

Moroni Levels

W43

LEVEL BOOK

400

22

H. S. CROCKER COMPANY

DRAWING MATERIALS AND
SURVEYING INSTRUMENTS

SAN FRANCISCO

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.

"Copyright, 1895, by Kneffel & Esser Co."

	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.

Levels for Pipe Line - N. Bench to
Sky Valley Road - Jan 22-1910 (P.P.M.)

Sta.	+S	H.I.	-S	Elev.	Remarks
0+00	10.6	310.1		300.0	(Assume)
0+50			9.6	300.5	
1+00			9.1	301.0	
(T.P.)					
1+50	8.0		8.5	301.6	
2+00		301.8	7.7	302.1	
(T.P.)					
2+75	8.4		2.7	307.1	
3+25		315.5	7.9	307.6	
3+50			7.6	307.9	
4+00			7.1	308.4	
(T.P.)					
4+50	4.5		6.8	308.9	
5+00		313.4	4.0	309.4	
5+50			3.5	309.9	
6+00			3.0	310.4	
(T.P.)					
6+50	7.6		2.6	311.0	
7+00		318.6	7.1	311.5	
7+50			6.6	312.0	
8+00			6.0	312.5	

Std.	+S.	H.I.	-S.	Elev.
(T.P.) 8+50	7.2		5.5	313.0
9+00		320.2	6.7	313.5
9+50			6.2	314.0
10+00			5.7	314.5
(T.P.) 10+50	12.3		5.2	315.0
11+00		327.3	11.9	315.5
11+50			11.4	316.0
(T.P.) 12+00	6.5		10.9	316.5
(T.P.) 12+50	5.6	323.0	3.3	317.0
13+25	2.5	322.6	0.0	317.0
(T.P.) 13+55	6.0	319.5	2.0	317.5
14+00		323.5	5.5	318.0
(T.P.) 14+50	10.9		5.0	318.5
15+00		329.4	10.4	319.0
15+50			9.9	319.5
16+25			9.15	320.25
(T.P.) 16+75	11.3		8.6	320.8
17+25		332.1	10.8	321.3 (Crest)

2 Levels for determination of
length of movable cable.

	300.00		
		0.60	299.40
1136	310.76		
		1.73	309.03
1187	320.90		
		2.74	318.16
		0.46	320.44
1135	331.79		
		0.56	331.23
1116	342.39		
		1.09	341.30
1088	352.18		
		1.54	350.64
1201	362.65		
68.63		5.98	

Mornington Feb 10th 1911.

= assumed elev. of midpoint of cable with
(top of buffer) low.

= Top rails South bench.

~~40.44~~ diff elev
between tracks

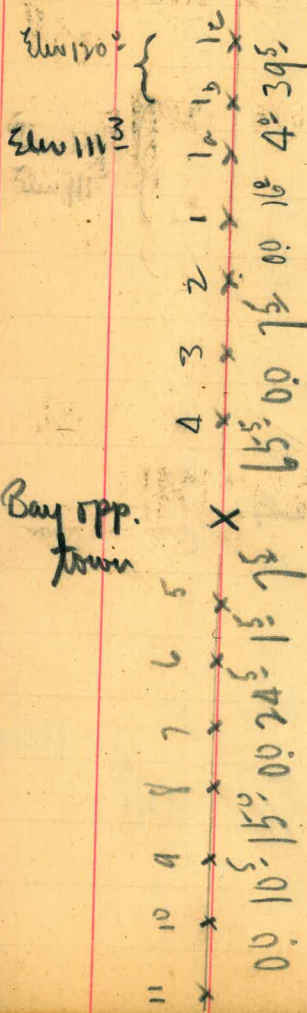
= Top rails north bench

3 Levels for Masonry Program Profile

Bm	1002	11053	100.51
	1074	12099	028 11025
* 1			
* 2			
3			
4			
0			261 11838
* 5	573	12411	
6			
7			
8			
9			
10			
11			

Aug 1 1911 Wmest. Kuchent.

- 675
- 55
- 195
- 099
- 433
- 72
- 83
- 101
- 92
- 72
- 105



5

11278

- 27
- 28
- 29
- 30
- 31
- 32
- 33
- 34
- 35
- 36
- 37
- 38
- 39
- 40
- 41
- 42
- 43
- 44

100' cross

1278

- 7.1
- 9.6
- 9.7
- 7.4
- 7.8
- 9.8
- 10.1
- 8.1
- 8.2
- 6.0
- 6.6
- 7.7
- 7.0
- 5.7
- 5.7
- 16.3
- 16.3

27 x
 28 x
 29 x
 30 x
 31 x
 32 x
 33 x
 34 x
 35 x
 36 x
 37 x
 38 x
 39 x
 40 x
 41 x
 42 x
 43 x
 44 x

6 Levels for 130 ft. Contour
B.M. + H.I. - 130.00

8.70 138.70

3.05 135.65

3.14 138.79

2.79

4.25 134.54

3.80 138.34

6.06 132.28

5.74 138.02

8.02

4.32 133.70

10.19 143.89

11.21 132.68

5.19 137.87

7.87

7.51 130.86

~~9.89 140.25~~

~~10.25~~

7.91 138.27

8.27

44.67 ✓ 7.84 130.43

~~8.74 139.17~~

~~44.24 ✓~~

9.17

Ed. White Oct. 8/11

Point on rock

130.00

Point on rock

B.M. Rock

B.M. Rock

B.M. Rock

130.00

B.M. Stake

B.M. Stake

7
B.M. + H.I. -

130.43

3.84 134.27

3.43 130.84

10.33 141.17

11.17

9.31 131.86

6.93 138.99

8.79

11.05

8.63 130.16

10.41 140.57

10.57

10.38 130.19

11.23 141.42

11.42

11.80 129.62

3.10 132.72

5.36 127.36

11.39 138.75

8.75

1.89 136.86

4.59 141.45

11.45

~~1.82~~ ~~5.080~~

Pt. on Rock

Pt. on Rock

U.S.G.S. B.M. 3010. 127.74

Pt. on Tent.

Pt. on Tent.

Pt. on Rock

Pt. on Tent.

Pt. on Rock

B.M.	+	H.I.	-	Grade Rod
		141.45		
			8.03	133.42
	7.63	141.05		11.05
B.M.			6.50	134.55
o	5.33	139.50	5.33	135.72
	6.08	141.80		11.80
o			7.57	132.29
	6.18	138.47		8.47
o			2.81	135.66
	4.24	139.90		9.90
			5.14	134.76
o	5.81	140.57		10.57
o			8.07	131.90
	9.44	141.34		11.34
			11.19	130.15
	11.56	141.71		11.71
50.94 ✓		50.68 ✓		

Pt. on Hub

Pt. on Rock in end of gulch. 134.55

" " Xarb

Pt. on Boulder

Pt. on Rock

Pt. on Rock

but a grade stake at this Point

g	B.M.	+	H. 1	-	Grade	Prod
0			141.71			
		7.55	140.76			
				8.50	133.24	
						10.76
0				11.61	129.15	
		10.64	139.79			
						9.79
0				8.78	131.01	
		9.13	140.14			
						10.14
0				10.98	129.16	
		10.72	139.88			
						9.88
0				8.40	131.48	
		7.58	139.06			
						9.06
0				7.20	131.86	
		5.50	137.36			
		51.12 ✓		55.47 ✓		

Pt. on Rock

Pt. on Rock

on Rock

on Rock

on Rock

Pt on Rock

16

B.M.

+

H. I.

-

Grade

137.36

7.36

o

7.14 130.22

Pt. on Rock

110.3 141.25

11.25

B.M.

5.79 135.46

B.M. on hard Boulder
200' south of small Oak

4.10 139.56

9.56

o

9.96 129.60

Pt on Rock

15.13 ✓

22.89 ✓

Oct. 13/11

11.96 141.56

11.56

o

6.58 134.98

Pt on Rock.

4.41 139.39

9.39

o

8.70 130.69

Pt. on Rock

5.90 136.59

6.59

o

4.90 131.69

Pt. on Rock

22.27 ✓

20.18 ✓

"	B.M	+	132.8	H I	-	131.69	"Sand"
	8.84		140.53				
						10.53	
o				7.32		133.21	
	4.82		138.03				
						8.03	
o				1.74		136.29	
	2.08		138.37				
						8.37	
o				.81		137.56	
	2.49		140.05				
						10.05	
o				4.24		135.81	
	2.90		138.71			8.71	
o				4.53		134.18	
	6.73		140.91				
						10.91	
o				5.48		135.43	
	27.86	✓		24.12	✓		

Pt. on Rock

Pt. on Rock back of Boulders.

Pt. on Rock.

07-14

Pt. on Rock

Pt. on Rock

Pt. on Rock

12

B.M.

+

H.1

-

13503

asahi

.76

136.19

6.19

○

2.46

133.73

Pt. on Rock

2.51

136.24

6.24

○

2.20

134.04

Pt. on Rock

5.85

139.89

9.89

○

2.43

137.46

Pt. on Rock

3.31

140.77

10.77

○

3.03

137.74

Pt. on Rock

3.16

140.90

10.90

○

4.27

136.63

Pt. on Rock

4.41

141.04

11.04

○

5.58

135.46

Pt. on Rock

20.00 ✓

19.97 ✓

13
B.m. + H. I. - 13546
6.28 141.74

11.74

0 2.58 139.16
2.19 141.35

11.35

0 4.15 137.20
3.70 140.90

10.90

0 1.14 139.76

12.17 ✓ 7.87 ✓

139.57

1.28 139.85

9.85

0 4.73 135.12
6.23 141.35

11.35

6.51 ✓ 4.73 ✓

Pt on Rock

Pt on Rock

Pt. on Rock

Oct 17/11

= corrects elev of Lead T.P.
Oct 17th 1911.
with Barbours

Pt. on Rock

11.11

14.		141.35		
B.M.	x	H. 1.	—	grade
○		5.25	136.10	
		3.41	139.51	9.51
○		4.53	134.98	
		4.65	139.63	9.03
B.M.		1.82	137.21	
		2.63	139.84	9.84
○		2.57	137.27	
		3.69	140.96	10.96
○		4.09	136.87	
		4.96	141.83	11.83
○		5.61	136.22	
		4.37	140.59	
		23.11 ✓	23.87 ✓	

Pt. on Tent.

Pt. on Tent.

Pt. on Rock, small stone by iron top

Pt on Rock

Pt. on Rock

Pt. on Rock

15
B.M. + H. I. -
140.59
grad
10.59

o 4.00 136.59

3.88 140.47

o 6.36 134.11

4.03 138.14

o 4.84 133.30

6.02 139.32

o 3.30 136.02

3.06 139.08

B.M. 5.43 133.65

16.99

239.3

Pt. on Rock

Pt. on Tent

Pt. on Tent

Pt. on Rock

Pt. on Rock at Tree (small oak)

	+	H.I.	-	
16 B.M	4.41	138.06		133.65 grade
				8.06
o	4.50	140.01	2.55	135.51
				10.01
o	4.41	141.42	3.06	137.01
				11.42
o	2.68	140.59	3.51	137.91
				10.59
B.M.	1.67	140.39	1.87	138.72
				10.39
o	4.66	139.96	5.09	135.30
				9.96
22.33		16.02		

OCT. 18th

Pt. in Brook

Pt. in Brook

Pt. in Brook

Pt. in Brook, 8 ft. from Boulder & small oak

Pt. in Brook

17	B.M.	+	H.I.	-	grade
			139.96		
o		4.81	141.39	3.38	136.58
					11.39
o		2.19	141.70	1.88	139.51
					11.70
o		4.47	139.23	6.94	134.76
					9.23
o		2.78	136.35	5.66	133.57
					6.55
B.M.		5.39	138.50	3.24	133.11
					8.50
o			1.35		137.15
		19.64		22.45	

Pt. on Rock

Pt. on Rock

Pt. on Rock

Pt. on Rock

Pt. on Rock next to Boulder 20 ft N
of stake

Pt. on Rock

18

13 m.

+

H.L.

-

grade

137.15

1.04

138.19

8.19

⊙

4.22 133.97

5.56

139.53

9.53

⊙

8.04 131.49

6.60

12.26

Pt. on Kent

131.49

4.54

136.03

6.03

⊙

2.52 133.57

6.35

139.86

Pt. on Kent

9.86

⊙

3.07 136.79

1.05

137.84

Pt. on Kent

7.84

11.94

5.59

Oct. 19th

19

B.M. + H.I. - grade

137.84

0 502 132.82

3.37 136.19

6.19

0 1.16 135.03

5.51 140.54

0 373 136.81

5.00 141.81

B.M. 1.88 139.93

.64 140.57

0 2.56 138.01

14.52

14.35

Pt on Tent

Pt. on Tent

x 1052

Pt. on Tent

group of Boulder
On Boulder, with small rock on top

Pt. on Boulder

20

Bm

0.58 140.51

139.93

grade

10.48 130.03

5.58 135.61

5.61

130.00

0

5.49 130.12

Pt. on bank

5.63 135.75

5.75

0

4.07 131.68

Pt. on bank

6.69 138.57

8.37

0

7.68 130.69

Pt. on bank

7.35 138.04

8.04

0

7.94 130.10

Pt. on bank

8.01 138.11

8.11

0

7.40 130.71

Pt. on bank

33.84

45.06

20th
Oct 1911

see page 19

21

B.M. + H. + - 130.71 grade

9.17 139.88

9.88

⊙

6.74 133.14

Pt. on bank

6.79 139.93

9.93

B.M.

7.26 132.67

On small Rock 50 ft. from small oak tree

5.60 138.27

8.27

⊙

6.36 131.91

Pt. on bank

5.24 137.15

7.15

⊙

3.28 133.87

Pt. on bank

4.57 138.44

8.44

⊙

7.55 130.89

Pt. on bank

31.37

31.19

22

Bm.

+ H. 1. -

130.89 grade

5.75 136.64

6.64

o

5.69 130.95

Pa. on bank.

8.08 139.03

9.03

o

6.27 132.76

Pa. on bank.

6.39 139.15

9.15

o

6.55 132.60

Pa. on bank

20.22

18.51

132.60

6.84 139.44

9.44

o

4.99 134.45

Pa. on bank

5.59 140.04

10.04

12.43

4.99

Oct. 21/1911

23

B.M.

+

H. I.

-

grade
10.04

140.04

B.M.

5.96 134.08

3.79 137.87

7.87

o

5.01 132.86

7.67 140.53

10.53

o

2.92 137.61

3.16 140.77

10.77

B.M.

3.71 137.06

2.79 139.85

9.85

o

5.84 134.01

4.35 138.36

8.36

o

2.42 135.94

21.76

25.86

Pt. on Rock. 10 ft. S. of fallen tree (log)

Pt. on Rock

Pt. on Rock

Pt. on Boulder. 40 feet N.E. of ~~fallen~~ oaks

Pt. on Rock

Pt. on Rock

24 B.M. + H. I. - grade
13594

2.40 138.34

8.34

⊙ 2.52 135.82

3.72 139.54

7.54

⊙ 3.96 135.58

3.69 139.27

9.27

⊙ 6.23 133.04

5.48 138.52

8.52

B.M. 3.75 134.77*

3.24 138.01

8.01

⊙ 3.05 134.96

3.93 138.89

2246 19.51

Pt. on Tent.

Pt. on Tent.

Pt. on Tent

Pt. on Rock, on Back of Point extending
into Cottonwood creek, small
monument.

Pt. on Rock

25 B.M. + H.I. - grade
138.89 889

0	253	136.36
	253	
		136.36

At on Rock (Last Turning Pt Oct. 22/11)

Oct. 28/11

26

Sewer for 130' contour on

901 109.52 100.51

083 108.69

1183 120.52

093 119.59

1003 129.62

060 129.02

1045 139.47

947

1071 128.76

1163 140.39

1039

1119 129.20

985 139.05

905

727 131.78

956 141.34

1134

1236

3153 ✓

South side November 9th 1911

Weather - wet fog Wreath Husband write.

27

141.34

858 132.76

907 141.83

1173

976 132.07

957 141.64

1164

262 139.02

296 141.98

1198

575 136.23

497 141.20

1120

B.M.

4.77 132.08

889 132.31

TP

3.68 133.40

TP

3.41 136.81

6.86 129.95

6.05 136.00

B.M.

3.33 132.67

= $\frac{1}{2}$ in porphyry bed-rock.

NOV. 12-1911

nail on ^{oak} stump 8" diam

28

	136.00			
TP	9.56	140.97	4.59	131.41
TP	2.01	132.25	10.73	130.24
TP	11.77	140.05	3.97	128.28
	9.21	139.75	9.51	130.54
BM			5.20	134.55
TP	6.49	141.38	4.86	134.89
TP	10.86	140.97	11.27	130.11
TP	4.86	141.54	4.29	136.68
BM	2.77		1.48	140.06

nail
on oak tree 8" right of line

on large rock, summit noon.

27 B.M. + H.I. - grade

B.M. 140.06

1.13 141.19

11.19

T.P. 10.85 130.34

9.21 139.55

9.55

B.M. 2.92 136.63

4.75 141.38

11.38

T.P. 6.90 134.48

4.91 139.39

9.39

T.P. 2.44 136.95

4.57 141.52

11.52

B.M. 2.05 139.47

24.57

25.16

Nov. 20/11

on Large Rock granite.

on slab

small
on Boulder. 2 stakes at Boulder

on Rock

on Rock

on Rock West side of Canyon. 50 feet E.
of Caliche

30 B.M. + H.I. - grade

205 141.52

139.47

11.52

T.P. 288 139.97 4.43 137.09

TP 585 134.18 9.69 130.33

TP 277 130.97 7.98 128.20

173 130.84 1.86 129.11

870 137.40 2.14 128.70

B.M. 204 136.97 2.47 134.93 ✓

TP 211 133.88 5.20 131.77

TP 770
78 134.18 7.40 126.48 ✓

B.M. 003 130.41 3.80 130.38 ✓

TP 701 132.60 4.82 125.59 ✓

528 137.66 0.22 132.38

451 138.06 4.11 133.55

470 138.62 4.14 133.92 ✓

TP 875 144.40 2.97 135.65 ✓

Pt. on Kent near end of Canyon W side

Dec 17 - 11

Stump Buck Brush 2" down on ridge

Dec 26 - 11

Stump Pool & Big Rocks

Jan 2 1912

31

144.40 ✓

6.00 142.81 8.09 136.81

TP 6.12 136.23 11.70 130.61

7.73 137.82 6.49 130.09 ✓

TP 6.43 137.00 7.25 130.57

2.20 138.54 0.75 136.24

BM 2.87 139.98 1.43 137.11 ✓

TP 9.19 139.38 9.79 130.19

TP 5.68 136.51 8.55 130.83

B.M. 1.43 135.08

BM 1.09 138.20 137.11

TP 3.40 135.90 5.70 132.50

TP 10.24 138.10 8.04 127.86

BM 1.70 136.40?

TP 6.12 136.14 8.09 130.01

TP 3.63 133.64 4.13 130.01

TP 5.76 133.17 9.23 127.41 ✓

30.25 ✓ 34.19 ✓

STAKE

on Rock NOON

Jan. 21-12

Took nails
^ on first telephone pole north of gate

On rock. MAR 22 1912 PM

H.D.H.

R.W.

UNCLE

32

		133.17		
TP	720	137.99	2.38	130.79
TP	350	134.44	7.05	130.94
BM	817	142.10	0.81	133.93
TP	818	139.98	10.30	131.80
TP	762	137.06	10.54	129.44 ✓
TP	423	133.62	7.67	129.39
TP	763	136.48	4.77	128.85
BM	827	140.39	4.39	132.69 ✓
TP	560	140.14	5.82	134.54
TP	1042	138.56	12.00	128.14
TP	752	136.99	9.09	129.47
BM	965	140.17	6.47	130.52
TP	848	138.48	10.17	130.00
TP	11.81	141.81	8.48	130.00
TP	10.04	140.04	11.81	130.00
TP	4.95	134.95	10.04	130.00
TP	722	137.22	4.95	130.00
	1309.9		126.44	

NIGHT MAR 22 - 1912

STUMP Brass Tack SOUTH SIDE 2:10 P.M.

Mar 23 1912 A.M.

an rock an point where pine grows

an rock ^{200'} R of Red opposite low pine log

STAKE

NOON

See page 37

33

Levels 130 Elevation on face of Dam

R. W. Waterman

1/12/12

①	+	HI	-	Elev.
B.M.				100.57
○	11.06	111.57	0.19	111.38
○	11.14	122.52	2.92	119.60
○	10.92	130.52	1.19	129.33
○	10.13	139.46		
			9.46	130.00

= 130 Elevation on face of dam.

B.M.				153.46
○	2.06	155.52	11.55	143.97
○	1.55	145.52	5.25	140.27 ✓
○	4.24	144.51	9.76	134.75
○	4.48	139.23		

34

Levels from Dunn to Cook

Feb. 4 - 1912

B.M. 8.53 109.04 100.51

T.P. 11.19 119.96 0.33 108.71

11.33 130.97 0.26 119.64

T.P. 11.56 142.28 0.25 130.72

11.64 152.48 1.44 140.84

6.74 159.09 0.13 152.35

B.M. 3.24 155.85

T.P. 8.84 167.83 0.10 158.99 ✓

4.8 163.0

B.M. 8.73 164.10

154.77

white Rock

on west end of Dining Room door sill

Glen of Rock at lower Bd of two 18" strata

35

Levels for Trip 2-4-12

TP 1.93 137.78 155.85

TP 11.56 165.26 408 133.70

TP 5.54 163.60 720 158.06

white rock

389 to Road

to white rock 500 133

" dam 100' long 133 35

" " curb 35

total list 668 552

163' of Bridge

36

+ HT -

BM 0.82

$\frac{561}{274}$
13.35

May 11 - 1912

H. B. N.

Top of Pin at Tower on 20' contour line

Top of water

37

		137.22			
BM	590	133.80	9.32	127.90	
TP	12.30	141.35	4.75	129.05	
TP	7.89	137.89	11.35	130.00	
BM			3.10		134.79
TP	5.93	135.93	7.89	130.00	
TP	4.63	134.26	5.80	130.13	
TP	4.35	127.94	11.17	123.59	
BM	598	133.88	0.4	127.90	
TP	5.09	135.08	3.89	129.99	
TP	7.14	137.14	5.08	130.00	
TP	7.50	137.50	2.14	130.00	
BM	921	139.36	7.35	130.15	
TP	5.59	138.27	6.88	132.58	
TP	6.55	136.22	8.10	130.07	
TP	6.05	136.25	6.42	130.20	
			3.94	132.31	✓
	94 214		99.12		✓

see page 32

7'5" of stump 8' high at narrow

on rock 200' west of end of 130' contour

BM ✓ see top of page

MARCH 24 1912

on rock north side of stream

Levels across the Prairie

3.41	135.72		132.31	
0.34	130.02	50.4	129.68	
0.50	129.95	0.57	129.45	
0.60	119.83	10.72	119.23	
1.35	109.58	11.60	108.23	
1.73	99.95	11.36	98.22	
BM	6.11	103.00	306	96.89
	10.93	113.93	000	103.00
	12.03	125.84	0.12	113.81
	10.56	135.94	0.46	125.38
	3.86	138.55	1.25	134.59
		1.39		137.14

51	42		
30	25		46.57 ✓
1	30	49	34.19
	94	21	126.44
			99.12
3	04	37	306.32
3	06	32	
		.05 ✓	
			137.15
			137.11
			.05 ✓

in rock in Prairie

39

check levels

B.M.	0.50	137.61		137.11
	0.64	127.28	1997	126.64
	0.21	115.75 ⁸	11.59	115.59
	0.56	104.61	11.75	104.05
	0.44	93.28	11.77	92.84
	0.24	81.65	11.87	81.41
	1.40	72.61	10.44	71.21
			6.89	65.72
399				
4.30			75.38	65.95
			399	
32			71.39	

13

65.73

6405

TRUE ELEV 137.34

water Mar 24 1912 PM
gauge at Town Mar 24 1912

40

TP	1015	140.35		130.20	
	8.48	138.87	9.96	130.89	
BM			5.41		132.48
TP	3.41	135.46	6.55	132.22	
TP	7.15	137.24	5.52	130.11	
TP	4.30	137.20	4.25	132.90	
BM			1.50		135.70
	4.50	133.47	8.23	128.97	
	7.01	136.97	3.51	129.96	
BM			4.03	132.94	
TP	6.02	136.98	6.91	130.06	
	4.70	134.39	5.82	130.26	
TP	3.70	133.76	4.30	130.06	
	4.45	134.91	3.80	130.46	
					0
BM			2.92		131.99
TP	6.33	135.43	5.61	129.30	
	4.68	135.06	5.25	130.38	
	<u>74.28</u>		69.42		

Surf 1.27

Nov 25 - 1912

Small mound of rock see page 24 13

Town Behn

134.06
35.50
<u>1.36</u>

on R 10' east of fallen log

134.05
132.94
<u>1.11</u>

132.67
131.99

.68

41

135.06

T.P. 4.98 136.23 3.79 131.27

4.10 137.90 2.45 133.90

2.35 140.05 0.20 137.70

B.M.

11.43

74.28

85.71

76.21

9.50 ✓

0.35 139.70

6.79

69.42

76.21

139.70

130.20 ✓

9.50

see page 19 group of Boulders

42 Spillway Levels Apr 31 1912

039 148.67 148.28

1+50

+75

r

+25

9.67

10.54

11.42

12.29

139.00

138.13

137.25

136.38

0.18 148.76

9.47 139.28

4.72 144.01

1+00

+25

+50

+75

2+00

+25

3.51

4.26

5.01

5.88

6.76

7.63

140.50

139.75

139.00

138.13

137.25

136.38

3 1/2' from 0+50 ahead

142.50 = grade 0+50

April 10th 1912

Waterman

etch

Grade

F.6

grade

e 14

grade

43

Grades for Spillway Apr 20, 12
J. W. Wright

293 = 2'

Sta	051	148.79	148.28	
1			80.4	140.75 @ 2' 11" 5.11
1+25			533 271 891 1/2	139.87 @ 3' 2 3/4" 5.69
1+50			566 322 1/2 9.79	139.00
1+75			10.66 1/2	138.12 1/2
2+00			11.54	137.25

44

44

45

45

46

46

47

48

48

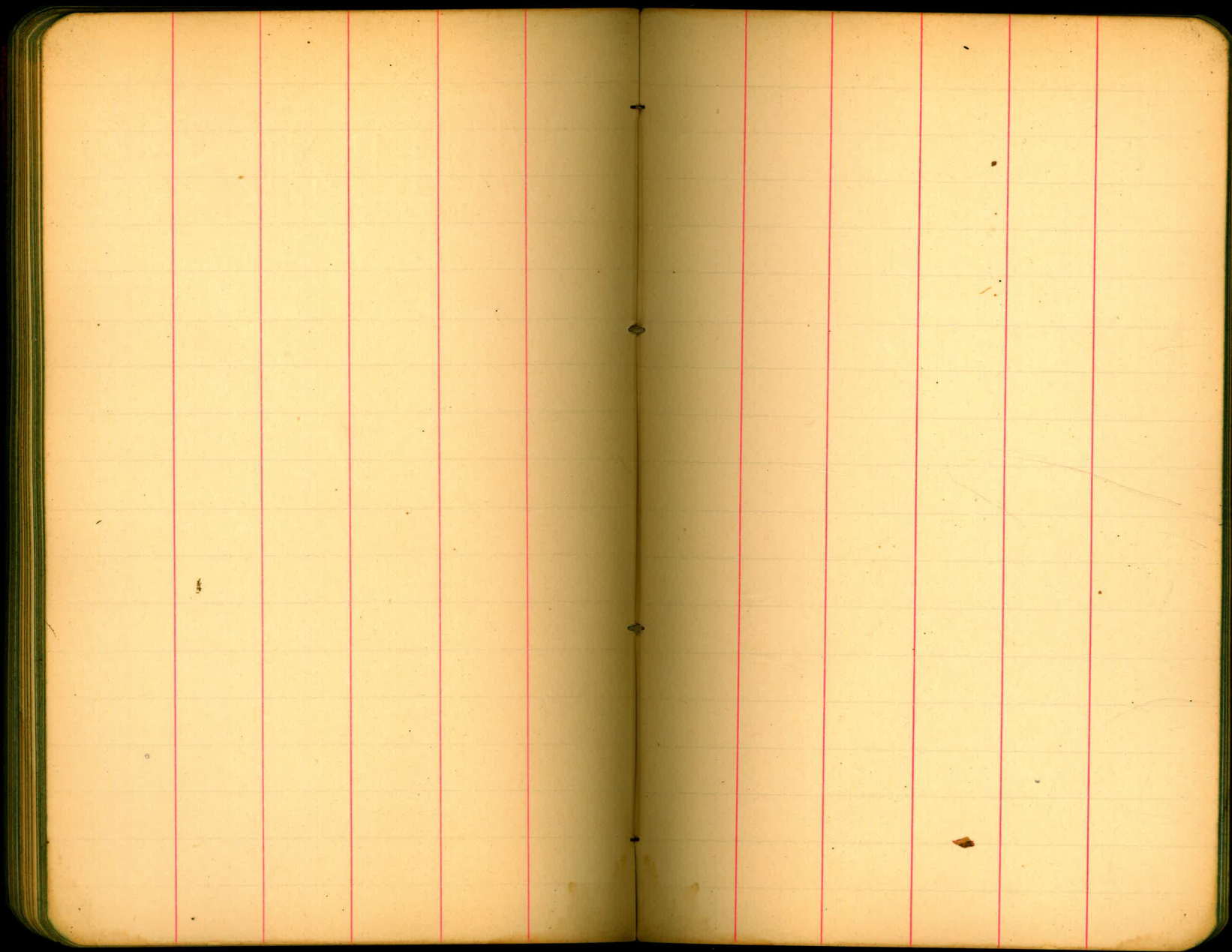
49

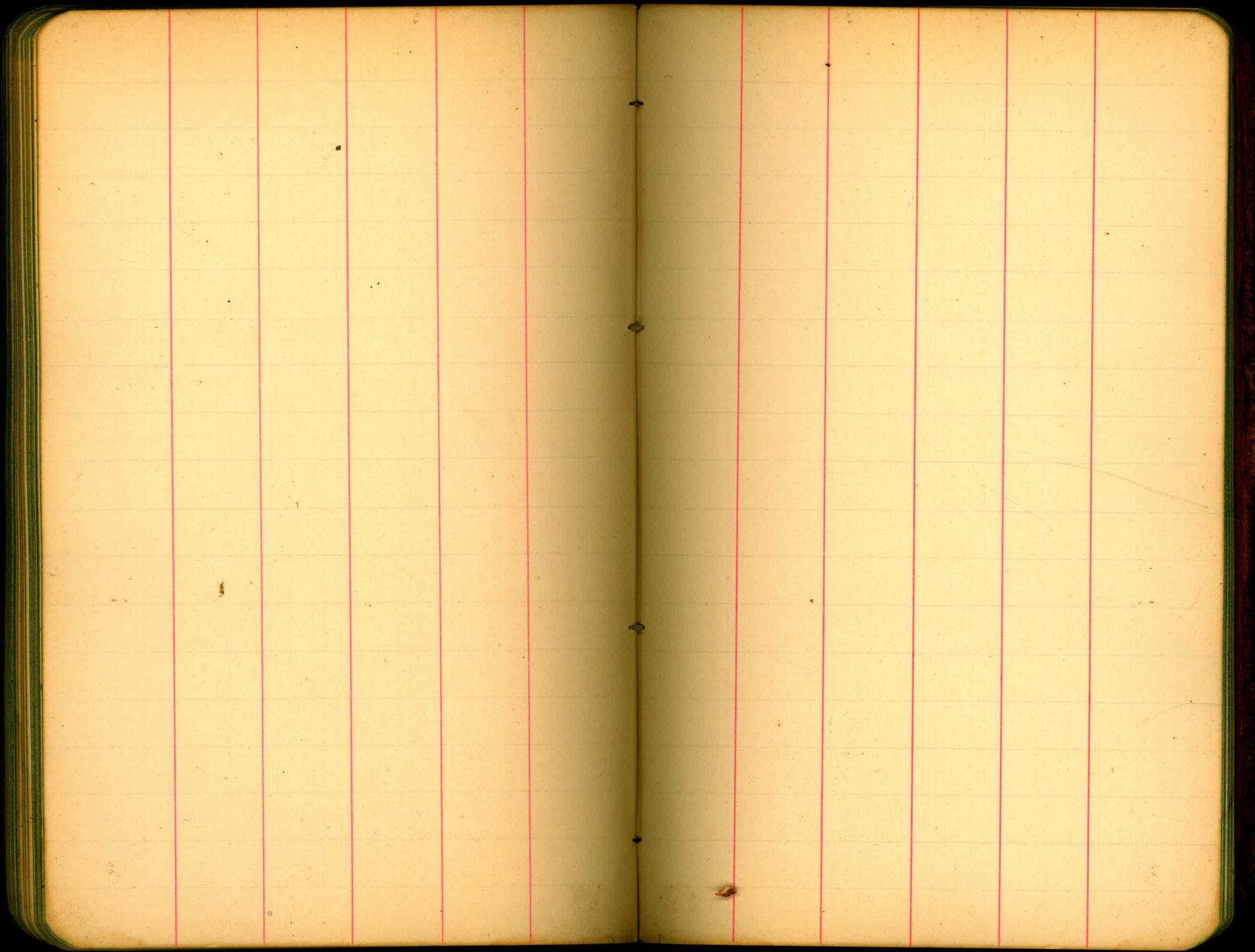
49

49

50

51





Man. Employes are henceforth
forbiden to go down on the
works after working hours in
the evenings except by permit.

De ahora en adelante, se les
prohíbe a todos los trabajadores
el ir ~~al~~ lugar a los trabajos
después de las horas de trabajo
excepto a negocio ó con permiso.

1132 111 83

100.51

034

111.49

1105 102.54

112

121.42

2237

146

3091

8051 ✓

12142

146

2142

71

79

52

100

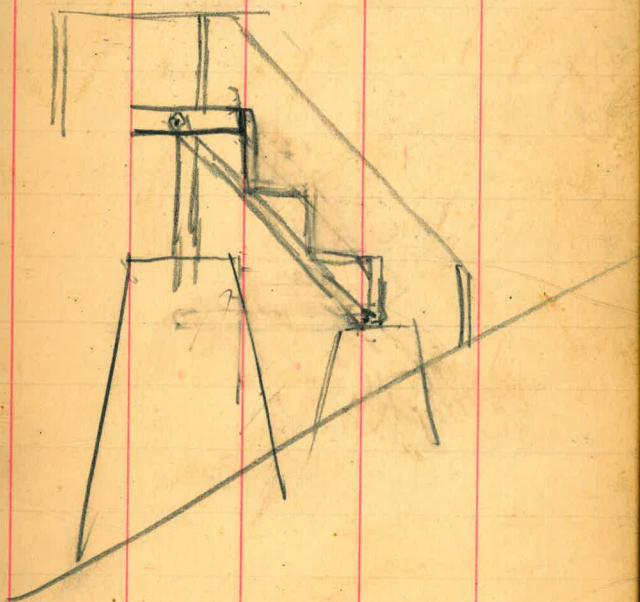
49 1/2 east

#11

14816 9 1/2" east of crest

#2

14817 2 1/4" east of crest



Grades for Pines for Bay

lowest subband.

Feb 27 1912

Memo for comparison 60

Elev of pin at Bay #2

12123

293 124.16

1 1/2

297

121.19 (12120)

1

474

119.42

- 0.58

0.29

0.48 East

2 1/2

2.00

122.16

122.03 (pin bent upwards)

4

339

120.77

+ 0.77

0.38 1/2

0.80 1/2 East

1 P. above 120 mt

82.3 1/2

149.90 1/2

141.67

#

0.80

149.10 1/2

- 0.89 1/2

0.45

0.23 East

0.62

148.90

148.28

476

144.14

1076

154.90

658 1/2

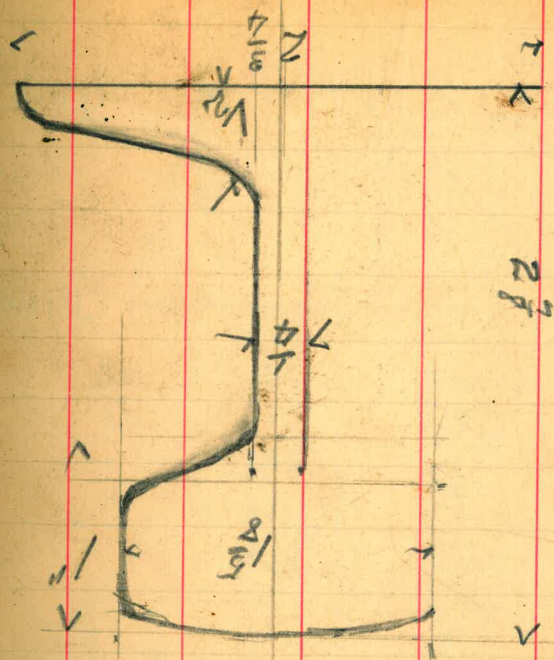
148.31 1/2

- 1.68 1/2

0.84

0.62 West

4 top



Section of rail to be used for
 supports for ~~hand~~ bridge above
 wooden trestle 2-26-11

Belting for Machine Shove

1 4" x 10'

1 3 1/2 x 11

2 3 1/2 x 28

1 2 x 10

1 2 1/2 x 14

1 3 x 21

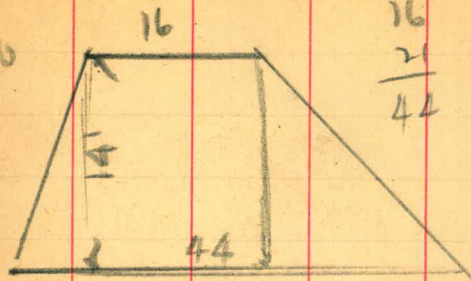
} 67' in on pc

All above 1/4 thick

5 7/16
 2 7/16
 1 4
 3/8
 for top
 for top

Elw 150

Elw 136



7
 16
 21

 44

~~44~~

~~16~~

~~60~~

~~14~~

~~240~~

~~60~~

~~840~~

~~91420~~

~~46~~

~~46~~

~~13~~

~~138~~

~~46~~

~~598~~

16

23

39

14

156

39

2546

9273

30

13

40

30

390

1057 111.08 10051

105 110.03

1169 121.72

131 120.41

315 122.56

1a

1a^{1/2}

*1

*1^{1/2}

*2

*2^{1/2}

*3

*3^{1/2}

222

202

236

233

153

387

248

12134 134 0.67

12154 154 0.77

12120 120 0.60

12123 123 0.61^{1/2}

12203 203 1.01^{1/2}

119.89 -0.31 -0.15^{1/2}

12108 108 0.54

161 121.95

1040 132.35

164 130.71

1120 141.91

108
61^{1/2}
-46^{1/2}

15 1.52
1.62
-90

This one built
5" to west.

4" to east of mark

9^{1/4}" to west of mark

10^{3/4}" to east of mark

5^{3/8}" to east of mark

mark is right

mark is right

mark is right

11
11
121
36
36
121
198
430

32
121
198
430

3408
350
24
100

350
12
700
3500
4200
22000
198
70

191
3600
22
140
132
80.9

401
973
28

14321
28
1098
112

164
16
984

1129
1227
190
215

2624
140
1220
1260
15190
955
14789
211

17
26
22
12
104

14191
14191
031
031
141.60
1160
15320

3 1/2
3
2 1/2

724
570
1224

8.73 151.94
9.99 143.21

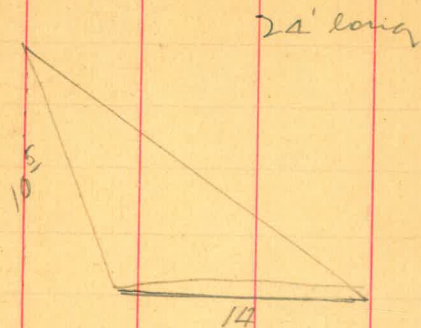
Unplated sand rivet 197 149.97 149.98

3 1/2	145.96	4.04	202	2 1/2"	6" thread
3	147.50	2.50	125	1 3/4"	mark in rivet
2 1/2	140.96	9.04	4.52	4 1/2"	mark in rivet

Cement on hand Jan 30 1911
 Co's cement shd 30 bbls
 Salora 125'
 Comanche ~~357 1/2~~ ~~12 1/2~~

lime on hand Jan 30 1911
 Co's cement shd 2 bbls.

Yards in Crushed Rock Pile
 Jan 30 1912



10.5
 7
 73.5
 24
 24 40
 157 0
 186 40
 162
 248
 203

27
 69.72

Yardage in Sand - pile Jan 30 1912

Rev

cup

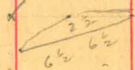
anyway

CTF line

any

400

20



1625 09 ft.

890

89

6400

1120

112

113 75

1130

113

108 00 ^{1/2}

920

92

119 0

410

41

62 00 ^{1/3}

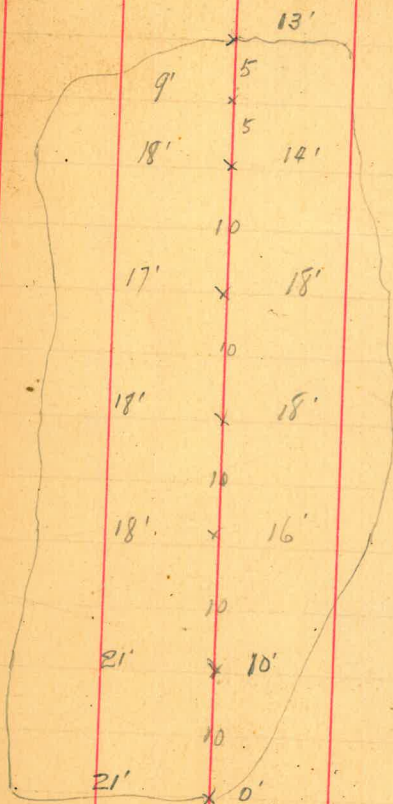
4870

178 yds

21 00

Quarter

Plan



Grades for Spillway Jan 17 1912

107	154.53	153.46
		10.77
5.17	148.93	143.76
0.39	148.67	148.28

Sto 0+00
 0+50
 +75
 1+00
 +25
 +50
 +75
 2+00
 2+04

0.43
 0.93
 1.43
 1.93
 2.43

Grades for Spillway

Grades for
 outside line
 for
 inside line

142 ⁵⁰	148 ⁵⁰	585
141 ⁵⁰	148 ⁰⁰	
141 ⁵⁰	147 ⁵⁰	
140 ⁵⁰	147 ⁰⁰	
139 ⁵⁰	146 ⁵⁰	
139.42	145.92	

108.93
 60.5
 142.78
 141.50
 1.38 = 1.42

148.93
 610

142.78
 140.50
 2.28 = 2.24

145.93
 1270
 1362
 13750

148.93
 435
 13758
 13950

0.50
 275
 1.25
 .03
 2.75

14350
 275
 139.25

A⁷
16

116

117

* 3

314

547

116

117

* 4

314

547

1091

906

290

2287

547

1091

906

548

2545

547

1740

250

1998

200

1474

15

7370

1474

2210

= nur 1/2

1490

16

1474

= 1486

1732

15

8660

1732

25980

2211

4809

= 1745

1474

1474

311.3525 ³² $(17.64 = \text{element})$
 $\frac{1}{27} \begin{array}{r} 211 \\ 189 \\ \hline 2235 \\ 2076 \\ \hline 15925 \\ 17526 \end{array}$
 $\frac{1}{346} \begin{array}{r} 2235 \\ 2076 \\ \hline 15925 \\ 17526 \end{array}$
 $\frac{1}{3524} \begin{array}{r} 15925 \\ 17526 \end{array}$
 $\frac{1}{1436} \begin{array}{r} 3 \\ 8 \\ 7 \\ 12 \\ \hline 30 = 2^{50} \end{array}$

1094
 $\frac{1109}{2200}$
 233
 1967
 216
 $\frac{1751}{15}$
 8755
 1751
 $26265 =$

1751
 1751
 $\frac{1751}{8755}$
 12257
 1751
 $\frac{3066001$

Total length
 265
 08
 $\frac{.02120}{216}$
 218
 218
 1744
 218
 436
 $\frac{47524}{3066001}$
 311.3525
 $\frac{31}{211}$

Bm
sta 1+00
sta 1+50
sta 2+00

0.47 153.93

153.46

4.93
5.93
6.18

grade + 6 ft

49.00
48.00
47.75

grade

43.00
42.00
41.75

-2.90 x -2.90

Above are levels for Spillway floor
Nov 10th 1911 west - McIntosh

11.56

~~5.93~~
5.6

Levels for template Nov 11th
1911

9.80 129.67

11.981
2.37 127.30

7.17 134.47

1.78 132.69

~~11.97~~

4.15

12.82

11.987

12.69

4.15

13.269

~~11.97~~

12.69

6.342

12.82

Levels for Trestle Extension
= top rail

1.16

10.91

1.17

179

233

1270

1270

10.37

208

8.29

829

15

1125

829

12435

9

3480

1195

2286

283

10.53

208

18.45

15

9225

1845

27.675

906

1109

179

1195

935

2026

213

1793

208

1585

15

7925

1585

23775

37675

51450

Jan 10 1912

Correct water

rail 3"

tie 8"

string 7"

cap 7"

26"

= ground at #3

= Bm

= #2

= #1

= ground at #4

10'

4'3"

14'3"



829

829

7461

1658

6632

68.7241

106.09

69.7850

62

163

575

489

665

103

103

309

103

106.09

69.7850

62

163

575

489

665

8950

325

835

082 132.06 131.24

1153 120.53

159 122.12

1151 110.61

045 111.06

1149 99.57

543 105.00

8.29

34.53
7.54

26.24
131.24
105.00 ✓

423 100.77

427 105.04

6.65

97.39

Search for
signs near back
slope dam
Nov 16 1941
Went to husband's

3 1491
330 1/2
660 1/2
10 1/2
983 9 1/2

3 1366
442
882

38.50
21 31 1/2
59.81 1/2

83.50
59.81 1/2
23 68 1/2

102

150
105
45
15
22.5
45
67.5
16

83.5
38.5
45.0

150
105
45
22.5
67.5
16
83.5

39.78
43.27 1/2
46
83.51 1/2

279
271

2402

9.41

200

15.22

47.3 1/2

10.95

10.25

48.44

1280.2 1/2

45.00
15
16
67.50
143.50 1/2
128.02 1/2
15.47 1/2

83.50
45
128.02
15.50
143.50

15
16
67.50
98.50
128.02 1/2
29.52 1/2
15.47 1/2
14.05

Levels from T.P. page to surface of lake
139.76

303 142.79

560 137.19

154 138.73

735 131.38

122 132.60

972 122.88

413 137.01

993 117.08

409 121.17

1016 111.01

021 111.42

1020 101.22

152 102.74

1115 91.59

058 92.17

1095 81.22

1652 ✓ 75.06 ✓

Sunday Oct 15th 1911

Went with

032 81.54 81.22

1057 70.97

036 71.33

658 64.75

.68 ✓ 17.15 ✓

~~Lopez Oct. 9. 6 hrs~~

~~Acunna " " 5 "~~

~~E. White. 10, "~~

~~Barbosa Oct. 10.~~

1143
298
357 2690
892

240 133.07

13063

1277 170 30

940 174 17

67 u 4^{1/2} u 20M

1925

4875

5^{1/2}

u

u a

$\frac{3}{4}$ mink

$\frac{3}{4}$ value

My locks.

rotan ganges 66.07

gange glass corks 60.62

585

are receipts upto dat

+ 082

$\frac{-547}{-254} - 13.35$
13.350

1159
524
635

11987

959

12068

122
61

10403027

1149

11878

1168
584
389

TP 0.69

129.58

536 134.94

1200

122.90

980 244
900 197
240

519
326

129.90
131.68

1317

7366

336

4013

110

20

10

10

10

10

10

74

7236

3153

4083

1012 11063

10051

042 110.21

1139 121.50

172 11978

1185 13163

100 130.63

627 112.88 13248

327

950 1902

3902

13698

13063

635

13698

13248

5

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

FOR SINGLE TRACK EMBANKMENT.

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

	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.