

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN._____PLAN_____Survey_____BELLAIRE AVE._____From CO. RD. "E" To CO. RD. "F"Road Acc't. No. 23

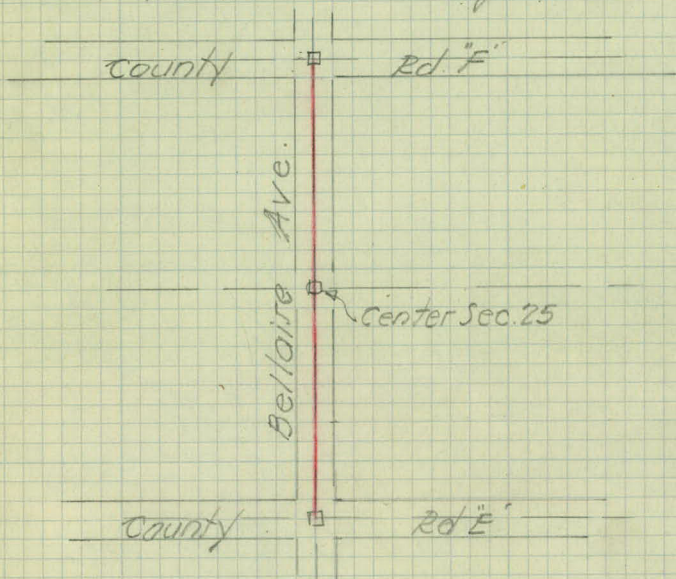
Date Filed _____

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Plan Survey

Bellaire Ave.

county Rd "E" to County Rd "F"

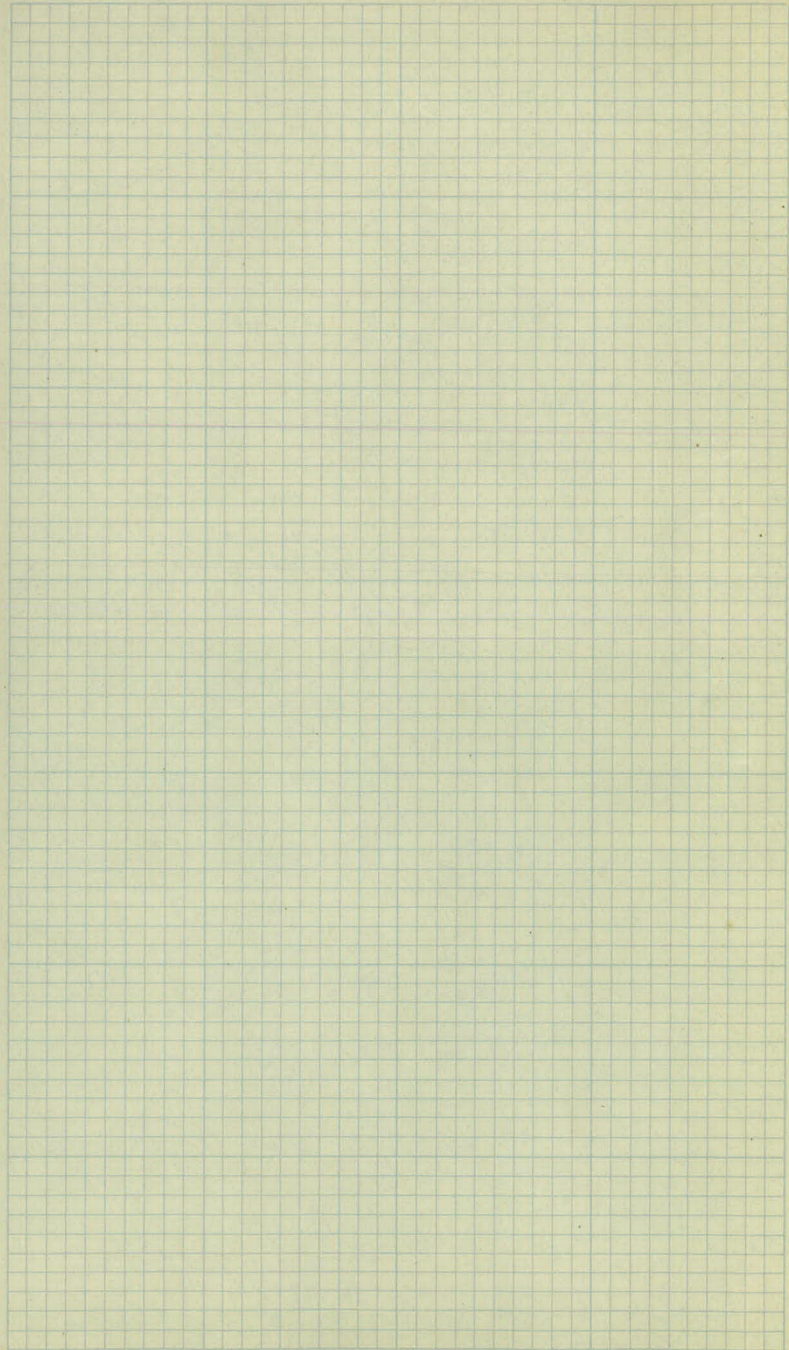


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W. H. Carlson
Dec. 1936

Bratager
March 1937



Alignment

Belloire Ave.

Co. Rd. "E" to Co. Rd. "F"

Angle.

Station	Point	Lt.	Rt.
105+46.4	E ^x F ⁿ		

79+03.0	P.O.T. Center Sec. 25		
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52+60.5	Mon.		
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□

W. H. Carlson

K. Anker.

L. B. Hendrix 17/8/36

A. Moeschler.

M. J. Gillen

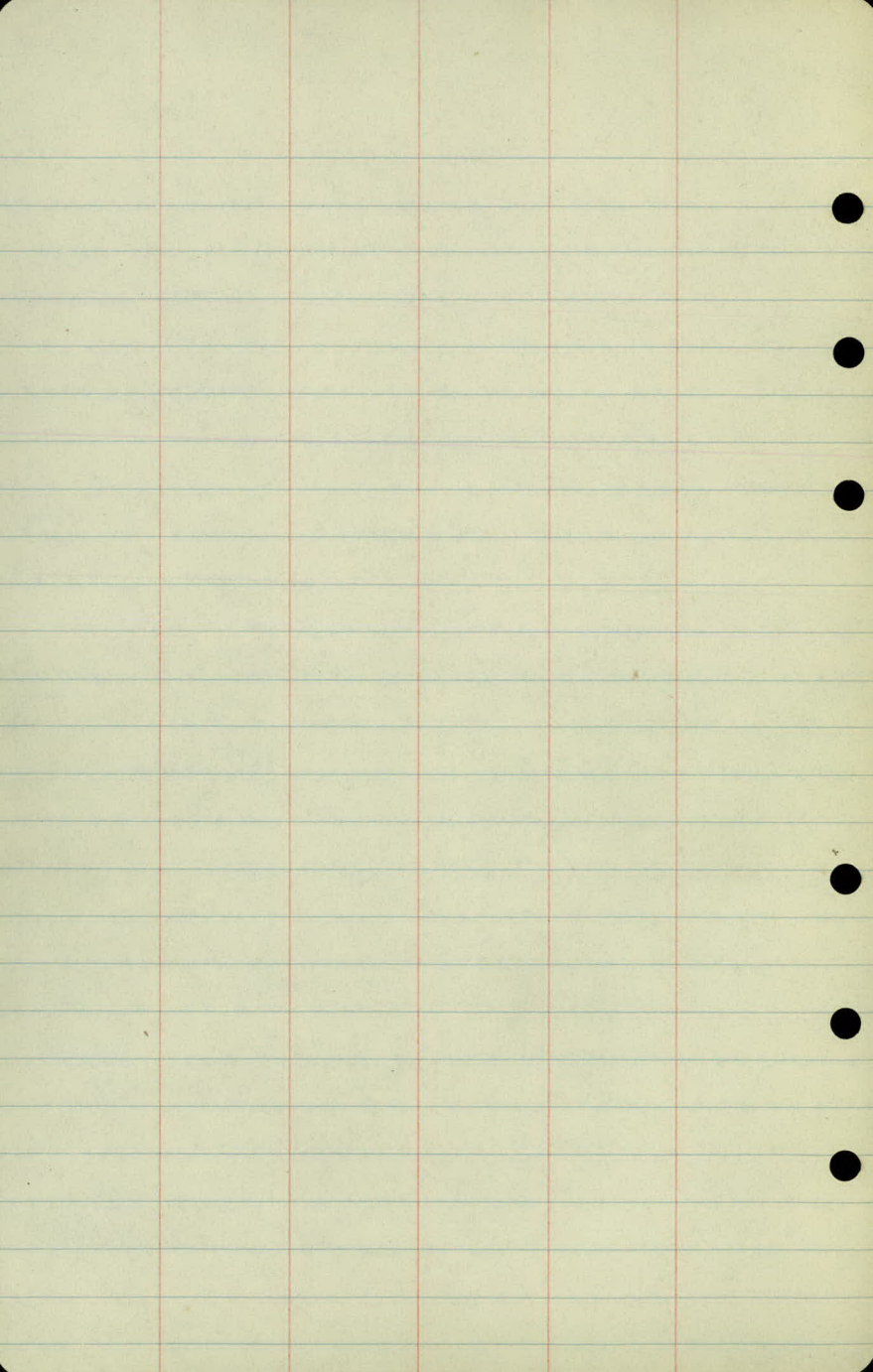
○

Iron Mort.

20' Conc.

□

Pavement & Co. Rd E



Topography

Bellaire Ave.

Co. Rd. "E" to Co. Rd. "F"

7 11

57

8 10

56

9 10

55

9 10

54

9 10

Tarvia

53

11- 10

$+60.5 = 2 \text{ Co. Rel. } E''$

52

cult.

Jarvis (Good)

cult.

+73 Shoulder

+90-P.P. 26

County Rd "E"

20' Conc. Pav.

10 9

64

9 9

63

9-10

62

9 11

61

9 10

60

10 9

59

9 11

58

Cult.

○○○○○

100 - 32

○ Small
oaks.

○

○○○○○

+ 48 - oak Small
32

Cult

Cult

11 10

147-2 15' X 38' C.M. 18.0 - 19.6

Drains 4

71

10 10

70

10 10

69

10 10

68

10 10

67

11 - 9

66

11 - 9

65

low
gr.

low

Low
marsh.

cult.

cult.

11 10

78

10 10

77

10 10

76

10 10

75

10 9

74

12 - 9

73

11 - 9

72

F-30

8

cult.

Pasture

F-30'

+42-F cor 30'

10 10

85

10-10

84

10-10

83

10 10

82

11-7'

81

12 10

80

11-10

79

+99-R.P. 27'

+101-Begin T.P. 28
F-30'

cult.

+102-24' Elm 27'
+105-80g. F. 30

+81-Begin R.P. 28'

cult.

+122-Ent. 12' x 2' CM.
18'

2-wires to 140'

+134-18" maple 76'

+14-10" Tri 8x 27'

Fruit
bearing
Sweet Trees

+91-15" Tree 27'

+66-18" Elm 27'

+42-15" 8x 27'

+19-18" Basswood - 27'

+15-18" Elm 27'

+79-Ent 12' x 26' CM.

+65-F. cor. 30' N.G.

Orchard

+67-F. cor. 30

cultivated.

+11-F. cor. 30

10 10

92

10 10

91

10 10

90

10-10

89

10 10

88

10 10

87

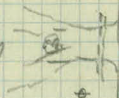
10 10

86

+76-14" oak 46'

+76-Ent. 12" x 20' CM

+02-P.P. 19'



+33-Field Ent.

+22-8" Elm 30'

+02-T.P. 27'

F-28'

+30-12" oak-28'

+56-P.P.

+35-T.P. 28'

+15-P.P. 27'

Cult.

F-29'

+99-T.P. 27'

+70-P.P.

Cult.

+22-6" Elm 32'

+66-T.P. 28'

F-30'

+8-12" B x El. 30'

+24-P.P.

+12-T.P. 27'

10 10

99

10-11

98

9-11'

97

9' 10

96

9 11

95

7-11

94

10 10

93

+27-P.P.



F-29

+89-T.P. 28



Post Hole,
No Outlet.

+79-P.P.



+95TP 28

+35-P.P.



Cult.

Cult.

+31-T.P. 29 (2-Wire)
F-30

+93-P.P. 76



+49RP



+69-T.P. 78



106

+46.4 = $\frac{1}{2}$ Co. Rd F

105

8 10

104

9 10

103

10 - 11

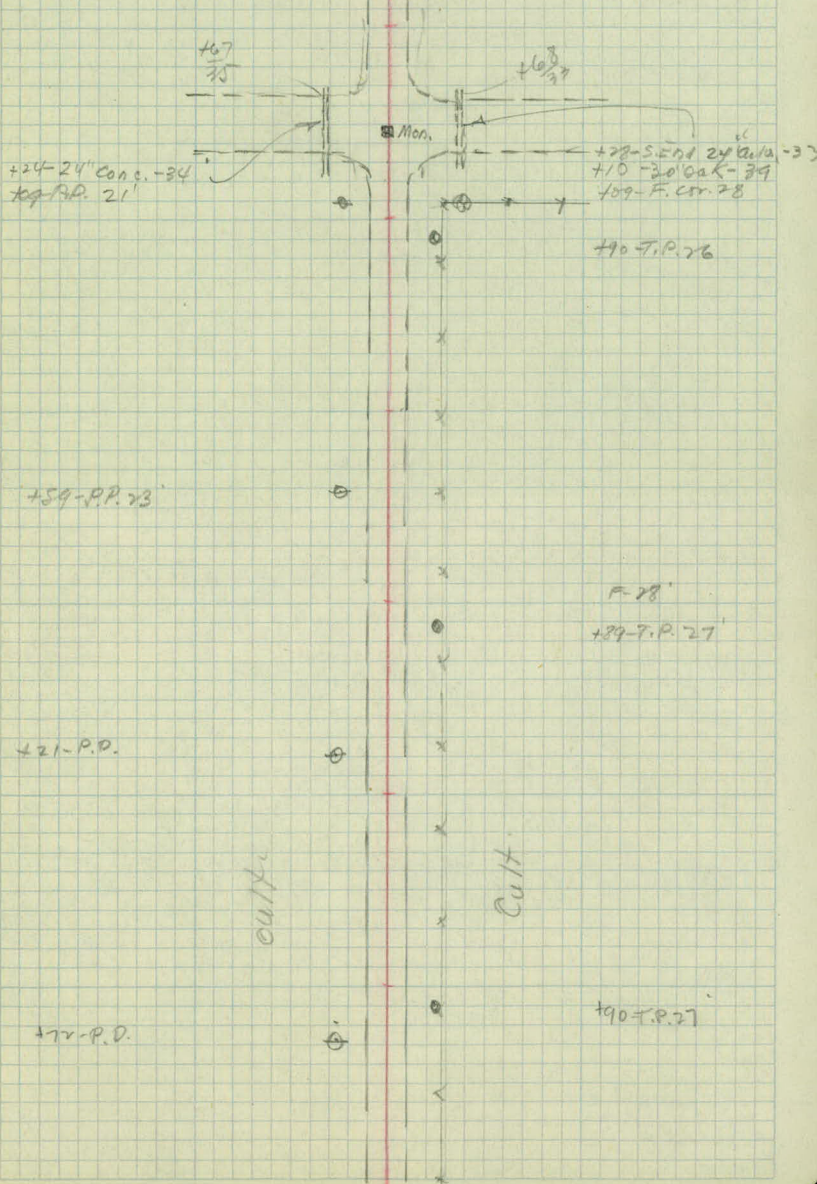
102

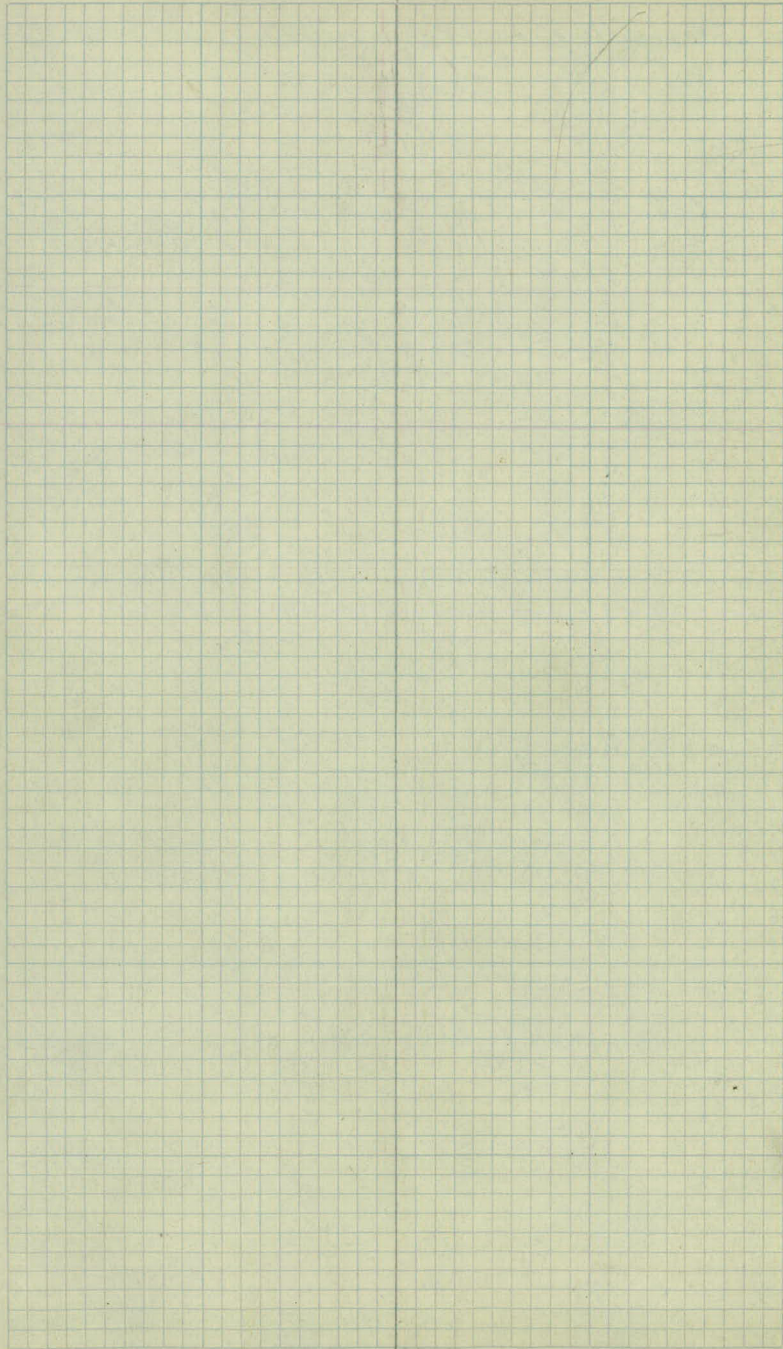
10 9

101

10 - 9'

100





Cross-Sections

Bellaire Ave.

Co. Rd. "E" to Co. Rd. "F"

Bratton	}	3/37
Wilke		
Gillen		

Sta.	+	π	-	E/8V.
B.M.	4.06	1031.66		1027.61
52+60.5 = 5 Co. Rd. E				27.7
+78				27.2
+85				26.9
+90				26.6
53+00				26.2
T.P.			4.05	1022.61
	0.69	1028.30		
53+50				24.8
54				23.3
+50				21.8
55				20.4
56				17.7
T.P.	2.93	1020.60	10.63	1017.67
+20				17.2

H. E. KH.

Top N.E. Cor. Monument.

$$\frac{5.1}{50} \quad 40 \quad \frac{3.7}{50}$$

$$\frac{5.3}{50} \quad 45 \quad \frac{3.7}{50}$$

$$\frac{7.5}{30} \quad \frac{5.6}{22} \quad 48 \quad \frac{5.2}{17} \quad \frac{5.6}{50}$$

$$\frac{4.9}{50} \quad \frac{4.8}{28} \quad \frac{5.7}{20} \quad 5.1 \quad \frac{5.9}{19} \quad \frac{4.2}{22} \quad \frac{3.0}{50}$$

$$\frac{5.7}{50} \quad \frac{6.0}{21} \quad \frac{6.3}{15} \quad \frac{5.8}{10} \quad 5.5 \quad \frac{5.8}{10} \quad \frac{6.4}{16} \quad \frac{5.0}{21} \quad \frac{4.6}{43} \quad \frac{4.1}{50}$$

Top N.E. Cor. Mount

$$\frac{5.9}{50} \quad \frac{4.6}{20} \quad \frac{4.9}{16} \quad \frac{3.5}{13} \quad \frac{4.6}{13} \quad \frac{2.2}{19} \quad \frac{1.3}{50}$$

$$\frac{8.0}{50} \quad \frac{6.3}{20} \quad \frac{6.6}{15} \quad \frac{5.6}{11} \quad \frac{5.0}{11} \quad \frac{5.4}{15} \quad \frac{6.3}{21} \quad \frac{4.2}{21} \quad \frac{3.5}{50}$$

$$\frac{7.5}{50} \quad \frac{7.7}{22} \quad \frac{8.2}{17} \quad \frac{6.9}{11} \quad \frac{6.5}{10} \quad \frac{7.0}{14} \quad \frac{7.6}{19} \quad \frac{7.1}{19} \quad \frac{5.9}{10}$$

$$\frac{12.1}{50} \quad \frac{10.5}{19} \quad \frac{6.3}{10} \quad \frac{7.9}{11} \quad \frac{8.4}{11} \quad \frac{8.8}{16} \quad \frac{8.5}{20} \quad \frac{9.0}{28} \quad \frac{7.7}{50}$$

$$\frac{12.4}{50} \quad \frac{13.5}{21} \quad \frac{19.1}{10} \quad \frac{10.6}{11} \quad \frac{11.1}{11} \quad \frac{12.3}{19} \quad \frac{12.3}{31} \quad \frac{12.0}{50}$$

$$\frac{6.1}{50} \quad \frac{5.3}{21} \quad \frac{3.9}{10} \quad \frac{3.4}{11} \quad \frac{3.9}{11} \quad \frac{5.2}{18} \quad \frac{4.0}{33} \quad \frac{4.1}{50}$$

Sta.	+	π	-	Elev.
56+50		1070.60		16.4
57				15.4
+50				14.4
58				13.3
T.P.	5.89	1019.20 [✓]	7.29	1013.31

+50

12.1

59

10.7

+35

09.8

60

07.7

T.P.

3.34

1009.79

12.75

1006.45

+50

06.2

61

04.5

B.M.

1.43

1009.79[✓]

1.43

1008.36

Ch. S Rd.

$\frac{11.4}{50}$ $\frac{8.8}{22}$ $\frac{5.2}{13}$ $\frac{4.6}{9}$ $\frac{4.2}{7}$ $\frac{4.5}{13}$ $\frac{6.1}{19}$ $\frac{3.5}{39}$ $\frac{3.0}{10}$

$\frac{14.2}{50}$ $\frac{11.7}{20}$ $\frac{6.1}{12}$ $\frac{5.7}{8}$ $\frac{5.2}{7}$ $\frac{5.4}{12}$ $\frac{6.8}{20}$ $\frac{6.4}{40}$ $\frac{5.9}{50}$

$\frac{11.1}{50}$ $\frac{9.7}{40}$ $\frac{8.4}{19}$ $\frac{7.4}{14}$ $\frac{6.8}{10}$ $\frac{6.2}{7}$ $\frac{6.5}{12}$ $\frac{7.2}{19}$ $\frac{6.9}{24}$ $\frac{6.2}{50}$

$\frac{4.8}{15}$ $\frac{4.2}{10}$ $\frac{3.2}{37}$ $\frac{4.4}{27}$ $\frac{7.7}{20}$ $\frac{8.6}{16}$ $\frac{7.9}{10}$ $\frac{7.3}{7}$ $\frac{7.7}{12}$ $\frac{8.4}{17}$ $\frac{6.0}{26}$ $\frac{5.9}{50}$

$\frac{10.9}{78}$ $\frac{7.8}{68}$

Top of Ctr. rail or Red. Stk. 58+00

$\frac{7.5}{76}$ $\frac{4.7}{67}$ $\frac{2.6}{50}$ $\frac{1.9}{33}$ $\frac{6.7}{20}$ $\frac{7.8}{13}$ $\frac{7.1}{7}$ $\frac{7.7}{14}$ $\frac{8.3}{19}$ $\frac{3.9}{26}$ $\frac{4.5}{50}$

$\frac{10.1}{80}$ $\frac{7.9}{65}$ $\frac{6.5}{50}$ $\frac{5.7}{29}$ $\frac{7.6}{23}$ $\frac{7.0}{15}$ $\frac{8.5}{7}$ $\frac{9.0}{15}$ $\frac{9.0}{19}$ $\frac{4.6}{25}$ $\frac{5.6}{50}$

$\frac{9.8}{80}$ $\frac{9.7}{22}$ $\frac{10.4}{16}$ $\frac{9.4}{7}$ $\frac{9.8}{11}$ $\frac{10.5}{17}$ $\frac{6.4}{24}$ $\frac{6.8}{50}$

$\frac{14.9}{50}$ $\frac{12.4}{22}$ $\frac{12.2}{13}$ $\frac{11.5}{7}$ $\frac{11.6}{12}$ $\frac{11.8}{17}$ $\frac{9.1}{23}$ $\frac{8.3}{27}$ $\frac{8.7}{50}$

$\frac{8.7}{50}$ $\frac{8.2}{25}$ $\frac{6.5}{18}$ $\frac{4.5}{12}$ $\frac{3.6}{7}$ $\frac{3.8}{13}$ $\frac{0.1}{21}$ $\frac{0.7}{26}$ $\frac{1.2}{50}$

$\frac{10.5}{50}$ $\frac{10.2}{35}$ $\frac{9.0}{18}$ $\frac{8.9}{12}$ $\frac{8.3}{7}$ $\frac{5.9}{13}$ $\frac{5.4}{18}$ $\frac{4.3}{25}$ $\frac{4.4}{50}$

Spike in 4" Oak 150' or Stk. 61+05

Sta.	+	π_1	-	E/100
------	---	---------	---	-------

1009.79

61+50				03.1
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62				81.6
----	--	--	--	------

+50				00.2
-----	--	--	--	------

+75				99.5
-----	--	--	--	------

63				98.7
----	--	--	--	------

T.P.	7.29	1006.04	11.04	998.75
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+30				97.9
-----	--	--	--	------

+50				97.4
-----	--	--	--	------

64				95.7
----	--	--	--	------

T.P.	5.99	1000.81	11.22	994.82
------	------	---------	-------	--------

+30				94.9
-----	--	--	--	------

+50				94.2
-----	--	--	--	------

ht

%

ht

$$\frac{9.4}{50} \quad \frac{8.7}{24} \quad \frac{8.1}{17} \quad \frac{7.5}{11} \quad \frac{6.7}{1} \quad \frac{7.1}{13} \quad \frac{7.2}{17} \quad \frac{5.6}{21} \quad \frac{5.2}{50}$$

$$\frac{8.3}{50} \quad \frac{8.1}{17} \quad \frac{8.7}{14} \quad \frac{8.7}{1} \quad \frac{8.8}{14} \quad \frac{9.3}{15} \quad \frac{6.6}{21} \quad \frac{6.6}{50}$$

$$\frac{7.5}{50} \quad \frac{8.3}{23} \quad \frac{9.3}{16} \quad \frac{10.2}{12} \quad \frac{9.6}{1} \quad \frac{10.1}{14} \quad \frac{10.6}{19} \quad \frac{8.1}{23} \quad \frac{7.6}{50}$$

$$\frac{7.6}{50} \quad \frac{7.8}{20} \quad \frac{9.4}{18} \quad \frac{11.0}{13} \quad \frac{10.3}{1} \quad \frac{10.8}{11} \quad \frac{10.9}{19} \quad \frac{6.8}{25} \quad \frac{7.3}{50}$$

$$\frac{6.7}{50} \quad \frac{5.3}{22} \quad \frac{7.8}{20} \quad \frac{11.1}{16} \quad \frac{11.6}{11} \quad \frac{11.1}{1} \quad \frac{11.6}{11} \quad \frac{11.7}{19} \quad \frac{10.3}{23} \quad \frac{8.3}{26} \quad \frac{5.5}{31} \quad \frac{7.0}{50}$$

$$\frac{2.3}{50} \quad \frac{+0.3}{25} \quad \frac{2.4}{24} \quad \frac{6.6}{19} \quad \frac{8.5}{14} \quad \frac{8.1}{1} \quad \frac{8.3}{10} \quad \frac{9.0}{21} \quad \frac{1.9}{31} \quad \frac{0.4}{35} \quad \frac{2.3}{50}$$

$$\frac{4.3}{50} \quad \frac{1.4}{25} \quad \frac{2.8}{24} \quad \frac{7.7}{19} \quad \frac{8.9}{14} \quad \frac{8.6}{1} \quad \frac{8.9}{10} \quad \frac{9.5}{21} \quad \frac{0.0}{31} \quad \frac{2.2}{50}$$

$$\frac{13.5}{50} \quad \frac{9.6}{23} \quad \frac{9.4}{19} \quad \frac{10.6}{10} \quad \frac{10.3}{1} \quad \frac{10.6}{10} \quad \frac{10.3}{19} \quad \frac{6.6}{27} \quad \frac{3.6}{31} \quad \frac{2.4}{50}$$

$$\frac{13.0}{50} \quad \frac{9.0}{21} \quad \frac{6.7}{14} \quad \frac{5.9}{1} \quad \frac{6.2}{10} \quad \frac{6.5}{18} \quad \frac{2.9}{24} \quad \frac{2.2}{32} \quad \frac{3.4}{50}$$

$$\frac{14.8}{50} \quad \frac{12.7}{28} \quad \frac{11.4}{23} \quad \frac{7.4}{13} \quad \frac{6.4}{1} \quad \frac{6.8}{10} \quad \frac{6.8}{16} \quad \frac{4.8}{22} \quad \frac{4.8}{32} \quad \frac{5.8}{50}$$

3
3
3

Sta.	+	π	-	Elev
		1000.81		
65				92.7
T.P.	2.18	993.10	9.89	990.92
+50				90.9
66				89.1
+50				87.5
67				85.9
+50				84.3
68				82.7
+50				81.0
T.P.	0.75	980.23	13.62	979.48
69				79.6
+50				78.1
70				76.9

Lt.

K.

Rt.

$$\frac{19.2}{50} \quad \frac{18.9}{28} \quad \frac{13.8}{19} \quad \frac{10.0}{14} \quad \frac{8.7}{10} \quad \frac{8.1}{10} \quad \frac{8.3}{10} \quad \frac{8.5}{17} \quad \frac{9.6}{25} \quad \frac{10.0}{42} \quad \frac{9.3}{50}$$

$$\frac{11.7}{50} \quad \frac{11.1}{42} \quad \frac{9.3}{28} \quad \frac{7.4}{19} \quad \frac{3.1}{13} \quad \frac{2.7}{16} \quad \frac{2.3}{16} \quad \frac{4.3}{31} \quad \frac{4.2}{50}$$

$$\frac{9.8}{50} \quad \frac{8.1}{19} \quad \frac{4.7}{14} \quad \frac{4.0}{14} \quad \frac{5.0}{16} \quad \frac{5.6}{33} \quad \frac{5.8}{50}$$

$$\frac{8.7}{50} \quad \frac{9.4}{29} \quad \frac{8.9}{19} \quad \frac{6.6}{14} \quad \frac{5.6}{14} \quad \frac{6.1}{14} \quad \frac{2.3}{17} \quad \frac{2.0}{28} \quad \frac{6.9}{50}$$

$$\frac{10.5}{50} \quad \frac{9.5}{33} \quad \frac{9.6}{19} \quad \frac{7.9}{14} \quad \frac{7.2}{10} \quad \frac{7.5}{10} \quad \frac{8.9}{19} \quad \frac{8.1}{28} \quad \frac{8.4}{50}$$

$$\frac{10.0}{50} \quad \frac{9.5}{37} \quad \frac{9.9}{28} \quad \frac{10.2}{19} \quad \frac{9.0}{11} \quad \frac{8.8}{10} \quad \frac{9.3}{10} \quad \frac{10.7}{18} \quad \frac{10.1}{23} \quad \frac{9.2}{28} \quad \frac{9.4}{36} \quad \frac{9.9}{50}$$

$$\frac{11.4}{50} \quad \frac{11.8}{25} \quad \frac{11.9}{18} \quad \frac{10.9}{11} \quad \frac{10.4}{11} \quad \frac{10.8}{10} \quad \frac{12.5}{19} \quad \frac{11.3}{31} \quad \frac{12.7}{50}$$

$$\frac{14.3}{50} \quad \frac{14.8}{38} \quad \frac{15.0}{25} \quad \frac{14.4}{18} \quad \frac{12.6}{11} \quad \frac{12.1}{13} \quad \frac{12.9}{13} \quad \frac{14.3}{18} \quad \frac{15.2}{50}$$

$$\frac{4.3}{50} \quad \frac{4.4}{31} \quad \frac{3.8}{18} \quad \frac{1.2}{12} \quad \frac{0.6}{13} \quad \frac{1.4}{13} \quad \frac{2.3}{17} \quad \frac{4.0}{21} \quad \frac{3.4}{27} \quad \frac{2.7}{50}$$

$$\frac{4.5}{50} \quad \frac{4.9}{34} \quad \frac{4.7}{16} \quad \frac{2.7}{11} \quad \frac{2.1}{13} \quad \frac{3.0}{13} \quad \frac{5.0}{17} \quad \frac{5.5}{30} \quad \frac{5.6}{50}$$

$$\frac{4.7}{50} \quad \frac{5.7}{29} \quad \frac{5.9}{17} \quad \frac{3.9}{12} \quad \frac{3.3}{12} \quad \frac{4.2}{14} \quad \frac{6.8}{17} \quad \frac{8.2}{37} \quad \frac{8.6}{50}$$

Sta. + 1 - Elev.

980.73

70+50

76.1

71

75.6

75.4

+47 Culvert 15" C.M. Drains Lt. (Series in ice)

72

75.2

B.M.

4.95

980.73

4.95

975.28

+50

75.3

73

75.6

+50

76.0

74

76.3

T.P.

11.30

987.74

2.79

976.44

+50

76.9

75

77.1

Lt.

E

Rt.

$$\frac{28}{50} \quad \frac{7.3}{31} \quad \frac{7.3}{18} \quad \frac{4.8}{13} \quad \frac{4.1}{12} \quad \frac{4.7}{12} \quad \frac{6.8}{18} \quad \frac{8.8}{29} \quad \frac{9.5}{50}$$

$$\frac{10.7}{50} \quad \frac{9.0}{18} \quad \frac{5.2}{12} \quad \frac{4.6}{12} \quad \frac{5.3}{12} \quad \frac{7.3}{18} \quad \frac{9.7}{33} \quad \frac{10.0}{50}$$

$$\frac{12.1}{50} \quad \frac{13.2}{32} \quad \frac{11.1}{23} \quad \frac{8.4}{12} \quad \frac{4.8}{12} \quad \frac{5.9}{12} \quad \frac{9.5}{19} \quad \frac{11.2}{24} \quad \frac{11.2}{50}$$

$$\frac{11.1}{50} \quad \frac{9.4}{18} \quad \frac{5.6}{12} \quad \frac{5.0}{12} \quad \frac{5.5}{12} \quad \frac{9.9}{18} \quad \frac{11.2}{31} \quad \frac{10.8}{50}$$

Spike in fence Post 150' Rt. Sta. 72+4 ✓

$$\frac{9.2}{50} \quad \frac{8.8}{33} \quad \frac{8.4}{20} \quad \frac{8.7}{14} \quad \frac{4.9}{12} \quad \frac{5.6}{12} \quad \frac{8.3}{18} \quad \frac{9.1}{25} \quad \frac{9.6}{33} \quad \frac{10.3}{50}$$

$$\frac{6.5}{50} \quad \frac{5.4}{34} \quad \frac{8.0}{30} \quad \frac{7.0}{19} \quad \frac{5.2}{14} \quad \frac{4.6}{14} \quad \frac{5.2}{14} \quad \frac{7.3}{19} \quad \frac{7.4}{25} \quad \frac{6.1}{27} \quad \frac{7.5}{50}$$

$$\frac{4.9}{50} \quad \frac{4.0}{31} \quad \frac{7.4}{30} \quad \frac{7.4}{20} \quad \frac{5.2}{16} \quad \frac{4.2}{12} \quad \frac{4.9}{13} \quad \frac{5.6}{17} \quad \frac{5.8}{24} \quad \frac{4.1}{28} \quad \frac{1.6}{31} \quad \frac{2.5}{50}$$

$$\frac{5.0}{50} \quad \frac{3.9}{33} \quad \frac{6.3}{31} \quad \frac{7.6}{26} \quad \frac{6.5}{19} \quad \frac{4.4}{12} \quad \frac{3.9}{12} \quad \frac{4.4}{12} \quad \frac{5.9}{17} \quad \frac{5.9}{25} \quad \frac{3.0}{28} \quad \frac{1.3}{50}$$

$$\frac{13.5}{50} \quad \frac{12.0}{33} \quad \frac{14.9}{29} \quad \frac{15.2}{18} \quad \frac{11.7}{13} \quad \frac{10.8}{13} \quad \frac{11.7}{13} \quad \frac{14.0}{16} \quad \frac{14.3}{26} \quad \frac{14.0}{35} \quad \frac{15.0}{50}$$

$$\frac{16.3}{50} \quad \frac{15.5}{19} \quad \frac{11.5}{12} \quad \frac{10.6}{13} \quad \frac{11.2}{13} \quad \frac{13.5}{16} \quad \frac{13.1}{40} \quad \frac{14.1}{50}$$

Sta.	+	π	-	Elev.
		987.74		
75+50				77.5
76				78.1
+50				79.0
77				80.2
+50				81.6
78				82.9
+50				84.1
T.P.	9.55	994.48	2.87	984.87
79				84.8
+50				85.0
80				84.9
+50				84.4

4.

4

21

$$\frac{15.9}{50} \quad \frac{15.1}{28} \quad \frac{14.3}{19} \quad \frac{11.0}{11} \quad \frac{10.2}{12} \quad \frac{10.6}{12} \quad \frac{13.4}{16} \quad \frac{13.7}{23} \quad \frac{13.7}{30} \quad \frac{13.0}{40} \quad \frac{14.0}{50}$$

$$\frac{17.0}{50} \quad \frac{16.1}{28} \quad \frac{14.9}{20} \quad \frac{10.5}{11} \quad \frac{9.6}{12} \quad \frac{10.0}{12} \quad \frac{12.8}{17} \quad \frac{13.5}{29} \quad \frac{13.1}{50}$$

$$\frac{15.6}{50} \quad \frac{15.2}{24} \quad \frac{12.5}{17} \quad \frac{9.5}{14} \quad \frac{8.7}{13} \quad \frac{9.2}{13} \quad \frac{12.3}{18} \quad \frac{11.9}{32} \quad \frac{10.9}{42} \quad \frac{11.0}{50}$$

$$\frac{12.5}{50} \quad \frac{12.7}{29} \quad \frac{12.2}{20} \quad \frac{10.9}{16} \quad \frac{8.3}{11} \quad \frac{7.5}{15} \quad \frac{8.1}{15} \quad \frac{9.8}{19} \quad \frac{10.1}{26} \quad \frac{9.4}{38} \quad \frac{10.0}{50}$$

$$\frac{9.4}{50} \quad \frac{6.4}{26} \quad \frac{7.9}{14} \quad \frac{7.9}{18} \quad \frac{6.7}{13} \quad \frac{6.1}{14} \quad \frac{6.5}{14} \quad \frac{6.9}{19} \quad \frac{6.6}{23} \quad \frac{4.1}{28} \quad \frac{4.6}{38} \quad \frac{6.3}{50}$$

$$\frac{5.5}{50} \quad \frac{3.1}{26} \quad \frac{5.5}{21} \quad \frac{5.7}{17} \quad \frac{5.1}{10} \quad \frac{4.8}{17} \quad \frac{5.2}{17} \quad \frac{5.2}{22} \quad \frac{2.4}{26} \quad \frac{2.9}{41} \quad \frac{4.2}{50}$$

$$\frac{2.3}{50} \quad \frac{1.5}{27} \quad \frac{4.2}{22} \quad \frac{4.7}{19} \quad \frac{4.1}{14} \quad \frac{3.6}{13} \quad \frac{4.0}{13} \quad \frac{4.8}{19} \quad \frac{4.5}{22} \quad \frac{2.9}{25} \quad \frac{3.7}{37} \quad \frac{5.5}{50}$$

$$\frac{6.4}{50} \quad \frac{5.4}{30} \quad \frac{7.0}{26} \quad \frac{10.0}{21} \quad \frac{10.3}{14} \quad \frac{9.6}{11} \quad \frac{10.0}{11} \quad \frac{10.3}{19} \quad \frac{7.5}{23} \quad \frac{5.4}{27} \quad \frac{5.4}{50}$$

$$\frac{5.6}{50} \quad \frac{4.9}{30} \quad \frac{9.8}{22} \quad \frac{10.0}{13} \quad \frac{9.4}{14} \quad \frac{9.8}{14} \quad \frac{9.6}{20} \quad \frac{2.8}{30} \quad \frac{2.4}{50}$$

$$\frac{6.7}{50} \quad \frac{6.3}{35} \quad \frac{5.9}{34} \quad \frac{9.5}{25} \quad \frac{10.4}{19} \quad \frac{10.0}{12} \quad \frac{9.5}{12} \quad \frac{9.9}{14} \quad \frac{10.4}{19} \quad \frac{3.4}{27} \quad \frac{2.8}{34} \quad \frac{2.4}{50}$$

$$\frac{7.5}{50} \quad \frac{7.0}{31} \quad \frac{10.0}{25} \quad \frac{10.9}{18} \quad \frac{10.3}{17} \quad \frac{10.0}{12} \quad \frac{10.5}{12} \quad \frac{10.5}{16} \quad \frac{4.9}{30} \quad \frac{4.9}{50}$$

Sto.	+	π	-	Elev.
		994.42		
81				83.7
+50				82.6
+79	Entrance Rt.			82.1
T.P.	1.71	983.66	12.47	981.95
82				81.8
+50				80.7
83				79.5
+50				78.0
84				76.6
B.M.	8.14	983.66	8.14	975.52
+50				75.3
85				73.9

L.

L

R.

$$\frac{8^5}{50} \frac{8^3}{34} \frac{7^8}{28} \frac{10^4}{25} \frac{11^9}{20} \frac{11^3}{13} \frac{10^7}{13} \frac{11^2}{13} \frac{11^0}{18} \frac{8^8}{23} \frac{7^5}{30} \frac{8^0}{50}$$

$$\frac{11^1}{50} \frac{10^9}{30} \frac{10^5}{27} \frac{13^0}{23} \frac{12^8}{16} \frac{12^0}{11} \frac{11^8}{13} \frac{12^0}{13} \frac{11^9}{18} \frac{10^7}{22} \frac{10^8}{30} \frac{10^8}{50}$$

$$\frac{12^3}{50} \frac{11^1}{50} \frac{9^9}{100}$$

$$\frac{4^3}{50} \frac{3^6}{35} \frac{2^2}{25} \frac{3^4}{17} \frac{1^9}{12} \frac{1^8}{12} \frac{2^1}{31} \frac{1^5}{50}$$

$$\frac{6^6}{50} \frac{5^7}{28} \frac{4^7}{14} \frac{3^4}{10} \frac{3^0}{11} \frac{3^2}{11} \frac{3^4}{18} \frac{3^0}{27} \frac{2^1}{50}$$

$$\frac{9^6}{50} \frac{7^9}{30} \frac{6^3}{16} \frac{5^1}{14} \frac{4^2}{10} \frac{4^5}{10} \frac{5^2}{15} \frac{5^0}{19} \frac{3^6}{25} \frac{2^7}{36} \frac{2^2}{50}$$

$$\frac{10^5}{50} \frac{8^1}{18} \frac{6^5}{13} \frac{5^7}{10} \frac{6^2}{10} \frac{7^2}{18} \frac{6^5}{22} \frac{5^8}{25} \frac{4^0}{30}$$

$$\frac{11^1}{50} \frac{10^4}{34} \frac{9^5}{26} \frac{9^6}{18} \frac{7^7}{12} \frac{7^1}{11} \frac{7^2}{11} \frac{7^2}{21} \frac{8^4}{32} \frac{8^5}{50}$$

Spike in 24" Elm 30' Rt. St. 84 + 20

$$\frac{11^8}{50} \frac{9^8}{24} \frac{9^6}{15} \frac{8^8}{11} \frac{8^4}{12} \frac{8^8}{12} \frac{10^3}{18} \frac{10^1}{22} \frac{7^5}{28} \frac{8^3}{42} \frac{5^2}{50}$$

$$\frac{13^1}{50} \frac{12^4}{32} \frac{11^5}{28} \frac{12^0}{22} \frac{11^5}{18} \frac{10^3}{12} \frac{9^8}{12} \frac{10^2}{17} \frac{11^4}{23} \frac{7^2}{28} \frac{8^8}{50}$$

Sta.	+	×	-	Elev.
		983.66		
55+50				72.4
T.P.	2.18	973.26	12.58	971.08
86				71.1
+50				69.9
87				68.6
+50				67.5
88				66.6
+50				65.8
89				65.4
+50				65.3
90				65.2
T.P.	1.45	969.55	5.16	968.10
+50				65.1

4.

E

R.

21

$$\frac{16.7}{50} \quad \frac{16.1}{28} \quad \frac{14.8}{18} \quad \frac{12.1}{14} \quad \frac{11.3}{14} \quad \frac{12.0}{14} \quad \frac{14.2}{19} \quad \frac{14.1}{26} \quad \frac{12.9}{29} \quad \frac{12.0}{39} \quad \frac{12.4}{50}$$

$$\frac{8.2}{50} \quad \frac{7.1}{30} \quad \frac{5.7}{17} \quad \frac{2.9}{14} \quad \frac{2.2}{14} \quad \frac{2.8}{10} \quad \frac{4.7}{19} \quad \frac{4.5}{23} \quad \frac{3.2}{26} \quad \frac{1.4}{29} \quad \frac{2.1}{45} \quad \frac{2.9}{50}$$

$$\frac{8.5}{50} \quad \frac{7.2}{30} \quad \frac{6.0}{25} \quad \frac{5.5}{19} \quad \frac{4.2}{12} \quad \frac{3.4}{14} \quad \frac{4.2}{14} \quad \frac{7.2}{19} \quad \frac{6.0}{24} \quad \frac{5.2}{29} \quad \frac{5.6}{30} \quad \frac{6.9}{50}$$

$$\frac{7.8}{50} \quad \frac{6.2}{17} \quad \frac{5.6}{12} \quad \frac{4.7}{14} \quad \frac{5.3}{13} \quad \frac{6.3}{17} \quad \frac{6.7}{23} \quad \frac{7.2}{31} \quad \frac{7.8}{50}$$

$$\frac{9.6}{50} \quad \frac{7.7}{20} \quad \frac{6.5}{12} \quad \frac{5.8}{14} \quad \frac{6.3}{11} \quad \frac{7.2}{17} \quad \frac{7.7}{22} \quad \frac{5.6}{25} \quad \frac{4.3}{26} \quad \frac{5.4}{50}$$

$$\frac{11.8}{50} \quad \frac{11.4}{32} \quad \frac{10.3}{17} \quad \frac{7.5}{10} \quad \frac{6.7}{14} \quad \frac{7.4}{13} \quad \frac{9.5}{18} \quad \frac{9.3}{24} \quad \frac{6.8}{28} \quad \frac{6.4}{50}$$

$$\frac{12.9}{50} \quad \frac{12.3}{28} \quad \frac{11.1}{17} \quad \frac{8.2}{11} \quad \frac{7.5}{14} \quad \frac{8.1}{12} \quad \frac{10.2}{17} \quad \frac{10.2}{26} \quad \frac{9.2}{50}$$

$$\frac{13.2}{50} \quad \frac{12.2}{25} \quad \frac{11.2}{17} \quad \frac{8.7}{11} \quad \frac{7.9}{14} \quad \frac{8.6}{13} \quad \frac{10.5}{18} \quad \frac{9.6}{25} \quad \frac{8.9}{29} \quad \frac{5.2}{30}$$

$$\frac{10.5}{50} \quad \frac{9.1}{27} \quad \frac{11.3}{23} \quad \frac{10.9}{17} \quad \frac{8.7}{13} \quad \frac{8.0}{12} \quad \frac{8.4}{12} \quad \frac{8.6}{18} \quad \frac{9.8}{23} \quad \frac{2.0}{27} \quad \frac{5.8}{29} \quad \frac{5.8}{50}$$

$$\frac{8.4}{50} \quad \frac{7.3}{27} \quad \frac{10.1}{23} \quad \frac{10.8}{18} \quad \frac{8.4}{13} \quad \frac{8.1}{14} \quad \frac{8.6}{13} \quad \frac{10.5}{19} \quad \frac{8.9}{22} \quad \frac{4.5}{29} \quad \frac{4.5}{50}$$

$$\frac{4.1}{50} \quad \frac{4.0}{27} \quad \frac{6.1}{23} \quad \frac{7.2}{17} \quad \frac{5.1}{12} \quad \frac{4.5}{14} \quad \frac{4.8}{11} \quad \frac{6.1}{17} \quad \frac{6.8}{23} \quad \frac{3.0}{29} \quad \frac{2.4}{31} \quad \frac{2.4}{50}$$

512. + π - Elev.

969.55

91 64.9

+50 64.8

92 64.6

+50 64.6

93 64.7

+50 64.9

94 65.1

+40 65.3

95 65.5

+50 65.7

96 65.5

+50 65.4

T.P. 5.61 970.25 4.91 964.64

Lr.

E

Rr.

$$\frac{60}{50} \quad \frac{65}{25} \quad \frac{74}{17} \quad \frac{56}{13} \quad \frac{47}{5} \quad \frac{55}{13} \quad \frac{26}{16} \quad \frac{62}{25} \quad \frac{57}{50}$$

$$\frac{64}{50} \quad \frac{74}{26} \quad \frac{79}{23} \quad \frac{72}{19} \quad \frac{57}{12} \quad \frac{48}{5} \quad \frac{55}{12} \quad \frac{81}{18} \quad \frac{81}{27} \quad \frac{87}{50}$$

$$\frac{57}{50} \quad \frac{53}{29} \quad \frac{64}{23} \quad \frac{62}{17} \quad \frac{57}{13} \quad \frac{50}{5} \quad \frac{56}{11} \quad \frac{26}{16} \quad \frac{84}{29} \quad \frac{90}{50}$$

$$\frac{70}{50} \quad \frac{21}{30} \quad \frac{20}{17} \quad \frac{57}{16} \quad \frac{50}{5} \quad \frac{57}{14} \quad \frac{64}{16} \quad \frac{65}{28} \quad \frac{75}{50}$$

$$\frac{20}{50} \quad \frac{71}{25} \quad \frac{22}{17} \quad \frac{56}{11} \quad \frac{49}{5} \quad \frac{58}{12} \quad \frac{27}{17} \quad \frac{85}{28} \quad \frac{90}{50}$$

$$\frac{50}{50} \quad \frac{46}{27} \quad \frac{66}{21} \quad \frac{67}{16} \quad \frac{54}{13} \quad \frac{47}{5} \quad \frac{53}{12} \quad \frac{20}{15} \quad \frac{21}{21} \quad \frac{63}{24} \quad \frac{84}{50}$$

$$\frac{34}{50} \quad \frac{32}{28} \quad \frac{66}{22} \quad \frac{60}{17} \quad \frac{50}{11} \quad \frac{45}{14} \quad \frac{58}{16} \quad \frac{62}{22} \quad \frac{53}{24} \quad \frac{61}{36} \quad \frac{75}{50}$$

$$\frac{26}{50} \quad \frac{29}{27} \quad \frac{60}{23} \quad \frac{50}{16} \quad \frac{47}{10} \quad \frac{43}{5} \quad \frac{50}{13} \quad \frac{56}{19} \quad \frac{63}{29} \quad \frac{20}{39} \quad \frac{83}{50}$$

$$\frac{05}{50} \quad \frac{14}{27} \quad \frac{53}{22} \quad \frac{55}{18} \quad \frac{46}{10} \quad \frac{41}{5} \quad \frac{47}{11} \quad \frac{54}{19} \quad \frac{56}{25} \quad \frac{60}{36} \quad \frac{65}{50}$$

$$\frac{91}{50} \quad \frac{10}{27} \quad \frac{51}{20} \quad \frac{46}{12} \quad \frac{39}{5} \quad \frac{46}{14} \quad \frac{57}{17} \quad \frac{60}{22} \quad \frac{43}{25} \quad \frac{31}{27} \quad \frac{31}{37} \quad \frac{71}{50}$$

$$\frac{30}{50} \quad \frac{22}{26} \quad \frac{55}{21} \quad \frac{58}{15} \quad \frac{46}{10} \quad \frac{41}{5} \quad \frac{44}{11} \quad \frac{59}{18} \quad \frac{51}{24} \quad \frac{22}{29} \quad \frac{16}{37} \quad \frac{23}{50}$$

$$\frac{56}{50} \quad \frac{58}{31} \quad \frac{57}{23} \quad \frac{67}{18} \quad \frac{52}{12} \quad \frac{42}{5} \quad \frac{47}{13} \quad \frac{67}{19} \quad \frac{56}{24} \quad \frac{28}{29} \quad \frac{25}{41} \quad \frac{32}{50}$$

Sta.	+	π	-	Elev.
		970.75		
97				65.3
+50				65.3
+80				65.3
98				65.4
+50				65.4
99				65.4
T.P.	10.77	976.03	4.99	965.76
+30				65.2
100				64.9
+50				64.6
101				64.0
+50				63.1
102				62.0
T.P.	6.22	968.56	13.69	967.34

LTC

A

RT

$$\frac{5.8}{50} \quad \frac{6.7}{26} \quad \frac{7.1}{25} \quad \frac{7.3}{16} \quad \frac{6.0}{11} \quad \frac{5.0}{50} \quad \frac{5.5}{13} \quad \frac{6.9}{18} \quad \frac{7.0}{26} \quad \frac{7.2}{50}$$

$$\frac{4.9}{50} \quad \frac{6.4}{26} \quad \frac{6.7}{24} \quad \frac{8.5}{16} \quad \frac{5.8}{11} \quad \frac{5.0}{50} \quad \frac{6.1}{12} \quad \frac{8.7}{18} \quad \frac{12.4}{22} \quad \frac{12.4}{36} \quad \frac{11.6}{50}$$

$$\frac{4.8}{50} \quad \frac{6.0}{27} \quad \frac{7.3}{22} \quad \frac{7.7}{15} \quad \frac{5.7}{12} \quad \frac{5.0}{50} \quad \frac{6.0}{13} \quad \frac{11.5}{18} \quad \frac{14.0}{27} \quad \frac{13.7}{40} \quad \frac{13.3}{50}$$

$$\frac{4.8}{50} \quad \frac{6.1}{26} \quad \frac{8.0}{21} \quad \frac{7.5}{16} \quad \frac{5.4}{10} \quad \frac{4.9}{50} \quad \frac{5.8}{12} \quad \frac{10.7}{18} \quad \frac{13.1}{23} \quad \frac{14.0}{36} \quad \frac{13.4}{50}$$

$$\frac{3.2}{50} \quad \frac{4.3}{24} \quad \frac{5.8}{16} \quad \frac{5.2}{10} \quad \frac{4.9}{50} \quad \frac{5.4}{11} \quad \frac{7.9}{20} \quad \frac{8.6}{28} \quad \frac{2.7}{50}$$

10th Hdr
NO CRED

$$\frac{0.8}{50} \quad \frac{0.8}{24} \quad \frac{5.4}{17} \quad \frac{5.4}{11} \quad \frac{4.9}{50} \quad \frac{5.5}{12} \quad \frac{4.3}{17} \quad \frac{2.0}{20} \quad \frac{2.1}{30} \quad \frac{3.0}{50}$$

$$\frac{5.5}{50} \quad \frac{4.5}{24} \quad \frac{11.0}{14} \quad \frac{10.8}{50} \quad \frac{11.0}{10} \quad \frac{11.5}{13} \quad \frac{11.0}{17} \quad \frac{6.4}{28} \quad \frac{4.0}{33} \quad \frac{3.5}{40} \quad \frac{4.0}{50}$$

$$\frac{7.6}{50} \quad \frac{5.4}{28} \quad \frac{9.6}{23} \quad \frac{11.5}{16} \quad \frac{11.5}{17} \quad \frac{11.1}{19} \quad \frac{11.3}{34} \quad \frac{1.0}{36} \quad \frac{1.3}{45} \quad \frac{1.6}{50}$$

$$\frac{11.7}{50} \quad \frac{7.1}{29} \quad \frac{7.5}{20} \quad \frac{11.7}{15} \quad \frac{11.4}{50} \quad \frac{11.6}{11} \quad \frac{11.6}{14} \quad \frac{4.4}{22} \quad \frac{2.4}{39} \quad \frac{3.5}{50}$$

$$\frac{12.2}{50} \quad \frac{9.4}{32} \quad \frac{7.4}{20} \quad \frac{11.3}{15} \quad \frac{12.5}{11} \quad \frac{12.0}{50} \quad \frac{12.2}{13} \quad \frac{5.5}{25} \quad \frac{5.4}{40} \quad \frac{6.4}{50}$$

$$\frac{12.8}{50} \quad \frac{7.8}{31} \quad \frac{8.0}{20} \quad \frac{13.1}{12} \quad \frac{12.9}{50} \quad \frac{13.0}{8} \quad \frac{13.4}{11} \quad \frac{12.4}{13} \quad \frac{8.7}{22} \quad \frac{7.5}{33} \quad \frac{9.0}{42} \quad \frac{9.3}{50}$$

$$\frac{13.7}{50} \quad \frac{11.7}{32} \quad \frac{9.7}{25} \quad \frac{10.1}{19} \quad \frac{14.4}{12} \quad \frac{14.0}{50} \quad \frac{14.2}{12} \quad \frac{13.1}{16} \quad \frac{10.9}{21} \quad \frac{10.6}{36} \quad \frac{11.4}{42} \quad \frac{11.7}{50}$$

Sta.	+	π	-	Elev.
		968.56		
107+50				60.8
103				59.5
+50				58.6
T.P.	4.11	967.47	10.20	58.36
104				57.7
+50				56.6
105				55.6
+24				55.3
+33				55.2
+46	Co. Rd. "E"			55.0
B.M.			7.90	54.57

L.T.

E

R.T.

$$\frac{8.7}{50} \quad \frac{6.5}{30} \quad \frac{5.1}{24} \quad \frac{6.1}{16} \quad \frac{8.7}{11} \quad \frac{7.8}{14} \quad \frac{8.7}{14} \quad \frac{5.8}{20} \quad \frac{5.7}{29} \quad \frac{4.8}{35} \quad \frac{5.5}{50}$$

$$\frac{11.3}{50} \quad \frac{8.8}{23} \quad \frac{7.7}{20} \quad \frac{8.8}{16} \quad \frac{9.5}{11} \quad \frac{9.1}{11} \quad \frac{9.4}{11} \quad \frac{9.4}{14} \quad \frac{8.8}{16} \quad \frac{6.8}{20} \quad \frac{5.4}{31} \quad \frac{4.8}{35} \quad \frac{5.3}{50}$$

$$\frac{14.6}{50} \quad \frac{12.6}{27} \quad \frac{11.2}{23} \quad \frac{11.0}{18} \quad \frac{10.8}{15} \quad \frac{10.0}{15} \quad \frac{10.5}{15} \quad \frac{8.2}{19} \quad \frac{6.7}{35} \quad \frac{5.5}{37} \quad \frac{5.8}{50}$$

$$\frac{11.2}{50} \quad \frac{9.5}{27} \quad \frac{7.2}{17} \quad \frac{5.6}{13} \quad \frac{4.8}{11} \quad \frac{5.2}{11} \quad \frac{5.7}{17} \quad \frac{4.0}{24} \quad \frac{3.0}{29} \quad \frac{1.4}{39} \quad \frac{1.4}{50}$$

$$\frac{12.4}{50} \quad \frac{11.3}{31} \quad \frac{10.4}{21} \quad \frac{6.7}{11} \quad \frac{5.9}{11} \quad \frac{6.4}{11} \quad \frac{8.5}{16} \quad \frac{8.0}{24} \quad \frac{6.4}{28} \quad \frac{5.4}{37} \quad \frac{4.9}{50}$$

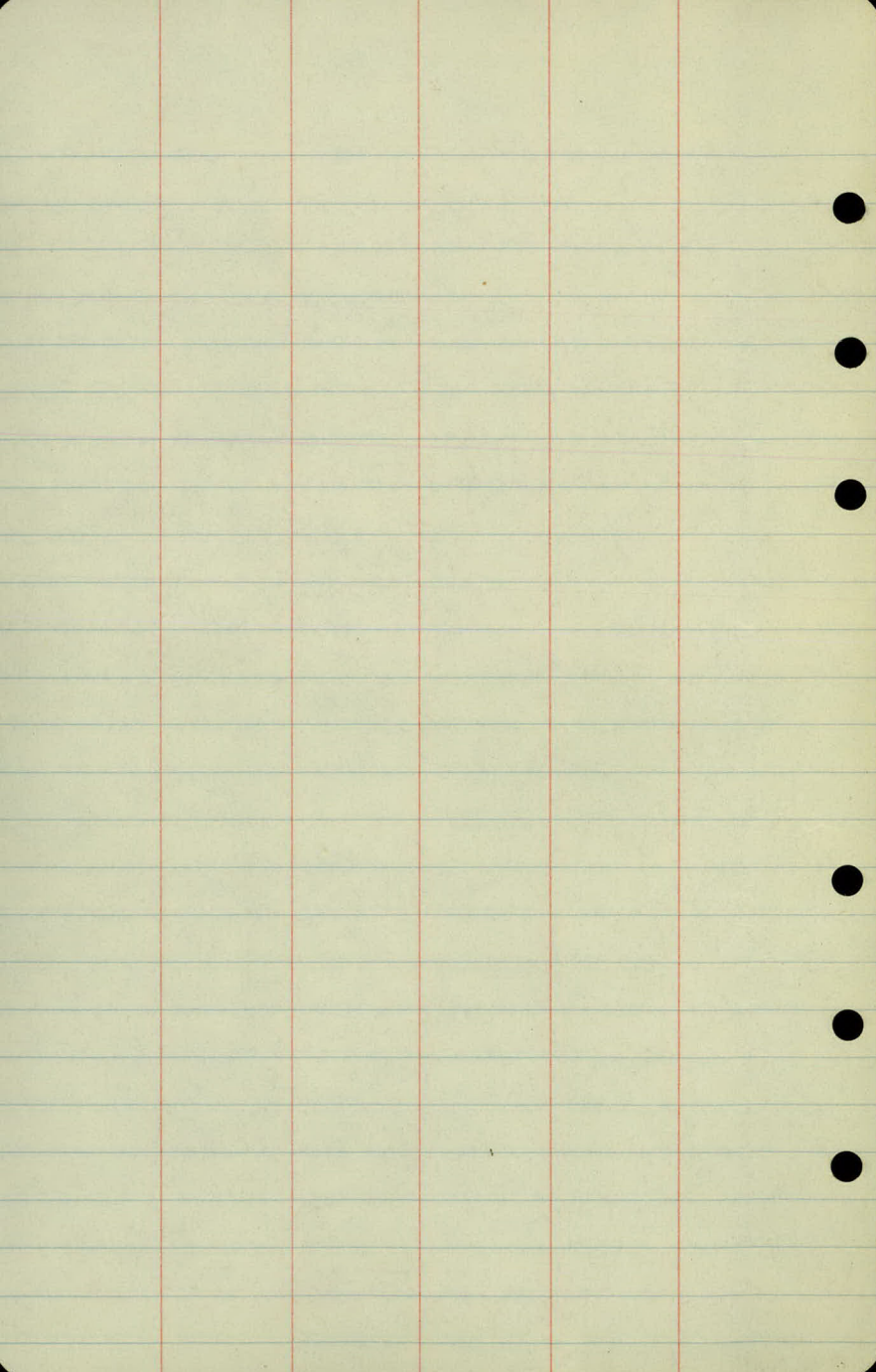
$$\frac{11.5}{50} \quad \frac{11.5}{31} \quad \frac{10.6}{18} \quad \frac{7.4}{17} \quad \frac{6.9}{11} \quad \frac{7.4}{11} \quad \frac{8.8}{18} \quad \frac{8.1}{27} \quad \frac{6.7}{46} \quad \frac{6.7}{50}$$

$$\frac{11.2}{50} \quad \frac{10.4}{30} \quad \frac{8.1}{20} \quad \frac{7.2}{17} \quad \frac{7.7}{17} \quad \frac{8.1}{18} \quad \frac{9.4}{27} \quad \frac{8.7}{50}$$

$$\frac{7.5}{50} \quad \frac{7.5}{17} \quad \frac{7.3}{17} \quad \frac{7.9}{28} \quad \frac{7.5}{50}$$

$$\frac{7.4}{100} \quad \frac{7.7}{50} \quad \frac{7.5}{50} \quad \frac{6.7}{50} \quad \frac{5.2}{100}$$

Spike in 20" Oak S.E. Cor. Bullard & E.



Bellaire Ave.

Bench Levels.

{ Bratager
Wilke
Gillen

3/6/37

Sta	+	-	Elev.
B.M.	1.30	1028.91	1027.61 ✓
	0.14	1016.83	12.22 1016.69
B.M.	8.47	1016.83	8.47 1008.36 ✓
	0.50	1004.69	12.64 1004.19
	0.45	991.37	13.77 990.92
	1.13	980.26	12.24 979.13
B.M.	4.98	980.26	4.98 975.28 ✓
	11.17	988.72	2.71 977.55
	0.56	981.31	7.97 980.75
B.M.	5.79	981.31	5.79 975.52
	1.92	970.07	13.16 968.15
	5.31	970.52	4.86 965.21
	0.11	961.13	9.50 961.02
B.M.		6.56	954.57 954.73

Lut

L

RL

Top of Monument, N.E. Cor., Bellairs
& Co. Rd. E.

Spk in 4" Scrub oak 150' Rt Sta 61+05

150' Rt. Sta. 72+42

Spk in Fence Post 200' Rt Sta

Spk in 24" Elm

Spike in 24" Elm. 30' Rt. Sta. 84+20

Spk in 20" Oak S.E. Cor Bellairs & F"

Sta.

+

π

-

Elev.

Recommendations

52+75 - No culvert Required

71+47 - $\frac{1}{2}$ Culu. in p. 15" Pl. 24"

81+79 - Ent. Rt. P. 15" X 20' from Sta. 71+47

83+88 - Field Ent Rt. Pl. 15" X 18' " " "

92+33 - Ent. Rt. no culv. required.

105+20 $\frac{1}{2}$ no culv. required.

