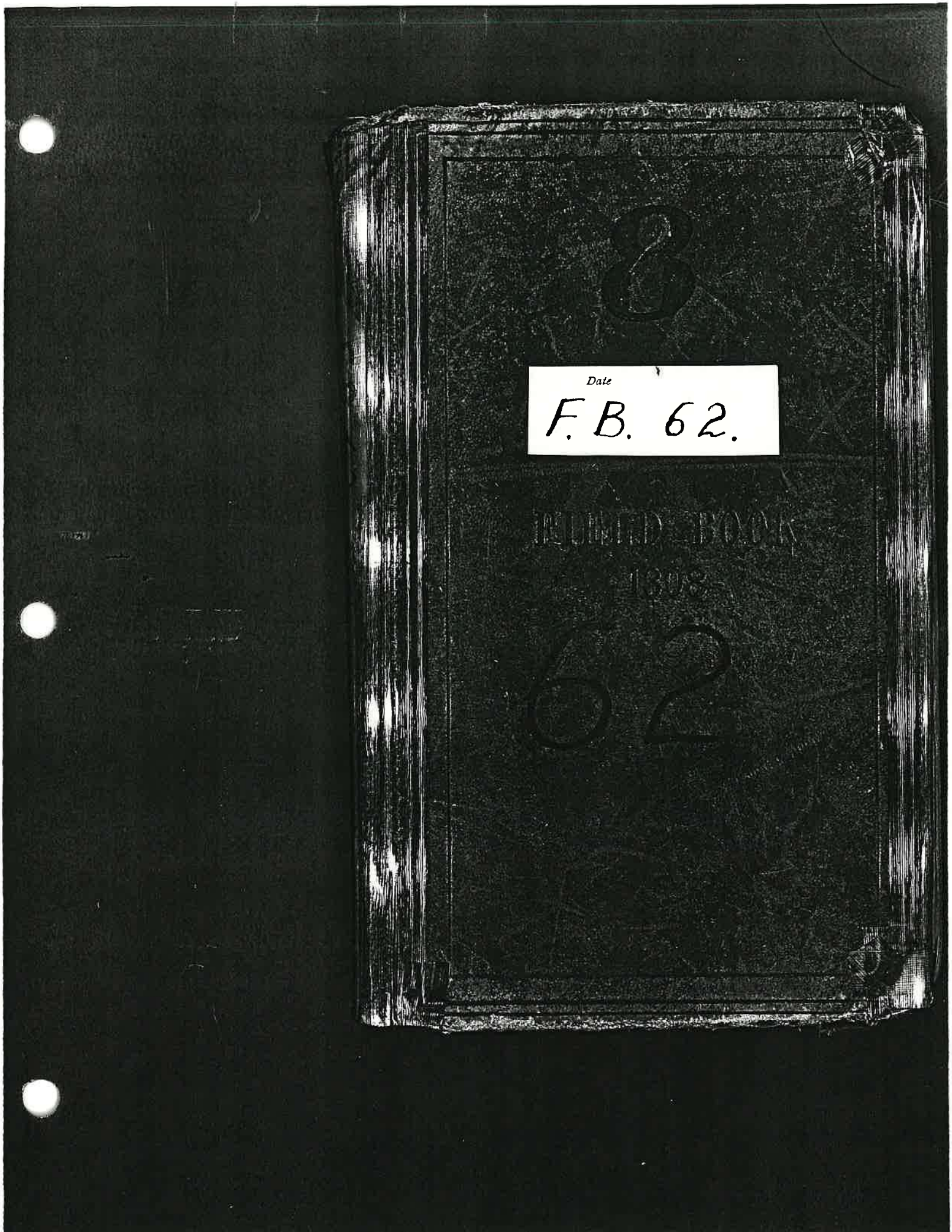
Field Book # 62


Date
F. B. 62.

Mon. Dec. 6-15 Left Rbg. at 8. a.m.
Arrive Glide at 1.30 P.M.
Tue. Dec. 7-15 Leave Glide at 8.30 a.m.
Arrive at Haaglin Moon.
Leave Haaglin at 2 P.M. Make to
the Place.
Wed. Dec. 8-15 Leave Place
at 8. a.m. go to Wright Place.
Thur. Dec. 9-15 Came to T. 25-1
and Camp.
Friday. Dec. 10-15 Stayed in Camp.
Snowed 2"
Saturday Dec. 11-15 - Run Compass
Snowed 4 inches.
Sun. Dec. 12 - Broke Trail
Mon " 13 - Brush very wet got
soaked Running Compass.
Tue. Dec. 14. Moved Grub Snowed
Wed. " 15 " " "
Thur. " 16 " " "
Fri. " 17 Cut wood etc Melted
Sat. " 18 " " Marked trail etc.
Sun. " 19 Leave Camp at 12⁰ a.m.
9.35 Old Camp. 10.35 a.m. Got lost
Hit Cabin at 4 P.M.

Bill Stewart Compassman
Tony Blanning "
Frank Webster Cruiser
Chas. Blanding "

Pete Grant Taylors Cabin
for 3 Standing

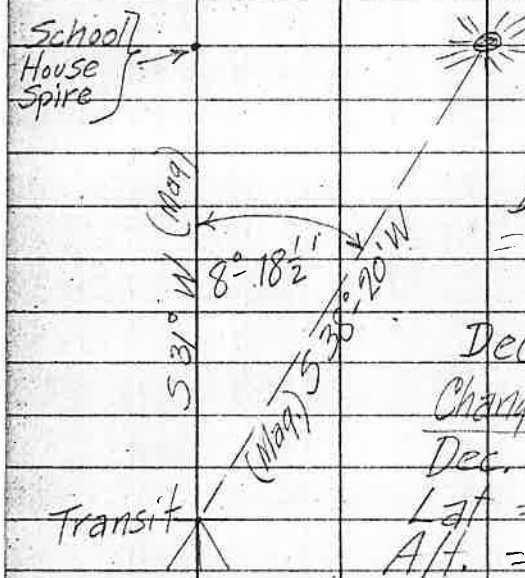
1/3 Sack of Flour
5 - Raisins
2# Dried Apples
3# Apricots.
2# Prunes
5# Corn Meal
9 - Packs or 18 lbs. Butter
2 - Catsup.
1 - Mustard
2 - Coffee
14 - Milk
2 - Cocoa
1 - Baking Powder
3 lbs. Bacon

4 Pr. Light Wt. Wool Socks
Velvet.

Dec. 29-15

3 P.M. A/H. 13°-35'

Bear. S 38-20W



Lat. 43°-13'

Diff. In Time = 11 Hrs.

Dec. = 23°-16.9'

Change = 00°-01.0'

Dec. 23°-15.9'

Lat = 43°-13'

A/H. = 13°-27'

Angle = 08°-43'

A = +.2246

B = +.5565

A+B = +.7811 Bearing of Sun =

S 38°-40' W

− 8-43

S 29°-57' W = Bearing of Spire

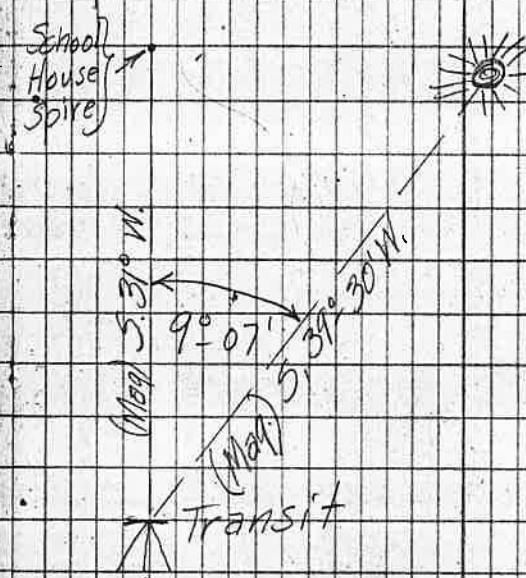
No Allowance for Ref.

Dec. 29-15

0

3.07 P.M. H. 13°-19'

Bear S 39-30 W



A/H. = 13°-27'

− 00°-04'

True A/H. = 13°-23'

Lat. 43°-13'

Dec. 23°-15.9'

A = +.2239

B = +.5515

A+B = +.7814

S. 38°-38' W. = Bear. of Sun.

− 8 − 43

S. 29°-55' W. = Bear. of Spire.

Myrtle Creek Hydro-electric Survey

Feb 28th 1916

Station	Ang Rt.	Ang Lt.	Dist.	Needle Br.	
9+42 9					1 - M B Sermond
	16° 21		152.25	N 60 E	1 - W M Smith ch
7+90 65					" " " Rock encvce S.W. Holland "
	9° 34		139.20	N 44° 00 E	" Griffith St
6+51 45					" " " " Dunnivan Ax
	15° 13½	15° 13½	129.77	N 34 20 E	" " " in sand
5+21 68					" " " " Rock crevice
		22° 15°	280.36	N 49 30 E	
2+41 32					Small oak hub
	39° 12½		58.62	N 71 40 E	
1+82 70					Small rock in boulder in place
		13° 42'	76.82	N 32 35 E	
1+05 88					Hole in bed-rock
			105.88	N 46 15 E	
0+00			942.90		Begin pt. of Traverse Line "A" on Myrtle Crk Hydro Electric Survey
					0+0 = hub Set in conglomerate boulder

Traverse cont. Line "A" Feb 29 1916

Station	Ang Rt	Ang Lt	Dist	Needle Br	
28 + 63.4					End of Line on First Orders. M. B. Garmond AM
	13° 03		16474	N 49 30W	W. W. Smith " "
26 + 98.66					" " on bank Bayless 2 hrs AM
	5° 04		17281	N 62° 30W	Griffith 2 " " "
25 + 25.85					Hue McGee 2 " " "
		18° 54	18800	N 67 25W	" " " "
23 + 37.85					" " " "
		20° 08'	15688	N 56 35W	" " " "
21 + 80.97					" " hub in sand
20°		20° 03	7222.0	N 36° 30W	
19 + 58.93					" " " " Stop here for dr
		15° 33	13343	N 16° 30W	" " " " under Bridge
18 + 25.5					
		18° 42'	15260	N 00 45W	" " " Rock crevice
16 + 72.90					
		9° 58'	14963	N 7° 55E	" " " "
15 + 23.27					
		15° 51'	16482	N 7° 55E	" " " sand
13 + 58.45					
		00 21½	28213	N 43 37E	Feb 28 1916
10 + 76.32					Small hub in rock Crevice
9 + 42.9		16° 05'	13342	N 44° 00E	
			19205.0		
			9129		
			10076		

Traverse Cont

Line "A"

	Ang Rt	Ang Lt	Dist	Needle
40+62.43				
		4° 27'	265 79.21	N 37 45 W
39+83.22				
		7° 50'	8489	N 35 20 W
38+94.33				
		18° 26'	9033	N 25 35 W
38+14.0				
		7° 00'	20390	N 7° 10 W
36+10.1				
		00 18'	7676	N 00 16 W
35+33.35				
	40 48'		10375	N 00 10 E
34+29.6				
		11 41'	19337	N 40 35 W
32+36.23				
	14° 32'		12223	N 29 00 W
31+14				
	33° 44'		9338	N 43 30 W
30+20.62				
		21° 35'	5584	N 79° 12 W
29+64.78				
28 63.4		6° 29'	10139	N 55 50 W
28 63.4			11990.3	
29 63.3				

March 1st

Germond PM
W. W. Smith PM
The Selig "
Sam Bayless "
Griffith "

Snow, rain & storms

From Sta. 29+80 we pass onto flume work

Feb 29

Traverse Line "A"

	Ang Rt	Ang Lt	Dist	
64+88.95				
	18° 55		799.13	N55 55W
64+09.04				
	24 46		692.4	N76 05W
63+39.80				
	18 39°		1151.1	S78 - 50W
62+24.69				
	7° 32		1942.9	S60 15W
60+30.48	64 52			
		28° 21	2753.5	S53° 40W
57+55.05				
		17° - 26'	2212.3	S84 10W
55+33.82				
		6° 40	3248.2	N79. 20
52+09.0				
		8° 08'	2043.0	N 73 15 W
50+02.7				
		8° 27	2005.0	N 65 25 W
48+02.20				
		18° 36'	2942.5	N56 30W
45+07.95				
40 62 43			242.52	
42+65.43	Cont	tang.		
10+62.43		00 38 1/2	2030.0	N38 20W
		88.16	24262.52	
		69 2 24	40 62 43	
			28895	

at 52+80 set in small Mile hub

hub

Traverse Cont

Line "A"

	Ang Rt	Ang Lt	Dist	Needle
$86+76^{72}$				
	00 04		264.27	N 73 43 W
$84+12^{45}$				
	6 - 59		261.40	N 75 10 W
$81+51^{0}$				
		10° 10'	214.18	N 68° 45 W
$79+34^{82}$				
	35 05		160.07	N 59 40 W
$77+74^{75}$				
		13 11½	549.40	S 86 10 W
$72+25^{35}$				
		2° 24	230.24	S 72 40 W
$69+95^{11}$				
	11 01		163.21	S 75 00 W
$68+31^{90}$				S
		35° 15	204.66	S 64 00 W
$66+27^{24}$				
$14\ 88^{95}$		95° 08'	139.29	N 81° 50 W
			218777	
			64 88 95	
			86 76 72	

End of Line for Mar 2 1916

Line "A"

Levels of Preliminary Survey

Myrtle Creek Hydro-Elec. Project Feb 29 "16

	B.S	H.I	FS for TP's	Rod Read	
U.S.G.S B.M.	2.17	615.03			612.86
T P	1.73	608.82	7.94		607.09
T.P	1.44	596.28	12.98		595.84
	1.41	586.50	11.19		585.09
T.P	3.22	584.85	4.87		581.63
				3.58	581.27
				5.2	579.65
0+00				4.4	580.4
+25				4.0	580.9
+35				6.9	578.0
+40				4.0	580.0
+50				3.7	581.1
+80				4.7	580.1
1+00				4.1	580.7
+05.88				3.00	581.85
1+15				4.9	580.0
+50				1.0	583.8
+82.7				2.59	582.26
T P	5.65	589.08	1.42		583.43
2+00				6.4	582.7
+41.32				5.49	
+50				6.4	582.7
3+00				8.8	580.3

Stormy + Cold

East of S.P depot 30 feet

Elm of B.M. on 8" alder tree 30' upstream from Sta 0+00

H.O surface at head of rapids Nail set in 15" alder tree Feb 29th. Said pt is 480ft above 0+00

H.O surf. at Sta 0+00

On ground (not on pt)

M. B. Germond AM

W W Smith AM

Levels

Line "A"

3 + 50		589.08		5.9	583.1
+ 65				4.1	
+ 80				5.5	
4 + 00				8.5	580.6
+ 50				8.3	580.8
5 + 00				4.6	584.5
+ 21.68				2.69	586.4
+ 50				7.6	581.5
6 + 00				4.7	584.4
+ 50				5.6	583.5
51.45				5.70	
7 + 00				6.00	583.1
+ 50				2.2	586.9
90.65				2.37	586.71
8				1.8	587.28
+ 50				5.9	583.18
9				6.4	582.68
T.P.	4.01	589.10	3.99		585.09
+ 42.9				4.38	584.72
+ 50				6.3	582.8
10				7.3	581.8
+ 50				3.2	585.9
+ 76.32			1	4.32	584.78
11				4.8	584.3
+ 50				8.5	580.6

Levels

12 + 00		589.10		3,5	585.6
+ 50				3,8	585.3
13				7,8	81.3
+ 50				6.5	82.6
+ 58.45				5.64	583.46
14				3.7	85.40
+ 50				5 7	83. 4
TP	6.20	591.85	3.45		585.65
15				7.1	584.75
+ 23.27				6.99	584.86
+ 50				7.0	84.85
16				7.9	583.95
+ 50				4,8	87.05
+ 73				5.2	86.65
17				7,4	84.45
+ 56				7.1	84 75
18				2.9	88 95
+ 25.5				5.98	85 87
+ 50				6.4	8.545
19				6.1	585.75
T.P.	7.41	593.82	5.44		586.47
+ 50				6.7	587.12
+ 58.93				8.67	85.15

Line "A"

Levels

20		593.82		8.0	85.82
+50				5.2	88.62
21				7.3	586.52
50				8.5	85.32
1+80 97				10.17	83.65
22				6.4	87.42
+50				7.9	85.92
23				9.6	84.22
+37 85				10.30	83.52
+50				10.3	83.52
24				10.0	83.82
+50				10.7	583.12
T.P.	6.38	590.29	9.91		583.91
25				5.6	584.69
+25 85				5.47	584.82
+50				5.1	85.19
26				9.2	81.09
+50				10.2	80.09
+98 66				2.69	87.60
27				2.9	87.39
+50				0.6	89.69
28				5.3	84.99
+50				4.8	85.49
2847 34				3.73	586.56
T.P.	0.70	576.95	12.04		578.25
H_2O Surf.			6.47		572.48

Line "F"

H_2O Mark at this station 1916 = 586.30

578.25 − 5.4 = 572.35

Topography Notes

		Point Elev's.
0+00		580.4
+50		581.1
1+00		580.7
1+50		583.4
2+00		582.7
+50		582.7
3+00		580.3
3+50		583.1
4+00		580.6

Linda

10

Feb 29

Germond 4 hr P.M. - ℄

Smith 4 " "

Bayless 3 " "

11/556 6.5/584 3/582 ⊙ 7/580 12/582 19/579+ EW

Hire MS Geel 2 hrs

18/586 14/584 4.5/582 ⊙ 5.5/580 9/579 EW

15.5/586 10.5/584 4.5/582 ⊙ 2/586 14/578

6.5/586 0.9/584 2/582 8.5/580 12/578

14/586 4.5/584 3/582 2.4/580 32.4/576 EW

5.5/586 4/584 2/582 4/580 6.4/578

2/586 1.6/584 10.5/582 9/580 12/578

20/586 15/584 6/582 17/580 24/578

2/586 15/584 15/582 4/580 13/576

Topography Notes

4 + 50		580.8
5 + 00		584.5
+ 21.65		584.4
+ 50		581.5
6 +		584.4
+ 50		583.5
7 + 06		583.1
+ 50		584.9
+ 90.65		586.7
8		587.8
+ 50		583.2
9		582.7
+ 56		582.8

Feb 29

26/586 18/584 7.9/582 ℄ 3.0/580 11/578 16/576

4/586 2/584 9/582 17/580 18/578 21/576

1/586 8/584 15/582 20/580 26/578 28/576

12.5/586 5.5/584 0/582 8/580 16/578 23/576

5/586 3.3/584 10/582 15/580 22/578 3/576

6.2/586 3/584 5/582 14/580 20/578 30/576

2/586 4.0/584 5/582 14/580 22/578 33/576

3.2/586 16/584 27/582 5.1/580 32/578 38/576

Levels Cont.

T.P.	2.03	588.59			586.56
29				4.7	583.8
B.M.				3.91	584.68
+50				6.6	582.59
+64.28				7.63	580.96
T.P.	8.18	589.14	7.63		580.96
30				7.60	582.14
+30.62				4.05	585.09
+50				3.7	585.44
31				2.7	586.44
+14				1.56	587.58
+50				11.2	577.94
32				11.6	577.54
T.P.	9.80	588.18	10.76		578.38
+36.23				3.35	584.83
+50				4.4	583.78
33				10.1	578.08
+50				11.1	577.08
34				8.4	579.78
+29.6				2.42	585.76
T.P.	5.46	591.74	2.42		585.76
+50				8.3	583.44
35				11.6	580.14
+33.35				5.96	585.78
	2599		20.81		

Liner "A"

B.M. on 16" alder 8' R. of St 29+10 along edge of bank and down on sandy beach

All Flume Construction

" " " " " " " " " "

" " " " " " " " " "

" " " " " " " " " "

" " " " " " " " " "

All flume

P- in slide from road

Pass on to rocky point

Levels Cont

- Line "A"

		591.74				
35 + 50				5.0	586.74	On rock pt
36				5.6	586.14	" rocky point
T.P	640	591.14	7.00		584.74	
+ 10				6.08 2	585.06	" " " Mar 2 1916
+ 50				8.2	582.94	
37				9.3	581.84	" " " " Germond 4 PM
+ 50				7.0	584.14	Smith 4 PM
38				3.4	587.74	" " "
+ 14 2				4.5	586.64	
+ 50				1.9	589.24	
T.P.	222	591.68	1.68		589.46	On " " "
38 + 94 33				3.97	587.71	
39				4.1	587.58	" " "
+ 50				9.4	582.28	
+ 53 22				9.14	582.54	" " " "
T.P.	859	591.13	9.14		582.54	
40				10.5	580.63	
+ 50				5.3	585.83	Leave rocky pt. Pass onto clay hill side
+ 62.43				4.8	586.33	
41				6.0	585.13	
+ 50				5.2	585.93	
42				9.32	582.81	
+ 50				8.7	582.43	Leave clay hillside and pass onto sandy bank
42 + 65 43				8.25	582.88	and beach
T.P.	251	585.39	8.25		582.88	

Levels Cont.

Line "A"

Mar 3. A.M.

		585.39				
43				3.9	581.49	Along sandy bank & beach Germond
+50				3.7	581.69	opposite bachelor's House Smith
44				3.1	582.29	
B.M.				6.7	578.92	On 14" alder tree 16' rt Sta 44+04
H.W.M.				1.00	584.39	H.W. Mark opposite " 44+00
+50				5.8	579.59	
45				6.2	579.19	
+07.5				6.36	579.03	
T.P.	804	587.07	6.36		579.03	
+50				8.2	578.87	
46				7.7	579.37	
+50				6.6	580.47	
47				5.5	581.57	
+50				1.0	586.07	
				1485	572.22	Left Sta on Mar 3 A.M. opposite Swedes' House
48				3.9	583.17	at head of rapids " " Sta 47+70
+02.5				3.43	583.64	along Sandy bank in front of Swedes
T.P.	663	590.27	3.43		583.64	
+50				2.7	587.57	" " " " " "
49				3.3	586.97	
+50				2.8	587.47	" " " " " "
50				3.6	586.67	
+02.7				4.04	586.23	" " " " " "
+50				2.4	587.87	

Levels Cont.

Line "A"

		590.27				Sand bank
51				1.9	588.37	
+50				2.2	588.07	
52				2.9	587.37	
+50				4.5	585.77	
+80				4.20	586.07	Mule st
53				3.8	586.47	
+50				4.4	585.87	
54				4.3	585.97	
T.P.	6.18	586.77	3.68		586.59	
	0.9	574.65		13.02	573.75	
				7.2	567.45	H.O surf. opposite Sta 54+00
T.P.	6.08	592.67			586.59	
+50				7.3	585.37	
55+00				6.2	586.47	Through old man's sandy field
+33.82				5.78	586.89	
55+50				4.2	588.47	
56+00				2.6	590.07	
56+50				1.7	590.97	
57				1.1	591.57	Pass out of field but still in
+50				3.3	589.37	sandy soil to
+55.05				3.98	588.69	
58				7.4	585.27	
H.W.M				9.6	582.87	H.W.M opposite Sta 57+50
+50				6.8	585.67	

Levels Cont

Line "A"

		592.67			
59				6.1	586.57
+50				6.7	585.97
60				6.7	585.97
+30 40				5.62	587.05
T.P.	5.46	592.51	5.62		587.05
+50				4.3	588.21
61				6.4	586.11
+50				6.5	586.01
62				5.2	587.31
+24 69				3.61	588.90
+50				4.2	588.31
63 +00				5.2	587.31
+39 8				2.97	589.54
T.P.	2.38	591.91	2.97		589.54
+50				2.8	589.12
64				4.6	587.32
+50				4.2	587.72
+58 95				4.95	586.97
T.P.			4.95		586.97
B.M.	1312	504.59		0.45	591.47
	2.31	606.38		0.52	604.07
	3.98	590.5			586.17
65				5.9	585.05
+50				5.1	585.85

March 3 1916

B.M. in 8" Madrone 3 Ft. Lt 64 +25

P.H.B.M. Marked 62+27. Note We check ed the P.H.B.M. within 20.11 Feet

Levels

59095

"Line "A"

66				3.0	587.95
+50				2.0	588.95
67				1.2	589.75
T.P.	683	597 01	0.77		590.18
+50				11.7	582.71
68				5.5	591.51
+31.9				5.06	591.95
+50				5.4	591.61
69				6.9	590.11
+50				8.3	588.71
+95.11				8.75	588.26
T.P.	617	594.73	8.75		588.26
70 + 00				7.4	587.63
+50				11.7	582.73
71				13.6	580.63
+50				13.1	581.33
72 +				9.2	585.23
+25.35				3.80	590.63
+50				4.3	590.13
73				5.8	588.63
+50				6.0	588.43
74				4.0	590.43
+50				4.8	589.63
75				8.4	585.03

Rocky point

March 3 1916

Sandy Soil

" "

" "

" "

Levels

Line

		594.43			
+50				7.2	587.23
76				4.9	589.53
+50				7.9	586.53
77				8.6	585.83
+50				6.3	588.13
77 +13	3.78	593.03	518		589.25
78				4.4	588.63
+50				2.9	590.13
79				5.1	587.93
+34				4.64	588.39
+50				8.5	584.53
80				11.4	581.63
+50				11.5	581.53
81				9.6	583.43
P.H.B.M.				4.32	588.71
A +51.22				7.65	585.38
T.P.	7.68	593.06		7.65	585.38
82				10.7	582.36
+50				9.9	583.16
83				6.1	586.96
+50				10.4	582.66
84				6.0	587.06
+50				4.5	588.56
85				4.0	589.06

Elev. as given 608.68

Levels

Line "A"

		593.06				
+50				3.7	589.36	Garmond March 3 1914
86				2.9	590.16	Smith " 3 "
+50				6.2	586.86	
+76 72				3.6	589.10	
	0.17	589.27	3.6		589.10	
				12.40	576.87	H.W. Mark opposite Sta. 86+76 72
T.P.	0.09	577.10	12.26		577.01	
	0.08	564.53	12.57		564.53	
			7.65		556.88	1/2 C. Surf. " " 86+76 72
	6.04	595.14			589.10	
	6.14	596.48		2.80	577.34	B.M. on Cairn's 1st Mile W. it Tree. B.O. 16" dia.
				9.78	588.70	

Very rainy & Snow Cold

Note. We check P.H. B.M as follow:

P.H. B.M. near bridge Marked 619.44 — 599.50
P.H. B.M. " 634.97 — 615.04
P.H. B.M " 626.27 — 606.38
P.H. B.M " 608.68 — 588.71

1/2 C. Surf. opposite Sta 28+50 = 572.35 March 3
5 36 78
15.47

Flume 6'x12' Water depth 5.5' Slope 2' per m. Carries 163⅓ C.F.=

Myrtle Creek Hydro-electric Sur.

	Ang Rt	Ang Lt	Dist.	Needle
17 + 11 ±				
	2° 16'		1467	N 38° 40 W.
15 + 64 5				
	5° 36		1050	N 41° 05 W
14 + 59 5				
		10° 45	773	N 46° 40 W
13 + 82 2				
		4° 41	1585	N 35° 50 W
12 + 23 7				
		7° 20'	1251	N 31° 05 W
10 + 98 6				
		1° 52'	2567	N 23° 50 W
8 + 41 9				
	10° 22'		2187	N 22° 00 W
6 + 23 ±				
	14° 08'		3411	N 23° 05 W
2 + 82 '				
			2821	
0 + 00				N 37° 40 W
			1+29.1	

21

Vey / Preliminary / Line "B"

Sta at turn Brock's garden. Begin pipe line (wagon) along sandy river bank

Mar 13 1916

" " " " M B Germond
Bill Berolneah
" " " " Jack Black ch

" " " " Fine & sunny

" " " "

" " " "

On rocks and sand bar

On rock & sand bar

X cut in solid rock on reef nearly opposite "A" Sta 28+63±. This dam site is at head of deep pool

Myrtle Creek Hydro-Elec. Survey

	Ang. Rt	Ang Lt			
48+71.6					
		15°40'	39 57 73	569	NW
44+84.3					
		00 15'	5824	586	00W
39+01.9					
	17°58'		9394	587	15W
29+62.5					
		14 25	1981	571-15	W
27+64.4					
		17° 59	2279	58345	W
25+36.5					
		18° 40	1445	N 79 20	W
23+92.0					
		14 30	1647	N 60 10	W
22+27.3					
		00 30'	1391	N 46 55	W
20+98.2					
		28° 39'	1434	N 47 00	W
19+44.8					
		13° 16'	579	N 18 10	W
18+81.9					
		35° 14'	667	N 4° 30	W
18+20.2					
	69° 05'		1090	N 31° 00	E
			31704		

Germond ⊼ 8
Berdine ch 7
Drake ax 4
Black ch 8
Martin sh 5

Mar. 14 1916

22

"B" Line

Down Stream through rocky flat

" " " " "

" " " " "

On rock pt.

Where Island pipe line would come in

27+00 begin of ditch or canal

" by Co. Road

Around river bend by Co. Road

" " " Co. Road

" " by R.R. Culvert

" " " " "

" " " " "

" " " " "

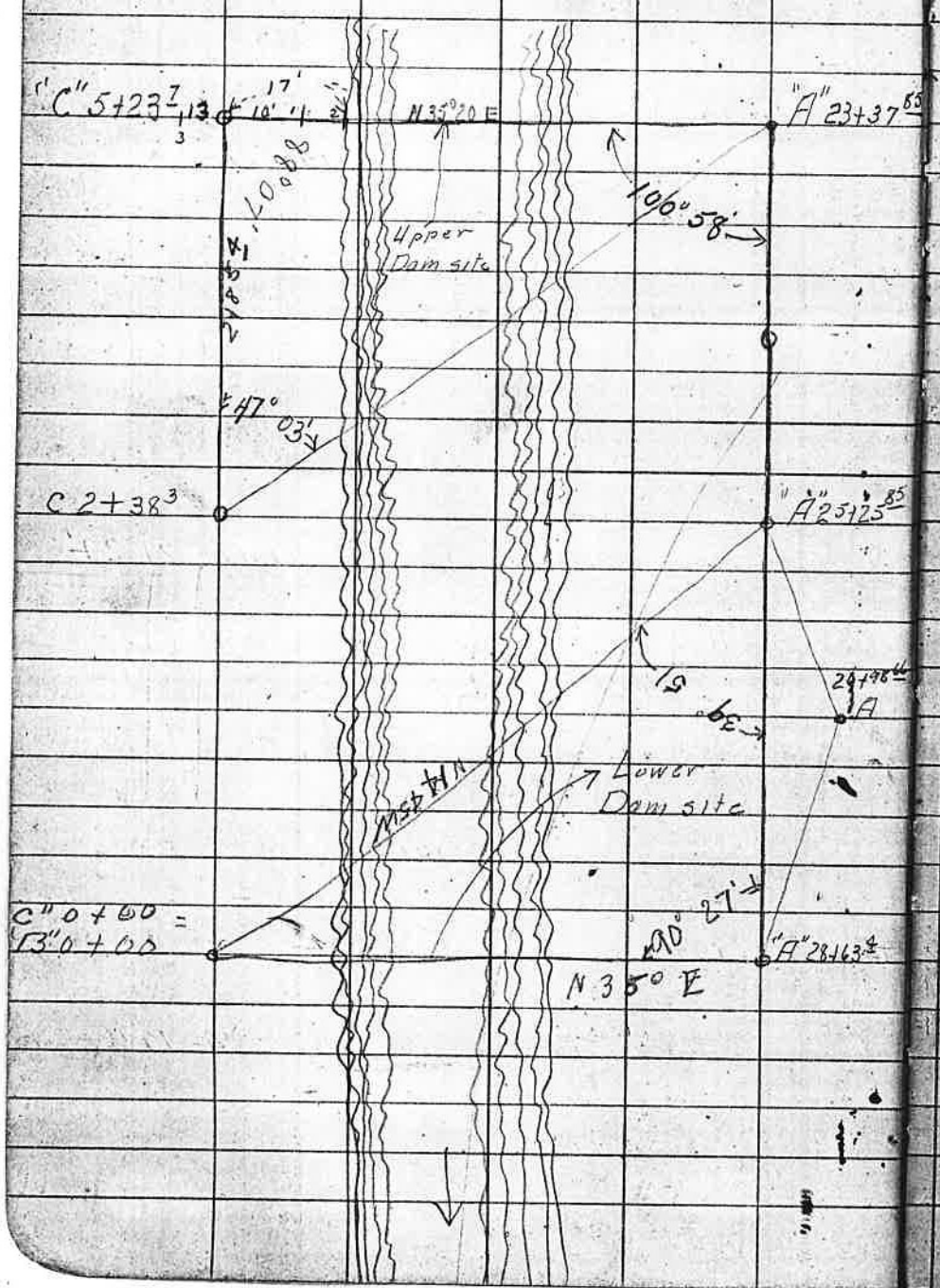
" " " by Drakes garden

Myrtle Cr. Hydro-Elec. Survey

"B" & — Lines & C Line

	Ang Rt	Ang Lt	Dist.	Needle
			523.1	
"C" 5+23.7				
	10° 56'		285.4	S 57° E
"C" 2+38.3				
		8° 58'	144.6	S 67° 58' E
"C" 1+93.7				
		21° 24'	93.7	S 58° 40' E
"C" 0+00 = "B" 0+00				

Triangles Upper & Lower Dam sites



Levels on Upper Dam site

58495

0+00			
PH 1	6.35	578.60	"C" 5+23.7
	9.45	575.50	Edge of exposed bedrock
PH 2			H_2O Surf
	10.47	574.48	Edge of H_2O
3	3.50	581.45	13' uphill E
4	6.00	584.95	20' " E

Mar 14 1916

H_2O Surface at 8 A.M. Mar 15 Upper Dam site

150	580.14	57860
	587	57483
" " " " " "		Lower Dam
226	579.05	57677
600		573.05

Levels on "B" & "C" Lines Myrtle Co. Hydro-electric Surv.

715
283
435
28
155

"A" 23+37.85	1.43	584.95			583.52
"C" 5+23				6.35	578.60
5+00				4.30	580.65
"C" 4+50				4.5	580.45
4+00				5.8	579.15
3+50				5.4	579.55
3+00				5.5	579.45
"C" 2+50				5.7	579.25
+38				5.93	579.02
T.P.	3.73	582.75	5.93		579.02
2+00				6.2	576.55
1+50				5.4	577.35
1+00				4.7	578.05
+93				1.03	581.72
+50				7.3	575.45
"C" & "B" 0+00				7.15	575.60
H_2O Surf.				9.45	573.30
T.P.	5.57	582.36	5.96		576.79
0+40				8.0	574.36
1+00				8.2	574.16
+50				6.2	576.16
2+00				4.5	577.86
	10.73		11.89		
	1.16		10.73		

On Hub

Mar 14 1916

T-rail spike in crevice of rock

On small white rock imbedded in the bed-rock

H_2O surface opp. Sta 2+00. also H_2O edge 6' Lt or West

2.8 = 579.95 16' Rt or East of Sta. 0+00

-(1.53) = 574.30 20 " or " " " 0+00

Myrtle Creek Hydro-electric Survey

M. B. Germond Asst.
Jack Black Rod

Mar. 14 1916

Sandy River bank

Mar 15 1916

Levels on the B.M.

		582.36			
2+50				4.8	577.56
⊙ +82½				4.9	577.45
3+00				4.5	577.86
+50				4.9	577.46
4+00				4.5	577.86
+50				4.6	577.76
5+00				4.9	577.46
+50				5.1	577.26
6+00				4.7	577.68
+23½				4.85	577.51
T.P.	5.73	583.24	4.85		577.51
+50				6.1	576.14 ✓
7+00				6.4	576.84 ✓
+50				5.0	578.24 ✓
8+00				5.5	577.74 ✓
+41.9				3.95	579.29 ✓
+50				4.4	578.84 ✓
9+00				6.1	577.14 ✓
+50				6.0	577.24 ✓
10+00				4.5	578.74 ✓
+50				3.4	579.84 ✓
+98.6				3.58	579.66 ✓
T.P.	4.55	584.21 ✓	3.58		579.66 ✓
11+00				4.9	579.5
	10.28 8.45 1.83		8.43		

Levels Line "B"

		584.21			
		3.95			
11 +50				6.1	78.1 ✓
12 +00				5.7	78.5 ✓
+23				5.05	79.2 ✓
+50				4.3	79.9 ✓
13 +00				5.0	79.2 ✓
+50				6.6	77.6 ✓
T.P. +82	486	584.14	4.93		579.28
+82				4.63	79.51 ✓
14				3.8	80.3 ✓
+50				3.4	80.7 ✓
15				5.7	78.4 ✓
+50				4.2	79.8 ✓
+64				3.10	81.0 ✓
T.P.	708	588.12	3.10		581.04
H.O					572.80
16 +00				8.3	79.8 ✓
+50				7.8	80.3 ✓
17 +00				6.5	81.6 ✓
+11				5.33	82.8 ✓
+50				10.7	78.4 ✓
18 +00				8.1	80.0 ✓
+20		✓		7.81	80.3 ✓
T.P.	948	589.79	7.81		581.98
+50				9.1	580.7 ✓
	2142		1584		
	1384				
	558				

Sandy river bank

" " " By Drake garage

H.O surface at Drake's Boat Landing 572.80

Sandy River bank by Drake's gas

Leads Line "B"

		589.74				
+86.9		3 81		7.08	82.71	
19		598		6.2	83.59	
+44.8				2.69	87.10	
+50				3.5	86.29	
20 +06				10.3	79.49	
T.P.	5.77	593.74	1.82		587.97	
+50				8.2	85.5	
+58				11.1	82.6	Creek at Wagon Road Xing
+88.2				1.30	92.4	
21 +06				7.5	86.2	
+08				15.6	78.1	small gully
+50				10.0	83.7	Co. Road Xing.
22 +06				8.2	85.5	
+27.3				8.96	584.78	
T.P.	5.69	590.50	8.93		584.81	
+50				7.6	82.9	
23				9.1	81.4	
+50				9.6	80.9	Opp. Cen. of Island 350 x 180
+92.0				2.08	88.42	
24				2.7	88.3	
+50				9.3	81.2	
25				8.7	81.8	
+31.3				4.81	85.64	
	6.29	585.98	4.81		587.69	
	1.75		15 56			
			11 75			
			3 81			

Levels Line "B"

		586.0 ✓ 555.98			
25 + 50				1.8	84.2 ✓
26 + 00				6.1	79.9 ✓
+ 50				5.1	80.9 ✓
27 + 00				10.2	575.8 ✓
+ 50				10.	76.0 ✓
+ 64.4				9.15	576.83
28				8.1	77.9 ✓
+ 50				7.7	78.3 ✓
H_2O				17.44	568.54 ✓
29				7.9	78.1 ✓
+ 50				10.0	76.0 ✓
+ 62.5				9.55	
TP	526	581.69 ✓	9.55		571.43 ✓
30				4.6	77.1 ✓
+ 50				3.2	78.5 ✓
31 + 00				3.0	78.7 ✓
+ 50				3.3	78.4 ✓
32				4.4	77.3 ✓
+ 50				5.0	76.7 ✓
33				5.4	76.3 ✓
+ 50				5.7	76.0 ✓
34				7.2	74.5 ✓
+ 50				6.5	75.2 ✓
35				5.9	75.8 ✓
			9.55 326 429		

H_2O surface opp "B" sta 28+50

Very rocky from here to sta 41+00

0'
6.1'
0'
0'
0'
0'
0'
0'
0'
0'
0'
0'
0'
0'
0'

This sta. can be Lowered 0' ft.

Levels Line "B"

		581.69			
T.P.	5.02	586.91	5.80		581.89
35 +50				4.7	76.2
36				5.1	75.8
+50				5.1	75.8
37				5.1	75.8
+50				5.1	75.8
38				5.6	75.3
+50				4.3	76.6
39				2.1	78.8
+61.9				2.03	
+50				3.00	77.9
40				2.3	78.6
+50				2.2	78.7
41				2.4	78.5
T.P.	5.98	582.95	3.94		576.97
+50				5.1	77.85
42				5.5	77.45
+50				5.2	577.75
43 +00				5.1	77.85
+50				5.6	77.35
44 +00				5.2	77.75
+50				5.9	77.05
+84.3				5.95	77
45 +00				6.6	76.35
	11.00		9.74		
	9.74				
	1.26				

0 " "
0 " "
0 " "
0 " "
0 " "
.5 " "
.5 " "
1 " "
4 " "
2 " "
2 " "
2 " "
2 " "
1 " "
1 " "
1 " "
1 " "
.5 " "
.5 " "
0 " "

This sta can be made 0' Ft Lower

Levels ✓ Line "B"

58295
137

45+00				6.8	76.15 ✓
+50				7.6	75.35 ✓
46				8.3	74.65 ✓
T.P.	3.29	581.67	4.57		578.38
+50				6.1	75.57 ✓
47				4.5	77.17 ✓
+50				5.6	76.07 ✓
48+00				3.7	77.97 ✓
+50				4.0	77.67 ✓
+71.6				4.50	77.17 ✓
49				3.7	77.97 ✓
+50				3.6	78.07 ✓
50				3.2	78.47 ✓
+50				4.0	77.67 ✓
51				4.7	76.97 ✓
T.P.	5.01	581.58 ✓	3.10	5	576.57
+50				5.4	76.18 ✓
52				5.3	76.28 ✓
+50				5.9	75.68 ✓
53				6.4	75.18 ✓
+50				6.8	74.78 ✓
54				6.1	75.48 ✓
+09.6				5.07	576.51
+50				4.8	76.78 ✓
	8.30		4.67		
			8.30		

(State marked on Equa.) 47+00 should equal 4.5+50 Line made 50 Ft. short here.

" " " 0 "
" " " 0 "
" " " 0 "
" " " 2 "
" " " 4 "
" " " 4' "
" " " 4' "
" " " 5' "
" " " 5 "
" " " 5 "
" " " 3 "

Can be made 1 layer

From 51+50 to sta. 59+ end is on lowest ground

Levels Lines "B" + Minus

		581.58			
		+3.7			
55				3.2	78.38
T.P	3.37	581.60	3.29		578.29
+50				4.1	77.5
56				4.5	77.1
+50				4.4	77.2
57				4.2	77.4
+50				5.1	76.5
58,				4.5	77.1
+50				4.8	76.8
59 +00.				5.2	76.4
+047			✓	5.18	
T.P.,	0.82	577.24	5.18		576.42
-line 0+25W				3.6	573.6
" 0+50W				3.2	574.0
" 0+75W				7.4	569.8
" 1+04W				19.16	558.08
T.P.	11.95	588.37			576.42
-line 0+25E				11.1	577.3
0+50E				9.8	578.6
0+75E				5.3	583.4
1+00E				0.6	587.8
T.P.	10.46	597.58	1.25		587.12
1+25E				5.9	591.7
1+50E				1.64	595.94

Lines

1266
6 30
14 16

H₂O edge = 65 ft West

Clear + Sunny

573.05
572.35
.70

35.50
33.58
1.20

Mar. 15 1916

573.05
578.00
15.
7
22
26

H₂O Surf. and H₂O edge Mar 15 1916

Myrtle Co. Hydro-electric Survey

Levels to check on P.H. P.B.M down

"B" 54+09.6	9.60	586.11		576.51
T.P.	6.79	592.00	0.90	585.21
P.H. "P" B.M.			2.75	589.25

Levels to check P.H.B.M. From below New

P.H.B.M.	8.75	628.19		619.44
T.P.	5.80	631.10	2.89	625.30
T.P.	6.91	636.21	1.80	629.30
			3.54	632.67

Mar. 15 1916

Opp. Bob Way's House

84°	09'	- 1
34	19'	
84"		
34	29	

Check on P.H. "P" B.M. Marked 609.17

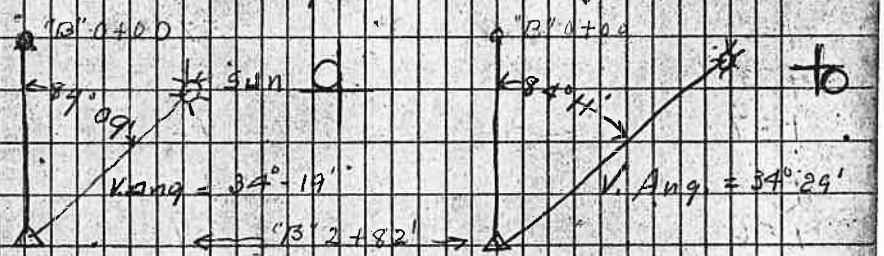
P.B.M. on Telegraph brace pole set 100 ft. R. of "B" 53+50 near Co Road

Bridge opp "A" 25+25 up to S. P. Depot

P.H. B.M. on Madrone tree W. 30' of "A" Sta. 25+25

Sun Obser Mar 15 1916 3 P.M.

Δ at "B" 2+82 Myrtle Cr Hydro elec. Surv.



H. Mean = 34°24' Ver Ang Mean = 34° 29'

Corr " = 34-22 36 84° 10 29 / 36 Corr H

∴ 1° 58'

Levels on West end Dam site #1

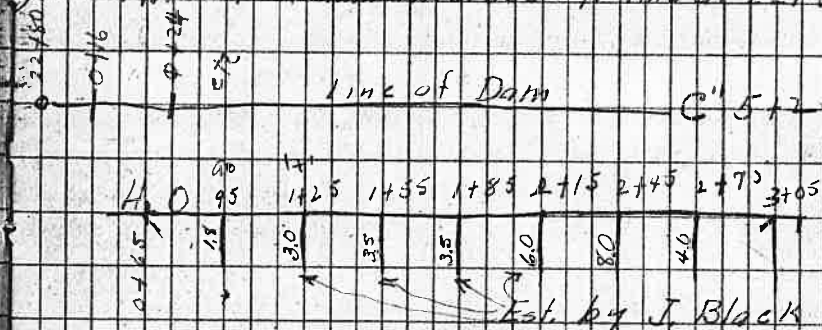
	3.00	557.2			584.2
A 22+80				3.0	584.2
0+16				1.1	586.1
+24				2.9	584.3
+30				2.1	585.1
+40				3.9	583.3
+52				11.6	575.6
+65				13.2	574.0

Levels on West end Dam site #2

	3855 0.60				585.4
28+50				1.4	
0+12				0.9	
+17				2.2	
+24				5.7	
+30				5.7	
+33				4.2	
+37				9.2	
+50				7.9	
+56				10.5	
+62				11.5	
+70				12.5	
+88					

Upper

Note W. end of dam intersect "A" line at 22+80



Est. by J. Black

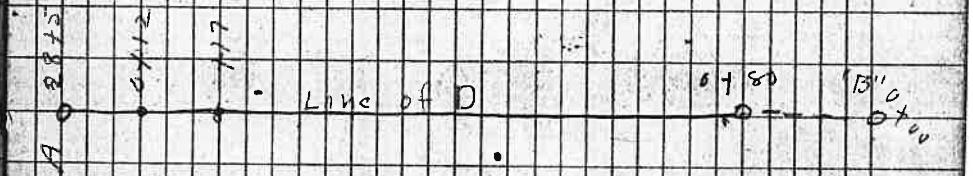
H_2O surf. and edge West side

Mar 15 1916

M. B. Gerrmond

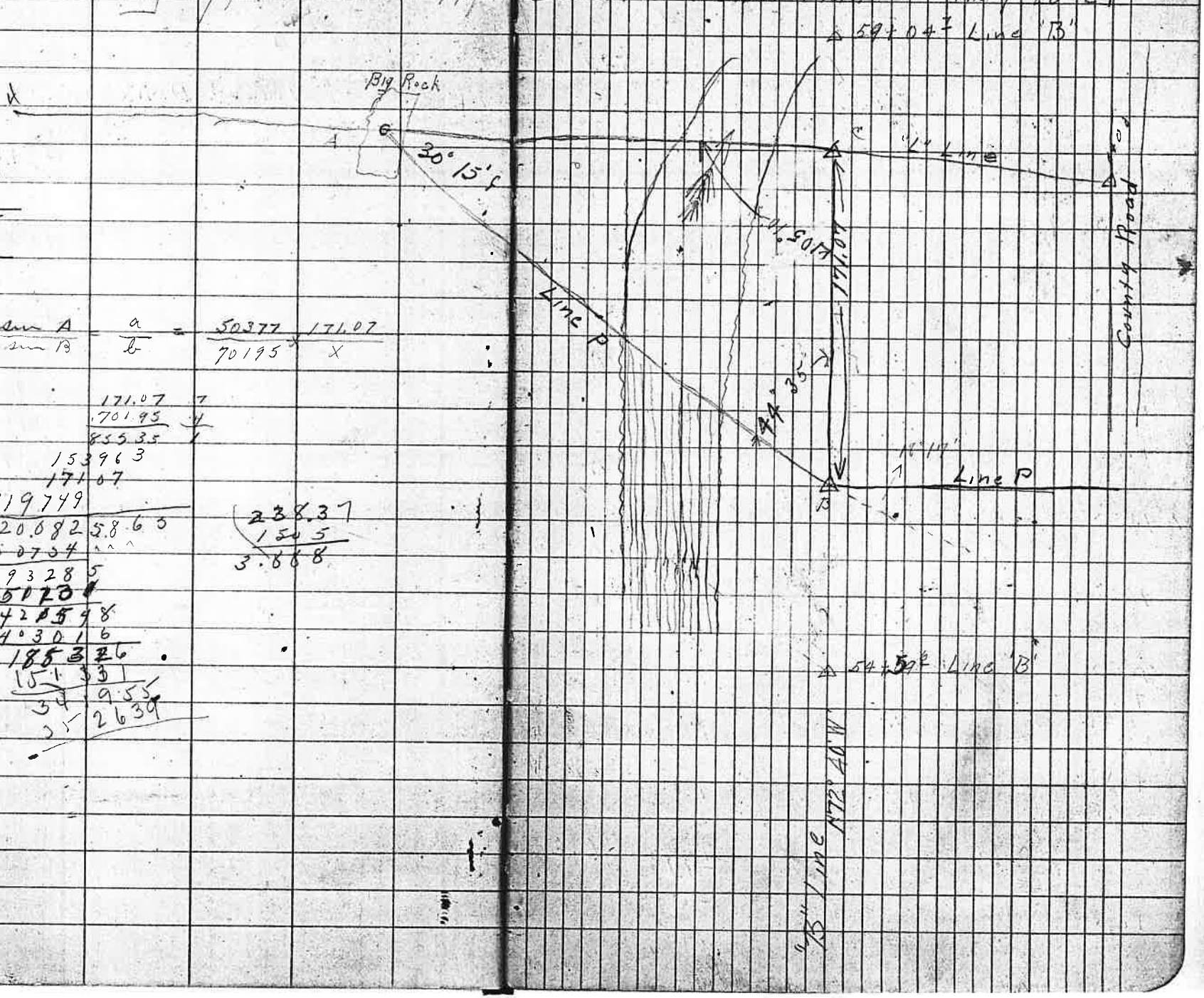
Jack Black

Note W. end of Dam would intersect A line at 28+50



H_2O surf. & edge on W. side

Second Survey Myrtle Creek Hydro-Electric Power Plant May 20-21



105 10
44 35
149 45
180
30 15

$\frac{\sin A}{\sin B} = \frac{a}{b} = \frac{50377}{70195} = \frac{171.07}{X}$

171.07
701.95
855.35
153963
171.07
119749

50377 | 120.082 | 5.8.6 3
10 07 54
19328 5
15 12 0
4 2 5 5 9 8
4 0 3 0 1 6
1 8 5 3 7 6
15 1 3 3
3 4 9.5 5
2 6 3 9

238.37
15 5
3.888

Second Survey Continued

	8.31	597.56 East 10 ft	℄	West R 10 ft	589.25
0 + 00		1.3 596.3	0.35 597.2	(-0.1) 597.7	On hub on edge of County Road
+ 25		7.4 590.2	6.5 591.1	5.9 591.7	
+ 50		11.2 586.4	11.0 586.6	10.7 586.9	
	0.35	585.36		12.5.5	585.87
+ 75		2.7 582.7	1.5 583.9	1.8 583.6	
+ 92					1st Test pit Elev of bottom of R. Rock = 577.56
1 + 00		3.9 581.5	3.7 581.7	3.7 581.7	
					579.00 = H.W. Mark 1916
+ 25		5.6 579.8	5.9 579.5	6.0 579.4	
+ 38.					2nd " " " " " = 570.0 no rock
+ 50		7.6 577.8	8.0 577.4	7.6 577.8	
+ 50 45				7.91	
+ 59					577.45 On hub at intersect of 65' line & ℄ line
+ 75		11.2 574.2	10.3 575.06	9.5 575.9	3rd Test pit Elev of bottom 571.6 no rock yet
+ 80					4th " " " " " 568.7 no rock yet
+ 95		12.8 572.6	9.5 575.9	10.3 575.1	
	0.40	572.64		13.12	572.24
2 + 00		1.5 571.1	0.8 571.8	(-1.9) 574.5	

57264

Second Survey Cont.

		East Lt 10 ft		West RH 10 ft	
2+05		1.1 571.5	5.6 567.0	5.0 567.6	
+10		12.7 560.2	7.6 565.0	5.5 567.1	
				9.0 563.64	
+15	On Rock → 15.6	557.0	12.0 on Rock 560.6	10.0 562.6	
+25		17.2 on Rock 555.4	16.5 on Rock 556.1	17.0 on Rock 555.6	
+35		19.0 553.6	17.3 on Rock 555.3	17.0 555.6	
+60			20.5 552.1		
+85			19.5 556.1		
	0.37	560.97			560.6
2+25			4.8		556.2
+35			5.2		555.8
+50			6.9		554.1
+62			7.3		553.7
+75			8.2		552.8
+80			6.7		554.3
+90			6.2		554.8
3+00			7.0		554.0
+13			9.2		551.8
+25			11.6		549.4
3+65			14.0		547.0

Hydro-Electric Survey

Elev of rock out crop solid rock

This Sta. is H_2O edge. Also H_2O surface

Gravel allow. 2' to bedrock

" " 4' " "

B.R.

" " 6.63 554.37 H_2O Surf.

" "

" "

On gravel 2' deep

" " 3 "

" " 2 " and big boulders

7.0 = 554.0 water sub floor

Levels on Line "P"

	6.59	(583.10)			576.51
0+00				0.49	582.6
+50				2.6	580.5
1+00				4.5	578.6
+10				4.63	578.47
+50				6.4	576.7
+85				9.8	573.3
+95				18.0	565.1
+98				22.0	561.1
2+02				26.5	556.6

Second Survey Cont.

hub at intersect of "P" line & "B" line

Hub Ridge and surface

Second Survey Cont. Levels on E Side of River - "L" Line

3+10			18.7 5555			" 6' " " "
+34			18.7 5555			add 10' to " "
+54			18.7 5555			add 10' to bed rock. Smaller rock lies 14' E of ℄
+65			18.7 5555			W edge of smaller rock 5' out of water & 16' across also sheet edge of big small rock
+69	" 16	18 5562	10.1 5641	10.1 564.1	" 5	To H.o. Surface, add 10 ft to bed rock. of rock. S. edge of
	E. Edge of	12	7.7	7.7	W. Edge of	
3+74	Big rock 18	5622	566.5	566.5	Big rock 12	
+79	" 18	7.9 5663	7.9 566.3	6.4 567.8	" 12	
+82	" 17	7.5 5667	6.1 568.1	6.1 568.1	" 14	
+86	" 16	16/7.5 out 5.0 5697 (566.7)	4.7 569.5	19/9.1 569.5 16/7.5 566.5	" 16	
+86.8	" 14	14/4.1 570.1	4.1 570.1	14/4.1 570.1	" 19	✓ Is Triangulation pt on Big Rock (See sketch
3+95	" 13	13/4.1 569.5	4.7 569.5	20/4.2 569.5	" 20	
4+00	" 19	12/7.5 566.7	7.5 566.7	10/7.5 out 566.7	" 18	
+06	" 10	14/8.5 (565.7)	8.5 565.7	17/9.5 = 564.7	" 17	
+12	" 10	100/12 = 562.0	9.1 565.1	13/9.1 565.1	" 15	W edge of big rock
+16	5600	10/14.2 to bed R	7.2 567.0	10/12 = bk R 562.0	" 19	
+22	559.0	10/15.2	11.2 563.0	10/10 = 564 level on W ct		add 2' to bed R.
+35		14/8 = 565.4	8.8 565.4	26/4.6 569.6	" 3 " "	
+45		18/12.6 571.6	4.0 570.2	28/3.4 (570.8)		
T.P.	12.33	586.05		0.44	573.72	
+55		14/8 = 577.3	10.8 575.3	28/10.6 575.5		
+65		10/4.5 581.6	4.8 581.3	28/6.0 580.1		

			E			
		586.05				
			7.6 578.5		578.45	H.W.M. 1916
T.P.	9.06	594.74		0.37	585.68	
+75			7.1 587.6. 0.94 593.8			
+95			0.94 593.8	54.	589.24	N. edge of Bob Ways road
				54	589.34	Check on 'A' Line sta 85+00

1074+35
2+31
1076+69

360
237 55
122 05
61

300
239 54
141 54
61 48
60.06

BCI = 1047+37.5

R 318

49½

127.0 Pine

99°34'

1120 53'

N 47° E

0+00

1+50.45

562.70

67+00 B Line

113
85
10.7
347 65
601

Survey for Joe Baltzar, Chrisman and Gorus

Aug 1916

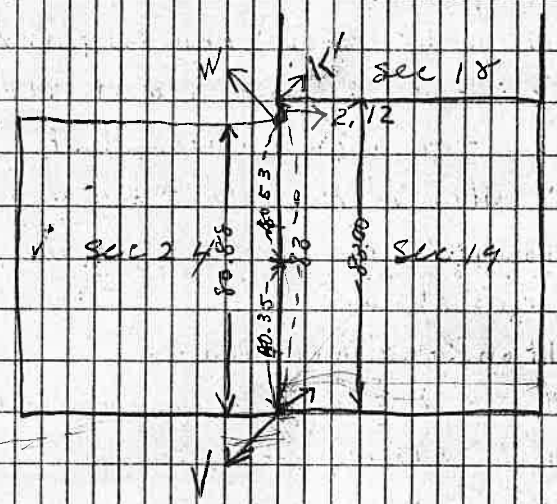
Began Survey at Sec. Cor. for Sec's 19.24.25 & 30 on T. Line bet. Ts 30 Rs 2 & 3 W. I found old Cor rotted but was able to identify it. I note all old BTs still standing and made measurements from trees. I set in steel bar 1"x36" for sec. Cor and run random Line N with the needle over a very rough and steep mountain at chs

I set in random stakes as follows

No. 66	Sec Cor	and set said random stakes W. according to Closing	noted below
" 1	183	ft. I set thru ft. 32 ft W.	
" 2	351	" " " " " 62 " "	
" 3	578	" " " " " 102 " "	
" 4	851	" " " " " 150 " W	
" a	1331.05		2.35 " " → 1/16 cor for Gorus
" 5	2015.7	" " " "	3.56 " W
" 6	2080.5		3.67 " W
" 8	2318.2		4.09 " W
" 9	2412.6		4.26 " W
" 10	2662	which is set 4.7 East of 1/4 cor. for sec 24 but not sec 19 Whose 1/4 cor is on North.	

I set For 1/16 Cor for sec. 24 above Tps & Rs on steel bar 3/4" x 26" and a cedar post 4" sq mked 1/16 S 24 C.S. N. B.T. ins distance. N.B. 1/16 cor is N 1331.05 ft and on true line.

Field Notes on Survey of Section Line between Secs 19 & 24 T 30 S R 2 & 3 W



W =

K = C.C. Marked CC on East Post 4"sq

A fir 15" N 78½ E 29

" " 24 S 55½ E 28

W = A cedar post 4"x4"

V = A cedar post 4"x4"

A Fir 30" N 2° E 8
" Fir 12" S 5° E 65
" Cedar 10" S 60 W 25
" Fir 12" N 55 W 58

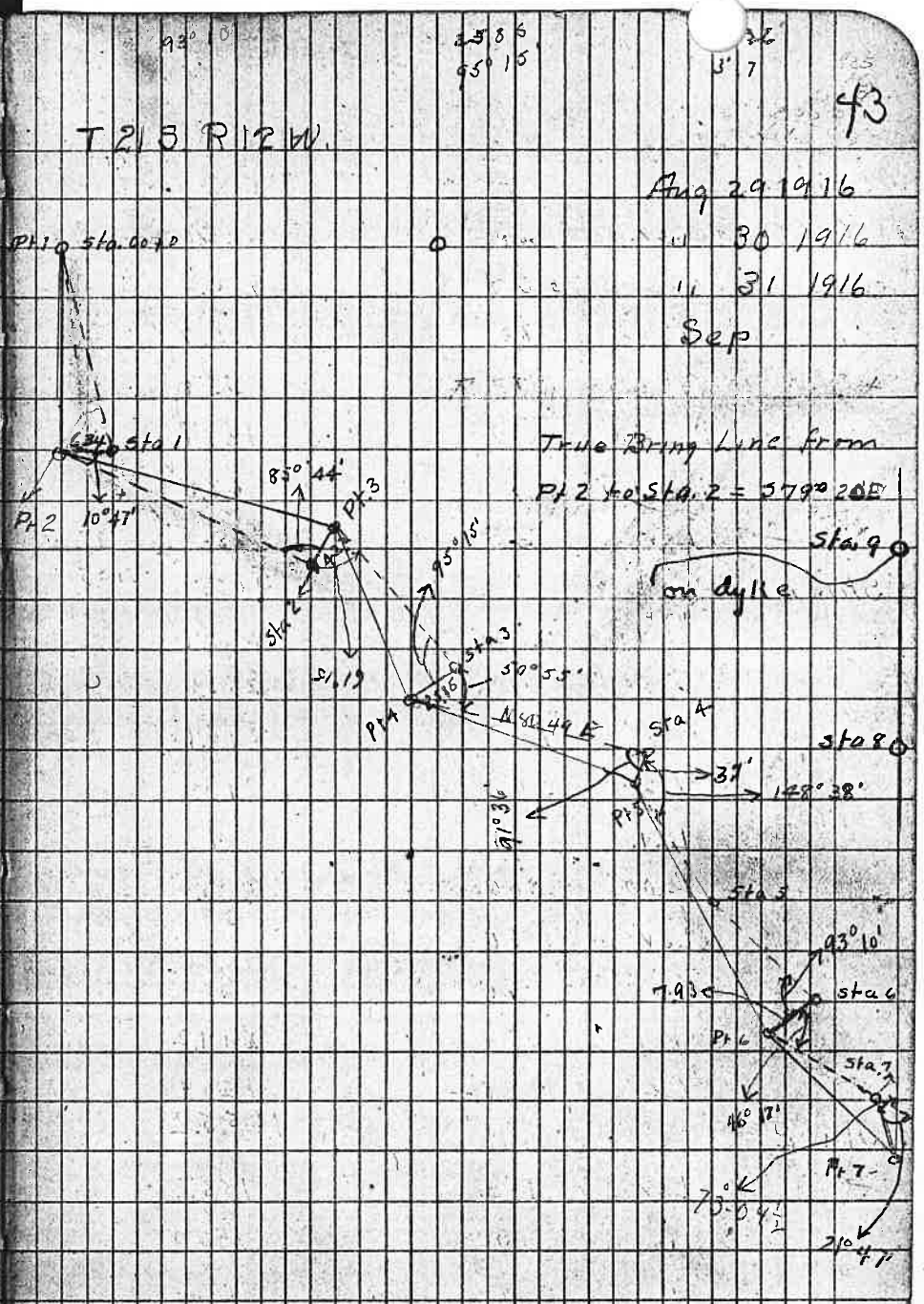
A Squirrel 30" S 38° E 40
A Fir 8 S 50 W 15

Cor Oak 15 N 45° E .59
C " " 15 S 74° E .56
" " 15 S 69 W .37
" " 18 N 3° W 1.41

Survey for J. A. Black Sec. 24 T 21 S R 12 W.

Aug 29 1916
" 30 1916
" 31 1916
Sep

I began survey at Sta. 0+00, which is pt No 1 of description (Also begin pt) I run S. by need ft to Sta 1 and fell 6.34 ft. E. of pt No 2. I set on Sta. 1 and turned Lt 90° 00' to pt No 2. I set on pt. No 2 sighted on Sta 1 and turned Rt 10° 47', which course is S 80° E as called for in description. I run on this Course ft to Sta 2 and fell 427 ft or pt 3 I set on sta 2 B.S. and turn Rt 85° 44' to pt. 3 S. 5° 44' W of cor, as shown on diagram. I then set up on Pt. 3 and sight on Sta. 2. and turn Lt 61° 15' and run ft to sta 3 and fell 2585' Northerly of pt 4. as shown. Set on sta. 3 B.S. and turn Lt 95° 15' to pt 4. Set on pt. 4 sight on sta 3 turn Rt 50° 55' and run ft on this course and set in Sta 4 3.7 ft Northerly as shown. Set on Sta. 4 B.S. and turn Lt 91° 36' to pt 5. Set on pt 5 sight on Sta 4 turn Rt 148° 38' and run ft on this course at ft hit tree Set sta 5 pt and turned Lt 5° 30' and continue on this Course and at ft set in Sta 6 7.93 ft Northerly of pt. 6. Set on sta 6 B.S. and turn Lt 93° 10' to pt. 6. Set on pt 6 and sight on Sta. 6 turn Rt 46° 17' and run ft on this course and set sta. 7. Set at sta. 7 B.S. on line turn telescope over and turn 21° 47' Rt 16.3 ft to pt 7. Set on pt 7 sight on sta 7 turn Rt 73° 04½ and start N. on Sec. line to sta 8 then turn Rt 1° 55' and continue on this course to river dyke and sta 9. From sta. 9 I put in Triangles shown on



True Bring Line from Pt 2 to Sta. 2 = 379° 20' E

Sta 9 on dyke

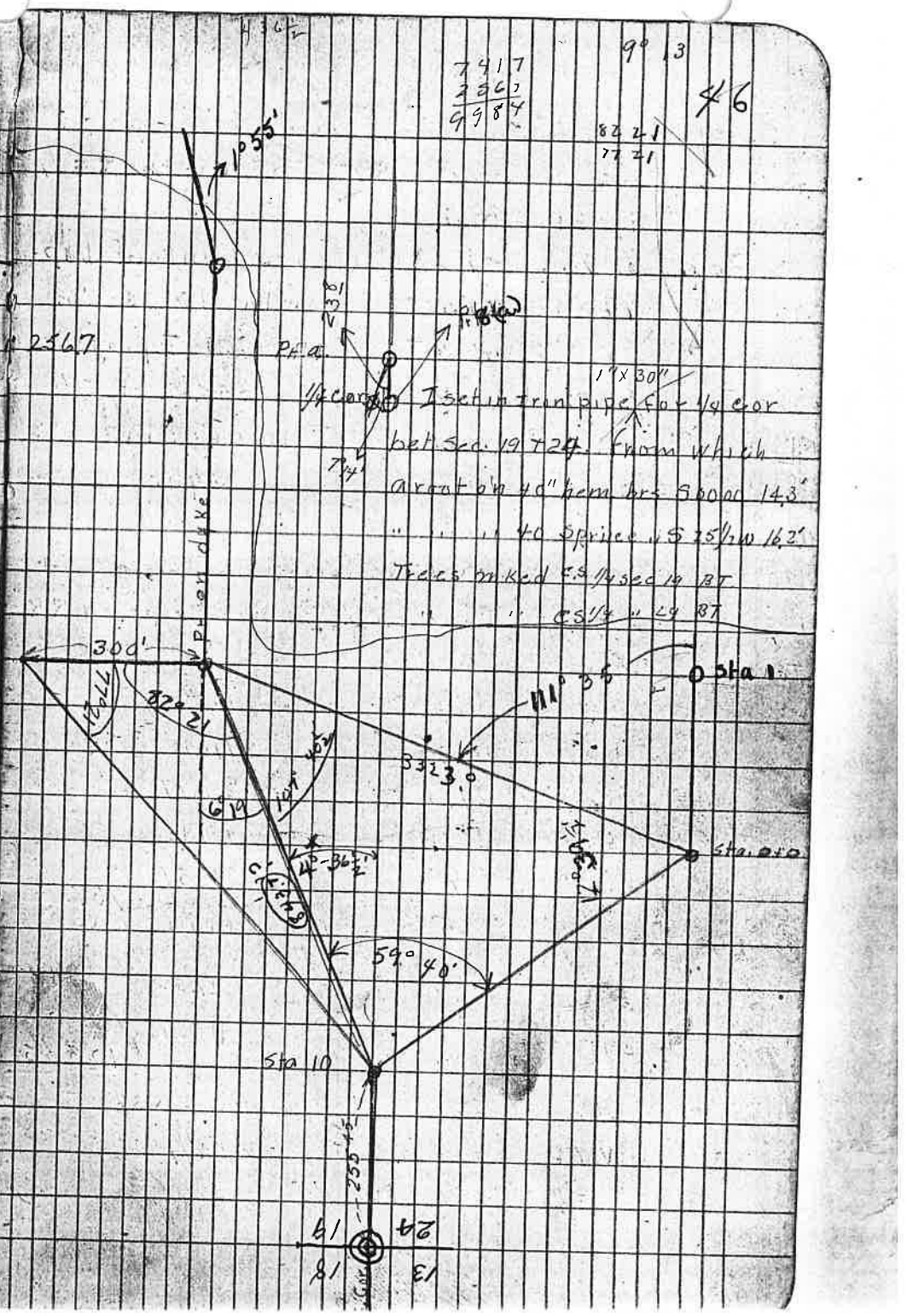
Sta.	Ang.	Slope Dist		Hor Dist	old Dist	Cut over
0+00	Lev.	25		25.0		
to	"	100		100.0		
	27° 10	175		155.7		
	37° 00	70		55.9		
	21 40	150		139.4		
	14 15	70		67.8		
	Lev	28.5		28.5		
				572.3	610.5	633
Sta. 1						
	8° 10	230		227.7		
	2° 50'	290		289.6		
	10 10'	100		98.4		
	9 30	300		295.9		
	Lev.	4		4		
	1-00	300		300.0		
	Lev	60		60		
	"	60		60		
	4° 10'	300		299.2		
	Lev	20.4		20.4		
				1655.2		4223
Sta 2						
	Lev	183.		183.0		
	"	150		150.0		
	"	65		65.0		
	"	55		55.0		
	"	30±		30.1		
Sta 3		483.1		483.1		2580

	Ang	Slope Dist.	Hor Dist.	
	22° 10	140	129.7	
	10 30	60	59.0	
	Lev	100	100.0	
	"	58.3	58.3	
			347.0	
Sta 4				37
	Lev	100	100.0	
Sta 5 →	5° 10	191.5 ←	190.7	290.7
	11 45'	100.	97.9	
	21 50	100	92.8	
	Lev	20	20.0	
	"	35.3	35.3	
			246.0	
Sta 6				79
	12° 20	125	122.1	
	Lev	145.3	145.3	
			267.4	163 Turn N. on Sec line
" 7				
	Lev	15	15	
	33 00	166	83.9	
	30 40	250	215.0	
	Lev	20	20.0	
	"	18	18.0	
	9° 30	220	217	
	Lev	125	125	
	"	696	69.6	
	21° 25'	34.87	32.5	
			7960	

11 30
10 30
14 10
1450
7760
1175

45

	4026	85			
	Ang.	Slope Dist.	Hor Dist	796.0	
	30 25	107.4	92.6		
Sta 8	27 16	97.2	86.4	975.0	
	Lev	60.0	60.0		
Pt a	"	40.0	40.0		
Pt b	32° 05	66.0	55.9		
	34 58	204.0	167.2		
	Lev	175.1	175.1		
	"	800.0			
	"	300.0			
	"	300.0			
Sta. 9	"	314.7	1214.7	1712.9	
	"	5.45			
	"	35			
	"	35			
	"	50			
	"	50			
	"	50			
	Lev	30			
		2554.5			



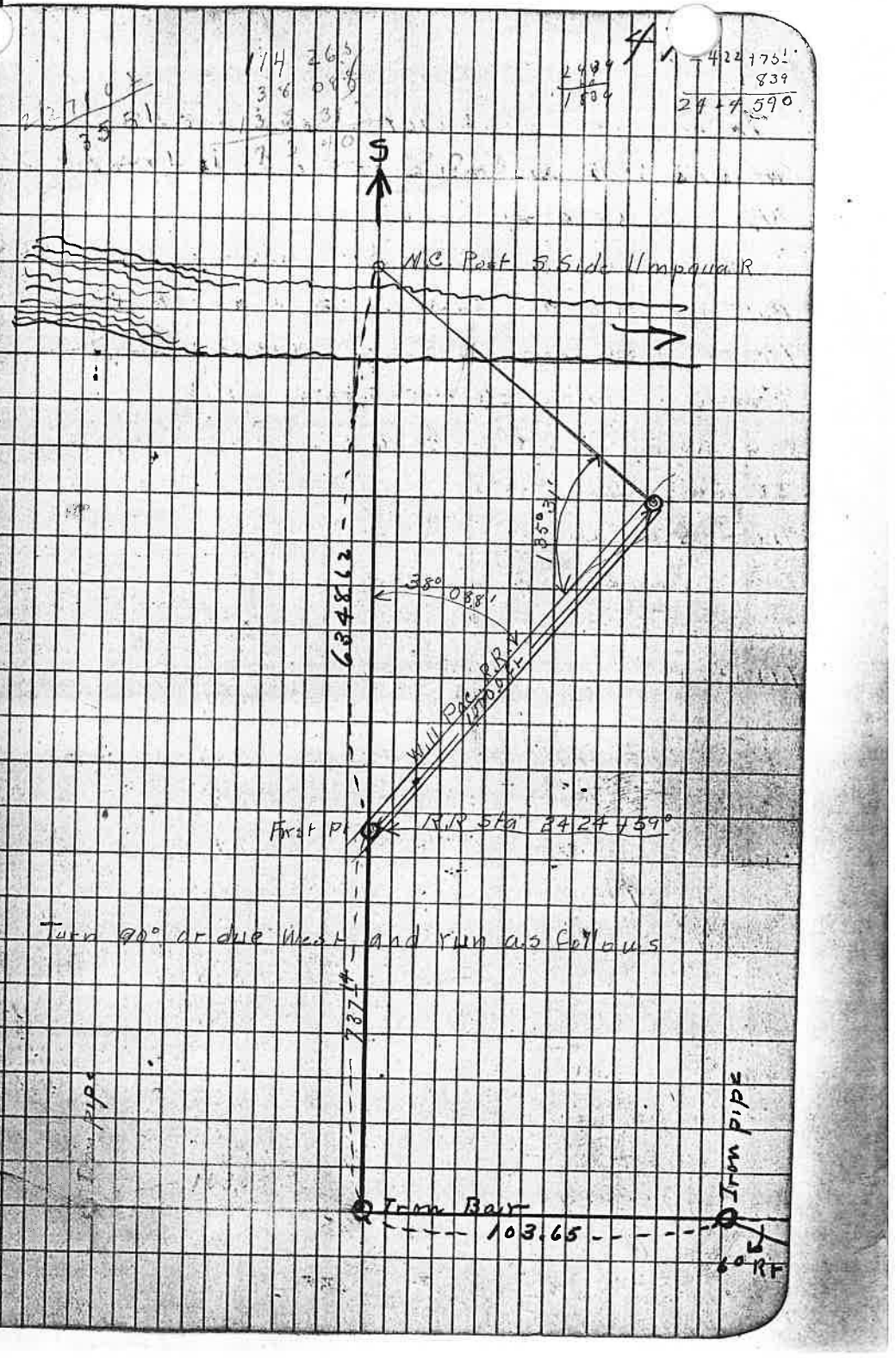
Umpqua Lumber & Box Co.

by

Survey for J.A. Black. Deed description for land sold Richmond on the S.E. 1/4 of the N.E. 1/4 Sec. 26 Tp 21 S. R 12 W.

Begin Survey at M.C. Post on S. bank of Umpqua River. Said M.C. post being on line bet sec's. 35 + 36. (Note one M.C. B.T. in evidence) I project line due North by Meridiograph 6348.62 ft to ℄ of Will. Pac. R.R. Where I triangulate as follows. Set on ℄ of R.R. Track sight on M.C. Turn Rt 38° 08.8' and run 1000 ft along track for base. Set on S. end of base sight on M.C. turn Lt 135° 31 to first pt. Turn on N. from first pt Set on R.R. Track as follows

	Ang	Dist		Hor Dist	
	Lev.	148.4		148.4	6348.62
	13° 30'	244.5		237.74	7371.4
	8° 50	209.6		207.11	7085.76
	13° 40'	86.0		83.57	
	22° 25'	65.25	to iron crow bar	60.32	737.14 1" x 36"
	32° 40'	32.5		27.36	
	19° 50' ~~20 RD~~	44.0		41.39	
	Lev.	34.9	to iron pipe 1" x 36" Then	34.9	103.65
	N 84° 00 W to W. side of S.E. 1/4 of the N.E. 1/4 of Sec 26				



W. on true line bet 4 & 9

39.50 set qr post

G. B. Oak 8" dia S 2° W 10 lks

" " " 4 " N 1° W 12

79 00 to cor.

S. bdy. of Tp 26 - 4

N 89° 57 E On S bdy of Sec 31

37.00 set qr post { a pine 13" dia N 15° E 262

71.00 summit y hill

75.50 Road

76.00 Stream

77.00 set post 31, 32, 5 T 6

B.O. 8" S 78° W 69 lks

Wit 8" N 42 W 107 "

W.O. 9" N 70 E 330

B.O. 5" S 53 E 214

N 89° 57' E On S bdy Sec 32

26.75 Summit of hill

40.00 Set qr post { B.O. 7" S 33° W 37 lks
" " 5" N 25° W 34 "

49.00 Entr prairie

49.50 Road N. & S.

54.40 Leave prari

80 00 Set post 4, 5, 32, 33

B.O 14" N 38° E 36

Cannel 6" S 87° E 19

" 5" S 82 W. 25

" 15 N 65° W. 69

Field Notes T 27 - 4

S 00° 25' E on true line bet Sec 4 & 5

39.68 set qr post { B.O 8" S 87° W 6 lks
B.O. 4" N 5° E 14 "

79.68 to Sec Cor

W. on true line bet secs 5 & 8

39.55 set qr sec. post raised mound

79.10 to Sec. Cor.

N. bet sec. 8 & 9

29.30 Entr improvement

40.00 Set qr post raised mound

60.00 Jacob Cox house S 2 W

79.50 leave prairie

80.00 Set post 4, 5, 8 & 9 { B.O. 16 N 60° E 235
B.O. 24 S 74° E 255 "
B.O. 25 N 3° W 210

S 00 37' E on true line bet 5 & 6

39.10 Set qr post.

G. Cannel 18" S 85° W 50 lks

" " 14 S 75° E 78 "

79.10 to Sec. Cor.

N bet 7 & 6

35.00 road to timber

40.00 Set qr post { B.O 28" N 71° W .63
B.O 8" " 14° E .79

80.00 " Sec. Cor. of 6 & 7

G. Cannel 5 N 18° W .35 lks

" " 8 N 60 E .72 "

" " 9 S 89 E .58 "

Set pr 25 S 85 W 18 "

Traverse Line of Sutherlin Creek beginning at its Inter. with the N Line of Wilkes Jenkin's D.L.C. #44 Sec. 7 T 26-5- and running S. to Co Road Xing.
Began Survey at Initial Pt: Plat "D" R.H.O. Tracts

Thence West		154.1	to	Lt. bank	Camas Cr.
"	S 12° 15 E	143.4		along Lt	bank
"	S 18° 00 W	196.5		"	"
"	S 4° 10 E	248.3		"	"
"	S 12° 00 W	312.0		"	Rt
"	S 36° 00 W	189.5		"	Rt
"	S 50° 00 W	192.6		"	"
"	S 31 15 W	191.4		"	"
"	S 61 00 W	145.5		"	"
"	S 57 35 W	109.0		"	"
"	S 41 30 W	200.0		"	"
"	S 33° 40' W	195.3		"	"
"	S 32° 00 W	84.0		"	"
"	S 57 20 W	50.0		"	Lt
"	S 57 20 W	216.5		"	"
"	S 70 40 W	274.9		"	Lt
"	N 88 30 W	283.6		In	Creek
	S 88 50 W	150.0		"	"

26' farther West to ℄ of Creek
down Stream 25' over Rt to ℄ of Stream
" " 30' " Rt " ℄ " "
" " 17' " Rt " ℄ " "
down Stream 16' over Lt to ℄ of Cr. at 30' on Course X Creek
" " 16' " Lt to ℄ " Cr "
" " 25 " Lt " ℄ " "
" " 20 " Lt " ℄ " "
" " 8 " Lt " ℄ " "
" " 35 " Lt " ℄ " "
" " 58 " Lt " ℄ " "
" " 65 " " " " "
" " 40 " Rt " ℄ " " at 65' on this Course we X Creek
" " 130 " Rt " ℄ " "
" " 15 " Rt " ℄ " "
" " 20 " Rt " ℄ " " at 80' on this Course we hit Creek
and to ℄ of Road

All Needle Work

F. Frear Chman
Green "

Traverse Line of Old Military Road. Begin. Running S. from Its Inter. with N. Line of ℄ 44 (See preceding page)

	Begin at Initial Pt Plat D			Roseburg H. O. Tracts
Thence	N87°20W	429.0	to ℄ of Military	R
"	S19 15 E	5459	in ℄ "	"
"	S8330E	270.0	" ℄ "	"
	S1530E	125.0	" ℄ "	"
	S2130W	400.0	" ℄ "	"
	S2315W	956.6	" ℄ "	"
	S2115W	800.0		
	South	250.0		

Traverse of Old Ck. Channel (See preceding page)

S18°30E	52.5
S47 30W	108.0
S16 00W	179.8
S55 00W	100.0

Close to old Line: 140 to ℄ of Stream

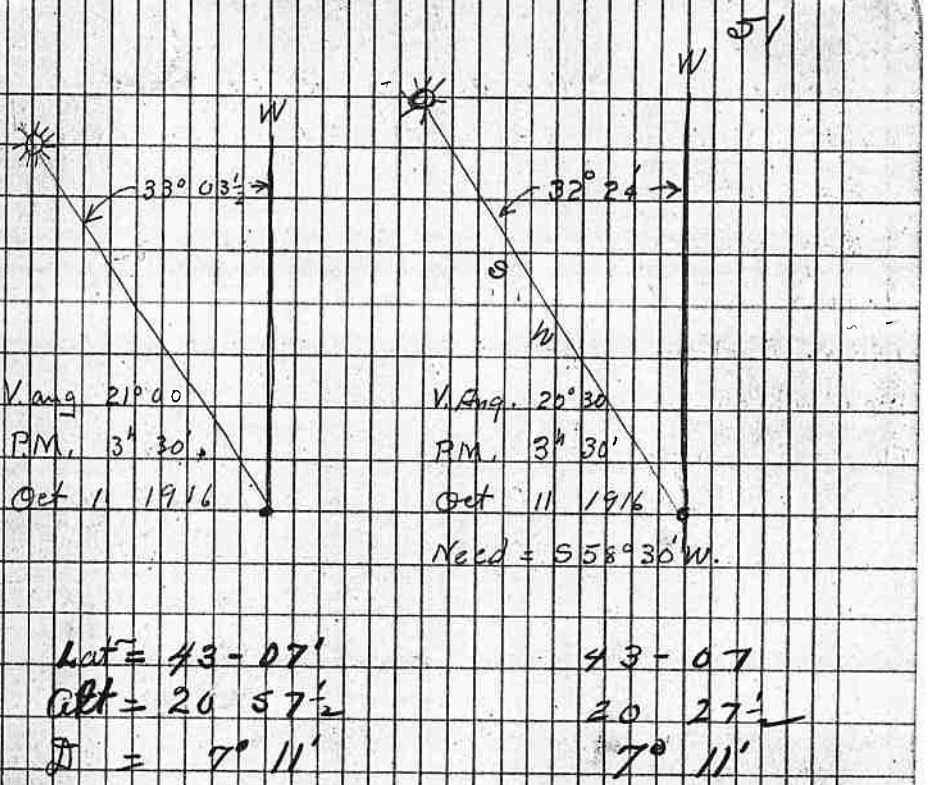
All Needle Work

Survey For Pierce & Thompson In
T 28 S., R. 6 W. Sec. 21 T 28

Survey To establish Line bet. Secs 21 & 28

Began at Cor. to Sec's. 21. 22. 27 & 28. Thence
N 89° 50' W by needle at
142.9 ft Set Stake
793.3 " Tack in oak stump
2078.2 " hub W. Edge Corn field
2283.5 " hub
2387.1 " "
2479.1 " "
2563.5 " To large stake near H_2O edge (E.)
3028.5 " " " " " " " " (W.)

Continue Line on West and at 5264.2 I fell on Sec. Cor for Sec 20 21 28 & 29. Cor. is a river basalt stone 6"x7"x14" or 16" Set around by 3 smaller stones. Did not change line at all and on return set at sta 2093.2 a blue basalt rock 4"x5"x14" to mark line. Stone witness by a
B. Oak 15" S 3° 00' E 8.3 ft. On return reestablish Sec Cor for Sec 21. 22. 27 & 28 as follows
Blue river basalt rock 4"x7"x16" mked. X & C. S
B. OaK 26" dia. brs. N 83° W 138 ft
W " 28" " " S 2° W 56.0 "

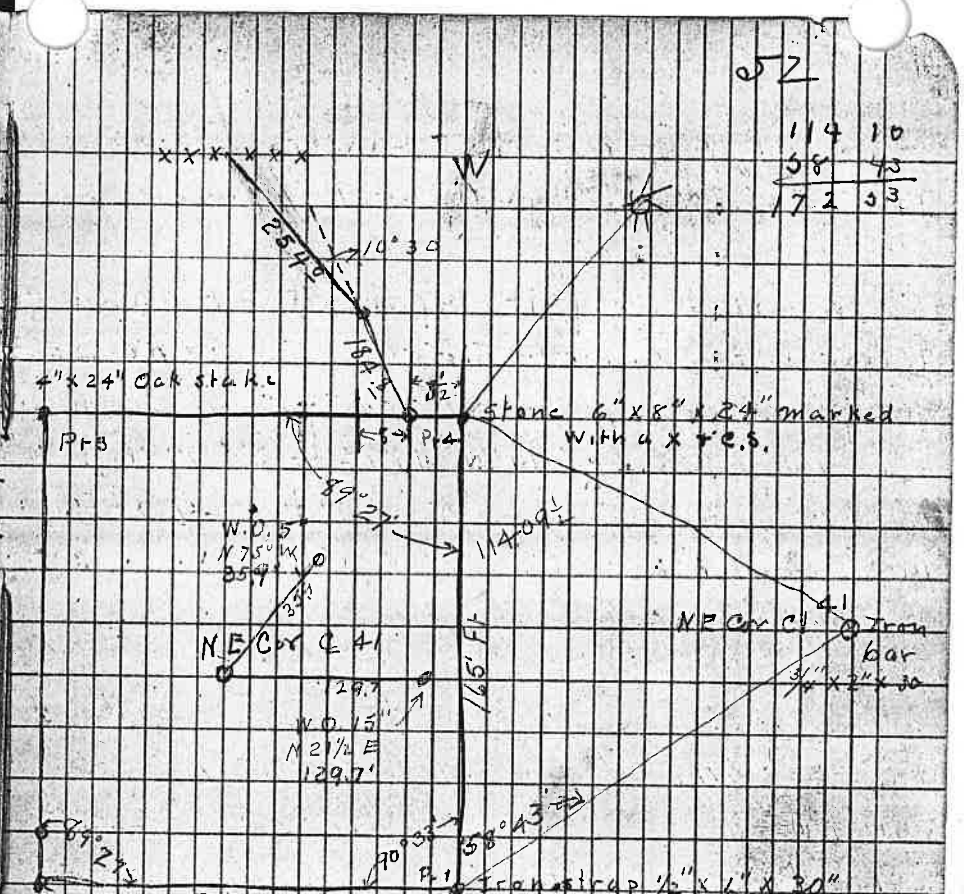


Survey for Cemetery.

Locally known as the (Gilmore Cem.) in T 28-5 Sec 11.

Began Survey at the N.E. Cor. (Pt 1) set in iron strap ½"x1"x30". Said pt 1 bears 12138 Ft from N.E. Cor C 41 which I reest. as follows. Iron bar 3½"x2"x30" from which { W.O. 5" dia brs. N 75° W 359 Ft / W.O. 15" " " N 21½ E 1297 " } cen. of side used

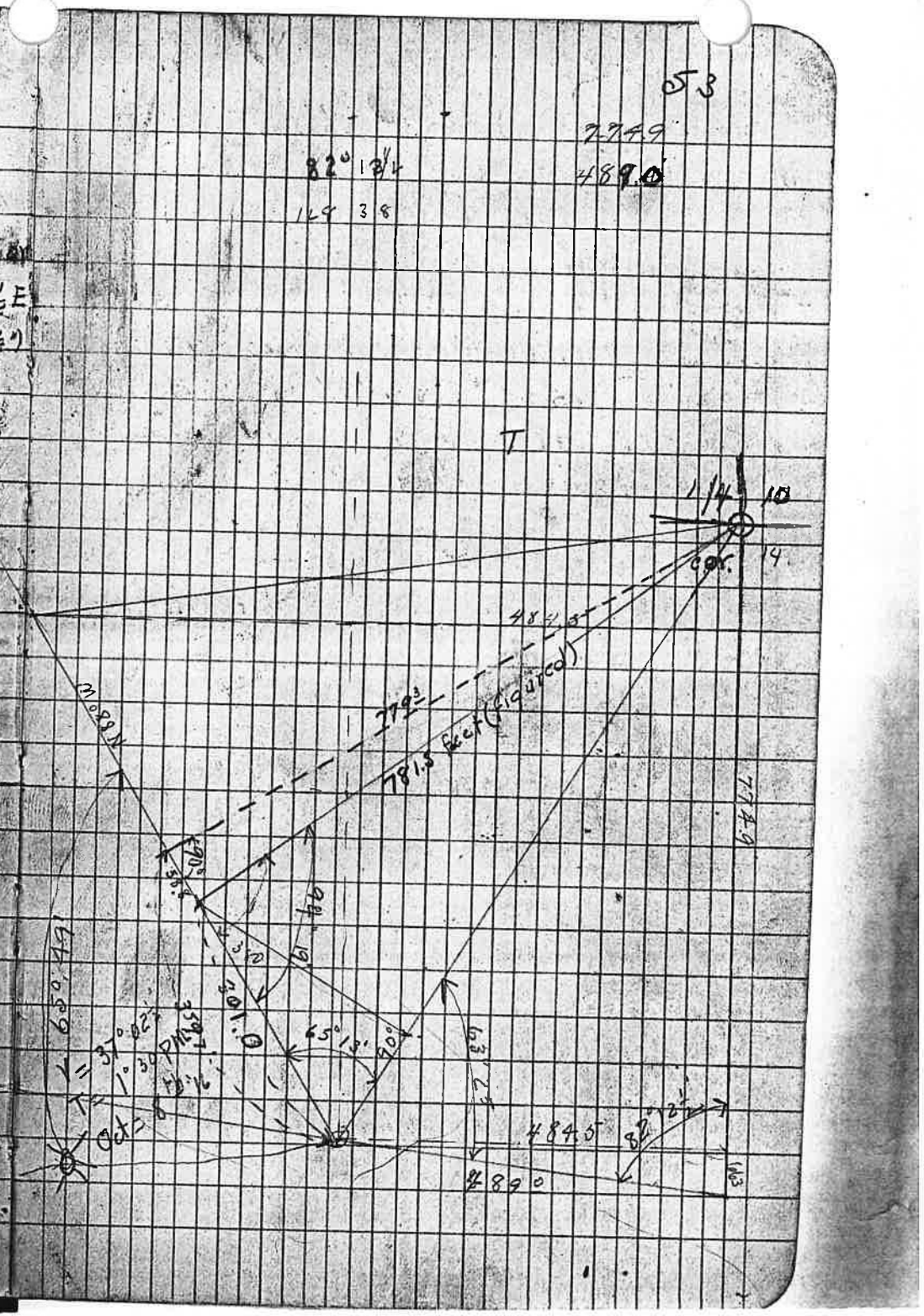
Thence from pt 1 S 264 Ft Pt 2 4" Oak stake
" " Pt 2 W 165 ft " 3 "
" " Pt 3 N 264 ft Pt 4 "
" " Pt 4 E 165 " to place of begin. Con. 1 acre



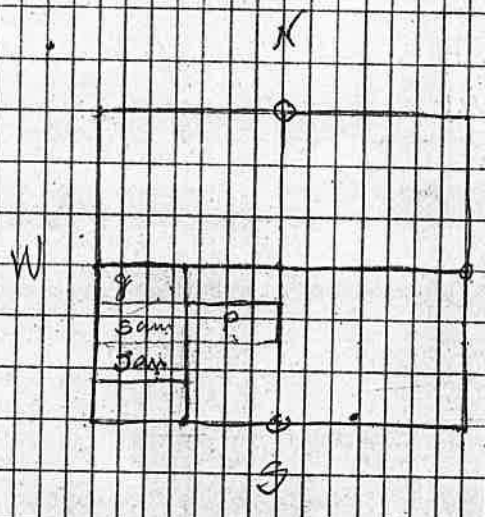
Survey for Poolet Lander in Sec 14 T 28 S. R 6 W. W M. Oct 9 1916

Began Survey at Big Stone Cor placed for 1/4 Cor bet Sec. 10 & 14 T 28 - 6 Thence S 56° 28½' E along Line fence 774.9 ft to small Iron (¾") rod Thence S 41° 19' W 489.0 ft to ¼ iron. rod 18" long. Thence N 87° 19' W 301.0 ft to post, Thence N 1° 38' W 781.5 (F)

		N	S	E	W
S 56 28½ E	774.9		427.98	645.99	
S 41 19 W	489.0		367.27		322.85
N 87 19 W	301.0	14.09			300.67
N 1° 38 W	781.5	781.18			22.28
		795.27	795.25		645.80



Palmquist	S½	of NE¼	of SW¼	Sec. 21	32-4
John	N½	of NW¼	of SW¼	" 21	32-4
Sam	S½	of NW¼	of SW¼	" 21	32-4
	N½	of SW¼	of SW¼	" 21	32-4



Survey for Langlois & Wells at Riddle Or. in Sec. 24 Tp 30 R-6

Survey was to cut out 10 acres.

Began Survey at gate near Co. Bridge

Set in iron bolt 3/4" X 16" for pt 1

Thence S 52° 03' W 152.9 by need to pt 2 Pipe 1" X 20"

Th South 804.43 to pt 3, 9/16 x 26" reb

" East 586.68 to pt 4 1" x 22" pipe

" N 00° 05' W 541.65 " pt 5 1" X 42" "

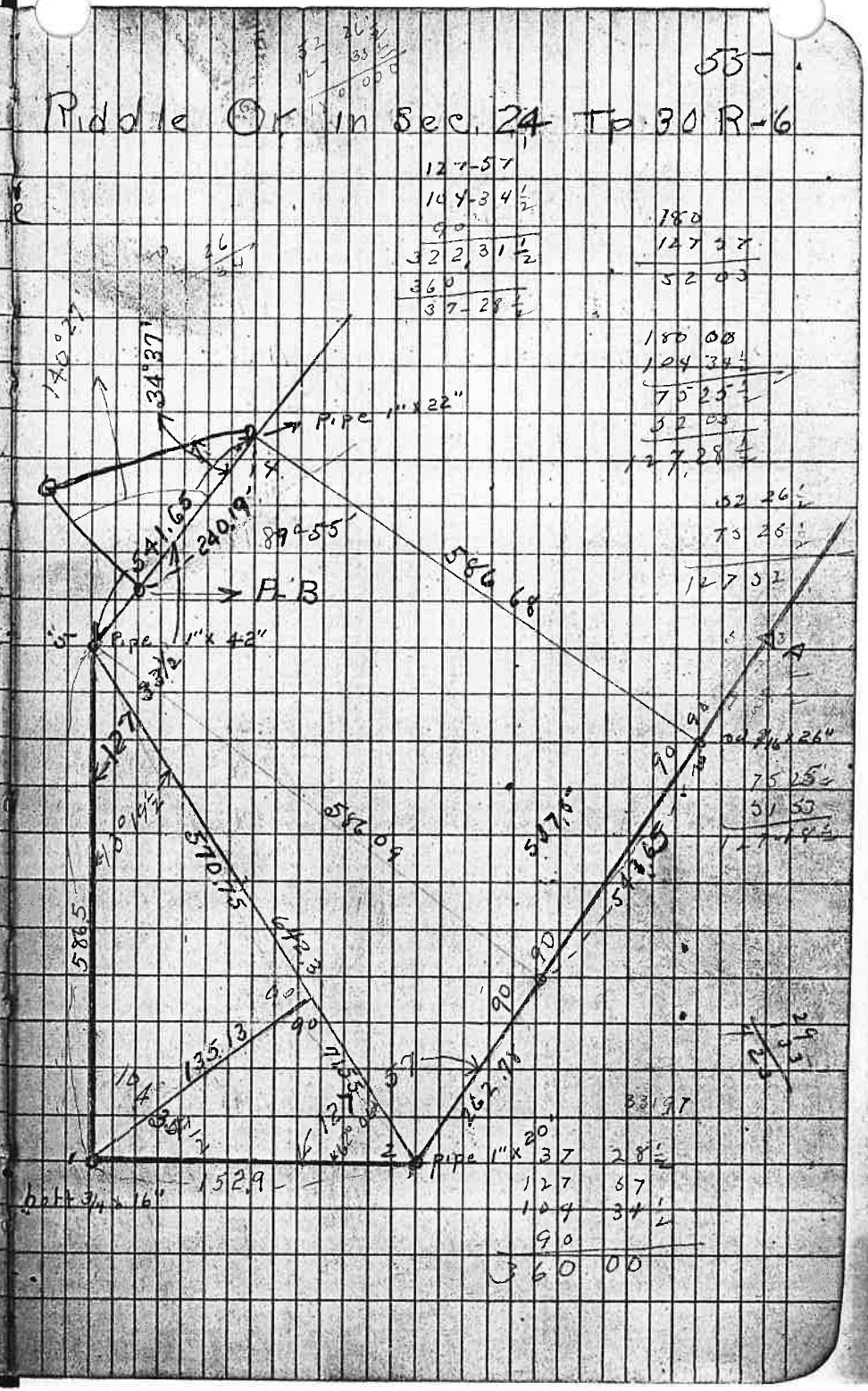
" N 52 31½ W 586.5 " " 1

Tran. at pt 3, Sight on "A" Turn Rt to Sun as follows. (1)

Hor Ang =	62° 20'	Hor Ang =	62° 48'
V " =	16 12½	V " =	15 48
PM =	4h 00	P.M. =	4h 00'
Oct 13	1916	Oct 13 =	

(2)

From pt 4. Sighted on pt 5 and turned Rt 34° 37' to the S.E. Cor of J.Q. Vanderbosh D.L.C. in Sec 24 Tp 30-6. At pt "B" sighted on pt 4 turned Lt 140° 27 to S.E. Cor. of



Levels on H_2O Survey for Myrtle Creek Oct 14

	-.02	577.43			577.45
			519		572.24
T.P.	2.34	568.03		11.74	556.69
T.P.	2.79	559.48		11.34	556.69
				6.68	552.80
				6.68	
				0.20	559.48
				3.94	555.50

On hub at sta 2400

H_2O Surface Oct 14 1916 at dam site

H_2O " 100 ft below dam site

Top pt of big boulder marked with blue streak at dam site

H_2O surface at head of rapids 200' above

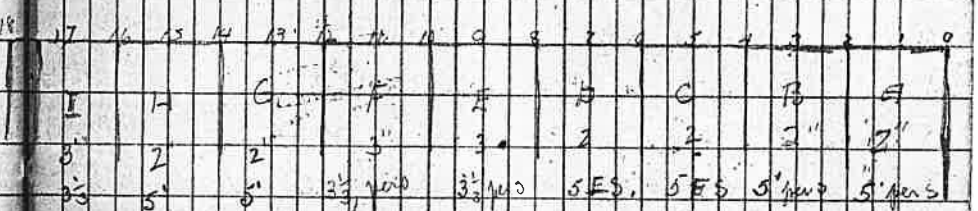
Water Measurement Myrtle Creek H_2O Survey

Levels on River Bed

	6.105	106.105			100.00 5
0		00		6.105	100.00
1		1.31	655	741	6.105
2		1.42	1.365	752	2.02
3		1.91	1.665	801	3.67
4		2.10	2.005	820	
5		2.13	2.115	823	4.23
6		2.10	2.145	820	
7		2.04	2.07	814	4.175
8		2.17	2.105	827	
9		2.17	2.17	827	4.345
10		2.18	2.175	828	
11		2.26	2.225	836	4.405
12		2.51	2.385	861	
13		2.51	2.51 ✓	861	5.055
14		2.58	2.543 ✓	868	
15		2.47	2.525 ✓	857	4.96
16		2.40	2.435 ✓	850	
17		2.21	2.305 ✓	831	4.565
18		2.31	2.26 ✓	841	

600

Assumed H_2O Surface Elevation 610.5



15	2	7
24	6	0
25	2	15
15	3	5
14	4	8 3
20	8	7 5
21	1	5
18	3	5
10	1	0
163	60	0

Field Notes of Survey For Re. Hugh Hunt Land

Began Survey at S.W. Cor of Tract. Sight N. along Line fence bet. Harding & Green and turn 87° 36½' Rt Int Ang and Howard Creek 348.6 to pt 1. Thence turn 137° 46' Rt. Int Ang. 627.53 to " 2 " " 180° 39 Rt " " 699.6 to " 3' at pt 3' set trav. sight on pt 2 turn Rt 3° 23½' 139± to pt 3. Also set on pt 3' turn Int Ang Rt 178° 29' to pt 4 N.E. Cor of Agee land. Then set on pt 3 Sight on pt 3' turn Lt 103° 10' along S. Line of Agee lot.

Δ at pt 3'	turn	Rt	178° 29'	812.4±	to pt	4
Δ " " 4	Sight on	pt 3'	turn Rt	180° 35	772.5	to pt 5
Δ " " 4	" "	" 3'	" Rt	80° 53½'	along N	
Δ " " 5	" "	" 4	" Rt	182° 36' 52½"	to pt	6
Δ " " 5	" "	" 4	" Rt	76° 59' 50"	to "	a
Δ " " 6	" "	" 5	" Rt	176° 35' 1147.3'	to pt	6
Δ " " 6	" "	" 6'	" Rt	192° 35½'	3046.5	to " 7
Δ " " 7	" "	" 6	" Rt	12° 06'	281.5	to " 8
Δ " " 8	" "	" 7	" Rt	178° 33' 32½"		to " 9
Δ " " 9	" "	" 8	" Lt	153° 05	344.45	to " 10
Δ " " 10	" "	" 9	" Rt	155 48'	163.40	to "
" " " 11	" "	" 10	" Rt	213 03	180.2	to "
" " " 12	" "	" 11	" Rt	186 58'	338.55	to " 13
" " 13	" "	" 12	" Rt	198° 45'	90.3	to 14
" " 14	"	13	" Rt	168 19' 20"	354.75	

Roscoe Green in Sec. 2

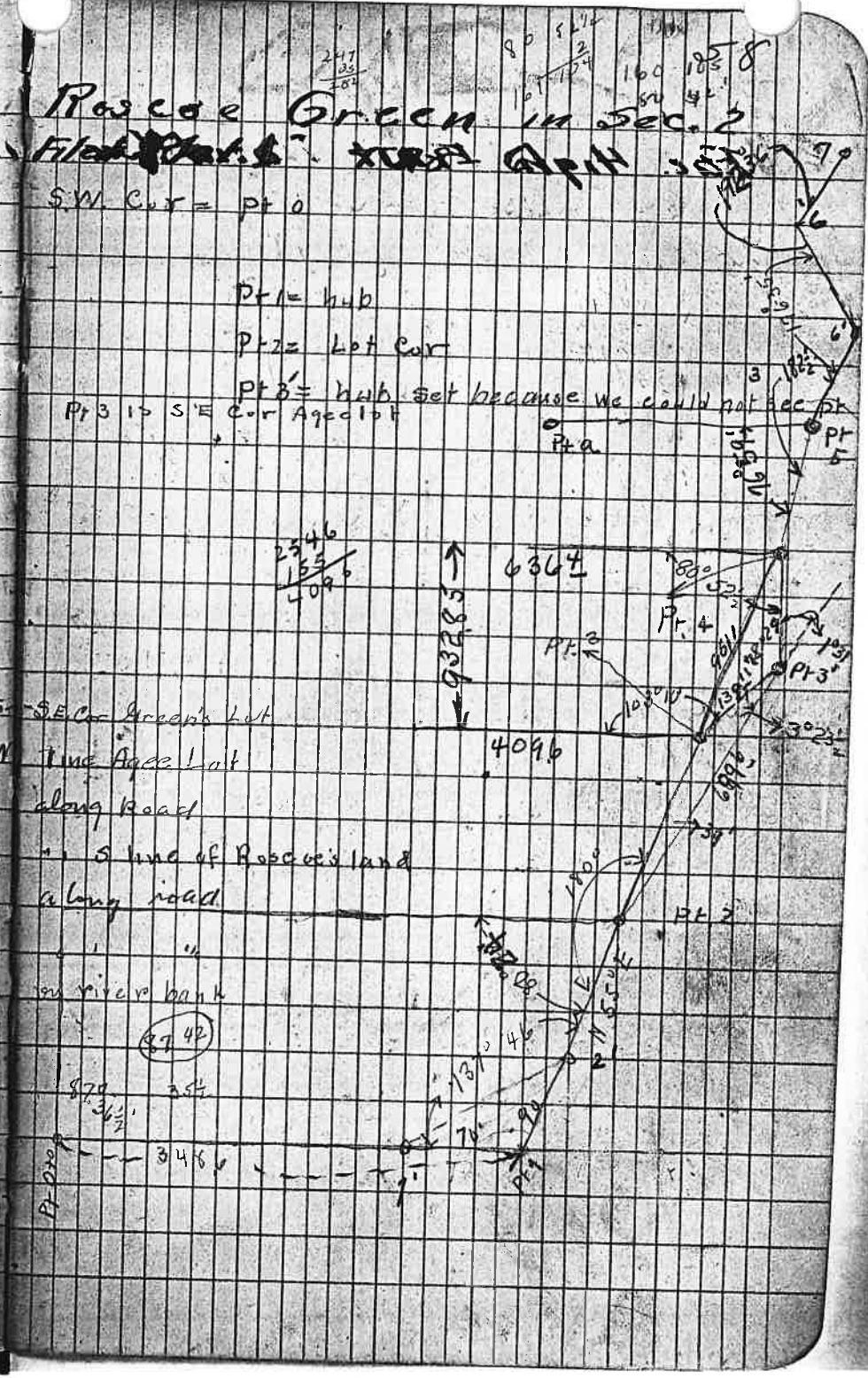
S.W. Cor = pt 0

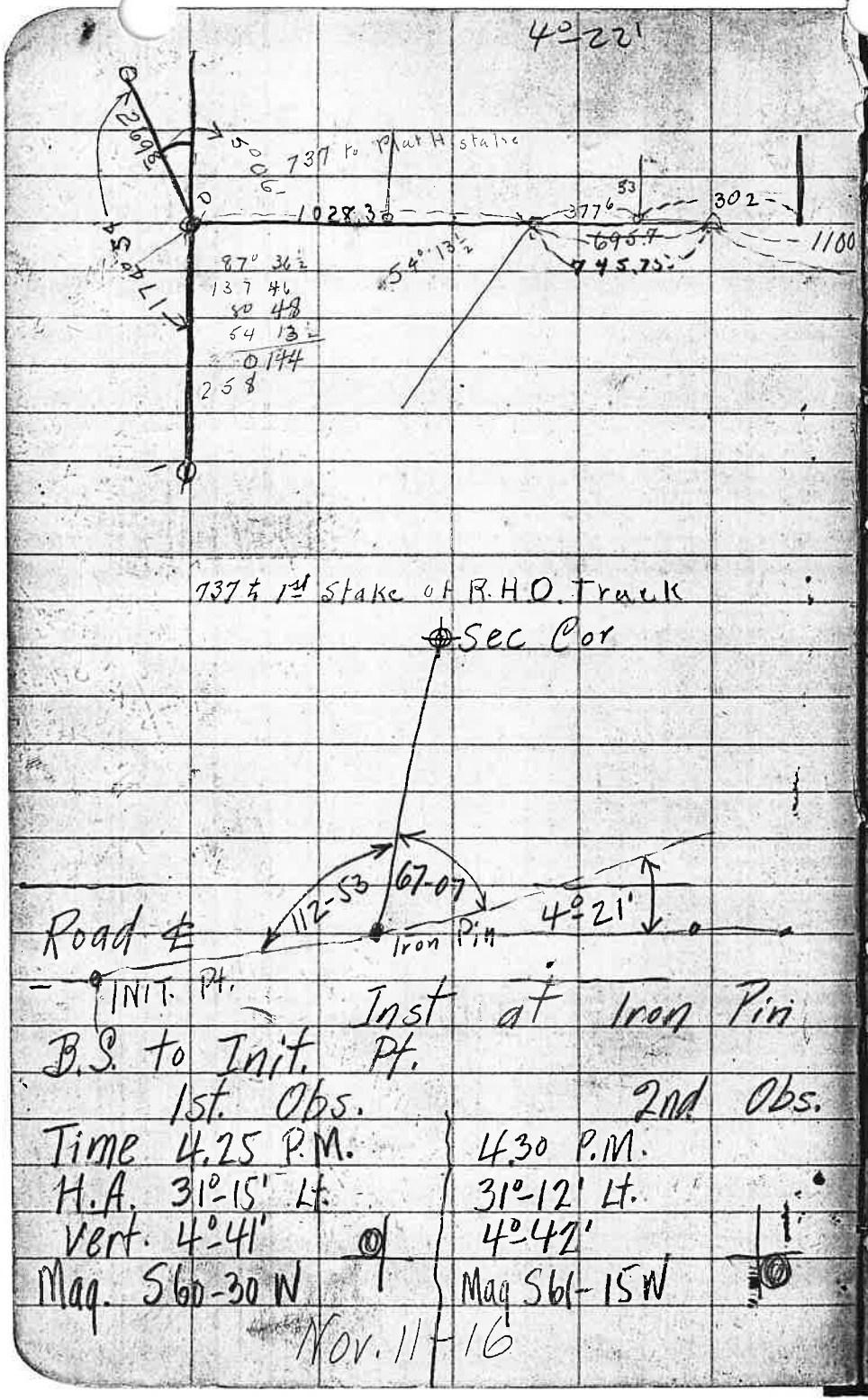
Pt 1 = hub

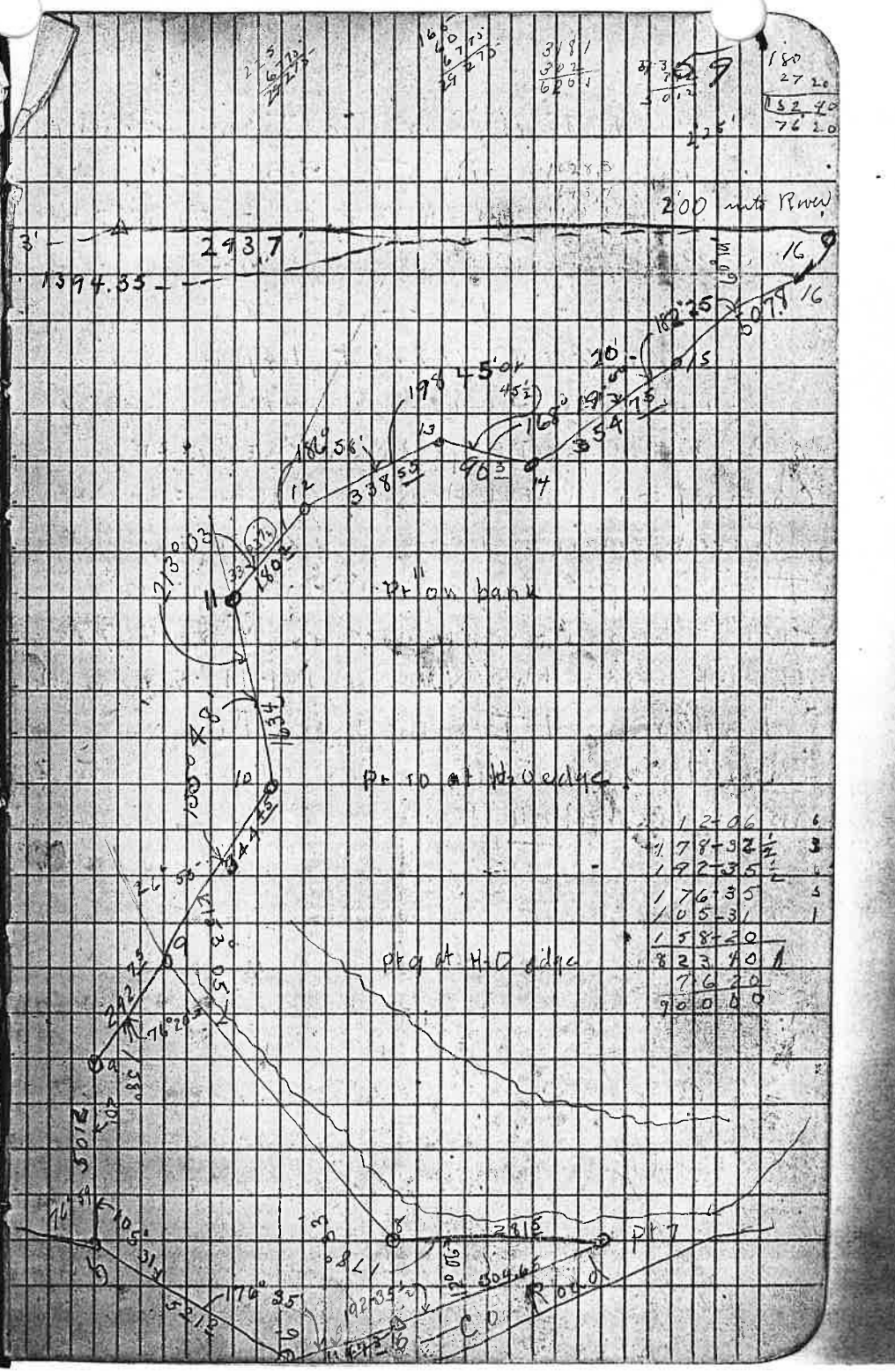
Pt 2 = Lot Cor

Pt 3 = hub set because we could not see pt 3 is S.E Cor Agee lot

Pt a.




4°-22'
737 ft to Pt at H stake
1028.3
3776
302
695.7
1100
745.75
87° 36½
137 46
80 48
54 13
0144
258
737 ft 1st stake of R.H.O. Truck
Sec Cor
112-53
67-07
4°-21'
Road ℄
Iron Pin
INIT. Pt.
Inst at Iron Pin
B.S. to Init. Pt.
1st. Obs.
2nd Obs.
Time 4.25 P.M.
4.30 P.M.
H.A. 31°-15' Lt.
31°-12' Lt.
Vert. 4°-41'
4°-42'
Mag. S60-30 W
Mag S61-15W
Nov. 11-16


200 mtr Rnge
2433.7
1394.35
Pt on bank
Pt 10 at H.O edge
pt 9 at H.O edge
Pt 7
Road ℄

60

Survey To determine The beginning & Ending Points of Bridges & Smith Road Petition in Tp 25 S R 6 W

Began at S.W. Cor E Stephen D.L.C. in T. 25 R 6 W

Thence East 1709 ft

" N 6°00' W 574.7 " to beg pt, Which is Witnessed as follows

W. Portal of Wagon Bridge brs. N 78½ E 50.1 ft

Chimney on School House N 42° 00 E

Church spire brs. S 88 00 E

Thence up Calapooia Creek on either side to a point which bears N 5° W 1773 ft dist. from the N.W. Cor Lot 11 B 8 Sutherlin Orchard Tracts Plat M.

Said point is at intersect. of Herstine and Coles Valley Road

East 1709 of Petition

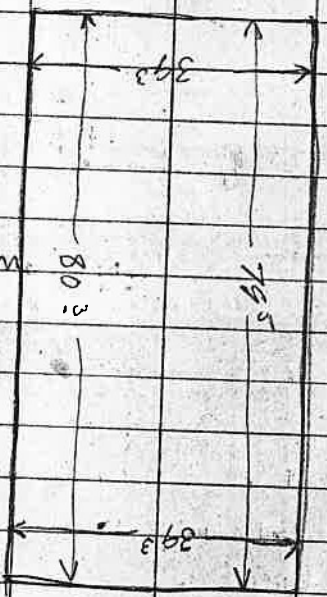
Glen McDonald Ch.
M B Gemmond
Octo 31st 1916

Measurements of Douglas Co. H_2O + Light Reservoir North Nov 1916

Germond
Percy Webb

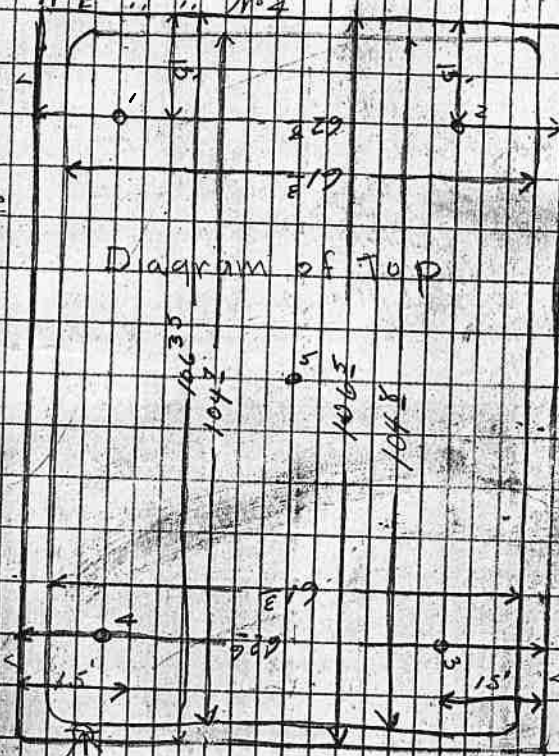
.63	260.63	200.00	Elev of Top assumed
	11.00	189.63	On bot. S E Cor Pt No 1
	11.20	189.43	" " S W " Pt No 2
	10.81	189.82	" " N W " Pt No 3
	10.80	189.83	" " N E " " No 4
	$10.99	189.64	Cen on "

Diagram of Bottom



0.54	200.04	On top of Concrete N.W. Cor
0.92	199.71	" " " S W "
0.58	200.05	" " " S E "
0.72	199.91	" " " N E "

Diagram of Top



Field Notes of Survey For Wm Langlois Tp 30-6W Sec 24

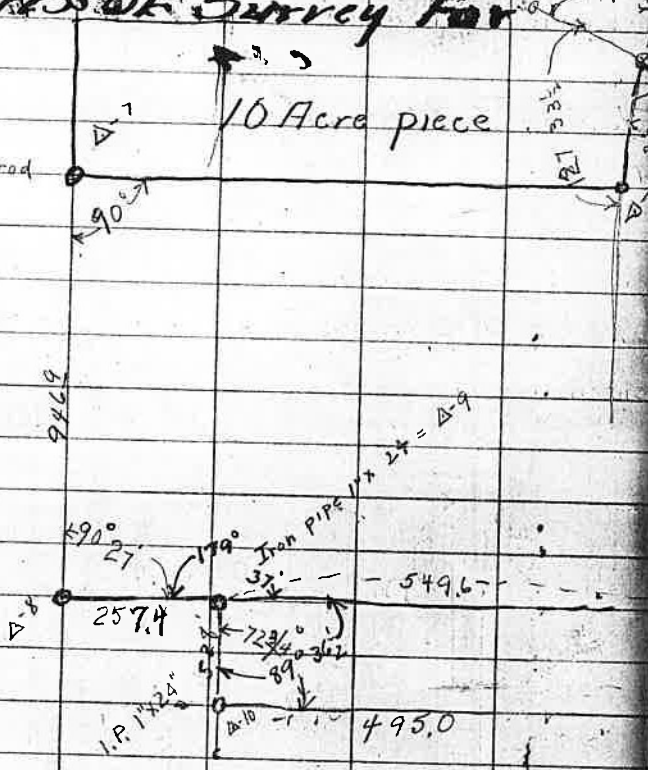
62

2° 50 PM
Nov 9" 16
V.A = 18° 36'
AA = 47 06
Ncl = 42° 30 W

3° PM
Nov 9" 16
V.A = 18° 05
AA = 46° 12"

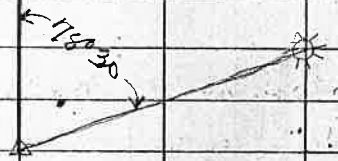
72 45
89 30½
16 45
174 30
19.2 27½
73 56
716 290

180 57
104 34½
179 03
115 05
179 46
90 12
90 27
894 184
193 17
1077 201
179 1807
1256 2238



Began Survey at S.W. Cor. of Mel Ryan's Land. Which is an Iron rod. thence ... Ft along line bet Ryan & Langlois to Iron pipe cor. of Ryans & Quine land from transit & turned 14' Lt. 932.15' to Iron axle on to Co Road. Then transit & turn 64° 55' Lt. 202' Ft along Co. Road. Then transit & turn 13° 17' Rt. 518' ft to Iron pipe and NE Cor of 10 A. Survey for Wells & Langlois Set on N.E. Cor. of Tract or Δ-4 BS on Δ-3 Turn Lt 180° 57' to N line of 10 A. Survey. Also called Road Line. Δ at Δ-4 FS on along road line of 10 A Tract turn Lt 127° 33½' to East line of 10 A tract. Then I moved to S.W. Cor. of 10 acre tract or Δ-7. Thence cont. W. line 10 A. piece Southerly 946.9 ft to Δ-8. then BS on Δ-7 turn Rt 90° 27' 2577.4 ft to Δ-9 Then at Δ-9 BS on Δ-8 turn 179° 37' 549.6 ft to Δ-0. Also turn Lt 90° 46½' 528' to Δ-10 At Δ-10 BS on Δ-9 turn Rt 72° 45' 495.0 ft. to Δ-11. Set at Δ-11 BS on Δ-10 transit & Turn 38° 15' Lt 234.96 ft to Δ-12 Set at Δ-12 BS on Δ-11 transit & turn 35° 30' Lt 90.42 ft to Δ-13. Set on Δ-13 BS on Δ-12 transit & Turn 12° 27½' Rt 109.8 ft to Δ-14. Set on Δ-14 FS on Δ-13 turn 73° 56' 109.7 ft to Δ-00

797
926
864
100
1076 0



2422 + 75.1

125
.9
112.5

Sept 1st 8° 15'
11 25
8-07.5

Lat = 43° 43' 4075
Δ/Hz 23 07 2129
D = 8 07.5 1853

S 78° 43 W
7 30
71 13 W

V Curve = 23° 09
H " = 78 30
4h 37' PM
Sept 1
Need S 77 30 W

L = 43-43 3951
Δ = 22° 27' 21 1
D = 8 08½ 1840

S 79 24
S 79 10
600 14 W

V = 22° 29'
H = 79 10
4h 40 PM
Sept 1

Brinq of R.R. Track is N 38° 08 E
Line Crosses RR Track at Sta 2425+80

N. Int Sec. 23+24.
8.52 to bank of River
A Spruce 16" bus N 63/4 E 4.50 Chs
A Birch 4" " N 1° W 4.19 Chs

No. Cor. Secs 20 & 21 T 29 R 5

34.00 Left bank of River

38.00 Rt " " "

39.00 Road

40. Post B W. Oak 10" S 28° W 125
" 8" N 37° E 168

S. 89° 30' W Cor Secs 20 & 29 29-5

40.10 Post W Oak 14" dia N 33 E 47
" 24" " S 70 E 17

East 177' of Pine 30" NE Trees
Pine 24" N45E 84 lks

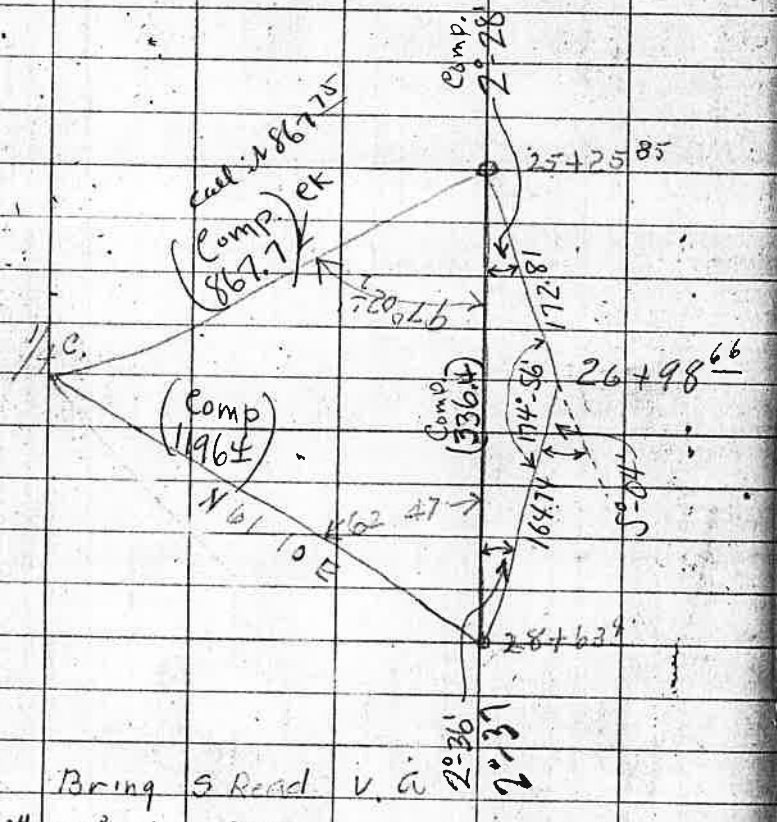
66
304
304
574

29.25 to Lt Banks of Smith River
a Spruce 8" S 1° W 58 lks
" " 8 S 9° E 50 "

44.36 Set M.C. post
a Spruce 15" dia S 80° W 54 lks
a Fir 15 " N 2° E 104 "

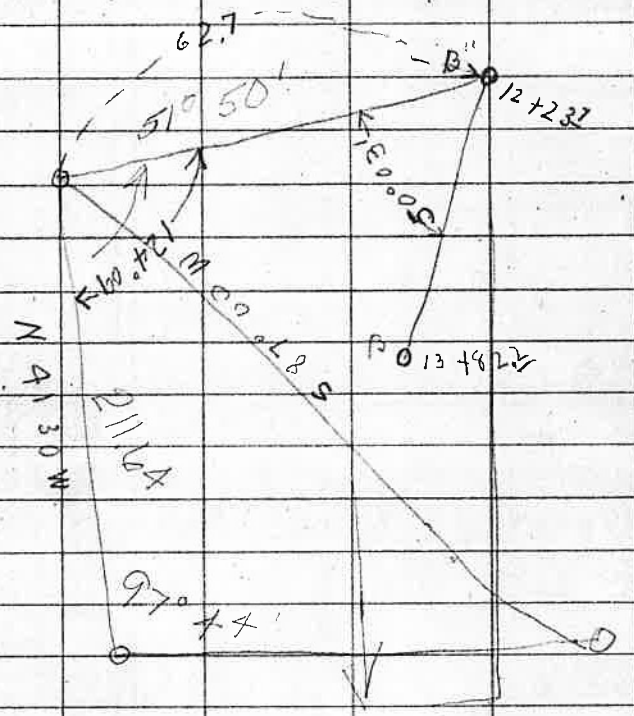
12.5 x 168 6
66
25.0
330
825.0 1008
1008
1108.8

Myrtle Creek Hydro Elec.



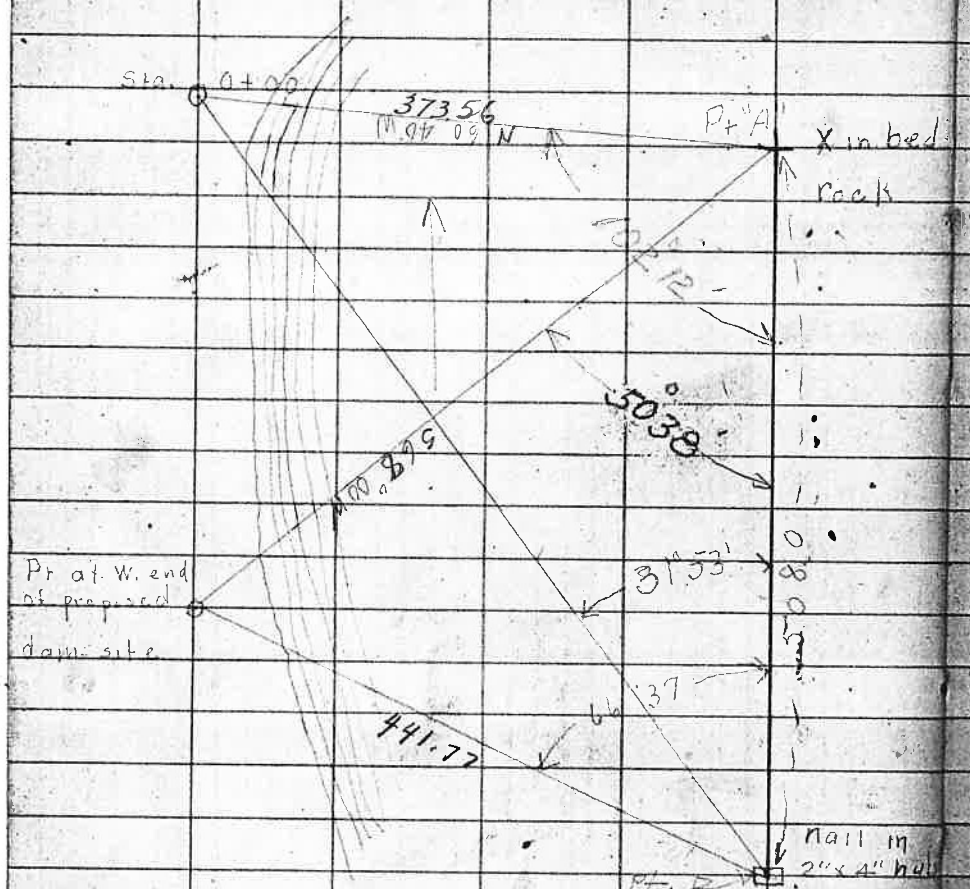
	Bring	S Read	V. Ø
Δ at 28+63.4	N 51°30'E	3.05	
	N 73 30 E	4.1	
	S 64 45 E	2.55	
	10/10	32/36	30/96

Dam near Drakes



TRIANGLE and LEVEL

Dam near Berdine's



2.23	587.42		585.09
		6.15	581.27
		5.51	581.91
		3.37	584.05
		2.76	584.66
		6.94	580.48

Notes Myrtle Creek Hydro Survey

M. B. Germanuck AM
W. W. Smith AM
March 1st 1916
Very Snowy & Cold

Elev of P.T. "A" or bedrock cropping
" height of water opposite Pt B
" Center end Excel Bar
" Upper " "
" Surface water Pt "A"

Levels to check our own Work

7.316	593.92		586.56
12.17	597.37	8.72	585.20
9.41	597.00	9.78	587.59
		1.29	595.71
		12.64	584.96

Feb 29 "16
Very Cold T Snow
Check within .13 feet

Levels to check Pacific H.W. BM

0.34	619.78		619.44
1.97	604.53	12.32	607.46
		4.67	604.76

Elev of P. H. W. S. B. M.

Error found to be 20.06 feet

	591.13		
12.49	603.11	0.51	590.62
11.56	614.40	1.27	602.84
8.28	621.33	1.36	613.40
32.28		6.29	615.04
8.37		8.37	
23.91			

752

63497

H_2O Sur.				3.58.	
B.M	3.2	584.85		3.22	581.63
H_2O Sur.				5.2	
0+00				4.4	
+25				4.0	
+35				6.9	
0+40				4.0	
+50				3.7	
+80				4.7	
1+00				4.1	
+05.88				3.00	
1+15				4.9	
+50				1.0	
1+83.7				2.59	
T.P	5.65	579.28	1.42		583.43
2+00				6.4	
+41.32				5.49	
+50				6.4	
3+00				8.8	
+50				5.9	
+65				4.1	

Elev on nail in alder tree at H_2O surface on Feb 29 1916 10 A.M. Point at head of Rapids 480 ft above pt 0+00 preliminary Survey

Elev of B.M Set on alder tree 30' above sta 0+00

H_2O surface at 0+00 on ground

		599.09			
3+50				5.5	
4+00				8.5	
+50				8.3	
5+00				4.6	
+21.68				2.69	
+50				7.6	
6+00				4.7	
+50				5.6	
A +51.45				5.70	
7+00				6.00	
+50				2.2	
7+90.65				2.37	
8+00				1.50	
+50				5.9	
9				6.4	
T.P.	4.01	589.10	3.99	5.09	
9+29				4.38	
+50				6.3	
10+00				7.3	
+50				3.2	
76.32				4.32	
11+00				4.8	
+50				8.5	
12+00				3.5	
+50				3.8	
13+00				7.8	

90		589.10			
		598.10			
13 + 50				6,5	
58 45				5,64	
14				3.7	
+ 50				5.7	
T.P	6.20	598.85	3.45		595.65
15				7.1	
+ 23 27				6.99	
+ 50				7.0	
16				7.9	
+ 50				4.8	
+ 73				5.2	
17				7.4	
+ 50				7.1	
18				2.9	
+ 25 5				5.98	
+ 50				6.4	
19			5.44	6.1	
T.P.	7.41	593.82	5.44		588.41
+ 50				6.7	
19 + 58 93				8.67	
20				8.0	
+ 50				5.2	
21				7.3	
+ 50				8.5	
21 + 80 97				10.17	
22				6.4	

593.82

22 + 50

23 + 37 85 + 50

24 + 50

T.P. 6.38 592.91 5.74 587.17

25

25 + 25

26 + 50

27

+ 50

28

28 + 63

79
9.6
10.3
10.0
10.7

589.29
12.04
577.25
.7
576.95
6.97
569.98

181 90
76 59
105 31
102 30
3 40
76
20 40
224 0

18

DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder stake for any width roadway. Slope 1½ to 1.

If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column at top row. The number at top of column is the difference in elevation between side stake and slope stake. If ground is not level estimate the difference in elevation between side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or subtract from fill. Set up rod at this height and line of sight should fall on target. If it does not make the slight adjustment necessary.

TABLE No. 9.

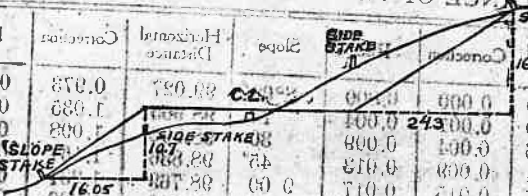
To find Tangent and External for curve at any other degree, divide by degree of curve and add corrections found in column of corrections.

Degree of curve with a given I may be found by dividing tangent, (or external) opposite I, by given tangent (or external).

The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

IMPROVED TABLES AND INFORMATION

178 32'



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1½ TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0 00	0 15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1 65	1 80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3 45	3.60	3 75	3.90	4.05	4.20	4.35	2
3	4.50	4 65	4.80	4.95	5.10	5 25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7 50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9 00	9 15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10 65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13 50	13.65	13 80	13 95	14.10	14.25	14.40	14 55	14.70	14.85	9
10	15.00	15.15	15 30	15 45	15.60	15.75	15.90	16.05	16.20	16 35	10
11	16 50	16 65	16 80	16.95	17 10	17.25	17.40	17.55	17.70	17.85	11
12	18 00	18.15	18.30	18 45	18.60	18 75	18.90	19.05	19.20	19 35	12
13	19 50	19 65	19.80	19.95	20.10	20.25	20 40	20 55	20.70	20.85	13
14	21.00	21 15	21.30	21.45	21 60	21.75	21.90	22 05	22 20	22 35	14
15	22 50	22.65	22 80	22 95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24 15	24 30	24 45	24.60	24.75	24 90	25.05	25.20	25.35	16
17	25.50	25 65	25.80	25 95	26.10	26 25	26 40	26.55	26.70	26.85	17
18	27.00	27 15	27.30	27 45	27.60	27.75	27.90	28.05	28 20	28.35	18
19	28 50	28.65	28 80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30 00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31 50	31 65	31.80	31.95	32 10	32 25	32.40	32.55	32 70	32 85	21
22	33 00	33 15	33 30	33 45	33.60	33 75	33.90	34.05	34.20	34.35	22
23	34 50	34 65	34.80	34.95	35.10	35 25	35 40	35.55	35.70	35 85	23
24	36.00	36 15	36.30	36 45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37 80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39 00	39 15	39.30	39 45	39 60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40 65	40 80	40.95	41.10	41.25	41 40	41.55	41.70	41.85	27
28	42 00	42 15	42.30	42.45	42.60	42 75	42.90	43.05	43.20	43.35	28
29	43 50	43 65	43.80	43 95	44.10	44 25	44 40	44.55	44.70	44 85	29
30	45 00	45 15	45.30	45 45	45.60	45.75	45.90	46.05	46 20	46.35	30
31	46.50	46.65	46.80	46 95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48 00	48.15	48.30	48 45	48.60	48 75	48.90	49.05	49 20	49.35	32
33	49.50	49 65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51 00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52 50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54 00	54.15	54.30	54 45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55 65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57 45	57.60	57.75	57.90	58.05	58.20	58 35	38
39	58.50	58.65	58 80	58.95	59.10	59 25	59.40	59.55	59.70	59.85	39
40	60 00	60 15	60 30	60 45	60 60	60.75	60 90	61.05	61 20	61.35	40
41	61.50	61.65	61.80	61 95	62 10	62 25	62.40	62.55	62.70	62.85	41
42	63 00	63.15	63.30	63 45	63 60	63 75	63 90	64 05	64 20	64.35	42
43	64.50	64 65	64 80	64.95	65.10	65 25	65 40	65.55	65.70	65.85	43
44	66 00	66 15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67 50	67 65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69 00	69 15	69 30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70 80	70.95	71.10	71.25	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73 35	48
49	73 50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

Computed by L. Leland Locke.

561 583

V = 36° 20'

A = 36° 07' 2"

Need = S 64° W

3° 25 R.M.

V = 19° 20

A = 16° 24

Need = S 83 30 W

5 h 00 PM