

W147

FIELD BOOK

361

CITY OF
SAN DIEGO - CALIFORNIA
ADDITIONAL WATER SUPPLY
- CONDUIT -
EL CAPITAN - UNIVERSITY HEIGHTS

7

KEUFFEL & ESSER CO.

DRAWING MATERIALS

AND

SURVEYING INSTRUMENTS.

MICROFILMED
NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

Tables for Excavations and Embankments.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.

FOR SINGLE TRACK EXCAVATION.

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

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

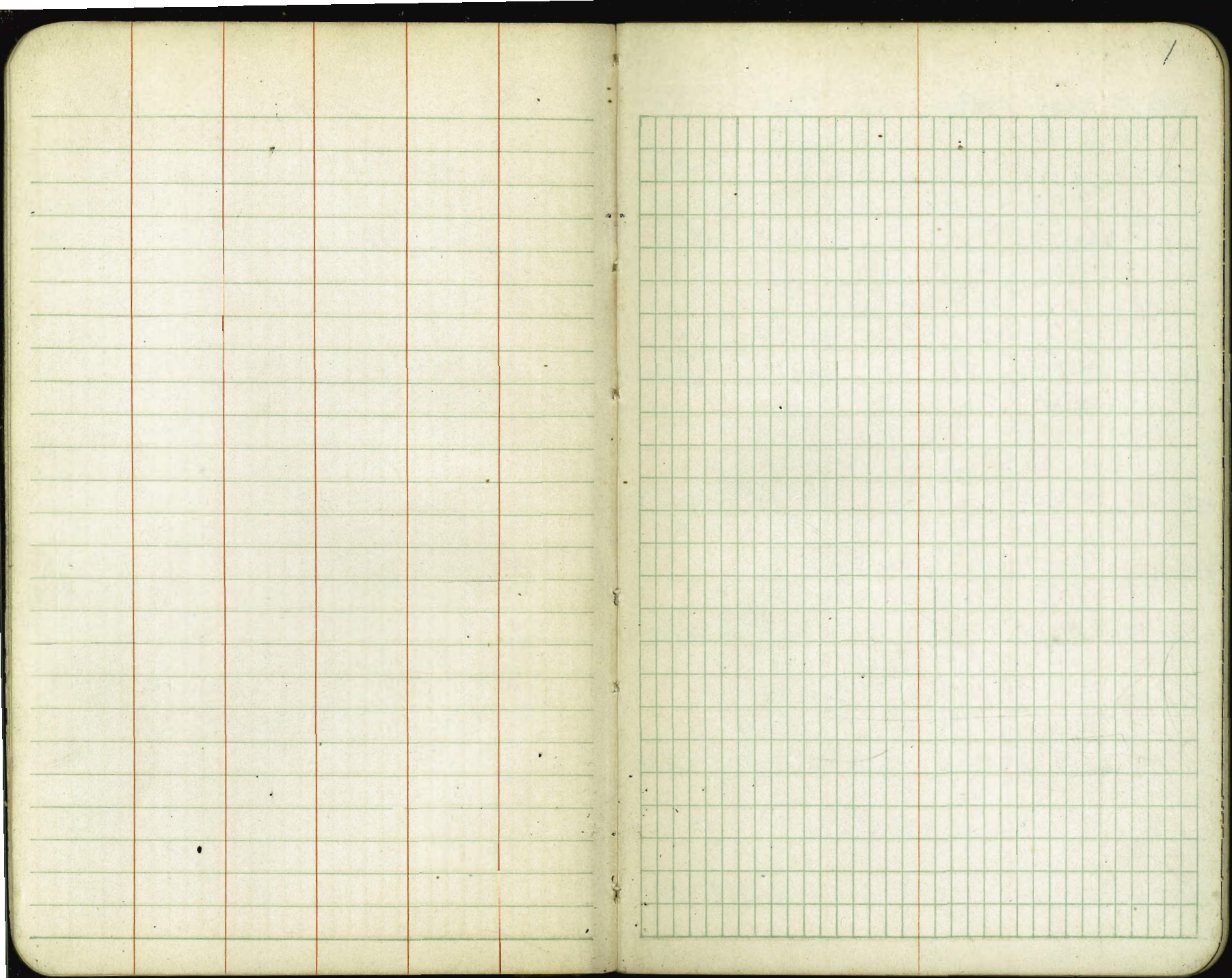
Calculated by Julien A. Hall, M. Am. Soc. C. E.

FOR KEITH'S RAILROAD CURVE TABLES SEE END OF BOOK.

Book #7
City of San Diego
California

Index

Around Road at Cape Horn - - - - 2
Check Levels - - - - - 7, 23, 35
Alignment near El Monte Grove - - 58



S-1

B5 H.1 FS

Hayler Loc
Franklin T
Williams Rod

2

Sta Az Rod Vert C El

103+17 283-46 5.10 528.44 523.34
538.25 533.15to 108+99 292-31 5.81 -0-50 -8+3 514.91
524.72

K@108+99 5.15 520.06 529.87

to 111+11 341-36 2.11 -1-06 9.30 510.76
520.57

K@111+11 5.13 515.89 525.70

to 113+08 352-01 1.96 -1-38 7.56 508.03
518.14

K@113+08 5.22 513.55 523.36

to 114+39 281-03 1.30 +1-17 2.50 511.05
520.86

K@114+39 5.12 516.17 525.98

to 116+78 249-25 2.38 -0-55 5.77 510.70
520.51

116+78 K 5.10 515.80 525.61

to 119+04 237-24 2.25 -0-09 6.08 509.77
519.53

Around Road @ Cape Horn Mon Oct 31/21

By Check
Levels

103+17

5.82

R

108+99

2.12

580

111+11

1.97

So of road (514.69)

113+08

1.31

R

114+39

2.39

211

So of road (510.48)

116+78

2.20

119+04

R

198

(508.05)
No of road @ Cape Horn

(510.76)

No of road

R

1.30

HX4 R.S. post Nedge road 2.38 opp end Cape Horn

So of road 100' In El Monte Oaks E end.
(510.41)

(509.44)

R

2.26

Dated
Nov 30 1921
JRB

B.S. H.I. P.S.

513.61
50

511.16
2.45
513.61

4

Sta	Az	Rod	Vert L	EI
π@135+39		4.85	^{509.09} 518.26	
	130-06	0.30		
	128-52	3.36		
	308-46	2.31		

✓
B142+65 212-32 7.75 -0-11 710 ^{500.99}
511.16

142+62^s Cross fence A155-12 to flume from cor below

π@142+65		4.75	^{505.94} 515.31	
	335-10-30	5.10		
147+83				
forward line	212-58	5.18		
149+56	"	6.91	691	70-29 +58. 506.79

✓
to 151+10 212-58 ⁸⁴²
8.44 +0-10+245 503.29
-0-05 -122 509.84

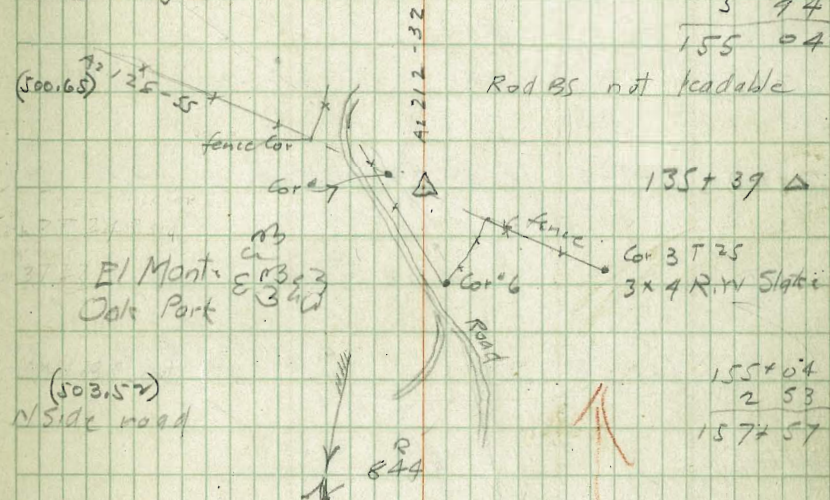
π@151+10		5.01	^{509.30} 514.95	
152+33	229-20	1.23		82 500.1 506.7
153+35	"	2.25		58 502.5 509.1

to 155+04 229-20 3.93 -0-25 734 ^{500.96}
507.61

π@155+04		5.07	^{506.03} 512.68	
155+72	223-21	0.68		103 495.7 502.7
156+38	"	1.34		114 494.6 501.3

to 157+57 223-21 2.52 -0-37 788 ^{498.15}
504.80

Cor 47 E1 Monte Oak Park
fence cor fence A2 128-55
Cor 3 T 25



forward line

(501.19)
No side road

forward line

(498.33)

135+39

7.26

142+65

8.45

151+10

3.94

155+04

155+04

2.53

157+57

wrong
Elevs
151+10
190+40

Plotted
Nov 18 1921
J.P.R.B.

Sta	Az	Rod	Vert	L	F.I
K@157+57		4.95	503.10 509.75		498.15 504.80 494.9
157+99	248-0	0.42		82	501.5
159+10	"	1.53		41	499.0 505.6
160+27	"	2.70		101	493.0 499.6
161+47	"	3.85		104	492.7 499.3
163+52	"	5.95	-0-36	-6.2	492.0
to 164+05	248-0	6.47	+0-45	+8.48	506.63 513.28
K@164+05		4.98	511.61 518.26		"
to 165+65	248-0	1.59	-1-17	8.58	503.03 509.68
K@165+65		5.0	508.03 514.68		"
167+84	224-49	2.19		64	501.6 508.3
to 171+02	224-49	5.36	-0-57	-8.91	494.12 500.77
K@171+02		5.22	499.61 505.99		"
173+67	216-24	2.60	-1-32	-6.9	487.6
175+47	"	4.45	-0-57	-7.4	486.7
to 176+77	216-24	5.74	-0-31	-5.18	489.21 495.59
		5.19	494.40 500.78		"

Sta	Az	Rod	Vert	L	F.I
157+57					157+57
					6.48
					164+05
					1.60
					165+65
					5.37
					171+02
					5.75
					180.77
					(506.99)
					P.O.T No edge road
					6.47
					(503.37)"
					1.59
					forward line
					(494.39)
					No edge road @ BM 9
					500.77
					494.39
					6.38 Error
					forward line
					" "
					5.74

500.91 BM 9
+ 1.13
502.04
- 7.65
494.39 171+02

Plotted Nov 18 1921
J.E.P.

B.S H.L P.S
L

497.02
6.38
490.64

6

Sta	Az	Rod	Vert L	EJ
K@176+77		5.19	494.40 500.78	
179+87	217-51	3.10		5.7 488.7
181+75	"	4.98		1.6 492.8
	✓			
K@182+26	217-51	5.48	+0-27.098 493.40 499.80	
		5.18	498.60 504.98	
K@182+26				
184+01	218-10	1.75		5.6 493.0 498.4
187+01	"	4.75		-0-54 -74 486.0
188+56	"	6.30		-0-51 -93 484.1
	✓			
K@190+40	218-10	8.13	-0-10 7.96 490.64	
		5.02	495.66	
K@190+40				
192+75	217-49	2.35		10.2 485.4
194+00	"	3.60		8.2 487.4
	✓			
K@196+81	217-49	6.40	-0-32 -5.96 484.68	
		5.25	489.93	
	✓			
K@199+66	265-46	2.84	+0-37 1.79 488.14	
		5.00	493.14	
K@199+66				
200+98	265-46	1.32	-3-02 -7.0 481.1	

Cont p 9

forward line

"

No sideroad

R
5.47

forward line

"

"

No side road

By Check level diff @ (171+02) or -6.38

page 8

Nov 1/21

forward line

"

C Road @ L

R
6.40

P.O.T. No sideroad

2.84

forward line

Plotted
Nov 18 1921
R.P.S.

Check Levels
B.S. H.I. F.S.

Sta	Ar	Rod	Vert L	El
	B.S.	T	F.S.	El
	0.74	525.36		524.62
86+01			5.25	520.11
T.P.	8.27	531.71	1.92	523.44
B.M.			4.82	526.89
90+20			4.83	526.88
T.P.	12.565	543.855	0.42	531.20
92+21	8.620	550.963	1.512	542.343
93+72			0.76	550.20
T.P.	0.555	539.966	11.552	539.411
"	0.750	528.084	12.632	527.334
96+28			3.57	524.51
T.P. 97+68	10.090	528.329	9.845	518.233
100+45			10.05	528.38
T.P.	2.916	530.786	0.459	527.870
" 103+17	0.793	524.132	7.447	523.339
T.P.	0.440	516.566	8.006	516.126
108+99			1.73	514.64
111+11			6.09	510.48
T.P. 113+08	7.650	515.700	8.516	508.050
114+33			4.94	510.76
116+78 S-1			5.29	510.41
119+04 "	2.970	512.410	6.260	509.440

B.M. #10 1/2 Twin Oak Tree to side S.D.R

U.S.G.S Gauging Sta Tablet 529.85

41590	
38340	
3.250	
524.62	
527.87	
524.72	10.08
520.57	10.09
518.14	10.09
520.86	10.10
520.51	10.10
T.R. 519.53	10.09

Contd from PG BS H.I. F.S.

9

Sta	Az	Rod	Vert. L	EI
π@199+66		5.00	493.14	
to 204+320	265-46	4.65	-0-30	898 484.16
π@204+32		4.86	489.02	
207+52	265-46	3.20	94	472.6
to 208+88	265-46	4.55	-0-23	745 481.57
π@208+88		5.22	486.79	"
210+97	299-21	2.09	+1-21	449 486.5
212+60	"	3.73	372 +3-37	425 505.1
to 213+25	299-21	4.36	+3-14	424 505.98
π@213+25		5.11		
213+88	265-44	0.63	63 -5-34	-61 499.9
215+04	"	1.84	179 -8-56	-281 477.9
216+60	"	3.38	335 -5-01	-195 476.5
to 216+85	265-44	3.59	-3-56	-2462 481.36
π@216+85		5.00	486.36	
to 219+58	298-01	2.72	+4-19	+20.49 501.85

P.I.O.T. No side road

R
464

of roadway in L @ school

4.36

forward line over ridge

" " " "

On top of ridge N of school

BS flag only

forward line

" "

" "

No side road @ L

R
3.59

199+66
4 66
207+32
4 56
208 88
4 37
213+25
3 60
216+85
2 73
219+58

482.40
+ 3.19 B.M.⁸
485.59
- 3 65
481.94 (216+85)

Plotted
1/10/18
M.B.

B.5 H.1 F.S

Sta	Az	Rod	Vert	L	E
π@219+58		4.83	506.68		501.85
221+64	257-45	2.06		82	498.5
to 223+06	257-45	3.47		0-14	6.44 500.24
π@223+06		4.93	505.17		
to 225+82	214-49	2.75		-1-51	8.91 491.33
π@225+82		5.03	496.36		
226+87	193-28	1.05		98	486.5
227+67	"	1.86	185	-4-02	-131 478.2
to 228+05	193-28	2.22		-2-47	-10.81 480.52
π@228+05		5.20	485.72		
229+47	236-31	1.42		106	475.1
to 230+98	236-31	2.92		0-30	7.72 478.00
π@230+98		4.94	482.94		
233+05		2.08	207	-3-06	-112 465.8
232+24	236-24	1.27	126	-4-37	-102 467.8
to 236+94	236-24	5.95		-1-10	-12.16 468.84

10

R
2.72

forward line

No edge road

R
3.47

No edge road

R
2.74

forward line

" "

30' NW of L in road @

silos

So side road

fence cor N + S line both ways from road
forward linePlatted Nov. 18 1901
H.R.P.

219+58
3 46
223+06
2 76
225+82
2 23
228 05
2 93
230+98
5 96

✓ 236+94

R
2.22R
2.92

B.S. H.I. F.S.

Sta	Az	Rod	Vert	L	E
K@236+94		5.18	471.02		465.84
238+71	256-25	1.77		9.3	461.7
242+54	"	5.58		10.0	461.0
to 245+59	256-25	8.64	-0-02	5.83	465.19
K@245+59		5.00	470.19		
to 247+72	263-15	2.12	10-05	4.68	465.51
K@247+72		5.11	470.62		
to 250+91	314-23	3.18	-0-54	9.90	460.72
K250+91		5.22	465.94		
253+15	245+57	2.24		6.1	459.8
255+01	"	4.10		8.0	457.9
to 256+37	245-57	5.45	-0-19	8.15	457.79
K@256+37		5.10	462.89		
to 260+68	250-33	4.30	-0-21	7.70	455.19
		5.14	460.33		

468

11

	R	
	5.93	
forward line		236+94
"		8.65
		245+59
		2.13
		247.72
		3.12
No edge road	R	250+91
	8.62	
		Nov 2/72
		250+91
		5.46
No edge road		256+37
	R	4.31
	2.12	260+68
	R	
	3.17	
forward line		
"		
No edge road	R	
	5.44	
455.26		B.M. @ 11 Sycamores B.M. # G 455.94
		plotted by Nov 1972

Sta	Az	Red	Vert L	LI
π@260+68		5.14	460.33	455.19
265+93		5.25		81 452.2
266+98		6.30	+1-08	412.4 467.6
268+00		7.33	73V +1-44	422 477.4
to 269+69	234-40	9.00	+1-48	+28.29 483.48
π@269+69		5.08	488.56	"
to 270+92	219-55	1.22	+1-57	0.89 487.67
π@270+92		4.98	492.65	"
271+83	222-21	0.92	91 -7-25	-11.8 475.9
272+73	"	1.87	181 -10 0	-34.0 455.7
275+49	"	4.60	457 -4-13	-33.7 454.0
to 276+90	222-21-30	5.97	-2-19	-24.6 463.51
π@276+90		5.03	468.54	"
275+97	42-21	0.93		74 461.1
279+36	227-15	2.47	746 -2-47	-14.0 451.5
279+84	"	2.95	794 -3-07	-16.0 447.5
280+77	"	3.88	387 -2-32	-17.2 446.3
283+03	"	6.14	613 -1-24	-15.0 448.5
to 284+47	227-15	7.56	-0-58	-12.79 450.2

	R	
	4.29	
forward line So edge road		thence over ridge
" " on hill		
" " " "		
		260+68
		9 01
		9.50
On hill	B.M. #	455.94 B.M. No. 6
		269+69
		1 23
		+ 2.65
		458.59
		270+92
		5 98
		260+68
		- 2.73
		455.26
		276+90
		7 57
		284+47
		1.22
		R
		1.22
forward line		
" " rough approx So edge road		
So edge road		
On hill So'S of road		
		5.96
On back line		
" " " "		
On forward "		
" " " "		So edge road
" " " "		
" " " "		in road

Plotted 18 1921
J.P.B.

Sta	Az	Rod	Vert L	E
π@284+47		4 92	455.64	450.71
284+88	258-40	0.41	24	443.2
π@289+83	258-40	5.35	-0.43	444.02 445.43
		5.15	449.17	-5.15 445.43
			4.38	444.79
π@289+83	5.15	Elev. H.I. Corrected		450.58
π@297+33	263-16	7.49	-0-19	441.44 914
π@297+33		4.94	446.38	"
π@301+21	265-48	3.87	-0-12	439.73 665
π@301+21		5.20	444.93	"
π@303+59	249-29	2.375	-0-07	439.25 568
π@303+59		5.12	444.37	"
	209-34	1.08	0	
B.M.	215-23	1.70	5.14	439.23
		1.75		
π@309+95	229-48	6.35	-0-16	436.63 7.74

7.57

On forward line so edge road	284+47
	5.36
	<u>289+83</u>
	7.50
to edge road	<u>297+33</u>
	3.88
	<u>301+21</u>
	2.38
B.M.#5 446.20 on SD Gas pole 72-74	303+59
	4.38
450.58 Now H.I.	6.86
Elevs Corrected to this B.M.#5 thence	<u>309+95</u>

R 747

R 387

No side road Appox on line with Pump Plant
E Property Line
fence @ 181-52 Az
2.37

N.E. Cor Pump Bldg so of road
USGS B.M. #39.83 N.W. Cor Pump Bldg
N.W. cor Pump Bldg
(tablet in
concreted
pipe)

Plotted
Nov 18 1921
H.R.B.

Sta	Az	Rod	Vert	∠	E
π@261+28		5.05	454.79 453.78		441.74 448.73
363+06	263-14	1.79	178	-3-35	-11.2 438.5
to 365+44	263-14	4.15		-1°-39	-11.98 436.75 437.85
π 365+44		4.98	441.73		
367+98	261-48	2.55	254	-2-02	-9.1 428.7
369+51	"	4.08	407	-2-37	-18.6 419.3
to 370+08	261-48	4.63		-2-33	-20.62 416.13 417.60
π@370+08		5.11	421.24		
	175-50	0.18			
376+43	261-25	6.35		-0-54	-10.0 407.6
to 377+04	261-25	6.95		-0-52	-10.50 405.63 407.70
π@377+04		5.07	412.77 410.70		
377+95	261-27	0.91		1.9	410.9
378+91	"	1.87		8.2	404.6
381+94	"	4.90		9.1	403.7
to 384+00	261-27	6.95		±0-41	+8.28 413.91 G.L. 416.52
π		5.07	418.98		

R
4.96

forward line	361+28 4 16
So side road	365+44 4 64
	370+08 6 96
	377+04 6 96
forward line	384+00
"	
forward line	
"	
forward line	
On line with fence Cor 1518	171-26 Az So at road
forward line	696
"	
"	
So side road	697 #

Nov 3/21

Plotted
M^w 5/22/21
HRS

Sta	Az	Rod	Vert L	E
π@384		507	418.98	416.55 413.91
385+39	261-19	1.39	+ 2 -13	+5.3 421.8
389+00	"	4.00	+ 1 -44	412.1 428.6
to 389+52	261-19½	5.51	+ 1 -27	+13.97 427.88 420.49
π@389+52		515	433.03	435.64
392+46	261-35	2.74		37 433.4
to 394+84	261-35	5.31	- 0 -11	708 425.95 G.L. 428.56
π@394+84		512	431.07	"
397+78	261+13	2.25	494 -1-43	-88 419.8
400+78	"	5.25	594 -1-11	-14.2 416.4
to 403+23	261-13	8.38	- 0 -39	752 416.43 G.L. 418.93
π@403+23		525	421.68	424.18
	272-35	0.58		
404+11	261-13	0.88		80 416.2
405+10	"	1.90	187 -3-24	-11.2 407.7
407+89	"	4.67	466 -1-22	-11.1 407.8
to 410+52	261-13	7.28	- 0 -50	-10.57 405.86 409.00

forward line	384	5+52
"		389+52
"		532
So side road		394+84
"		839
"	551	403+23
"		729
forward line		410+52 ✓
So side road		
"	532	
forward line		
"		
P.O.T.		
BS not readable.		
Intersect Julian Ave + Alpine Road		
@ fence N side Alpine Road		
forward line		form Line
"		"
to field N of Alpine Road		
	227	

Plotted Nov 18, 1933

Sta	Az	Rod	Vert	←	F
π@410+52		A 85	413.85	71	409.00 405.82
	300-13	0.79			
	250-26	0.84			
410+68	261-30	0.16		73	406.6
410+84	"	0.32		59	408.0
	268-40	3.45			
	267-45	3.95			

to 416+79 ▲ 261-30 6.26 1047.403.53
-0-31 -5.64 #2022

π@416+79		A 97	408.50		405.19
417+88	262-13	1.09		5.0	403.5
419+66	"	2.87		0.3	408.2
421+41	"	4.62		7.0-43	409.3

to 424+14 ▲ 262-13 7.34 420.84
+1-21 +17.31 #17.53
By Check Levels 420.65

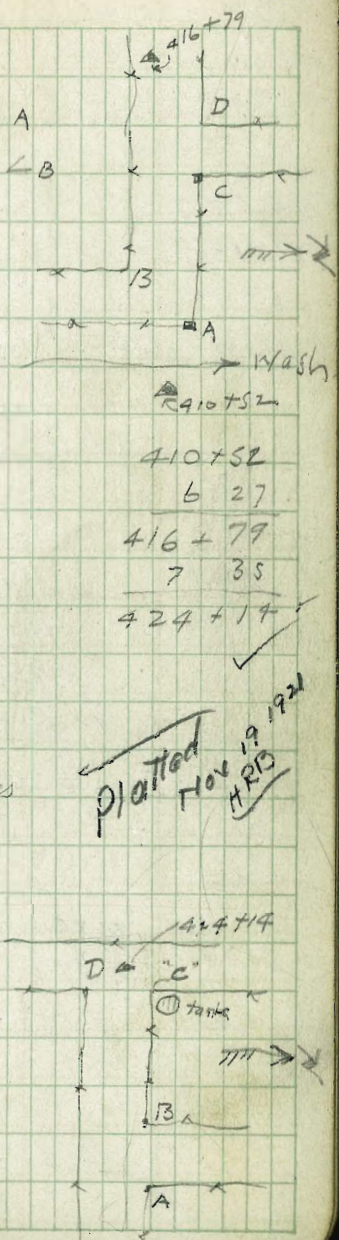
π@424+14		5.21	425.86		422.74
	74-33	2.70	268	-4-11	-19.6 401.1
	72-34	2.10	207	-5-23	-19.6 401.1
422+26	82-13	1.89	188	-5-10	-16.9 403.8
423+20	"	0.96	94	-8-40	-14.3 406.4
	3-14	0.33		0	
	144-35	0.32		0	
424+55		0.41		0.5	425.4

4x4 White post Road Cor A
 fence Cor W & S # @ Road L-B
 & Wash forward line
 " "
 " "
 4x4 Post @ fence Cor Road "C"
 fence Cor Road D
 BS flag only
 So Side road

forward line
 "
 "

Intersect + roads
 B.S. road not readable olive trees

fence Cor A Road
 fence Cor B
 Back line
 " "
 fence cor C
 " " D
 forward line



Platted Nov 19 1921
 H.R.D.

416+79 ▲

Sta

420.65
416.46to 426+69 196-05 2.54 +2-55 433.59
1294 427.70K@426+69 5.20 438.79
428+39 196-21 1.70 33 435.5to 431+10A 196-21 1/2 4.40 -0-38' 1025+ 428.70
-4.89 424.51

Cont P 20

Levels from County Highway

	+	HI	-	
	6.880	401.056	394.176	
TP	11.515	408.671	3.90	397.156
"	11.985	420.312	0.344	408.327
	9.555	429.547	0.320	419.992
		8.895	420.652	

39935°

13459°

Check Levels	+	HI	-	EI
	5.880	406.236		400.356
	4.890	408.11	3.015	403.221
A6+79			4.58	403.53
T.P	7.57	413.79	1.89	406.22
A10+52			4.79	409.00
T.P	12.34	421.42	4.71	409.08

Cont'd p 23

19

424-14
2.55

2.54

426+69
4.41
431+10

Form line

@ Intersect L of Road

Platted
Nov 19 1921
HRB

Highway (B.M. #20) No side road

	39.935	
	13.459	
	26.476	
	394.176	
On 424+14	416.46	4.19 Error
	420.652	

B.M. E of Lakeside Ho of Highway Not School Ho

399.15 Error 4.38

404.79 " 4.21

Sta	Az	Red	Vert	∠	EI
466+10	π	4.99	476.77		471.78
468+49	198-45	2.40	339	+1-57	+8.7 480.0
470+76	"	4.68	466	+2-25	+19.7 491.5
472+06	198-45	5.95		+2-17	+23.72 495.50
472+06	π	5.00	500.50		
475+60	197-56	3.53		+0-52	+5.94 500.84

Continued on page 75

22

688 -2°-19

forward line	466+10
"	5.96
" @ fence w side road	472+06
"	3.54
E side road	475+60

5.95

Platted Nov 21 1921
HRB

+ H.I
Check Levels

Sta	Az	Rod		Vert	L	EI
	+	H	-	ET		
403+23 Camp 19		421.42	2.49	418.93		
T.P.	12.56	429.36	4.62	416.80		
394+84			0.80	428.56	0.80	
T.P.	6.67	436.01	0.02	429.34		
389+52			5.52	430.49	5.52	
TP	7.64	425.22	12.43	423.58		
384			8.70	416.52	8.70	
T.P.	0.59	413.05	12.76	412.46		
T.P.	5.65	415.74	2.96	410.09		
377+04			8.04	407.70	8.04	
T.P.	13.01	428.40	0.35	415.39		
370+08			10.80	417.60	10.80	
T.P.	12.84	440.99	0.25	428.15		
365+44			3.14	437.85	3.14	
TP	12.47	452.81	0.65	440.34		
361+28			3.07	449.74	3.07	
T.P.	9.39	460.06	2.14	450.67		
356+31				452.05	8.01	
T.P.	7.77	467.23	0.60	459.46		
351+10				461.02	6.21	
349+40				464.32	2.91	
T.P.	9.50	468.98	7.75	459.48		
344+74				458.53	10.45	
339+75				465.33	3.65	
B.M. Telephone 466.33 page 14			26.4	466.34		

415.86	Snor	- 3.57
424.88	"	- 3.68
426.81	"	- 3.68
412.84	"	- 3.68
404.56		- 3.14
415.06		- 2.54
435.68		- 2.17
447.66		- 2.08
449.77		- 2.08
459.04		- 1.98
462.30		- 2.02
457.04		1.43
464.27		- 1.06
465.34		- 1.0

Check	+	+	-	±
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468.98

T.P.	12.74	480.88	0.81	468.14
------	-------	--------	------	--------

333+90				480.22	0.66	479.75	0.97
--------	--	--	--	--------	------	--------	------

TR	1.16	469.39	12.65	468.23
----	------	--------	-------	--------

TR	0.28	457.13	12.54	456.85
----	------	--------	-------	--------

325+05) ^{TR}			12.56	444.57
-----------------------	--	--	-------	--------

			13.36	443.77
--	--	--	-------	--------

443.77

S

Continued from page 22 #1.

Sta	Az	Rod	Vert L	EI
N@475+60	197-56	3.53 5.05	+ 0-52 505.89	500.84
S ^{#76 68} page 22	198-47	1.08	-2-57	495.3
to 478+72	198-47	3.11	696	498.93
N@478+72		4.82	503.75	"
T-3 53+84				
479+70	187-56	0.98	43	499.5
482+36	"	3.64 364	+ 1-39	405 509.4
483+36	"	4.65 464	+ 1-38	437 512.1
to 484+14	187-56	5.41	+ 1-28	43.88 512.81
T3 59+24				
N@484+14		4.58	517.39	"
485+56	185-36	1.42	6.8	510.6
486+92	"	2.78	2.1	515.3
487+84	"	3.70	7.7	509.7
488+02	"	3.88	0.8	516.6
to 489+54	185-36	5.39	+ 10-30	414.15 526.96
T3 64+63				
N@489+54		4.47	531.43	"
492+66	180-01	3.13 312	+ 2-48	+15.3 542.3
494+37	"	4.85 483	+ 2-34	+21.7 548.7
495+84	"	6.32 630	+ 2-09	+23.8 550.8

25

353 - 0°-53'

forward line in road

3.11

On W side road On tack in white stake with
gas pipe 6" forward road or East (property line differ
from line

W side road

5.40

-1-31'

forward line

"

" " in wash

W side road

5-40 -1-32'

Platted

Nov 21 1921

HRB

forward line in road

" " " "

" " in " "

Sta	Az	Req	Vert	∠	EI
K@489+54		4.47	531	43	526.96
To 497+88	180-01	8.33	+ 2	- 49	+ 40.94 567.90

K@497+88		5.19	573	00	
499+91		2.05	703	+ 4	- 35 + 16.2 584.1

To 501+36	180-03-30	3.50	349	+ 5	- 25 + 33.00 600.90
-----------	-----------	------	-----	-----	---------------------

K@501+36		5.11	606	01	
----------	--	------	-----	----	--

503+48	180-04	2.13	714	+ 4	- 28 + 16.6 617.5
--------	--------	------	-----	-----	-------------------

505+00	"	3.65	364	+ 3	- 42 + 23.5 624
--------	---	------	-----	-----	-----------------

506+48	"	5.20	514	+ 6	- 17 + 56.5 657.4
--------	---	------	-----	-----	-------------------

To 507+21	180-04	5.22	585.4	+ 6	- 19 + 64.85 665.75
-----------	--------	------	-------	-----	---------------------

K@507+21		5.20	670	95	
----------	--	------	-----	----	--

508+40		1.20			5.8 665.2
--------	--	------	--	--	-----------

509+03		1.83	184	+ 3	- 58 + 12.7 678.5
--------	--	------	-----	-----	-------------------

509+61		2.43	240	+ 5	- 54 + 44.8 690.6
--------	--	------	-----	-----	-------------------

To 510+26	180-04-45	3.07	304.7	+ 5	- 55 + 31.56 697.31
-----------	-----------	------	-------	-----	---------------------

K@510+26		4.98	702	20	
----------	--	------	-----	----	--

511+31		1.05			4.2 698.1
--------	--	------	--	--	-----------

						489+54
						8+34
						497+88
						3 50
						501+36
						2 14
						503+50
						507+21
						3 05
						510+26

form line
on form line

R
5.25 - 6 - 20

form line in gully

Platted

Nov 21 1971
HRB

3100 - 5-53

forward line

K@510+26		498	702.29		697.31
514+25	180-04	1.99	198	+ 2-36	490 706.3
to 513+40	180-04	3.13		+ 1-51	410.14 707.45
K@513+40		5.04	712.49		"
515+95	180-04	2.58	755	- 6-03	471.6804
517+30	"	3.92	390	- 5-10	352 677.3
518+77	"	4.85	484	- 4-18	364 671.1
518+98	"	5.60	558	- 3-02	295 678.0
to 520+16	180-04	6.75		- 1-0	11.78 695.67
K@520+16		5.11	700.78		"
520+84	1	0.66	66	- 5-28	6.3 689.4
to F.S.	180-04				
523+73	" "	3.65	357	- 7-29	470 648.7
to 526+89	180-04	6.80	673	- 6-12	73.14 672.53
K@526+89		5.10	627.63		"
528+37	"	1.44	143	- 2-58	74 615.1
to 534+38	180-04	7.48		- 1-54	24.78 597.75
		5.09	602.84		

fair line

On Hills

forward line

" "

" "

" "

on hill

3.13 - 1-50

6.74 + 0-59

form line

to end of road @ L

form line

@ W side of road

6.82 + 6-15

E side road form line

Platted

Nov 20 1921

ARB

7.48 + 1-53

372
2
744

27

510+26	
3	14
513	- 40
6	76
520	+ 16
6	73
525	+ 87
7	49
534	+ 38
	73
	73

Sta	Az	Rad	Vert	L	E
$\pi@534+38$		5.09	602.84		597.75
536+48	180-04	2.10		104	592.4
$\pi@542+75$	180-04	8.36	-1-09	-16.83	580.92
$\pi@542+75$		5.03	580.95		
	90-26				
544+60	180-04	1.85		104	570.5
546 52	"	3.78	377	-1-50	-12° 566.9
$\pi@548+38$	180-04	5.62	-1-38	-16.05	564.87
$\pi@548+38$		5.12	569.99		
	180-04	3.58			
$\pi@550+76$	180-04	2.37	-1-12	10.11	552.85
$\pi@550+76$		5.05	564.93		
$\pi@131+47$	182-13	4.08	-0-52	-6.17	553.91
T-3					
$\pi@552+89$	218-40	2.12	-0-10	5.70	552.23
$\pi@552+89$		5.10	564.33		
$\pi@554+61$	222-42	1.71	-0-07	5.45	558.88
		5.03	563.91		

forward line of land line to E					
Neqge road E	8.34	+1°-08		534+38	
E " This road				6+37	
				542+75	
				5	63
road E				548+38	
forward line				2	38
" "				550	76
				2	13
				558	89
				1	72
E side Road	5.63	+1-36		558	61

forward line

2.37

to T3 Closure } $\pi@T3$ $\begin{matrix} 270^{\circ}30' \\ -131+47 \end{matrix}$ BSS 550+76

T3 554.11 } $\pi@T3$ $\begin{matrix} AL \\ 270-75 \end{matrix}$ -6.96

In Olive grove

2.12

In Olive grove

1.71

Platted

Nov 21 1921

HRB

Sta	Az	Rod	Vert L	EJ
K@554+61	✓	5.03	563.91	558.88
to 556+92	221-38	2.30	-0-37	-2.49 556.39
K@556+92		5.14	561.53	
to 560+77	219-40	3.81	-0-36	9.18 554.35
K@560+77		4.92	557.27	
to 563+14	198-51	2.36	-1-43	12.10 545.17
K@563+14		4.94	550.11	
B.M.				6.01 544.10
565+39				546.65
New M.I.	180-58	2.16	551.59	2-27 -9.2 537.6
567+86	"	4.73	474	-2-32 -2.0 525.7
to 570+40	180-58	7.25	-2-02	-25.78 520.87
K@570+40		4.95	525.82	
to 574+56	210-01	4.15	-0-02	5.05 520.77
K@574+56		4.99	525.76	
to 579+03	210-01	4.46	-1-01	-7.92 512.85

558.88
2.64
561.52
5.14
556.38

29

W side Second St	555+61	2.31	
50' So of S rd Cur Second + Grand	556+92	3.85	
2.30 BSR. 21 + 2.64	560+77	2.37	
Nov 9/21	563+14	7.26	
	570+40	4.16	
	574+56	4.77	
	579+03		
		2.37	

545.58

On Second St W side on tel pole
forward line H.I. Corr to B.M.
" " @ Culvert

545.58
6.01
551.59

W side road

7.24

In Vineyard P.O.T.

4.17

In Vineyard

Platted
Nov
22, 1921
H.P.B.

Sta	Az	Rad	Vert L	512.85
κ 579+03		502	517.67	
to 586+42	210-20	7.38	-1-02	-13.31 499.54
κ 586+42		5.05	504.59	
		2.65	56	499.0
		Void		
to 592+48	253-48	6.05	-0-18	8.55 496.04
κ@ 586+42 again				499.54
		5.08	504.62	499.54
589+07	249-42	2.65	5.6	499.0
to 592+66	249-42	6.23	-0-22	9.24 495.38
κ@ 592+66		4.98	500.36	
to 598+24	249-42	5.57	-1-01	-9.89 485.49
κ 598+24		5.08		
to 603+10	249-42	4.85	-1-06	-9.34 476.15
κ@ 603+10		5.07	481.22	
606+75	"	3.65	365	-0-53 -56 470.6

4.46 +0-59 579+03
 7 39
 586+42
 6 06
 592+48

No side of road Pepper Drive

7.40 ± not readable
 forward line in vineyard So of Pepper Drive

line changed

Az from 592+48 tube abandoned

forward line

In Vineyard P.O.T.

Rad Not readable palms

" P.O.T. 5.59

" P.O.T.

Platted Nov 22 1921 HRB

⊕ Road So + No.

586+42	6 24
592+66	5 58
598 24	4 86
603+10	

Sta	Az	Pod	Vert	L	E
$\pi @ 603+10$		5.07	481.22		476.15
609+07	249-42	5.97	597	-0-42	-73 468.9
610+89	"	7.80	779	+1-17	+17.4 493.6
$\pi @ 611+41$	249-42	8.30		+1-39	+23.93 500.08
$\pi @ 611+41$		5.00	505.08		"
612+07	"	0.66		+4-02	+4.6 504.7
$\pi @ 613+65$	249-42	2.23		+1-22	+5.34 505.42
$\pi @ 613+65$		4.98	510.30		"
613+98	"	0.33		7.8	502.5
615+21	"	1.60	186	-2-05	-24.8 480.6
616+70	"	3.12	305	-8-20	-44.8 460.6
618+15	"	4.55	450	-6-35	-51.8 453.6
$\pi @ 620+13$	249-42	6.48		-4-52	-54.84 450.58
$\pi @ 620+13$		4.83	450.41		
to Fore Sight	227-19				
622+43		2.30		6.8	443.6
to 626+11	227-19	5.97		-0-35	-6.10 444.48
		4.93	449.41		

204-54 31

forward line	In Vineyard	rd of road	
"	"	On Hill	249+4
On Hill P.O.T.			603+10 8.31
			611+41
			2.24
			613+65
			6.78
forward line			620+13
			5.98
On Hill P.O.T.			626+11 ✓
		2.23	-1°-24
forward line			
"	"		
"	"		
"	"		
In Vineyard			
		6.50	+4-54
Running to F.S. pole on hills	rd edge of		
Copen Valley			
		5.26	+0-34'

Platted
Nov 17 1921
HBB

+ H.I. -

Sta	Az	Rod	Vert	L	E
626+11		493	149.41	8	444.5
629+89	227-19	378		80	441.4
631+01	"	490		81	441.3
to 632+74	227-19	6.62	-0-29	978	439.63
N@632+74		0.31	503 444.66	530	439.4
633+05		0.59		510	439.6
633+33	"	0.59		510	439.6
637+14	"	4.40		74	437.3
to 638+88	227-19	6.13	-0-24	876	435.90
N@638+88		4.85	440.75		
640+88	"	7.00		78	433.0
641+73	"	2.85		61	434.7
to 643+96	227-19	5.07	-0-15	690	433.85
N@643+96		4.98	438.83		
to 649+04	227-19	5.07	-0-17	706	431.77
N@649+04		4.98	436.75		
651+98	"	2.94		55	431.3
653+16	"	4.12		88	428.0
to 654+16	227-19	5.11	-0-07	597	430.78

All OS in vineyard

E. N+S road forward line

N edge Broadway

E. N+S road Broadway forward line

fence line N+S

forward line

626+11
6.63
632+74
6.14
638+88
5.08
643+96
5.08
649+04
5.12
654+16 ✓

R 6.11

5.07

5.06

Platted Nov 22 1921
HRS

Sta	Az	Rad	Vert L	E
$\pi @ 654+16$		5.04	435.82	430.78
657+48	227-19	3.32		73 428.5
658+78	"	4.62		104 4254
$\rightarrow 660+37 @ 227-19$		6.20	-0-14	763 428.19
$\pi @ 660+37$		5.06	433.25	"
661+90	"	1.53		52 428.1
$\rightarrow 665+73 @ 227-19$		5.35	-0-06	5.72 427.53
$\pi @ 665+73$		5.07	432.60	"
667+30	227-19	1.57		84 424.2
668+23	"	2.50		97 422.9
669+51	"	3.78		5.5 427.1
$\rightarrow 672+08 @ 227-19$		6.34	0	5.12 427.48
$\pi @ 672+08$		5.08	432.56	"
673+37	"	1.29		48 427.8
675+34	"	3.26		63 426.3
676+85	"	4.77		50 427.6
$\rightarrow 678+13 @ 227-19$		6.04	+0-01	465 427.91

	5.10	
forward line		654+16
		621
		660+37
		534
		665+73
		635
		672 08
		605
		678+13 ✓
	R	
	G19	
forward line		
In Vineyard	5.34	
forward line		
"	"	
"	"	
In Vineyard		
	633	
"	"	
"	"	
"	"	
@ Su side Wisconsin Ave	428.27 ✓	p 35

Platted Nov 22 1921
H.R.B.

Check Levels El Cajon

	El	-	H1	+
B.M.	415.435		419.115	3.680
TP	417.065	2.050	423.450	6.385
TP	418.26	5.19	425.35	7.09
"	422.75	2.60	430.73	7.98
B.M.	426.73	(4.00)		
S-678+13	428.27	2.46		429.91
page 33		12.30		25.135

Check Levels Grossmont

	El	-	H1	+
	647.95		650.69	2.74
TP	638.17	12.52	638.32	0.15
TP	626.23	12.09	635.26	2.03
794+83	633.83	1.43		
TP above	626.23		627.28	1.05
B.M.	614.33	12.95	616.98	2.65
797+35	614.54	(2.44)		
TP	604.94	12.04	607.31	2.37
TP	594.60	12.71	595.96	1.36
TP	583.56	12.40	584.37	0.81
TP	571.75	12.62	573.20	1.45
B.M.	560.55	12.65	563.27	2.72
826+77A	552.35	10.92		
		86.29		12.41

Nov 10/21
Co. Highway B.M. N.W. Cor. Magnolia & Broadway
(1/2 Mile N. of El Cajon)

420.507 #2

Spruce Eucalyptus tree of grove N. of El Cajon 1/4 of road
Spoke in root of 426.70 B.M.

On cross Hub apple Stone @ Ry. Bridge

631.80 p 37

On tel pole N. side SD Ry
612.44 p 40 in private roadway

626.23
73.88
552.35

Tel pole N side SD Ry

86.29
12.41
73.88
551.35
625.23

75.37
9.65
65.68
559.55
625.23

from p 34	Note Equality	H.1.		
Sta	Az	Rod	Vert	E
$\pi @ 695+95 = 699+95$		5.20	434.45	429.25
	145-06	0.0495		
to FS	219-56			
699+40	"	3.45		93.4252
699+50	"	3.55		17.7416.8
699+60	"	3.65		9.74248
			7.18	
to 702+41	219-56	6.45	-0-11	427.27
$\pi @ 702+41$		5.25	432.52	"
			0.60	
to 708+40	219-56	5.98	+0-26	431.92
$\pi @ 708+40$		5.22	437.14	"
710+39	"	1.92	2.2	434.9
to 714+23	219-56	5.82	+0-29	+490 436.82
$\pi @ 714+23$		5.19	442.01	
to 720+15	219-56	5.91	+0-50	+8.58 445.40
$\pi @ 720+15$		5.16	450.56	"
to 726+40	219-56	6.48	+0-59	+11.12 456.52

65

219-56
160
3056

36

4.35
Hwy Cor El Cajon Service Sta. west of town
Along W Side Highway to S.D.

forward line @
below in drainage
on Culvert Top

695+95
6.46
702+41
5.99
708+40
5.83
714+23
5.92
720+15
6.49
726+40

5.2 ft of paving
6.45

5.2 ft of paving

5.97

5.2 ft of paving Approx in line with fence } west of road
270-23
A2

585

5.1 " " "

5.90 -0-52

platted Nov 22 21
H.R.B.

On line fence to west

5.0 " " " 6.47 -1-01

Sta	Az	Rad	Vert	L	E1
K@726+64		5.23			456.52
730+99	219-56	4.35	+1-31		+115.4680
	270-50				
to 736+50	219-56	9.85	+1-44		+30.07 486.59
K@736+50		5.12			491.71
738+45		1.95	+1-33		+53 491.9
741+63		5.13	-0-53		79 478.7
to 742+48	219-56	5.97	+0-55		+9.56 496.16
K@742+48		5.25			501.40
745+72	219-56	3.25	+2-28		+140 510.2
to 746+54	219-56	6.05	+2-02		+21.52 517.67
K@748+54		5.26			522.87
	307-22				
to 752+73	225-09	4.18	+0-54		+65.7 524.24
K@752+73		5.14			529.38
756+60		3.88	+1-57		+137.537.4
to 758+86	245-11	6.12	+1-39		+17.63 541.87

Intersect road from	E				726+64
fence line of					9.86
					736+50
					5.98
					742+48
					6.06
4.95 W. of W. Side of Paring					748+54
		9.85	-1-46		4.13
					752+73
					6.13
furn line					758+86
" "					
4.90 W. of W. Line of Paring		6.00	-0-56		
furn line					
4.85 W. of Paring					
		6.05	-2-03		
Az of fence W. of R.R. lines to this hub					
5.0 W. of W. line Junction of State Paring & El Cajon Paring					
Approx on So Line Chase St to E of					
		4.18	-0-55		
furn line					

platted
Nov 22 1909

+ H.1 -

Sta Az Rod Vert L El
 TP758+86 5.38 547.25 541.87

to 763+16 Δ 245-11 4.29 +0-43 +5.37 547.24

TP763+16 5.00 552.24
 765+69 2.53 1.9 550.3

to 768+63 Δ 228-23 5.46 +1-30 +14.34 561.58
 -17+104

TP768+63 4.45 566.03
 22+28^s 53-36 5.22 571 -1-58 -17.9 543.7

769+14
 On tunnel Δ 283-37 0.51 0.2 565.8
 769+44 " 0.84 81 +10 -10 +14.6 576.2
 769+90 " 1.31 127 +9 -41 +21.7 583.3
 770+19 " 1.61 156 +10 -18 +28.3 589.9

to 771+18 \circ 283-37 2.68 255 +13 -15 +60.02 621.60

TP771+18 4.98 626.58
 773+59 " 2.42 741 +1 -29 +6.7 627.8
 774+63 " 3.45 +0 -41 +41 625.7
 776+29 " 5.12 511 +2 -23 +11.4 643.0

to 777+15 \circ 283-37 6.00 597 +4 -42 +49.10 670.70

283-23

283-37
120
103-37

38

Rod L

6.12 -1-41 758+86

+30

763+16

In field 3ft + 11 of highway fence head

5 47

768+63

4.28 -0-44

2 55

forward line

771+18

5 97

East Portal of Tunnel

777+15

On -17+104 line E from Eucalytus pass @ Grossmont

5.46 -1-31

Δ marked S on Projection Sheet
 53-29 Az " " "

forward line

S.D. & A Ry
 Upper edge " " cut

270 -13 -17

forward line

" " Approx Vert L

" " "

Platted as 1921
 Nov 21 1883

Sta	Az	Rad	Vert. C	El
π@777+15		510	675.80	670.70
+0778+97	283-37	1.81	+3-43	+11.77 682.47
π@778+97	not occupied	Offset 3' to Left		
+0780+42		1.44		
π@780+42		5.04	685.83	680.22
782+11	283-37	1.70	169 -2-02	-60 674.8
784+81		4.40	439 -1-30	-11.5 669.3
+0786+05	283-37	5.62	-1-33	-15.20 665.89
π@786+05		5.02	670.61	"
786+71	283-37	0.66		80 662.6
789+14	"	3.10	309 -1-06	-5.9 659.7
+0791+23	283-37	5.17	-0-23	8.51 662.10
π@791+23		5.18	667.28	
	104-05	1.45		5.9 661.4
792+08	283-37	0.85		9.5 657.8
794+06	"	2.85	283 -4-17	-21.2 640.9
+0794+83	283-37	3.61	360 -4-49	-30.30 631.80

+ 3.36
 283-37
 90
 193-37

5.04 39

662+7
 -3.76
 685.83
 777+15
 1.82
 778+97
 1.45
 780+42
 5.63
 786+05
 5.18
 791+23

600	-4-44	
1.81	-3-45	
On offset	Offset 3' Lt	
+3.36 Rad on 778+97		
On fence line		
On Offset 3' Lt	5.61	+1-32
forward line		
"		
On Offset 3' Lt		in open field
Old Hub & tack	2' x 2'	
forward line		
"		
On hillside	3' offset	left

Plotted
 Nov 1923
 RB

Sta	Az	Rod	Vert	ℓ	E
π@794+83		5.08	636.88		631.80
795+60	283-37	0.79	77	-8-04	-109 620.9
796+11	"	1.32	148	-9-02	-205 611.3
796+35	"	1.54	152	-7-10	-190 612.8
796+71	"	1.90	188	-6-50	-224 609.4

to 797+360 283-37 2.53 253 -4-23 -1936 ~~612.44~~
 ✓ 614.54

π@797+36		4.98	619.82		"
799+05	283-37	1.70	169	+5-0	+147 629.2
799+75	"	2.40	239	+3-28	+145 629.0
780+76	"	3.40			

to 801+620 283-37 4.28 426 +4-49 +36.90 651.44

Next Elevs HI.

π@801+62		5.03	656.47		"
803+55	283-37	1.95	193	+5-12	+176 669.0

to 805+920 283-37 4.32 430 +4-58 +37.36 688.80

π@805+92		4.90	623.70		"
806+84		0.92		3.1	690.6

to 807+330 283-37 1.40 +0-23 4⁰⁴ 689.66
 5.00

R of ry fence for line +43.50^R 3.61
 drainage
 C.S.D. Ry
 Drainage + R of ry fence

On 3' Offset left in private road
 Check levels to 35 Elev Corrected

2.53 +4-24
 forward line
 " "
 C. Fletcher flume

On 3' Offset Lt on Hill
 4.28 -4-57

forward line
 Nov 12/21

On 3' Offset Lt on Hill
 4.32 -4-59

forward line
 805+92
 1.41

On 3' Offset Lt on Summit of Hill
 807 33
 1.40

✓
 805+92
 1.41
 807 33

Sta	Ar	Rod	Vert	L	El
T@807+33		5.00	694.66		689.66
808+88	283-37	1.59	155	-8-24	229 666.8
810+76	"	3.48	343	-7-01	42.1 647.6
811+72	"	4.44	439	-6-11	47.4 642.3
To 812+79	283-37	5.50	546	-5-23	51.47 638.19

T@812+79		5.10	643.29		638.2
813+73	283-37	0.95	94	-6-0	-9.9 638.3
815+52	"	2.78	273	-7-34	36.3 601.9
816+63	"	3.88	384	-6-42	45.0 593.2
817+64	"	4.88	485	-4-30	38.2 600.2
818+60	"	5.83	581	-4-13	42.8 595.4

To 820+97	283-37	8.17		-0-54	-12.84 625.35
-----------	--------	------	--	-------	---------------

T@820+97		5.10	630.45		
822+17	283-37	1.20			2.0 628.5

To 823+35	283-37	2.37		0	5.17 625.28
-----------	--------	------	--	---	-------------

T@823+35		4.88	630.16		
824+65	283-37	1.30	178	-7-04	-15.8 609.5

To 824+65	283-37	1.31	130	-7-03	-16.09 609.19
-----------	--------	------	-----	-------	---------------

5.08 614.27

forward line

Plotter flame

On hill 3' offset Lt

5.48 +5-25

forward line

" "

" "

" "

812+79

8 18

820+57

2 38

823+35

On 3' offset Lt on hills

8.17 +0-55

forward line

On 3' offset Lt on hills

2.37

forward line

On 3' offset Lt on hills

Platted
Nov 25 1921
MRB

Sta	Az	Rod	Vert. L	E
π@824+65		5.06	614.27	609.19
835+98	283-37	1.38	133	-10-39 -248 5844
826+99	"	2.45	234	-12-37 -522 5577
π@828+970	283-37	4.38	432	-7-18 -55.32 553.87 552.35
π@828+97		4.94	557.29	"
830+36	283-37	1.39		68 550.5
π@830+78	283-37	1.80		-0-04 5129 557.00
π@830+78		4.77	556.77	
	50-57.7	4.25	423	+2-31 +186 570.6
π@835+34	247-07	4.55		-0-51 -674 545.26
π@835+34		5.00	550.26	545.26
839+44		4.10		-0-57 -68 538.5
π@841+03	247-07	5.68		-0-53 -876 536.50
π@841+03		5.13	541.63	
844+49	247-07	3.46		90 532.6
844+74	" "	3.72	371	-1-21 -88 527.7
844+96	" "	3.93		9 43 532.2

130 +7-04

On forward line

face of hills

552.35 Error 1.52 Von levels 10.35

On 3' Offset 150' So of SD + A in field
(By Check Levels p 35)

4.37 +7-22

828+37
1.51
830+78
4.56
835+34
4.56 7.35 No of S.P.A.R. Tang

Hub behind Tel. pole 50+408 } Grossmont Tunnel
Old #8 knocked out } line

835+34 is also 7.35' No of S.D. + A. Ry @ Robinson

4.56 +0-50

On forward line @ top Fletcher Siphon
across S.D. R. of 17.

7.35 No " " S

5.68 +0-55

W.C. Bridge

In S drainage @ Bridge

S.W. cor Bridge #23

Platted Nov 25 1913

Sta	Az	Rod	Vert. L	Elev
@841+03				526.50
+0846+82	247-07-30	5.78	-0-42-7.06	529.44
π846+82		5.15	534.50	"
+0852+56	247-04	5.73	-0-57-7.52	519.92
π@852+56		4.97	524.89	"
+0857+55	239-29	4.98	-0-13-7.28	517.61
π@857+55		5.12	522.73	"
	237-44	2.54	-0-28-6.92	515.81
+0863+22	229-16-30	5.66	-0-34-5.61	512.00
π@84+32 ⁶		4.15	519.96	515.81
	45°-0	9.25	+0-55-14.81	530.62
π@863+22		5.06	517.06	512.00
864+96	228-31	1.74	-2-44-8.3	503.7
867+05	"	3.84	383 -1-40-11.2	500.8
+0869+08	228-31	5.85	-1-13-12.43	499.57
		4.98	504.55	

14.25
2.36
16.61

In SD Ry R of Ry 110 ft E		841+03	5 73
		846+82	5 74
	577 +0-43	852+56	4 99
In SD Ry R of Ry No side		857+55	5 67
	572 +0-57	863+22	5 86
		869+05	
In SD R of Ry 4'S of R of Ry fence			4.99
+084+32 ⁶ Grossmont Tunnel line			2.53
In S-D Ry R of Ry 16.61 N of track			
To #11 on Projection Sheet			
forward line		5.65	+0-34
		5.84	+1-14

dated Nov 26 1921
H.E.P.

Sta	Az	Rod	Vert L	E
π@869+08		4.98	504.55	499.57
to 875+07	227-55	5.98	-0-39	-6.80 492.77
π@875+07		4.96	497.73	
to 881+21	228-34	6.13	-0-39	-6.97 485.80
π@881+21		5.03	490.83	"
to 886+40	232-06-30	5.18	-0-35 ^{10.20}	480.63
π@886+40		5.13	485.76	"
to 891+78	237-25	5.37	-0-40	-6.24 474.39
π@891+78		5.09	479.48	"
893+10	237-25	1.32		7.8 471.7
895+68	"	3.90		5.2 474.3
to 898+81	237-24	7.02	+0-48	9.84 484.23
π@898+81		4.51	489.04	
900+23		1.42	30	486.0
902+96		4.15	32	485.8
905+01		6.20	+0-29	+5.2 489.4

44

to 89 Rod W	6.00	+0-38	869+08
			5.79
			875 07
			6 14
			881+21
			5 19
9.8 N of E Track	6.12	+0-40	88.6+40
			5 38
			891+78
			7 03
			898+81
7.2 " " "		5.17	
to SD Rod W No Side			
		5.09	+0-42
forward line			
" " "			
to SD Ry Rod W N side			
		7.02	-0-50
forward line ahead Ry fill			
" " " " "			

Nov 14/21
 ✓ plotted Nov 26
 2/213

Sta	Az	Rod	Vert	∠	E
π@922+07		5 07	484.59		479.5
918+79	83-25	3.30	328	-4-38	-26.6 457.9
920+04	"	2.04	203	-4-26	-15.7 463.8
923+21	262-03	1.14	114		2.6 482.0

to 924+33 @ 262-03 2.25 -0-02 5.18 479.41

π@924+33		5 08	484.49		"
925+20	262-03	0.88	87	-7-01	-10.6 468.8
926+29	"	2.00	196	-8-56	-30.6 448.8
926+74	"	2.43	241	-5-0	-21.0 458.4
928+47	"	4.10	409	-1-40	-11.9 467.5

to 928+89 @ 262-03 4.55 -1-33 -12.32 467.09

π@928+89		5 10	472.19		"
929+60	262-03	0.71	71		10.3 461.9
930+28	"	1.41	139	-6-26	-15.7 451.4
930+99	"	2.11	210	-1-50	-6.7 460.4
931+57	"	2.68	268		8.4 463.8

to 932+60 @ 262-03 3.70 -0-26 7.83 464.36

π@932+60		5 10	469.46		"
933+77	"	1.13	117	-6-30	-12.7 451.7

					5.48	922+07
Back line	in road					2 26
"	on hill					924+33
forward "	" "					4-56
						928+89
						3 71 ✓
						932+60

P.O.T. On Hillside So side Valley No of La Mesa

					2.25	
forward line						
"	in gulch					
"	on hills					
"	"					
On hills	P.O.T.					" " " "
					4.53	+1-35

forward line						
"	in gulch					
"	on hills					
"	"					

On hills	P.O.T.					
					3.69	
forward line	in gulch					

Platted Nov 20, 1921 HCB

Sta	AZ	Rod	Vert	∠	El.
π@932+60		5.10	469.46		464.36
934+80	262-03	2.20		19	467.6
935+69	"	3.10	309	+1-33	48.4 472.8
to 937+24	262-03	4.63		+1-26	+11.61 475.97
π@937+24		5.11	481.08		
940+12	"	2.88		103	470.8
to 941+57	262-03	4.32		-1-0	-7.54 468.43
π@941+57		5.10	473.53		
942+33	"	0.77	76	-6-36	-8.8 459.6
943+70	"	2.18	93	-8-36	-34.3 436.1
943+45	"	1.88		same elev.	436.1
944+79	"	3.23	321	-1-40	-9.4 459.0
945+84	"	4.28	427	+1-21	+10.1 458.3
to 946+91	262-03	5.33		+1-18	+12.13 480.56
π@946+91		5.05	485.61		
to 948+63	234-32	1.71		+2-21	+7.05 487.61
		4.24	492.55		

forward line

forward line

ROTUNDA

forward line

in gulch

forward line on hill

On terraced hill

Top terraced hill

932+60	4.64
937+24	4.33
941+57	5.34
946	9.1
1	7.2
948+63	

4.64 -1-23

4.31 +1-01

5.32 -1-18

plotted
Nov 26 1921
H.P.S.

Sta	Az	Rod	Vert	L	E
N@948+63		4.94	492.55		487.6
949+73	211-28	1.10		87	483.9
950+75	"	2.13	214	-4-07	-153 472.3
951+47	"	2.85	184	-4-02	-20° 467.6
✓					
to 955+22	211-28	6.58		5.75	486.80
N@955+22		4.94	491.74		
952+33	31-28	2.93	189	-6-20	-34° 454.8
952+39	"	2.83	20	lower	215° 434.8
953+15	"	2.10	707	-6-04	-22° 464.8
953+66	"	1.57	156	-5-51	-15° 470.9
954+07	"	1.16	115	-5-45	-11° 475.3
954+56	"	0.66		10.4	481.3
95	270-23	1.60			
to 958+78	211-28	3.55		+1° 12'	+742 494.22
N@958+78		5.17	499.39		
959+16	356-06	0.38		5.30	494.1
95	352-36	0.175		5.65	492.7
	182-12	0.41		4.21	495.2
✓					
to 964+83	269-16	6.04		-1-02	-10.88 483.34

		0-3Lo Compass read 2017
	1.71	-2.19
forward line		948+63
"	"	6 59
"	"	955+22
"	"	3 56
		958+78
N.Y. 30' # SD. Baby Chick Ho		Arc P.D.T
in grain field on No. line Santiago		6 05
	6.58	964+83 ✓

Back line in gully

" " " "

" " on hill

" " " "

" " " "

fence Corp on N.Y. Cor. Santiago Arc and
+ Keeney "

No of Co Hwy @ Keeney Arc fence along No
edge paved Hwy

-1°-12'

Concrete Co Hwy Mon. No side Hwy BC RPS
" " " " " " "
" " " " So " "

Plated Nov 26 1921
H 1213

Sta	Az	Rod	Vert L	E
π@964+83		5 00	488.34	483.34
	101-44	1.93		1.41 486.9
	83-49	1.90	189 + 1-35	+5.7 488.5
967+56		2.73		5.00 483.3
to 971+95	269-28	7.11	+0-26	+5.41 488.75

π@971+95		5.12	493.87	
	114-43	1.52		7.65 486.22
	105-59	2.28	327 - 1-29-59	482.9
973+32	269 11	1.37		4.6 489.27
to FS	269-11			
974+95		3.00		10.2 483.7
to 977+67	269-11	5.71	-1-0	-9.96 478.79

π@977+67		5.05	483.84	
	42-34	0.45		2.60 481.2
	72-37	1.15		2.12 481.7
	120-10	1.29		5.44 478.4
	154-16	0.725		5.27 478.5
979+58	269-11	1.91		7.4 476.4
980+62	"	2.95		6.2 477.6
to 983+38	269-11	5.70	-0-56	-9.30 469.49

5.13 474.62

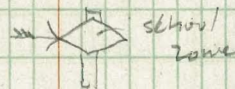
269 11.
180
89-11

49

6.04	L not readable	964+83
Co Hwy	Concr Mon So	side Hwy
"	"	"
forward line		
10.5	No of No edge	Co Hwy pavement

7.12
7.12
5.72
977+67
5.71
983.38 ✓

7.11	-0-27
Co Hwy	Concr Mon So
"	"
forward line	



5.71 + 1-0

Co Hwy	Concr Mon No	side Hwy
"	"	"
"	"	So
forward line		

Plotted
Nov 26 1921
HRB

Sta	Az	Red	H.I.	Vert	Elev
⊕ 983 + 38		5.13	474.6		469.49
5-39	0.32			534	469.3
292-16	0.82			not visible	
222-43	1.00			593	468.7
176-09	0.66			3.55	471.0
⊕ 989 + 58	269-11	6.19		-0-39	-703 467.46
⊕ 989 + 58		5.01	467.47		
220-05	0.88			621	461.3
243-21	1.54			538	462.1
273-06	1.42			705	460.4
⊕ 996 + 77	269-11	7.18		+0-02	432 463.15
⊕ 996 + 77		5.08	468.23		
331-16	0.37			5.57	462.6
288-12	1.02			4.88	463.3
235-03	1.18			5.38	462.8
194-13	0.67			5.00	463.2
⊕ 1003 + 90	269-11	7.12		-0-22	911 459.17
⊕ 1003 + 90		5.22	464.34		
167-55	0.66			4.78	459.5

50

?

5.70	+0.57		
Co Hwy Concr Man	NW side Road Xing		
for levels	" " " E " "		
" " " " SW " "			
" " " " E " "			
No side Hwy		983 + 38	
		620	
		989 58	
		7 19	
		996 + 77	
	6.18	+0-38	
Co Hwy Concr Man	So E Cur Road Xing		
" " " " W " "			
Tab Fletcher Guyana	Pipe Line 24" } from Murray Dam		
		996 + 77	
		7 13	
		1003 + 90	
		7.17	
Co Concr Hwy Man		7.17	
" " " "			
" " " "			
" " " "			
@ turn to So in Hwy	7.11		
			Platted Nov 28 H.R. 13
Co Hwy Concr Man	So of Hwy		(one on No side out)

Sta	Az	Rod	Vert	L
T@1003+90		5 22	464.34	459.12
T@1009+78	220-59	5.87	-0-54	-923 449.89
X@1009+78		5.14	455.03	
1011+38	266-38	1.62	160	-6-20 -178 432.1
1012+36	"	2.62	258	-6-43 -303 419.6
1012+86	"	3.12	308	-6-04 -327 417.2
T@1014+66	261-43	4.87	+0-30	060 454.43
X@1014+66		4.91	459.34	
1014+87	251-06	0.21		8.1 451.2
1015+50	"	0.84		6.0 453.3
1016+22	"	1.56		1.7 457.6
T@1018+38	251-06	3.71	+0-32	3.46 457.89
X@1018+38		4.98	462.87	
	75-34	1.07		5.85 457.0
1021+31	249-11	2.93		6.6 456.3
1022+63	"	4.25		6.9 456.0
T@1023+04	249-11	4.65	+0-03	4.70 458.17

1003+90
51.88
1009 78
4.88
1014+66

In Private doorway over Fletcher's pipe lines
Dist not readable + 0.54

(forward line) } between two pipe lines
" }
" } 24" So 18" N 8' apart

New transit Line # 3 - 5223

Nov 15/21

forward line Edge paving
" " Edge "

1014+66
3.72

1018 38
4.66

1023 07

3.71 -0-32

2x2 Hubs Copper tack (Ref ^{Line of} ~~st~~) possible B.C. RR
forward line @ fence line So

So edge of heavy fill

Plotted Nov 28
1921
W.E.B.

11.66
9.62
2.04

Sta	Az	Rod	Vert L	E1
π1040+46		4.95	474.99	
	6-35			
1042+46		2.00	4.1 470.9	
to 1044+68	241-13	4.21	5.26 -0-03	469.73
π1044+68		5.01	474.74	
	26-23	0.85	381 470.9	
	254-59	1.27	460 470.1	
	225-29	1.15	5.25 469.4	
1046+89	230 53	2.21	67 468.0	
1048+68	"	4.00	47 470.0	
1050+70	"	6.02	64 468.3	
to 1052+79	230-53	8.10	8.10 -0-12	466.64
π1052+79		4.94	471.58	
B.M. ?	94-19	0.19	5.07 466.56	
	New H.I. 15-21	0.80	5.07 472.93	
to F.S.	240-42		4.22 468.7	
1054+20	"	1.41	31 469.8	
to 1058+98	240-42	6.18	1.07 +0-22	471.86
π1058+98		5.11	476.97	
to 1064+26	240-42	5.27	4.50 +0-03	472.47

657
Cotuchlan Drive No of Hwy of fence line Az
forward line

1040+46
+ 22
1044 68
8 11

4.21

1052 70
6 19

Co Hwy - Concr Mon No of Hwy

1058+98
5 28
1064 26

forward line

CLOSURE
ERROR = 1.35

467.86
5.07
472.98
488.77
15.84

8.10
467.86 Co East S.D. limits to E } Concr Mon
Hub No Side Hwy } So side Hwy

forward line

6.15

Platted Nov 28 1921
H.E.B.

Sta	Az	Rod	Vert L	El
K1064+26 ①		4.88	477.35	472.47
			364	473.71
		New H-T		
K1064+26		4.88	477.35	
1065+61	240-42	1.35		6.5 470.9
1067+04		2.78		9.9 467.5
to 1070+38 ②	240-42	6.11	+0- ³³ 28	+5.87 478.34
K1070+38		5.08	483.42	
+ 1073+57 ②	240-42	3.18	+0-11 348	479.94
K1073+57		5.08	485.02	
1074+89	341-39	0.56		4.70 480.3
	261-03	1.32		6.8 478.2
1076+25	"	2.68		10.5 474.5
	158-24	0.25		4.48 480.5
to 1078+53 ③	261-03	4.95	-1°-53	-16.29 463.65
K1078+53		5.05	468.70	
	261-03	3.50	348	-3-54 -23.7 440.0
to 1083+94 ④	261-03	5.40	-3-28	-32.68 430.97

Continued Book 6 Page 28

488.31
15.84
472.47

5.27
top 2" stand pipe 3' high + So of road
Corrected from FS on Concrete Mon 467.86
@ E.S.D City Limit page 53
forward line

✓
+0-33' { Corrected 1064-26
6 12
Vernier 1070+38
3 19
1073+57
4 96
1078 53
5 41
1083+94

6.11 -0-38

Co Hwy Concr Mon No side road
forward line

Co Hwy Concr Mon So of Road

4.75 +1-54
forward line

Plotted Nov 28 1921
HRB

Check Level from p 35

Sta	El	-	H.I.	+	-
BM	560.55		560.71	0.26	
880+78	551.88				8.83
T.P.	548.87	11.84	549.90	1.03	
835+34	544.36				4.54
TP	537.50	12.40	538.50	1.00	
841+03	536.54				1.96
846+82	529.10				2.40
TP	527.12	11.38	528.44	1.32	
850+56	520.13				8.31
TP	520.44	8.00	520.69	0.25	
857+55	517.82				2.87
84+326	516.06				4.63
863+22	512.23				8.46

Error

BM tel pole page 35

S Stas on Δ's

519.92

0.21

Grossmont tunnel line

523.22

Sta	Az	Rod	Vert L	EI
T 1083+940		4.98	435.25	480.97
to 1091+330	261°-03'	7.38	-0°-48'	-10.34 420.63
T 1091+33		4.96	425.59	
1095+88	261° 03'	4.55	-1° 34' 2"	-12.4 408.2
to 1098+820	261° 03'	7.48	-1° 34'	-20.45 400.18
T 1098+82		5.05	405.23	
to 1103+52A	261° 03'	4.69	-3.75	401.48
T 1103+52	STN	4.63	406.11	
to 1108+080	260° 25'	4.55	-2°-37'	-20.79 380.17
T 1108+08		5.00	385.17	
to 1115+10 Δ	260-25	7.01	+1°-11'	+14.51 394.68
T 1115+10		4.93	399.61	
to 1121+46 ⊙	261° 05'	6.35	-0° 46'	-8.52 386.16
T 1121+46		4.97	391.13	
to 1128+45 ⊙	261° 05'	6.98	-2° 09'	-26.82 359.34
T 1128+45		4.87	365.21	
to 1135+46 ⊙	261° 05'	7.00	-0° -29'	-5.89 353.45
T 1135+46		4.80	358.25	
1136+73	261° 05'	7.27	5.8	352.5
to 1141+85 ⊙	261° 05'	6.38	+0° 06'	3.79 354.46

	5.88	+3° 29'
	7.36	+0° 49'
⊥ road So RADIO ROAD		
So Side Hwy	7.48	+1° 34'
	4.69	
So side parking	4.54	-2° 38'
So side parking	7.00	-1° 11'
So side parking @ ⊥ Street to South	6.34	+0° 47'
	6.96	+2° 13'
So side pared Highway	7.02	+0°-30'
⊥ of Parking turning South		
So Side El Cajon Ave		

Notes copied from Book #5 pp 24 to 27.

Sta.	Azimuth	Rod	Hor. Dist.	Vert. L	Diff. Elev.	Elev.
π@ 97+68			5.03	582.70		527.67
to 100+450	283° 46'	2.76		+2° 08'	+10.31	537.98
π@ 100+45			5.22	543.20		523.34
to 103+17Δ	283° 46'	2.71		-1° 01'	-4.83	533.15
π@ 103+17			5.06	528.40 532.21		
	292° 31'	5.78		-0° 50'		
to 112+48Δ	292° 31'	9.30		+4° 24'	+7.23	594.57 604.38
π@ 112+48			5.07	599.64 609.45		
to 116+07Δ	235° -10½'	3.58		-4° 35'	-28.59	565.98 515.79
π@ 116+07			4.87	570.85 580.66		
to 117+74Δ	263° 18'	1.67		-7° 12'	-20.89	545.09 554.90
π@ 117+74			5.00	550.09 559.90		
to 119+22Δ	271° 08'	1.47		-9° 48'	-24.82	520.07 530.08
π@ 119+22			4.79	525.06 534.87		
to 120+28Δ	272° 09'	1.05		-5° 56'	-10.89	509.38 519.19 509.02
π@ 120+28			5.10	514.12 524.29		
to 122+13Δ	253° -51½'	1.84		-0° -36'	7.22	506.90 517.07
π@ 122+13			5.07	511.97 522.14		
to 124+63Δ	249° 49½'	2.49		-0° 24'	7.07	504.90 515.07
π@ 124+63			5.11	510.01 520.18		
to 127+19Δ	240° 08'	2.55		-0° 17'	6.51	503.50 513.67
π@ 127+19			5.09	508.15 518.76		
to 129+61Δ	241° -02'	2.41		-0° -10'	6.02	502.57 512.74

Alignment "P" line near El Monte Grove. 58

G.R.H.
10-29-21

By Check
Levels

(518.24)

(528.38)

P.O.T. No. edge road

R

2.76

(523.34)

N. Edge Road

R

2.71

forward line in road (leave it for anthrile. on Mt)

Top of ridge (Cape Horn) E and El Monte Oak Grove.

No rod back site flagged.

No rod B.S. flagged.

R

1.67

R

1.45

R

1.05

(508.70)

R

1.84

(506.58)

R

2.50

(504.55)

R

2.55

(503.15)

(502.18)

Information from J.W. Williams, Lakeside 10-22-21.
J.W.

- B.M. #20 Bolt in oak tree Damsite #2 - 50' West Eler
of Johnson's House, on South side of road 571.46.
— Floor Line at Damsite #2 553.17
Elev. of 160' Contour 713.17
Intersection of probable axis of Damsite
No 2 with flume - 16d rail in sill (200' contour) 753.17
- B.M. #10½ Spike in crotch of twin oaks about 700' West
of East Monte Ranch line on N. side of
road and South side of river 524.62
- B.M. #10 Spike in oak tree 100' S.E. of pump at Monte Park 511.09
- B.M. #9 Spike in root of oak tree 8' South and 70' West
road 150' E of where power pole line leaves
road and turns North to river 500.91
- B.M. #7 Spike in large 10" Cor. fence post on North side
of road on Foster's West fence line just West
of old Monte Ranch House. 467.56
- B.M. #6 Spike in largest sycamore nearest road in
cluster of 11 trees about 3 miles East of
Lakeside 455.94
- B.M. #5 Spike in S.D. Cor. G. & E. Co's. pole #72749 on
South side of road ¼ mile East of Monte
Pumping Plant. 446.20
- B.M. #19½ County Highway, Railway spike in pole
25' N.W. of Intersection of fence on
West side of Bostonia Road with Santee
to Lakeside Road. 393.646

Lakeside to El Capitan.

Sta. 76+34.4 - Hub on Center Line of San Diego River
transverse and probable axis of dam site No 2.

River transverse bears $S. 88^{\circ} 11' E.$ to Sta. 86+55.7
from Sta 76+34.4.

Bearing of probable axis of dam site No 2
is $N. 1^{\circ} 28' E.$ and is on line with Coreholes #1 and #3

Tie to East Line of El Monte Ranch. Sta. 0+00
is $S. 12^{\circ} E.$ 429' from 3"x4" post - 6' high in rock mound
Marked Cor. #1, which post is 1016' from spike 3.14' North
of North Gate Post at E. Line of El Monte Ranch.

KEITH'S RAILROAD CURVE TABLES.

Published by KEUFFEL & ESSER CO., New York.

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HOW TO USE KEITH'S TABLES.

EXAMPLE.

Wanted a Curve with an Ext. of about 12 ft. Angle
of Intersection or I. P. = $23^{\circ} 20'$ to the R. at Station
542+72.

Ext. in Tab. IV opposite $23^{\circ} 20' = 120.87$
 $120.87 \div 12 = 10.07$. Say a 10° Curve.

Tan. in Tab. IV opp. $23^{\circ} 20' = 1183.1$
 $1183.1 \div 10 = 118.31$.

Tab. V correction for A. $23^{\circ} 20'$ for a 10° Cur. = 0.16
 $118.31 + 0.16 = 118.47 =$ corrected Tangent.

(If corrected Ext. is required find in same way)
Ang. $23^{\circ} 20' = 23.33^{\circ} \div 10 = 2.3333 =$ L. C.

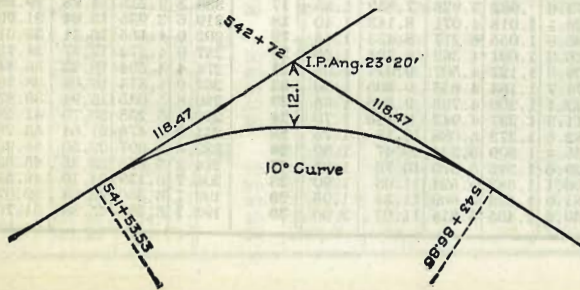
$2^{\circ} 19\frac{1}{2}' =$ def. for sta.	542	I. P. = sta.	542+72
$4^{\circ} 49\frac{1}{2}' =$ " " "	+50	Tan. =	1.18.47
$7^{\circ} 19\frac{1}{2}' =$ " " "	543	B. C. = sta.	541+53.53
$9^{\circ} 49\frac{1}{2}' =$ " " "	+50	L. C. =	2.33.33
$11^{\circ} 40' =$ " " "	543+	E. C. = Sta.	543+86.86
	86.86		

$100 - 53.53 = 46.47 \times 3' (\text{def. for 1 ft. of } 10^{\circ} \text{ Cur.}) = 139.41' =$
 $2^{\circ} 19\frac{1}{2}' =$ def. for sta. 542.

Def. for 50 ft. = $2^{\circ} 30'$ for a 10° Curve.

Def. for 36.86 ft. = $1^{\circ} 50\frac{1}{2}'$ for a 10° Curve.

(These tables are published in Field Books of
KEUFFEL & ESSER CO., New York, N. Y.)



482.40

261 05
 259 46

 10 191

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ TO 1.

FOR SINGLE TRACK EMBANKMENT.

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

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