

Book # 86 - Dr 8

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

_____ Plan _____ Survey

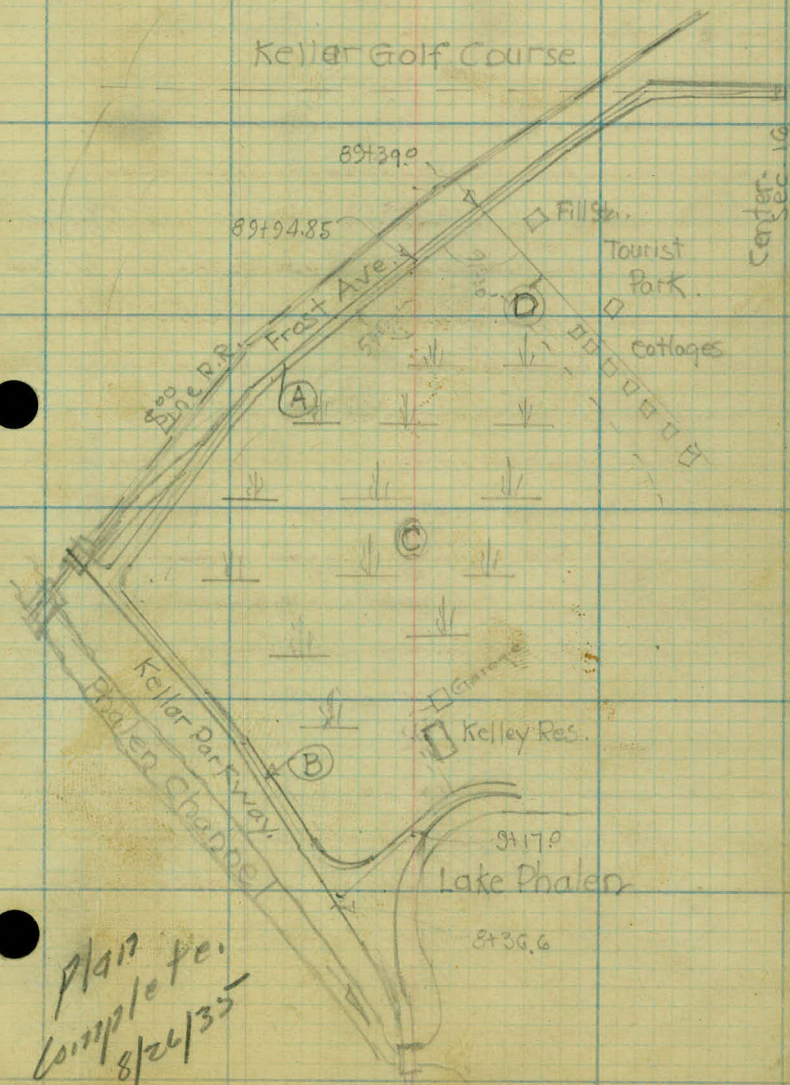
_____ KELLEY SWAMP _____

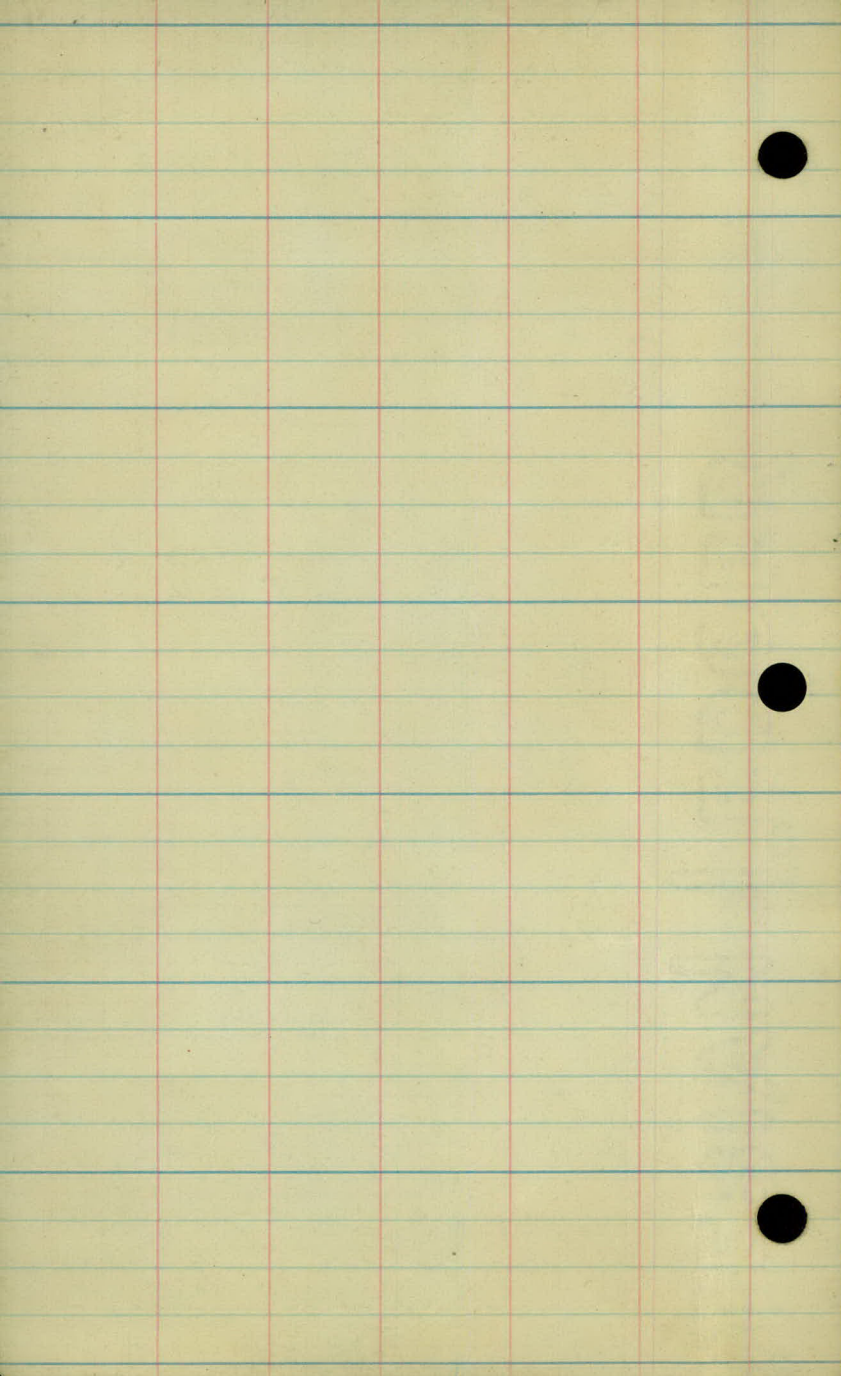
From _____ To _____

Road Acc't. No. _____

Date Filed Sept. 1935 File 8 _____

Plan Survey - Filling of Marsh
Junc. of Frost Ave. & Keller Pkwy.





Alignment.

Sta. Point Angle
Lt. Rt.

Line (A)

97+55 = 2 Kellar Pkwp Paving.

97+53.8 = P.I. = 0+00

93+17.47 P.T. 9°02'

10° C. Lt.

Δ 18°04'

P.I. 92+28

T. 91.2

91+36.8 P.C. 0°00'

L. 180.6

89+94.85 P.O.T.

89+31.0 P.O.T.

89+21.37 P.T. 3°22'

(Taken from Frost Av. Notes)

3° C. Lt.

Δ 6°44' Lt.

P.I. 88+09.3

86+96.93 P.C. 0°00'

T. 112.37

L. 222.44

Line (B)

$82^{\circ} - 43'$

$97^{\circ} 17'$

Line (C)

$59^{\circ} 53'$

$45^{\circ} 17'$
 $56^{\circ} 38'$
 $15^{\circ} 13'$

Line (D)

640

$90^{\circ} 30'$

Ramsey

Edoo Line

Co. Prop.

95.75

Kelly Prop.

96.78

Stone Sparrow
 $82^{\circ} 33'$
 $90^{\circ} 04'$
 $1^{\circ} 13'$

Edoo Line

Sta. Point Angle
Lt. Rt.

Line (B)

8+36.6 P.I. $111^{\circ}24'$

4+65.9 P.T. $4^{\circ}24'$

4° C. R.T.

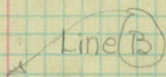
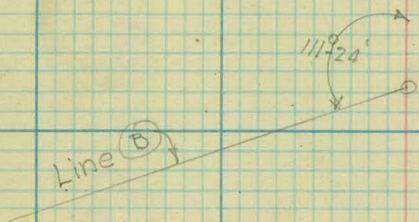
$\Delta 8^{\circ}48'$

P.I. = 3+56.1

T. 110.2

2+45.9 P.C. $0^{\circ}00'$ L. 220.0

0+00 = 97+53.8 - First Ave.



Line A

Sta.

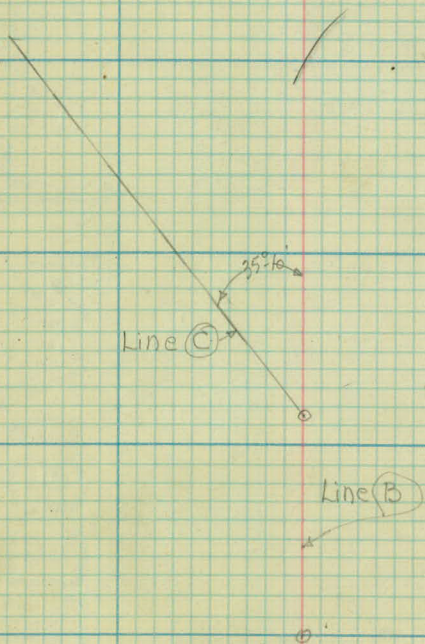
Point

10199.4

9+17.0

P.O.T.

8136.6



Line (C)

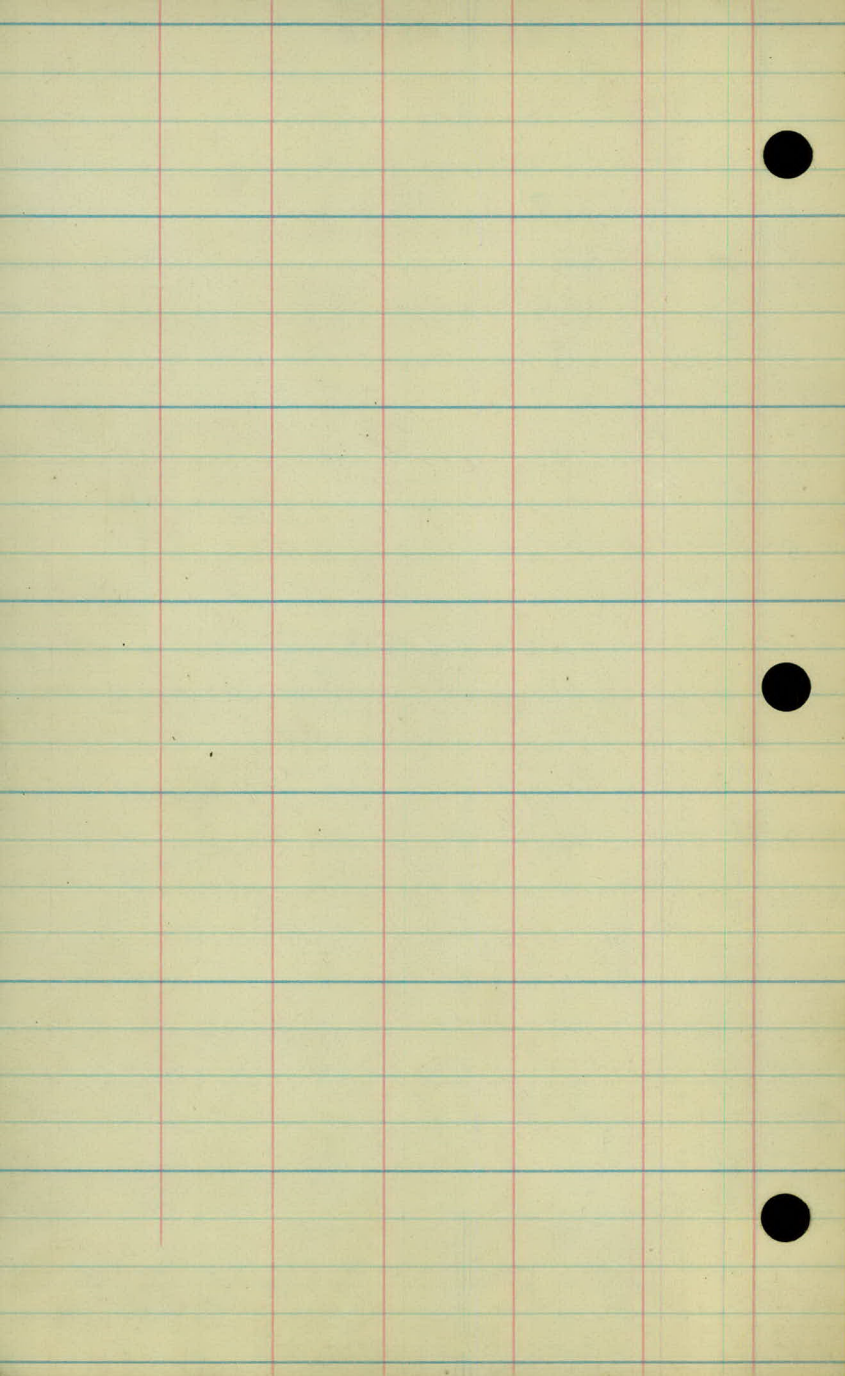
3to

2to

1481 - 4.88 Rt = Slope Pipe Mon.

1to

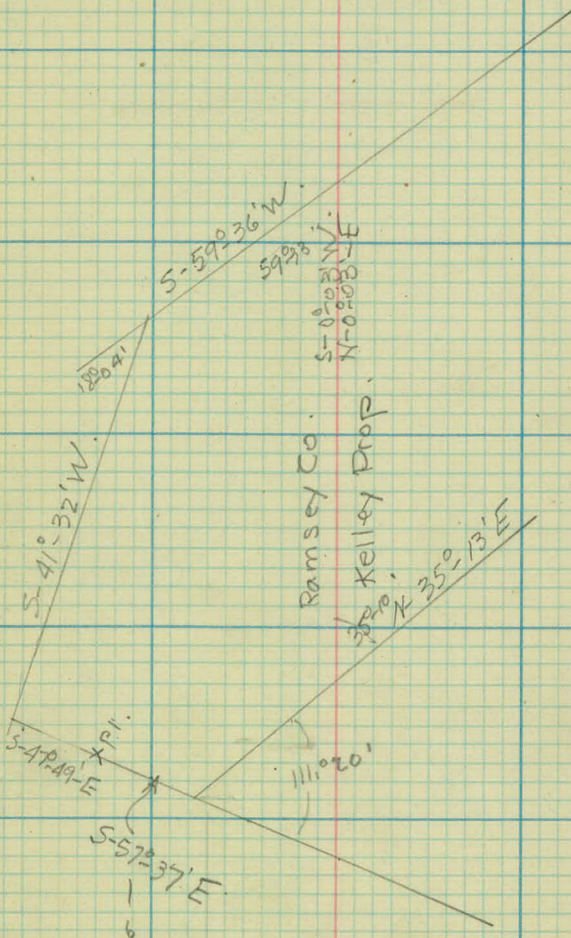
07005 9+17 (B)inc

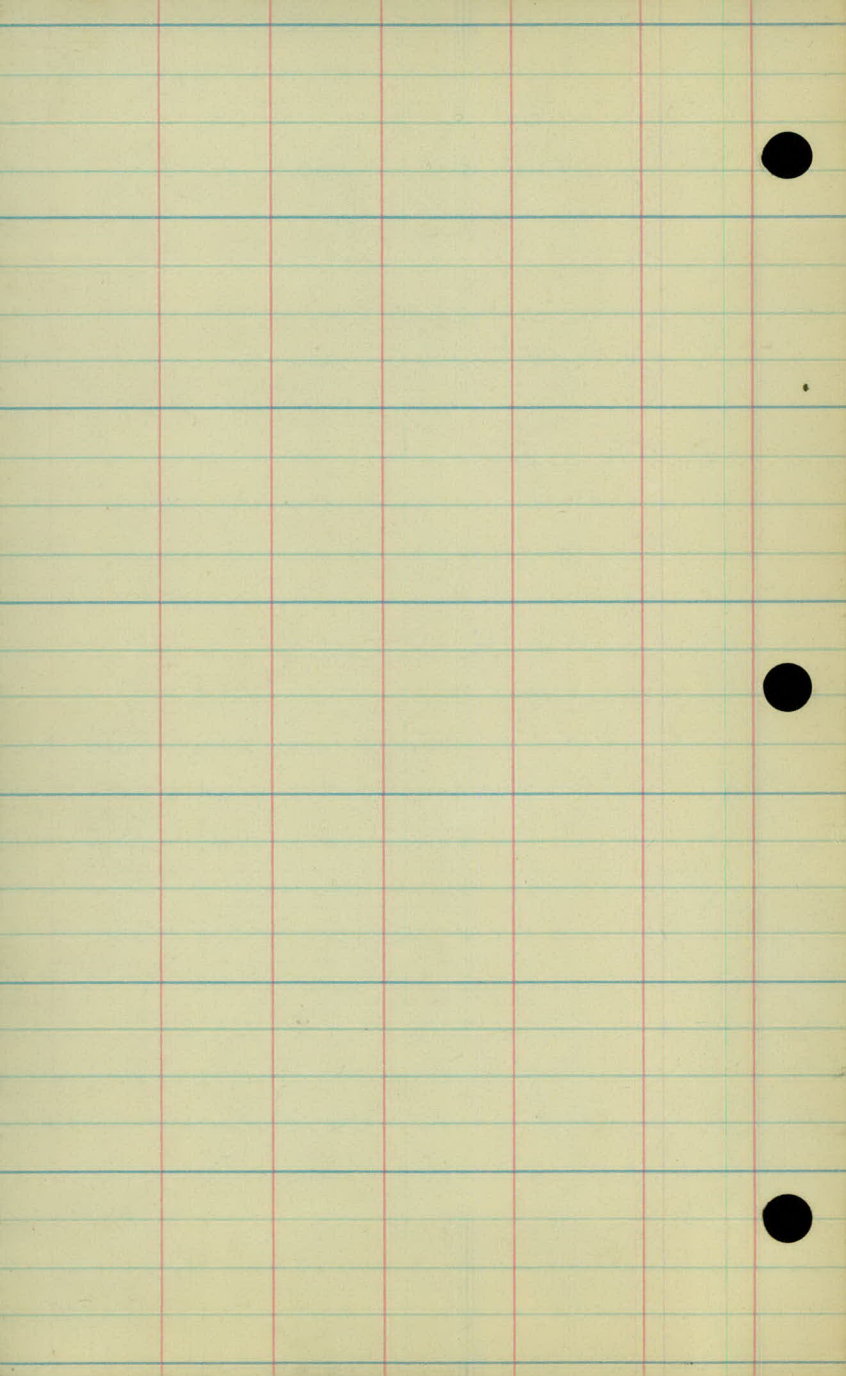


5-A

日

Sec. 6





Topography/-

Line (A)

93

"

92

91

90

+44.85 = Lot Line

+44-2 Rd. to Tour. Park

89

88

Note: See X-Sections
for Waters edge of
Marsh.

Paul 10'
G.R. 175'

+89-outlet-24" R₃-30'

+128-10" C.M. 14'-C.M. 75' 1/4

Paul 118'
G.R. 19.5'

+50 Paul 175
G.R. 20.

+03-P.R. 32'
Paul 17.5
G.R. 20

+50-Paul 115
G.R. 18

Paul 10'
G.R. 175

Line (C)

+07-R.P. 27'
+06-Beg. G.R. 17'
Paul 10'

+08-10" Oak 42
+05-R.D. 27

+74-Lig. Pole 43

+42-Grp Pump 41

+33-Grp Pump 46'

+22-S.V. cor. Fill 46

+07-N.V. cor. Fil. Ste 51
Paul 10'

+62-E.G.R. 135

+13-R.P. 29

Paul 10
G.R. 135

Paul 10' 7
Paul 19-24'-51'

+77-Inlet 71'

+50 Paul 10
Paul 19-24'-35

Paul 10'
Paul 19.23'

+50-Paul 10
Bl. Top 135

Paul 10'
Beg. Conn. Rth.

conc. Post Chain

+59-23'

one course conc.

Kelle/Prop
Ramsey Co.
Prop

Wood G.R.

Last Paul

Black Top

To Inlet

cont'd - Next page

$$97 + 53.8 = 0700$$

97

96

95

94

See next page.

55' 11" / 1' 1" 55' 11" / 1' 1" 55' 11" / 1' 1"

Phalen Channel

Line (B) — To Lake Phalen — To Maple St.

±14.67 Beg. Rod. Pav. 16'

G.R. 22'

±70-Outlet 18" C.V. 40.5

±61-Pav. 11.3

±42-Pav. 10.5

±32-P.P. 44'

±15-12" Oak-35' Pav. 10'

Beg. Wood Cr. ±87 E. Conc G.R. 17'

Pav. 10'

G.R. 17'

±75-Conc Spill. 24'

±9-P.P. 30'

±75-Conc Spill. 24'

±19-P.P. 30'

±14.67 Beg. Rod. Pav. 16' Wall-26'

±70-C.B. 215'

±61-Pav. 11.3

±42-Pav. 10.5

Wall-22' Pav. 10'

Pav. 10'

Wall-22'

±35-Rub. Wall-72'

±41-B.G.R. 31'

Beg. Rub. Wall

Line (A)

To Maple

Line (B)

5

4

(Place bid.) 36"

or two 24" @ each end

3

2

1

040

Pav. 16'

Pav. 16'

(9)

Pav. 16'

Pav. 16'

+95-P.R. 18'

+59-Cons. Spill. 26'



Pav. 16'

Pav. 16'

W.E. Creek - 45'

+58-Group SW Willow

+51-P.R. 21'

+76-Cons. Spill. 27'



+16-P.R. 17'



W.E. Cr. 36'

+55-E. Cr. R. 23'

Pav. 16' G.R. 23'

+84-P.R. 19'



+48-Inlet culv. 68'

+48-C.B. 14'

+35-End. Rad. culv. 16'
G.R. 23'



Tarvia
Paving
Conc. gutters.

Phaler Channel

Pav. 16'

W.E. Cr. 37'

(Line A)

Line (B)

11

10

+172.010 (Lot Line 35° Left)
See next page.

9

840



+366-PI = $\Delta 111^{\circ} 24'$

8

7

6

Ramsel
Co. Prop.

G.R. 2'

+99.4 - Pav. 20

+63 - Ent.

+50 - Pav. 12'

+33 - 10' 0" x 23'

+20 - 10' 0" x 21'

+16 - R.R. 22'

Pav. 16'

+51 - End Rad. 16'

2 Beg. G.R. 19'

Pav. 36'

Kelly
Prop.

Lot
Line

Line (C)

+35° 10'

32'

+50 - Pav. 21'

Pav. 16'

+50 - Pav. 20'

- Sta. 9+17.0 = 0+0 on Lot line.
Pav. 33

+36.6 Pav. 65'

111° 24'

PI = +36.6

+36.6 Pav. 17'

+10 - Pav. 16'

W.E.C. 54

+70 - P.P. 39'

+50 - Pav. 21'

+23 - Beg. Rad. 16'

+19 - Conc. Sp. 11-78

80° Curve

Pav. 16'

+99 - C.B. 14

+35 - 15' - 11-24

Pav. P.D. 18

Line (C)

2+50

2

,

0/0 = 9+17.0

2+50

2+00

1
 +59-14" oak-76'
 +54-12" oak-27'
 +51-12" oak-65'
 +43-14" oak-21'
 +24-14" oak-76'
 +18-8" oak-12'
 +01-10" oak-30'

+28.4-E. Paving-

8436.6

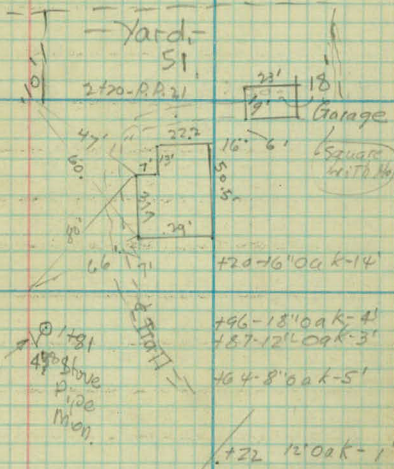
72.111

-3590'

(B)

Line

9.17



Line (D)

6

5

4

3

2

1

0% = ± frost Ave Paving Sta. 89+39.0

All-Cott-12.5x16.5

Cottage # one 12

121-Cor. Cottage
29'

+88 19. 16x8'

+57-2 Waggon trail

Trail 1 = 0.0

Scattered
oaks

+28 Mens-19'

Trail 1 = 10'

+99-56 back 75'

7x14

(See X-Notes for Tree Line South.)

+52-Cott-23'

+14-Cott-19'

+55-Cott-15'

+76-Cott-12'

+17-Cott-14'

Trail = 2'

+98-12" W. Oak 45

+82-12" Oak 44

+80-12" Oak 48

+56-Trail-43

+56-18" Oak-60

+31-24" Oak-46

+23-24" Oak-41

Trail-10

+27-18" Oak-39

+76-24" " -15'

+58-12" " -21'

+56-14" " -49'

+24-10" Oak-75

+10-30" Oak-33

+70-19" Oak-56

Trail 0.0

Trail-6'

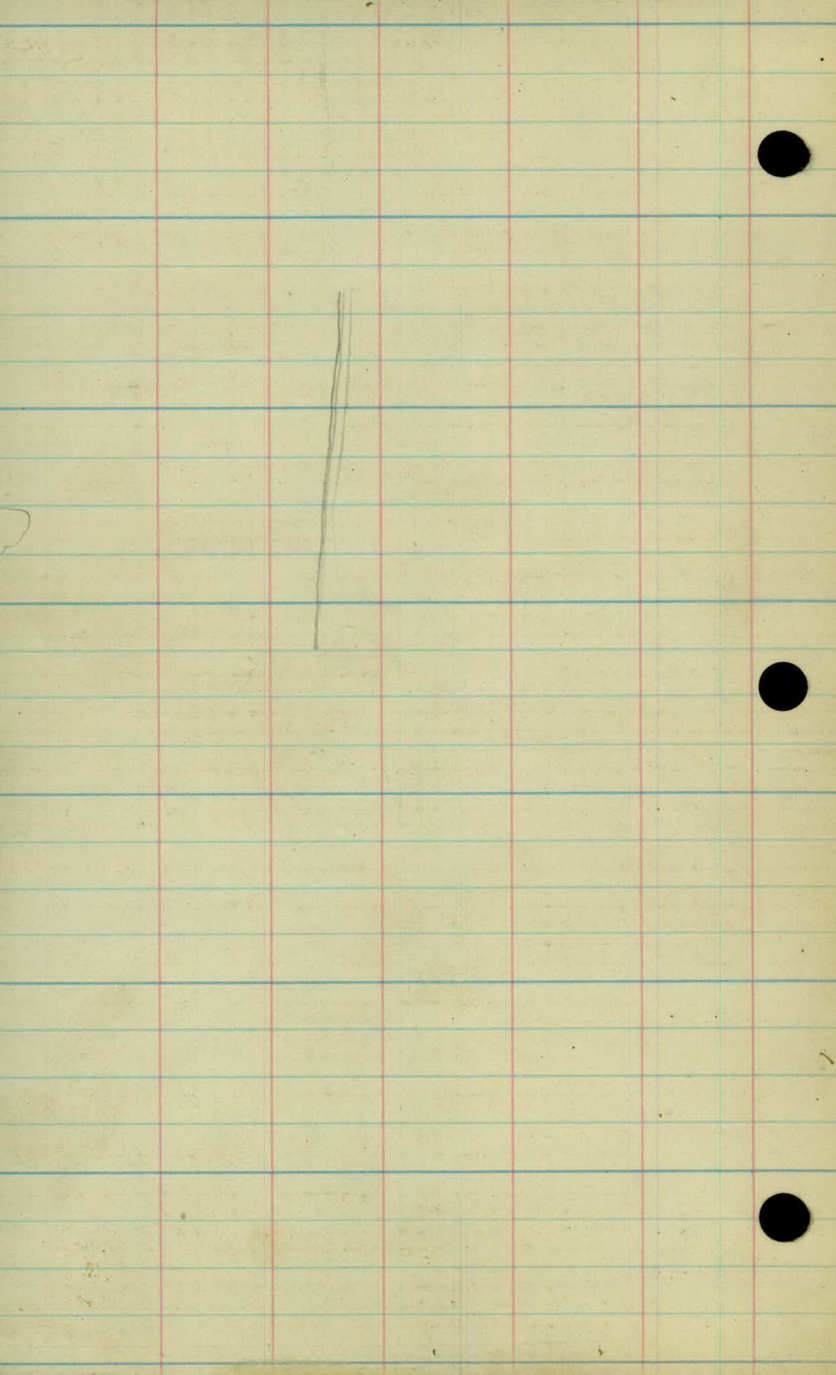
+62-Cor. Fill-Sta. 15.8

+46-Cor. Rump.

+62-17" Oak-50'

+62-17" Oak-50'

90.30



Levels & Cross-sections

- Stadia -

Sta.	+	π	-	Elev.
B.M.	1.23	908.71		907.48
T.P.	0.20	896.57	12.34	896.37
✓	1.01	884.32	13.26	883.31
B.M.	1.38	876.52	9.18	875.14

X-sections @ Line

89+00

+74

90

91

T.P.	3.84	870.15	10.21	866.31
------	------	--------	-------	--------

92

93

94

92

95

96

96+67

97+146 1909 Rad. cut-off

Sta.	+	π	-	Elev.
		870.15		
T.P.	4.30	869.11	5.34	864.81

X-section (B) Line

0+35

1+0

2+0

3+0

4+0

5+0

6+0

7+0

T.P.	10.24	874.60	4.75	864.36
------	-------	--------	------	--------

8126.6

60.1	62.6	63.8	63.9	63.9	64.2	62.3	60.3	58.6
9.0	6.5	5.3	5.2	5.2	4.9	6.8	8.8	10.5
WE = 82	75	16		16	19	30	34	36 = WE

59.6	63.3	63.7	63.9	63.7
9.5	5.8	5.4	5.2	5.4
50	40	16		16

59.6	60.1	63.3	63.7	64.1	63.7
9.5	9.0	5.8	5.4	5.0	5.4
34	31	24	16		16

2476 = 5.5	5.5	63.6	64.1	64.1	63.4	59.1	58.6
	5.4	63.5	5.0	5.0	5.7	10.0	10.5
	27	5.5	5.0	16	31	38	39 = W.E.
	32	23	16				

60.1	59.5	63.6	63.8	64.3
9.0	7.6	5.5	5.3	4.8
W.S.	30	23	16	

59.6	59.1	63.6	64.0	64.3	64.1
9.5	9.0	5.5	5.1	4.8	5.0
32	30	22	16		16

62.9	61.4	62.1	61.8	64.3	64.4	64.5
6.2	7.7	7.0	7.3	4.8	4.7	4.6
76	87	50	76	20	16	

59.3	54.5	64.1	64.2	64.4
9.8	9.6	5.0	4.9	4.7
60	30	21	16	

7719- 2 Spill/Way / 16

65.0
96

Sta.	+	π	-	Elev.
		874.60		

X-sections (C) Line

oto = (9+17 - (B) Line)

0+50

1+0

1+50

1+70

1+80

2+0

T.P.	8.33	876.47	6.46	868.14
------	------	--------	------	--------

2+0

2+20

2+50

Lt.

L

24

16

65.3

9.3

60.3

62.5

63.6

64.6

65.0

65.0

$$\begin{array}{r} 14.3 \\ 54 \end{array}$$

$$\begin{array}{r} 12.1 \\ 41 \end{array}$$

$$\begin{array}{r} 11.0 \\ 15 \end{array}$$

$$\begin{array}{r} 10.0 \\ 10 \end{array}$$

$$\begin{array}{r} 9.6 \\ 11.0 \end{array}$$

$$\begin{array}{r} 9.6 \\ 15 \end{array}$$

← PAU →

59.5

60.3

61.7

62.5

65.0

65.0

$$\begin{array}{r} 15.1 \\ 90 \end{array}$$

$$\begin{array}{r} 14.3 \\ 50 \end{array}$$

$$\begin{array}{r} 12.9 \\ 28 \end{array}$$

$$\begin{array}{r} 12.1 \\ 10 \end{array}$$

$$\begin{array}{r} 9.6 \\ 43 \end{array}$$

$$\begin{array}{r} 9.6 \\ 48 \end{array}$$

61.6

62.5

65.0

67.8

65.4

64.0

62.3

61.9

62.8

$$\begin{array}{r} 13.0 \\ 100 \end{array}$$

$$\begin{array}{r} 12.1 \\ 77 \end{array}$$

$$\begin{array}{r} 9.6 \\ 56 \end{array}$$

$$\begin{array}{r} 6.8 \\ 28 \end{array}$$

$$\begin{array}{r} 9.2 \\ 10 \end{array}$$

$$\begin{array}{r} 10.6 \\ 6 \end{array}$$

$$\begin{array}{r} 12.3 \\ 24 \end{array}$$

$$\begin{array}{r} 12.7 \\ 48 \end{array}$$

$$\begin{array}{r} 11.8 \\ 74 \end{array}$$

= 4 Drive

67.5

70.9

71.9

67.6

$$\begin{array}{r} 7.1 \\ 70 \end{array}$$

$$\begin{array}{r} 3.7 \\ 45 \end{array}$$

$$\begin{array}{r} 5.7 \\ 20 \end{array}$$

$$\begin{array}{r} 7.0 \\ 10 \end{array}$$

69.9

$$\begin{array}{r} 4.7 \\ 70 \end{array}$$

60.8

61.7

63.0

70.0

72.4

72.5

72.1

$$\begin{array}{r} 13.8 \\ 130 \end{array}$$

$$\begin{array}{r} 12.9 \\ 115 \end{array}$$

$$\begin{array}{r} 11.6 \\ 100 \end{array}$$

$$\begin{array}{r} 4.6 \\ 70 \end{array}$$

$$\begin{array}{r} 1.8 \\ 43 \end{array}$$

$$\begin{array}{r} 2.1 \\ 70 \end{array}$$

$$\begin{array}{r} 2.5 \\ 10 \end{array}$$

$$\begin{array}{r} 13.8 \\ 39 \end{array}$$

$$\begin{array}{r} 14.0 \\ 65 \end{array}$$

= 4 Drive

Top Steve Pipe Mon. 4.33 Et sta 1481

62.7

62.5

$$\begin{array}{r} 13.8 \\ 39 \end{array}$$

$$\begin{array}{r} 14.0 \\ 65 \end{array}$$

= 4 Drive

60.5

61.6

68.0

72.3

72.4

71.7

65.9

62.9

62.7

$$\begin{array}{r} 16.0 \\ 125 \end{array}$$

$$\begin{array}{r} 14.9 \\ 100 \end{array}$$

$$\begin{array}{r} 8.5 \\ 70 \end{array}$$

$$\begin{array}{r} 4.2 \\ 40 \end{array}$$

$$\begin{array}{r} 4.1 \\ 10 \end{array}$$

$$\begin{array}{r} 4.8 \\ 9 \end{array}$$

$$\begin{array}{r} 10.6 \\ 31 \end{array}$$

$$\begin{array}{r} 13.6 \\ 48 \end{array}$$

$$\begin{array}{r} 13.8 \\ 59 \end{array}$$

= 4 Drive

60.9

63.5

63.1

63.8

$$\begin{array}{r} 15.6 \\ 72 \end{array}$$

$$\begin{array}{r} 13.0 \\ 70 \end{array}$$

$$\begin{array}{r} 13.4 \\ 70 \end{array}$$

$$\begin{array}{r} 12.7 \\ 41 \end{array}$$

= 4 Drive

66.4

$$\begin{array}{r} 10.0 \\ 10 \end{array}$$

= Top Brick N. side

63.3

Steps

$$\begin{array}{r} 13.20 \\ 10 \end{array}$$

NW. Cor. Res.

Sta.	+	π	-	Elev.
		876.47		
T.P.	4.33	867.16	13.64	862.83

3+0

T.P.	13.00	877.02	3.14	864.02
✓	13.68	889.75	0.95	876.07
T.B.M.			6.30	883.45
T.P.	1.22	881.58	9.39	880.36
B.M.			6.46	875.12
B.M.	1.29	876.43		875.14

(X-Sections @ Line)

Sta = 89+39 - @ Line

1+0

2+0

T.R.	9.99	883.42	3.00	873.43
------	------	--------	------	--------

3+0

4+0

H

E

Rt.

17

Top Rock near Kelley's.

54.9

$$\begin{array}{r} 7.3 \\ \hline 35 \end{array}$$

61.4

$$\begin{array}{r} 5.8 \\ \hline \end{array}$$

62.2

$$\begin{array}{r} 5.0 \\ \hline 34 \end{array}$$

62.4

$$\begin{array}{r} 4.8 \\ \hline 75 \end{array}$$

61.9

Paved entrance to Gar. 5.3

Top. 6x6 G.R. Post

Stoop of Cottage E. of Sta. 6 to (D)

60.1

Tree line

72.3

$$\begin{array}{r} 4.1 \\ \hline \end{array}$$

71.9

$$\begin{array}{r} 4.5 \\ \hline 22 \end{array}$$

69.3

$$\begin{array}{r} 7.1 \\ \hline 30 \end{array}$$

69.3

$$\begin{array}{r} 7.1 \\ \hline 33 \end{array}$$

60.6

$$\begin{array}{r} 15.8 \\ \hline 72 \end{array}$$

60.1

$$\begin{array}{r} 16.3 \\ \hline 79 = W.E. \end{array}$$

71.1

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

71.6

$$\begin{array}{r} 4.8 \\ \hline 22 \end{array}$$

69.6

$$\begin{array}{r} 15.8 \\ \hline 63 \end{array}$$

60.1

$$\begin{array}{r} 16.3 \\ \hline 72 = W.E. \end{array}$$

77.3

$$\begin{array}{r} 6.1 \\ \hline \end{array}$$

73.1

$$\begin{array}{r} 10.3 \\ \hline 33 \end{array}$$

61.6

$$\begin{array}{r} 21.8 \\ \hline 65 \end{array}$$

60.1

$$\begin{array}{r} 23.3 \\ \hline 90 = W.E. \end{array}$$

79.7

$$\begin{array}{r} 3.7 \\ \hline \end{array}$$

72.7

$$\begin{array}{r} 10.7 \\ \hline 35 \end{array}$$

61.0

$$\begin{array}{r} 22.4 \\ \hline 67 \end{array}$$

60.1

$$\begin{array}{r} 23.3 \\ \hline 88 = W.E. \end{array}$$

Tree line

883.42

7.09

887.25

3.26

880.16

540

T.D.

3.35

888.57

2.03

885.22

6

T

2.03

882.22

5.07

TreeLine

86.2	81.0	74.9	61.5	60.2
<u>1.1</u>	<u>6.3</u>	<u>12.4</u>	<u>25.8</u>	<u>27.1</u>
	29	49	83	100 = W.E.
87.7	77.9	69.4	62.6	61.5
<u>0.9</u>	<u>10.7</u>	<u>19.2</u>	<u>20.0</u>	<u>27.1</u>
	54	82	95 1/2	130 = W.E.

Point	A	Dist.		
B.M.	10.75	873.58		862.83

A@ 2+40 - (A) Line

Point in Marsh	0-00'	186'	14.1	859.5
W. Surface	✓	186'	13.48	860.1
Point in Marsh	✓	240'	14.0	859.6
✓	✓	330'	13.8	859.8
✓	358°	640'	13.7	859.9
✓	333°	589'	13.8	859.8
✓	334°	420'	13.8	859.8
✓	335°	230'	14.1	859.5

B.M.	6.85	869.68		862.83
------	------	--------	--	--------

A@ 11+00 - (B) Line

14' Oak	359°	32'	6.6	863.1
14' Oak	27°	55'	6.5	863.2
Con. Hedge & Yard	35-30°	88'	7.5	862.2
" " "	3-00°	191'	8.8	860.9
Pl. in Marsh	11-30°	290'	10.7	859.0
Reg. Rail Fence	68-10°	214'	4.6	865.1
± Pav.	75-30°	213'	5.5	864.2
Pt on Rail F. Line	42°	253'	8.3	861.4
End of Rail Fence	78-30°	206'	8.4	861.3
Pl. in Marsh	13-30°	380'	10.2	859.5

Sounding - 18' - no Bottom ✓

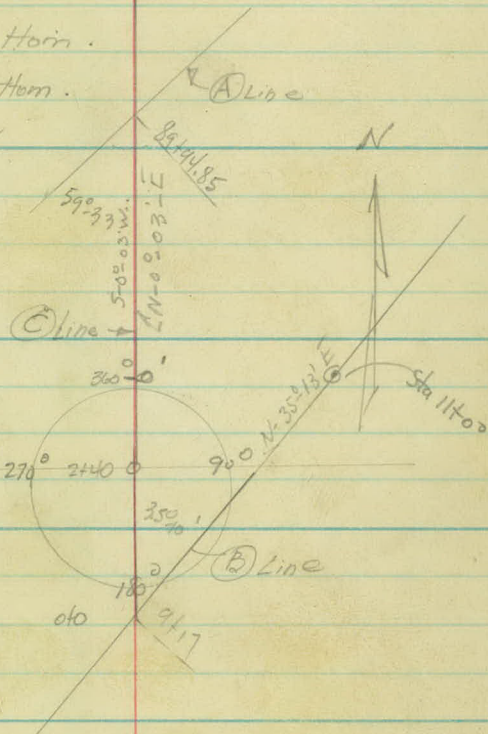
✓ 18' - no Bottom

✓ 18' - no Bottom

✓ 11' - Bottom.

✓ 18' - no Bottom.

✓ 18' - ✓



14' - no Bottom.

Bottom 8'

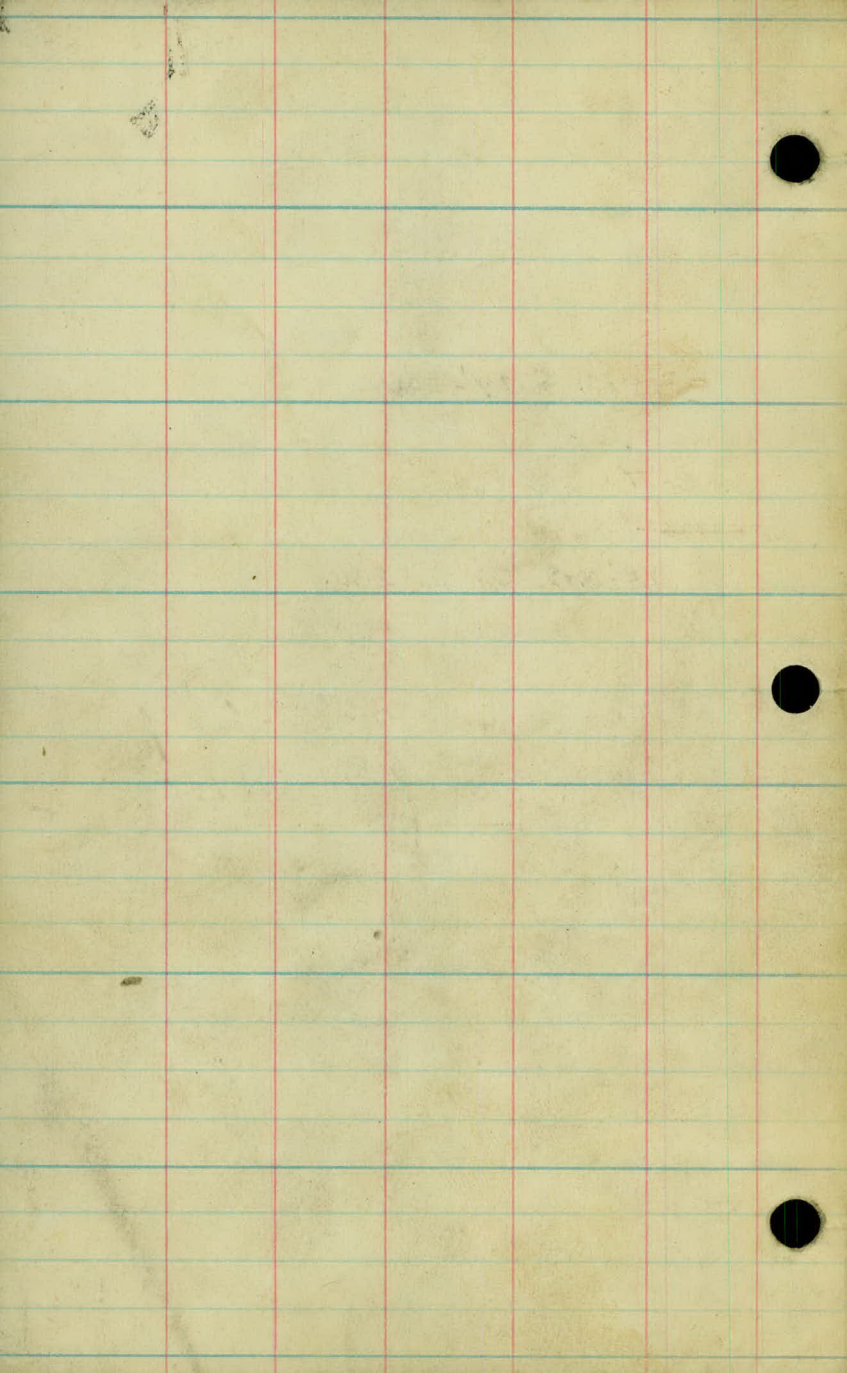
Point				
	A	773. 869.68 DIST		
S.W. Cor. Shed	32°-40'	376'		
N.W. ✓ ✓	31°-40'	380		
7.5° North to 18° East.				
Pt. in Marsh	14°-35'	456'	9.8	859.9
N.W. Cor. Co. H.	35°-50'	433'	6.8	862.9
S.W. Cor. Co. H.	37°-18'	430'		
N.E. Cor. Co. H.			0.0	869.68
Pt. in Marsh	74°-30'	358'	10.2	859.5
N.W. Cor. Co. H.	43°-50'	376'	8.2	861.5
S.E. Cor. Co. H.	45°-54'	374'	8.2	861.5
Pt. in Bank	49°-50'	420'	0.0	869.7
✓ ✓ ✓	61°-30'	376'	0.4	869.3
	61°-30'	331'	75	862.2

} 12'-N. & S. & 24'-E. & W.

No Bott.

~~No Bott.~~

14'-N. & S. and 76'-E. & W.



Kelleys Swamp
additional Topog.

- "D" Line -

See P. - 12

W. H. Carlson
Nov. 15, 1933

6

Timber 150'

5

4

3

3

2

1

oto

Timber Line 87

22

Set 00 15'

120
110'

Trail 16

188-14" Oak 7'

193-12" Oak 3'

150-Trail 30'

115-0 Oak 15'

111-10" Oak 16'

100-P.R. 13' (2 Trail 22')

150-Trail 35'

173-Cor. 50'

170-Cor. Brick's house 24'

Boiler Room

165-Water 18'

179-Cor. Kit + Bath 19'

112-24" Oak 28'

127-16" Oak 40'

127-24" Oak 50'

105-18" Oak 34'

100-Cor. 20'

109-P.R. 1'

188-16" Oak 35'

178-16" Oak 58'

170-18" Oak 65'

139-12" Oak 62'

120-16" Oak 60'

112-18" Oak 18'

190-24" Oak 50'

180-Water 50' 23'

170-16" Oak 42'

190-16" Oak 55'

122-18" Oak 35'

Sea King
Oak 15'

Trail

12

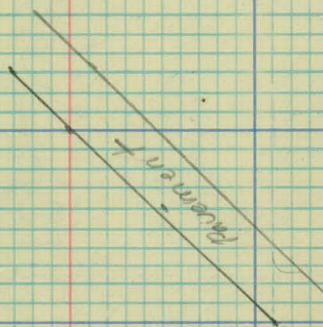
11

10

9

8

7



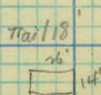
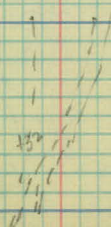
Cottages on
City Prop.

102-Cor. Cott. 2' 12' x 12'
on City Prop.



108-Cor. Cott. 8'

111- 22.5 to 12'

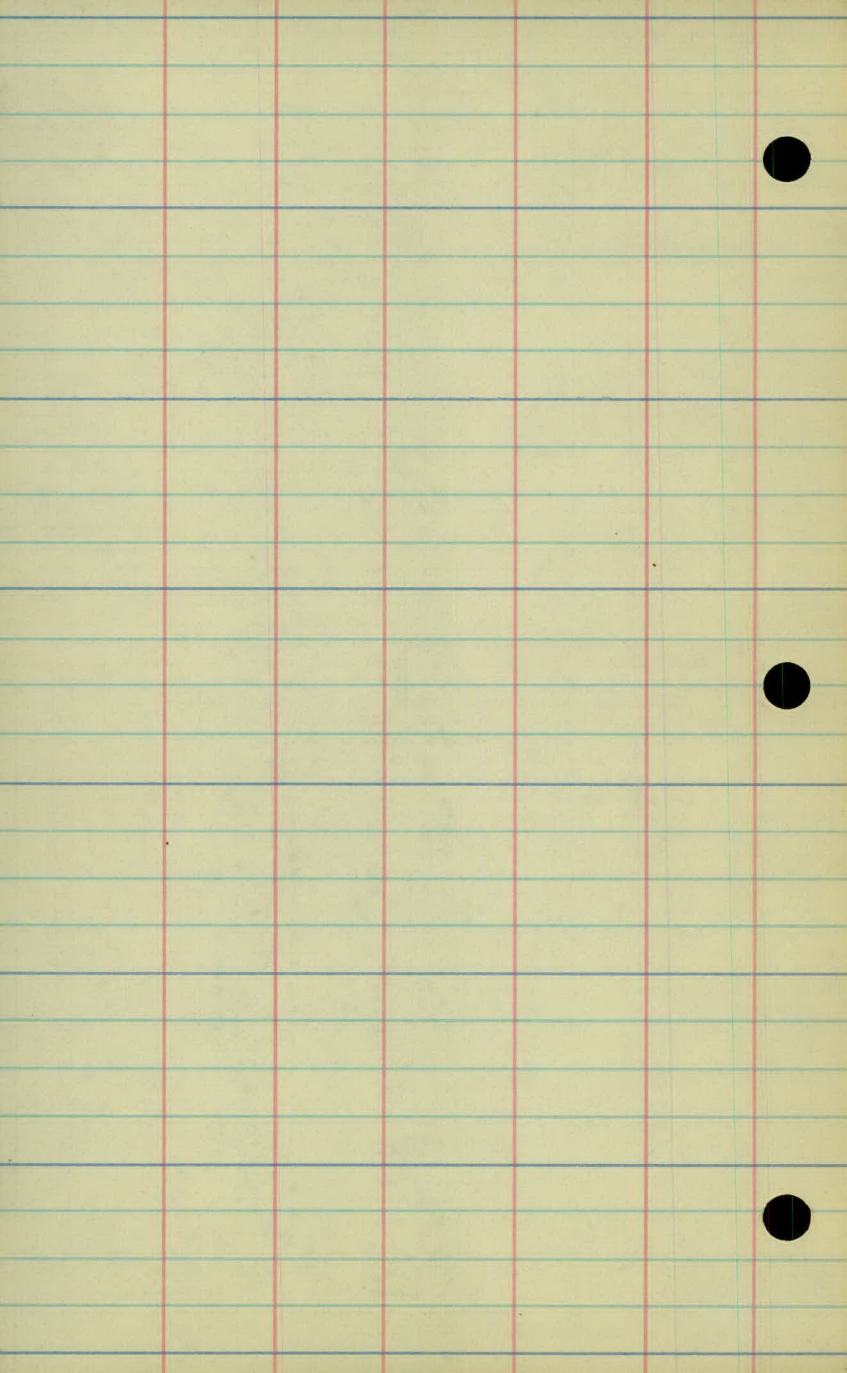


175-Cor. Cott. 25'

17-Cor. Cott.

105-Cor. Cott. 50'





additional levels.

"D" Line

See P. 17

Station	+	π	-	Elev.
B.M.	6.05	281.19 [✓]		875.14

410 = 89439 - A Line

140

1435

240

2450

340

+ Cott #10

3450

+ Cott #8

440

T.P.	10.31	891.09 [✓]	0.47	880.72 [✓]
------	-------	---------------------	------	---------------------

44 Kitchen

4 Brick
Cott #6

41454

Spike in T.P. 25- at Sta. 89+4/0 (B/c #260)

$$\begin{array}{r} 70.2 \\ 11.0 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 73.2 \\ 8.0 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 67.2 \\ 14.0 \\ \hline 52 \end{array}$$

$$\begin{array}{r} 70.7 \\ 10.5 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 74.3 \\ 6.9 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 73.4 \\ 7.8 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 75.7 \\ 5.5 \\ \hline 41 \end{array}$$

$$\begin{array}{r} 75.8 \\ 5.4 \\ \hline 27 \end{array}$$

$$\begin{array}{r} 78.1 \\ 3.1 \\ \hline 24 \end{array}$$

77.5

$$\begin{array}{r} 80.5 \\ 3.7 \\ \hline \end{array}$$

= door sill co #10

$$\begin{array}{r} 75.9 \\ 5.3 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 75.9 \\ 5.3 \\ \hline 38 \end{array}$$

$$\begin{array}{r} 78.9 \\ 2.3 \\ \hline 34 \end{array}$$

$$\begin{array}{r} 80.0 \\ 1.2 \\ \hline 17 \end{array}$$

$$\begin{array}{r} 78.9 \\ 2.3 \\ \hline 5 \end{array}$$

78.3

~~78.1~~

= door sill co #8

$$\begin{array}{r} 73.6 \\ 7.6 \\ \hline 60 \end{array}$$

$$\begin{array}{r} 74.0 \\ 7.2 \\ \hline 46 \end{array}$$

$$\begin{array}{r} 77.4 \\ 3.8 \\ \hline 41 \end{array}$$

$$\begin{array}{r} 80.5 \\ 0.7 \\ \hline 19 \end{array}$$

8806 = 14.2 = Door Sill Small Co #.

8829 = 8.2 = Door Sill Kitchen

837 7.7 = " " Brick Bldg Women's Bath

$$\begin{array}{r} 881.2 \\ 9.8 \\ \hline \end{array}$$

#55 = Door Sill Co #46

$$\begin{array}{r} 79.3 \\ 11.7 \\ \hline 46 \end{array}$$

Sta.

+

 π

-

Elev.

891.03 ✓

540

T.P.

8.53

892.03 ✓

7.53

893.50 ✓

5450

640

6450

740

T.P.

1.08

892.89

1322

878.81

740

80.6	81.6	81.4	81.0	86.2
<u>10.4</u>	<u>3.0</u>	<u>1.6</u>	<u>2.0</u>	<u>2.4</u>
90	50	31	16	

$$\begin{array}{r} 884.3 \\ \underline{6.7} \text{ Door} \\ \text{Sill/Cott} \#4 \end{array}$$

$$\begin{array}{r} 884.2 \\ \underline{6.8} \\ \text{" " " \#3} \end{array}$$

$$\begin{array}{r} 883.7 \\ \underline{7.3} \\ \text{" " " \#2} \end{array} \quad 5490$$

$$\begin{array}{r} 881.9 \\ \underline{9.1} \\ \text{" " " \#1} \end{array} \quad 6131$$

79.3	82.1	81.6	90.3	81.3	86.5
<u>12.7</u>	<u>8.9</u>	<u>4.2</u>	<u>1.7</u>	<u>2.7</u>	<u>5.5</u>
100	86	65	33	15	

76.2	82.2	81.0	88.9	89.6	87.7
<u>15.8</u>	<u>9.8</u>	<u>5.0</u>	<u>3.1</u>	<u>3.4</u>	<u>2.3</u>
100	78	56	40	23	

79.6	86.1	87.0	86.0	85.0	81.1	75.1
<u>12.4</u>	<u>5.9</u>	<u>5.0</u>	<u>6.0</u>	<u>7.0</u>	<u>10.9</u>	<u>16.9</u>
70	38	20	9		27	50

78.4	82.0	81.0	78.5
<u>13.6</u>	<u>10.0</u>	<u>7.0</u>	<u>13.5</u>
50	30		17

(1.4)

75.2	77.9
<u>7.7</u>	<u>5.0</u>
33	50

$$\text{Door Sill/Cott} = \begin{array}{r} 67.2 \\ \underline{15.7} \end{array}$$

Sta. + X - Elev.

88289

7+50

8+0

7+50

9+0

9+50

10+0

10+60

T.P 3.70 875.17 11.42 871.47

10+60

10+85

11+0

1+30

at

L

RT

27

$$\begin{array}{r} 7.7 \\ 50 \end{array} \quad \begin{array}{r} 5.0 \\ 25 \end{array} \quad \begin{array}{r} 77.4 \\ 5.5 \end{array} \quad \begin{array}{r} 6.0 \\ 10 \end{array} \quad \begin{array}{r} 13.0 \\ 46 \end{array} \quad \begin{array}{r} 20.7 \\ 71 \end{array} \quad \text{Flat} -$$

$$\begin{array}{r} 13.2 \\ 50 \end{array} \quad \begin{array}{r} 10.1 \\ 36 \end{array} \quad \begin{array}{r} 76 \\ 18 \end{array} \quad \begin{array}{r} 75.1 \\ 7.2 \end{array} \quad \begin{array}{r} 86 \\ 25 \end{array} \quad \begin{array}{r} 12.3 \\ 50 \end{array} \quad \begin{array}{r} 12.0 \\ 71 \end{array} \quad \begin{array}{r} 21.6 \\ 85 \end{array} \quad \text{Flat.}$$

$$\begin{array}{r} 14.8 \\ 28 \end{array} \quad \begin{array}{r} 9.7 \\ 10 \end{array} \quad \begin{array}{r} 74.7 \\ 8.2 \end{array} \quad \begin{array}{r} 7.0 \\ 16 \end{array} \quad \begin{array}{r} 7.7 \\ 37 \end{array} \quad \begin{array}{r} 10.6 \\ 66 \end{array} \quad \begin{array}{r} 18.0 \\ 100 \end{array} \quad \begin{array}{r} 22.0 \\ 122 \end{array} = \text{Flat}$$

76.2

6.7

0

5.3

16

5.6

67

13.0

100

20.0

130

Flat

Door Sit/ Cott. $\frac{449}{-}$

78.4

13.1

35

7.8

18

4.5

3.6

10

3.4

37

12.2

75

18.6

119

Flat.

78.8

12.7

37

6.6

16

4.1

4.2

14

6.7

23

20.6

50

75

19.0

112

Edge Rev.

$$\begin{array}{r} 11.2 \\ 39 \end{array} \quad \begin{array}{r} 7.5 \\ 25 \end{array} \quad \begin{array}{r} 5.6 \\ 12 \end{array} \quad \begin{array}{r} 75.8 \\ 7.1 \end{array}$$

x 0.6

11.7

29

11.0

50

= Edge Rev.

65.2

11.0

12

3.0

39

0.0

24

12.0

1

64.5

Flat =

11.0

17

6.0

50

1.4

29

0.1

14

12.7

1

= Edge Rev.

Flat =

11.3

90

9.0

77

6.3

60

10.8

29

App Edge Rev.

St. + X - Elev.

875.17

10+60

10+0

T.P. 11.96 873.83 13.30 861.87

9+50

9+0

8+50

8+0

7+50

7+0

6+50

6+0

5+50

5+10

T.P. 4.61 874.66 3.78 870.05

$$\begin{array}{r} 13.1 \\ 150 \end{array} \quad \begin{array}{r} 13.6 \\ 100 \end{array} \quad \begin{array}{r} 11.7 \\ 75 \end{array} \quad \begin{array}{r} 39 \end{array}$$

$$\begin{array}{r} 13.9 \\ 150 \end{array} \quad \begin{array}{r} 13.4 \\ 90 \end{array} \quad \begin{array}{r} 11.6 \\ 60 \end{array} \quad \begin{array}{r} 37 \end{array}$$

low land

$$\begin{array}{r} 12.4 \\ 150 \end{array} \quad \begin{array}{r} 11.8 \\ 73 \end{array} \quad \begin{array}{r} 21 \end{array}$$

$$\begin{array}{r} 11.7 \\ 150 \end{array} \quad \begin{array}{r} 11.7 \\ 85 \end{array} \quad \begin{array}{r} 10.8 \\ 56 \end{array} \quad \begin{array}{r} 6 \end{array}$$

$$\begin{array}{r} 11.7 \\ 150 \end{array} \quad \begin{array}{r} 12.0 \\ 100 \end{array} \quad \begin{array}{r} 10.3 \\ 45 \end{array} \quad \begin{array}{r} 18 \end{array}$$

$$\begin{array}{r} 11.9 \\ 150 \end{array} \quad \begin{array}{r} 10.2 \\ 83 \end{array} \quad \begin{array}{r} 50 \end{array}$$

$$\begin{array}{r} 11.5 \\ 780 \end{array} \quad \begin{array}{r} 10.2 \\ 150 \end{array} \quad \begin{array}{r} 7.2 \\ 120 \end{array} \quad \begin{array}{r} 4.8 \\ 94 \end{array} \quad \begin{array}{r} 50 \end{array}$$

$$\begin{array}{r} 10.1 \\ 192 \end{array} \quad \begin{array}{r} 5.3 \\ 163 \end{array} \quad \begin{array}{r} 5.3 \\ 150 \end{array} \quad \begin{array}{r} 6.6 \\ 118 \end{array} \quad \begin{array}{r} 3.6 \\ 85 \end{array} \quad \begin{array}{r} 50 \end{array} \quad +1.2$$

$$\begin{array}{r} 9.9 \\ 225 \end{array} \quad \begin{array}{r} 3.7 \\ 193 \end{array} \quad \begin{array}{r} 4.1 \\ 169 \end{array} \quad \begin{array}{r} 6.8 \\ 150 \end{array} \quad \begin{array}{r} 5.7 \\ 118 \end{array} \quad \begin{array}{r} 1.3 \\ 93 \end{array} \quad \begin{array}{r} 70 \end{array} \quad +11.2$$

$$\begin{array}{r} 1.0 \\ 200 \end{array} \quad \begin{array}{r} 2.0 \\ 181 \end{array} \quad \begin{array}{r} 5.2 \\ 150 \end{array} \quad \begin{array}{r} 4.8 \\ 130 \end{array} \quad \begin{array}{r} 1.0 \end{array} \quad +13.9$$

$$\begin{array}{r} 2.7 \\ 200 \end{array} \quad \begin{array}{r} 4.5 \\ 150 \end{array} \quad \begin{array}{r} 3.6 \\ 135 \end{array} \quad \begin{array}{r} 100 \end{array} \quad 10.7$$

$$\begin{array}{r} 2.7 \\ 150 \end{array}$$

Sta. + T - Elev.

87466

540

21454

1440

3450

340

2450

240

1435

140

04 40

T.P.

7.13

879.07

2.72

871.94

3.93

875.84 ✓

$$\begin{array}{r} 5.1 \\ 200 \end{array} \quad \begin{array}{r} 5.6 \\ 150 \end{array} \quad \begin{array}{r} 5.6 \\ 138 \end{array} \quad \begin{array}{r} 3.6 \\ 179 \end{array} \quad \begin{array}{r} 3.4 \\ 111 \end{array} \quad \begin{array}{r} 80 \end{array}$$

$$\begin{array}{r} 8.6 \\ 200 \end{array} \quad \begin{array}{r} 7.3 \\ 150 \end{array} \quad \begin{array}{r} 6.5 \\ 100 \end{array} \quad \begin{array}{r} 7.3 \\ 80 \end{array} \quad \begin{array}{r} 7.3 \\ 67 \end{array} \quad \begin{array}{r} 46 \end{array}$$

$$\begin{array}{r} 8.6 \\ 200 \end{array} \quad \begin{array}{r} 8.2 \\ 150 \end{array} \quad \begin{array}{r} 6.8 \\ 78 \end{array} \quad \begin{array}{r} 60 \end{array}$$

$$\begin{array}{r} 8.0 \\ 200 \end{array} \quad \begin{array}{r} 6.7 \\ 183 \end{array} \quad \begin{array}{r} 8.3 \\ 150 \end{array} \quad \begin{array}{r} 7.8 \\ 100 \end{array} \quad \begin{array}{r} 6.5 \\ 73 \end{array} \quad \begin{array}{r} 50 \end{array}$$

$$\begin{array}{r} 8.0 \\ 230 \end{array} \quad \begin{array}{r} 6.0 \\ 200 \end{array} \quad \begin{array}{r} 8.3 \\ 150 \end{array} \quad \begin{array}{r} 7.8 \\ 100 \end{array} \quad \begin{array}{r} 5.6 \\ 70 \end{array} \quad \begin{array}{r} 41 \end{array}$$

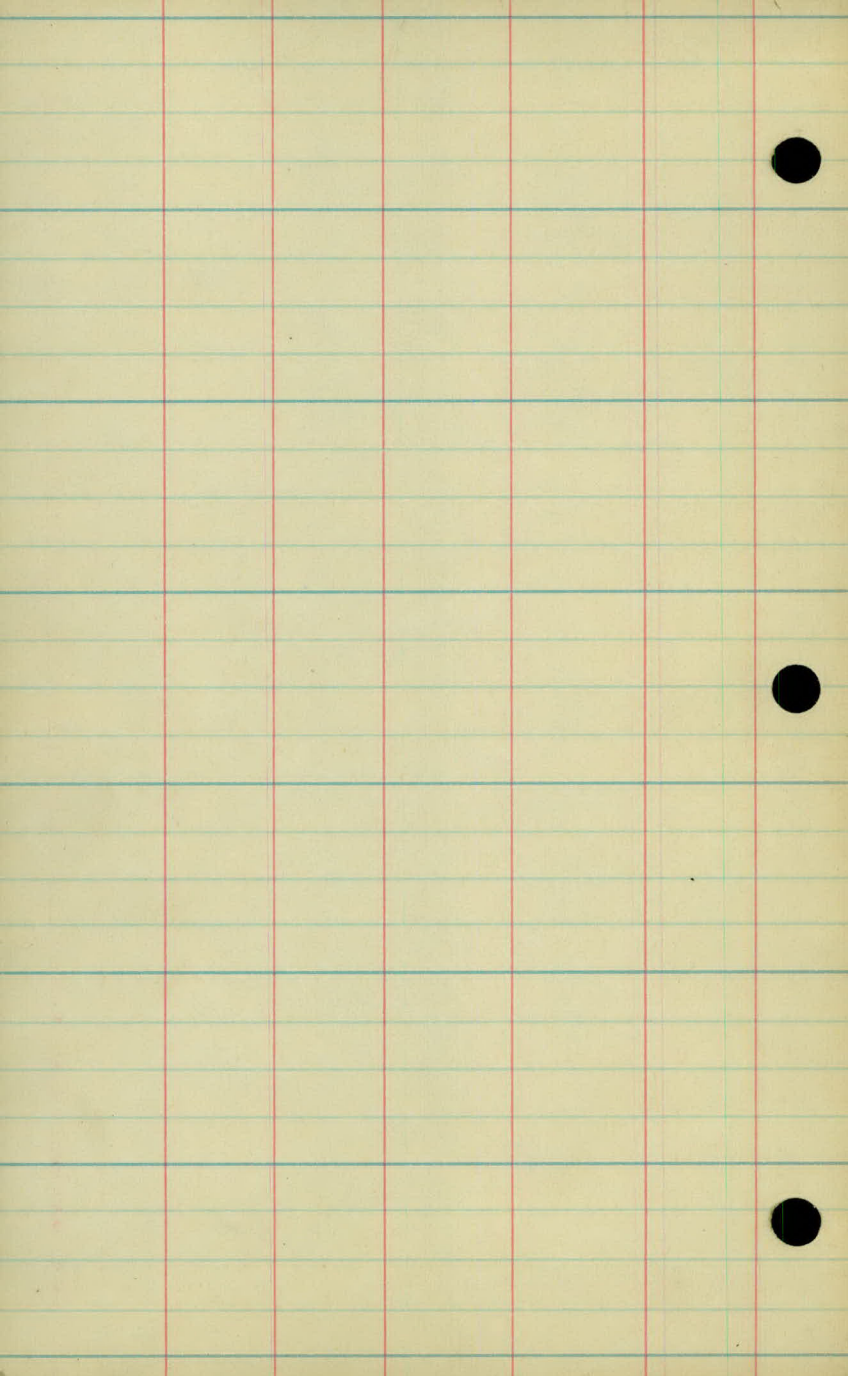
$$\begin{array}{r} 6.0 \\ 200 \end{array} \quad \begin{array}{r} 8.0 \\ 150 \end{array} \quad \begin{array}{r} 8.0 \\ 100 \end{array} \quad \begin{array}{r} 6.5 \\ 50 \end{array} \quad \begin{array}{r} 78 \end{array}$$

$$\begin{array}{r} 2.6 \\ 200 \end{array} \quad \begin{array}{r} 3.6 \\ 174 \end{array} \quad \begin{array}{r} 7.4 \\ 140 \end{array} \quad \begin{array}{r} 8.2 \\ 97 \end{array} \quad \begin{array}{r} 52 \end{array}$$

$$\begin{array}{r} 7.0 \\ 170 \end{array} \quad \begin{array}{r} 5.5 \\ 150 \end{array} \quad \begin{array}{r} 7.5 \\ 125 \end{array} \quad \begin{array}{r} 7.0 \\ 85 \end{array} \quad \begin{array}{r} 50 \end{array}$$

$$\begin{array}{r} 11 \\ 200 \end{array} \quad \begin{array}{r} 2.8 \\ 180 \end{array} \quad \begin{array}{r} 6.0 \\ 150 \end{array} \quad \begin{array}{r} 6.7 \\ 125 \end{array} \quad \begin{array}{r} 44 \\ 85 \end{array}$$

$$\begin{array}{r} 3.9 \\ 150 \end{array}$$



QTL-000

Cu.V/d 720

 $\frac{19}{10}$

8/28

 $\frac{8}{10}$

0.58

720

 $\frac{1}{2} \times \frac{1}{8}$
$$A = 237$$

88.5

8.1.1

1607

97.0

$$A = 510$$

100

$$2\frac{1}{3}$$

640

8-6-2

2/9

1/2

2/2/2

1036

$$K = 609$$
 $8\frac{1}{2}$

5450

8/10

 $\frac{1}{2} \times 8$

968

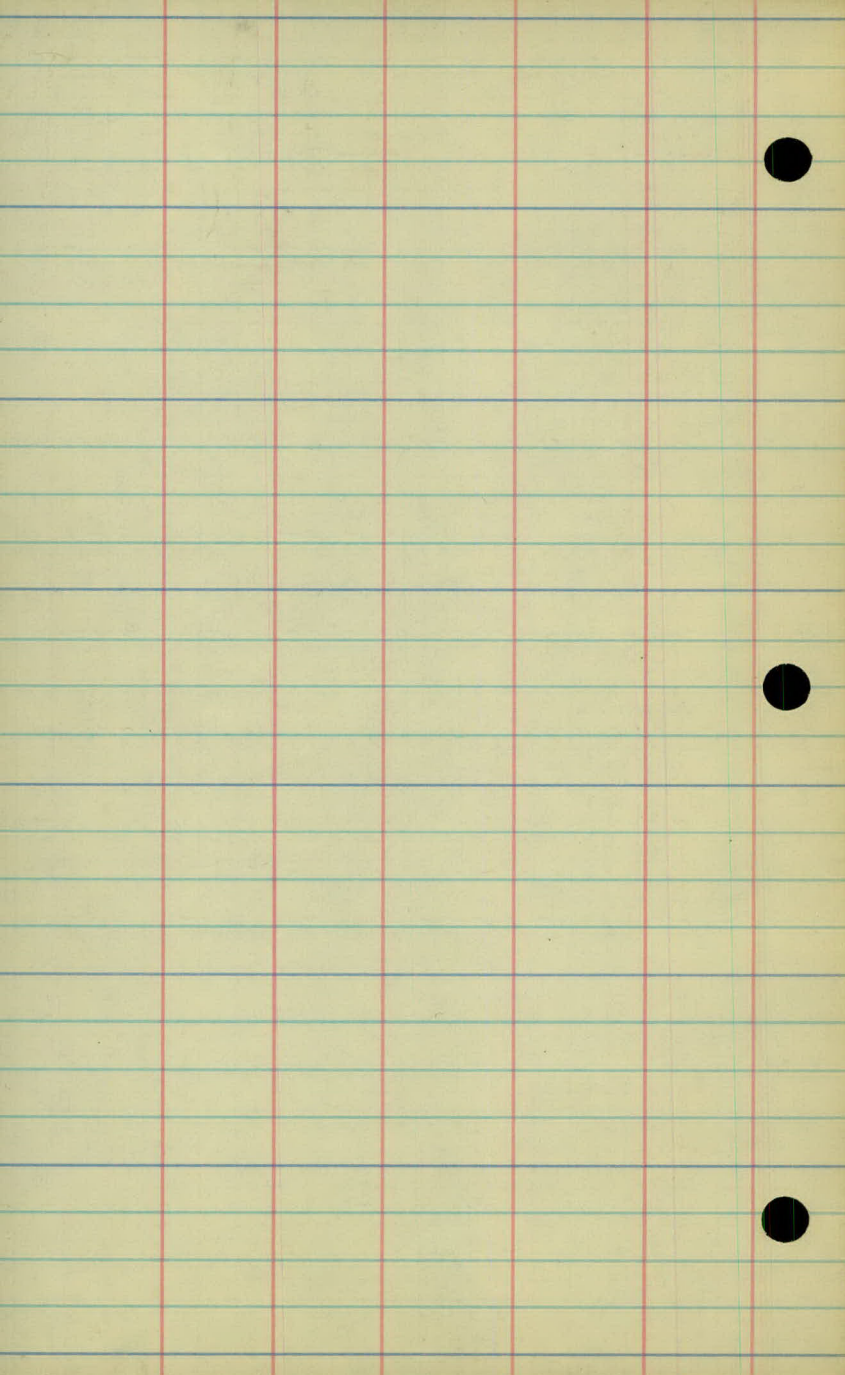
Ar-4360

09/07

 $\frac{1}{2} \times \frac{1}{2}$
$$\begin{array}{r} 570 \\ \hline 3485 \end{array}$$

510

$$0.0 = 1150$$



Profile D'Line

Proposed Grade 9820

4-882.9 Kitchen - Door Sill
83.3 Brick Door Sill

Cott #4 - 8843

Cott #3 - 884.2

Cott #2 - 883.7

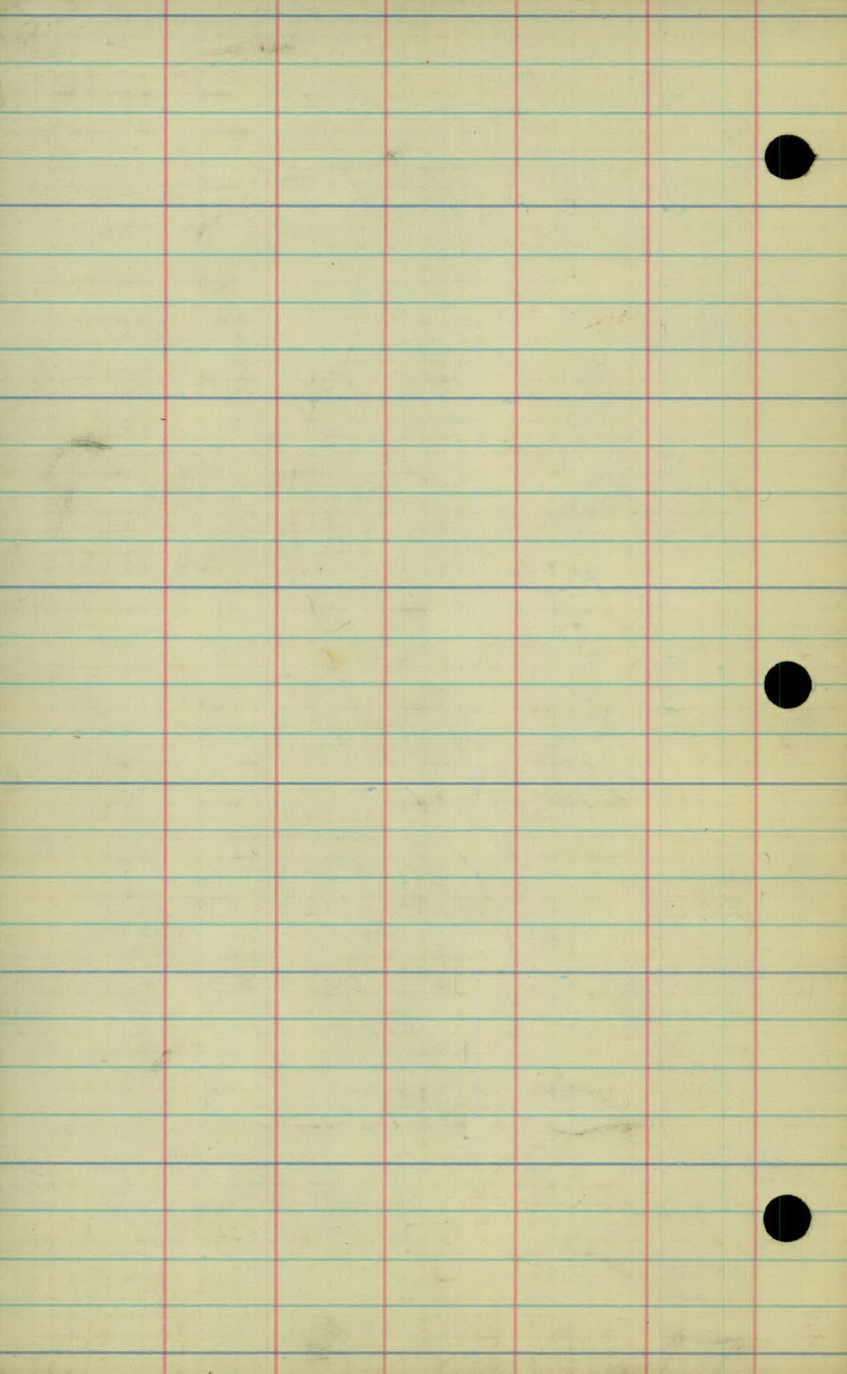
Cott #1 - 881.9

Cottage on City Property

Prop. Grade.

Pavement

11
10
9
8
7
6
5
4
3
2
1



Borrow Pit. #1

South of Phalen Channel

W 129' E

W.S. - 118' E

3450 - E. Par. 193'

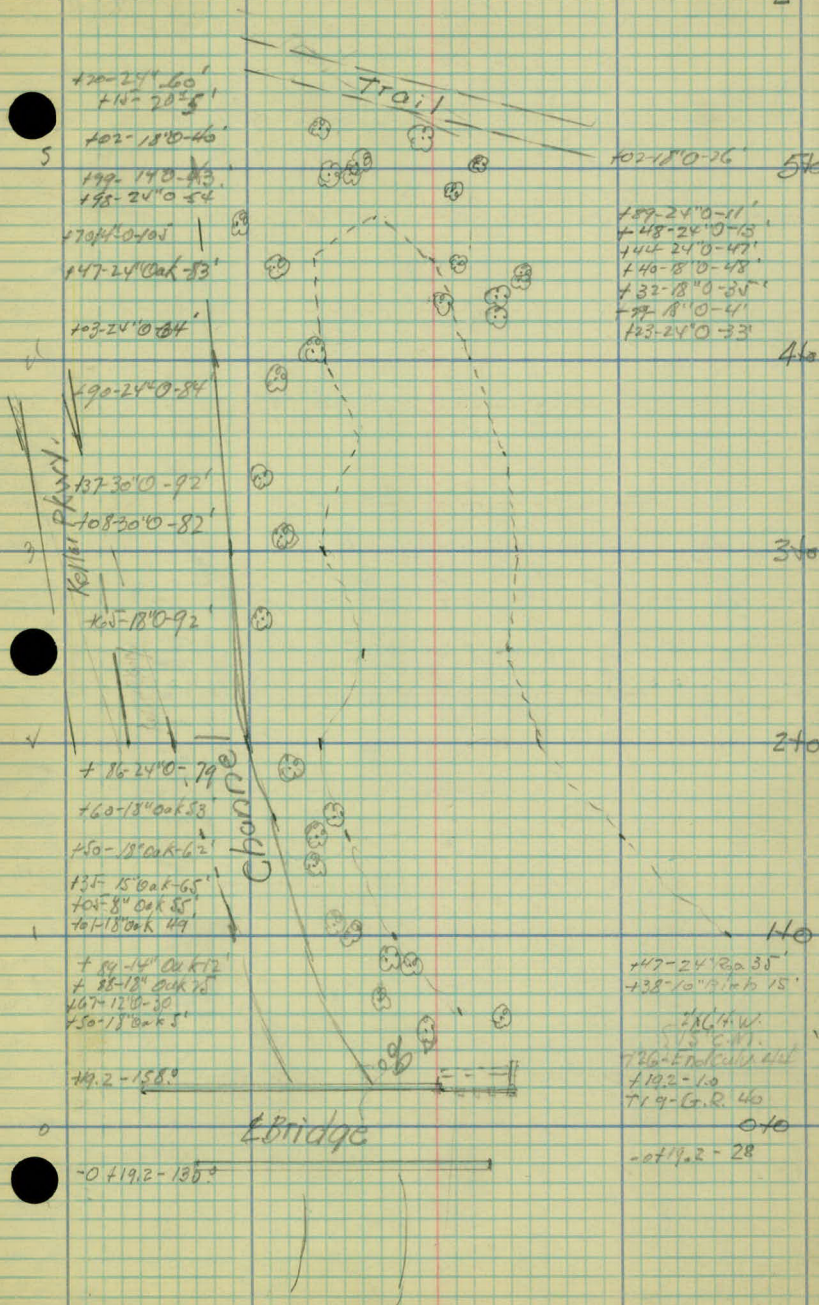
W.S. 110'

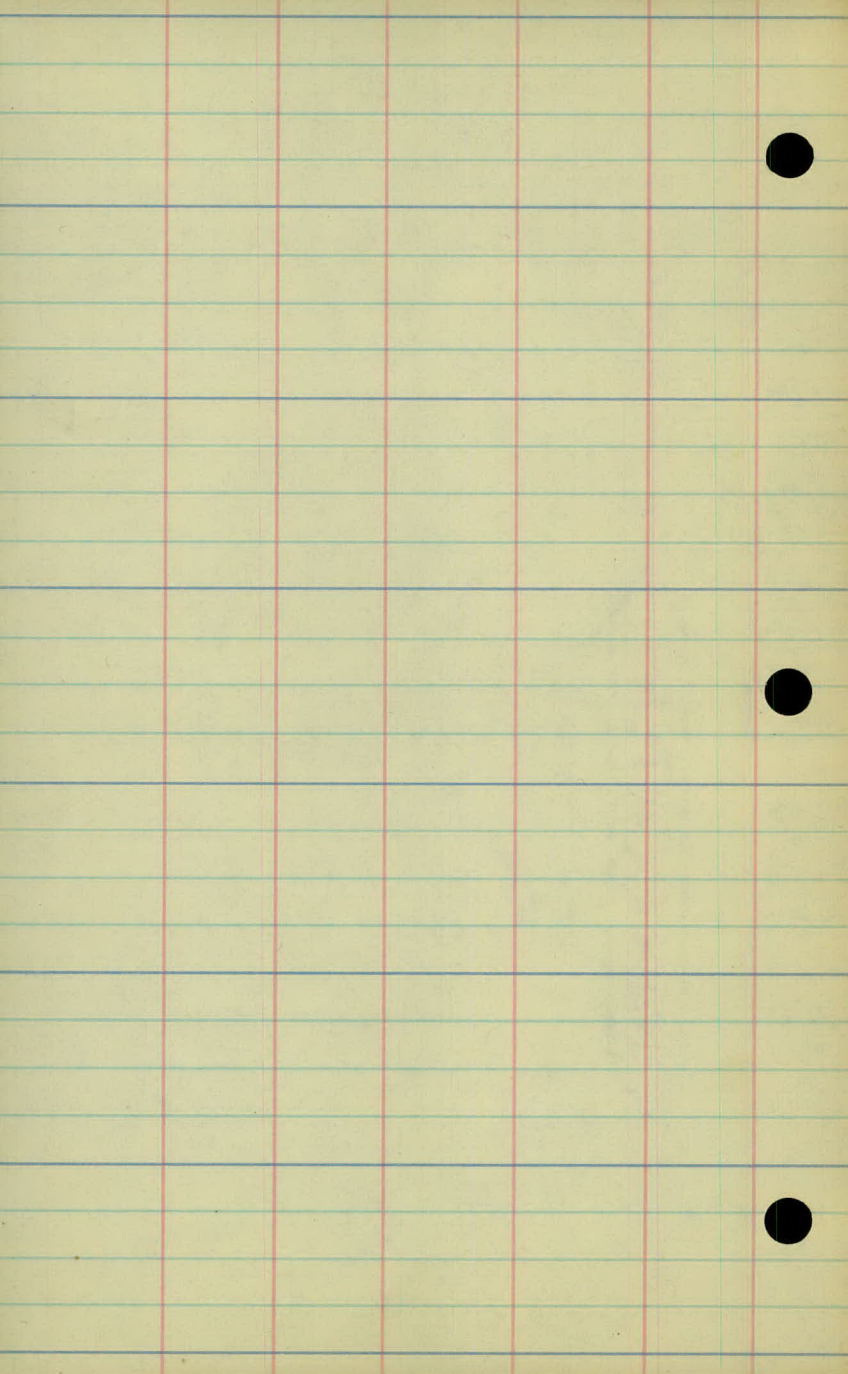
141' W.S. 102' E
E. Par. 164'

450

130 E 87'

109' E 70'





X-Sections

Borrow Pit.

South of Thalen Channel

Sta.	+	+	-	Elev.	
B.N.	8.35	890.18 ✓		881.83	
					Gr Rod.
0+35				81.0	
0+60				75.2	10.4
1+0				85.2	11.2
1+50				86.5	12.2
2+0				85.2	13.2
T.P.	0.21	883.82 ✓	6.57	883.61	
2+50				82.3	7.8
3+0				81.1	8.8
3+50				80.6	9.8
4+0				75.8	10.8
4+50				72.0	11.8
4+75					12.3
5+0				64.2	
T.P.	0.30	870.94	13.18	870.64	

870.94

570

4450

240

3450

T.P.

5.07

866.65

9.36

861.58

340

7480

240

1450

140

0460

+15.18

881.83

4.

4

$$\begin{array}{r} 120 \\ 129 \end{array} \quad \begin{array}{r} 105 \\ 119 \end{array} \quad \begin{array}{r} 93 \\ 108 \end{array} \quad \begin{array}{r} 67 \\ 102 \end{array} \quad \begin{array}{r} 23 \\ 75 \end{array}$$

6.7

$$\begin{array}{r} 120 \\ 124 \end{array} \quad \begin{array}{r} 103 \\ 114 \end{array} \quad \begin{array}{r} 103 \\ 100 \end{array}$$

+1.1

$$\begin{array}{r} 120 \\ 119 \end{array} \quad \begin{array}{r} 103 \\ 111 \end{array} \quad \begin{array}{r} 104 \\ 92 \end{array}$$

+4.9

$$\begin{array}{r} 120 \\ 116 \end{array} \quad \begin{array}{r} 110 \\ 108 \end{array} \quad \begin{array}{r} 87 \\ 87 \end{array}$$

4.7

$$\begin{array}{r} 109 \\ 110 \end{array} \quad \begin{array}{r} 70 \\ 104 \end{array} \quad \begin{array}{r} 38 \\ 84 \end{array}$$

14.1

$$\begin{array}{r} 109 \\ 106 \end{array} \quad \begin{array}{r} 80 \\ 104 \end{array} \quad \begin{array}{r} 80 \\ 98 \end{array} \quad \begin{array}{r} 40 \\ 93 \end{array}$$

15.6

$$\text{W.S.} \quad \begin{array}{r} 109 \\ 103 \end{array} \quad \begin{array}{r} 77 \\ 99 \end{array} \quad \begin{array}{r} 70 \\ 92 \end{array} \quad \begin{array}{r} 00 \\ 84 \end{array}$$

14.5

$$\begin{array}{r} 109 \\ 87 \end{array} \quad \begin{array}{r} 84 \\ 82 \end{array} \quad \begin{array}{r} 76 \\ 76 \end{array} \quad \begin{array}{r} 75 \\ 72 \end{array}$$

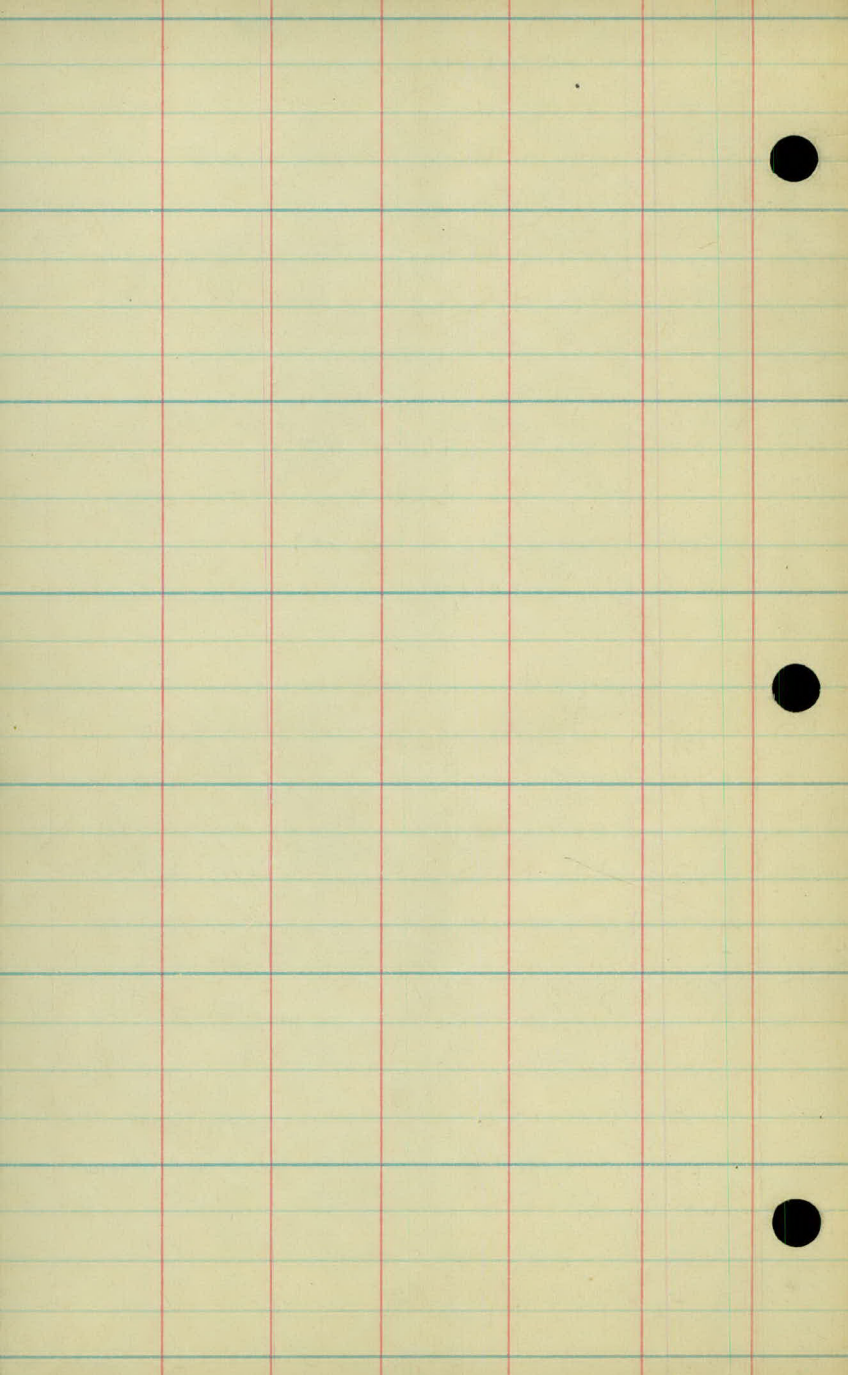
19.8

$$\begin{array}{r} 109 \\ 71 \end{array} \quad \begin{array}{r} 78 \\ 67 \end{array} \quad \begin{array}{r} 75 \\ 61 \end{array} \quad \begin{array}{r} 00 \\ 50 \end{array}$$

18.5

$$\begin{array}{r} 109 \\ 54 \end{array} \quad \begin{array}{r} 80 \\ 48 \end{array} \quad \begin{array}{r} 71 \\ 37 \end{array}$$

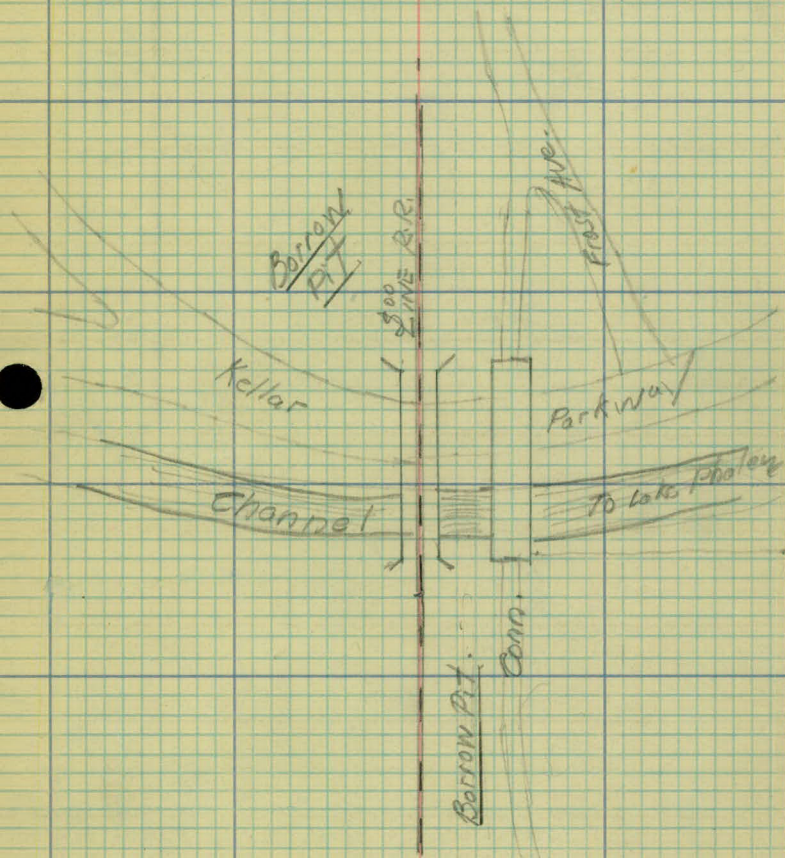
04.5



1

Proposed Borrow Pits

Soo Line R.R. & Keller Parkway.



W. N. Carlson
Nov 15, 1935

9

8

7

6

5

4

1/2 500
2 1/2 mi. R.R.

Proposed Borrow Pit

Tarvia Pavement

To Arden St.

Bridge

9+63

9+33

101-14' on to 71'

192-12' on to 76'

Scattered
Rocks

12to

11to

Scale 1" = 50'

10to = ϵ ⁶⁰⁰ LINE Bridge. #44

13401- R.R. Pole 29'

3

+43-T.P. 42

+93- R.R. Pole 27

Proposed Borrow Pit

2.800 PINE B.P.

+55-T.P. 138

+70-T.P. 33

About 30 W. 160'

+21-T.P. 47'

+1089- R.R. T.P. 285

1423

10423

+54- E. Wing Wall 38.

TO ST. PAUL

B.W.

+37.85- 8.5

Edge Pavement
to 11/4" P.K.W.

+35.3- Edge Pav.

Pavement

Channel

2-Wall.

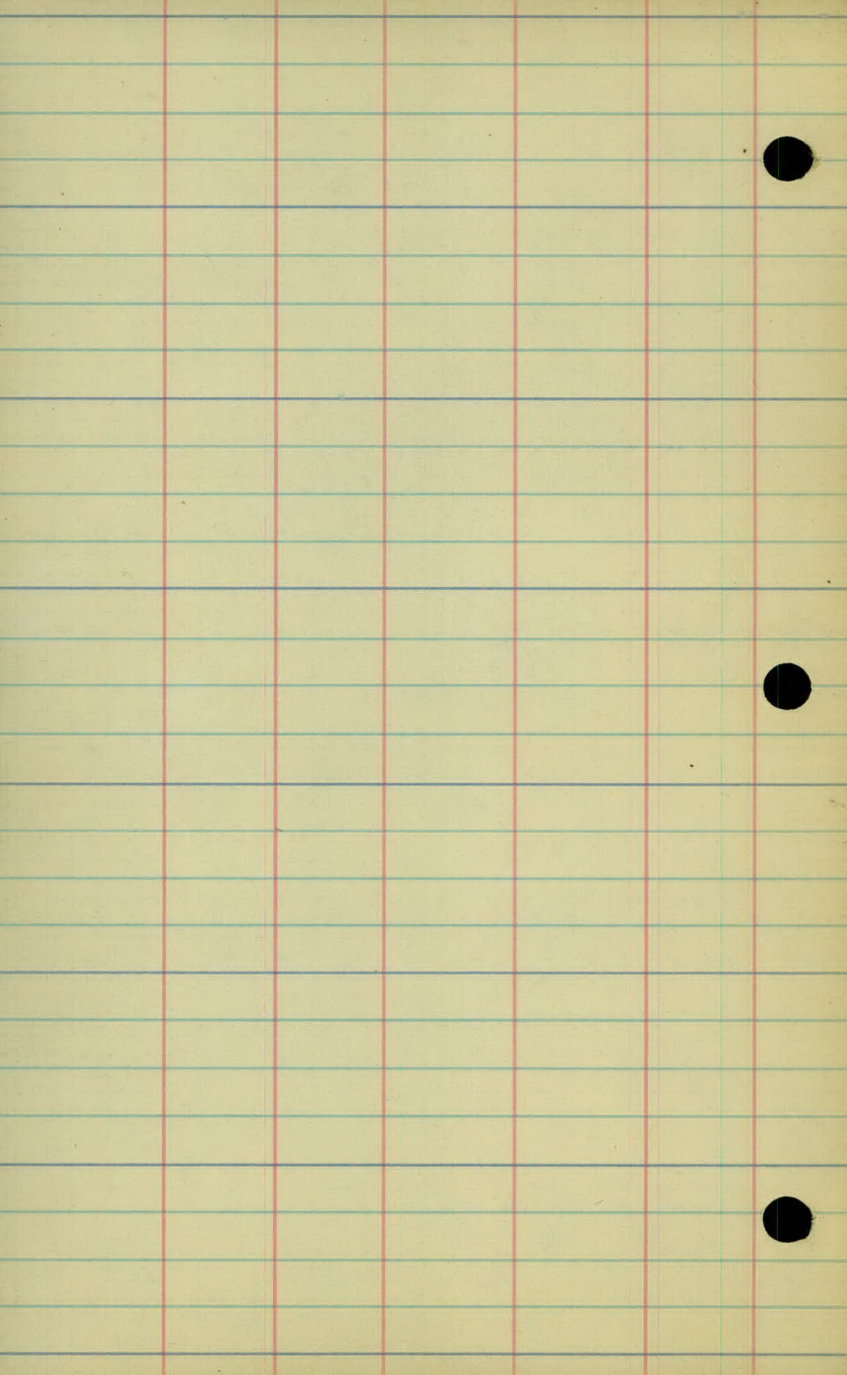
+62.2- 8.5

+60- 13.5

+60.2- 8.5

+60- 13.5

94.92



X-Sections
Borrow Pit.

B.D.T.

1.53

884.37

872.84

440

+50

540

640

740

+50

840

+50

+80

940

2

Right

5

$$\text{Borrow} = 0.0 = 3480$$

$$\begin{array}{r} 16.6 \\ \hline 7.8 \end{array} \begin{array}{r} 8.2 \\ 4 \end{array} \begin{array}{r} 9.1 \\ 7 \end{array} \begin{array}{r} 10.3 \\ 12 \end{array} \begin{array}{r} 10.9 \\ 26 \end{array} \begin{array}{r} 5.3 \\ 24 \end{array} \begin{array}{r} 6.3 \\ 58 \end{array} \begin{array}{r} 10.2 \\ 114 \end{array} \begin{array}{r} 9.4 \\ 130 \end{array} = 70.0$$

$$16.3 \begin{array}{r} 8.1 \\ 4 \end{array} \begin{array}{r} 8.6 \\ 12 \end{array} \begin{array}{r} 10.9 \\ 35 \end{array} \begin{array}{r} 11.4 \\ 49 \end{array} \begin{array}{r} 10.5 \\ 76 \end{array} \begin{array}{r} 1.1 \\ 100 \end{array} \begin{array}{r} 10.4 \\ 118 \end{array} \begin{array}{r} 9.6 \\ 70.0 \end{array}$$

$$16.0 \begin{array}{r} 8.4 \\ 4 \end{array} \begin{array}{r} 8.9 \\ 7 \end{array} \begin{array}{r} 9.5 \\ 12 \end{array} \begin{array}{r} 11.0 \\ 35 \end{array} \begin{array}{r} 11.1 \\ 48 \end{array} \begin{array}{r} 1.0 \\ 53 \end{array} \begin{array}{r} 0.0 \\ 59 \end{array} \begin{array}{r} 0.1 \\ 70 \end{array} \begin{array}{r} 10.4 \\ 109 \end{array} \begin{array}{r} 9.8 \\ 100 \end{array} = 70.0$$

$$75.4 \begin{array}{r} 75.0 \\ 4 \end{array} \begin{array}{r} 74.4 \\ 7 \end{array} \begin{array}{r} 72.7 \\ 13 \end{array} \begin{array}{r} 72.8 \\ 21 \end{array} \begin{array}{r} 81.6 \\ 48 \end{array} \begin{array}{r} 81.6 \\ 52 \end{array} \begin{array}{r} 73.5 \\ 76 \end{array} \begin{array}{r} 74.0 \\ 74 \end{array} \begin{array}{r} 74.0 \\ 74 \end{array} \begin{array}{r} 74.0 \\ 74 \end{array} = 74.0$$

$$75.0 \begin{array}{r} 9.4 \\ 4 \end{array} \begin{array}{r} 9.9 \\ 7 \end{array} \begin{array}{r} 10.5 \\ 12 \end{array} \begin{array}{r} 11.6 \\ 18 \end{array} \begin{array}{r} 11.6 \\ 33 \end{array} \begin{array}{r} 11.6 \\ 33 \end{array} \begin{array}{r} 11.6 \\ 33 \end{array} \begin{array}{r} 11.6 \\ 33 \end{array} \begin{array}{r} 11.6 \\ 33 \end{array} \begin{array}{r} 11.6 \\ 33 \end{array} \begin{array}{r} 11.6 \\ 33 \end{array} = 75.0$$

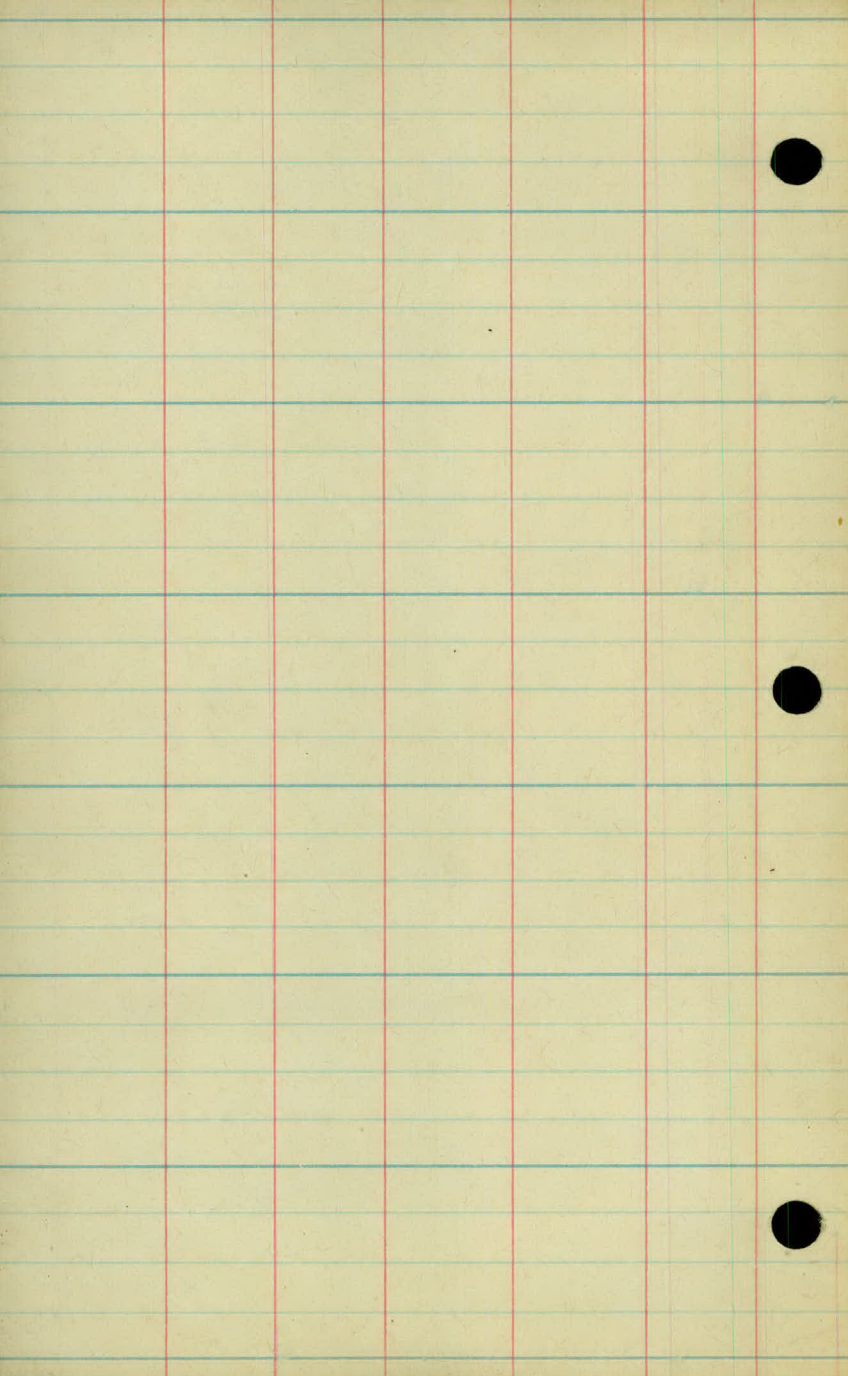
$$74.7 \begin{array}{r} 9.7 \\ 4 \end{array} \begin{array}{r} 10.2 \\ 10 \end{array} \begin{array}{r} 10.9 \\ 14 \end{array} \begin{array}{r} 9.9 \\ 19 \end{array} \begin{array}{r} 9.9 \\ 30 \end{array} \begin{array}{r} 5.5 \\ 33 \end{array} \begin{array}{r} 8.7 \\ 49 \end{array} \begin{array}{r} 11.6 \\ 66 \end{array} \begin{array}{r} 11.4 \\ 84 \end{array} \begin{array}{r} 11.4 \\ 84 \end{array} = 74.7$$

$$74.5 \begin{array}{r} 8.9 \\ 4 \end{array} \begin{array}{r} 10.4 \\ 9 \end{array} \begin{array}{r} 10.9 \\ 17 \end{array} \begin{array}{r} 8.2 \\ 31 \end{array} \begin{array}{r} 6.8 \\ 48 \end{array} \begin{array}{r} 9.3 \\ 68 \end{array} \begin{array}{r} 12.4 \\ 85 \end{array} \begin{array}{r} 11.6 \\ 85 \end{array} \begin{array}{r} 11.6 \\ 85 \end{array} \begin{array}{r} 11.6 \\ 85 \end{array} = 74.5$$

$$74.2 \begin{array}{r} 10.2 \\ 4 \end{array} \begin{array}{r} 10.6 \\ 9 \end{array} \begin{array}{r} 11.0 \\ 14 \end{array} \begin{array}{r} 9.3 \\ 18 \end{array} \begin{array}{r} 9.1 \\ 24 \end{array} \begin{array}{r} 7.7 \\ 28 \end{array} \begin{array}{r} 7.8 \\ 48 \end{array} \begin{array}{r} 10.1 \\ 63 \end{array} \begin{array}{r} 12.9 \\ 82 \end{array} \begin{array}{r} 11.7 \\ 82 \end{array} = 74.2$$

$$74.1 \begin{array}{r} 10.3 \\ 4 \end{array} \begin{array}{r} 10.8 \\ 9 \end{array} \begin{array}{r} 11.1 \\ 17 \end{array} \begin{array}{r} 12.1 \\ 29 \end{array} \begin{array}{r} 8.9 \\ 49 \end{array} \begin{array}{r} 10.8 \\ 68 \end{array} \begin{array}{r} 12.3 \\ 82 \end{array} \begin{array}{r} 11.4 \\ 82 \end{array} \begin{array}{r} 11.4 \\ 82 \end{array} \begin{array}{r} 11.4 \\ 82 \end{array} = 74.1$$

0.0 - Borrow -



X-Sections

Borrow pit.

Sta	+	-	Elev.
	3.93	878.09 879.07 ✓	874.16 875.14
B.M.	9.84	885.72 86.70 ✓	875.88 876.86 ✓
B.M.	5.75	887.61 88.59	861.86 882.84

10+38

10+50

10+75

11+0

+20

+45

+70

Left.

4

7

Top Conc. C.R. Post.

Top of Abut. West Side North end. Kellarking + 5° NE

$$\begin{array}{r}
 62.8 \quad 81.8 \quad 81.8 \quad 81.7 \quad 82.2 \text{ Top rail} \\
 \underline{249} \quad \underline{525} \quad \underline{525} \quad \underline{59} \quad \underline{540} \\
 14.5 \quad 14.5 \quad 2.5 \quad 4 \quad 5
 \end{array} = 82.2$$

$$\begin{array}{r}
 80.3 \quad 81.5 \quad 81.6 \quad 82.1 \\
 \underline{73} \quad \underline{61} \quad \underline{62} \quad \underline{545} \\
 14 \quad 7 \quad 4 \quad 5
 \end{array} = 82.2$$

$$\begin{array}{r}
 75.8 \quad 80 \quad 80.6 \quad 79.9 \quad 81.2 \quad 81.6 \quad 82.1 \\
 \underline{118} \quad \underline{126} \quad \underline{72} \quad \underline{77} \quad \underline{64} \quad \underline{60} \quad \underline{553} \\
 35 \quad 24 \quad 16 \quad 12 \quad 7 \quad 4 \quad 5
 \end{array} = 82.1$$

$$\begin{array}{r}
 75.1 \quad 80.0 \quad 81.5 \quad 79.9 \quad 80.9 \quad 81.6 \quad 82.0 \\
 \underline{125} \quad \underline{76} \quad \underline{61} \quad \underline{77} \quad \underline{67} \quad \underline{60} \quad \underline{560} \\
 31 \quad 30 \quad 14 \quad 12 \quad 7 \quad 4 \quad 5
 \end{array} = 82.0$$

$$\begin{array}{r}
 76.7 \quad 79.9 \quad 81.9 \quad 80.6 \quad 81.0 \quad 81.5 \quad 82.0 \\
 \underline{109} \quad \underline{77} \quad \underline{57} \quad \underline{70} \quad \underline{62} \quad \underline{61} \quad \underline{565} \\
 52 \quad 51 \quad 14 \quad 12 \quad 9 \quad 4 \quad 5
 \end{array} = 82.0$$

$$\begin{array}{r}
 77.0 \quad 80.4 \quad 81.2 \quad 81.4 \quad 81.6 \quad 81.9 \\
 \underline{100} \quad \underline{72} \quad \underline{64} \quad \underline{62} \quad \underline{62} \quad \underline{575} \\
 53 \quad 51 \quad 39 \quad 18 \quad 4 \quad 5
 \end{array} = 81.9$$

$$\begin{array}{r}
 77.3 \quad 82.5 \quad 81.7 \quad 82.0 \quad 81.5 \quad 81.1 \quad 81.3 \quad 81.8 \\
 \underline{103} \quad \underline{57} \quad \underline{59} \quad \underline{56} \quad \underline{61} \quad \underline{65} \quad \underline{63} \quad \underline{584} \\
 123 \quad 120 \quad 100 \quad 63 \quad 50 \quad 9 \quad 4 \quad 5
 \end{array} = 81.8$$

(887.61)

~~88.59~~

12+0

+30

+55

+75

13+0

13+25

13+75

T.P.

0.02

(874.29)

~~875.27~~

13.34

(874.27)

~~875.25~~

Left

Top
Top Rail

8

77.3	82.8	82.2	82.6	82.4	81.6	81.2	81.6
100	48	54	50	52	60	64	55
Control	125	121	120	75	32	12	4

81.7

83.4	82.6	83.1	81.9	83.7	81.0	81.2	81.1	81.6
42	50	45	57	39	66	64	65	600
Control	120	96	64	39	34	27	10	4

81.6

73.6	82.3	82.0	82.6	80.7	80.6	81.0	81.4
140	52	56	40	69	70	66	670
80	72	39	34	28	10	4	

81.4

72.8	77.9	80.2	81.1	80.2	80.8	81.3
149	95	74	65	74	68	63
74	72	50	14	8	4	

81.3

72.0	76.0	78.9	80.6	81.1
15.6	16	8.7	70	65
69	20	14	4	

81.1

76.4	80.0	80.6	81.1
11.2	7.6	2.0	65
76	8	4	

81.1

77.6	79.6	80.4	80.9
10.0	80	72	67
12	8	4	

80.9

(874.29) ✓

~~875.27~~

10+50

10+75

11+0

11+20

11+45

11+70

12+0

12+30

$$\begin{array}{r} 62.6 \quad 62.7 \quad 64.8 \quad \text{Erdwall} \\ 11.70 \quad 11.6 \quad 9.5 \\ \hline \text{Edge Rev.} = \frac{69.5}{53} - \frac{5}{13} \quad 11.7 \end{array}$$

$$\begin{array}{r} 62.7 \quad 62.8 \quad 63.3 \quad 65.6 \\ 11.6 \quad 11.5 \quad 11.0 \quad 8.7 \\ \hline \text{Edge Rev.} = \frac{121}{121} \quad \frac{100}{100} \quad \frac{70}{70} \quad \frac{37}{37} \end{array}$$

$$\begin{array}{r} 62.7 \quad 62.5 \quad 62.4 \quad 66.3 \\ 11.6 \quad 10.8 \quad 11.4 \quad 8.0 \\ \hline \text{Edge Rev.} = \frac{158}{158} \quad \frac{150}{150} \quad \frac{100}{100} \quad \frac{48}{48} \end{array}$$

$$\begin{array}{r} 63.0 \quad 63.7 \quad 64.4 \quad 63.4 \quad 63.3 \quad 64.1 \quad 65.9 \\ 11.3 \quad 10.6 \quad 9.9 \quad 10.9 \quad 11.0 \quad 10.2 \quad 8.4 \\ \hline \text{Edge Rev.} = \frac{187}{187} \quad \frac{174}{174} \quad \frac{138}{138} \quad \frac{133}{133} \quad \frac{110}{110} \quad \frac{80}{80} \quad \frac{69}{69} \end{array}$$

$$\begin{array}{r} 63.7 \quad 64.4 \quad 64.0 \quad 65.3 \quad 65.4 \quad 63.6 \quad 65.1 \quad 62.2 \quad 62.7 \\ 9.9 \quad 10.8 \quad 9.0 \quad 9.1 \quad 10.7 \quad 9.2 \quad 7.4 \quad 6.6 \\ \hline \text{Edge Rev.} = \frac{200}{200} \quad \frac{187}{187} \quad \frac{175}{175} \quad \frac{142}{142} \quad \frac{136}{136} \quad \frac{100}{100} \quad \frac{81}{81} \quad \frac{66}{66} \end{array}$$

$$\begin{array}{r} 64.8 \quad 65.1 \quad 64.9 \quad 64.1 \quad 66.4 \quad 66.4 \quad 70.0 \\ 9.5 \quad 9.2 \quad 9.4 \quad 10.2 \quad 7.4 \quad 7.0 \quad 4.3 \\ \hline \frac{260}{260} \quad \frac{230}{230} \quad \frac{200}{200} \quad \frac{176}{176} \quad \frac{170}{170} \quad \frac{150}{150} \quad \frac{175}{175} \end{array}$$

$$\begin{array}{r} 64.6 \quad 64.3 \quad 69.6 \quad 71.3 \\ 9.7 \quad 10.8 \quad 4.7 \quad 3.0 \\ \hline \frac{200}{200} \quad \frac{180}{180} \quad \frac{160}{160} \quad \frac{137}{137} \end{array}$$

$$\begin{array}{r} 64.6 \quad 65.7 \quad 70.3 \quad 72.2 \quad 72.5 \quad 74.0 \\ 9.7 \quad 8.6 \quad 4.0 \quad 2.4 \quad 1.8 \quad 0.3 \\ \hline \frac{200}{200} \quad \frac{178}{178} \quad \frac{173}{173} \quad \frac{163}{163} \quad \frac{145}{145} \quad \frac{135}{135} \end{array}$$

(874.29)

~~875.27~~

12+55

12+75

13+0

13+25

13+75

+ 7.27

882.84

882.54

B.N.

1068

864.57

(863.61)

$$\begin{array}{r} 65.9 \\ 8.4 \\ \hline 200 \end{array} \quad \begin{array}{r} 65.9 \\ 8.4 \\ \hline 150 \end{array} \quad \begin{array}{r} 67.1 \\ 7.2 \\ \hline 118 \end{array}$$

$$\begin{array}{r} 65.0 \\ 9.3 \\ \hline 200 \end{array} \quad \begin{array}{r} 64.8 \\ 9.5 \\ \hline 150 \end{array} \quad \begin{array}{r} 65.2 \\ 9.1 \\ \hline 110 \end{array} \quad \begin{array}{r} 67.2 \\ 7.1 \\ \hline 82 \end{array}$$

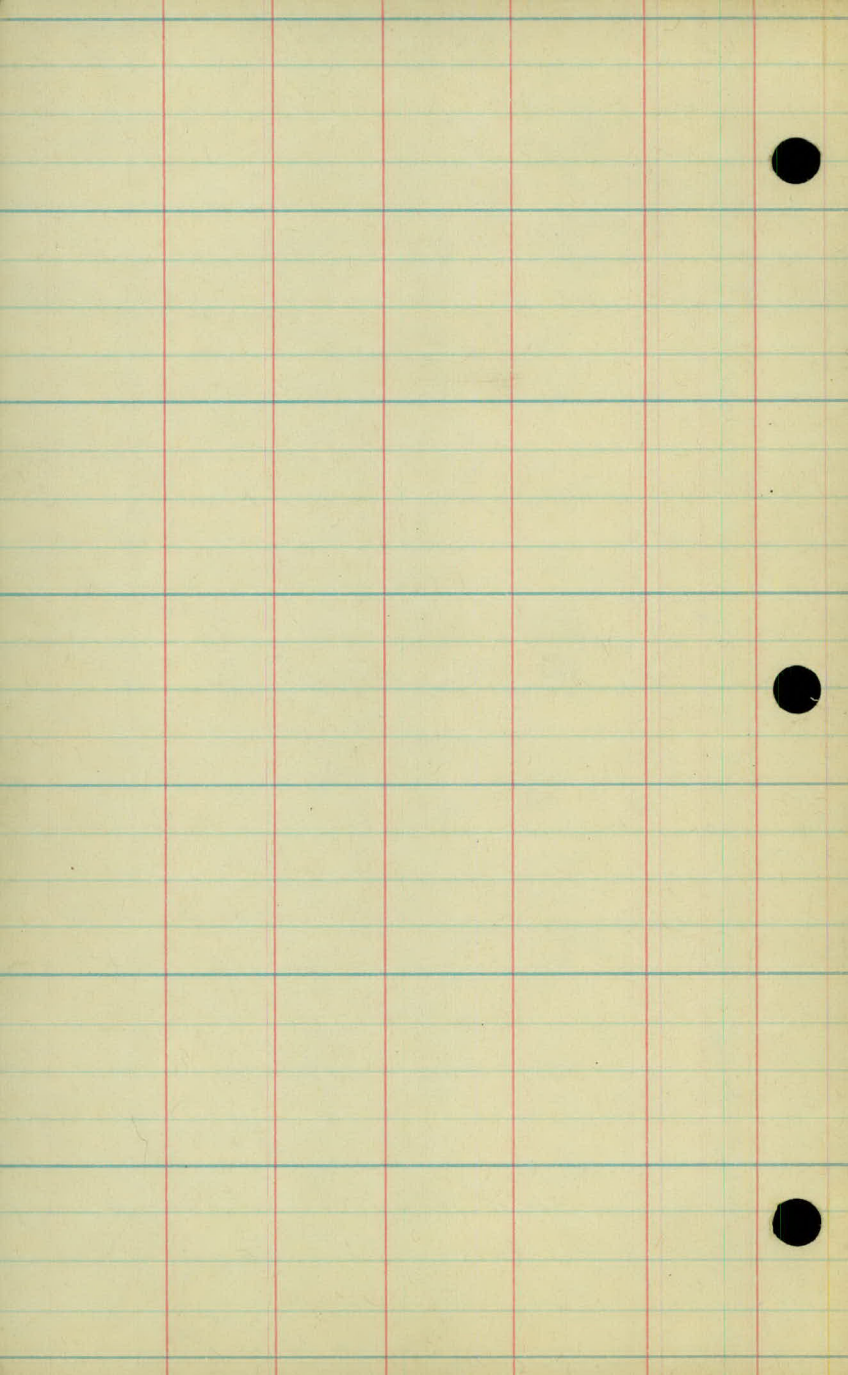
$$\begin{array}{r} 64.3 \\ 10.0 \\ \hline 200 \end{array} \quad \begin{array}{r} 64.0 \\ 10.3 \\ \hline 150 \end{array} \quad \begin{array}{r} 60.3 \\ 10.0 \\ \hline 115 \end{array} \quad \begin{array}{r} 64.9 \\ 9.4 \\ \hline 78 \end{array}$$

$$\begin{array}{r} 63.6 \\ 10.7 \\ \hline 150 \end{array} \quad \begin{array}{r} 63.9 \\ 10.4 \\ \hline 100 \end{array} \quad \begin{array}{r} 64.1 \\ 10.2 \\ \hline 50 \end{array} \quad \begin{array}{r} 68.1 \\ 6.2 \\ \hline 29 \end{array}$$

$$\begin{array}{r} 62.6 \\ 11.7 \\ \hline 150 \end{array} \quad \begin{array}{r} 62.2 \\ 12.1 \\ \hline 100 \end{array} \quad \begin{array}{r} 62.3 \\ 12.0 \\ \hline 53 \end{array} \quad \begin{array}{r} 61.0 \\ 12.3 \\ \hline 49 \end{array} \quad \begin{array}{r} 65.4 \\ 8.9 \\ \hline 43 \end{array} \quad \begin{array}{r} 65.4 \\ 8.9 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 75.27 \\ 10.68 \\ \hline 64.59 \\ 63.01 \\ \hline 1.98 \end{array}$$

Willow



LINE R.R.

780

770

760

12.5' 12.5' 12.5' 12.5' 12.5'

12.5' 12.5'

a = 215'

13.5' 13.5'

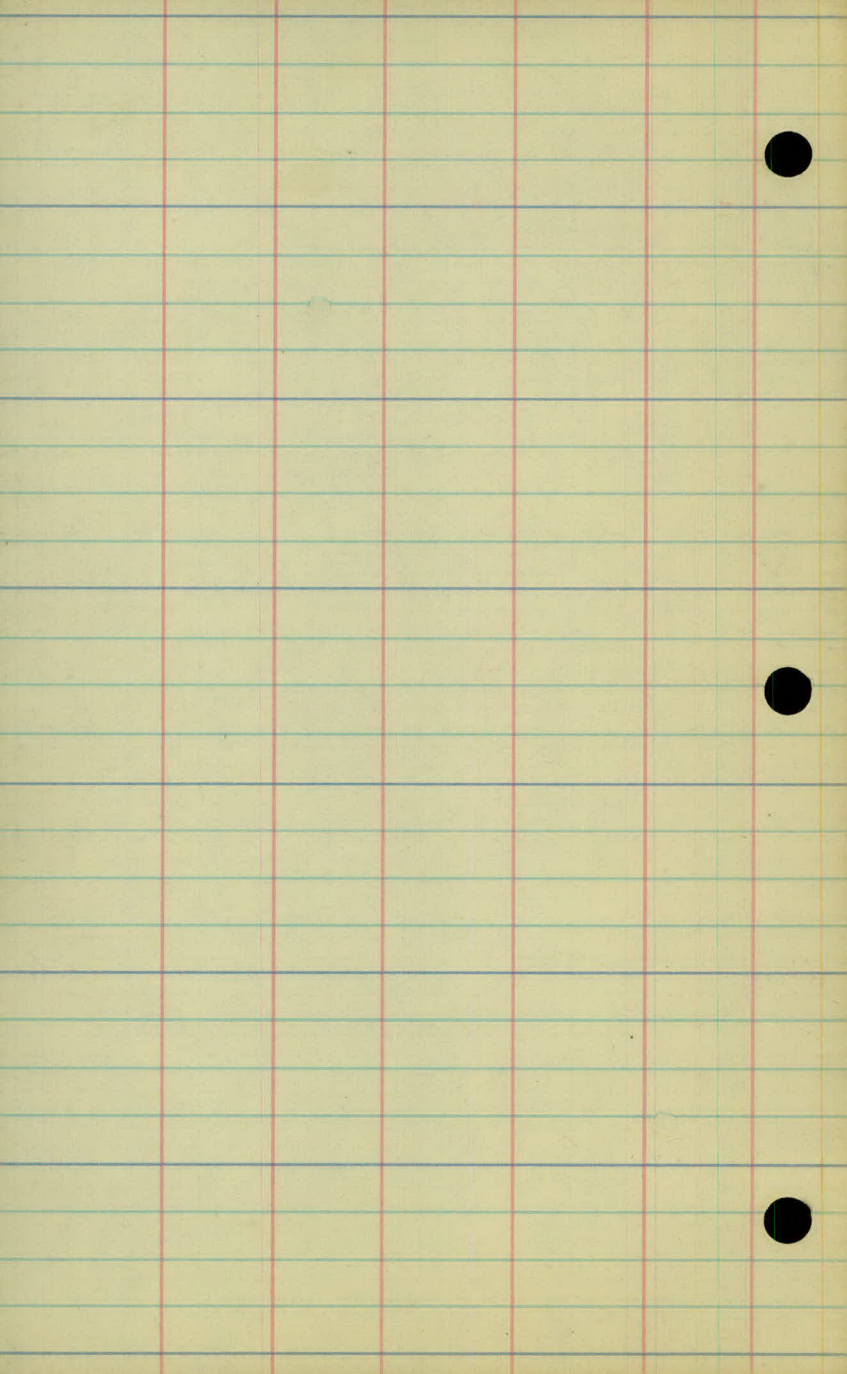
- Tarvia -

Typical Section Sta. 610

20 40 60 80 100

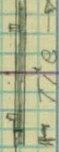
Scales { Ver " = 10' }
 { Hor " = 20' }

(215 X 450 ÷ 27 = 3583)
 C.V.



Track

12. N



870

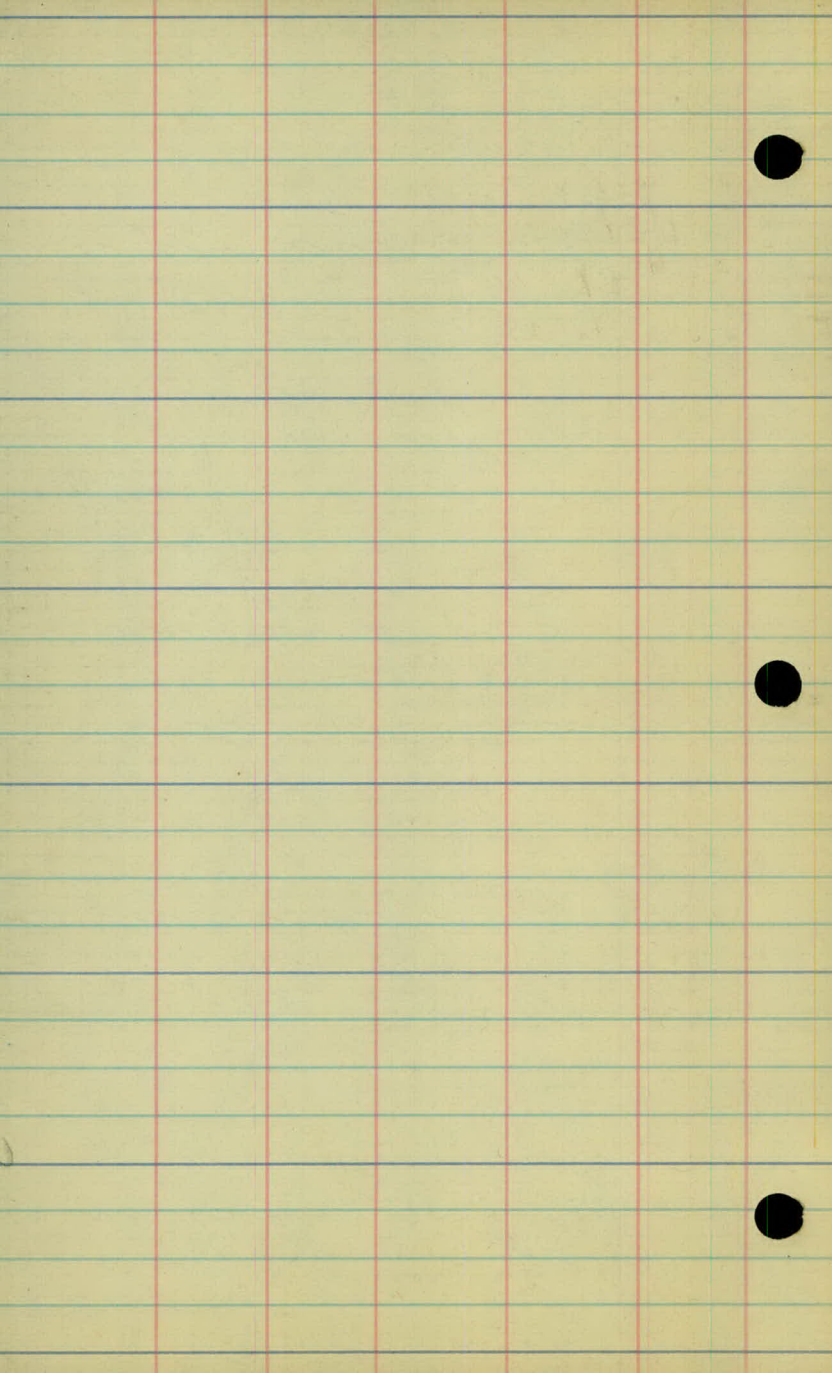
860

850



5/10/20

Typical Section Sta 11+70



New Grading



870

860

Typical Section 13+75

