#40

40 808

DIETZGEN

TRADE MARK

ENGINEERS'

FIELD BOOK

No. 404

808

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be 30.6 + (20—16) ÷ 2 or 2 ft. added to 30.6 = 32.6. For slopes of 1 on 1½ see inside of back cover.

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Survey for the Naf Irrigation Co. Naf Utah.

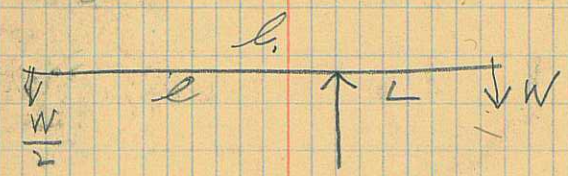
May 1916

Eugene Schaub
Logan Utah

Whole book devoted to this survey

Defendant.

Irvin Campbell, W.R. Kempton, Lorine Kempton, A. E. Hartaugh, and Sophia J. Ryan.



$l_1 = l + L \qquad l_1 - l = L$

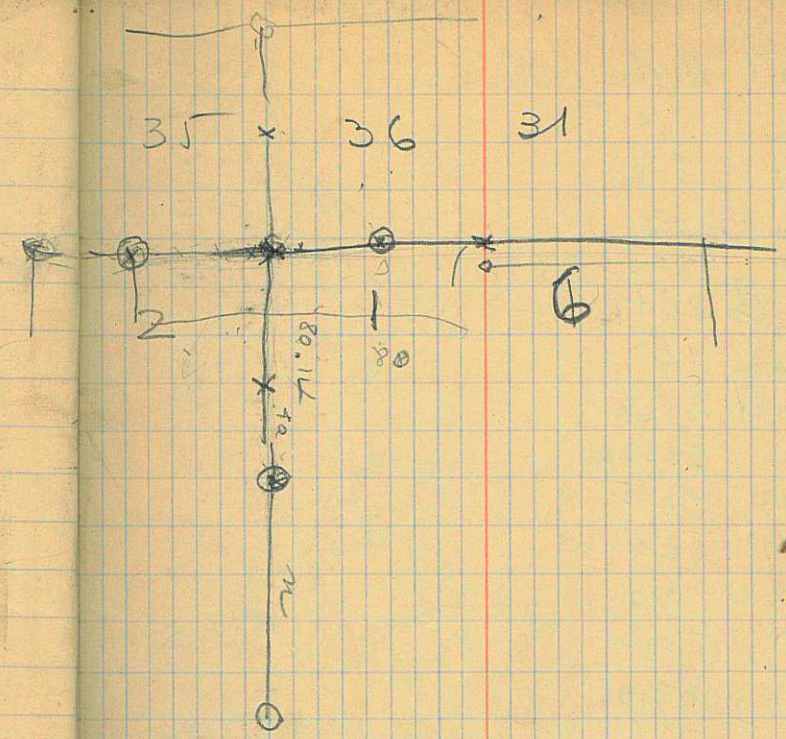
$\frac{l W}{W 2} = L \cancel{W}$

$2(l_1 - l) = \frac{l \cancel{W}}{\cancel{W} 2} = l$

$2 l_1 - 2l = l$

$\frac{2 l_1}{3} = l + 2l = 3l$

$3 \overline{)23.25}$
7.75
15.50


35
36
31
2
1
6
80.14
80
40
n

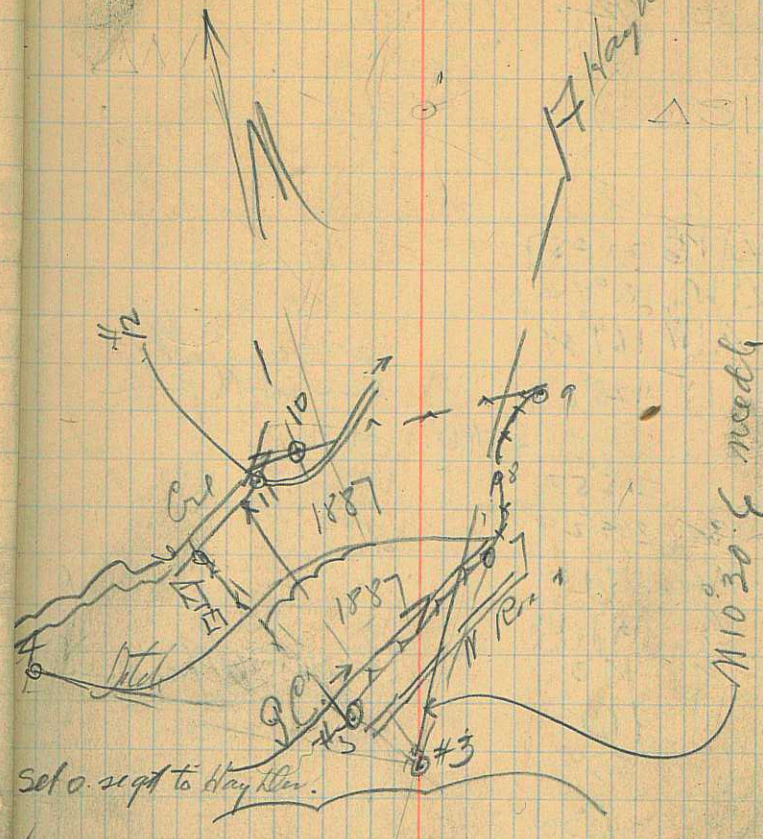
Stadia

1 Pt Angle Needle Bar 1 1

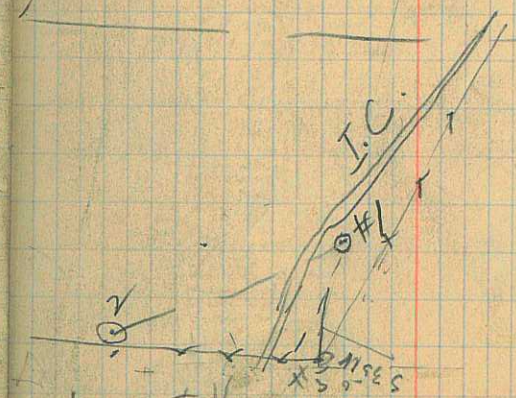
{Catch River ditch
12 343°53' N5°W
△ 1 20°37'
△ Sch 13°
△ 1 338°50'
11 333°30'
10 347°25'
9 5°30'
8 1°30
7 5°42'
6 307°10'
5 284°16' Scor. S. Creek track
4 48°16' intake Kempton ditch

#3 =

v 312°06 5 — 1075
1E Ry Rpile 22°56
Sch 1 124° v
1 —



Set o. sight to Hay Ker.

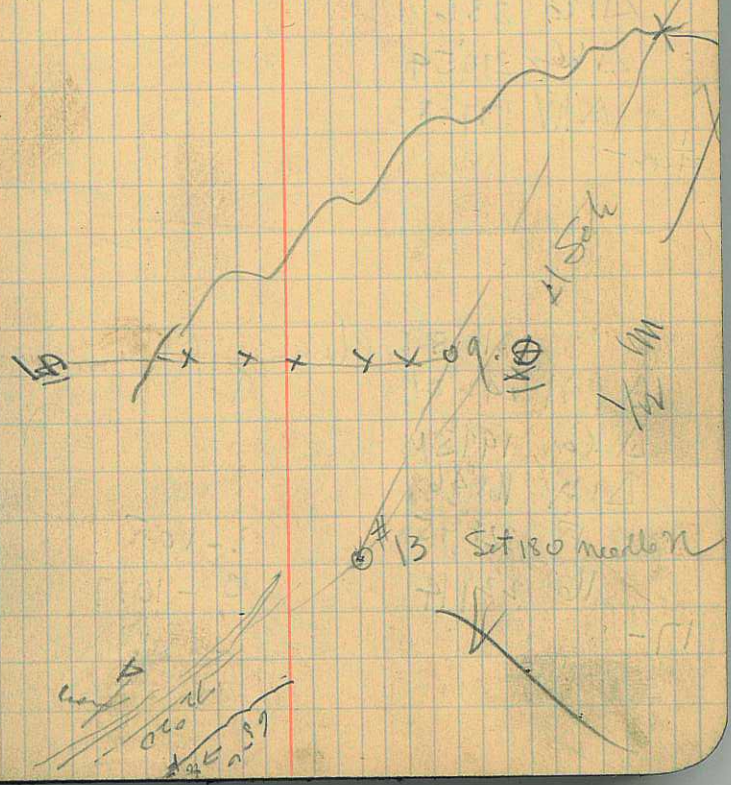


Set o. to Hay = (Set o sight to Ah Ker)

1 – Pt Fz. Middle

△ 1	214°57	
△ Ho.	186°44	
△ 1	167°31	
15	128°09	in line with fence
14		Set 180°. med n.
	215°58	
△ Sch	204°29	
△ Ker.	188°16	
9	197°06	
12	140°	Rice Watch. 6 cfs run
11	113	
6	83°	
8	60°30	
4	62°45	
7	16°53	
5	38°51	
15	164°54	
13 –		

△ 1 + 699
+ 118
– 334



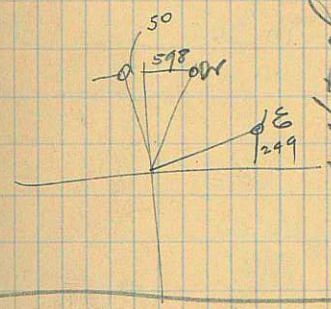
180 (P)
Δ1E 256°
Δ1Cor 210°54
Δ1W 177°08
¼ cor –

210°57 Chimney of S. Ryan's house
Δ1 ~~W~~ E 242°21
Δ1Cor 199°50
Δ1W 168°46'
18 224°45
16 229°14
17 –

3 – 10.8
3 – 10.7

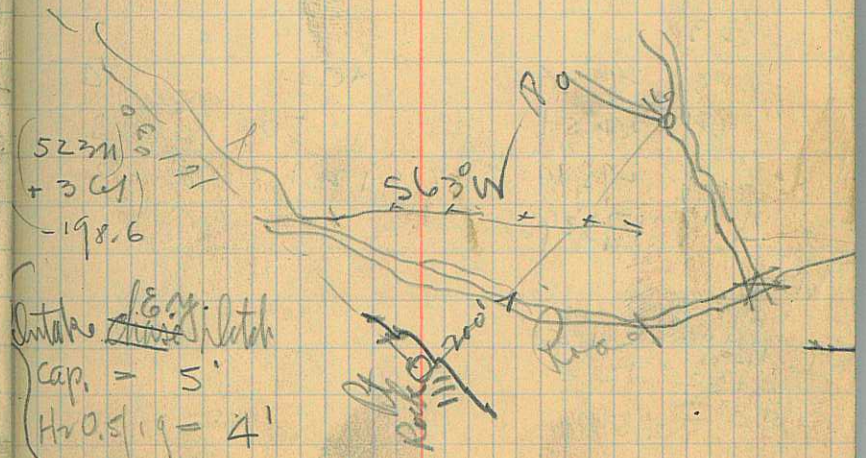
8

	1.6
	2.5
	8 0
3	2



night along Hudson ++ N

Δ

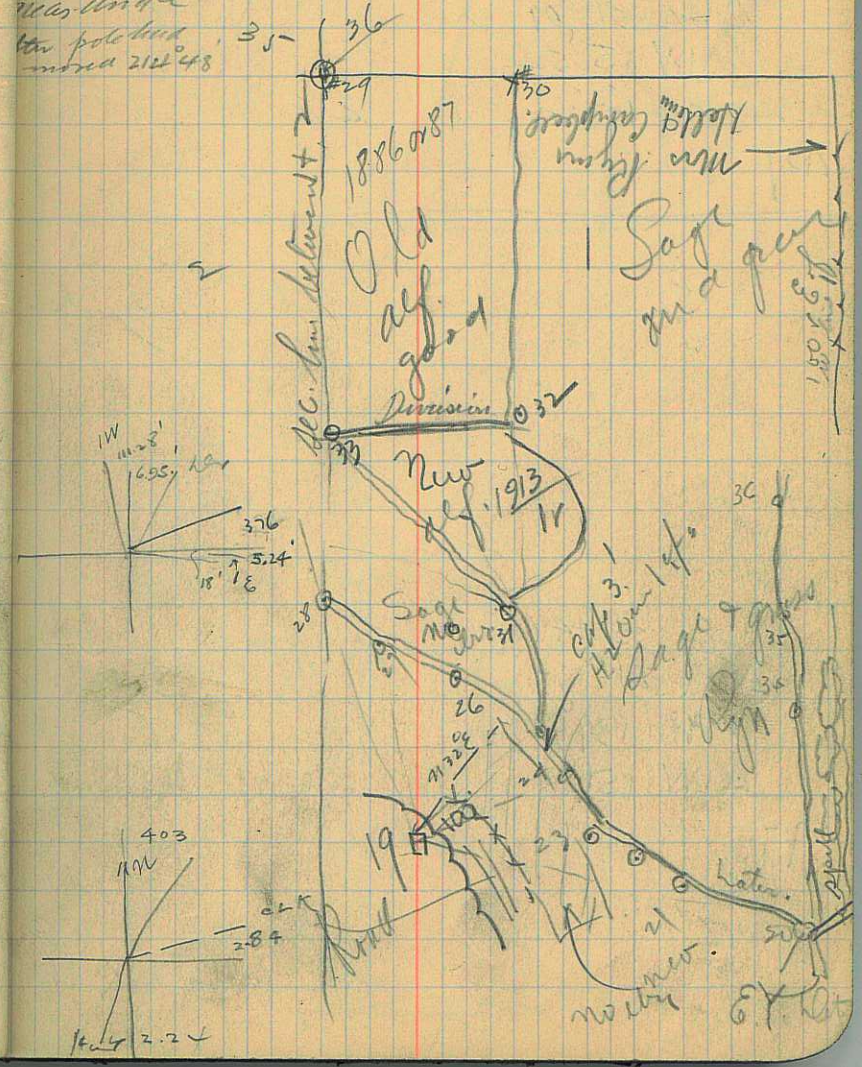


Intake ~~Chute~~ E.Y. Sketch
Cap. = 5'
Hr 0.5/19 = 4'

T	Ay		U	Stadia C	L
36	238°10		12.10		3.00
35	249°53		11.00		3.00
34	263°03		10.4		3.0
Δ1E	270°18	✓			
Δ Dr	214°49				
33	169°15			10.85	5.0
32	185°35		10.65	5.00	
	249°24	Ryn Chimney			
31	190°46		10.75		4
30	182°40				
29	173°42				
28	161°35		11.00		4
27	172°23		10.75		5
26	188°36		9.1		4
25	221		10.80		7
24	266°45		10.75		7
23	288°		9.9		5
22	292°44		10.1		4
21	293°51		10.50		3
20	295°19'	5/23/16	12.1	—	3.0
Δ1W	173°39	✓			
T19 –		5/19/16			
Δ1B13	201°58				
1/4 cir	12°38				
1+2					
Δ1CLK	254°08				

19 –

2696 0
2492 5
20 36



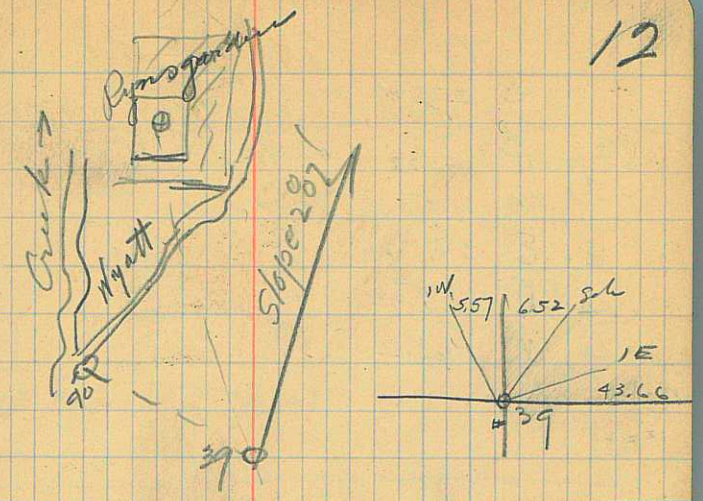
Stadia

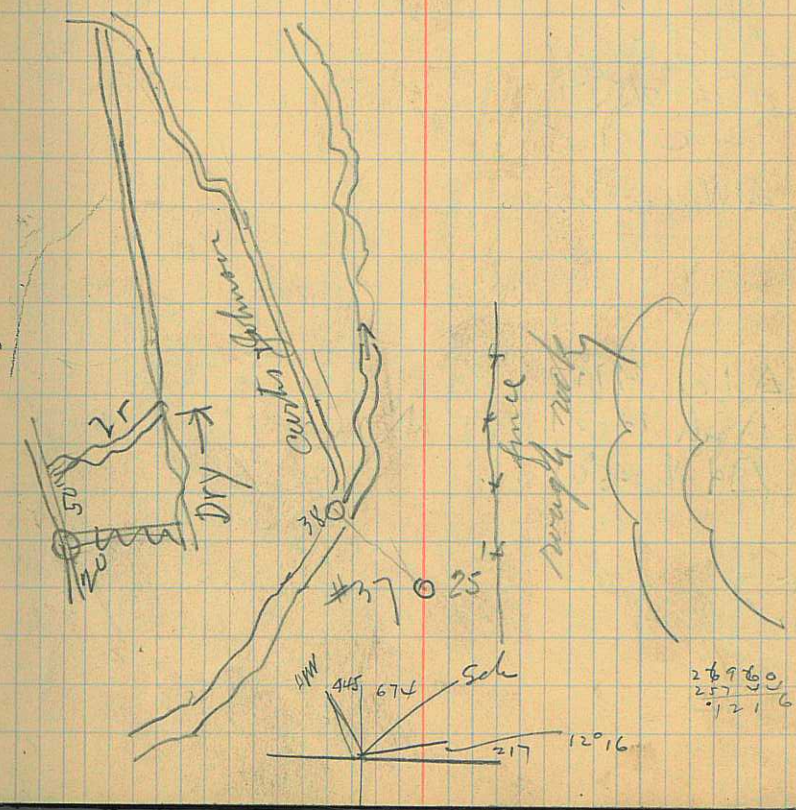
			L	C	J
Rucklety	302°		5		12
	186°42	Ryn's Chimney			
5	18°32				
Δ1E	267°30				
Δ Sch	213°07'				
Δ1W	150°52				
40	107°16		4		6.12

A39

Δ1E 257°44
ΔSch 214°
38 139°
Δ1W 156°

37-





BB = Barron Bone

	Az			
48	357°49	car port	5.	10.25
46	41°01	to car port on creek		
45	43°28	creek	6	11.06
44	74°04	Creek	7	10.8
Δ1E	349°22'			
ΔBB	189°02			
Δ1W	402°14			

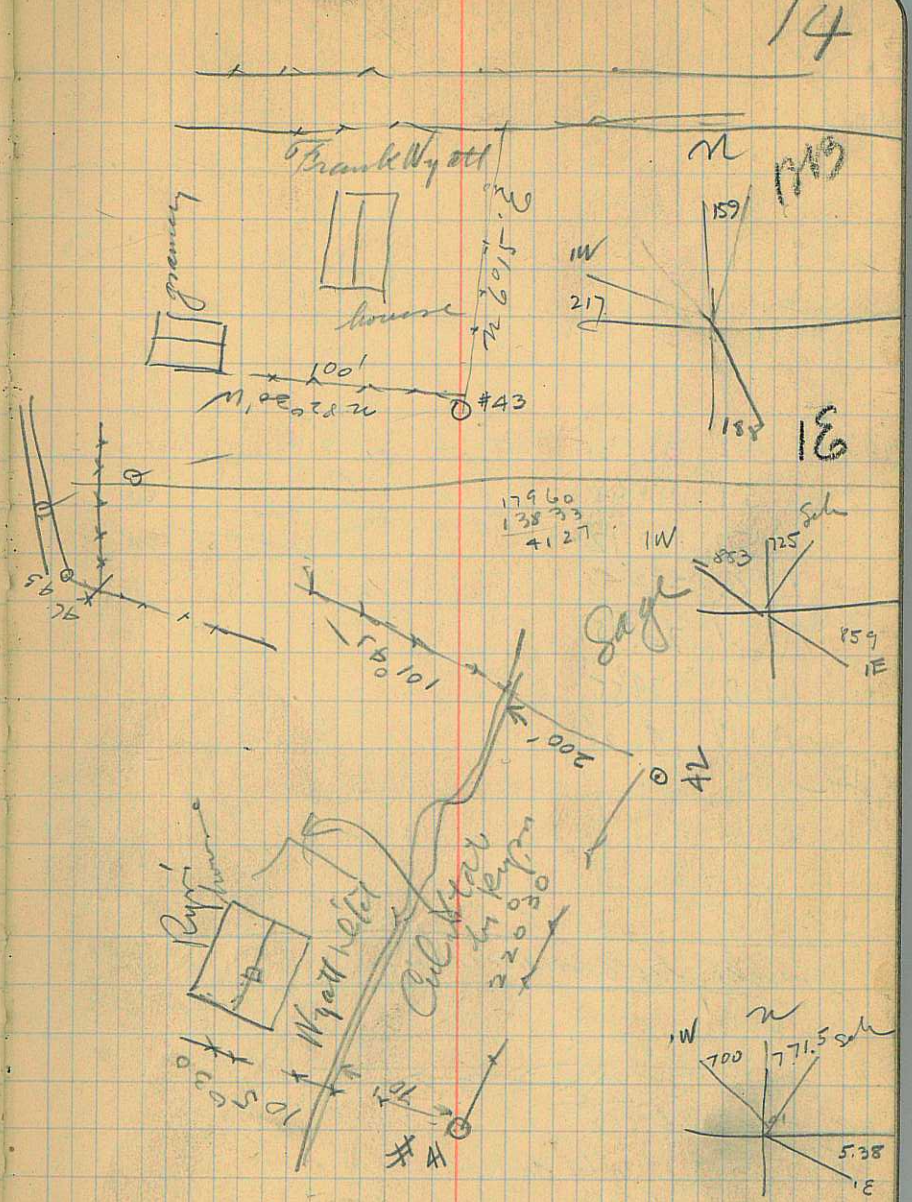
43'–

Δ1E	310°39
ΔSch	215°57
fence	101°45
Δ1W	138°33

42–

Δ1E	297°17
ΔSch	217°39
Δ1W	145°01

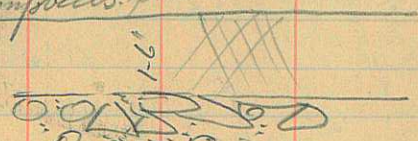
41–



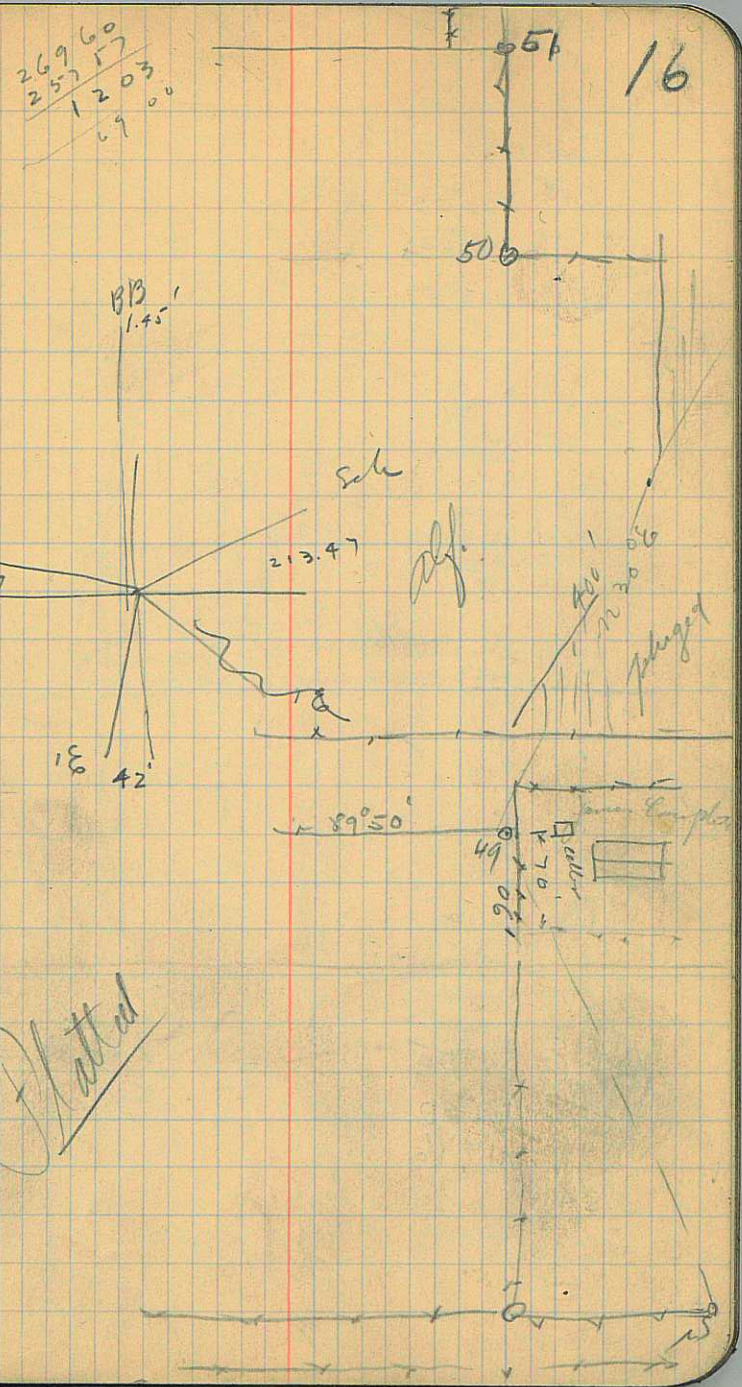
52 325°25' to SE cor. g. Campbell's barn
51 180°08'
50 180°12'
Δ1E 2°24'
Δ Sch ~~355~~ 257°57'
Δ1BB 179°55'
Δ1W 96°36

49 —

James Campbell's potato cellar.



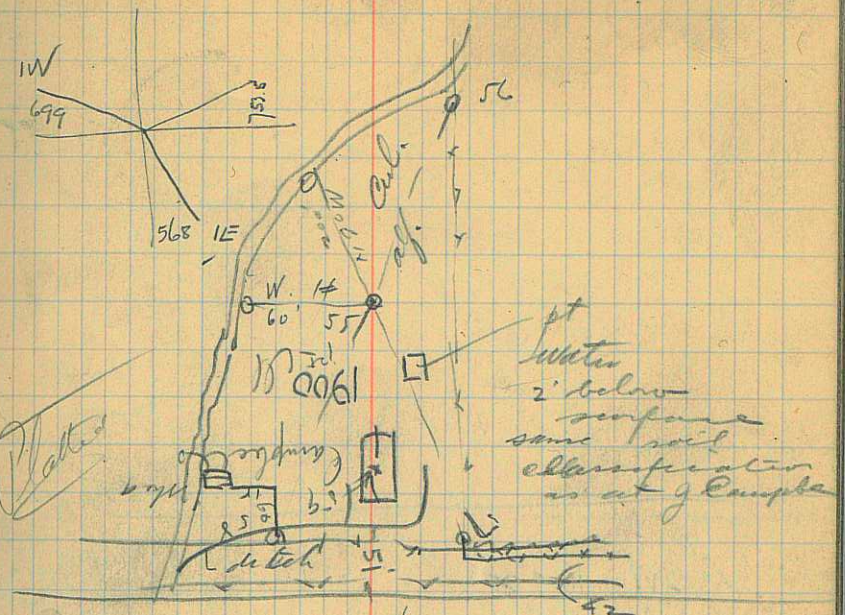
3 to 6" cobbles
filled in with a
loose textured
soil or sand

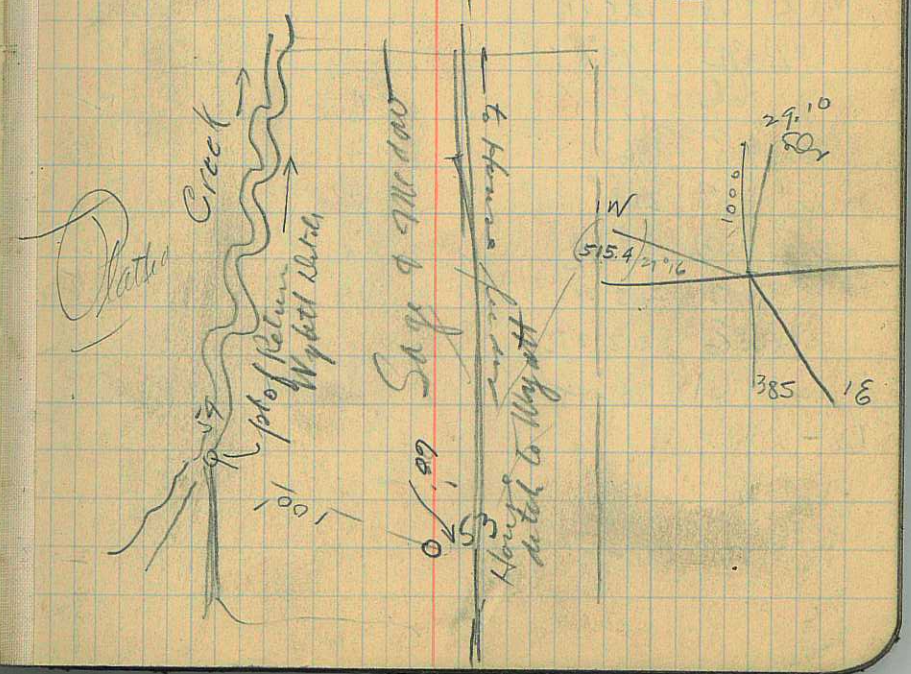


Plotted

59	355°51'		
58	8°55'	7	10.58
57	341°07'	7	10.65
Δ Sol	233		
∠1E	330°23'		
56	196°04'	7	10.75
∠1W	124°57'		

55 –





Δ 1 E	338°55'
Δ Ver	181°40'
Δ 1W	167°16'

– 54

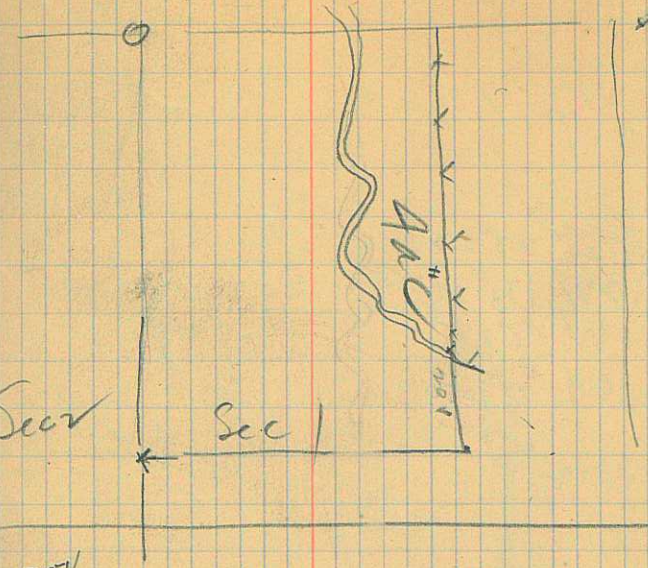
53 –

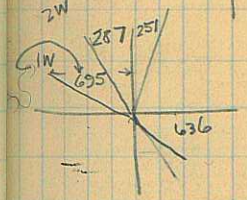
55-

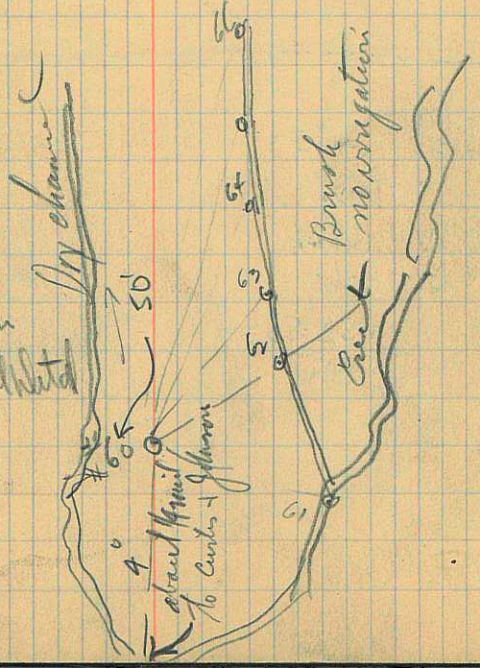
Δ 2W	164°00		
Δ 1W	145°11		
ΔBB	199°05'		
66	193°35'	6	12
65	196°	7	11.0
64	203°	8	11.0
63	223°30'	8	10.25
62	265°30'	8	9.75
Δ 1E	302°27		
61	302°14	6	8.25

60-

53-



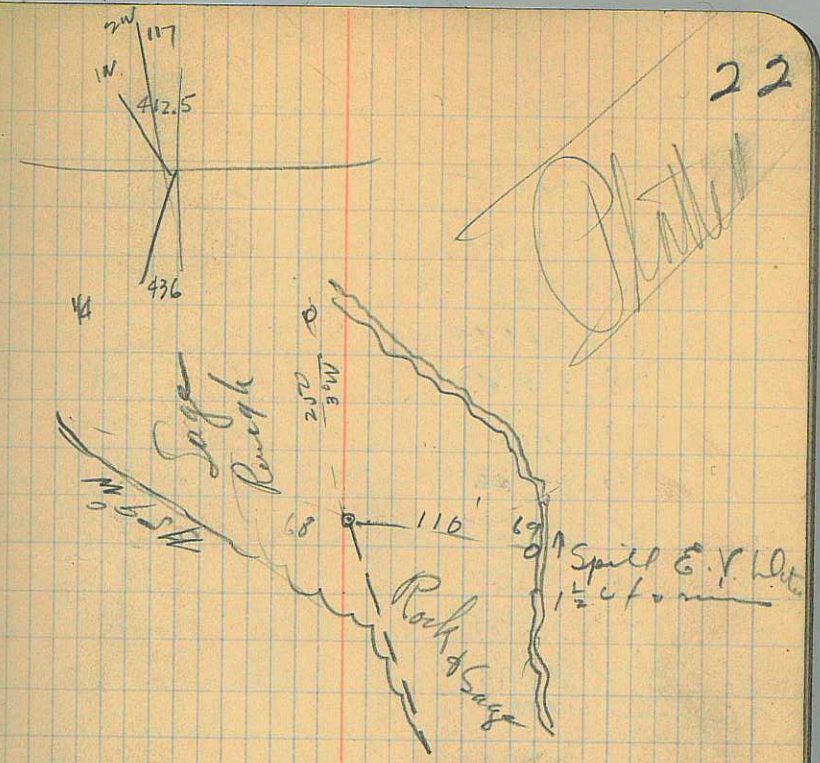




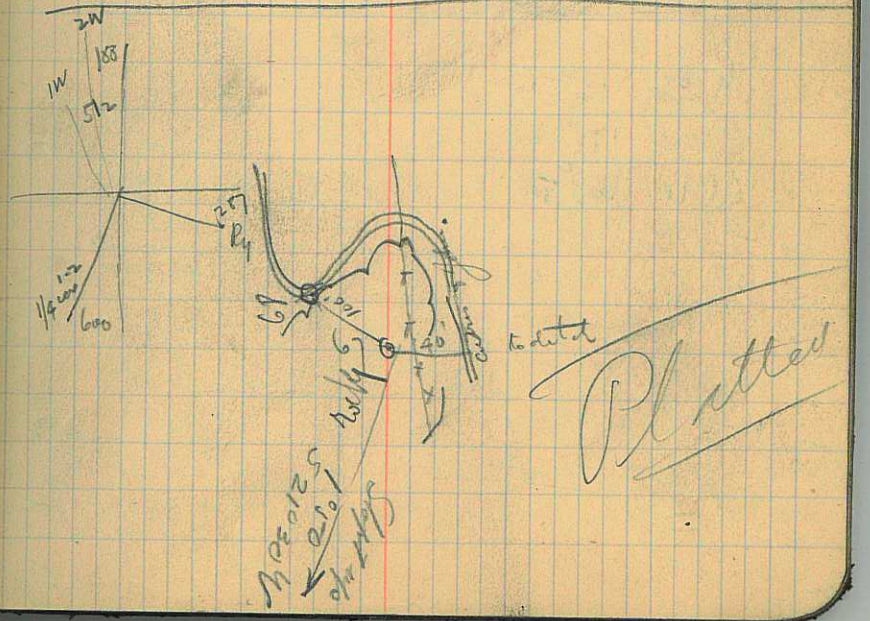
55 1 + ½ cor 23°33
Δ 2W 173°21
Δ 1W 157°35
69 29°50
68 —

1/4 bet 1 + 2 30°57
143°
Δ 2W 169°21'
Mr Ryan C 286
Δ 1W 152°53
67 —

53



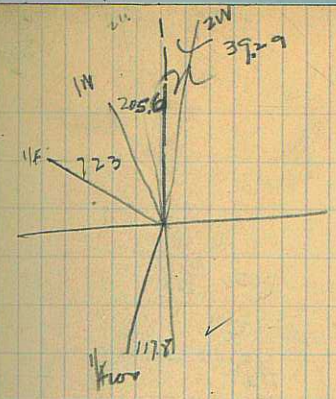
Plotted



Plotted

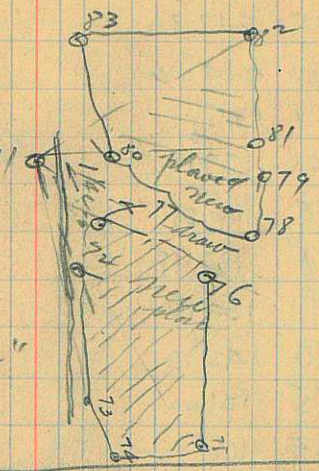
	1/4 cor 1-2	6°93			
	∠1 2W	182°15			
	∠1 1W	168°23			
	83	229°11	5		7
	82	247°35	3		6
	81	296°20 (150)			
	80	331 (200)			
5	79	324°44	6		11
	78	371°43	6		10.80
	77	341°68	6		10
	76	338°03	4		10.40
	75	349°30		5	10.25
	74	355°04		5	10.4
	73	352°25		7	10.5
	72	351°11	4		6.2
71 –	approx 1/4 cor	144°07			

	1/4 cor	12°56			
	∠2W	178°17			
	∠1W	163°54			
70 –					

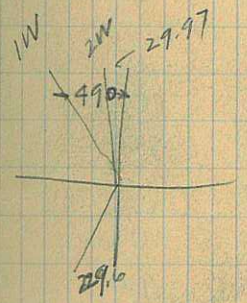


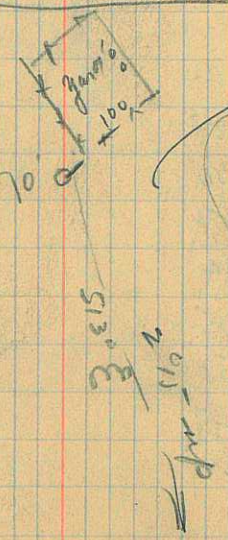
17960
168 23
11 37

alf



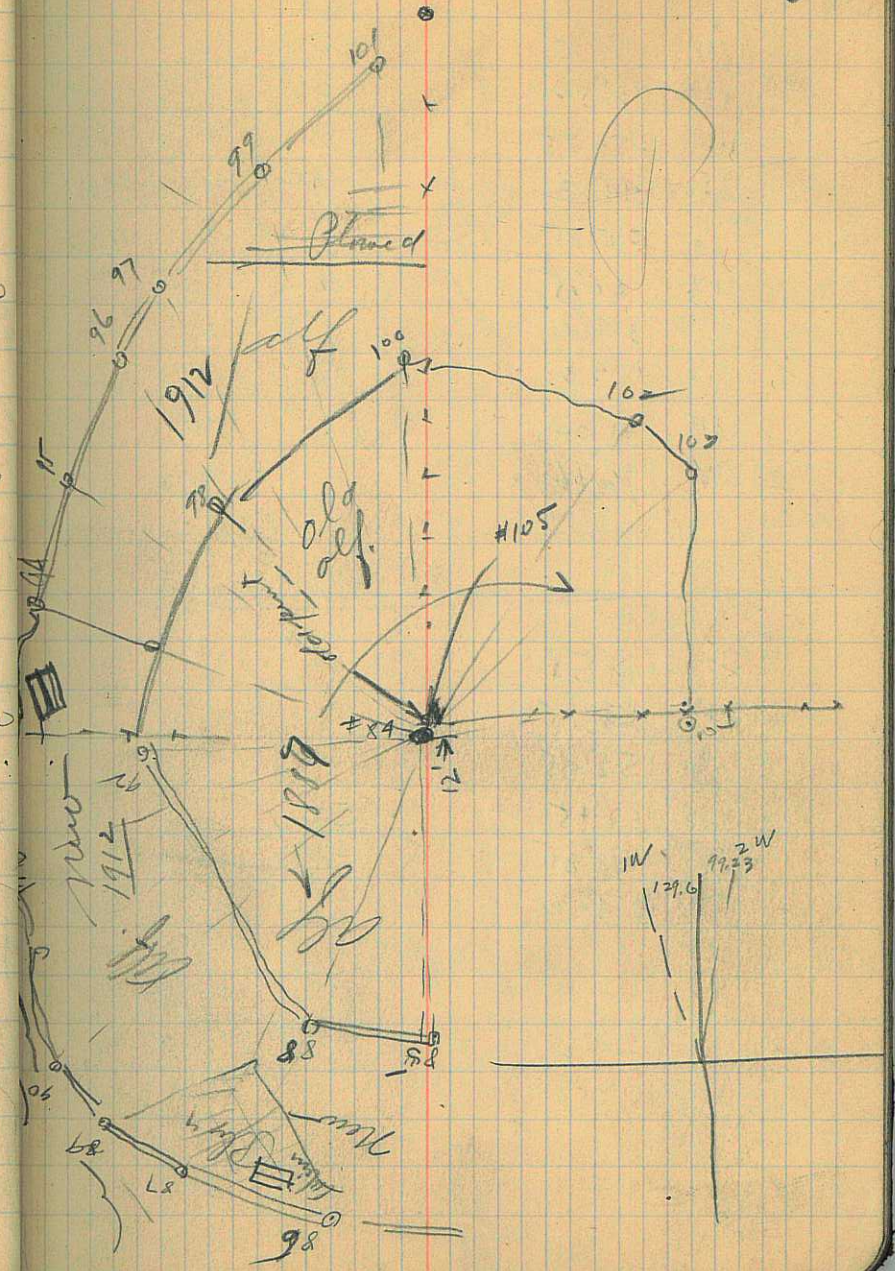
Soil sample
at 71 depth 4"
struck rock.





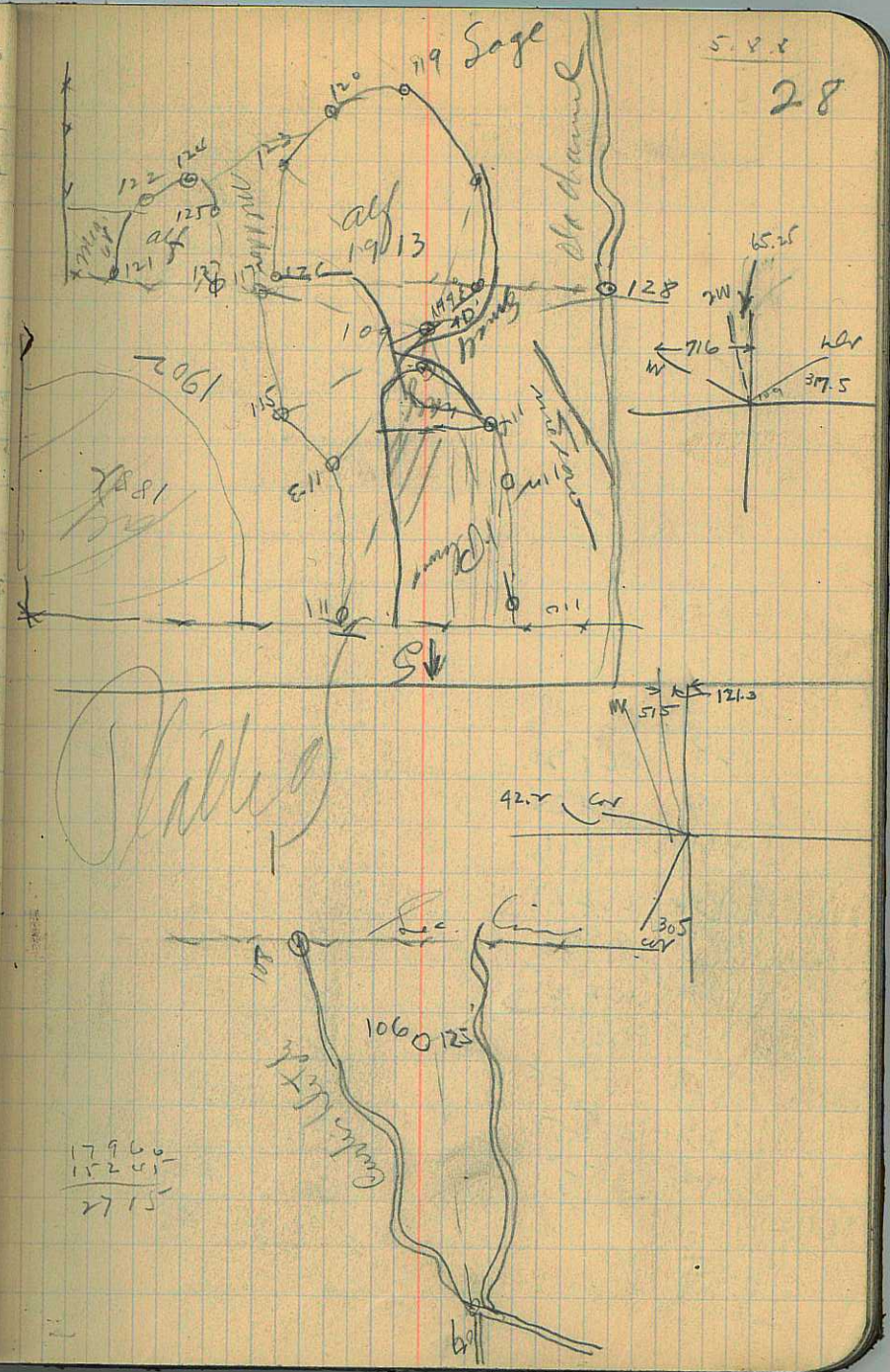
17960
15314
2606

	105	178°50'			
	∠7W	185°40			
	104	266°44	2		5.1
5	103	217°30	2		7.50
	102	209°20	2		7.50
	161	175	~~2~~ 2		10
	100	177°15'	~~2~~		6
	99	166°55'		3	10
	98	137°45	2		7.60
	97	154°10		4	10.37
	96	142°10'		4	10.00
	95	121°02	2		11
	94	106°32	4		10.8
84	93	86°57	2		10.0
	92	89°44	2		5.9
	91	55°28	2		11
	90	41°30'	5	10.1	
	89	29°32	2	8.00	
	88	17°14'	3	7.5	
	87	13°35'	4	10.6	
	86	3°52'	2	9.00	
	85	359 47'	2	6.8	
	4W	172°37'			
53	84 –				



120	16°45'	3		8.50
121	90°04'	4	7.1	
119	177°51'	5		10.80
118	199°35'	6		7.85
117	93°50'	3		5.75
116	354°25'	3		5.2
115	44°13'	4		7.9
114	35°25'	1		5.80
113	20°15'	2		8.9
112	346°	1		7.6
111	11°33'	1		12
110	348°04'		2	7.6
△2W	176°16'		7	
109 —				

¼ cor 1/2	16°58'		
△2W	173°05'		
△1W	152°45'		
108	107°45'	5.00	6.80
nw cor sec 1 pot	92°21'	5.0	6.80
107	354°40'	5.0	8.80
106. —			



128	261°30	2		49
△1W	144°24			
△2W	176°16			
△B	252°23			
127	91°50'	2		6.50
126	102°25	2		3.30
121	112°	2		6.3
124	108°55	2		7.0
123	148°45	7		10.5
122	95°		4	7.1
109–			4	

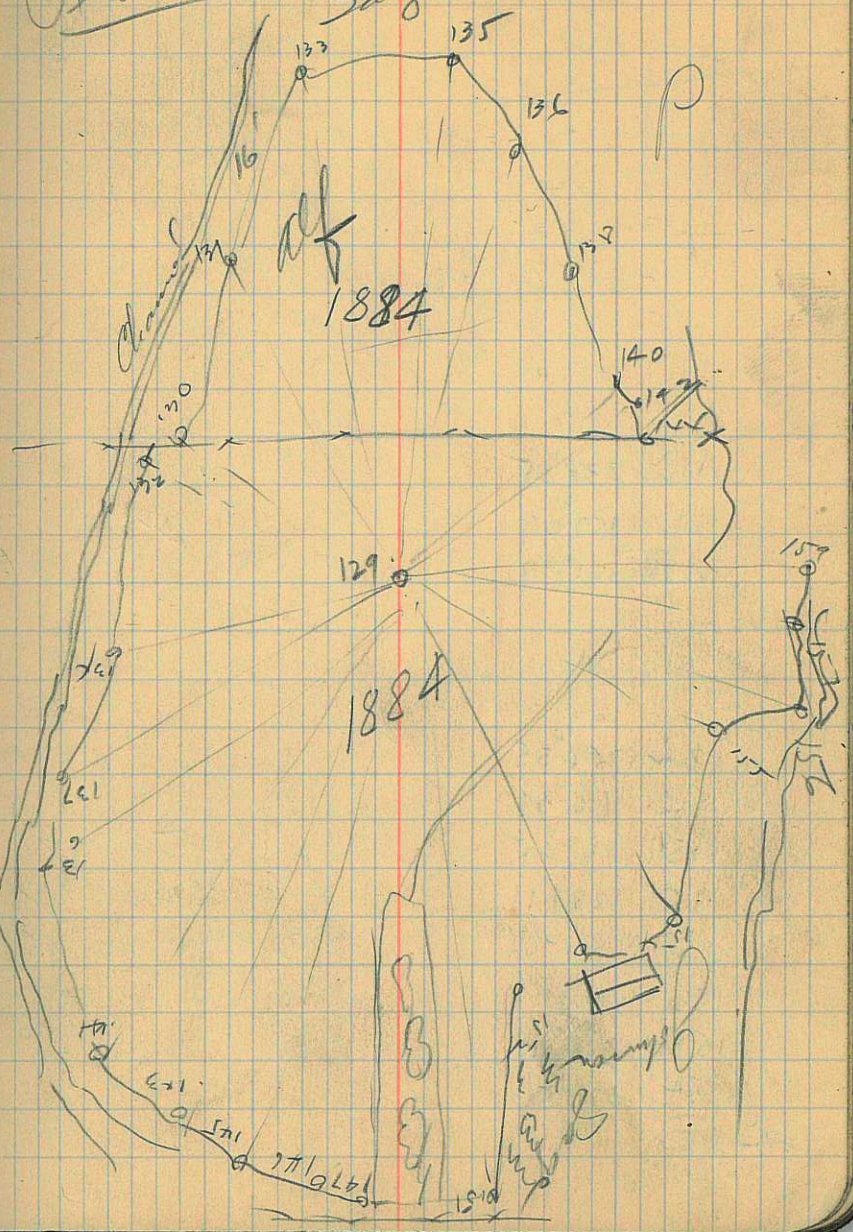
17960
14424
3536

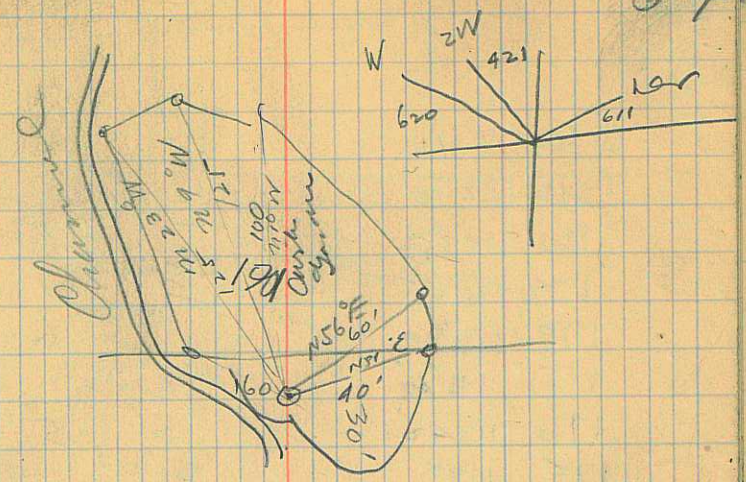
26960
25223
1737

Stated

153	329°42		3	6.3
152	342°16		4	7.8
151	346°		3	7.9
150	351°50	3.0		7.6
149	353°26	1.0		8.2
148	353°26		4	8.8
147	5°40		5	9.8
146	7		5	9.4
145	12°55	~~50~~	5	9
144	235°18	7		10.0
143	14°		5.0	8.5
142	223°50	6		10.2
141	23°25	3		8.8
140	221°31	3		9.8
139	96	3		7.8
138	204°30	3		10.5
137	65°30	3		7.0
136	187°30	3		9.8
135	182°14	2		10.4
134	8°36	2		5.40
133	154°50	2		10.30
132	117°30	2		5.30
131	144°47	6		10.75
130	125°12	8		10.75
ΔIW	133°17			

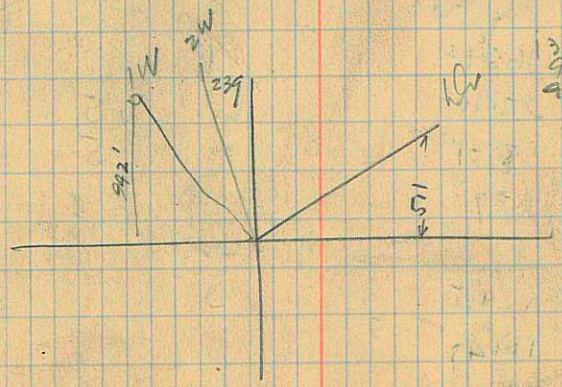
129-





A12 238°35
Δ2W 157°09
Δ1W 121°47
160 –

Δ1R 292°55
Δ2W ~~160~~ 166°31
159 275°45 5.00 7.8
158 287°11 4.0 7.2
157 295°01 3 9.5
156 301 3 8.7
155 308°10 3 8.60
154 320°56 3.0 6.6
129 –

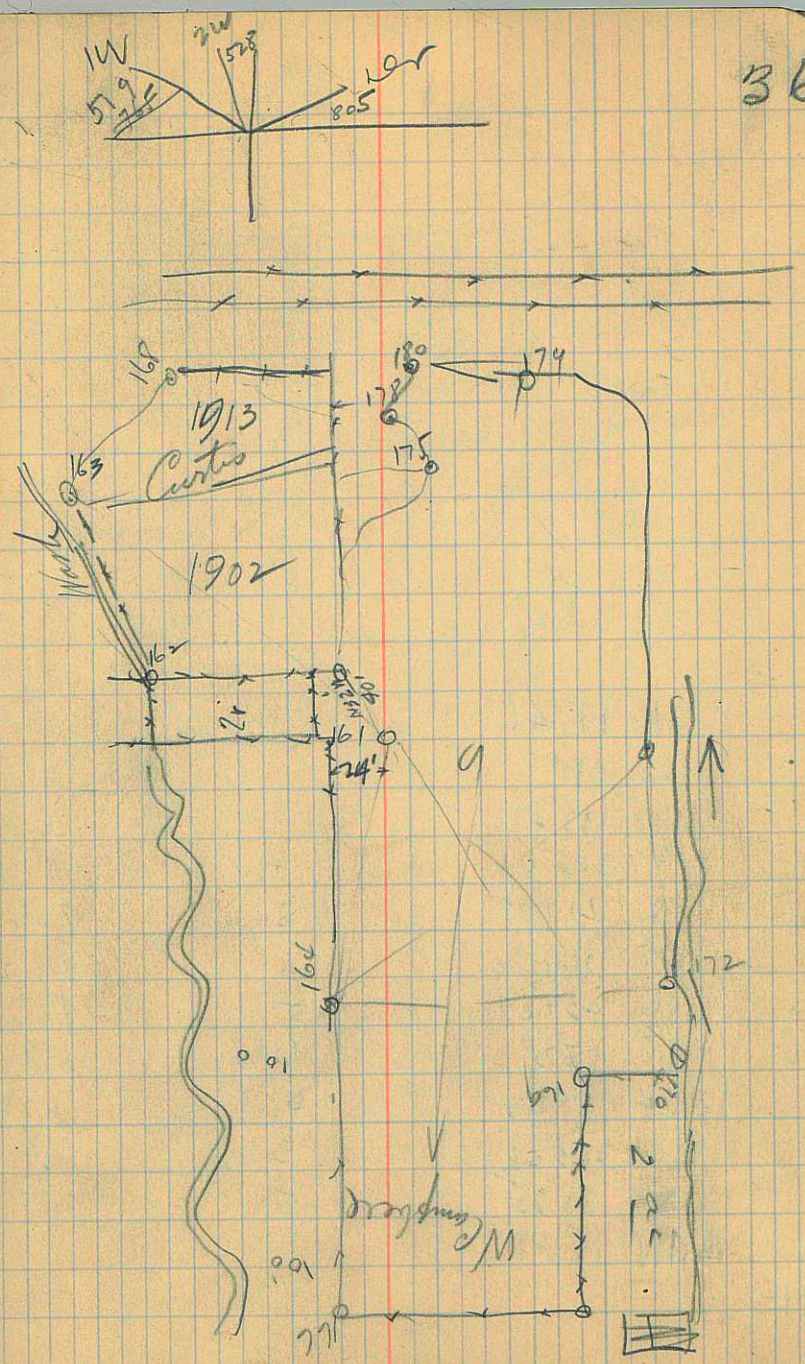


179 60
166 31
13.29

133.17 179 60
90 7 133.17
93.17 46.13

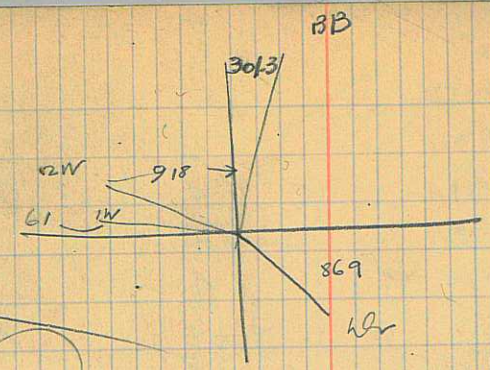
26960
20255
2705

Δ Wr	23°10'			
Δ 2W	152°10			
180	183°53		6	9.8
179	190°45	3		10.50
178	182°49		6	9
177	196°40'	2		10.25
176	188°42'		5	8
175	188°	2		7.50
174	212°05'		6	10.50
173	226°11	2		10.50
172	275°33'	4		10.25
171	290	4		10.80
170	322	4		10.50
169	334°54	4		10.62
168	165°12	1		8.70
167	351°18'		5	10.75
166	358°51'		5	10.75
165	159°		3	6.50
164		2		5.90
163	124°25	3		5.60
162	101°47' 105'			
Δ 1W	117°26			



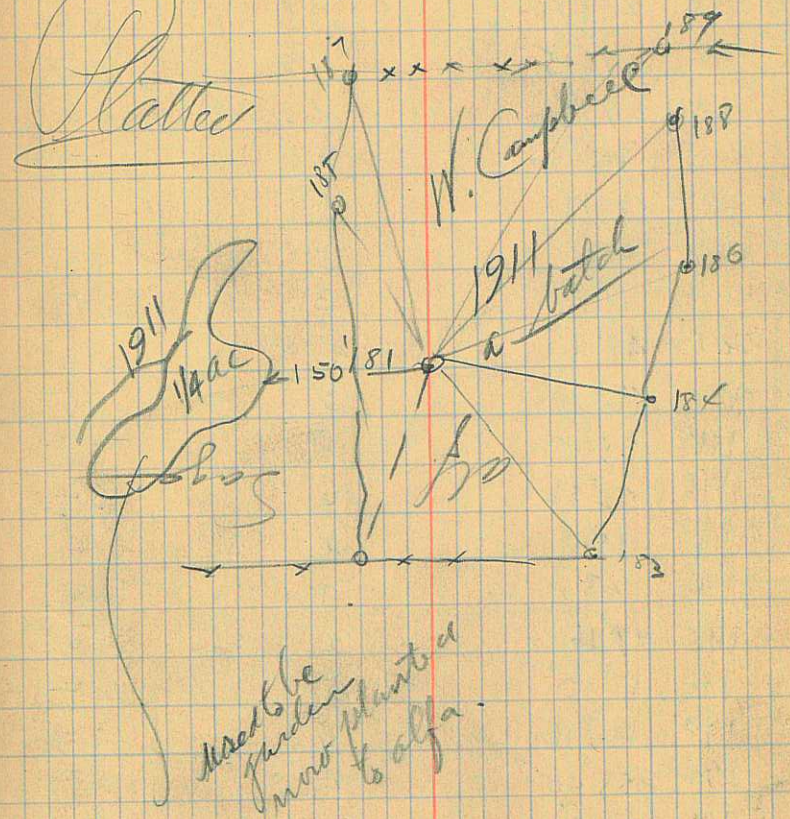
△BB	196°46		
△Dr	311°		
△2W	137°27		
189	206°05	2	7.0
188	217°05	5.10	9.06
187	160°30	6	10.62
186	234°54	5	9.06
185	153°	6.00	6.90
184	271°43	3	6.25
183	303°55	3	6.4
182	28°25	5	7.2
△1W	93°29		

181–



17960
13727
4233

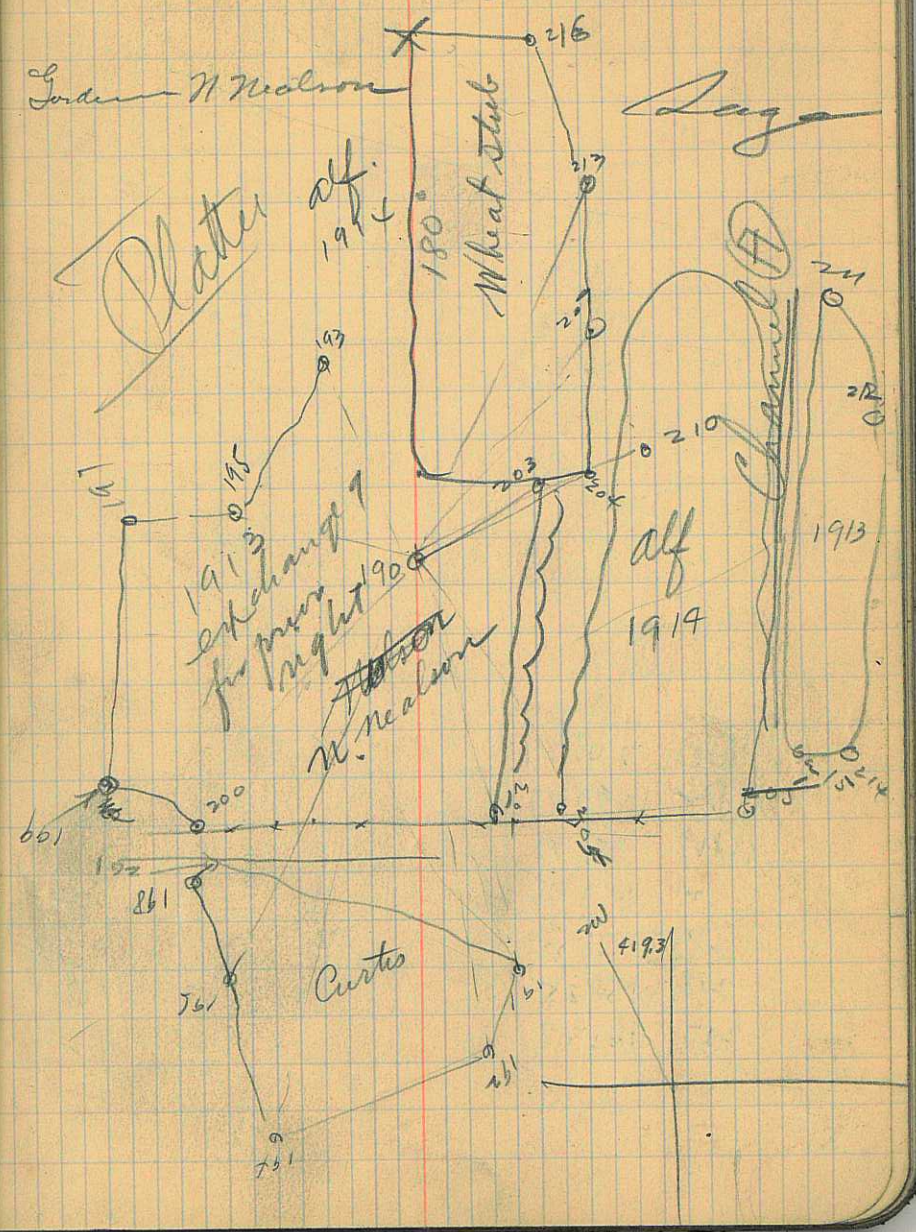
311
210
40



used the garden more planted to alfa.

216	198°20'			6.2
215	292°	6		10.5
214	292°50	5		10.5
213	213°30	2		8.6
212	270°31'	4.		9.2
211	261°20	4.		8.60
210	254°30	4		6.6
209	235°	6		9.9
208	243°30	6		10.30
207	219°15	3		7.90
206	297°30	6.0		10.67
205	302°36	6.0		10.09
204	244	3		6.0
203	243°	3		5.5
202	317°30'	3		6.05
201	48°11'	4.		8.3
200	46°30'	3		6.5
199	55°15	2		5.8
198	52°51	6		10.4
197	93°15	3		6.2
196	29	4		10.50
195	99°16	3		5.2
194	15°10'	3		10.50
193	132°16	3		5.3
192	355°40	4.0		10.8
191	350°13'	5.0		10.30
△ 2W	157°15			

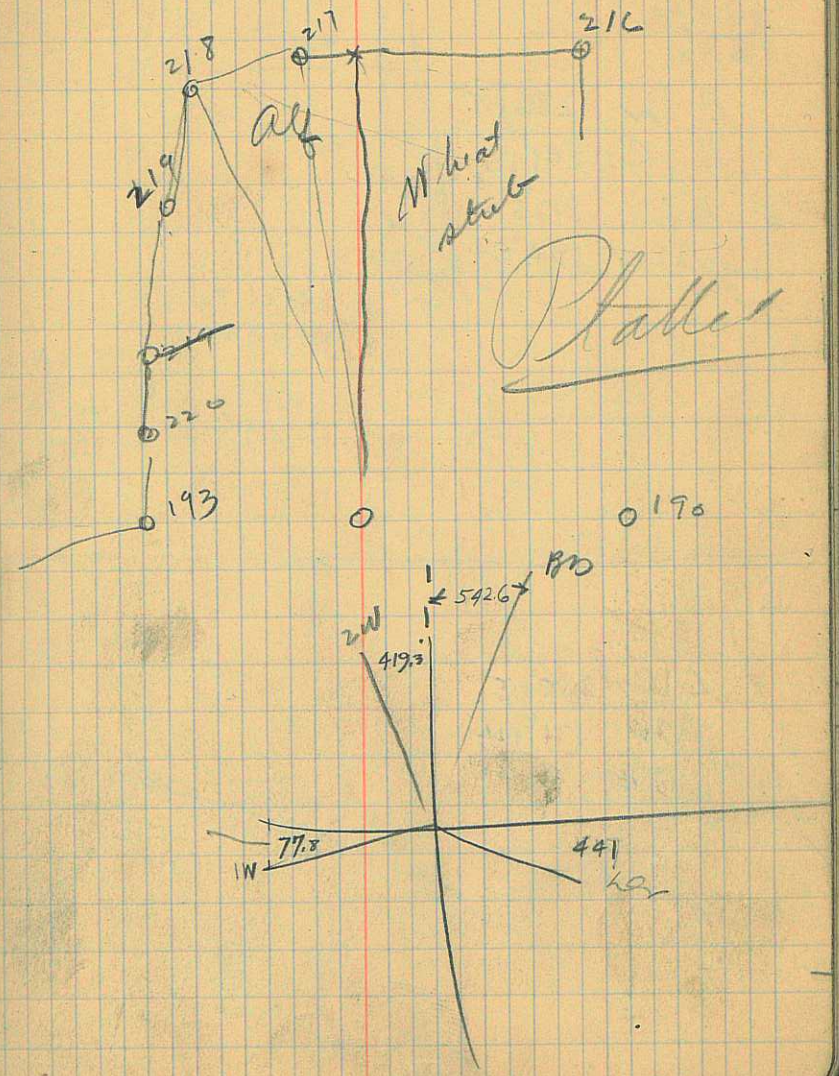
190 –



∆BB	208°29			
∆Dr	293°47			
∆IW	85°33			
220	147°35	1		6.2
219	155°50	2		8.9
218	158°25		2	6.60
217	162°08		2	7.2

190 –

Sog

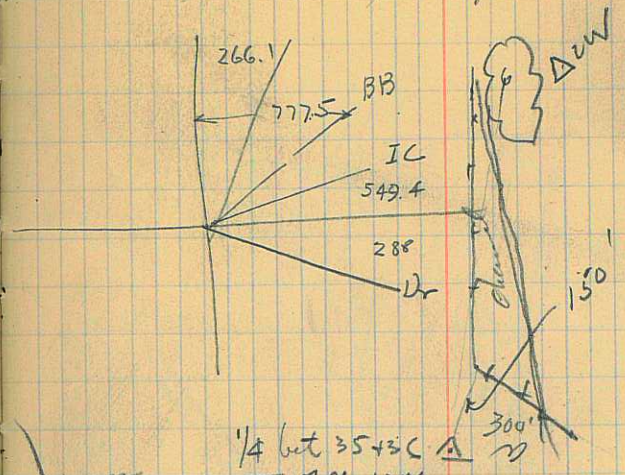


Δ Dr 286°05
Δ I.C. 241°13
ΔBB 217°52
Δ2W 194°54
on 1/4 cor -

Δ1Cr 285°05
Δ2W 171°14
Δ1W 93°44
221 -

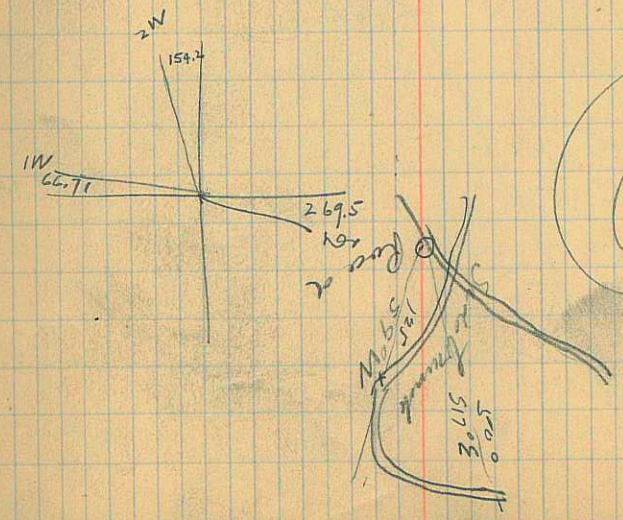
(I.C = Chain Campbell
W pipe on house)

44



269 60
241 13
28 47

1/4 bet 35+3C Δ
T14N, 13W



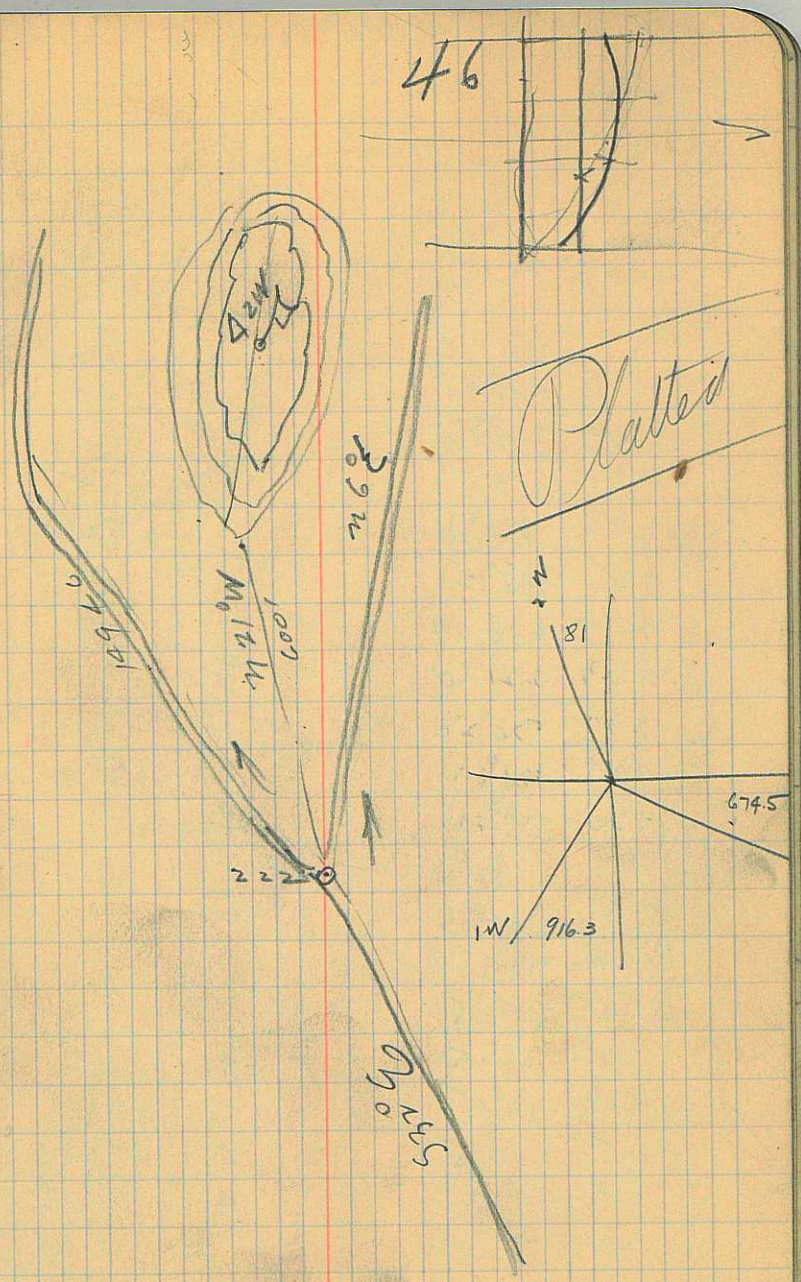
ΔWr 304

ΔW 42°30

149°40

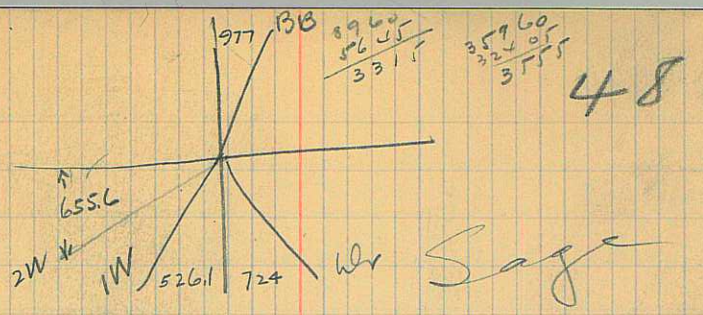
Δ2W 175°22

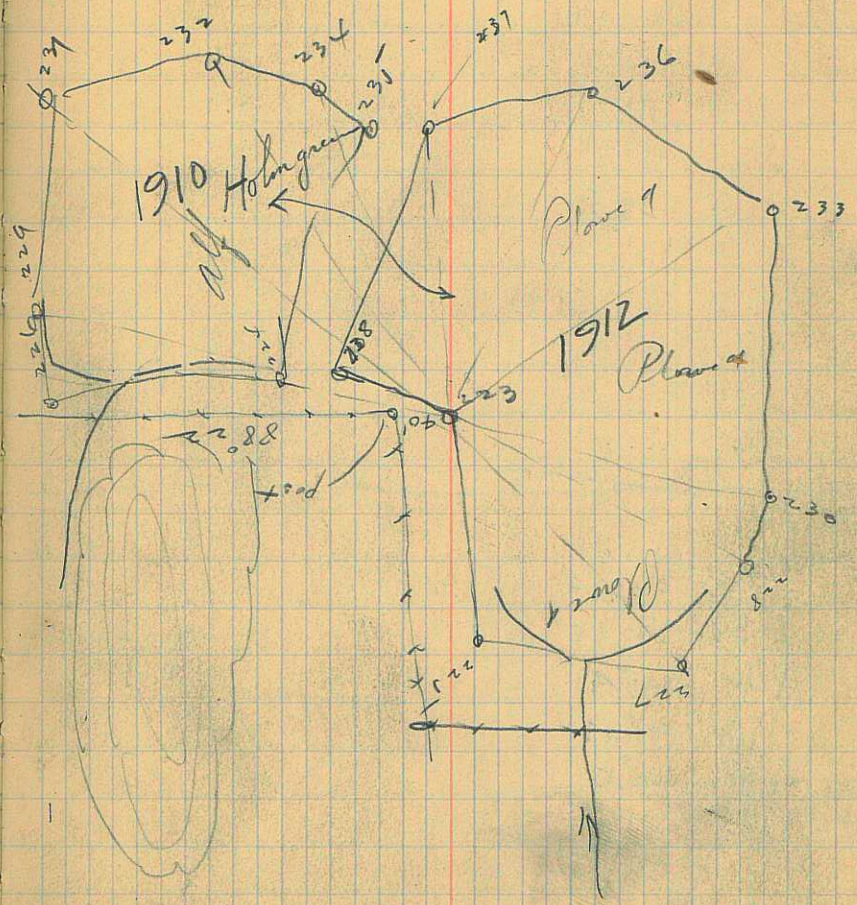
222 –



238	99°45'	4		5.9
Δ BB	224°20'			
237	159°		2	6.2
236	194°30		2	6.2
235	145°12		6	10.75
234	139°24'		5	10.05
233	221°30'	2		7
232	130°20	1		12.1
231	121°17		5	10.50
230	289°40'	4		8.1
229	92°		7	11.4
228	304°16	2		6.0
Δ 1W	27°45 ✓			
Δ Pr	324°05			
227	318°15'	2		7.1
226	89°55	5		11.8
225	357°05	4		6.4
224	99°20'	4		8.00
Δ 2W	56°45 ✓			

223 –





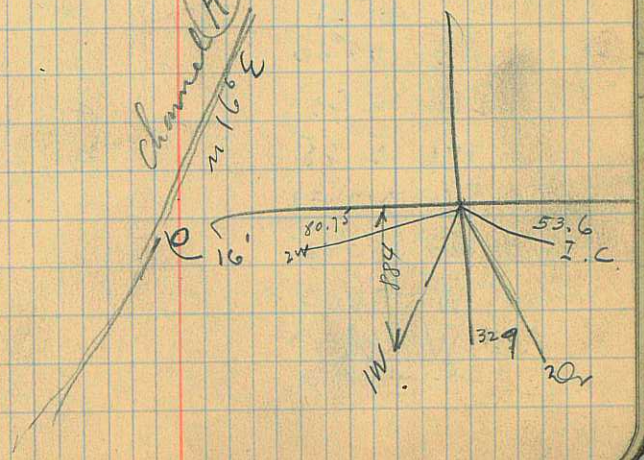
∆ I.C.	273°04
∆ 1E	342°38
∆ Dr	341°47
∆ 1W	48°31
∆ 2W	85°13

239-

no very visible

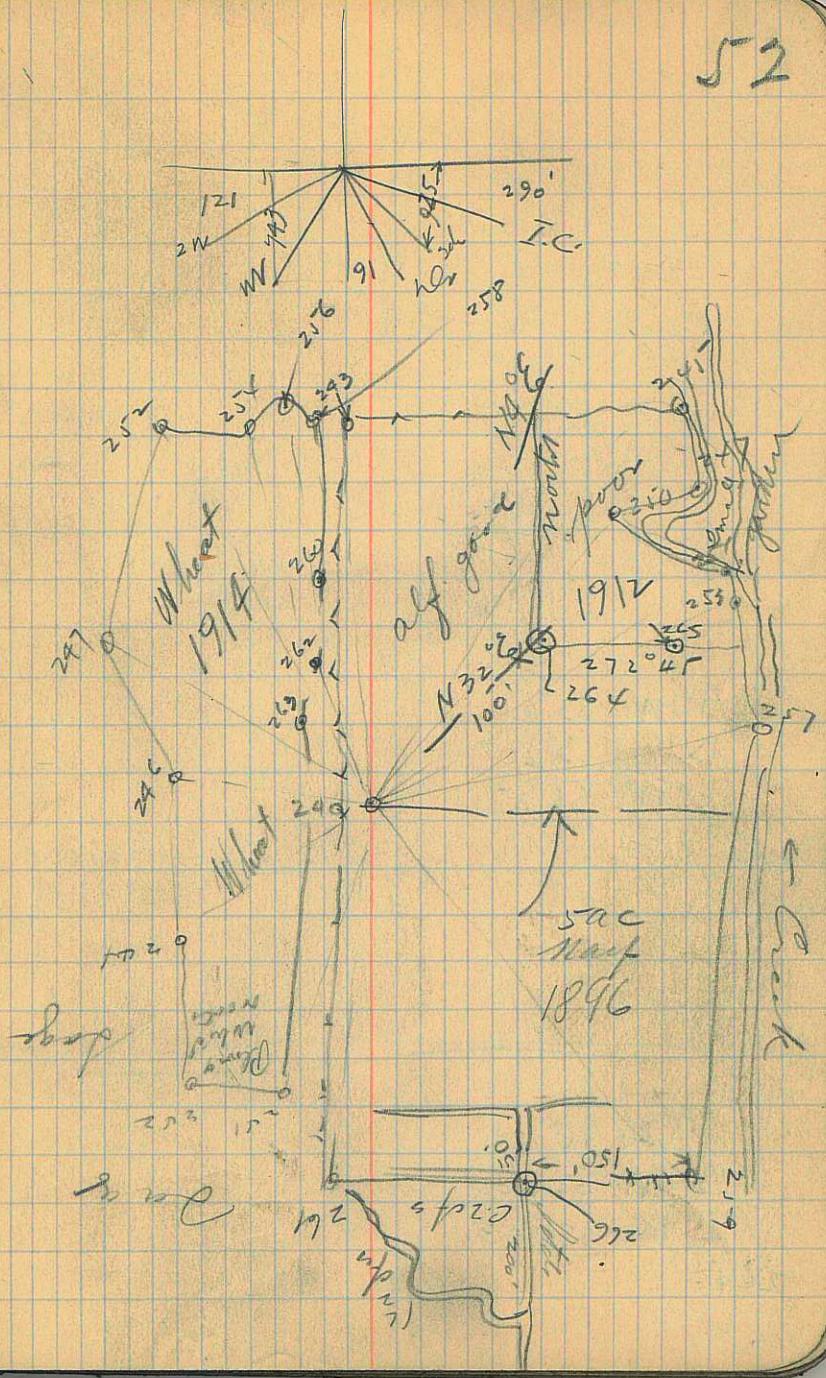
Channel ft

m 1664



35960
541 47
1813

263	146°40	4		6.05
262	171°45	7		10.4
261	8°30	2		6.7
260	176°20'	2		8.1
259	319°25	3		9.0
258	177°30'	3		11.8
257	277°56	2		6.4
256	163°30'	2		11.2
255	242°40'	4		8.5
254	152°50'	2		10.50
253	234°50	2		7.3
252	139°12'		4	8.2
251	220	3		9.0
250	201°05	2		9.5
249	117°30	2		6.6
248	200°30'		4	8.0
247	205°20'		4	8.2
246	97°30'	4		6.20
245	203°20		4	9.0
244	40°27	2		5.8
243	179°20		4	8.4
242	20°53'	4		9.0
241	15°25	4		8.8
Δ Sol	312°47			
Δ Ho	354°48			
Δ W	53°23			
Δ ZW	83°07			
240 ⊥ I.C.	286°13			

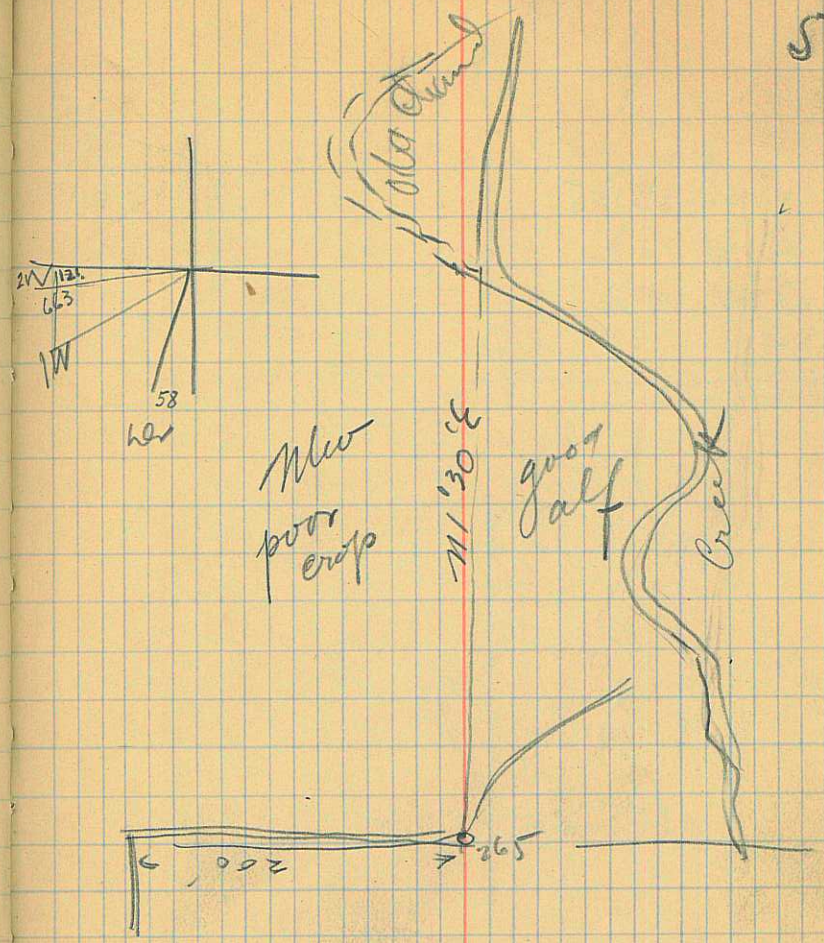

121
290°
I.C.
W
91
258
Wheat
1914
alf good
1912
N32°
100'
272°45'
264
Wheat
sac
Wheat
1896
Corn
Corn
Corn

Δ 2W 83°07
Δ Hev 3°20
Δ 1W 56°27

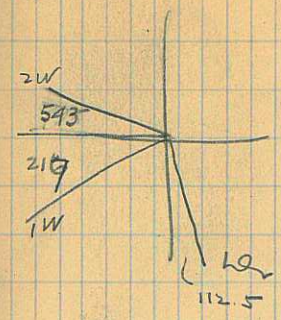
265-

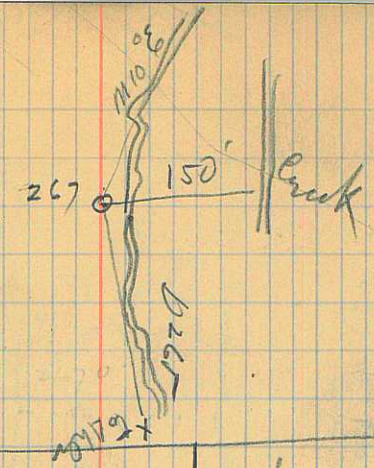
Δ 2W 80°51
Δ 1W 52°56
Δ Hev 356°43

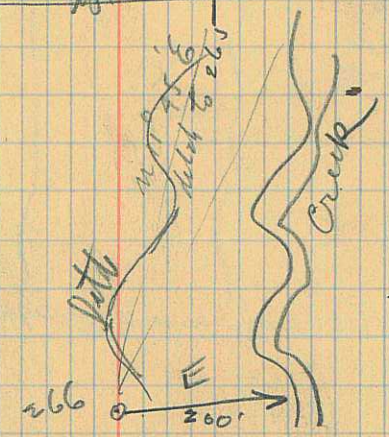
264-



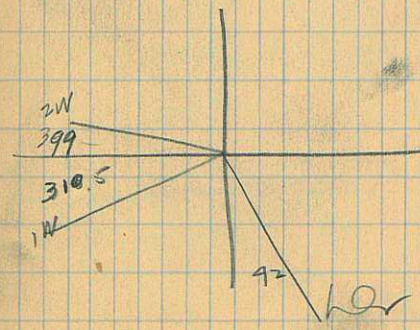
Δ Ro 35°35
Δ W 77°46
Δ N 118°30'
267 –

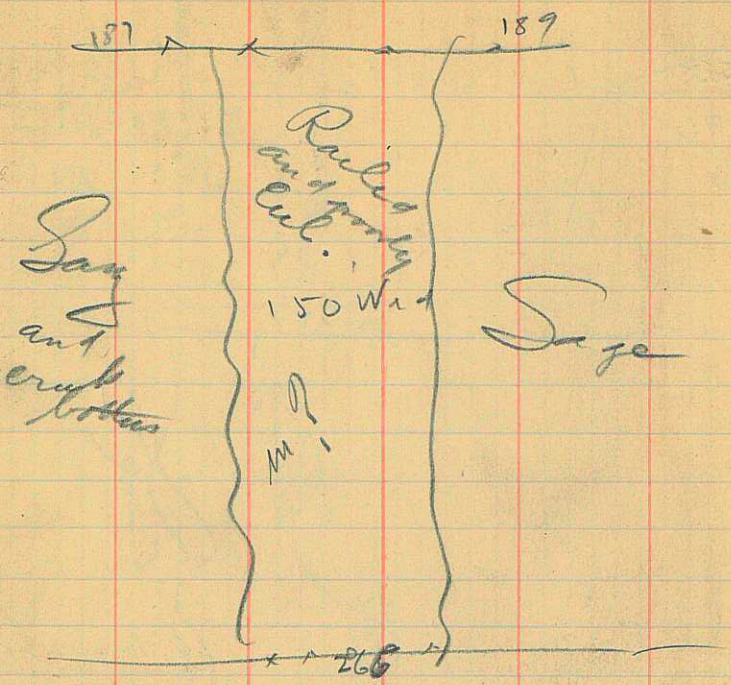






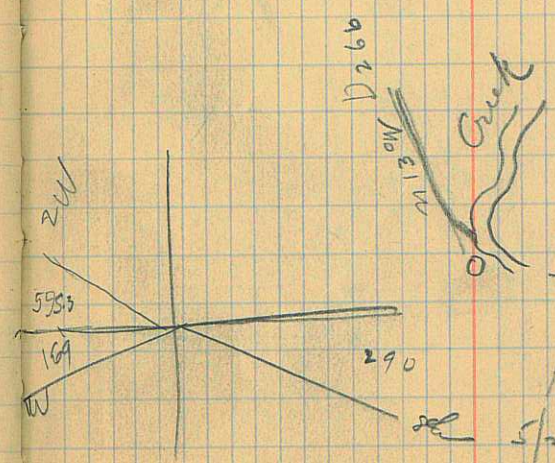
Δ Ro 35°34
Δ W 72°49
Δ N 111°46
266 –





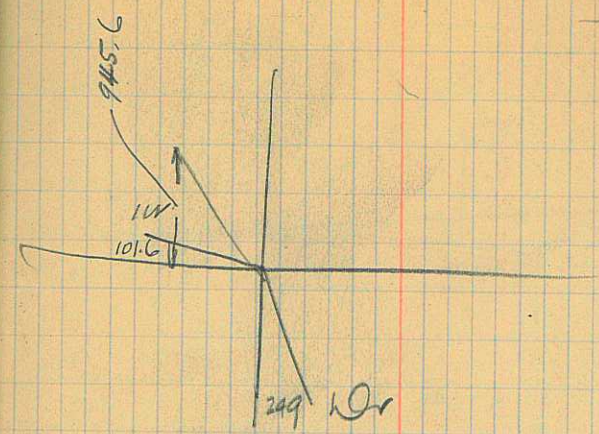
A Sch 286°11
A W 80°25
A 2W 120°46'

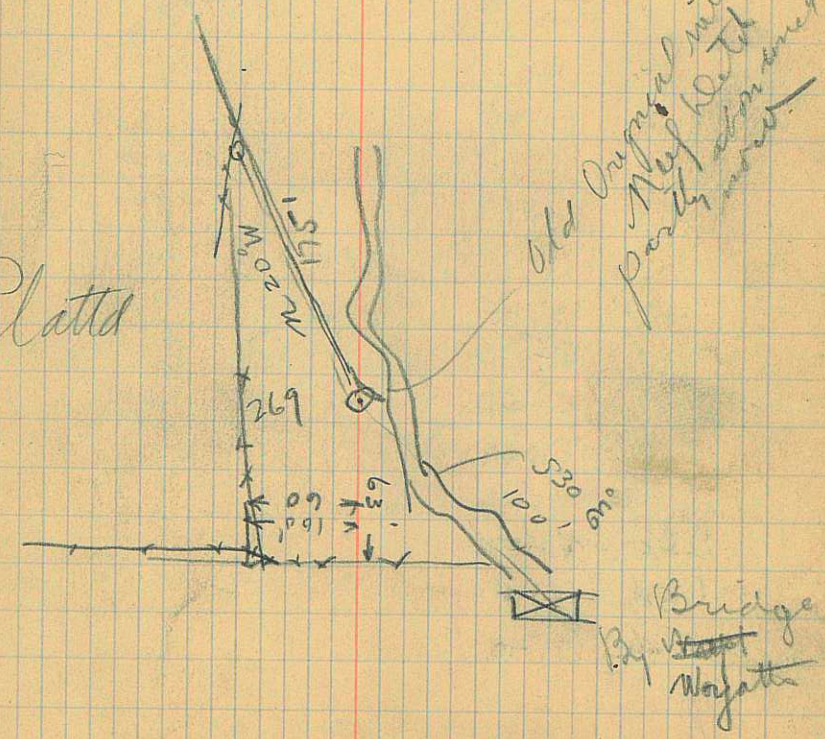
268-



Intake Capacity
3 c.f.s
H_2O flow
5/22/16 2 c.f.s

360
346
14





20

A 1Or 346°
A W 95°48
Δ 2W 133°24
269

272	13°45'
271	54°30
59	108°50
52	270°31
Δ1 E	335°46
⅄ C.L.K.	270°54
Δ Sch	225°11
Δ Wr.	177°40'

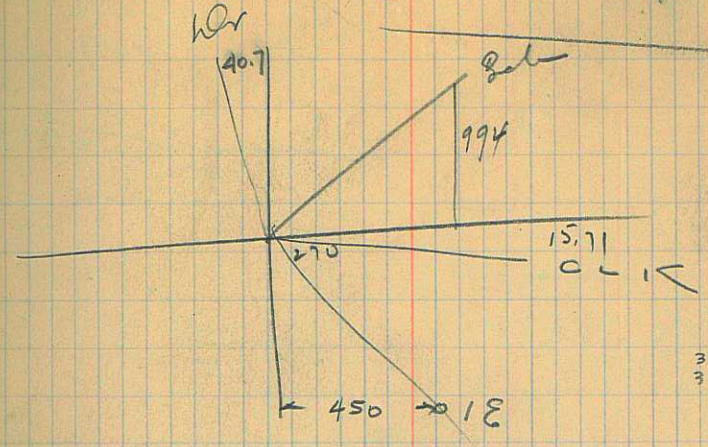
270 –

4

6.80

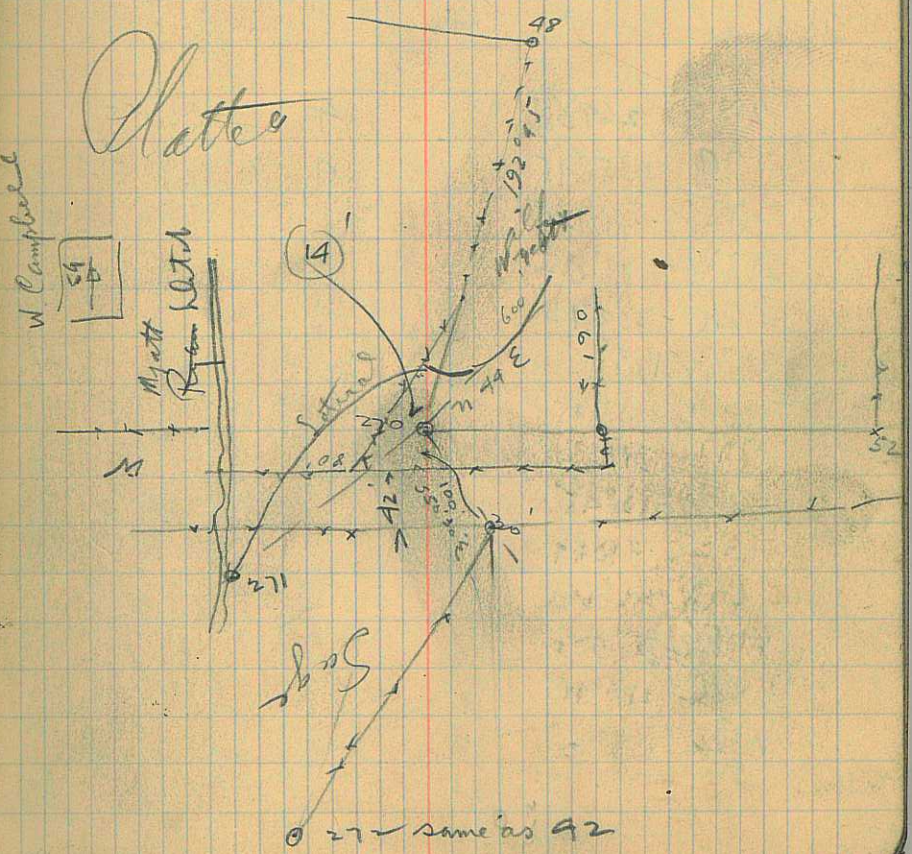
C.L.K. - C.F. Kempton

62

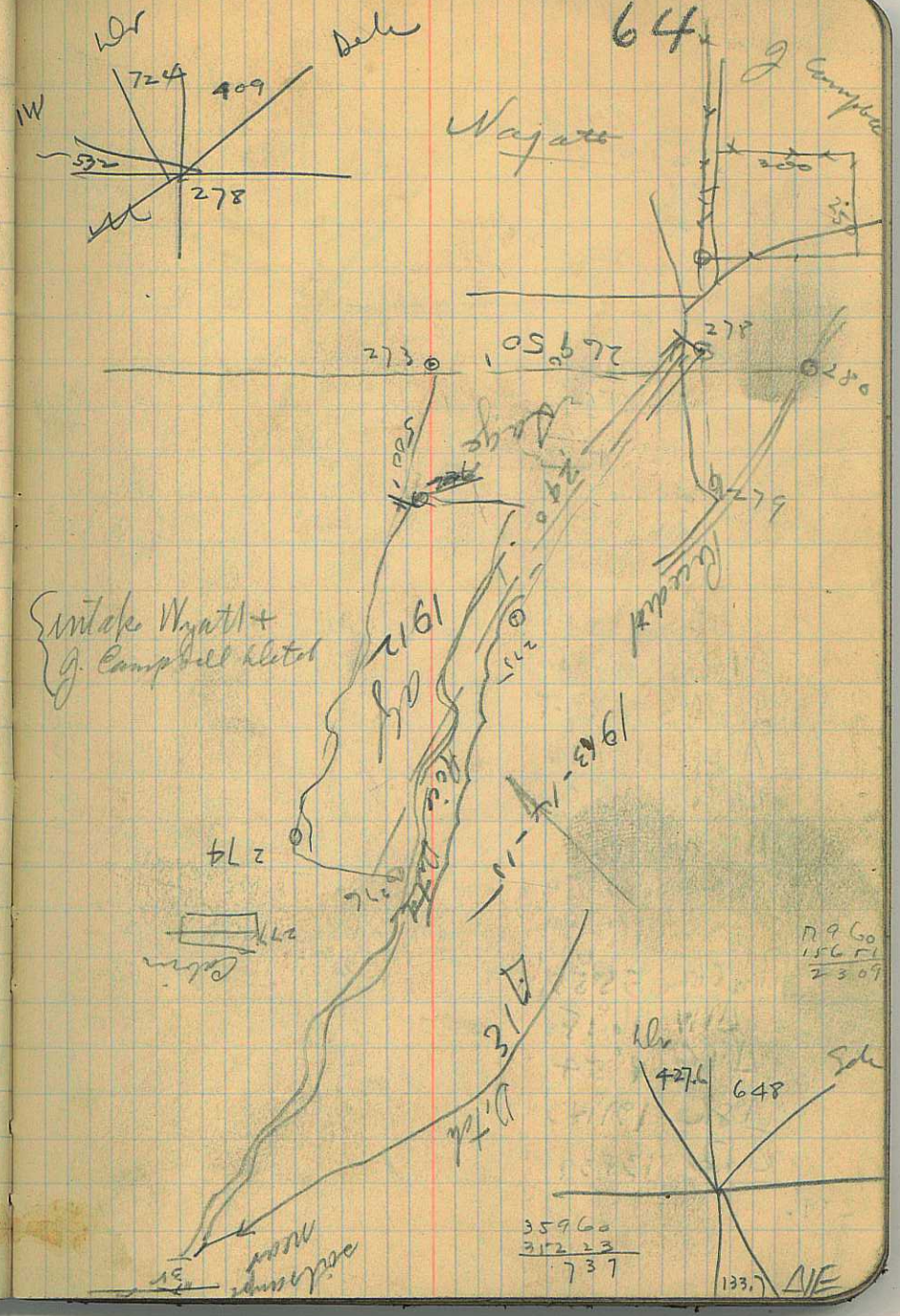


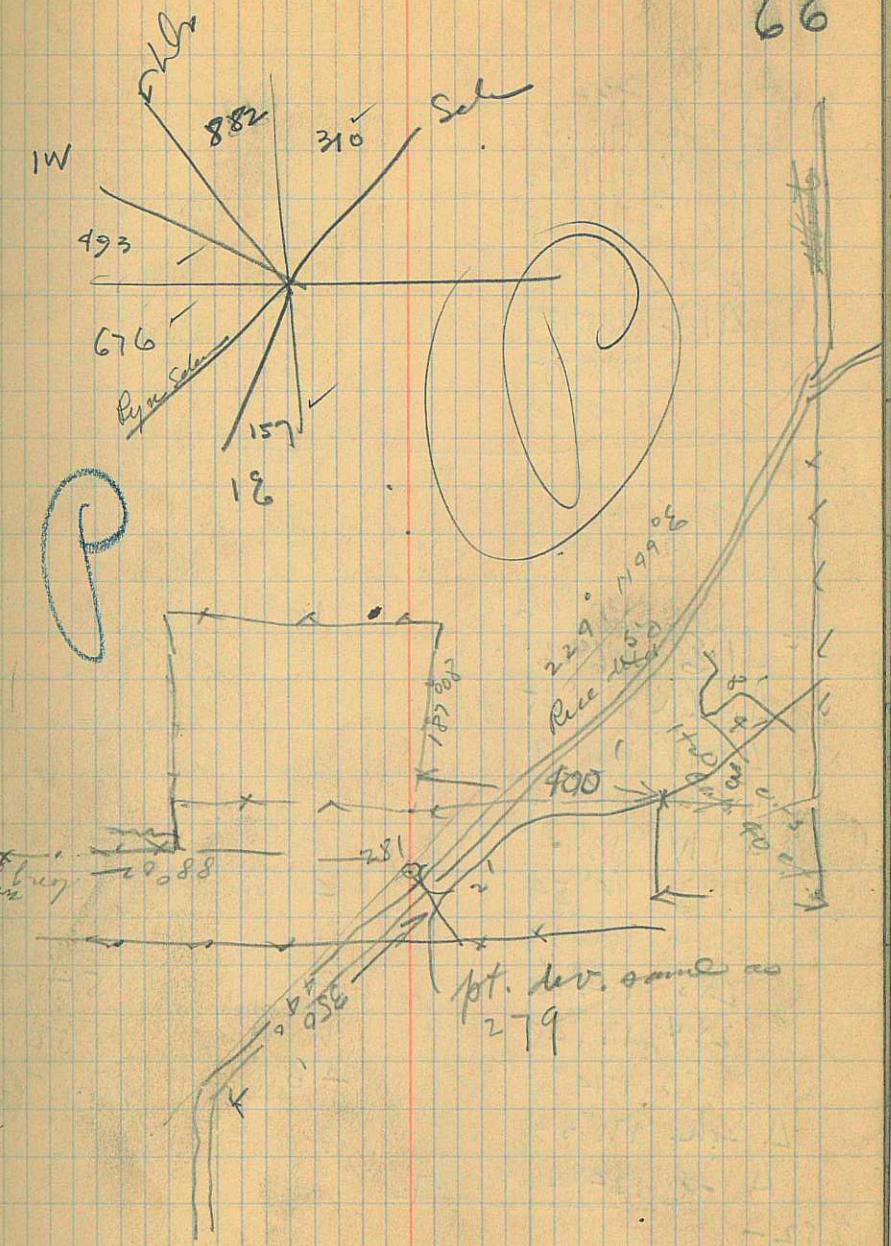
359°60
335°46
24°14

Plate



280	269°38'	4	5.80
279	358°45	9	54
275	11°30		
Δ IW	118°02		
Δ Sch	202°14'		
Δ Dr	199°05		
278 –			
Cabin 277	2138'		
276	12°45		
275	351		
274	21°30		
Δ IE	352°23'		
Δ Sch	212°56		
Δ Dr	156°51'		
273 –			



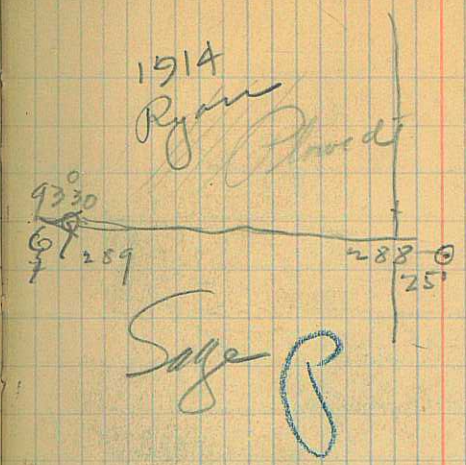


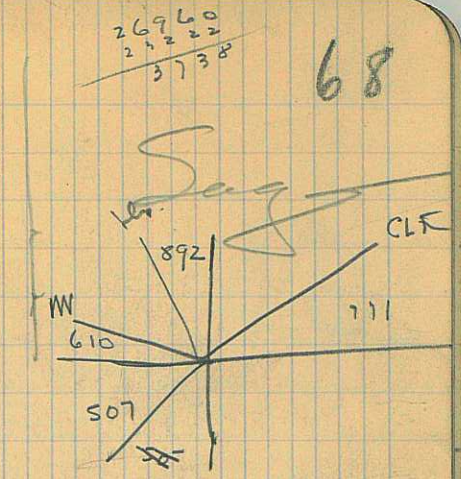
Ryn Chm 55°55'
Δ1W 116°15
Δ1E 8°54
Δ8h 191°14
Δ2r 138°37

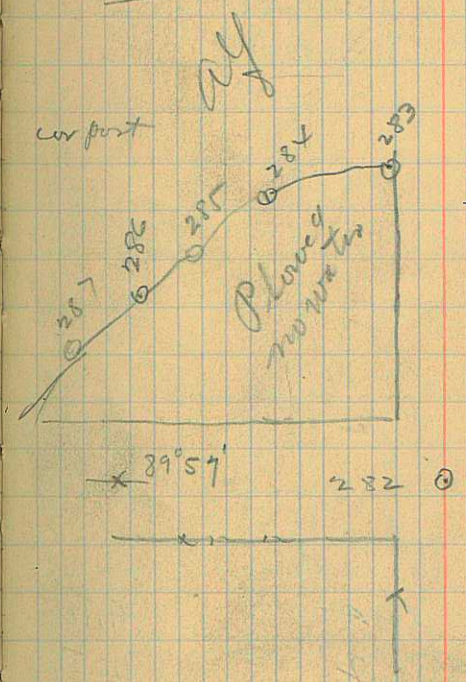
281.

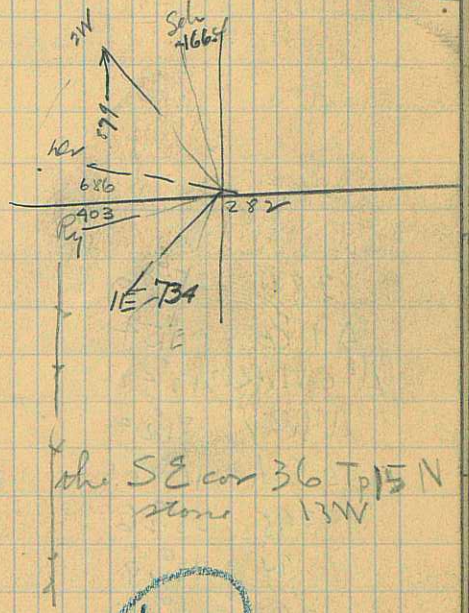
Δ CLK	232°22'			
Δ Sch	171°46			
Δ WW	121°23			
Δ IE ≠	63°05			
289	93°30			
Δ Pr	138°15			
288 –	~~138°15~~			

Δ I.C.	153°27			
	137°06	10	1	10.45
≠ Δ I E	36°16			
Δ CLK	269°45			
Δ 2W	131°19			
Ryan	68°03			
Δ 1W	113°18			
287	94°54	4		10.
286	106°37	6		10.15
285	114°10	2		5.4
284	137°45	6		8.50
283	174°	4.0		7.25
Δ Sch	170°33'			
Δ Pr	~~124°26~~ 124°27'			
282 –				

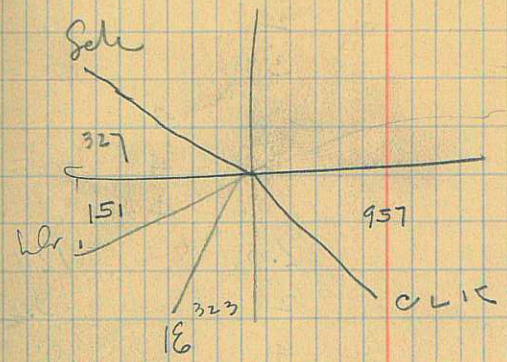


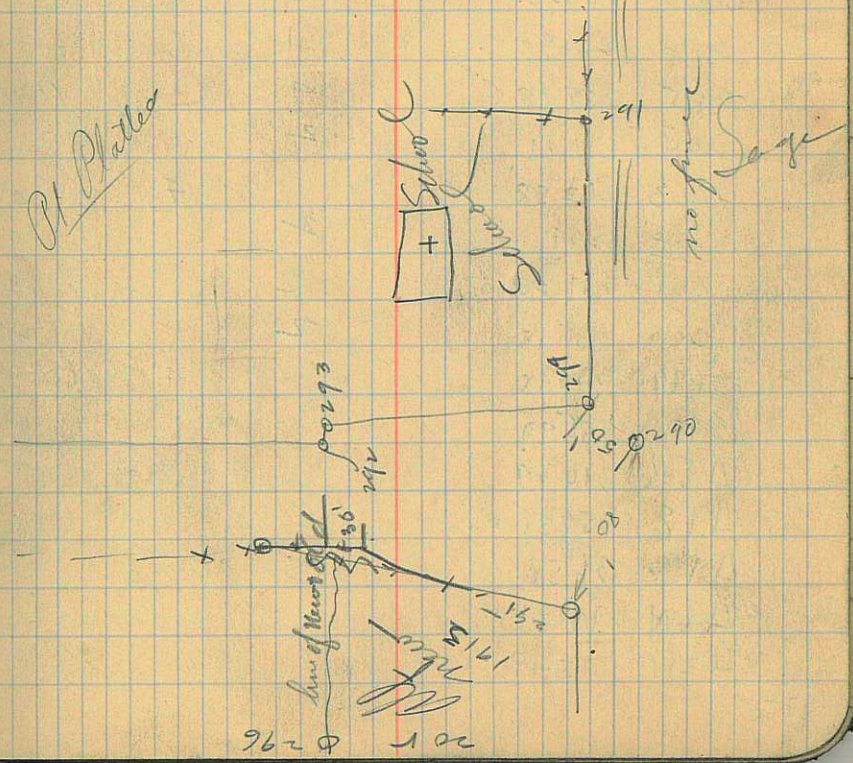






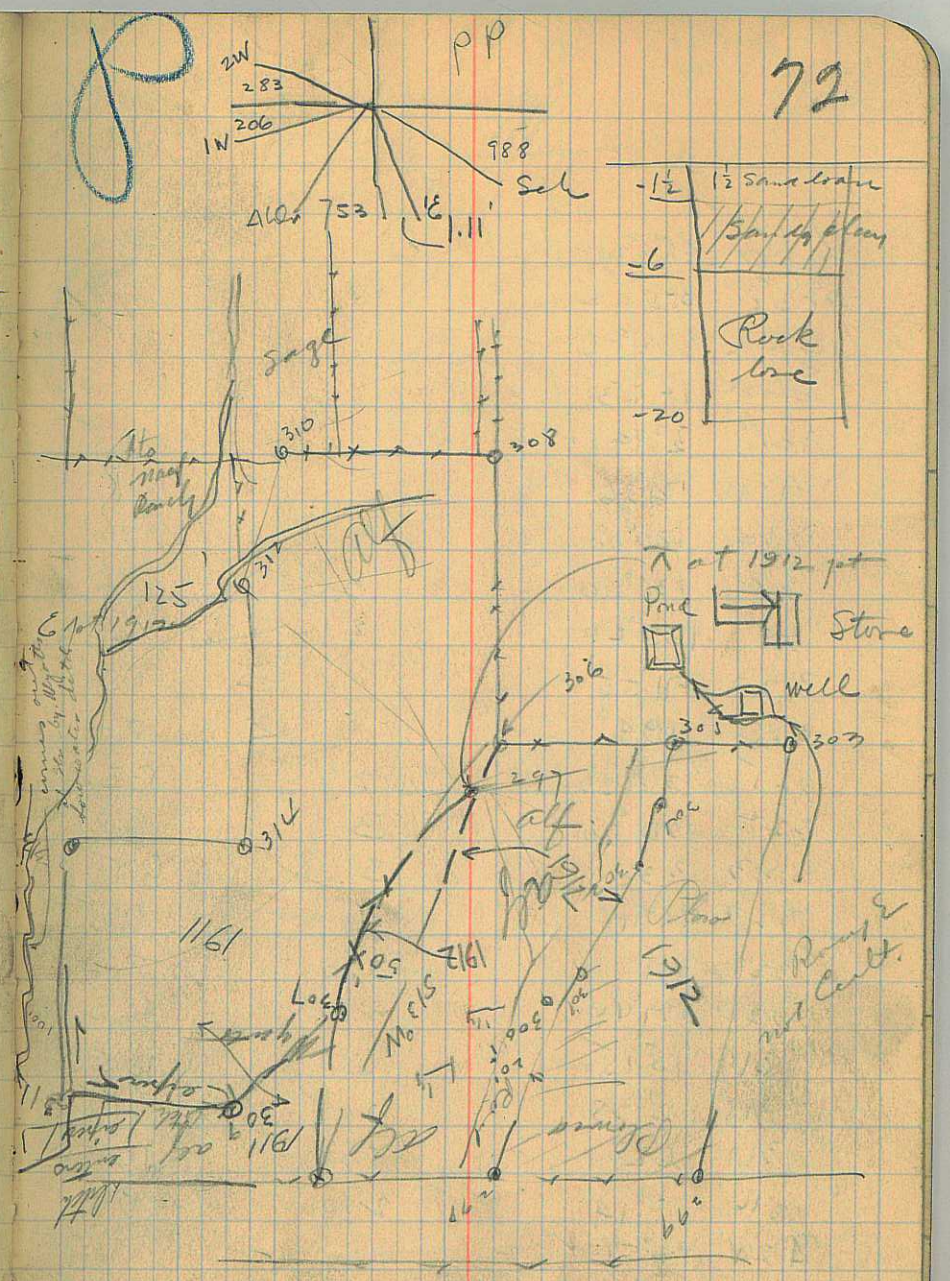
296	25°30		
A I E	17°54		
Δ C.I.K	313°42		
Δ Her	81°29		
Δ Sch	108°06		
295	25°26		
294	97°18		
293	88°03	4	9.10
292	87°25	2	7.05
291	169°37	4	6.5
290 –			





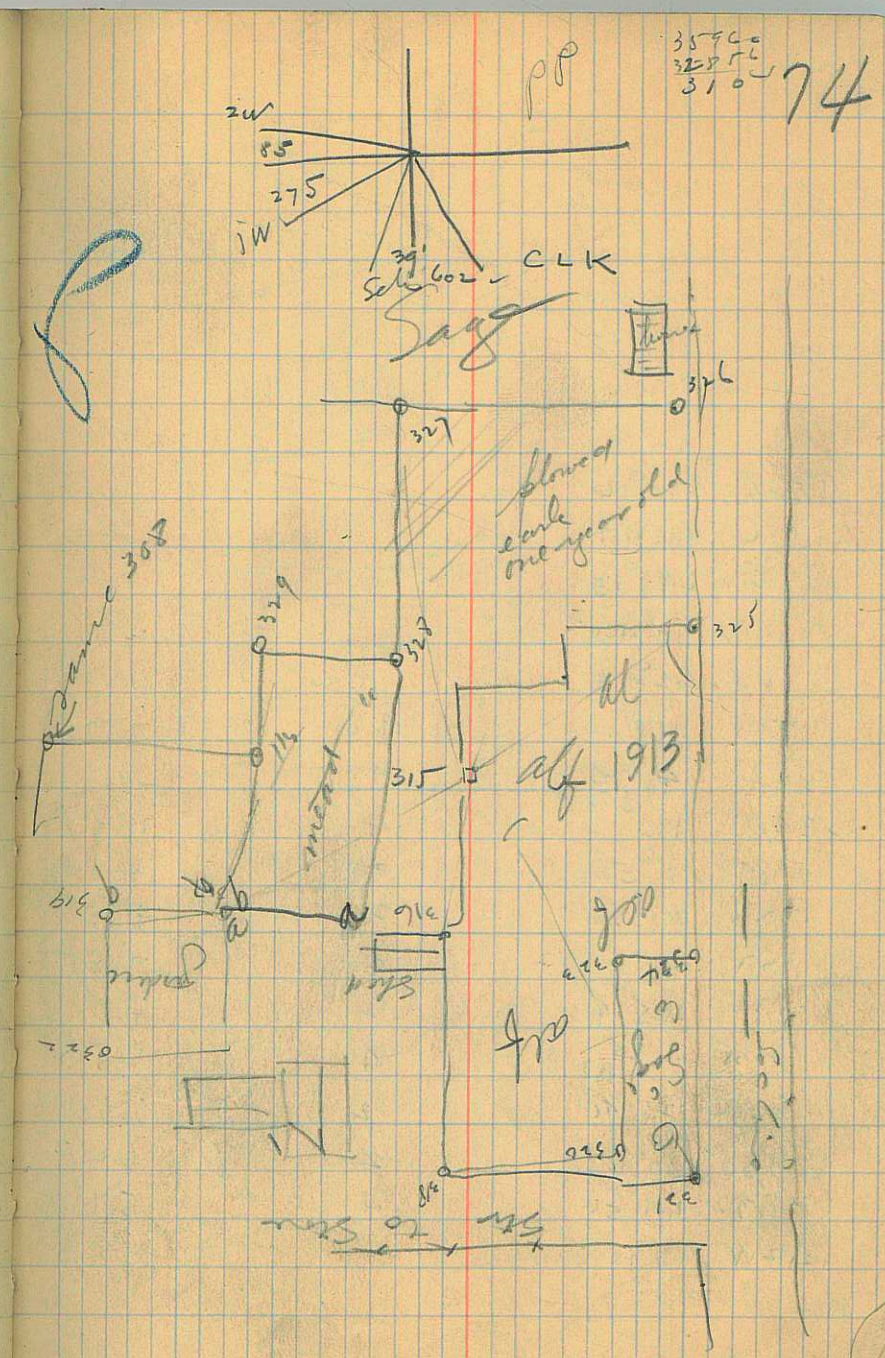
314	47°10'	2		10.25
313	54°	3		12.50
312	125°		4	7.85
311	41°12'		4	10.50
310	148°		4	8.40
309	26°21	2.0		12.00
308	182°	2		9.8
307	19°39'	4		11
306	200°	1		2.25
305	259°18	4		11.0
304	271°11'	2		8.0
303	262°58'		4	9.9
302	294	2		8.3
301	331°20'	2		9.2
300	338°18	2		9.2
299	336°18		4	10.75
298	356°47		1	6.9
Δ Sch	314°39			
4 1E	359°55 ✓			
Δ Wr	36°58			
4W	78°21 ✓			
4 2W	105°48 ✓			

297 -



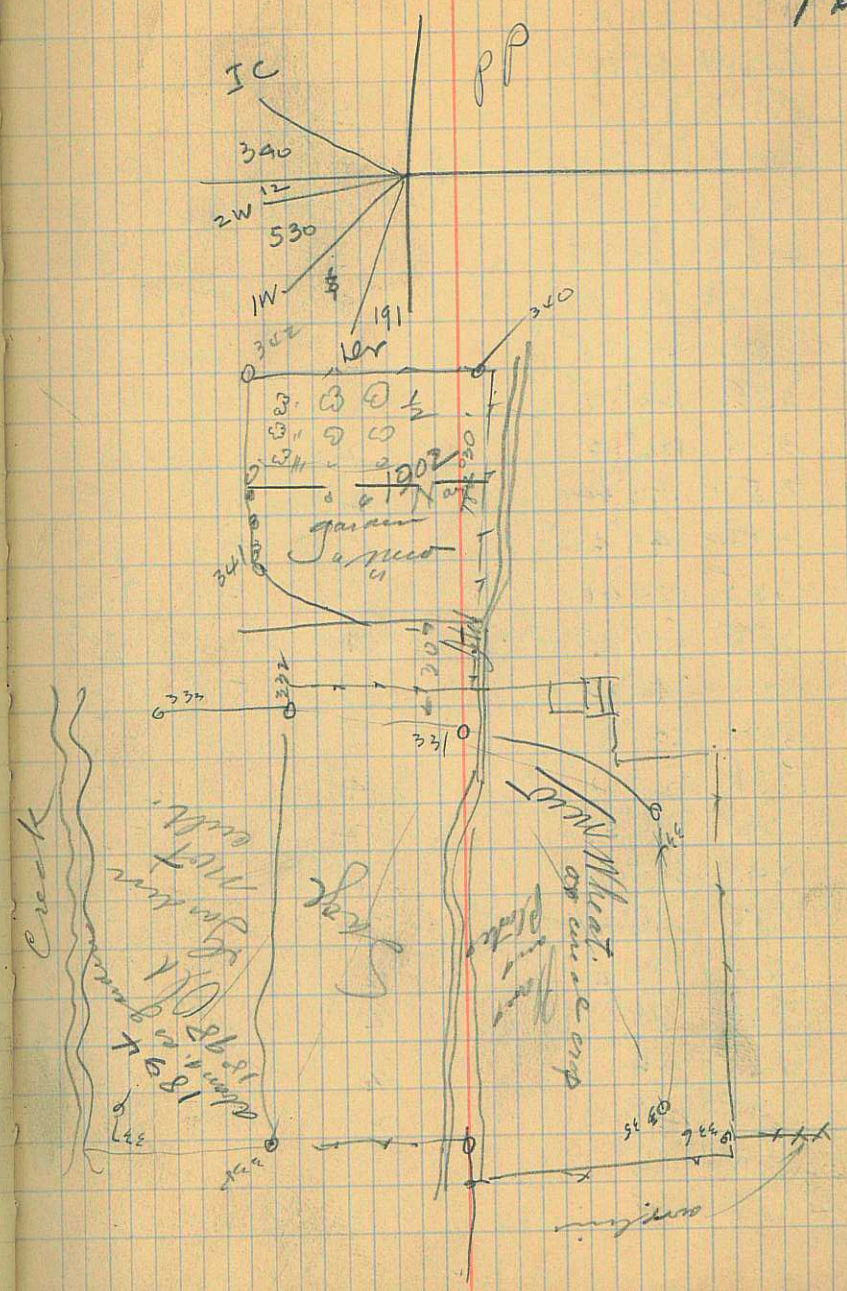
Δ Hor	46°42			
3 & cor				
2 C 36	355°02			
Δ C L K	328°56			
Store	14°23			
Δ Eh	2°14			
Δ W	74°36			
330	120°00'	2		7.00
329	136°20	2		8.00
328	155°20	2		6.30
327	171°55'		3	7.50
326	194°		4	8.50
325	200°23	2		8.30
324	321°30	3		6.85
323	330	3		6.5
322	59°10	4		9.15
321	331°	3.0		8.0
320	337°44	2		6.3
319	75°15	6		10.50
318	2°38	2		6.0
317	62°	8.0		10.50
316	3°14'	2.0		3.14
Δ W	94°51			

315 –


74
pp
2W
85
275
1W
39'
Sebo 602
CLK
Sagg
326
327
planted
cedar
one year old
308
329
328
325
315
913
metal
316
gate
fence
fence
fence

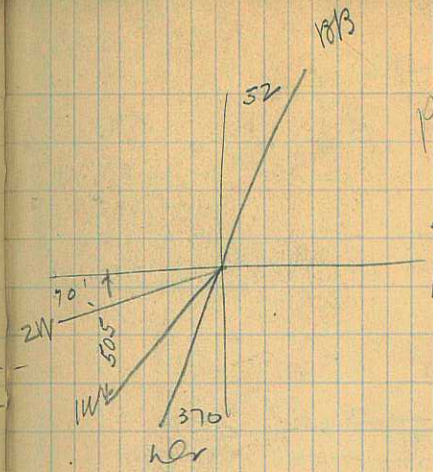
Δ Sch	320°10		
Δ. I.C.	108°47		
~~Δ~~ Store	292°13		
Δ Ver	10°49		
Δ W	62°04		
342	168°20	4.0	7.87
341	146°30	4	6.0
340	187°	4	7.6
339	2°50	2	4.20
338	27°30'	2	4.65
337	47°	4	7.25
336	325°19'	2	4.8
335	335°10	4	6.50
334	291°40	2	3.30
333	100°27	4	6.6
332	101°50	4	5.1
Δ 2W	89°18		

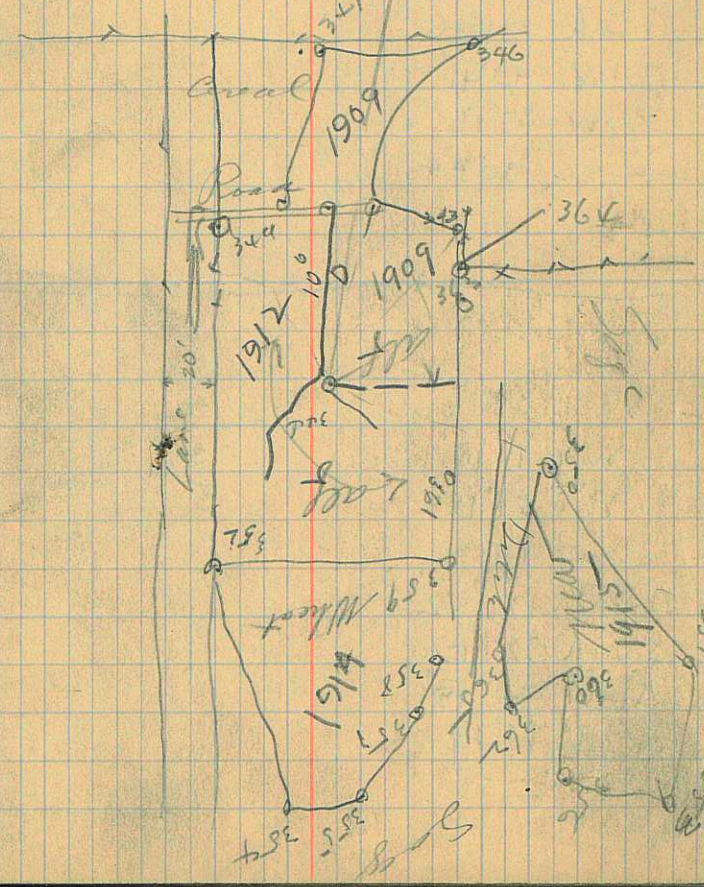
331 –


IC
PP
340
2W
530
1W
191
Ver
342
340
341
garden
Jasmine
333
332
331
Wheat
Corn
Creek
Stone
Fence
Fence
Fence

Δ 1813	182°59'			
Δ Hor	20°18			
Δ IW	63°12			
365	172°35'	2		10.50
364	77°30	3		5.50
363	83°	4		6.75
362	159°15	3		12.0
361	139°30	4		7.35
360	142°45	3		10.75
359	163°50	2		6.4
358	176°14	2		7.3
357	177°44	2		8.8
356	149°42		4.	8.9
355	189°40		3	7.2
354	189°35'	1		9.5
353	148°23		5.0	10.0
352	200°12'	3		7.2
351	120°52	4		10.7
350	106°53	2		5.9
349	337°40'	2		5.85
348	346°30'	2		5.9
347	1°04'	2		7.0
346	28°	2		7.9
345	26	2		5.50
344	44°	2		5.50
Δ 2W	86°			

343 —

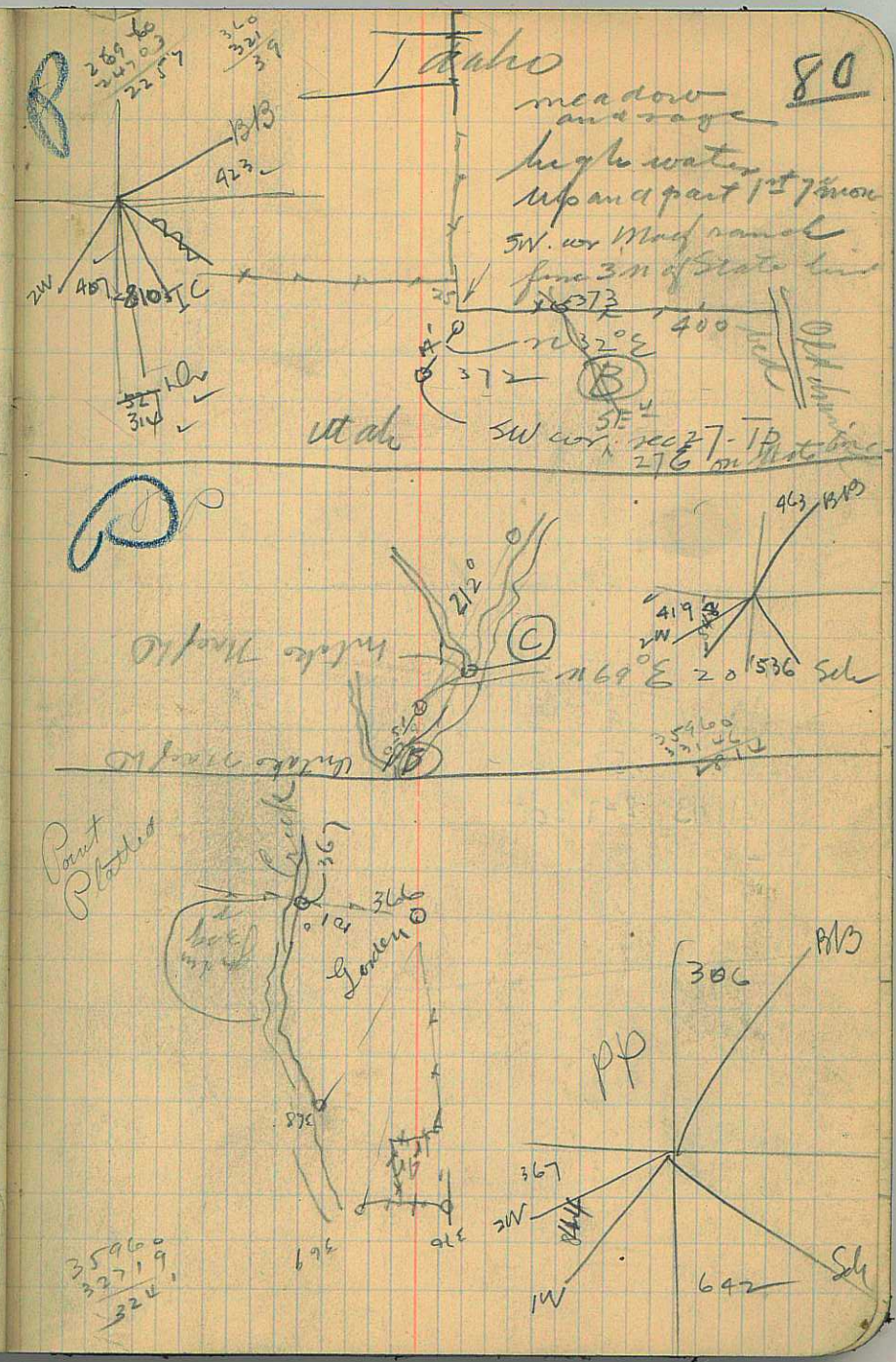




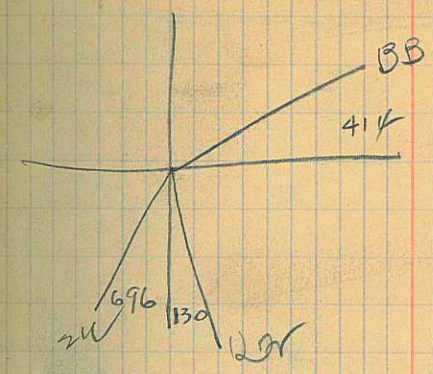
373	359°08	5.0	5.9
∠ I.C	321°		
∠ B	342°12		
∠ BB	247°03		
∠ W	22°09		
372 —			

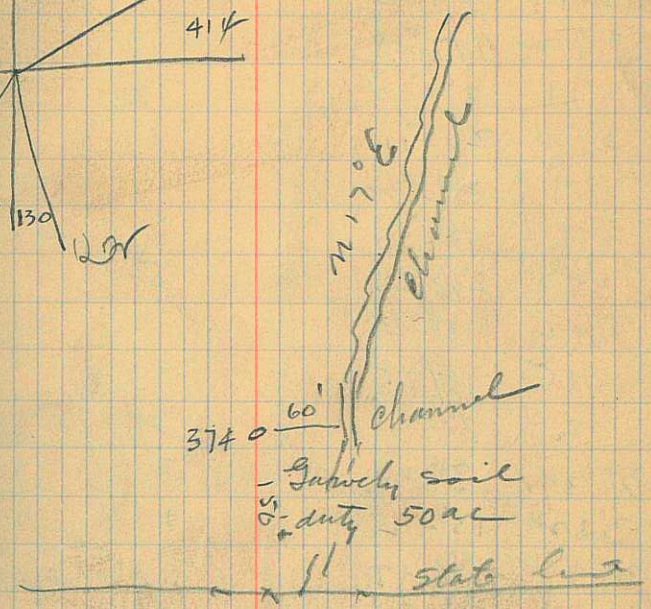
∠ BB	204°52		
∠ Sch	331°46		
∠ IW	49°41'		
∠ W	67°16		
15m 13W sec 36	80°44	3	7.55
371 —			

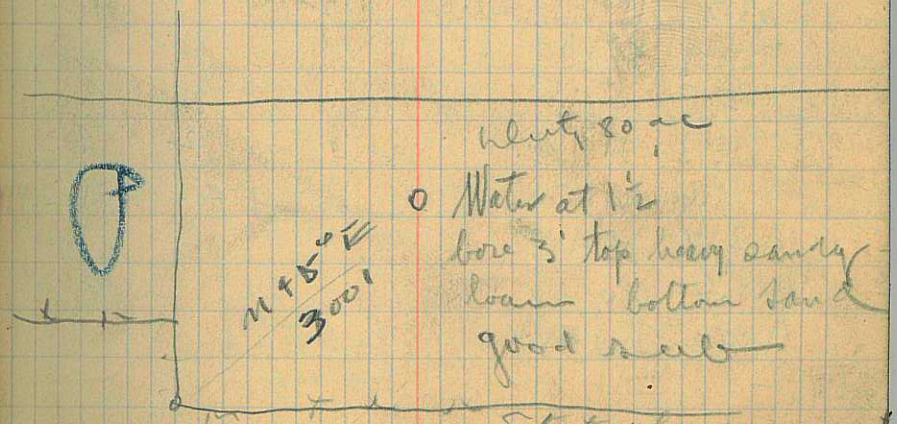
370	356°30	4	6.0
369	11°18'	3	5.0
368	39°18	5	6.3
367	101°	8	8.8
∠ BB	197°02'		
∠ Sch	327°19'		
∠ W	49°49'		
∠ W	69°49		
366 —			



269 60
247 30
22 30







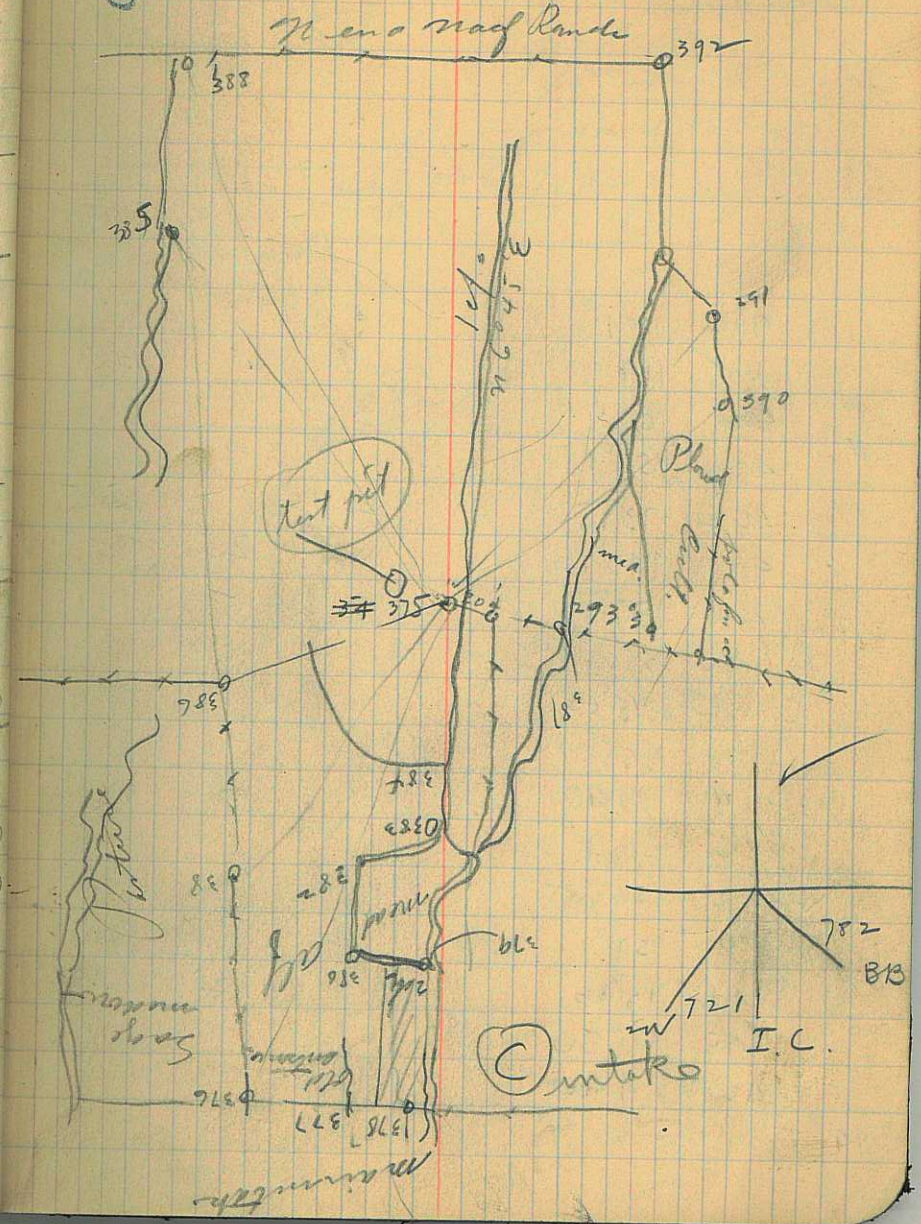
Δ 2 W 34° 50
Δ R 352° 36
Δ 1313 247° 30'
374 –

393	215°44'	4		16.80
392	197°48'		4.0	10.75
391	221°30'	2		8.0
390	236°11	3		8.2
389	293°30	4	4	8
388	166°30		4	10.50
387	293°30'	5		6.1
386	68°45			
385	137°55	3		10.5
384	3°50'	3		6.2
383	3°	2		6.55
382	13°42	1		6.1
381	39°12		5	10.30
380	11°	2		9.25
379	4°10		4	8.80
378	5°15		2	~~4.010~~
377	11°16		2	9.010
376	28°30		4	12
A 2W	35°48			
Δ 1'C	00 00			
Δ BB3	308 02			

375 –

test pit 375 ; H_2O plane at 2½
sandy clay 1-1½

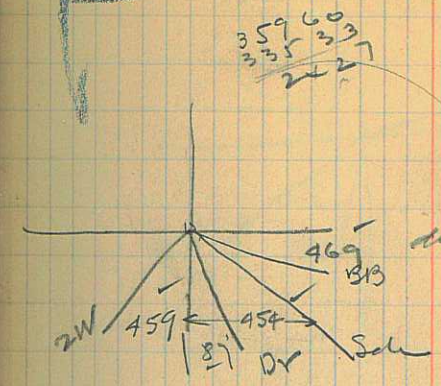
84



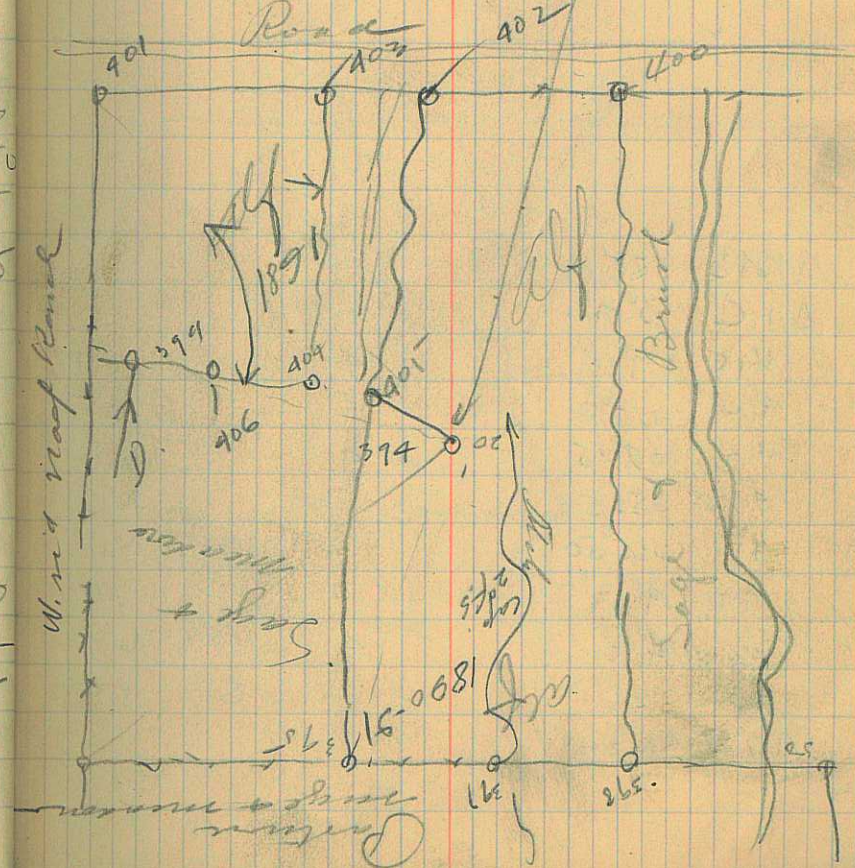
W	406	101°	3		9.3
	405	119	9		10.7
W	404	103°	3		8.3
W	403	152°18'		4	9.80
	402	173°18'	2		12.50
	401	140°16		2	8.5
	400	197°43'		5	10.75
A Sch		335°33'			
Δ 1813		295°08			
Δ Dr		355°01'			
	399	99°40'	2.		9.3
	386	321°	7		
	398	344°05	6		9.8
	397	357°	4		6.60
	396	74°16'		2	6.2
	395	16°50	7		10.55
A2W		24°40 ✓			

394-

Map Remarks

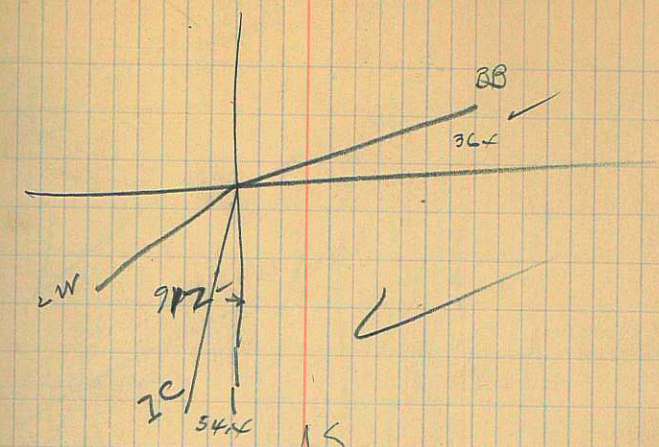


~~Soil Sec~~
soil boring
1 foot shrunk rock
1 - sandy clay
only 70 ac

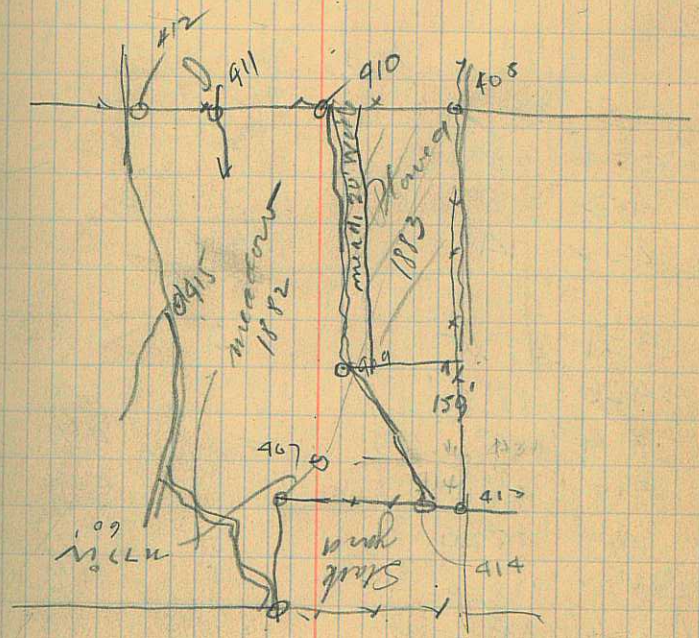


ΔBB3	250°00'			
Δ I.C.	3°07'			
415	337°35'	4		8.0
414	105°	4		6.05
413	103°45	4		6.80
412	351°50'	2		8.95
411	355°50	2		9.0
410	4°17'	2		9.0
409	4°10	4		6.3
408	26°		5	8.9
Δ2W	42°22			

407 -

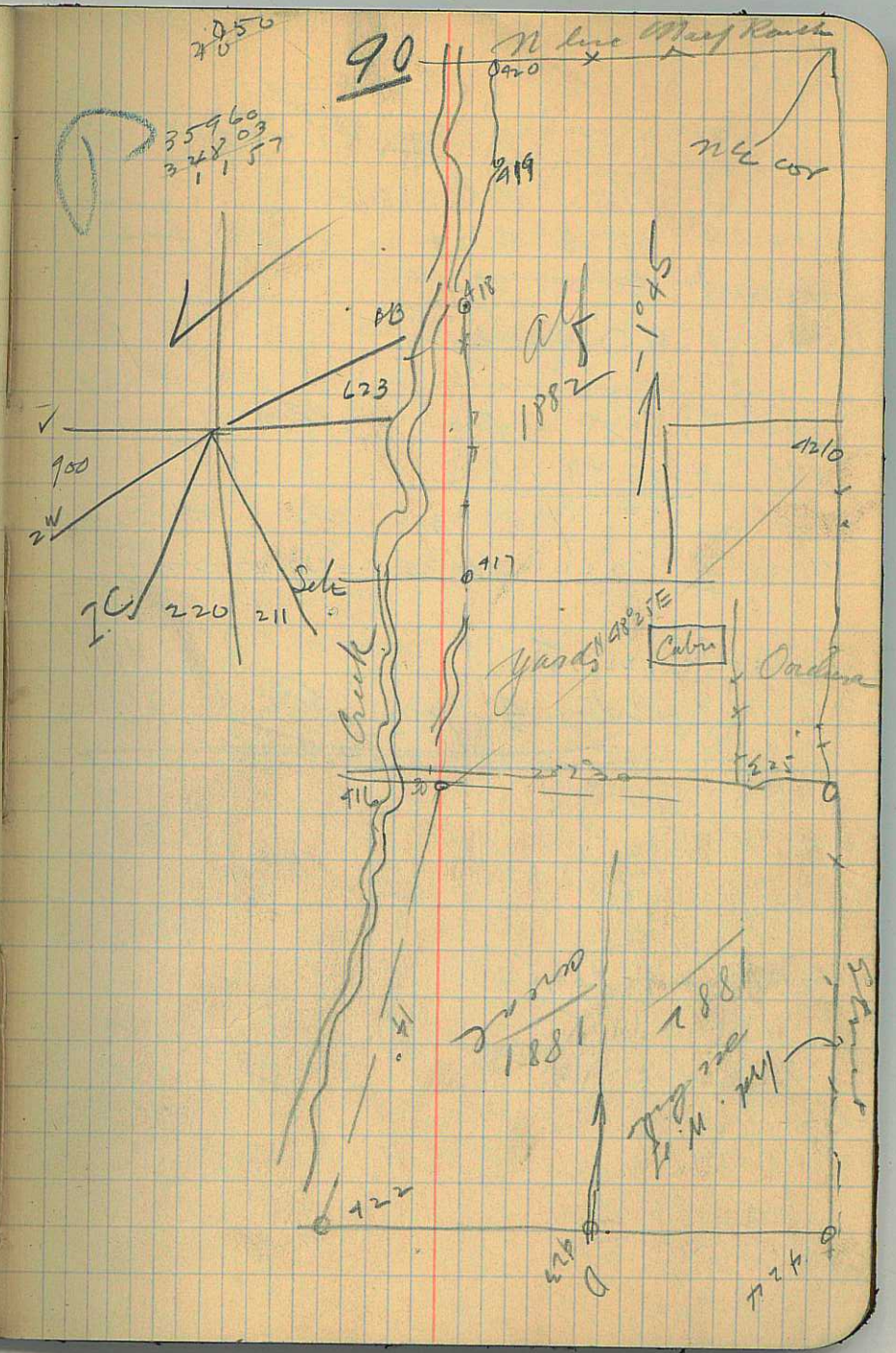


15



425	288°30'	4		7.8
424	333°39'	4		12
423	353°30	3		10.4
422	14°	3		10.5
421	48°15	4		8.8
420	188°50'		1	11.5
419	189°		4	10.5
418	187°10'		4	9.0
417	184°20'	3		7.1
Δ PAB	238°04'			
Δ Sch	348°03			
Δ I.C	12°26			
Δ 2W	48°00'			

416-



Ob. on 426

may monday 22nd - 1916 (9)

	Hz.	Vert.	time
Direct	81°26	40°24	4.05
Inverse	82°21	39°45	
	81°53'30"	40°04'30"	

Direct	81°58	39°58	9:15 PM
Inverse	82°59	39°08'	
	82°28'30"	39 33	

mean Z 82°11' 39°48'30" = 39 47 22

AZW 122°35

426 Sub 4' from Az 82.11

ΔAch 350°47 ✓

ΔBB 161°35 ✓

AZW 58°19 ✓

-◇- -

179°60'
161°35'
18°25'

Lat 41°59'15" approx

Long for = 113°1' I

$$\sin \tfrac{1}{2}a = \sqrt{\frac{\cos \tfrac{1}{2}(z + \varphi + \delta) \sin \tfrac{1}{2}(z + \varphi - \delta)}{\sin z \cos \varphi}}$$

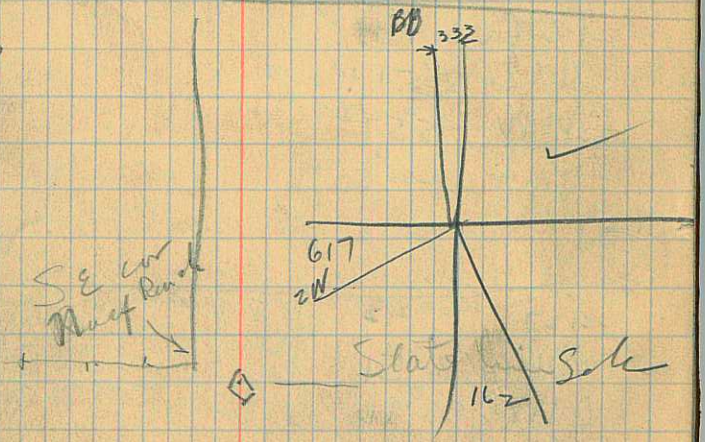
Z = 50°12' 38"

φ = 41°59' 15"

δ = +20°28' 11.6"

Sun S 82°06 40" W

359°60'
350°47'
9 13



π - Pt Ag. Alist

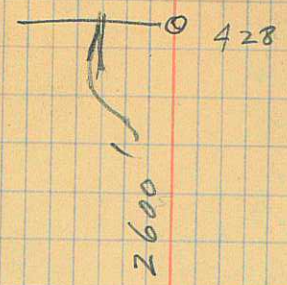
427 —
Δ Hor 82°40

428 —
Δ PB 179°29 ✓
Δ I.C. 159°58 ✓
Δ Sch 259°56 ✓
Δ CPK 301°31 ✓
Δ 1E 2°51 ✓
Δ 1W 95°57' ✓
Δ 2W 122°50' ✓

427

427 2°23
Δ 1E 2°51'
Δ 1W 95°40
Δ 2W 122°35

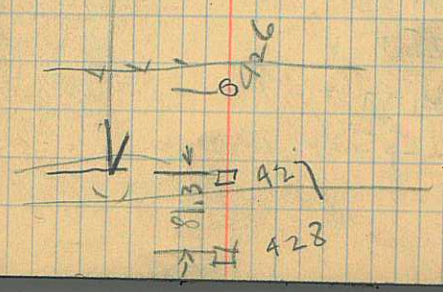
426 —



started ⊙ distance × here 427

Sub 4'

Set 182°23 1°5 m



	AZ
∆ BYB	157°49
∆ 2W	56°10 ✓
∆ 1W	46°05 ✓
∆ I.C.	22°24 ✓
∆ Dr	15°52 ✓
∆ Sch	351°01 ✓
∆ CLK	336°02 ✓

429 –

∆ BYB
∆ 2W
∆ I C
∆ 1W
∆ Dr
∆ Sch
∆ CLK

428 –

∆ BYB	176°48 ✓
∆ 2W	85°08 ✓
∆ I C	71°47 ✓
∆ 1W	64°05 ✓
∆ Dr	25°17 ✓
∆ Sch	341°17 ✓
∆ CLK	325°50 ✓

428 –

Set 182°23 F.S. N. ☐ #429 ↔ 4800 from 427
461076 Stat. line

Angle ☐ 4000 from 427
74°25
82°45
69°21
61°42
22°47
338°5
323°27
Set 0 F.S. South along line

Set 182°23 F.S. N ☐

Az

Δ 1W 21°3
Δ 1E 330°47
Δ Br 316°21
302°07
Δ CLK 301°0
Δ Sch 294°13
Δ I.C. 268°50
Δ B/B 227°06
Δ 2W —

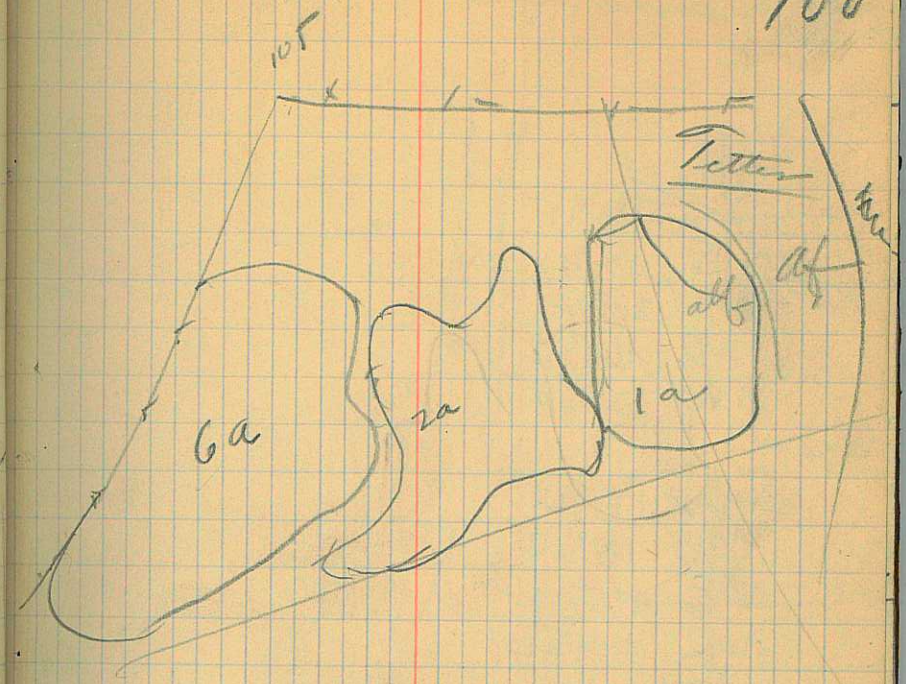
Δ B/B 92°08
430 —

to NE cor James Campbell house

Note 1000' S of S line of Reef
Reach rail in 4 deep.
Creek no inlet

Δ B/B

#430
□ 5400 from 427



Δ 2W	200°48
Δ B&B	218°45
Δ Sch	271°10
SE cor	291°26
Δ Dr	280°38'
A cor	352° R
Δ 1E	315°11 ✓
427	274° ✓
Δ 1W –	

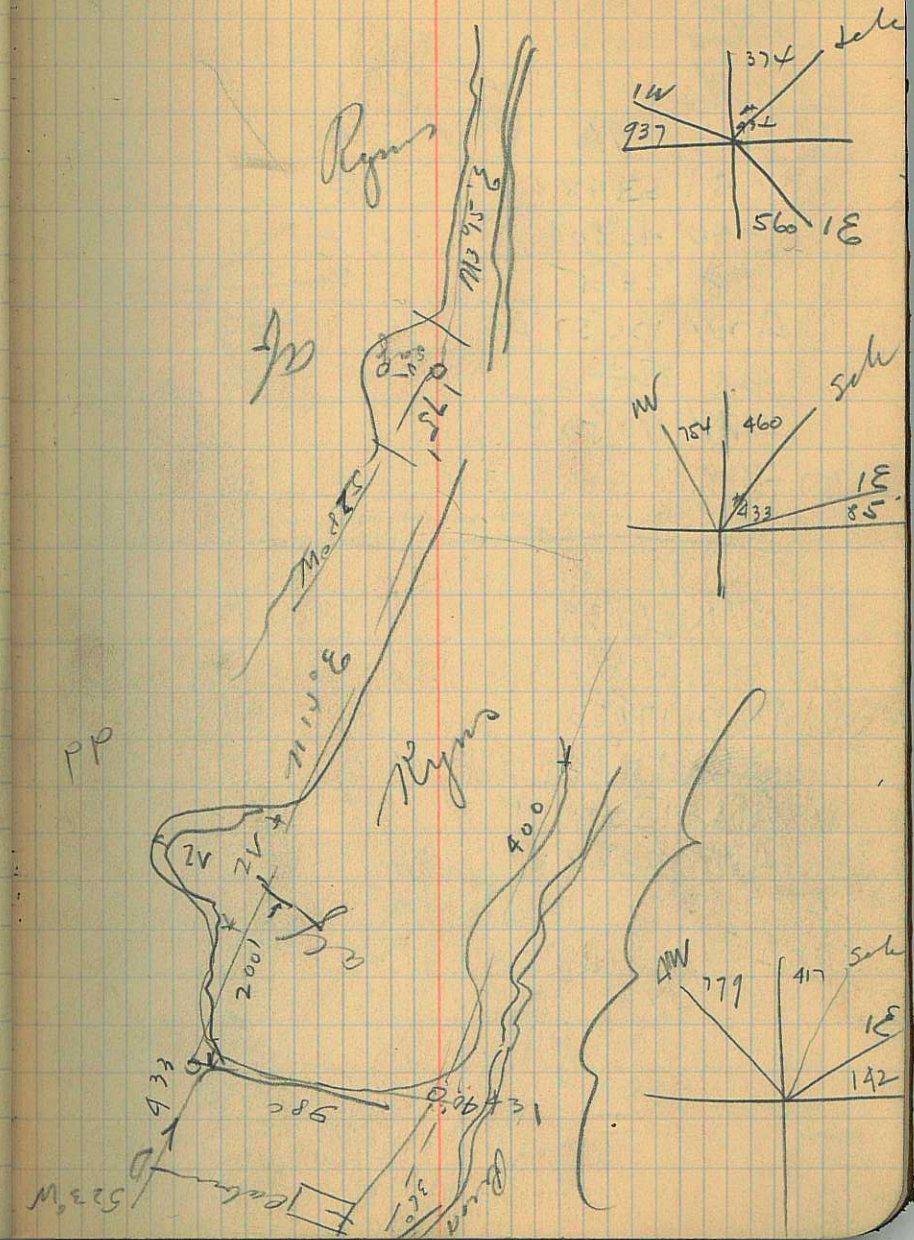
(PP = Pyramid is plotted) 5/23/16

435 183°15
∠1 E 330°45
Δ Sch 200°31
Δ Dr 165°15
Δ W 133°09

434 –
Δ Dr 177°14
Δ BB 184°44
1 E 265°09
Δ Ch 204°42
Δ W 142°58

433 –
Pyr Cabin 39°18
432 213°
∠1 E 261°55
Δ BB 184°12
∠ E C 179°46
Δ Sch 202°38
Δ Dr 174°26
Δ W 142°05

431 –



∠ Ilr	307°41			
∠ Sch	263°12			
442	96°	4		6.6
441	53°48	3		6.3
440	43°30'	2		5.3
439	24°35	2		6.9
∠ IW	136°57		t	
438	35°46		6.0	9.9
∠ IW	98°50			

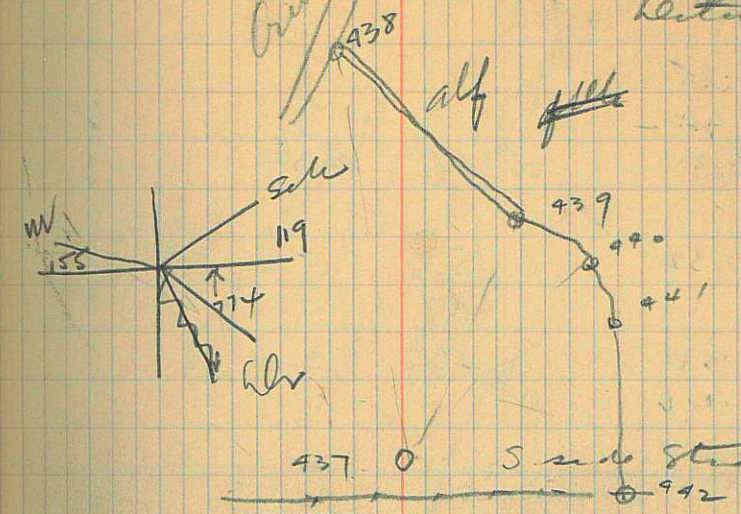
437 –

∠ CIK	261°39'
∠ Sch	203°38'
∠ BB	179°53
∠ IC	171°20
∠ Ilr	153°57
∠ IW	123°08

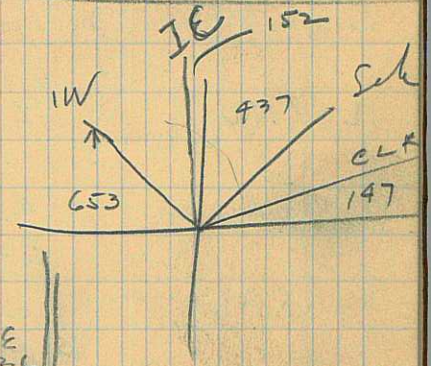
436

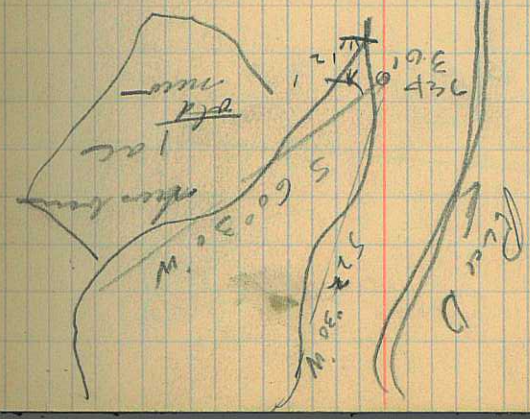
5/23/16

Walt Campbell
Kentucky



PP





5/23/16 Water Meas

Wyatt Experiment Clear Creek Utah

Dist	Depth	W of O	time	Rev.
.5	.25			
1.0	0.3		50	40
1.5	0.32		50	50
2	.30		46½	30
2.8	.20			
.5	0.35			
1.0	0.40		41	60
1½	0.40		44	80
			43½	80
2	0.40		47	40
2.8	.35			

0.86 cfs

1.92 cfs

10. am

gage start ½"
" stops ½"

106

iron rod graduated in inches was driven into the bed of the ditch

gage start 4"
stop 4"

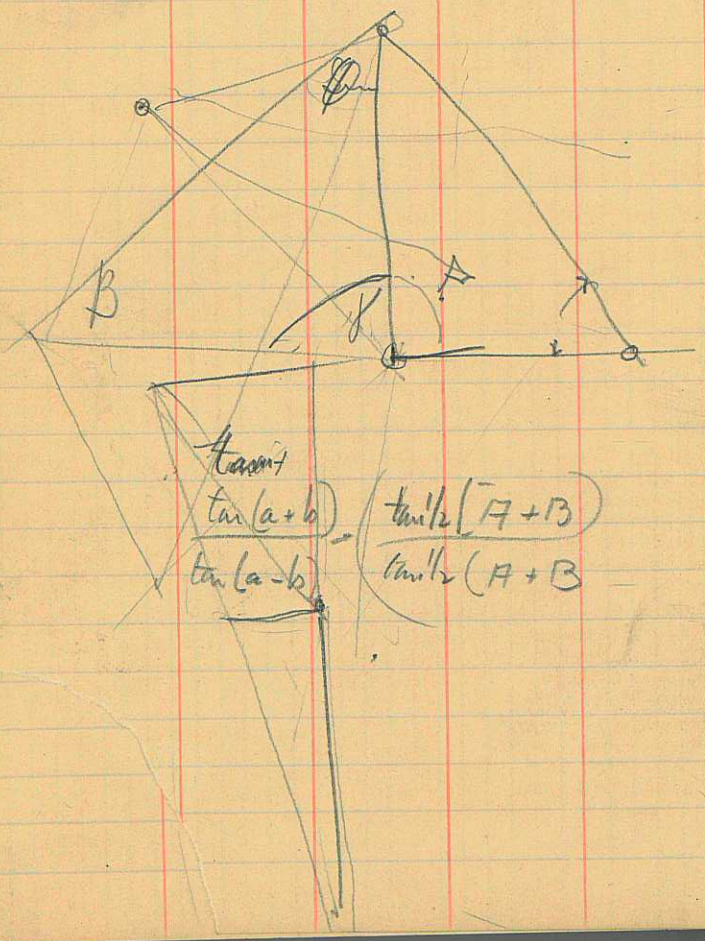
5/23/16 at Clear Creek Govt. Gage

Dist	Depth	Diff 0	time	Rev
13.5	0.35			
12	.6	.36	46	30
10	.65		45	50
8	.8	.50	47	40
6	.9	.54	45	60
			46	50
5	1.0	.6	45	60
4	.8	0.5	41	50
3	.4			

Start 0.85
Stop 0.85

4' running down
Reed detch

Water Supply Papers
of the Great Basin
from 1896 to and including
1915



DIETZGEN'S RAILROAD CURVE
AND
REDUCTION TABLES

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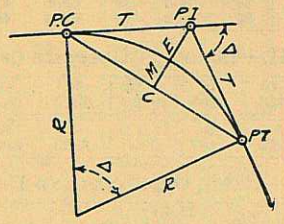

CURVE FORMULAS

Radius$=R=\frac{50}{\sin. D/2}$ (1) Degree of Curve$=D$ and $\sin. \frac{D}{2}=\frac{50}{R}$ (2)

Tangent$=T=R\tan\frac{\triangle}{2}$ (3) Length of Curve$=L=100\frac{\triangle}{D}$ (4)

Middle ordinate$=M=R(1-\cos. \frac{\triangle}{2})$ (5) $=R\text{vers}\frac{\triangle}{2}$ (6)

External$=E=T\tan\frac{\triangle}{4}$ (7) $=R\cos\frac{\triangle}{2}(1-\cos.\frac{\triangle}{2})$ (8)$=R\text{exsec}\frac{\triangle}{2}$ (9)

Long Chord$=C=2\ R\sin.\frac{\triangle}{2}$ (10) $\triangle$=Central Angle

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.=Sta. 161+60.35 to find Sta. of P. C. and P. T. $\triangle=62°\ 10'$ $D=8°\ 20'$. From Table IV for 1° curve T=3454.1 and $\div 8\frac{1}{3}$=414.49 ft. From Table V correction=.36 or T=414.85 ft. P. C.=Sta. P.I.—T=157+45.50. Also from (4) L=746.00 and P. T.=Sta. P. C.+L=164+91.50.

Offsets.—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft.=7.27 ft. Distance=158—Sta. P. C.=54.50, hence offset=7.27 $(54.50\div 100)^2$=2.16 ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2\div(2\times 688.26)$=2.16 ft.

Deflections.—Deflection angle=½ D for 100 ft., ¼ D for 50 ft., etc. For c ft.=(in minutes) .3 x C x D° or=defl. for 1 ft. from Table III x C. For Sta. 158 of above curve=.3 x 54.5 x $8\frac{1}{3}$=136.2′ or 2° 16.2′, or=2.50 x 54.5=136.2′ from Table III. For Sta. 159 deflection angle=2° 16.2′+8° 20′÷2=6° 26.2′, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 91.37. For from Table IV for 1° curve E=960.6 for 8° 20′=960.6÷$8\frac{1}{3}$=91.27 and from Table V correction=.10 or E=91.37 ft. Or suppose $\triangle$=32° and E is measured and found to be 42 ft. What is D? From Table IV E=230.9 and÷42=5.5 or D=5° 30′.