

FIELD BOOK

360

170

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Levels of Drainage at Boy River Crossing
 Sec 29-T144-R27-C.A.R.#4.

Levels from crossing east.

B.M.	2.12	1306.12		1309.00
0+65			83	97.82
1+00			8.0	98.12
2+00			7.8	98.32
3+00			7.6	98.52
4+00			7.8	98.32
5+00			7.2	98.92
6+00			7.0	99.12
	5.12	1306.62	4.62	1301.50
7			6.4	00.22
8			7.1	99.52
9			6.8	99.82
10			6.6	00.02
11			6.4	00.22
12			5.9	00.72
13			5.2	01.42
14			3.6	03.02

Oct. 21, 1930

A. W. Prudlo.

2

Base of Rail at crossing Sta 375+83.2

Levels from crossing south to Culvert

B.M.	555	1309.55		1304.00
374+38	24 X 24	CMC	11.5	98.05
375			11.5	98.05
376			11.1	98.45
377			11.3	98.25
378			11.2	98.35
379			11.1	98.45
380			11.7	97.85
381			11.4	98.15
382			11.8	97.75
	833	1309.33	855	1301.00
383			11.6	97.73
384			11.3	98.03
385			11.5	97.83
386			11.7	97.63
387			12.1	97.23
388			12.0	97.33
389			12.1	97.23
	4.35	1309.07	461	1304.72
390			11.8	97.27
+33			11.4	97.67
			6.93	

Base of rail at Crossing, Sta. 373+83.2
 Inp. in road east side of track

at culvert.

Levels from crossing West to River

0+00	1.34	1305.34		1304.00
0+45			7.6	97.74
1+00			7.8	97.54
2			7.9	97.44
3			7.7	97.64
4			7.9	97.44
5			8.0	97.34
6			8.0	97.34
+79	30" X 26" C.M.		7.60	1295.74
0+00	4.64	1300.38		1295.74
1+00			4.6	95.78
2			4.7	95.68
3			4.8	95.58
4			4.8	95.58
5			5.1	95.28
6			5.2	95.18
	4.58	1299.76	5.20	1295.18
7			4.7	95.06
8			4.7	95.06
9			4.9	94.86
10			4.9	94.86
11			4.9	94.86
12			5.0	94.76

Base of rail at Sta 373+83.2



=0+00 For ditch To River

End of Culv.

13

1299.76

5.1 94.66

6.15 1300.91

5.00 1294.76

14

6.3 94.61

15

6.5 94.41

16

6.6 94.31

17

6.6 94.31

18

6.6 94.31

19

6.6 94.31

20

6.5 94.41

+16

6.5 94.41

22

8.5

5
End of Ditch
In bog.

C.A.R. #30 - July 30, 1938
Levels for Drainage ditch on N. side of Rd.

July 30, 1938
dear & fair

55. Walker St
B. Shuler St
R. Duncanson Road.

6

Sta	11/	Ditch	Gr. Elev	B.M.	- Rd. ±	± 4' Road Elev.
5+0	7.29	1307.29		1300.00	10' Elm - R. 50' 45' R. of 0.0	± runs on S. side.
0.0		10.3	97.0		7.7	99.6
1		7.2	98.1		6.8	00.5
2		8.0	99.3		5.2	01.9
3		6.4	00.9		3.9	03.4
4		6.3	01.0		4.4	02.9
5		5.2	01.9		3.4	03.9
6		3.2	04.1		0.4	06.9
T.P.	5.25	12.02	0.52	06.77	Rock Sta 6.	
7		6.7	5.3		4.3	07.8
8		6.5	5.6		3.7	08.3
9		6.5	5.5		4.0	08.0
10		6.6	5.4		4.3	07.7

sta	CAR #30	H1 12.02	ditch	G.Elev.	B.M.	-rd. #	±
11			7.2	4.8	✓	4.2	07.8
12			6.0	6.0	✓	3.4	08.6
13			5.2	6.8	✓	2.0	09.6
T.P.	7.24	16.78	2.98		9.54	Rock st 13	
14			9.3	7.5	✓	7.4	09.4
15			8.7	8.1	✓	6.5	10.3
16			7.5	9.3	✓	4.9	11.9
17			7.2	9.6	✓	3.4	13.4
18			7.5	9.3	✓	4.2	12.6
↑ 19			8.1	8.7	✓	5.2	11.6
20			7.5	9.0	✓	2.7	12.1
T.P.	9.65	21.21	5.22		11.56	Rock st 20	

July 30-32

Sta	Ht	Ditch	Cut Elev	B.M.
21	21.21	11.5	9.9	✓
22		11.2	10.0	✓
23		10.5	10.7	✓
24		10.0	11.7	✓
25		9.5	11.7	✓
26		9.0	12.2	✓
27		8.9	17.3	✓
28		8.8	17.4	✓
29		9.0	17.7	✓
30		9.7	11.5	✓
BM		4.58		16.63
T.P.	4.77	16.99	8.99	12.87
T.P.	4.93	13.28	9.24	8.15
T.P.	2.77	5.97	10.43	2.95
BM		5.78		

CAR #30
July 30 - 35

8

-Rd.	
9.1	121
7.8	134
5.8	154
4.5	167
3.5	174
4.7	165
5.1	161
5.4	158
5.1	161
6.0	157

Cross on R' Rock R35 Hava

Rock Sta 20

Rock Sta 19

Rock Sta 34.9

B.M. on Elm tree. (126)

B. J. W. top 1/6 of 15 SAR #8 - Jan # 320.1
 500 Book #173

P.T. 295 + 30.5

296

297

298

T.P.
299

300

301

302

303

304

304 + 26.4

305

T.P.
306

307

308

309

310

T.P.
311

312

313

4.50

27.52

8.61

2308

792

31.63

0.08

2371

11.42

23.79

6.51

12.37

13.88

1319.12

17.1

202

21.0

22.0

23.0

24.0

25.0

26.0

27.0

28.0

24.0

23.2

21.4

19.5

17.6

15.7

13.8

11.9

10.0

10.0

291 + 50 - 36' Lt R. sp. in 10' Bass Wood.

75

Ditch 5 Low

6.5

5.9

5.4

8.7

7.7

6.8

5.5

5.4

6.4

7.3

8.7

8.6

4.2

6.2

8.3

9.9

1.6

2.5

5.3

Ditch 9' W

8.4

7.3

6.5

5.5

8.6

7.6

6.6

5.6

5.3

6.5

7.0

8.4

Ditch 8' W

2.4

4.3

6.2

8.1

10.0

1.7

2.7

3.1

S.S. Walker R.
 M.W. Duncan R.

9

10.5

	+S	HJ	-S
314			
315			
316		A	
317	5.55	13.88	
T.P.	4.72	13.05	
318		↓	
319			
320			
321			
322			
323		↓	
T.P.	5-	13.28	501
324	5.24		8.04
325		↓	
326			
327			
328			
329			
330		↓	

9.0
8.2
8.0
8.0
1308.33
8.0
8.0
8.0
8.0
8.0
8.0
8.0
8.5
9.0
9.5
9.5

1308.33

9.3	4.5	4.6
8.6	5.1	5.3
8.4	5.2	5.5
8.0	5.9	5.9
8.0	5.0	5.0
8.0	4.7	5.0
8.0	4.5	5.0
8.0	5.5	5.0
8.0	5.2	5.0
8.0	5.05	5.0
8.0	4.8	5.0
8.0	4.8	4.8
8.0	4.9	4.8
8.0	4.8	4.8
8.5	4.7	4.7
9.0	4.1	4.3
9.5	3.9	3.8
9.5	3.8	3.8

312 + 27 - 502 B.M. 8" B.P.
8.5
1.60
1.20

4.6
grade 5.0

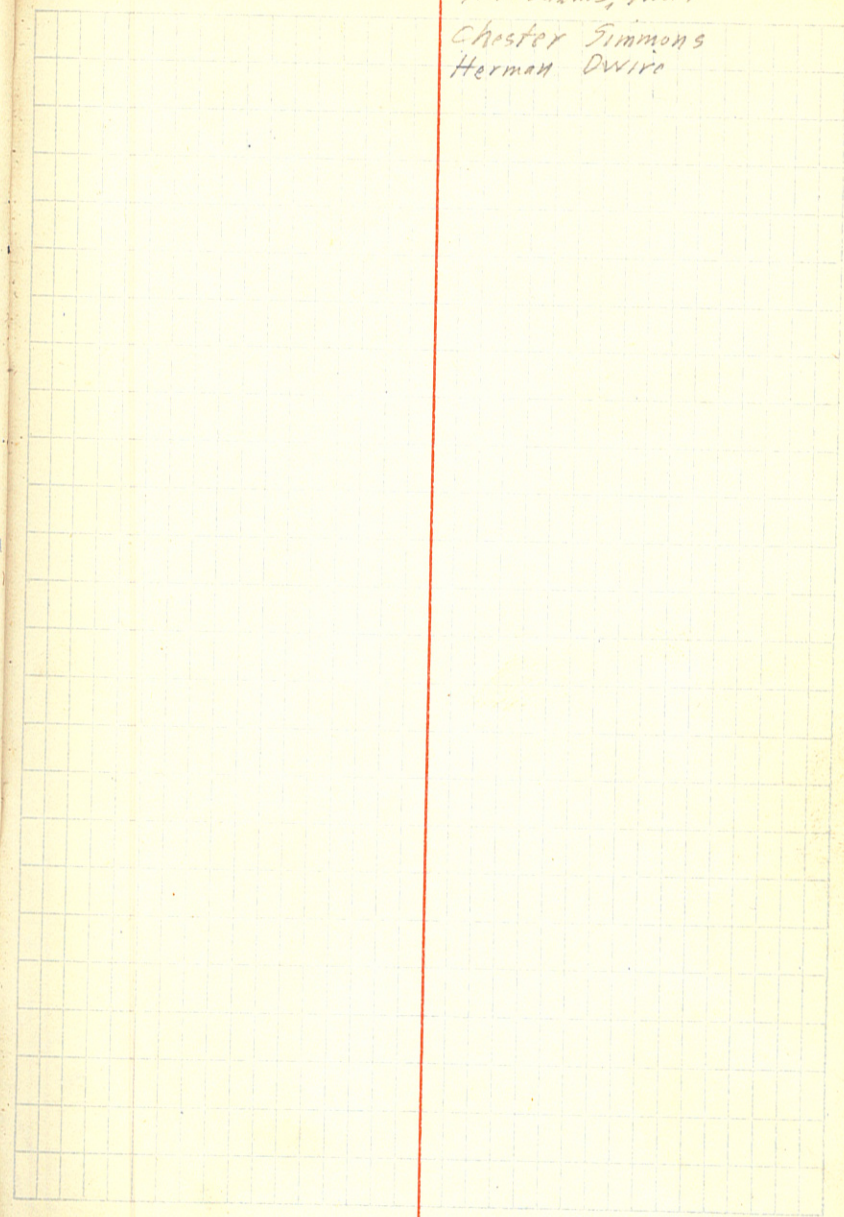
OK

S.A.R. No 5, Alternate Route thru Hackensack.

Proposed Curves

May 23, 1935
 R.A. Dakms, Inst.
 Chester Simmons
 Herman Dwiro

Defl.	Angle	Mag. Bearing	Defl.
P.T.			
201+20.2 = 201+31.4			
P.I.	L	Δ 29°30'4"	+ 202-14'45"
198+80		D 6°00'	201-14'08"
		T 251.4	200-11'08"
		L 491.6	199-8'08"
196+28.6		E 32.5	198-5'08"
P.C.			197-2'08"
P.T.			
161+64 = 161+88.3			+ 44 = 19°00'
			161 = 17'04"
P.I.	R.	Δ 38°00'R	160 = 14'04"
158+59.5		D 6°	159 = 11'04"
		T 328.8'	158 = 8'04"
		L 633.3	157 = 5'04"
155+30.7		E 55'0"	156 = 2'04"
P.C.			



C.A.R. No 27 BRIDGE SURVEY

South Line of Sec. 1-140-31

Sta	+	HI	-	Elev.
BM.	0.35	100.35		100.00
0+00			4.7	95.7
+50			6.3	94.1
1+00			7.0	93.4
1+50			4.6	95.8
1+65			3.45	96.9
W.L.			10.2	90.2
1+95			3.6	96.8
2+00			3.7	96.7
2+50			7.5	92.9
3+00			7.5	92.9
Elev.	Top of pipe	96.9 + 0.3		97.2
"	Bot. of "	97.2 - 24.0 =		73.2
		4.8		
		3.6		
3+00				
1+95				
1+65				
0+00				

ON South Line of Section 1-140-31
959 Ft. East of 1/4 Cor. on South Line of
said Sec. 1.

Dec. 9, 1935

R.A. Dahms Inst.
Marion County Rd. 13

L

R

B.M. on 10" Balsam NW Sta 0+00

12	7.0	7.0	3	10	
8.2	7.5		7.0	7.7	
16	7.0	4.6	6	12	Soundings
10.0	5.3		4.6	8.6	10.0 to top
		3.5			of ice.
			10.2		2.0 water

Elev. 78.2 to Canal

12	5	3.7	5	12	
10.2	4.0		3.7	10.2	
10	7	7.5	6	12	
9.5	8.1		7.5	9.6	

Sta. 1+79
3.0 N of Br.

Soundings 1/2" pipe

2.0' of water

8.0' of Muck

←

1.0	23 blows	10" Sledge	1.0 drop.
2.0	50 "	"	"
3.0	70 "	"	"
4.0	63 "	"	"
5.0	58 "	"	"
6.0	87 "	"	"

End of Bridge

Bot. of Bridge

Fence Post

39.2

Old Bridge

Two spans 16' x 30' Ten Mile Creek.

Tel Pole

36.2

✓

G.A.R. N^o 2 BRIDGE SURVEY

South Line of Sec. 31-138-30

Sta.	+	HI	-	Elpy
B.M.				100.00

B.M. 04

C.A.R. N^o 24, BRIDGE SURVEY

South Line of Sec. 14-137-31

Sta.	+	H.I.	-	Elev
B.M.	5.7	105.7		100.00
0+00			5.6	101.0
0+50			5.7	100.0
0+64			6.0	99.7
W.L.			10.2	95.5
1+00			6.5	99.2
1+50			6.4	99.3

Elev. of top of pipe 100 100-02 99.8
 " " Bot " " 99.8-12.0- 87.8

2.6
2.9

0+64
 0+50
 0+00

ON South line of Sec. 14-137-31
 135' Ft. west of 1/4 Cor on South line
 of said sec. 14.

Dec. 9, 1935

R. A. Dahms, Inst.,
 Marion Kennedy, Rod. 15

B.M. on Tele Pole, NE of Bridge

Soundings
 1.0' of water
 Gravel Bottom

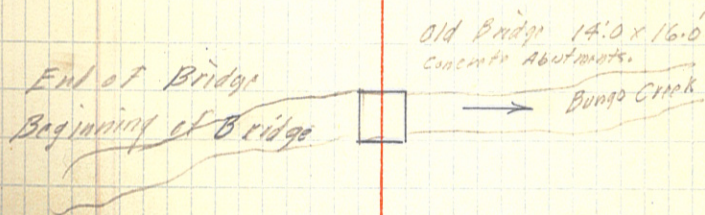
94.5 Gravel

Sta. 0+57
 at N edge of Bridge
 Sand-Gravel

Soundings 1/2" pipe

2.0 Ft. Water

1.0	28	blows	10" slide	1.0 drop
2.0	37	"	"	"
3.0	60	"	"	"
4.0	45	"	"	"
5.0	70	"	"	"
6.0	63	"	"	"
7.0	80	"	"	"



C.A.R. No 9, BRIDGE SURVEY

West Line of Sec. 20-137-32

Sta.	+	H.I.	-	Elev.
B.M.	5.45	105.45		100.00
0+00			5.40	100.1
0+50			5.20	100.3
1+00			4.00	101.5
1+04			3.7	101.8
W.L.			11.4	94.1
1+28			3.65	101.8
1+50			5.35	100.1
2+00			6.0	99.5

Elev. of top of pipe. $101.8 - 5.6 = 96.2$
 " " Bot. " " $96.2 - 12.0 = 84.2$

10.6
5.0
5.6

2+00
1+28
1+04
0+00

.6 from S.

on West Line of Section 20-137-32
 400 ft. North of $\frac{1}{4}$ Cor. on West Line
 of Said Section 20.

Dec. 9, 1935

R. A. Dahms, Inst.
 Marion Runney, Rod. 16

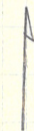
L ~~A~~ R
 B.M. on Telephone Pole 27.6 East of Sta. 0+00

93.1 Gravel.

Sta. 1+14.5
 2 1/2 West of Old Br.
 Sand-Gravel

	Soundings	
	0.6	water
	1.0	to gravel bottom.
	Soundings 1/2 in. pipe	
	1.0	28 blows 10" sledge 1.0 drop
	2.0	55 " " "
	3.0	45 " " "
	4.0	44 " " "
	5.0	50 " " "
	6.0	46 " " "
	7.0	53
	8.0	53
	9.0	63

N



End of Bridge

Wash Ditch No 9

Beginning of Bridge

Old Bridge Frame
 16' x 24'

27.6 Telephone Pole East
 B.M.

C.A.R. No. 9, BRIDGE SURVEY

South Line of Section 16-136-32

Sta.	+	H.I.	-	Elev.
B.M.				

17

B.M. on.

C.A.R. No 22 BRIDGE SURVEY

South Line of Sec. 19 - 134-31

Sta.	+	H.I.	-	Elev
B.M.	7.15	107.15		100.00
0+00			0.15	107.0
0+50			3.7	103.5
1+00			4.9	102.3
1+50			5.3	101.9
W.L			9.0	98.2
1+81			5.5	101.7
2+00			6.0	101.2
2+50			6.1	101.1
3+00			6.4	100.8

Elev. of Top of Pipe 4.1 - 101.9 = 97.8
 of Bot. " (12.0) 85.8

2+00

1+81

1+50

0+00

On South Line of Section 19-134-31
 1264 ft. East of the 1/4 Cor. on South line
 of said section 19.

Dec. 10, 1935
 Cold. 15° below zero.

R. A. Dahms Inst.
 Marion Kennedy Rod. 18

L		R	
B.M. on 4" Poplar NE of sta. 0+150			
Soundings			
Gravel Bottom			
16	9	4.9	7.
8.5	5.0		5.3
		5.3	8.4

Top of Ice. 4.5 ft. of water. E193.7

14	7	5.5	9	15
8.6	6.1		6.5	8.4
14	9	6.0	8	13
7.4	6.3		6.4	7.7

Sta. 1+59
 9.05 of $\frac{1}{2}$

Soundings 4" pipe.
 4.0 of water

Sand	1.0	28	blows	10" sledge	1.0 drop
Gravel	2.0	28	"	"	"
	3.0	35	"	"	"
	4.0	35	"	"	"
	5.0	50	"	"	"
	6.0	53	"	"	"
	7.0	70	"	"	"
	8.0	80	"	"	"

End of Bridge

Beq. of Bridge

Mosquito
 CRMK

Old Bridge 16" x 31"
 2 - 16' spans.



C.A.R. No. 11

BRIDGE SURVEY

S.E. Cor of Section 19-135-31

Sta	+ H.I.	-	Elev.
B.M.	5.95	105.95	100.00
0+00		3.3	102.7
0+50		4.2	101.8
1+00		5.1	100.9
1+50		4.1	101.9
W.L.		9.4	96.6
1+74		4.2	101.8
2+00		4.7	101.3
2+50		3.6	102.4
2+78		2.0	104.00

Elev. of Top of pipe $101.9 - 3.2 = 98.7$
 " of Bot. " $98.7 - 12.0 = 86.7$

2+78

2+00

1+74

1+50

0+00

On South Line of Sec. 19-135-31,
 108 ft West of S.E. Cor. of Said
 Section 19.

Dec. 10, 1935
 Clear & Cold
 15° below zero.

R.A. Dahms, Inst.
 Marion Kennedy, Rod.

19

L R
 B.M. on Poplar, NE of Sta. 0+00

12	8	42	9	12
4.8	4.4		4.6	5.1
11	6	5.1	8	13
28	5.4		5.4	7.8

2.0 of Water Gravel Bottom 94.6

12	7	47	7	12
5.7	5.0		5.0	6.7

Sta. 1+55
 14.0' S of Sec. Line

Soundings 1/2" Pipe

3.0 Ft. Water

Sand-Gravel

1.0 " 40 blows #10 sledge 1.0 drop

2.0 " 30 " " " "

3.0 " 42 " " " "

4.0 43 " " " "

5.0 50 " " " "

6.0 80 " " " "

7.0 80 " " " "

8.0 80 " " " "

Sta. 2+78 Sec. Core

End of Bridge

Beginning of Bridge

Mosquito Creek 16'

Old bridge 16' x 24'

Concrete str. pier and abutments

Sta. 0+00

C.A.R. No 28, BRIDGE SURVEY

In. Sec. 22, -140-28

Sta.	+	HI	-	Elev.
B.M.	3.25	103.25		100.00
0+00			5.9	97.4
0+50			6.0	97.3
1+00			4.4	98.9
W.L.			9.6	93.7
+50			4.5	98.8
+51			4.5	98.8
2+00			5.3	98.0
2+50			5.9	97.4

Transit Notes

2+50

2+00

1+51

1+00

0+50

0+00

Dec. 11, 1935
Cloudy + Cold.

R.A. Dahms Inst.
Marion Kennedy, Rob. 20

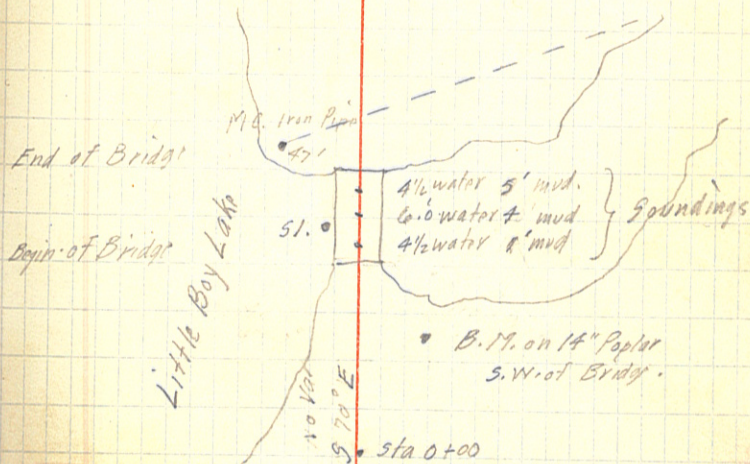
L		R	
B.M. on 14" Poplar	5. W of Bridge		
20	10	59	15 20
W. Edge 9.9	6.2		6.2 7.5
" 9.6	9	6.0	2 14
	6.8		6.4 6.7

Water Level 6' of Water El. 89.3
8' Soundings to Gravel El. 79.7

12 5.3 10 14
5.5 5.8 6.4

Soundings
4.0 water
5.0 mud.

1.0 45 blows 10" sledge. 1.0 drop
2.0 89 " " " "



C.A.R.# 9 BRIDGE SURVEY

South Line of Sec. 20 - 137-32

Sta.	+	H.I.	-	Elev.
B.M.	4.7	104.7		100.0
0+00			6.3	98.4
0+50			6.3	98.4
1+00			5.0	99.7
W.L.			12.3	92.4
1+24			5.1	99.6
1+50			5.0	99.7
2+00			4.2	100.5

Elev. of top of pipe 100.0 - 7.2 = 92.8

" " Bot. " " 92.8 - 12.0 = 80.8

9.2
7.2

2+00

1+50

1+24

1+00

0+50

0+00

On South Line of Sec. 20-137-32
1600ft. East of the SW corner of
said sec. 20.

Dec. 10, 1935
Clear Cold.
15° below zero.

R.A. Dahms, Inst. 21
Marion Kennedy, Rod.

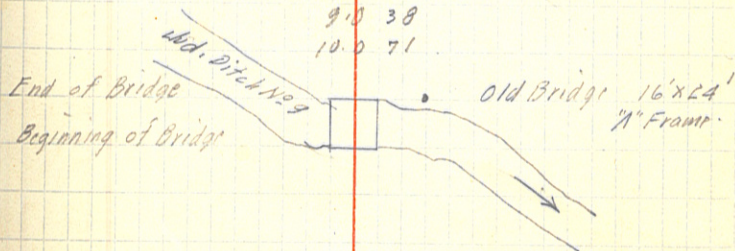
B.M. on Telephone Pole South of Bridge

0.6" of Water in Ditch Gravel Bottom. 91.8

Sta. 1+14
2.0 North of Br.

Soundings 1/2 pipe
1.0 ft. water

Depth	Soil	Blows	Notes
1.0	Sand-Gravel	28	10" sledge 1.0 ft drop.
2.0		32	" " " "
3.0		32	" " " "
4.0		40	" " " "
5.0		56	" " " "
6.0		53	" " " "
7.0		35	" " " "
8.0		30	
9.0		38	
10.0		71	



C.A.R. No 11

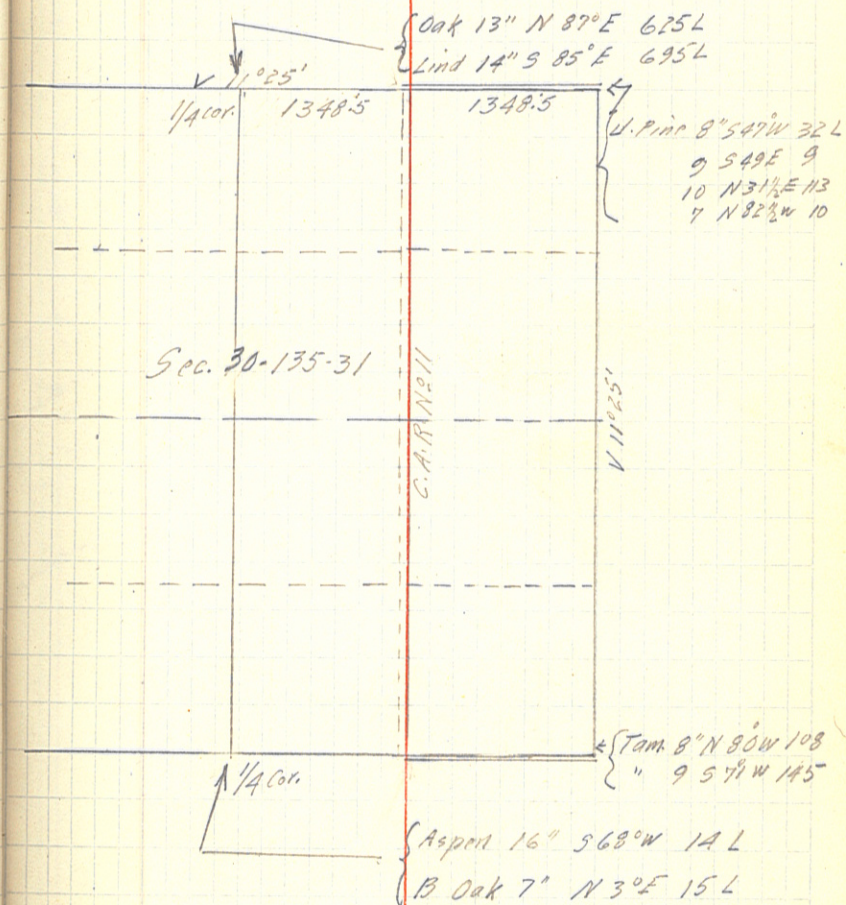
Sec. 30-135-31

Checked E 1/4 line on which C.A.R. #11
is constructed and found that the
1/4 line and road are correctly located.

Checked E 1/4 cor on N. line of Sec. 30
and found it to be correctly located.

Sept. 10, 1936
clart warm.

22
R.A. Dahms, Inst.
Pat Lottis, Chain



October 1936

R.E. Merrill Inspector

Fri 16-1936

Cloudy + Light Rain

only 1 man team + Wagon showed up for work. to day
started fill at Bridge 5710

Contractor acting as. Supt + foremen.

Worked. 8 hrs.

sat Oct 17-1936

Cloudy + Cool

1 Supt 3 Laborers. 1 team + teamster with Wagon Working

2 Laborers. Loading Wagons 1 Laborer Excavating East abutment
Filling approaches. to Bridge 5710

Mon Oct 19-1936

Clear + Warm

1 Supt 5 Laborers. 2 teams + wagons. 2 teamsters. Working

Jack Kastanek had card for team but he thought his team
could not do the work. Graus put him to work as Laborer

Hired S.J. Griffith as had to have 2 teams or lay off
some of the laborers. Bridge 5710

4 Laborers Loading Wagons 1 Excavating East abutment

Tues Oct 20-1936

No work today wet snow fell in PM

Cleared up some in PM.

Wed Oct 21-1936 Bridge 5710 Clear + cold R.F. Merrill in
1 Supt 5 Laborers 2 teamsters 2 teams + Wagons Working
filling approaches. 4 Laborers + teamsters Loading Wagons.
1 Laborer Dumping Wagons + Working on fill

Thurs Oct 22-1936 Clear + cold Bridge 5710
1 Supt 5 Laborers 2 teamsters 2 teams + Wagons Working
4 Laborers + Teamsters Loading wagons + hauling approaches
1 Laborer Dumping Wagons + Working on fill

Fri Oct 23-1936 Bridge 5710 Cloudy + cold
1 Supt 5 Laborers 2 Teamsters 2 teams + Wagons Working
filling approaches
4 Laborers + teamsters Loading Wagons + hauling to
approaches. 1 Laborer Dumping Wagons + Working
on fill

Sat Oct 24-1936 Bridge 5710 Cloudy + warm
1 Supt 5 Laborers 2 Teamsters 2 teams + Wagons Working
4 Laborers + Teamsters Loading wagons
1 Laborer Dumping Wagons + Working on fill

Sun Oct 25-1936

24

Mon Oct 26-1936 Bridge 5710 Clear + warm R.F. Merrill in Supt
1 Supt 4 Laborers 2 teamsters 2 teams + Wagons Working
1 Laborer did not show up for work this am. Supt helped
Dump Wagons + keep fill leveled off.
frost in cut bothered quite a little as was 40° above
Zero last night

Crew Loading And Hauling to approaches

Tues. Oct 27-1935 Bridge 5710 Clear + warm
1 Supt 5 Laborers 2 teamsters 2 teams + Wagons Working
4 Laborers 2 Teamsters Loading + hauling to approaches.
1 Laborer Dumping Wagons + Working on fill

Wed Oct 28-1936 Bridge 5710 Clear + warm
1 Supt 4 Laborers 2 teamsters 2 teams + Wagons Working
3 Laborers + teamsters Loading + hauling to approaches.
1 Laborer Dumping Wagons + Working on fill
1 Laborer Did not show up for work today

Thurs. Oct 29-1936 Bridge 5710 Clear + warm
1 Supt 4 Laborers 2 teamsters 2 teams + Wagons Working
3 Laborers + Teamsters Loading + hauling to approaches
1 Laborer Dumping Wagons + Working on fill

Fri Oct 30-1936 Bridge 5710 Clear + Warm R.E. Merrill inspt
1 Supt 4 Laborers 2 teamsters. teams + Wagons Working
3 Laborers + teamsters. Loading + Hauling to approaches.
1 Laborer Dumping Wagons + Working on fill

Sat Oct 31-1936 Clear + Warm
1 Superintendent No Work. as Men had their
time in for wk.

Sun. Nov 1st 1936
Rain + snow 5" of snow fell

Mon. Nov. 2-1936 Cloudy Am. Snow P.M. Bridge 5712
1 Supt 4 Laborers 2 teamsters + teams + Wagons Working
3 Laborers + teamsters. Loading + Hauling to approaches.
1 Laborer Dumping Wagons + Working on fill
started to snow about 3 P.M. was Real Blizzard By Dark

Tues. Nov 3-1936 Bridge 5712 Clear + Cold
1 Supt 3 Laborers 2 teamsters + Teams + Wagons Hauling
to approaches. 1 laborer taking care of Dumping
wagons + fill + helped Load
1 Laborer did not show up for work today

Wed Nov 4-1936 Bridge 5712 Clear + Warm R.E. Merrill inspt
1 Supt + 4 Laborers + 2 teamsters. teamst + wagons. Working
3 Laborers. teamsters Loading + Hauling to approaches.
1 Laborer Dumping Wagons + Working on fill

Thurs. Nov 5-1936 Cloudy Am. Heavy snow Pen.
Crew did Not Work to day as was Not Much that could
Be done till they get a truck on job to Build
Temp. Crossings.

Fri. Nov 6-1936 Clear + Cold
Contractor Left to get Material for pile Driver
No Work for Crew

Sat Nov 7-1936 Clear + Warm heavy fog in Am.
No Work for Crew

Sun. Nov 8
Clear + Warm

Mon. Nov 9 Clear + Mild Bridge 5707 R.E. Merrill
1 Supt 1 foreman 4 Laborers. 1 teamsters. team + wagon 1 tr. Driver
1 small G.M.C. truck Building Temp. Crossing
Hauled in timbers for pile Driver + 1 Load of
Lumber for Camp as some of the work is
so far from town. it will take to much time
to go Back + forth

Tues. Nov 10 - 1936 = Bridge 5707 Clear + Warm R.E. Merrill ins
1 Supt 1 Foreman 4 Laborers 1 teamster 1 truck driver
1 small G.M.C. truck 1 team + wagon working on
Temp Crossings

Wed Nov 11 - 1936 Thawing today
1 Supt 1 Foreman 5 Laborers 1 truck driver working
2 Laborers Excavating Wires at Bridge 5710
3 Laborers Building Camp Truck Driver brought
hoist for pile driver from McGregor today with other
tools.

Thurs. Nov 12 - 1936 Clear + Warm Thawing
1 Supt 1 Foreman 5 Laborers 1 Truck Driver
2 Laborers Removing old concrete from bridge at 5710
Rest of crew building camp + pile driver

Fri Nov 13 - 1936 Clear + Warm Thawing days. Cold nights
1 Supt 1 Foreman 2 Laborers working on pile driver
1 Truck driver working on camp

Sat Nov 14 - 1936 Clear + Warm
No work waiting for piling

Sun. Nov 15 1936
Clear + Warm

26
Mon. Nov 16 - 1936 Bridge 5707 Clear + Warm
R.E. Merrill
1 Supt 2 Laborers Lifting plank from
Old Bridge + pulling Nails from same
Was quite a job as spikes were 90 pennies

Tues. Nov 17 - 1936 Clear + Warm Bridge 5707
1 Supt 1 Foreman 1 Carpenter 3 Laborers
1 Truck Driver working on pile driver
Built Temp Crossing Placed Barricades
+ Moved Tool house from Bridge 5710 to 5707

Wed Nov 18 - 1936 Bridge 5707 Clear + Cold
1 Supt 1 Foreman 1 Carpenter 2 Laborers 1 Truck Driver
Foreman Carpenter + 1 Laborer Building pile driver
Truck driver + 1 Laborer Hauling piling to Bridges
from Motley Recd. Piling for 3 Bridges today

Thurs Nov 19 - 1936 Bridge 5707 Clear + Warm
1 Supt 1 Foreman 2 Pile driver Lead man 1 Laborer
1 Truck + driver Hauling piling + Building pile driver
Finished pile driver to day
Started Driving Piling Got one down.
1 - pile driver + hoist 1 - G.M.C. 2 ton truck

Fri Nov 20 - 1936 Bridge 5707 Clear + Warm R.F. Merrill
1-Supt 1-foremen 1-Pile Driver Opr 1-Pile driver
Lead Man 1-Laborer 1-Truck Driver
Driving piling + Building false work.
Piling went down good But Hard Driving
East abutment Drove 4 piles today
1-Pile driver + Hoist 1-G.M.C. 2 ton truck

Sat Nov 21 - 1936 Bridge 5707 Cloudy + cold
1-Supt 1-foremen 1-Pile driver Opr
1-Pile driver Lead Man Driving Piling
Finished Driving Piling in East
Abutment today
1-Pile driver + Hoist 1-truck G.M.C. 2 ton + Driver
Sun Nov 22 Clear + Warm

Mon Nov 23. Bridge 5707 Clear + Warm
1-Supt 1-foremen 1-Pile Driver Opr 1-Pile driver
Lead man 1-Laborer 1 Truck Driver
1-Pile driver + Hoist 1-G.M.C. truck. 2 ton
Driving piling Moved over to West abutment.
Built false work + drove 5 piling

Tues. Nov 24 Bridge 5707 Cloudy some snow R.F. Merrill
1-Supt 1-foremen 1-Pile driver Opr 1-Pile driver
Lead man 1 Laborer + truck Driver
1-Pile driver + Hoist 1-G.M.C. 2 ton truck.
Finished Driving piling in West abutment
at noon. took Down the Driver Ready to Move P.M.

Wed. Nov 25 - 1936 Cloudy + cold some snow
1-Supt 1-foremen 1-Pile driver Opr 1-truck
Driver 1-Pile driver Lead Man, Moving Driver
to Bridge 5710

Thurs. Nov 26 - 1936 Clear + Warm.
Thanks-Giving Day No Work.

Fri. Nov 27 - 1936 Clear + Warm.
No Work. Waiting for Material

Sat Nov 28 - 1936 Clear + Warm.
No Work. Still Waiting for Material

Sun. Nov 29 - 1936 Clear + Cold

Mon. Nov. 30 - 1936 Cloudy + cold
1-Supt 1-foremen 1- pile driver opr
1- pile Driver Lead Man 1-truck Driver
Repairing pile driver + unloading
lumber + timbers for Bridges
Whitch came in today
2 Laborers in P.M.

Tues Dec 1st 1936 Bridge 5707 Cloudy + warm
1-Supt 1-foremen 1- pile driver opr +
1 pile driver Leadman - 1 Truck Driver 4 Laborers
unloading Bridge Lumber + Hauling to
Bridge sites 1- 2 ton. truck.
Cutting of piling + placing timbers.

Wed Dec 2nd 1936 Bridge 5707 cloudy + warm.
1-supt 1-truck Driver 1-Laborer unloading Piling
+ Bridge timbers at Pine River + Hauling to other Bridge
1-Foremen 1 pile driver opr 4 Laborers placing Bridge
timbers Bridge 5707 1- 2 ton. G.M.C. truck
Work progressing fine

Thurs. Dec 3rd 1936 Clear + cold Snow last nite
1-foremen 1- pile Driver opr 2 Laborers working
Bridge 5707 1-Supt 1-truck Driver 2 Laborers
unloading + Hauling Piling + Bridge timbers
From Pine River to other Bridges
1- 2 ton. truck.

Bridge 5707 28

Fri Dec 4th 1936 Clear + cold R.E. Merrill
1-supt 1 foremen 1 pile driver opr
2 Teams + teamsters Hauling Fill to Bridge
2 Laborers Loading Wagons 1- 2 ton. G.M.C. truck.
1 truck Driver + 2 Laborer Hauling Bridge
Timbers. pile driver opr putting on Guard Rail

Sat Dec 5th 1936 Bridge 5707 Snowing hard
1-Supt 1-foremen 1- pile driver opr 1 Pile driver
Leadman 3 Laborers. 1 truck Driver
1- G.M.C. truck. 2 ton
Finished Laying wearing surface + wings
filling approaches. got them. so could turn
the traffic over Bridge today

Sun. Dec 6 = 1936 Clear + cold

Mon Dec 7 = 1936 Cloudy + cold
1-Supt 1-foremen 1- pile driver opr 1- pile driver
Leadman 2 Laborers. setting up pile driver
+ Building false work. Bridge 5710
1-truck Driver 1-teamster + Team + Wagon. 2-Laborers.
filling approaches to Bridge. 5707

R.E. Merrill inspt

Tues. Dec 8 = 1936 Cloudy Cold R.E. Merrill
1 Teamster 2 Laborers. 1/2 team + Wagon.
hauling fill to approaches. Bridge 5707
1-Supt 1-foreman 1-piledriver apr 1-piledriver
Lead Man 2 Laborers. setting pile driver Br 5710
started driving piling today got 3 down in
west abutment

Wed Dec 9 = 1936 Bridge 5710 Cloudy + warm snow last Mtn
1-Supt 1-foreman 1-piledriver apr
1-piledriver Lead Man. 2 Laborers 1-truck Driver
Driving piling Broke Hoist on pile driver
at 10³⁰ AM. No more work today as had to go
to Duluth for repairs

Thurs. Dec 10 - 1936 Br. 5710 Clear + Cold
1-Supt 1-foreman 1-piledriver apr 1-piledriver Lead
Man. 1-truck driver 2 Laborers. Repairing Hoist
framing piling started driving piling at
10 AM. finished driving piling in west abut.

Fri Dec 11 = 1936 Bridge 5710 Clear + Cold
1-Supt 1-Foreman 1-Piledriver apr
2 piledriver Lead Man. 4 Laborers.
finished driving piling in last abutment
Excavating for backing plank + Building
Puddle Dams.

29
Sat Dec 12 = 1936 Bridge 5710 Thawing today R.E. Merrill
1-Supt 1-foreman 1-piledriver apr 2 piledriver
Lead Man. 3 Laborers. Moved pile driver off of
Bridge site. Cutting off piling placing timbers
+ Backing plank Excavating for backing plank

Sun. Dec 13 = 1936 Clear + Warm.

Mon Dec 14 = 1936 Br. 5710 Clear + Warm Thawing
1-Supt 1-foreman 1-piledriver apr 2 piledriver
Lead Men 4 Laborers placing timbers + planting
Cutting piling + Hauling Bridge timbers to
Br. 5709 1-2 ton G.M.C. Truck

Tues Dec 15 = 1936 Clear + Warm Thawing Br 5710
1-Supt 1-foreman 1-piledriver apr 2 piledriver Lead
Men 4 Laborers. finished laying floor Guard
Raile + Wing plank this finished the Bridge
Truck Hauling plank to Bridge 5709

Wed Dec 16 = 1936 Clear + Warm Bridge
2 piledriver Lead Man 4 Laborers 1-Supt 1-foreman
1 piledriver apr Moving + setting w.p. at
Bridge 5709 1-team + Wagon
filling approaches. at Bridge 5710

Thurs Dec 17-1936 Cloudy + Warm
1-Supt 1-foremen 1 Piledriver Opr
2 pile driver Lead Men 3 Laborers
1- kamater 1- 2 ton G.M.C. truck
1- team + wagon

finished filling approaches to Bridge
5710 turned traffic over it tonight
finished moving cut fit to Bridge 1509
Built temporary Xing at 1509
Put up Barracades. + Lights.

Fri. Dec 18 = 1936 Cloudy + Warm
1-Supt 1-foremen 1- pile driver Opr
2 pile driver Lead Men
finished setting up driver and
started. Driving piling got one down
Repairing Detour

Sat Dec 19 = 1936 Cloudy + Warm.
1- Supt 1- Foremen + Piledriver Opr
2 pile driver Lead Men
Driving piling Bridge 5709
Finished North abutment today

Sun. Dec 20 = 1936 Cloudy + cold

Mon. Dec 21 = 1936 Br 5709 Clear + Cold R.E. Merrill
1- Supt 1- Foremen 1- pile driver Opr
3 pile driver Lead Men 1- Laborer 1- truck
Driver 2 trucks Finished driving piling
in south abutment today
trucks. Hauling piling + Lumber to Br 5712

Tues. Dec 22 = 1936 Cloudy + Warm. Br 5709
1-Supt 1-foremen 1- pile driver Opr 2- piledriver
Lead Men 2 Laborers Cutting off Piling placing
Caps. on Each abutment 1-truck Driver
2 trucks hauling timbers + Lumber Br 5711
+ Br 5708

Wed. Dec 23 = 1936 Cloudy + Warm.
1- Supt 1- foremen 1- Piledriver Opr
2 pile driver Lead Men Moving Driver to
Br 5708 Hauling Lumber + Bracing
up Old Bridge to carry traffic over Xmas.
as are shutting down till after New Year
put Mud sill down in center of old Bridge.
With post + Caps put up Guard Rails.

Mon. Jan. 4 = 1937 Blizzard IFE Merrill
No work in P.M. Bridge 5709

1-Foreman. 1-piledriver opr 2 piledriver
Lead Men. 2 Laborers Excavating in
Both Abutments.

Supt + 1-Carpenters foreman 1-piledriver
Lead Man. waiting in Motley for the snow plow
to clear the road so they could get out to job

Tues Jan 5-1937 Clear + Cold Br. 5709

1-Supt 2 foremen. 1-piledriver opr 3-piledriver
Leadman 1-Laborer Removing Old Bridge
fixing up Detour Had to shovel snow off

2 laborers did not show up
today

Wed Jan 6 = 1937 Snowing Br. 5709

1-Supt 2-foremen 1 pile driver opr
3 pile driver Lead Men 1 Laborer placing
stringers + backing plank. Moved piledriver
to Br. 5708 the 2 laborers has not showed
up yet

Thurs Jan 7 = 1937 Clear + very cold

1-Supt 2 foremen 1-piledriver opr
3 piledriver Lead Men 1 Laborer
Placing floor plank + Guard Rail post
Br. 5709 in P.M. setting up Piledriver
Jacking out part of old bridge Putting in
Temporary Crossing at Br. 5708
Still waiting for Laborers to show up

Fri Jan 8 = 1937 Snowing + Real cold

1-Supt 2-foremen 1-piledriver opr
3 piledriver Lead Men 1 Laborer
Placing wearing surface + Building wings Br. 5709
Removing Old Br. 5708 Worked $\frac{1}{2}$ day soomed hard
Only 1 Laborer showed up today

Sat Jan 9 = 1937 Clear + Cold 26° Below

1-Supt 2-foremen 1 Piledriver opr 2 Piledriver Lead men
1 Lead man. did not show up for work + 1 Laborer showed up
P.M. started driving piling Br 5708
Finished up wings + Laying wearing surface
Br. 5709

Sun. Jan. 10 = 1937 Clear + cold 36° Below

Monday Jan. 11-1937 Clear + Warm

1-Supt 1-Lead man. 2 Laborers 1 team + teamster
filling in approaches Br 5709
2-foremen - 2 Leadmen 1-piledriver opr
Driving piling Br 5708
got approaches filled
Finished Driving piling a Br 5708

Tues Jan. 12 = 1937 Br. 5708 Clear + Warm
1-Supt 2 foremen. 1 Pile driver Opr
3 pile driver Leadmen 2 Laborers -
Removing Old Bridge Placed Caps + stringers
Done some Excavating for Backing plank
Moved Hoist + 1-Load of timbers to
Br 5711

Wed Jan 13 = 1937 Br 5708 Cloudy + Warm
1-supt 2 foremen 1 pile driver Opr
3 pile driver Lead Men. 4 Laborers -
placing Backing plank. Building Wings.
Laying floor finished Excavating for
the Backing plank.

Moved Piledriver Leads to Br 5711

Thurs. Jan 14 = 1937 Clear + Cold
2 Supts. 2 foremen 1 Pile Driver Opr
3 pile driver Lead men. 4 Laborers. 1 teamster
+ Team finished Laying wearing surface
+ Guard rails filling approaches Bridge 5708
Built temporary crossing removed Old Bridge
at 5711

32
Fri Jan. 15 = 1937 Clear + Very Cold P.E. Merrill
2 Supts. 2 foremen. 1-piledriver Opr
3 pile driver Lead Men. 4 Laborers. 1-teamster
1-team finished filling approaches.
Finished Guard Rail Br 5708
Started Driving piling Br 5711

Sat Jan. 16 = 1937 Br 5711 Cloudy + Warmer
1-Supt 2 foremen 1-pile driver Opr
3-piledriver Lead Men 1-Laborer
finished framing + Driving piling Br 5711
Cut off part of piling Excavating for Backing
Plank.

Sun Jan 17 = 1937 Clear + Cold

Mon. Jan 18 = 1937 Br 5711 Clear + Very Cold
1-supt 1 foremen 3 pile driver Lead men 4 pile driver Opr
1-Laborer Removing Old Concrete abutment
Excavating East abutment
Bridge 5712 1-foremen. 4 Laborers.
Building temporary Xing

Tues Jan 19-1937 Clear + Cold 42° Below
1 Supt 1 foreman 3 Piledriver Lead men
1- pile driver opr 1-Laborer placing caps
Cutting piling excavating for Backing plank
Placing stringers. Bridge 5711
1- Supt 1- foreman 4 Laborers
Moving piledriver & hoist to Bridge 5712
Removing old Bridge & finishing temp Xing

Wed
Jan 20-1937 Blizzard
1 Supt 2- foreman 1- pile driver opr
2 piledriver Lead men 4 Laborers
Moving tool House & Hammer from
Bridge 5711 to 5712 Removing old Bridge
& shoveling snow from lumber Bridge 5712
setup Driver & Drive 2 Piling

Thurs
Jan 21-1937 Clear + Cold
1 Supt 1- foreman 2 Piledriver Lead Men
1- pile driver opr 4 Laborers. Driving
Piling Removing snow Br 5712
1- Supt 1 pile driver Lead Man 1- foreman
1- Laborer placing Backing plank
& stringers at Bridge 5711

33
Fri
Jan 22=1937 Clear + Cold P.F. Merrill
1-Supt 1- foreman 1- piledriver opr
4 Laborers finished driving piling
Excavating for Backing plank Cutting off Piling
Bridge 5712
1-Supt 2 pile driver Lead Men 1- foreman
1- Laborer finished placing planking
& Guard Rail Bridge 5711

Sat Jan. 23=1937 Clear + Cold
2 Supts 2 foreman 1- pile driver opr 2 Piledriver
Lead men 4 Laborers 1- team & teamster
filling approaches & Removing temp Xing
Br 5711 Tearing down piledriver & moving
it to Margaret placing stringers & caps Excavating
for Backing plank Br. 5712

Sun Jan 24=1937 Cloudy + Cold

Mon. Jan. 25=1937 Clear + Cold
2 foreman 4 Laborers. placing floor
Plank & Backing Blank. Excavating for
Backing plank. Frost allmos all the way down
slows up work quite a little

Tues. Jan. 26 = 1937 Clear + Cold

1 Supt 2 foremen 4 laborers,
finished Excavating for Backing Plank
placing same. + Weaving surface
Removed Old Logs. from fill adjoining
Bridge as was a lot off them in fill

Wed. Jan 27 = 1937 Cloudy + some snow

1 Supt 2 foremen 4 laborers
finished Removing wood from fill
+ cut down fill as Bridge was set
2 feet lower than old one
started filling approaches.

Thurs. Jan. 28 = 1937 Clear + cold

1 Supt 2 foremen 3 laborers. filling
approaches. Br 5712

Fri. Jan. 29 = 1937 Cloudy + cold

1 Supt 2 foremen 3 laborers.
finished filling approaches. cleaning
up around Bridge Moving Tool House
Work suspended till spring for
Grade finishing RAPPING + painting
Guard rails

R.E. Merrill

S.A.P. No 7. Bridge Survey
Level Notes

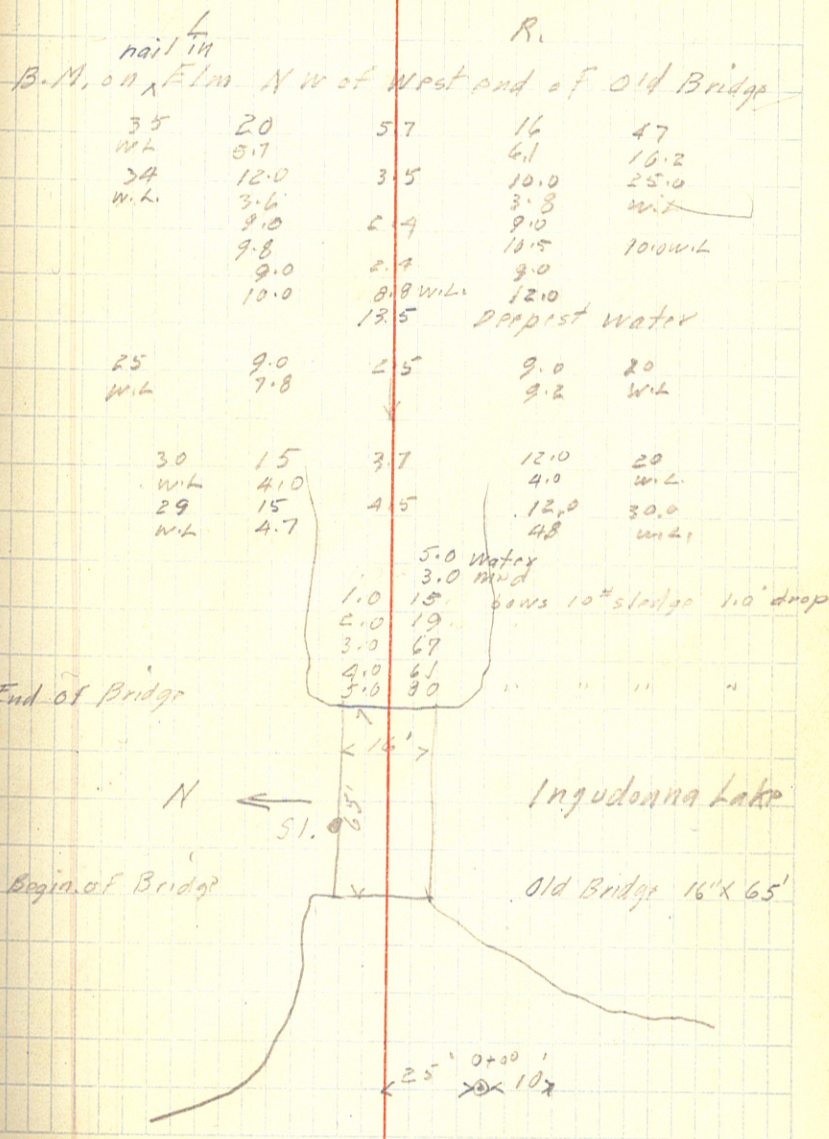
Sta	+	H.L.	-	Elev.
B.M.	5.0	105.0		100.0
0			5.7	99.3
0+50			3.5	101.5
0+85			2.4	102.6
1+00			8.8	98.2
1+15			2.4	102.6
R	2.7	105.2	13.5	91.5
1+50			2.5	102.5
2+00			2.5	102.7
2+50			3.7	101.5
2+50			4.5	100.7
2+00				
1+50				
1+00				
0+85				
0+50				
0+00				

Transit Notes

Oct. 23, 1940
Clear & Warm

R.A. Dahms, Inst.
Geo. Minder, Rot. 35

Govt. Lot. No 5, Sec. 32-141-27



C.A.R. No 39 Bridge Survey

Level Notes

Sta.	+	H/I	-	Elev.
B.M.	3.3	103.3		100.0
0+00			1.00	102.3
+50			3.9	99.4
+75			5.2	98.1
1+00			5.9	97.4
			11.0	92.0
+36			6.3	97.0
+50			6.7	96.6
2+00			7.3	96.0

Transit Notes

2+00
+50
+36
1+00
+75
+50
0+00

Dec. 12/19/40
Cloudy, warm

R.A. Dahms, Inst.
R. Magalson, Rod. 36

In SE 1/4, NE 1/4 Sec. 15-140-29

L

R.

B.M. on notch on 10' birch S.E. of Bridge

L	25	20	12	5.1	12.0	2.0	L
	3.0	6.0	6.4		5.3	2.9	
L		22	12		12.0	2.2	L
		0.9	6.7		3.8	0.6	
L		22	12		12	2.2	L
		8.5	6.0		6.1	9.0	

Water Level

L	18	12		12	18	L
	4.4	5.5		6.2	9.4	
	16	10		12	13	L
	7.6	5.6		5.5	7.2	

4.0' water

1.5' mud

1.6	4' flows #10 sledge	1.0' drop
2.0	67 "	" "
3.0	77 "	" "

3/4" pipe

End of Bridge

Begin of Bridge

5' old Bridge 16' x 36'
→ 4.8 Floor to water

Loon Lake Twp. Culvert
& Bridge Survey

Sta.	+	HI	-	Elev.
B.M.				100.00
0+00			2.30	114.35
+50			4.30	112.35
1+00			8.35	106.3
TP	8.35	116.65	1.50	108.3
1+50			5.00	104.8
2+00			8.50	101.3
2+11			8.95	100.85
2+24			9.05	100.75
2+50			7.95	101.85
3+00			4.00	105.8
B.M.		109.80	9.80	100.00
B.M.	3.00	103.0		100.00
			10.4	92.6
			10.4	92.6
			10.6	92.4
			16.7	92.3
2+24				
2+11				
0+00				

July 7, 1942

R.A. Dahms Inst.
David Wickland, Rod

37

In Govt. Lot No 1 - Sec. 33 - 136 - 29

L

R

on top of N.E. Con. Bridge Abutment.

		12	5.0	11.0	13.0	15.0
		5.3		5.7	6.0	5.8
31	21	9		7	16	26
9.5	8.0	3.6		3.8	7.1	11.0

East end of Con. Bridge

West end of Con. Bridge 13.0 x 17.0"

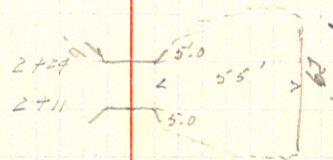
24.0	10	2.5	12	21	31
10.9	3.0		2.4	5.2	4.0
24	11	4.0	7	18	
13.0	4.6		4.3	5.8	

Bottom of stream, upper side of B.C.

" " " Lower " "

" " " " Dam

" " " Upper " "



Co. Line Cass
Crown wing

W. B. & Lennie Nisbitt

N.E. of N.E. Sec. 6.

Walden.

1600
7200

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1 1/2 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.

MADE IN GERMANY.
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