

BK 39 Dr 16

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

Drainage.....Survey

Lamline Ave

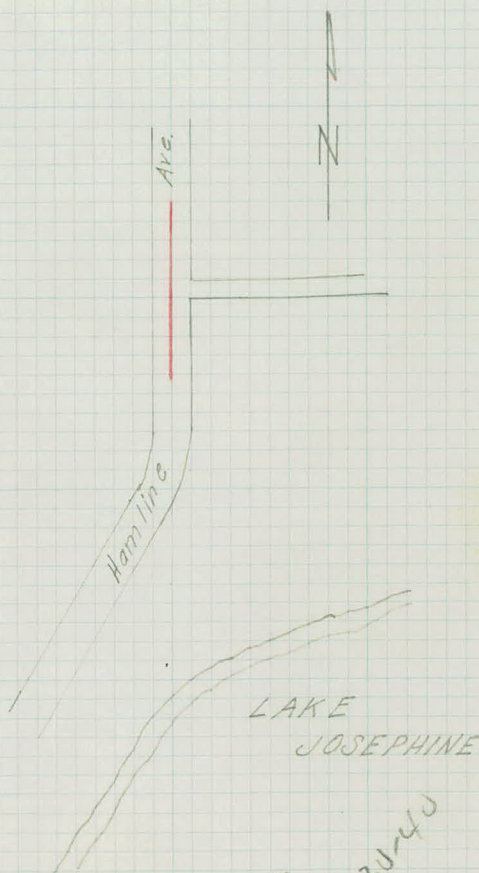
From Lake Josephine Well
North.

Road Acc't. No. 9

Date Filed.....File.....

BK 39 Dr 16

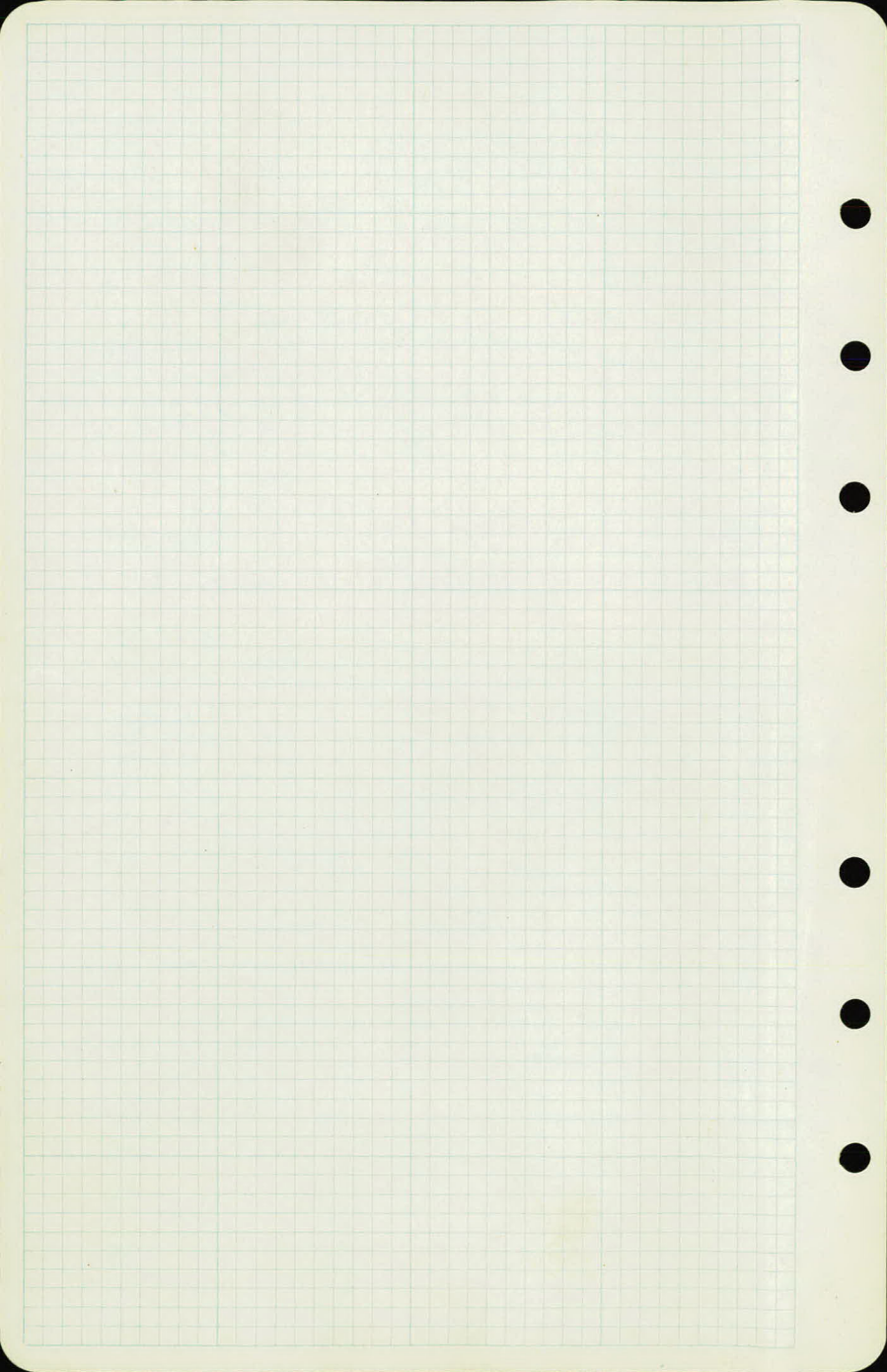
PLAN SURVEY
HAMLINE AVE.



INDEX.

- Align - 1-2
Topog. - 3-4
Xsections - 5-

Work up 7-30-40



1

Alignment

Sta	Point	Δ Lt	Δ Rt
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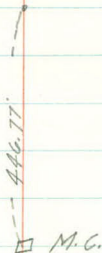
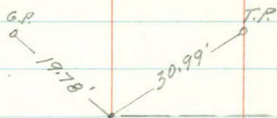
2	+00	P.O.T. = Approx 1/2 1st side Rd. N. of Lake Josephine and E. side of Hamling Ave.	
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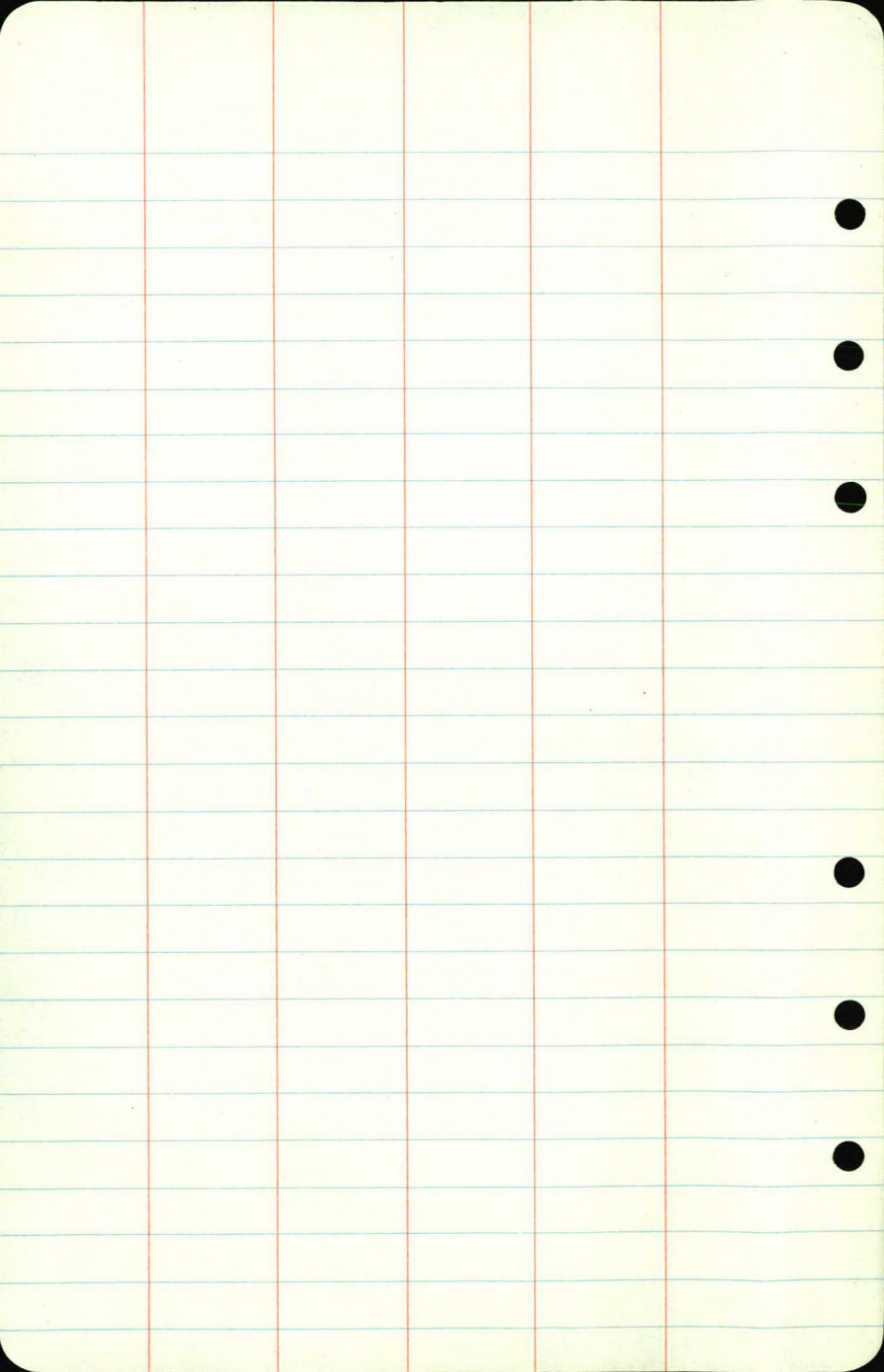
0	+00	P.O.T.	
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9-23-40
K.A.
L.C.
M.B.

2

Chf. Sec. 34 T30N R23W





Topography

4 Fc-21' 13' 11' Fc-20'

+63-T.P.-27'

+66 R.C. 15" x 38' 6" M.

3 H15-End Swamp. 20' 18'
Fc-21' 11' 10' Fc-20'

+80-12' Willow - 29'
+78-15' Willow - 25'

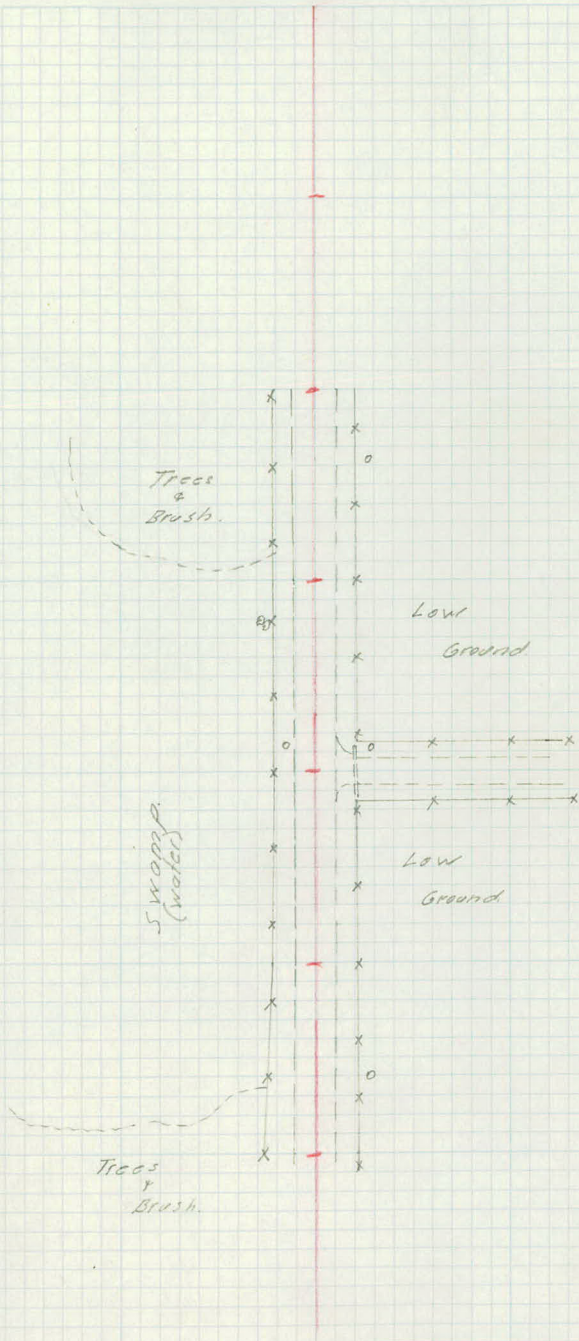
2 H13-6.P.-15' 11' 11'
Fc-21' H16-Fc. Cor - 21'
H12-T.P.-29'
H13-N. End 10" Vit. C. 20'
2 1/3" Wide Road
+84-S. End 10" Vit. C. 21'
+85-Fc. Cor - 21'

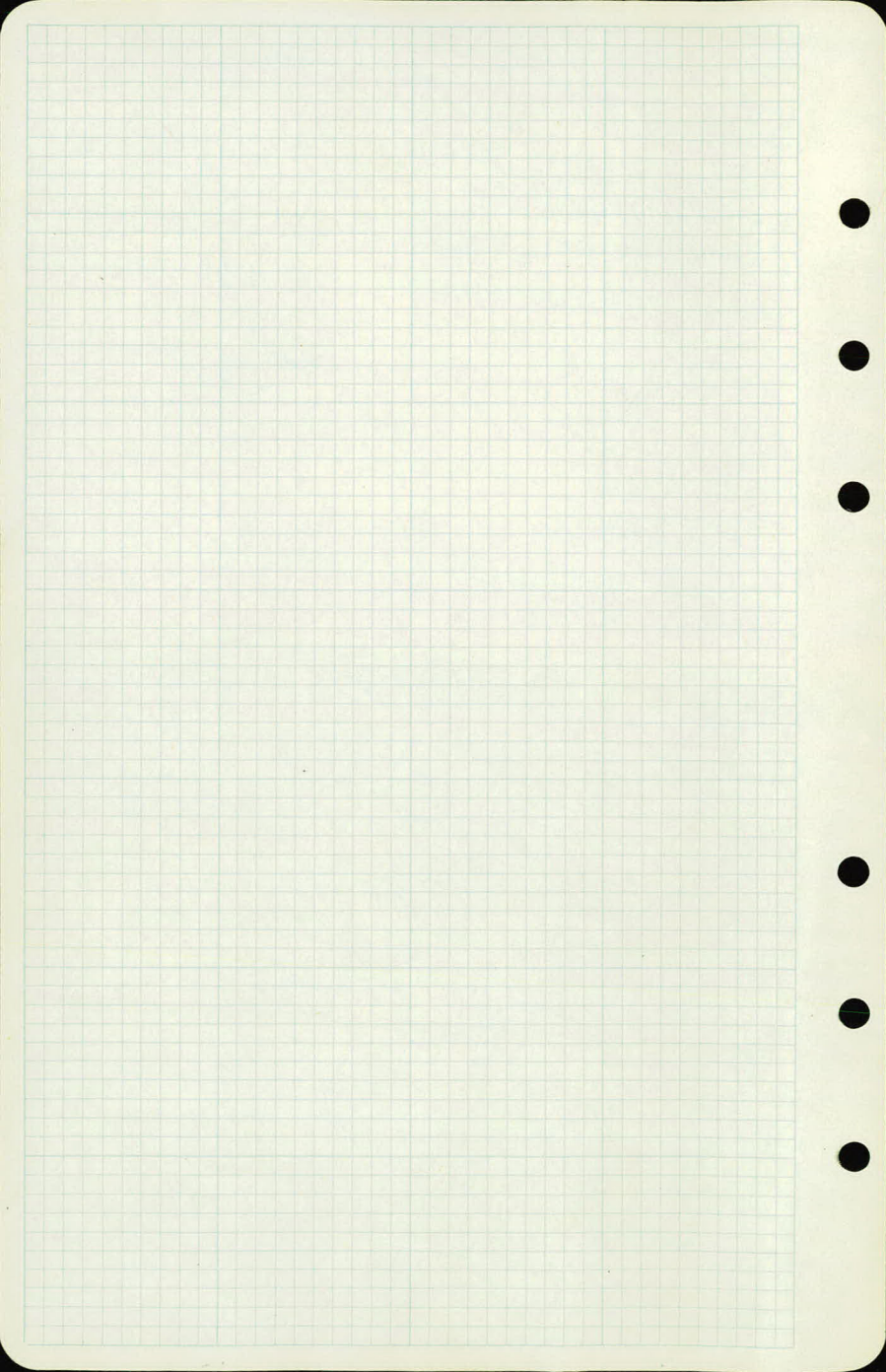
1 Fc-23' 10' 11' Fc-22'

+35-Bog Swamp.

+40-T.P.-26'

0+00 Fc-21 11' 11' Fc-22





X Sections

Sta	+	π	-	Elev.
B.M.	1.65	889.38		887.73
T.P.	2.06	888.50	2.94	886.44

0 +00

+50

1

+85

+86 F.L. VIT. CUL. RT.

8.10

80.40

2 +94

2 +07

+13 F.L. VIT. CUL. RT.

8.35

80.15

2 +16

+50

Lt R Rt

Lake Imp. Bench at Lake Josephine

34

18.70 80.5

<u>88</u>	<u>86</u>	<u>56</u>	<u>47</u>	<u>43</u>	<u>48</u>	<u>51</u>	<u>76</u>	<u>73</u>	<u>79</u>
50	29	17	11		10	14	19	35	50

18.80 80.4

<u>95</u>	<u>98</u>	<u>96</u>	<u>91</u>	<u>74</u>	<u>61</u>	<u>53</u>	<u>48</u>	<u>52</u>	<u>59</u>	<u>80</u>	<u>80</u>	<u>72</u>
100	57	36	23	19	16	10		10	15	19	33	50

<u>97</u>	<u>93</u>	<u>87</u>	<u>60</u>	<u>52</u>	<u>49</u>	<u>53</u>	<u>62</u>	<u>77</u>	<u>81</u>	<u>81</u>
50	50	20	16	9		11	16	19	33	50

49 52 58 65 66
10 13 26 50

49 54 58 63 67
10 12 20 50

19.25 77.50

80.00

<u>925</u>	<u>110</u>	<u>107</u>	<u>96</u>	<u>91</u>	<u>58</u>	<u>53</u>	<u>50</u>	<u>59</u>	<u>59</u>	<u>59</u>	<u>81</u>	<u>85</u>	<u>85</u>
Top Water 84		69	50	22	14	10		9	11	15	20	30	50

77.80 79.60

<u>107</u>	<u>105</u>	<u>94</u>	<u>68</u>	<u>60</u>	<u>55</u>	<u>51</u>	<u>57</u>	<u>59</u>	<u>62</u>	<u>87</u>	<u>85</u>	<u>89</u>
50	31	22	17	12	10		9	10	15	19	28	50

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

		888.50		
--	--	--------	--	--

3

+06	2 Culv			
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+50				
-----	--	--	--	--

4

B.M.			5.30	883.00
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T.R	3.05	889.12	2.43	886.07
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B.M.			1.40	887.72	(887.73)
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LH

E

RH

79.30

$\frac{89}{100}$	$\frac{92}{42}$	$\frac{88}{31}$	$\frac{88}{21}$	$\frac{65}{16}$	$\frac{57}{10}$	$\frac{53}{11}$	$\frac{59}{15}$	$\frac{65}{15}$	$\frac{87}{19}$	$\frac{88}{36}$	$\frac{89}{50}$
------------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------

78.83

7.67

79.50

$\frac{85}{50}$	$\frac{90}{20}$	$\frac{90}{16}$	$\frac{63}{12}$	$\frac{58}{9}$	$\frac{60}{12}$	$\frac{64}{15}$	$\frac{69}{20}$	$\frac{86}{36}$	$\frac{88}{50}$	$\frac{91}{74}$	$\frac{86}{100}$	$\frac{89}{100}$
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78.40

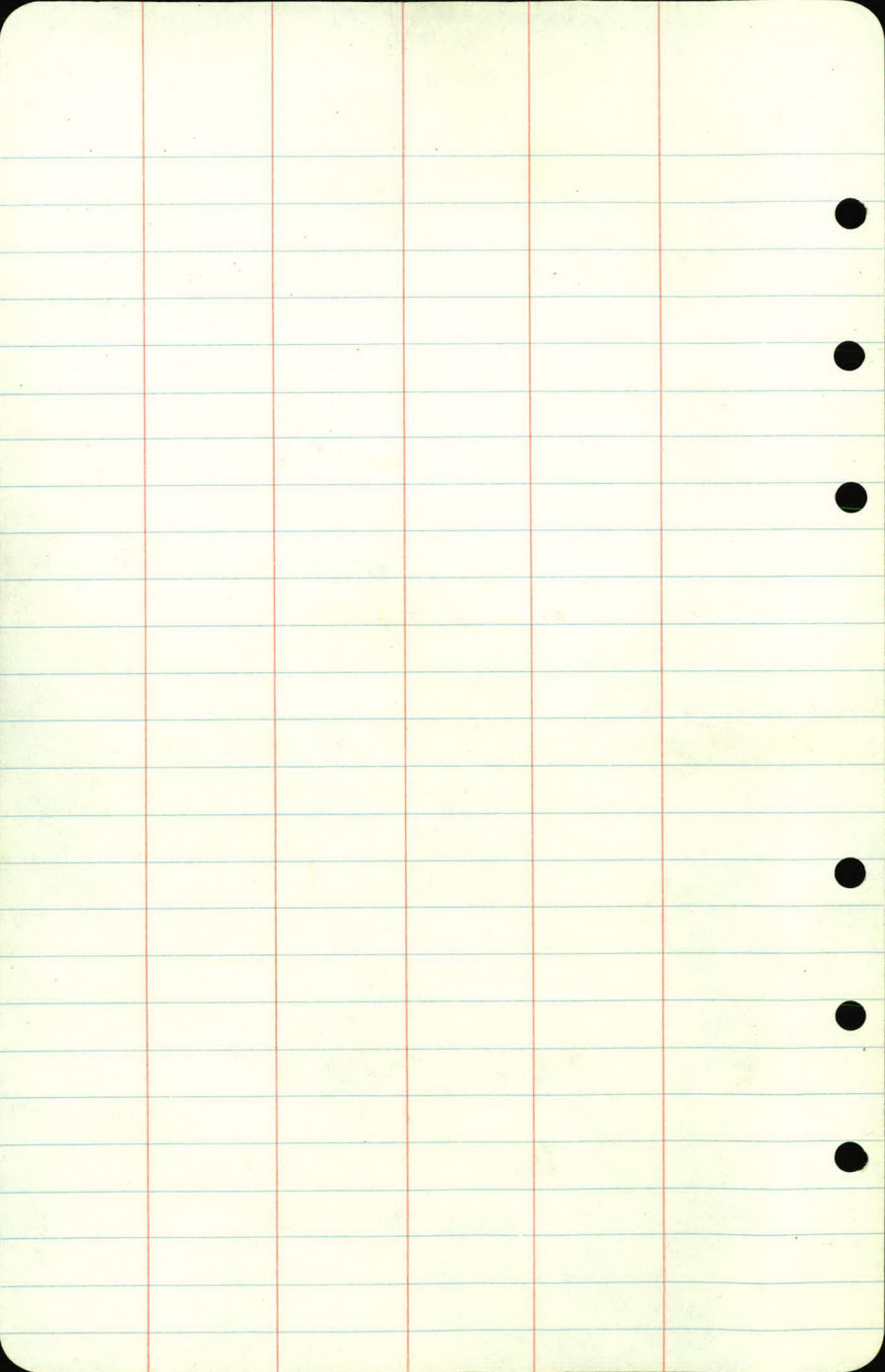
10.10

79.40

$\frac{62}{7}$	$\frac{65}{10}$	$\frac{69}{13}$	$\frac{71}{19}$	$\frac{85}{33}$	$\frac{85}{54}$	$\frac{86}{72}$	$\frac{85}{100}$
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Spk in T.P. 29.4 sta 2+29

Lake Imp. Bench.



Sta	+	-	Elev
B.M.	11.50	895.40	

Lake
883.90

Ground of Sounding #1		5.0	890.4
" " "	#2	5.3	890.1
" " "	#3	6.2	889.2

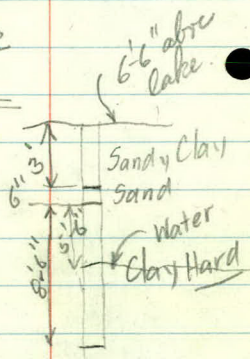
Sounding #1
0'-3' Sandy Clay
3'-3.5' Sand
9' Water
3.5'-12' Clay

Sounding #2

7.6' = Trace Water
11.0 = Water Clay Wet
0-12 Clay

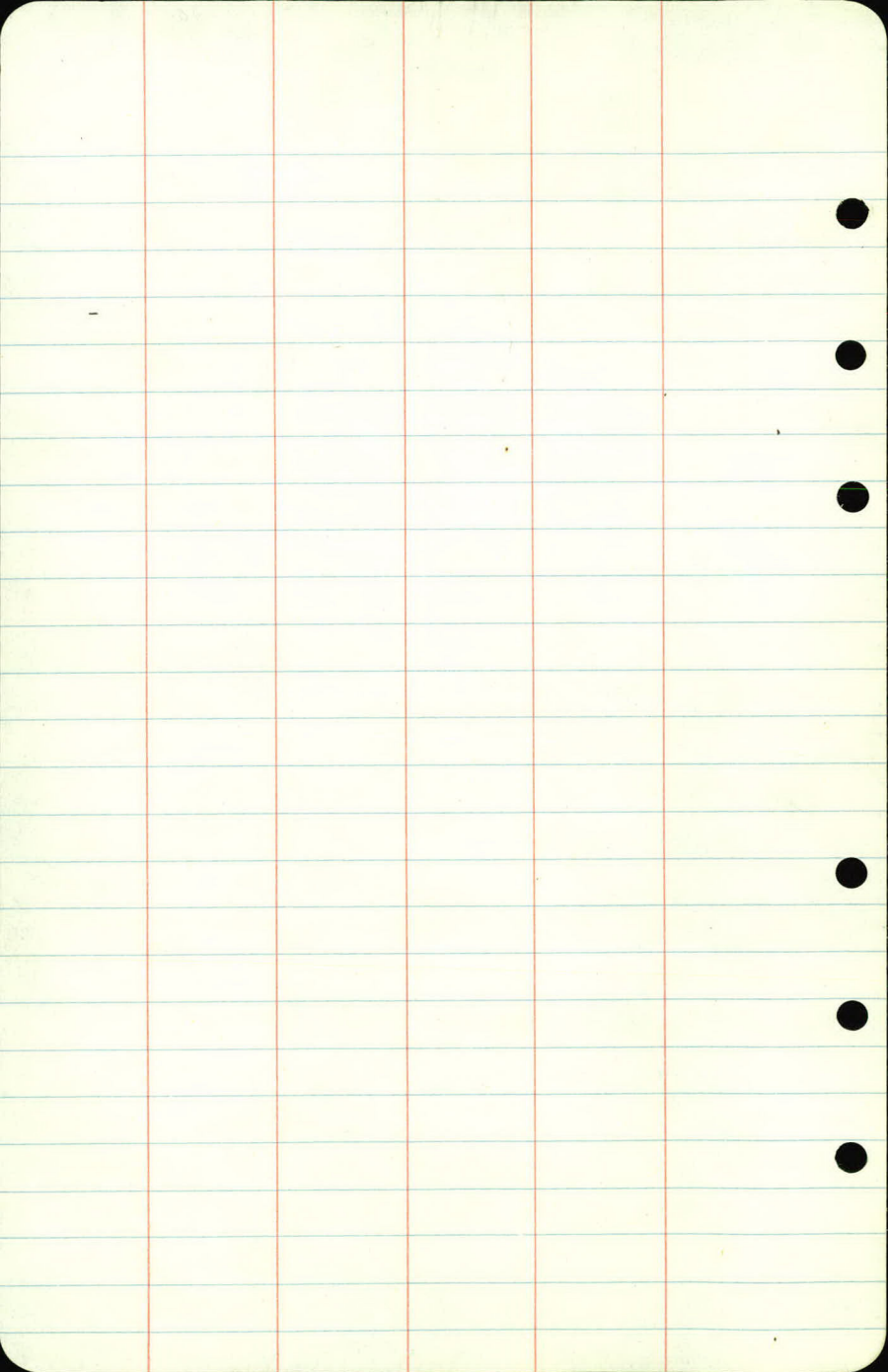
Sounding #3

0-3' Sandy Loam
4.6' Water
3'-8' Sand
8-down Clay



9-21-90
K.A.
L.G.
M.B.

= Elev. Lake Josephine



PLAN SURVEY

DITCH From JOSEPHINE PUMP
to LAKE JOHANNA

Index:

Completed - 10-23-40

"A" Line

Alignment 1-3

Topog. 4-7

Gross Sections 8-13

Bench Levels 14-15

"B" Line

Alignment 17-18

Profile Levels 19-21

Sketch 16

Party:

R. Pease
A. Moeschter
L. Goldberg
C. Fewer

"A" LINE

Sta.	Pt.	Ext. Angle	Bearing
		Lt. Rt.	Mag. Calc.

9 + 93.24

15° 28'

S 58° 30' W

9 + 11.00

P.I.

25° 32'

S 43° W.

S 68° 15' W

7 + 18.35

P.I.

18° 11'

(on Bridge)

S 89° 15' W

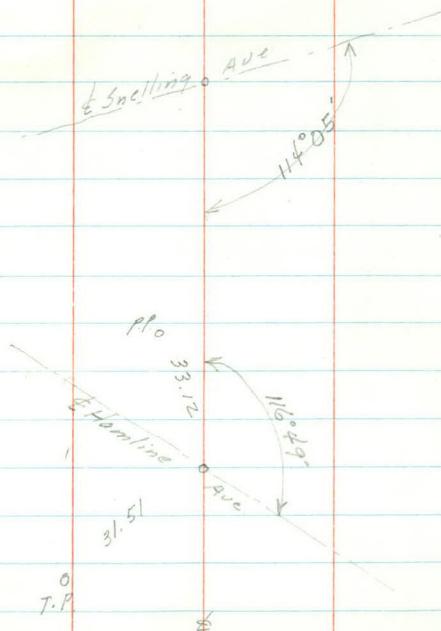
6 + 31.82

P.I.

19° 24'

N 76° 45' W

0+00 = E Hamline AVE.



"A" LINE

Sta	pt.	Ext. Angle	Bearing
		Lt. Rt.	Mag. Calc.

18+55.30 P.O.T. Edge - Water Line - Johanna.

N 47° 45' W

17+00.5

25° 42'

N 73° 30' W

15+50.00

47° 53'

"A" LINE

TOPOGRAPHY

Note: Topography tied from Offset Line.

6
+75 Fe Xs $\frac{1}{2}$

5
4
3
2
1
0
+35 Fe Xs $\frac{1}{2}$

+14 Shldr. Xs $\frac{1}{2}$

-18 Shldr. Xs $\frac{1}{2}$

A hand-drawn sketch on graph paper showing a street intersection. A diagonal line is labeled "HAMLINE" and "AVE". Another line intersects it at a right angle, marked with a small square symbol. Several points are marked with 'x' along the lines.

13

12

11

+91 Side Ditch x s $\frac{1}{2}$
2' Bottom

10

+65 Fc x s $\frac{1}{2}$

9

+11 Side Ditch

8

7

+83 Fc x s $\frac{1}{2}$

+48.3 Wheel Guard x s $\frac{1}{2}$

+13.5 Wheel Guard x s $\frac{1}{2}$

6

Ditch 9-11

150 Ditch 8-10

Ditch 7-1

150 Ditch 5-12

Ditch 4-12

150 Ditch 5-12

Fe 21
Ditch 6-11
193 2d Ditch 6-12
193 P.R. 2d
175 Fe Cor. 6
175 Ditch 0-5
150 Ditch 3
150 Fe. 57
133 Wood Bridge 6
172 Wood Bridge 0-7
11,00 Ditch 4-7
100 Ditch 4-7

150 Ditch 3-7

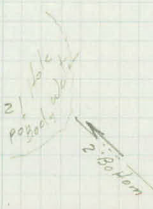
Side Ditch 100
Ditch 4-8

150 Ditch - 3-8

1835 Ditch 2-7
Ditch 0-7
192 End Pipe 3
175 Ditch 0-7
164 Pipe 2.5
164 End Wing 13
152 End Barrel 5
150 Pipe 01

16 End Barrel 15
11 End Wing 27

150 Side Ditch 62

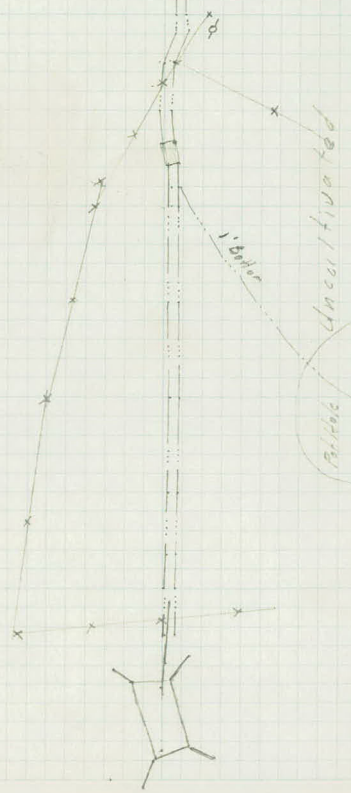


150 Ditch 2
133 Wood Bridge 01
11,00 Fe. 33
100 Fe 36

100 Fe. 60

178 Fe Cor 75
158 End Wing 25
151 End Barrel 15

109 End Barrel 4
100 Shldr 27



19

18

17

16

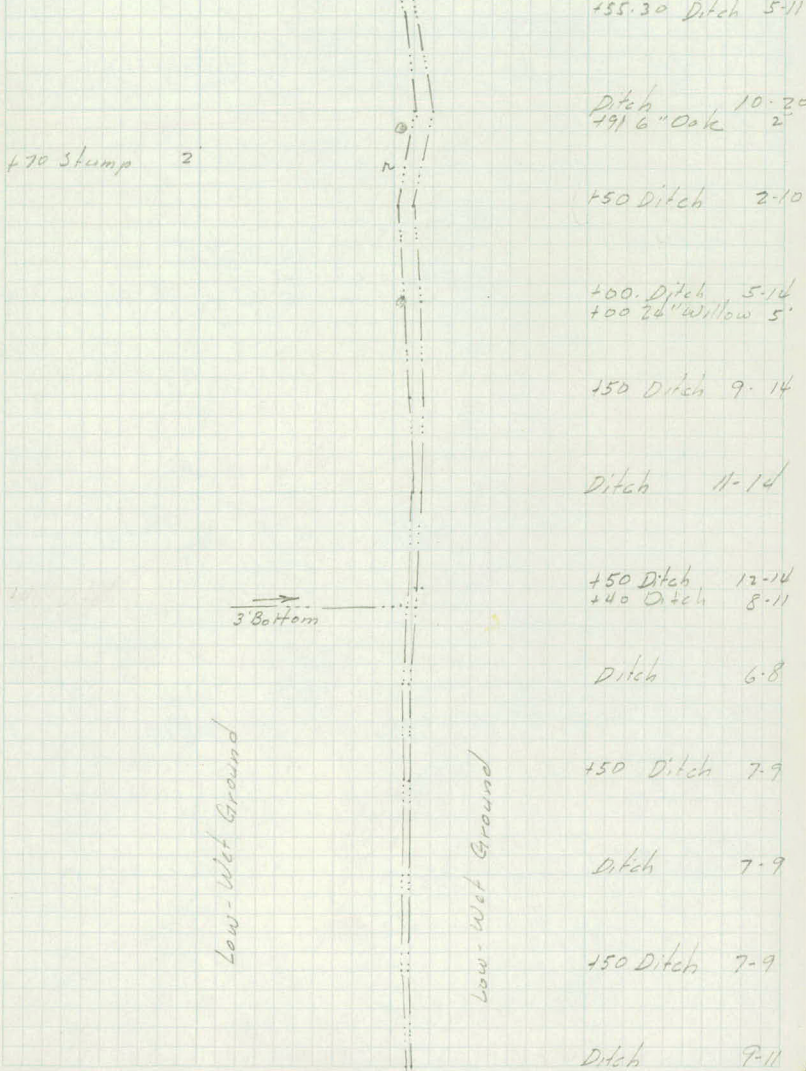
140 Side Ditch Rs $\frac{1}{2}$

15

14

13

LAKE JOHANNA





Cross Sections
"A" Line

Ditch - Lake Josephine to Johanna

Note: $\frac{1}{2}$ for cross sections is actual $\frac{1}{2}$ ditch

Sta	+	π	-	Elev.
B.M.	3.21	890.94		887.73
0 - 21	Flow Line	36" C.M.	12.00	78.94
0 - 17	shldr		8.2	82.7
0 + 00	$\frac{1}{2}$ Hamline		7.5	83.4
0 + 14	shldr		8.4	82.5
+ 21	Flow Line	36" C.M.	12.87	78.07
+ 33			11.8	79.1
+ 66			13.8	77.1
1			13.1	77.8
+ 50			13.1	77.8
2			12.7	78.2
+ 50			12.7	78.2
+ 70	Profile Side Ditch		12.1	78.2
3			12.4	78.5

Lake Imp B.M. for Lake Josephine

B.9

$\frac{11.7}{25}$	$\frac{11.5}{13}$	$\frac{10.9}{5}$	$\frac{11.5}{3}$	Grd	$\frac{11.7}{12.0}$	$\frac{10.3}{2}$	$\frac{9.6}{4}$	$\frac{11.0}{9.15}$	$\frac{11.1}{25}$
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$\frac{11.6}{25}$	$\frac{11.2}{14}$	$\frac{12.3}{4}$	$\frac{10.9}{1}$	Top Pipe	$\frac{11.8}{5}$	$\frac{11.3}{11}$	$\frac{11.0}{21}$	$\frac{10.9}{25}$
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$\frac{11.0}{25}$	$\frac{11.6}{11}$	$\frac{11.7}{4}$	$\frac{13.2}{3}$	Top Pipe	$\frac{11.3}{1}$	$\frac{12.7}{13.8}$	$\frac{10.7}{5}$	$\frac{11.0}{7}$	$\frac{11.0}{25}$
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$\frac{10.9}{25}$	$\frac{11.2}{10}$	$\frac{10.6}{4}$	$\frac{12.8}{3}$	Top Pipe	$\frac{11.2}{1}$	$\frac{12.0}{13.1}$	$\frac{10.5}{3}$	$\frac{10.9}{4}$	$\frac{10.8}{9}$	$\frac{10.8}{25}$
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$\frac{11.2}{25}$	$\frac{11.2}{16}$	$\frac{10.6}{5}$	$\frac{12.2}{3}$	Top Pipe	$\frac{11.6}{1}$	$\frac{12.8}{13.1}$	$\frac{10.8}{2}$	$\frac{10.5}{3}$	$\frac{10.8}{7}$	$\frac{10.8}{25}$
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$\frac{10.8}{25}$	$\frac{10.9}{13}$	$\frac{11.3}{3}$	$\frac{12.6}{2}$	Top Pipe	$\frac{11.35}{1}$	$\frac{12.3}{12.7}$	$\frac{10.8}{2}$	$\frac{10.8}{3}$	$\frac{10.7}{7}$	$\frac{10.7}{25}$
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$\frac{10.9}{25}$	$\frac{11.2}{12}$	$\frac{11.7}{3}$	$\frac{12.7}{2}$	Top Pipe	$\frac{11.35}{0}$	$\frac{12.0}{12.7}$	$\frac{10.7}{2}$	$\frac{11.1}{3}$	$\frac{10.9}{10}$	$\frac{10.9}{25}$
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$\frac{11.3}{25}$	$\frac{11.1}{12}$	$\frac{10.9}{3}$	$\frac{12.3}{2}$	Top Pipe	$\frac{11.55}{0}$	$\frac{12.2}{12.4}$	$\frac{10.9}{2}$	$\frac{11.1}{13}$	$\frac{11.5}{3}$	$\frac{11.5}{25}$
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dr 2 ft

70/10

12.6 12.7 12.5

Sta	+	⌒	-	Elev.
		890.94		
3+50			13.0	77.9
4			13.0	77.9
T.P.	11.33	891.59	10.68	880.26 ✓
+50			13.6	78.0
5			13.4	78.2
+50			13.2	78.4
+77			13.0	78.6
+80			13.0	78.6
6			13.3	78.3
+12			3.35 Top wheel Guard	88.24
			13.1	78.5
			5.60 - Bottom Slab.	
+31.82	± Snelling		3.7	87.9
+50			3.30 Top wheel Guard	88.29
			13.5	78.1
T.P.	1.72	887.83	3.55 Bottom Slab -	88.04
			5.48	88 6.11
+92			110.5	77.3

$$\begin{array}{ccccccc} & & & & \text{Top} & & \\ & & & & \text{Pipe} & & \\ \frac{11.1}{25} & \frac{11.3}{16} & \frac{10.8}{3} & \frac{13.0}{2} & \frac{11.6}{1} & \frac{11.2}{2} & \frac{11.2}{3} \end{array}$$

$$\begin{array}{ccccccc} & & & & \text{Top} & & \\ & & & & \text{Pipe} & & \\ \frac{11.2}{25} & \frac{10.8}{9} & \frac{11.1}{2} & \frac{12.9}{1} & \frac{11.80}{1} & \frac{12.0}{2} & \frac{11.0}{3} \end{array}$$

$$\begin{array}{ccccccc} & & & & \text{Top} & & \\ & & & & \text{Pipe} & & \\ \frac{12.0}{25} & \frac{11.9}{17} & \frac{12.0}{3} & \frac{13.7}{2} & \frac{12.42}{0} & \frac{13.4}{2} & \frac{11.7}{3} \end{array}$$

$$\begin{array}{ccccccc} & & & & \text{Top} & & \\ & & & & \text{Pipe} & & \\ \frac{11.8}{25} & \frac{11.9}{9} & \frac{12.1}{2} & \frac{13.4}{1} & \frac{12.42}{0} & \frac{12.8}{2} & \frac{12.0}{3} \end{array}$$

$$\begin{array}{ccccccc} & & & & \text{Top} & & \\ & & & & \text{Pipe} & & \\ \frac{12.2}{25} & \frac{12.4}{18} & \frac{12.4}{3} & \frac{13.2}{1} & \frac{12.67}{0} & \frac{13.5}{2} & \frac{12.5}{3} \end{array}$$

$$\begin{array}{ccccccc} & & & & \text{Top} & & \\ & & & & \text{Pipe} & & \\ \frac{12.2}{25} & \frac{12.4}{9} & \frac{12.8}{1} & \frac{13.0}{1} & \frac{12.60}{0} & \frac{12.6}{3} & \frac{12.2}{10} \end{array}$$

$$\begin{array}{ccccccc} & & & & \text{Top} & & \\ & & & & \text{Pipe} & & \\ \frac{11.4}{25} & \frac{10.8}{12} & \frac{10.7}{6} & \frac{12.6}{4} & \frac{12.52}{0} & \frac{12.6}{2} & \frac{10.7}{4} \end{array}$$

$$\begin{array}{ccccccc} & & & & \text{Top} & & \\ & & & & \text{Pipe} & & \\ \frac{8.0}{25} & \frac{9.0}{15} & \frac{9.3}{9} & \frac{13.3}{3} & \frac{12.68}{6} & \frac{12.9}{3} & \frac{11.0}{4} \end{array}$$

$$\begin{array}{ccccccc} & & & & \text{Top} & & \\ & & & & \text{Pipe} & & \\ \frac{4.4}{25} & \frac{4.8}{15} & \frac{4.0}{7} & \frac{3.35}{7.5} & \frac{12.6}{5} & \frac{12.73}{1} & \frac{13.0}{2} \end{array}$$

$$\begin{array}{ccccccc} & & & & \text{Top} & & \\ & & & & \text{Pipe} & & \\ \frac{5.1}{25} & \frac{5.0}{15} & \frac{3.32}{15.14} & \frac{12.6}{14} & \frac{12.3}{10} & \frac{11.8}{4} & \frac{13.0}{0} \end{array}$$

$$\begin{array}{ccccccc} & & & & \text{FL} & & \\ & & & & \text{Pipe} & & \\ \frac{6.0}{25} & \frac{6.7}{16} & \frac{6.4}{5} & \frac{8.7}{4} & \frac{10.20}{0} & \frac{8.5}{2} & \frac{6.7}{4} \end{array}$$

Sta		K	-	Elev.
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887.83

7			10.8	77.0
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+18.35			9.4	78.4
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+50			9.8	78.0
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8			9.7	78.1
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+50			10.0	77.8
-----	--	--	------	------

9			9.9	77.9
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+11			10.2	77.6
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Profile Ditch Lt. 9211

B.M.	3.11	890.31	0.63	887.20	(887.16)
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+50			12.3	78.0
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+93.24			12.7	77.6
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T.P.	5.13	884.51	10.93	879.38
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10 +50			7.5	77.0
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1 +92	Profile Ditch Lt.		7.6	76.9
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$$\begin{array}{r} 5.6 \\ 25 \end{array} \quad \begin{array}{r} 6.5 \\ 19 \end{array} \quad \begin{array}{r} 6.5 \\ 5 \end{array} \quad \begin{array}{r} 10.0 \\ 4 \end{array} \quad 10.8 \quad \begin{array}{r} 9.0 \\ 7 \end{array} \quad \begin{array}{r} 7.0 \\ 5 \end{array} \quad \begin{array}{r} 7.3 \\ 14 \end{array} \quad \begin{array}{r} 7.5 \\ 25 \end{array}$$

$$\begin{array}{r} 5.7 \\ 25 \end{array} \quad \begin{array}{r} 6.5 \\ 14 \end{array} \quad \begin{array}{r} 6.4 \\ 5 \end{array} \quad \begin{array}{r} 9.0 \\ 2 \end{array} \quad 9.1 \quad \begin{array}{r} 9.3 \\ 2 \end{array} \quad \begin{array}{r} 6.9 \\ 4 \end{array} \quad \begin{array}{r} 7.2 \\ 14 \end{array} \quad \begin{array}{r} 7.4 \\ 25 \end{array}$$

$$\begin{array}{r} 6.0 \\ 25 \end{array} \quad \begin{array}{r} 6.4 \\ 16 \end{array} \quad \begin{array}{r} 7.3 \\ 4 \end{array} \quad \begin{array}{r} 9.1 \\ 2 \end{array} \quad 9.8 \quad \begin{array}{r} 9.1 \\ 2 \end{array} \quad \begin{array}{r} 7.1 \\ 4 \end{array} \quad \begin{array}{r} 7.8 \\ 12 \end{array} \quad \begin{array}{r} 7.8 \\ 25 \end{array}$$

$$\begin{array}{r} 5.7 \\ 25 \end{array} \quad \begin{array}{r} 7.0 \\ 15 \end{array} \quad \begin{array}{r} 7.3 \\ 4 \end{array} \quad \begin{array}{r} 9.2 \\ 2 \end{array} \quad 9.7 \quad \begin{array}{r} 9.5 \\ 2 \end{array} \quad \begin{array}{r} 7.2 \\ 3 \end{array} \quad \begin{array}{r} 8.0 \\ 13 \end{array} \quad \begin{array}{r} 8.3 \\ 25 \end{array} \quad \text{Low Spot of Pat Hole} \quad \begin{array}{r} 8.8 \\ 100 \end{array}$$

$$\begin{array}{r} 5.2 \\ 25 \end{array} \quad \begin{array}{r} 6.7 \\ 14 \end{array} \quad \begin{array}{r} 7.2 \\ 4 \end{array} \quad \begin{array}{r} 9.1 \\ 2 \end{array} \quad 10.0 \quad \begin{array}{r} 10.0 \\ 1 \end{array} \quad \begin{array}{r} 7.6 \\ 3 \end{array} \quad \begin{array}{r} 8.3 \\ 12 \end{array} \quad \begin{array}{r} 8.9 \\ 26 \end{array}$$

$$\begin{array}{r} 6.2 \\ 25 \end{array} \quad \begin{array}{r} 6.9 \\ 14 \end{array} \quad \begin{array}{r} 7.8 \\ 3 \end{array} \quad \begin{array}{r} 9.7 \\ 2 \end{array} \quad 9.9 \quad \begin{array}{r} 9.7 \\ 2 \end{array} \quad \begin{array}{r} 7.5 \\ 4 \end{array} \quad \begin{array}{r} 8.6 \\ 12 \end{array} \quad \begin{array}{r} 8.2 \\ 25 \end{array}$$

$$\begin{array}{r} 5.4 \\ 25 \end{array} \quad \begin{array}{r} 6.4 \\ 14 \end{array} \quad \begin{array}{r} 7.0 \\ 9 \end{array} \quad \begin{array}{r} 7.6 \\ 3 \end{array} \quad \begin{array}{r} 9.8 \\ 2 \end{array} \quad 10.2 \quad \begin{array}{r} 10.0 \\ 2 \end{array} \quad \begin{array}{r} 7.6 \\ 3 \end{array} \quad \begin{array}{r} 7.7 \\ 12 \end{array} \quad \begin{array}{r} 7.6 \\ 25 \end{array}$$

$$\begin{array}{r} 8.1 \\ 3 \end{array} \quad \begin{array}{r} 8.8 \\ 15 \end{array} \quad \begin{array}{r} 8.0 \\ 30 \end{array} \quad \begin{array}{r} 8.9 \\ 50 \end{array} \quad \begin{array}{r} 8.7 \\ 75 \end{array} \quad \begin{array}{r} 8.9 \\ 100 \end{array} \quad \begin{array}{r} 8.8 \\ 125 \end{array} \quad \begin{array}{r} 8.8 \\ 150 \end{array}$$

Spike PA 648+50

$$\begin{array}{r} 3.6 \\ 25 \end{array} \quad \begin{array}{r} 4.0 \\ 18 \end{array} \quad \begin{array}{r} 4.5 \\ 11 \end{array} \quad \begin{array}{r} 7.4 \\ 6 \end{array} \quad \begin{array}{r} 11.9 \\ 2 \end{array} \quad 12.3 \quad \begin{array}{r} 12.0 \\ 2 \end{array} \quad \begin{array}{r} 7.8 \\ 6 \end{array} \quad \begin{array}{r} 6.3 \\ 11 \end{array} \quad \begin{array}{r} 5.1 \\ 25 \end{array}$$

$$\begin{array}{r} 10.0 \\ 25 \end{array} \quad \begin{array}{r} 9.8 \\ 12 \end{array} \quad \begin{array}{r} 11.6 \\ 6 \end{array} \quad \begin{array}{r} 12.4 \\ 3 \end{array} \quad 12.7 \quad \begin{array}{r} 12.3 \\ 3 \end{array} \quad \begin{array}{r} 11.0 \\ 7 \end{array} \quad \begin{array}{r} 9.4 \\ 11 \end{array} \quad \begin{array}{r} 7.3 \\ 25 \end{array}$$

Top Stake 9493 24

$$\begin{array}{r} 5.2 \\ 25 \end{array} \quad \begin{array}{r} 5.7 \\ 6 \end{array} \quad \begin{array}{r} 6.8 \\ 3 \end{array} \quad \begin{array}{r} 7.4 \\ 1 \end{array} \quad 7.5 \quad \begin{array}{r} 7.3 \\ 1 \end{array} \quad \begin{array}{r} 6.2 \\ 3 \end{array} \quad \begin{array}{r} 4.9 \\ 7 \end{array} \quad \begin{array}{r} 5.3 \\ 17 \end{array} \quad \begin{array}{r} 5.6 \\ 25 \end{array}$$

877.23

$$\begin{array}{r} \text{Top Water} \\ 7.28 \\ 200 \end{array} \quad \begin{array}{r} 8.5 \\ 200 \end{array} \quad \begin{array}{r} 7.8 \\ 150 \end{array} \quad \begin{array}{r} 7.6 \\ 100 \end{array} \quad \begin{array}{r} 7.4 \\ 75 \end{array} \quad \begin{array}{r} 7.0 \\ 50 \end{array} \quad \begin{array}{r} 6.7 \\ 28 \end{array} \quad \begin{array}{r} 6.5 \\ 11 \end{array} \quad \begin{array}{r} 7.0 \\ 1 \end{array} \quad 7.6$$

Sta.	+	π	-	Elev.
		884.51		
11			7.6	76.9
	+ 50		8.0	76.5
12			8.0	76.5
	+ 50		8.4	76.1
13			8.4	76.1
	+ 50		8.7	75.8
14			8.9	75.6
	+ 50		9.3	75.2
15			9.0	75.5
T.P	8.96	886.11	7.36	877.15
+ 40	Profile Ditch Lt		10.2	75.9
+ 50			10.2	75.9
16			10.6	75.5

6.5 6.4 6.9 7.5 7.5 6.7 5.7 6.1 6.2
25 7 3 1.5 7.6 1.5 3 5 12 25

$\frac{6.8}{25}$	$\frac{6.8}{2}$	$\frac{7.6}{2}$	$\frac{7.8}{1}$	$\frac{7.9}{1}$	$\frac{6.6}{2}$	$\frac{6.2}{2}$	$\frac{6.4}{14}$	$\frac{6.2}{25}$
------------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------	------------------

$$\frac{7.0}{25} \quad \frac{7.0}{11} \quad \frac{7.1}{2} \quad \frac{8.1}{1} \quad 8.12 \quad \frac{8.0}{1} \quad \frac{7.1}{4} \quad \frac{6.2}{6} \quad \frac{6.6}{15} \quad \frac{6.7}{23}$$

$\frac{7.2}{25}$	$\frac{7.1}{7}$	$\frac{7.3}{2}$	$\frac{8.3}{1}$	$\frac{8.1}{1}$	$\frac{6.6}{3}$	$\frac{6.7}{8}$	$\frac{6.9}{25}$
------------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------

$$\begin{array}{r} 7.3 \\ 25 \overline{) 182.5} \\ \underline{175} \\ 75 \\ 72 \\ \underline{35} \\ 35 \\ \underline{0} \end{array} \quad \begin{array}{r} 7.2 \\ 10 \overline{) 72} \\ \underline{70} \\ 20 \\ 20 \\ \underline{0} \end{array} \quad \begin{array}{r} 7.2 \\ 2 \overline{) 14.4} \\ \underline{14} \\ 40 \\ 40 \\ \underline{0} \end{array} \quad \begin{array}{r} 8.4 \\ 1 \overline{) 84} \\ \underline{84} \\ 0 \end{array} \quad \begin{array}{r} 7.3 \\ 2 \overline{) 14.6} \\ \underline{14} \\ 60 \\ 60 \\ \underline{0} \end{array} \quad \begin{array}{r} 7.2 \\ 8 \overline{) 57.6} \\ \underline{56} \\ 16 \\ 16 \\ \underline{0} \end{array} \quad \begin{array}{r} 7.2 \\ 10 \overline{) 72} \\ \underline{70} \\ 20 \\ 20 \\ \underline{0} \end{array} \quad \begin{array}{r} 7.3 \\ 25 \overline{) 182.5} \\ \underline{175} \\ 75 \\ 72 \\ \underline{35} \\ 35 \\ \underline{0} \end{array}$$

$$\frac{7.5}{25} \frac{7.3}{11} \frac{7.5}{2} \frac{8.5}{1} \frac{8.7}{8.71} \frac{7.5}{2} \frac{7.4}{6} \frac{7.2}{14} \frac{7.3}{25}$$

$$\frac{7.4}{2.5} \quad \frac{7.5}{1.4} \quad \frac{7.6}{2} \quad \frac{8.6}{1} \quad 8.9 \quad \frac{8.9}{1} \quad \frac{7.4}{2} \quad \frac{7.3}{12} \quad \frac{7.4}{25}$$

$\frac{7.5}{25} \quad \frac{7.5}{9} \quad \frac{7.8}{2} \quad \frac{9.1}{1} \quad 9.3 \quad \frac{9.0}{1} \quad \frac{7.9}{2} \quad \frac{7.4}{7} \quad \frac{7.3}{18} \quad \frac{7.2}{25}$

$\frac{7.4}{25}$	$\frac{7.1}{12}$	$\frac{7.9}{2}$	$\frac{2.0}{1}$	$\frac{88}{1}$	$\frac{7.6}{2}$	$\frac{7.2}{9}$	$\frac{7.2}{25}$
------------------	------------------	-----------------	-----------------	----------------	-----------------	-----------------	------------------

● 877.29
Top Water

Top Water

<u>8.82</u>	<u>9.8</u>	<u>9.6</u>	<u>9.2</u>	<u>9.3</u>	<u>9.5</u>	<u>10.5</u>	<u>10.0</u>
250	250	200	150	100	50	22	12 10.2

$\frac{9.0}{25}$	$\frac{9.0}{16}$	$\frac{9.5}{3}$	$\frac{10.4}{2}$	$\frac{10.2}{10.2}$	$\frac{10.1}{1.5}$	$\frac{9.5}{4}$	$\frac{9.0}{12}$	$\frac{8.9}{26}$
------------------	------------------	-----------------	------------------	---------------------	--------------------	-----------------	------------------	------------------

$$\frac{8.9}{25} \frac{8.9}{15} \frac{9.2}{7} \frac{9.9}{3} \frac{10.8}{2} 10.6 \frac{10.5}{2} \frac{9.3}{4} \frac{9.5}{12} \frac{9.0}{25}$$

Sta	T	π	—	Elev.
-----	---	-------	---	-------

886.11

16+50

10.5

75.6

17+00.5

10.3

75.8

+50

10.7

75.4

18

11.0

75.1

+55.3

10.0

76.1

Top Water Johanna

9.55

76.56

10-21-40

B.M.

4.32

879.79

(879.82)

$$\begin{array}{r} 7.8 \ 8.5 \ 9.4 \ 10.2 \\ \hline 25 \ 15 \ 4 \ 2 \end{array} \quad \begin{array}{r} 10.3 \ 9.9 \ 9.1 \ 9.0 \ 8.4 \\ \hline 2 \ 4 \ 6 \ 15 \ 25 \end{array}$$

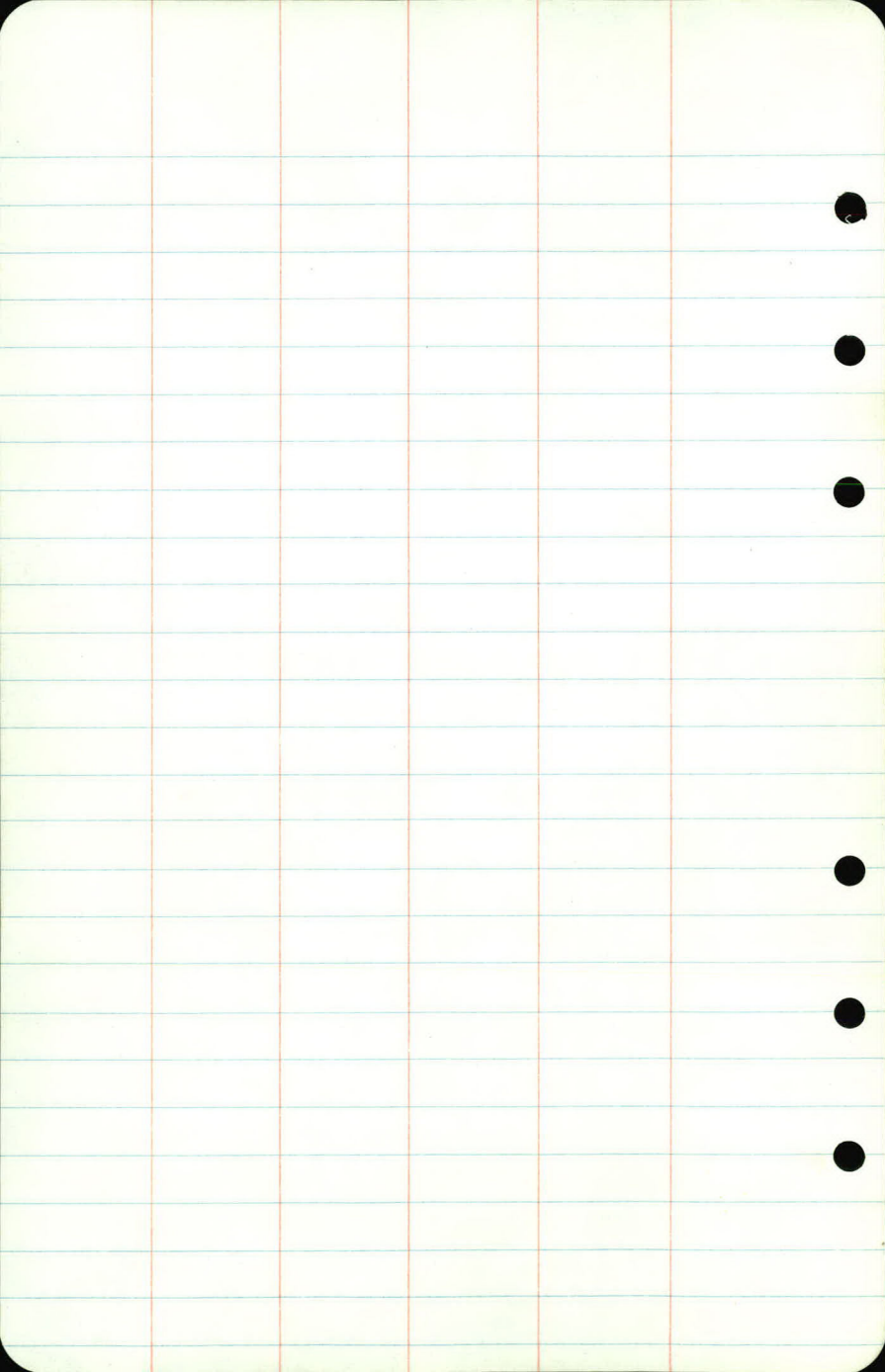
$$\begin{array}{r} 8.0 \ 9.0 \ 10.4 \\ \hline 25 \ 10 \ 6 \end{array} \quad \begin{array}{r} 10.0 \ 7.7 \ 7.0 \ 6.3 \\ \hline 4 \ 7 \ 16 \ 25 \end{array}$$

$$\begin{array}{r} 5.3 \ 7.4 \ 9.3 \ 10.6 \\ \hline 25 \ 15 \ 6 \ 4 \end{array} \quad \begin{array}{r} 10.1 \ 9.7 \ 8.0 \ 6.4 \\ \hline 3 \ 6 \ 13 \ 25 \end{array}$$

$$\begin{array}{r} 6.4 \ 7.6 \ 9.5 \ 10.7 \\ \hline 25 \ 17 \ 8 \ 3 \end{array} \quad \begin{array}{r} 10.9 \ 10.1 \ 9.9 \ 8.5 \\ \hline 4 \ 6 \ 16 \ 25 \end{array}$$

$$\begin{array}{r} 8.6 \ 9.2 \ 10.0 \\ \hline 25 \ 6 \ 3 \end{array} \quad \begin{array}{r} 10.0 \ 9.3 \ 8.9 \ 6.5 \\ \hline 3 \ 6 \ 13 \ 25 \end{array}$$

Top Spike 12" Oak 30" Rt. 18



Bench Levels

Ditch - Josephine to Sohanna

Sta	i	π	—	Elev.
B.M.	2.53	890.26		887.73
	8.74	894.65	4.35	885.91
	1.84	890.05	6.44	888.21
B.M.	2.89		2.89	887.16
	1.99	887.07	-4.97	885.08
	2.62	885.86	3.83	883.24
B.M.			6.04	879.82

B.M.	4.80	892.53		887.73
	4.27	890.16	6.64	885.89
			6.28	883.88

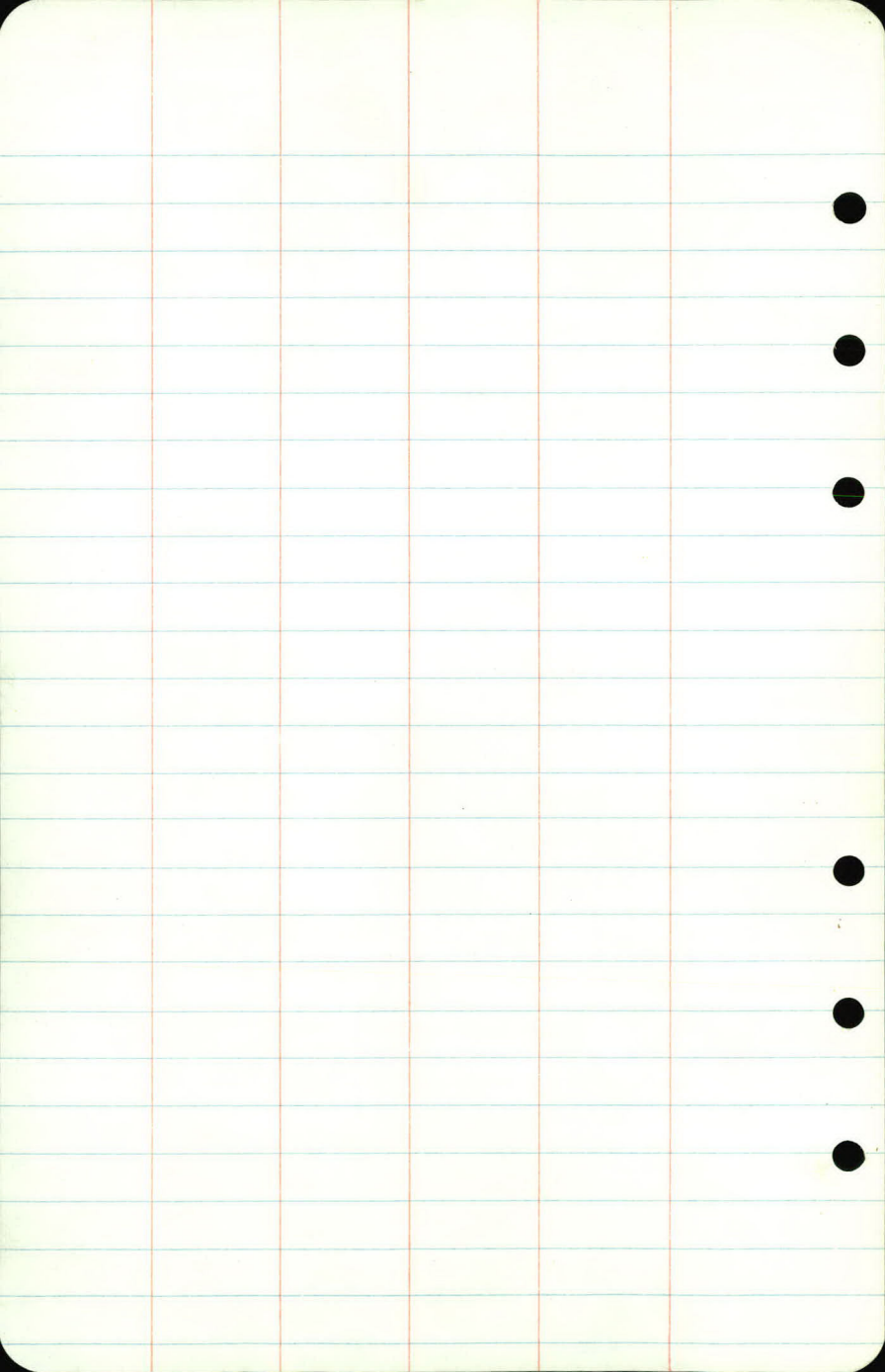
Lake Imp. B.M. for Lake Josephine

Spike P.P. Lt. 8+50

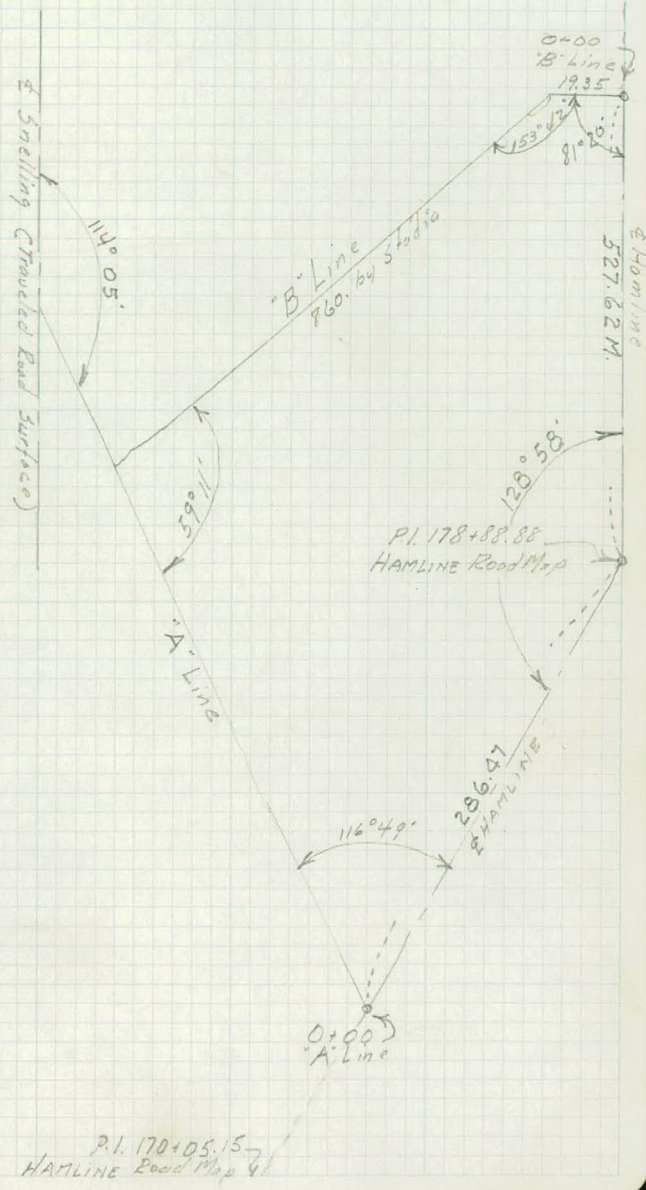
Spike 12' Oak 36' Rt. 18+00

Lake Imp. B.M.

Spike Arc Light Pole S.E. 0+00 "B" Line



P.I. 167+17.50
HAMLINE Rd Map





Alignment "B" Line.

"B" LINE

Ext. Angle

Bearing

Sta. Pt.

Lt. Rt.

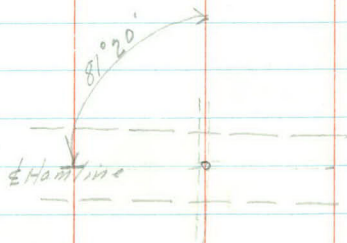
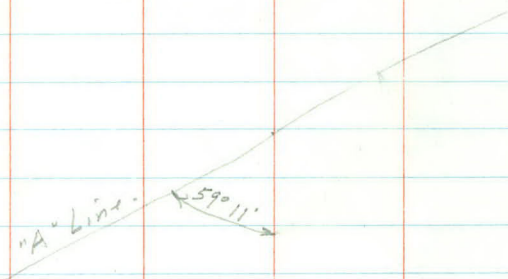
Mag. Calc.

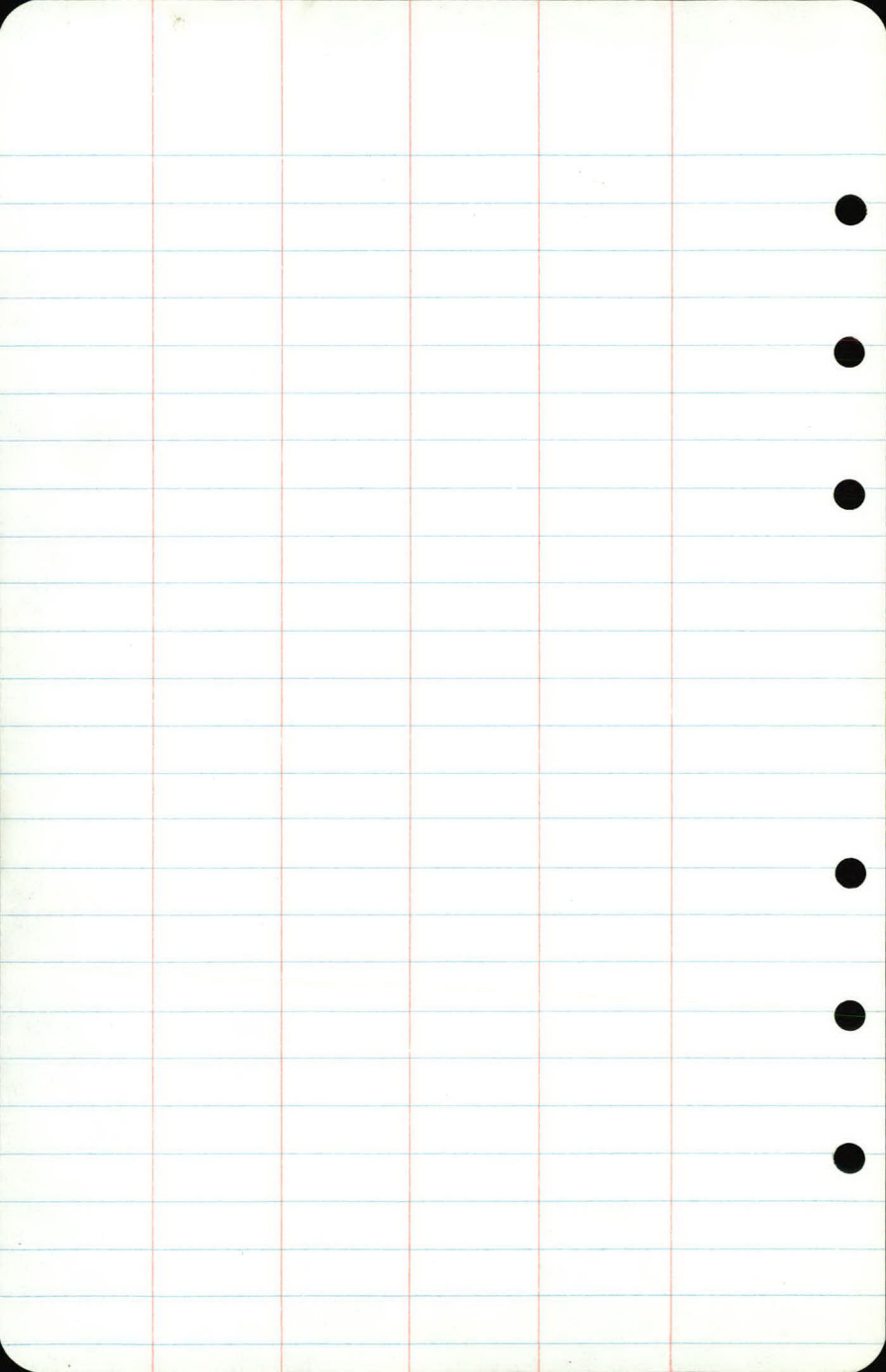
8+79.35 B Line = 5+35.5 A Line

860.44
Stadia

PT.
0+1935 End 15" C.M. 26°18'

0+00 = Hamline





Ditch Josephine to Johanna

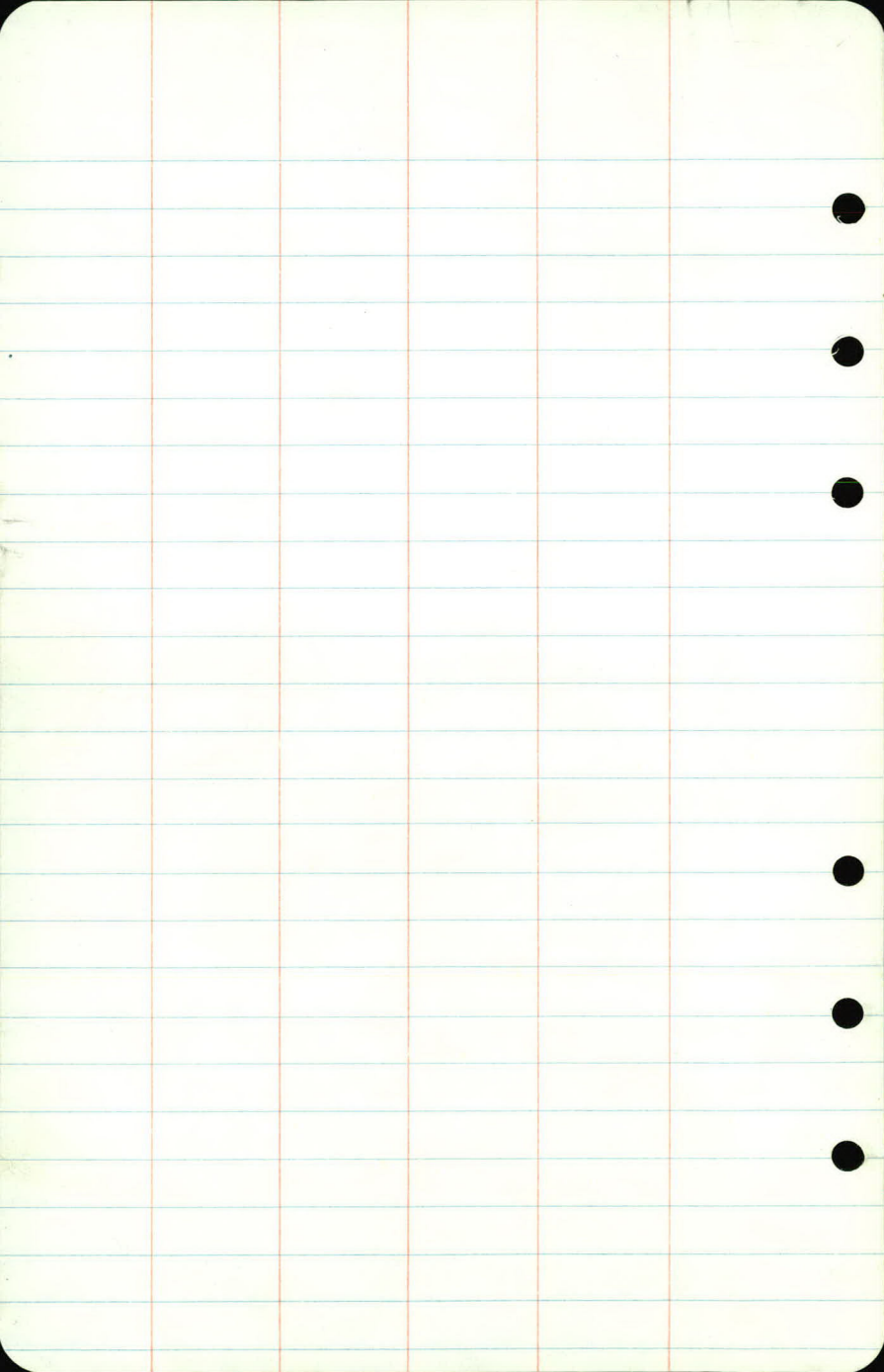
Profile Levels
on "B" Line

x				
Sta.	+	π	-	Elev.
B.M.	3.67	887.55		883.88
0+18	FL 15" C.M.		9.12	78.43
0+15	shldr		5.0	82.6
0+00	$\frac{1}{2}$		4.4	83.2
0+16	shldr		5.0	82.6
+19	FL 15" C.M.		8.65	78.90
+50			9.6	78.0
1			10.5	77.1
+50			9.2	78.4
2			9.4	78.2
	Top Water in Swamp		7.74	79.81 10-18-40
+50			10.00	77.6
3			10.1	77.5
+50			9.8	77.8

Spike Arc. Light Pole

Sta.	+	π	-	Elev.
		887.55		
3 + 75			8.2	79.4
4			8.6	79.0
+ 50			8.3	79.3
5			8.5	79.1
B.M.	3.65	890.81		887.16
+ 50			12.3	78.5
6			11.8	79.0
+ 50			11.0	79.8
7			11.1	79.7
+ 50			10.9	79.9
8			10.9	79.9
+ 50			11.3	79.5
			11.2	79.6

Spike PP Lk 8450 "A" Line.



Ditch Josephine to Johanna

Topog. Tied from Hamline

P.1 Sta. Hamline is 0+00

Sta. No. is Plus, So. is Minus

All ties from Tangents

7. End - ^{Ties to Swamp}
190 - 230

6 180 - 360

+2.5 25 - 108

5 25 - 100

4 22

3 23'

+50 90 ^{Land}
(250 - 305)

2 115 ^{Land}
(220 - 350)

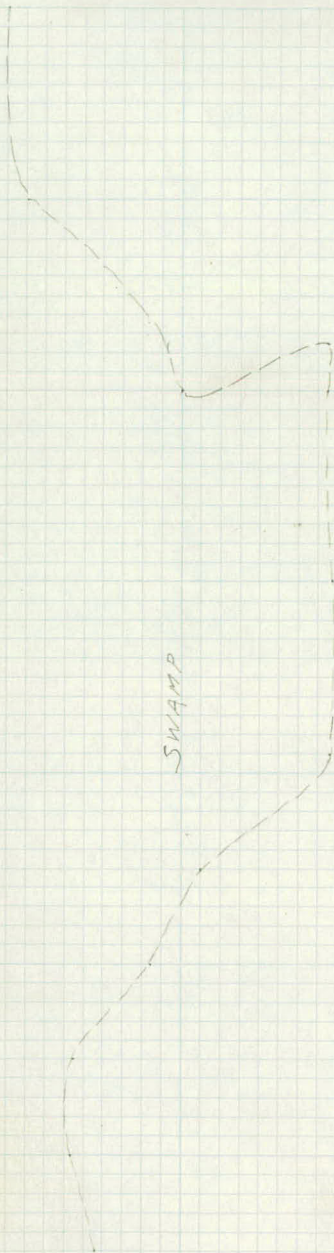
+50 157 ^{Land}
(225 - 320)

1 155 ^{Land}
(200 - 360)

+50 144

0 +00

SWAMP



0+00

Ties to Swamp

-1 -50 135-230

-1 162-200

-50 420

-2 100-200

-50 30-280

-3 75

-4 100

-5 175

-6

-7

SWAMP

LAND

SWAMP



Ditch Josephine to Johanna
Ties to Swamp Rt Angle to Snell.

Sta. 6+ Ditch is 0+00 Snelling Av.

Sta. to North is Plus

Sta. to South is Minus

Ties to Swamp

450

125-186-540

118-270

225

176

105

LAND

SWAMP

0+00 10 5

-50 54

-1 64

-2 52

-3 72

-4 End 59-175

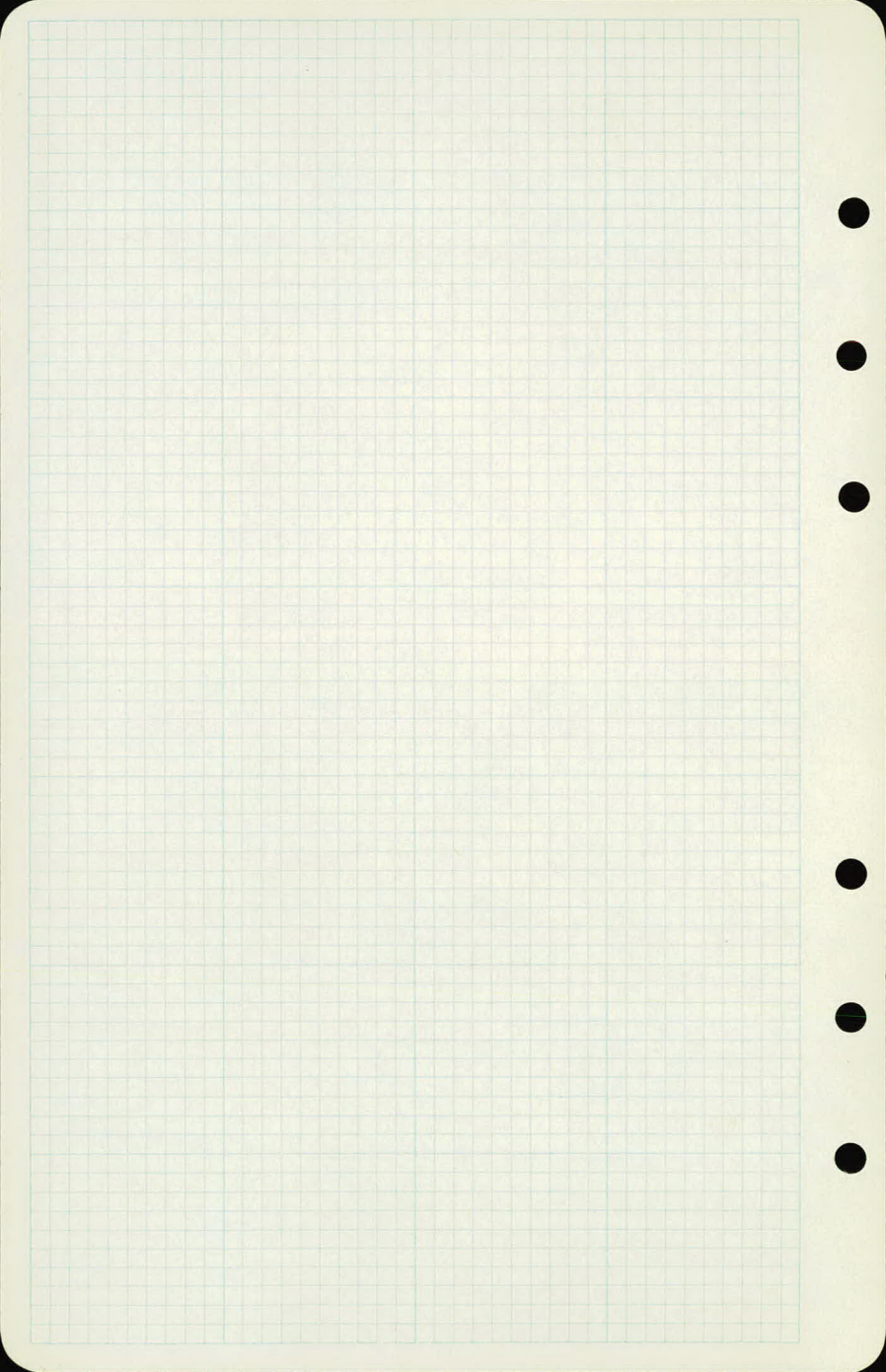
-5

-6

-7

SWAMP





Pot Hole Rt. 8+00
Tied from Offset Line

6

16.26

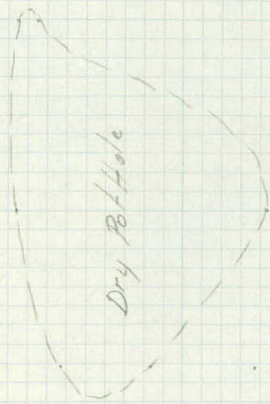
8

16-142

7

418

38





Ditch Josephine to Johanna
stadia work

Tie in Swamp.

Point Azimuth Dist. (Clockwise)

Azimuth of Line 9+11 to 9+93.24 is $0^{\circ}00'$

A 9+93.24 B.S. to 9+11 (Back Azimuth $=180^{\circ}00'$)

Swamp $20^{\circ}20'$ 115.0

$38^{\circ}50'$ 130.0

$42^{\circ}00'$ 287.0

$315^{\circ}10'$ 112.0 ✓

$39^{\circ}00'$ 370.0 ✓

$282^{\circ}30'$ 222.0

$32^{\circ}55'$ 470.0 ~

$290^{\circ}10'$ 390.0

$24^{\circ}50'$ 593.0

$310^{\circ}00'$ 580.0

$321^{\circ}30'$ 620.0

$336^{\circ}30'$ 620.0

$12^{\circ}15'$ 610.0

$00^{\circ}30'$ 660.0

$330^{\circ}00'$ 700.0

$351^{\circ}30'$ 770.0

$331^{\circ}15'$ 800.0

$343^{\circ}30'$ 900.0

$337^{\circ}10'$ 900.0

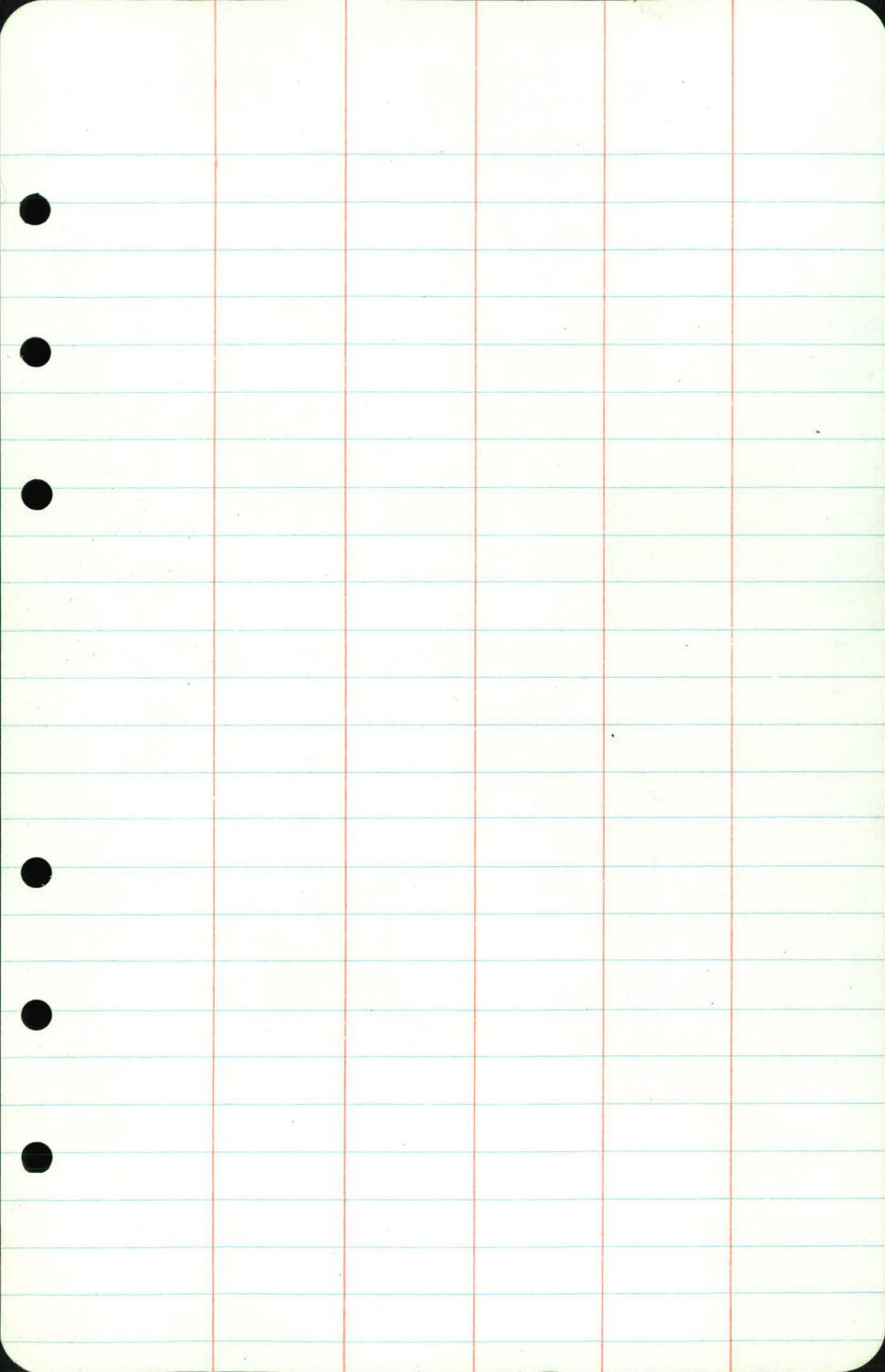
Water
Hole

$338^{\circ}50'$ 600.0

$344^{\circ}00'$ 580.0

$340^{\circ}00'$ 425.0

$337^{\circ}50'$ 525.0



Point	Azimuth	Dist.
Water hole	345°10'	600.0
	351°15'	580.0

SLOPE STAKE

Ditch Between Hamline
and Lake Johanna.



Sta	+	π	-	Elev.	
B.M.	1.48	888.61		887.13	
0+21				78.07	
+33				78.07	10.54
+66				78.06	10.55
1				78.06	10.57
	1.51	888.64	1.48	887.13	
+50				78.03	10.61
2				78.01	10.63
+50				77.99	10.65
+70				77.99	10.65
3				77.98	10.66
+50				77.96	10.68
T.P.	9.18	889.22	860	880.04	
4				77.94	11.28
+50				77.93	11.29
					877.90
					5125.5

Spike in Oak-Lake Imp.

$$\begin{array}{r} 7.54 \\ \underline{C3.0} \end{array}$$

$$\begin{array}{r} 8.55 \\ \underline{C2.0} \end{array}$$

$$\begin{array}{r} 8.57 \\ \underline{C2.0} \end{array}$$

$$\begin{array}{r} 9.0 \\ \underline{C1.6} \\ 4.6 \end{array}$$

$$\begin{array}{r} 8.61 \\ \underline{C2.0} \end{array}$$

$$\begin{array}{r} 8.7 \\ \underline{C1.9} \\ 4.9 \end{array}$$

$$\begin{array}{r} 9.2 \\ \underline{C1.4} \\ 4.4 \end{array}$$

$$\begin{array}{r} 8.63 \\ \underline{C2.0} \end{array}$$

$$\begin{array}{r} 8.8 \\ \underline{C1.8} \\ 4.8 \end{array}$$

$$\begin{array}{r} 9.2 \\ \underline{C1.5} \\ 4.5 \end{array}$$

$$\begin{array}{r} 8.65 \\ \underline{C2.0} \end{array}$$

$$\begin{array}{r} 8.8 \\ \underline{C1.9} \\ 4.9 \end{array}$$

$$\begin{array}{r} 9.2 \\ \underline{C1.5} \\ 4.5 \end{array}$$

$$\begin{array}{r} 8.65 \\ \underline{C2.0} \end{array}$$

$$\begin{array}{r} 9.2 \\ \underline{C1.5} \\ 4.5 \end{array}$$

$$\begin{array}{r} 9.0 \\ \underline{C1.7} \\ 4.7 \end{array}$$

$$\begin{array}{r} 8.66 \\ \underline{C2.0} \end{array}$$

$$\begin{array}{r} 9.0 \\ \underline{C1.7} \\ 4.7 \end{array}$$

$$\begin{array}{r} 8.9 \\ \underline{C1.8} \\ 4.8 \end{array}$$

$$\begin{array}{r} 8.68 \\ \underline{C2.0} \end{array}$$

$$\begin{array}{r} 9.3 \\ \underline{C1.4} \\ 4.4 \end{array}$$

$$\begin{array}{r} 9.9 \\ \underline{C1.4} \\ 4.4 \end{array}$$

$$\begin{array}{r} 9.27 \\ \underline{C2.0} \end{array}$$

$$\begin{array}{r} 9.8 \\ \underline{C1.5} \\ 4.5 \end{array}$$

$$\begin{array}{r} 10.0 \\ \underline{C1.3} \\ 4.3 \end{array}$$

$$\begin{array}{r} 9.29 \\ \underline{C2.0} \end{array}$$

$$\begin{array}{r} 9.9 \\ \underline{C1.4} \\ 4.4 \end{array}$$

Sta.	t	π	-	Elev	
		88922			
5				77.91	
+50				77.87	
+77				77.83	
+80				77.82	
6				77.79	
+12				77.77	
T.P.	2.49	888.13	3.58	885.64	6.17
+50				77.70	
+92				77.63	
7				77.62	
+18				77.59	7+18.35
+50				77.53	
8				77.45	
B.M.	1.63	888.13	1.63	<u>886.50</u>	887.46

11.31

$$\begin{array}{r} 10.0 \\ C13 \\ \hline 43 \end{array}$$

$$\begin{array}{r} 9.31 \\ C2.0 \\ \hline \end{array}$$

$$\begin{array}{r} 10.3 \\ C1.0 \\ \hline 42 \end{array}$$

11.35

$$\begin{array}{r} 9.35 \\ C2.0 \\ \hline \end{array}$$

11.39

X

11.40

$$\begin{array}{r} 8.40 \\ C3.0 \\ \hline \end{array}$$

$$\begin{array}{r} 8.8 \\ C2.6 \\ \hline 55 \end{array}$$

11.43

$$\begin{array}{r} 8.43 \\ C3.0 \\ \hline \end{array}$$

$$\begin{array}{r} 8.6 \\ C2.8 \\ \hline 58 \end{array}$$

11.45

$$\begin{array}{r} 9.45 \\ C2.0 \\ \hline \end{array}$$

10.43

$$\begin{array}{r} 8.43 \\ C2.0 \\ \hline \end{array}$$

10.50

$$\begin{array}{r} 6.9 \\ C3.6 \\ \hline 6.6 \end{array}$$

$$\begin{array}{r} 6.50 \\ C2.0 \\ \hline \end{array}$$

$$\begin{array}{r} 2.3 \\ C3.2 \\ \hline 63 \end{array}$$

10.51

X

10.54

$$\begin{array}{r} 7.2 \\ C3.3 \\ \hline 63 \end{array}$$

$$\begin{array}{r} 8.54 \\ C2.0 \\ \hline \end{array}$$

$$\begin{array}{r} 7.5 \\ C3.0 \\ \hline 60 \end{array}$$

10.60

$$\begin{array}{r} 7.8 \\ C2.8 \\ \hline 58 \end{array}$$

$$\begin{array}{r} 8.60 \\ C2.0 \\ \hline \end{array}$$

$$\begin{array}{r} 7.9 \\ C2.7 \\ \hline 53 \end{array}$$

10.68

$$\begin{array}{r} 8.1 \\ C2.6 \\ \hline 55 \end{array}$$

$$\begin{array}{r} 8.68 \\ C2.0 \\ \hline \end{array}$$

$$\begin{array}{r} 7.8 \\ C2.9 \\ \hline 53 \end{array}$$

	+	+	—		
			888.13		
8450				77.36	10.97
B.M.			3.		887.16
7				77.30	
+11	P.1			77.26	10.87
+50				77.19	10.94
	4.21	890.95	11.83	879.12	
+93	P.1	883.33		77.12	6.21
10+50				77.02	6.31
+92				76.88	x
11				76.85	6.48
+50				76.67	6.66
12				76.50	6.83
+50				76.32	7.01
13				76.15	7.18
	7.97	883.33	5.38	877.95	
		885.96			

$$\begin{array}{r} 8.77 \\ C2.0 \end{array}$$

Spk P.P. Lt. 8+50

$$\begin{array}{r} 8.87 \\ C2.0 \end{array}$$

~~10.9~~
~~2.0~~

$$\begin{array}{r} 4.2 \\ C2.0 \\ \hline 5.0 \end{array}$$

$$\begin{array}{r} 4.21 \\ C2.0 \end{array}$$

*

$$\begin{array}{r} 3.5 \\ C2.8 \\ \hline 5.8 \end{array}$$

$$\begin{array}{r} 4.31 \\ C2.0 \end{array}$$

$$\begin{array}{r} 4.9 \\ C1.4 \\ \hline 4.4 \end{array}$$

$$\begin{array}{r} 4.8 \\ C2.2 \\ \hline 5.2 \end{array}$$

$$\begin{array}{r} 4.48 \\ C2.0 \end{array}$$

$$\begin{array}{r} 5.5 \\ C1.0 \\ \hline 4.0 \end{array}$$

$$\begin{array}{r} 5.5 \\ C1.2 \\ \hline 4.2 \end{array}$$

$$\begin{array}{r} 4.66 \\ C2.0 \end{array}$$

3
1
-
6.66

$$\begin{array}{r} 5.3 \\ C1.5 \\ \hline 4.5 \end{array}$$

$$\begin{array}{r} 4.83 \\ C2.0 \end{array}$$

$$\begin{array}{r} 6.0 \\ C1.0 \\ \hline 4.0 \end{array}$$

$$\begin{array}{r} 5.01 \\ C2.0 \end{array}$$

$$\begin{array}{r} 6.5 \\ C0.7 \\ \hline 3.7 \end{array}$$

$$\begin{array}{r} 5.18 \\ C2.0 \end{array}$$

$$\begin{array}{r} 6.5 \\ C0.7 \\ \hline 3.7 \end{array}$$

Sta.	+	π	-	Elev.	
		885.92			
13	+50			75.97	9.95
14				75.80	10.12
	+50			75.62	10.30
15				75.61	10.31
	+40			75.61	10.31 X
	+50	P1		75.60	10.32
16				75.59	10.33
	+50			75.58	10.34
17		P1		75.57	10.35
	+50			75.56	10.36
18				75.55	10.37
	+55	P1		75.54	
B.M.		885.92	6.00		879.92
					879.26

$$\begin{array}{r} 9.4 \\ 60.6 \\ \hline 3.6 \end{array}$$

$$\begin{array}{r} 7.75 \\ 62.0 \\ \hline \end{array}$$

$$\begin{array}{r} 9.4 \\ 60.6 \\ \hline 3.6 \end{array}$$

$$\begin{array}{r} 8.12 \\ 62.0 \\ \hline \end{array}$$

$$\begin{array}{r} 8.30 \\ 62.0 \\ \hline \end{array}$$

$$\begin{array}{r} 9.5 \\ 60.8 \\ \hline 3.8 \end{array}$$

$$\begin{array}{r} 7.9 \\ 61.3 \\ \hline 4.3 \end{array}$$

$$\begin{array}{r} 8.31 \\ 62.0 \\ \hline \end{array}$$

x

x

$$\begin{array}{r} 8.32 \\ 62.0 \\ \hline \end{array}$$

$$\begin{array}{r} 8.33 \\ 62.0 \\ \hline \end{array}$$

$$\begin{array}{r} 7.3 \\ 61.0 \\ \hline 4.0 \end{array}$$

$$\begin{array}{r} 8.9 \\ 61.4 \\ \hline 4.4 \end{array}$$

$$\begin{array}{r} 8.34 \\ 62.0 \\ \hline \end{array}$$

1.7

$$\begin{array}{r} 8.35 \\ 62.0 \\ \hline \end{array}$$

$$\begin{array}{r} 8.6 \\ 61.8 \\ \hline 4.8 \end{array}$$

5.0

$$\begin{array}{r} 8.36 \\ 62.0 \\ \hline \end{array}$$

$$\begin{array}{r} 8.1 \\ 62.3 \\ \hline 5.3 \end{array}$$

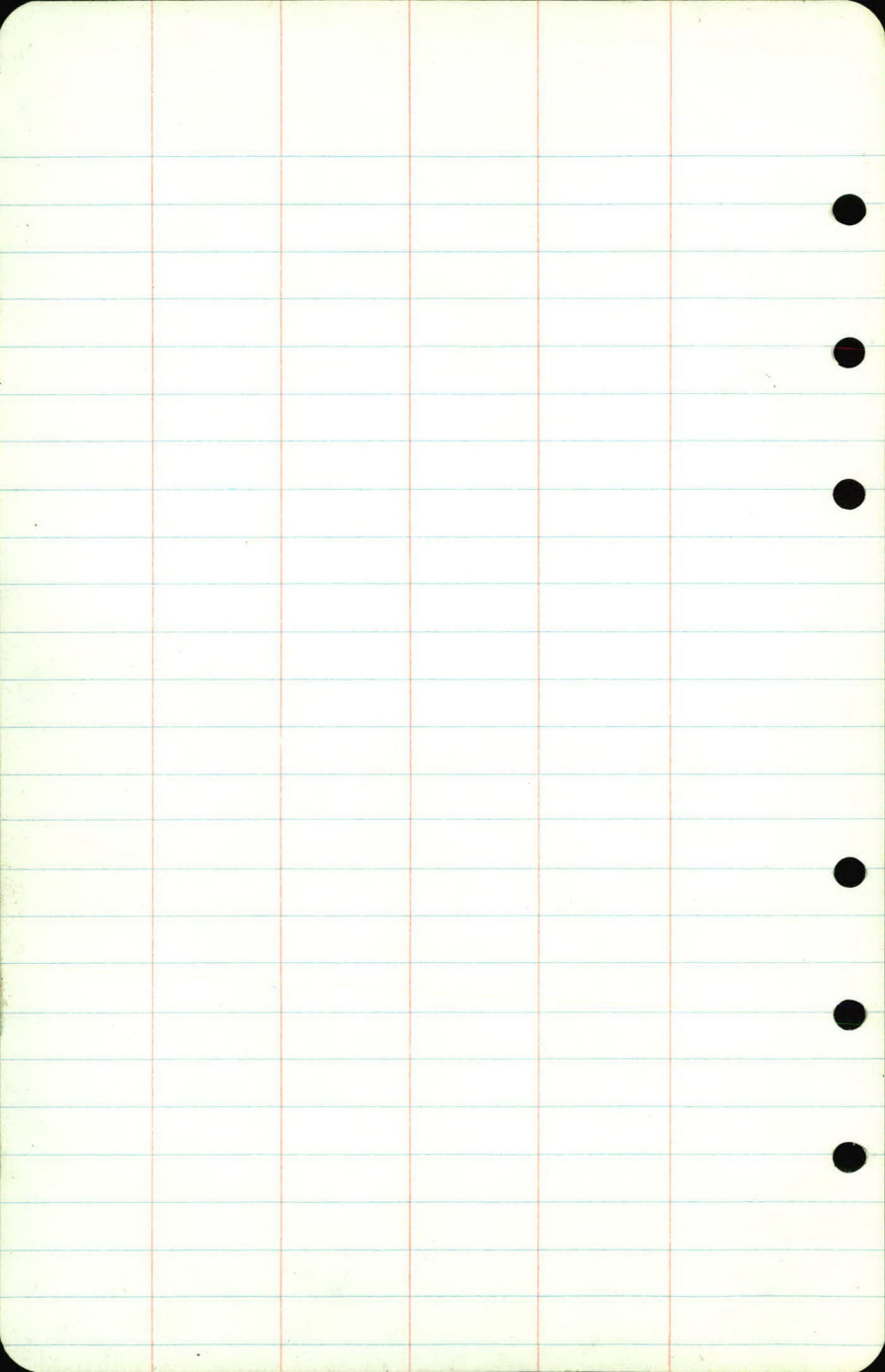
$$\begin{array}{r} 8.4 \\ 62.0 \\ \hline 5.0 \end{array}$$

$$\begin{array}{r} 8.37 \\ 62.0 \\ \hline \end{array}$$

$$\begin{array}{r} 8.38 \\ 62.0 \\ \hline \end{array}$$

1038

sr 5pk in 12" Oak 30' Rt. Sta 18



*B-Line-

B^o Line

	+	π	-	GRADE	
B.M.	5.24	889.12		883.88	
0+19		78.34		78.41	78.43 - 18
		10.78			
+50				78.39	
1				78.36	
+50				78.33	
2				78.30	
+50				78.27	
3				78.24	
+50				78.21	
+75				78.20	X
4				78.18	
B.M.	3.31	890.47		887.16	
+50				78.15	12.32
5				78.12	12.35

$$\begin{array}{r} 78.9 \\ 8.92 \\ 1.25 \\ \hline 89.07 \end{array}$$

Spk Arc. Pole SE 0400

10.71

$$\begin{array}{r} 7.71 \\ \hline 63.0 \end{array}$$

10.73

$$\begin{array}{r} 8.73 \\ \hline 62.0 \end{array}$$

10.76

$$\begin{array}{r} 8.76 \\ \hline 62.0 \end{array}$$

10.79

$$\begin{array}{r} 8.79 \\ \hline 62.0 \end{array}$$

10.82

$$\begin{array}{r} 8.82 \\ \hline 62.0 \end{array}$$

10.85

$$\begin{array}{r} 8.85 \\ \hline 62.0 \end{array}$$

10.88

$$\begin{array}{r} 8.88 \\ \hline 62.0 \end{array}$$

10.91

$$\begin{array}{r} 8.91 \\ \hline 62.0 \end{array}$$

10.94

$$\begin{array}{r} 8.94 \\ \hline 62.0 \end{array}$$

$$\begin{array}{r} 9.30 \\ \hline 9.32 \end{array}$$

$$\begin{array}{r} 9.30 \\ \hline 9.35 \end{array}$$

	+	π	-	GRADE	
		890.47			
5+50				78.09	12.38
6				78.06	12.41
+50				78.03	12.44
7				78.00	12.47
+50				77.97	12.50
8				77.94	12.53
+50				77.91	12.56
+60				77.90	
B.M.					887.16

566E
Pod

$\frac{0.30}{9.38}$

$\frac{0.30}{9.41}$

$\frac{0.30}{9.44}$

$\frac{0.30}{9.47}$

$\frac{0.30}{9.50}$

$\frac{0.30}{9.53}$

$\frac{0.30}{9.57}$

P.P. Lt. 8+50 "A" Line

