}$ $\frac{7.1}{15}$ $\frac{6.4}{16}$ $\frac{6.5}{50}$

$\frac{6.4}{50}$ $\frac{6.4}{23}$ $\frac{7.7}{22}$ $\frac{6.2}{20}$ $\frac{5.4}{14}$ 4.9 $\frac{5.3}{10}$ $\frac{6.2}{12}$ $\frac{7.0}{15}$ $\frac{6.4}{17}$ $\frac{6.4}{50}$

$\frac{6.2}{50}$ $\frac{6.3}{24}$ $\frac{7.0}{22}$ $\frac{6.0}{20}$ $\frac{5.3}{14}$ 5.0 $\frac{5.2}{8}$ $\frac{6.0}{13}$ $\frac{6.8}{15}$ $\frac{6.1}{16}$ $\frac{6.2}{50}$

$\frac{6.1}{50}$ $\frac{6.1}{22}$ $\frac{6.6}{21}$ $\frac{6.0}{19}$ $\frac{5.0}{11}$ 4.8 $\frac{5.8}{12}$ $\frac{6.8}{15}$ $\frac{6.1}{16}$ $\frac{6.1}{50}$

$\frac{6.2}{50}$ $\frac{6.5}{22}$ $\frac{7.0}{20}$ $\frac{6.2}{19}$ $\frac{5.7}{17}$ 5.1 $\frac{5.2}{7}$ $\frac{5.8}{12}$ $\frac{6.8}{15}$ $\frac{6.2}{16}$ $\frac{5.9}{25}$ $\frac{5.9}{50}$

$\frac{6.2}{50}$ $\frac{6.2}{22}$ $\frac{6.9}{21}$ $\frac{6.0}{18}$ $\frac{5.4}{12}$ 5.2 $\frac{5.8}{13}$ $\frac{6.8}{14}$ $\frac{6.1}{16}$ $\frac{6.0}{50}$

Sta	+	π	-	Elev.
		902.88	902.88	
5+50			5.9	97.0
6			5.6	97.3
+50			5.4	97.5
7			5.1	97.8
+50			5.0	97.9
8			4.9	98.0
+50			5.0	97.9
9			4.4	98.5
+50			3.0	99.9
T.P.	9.91	909.75 ✓	3.04	899.84 ✓
10			8.4	01.4
+50			6.7	03.1
11			5.2	04.6

6.3 6.2 7.4 6.6 5.7 6.1 7.1 6.5 6.3
50 23 21 19 14 5.9 12 14 16 50

6.1 6.4 7.6 6.1 5.8 6.2 7.3 6.5 6.3
50 22 20 18 12 5.6 12 14 15 50

5.8 6.0 6.9 6.1 5.6 5.7 6.8 6.0 6.1
50 21 20 19 14 5.4 13 14 16 50

5.4 5.6 6.7 5.3 5.7 6.8 5.9 6.2
50 22 21 19 5.1 12 14 15 50

5.2 5.3 6.6 5.4 5.2 5.3 5.6 6.6 5.8 6.2
50 23 21 19 16 12 5.0 13 14 15 50

5.1 5.5 6.6 5.6 5.2 6.0 7.1 6.2 6.2
50 23 22 20 13 4.9 12 14 15 50

5.9 5.9 6.9 6.0 5.3 5.3 6.1 6.9 6.1 6.1
50 23 21 20 16 5.0 9 13 15 16 50

5.7 5.8 5.2 6.3 5.1 4.1 5.1 6.5 5.6 5.9
50 34 23 21 19 12 4.4 14 16 18 50

5.0 4.9 5.9 4.9 3.5 3.4 4.1 4.9 5.2
50 23 21 19 12 3.0 11 16 18 50

10.4 10.7 9.9 8.8 9.0 10.4 11.4 11.5
50 29 18 14 8.4 10 14 26 50

6.1 6.6 6.9 7.2 7.2 7.8
50 36 20 15 6.7 10 50

3.1 3.0 3.7 5.5 5.4 5.8 4.2 4.6
50 35 20 18 14 5.2 11 16 50

Sta	+	✕	-	Elev.
		909.75		
11450		✓	3.7	06.1
T.P.	9.36	916.50	2.61	907.14 ✓
12			9.4	07.1
+50			8.1	08.4
13			6.8	09.7
+50			5.7	10.8
14			4.6	11.9
+50			3.3	13.2
15 +59			3.0	13.5
+70			2.8	13.7
+90			2.7	13.8
+99			2.73	13.77
+16			2.54	13.96
B.M.			2.54	913.96 ✓
				913.96

$\begin{array}{r} 0.4 \\ 50 \end{array}$ $\begin{array}{r} 0.7 \\ 36 \end{array}$ $\begin{array}{r} 1.0 \\ 24 \end{array}$ $\begin{array}{r} 4.6 \\ 19 \end{array}$ $\begin{array}{r} 4.2 \\ 15 \end{array}$ $\begin{array}{r} 3.7 \\ 50 \end{array}$ $\begin{array}{r} 4.5 \\ 13 \end{array}$ $\begin{array}{r} 1.7 \\ 17 \end{array}$ $\begin{array}{r} 2.8 \\ 50 \end{array}$

$\begin{array}{r} 5.2 \\ 50 \end{array}$ $\begin{array}{r} 5.8 \\ 28 \end{array}$ $\begin{array}{r} 10.5 \\ 22 \end{array}$ $\begin{array}{r} 9.8 \\ 17 \end{array}$ $\begin{array}{r} 9.4 \\ 12 \end{array}$ $\begin{array}{r} 9.9 \\ 12 \end{array}$ $\begin{array}{r} 7.1 \\ 17 \end{array}$ $\begin{array}{r} 8.2 \\ 50 \end{array}$

$\begin{array}{r} 4.6 \\ 50 \end{array}$ $\begin{array}{r} 4.8 \\ 36 \end{array}$ $\begin{array}{r} 5.5 \\ 25 \end{array}$ $\begin{array}{r} 8.6 \\ 20 \end{array}$ $\begin{array}{r} 8.1 \\ 50 \end{array}$ $\begin{array}{r} 8.6 \\ 10 \end{array}$ $\begin{array}{r} 4.5 \\ 13 \end{array}$ $\begin{array}{r} 7.8 \\ 50 \end{array}$

$\begin{array}{r} 4.1 \\ 30 \end{array}$ $\begin{array}{r} 5.3 \\ 24 \end{array}$ $\begin{array}{r} 7.3 \\ 16 \end{array}$ $\begin{array}{r} 6.8 \\ 10 \end{array}$ $\begin{array}{r} 7.4 \\ 10 \end{array}$ $\begin{array}{r} 6.1 \\ 14 \end{array}$ $\begin{array}{r} 6.2 \\ 34 \end{array}$ $\begin{array}{r} 5.8 \\ 50 \end{array}$

$\begin{array}{r} 5.2 \\ 50 \end{array}$ $\begin{array}{r} 4.8 \\ 39 \end{array}$ $\begin{array}{r} 4.5 \\ 34 \end{array}$ $\begin{array}{r} 4.9 \\ 21 \end{array}$ $\begin{array}{r} 6.4 \\ 19 \end{array}$ $\begin{array}{r} 5.7 \\ 11 \end{array}$ $\begin{array}{r} 4.8 \\ 14 \end{array}$ $\begin{array}{r} 4.6 \\ 50 \end{array}$

$\begin{array}{r} 4.4 \\ 50 \end{array}$ $\begin{array}{r} 3.8 \\ 39 \end{array}$ $\begin{array}{r} 3.1 \\ 35 \end{array}$ $\begin{array}{r} 3.6 \\ 23 \end{array}$ $\begin{array}{r} 5.5 \\ 19 \end{array}$ $\begin{array}{r} 4.6 \\ 10 \end{array}$ $\begin{array}{r} 5.5 \\ 10 \end{array}$ $\begin{array}{r} 3.3 \\ 14 \end{array}$ $\begin{array}{r} 3.5 \\ 50 \end{array}$

$\begin{array}{r} 1.6 \\ 50 \end{array}$ $\begin{array}{r} 1.5 \\ 40 \end{array}$ $\begin{array}{r} 0.8 \\ 35 \end{array}$ $\begin{array}{r} 1.6 \\ 23 \end{array}$ $\begin{array}{r} 4.0 \\ 19 \end{array}$ $\begin{array}{r} 3.8 \\ 10 \end{array}$ $\begin{array}{r} 3.3 \\ 11 \end{array}$ $\begin{array}{r} 3.9 \\ 11 \end{array}$ $\begin{array}{r} 1.7 \\ 16 \end{array}$ $\begin{array}{r} 1.8 \\ 20 \end{array}$ $\begin{array}{r} 5.4 \\ 37 \end{array}$ $\begin{array}{r} 5.6 \\ 46 \end{array}$ $\begin{array}{r} 3.8 \\ 55 \end{array}$ *shldn. ryo*

$\begin{array}{r} 1.5 \\ 50 \end{array}$ $\begin{array}{r} 0.7 \\ 36 \end{array}$ $\begin{array}{r} 1.4 \\ 23 \end{array}$ $\begin{array}{r} 3.8 \\ 19 \end{array}$ $\begin{array}{r} 3.0 \\ 30 \end{array}$ $\begin{array}{r} 3.5 \\ 12 \end{array}$ $\begin{array}{r} 4.4 \\ 15 \end{array}$ $\begin{array}{r} 4.9 \\ 28 \end{array}$ $\begin{array}{r} 2.6 \\ 42 \end{array}$ $\begin{array}{r} 3.72 \\ 55 \end{array}$

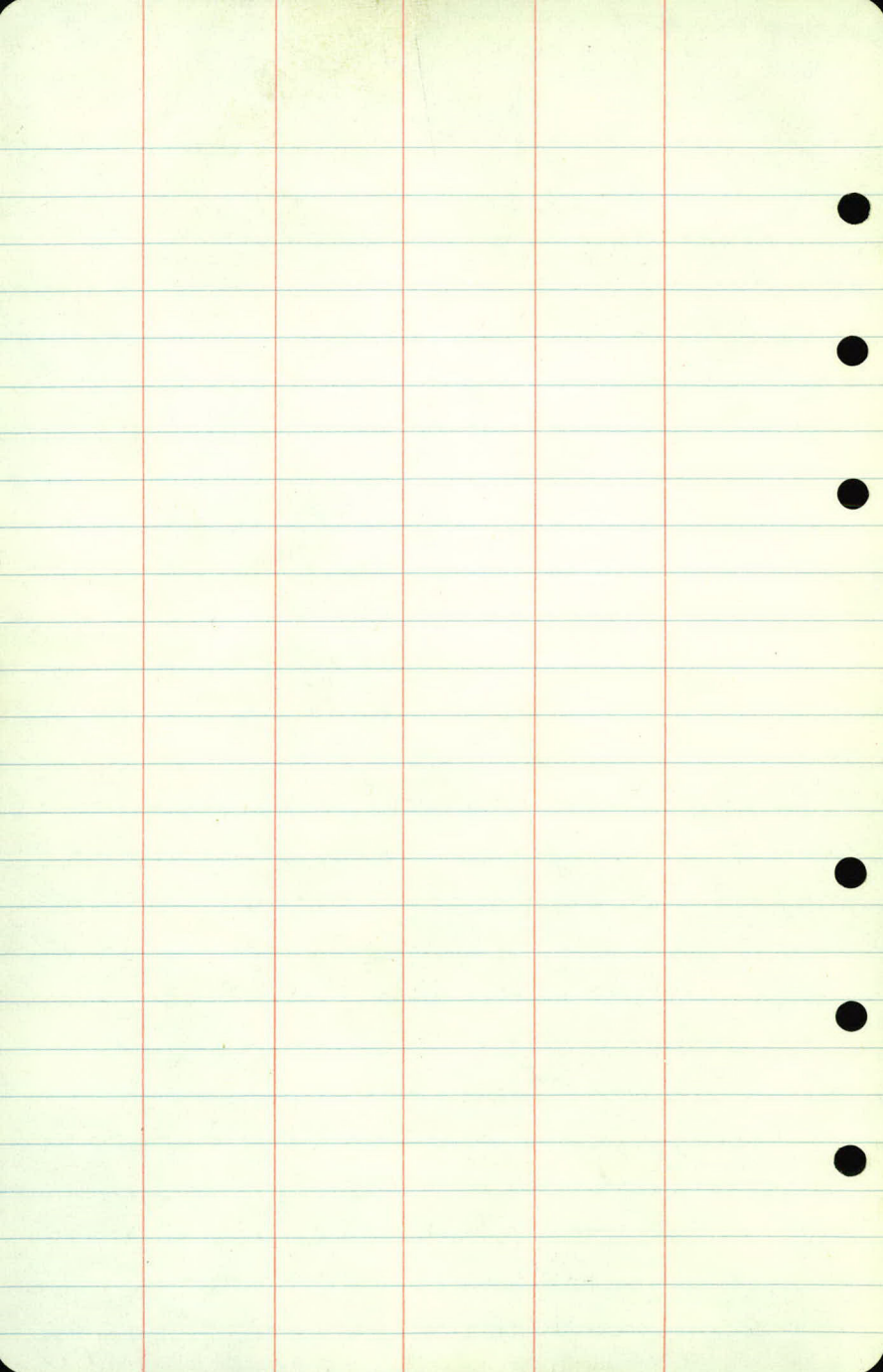
$\begin{array}{r} 1.1 \\ 50 \end{array}$ $\begin{array}{r} 1.0 \\ 40 \end{array}$ $\begin{array}{r} 0.0 \\ 35 \end{array}$ $\begin{array}{r} 1.1 \\ 23 \end{array}$ $\begin{array}{r} 3.7 \\ 18 \end{array}$ $\begin{array}{r} 3.4 \\ 10 \end{array}$ $\begin{array}{r} 2.8 \\ 2.8 \end{array}$ $\begin{array}{r} 3.1 \\ 14 \end{array}$ $\begin{array}{r} 3.2 \\ 29 \end{array}$ $\begin{array}{r} 3.50 \\ 45 \end{array}$

$\begin{array}{r} 1.1 \\ 50 \end{array}$ $\begin{array}{r} 0.2 \\ 36 \end{array}$ $\begin{array}{r} 1.0 \\ 27 \end{array}$ $\begin{array}{r} 2.9 \\ 20 \end{array}$ $\begin{array}{r} 3.2 \\ 13 \end{array}$ $\begin{array}{r} 2.7 \\ 2.7 \end{array}$ $\begin{array}{r} 3.79 \\ 19 \end{array}$

$\begin{array}{r} 0.4 \\ 50 \end{array}$ $\begin{array}{r} 0.5 \\ 45 \end{array}$ $\begin{array}{r} 3.8 \\ 29 \end{array}$ $\begin{array}{r} 3.0 \\ 24 \end{array}$ $\begin{array}{r} 2.1 \\ 21 \end{array}$ $\begin{array}{r} 2.73 \\ 2.73 \end{array}$

$\begin{array}{r} 1.84 \\ 50 \end{array}$ *on 2 STA # 10* $\begin{array}{r} 3.20 \\ 50 \end{array}$
2.54

Top Drill Hole Sta 15+16.74



Long Lake Rd.

Slope stakes

"H²" to #10

Sta	+	π	-	Grade	D.K.B. Gr.	Grade	Red.
B.M.	3.95	902.68					(898.73)

0	+00			98.5			
---	-----	--	--	------	--	--	--

	+50			98.5	94.2	6.5	
--	-----	--	--	------	------	-----	--

1				98.4	95.9	6.8	
---	--	--	--	------	------	-----	--

	+50			98.4	95.6	7.1	
--	-----	--	--	------	------	-----	--

2				98.4	95.3	7.4	
---	--	--	--	------	------	-----	--

	+11	2 Calv.			95.2	1.5	
--	-----	---------	--	--	------	-----	--

	+50			98.4	95.3	7.4	
--	-----	--	--	------	------	-----	--

3				98.4	95.4	7.3	
---	--	--	--	------	------	-----	--

	+50			98.5	95.5	7.2	
--	-----	--	--	------	------	-----	--

4				98.5	95.6	7.1	
---	--	--	--	------	------	-----	--

	+50			98.6	95.7	7.0	
--	-----	--	--	------	------	-----	--

Cor. Rod

LH

Z

Rt.

Top Mant 0100

4.2

$$24.0 / \frac{6.3}{R0.2}$$

$$\frac{44}{-0.2}$$

$$\frac{3.1}{R0.39/30.4}$$

4.3

$$24.4 / \frac{6.6}{R0.2}$$

$$\frac{45}{-0.2}$$

$$\frac{35}{R0.33/30.6}$$

4.3

$$26.8 / \frac{6.0}{R1.1}$$

$$\frac{45}{-0.2}$$

$$\frac{47}{R0.29/27.9}$$

4.3

$$28.4 / \frac{5.8}{R1.6}$$

$$\frac{49}{-0.6}$$

$$\frac{6.2}{R1.2/27.6}$$

$$\frac{75}{20.}$$

$$\frac{75}{20.}$$

4.3

$$26.8 / \frac{6.6}{R0.8}$$

$$\frac{50}{-0.7}$$

$$\frac{6.9}{R0.5/26.2}$$

4.3

$$26.2 / \frac{6.7}{R0.6}$$

$$\frac{52}{-0.9}$$

$$\frac{6.7}{R0.6/26.2}$$

4.2

$$26.4 / \frac{6.5}{R0.7}$$

$$\frac{53}{-1.1}$$

$$\frac{6.6}{R0.6/26.2}$$

4.2

$$26.2 / \frac{6.4}{R0.7}$$

$$\frac{51}{-0.9}$$

$$\frac{6.4}{R0.7/26.2}$$

4.1

$$25.6 / \frac{6.6}{R0.4}$$

$$\frac{53}{-1.2}$$

$$\frac{6.4}{R0.6/26.0}$$

Sta	+	-	Grade	Ditch Gr.	Gr. Road
		902.68			
5			98.6	95.8	6.9
I.P.	5.71	902.88	5.51	897.17	
+50			98.7	95.9	7.0
6			98.7	96.0	6.9
+50			98.8	96.1	6.8
7			98.8	96.2	6.7
+50			98.9	96.3	6.6
8			98.9	96.4	6.5
+50			99.0	96.5	6.4
9			99.1	96.6	6.3
+50			99.6	96.7	6.2
10			999.3		
I.P.	9.21	912.07	0.02	902.86	

Gr. Rod.

LH

R

RH

4.1

$$254 / \frac{65}{R04}$$

$$\frac{58}{-1.3}$$

$$\frac{6.3}{R06/256}$$

4.2

$$258 / \frac{69}{R06}$$

$$\frac{57}{-1.5}$$

$$\frac{6.5}{R05/256}$$

4.2

$$259 / \frac{69}{R05}$$

$$\frac{57}{-1.5}$$

$$\frac{6.9}{R02/25.9}$$

4.1

$$262 / \frac{59}{R09}$$

$$\frac{53}{-1.2}$$

$$\frac{6.3}{R05/25.9}$$

4.1

$$264 / \frac{56}{R11}$$

$$\frac{50}{-0.9}$$

$$\frac{6.1}{R06/25.9}$$

4.0

$$266 / \frac{59}{R12}$$

$$\frac{49}{-0.7}$$

$$\frac{5.9}{R07/25.6}$$

4.0

$$269 / \frac{53}{R12}$$

$$\frac{49}{-0.9}$$

$$\frac{6.0}{R08/25.0}$$

3.9

$$259 / \frac{59}{R09}$$

$$\frac{50}{-1.1}$$

$$\frac{6.0}{R04/24.8}$$

3.8

$$258 / \frac{54}{R09}$$

$$\frac{44}{-0.6}$$

$$\frac{5.9}{R07/25.8}$$

3.3

$$274 / \frac{43}{R13}$$

$$\frac{30}{+0.3}$$

$$\frac{5.0}{R02/27.2}$$

2.6

$$250 / \frac{36}{R10}$$

$$\frac{1.4}{+1.2}$$

$$\frac{4.4}{R02/23.4}$$

Sta.	+	π	-	Grade
		912.27		
10	+50			01.3
11				02.5
	+50			04.1
12				05.7
	+50			07.4
T.P.	9.25	917.65	3.67	908.40
13				09.0
	+50			10.7
14				12.1
	+100			12.8
	+100			13.5
B.M.		3.69	- 913.96	913.96

Gr. Rod.

Lt

R

Rt.

10.8

$$30.8 / \frac{8.9}{4.9}$$

$$\frac{30}{4.8}$$

$$\frac{7.9}{10.9 / 28.8}$$

9.6

$$33.0 / \frac{5.5}{4.1}$$

$$\frac{1.9}{4.2}$$

$$\frac{7.2}{12.9 / 31.8}$$

8.0

$$33.0 / \frac{3.0}{4.5}$$

$$\frac{6.0}{4.0}$$

$$\frac{4.0}{18.9 / 33.0}$$

6.4

$$33.0 / \frac{1.0}{4.4}$$

$$\frac{4.9}{4.5}$$

$$\frac{3.2}{18.2 / 33.0}$$

4.7

$$33.0 / \frac{0.5}{4.2}$$

$$\frac{3.7}{4.0}$$

$$\frac{3.1}{4.6 / 30.2}$$

8.7

$$32.0 / \frac{6.2}{4.5}$$

$$\frac{7.9}{4.8}$$

$$\frac{7.3}{11.9 / 27.8}$$

7.0

$$28.8 / \frac{6.1}{4.9}$$

$$\frac{4.8}{4.1}$$

$$\frac{5.7}{11.3 / 29.6}$$

5.6

$$28.8 / \frac{4.7}{4.9}$$

$$\frac{5.7}{4.1}$$

$$\frac{4.6}{11.0 / 27.0}$$

4.7

$$31.8 / \frac{2.5}{4.4}$$

$$\frac{4.7}{4.2}$$

$$\frac{3.2}{11.7 / 30.4}$$

4.2

$$31.6 / \frac{1.9}{4.3}$$

$$\frac{3.8}{4.4}$$

