

Book-77-Dr. 6

GOV'T. FIELD NOTES

T.29.N ~ R.23.W

LEVEL BOOK

371

Copied Mar: 1925
C.A.O.

KEUFFEL & ESSER CO.

DRAWING MATERIALS

AND

SURVEYING INSTRUMENTS.

NEW YORK.

CHICAGO.

ST. LOUIS.

SAN FRANCISCO.

MONTREAL.

TABLES FOR EXCAVATIONS AND EMBANKMENTS.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.

FOR SINGLE TRACK EXCAVATION.

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	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	0
1	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	1
2	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	2
3	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	3
4	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	4
5	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	5
6	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	6
7	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	7
8	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	8
9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	9
10	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	10
11	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	11
12	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	12
13	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	13
14	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	14
15	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	15
16	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	16
17	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	17
18	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	18
19	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	19
20	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	20
21	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	21
22	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	22
23	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	23
24	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	24
25	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	25
26	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	26
27	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	27
28	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	28
29	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	29
30	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	30
31	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	31
32	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	32
33	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	33
34	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	34
35	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	35
36	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	36

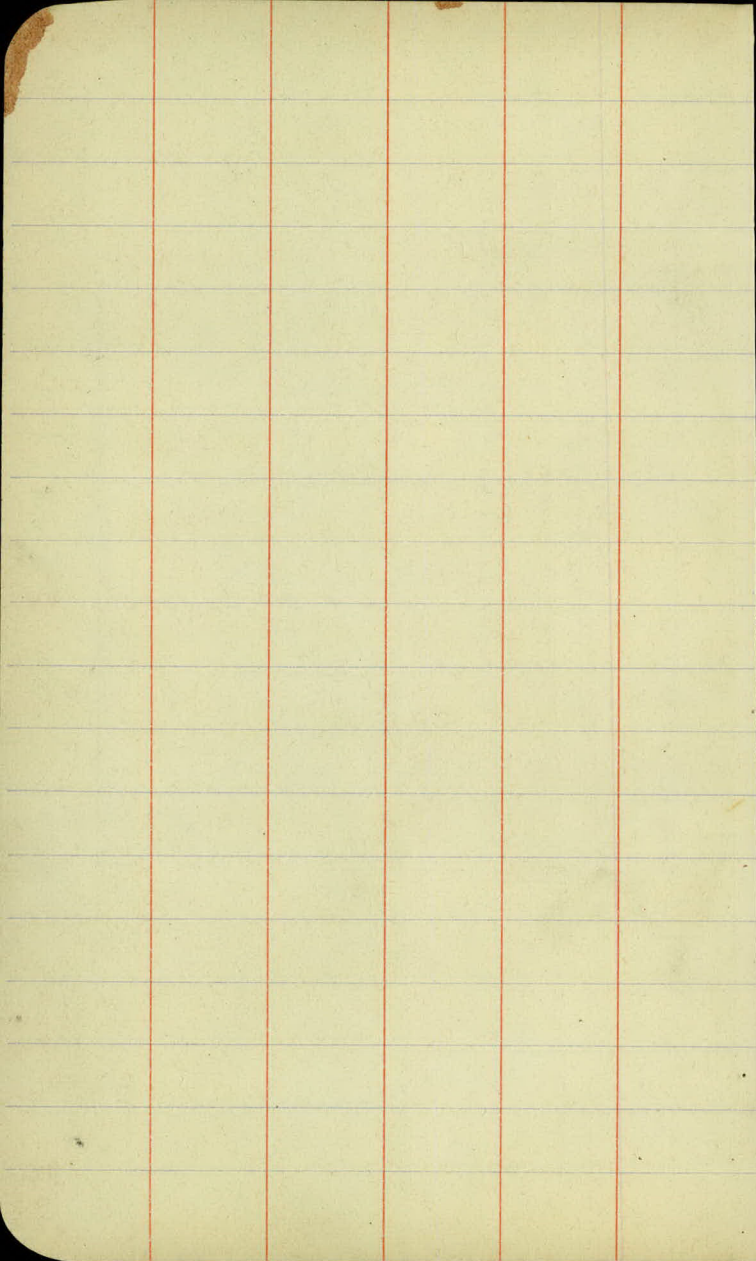
Calculated by Julien A. Hall, M. Am. Soc. C. E.

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TWP. 29 RANGES 23 W.

1. 6 ¹⁰ ₆₉	5 ⁹ ₆₈	4 ⁸ ₅₃	3 ⁷ ₄₂	2 ⁸³ ₃₁	1. ^{6.} ₂₀
2. 7 ^{MEAN.} ₆₆	8 ⁵² ₆₅	9 ⁴¹ ₅₁	10 ³⁰ ₄₀	11 ¹⁹ ₂₉	12 ¹⁸
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TWP. 29 N.

1.

Between Ranges 23 & 24 W.

CHAINS. South between Sec 146
Var. 11°

43.90 Set post at gr. Sec corner.
Br Oak 10 S. 10 W 127
B. Oak 18 S. 10 E. 153

51.00 B Oak 18

83.90 Set post at corner to Sec's
1, 6, 7 & 12.

Br. Oak 8 N 35 W 80

Br. Oak 12 N 72 E 81

Br Oak 12 S. W 120

Land rolling Soil Fine
Timber White B & Br.
Oak.

Oct 17th.

Bellevue Range 23724

CHAINS.

South between Sec 7 & 12
Var $10^{\circ} 45'$

29.63 Br Oak 12

40.00 Set post at ga. sec
corner.

Br Oak 8 N 10 W 92

Br Oak 16 S. 50 W. 104

80.00 Set post at corner to
Sec. 7, 12, 13 & 18.

Br Oak 8 N 11 W. 90

Br Oak 8 S. 46 E 50

Br Oak 8 S. 10 W. 53

Land high & rolling

Soil 2nd rate timber

White Blk + Br Oak

Oct 17th

TWP. 29 North
Between Ranges 23 & 24 W.

CHAINS.

South between Sec 13 & 18
Var 11°

300 enter wet prairie bottom
with scattered timber

4000 Set post at gr section
corner.

Br. Oak 10 S. $\frac{1}{2}$ W 29, 12

Br. Oak 10 S. 1 E. 22, 38

8000 Set post at corner to sections
13, 18, 19 & 24.

and made river.

Put 8 lbs south.

land high & wet prairie
bottom with scattering places
of hard land. Timbered
with white ^{Br} Oak.

Oct 17th

4.

TWP 29 N.

Between Ranges 23 & 24

CHAINS.

South between Sec 19 & 24

Var 119

40.00 Set post at gr. Sec
corner & made mound
Pit 8 lks East

78.00 Leave wet bottom

80.00 Set post at corner to
Sections 19, 24, 25 & 30
and made mound
Pit 8 lks South

Land high level wet
prairie bottom with
scatt. patches of
Oak opening
Oct 17th

TWP. 27 N.

Between Ranges 23 & 24.

CHAINS.

South between Sec 25 & 3.
Var 11°

32.25 Road N. E

37.78 Enter field S. W.

40.00 Set post at gr. Sec. corner
and grade moraine
Pit 18 lks East

47.25 To Mississippi river runs
S. to E. banks high current
rapid & set meander
post.

Bench 8 S. 35 E. 49

Bench 6 N. 40 W. 55

Land high & level prairie

Soil good 2 rate

Oct 18th

6. Between Twp 29 & 30 N.
Range 23 W. 4th Mer.

CHAINS.

West between Sec 14 & 36
Var 11° 15'

1234 To lake & established for
meander corner.

Q. Oak 12" diam.

4000 Quarter Section
corner in lake

8000 Section corner in
lake.

Oct 18th

Between Twp 29 N 30 North. 7.
Range 23 West 4th Meridian.

CHAINS

West between Sec 34 34
Var 11°

7.54 to lake & set meander post
B Oak 8 N 85 E 40
Aspen 12 S. 21 W 15

45.27 Over lake & set meander
post.

B Oak 24 N 25 W 6

B Oak 18 S. 12 W 9

80.00 Set post at corner to Sections
3, 4, 33 & 34

B Oak 15 N. 17 E. 90

B Oak 15 N. 6 W. 109

B. Oak 12 S. 60 W 97

B. Oak 20 S. 50 E 20,

Sand high rolling Oak
barrens Soil 2 rods, 18th
Oct. 1864

8.

Between Twp 29 & 30 N.
Range 23 W 4th Mer.

CHAINS.

West between sec 4 & 33
Var $10^{\circ} 45'$

11.44 to Pond corner.

25.54 over pond.

40.00 Set post at gr. sec. corner
Br Oak 12 N. 2 W 141
W. Oak 16 S. 46 W. 32

80.00 Set post at corner to
sections 4, 5, 32 & 33.

Br Oak 12 S 85 E 86

No other near

Land high rolling
Oak barrens

Soil poor 2nd rate
Oct 16th

Between Twp 30 & 29 North
Range 23 W 4th Mer. 9

CHAINS.

West between Sec 5 & 32
Var $10^{\circ} 45'$

40.00 Set post at gr. Sec corner.
W Oak 18 N 62 E. 279
Br Oak 10 63 W 42

80.00 Set post at corner to sections
5, 6, 31 & 32
B. Oak 18 N 86 E. 342
B. Oak 22 W 84 E 253
W Oak 14 S. 82 W 116

Land high rolling
Oak barren
Soil poor 2nd rate

Oct 17th

Between Twp 29 & 30
Ranges 23 W. 4th Mer.

C. HAINES.

West between Sec 6 & 31.
Var $10^{\circ} 45'$

40.00 Set post at gr sec corner
Wht Oak 24 S 5 E 27
Wht Oak 20 W 60 W 50

73.94 Set post for corner to Twp
29 & 30 N Ranges 23 & 24
Br Oak 21 N 85 E 32
Br Oak 15 S 51 E 101
B. Oak 13 N 59 W 39
Br Oak 13 S 2 W 36

Land high level
Oak barrens interspersed
with marshes

Oct 17th

TWP 29 N R 23 W #11

CHAINS

Work between sections
35 & 36

Var $11^{\circ} 15' E$.

39.50 Road from St. Paul to the
Falls of St Anthony lines
E. & W.

40.00 Set $\frac{1}{4}$ Section post
Bir Oak 12 N 8 E. 243

80.00 Set post corner to sections
25, 26, 35 & 36.

W Oak 20 N 8 W 361
no other

Land rolling soil 2nd rate
Timber Shaking Oak.

TWP 29N R 23
W 4th Mer.

East Random between
Sections 25 & 36

Var $11^{\circ} 15' E$.

80.54 Intersected Range line
11 links south of post

West corrected between
Sections 25 & 36.

Var $11^{\circ} 20' E$.

20.00 To small lake

25.00 Over Lake

40.27 Set $1/4$ sec post.

B Oak 12 S $35^{\circ} E$ 64

78.00 Leave Marsh bears N & S.

80.54 Section corner

low wet marsh

Soil 3 rats.

CHAINS.

North between sections 25 & 26
Var $10^{\circ}55'E$.

4000 Set $\frac{1}{4}$ section post
{ Bur Oak $\frac{1}{2}$ S. $58^{\circ}E$ 33
{ no other

8000 Set post corner to Secs
23, 24, 25 & 26

Bur Oak $12N 88^{\circ}W 161$
Land rolling soil
2 rate

Timber scattering
Oaks.

TWP 29 N - R 23 W

East Run down
between sections
24 & 25

Var $11^{\circ} 15' E$.

80.60 Intersected Range
line 10 links south
of post.

West corrected between
sections 24 & 25.

Var $11^{\circ} - 45' E$.

20.00 Enter marsh bears N & S.

30.00 Leave marsh and enter
Tamarack Swamp.

40.30 Set $\frac{1}{4}$ section post
Tamarack 12 5 18 W. 43

60.00 Leave Swamp

80.60 Section corner
land mostly level
Swamp & marsh.

TWP. 29 N - R 23 W. 4TH MER. 15

North between sections 23 & 24

Var $10^{\circ} 25'$ E.

40.00 Set $\frac{1}{4}$ section post
{ W. Oak 12 S. 68° W 43
Do 8 N. 20 E. 30

59.00 To pond

61.00 Over pond.

80.00 Set post corner to sections
13, 14, 23 & 24

{ Burr Oak 10 S. 51° W. 31
B. Oak 16 S. 63° E. 59

Land rolling, Soil 2nd rate

Timber scattering

Burr, B. & W. Oak.

East Random between
Sections 13 & 24.

Var. $10^{\circ} 57'$ E.

80.00 Intersected Range line
35 links South of post.
West Corrected between
Sections 13 & 24.

Var $11^{\circ} 12'$ E.

18.00 Enter Tamarack swamp

40.00 Set $\frac{1}{4}$ Section post
 { Tamarack 15 N. 16 E. 10
 Do 14 S. 20 E. 23

55.00 Leave Swamp bears N & S.

80.00 Section corner
Land level Swamp

Soil 2nd rate

Timber Tamarack Burr
and B. Oak.

TWP. 29 N. - R 23 W 4TH MER. 17

North between Sections 13 & 14.

Var 10° 57' E.

40.00 Set 1/4 Section post

{ B. Oak 8 S. 16 E. 57

Do 9 S. 15 W. 53.

80.00 Set post corner to Sections
11, 12, 13 & 14

Bur Oak 12 N. 55 E. 208

Do 10 S. 64 E 90

Land Hilly Soil 2 rate
Timber Scattering Bur,
B. & W. Oak.

East Random line
between Sections 12 & 13
Var $10^{\circ} 57' E$.

79.80 Intersected Range line
25 links South of post.

West corrected between
Sections 12 & 13. Var $11^{\circ} 8' E$.

39.90 Set $\frac{1}{4}$ section post
 { W. Oak 16 N. 1 E. 86
 { Do 12 S. $25^{\circ} E$. 83.

79.80 Section Corner
Land rolling
Soil 2nd rate
Timber scattering
B. & W. Oak.

TWP. 29 N - R. 23 W 4th MER. 19

North between Sections 11 & 12.
Var $11^{\circ} 10'$ E.

40.00 Set 14 sections post
{ Bur Oak 10 N 83 W. 59
Do 9 S. 62° E. 88

59.00 Enter Tamarack Swamp bears E. & W.

73.00 Leave Swamp bears E. & W.

80.00 Set post corner to Sections
1, 2; 11 & 12.

W. Oak 16 N. 5° E. 40

Do 17 N 84° W 31

Land rolling except
Swamp, Timber Bur
B. & W. Oak and Tamarack.

Twp. 29 N. - R 23 W 4 Mer.

East Random between

Sections 1 & 12.

Var 11° 25' E.

79.72 Intersected Range line
35 links South of post.

West corrected between

Sections 1 & 12.

Var 11° 40' E.

39.86 Set 1/4 Section post
{ W. Oak 12 N. 4 W. 55

79.72 Section corner.

Land rolling. Soil

2nd rate. Timber scattering

Oak, B. & W. Oak

Oct 31st

TWP. 29 N. R 23 W 4th MEK. 21

North between sections 1 & 2
Var 11° 15' E.

28.00 To Pond.

33.00 Over Same.

36.50 To Pond

40.00 In Pond.

43.50 Over Pond and set post
for Witness corner to $\frac{1}{4}$ section
post.

Bur Oak 8 N. 48° W 92.

Var. 11° 02' E. don

51.02 To Lake & set meander post.

W. Oak 10 S. 44 W 9

Land Hilly & Broken
Soil 3rd rate.

Timber Scattering Bur
B. & W. Oak.

North between sections 34 & 35

Var $11^{\circ} 15' E$.

19.00 Road from St. Paul to the

Falls of St. Anthony

course N. W. & S. E.

23.00 A house and field

300 links West.

40.00 Set 1/4 Section post

Bur Oak $12 N. 10^{\circ} W. 373$

52.00 Enter Scattering Timber.

80.00 Set post corner to Sec's

26, 27, 34 & 35.

Bur Oak $14 N. 82 W. 94$.

Do $16 N. 64 E 172$

Land rolling, soil

2nd rate. Timber

scattering Bur Oak.

East Randam between
sections 26 & 35.

Var N 15° E.

79.60 Intersected N & S line
10 links North of post.

West corrected between sections
26 & 35

39.80 Set $\frac{1}{4}$ section post.

{ Burr Oak 12 & 60 $^{\circ}$ E. 3.65
Section corner.

79.60

Land rolling. Soil 2nd
rate. Timber scattering
B. & Burr Oak.

T. 29 N. - R. 23 W. 4th MER.

North between sections 26 & 27
Var 11° 15' E.

40.00 Set 44 section post
Bur Oak 10 S. 28° W. 33
Do 14 N. 33° E. 48

80.00 Set post corner to
Sections 22, 23, 26 & 27.
Bur Oak 10 N. 19° E. 3.47
Do 12 N. 84° W. 2.43

Land rolling
Soil 2nd rate
Timber Scattering
Bur & B. Oak.

East Random between Sections
23 & 26.

Var $11^{\circ} 10'$ E.

79.81 Intersected north & south
line 26 links north of post.

West corrected between
Sections 23 & 26

Var $10^{\circ} 59'$ E.

35.14 To lake & set meander post
{ B. Oak 16 S. 9° E. 1.19
 Do 14 N $1\frac{1}{2}^{\circ}$ N. 20

65.81 Over lake & set post
Aspen 14 S. 38° W. 78
B. Oak 18 S. 60° E. 232

79.81 Section corner
land rolling, Soil red
vale. Timber scattering
Birch & B. Oak.

Work between sections 22 & 23

Var 10° 40' E.

27.00 To Pond.

35.10 Over Pond.

37.00 To Lake & set meander post

Aspen 8 S 60° E. 67

Do 12 S. 67 W. 21

40.00 In Lake.

49.00 Over Lake & set post

Bur Oak 10 N. 52° W 30

80.00 Set post corner to

Sections 14, 15, 22 & 23.

{ W. Oak 18 S. 20 E. 84

{ Bur Oak 28 N. 65° W 66

Land hilly soil 2nd
rate

Timber scattering Bur
O & W. Oak.

East Random between Sections
14 & 23.

Var $10^{\circ} 50'$ E.

8000 Intersected N. & S. line 19
links north of post.

West Corrected between
Sections 14 & 23.

Var $10^{\circ} 42'$ E.

4000 Set $\frac{1}{4}$ Section post

Bur Oak 12 N. 45° W 33.

Do 15 S. 35° E. 89

8000 Section corner

Land rolling Soil 2nd
rate Timber Scattering
Bur Oak.

T. 29 N. R. 23 W. 4th MER.

North between Sec 14 & 15.

Var $10^{\circ} 36'$ E.

40.00 Set $\frac{1}{4}$ section post
 { Bur Oak 12 S. 81° E 30
 Do 15 S. 65° W. 53.

80.00 Set post corner to
 sections 10, 11, 14 & 15
 { Bur Oak 12 S. 40° W 140
 { B. Oak 15 N 17° W 169

Land high, rolling, Soil
 2nd rate Timber scattering
 Bur B & W. Oak.

T. 29 R. 23 W. 4th MER. 29

East Random between
Sections 11 & 14

Var $10^{\circ} 50'$ E.

79.75 Intersected N & S line 35
links west of post.

West Corrected between
Sections 11 & 14.

Var $10^{\circ} 35'$ E.

39.87 $\frac{1}{2}$ Set $\frac{1}{4}$ Section post
Bur Oak 12 N 43° E. 68
D. 15 S 89° W 13

79.75 Section Corner
Land rolling
Soil 2nd rate Timber
Scattering Bur Oaks.

North between Sec's 10 & 11
Var. $11^{\circ} 30' E$.

40.00 Set $\frac{1}{4}$ section post
Bur Oak 15 S $9^{\circ} W$ 45
Do. 12 N $10^{\circ} E$ 46

64.75 To Lake bears N E. & S W.

78.60 Over lake " " "

80.00 Set post corner to
Sections 23, 10 & 11

B. Oak 15 N $8^{\circ} W$ 26

W Oak 12 S $38^{\circ} E$ 85

Land rolling

Soil 2nd rate

Timber, Bur, B & W Oak

TWP 29 N R 23 W 4TH MER.

31

East Random between sections
2 & 11.

Var $11^{\circ} 15'$ E.

80.60 Intersected N & S. line
45 links north of post.

West corrected between
Sections 2 & 11

Var $10^{\circ} 56'$ E.

38.00 Enter marsh

40.30 Set $\frac{1}{4}$ section post
B. Oak 16 N $86\frac{1}{2}$ E. 228

50.00 Leave marsh

63.25 To Small lake bears N & S.W.

76.25 Over lake bears NE & S.W.

80.60 Section corner

Land rolling soil 2nd
rate Timber Bur, B & W Oak.

North Random between
Sections 2 & 3.

Var $11^{\circ} 06' E$.

83.28 Intersected North
Boundary 12 links west of post.

South corrected
between Sections 2 & 3
Var $11^{\circ} 1' E$.

9.67 to marsh.

43.28 Set 1/4 Section post
W. Oak 18 S. $34\frac{1}{2} E$. 267
Do 10 S. $31\frac{1}{2} W$. 260

83.28 Section corner
land rolling
Soil 2nd rate
Timber Burr, B. & W. Oak.
45.00 Leaves marsh.

North between Sec 33 & 34

Sec 11th 15' E.

20.10 Road from St. Paul to the
falls of St. Anthony bears E. & W.

40.00 Set ~~1/4~~ section post sections
 { Bur Oak 13 N 75° E 29
 Do 10 S 13° W. 86

80.00 Set post corner to sections
 27, 28 33 & 34.

Bur Oak 12 S 50 W 393

Land gently rolling

Soil 2nd rate

Timber Scattering

Bur & Black Oak

East Random between
Sections 27 & 34

Var $11^{\circ} 6' E$

80.34 Intersected N & S line
at post.

West corrected between
Sections 27 & 34

Var $11^{\circ} 6' E$

15.00 Enter Prairie bears NW.

40.17 Set 1/4 Section post in
mound pit 8 links East.

78.00 Leave prairie & enter
Timber

80.34 Section corner.

North between sections 27 & 28

Var $10^{\circ} 35'$ E.

40.00

Set $\frac{1}{4}$ section post

Bur Oak $10^{\circ} N 84^{\circ} W$ 2.47

80.00

Set post corners to sections

21, 22, 27 & 28

Bur Oak $12^{\circ} S 11\frac{1}{2}^{\circ} W$ 4.76

Land rolling

Soil 2nd rate Timber

Scattering Bur & B Oak

East Random between

sections 22 & 27

Var $11^{\circ} 6' E$.

80.40

Intersected N & S. line

4 links south of post.

West corrected between

sections 22 & 27

Var $11^{\circ} 8' E$.

40.20

Set $1/4$ section post.

Bur Oak $12 N 73 \frac{1}{2} E 106$

Do $12 S 30^{\circ} E 225$

80.40

Section corner

Land rolling

Soil 2nd rate

Timber scattering

Bur & B & W Oak

Twp 29 N R 23 W 4th Mer.

37

North between Sections 21 & 22
Var 10° 30' E.

40.00 Set 1/4 Section post

Bur Oak 12 S 56° W 4.72

80.00 Set post corner to sections
15, 16, 21 & 22

Bur Oak 16 S 25° E 1.26

Do 12 S 17° W 20.0

Land rolling, soil 2nd
rate, Timber scattering
Bur Oak.

East Random between
Sections 15 & 22

Var $10^{\circ} 50' E$.

80.79 Intersected N & S line
150 links south of post.

West corrected between
Sections 15 & 22

Var $11^{\circ} 54' E$

40.39 1/2 Sec 1/4 Section post

Bur Oak 20 S 23 E

253

80.79 Section corner.

Land rolling.

Soil 2nd rate

Timber scattering
Bur Oak

TWP 29 N R 23 W 4th Mer.
39

Notch between Sections 15 & 16
Var $10^{\circ} 50' E$.

40.00 Set $\frac{1}{4}$ Section post.

Bur Oak $12 N 65^{\circ} E 200$

80.00 Set post corner to
Sections 9; 10; 15 & 16.

W. Oak $22 N 85^{\circ} E 61$

O. 12 S. $29^{\circ} E 38$

Land rolling

Soil 2nd rate

Timber scattering Bur.

B & W Oak.

East Random between
Sections 10 & 15.

Var. $11^{\circ} 55' E$.

80.20 Intersected N & S. line
20 links South of post.

West connected between
Sections 10 & 15

Var. $11^{\circ} 34' E$.

40.10 Set $\frac{1}{4}$ section Post.

Bur Oak 10 S. $22^{\circ} W 31$

D. 8N $62^{\circ} E$. 56

80.20 Section corner

Land rolling. Soil
2nd rate. Timber
scattering Bur, B &
W Oaks.

TWP. 29 N - R 23 W 4th ME
41

North between sections 9 & 10.

Bear 11° 18' E.

40.00

Set 44 section post.

Bear Oak 12 N 49° W 169

O. 14 N 60° E 22

65.90

To pond bears E & W.

80.00

Over pond & set post corner
to section 3, 4; 9 & 10

W Oak 10 N 51° E 252

Land rolling

Soil 2nd rate.

Timber scattering.

Bear B. & W. Oak.

East Boundary between
Sections 3 & 10.

Var 11th 9' E.

79.75 Intersected N & S. line
at post.

West corrected between
Sections 3 & 10.

Var 11th 9' E.

39.87 1/2 Set 1/4 Section post.

B Oak 10 S, 8th W 25.

79.75 Section corner

Soil 2nd rate

Timber scattering Pine

B & W Oak.

North Random between Sec: 3 & 4.
Var 11.5 E.

83.43 Intersected North Boundary
58 links West of post.
South corrected between
Sec: 3 & 4.

Var 10^o 46 E.

43.43 Set 1/4 Section post
B Oak 12 N 87^o E 106
Bur Oak 12 N 62^o W 121

52.00 To Small Lake bears E & W.

59.00 Over Lake.

83.43 Section corner.
Land rolling soil. 2nd rate
Timber scattering Bur &
B & W. Oak

No. 7th

North between sections 32 & 33
Var $11^{\circ} 15' E$

4.80 Road bears E & W.

30.75 Road from St Paul
to the Falls of St. Anthony
bears S. E. $7\frac{1}{2} W$.

40.00 Set $\frac{1}{4}$ Section post.
Burr Oak $12 S 15^{\circ} E 53$
D. $12 N 80\frac{1}{2} W 119$

80.00 Set post corner to
sections 28, 29, 32 & 33.
Burr Oak $16 S 55^{\circ} 181$
D. $14 N 55^{\circ} W 100$

Land rolling

Soil 2nd rate.

Timber scattering Burr
O. & W. Oak.

East Random line between
sections 28 & 33

Var 11⁰ 15' E.

80.00 Intersected N & S. line
6 links north of post.

West corrected between
sections 28 & 33.

Var 11⁰ 12' E.

40.00 Set 1/4 section post

Bur Oak 12⁰ 37' E 83

19. 10 N 2⁰ W 44

80.00 Section corner

Land rolling
Soil 2nd rate

Timber scattering

Bur, B. & W. Oak.

North between Sections 28 & 29.

Var 10° 50' E.

32.63 To Lake and set post for
Witness to 1/4 Section corner

B. Oak 16 S 6° E 44

O. 18 S 28° W 40.

50.00 Over Lake

80.00 Set post corner to
Sections 20, 21, 28 & 29.

B Oak 12 S 26° E 52.

W Oak 10 N 67° W. 78

Land hilly Soil 2nd
rate

Timber Burr, B
& W. Oak.

East Random between sections
21 & 28

Var $11^{\circ} 15' E$

79.75 Intersected N & S line at post.

West corrected between
sections 21 & 28

Var $11^{\circ} 15' E$

39.89 $\frac{1}{2}$ Set $\frac{1}{4}$ section post

Bur Oak 16 S $44^{\circ} E$ 79

Do 16 N $4^{\circ} E$ 87

64.50 To small lake

72.20 Over lake

79.75 Section corner

land rolling soil 2nd rate

Timber scattering

Bur, B & W. Oak

North between sections
20 & 21.

Var $10^{\circ}30'$ E.

1.50 To Small Lake bears
E & W.

5.00 Over Lake

40.00 Set 44 section post
Bearing Oak 16 S 52° E 46
D. 12 N 23° W 78

80.00 Set post corner to
Sections 16, 17, 20 & 21.
Bearing Oak 20 S 39° W 83
D. 14 N 51° E 33

Land hilly soil 2nd rate
Timber Bearing B &
W Oak.

East Random between
 Sections 16 & 21
 Var 11° 10' E.

79.87 Intersected N & S. line
 20 links north of post.

 West corner between
 Sections 16 & 21
 Var 10° 10' E.

39.93½ Set 1/4 Section post
 Bur Oak 10 N 55° W 111

79.87 Section Corner
 Land level. Soil 2nd
 rate Timber scattering
 Bur B & W Oak.

North between Sec 16 & 17

Bar $10^{\circ} 50'$ E.

40.00 Set 1/4 section post

Bar Oak $15^{\circ} 55'$ E 168

80.00 Set post corner to

Sections 8, 9, 16 & 17.

W. Oak $15^{\circ} 19'$ W 42

Do $10^{\circ} 44'$ E. 26

Land rolling. Soil

2nd rate Timber

Scattering Bar, B & W. Oak

East Random line between
sections 9 & 16.

Var 11° E.

80.18 Intersected N & S. line
30 links south of post

West corrected between
Sections 9 & 16.

Var $11^{\circ} 13'$ E.

40.09 Set $\frac{1}{4}$ Section post
W. Oak 10 N 66° E 10
Do 16 N 75° W 66

80.18 Section corner

hard rolling soil 2nd
rate Lumber scattering
Bur & B. Oak.

North between Sec. 8 & 9
Var $11^{\circ} 30' E$.

40.00 Set $\frac{1}{4}$ Section post
B Oak 12 S $39^{\circ} E$ 1.48

80.00 Set post corner to
Sections 4, 5 & 8 & 9
B Oak 12 N $77^{\circ} E$ 1.59

Bur Oak 10 N. $84^{\circ} W$ 2.03
hard rolling Soil
2nd rate

Timber Bur, B &
W. Oak.

East Random between Sec
4 & 8.

Var $11^{\circ} 10'$ E.

80.15 Intersected $\frac{1}{4}$ S. line 20
~~20~~
links south of post.

West corrected between
Sections 4 & 8.

Var $11^{\circ} 19'$ E.

0.50 $\frac{1}{4}$ Pond.

3.00 Over Pond

40.07 $\frac{1}{2}$ Set $\frac{1}{4}$ Section post
W. Oak 18° S 62° W 15

80.15 Section corner

Land - rolling. Soil 2nd
rate Timber Bur, B & W.
Oak.

North Random line between
Sections 4 & 5.

Bear $11^{\circ}15'$ E.

8410 Inserted North Boundary
15 links E of post.

South corrected between Sec 4 & 5.

Bear $11^{\circ}21'$ E.

16.00 To Pond

22.00 Over Pond.

31.60 To Lake & set post
for Witness corner to $\frac{1}{4}$ Sec.

B Oak 10 N. 9° W 47

D. 14 N 5° E 137

67.00 To Small Lake

74.10 Over Lake

8410 Section Corner

54.00 Over Lake

Hard rolling Soil 2nd rate

Timber standing Bur, B. & W. Oak

West between sections 29 & 32
 Var 11th 20' E.

40.00 Set 14 section post.

B. Oak 16 of 31st E 33

Bur Oak 12 N 57th W 71

50.00 Enter Marsh bears NW. & S. E.

60.00 Leave Marsh

77.00 Road from St. Paul & Falls
 of St Anthony bears NW. & S E.

80.00 Set post to corner to
 Sections 29, 30, 31 & 32

Bur Oak 14 N. 62nd E 36

B. Oak 18 of 25th W. 120.

Land rolling. Soil
 2nd rate. Timber Bur
 B & W. Oak.

South between sections
31 & 32.

Var $11^{\circ} 20' E$

34.50 Enter Field

40.00 Set $\frac{1}{4}$ Section post
Sugar tree $18N. 18^{\circ} W 51$

48.05 To left Bank of the
Mississippi River course
S. E. and set
meander Post.

Bur Oak $12N. 28^{\circ} W 153$

W Ash $8N. 70^{\circ} E. 92$

Land rolling. Soil 2nd
rate Timber Bur
34 W. Oak.

TWP. 29 N R 23 W.

57

West between Sections
31 & 32.

Var $11^{\circ} 20'$ E.

40.00 Set 1/4 Section post
B. Oak 16 N 62° W 49
Do 20 S 10° W. 39

18.00 To Left Bank of the Mississippi
river and set meander
post.

Cottonwood 14 S. 80° E 3.73

Land rolling

Soil 2nd rate

Timber Burr, B & W Oak

Sugar. Spruce & Elm.

North between Sections 29 & 30.

Var $10^{\circ} 50'$ E.

1.75 Road from St Paul to
the Falls of St Anthony
bears S. E. & W. W.

40.00 Set $\frac{1}{4}$ Section post
Bur Oak 16 S $1^{\circ} E$ 63
D. 12 N $24^{\circ} W$ 73

54.00 Enter Marsh bears NW & S. E.

75.00 Leave " " " " "

80.00 Set post corner to
Sections 19, 20 29 & 30
Bur Oak 12 S 75°
W 21

D. 15 N $70^{\circ} E$ 1.51

Land hilly except
marsh. Soil 2nd rate

Timber scattering Bur B & W. oak

TWP. 29 N. R 23 W. 4th Mer. 57

East Random Line between
Sections 20 & 29.

Var $11^{\circ} 20'$ E.

80.18 Intersected N & S Line
1 link North of Post.

West corrected between
Sections 20 & 29.

Var $11^{\circ} 17'$ E.

23.50 To Small Lake.

31.50 Over Lake.

40.09 Set 1st Section Post.

Bur Oak 12 S. 43° E 41

B. Oak 14 N 80° W. 8

80.18 Section Corner

Land hilly Soil red rate
Timber scattering Bur,
B. & W. Oak.

West Random between
 Sections 19 & 30.
 Var $11^{\circ} 30' E$.

75.69 Intersected West Boundary
 123 links north of post.

last corrected between
 Sections 19 & 30.
 Var $12^{\circ} 13' E$.

25.00 Enter Timber:

35.69 Set $\frac{1}{4}$ Section post
 Bur Oak $16 N 60^{\circ} W 70$
 D. $18 N 55^{\circ} E 20$

75.69 Section Corner
 Sand level Soil
 and rate Timber Bur
 O & W. Oak.

TWP 29N R 23W.

61

North between Sections
19 & 20.

Var $10^{\circ} 30'$ E.

40.00 Set $1/4$ Section post.

Bur Oak 14 S $22\frac{1}{2}^{\circ}$ W 62

Do. 17 S $62\frac{1}{2}^{\circ}$ E. 157

80.00 Set post corner to
Sections 17, 18, 19 & 20

Bur Oak 18 N 22° W 56

Do 16 S 53° E 84

Land level. Soil 2nd
rate. Timber scattering
Bur, B & W. Oak.

East Random line between
Sections 17 & 20.

Var $11^{\circ} 15'$ E

80.19 Intersected N & S. line
35 links North of post
West corrected between
Sections 17 & 20.

Var 11° E.

40.09 $\frac{1}{2}$ Set 14 Section post
Bur Oak $14^{\circ} N 38^{\circ} E 25$
W Oak $20^{\circ} S 27^{\circ} W 84$

Land rolling

Soil 2nd rate

Timber scattering

Bur, B & W Oak

80.19 Section corner

No. 2.

West Random line between
Section 18 & 19.

Var $12^{\circ}10'$ E.

76.21 Intersected West Boundary
9 links south of post.

East corrected between
Sections 18 & 19

Var $12^{\circ}6'$ E.

36.21 Set 1/4 Section post

Bur Oak $12^{\circ}N 85^{\circ}E 5.74$

41.70 Leave Marsh and enter
Timber

76.21 Section corner

Land level. Soil 2nd
rate. Timber Bur, B &
W. Oak.

North between Section

17 & 18

Var 11° E.

40.00

Set $\frac{1}{4}$ Section post

Bur Oak 12 S 83° W 2

D. 14 S 88° E. 42

80.00

Set post corner to Section
7, 8, 17 & 18

Bur Oak 17 N $51\frac{1}{2}^{\circ}$ W 130

D. 14 S 62° E. 170

Land hilly, soil

Good rate

Timber scattering

Bur Oak.

East Random between
Sections 8 + 17.

Var 11° E.

80.62 Intersected N & S line
14 links north of post.

West connected between
Sections 8 + 17.

Var $10^{\circ} 54'$ E.

40.31 Set $1/4$ Section post

W. Oak 15 of 40° E 13

D₀ 14 N. 9° W 37

80.62 Section Corner

Land hilly. Soil 2nd rate
Timber Spr, W & S Oak.

West Random line
between Sections 7 & 18
Var $12^{\circ} 5' E$.

75.72 Intersected West Boundary
44 links South of post.
East corrected between
Sections 7 & 18.
Var $11^{\circ} 46' E$.

35.72 Set 1/4 Section post.
Bur Oak 108 $51\frac{1}{2}^{\circ} E 26$
D. 12 N $27^{\circ} W 39$

75.72 Section corner
Land hilly soil
bad rth. Timber scattering
Bur, B & W Oak.

Work between sections
7 & 8

Var $11^{\circ} 10' E$.

40.00 Set $\frac{1}{4}$ section post
Bur Oak $12 N 75^{\circ} W 57$
Do $11 E 73^{\circ} E. 95$

80.00 Set post corner to
sections 5, 6, 7 & 8
Bur Oak $11 N 74^{\circ} E 80$
Do $12 N 21^{\circ} W 125$

Land rolling Soil 2nd
rate

Timber scattering Bur
B & W. Oak.

East Random between
Sections 5 & 8.

Var $10^{\circ} 40' E$.

80.42 Intersected N & S line
at post.

West connected between
Sections 5 & 8.

Var $10^{\circ} 40' E$.

3.40 To Small Lake

12.42 Over Lake

40.21 Set 1/4 Section post

Bur Oak $10 N 51^{\circ} E 95$

Do 9 S $35^{\circ} E 105$

80.42 Section corner

Land rolling. Soil 2nd
rate. Timber scattering
Bur, B & W Oak.

West Random between
 Sections 6 & 7
 Var $10^{\circ} 40'$

75.10 Intersected West Boundary
 15 links north of post.

East Connected between
 Sections 6 & 7
 Var $10^{\circ} 46' E.$

35.10 Set 1/4 Section post
 Bur Oak 13 S $25^{\circ} W 410$

75.10 Section Corner
 Land rolling.
 Soil 2nd rate
 Timber Scattered Bur
 B & W. Oak.

North Random between
Sections 5 & 6.

Var $11^{\circ} 16' E$.

8400

Intersected North Boundary
5 Links West of post.
South corrected between
Sections 5 & 6.

Var $11^{\circ} 14' E$.

4400

Set $1/4$ Section post.

Bur Oak $10 N 72^{\circ} E 1.08$

W. Oak $14 S 23^{\circ} W 50$

8400

Section Corner.

Land rolling

Soil 2nd rate

Timber scattering Bur,
B & W. Oak

Meanders of the left Bank of
the Mississippi River beginning at a post
in South boundary thence up Stream.

N 15½ W. 10.00 in Section 32
at 9.50 mouth of Stream 6 West.

N 37½ W. 7.00 at 2.00 house, 3.00 N.E.

N 45½ W. 14.50 at 8.25 run 4 S.W.

N 59½ W. 13.20 at 10.00 enter field to
line of Section 31 & 32

N 53 W. 4.00 in Section 31 from this
point to point opposite N 76½ W.
N. 48½ W. 14.50 point opposite S. 31½ W.

N 40 W. 6.00

N 33 W. 4.00

N 34½ W. 9.00 at 5.00 foot of Island.

N 43½ W. 12.00

N 29 W. 4.00

N 47W 4.00 to of Island
 N 59W. 11.00 to line of sections 31 & 30
 Scattering Bur & B. Oak

N 41 W. 42.82 to line of Secs 25 & 30
 in Sec 30
 Land of timber.

Meander of the South part of lake in
 Secs 1 & 2 beginning at a post on north
 boundary on East Side of Lake
 Hence in Section 1.

COURSE CHS. REMARKS.

S 21½ W. 11.00 In Section 1

S. 73½ W. 3.50

N 59W. 2.00

N 29 W. 8.50

COURSE CHAINS

REMARKS.

N 88 1/2 W.	13.00	
S 48 W.	8.00	
S 71 1/2 W.	6.00	
N 86 W.	14.00	
S 51 1/2 W.	10.50	
S 13 W.	2.50	
S 20 W.	15.00	
S 48 1/2 W.	2.73	to line of sections 1 & 2.
S 64 W.	4.50	in section 2
S 31 1/2 W.	11.00	
S 49 1/2 W.	8.50	
S 35 1/2 W.	13.00	
S 64 1/2 W.	7.00	
S 48 W.	10.00	at 6.00 enter marsh.
N 70 W.	9.50	leave marsh.
N 18 W.	12.00	
N 57 1/2 W.	34.00	

COURSE CHAINS

REMARKS.

N $23\frac{3}{4}^{\circ}$ E. 3300N $0^{\circ} 30' W$. 786

to north boundary

Land 2nd rate scattering

3 in B. & B. Oaks.

Meanders of LAKE in Sections 22, 23, 26

Beginning at a post on line between

Secs 23 & 26 on West Side of Lake

thence in Section 26.

COURSE CHAINS

REMARKS.

S 74° E. 6.00 in Section 26S. 59° E. 1.70S $14\frac{1}{2}^{\circ}$ E. 2.00S. $49\frac{1}{2}^{\circ}$ E. 4.50S 37° E. 4.50N $72\frac{1}{2}^{\circ}$ E. 6.50N 80° E. 2.50

COURSE	CHAINS	REMARKS.
N 60 E.	7.50	
N 21 E.	5.27	to line of Section 23 & 26
N 24 1/2 W.	2.50	in Section 23
N 51 1/2 W.	2.50	
N 85 W.	5.50	
N 59 W.	3.50	
N 5 1/2 W.	1.50	
N 2 1/2 W.	7.50	
N 24 1/2 W.	5.00	
N 8 W.	4.50	
N 60 W.	5.50	
N 9 1/2 E.	2.00	
N 0° 30' E.	6.50	
N 63° W.	12.50	at 5.00 house 3.00 north.
N 7° W.	4.50	
N 66 1/2 W.	11.50	
S 79 W.	3.99	to line of Section 22 & 23.

COURSE	CHAINS	REMARKS.
S 52 W.	5.50	In Section 22
S 89 1/2 W.	8.00	
S 52 W	7.00	
S 11 W	3.50	
S 83 E	6.00	
S 56 E	3.50	Enter Field
N 70 1/2 E.	7.50	
S 80 E	2.84	<u>to line of Sections 22 + 23</u>
S 71 E.	1.00	In Section 23
S 66 E.	6.00	
S 5 W.	2.50	
S 22 E	3.00	
S 30 W	3.00	
S 37 1/2 W	6.50	
S 72 W.	3.00	
S 12 E	3.50	
S 28 E	5.00	at 100 leave field

COURSE CHAINS	REMARKS.
S 88 1/2 E 5.00	
S 53 E 1.50	
S 10 1/2 E. 1.00	
S 11 W. 7.50	
S 49 1/2 E. 1.93	to line of Section 23 & 26

Meanders of a lake in Section 3 beginning at a post on north boundary on West Side of Lake thence in Section 3.

COURSE CHAINS	REMARKS.
S 47 1/2 E. 5.50	in Sec 3.
S. 70 E. 5.00	
S 14 E. 6.50	
S 54 E. 12.00	
S. 46 E. 10.00	
N 84 E 6.79	enter marsh S. E.
N 12 E. 7.50	

COURSE CHAIN

REMARKS.

NORTH 9.00

N 16 1/2 E 7.50

N 2 E 1.55

Sandy Shore.

Elm maple Birch

Oak.

Nov 3 1847.

79
AFFIDAVIT.

I Isaac W. Higbee
Deputy Surveyor do
hereby solemnly swear
that in pursuance of
a contract with George
W. Jones Surveyor
General of the United
States for Wisconsin
and Iowa bearing
date the 3rd day of
September 1847 and
in strict conformity
to the laws of the
United States and
the instruction of said
Surveyor General.

I have regularly survey

and subdivided into
 Sections Township 29
 North Range 23 West
 4th meridian Wisconsin
 Territory and I do
 further solemnly swear
 that the foregoing are
 true and original
 Field Notes of the said
 Survey executed as
 afore-said. Isaac W.
 Hyger.

Deputy Surveyor
 Daniel Hyger } chairman
 Wm Cleveland }

John Brown Marker

Subscribed by said Isaac
 W Hyger Deputy Surveyor

and sworn before me
at Dubuque this 28th,
day of January 1848.

George S. Nightingale
Justice of the Peace,
Dubuque Co. Iowa.

Between ~~Surf~~ 29 & 30 N 83
Range 23 W 4th Unen.

Wet between Secs 29 & 35.
San —

7.48 Over lake & set meander
post.

Wht Oak 20 N 55 W 134

Wht Oak 18 S 30 W 54

40.00 Set post at 1/4 section corner.

Br Oak 20 East 27

B Oak 10 N 18 W 159

80.00 Set post at corner to
sections 2, 3, 34 & 35.

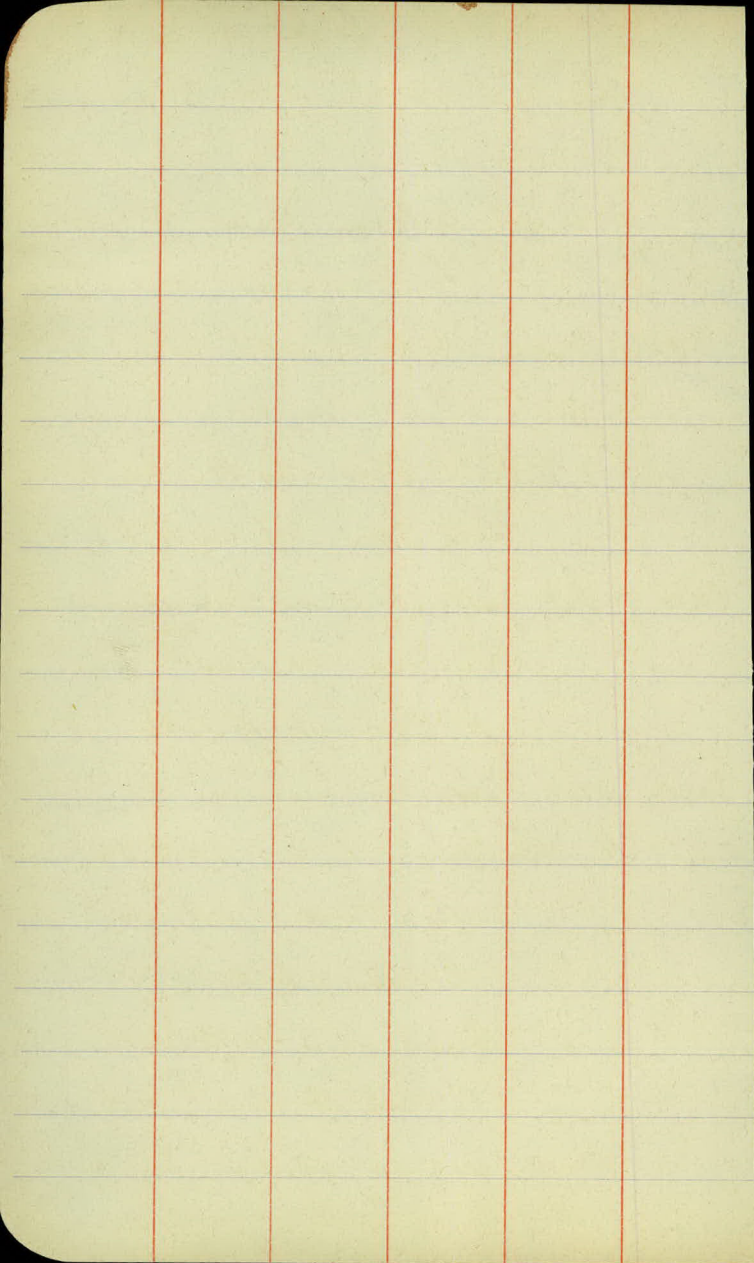
Br Oak 15 N 55 E 38

B Oak 12 N 39 W 54

B Oak 13 S 40 W 114

W Oak 12 S 5 E 94

Land hgh & broken
B & W Oak.



1	✓	12	185
2	✓	24	165
3	✓	88	140
4	✓	100	90
5	✓	46	55
6	✓	44	46
7	✓	16	42
8	✓	21	28
9	✓	33	21
10	✓	44	31
11	✓	29	44
12	✓	15	39
13	✓	7	19
14	✓	44 24 21	
		30 — 6	
15	✓	30	16
16	✓	8	33
17	✓	13	16
18	✓	17	7
19	✓	3	21
20	✓	00	38
21	✓	00	41

ANT.
12016

1-7-18

2-00-35

3-00-25

4-00-36

5- (20-75

HW LW
21-07-18

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ TO 1.

FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37.0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40.0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.

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