

PLANS SURVEY
BIRCH LAKE RD.

From Centerville Road
To Bald Eagle Ave.

CO. PROJ. N^o 23-56

RD. % N^o 29

FILE N^o 2

Office of Ramsey Co. Engineer
ST. PAUL, MINN.

Date filed 4-13-23

'2" (23-56)

Birch Lake Survey
"A" line

Pages 1 to 3

Sta 56+23.2 To 112+78.2

R. K. Austin Transit
Skooqlan } chain
Reiting }
Maloney Rear Flag
Walsh Stake Artist

Revision Proj. 23-56

Binch Lake
"A" line

Ang. h. $\frac{1}{2}$ Ang. R

60+20¹ E.C. 9° Curve left.

N 81° 54' E
✓

59+70 P.I. 9° 02'

x

59+19² B.C. 9° Curve left.

58+27⁵ E.C. 10° Curve left.

S 89° 04' E
✓

57+31⁸ P.I. 21° 25'

x

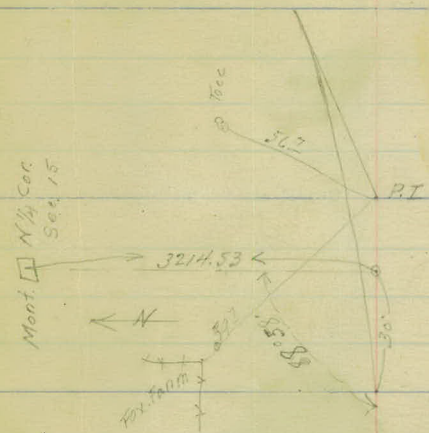
56+23³ B.C. Beginning of "A" line

Black Lake "A" line

4,300

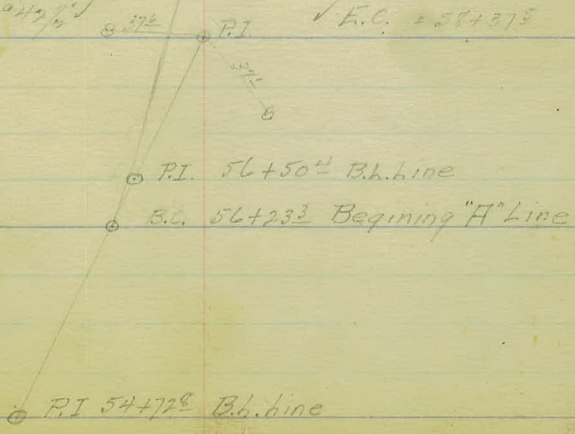
90° Curve left
 $\Delta = 90^\circ 02'$
 \checkmark S.T. = 50.34
 \checkmark B.C. = 59+19.2
 length = 100.4
 \checkmark E.C. = 60+20.2

Sta - Def
 59+19.2 = 0°00'
 60+400 = 3°37'
 +20 = 4°31'



Sta. Def
 56+23.3 = 0°00'
 57+00 = 3°50'
 58+00 = 8°50'
 + 37.5 = 10°42.5'

10° Curve left
 $\Delta = 21^\circ 25'$
 \checkmark S.T. = 108.5
 \checkmark B.C. = 56+23.3
 length = 214.2
 \checkmark E.C. = 58+37.5



E

Binch Lake
"A. h. ine"

Ang. h. Ang. R.

81+24E E.C. 15° Curve left.

N 75° 18' E
✓

80+75± P.I. 15° 02'

80+24E B.C. 15° Curve left.

64+44± E.C. 7° Curve Right.

S 89° 40' E
✓

63+84± P.I. 8° 26'

63+23± B.C. 7° Curve Right.

Birch Lake
"H. Hine"

Sta. Def.

80+24.6 - 0°00'
81+00 - 5°39'
+ 24.8 - 7°31'

15° Curve Left

$\Delta = 15^{\circ}02'$

- ✓ S.T. = 50.55 50.5
- ✓ B.C. = 80+24.6
- ✓ length = 100.2
- ✓ E.C. = 81+24.8

Sta. - Def.

63+23.6 = 0°00'
64+00 = 2°40'
+ 24.1 = 4°13'

7° Curve Right

$\Delta = 8^{\circ}26'$

- ✓ S.T. = 60.30 60.4
- ✓ B.C. = 63+23.6
- ✓ length = 120.5
- ✓ E.C. = 64+24.1

Birch Lake
"A" line

Ang. h. Ang R

112+28.7 P.I. 90°00' ϕ Bald Eagle Ave

86+68.6 P.O.T.

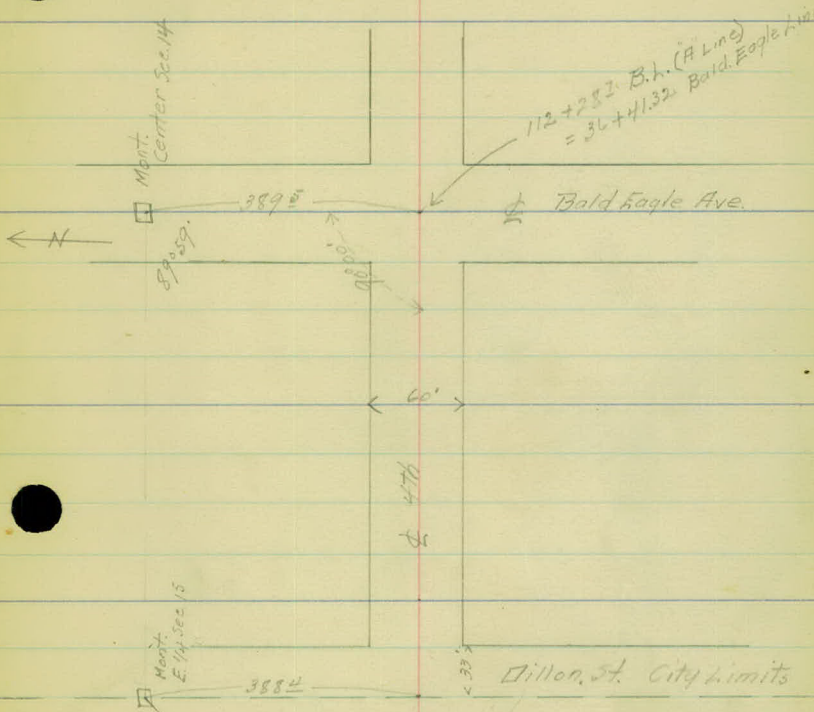
S 89°-46' E

85+33.0 E.C. 15° Curve Right.

84+83.7 P.I. 14°56'

84+33.5 B.C. 15° Curve Right.

Binch Lake
"A" line



Sta.	Def. \angle
84+33.5	0° 00'
85+00	40° 59'
+33.2	70° 28'

150 Curve Right
 $\Delta = 144.56'$
 \checkmark S.T. = 50.2
 \checkmark B.C. = 84+33.5
 \checkmark length = 99.5
 E.C. = 85+33.0

Ang. 6. Ang. R.

11° 20' 7.5

17° 20'

11° 20' 7.5 15° 16'

Binch Lake
"A" line

Artificial Topography
Pages 1 to 8

R. E. Austin, Recorder
Skoglund } chainmen.
Walsh }

Sta. 56+232 To 112+257

008

Binch Lake
"A" line



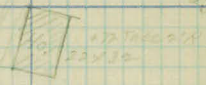
163 Fence line

165 Tree 13' 1/2

63+00

166 Tree 15' 1/2
167 Tree 19' 1/2

Young Orchard (20 trees)



62+00

168 Tree 20'

169 Tree 22'

Living way

170 Tree 27'

171 Tree 31'
172 Old Rd 61+00

Old Road

173 Tree 17'
174 Tree 17'
175 Tree 17'
176 Tree 17'

177 Tree 1' 1/2

177 Tree 17'
178 E.R. 12' 1/2

179 Tree 15' 1/2
Eul. Edge 55' 1/2
181 Tree 15' 1/2

179 Tree 17'
180 Tree 17'
1753 Old Rd 61+00

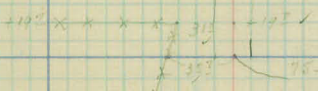
← Otter Lake Rd.

⊥ Road

Bone Lake

182 Tree 15'

59+00



3-23-24

② of 8

Binchhoke
"A" Line

N

P ② of 8

7/1/10

1116



70-100

69-100

125 Tree 15' ✓

68-100

67-100

Cultivated Land

Cultivated Land

66-100

16' 10"

128 Tree 19' ✓

147

165

152

Plum Tree

129 Tree 30' ✓

116 (4) Trees, 16' ✓
100 Trees 16' 20' 65-100

147

171 Tree 15' ✓

Garden

142 Fence 4' ✓

Garden ✓

Corn Field

117

Fence

64-100

③ of 8

Binch Lake
"A. hine"

A

B

R 048

78+00

End. Fence

117 x x x 72

25
20

77+00

76+00

75+00

20
50

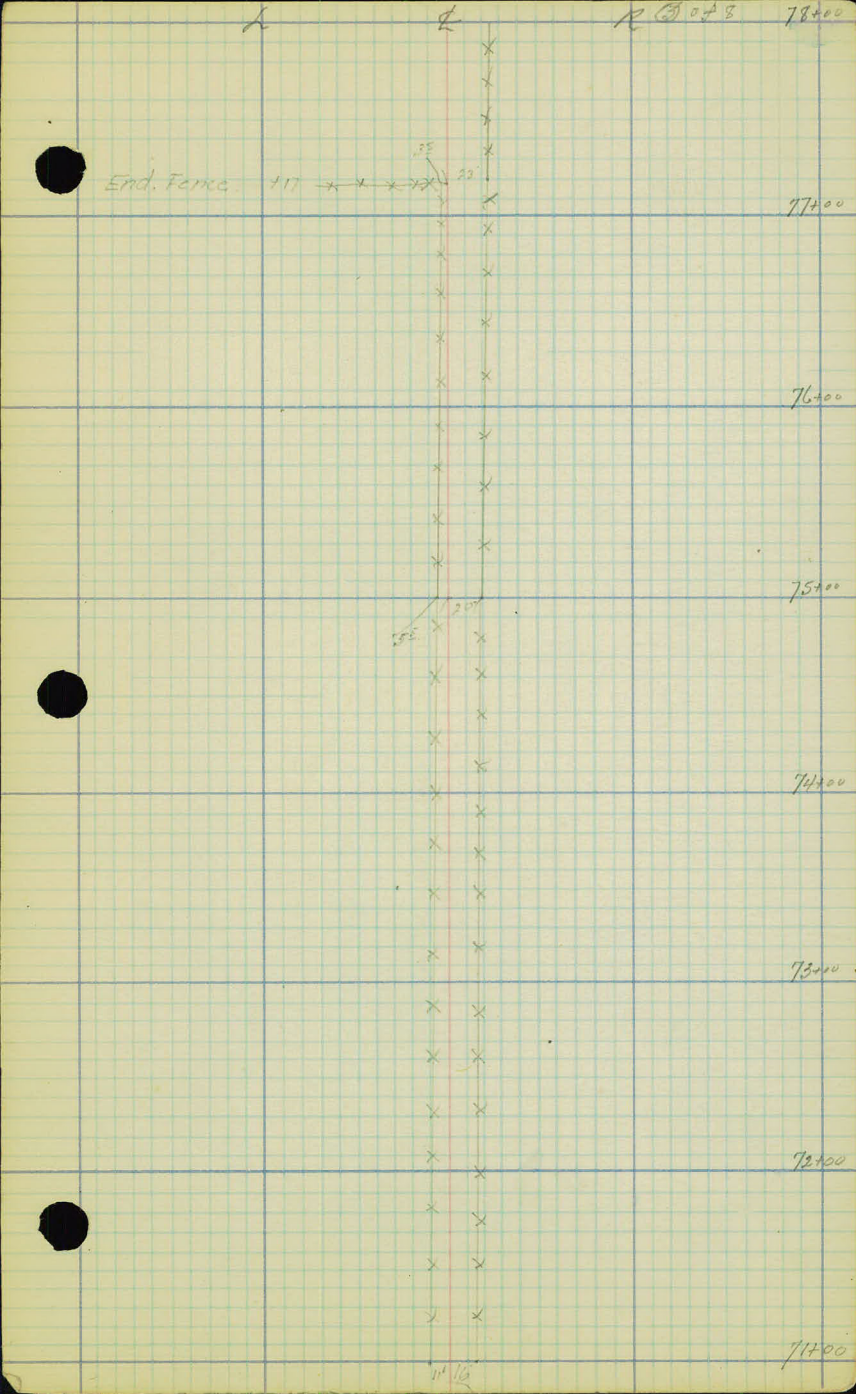
74+00

73+00

72+00

71+00

11 1/2



(4) 015

A

£

R ⊕ of 8 \$54.00

84.00

83.00

82.00

170 185 190 End. Fence

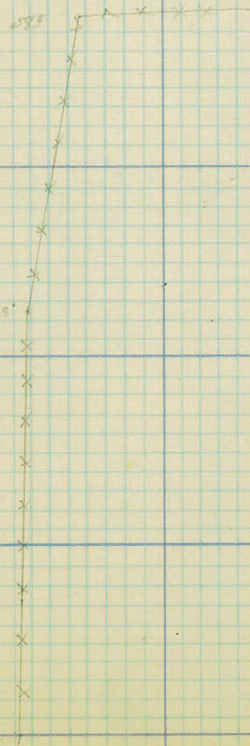
81.00

120 E. 20'

80.00

79.00

78.00



⑤ of 8

A

d

P ② of 8

92+00

Ditch 6' wide, 12' to edge

91+00

90+00

89+00

← Drain Ditch

88+00

87+00

Ditch 10' wide 12' to edge 86+00

Drain Ditch

x x x x x x x x x x x x x x x x

85+00

Birch Lake
"A" line

A
+94 E.P.

P
194 E.P. 99+00

← Drain Ditch

12 To Edge

Ditch 5' Wide

98+00

+84 E.P. 21' L

• ✓

+89 E.P. 20' L

• ✓

97+00

+149 Cuy. P. 21' L

• ✓

19

x x x

+40 End

+100 E.P. 21' L

• ✓

19 1/2

x

96+00

x

x

x

95+00

19'

x

x

+141 E.P. 21' L

•

x

21'

x

x x x x

+00

94+00

← Drain Ditch

93+00

+179 E.P. 21' L

•

6' wide 12 ft

92+00

Birch Lake
"H. hinc

+93 E.P. 22' ✓
+92 T.N. 22' ✓

← Main Ditch

105400

+98 Hqd 24' ✓

+94 E.P. 22' ✓
+92 T.N. 22' ✓

+102 St. Florence Ave

+22 T.P. 22' A ✓
Ditch 5' wide 104400

4' concrete sidewalk

+07 E.P. 22' ✓
+98 T.N. 22' ✓

+91 T.P. 21' R ✓ 103400

+71 T.N. 22' ✓

← Main Ditch

+50 T.N. 22' ✓

Ditch 5' wide 102400

+31 T.N. 22' ✓

+96 T.N. 22' ✓

+74 E.P. 21' ✓
+68 T.N. 22' ✓

+51 T.P. 21' R ✓

+21 T.N. 22' ✓

+16 T.N. 22' ✓

+15 ✓

+98 T.N. 22' ✓

+68 T.N. 22' ✓

+14 E.P. 22' ✓

+91 T.P. 21' R ✓
+22 T.N. 22' A ✓
+13 T.N. 22' R ✓
100400

← Ditch

+25 E.P. 21' ✓
+24 E.P. 21' ✓
+14 Hq. 24' ✓
+20 E.P. 21' ✓

+10 E.P. 21' ✓
99400

Birch Lake
"A" line

Binch Lake
"H" line

+ 28" ϕ Bald Eagle Ave.

+ 04 End Work
+ 02 E. 23' L ✓
+ 01 H.H. 23' L ✓
+ 00 T.R. 23' L ✓

+ 02 T.R. 23' L ✓ 112+00
+ 04 End ✓

Total 2" H. side 1114 00

+ 01 B.P. 23' L ✓
+ 04 T.R. 23' L ✓

+ 04 T.R. 23' L ✓ 1104 00

+ 09 A.P. 23' L ✓
+ 04 T.R. 23' L ✓

109+00

+ 01 E.P. 23' L ✓
+ 22 T.R. 23' L ✓

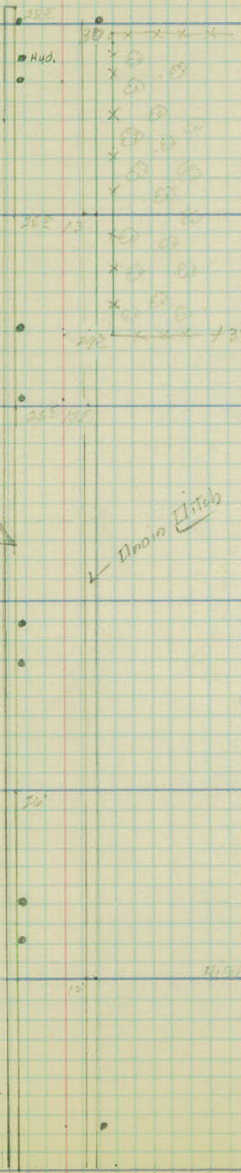
108+00

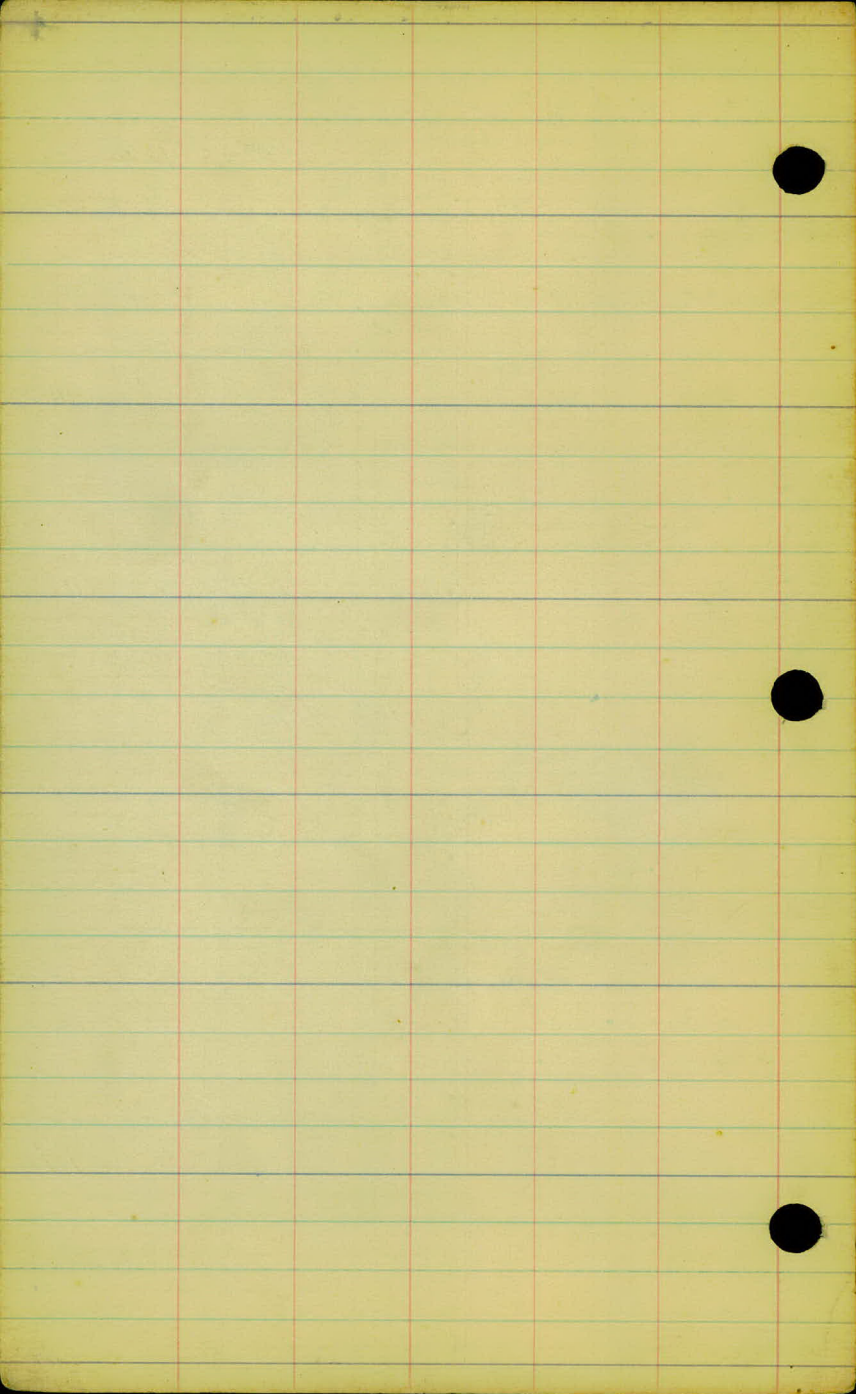
total 4" side ✓ 107+00

+ 22 B.P. 23' L ✓
106+00

4' concrete sidewalk

↓ Drain Elites





"A" Line Levels

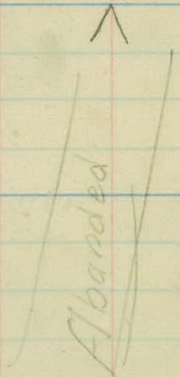
6 Sheets

RIL
W/MCD

Job - 23-56

"A" Line Levels Sheet #1 of 6

Station	I.S.	H.I.	F.S.	Rod	Elev
	3.77	235.36	✓		234.59 ✓
56+233				4.3	231.06 ✓
57+00				4.9	230.46 ✓
58+00				5.3	230.06 ✓
+375				5.5	229.86 ✓
59+00				5.5	229.86 ✓
+50				5.4	229.90 ✓
60+00				5.3	230.0
+20				5.6	229.7
+40				7.4	227.9
+48				7.4	227.9
+50				8.5	226.8
+52				7.4	227.9
61+00				7.4	227.9
62+00				5.1	230.2
			1.24		234.12
	10.80	244.92			
62+733	14.57			8.1	236.1
63+00	6.77			6.1	236.0
64+00	7.80			5.5	239.4
65+00				5.0	239.9
			(4.15)		240.77
66+00				5.6	239.3
67+00			2393.9	6.0	238.9
68+00			231.54	6.4	239.5
69+00			7.80	6.2	238.7
			5.53		239.39
			6.77		



✓

TP on cedar 25' L of 57+35 Elev 231.59

B.C. A" Line

R.I.L }
W.M.C.D } 3-21-23

E.C.

100
9.7

Center of Otter Lake Road

TP on stump

B.M. "Black Oak 65+30 35' Left

TP

A Line Levels Sheet #2 of 6

Station	B.S.	I.I.	F.S.	Rod	Elev
	375	235.34	✓		231.59 ✓
59+192				5.5	229.8 ✓
+83				5.2	230.1 ✓
60+00				7.1	228.2 ✓
+202				7.4	227.9 ✓
+42				8.0	227.3 ✓
+48		16.5		8.5	226.5 ✓
+53				7.8	227.5 ✓
61+00				7.9	227.4 ✓
62+00				5.1	230.2 ✓
+50				1.6	233.7 ✓
			0.71 ✓		234.62 ✓
	10.27	244.90	✓		
62+85				7.8	237.1 ✓
63+00				6.5	238.4 ✓
+232				5.9	239.5 ✓
64+00				5.0	239.9 ✓
+44'				5.0	239.9 ✓
65+00				4.7	240.2 ✓
			9.10 ✓		240.80 ✓
	4.04	244.82	✓		
66+00	18.06		4.81	5.1	239.7 ✓
	3.55		8.10		
67+00	21.61		12.91	4.9	239.9 ✓
	12.91				
68+00	8.90			5.3	239.5 ✓

R.L.
W.M.C.D. } 3-22-23

B.C.

E.C.

T.P. Top of stake 62+50

B.C.

B.M. 16" Black Oak 65+40 30' R Elev 240.77

240.29

231.59

8.70

A Line Levels Sheet #3 of 6

Station	B.S.	^{H.I.} 2448.4	F.S.	Rod	Elev
69+00				5.2	239.6 ✓
70+00				5.0	239.8 ✓
71+00				4.8	240.0 ✓
72+00				5.8	239.0 ✓
73+00				4.8	240.0 ✓
					340.86 ✓
	355	244.41	3.95 ✓		
74+00				4.1	240.3 ✓
75+00				4.2	240.2 ✓
76+00				5.0	239.4 ✓
77+00				4.7	239.7 ✓
78+00				4.8	239.6 ✓
79+00				5.1	239.3 ✓
80+00				4.6	239.8 ✓
					240.29 ✓
	2.85	243.14	4.2 ✓		
-24.6					
81+00				4.9	238.7 ✓
+24.8					
82+00				4.7	238.4 ✓
83+00				5.5	237.6 ✓
84+00				6.1	237.0 ✓
+33.5					
85+00				6.1	237.0 ✓
+33.2					
+4.8				6.1	237.0 ✓
+5.5				4.9	238.2 ✓

R.H. } 3-22-23
W.M.C.D. }

T.P. Top of stake 73+00

T.P. conference post 80+00 30' R. X

BC

R.H. } 3-23-23
W.M.C.D. }

E.C.

24029
260
24312

BC.

E.C.

"A" Line Levels Sheet #4 of 6

Station	B.S.	H.I.	F.S.	Rod	Elev
85+86		243.14	✓	5.9	237.2 ✓
+88				9.0	234.1 ✓
+95				9.1	234.0 ✓
+97				5.5	237.6 ✓
86+00				5.3	237.8 ✓
+69				3.9	239.2 ✓
87+00				3.9	239.2 ✓
88+00				5.1	238.0 ✓
89+00				5.2	237.9 ✓
+05				5.1	238.0 ✓
+06				6.5	236.6 ✓
+08				4.4	238.1 ✓
90+00				6.0	237.1 ✓
91+00				4.5	238.6 ✓
			370		239.4 ✓
	2.57	243.01	✓		
92+00				4.3	238.7 ✓
9			2.96		240.05 ✓
92+00			6.66		
	2.76	242.81	✓		
93+00	6.33			3.8	239.0 ✓
94+00				4.6	238.2 ✓
95+00				5.9	236.9 ✓
+50				5.6	237.2 ✓

RIL }
WMO D } 3-23-23

Culvert

T.P. Top of stake 91+00

B.M. Elec Pole 82+80 - 21' L

A Line Levels Sheet #5 of 6

Station	B.S.	I.I.	F.S.	Prod	Elev
		242.81			
96+00				5.7	237.1 ✓
97+00				5.1	237.7 ✓
98+00				4.5	238.3 ✓
99+00				3.0	239.8 ✓
+15				3.2	239.6 ✓
100+00				3.2	239.6 ✓
			2.58		240.23 ✓
	4.04	244.32			
101+00				5.4	238.9 ✓
102+00				5.2	239.1 ✓
103+00				5.0	239.3 ✓
104+00				4.3	240.0 ✓
+70				4.5	239.8 ✓
105+00				4.7	239.6 ✓
106+00				4.5	239.8 ✓
+54.3				4.6	239.7 ✓
107+00				4.5	239.8 ✓
108+00				4.1	240.2 ✓
			3.23		241.09 ✓
	4.01	245.10	58.1		
	8.1°				
109+00				4.8	240.3 ✓
110+00				4.7	240.4 ✓
111+00				4.9	240.2 ✓
112+00				5.5	239.6 ✓
+10				5.4	239.7 ✓
+28				4.8	240.3 ✓

R.I.L }
W.M.C.D } 3-23-23

T₁ Tol

T₁ Top of stake 100+00

6 of 5

T₁ Top of stake 108+00

"A" Line Levels Check Sheet #6 of 6

Station	B.S.	I.I.	F.S.	Rod	Elev
		245.10 ✓	3.93		241.17 ✓
	393.	245.10 ✓			
			5.42		239.68 ✓
	475	244.43 ✓			
			4.49		239.94 ✓
	263	247.57	242.57		
			1.94		240.63 ✓
	270	243.33 ✓			
			4.57		238.76 ✓

B.M. Tele Pole "BL" 82+90 Elev 238.85

RIL }
 WMCD } 3-23-23

92+51 Ent. R. X
✓ P. 24" x 25' Port. Culv

92+36 Ent. R.
P. 12" x 25' Port. Culv. X

95+50 imp 12" C.M. remove
P. 24" P. 3 X

98+95 Road Int. R.
28'-2" C.M. imp X
Cond. OK,

98+95 Road Int. L
P. 12" x 30' Port. Culv

99+15 12" x 30' C.M. imp.
Rem. Not req.
Poor Cond.

✓ 101+22 Ent. R.
P. 24" x 15' Port Culv

✓ 102+45 Ent. R. P. 24" x 15' Port. Culv

102+95 10" x 26' C.M. imp
remove not req

104 + 67 Int, BT, R & L

24" x 34' C. M. inp. R,
Cond. O.K.

10" x 28' C. M. inp. L, remove
Poor Cond

P. 12" x 30' Port, Culv

108 + 15 Ent, R.

P 24" x 15' Port, Culv

110 + 30 Ent, R

12" x 16' C. M. inp.
Cond. O.K.

112 + 09

12" x 25' Wrot. Iron P. inp
remove.
P.

'A" Line Cross Sections

75 sheets

C

RIL
W.M.C.D
W.M
R.R

"A" Line Cross Sections

Station	Elev
55+00	232.4
56+23.3	231.0
57+00	230.5
58+00	230.4
+37.5	229.9
59+00	229.9
+19.9	229.8
+47	229.9
+60	230.1
+83	230.1
60+00	228.2
+20'	227.9
61+00	227.4
62+00	230.2

L

Φ

R

$$\begin{array}{r}
 + \frac{2.2}{33} + \frac{1.5}{15} - \frac{0.1}{12} \\
 + \frac{1.7}{33} - \frac{1.1}{20} - \frac{0.4}{18} - \frac{0.0}{6} \\
 \frac{0.0}{33} - \frac{0.2}{22} + \frac{0.1}{0.7}
 \end{array}$$

$$\begin{array}{r}
 - \frac{0.2}{14} - \frac{0.1}{15} - \frac{1.1}{29} - \frac{2.0}{33} \\
 - \frac{0.4}{10} - \frac{2.6}{29} - \frac{3.8}{33} \\
 - \frac{0.2}{7} - \frac{1.6}{11} - \frac{3.0}{21} - \frac{4.0}{33}
 \end{array}$$

$$\begin{array}{r}
 - \frac{1.6}{33} - \frac{1.6}{24} - \frac{0.0}{19} - \frac{0.3}{9} - \frac{0.3}{6} - \frac{2.0}{11} - \frac{2.9}{25} - \frac{3.0}{33}
 \end{array}$$

$$\begin{array}{r}
 - \frac{2.1}{33} - \frac{2.1}{20} - \frac{0.3}{15} - \frac{0.0}{5} - \frac{0.2}{7} - \frac{2.0}{12} - \frac{3.6}{33}
 \end{array}$$

$$\begin{array}{r}
 - \frac{2.0}{33} - \frac{2.0}{18} - \frac{0.0}{13} - \frac{0.3}{12} - \frac{3.0}{20} - \frac{3.7}{33}
 \end{array}$$

$$\begin{array}{r}
 - \frac{2.0}{33} - \frac{2.0}{19} - \frac{0.3}{14} - \frac{0.2}{12} - \frac{3.3}{20} - \frac{4.0}{33}
 \end{array}$$

Otte-Lake Rd $\frac{0.0}{33}$

$$\begin{array}{r}
 \frac{3.0}{33} - \frac{2.0}{27} - \frac{0.6}{18} \\
 - \frac{2.7}{33} - \frac{2.7}{22} - \frac{3.3}{21} - \frac{3.3}{20} - \frac{3.2}{16} - \frac{2.2}{6}
 \end{array}$$

$$\begin{array}{r}
 - \frac{0.2}{17} - \frac{3.1}{26} - \frac{4.0}{33} \\
 - \frac{0.3}{24} - \frac{3.3}{30} - \frac{3.0}{33}
 \end{array}$$

$$\begin{array}{r}
 - \frac{0.6}{33} - \frac{0.5}{18} - \frac{1.6}{15} - \frac{1.6}{14} - \frac{0.5}{11} - \frac{0.8}{2}
 \end{array}$$

$$\begin{array}{r}
 + \frac{1.5}{4} + \frac{1.6}{28} - \frac{1.8}{35}
 \end{array}$$

$$\begin{array}{r}
 - \frac{0.6}{33} - \frac{0.2}{14} - \frac{1.3}{11} - \frac{1.3}{10} - \frac{0.5}{8}
 \end{array}$$

$$\begin{array}{r}
 \frac{0.0}{3} + \frac{2.4}{11} + \frac{2.2}{33}
 \end{array}$$

$$\begin{array}{r}
 - \frac{0.8}{33}
 \end{array}$$

$$\begin{array}{r}
 + \frac{1.0}{18} + \frac{0.5}{22} + \frac{1.5}{28} + \frac{1.5}{33}
 \end{array}$$

Driveway

$$\begin{array}{r}
 \frac{0.0}{33} - \frac{0.0}{28}
 \end{array}$$

$$\begin{array}{r}
 \frac{0.0}{33}
 \end{array}$$

Center Driveway

A Line Cross Sections

Station	Elev	
62+50	233.7	.
+85	237.1	.
63+00	238.4	.
+23.6	239.5	. B.C.
64+00	239.9	.
+44.1	239.9	. E.C.
65+00	240.2	.
66+00	239.7	.
67+00	239.9	.
68+00	239.5	.
69+00	239.6	.
70+00	239.8	.

'A' Line Cross Section

Station	Elev
71+00	240.0
72+00	239.0
73+00	240.0
74+00	240.3
75+00	240.2
76+00	239.4
77+00	239.7
78+00	239.6
79+00	239.3
80+00	239.8
81+00	238.7
82+00	238.4

L

E

R

$$\frac{-0.5}{33}$$

$$\frac{-0.5}{33}$$

$$\frac{0.0}{33}$$

$$\frac{+0.3}{33}$$

$$\frac{-0.3}{33}$$

$$\frac{-0.5}{33}$$

$$\frac{0.0}{33}$$

$$\frac{0.0}{33}$$

$$\frac{-0.3}{33}$$

$$\frac{0.0}{33}$$

$$\frac{0.0}{33}$$

$$\frac{0.0}{33}$$

$$\frac{-0.3}{33}$$

$$\frac{-0.4}{33}$$

$$\frac{-0.5}{33}$$

$$\frac{-0.1}{33}$$

$$\frac{0.0}{33}$$

$$\frac{0.0}{33}$$

$$\frac{-0.7}{33}$$

$$\frac{-0.1}{33}$$

$$\frac{-0.3}{33}$$

$$\frac{-0.2}{33}$$

$$\frac{0.0}{33}$$

$$\frac{0.0}{33}$$

"A" Line Cross Sections

Station	Elev
83+00	237.6
84+00	237.0
85+00	237.0
+48	237.0
+55	238.2
86+00	237.8
+69	239.2
87+00	239.2
88+00	238.0
89+00	237.9
90+00	237.1
91+00	238.6

$$\frac{00}{33} \quad \frac{00}{33}$$

$$+ \frac{0.5}{33} \quad \frac{00}{33}$$

$$\frac{00}{33} \quad + \frac{0.3}{33}$$

$$\frac{00}{33} \quad \frac{00}{12} \quad \frac{00}{24} \quad \frac{14}{33}$$

$$- \frac{10}{33} \quad \frac{00}{25} \quad + \frac{00}{6} \quad - \frac{11}{10} \quad \frac{11}{19} \quad + \frac{06}{33}$$

$$+ \frac{06}{33} \quad + \frac{0.2}{10} \quad - \frac{3.5}{13} \quad - \frac{3.5}{24} \quad \frac{00}{22} \quad \frac{00}{33}$$

$$- \frac{01}{33} \quad - \frac{06}{14} \quad + \frac{05}{7} \quad - \frac{07}{14} \quad - \frac{50}{13} \quad - \frac{50}{17} \quad - \frac{12}{19} \quad - \frac{15}{33}$$

$$- \frac{12}{33} \quad - \frac{12}{40} \quad \frac{00}{6} \quad - \frac{08}{9} \quad - \frac{50}{72} \quad - \frac{50}{16} \quad - \frac{15}{20} \quad - \frac{15}{33}$$

$$- \frac{05}{33} \quad - \frac{05}{28} \quad \frac{00}{23} \quad \frac{00}{10} \quad - \frac{4.5}{13} \quad - \frac{4.5}{17} \quad - \frac{03}{19} \quad - \frac{00}{33}$$

$$\frac{04}{33} \quad - \frac{09}{26} \quad - \frac{03}{22} \quad - \frac{03}{12} \quad - \frac{24}{14} \quad - \frac{24}{16} \quad - \frac{04}{18} \quad - \frac{00}{33}$$

$$\frac{00}{33} \quad + \frac{03}{18} \quad \frac{00}{13} \quad - \frac{24}{14} \quad - \frac{24}{16} \quad - \frac{00}{17} \quad + \frac{04}{33}$$

$$\frac{0.1}{33} \quad - \frac{0.2}{11} \quad - \frac{2.5}{14} \quad - \frac{2.5}{16} \quad - \frac{02}{19} \quad - \frac{04}{33}$$

A Line Cross Section

Station	Elev	
92+00	238.7	
93+00	239.0	
94+00	238.2	
95+00	236.9	
96+00	237.1	
97+00	237.7	
98+00	238.3	
99+00	239.8	Street
100+00	239.6	
101+00	238.9	
+ 20		Driveway on R
102+00	239.1	

$$-\frac{0.4}{33} - \frac{0.6}{5} - \frac{0.7}{11} - \frac{2.5}{14} - \frac{2.5}{16} - \frac{1.0}{18} - \frac{0.8}{33}$$

$$+\frac{0.7}{33} - \frac{0.05}{20} - \frac{0.6}{16} - \frac{1.0}{12} - \frac{2.7}{14} - \frac{2.7}{16} - \frac{1.0}{18} - \frac{1.1}{33}$$

$$+\frac{0.5}{33} - \frac{0.0}{16} - \frac{0.0}{9} - \frac{0.4}{12} - \frac{2.4}{14} - \frac{2.4}{16} - \frac{0.5}{18} - \frac{0.5}{33}$$

$$+\frac{1.0}{33} + \frac{0.5}{12} + \frac{0.7}{6} + \frac{0.2}{2} - \frac{0.4}{13} - \frac{1.1}{14} - \frac{1.1}{16} - \frac{0.1}{18} - \frac{0.0}{33}$$

$$+\frac{0.3}{33} + \frac{0.3}{12} + \frac{0.6}{7} + \frac{0.3}{12} + \frac{1.4}{13} - \frac{1.4}{14} + \frac{0.5}{18} + \frac{0.5}{33}$$

$$+\frac{0.9}{33} + \frac{0.2}{12} + \frac{0.5}{7} - \frac{0.0}{12} - \frac{1.4}{13} - \frac{1.2}{14} - \frac{0.0}{18} + \frac{0.5}{33}$$

$$\frac{0.0}{33} - \frac{0.0}{13} - \frac{0.4}{10} + \frac{0.2}{4} - \frac{0.3}{3} + \frac{0.3}{5} - \frac{0.2}{12} - \frac{1.4}{13} - \frac{1.4}{14} - \frac{0.0}{18} - \frac{0.0}{33}$$

$$\frac{0.0}{33} - \frac{0.0}{5} - \frac{0.0}{5} - \frac{0.0}{33}$$

$$+\frac{0.3}{33} - \frac{0.0}{17} + \frac{0.3}{5} - \frac{0.5}{12} - \frac{2.0}{14} - \frac{2.0}{16} - \frac{0.5}{18} + \frac{1.0}{24} - \frac{0.5}{30} - \frac{0.5}{33}$$

$$+\frac{0.5}{33} + \frac{0.5}{14} - \frac{0.0}{16} - \frac{0.3}{12} - \frac{1.5}{14} - \frac{1.5}{16} - \frac{0.3}{18} + \frac{1.0}{23} - \frac{0.2}{33}$$

$$+\frac{0.2}{33} - \frac{0.0}{18} - \frac{0.2}{6} - \frac{0.5}{12} - \frac{2.3}{14} - \frac{2.3}{16} - \frac{0.8}{18} - \frac{0.4}{33}$$

A Line Cross Section

Station	Elev	RIL W.M.C.D. W.M. RR
103+00	239.3	} 3-
104+00	240.0	
104+76	239.8 Street	
105+00	239.6	
106+00	239.8	
107+00	239.6	
108+00	240.2	
109+00	240.3	
110+00	240.4	
111+00	240.2	
112+00	239.6	
+28	240.3	

$$+ \frac{03}{33} \quad \frac{00}{17} - \frac{07}{16} \quad \frac{00}{8} \quad - \frac{02}{4} \quad \frac{07}{6} - \frac{10}{12} - \frac{23}{14} - \frac{23}{16} - \frac{07}{18} - \frac{07}{33}$$

$$\frac{00}{33} - \frac{02}{18} - \frac{08}{16} \quad - \frac{02}{4} - \frac{10}{12} - \frac{28}{14} - \frac{28}{16} - \frac{10}{18} - \frac{05}{33}$$

$$\frac{00}{33} - \frac{02}{33}$$

$$+ \frac{01}{33} \quad - \frac{05}{13} - \frac{20}{15} - \frac{20}{17} - \frac{02}{14} \quad \frac{00}{33}$$

$$\frac{00}{33} - \frac{08}{12} - \frac{30}{14} - \frac{30}{16} - \frac{03}{10} \quad \frac{00}{33}$$

$$\frac{00}{33} - \frac{02}{5} - \frac{08}{7} - \frac{12}{12} - \frac{30}{13} - \frac{30}{15} - \frac{13}{17} \quad \frac{00}{33}$$

$$\frac{00}{33} + \frac{06}{30} \quad - \frac{05}{10} - \frac{34}{14} - \frac{34}{16} - \frac{03}{19} - \frac{03}{33}$$

$$+ \frac{04}{33} + \frac{04}{30} - \frac{02}{29} \quad - \frac{08}{12} - \frac{33}{14} - \frac{33}{16} - \frac{05}{19} \quad \frac{00}{33}$$

$$\frac{00}{30} - \frac{03}{30} - \frac{03}{17} - \frac{06}{15} \quad - \frac{07}{12} - \frac{32}{15} - \frac{32}{17} - \frac{05}{20} \quad \frac{00}{29} \quad \frac{00}{33}$$

$$\frac{06}{33} \quad \frac{00}{29} - \frac{04}{17} - \frac{07}{15} \quad - \frac{04}{12} - \frac{20}{14} - \frac{25}{16} - \frac{00}{20} \quad \frac{00}{29} \quad \frac{00}{33}$$

$$\frac{00}{33} \quad \frac{00}{20} \quad \frac{03}{17} \quad \frac{05}{16} \quad \frac{03}{15} - \frac{03}{12} - \frac{22}{15} - \frac{22}{16} - \frac{10}{14} - \frac{05}{33}$$

$\frac{00}{33}$ $\frac{00}{33}$ Intersection of
Bald Eagle Ave

"A" Line Cross Section
7 Sheets

"A" Line Culverts

R.I.E }
W.M.C.D } 3-23-23

A Line Culverts

W 22 - Recommended

Station 36+12 Corrigated Iron Pipe 165' R of Φ

60+44	L	Φ	R	
Flows R	$\frac{20}{2264}$	226.3	$\frac{165}{2262}$	$\frac{36}{225.8}$

85+91 Proposed Culvert 4' x 4'

L	Φ	R	
	$\frac{33}{2342}$	234.0	$\frac{33}{2338}$ $\frac{50}{233.5}$

County Ditch Flows Right

95

85+50 12" Corrigated Iron Pipe Length 20'

L	Φ	R	
	$\frac{16}{2362}$	237.2	$\frac{4}{2359}$ $\frac{16}{235.1}$

Flows Right

99+15 12" Corrigated Iron Pipe Length 30'

L	Φ	R	
	$\frac{18}{2386}$	239.6	$\frac{12}{2379}$

112+10 12" Cast Iron Pipe Length 24'

L	Φ	R	
	$\frac{12}{2382}$	239.7	$\frac{12}{2380}$

Flows Right

BIRCH LAKE-CENTERVILLE
CONNECTION

Proj. 23-56

Ang. h [£] Ang. R.

3+09² = 1+99⁰⁶ B.h. line.

N90°-0'E

1+99.1 P.I. ✓ 89°49'

N0°-11'E

3409.1 "A" = 1499.1 B.h. = E.C.

Sta. Def

0+00 - 0°00'

+50 - 7°15'

1+00 - 14°30'

+50 - 21°45'

2+00 - 29°00'

+50 - 36°15'

3+00 - 43°30'

+09.1 - 44°54 1/2'

29° Curve RT

$\Delta = 89°49'$

S.T. = 199.1 ✓

B.C. = 0+00 ✓

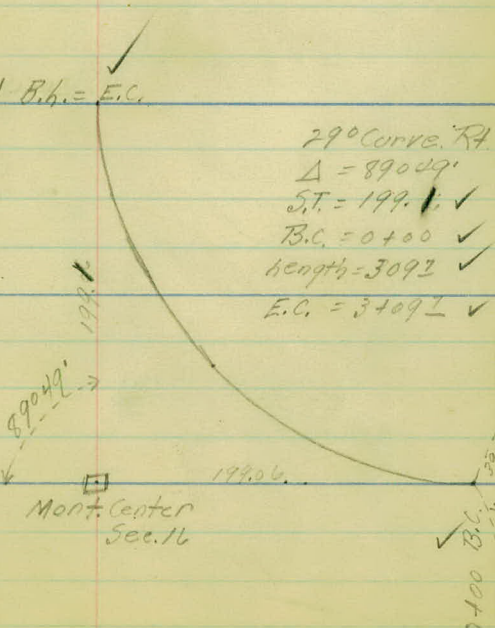
length = 3093 ✓

E.C. = 3+09.1 ✓

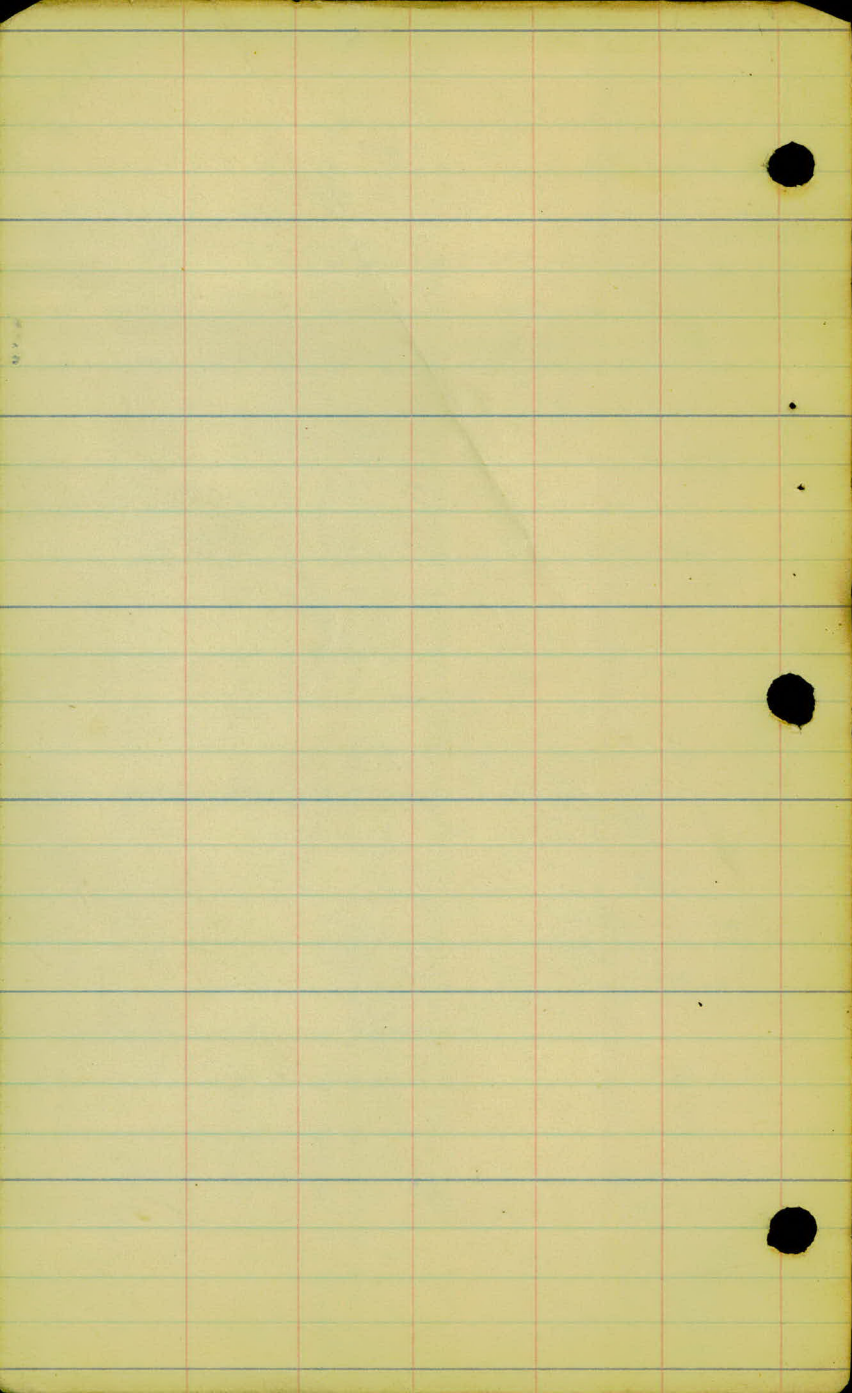
Centerville Rd. ↓

Mont. Center
Sec. 16

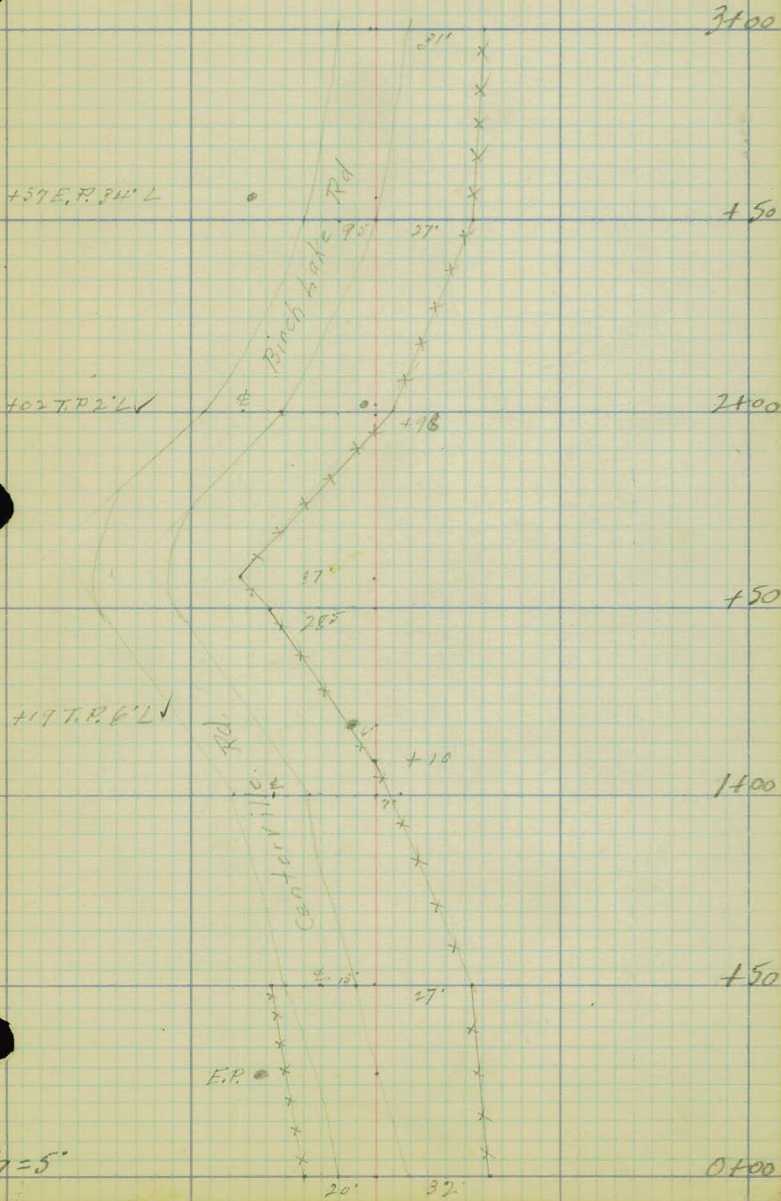
← N



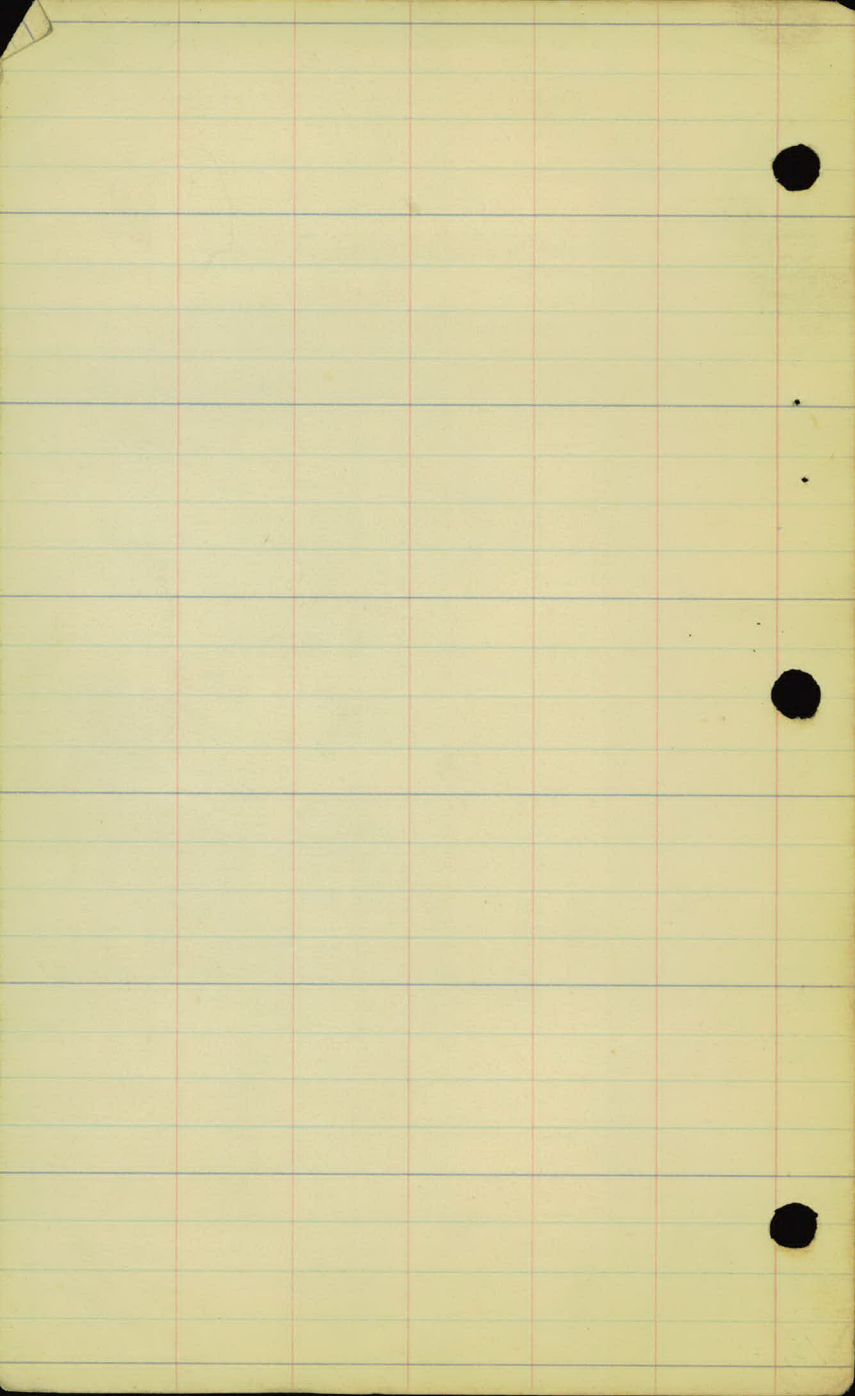
0+00 B.C.
199.06
T.P.



Birch Lake - Centerville Connection. Artificial Topography. Sta. 0+00 - 3+09.1



1 Sq = 5'



Birch Lake - Centerville
Connection Levels

2 Sheets

R.I.L. }
W.M. } 4-12-23

Sheet #

Station	+	H.I.		Rod	
	6.61	258.01	✓		257.40
			4.33		253.68 ✓
	5.61	259.29	✓		
			0.33		258.96 ✓
	7.25	256.21	Note. 21		
	19.47		9.78	4.78	256.43 ✓
0+00	B.C	2	14.44	7.8	258.4 ✓
	19.47		256.43		
+50	14.44		251.40		
	5.03		5.03	8.6	257.6
1+00				12.9	253.3
+50				12.6	253.6
2+00				11.2	255.0
+20				7.7	259.5
+50				6.2	260.0
3+00				4.2	262.0
+097	EC			3.9	262.3

Sheet #2

B.M. Elec Pole 22+55 30' Left Elev 251.40

Granit Monument Intersection of Cent + Birch Lake Rds

045012¹¹ vitrified Pipe Culvert

	L	E	R
	$\frac{50}{240.4}$	$\frac{28}{241.2}$	$\frac{14}{241.5}$
		2476	

Flows Left Length 42'

Birch Lake - Centerville
Connection Cross Section
25 sheets

RIL
W.M.
JHC
RW } 4-12-23

0+00

~~25~~8.4

+50

~~25~~7.6

1+00

~~25~~3.3

+50

~~25~~3.6

2+00

~~26~~5.0

+50

~~26~~0.0

3+09.7

~~26~~2.3

L

E

R

$$-\frac{6.0}{33} - \frac{4.8}{19} - \frac{0.6}{10} \frac{0.2}{7} + \frac{0.1}{9} - \frac{0.5}{14} - \frac{2.7}{19} - \frac{3.4}{33}$$

$$-\frac{5.0}{33} - \frac{4.7}{29} - \frac{0.6}{21} \frac{0.0}{16} - \frac{0.2}{4} - \frac{0.8}{7} - \frac{4.3}{13} - \frac{5.3}{25} - \frac{5.8}{33}$$

E of Rd

$$+\frac{3.7}{42} + \frac{4.4}{24} + \frac{3.6}{16} + \frac{0.9}{10} - \frac{0.4}{8} - \frac{0.7}{13} - \frac{1.1}{33}$$

$$-\frac{2.4}{33} + \frac{1.3}{17} + \frac{0.9}{10} - \frac{0.5}{15} - \frac{0.1}{33}$$

E of BL Rd

$$+\frac{4.0}{27} + \frac{3.1}{10} + \frac{0.4}{3} \frac{0.0}{4} + \frac{0.5}{15} + \frac{0.5}{33}$$

$$-\frac{0.5}{33} - \frac{0.4}{26} \frac{0.0}{22} + \frac{0.4}{13} + \frac{0.2}{11} - \frac{1.5}{14} + \frac{3.0}{24} + \frac{4.1}{33}$$

$$+\frac{2.4}{33} + \frac{2.3}{27} + \frac{0.4}{14} \frac{0.0}{13} + \frac{0.2}{6} - \frac{0.2}{8} - \frac{0.3}{11} - \frac{0.3}{12} \frac{0.0}{13} + \frac{0.4}{17} + \frac{5.0}{19} + \frac{5.0}{33}$$

334163

89.7

125.4

215.1

U24511