

# 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 ft. wide Side Slopes 1 on 1.

For Single Track Embankment.

MICROFILMED  
DEC 3 8 1964

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 of the stake point? Ans. from Table 30.6. For same slopes but other widths correct above figures by one-half difference in width of roadbed; thus in this case, for 20 ft. roadbed distance will be  $30.6 + (20 - 16) \div 2$  or 2 ft. added to above figures for slopes of 1 on 1  $\frac{1}{2}$  see inside of back cover.

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INDEXED

to page # 23

This Field Book is manufactured of a High Grade 50% Rag Paper having a WATER RESISTING SURFACE, and is sewed with Bing Special Enamel Waterproof thread.

Made in U. S. A.



Proposed Chollas Road 3-17

Set B.M. - Redwood + Chollas Station

N. W. 1/4 Cor. Arnolds Park

Prop Drain across Fairmount 20-23

Alignment Proposed Chollas Road L. Line 25-28

Level " " " " " " 29-46

Alignment P. Line " " " " 47-51

Tie P to P' at Euclid + Laurel 52-53

Alignment Chollas P' line Sta 34 to 140 54-64

Road

18

Aug. 1948 Proposed New Alinement  
 Hendricks Chollas Road  
 Roberts See R-25 for New Alinement  
 Greer Defl. Lt.  
 Korer W0790077

11+09.69 EC Set Hub & Disc. 8°38.30'

11+00 8°29.95'

INDEXED

OCT 16 1950

+50 7°46.97'

10+00 7°03.99'

+50 6°21.01'

9+00 5°38.03'

+50 4°55.05'

8+00 4°12.07'

+50 3°29.09'

7+00 2°46.11'

+50 2°03.13'

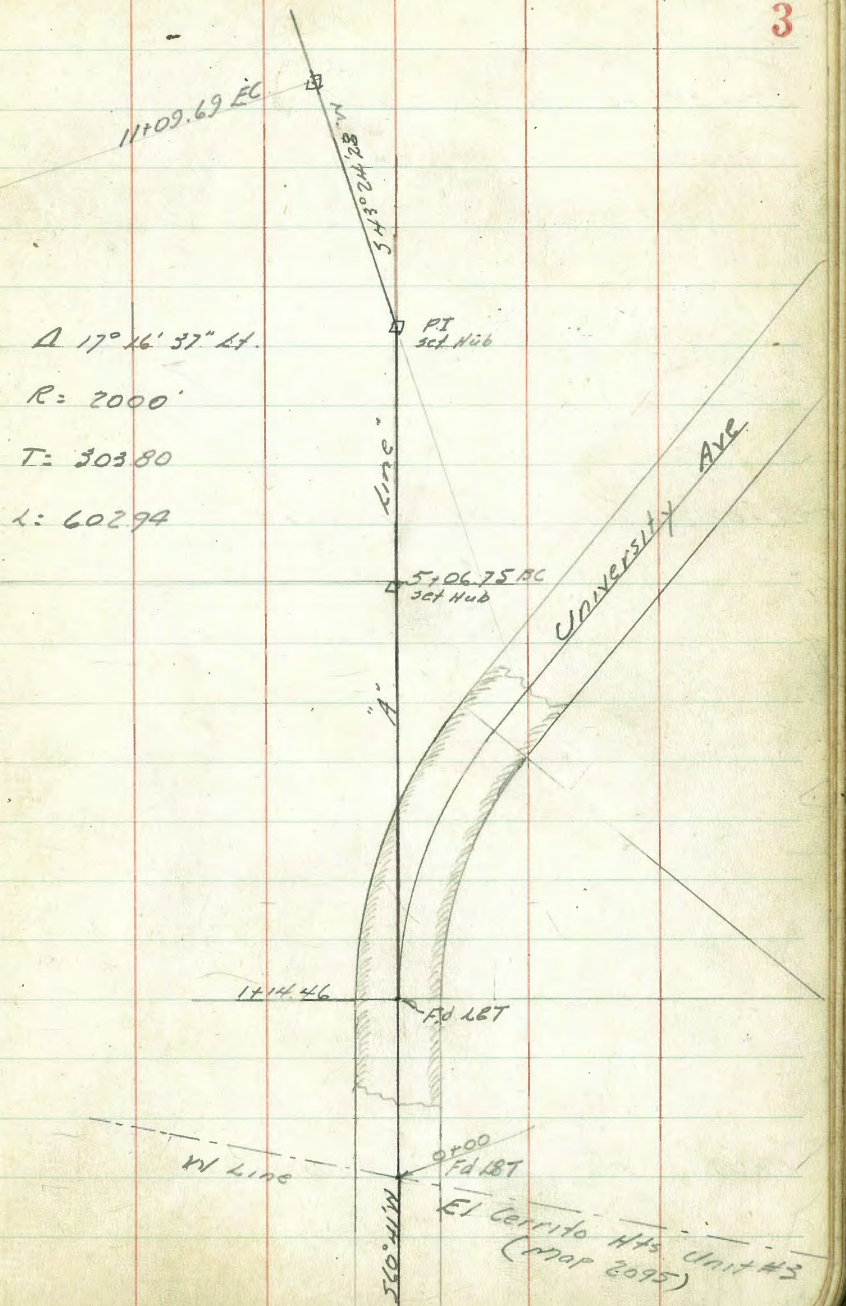
6+00 1°20.15'

+50 0°37.17'

5+06.75 BC Set Hub & Disc. 0°00'

1+14.46 BC on University Fd L&T

0+00 Fd L&T E University & West Line  
 El Cerrito Hts. Unit No. 3

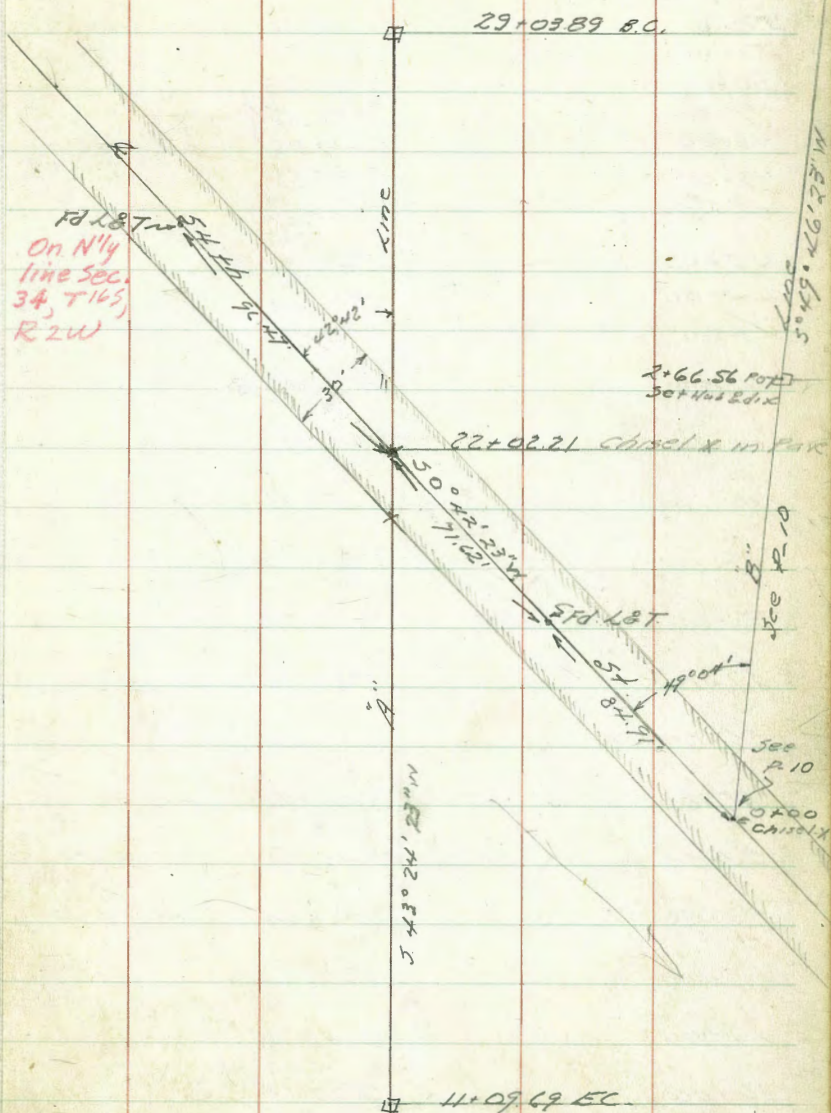


Alinement Chollas Road (Contd)

29+02.89 RC set Hub & Disc.

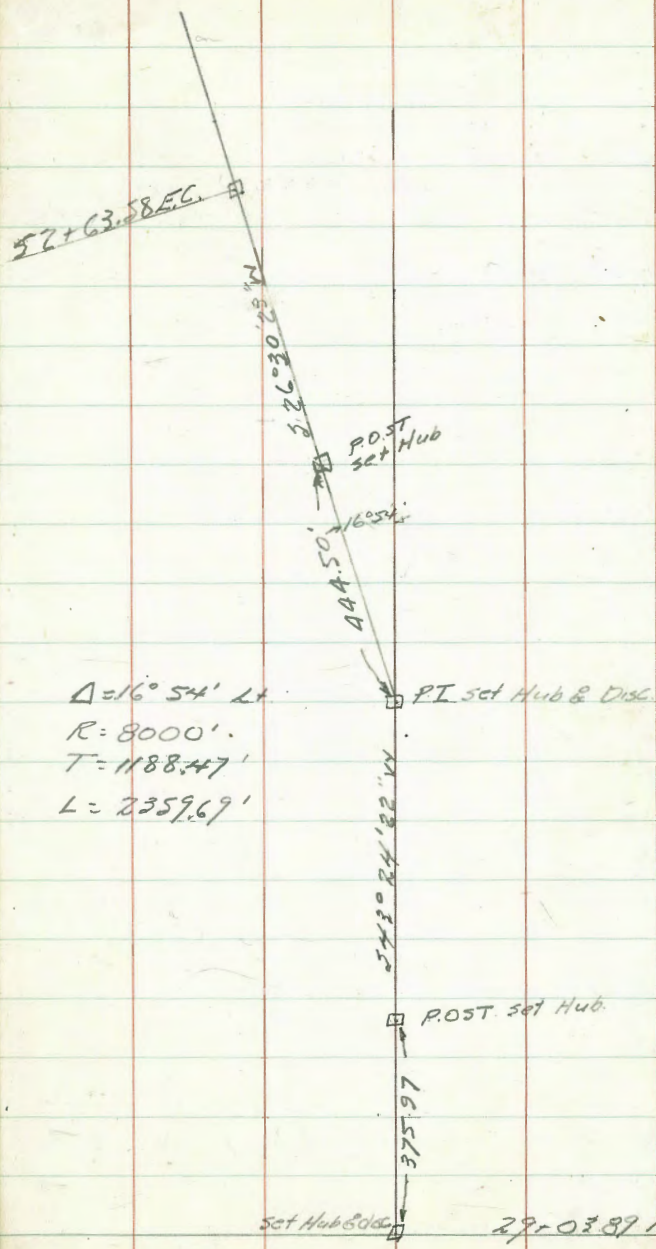
22+02.21 Int. & 54th St. Set Chisel X in Pavement

11+09.69 EC set Hub & Disc.



Cont'd. from P. 4

	Defl. Lt
52+63.58 EC.	8° 27'
29 52+00	8° 13.30"
57+00	7° 51.82'
50+00	7° 30.23'
49+00	7° 08.85'
48+00	6° 47.36'
47+00	6° 25.88'
46+00	6° 04.39'
45+00	5° 42.91'
44+00	5° 21.42'
43+00	4° 59.94'
42+00	4° 38.45'
22+ 41+00	4° 16.97'
40+00	3° 55.48'
39+00	3° 34.00'
38+00	3° 12.51'
37+00	2° 51.03'
36+00	2° 29.54'
35+00	2° 08.06'
34+00	1° 46.57'
33+00	1° 25.09'
32+00	1° 03.60'
31+00	0° 42.12'
11 30+00	0° 20.63'
29+03.89 BC.	0° 00'



started again Cont'd. from P. 5  
Aug 1949  
Hendricks

82+18.57 post. set 2x2" Rn & Disc.

79+37.78 BC. set Hub & Disc.

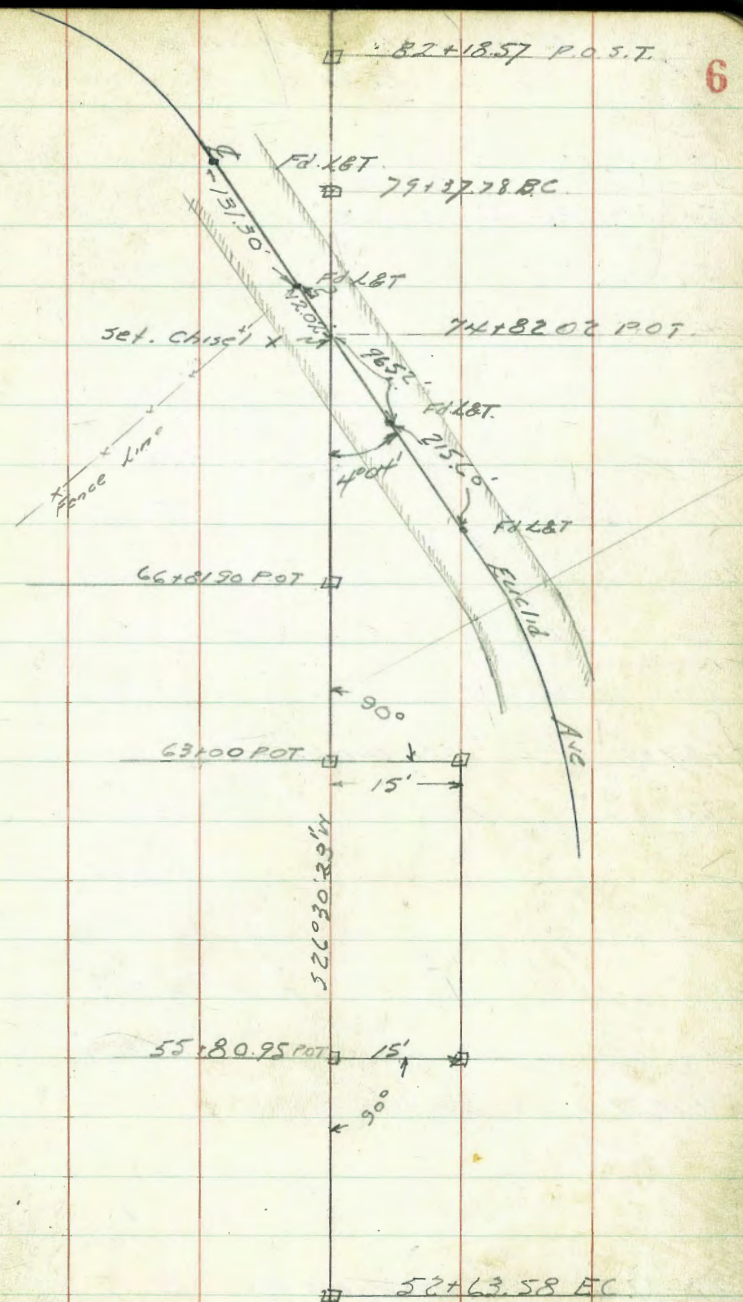
74+82.02 POT Int. & Euclid Ave.

66+81.90 POT set Hub & Disc.

63+00 POT set Hubs & Discs. offset 15' Lt. to original line

55+80.95 POT. offset 15' Rt. set Hubs & Discs.

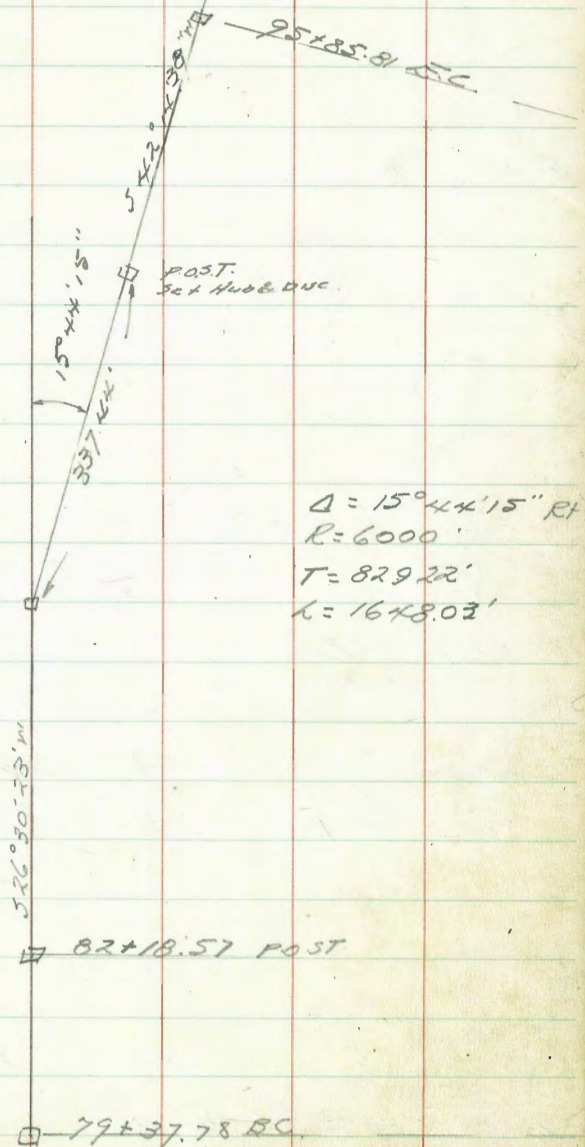
62+53.58 EC. set Hub & Disc.





Proposed New Alignment  
Cholms Road Contd. from P.6

96+85.81 EC Equation	
95+85.81 EC Set Hub & Disc.	7°52.26'
95	7°27.58'
94	6°58.93'
93	6°30.28'
92	6°01.63'
91	5°32.98'
90	5°04.33'
89	4°35.68'
88	4°07.03'
87+67.00 PI Set Hub & Disc.	-
87	3°38.38'
86	3°09.73'
85	2°41.08'
84	2°12.43'
83	1°43.78'
82+18.57 POST.	-
82	1°15.13'
81	0°46.48'
80	0°17.83'
79+37.78 BC Set Hub & Disc.	0°00'



Proposed New Alignment  
Chollas Rd Cont'd. from P. 7

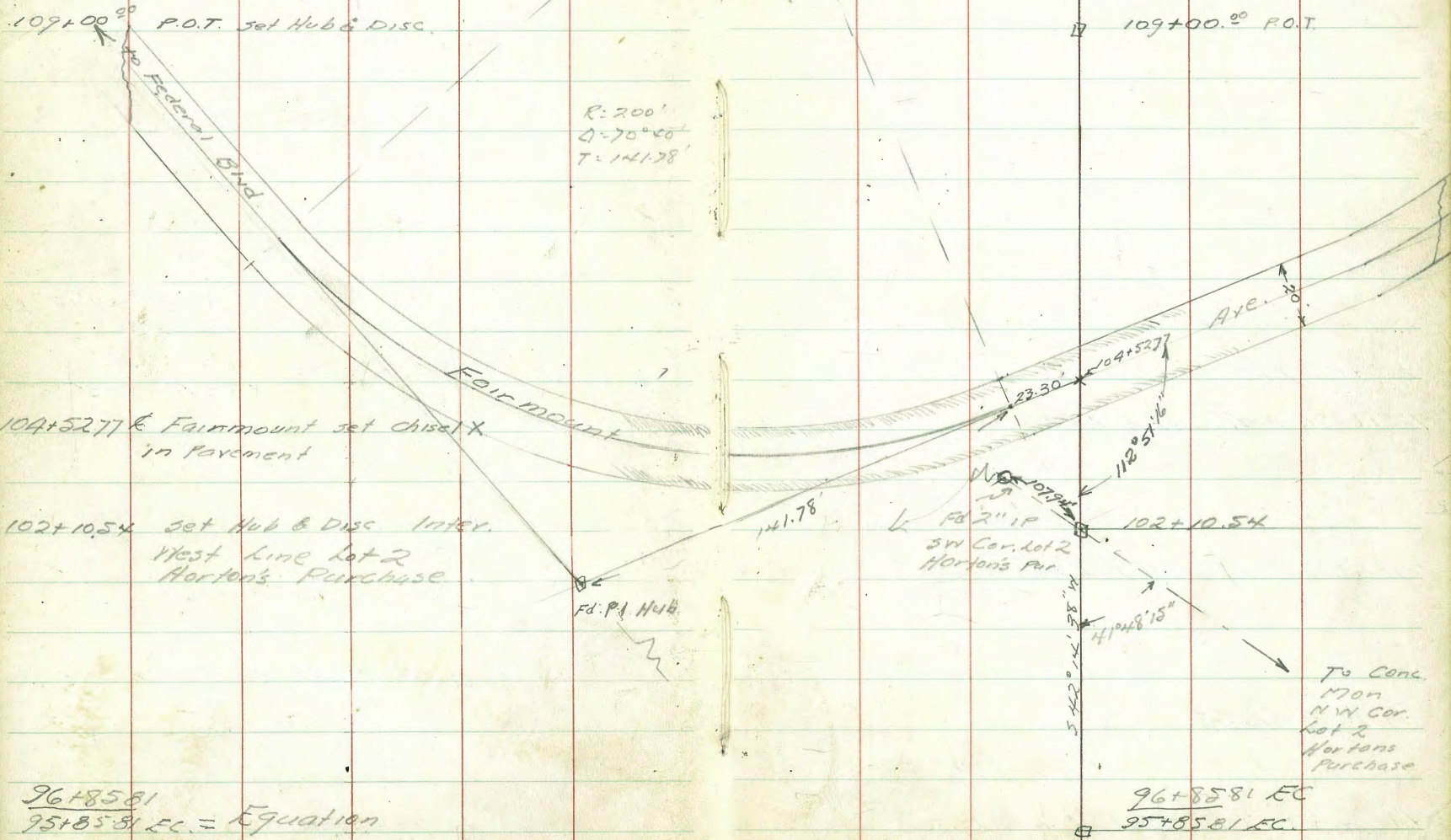
116+37.17 BC Set Hub & Disc

116+37.17 BC

109+00.00 P.O.T. set Hub & Disc

109+00.00 P.O.T.

R: 200'  
D: 70°00'  
T: 141.78'



104+52.77 Fairmount set chisel  
in pavement

102+10.54 set Hub & Disc Inter.  
West Line Lot 2  
Hortons Purchase

Fd. PA Hub

Fd. 2" IP  
SW Cor. Lot 2  
Hortons Pur.

102+10.54

To Conc.  
Mon  
NW Cor.  
Lot 2  
Hortons  
Purchase

96+85.81  
95+85.81 EC = Equation

96+85.81 EC  
95+85.81 EC

Proposed New Alignment  
Chollas Road Cont'd from P 8

135+61.40 EC



126+18.27 PI Set Hub & Disc.

125+82.96 POST. Set Hub & Disc.

121+33.33 POST Set Hub & Disc.

117+42.81 POST

116+37.17 BC Set Hub & Disc.

\* This Dist. taken  
from sheet 6 of Roll Map

No 4420

R=200  
Δ=22°51'  
T=121.25'

Federal

R=1000  
Δ=20°56'  
T=183.23'  
L=362.45'

117+42.81 P.O.S.T.

116+37.17 B.C.

Blk 9  
110440  
10040  
Hortens

135+61.40 EC  
Set Hub & Disc. X

FD 1/2 IR  
N.E. Cor of  
S.E. 1/4 of Lot 78  
Hortens Purchn

Δ=27°33'45"  
R=4000'  
T=981.10'  
L=1924.23'

126+18.27 PI

125+82.96 POST

121+33.33 POST

542°44'38" W

560°04'50" W

29°29' W

27°33'45"

36'

244.35 E

B" Line Alignment  
Chollas Valley

8+60.09 Set Hub & Disc

8+60.09 POT  
Set Hub & Disc

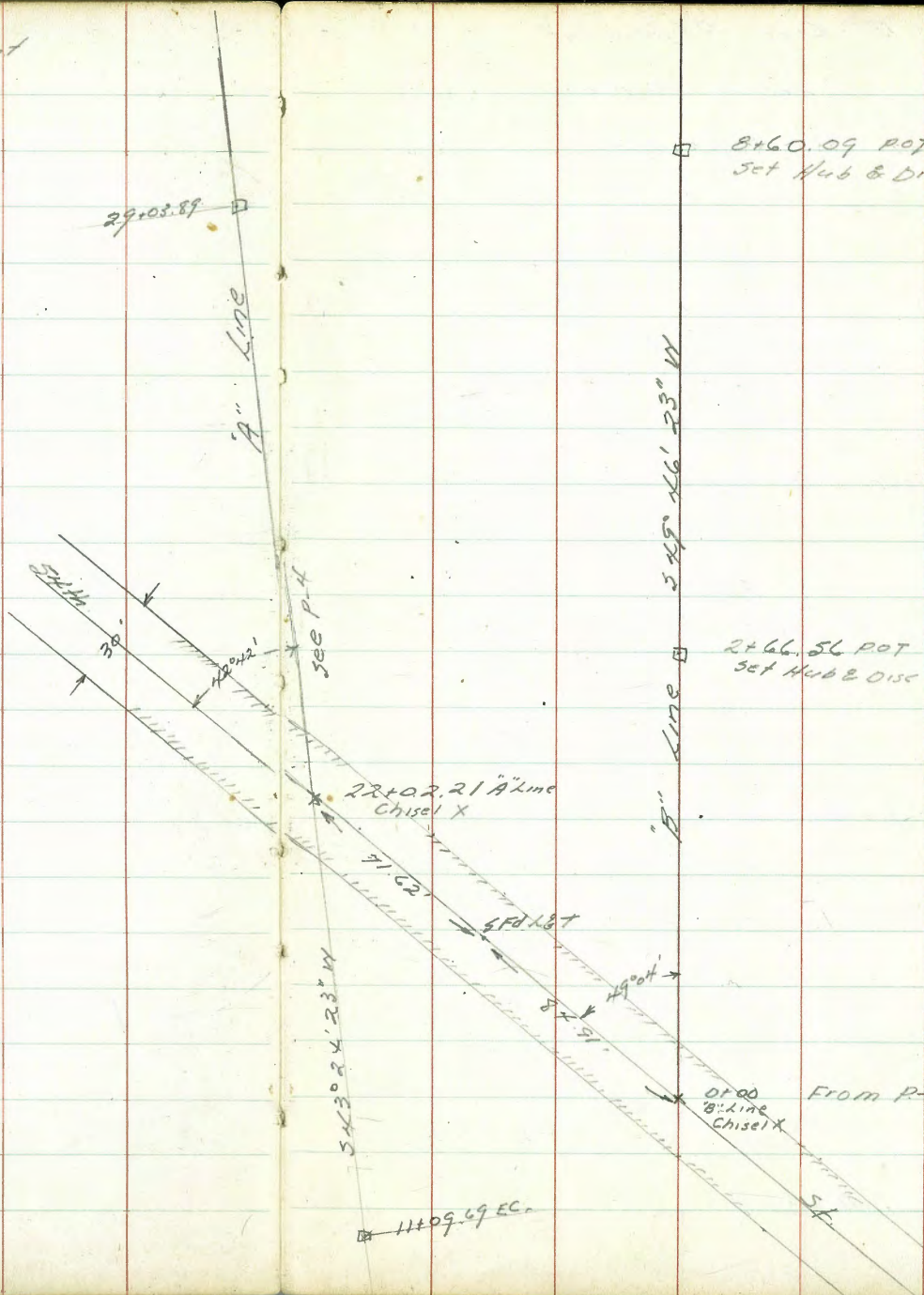
29+03.87

2+66.56 POT Set Hub & Disc

2+66.56 POT  
Set Hub & Disc

0+00 Int. of 54th St

From P-4



13" Line Alinement Cont'd.

Chollas Valley

11

25187.26 POT Set Hub & Disc.

25187.26

20104.69 POT Set Hub & Disc.

20104.69

15120.89 Set Hub & Disc.

15120.89

8160.09 Set Hub & Disc.

8160.09

M.F.E. 27.834

5' Line Alignment Contd.  
Cholms Valley

45+57.26 POT Set Hub & DISC

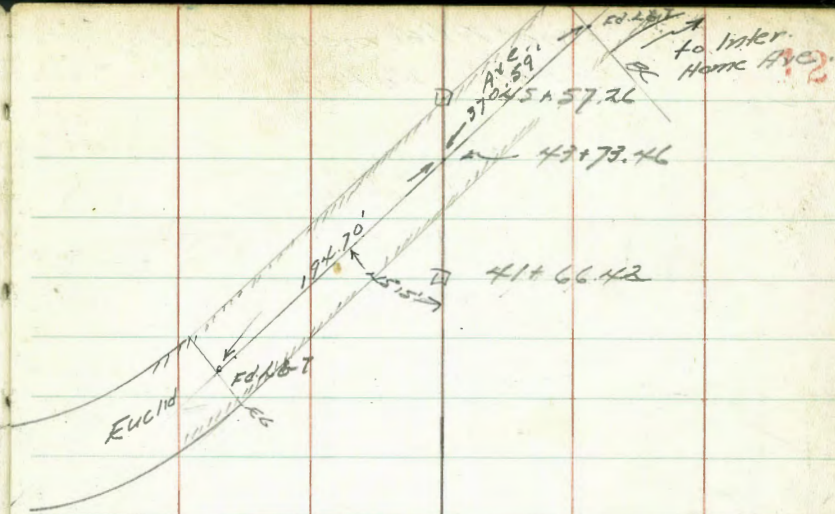
43+73.46 set Chisel x Int & Euclid

41+66.42 Set Hub & DISC

34+48.22 POT Set Hub & DISC

30+2194 POT Set Hub & DISC

25+87.26 POT



45+57.26

349° 46' 23" W

30+2194

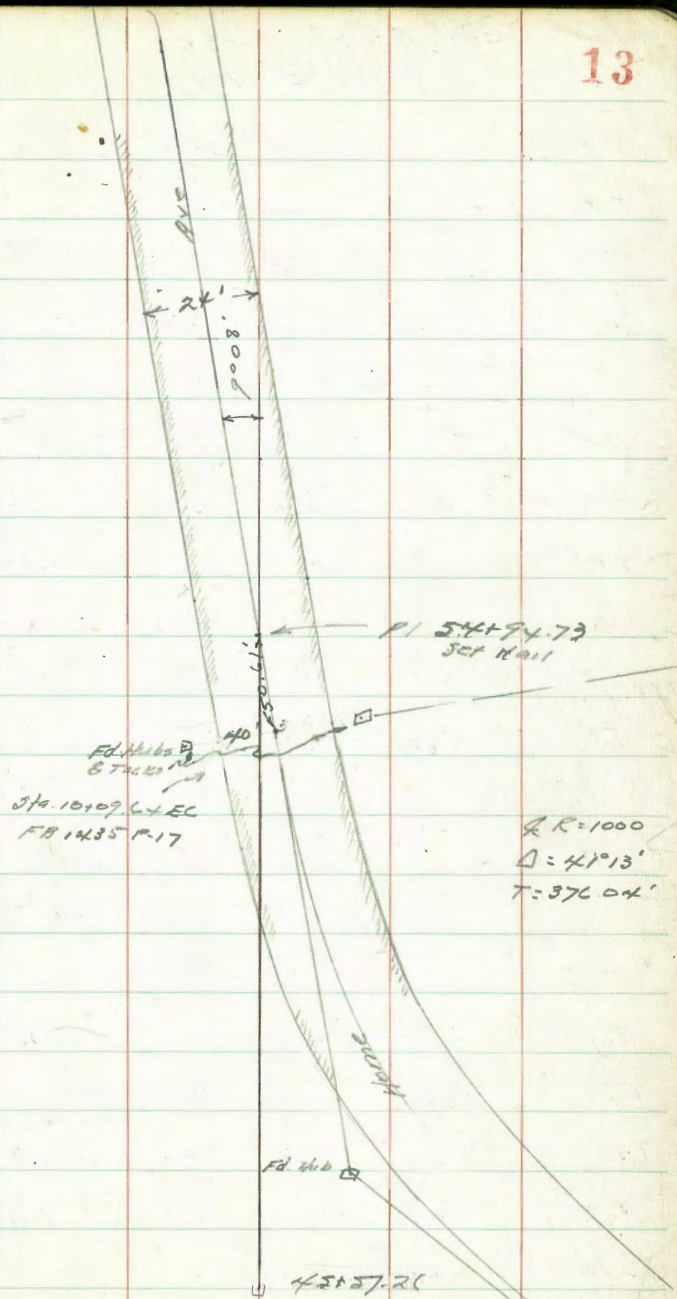
25+87.26

B<sup>r</sup> Line Alinement Cont'd.  
Chollas Valley

54+94.73 PI Jet Nail Intersection & Home Ave

45+57.26 Jet Nail & Disc.

13



Levels "A" Line  
Chollas Valley

14

			3.3		249.33
T.P.	4.29	252.66	5.80		248.37
T.P.	6.97	254.17			247.20
Check			6.57	246.97	246.96
T.P.			6.34		247.20
T.P.	5.64	253.54	9.46		247.90
T.P.	0.82	257.36	13.06	256.54	
T.P.	0.82	269.60	7.61	268.78	
			6.09		270.30
			2.25		274.14
T.P.	0.08	276.39	10.24	276.31	
			4.03		282.52
T.P.	2.22	286.55	5.30	284.33	
			5.63		284.00
			4.64		284.99
T.P.	7.54	289.63	6.04	282.09	
T.P.	2.86	288.13	8.04	285.27	
T.P.	0.34	293.31	9.46	292.97	
T.P.	0.67	302.43	9.27	301.76	
B.M.	1.01	311.03			310.02

on Hub. POST. 375.97' ahead BC see pg. 5

on Hub BC. 29+03.89

chisel cross & 54<sup>th</sup> see pg. 48 F.B. 1582

22+02.21 chisel cross & 54<sup>th</sup>

17+00 stub

11+09.69 E.C. on Hub

on P.I. Hub

Approx. 5706 S.E. Cor. House on Conc. Walk cor. near house

1+14.46 B.C. on University Ld & C.T.

0+00 Ld & C.T. & University see pg. 3

NWBP University & 54<sup>th</sup> Sts.



Levels Line "A"  
Cont'd From Page 14

T.P.	3.38	159.31	6.85	155.93
T.P.	0.91	162.78	12.95	161.87
T.P.	2.67	174.82	7.87	172.15
T.P.	2.04	180.02	9.73	177.98
			4.91	182.80
T.P.	0.90	187.71	4.12	186.81
			2.58	187.35
T.P.	8.05	190.93	7.86	182.88
Check			0.43	190.31 = 190.30
T.P.	2.85	190.74	7.96	187.99
T.P.	1.61	195.85	11.46	194.24
			2.18	203.52
T.P.	0.47	205.70	12.21	205.23
T.P.	0.12	217.44	9.21	217.32
			6.15	220.38
T.P.	3.54	226.53	0.30	222.99
			10.15	213.14
T.P.	1.55	223.29	12.87	221.74
T.P.	0.75	234.61	12.43	233.86
T.P.	4.76	246.29	11.13	241.53

252.66  
1

15

on Hub P.I. See pg. 7

on Hub 79+37.78 BC.

on chisel cross & Euclid 74+82.02 P.O.T. See pg. 6

Nail on Tele. Pole # 305465H on Euclid 73+30 approx. Sta.

Nail on Tele. Pole # 307597H on Euclid 65+00 Approx. Sta.

see pg. 44 FB, 1582 Sta, 104+00 2d & CT.

on 15' R offset Hub 55+80.95

on Hub 52+63.58 EC.

on Hub P.O.T. 444.50' from P.I. See pg. 5

on Rim of MH near P.I.

Levels Line "A"

Cont'd From Page 15

T.P.	2.27	93.40	7.97	91.13	
T.P.	1.77	99.10	7.29	97.33	
T.P.	2.22	104.62	9.74	102.40	on Chisel cross 135+61.40 E.C.
T.P.	0.16	112.14	12.87	111.98	
			0.62	124.23	on top post East End of barricade St. Sta. <sup>on</sup> <sub>Curve</sub> 130+00
T.P.	3.20	124.85	5.20	121.65	
T.P.	5.04	126.85	10.58	121.81	
			4.05	128.34	on Private "S.I." Pt. 1" Pipe approx. Sta. 121+60 on Curve
T.P.	4.33	132.39	5.25	128.06	POST 117+42.81
			7.10	126.21	on hub 116+37.17 BC
T.P.	6.22	133.31	5.71	129.09	
T.P.	1.16	132.80	13.27	131.64	
			5.90	139.01	on hub 109+00 P.O.T. See pg. 8
T.P.	10.87	144.91	8.91	134.04	
check			4.93	138.02 = 137.95	NLY Edge of Paving 61+82.70 See pg. 11 F.B. 1582 ?
			4.45	138.50	on chisel cross 104+52.77 See pg. 8
T.P.	4.00	142.95	7.76	138.95	
T.P.	7.00	146.71	11.82	139.71	
			10.20	141.33	on hub $\frac{96+86.81}{95+85.81}$ EC
T.P.	0.97	151.53	8.75	150.56	

15931

Levels Line "A"

Cont'd From Page 16

17

Check 5.73 75.29 = 75.35

T.P. 1.61 81.02 12.98 79.41

T.P. 0.39 92.39 6.61 92.00

T.P. 7.87 98.61 2.66 90.74

93.40

B.P. S.W. Cor. Bridge Home & Federal

Set. B.M. - Redwood Chollas Station

Road

Sommermayr  
Bogg T  
Allen

INDEXED  
Y.K.  
OCT 16 1950  
Cont. - P. 19

10-16-50  
20006

T.P.	0.37	301.98	2.63	301.61	0.03 Error Low. 301.64
T.P.	9.10	304.24	8.18	295.14	OK
T.P.	4.17	303.32	9.23	299.15	
T.P.	4.49	308.38	6.82	303.89	
	6.29	310.71	-	304.42	B.M. #2
Set. B.M. #2			6.29	304.42	chiseled square OK
T.P.	6.39	310.71	4.17	304.32	
T.P.	5.71	308.70	0.62	302.99	
T.P.	8.42	303.61	7.79	295.19	OK #1
Set. B.M. #1	1.54	303.18	1.57	301.64	Set. B.M.
T.P.	11.47 303.21	303.21 11.47	1.02	291.74	
T.P.	9.54	292.76	0.58	283.25	
T.P.	10.87	283.80	0.84	272.93	
T.P.	11.30	273.77	0.35	262.47	
T.P.	7.92	262.82	0.30	254.90	
	8.24	255.20		246.96	= B.M. A

~~Void~~

B.M. #1 S.W. Ret. Marvint + Winlow chiseled B

Error of 0.03 in this line  
See Re-run - P. 19.

ctr. N.W. ob. Ret. Redwood + Cholla Station Road.

B. chiseled square ctr. S.W. ob. Ret. Marvint + Winlow

orig B.M. - X in pavement 14478520 EB 1582  
25 + 48

~~Void~~

Check B.M.#2		4.99	304.42	<del>304.42</del> <sup>ok</sup>
T.P.	6.18	309.41	5.21	303.23
T.P.	9.52	308.44	4.55	298.92
T.P.	8.71	303.47	7.89	294.76
	1.01	302.65		301.64

Orig B.M.		6.79	245.92	<del>245.92</del> <sup>1.04 Low</sup>
T.P.	3.58	252.71	10.47	249.13
T.P.	2.22	259.60	10.88	257.38
T.P.	0.48	268.26	12.73	267.78
T.P.	0.33	280.51	10.51	280.18
T.P.	1.70	290.69	12.99	288.99
				301.98

~~Check back~~

1.04 Low.

Line N.G. must be re-run.  
check at later date.

~~B.M.#1 (P18)~~

~~of B.M.#1 to B.M.#2  
back within 0.01 - See above for re-check  
line between orig B.M. + B.M.#1 checks~~

Ext. Storm Drain, Fairmount ~~Ext.~~  
From Arnolds Park

Sommermeier

Begg

Allen

Bunch

INDEXED

DEC 6 1950

12-5-50

W.O. 20712

• = set stub + tack

Map # 2700

" 283

0+78 stub

0+45' = Wly edge Pave.

0+34' = Aprx. E Pave.

0+23' = Ely edge Pave

0+17' = Intersect Wly. line Lot 14 Map 2700

Map 283

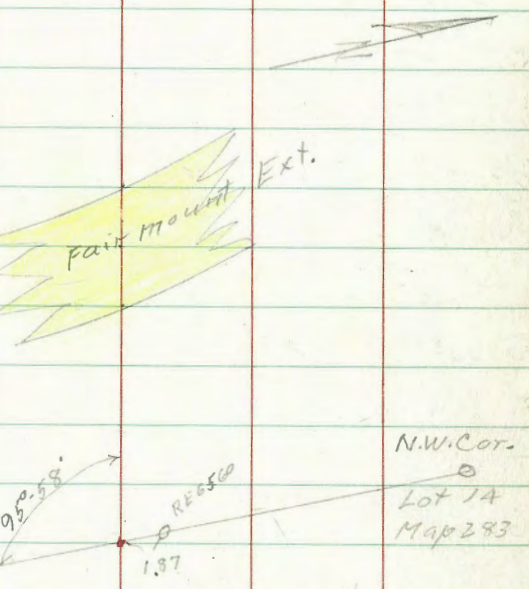
Map 2700

=  $\Delta$  33°-45' - Lt.

0+00 = outlet Existing 24" conc. drain

Prop.  
Drain

20



Prop. Levels - drain Crossing Fairmount  
sketch

0+17<sup>E</sup> - stub. = Wly line lot 1A Map # 283

154.7  
2.1  
10  
2.154.74  
2.70  
3.6  
10  
153.2

0+08

153.7  
1.1  
10  
2.2  
11.3  
2  
145.5  
144.8  
120  
10

T.P. 8.77 156.84 ✓ 1.77 148.07 ✓

156.84 ✓

0+03<sup>E</sup> 10' Mt. = & existing sewer M.H.

146.4  
3.4  
10  
Top of  
M.H.

0+02<sup>E</sup>

155.8  
+6.0  
3  
5.1  
144.7

0+01

156.3  
+6.5  
10  
156.3  
+6.5  
5  
144.7  
5.1  
2  
144.7  
5.1  
10  
147.3

A 33° 45' 24"  
0+00: Invert - outlet existing drain

144.87  
4.97  
149.84 ✓

11.34 149.84 ✓ - 138.50 ✓

chisel x 17 Paue. Sta 104+52.77 page 8

+ page 16

0+73

T.P. 6.43 150.05 ✓ 13.22 143.62 ✓

0+61

0+55

0+45<sup>S</sup> = Wly edge Conc. Pave. Rods along edge of Pave.

0+34<sup>S</sup> = E Pave. Rods on line of Pave.

0+23<sup>S</sup> = Fly edge Conc. Pave. Rods along line of Pave

140.6	139.6	139.6	141.0
9.5	10.5	10.7	9.0
<u>10</u>		<u>5</u>	<u>10</u>

150.05 ✓

144.4	147.3	149.1
12.4	9.5	7.7
<u>10</u>		<u>10</u>

151.6	150.3	148.7
5.3	6.5	8.1
<u>10</u>		<u>10</u>

152.19	150.92	149.73
4.65	5.92	7.11
<u>10</u>		<u>10</u>

153.61	152.34	151.10
3.22	4.50	5.74
<u>10</u>		<u>10</u>

154.60	153.42	152.20
2.24	3.42	4.64
<u>10</u>		<u>10</u>

156.84 ✓



check B.M. P. 21

11.55 138.50 (138.50)

1+00

$$\begin{array}{r} 14/0 \\ 9.0 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 139.4 \\ 10.6 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 138.2 \\ 11.8 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 137.4 \\ 11.7 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 143.6 \\ 6.5 \\ \hline 40 \end{array}$$

0+78 1/2 stub

$$\begin{array}{r} 139.8 \\ 10.2 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 139.4 \\ 10.7 \\ \hline 10 \end{array}$$

Low point  
on 9

$$\begin{array}{r} 139.6 \\ 10.4 \\ \hline 11 \end{array}$$

0+76

$$\begin{array}{r} 140.6 \\ 9.5 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 139.6 \\ 10.5 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 139.2 \\ 10.8 \\ \hline 10 \end{array}$$

$$\underline{150.05}$$

REMOVED 12-7-50, A.E.K.

Profile Storm drain end Brock bank St.

culvert  
E

1450

0+48 - Fill made to here

0+00  
inlet

		398 <sup>69</sup>	398 <sup>69</sup>	405 <sup>09</sup>	405 <sup>29</sup>	406 <sup>29</sup>	410 <sup>39</sup>
1450		14°	14°	7 1/2	7 1/2	6 1/2	2 1/2
		28	18	6		4	10
		404 <sup>39</sup>	401 <sup>69</sup>	401 <sup>29</sup>	408 <sup>41</sup>	410 <sup>39</sup>	
1420		8 1/2	10 1/2	11 1/2	4°	2 1/2	
		30	23	15		10	
		405 <sup>09</sup>	402 <sup>59</sup>	402 <sup>59</sup>	407 <sup>69</sup>		
0+95		7 1/2	9 1/2	9 1/2	4 1/2		
		10	5		10		
		408 <sup>59</sup>	404 <sup>69</sup>	410 <sup>09</sup>			
0+65		3 1/2	7 1/2	2 1/2			
		10		10			
IP <sub>2</sub>	024	<u>412<sup>49</sup></u>		12 <sup>10</sup>	412 <sup>25</sup>		
		416 <sup>35</sup>	416 <sup>25</sup>	416 <sup>85</sup>			
0+48		8°	7 1/2	7 1/2			
		10		10			
		419 <sup>65</sup>	419 <sup>55</sup>	419 <sup>45</sup>			
0+00		4 1/2	4 1/2	4 1/2			
		10		10			
IP <sub>1</sub>	064	<u>424<sup>35</sup></u>		11 <sup>08</sup>	423 <sup>74</sup>		
	006	434 <sup>79</sup>			434 <sup>73</sup>		

439<sup>39</sup> Marked F. 457 = 434<sup>73</sup>  
 BM = grade stake sta 5139<sup>36</sup> PC. west side

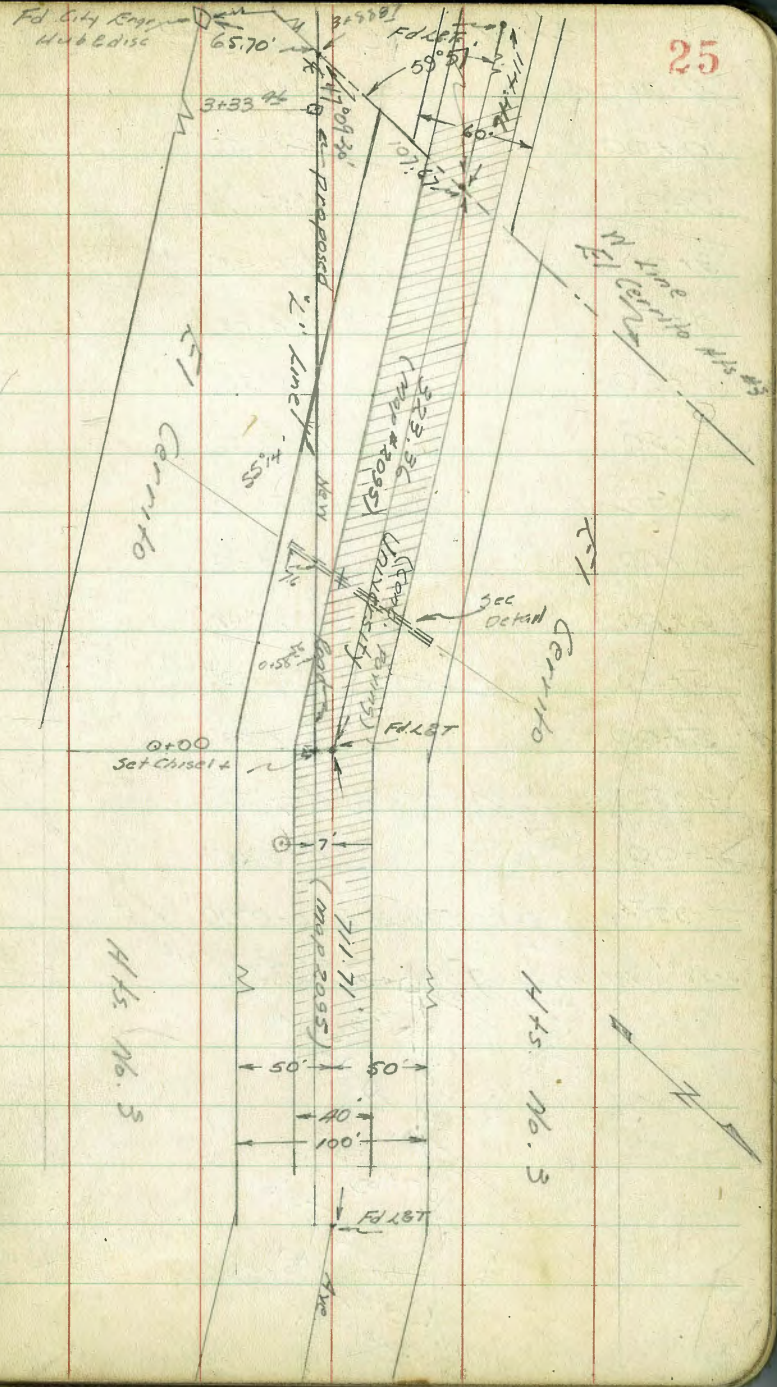
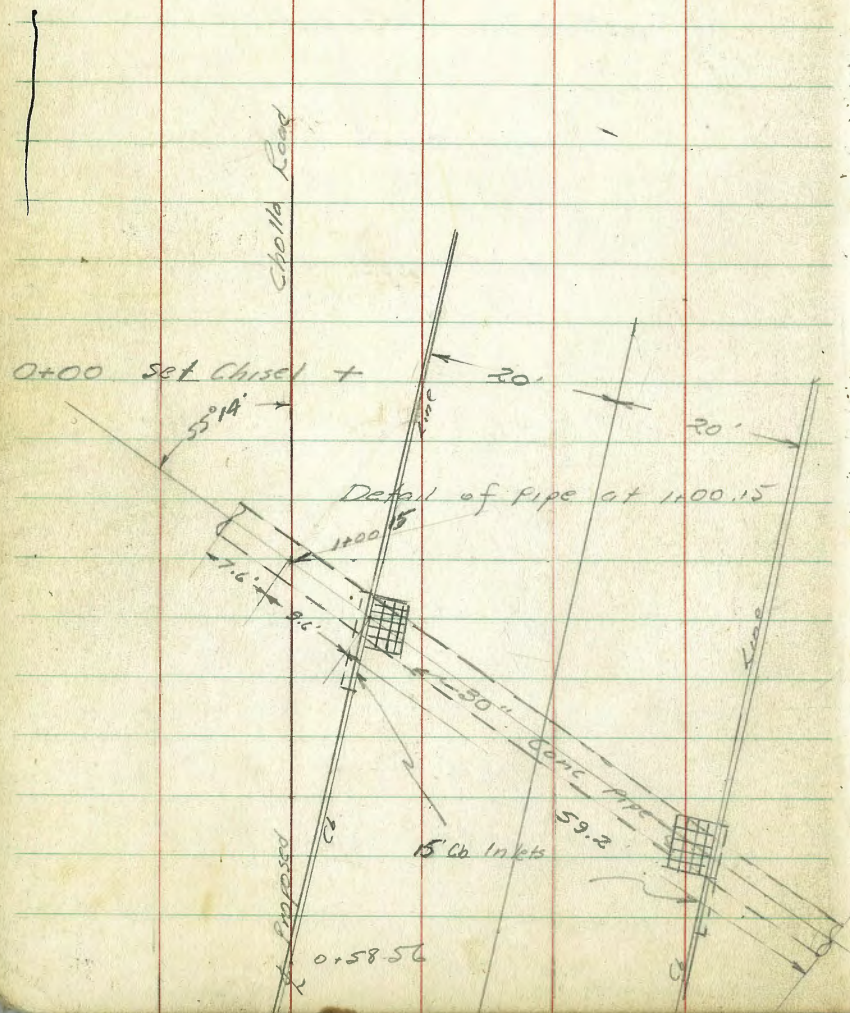
April 1951 Proposed Road Chollas Valley

Hendricks  
Allen  
Shepard  
Bruner  
W O # 20533

Indexed 54th to Fairmount

3+88.87 Intersection w/ Ly Line El Cerito Hts #3

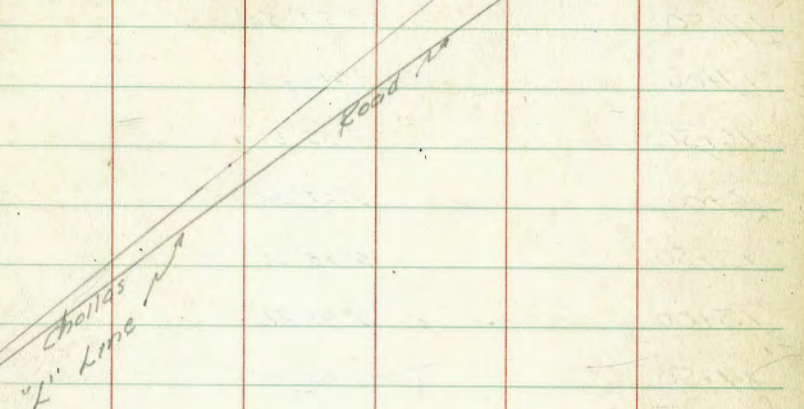
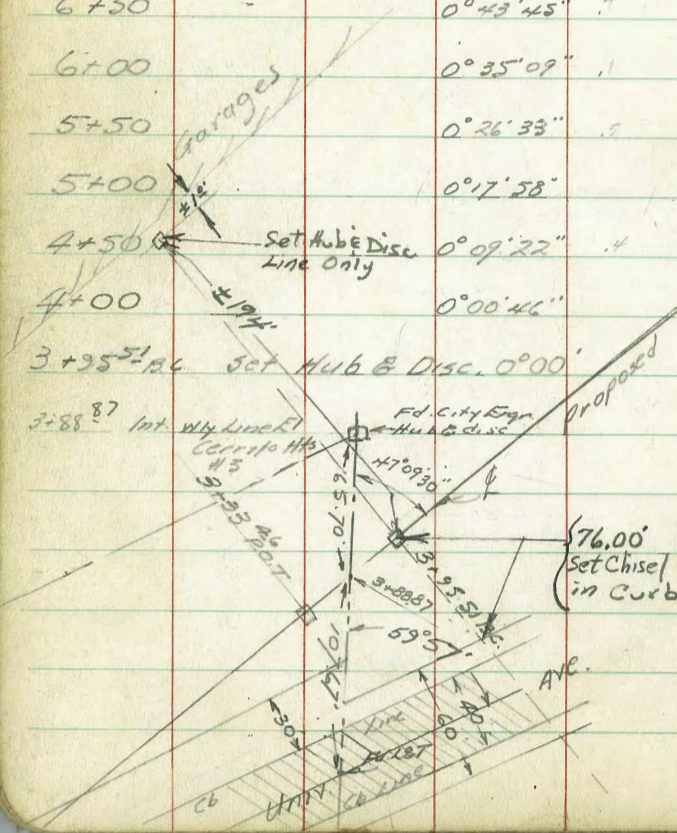
3+33.46 POT. Set Hub & disc



Chollas Road Cont'd

Defl.

10+00	1°43'55"	9
9+50	1°35'19"	8
9+00	1°26'43"	7
8+50	1°18'08"	6
8+00	1°09'32"	5
7+50	1°00'56"	4
7+00	0°52'20"	3
6+50	0°43'45"	2
6+00	0°35'09"	1
5+50	0°26'33"	0
5+00	0°17'58"	
4+50	0°09'22"	.4
4+00	0°00'46"	
3+95 <sup>±</sup> RL	Set Hub & Disc. 0°00'	



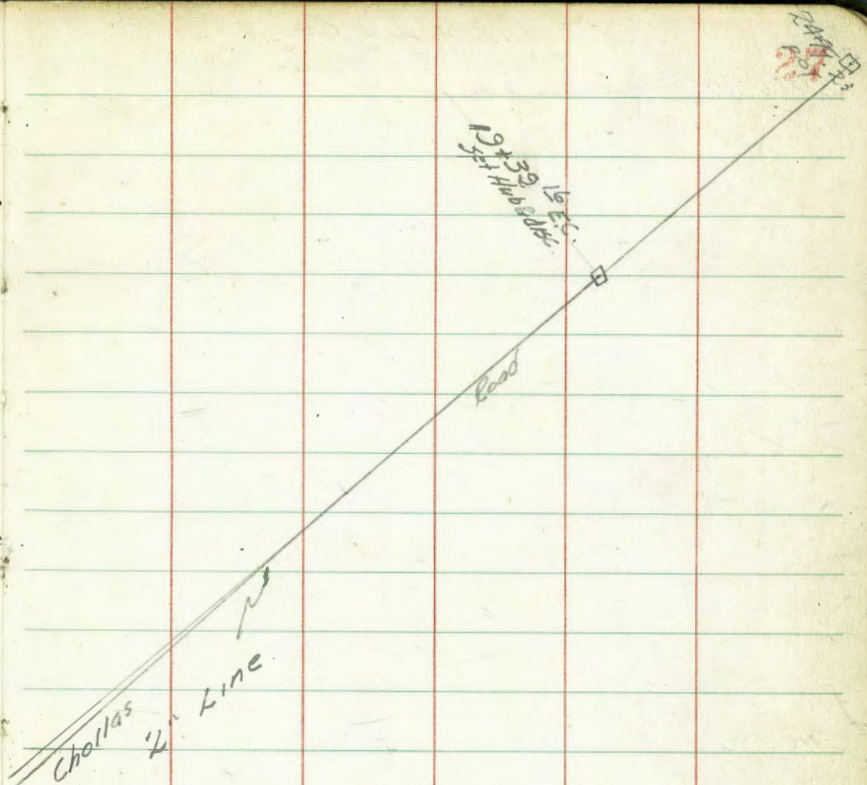
$A = 8^{\circ}50'40''$   
 $R = 19000'$   
 $L = 1543.65'$   
 $T = 773.36'$   
 $E = 29.86'$

see K-19  
 6/25/59  
 for N/W Lot 29 Lemon Villa Tract.

Chollas Road Cont'd

Station	Defl.	
19+39 <sup>16</sup> EC. Set Hub & disc	4°25'20"	.3
19+00	4°18'37"	.6
18+50	4°10'02"	.0
18+00	4°01'25"	.3
17+50	3°52'50"	.8
17+00	3°44'14"	.2
16+50	3°35'38"	.6
16+00	3°27'02"	.0
15+50	3°18'26"	.4
15+00	3°09'51"	.8
14+50	3°01'15"	.3
14+00	2°52'40"	.7
13+50	2°44'05"	.1
13+00	2°35'29"	.5
12+50	2°26'53"	.9
12+00	2°18'18"	.3
11+67 <sup>34</sup> Center of Curve Set Hub & disc.	2°12'40"	
11+50	2°09'42"	.7
11+00	2°01'66"	.1
POC 10+50	1°52'30"	.5

11+67<sup>34</sup> Center of Curve  
Set Hub & disc.







Levels L' Line  
Chonas Road Cont'd

30

1+08

277.39  
15.0  
100  
279.29  
13.1  
70  
278.79  
13.6  
50  
278.99  
13.4  
9  
5.4  
286.99  
5.45  
10.7  
Cb  
286.94  
6.10  
10.7  
G  
286.29  
5.43  
31.4  
286.96  
6.57  
52.1  
G  
285.82  
5.86  
22.1  
Cb  
286.53  
5.54  
7.5  
286.99

1+00 1/2

Section Taken on line of Pipe  
Int. 30" Conc. Pipe

277.49  
12.75  
7.6  
5.5  
282.59  
5.12  
7.6  
Cb  
282.69  
5.93  
9.6  
GHC  
284.49  
4.20  
9.6  
F.L.  
279.29  
5.12  
9.2  
G  
287.39  
5.32  
9.2  
G  
287.27  
6.05  
9.2  
G  
286.46  
4.20  
5.39  
G  
281.19  
2.42  
5.28  
F.L.  
282.97  
6.16  
5.38  
GHC  
286.23  
5.34  
5.8  
Cb  
287.05  
9.0  
6.8  
F.L.  
283.39

1+00

277.49  
14.9  
102  
282.59  
9.8  
84  
282.69  
9.7  
50  
284.49  
7.2  
15  
279.29  
13.1  
18  
287.29  
5.1  
7  
5.0  
287.39  
5.32  
9.2  
G  
287.07  
6.05  
9.2  
G  
286.33  
5.39  
29  
G  
287.00  
6.41  
50.4  
G  
285.99  
5.75  
50.4  
Cb  
286.69  
5.1  
7.5  
286.89

0+95

277.69  
14.7  
105  
285.69  
6.7  
84  
286.49  
5.9  
50  
287.29  
5.26  
8.1  
Cb  
287.13  
5.28  
8.1  
G  
286.47  
5.38  
29  
G  
287.01  
6.25  
49.4  
G  
286.04  
5.69  
49.4  
Cb  
286.70  
5.7  
7.5  
286.69

0+58 1/2 Int. South Cb. Line Univ. Pvc.

287.54  
4.25  
Cb  
286.89  
5.50  
G

0+50

284.99  
7.4  
100  
285.09  
7.3  
87  
286.79  
5.5  
50  
286.99  
5.4  
29  
287.60  
4.79  
21  
Cb  
287.03  
5.35  
21  
G  
287.08  
5.31  
19  
G  
287.45  
4.94  
389  
G  
286.53  
5.86  
389  
Cb  
287.24  
5.5  
55  
Ditch  
288.49  
3.9  
71  
289.09  
5.3  
8.3  
289.09

0+02 Power Pole # P172367 14' Lt.

292.39

292.39



3+02 Power Pole # 172366 53.5' Rt

3+00

272.89  
273.49  
278.79  
279.89  
283.69  
286.09  
286.59  
285.69  
285.52  
284.77  
285.15  
284.09  
284.76

17.7  
17.1  
11.8  
10.7  
6.9  
4.5  
4.0  
4.3  
5.07  
5.82  
5.44  
6.50  
5.14  
1.14

100  
70  
56  
42  
21  
15  
28  
43  
54.9  
54.9  
6  
6  
75  
96  
96  
1

290.59

T.P. 4.35 290.59 6.15 286.24

5pt. in Power Pole # 172366 53.5' Rt Sta. 3+02

2+50

273.39  
275.39  
282.69  
285.49  
287.59  
287.19  
287.69  
286.29  
285.92  
285.12  
285.53  
284.55  
285.17

19.0  
17.0  
9.7  
6.9  
4.0  
5.2  
4.1  
6.1  
6.47  
7.27  
6.86  
7.22  
7.22

100  
86  
70  
40  
12  
14  
29  
43.4  
43.4  
64  
84.5  
84.5

2+00

275.09  
276.29  
284.19  
285.49  
287.89  
288.49  
288.09  
286.59  
286.41  
285.59  
286.09  
285.08  
284.77  
286.29

17.3  
16.1  
8.2  
6.9  
4.5  
2.9  
4.3  
5.2  
5.73  
6.80  
6.70  
7.1  
6.9  
6.1

100  
86  
69  
50  
20  
19  
24  
32  
32  
52  
73.4  
73.4  
100

1+50

276.69  
277.19  
285.39  
286.29  
286.99  
287.89  
287.09  
286.75  
286.09  
286.64  
285.57  
286.27  
286.39

15.7  
15.0  
7.0  
6.1  
5.4  
4.5  
5.3  
5.4  
6.30  
5.75  
6.82  
6.13  
6.13  
6.10

100  
87  
75  
50  
28  
12  
20  
206  
41  
61  
61  
77

1+30

277.09  
279.29  
286.59  
287.29  
287.39  
286.83  
286.11  
286.64  
285.76  
286.42  
286.79

15.3  
13.1  
5.4  
5.1  
5.0  
5.52  
6.28  
5.75  
6.42  
5.97  
5.1  
5.1

100  
68  
50  
75  
50  
16  
10  
36.5  
57.3  
57.3  
75

1+16

277.69  
279.29  
280.69  
286.79  
286.86  
286.25  
286.86  
285.84  
286.53  
286.79

14.7  
13.1  
11.7  
5.6  
5.53  
6.14  
5.53  
6.55  
5.75  
5.75  
5.1

100  
50  
11  
5.6  
12.5  
125  
33  
53  
53  
75

292.39 T

292.39 T

Levels L Line  
Chollas Road Cont'd

5+00

T.P. 4.49 288.49 6.55 284.04 (284.00)

4+50

4+00

3+95.51 B.C.

3+80

3+35

290.59

32

266.99  
21.5 20.7 20.8 16.0 14.7 14.0 11.8 4.3 2.4 4.0 4.0  
100 88 65 40 14 42 63 78 94 106.7  
CB

L&T & Univ. P-29) 288.49

270.19 269.59 272.89 274.49 274.49 275.99 277.29 283.99 284.89 284.19 283.53  
20.4 21.0 17.2 16.6 16.1 14.5 13.3 6.5 5.7 6.0 7.06  
100 79 58 33 14 40 54 68 89.2 89.2  
CB G

274.99 271.99 274.79 275.79 275.39 276.39 279.19 284.59 286.09 285.19 284.75 283.92  
18.5 18.5 15.8 14.8 15.3 14.3 11.4 6.0 4.5 5.4 5.5 6.7  
100 66 53 28 7 25 44 55 65 77 77  
CB G

271.99 271.99 274.79 275.59 275.39 276.89 279.09 284.99 286.39 285.19 284.80 283.99  
18.5 18.5 15.8 14.7 15.3 13.7 11.5 5.5 4.3 5.4 5.7 6.0  
100 66 54 28 8 24 43 54 65 76.2 76.2  
CB G

271.99 272.59 275.29 275.19 277.29 277.39 279.59 282.89 286.39 286.39 284.79 284.95 284.19 284.49  
18.5 18.0 15.3 15.4 13.4 13.3 11.0 7.2 4.3 4.3 5.5 5.4 6.0 6.0  
100 67 56 45 26 19 25 41 53 67 72.8 72.8 94  
CB G

272.39 273.19 274.19 278.59 279.69 282.29 284.29 285.69 286.19 285.39 287.26 284.47 284.71 283.80 284.47  
15.2 17.4 16.4 12.0 10.2 8.3 6.2 4.3 5.2 5.3 6.2 5.8 5.8 6.2 6.2  
100 69 59 46 28 10 17 35 50 63 63 84 104.5 104.5  
CB G CB

290.59

Levels "L" Line  
Chollas Road Contd.

7+00

T.P. 0.47 276.07 12.89 27560

6+50

6+25

6+00

5+75

5+35

288.49

266.89 266.07 264.47 263.37 264.77 264.47 267.37 266.87 269.97 288.07 **33**  
 9<sup>2</sup> 10<sup>0</sup> 11<sup>5</sup> 12<sup>2</sup> 11<sup>3</sup> 11<sup>5</sup> 8<sup>7</sup> 9<sup>2</sup> 6<sup>1</sup> 12<sup>0</sup>  
 100 73 68 54 45 9 38 83 122  
 Ditch

267.69 268.09 265.59 265.19 265.59 276.07 265.29 267.39 267.29 266.89 272.49 278.59 279.99  
 20<sup>5</sup> 20<sup>4</sup> 22<sup>8</sup> 23<sup>2</sup> 22<sup>9</sup> 23<sup>2</sup> 21<sup>1</sup> 21<sup>2</sup> 21<sup>5</sup> 16<sup>0</sup> 9<sup>9</sup> 8<sup>5</sup>  
 100 80 70 47 31 4 26 51 76 86 100  
 Ditch

267.99 268.29 266.29 267.09 265.59 265.39 265.39 267.59 267.39 265.89 270.29 278.19 280.49 280.69 289.69  
 20<sup>5</sup> 20<sup>2</sup> 22<sup>2</sup> 23<sup>5</sup> 22<sup>9</sup> 23<sup>1</sup> 23<sup>1</sup> 20<sup>9</sup> 21<sup>1</sup> 22<sup>5</sup> 18<sup>2</sup> 10<sup>2</sup> 8<sup>0</sup> 7<sup>2</sup> 7<sup>8</sup>  
 100 82 76 62 49 28 11 14 29 41 54 80 96 115  
 Ditch

269.39 269.19 265.89 265.99 265.69 264.89 267.39 267.39 267.19 266.29 271.89 278.29 280.79 281.59 282.29  
 19<sup>5</sup> 10<sup>5</sup> 22<sup>2</sup> 23<sup>8</sup> 22<sup>5</sup> 22<sup>8</sup> 23<sup>5</sup> 21<sup>1</sup> 21<sup>1</sup> 21<sup>3</sup> 22<sup>2</sup> 16<sup>5</sup> 10<sup>2</sup> 7<sup>2</sup> 6<sup>9</sup> 6<sup>2</sup>  
 85 80 71 64 42 23 4 7 16 31 45 67 80 100  
 Ditch

267.59 265.89 264.79 266.09 265.69 265.99 267.69 267.99 271.49 279.59 280.89 282.49 282.79  
 20<sup>9</sup> 22<sup>5</sup> 23<sup>7</sup> 22<sup>5</sup> 22<sup>8</sup> 22<sup>5</sup> 20<sup>8</sup> 20<sup>5</sup> 17<sup>0</sup> 8<sup>2</sup> 7<sup>5</sup> 5<sup>0</sup> 5<sup>2</sup>  
 102 96 88 80 45 20 10 19 50 70 88 100  
 Ditch

264.69 266.89 266.59 267.29 271.09 271.89 272.99 274.29 277.49 283.99 283.99  
 23<sup>8</sup> 21<sup>5</sup> 21<sup>2</sup> 21<sup>2</sup> 17<sup>4</sup> 16<sup>5</sup> 15<sup>5</sup> 14<sup>2</sup> 11<sup>0</sup> 4<sup>5</sup> 4<sup>5</sup> 2<sup>5</sup> 2<sup>3</sup> 2<sup>3</sup>  
 109 100 67 37 20 7 10 41 65 100  
 Ditch

288.49

Levels L" Line  
Chollas Road cont'd

7+00

8+50

I.P. 2.97 268.12 10.92 265.15

8+25

8+17 Sewer MH. 14' Rt.

8+00

7+94 Power Pole # 547988 6' Rt.

7+50

276.07  
↑

34

260.32 262.92 263.02 260.02 260.02 260.92 260.32 261.02 260.62 263.72 263.62  
 78 57 51 81 81 73 78 71 75 74 74 71 263.72  
 100 86 71 54 12 23 50 80 87 100  
 Ditch  
 263.92 263.42 260.32 263.02 264.92 264.82 260.82 261.02 261.92 261.82 262.02 261.62 264.82 264.92  
 43 47 78 51 33 23 73 71 63 63 61 65 72 32 100  
 100 88 66 56 52 45 37 22 25 50 67 72 100  
 Ditch

268.12  
 South Rim Sewer MH Rt. Sta. 8+17  
 267.07 264.77 259.97 262.57 264.47 265.27 262.07 261.67 262.07 261.17 265.47 265.27  
 90 11 16 12 11 10 14 14 14 14 10 10  
 100 100 82 70 44 24 19 26 58 68 100  
 Ditch

266.37 264.87 262.47 260.67 263.07 263.67 264.07 263.37 264.77 263.47 266.17 265.87 266.17  
 97 11 13 15 12 12 12 12 11 12 10 9 9  
 100 85 75 59 56 38 17 8 40 50 83 100  
 Ditch

266.37 263.97 262.77 263.87 264.57 264.17 264.57 266.67 266.67 268.17 268.47  
 97 12 13 12 11 11 11 9 9 7 7  
 100 73 61 52 29 6 15 50 87 100  
 Ditch

276.07  
↑

Levels "L" Line  
Chollas Road Gen 18.

12+00

11+50

11+19 Sewer MH 64" Rt

11+00

T.P. 5.65 267.94 5.83 262.29

10+50

10+00

9+50

268.12  
↑

35

260.84  
7.6 10.8 9.5 9.2 11.8 10.5 9.2 9.2 12.2 8.0 8.0 8.5  
100 87 50 30 (20 9) 5 29 79 100  
Ditch

260.24 260.94 258.4 259.4 256.94 255.94 259.04 260.24 260.74 260.74 259.84 259.34  
8.2 7.0 9.4 8.8 11.0 12.0 8.9 7.7 7.2 7.2 8.1 8.5  
100 82 71 40 23 19 14 29 50 100  
Ditch

260.44 262.84 259.94 260.74 259.14 257.14 258.04 260.94 259.64 261.24 261.04  
7.5 5.1 8.0 7.2 8.3 10.3 9.9 6.5 7.6 8.3 6.7 6.9  
100 85 77 50 37 27 18 14 27 50 100  
Ditch

North Rim Sewer MH Rt Sta. 11+19

262.92 260.42 258.12 261.02 262.72 260.02 260.22 262.32 261.52  
5.2 7.7 10.0 7.1 5.4 8.1 7.9 5.8 6.5  
100 85 68 55 20 23 50 100  
Ditch

257.72 260.32 261.22 260.12 261.22 261.32 261.82 262.82 262.12  
10.4 7.8 6.2 8.0 6.9 6.8 6.1 6.0  
107 102 50 32 30 50 83 100  
Ditch

259.12 262.12 262.62 260.42 260.72 260.62 261.02 260.32 261.22 263.92 263.02  
9.0 6.0 5.5 7.7 7.4 7.5 7.1 7.8 6.9 4.2 5.1  
100 100 68 43 27 30 50 70 75 100  
Ditch

268.12  
↑

T.P. 1.96 26016 9.74 258.20

13+50

13+30 A. wash

13+20

13+00

12+50

12+30

257.54  
257.64  
253.74  
255.14  
257.44  
258.74  
261.64  
257.14  
256.94  
260.84  
262.44  
262.04  
255.74  
255.64  
257.74  
257.94  
257.54

100 10 14 12 10 9 6 10 11 7 5 5 12 12 10 10 10 10  
91 88 74 70 50 32 17 9 7 7 17 24 32 36 50 80 100  
(Ditch)

258.44  
258.24  
258.04  
258.24  
259.14  
258.34  
256.44  
256.14  
258.44  
258.84  
258.04  
257.74  
258.14  
257.54

9 9 13 13 8 9 11 11 12 9 10 9 10 9 10  
100 89 84 77 70 88 33 0 18 27 50 80 100  
(Ditch)

258.44  
258.14  
258.14  
259.14  
258.34  
256.44  
256.24  
258.44  
259.34  
258.84  
258.14  
258.14  
257.54

9 9 12 13 8 9 11 11 9 8 9 9 10  
100 84 75 69 42 37 14 7 37 50 80 100  
(Ditch)

258.14  
258.44  
255.24  
256.44  
255.74  
259.64  
259.64  
259.64  
255.64  
255.34  
258.84  
258.54  
257.74

9 9 12 11 12 8 8 8 12 12 9 9 10  
100 80 75 34 12 4 17 27 45 67 87 100

258.74  
256.34  
259.24  
257.34  
256.04  
262.54  
262.04  
255.54  
260.44  
259.64  
258.24

9 11 8 10 11 5 5 10 7 7 8 9  
100 78 50 29 8 10 33 45 77 100  
(Ditch)

258.14  
256.44  
258.84  
257.14  
256.24  
256.14  
257.94  
259.64  
259.44  
260.34  
259.74  
258.64

9 11 9 10 11 11 10 8 8 7 8 9  
100 85 50 33 19 5 12 34 50 76 100  
(Ditch)

267.94  
T

267.94  
T

14+65

253.76  
 64 74 4.9 7.1 6.8 7.0 7.2 5.4 7.5 7.8 3.4 2.9  
 100 96 93 50 30 37 42 50 71 82 100  
 Ditch

14+37

253.26  
 6.9 7.1 5.5 6.5 7.6 7.1 6.9 6.3 3.3 3.9 2.6 2.86  
 (100 91) 86 36 23 50 64 77 100  
 Ditch

14+24 Sewer 144. 105' Rt.

254.36  
 5.8 7.3 5.3 4.2 10.5 0.3 4.7 7.5 6.3 5.5 3.4 2.7 2.56.46  
 100 89 86 44 37 26 12 50 69 76 100  
 Ditch

14+20

256.26  
 3.9 5.4 7.0 5.4 4.2 2.2 2.0 1.4 6.5 7.3 5.9 8.6 2.9 3.7 2.56.46  
 100 93 83 81 66 60 45 18 8 37 55 90 100  
 Ditch

14+00

257.96  
 2.2 4.1 7.0 3.7 1.2 1.2 1.2 6.9 6.9 5.5 2.7 3.1 2.9 3.8 2.56.36  
 96 93 80 75 49 41 18 6 39 48 70 91 100

13+86

258.56  
 1.5 2.0 4.3 1.1 1.0 1.4 1.3 1.0 1.0 1.2 4.5 4.9 2.7 2.5 2.57.76  
 94 89 76 73 59 46 37 21 15 12 26 38 45 90 100  
 Ditch

13+72

260.76  
 7

260.16  
 7

Levels 2" Line  
Chollas Road Cont'd

17+50

248.69  
10.6  
100  
248.29  
11.0  
85  
246.69  
12.5  
70  
249.49  
9.3  
58  
249.99  
7.3  
47  
250.49  
8.8  
16  
251.29  
9.8  
25  
249.49  
10.3  
50  
248.99  
8.5  
66  
250.69  
11.3  
81  
252.99  
12.3  
95  
254.59  
12.7  
100  
246.19

38

17+00

250.29  
9.0  
100  
249.89  
9.4  
87  
248.00  
11.3  
71  
249.19  
10.1  
62  
249.99  
9.3  
50  
250.49  
8.9  
18  
250.29  
9.8  
22  
249.49  
9.2  
50  
249.39  
7.3  
73  
251.99  
5.3  
91  
253.99  
10.4  
106  
254.99  
7.0

16+50

250.09  
9.2  
100  
251.49  
7.8  
75  
251.69  
7.6  
50  
251.99  
7.3  
40  
248.89  
10.4  
22  
251.09  
8.2  
8  
251.09  
8.2  
24  
252.09  
7.2  
29  
249.89  
9.4  
50  
253.19  
6.1  
78  
254.49  
1.9  
100

T.P. 560 259.29 6.47 253.69

16+00

250.76  
9.4  
100  
252.76  
7.4  
80  
250.16  
10.0  
50  
250.36  
9.8  
10  
252.06  
8.1  
9  
252.06  
8.1  
13  
250.76  
8.2  
31  
251.96  
9.5  
40  
250.56  
8.2  
60  
251.46  
6.1  
75  
253.46  
6.1  
100  
254.06

15+50

256.66  
7.5  
100  
253.66  
6.1  
90  
250.56  
9.1  
88  
250.76  
9.4  
16  
252.66  
7.5  
16  
251.46  
8.2  
35  
251.46  
7.0  
50  
252.36  
7.5  
75  
252.56  
5.8  
88  
254.36  
5.6  
100  
254.56

15+00

252.26  
7.9  
100  
252.26  
7.9  
68  
252.06  
8.1  
33  
252.06  
8.1  
29  
252.56  
7.6  
67  
252.76  
7.4  
78  
256.26  
8.9  
100  
255.46  
4.7

260.16

260.16



Levels L" Line  
Chollos Road Cont'd

20+00

19+50

T.P. 8.95 255.20 8.99 246.25

19+39.16

19+00

18+87 Sewer 174.66' R4.

T.P. 8.99 255.24 13.04 246.25

18+50

18+00

259.29

244.80  
10<sup>+</sup> 10<sup>5</sup> 11<sup>14</sup> 10<sup>-5</sup> 6<sup>5</sup> 10<sup>2</sup> 11<sup>0</sup> 7<sup>5</sup> 4<sup>2</sup> 4<sup>4</sup> 4<sup>10</sup> 2<sup>5</sup> 7<sup>00</sup> 3<sup>9</sup>  
100 20 28 8 17 34 61 65 79 89 100

245.20 246.20 246.10 245.20 250.00 246.20 244.80 247.20 250.90 251.20 248.50 252.20  
10<sup>0</sup> 9<sup>2</sup> 9<sup>2</sup> 10<sup>0</sup> 5<sup>2</sup> 9<sup>0</sup> 10<sup>+</sup> 8<sup>0</sup> 4<sup>3</sup> 4<sup>0</sup> 13<sup>3</sup> 13<sup>0</sup> 13<sup>0</sup>  
100 75 86 11 20 30 62 70 77 92 115

255.20  
07 stub 50' R4 510.19+39.50  
244.34 246.04 246.14 247.24 247.24 248.24 247.24 245.24 245.94 248.04 251.14 248.34 258.54  
10<sup>9</sup> 9<sup>2</sup> 9<sup>2</sup> 8<sup>0</sup> 8<sup>0</sup> 7<sup>0</sup> 8<sup>0</sup> 10<sup>0</sup> 9<sup>2</sup> 7<sup>2</sup> 4<sup>2</sup> 13<sup>2</sup> 13<sup>2</sup>  
100 75 50 28 12 17 30 50 67 76 100 110

247.54 245.04 248.94 247.14 249.14 250.54 250.84 248.34 246.74 248.94 251.64 251.94 248.04 248.34  
7<sup>2</sup> 10<sup>2</sup> 6<sup>5</sup> 8<sup>2</sup> 6<sup>2</sup> 4<sup>7</sup> 4<sup>2</sup> 6<sup>9</sup> 8<sup>5</sup> 6<sup>3</sup> 3<sup>5</sup> 3<sup>3</sup> 13<sup>2</sup> 13<sup>2</sup>  
100 85 67 44 27 16 24 50 67 74 81 105 115

255.24  
00 stub 50' R4 510.19+39.50  
249.09 248.59 247.59 249.49 248.39 248.99 248.29 249.49 250.29 250.44 253.89 258.79 259.09  
10<sup>2</sup> 10<sup>2</sup> 11<sup>2</sup> 9<sup>2</sup> 10<sup>2</sup> 10<sup>2</sup> 11<sup>0</sup> 9<sup>8</sup> 9<sup>0</sup> 8<sup>5</sup> 5<sup>5</sup> 6<sup>5</sup> 5<sup>0</sup> 0<sup>2</sup>  
100 75 50 22 24 33 50 63 74 83 100 120

248.69 249.19 248.39 247.99 248.79 250.69 249.79 249.99 250.89 252.29 251.69 252.49 252.99  
10<sup>6</sup> 10<sup>2</sup> 10<sup>9</sup> 11<sup>2</sup> 10<sup>5</sup> 8<sup>5</sup> 9<sup>5</sup> 9<sup>0</sup> 8<sup>2</sup> 7<sup>0</sup> 3<sup>6</sup> 7<sup>0</sup> 7<sup>0</sup>  
100 71 50 23 19 30 50 61 78 88 95 100

259.29

Levels L' Line  
Ghollas Road Contd.

22+15

240.85  
241.55  
241.75  
243.85  
249.25  
251.15  
251.75  
11<sup>m</sup> 10<sup>s</sup> 10<sup>k</sup> 8<sup>m</sup> 2<sup>s</sup> 10  
100 50 37 41 64 100

22+00

240.55  
241.75  
248.85  
241.85  
241.85  
243.75  
249.55  
251.65  
251.05  
11<sup>s</sup> 10<sup>k</sup> 8<sup>m</sup> 10<sup>m</sup> 10<sup>m</sup> 8<sup>k</sup> 2<sup>s</sup> 0<sup>s</sup> 0<sup>k</sup>  
100 64 47 22 37 46 67 100

T.P. 262 252.15 567 249.53

21+50

241.50  
243.60  
243.70  
242.40  
252.5  
243.00  
243.70  
245.50  
248.80  
250.60  
251.50  
13<sup>k</sup> 11<sup>s</sup> 11<sup>m</sup> 12<sup>m</sup> 12<sup>m</sup> 11<sup>s</sup> 9<sup>k</sup> 6<sup>k</sup> 4<sup>s</sup> 3<sup>k</sup>  
100 61 47 36 31 48 52 75 100

21+00

242.10  
244.40  
244.60  
243.00  
243.30  
246.00  
249.20  
252.00  
13<sup>k</sup> 10<sup>m</sup> 10<sup>s</sup> 12<sup>m</sup> 11<sup>k</sup> 9<sup>k</sup> 6<sup>s</sup> 3<sup>k</sup>  
100 80 50 30 53 58 100

20+75

242.60  
244.00  
244.70  
247.80  
242.90  
244.40  
249.10  
249.50  
253.50  
254.30  
12<sup>s</sup> 11<sup>m</sup> 10<sup>m</sup> 12<sup>k</sup> 12<sup>m</sup> 10<sup>m</sup> 6<sup>k</sup> 5<sup>k</sup> 1<sup>k</sup> 0<sup>k</sup>  
100 80 50 26 50 58 71 90 100

20+50

242.70  
247.70  
245.50  
243.20  
245.30  
248.30  
244.20  
243.40  
245.70  
249.80  
249.90  
252.10  
255.00  
12<sup>s</sup> 7<sup>s</sup> 9<sup>k</sup> 10<sup>m</sup> 9<sup>k</sup> 6<sup>k</sup> 11<sup>k</sup> 11<sup>k</sup> 9<sup>s</sup> 5<sup>s</sup> 5<sup>k</sup> 3<sup>k</sup> 0<sup>k</sup>  
100 68 29 4 6 16 28 53 60 70 78 100

255.20  
↑

255.20  
↑

Levels "L" Line  
Chollas Road Contd.

BM, 4.82 251.78 5.20 246.95 246.96

Chisel + 54 14 51

24+00

239.05  
13' 12.9' 8.7' 8' 6' 5.2' 4' 3.65' 2.64'  
100 58 44 18 12 50 69.83 96.64

23+70

239.45  
12.7' 13.2' 7.8' 8' 5.5'  
100 50 44 21 62 79 93 101

East Edge  
Paving  
54 14 51  
Paving  
54 14 51

23+50

239.75  
12.5' 12.3' 8.3' 8' 6'  
100 44 34 19 26 43 69 100

23+00

240.05  
12' 7' 7' 7.6' 6' 4' 4'  
100 75 35 40 54 100

22+75

239.25  
12.9' 12.3' 9' 8' 7' 5.6' 3.7'  
100 31 10 20 29 58 100

22+55

241.55  
10.6' 10.9' 12' 10' 8.7' 7.8' 4.6' 2.3' 1.9'  
100 50 24 14 28 35 59 100

252.15  
✓

252.15  
✓

Levels 2" line  
Chattas Road Contd

26+00

25+50

25+00

24+83<sup>3x</sup> West Edge Paving

24+65<sup>24</sup> S. South St.

24+47.14 East Edge Paving South St.

24+14 Sewer MH. 2' RT.

251.78  
/

243.78  
244.28  
243.98  
240.88  
240.58  
240.08  
239.18  
239.48  
239.08  
243.48

5.0 7.5 7.0 10.7 11 11.7 12.5 12.3 12.2 11.1  
100 86 44 14 26 23 72 97 105

247.15  
247.08  
243.88  
243.98  
241.68  
241.48  
240.18  
240.98  
240.28

7.6 7.7 7.9 7.8 10 10 11.5 10.7 11.5  
100 86 82 31 33 41 64 100

242.28  
247.18  
247.25  
247.23  
246.91  
246.58  
243.38  
241.08  
241.08  
242.38  
241.98

9.2 7.5 7.4 7.5 7.2 5 8.6 10.7 10.7 9.4 9.8  
100 89 84 50 55 24 68 18 45 63 84 100

Toe East Edge Paving West Edge Paving

241.78  
242.38  
246.88  
247.14  
247.07  
246.76  
246.48  
243.68  
242.58  
242.08  
242.88  
242.58

10.9 9.4 7.9 7.6 7.1 5.0 5.3 5.5 9.3 9.2 8.9 9.2  
100 75 66 53 265 17 25 41 64 90 100

Toe East Edge Paving West Edge Paving

238.48  
241.78  
242.58  
246.88  
246.97  
246.94  
246.86  
246.78  
243.48  
243.48

13.3 10 9.3 7.9 7.2 7.4 7.2 5.0 5.0 8.3 8.3  
105 99 50 42 268 16 DISC 268 21 50 100

Toe East Edge Paving West Edge Paving

238.58  
239.28  
242.48  
243.68  
246.58  
246.97  
247.20  
247.19  
247.28  
245.08  
244.18

13.2 12.5 9.3 8.1 5.2 4.8 4.5 4.5 4.5 6.7 7.5  
110 96 91 32 18 268 53 62 66 78 100

Toe East Edge Paving West Edge Paving

251.78

Levels L Line  
Chollas Road Cont'd

28+50

28+10 41' Lt. - 2 Series Mt.

28+00

27+50

27+00

26+50

T.P. 3.36  $\frac{242.09}{\uparrow}$  1305 238.73

26+25

$\frac{251.78}{\uparrow}$

231.99  
233.09  
232.89  
233.49  
233.39  
234.49  
234.89  
239.49  
238.59  
238.39  
237.99  
238.48  
43  
10 9 9 8 8 7 7 26 35 37 41 36  
101 97 50 26 7 27 58 63 73 92 92 5  
Ditch

233.99  
234.19  
233.89  
233.59  
238.29  
239.99  
239.39  
239.09  
238.79  
239.32  
8 7 8 8 2 2 3 3 3 3 2 2  
100 50 39 51 68 72 83 103 102 102 6  
Ditch

235.09  
235.59  
237.69  
237.79  
233.69  
237.19  
233.79  
235.59  
239.19  
240.59  
240.09  
239.99  
7 6 4 4 8 7 8 6 2 1 2 2  
100 83 80 50 42 21 50 61 80 85 96  
Ditch

235.49  
239.29  
236.79  
233.99  
234.79  
237.19  
233.49  
235.79  
238.49  
238.49  
240.19  
240.39  
241.29  
6 5 5 8 7 7 8 6 2 1 2 2  
100 95 89 62 50 22 38 45 73 76 94 100  
Ditch

243.69  
241.89  
237.39  
236.29  
236.89  
237.99  
239.89  
239.19  
238.49  
241.89  
242.69  
1 0 4 5 4 2 2 2 0 1 1  
100 50 39 17 10 17 51 87 92 100

243.78  
243.08  
242.78  
239.38  
242.09  
240.38  
239.58  
238.88  
238.48  
242.68  
8 8 9 12 11 12 12 13 9 9  
104 74 48 21 34 50 91 98  
Bank

$\frac{251.78}{\uparrow}$

Levels "L" Line  
Chollas Road Contd.

31+00

30+80

30+50

T.P. 4.76 240.86 5.99 236.10

30+00

29+50

29+00

242.09  
X

242.09  
X

234.06	227.46	228.66	229.06	230.26	225.86	232.36	237.56	234.66	234.76	235.56	234.66	234.56	234.06	234.50
6.8	13.4	12.2	11.8	10.6	8.5	10.2	6.2	6.1	5.2	6.2	6.2	6.2	6.2	16
103	94	86	65	43	28	20	13	31	48	52	52	62	82	82
Ditch														
227.46	228.66	229.06	229.76	232.26	233.16	234.46	235.86	234.86	234.66	234.36	234.82	234.56	234.06	234.50
12.4	12.2	11.8	11.1	8.5	7.7	6.5	5.0	6.0	6.2	6.5	6.0	6.2	6.2	16
100	94	75	50	24	22	48	52	62	82	82	82	82	82	82
Ditch														
228.26	230.36	229.26	230.86	231.76	232.06	233.36	234.76	236.36	235.46	235.16	234.76	234.28	233.76	233.28
12.6	10.5	11.6	10.0	9.1	8.8	7.4	6.5	4.8	5.4	5.7	6.1	5.4	5.4	16
106	92	67	50	30	18	22	48	52	62	82	82	82	82	82
Ditch														
Pay G Cb														

228.79	230.49	231.29	240.86	231.89	233.49	235.49	236.89	236.19	235.99	235.69	235.13
13.3	11.5	10.8	10.2	8.5	6.5	5.2	5.2	6.1	6.5	5.8	5.4
106	100	50	18	22	47	52	62	82	82	82	82
Ditch											
231.29	229.89	230.99	231.29	232.79	232.09	237.69	237.09	236.89	236.39	236.89	237.78
10.2	12.2	11.8	10.8	9.3	10.0	9.3	4.4	5.0	5.2	5.7	5.8
100	(93)	79	50	26	15	46	52	62	82	82	82
Ditch											
231.39	229.79	230.89	231.69	233.99	234.79	234.49	233.79	238.29	237.69	237.49	237.29
10.2	12.2	11.8	10.8	8.1	7.5	7.5	8.0	5.0	4.5	4.9	4.3
102	96	91	43	19	6	21	50	54	64	84	84
Ditch											
Pay G Cb											

Levels 2" Line  
Chollas Road Cont'd.

32+47

12 <sup>8</sup>	13 <sup>13</sup>	16 <sup>1</sup>	13 <sup>13</sup>	12 <sup>13</sup>	7 <sup>10</sup>	4 <sup>13</sup>	5 <sup>13</sup>	7 <sup>13</sup>	7 <sup>13</sup>	8 <sup>13</sup>	8 <sup>13</sup>	9 <sup>13</sup>	8 <sup>13</sup>	8 <sup>13</sup>	8 <sup>13</sup>	8 <sup>13</sup>
100	90	77	65	50	19	37	41	48	52	62	82	82	82	82	82	82
		Ditch														

32+35

13 <sup>2</sup>	14 <sup>2</sup>	12 <sup>2</sup>	13 <sup>2</sup>	13 <sup>2</sup>	8 <sup>2</sup>	5 <sup>2</sup>	2 <sup>2</sup>	6 <sup>2</sup>	7 <sup>2</sup>	8 <sup>2</sup>	8 <sup>2</sup>	8 <sup>2</sup>	8 <sup>2</sup>	8 <sup>2</sup>	8 <sup>2</sup>	8 <sup>2</sup>
94	82	69	60	41	35	18	29	40	48	52	62	82	82	82	82	82

32+00

13 <sup>3</sup>	13 <sup>3</sup>	13 <sup>3</sup>	13 <sup>3</sup>	13 <sup>3</sup>	9 <sup>3</sup>	8 <sup>3</sup>	5 <sup>3</sup>	5 <sup>3</sup>	6 <sup>3</sup>	7 <sup>3</sup>	8 <sup>3</sup>	8 <sup>3</sup>	8 <sup>3</sup>	8 <sup>3</sup>	8 <sup>3</sup>	8 <sup>3</sup>
100	79	72	60	50	39	26	14	17	35	48	52	62	82	82	82	82

31+82 & 24" Conc Pipe

11 <sup>9</sup>	12 <sup>9</sup>	14 <sup>9</sup>	12 <sup>9</sup>	13 <sup>9</sup>	13 <sup>9</sup>	13 <sup>9</sup>	8 <sup>9</sup>	7 <sup>9</sup>	6 <sup>9</sup>	7 <sup>9</sup>	7 <sup>9</sup>	8 <sup>9</sup>	11 <sup>9</sup>	7 <sup>9</sup>	7 <sup>9</sup>	7 <sup>9</sup>
100	83	77	62	50	8	8	8	25	48	52	62	905	905	905	905	905

31+55

11 <sup>5</sup>	12 <sup>5</sup>	13 <sup>5</sup>	12 <sup>5</sup>	10 <sup>5</sup>	14 <sup>5</sup>	10 <sup>5</sup>	8 <sup>5</sup>	7 <sup>5</sup>	6 <sup>5</sup>	7 <sup>5</sup>	7 <sup>5</sup>	7 <sup>5</sup>	7 <sup>5</sup>	7 <sup>5</sup>	7 <sup>5</sup>	7 <sup>5</sup>
96	87	73	68	50	39	32	8	25	48	52	62	82	82	82	82	82

31+30

7 <sup>9</sup>	13 <sup>9</sup>	12 <sup>9</sup>	12 <sup>9</sup>	8 <sup>9</sup>	14 <sup>9</sup>	11 <sup>9</sup>	6 <sup>9</sup>	6 <sup>9</sup>	8 <sup>9</sup>	7 <sup>9</sup>	6 <sup>9</sup>	6 <sup>9</sup>	7 <sup>9</sup>	7 <sup>9</sup>	7 <sup>9</sup>	7 <sup>9</sup>
100	86	78	67	46	35	27	14	5	25	48	52	62	82	82	82	82

240.86

240.86

Levels 2" Line  
Chollas Road Cont'd.

P" Line Ahead  
See Topo. Sheets

T.P. 2.24 238.62

on & Hub 32166<sup>49</sup>-86.

3216649 BL.

228.26	226.56	224.56	229.06	237.06	238.56	238.66	238.06	233.76	232.96	231.96	231.76	231.24	231.78
12.14	16.11	11.10	10.10	12.10	12.10	12.10	12.10	12.10	12.10	12.10	12.10	12.10	12.10
100	78	71	52	32	18	35	39	48	52	62	62	62	62

32160

228.36	226.56	224.66	229.76	236.46	238.56	238.76	238.46	233.76	233.16	232.16	231.86	231.36	231.86
12.14	16.11	11.10	10.10	12.10	12.10	12.10	12.10	12.10	12.10	12.10	12.10	12.10	12.10
100	79	72	55	32	18	35	39	48	52	62	62	62	62

240.86

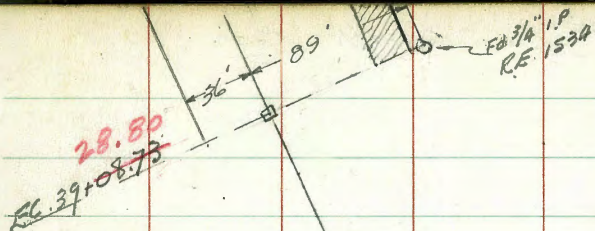


"P" Line Chollas Road

Cont'd from P-28

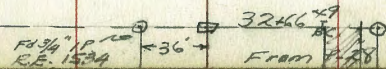
~~28.80~~  
~~39+08.77~~ EC. Set Hub & disc

32+66<sup>49</sup> EC set Hub & disc (from P-28)



R = 1530'  
Δ = 24° 42' 20"  
T = 336.88.46  
L = 667.24  
31

P.I. set Hub & disc



47

"P" Line Chollas Road Cont'd

86.45  
~~44+66~~<sup>38</sup> L. Pt. Set Hub & disc.

87.12  
 42+62.05 P.O.T. Set Hub & disc.

28.80  
 39+08.77 EC. Set Hub & disc.

2°53'10"  
 86.45  
~~44+66~~<sup>38</sup> L.

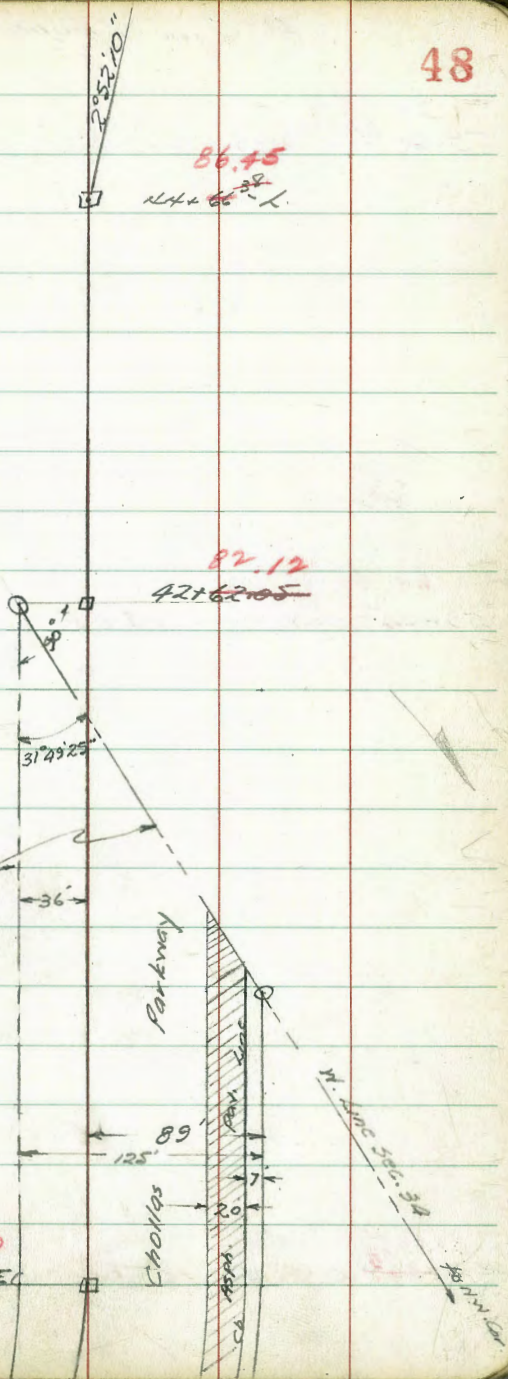
87.12  
 42+62.05

Boundary  
 Hubner  
 Estates  
 Map # 2680

Parkway

Chollas

28.80  
 39+08.77 EC



"P" Line Chollas Road Cont'd.

80.44  
59.60<sup>37</sup> P.O.T. Set Hub & disc.

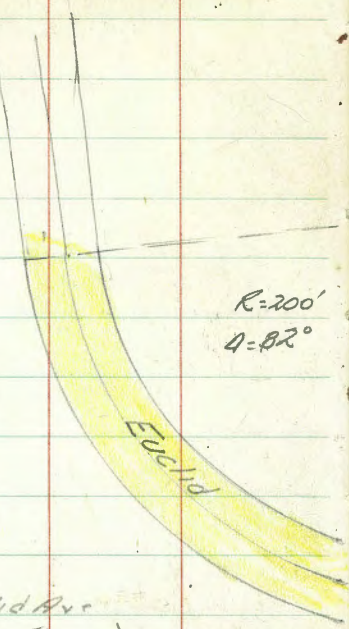
60.48  
53.40<sup>41</sup> P.O.T. Set Hub & disc.

86.45  
44.66<sup>38</sup> L. 2°52'10" Rt. Set Hub & disc

80.44  
59.60<sup>37</sup> P.O.T.

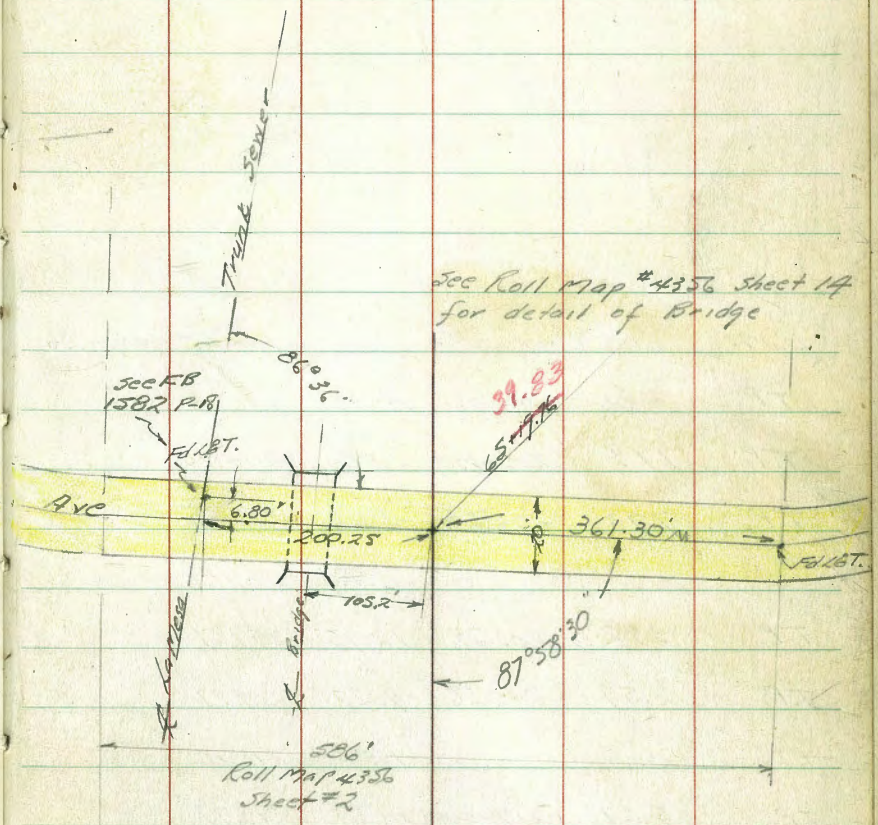
60.48  
53.40<sup>41</sup> P.O.T.

86.45  
44.66<sup>38</sup> L. Rt.



39.83 Set Chisel +  
 65+19.76 Intersection & Euclid Ave  
 (Fd chx 9-26-56 J.C.)

80.44  
 59+60.37 P.O.T. Set Hub & disc.



See Roll Map #4356 Sheet 14  
 for detail of Bridge

80.44  
 59+60.37 P.O.T.

April 1951 Levels for Topography 'P' Line  
 Hendricks  
 Allen  
 Shepard  
 Bruner  
 Chollas Road

51

B.M.			9.76	190.45	190.50	on L&T 54+104+100 (FBISSR P.44)
T.P.	4.08	200.21	10.30	196.13		
T.P.	1.73	206.43	1.88	204.70		on Hub 59+60-37 POT
T.P.	7.73	206.58	4.68	198.85		
			0.93	202.60		on Hub 53+40.41 POT
T.P.	3.92	203.53	12.95	199.61		
T.P.	2.59	212.56	9.47	209.97		
			1.34	218.10		on Hub 44+66.38 L
T.P.	5.67	219.44	10.89	213.77		on Hub 42+62.05 POT.
T.P.	6.12	224.66	12.81	218.54		on Hub 39+08.73 EC.
T.P.	2.85	231.35	13.04	228.50		
B.M.	2.92	241.54		238.62		on Hub 32+66.49 (P. 46 this book)

Chollas Road P' Line

70+79.61

70+50 P.O.T.

68+68.60 P.L.  $\Delta 15^{\circ} 43' 46''$

Dec. 21-51

H. Sisson

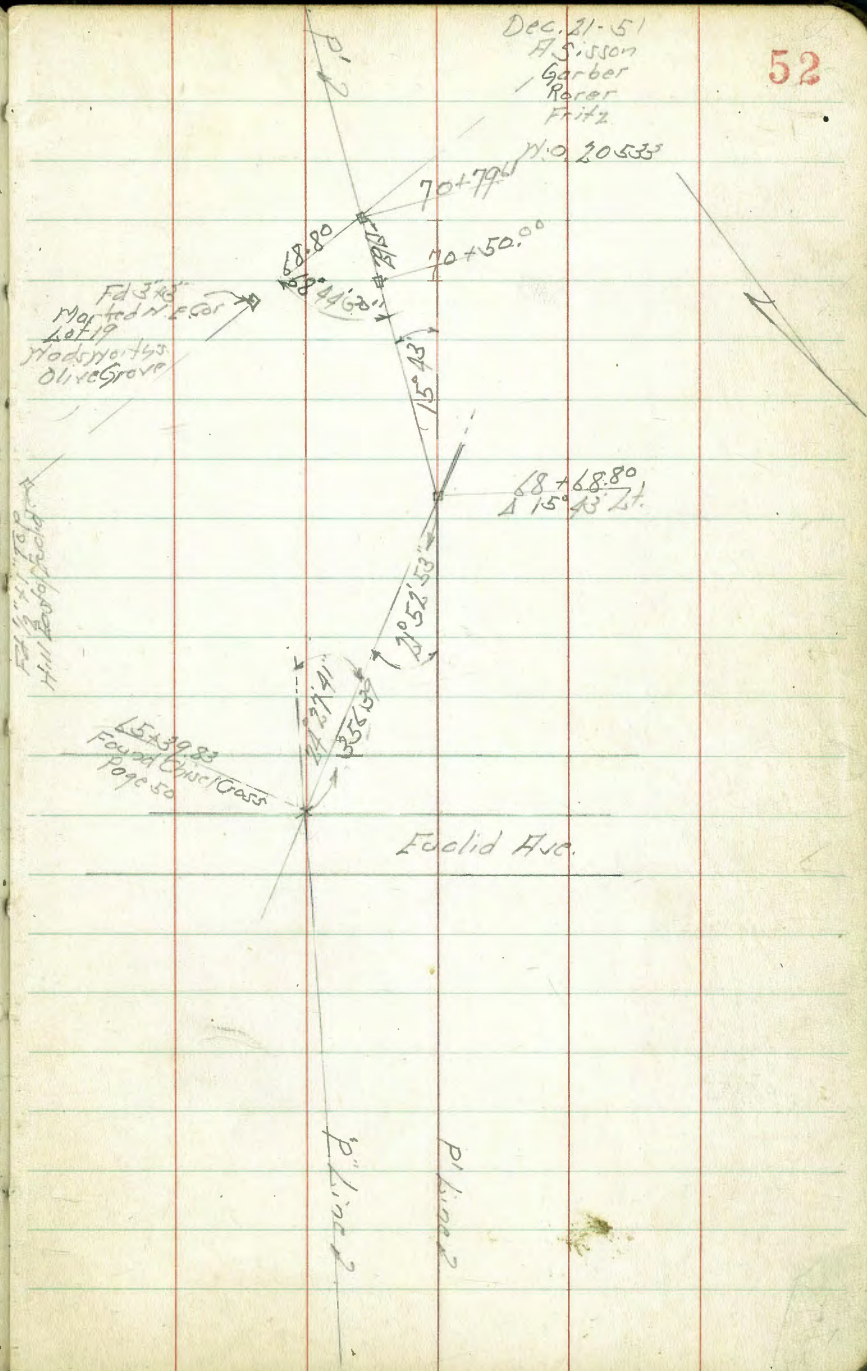
Garber

Rorer

Fritz

N.O. 20533

52



DPC 28-61  
 AS No  
 Garber  
 Rora  
 Fritz

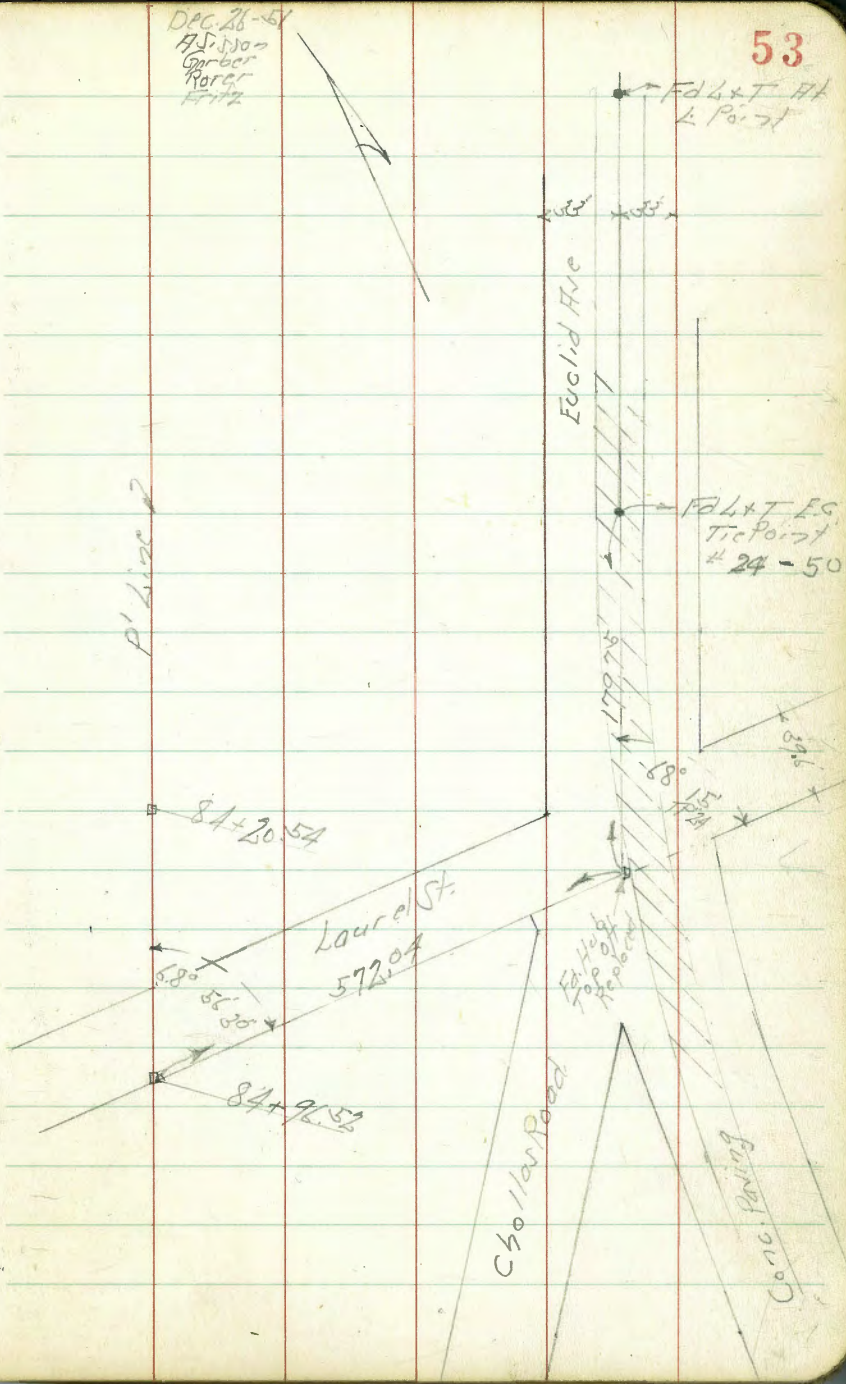
53

84+20.54 P.O.T.

84+96.52

82+71.50

84+96.52  
 70.7961  
 4 10 91





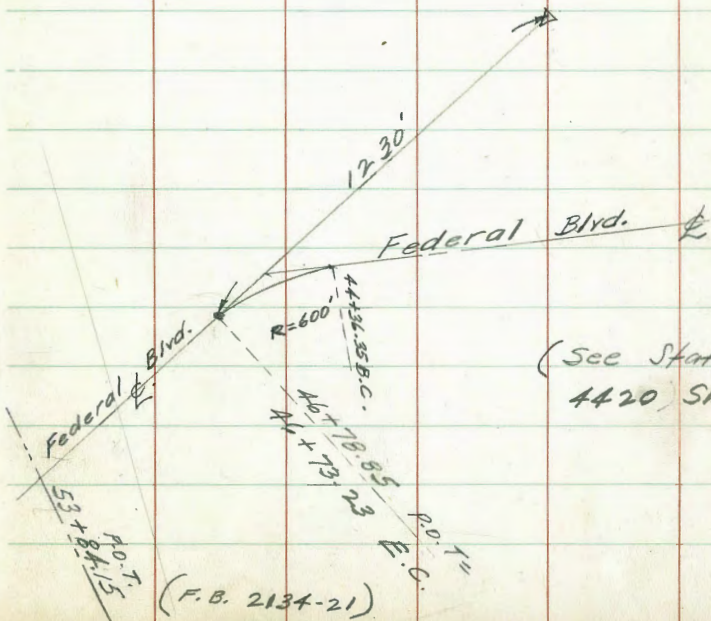


W.O. 20533

Laurel St.

55

"P" Line



(See State Roll  
4420, Sheet 6)

(F.B. 2134-21)

Alignment Chollas Road P Line  
Station 34+67.86 to 40+23.67

Jan 7.30-52  
75.550  
Garber  
Rorer  
Fritz  
W.O. 20539

56

For New Ties at this Point  
See P. 67

40+23.00 P.O.T.

34+67.87  $\Delta 19^{\circ} 15' 47''$

34+67.87  
Fol. Hub + Disc.  
Page 47

34+67.87  
 $\Delta 19^{\circ} 15' 47''$

Chollas P. 2

Chollas Brkwy.

Hubner, Fortaker

36+03.87 O.K. P.I.  
Fol. Hub + Disc.

Mina

E 190+81

42+03.72

Fol. 2. p.p.r  
+ 0.15  
RF 1534

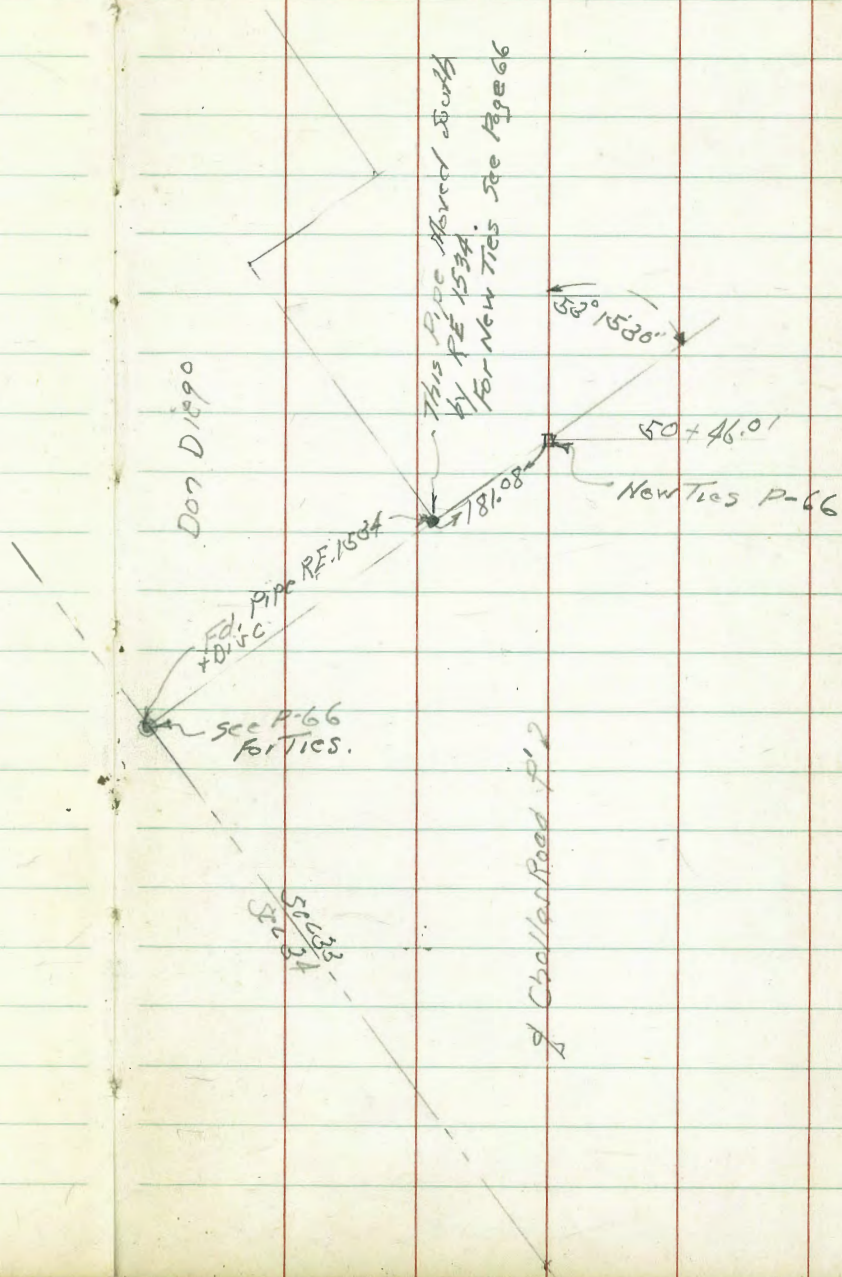
$\Delta 37^{\circ} 16' 15''$

53+97.00 P.O.T.

50+46.01 P.O.T.

50+06 P.O.T.

45+97.00 P.O.T.

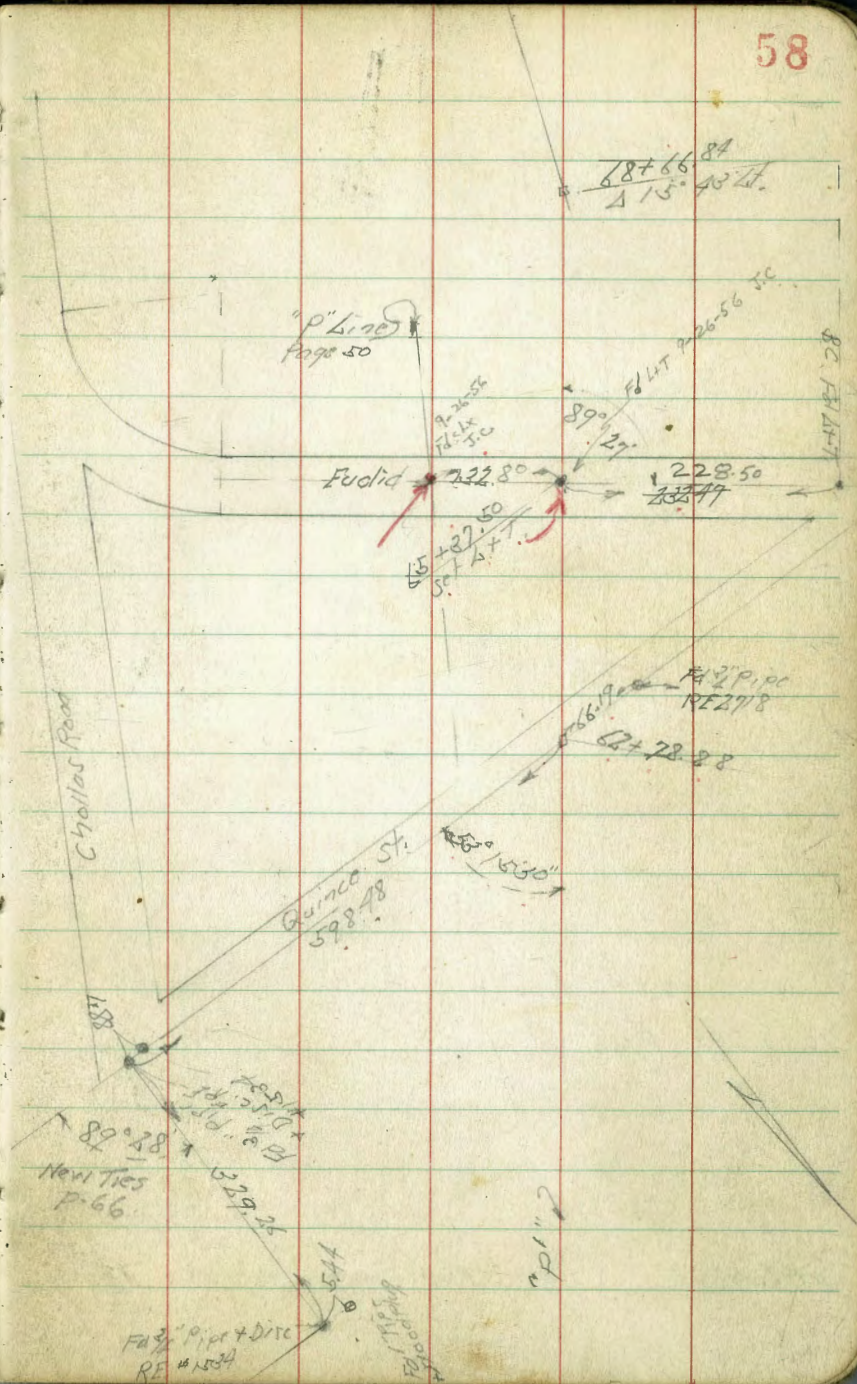


68+66.84  $\Delta$  15° 43' 44"

65+51.95 P.O.T.

58+54.96 P.O.T.

Fd. Cont. No. 1  
Doric's 452201  
Marked by Sec 22



Fd. Cont. No. 1  
Doric's 452201  
Marked by Sec 22

82+19.54 P.O.T.

70+48.04 P.O.T.

68+66.81 A

59

82+60.54  
P.O.T. = 1" X 1" 3/4

94+00.97 P.O.T.

92+10.39 P.O.T.

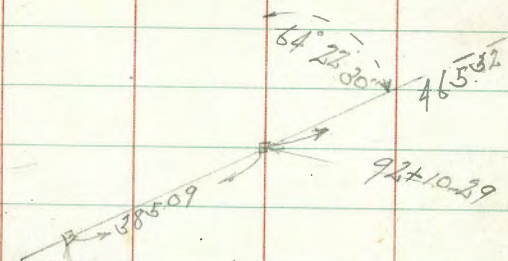
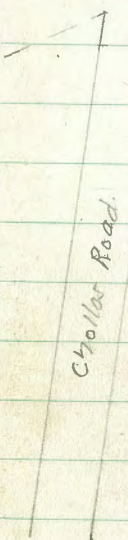
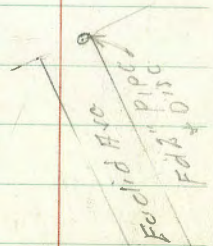
88+78.74 P.O.T.

86+25.62 P.O.T.

Abd.

84+91.56  $\Delta$  4° 17' Rt. Equation.

85+12.51 = back



Fudid Arc  
Fudid Arc

P' 1/2

Meas.  
244.97  
56.00/100  
7.3-5.3

Feb. 2-52  
F. J. Sisson  
Pope  
Rorer

60

(2)

(3)

Fudid Arc  
City Dir.

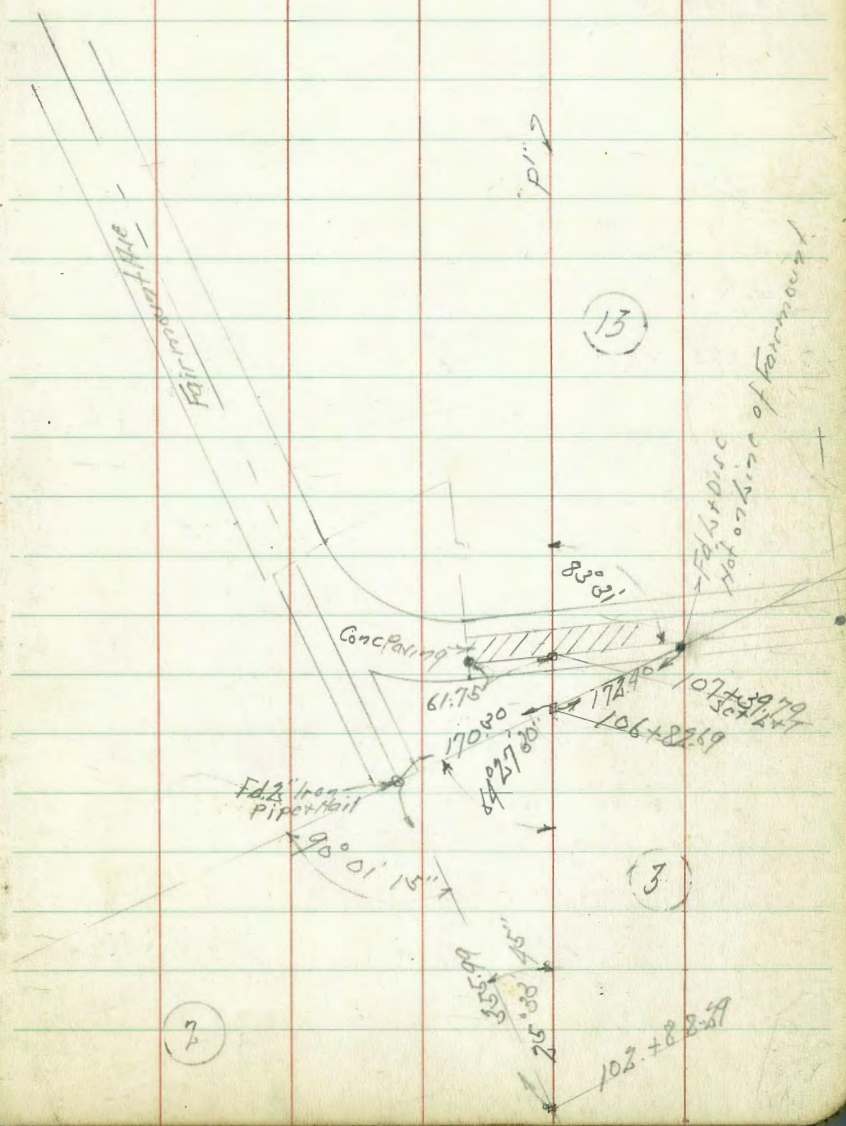
102+30.59 P.O.T.

Feb. 4. 52

W. Sisson  
Garber  
Rorer  
Fritz

Denotes  
• Lead + Disc Found •

107+3979 ROT





130+21.53 P.O.T

127+52.63 P.I. P.L

126+24.75 P.O.T

123+32.72 A 43° 47' 45" RT

Fd. Conc. Mon.

P.I. 2

63

Fd. Conc. Mon.

127+52.63 P.O.T

257.15

19° 21' 30"

Fd. Conc. Mon.

522.89

123+32.72 A 43° 47' 45" RT

121+49.84

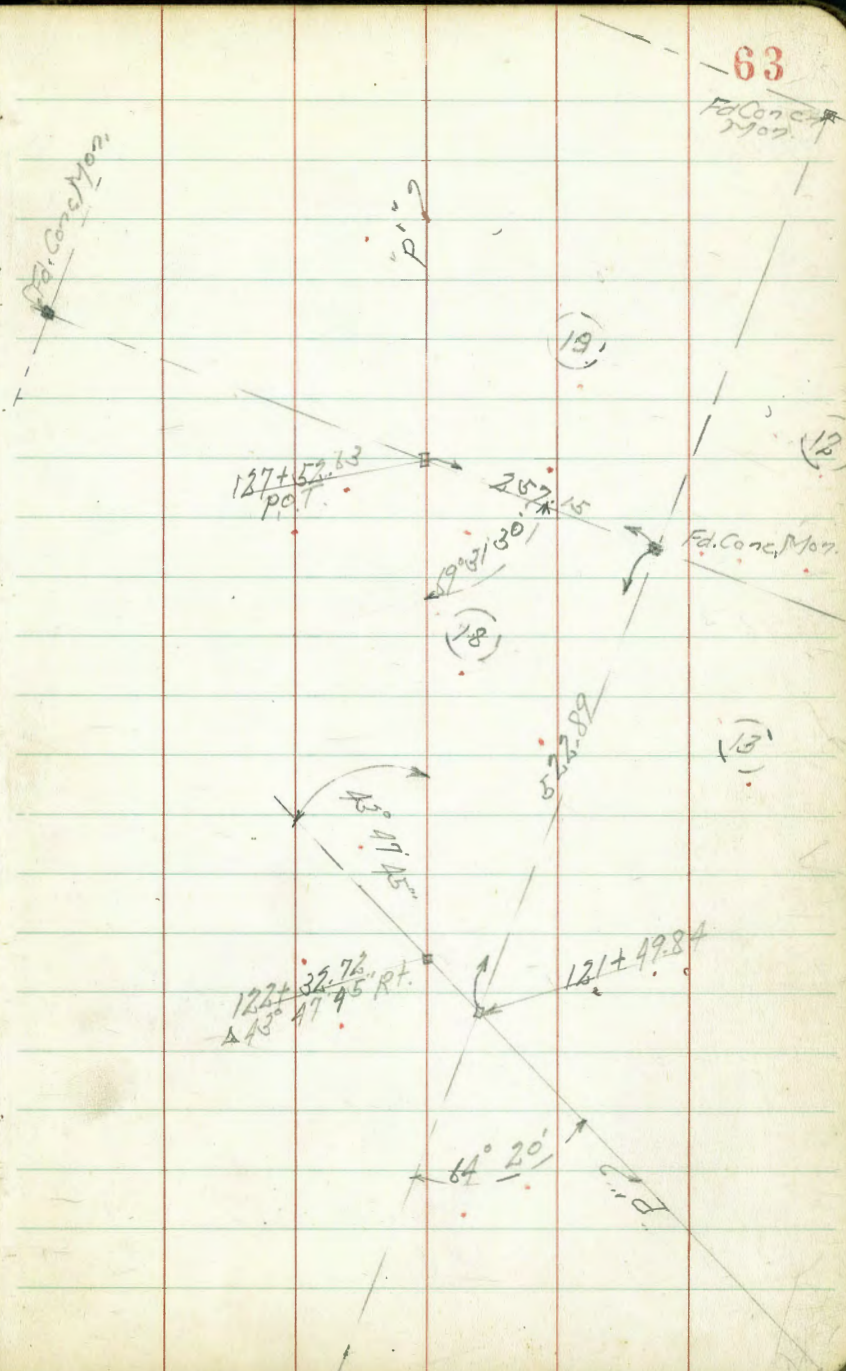
64° 20'

(19)

(12)

(18)

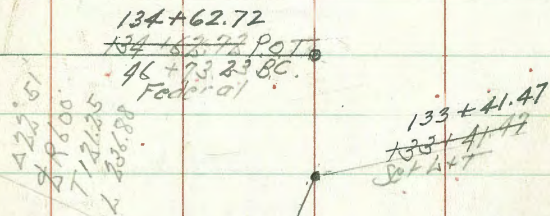
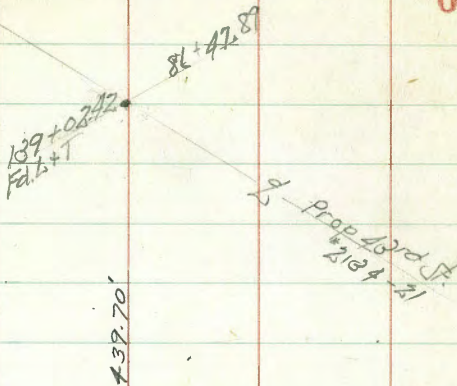
(15)



139+02.43

134+62.72

133+41.47



Federal Boulevard

P. 2  
Chollas Rd.

Chollas Road "P" Line

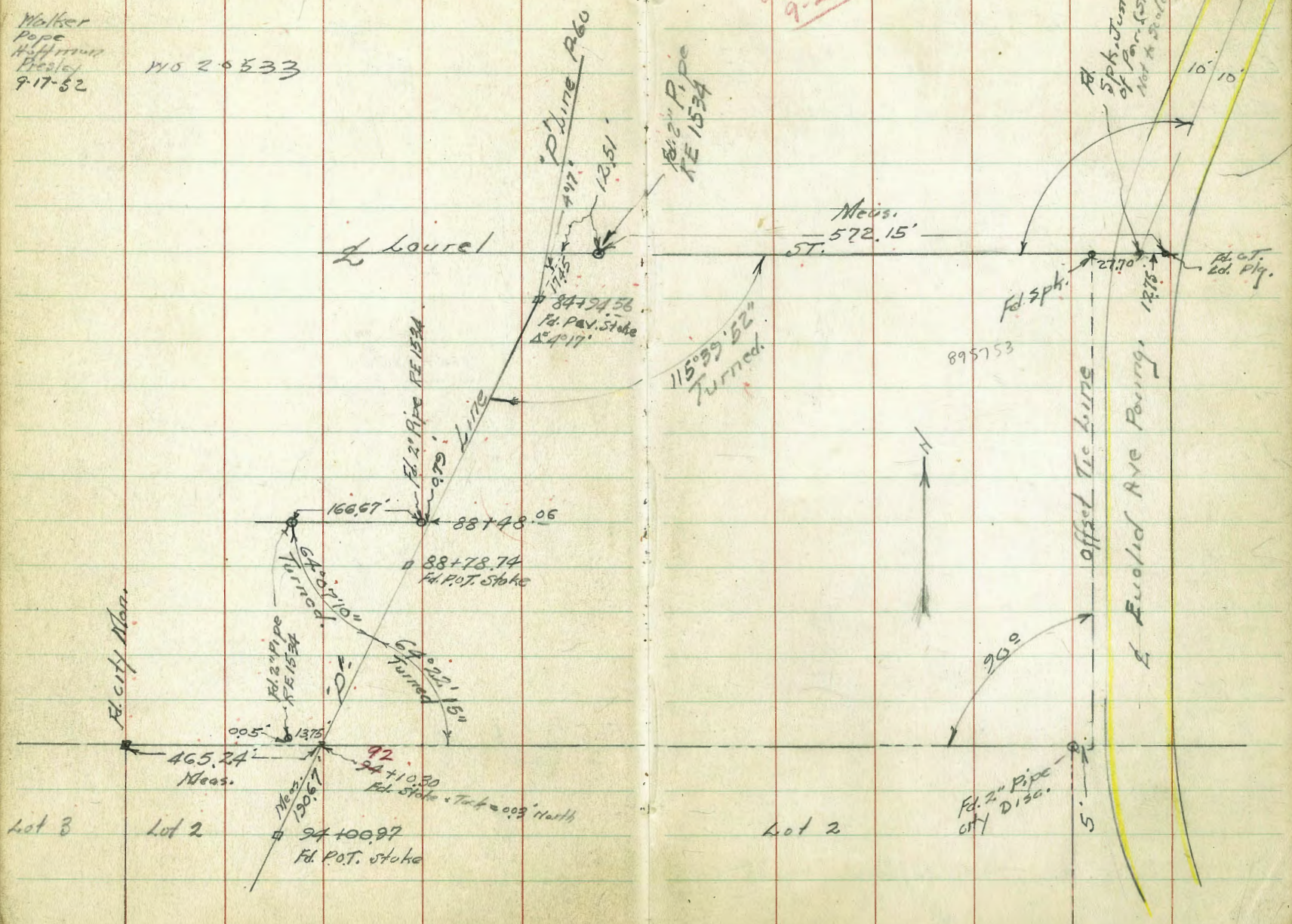
Ties

Walker  
Pope  
Hoffman  
Prestley  
9-17-52

145 20533

Ties  
Indoed  
9-25-52

65



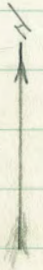
La Laurel

Meas.  
572.15'  
ST.

115°33'52"  
Turned

895753

offset tie line  
Euclid Ave Paring



90°

Fd. 2" Pipe  
only D 130.

5'

10' 10'

Fd. 5pk. Just West  
of Par. (Stake)  
Not to Stake

Fd. of  
2d. Pky.

1875

City Mar.

Lot 2

Lot 3

Lot 2

465.24  
Meas.

005'

1375

Fd. 2" Pipe  
FE 1534

64°22'15"  
Turned

64°22'15"  
Turned

92  
94+10.30  
Fd. Stake

94+00.97  
Fd. P.O.T. Stake

Tie = 003' North

166.67

88+48.06

88+78.74  
Fd. P.O.T. Stake

84+94.56  
Fd. P.O.T. Stake  
8417

12.51

1175

1175

1175

1175

1175

1175

1175

1175

1175

1175

1175

1175

1175

1175

1175

1175

1175

1175

1175

18" Pipe  
FE 1534

18" Pipe  
FE 1534

18" Pipe  
FE 1534

18" Pipe  
FE 1534

18" Pipe  
FE 1534

18" Pipe  
FE 1534

Notes ~ To Existing Pipes as Found

17 SE 1/4 of NE 1/4 Sec 33

Walker T 16 S, R 2 W, S.B.M.

Repe WO 20533

Ernest Pullan

5-13-53

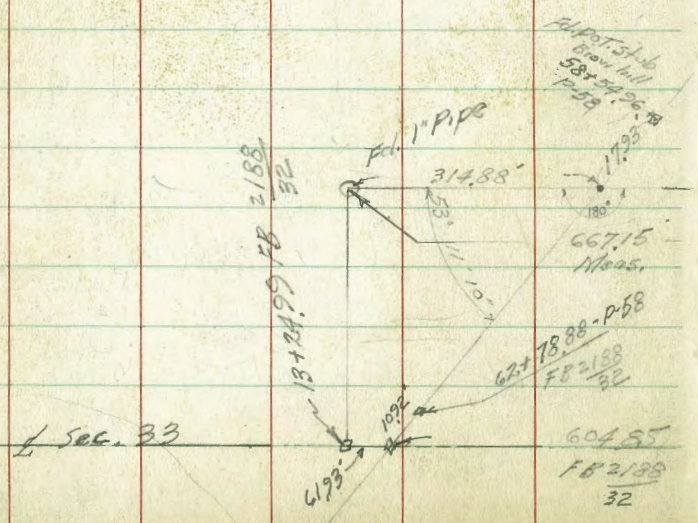
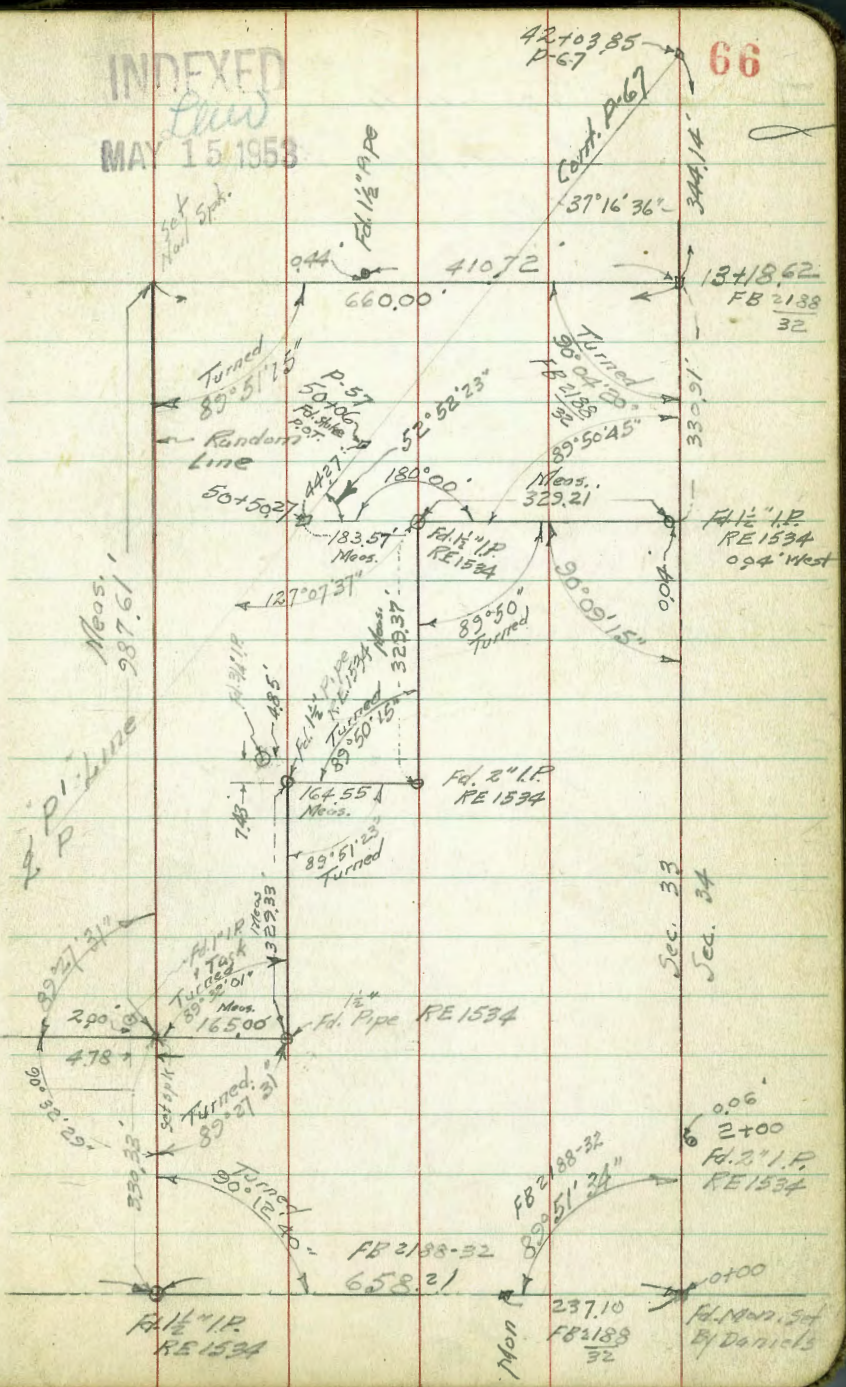
RANDOLPH LINE  
FB 2188-32-34

INDEXED

Draw  
MAY 15 1953

42103.85  
P-67

66



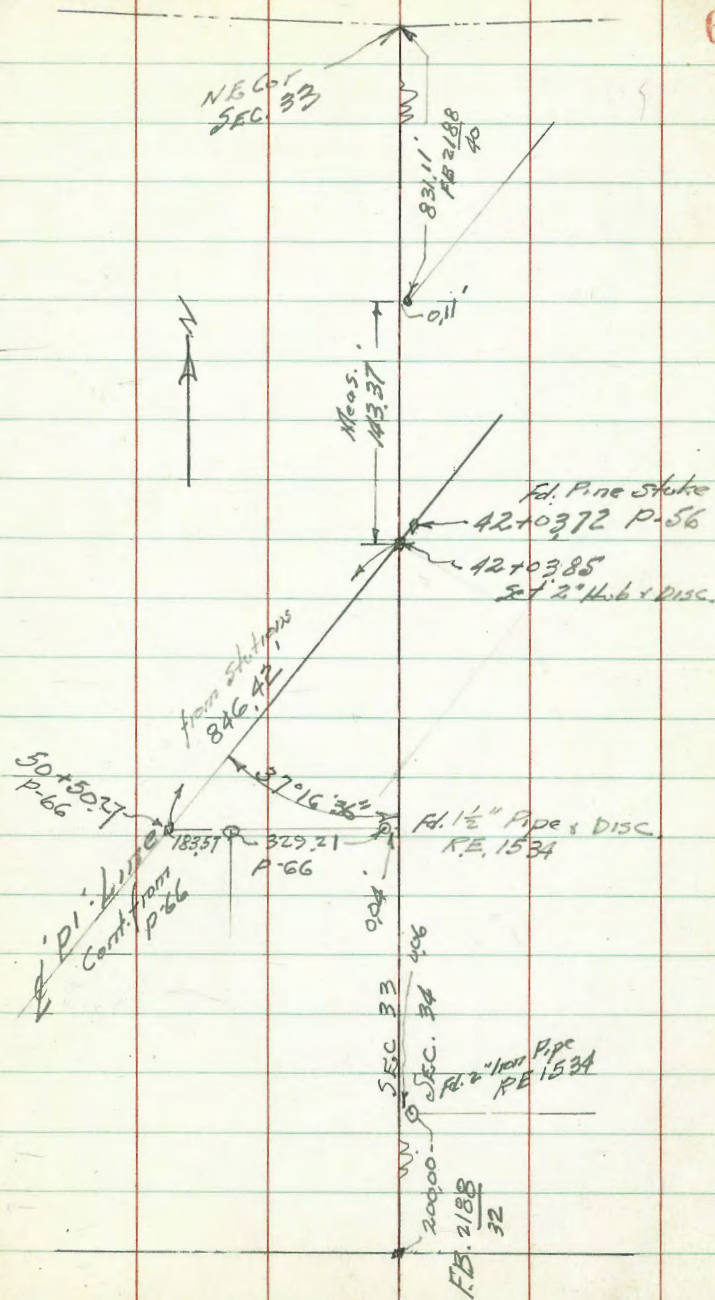
Sec. 33

Sec. 33  
Sec. 34

0.06  
2+00  
F. 2\"/>

0+00  
F. 1\"/>

Ties To Challas Road Survey  
Cont. from P-66



The image shows an open notebook with two facing pages. Both pages are cream-colored and feature light blue horizontal ruling. Each page is divided into columns by red vertical lines: one narrow column on the far left and one narrow column on the far right, with a wider central column. The right page has the number '68' printed in red ink in the top right corner. The notebook is bound in the center, and the pages appear slightly aged with some minor discoloration and faint smudges.









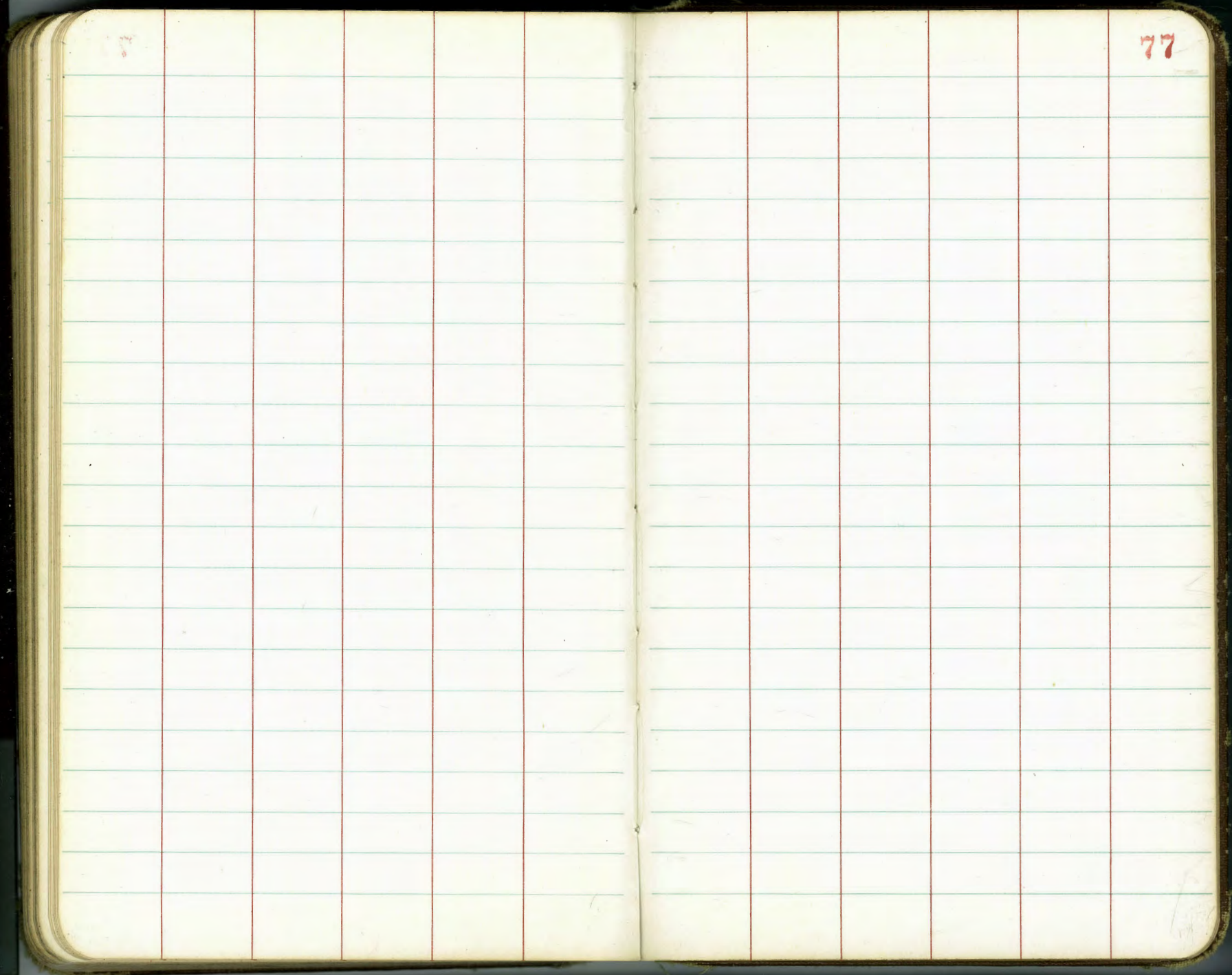












76

77



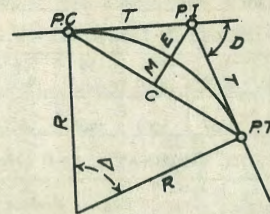






# DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

Copyright, 1914, by Eugene Dietzgen Co., New York City



### CURVE FORMULAS

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

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

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

External  $= E = T \tan \frac{\Delta}{4} = R + \cos \frac{\Delta}{2} - R$  (8)  $= R \text{exsec } \frac{\Delta}{2}$  (9)

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

### EXPLANATION AND USE OF TABLES

**Stations.**—Given P. I. = Sta. 161 + 60.35 to find Sta. of P. C. and P. T.  $\Delta = 62^\circ 10'$   $D = 8^\circ 20'$ . From Table IV for  $1^\circ$  curve  $T = 3454.1$  and  $+8\frac{1}{3} = 414.49$  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 =  $7.27 \frac{54.50}{100} = 2.16$  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 =  $\frac{1}{2} D$  for 100 ft.,  $\frac{1}{4} D$  for 50 ft., etc. For c ft. = (in minutes)  $.3 \times C \times D$  or = def. for 1 ft. from Table III  $\times C$ . For Sta. 158 of above curve =  $.3 \times 54.5 \times 8\frac{1}{3} = 136.2'$  or  $2^\circ 16.2'$ , or =  $2.50 \times 54.5 = 136.2'$  from Table III. For Sta. 159 deflection angle =  $2^\circ 16.2' + 8^\circ 20' + 2 = 8^\circ 26.2'$ , etc.

**Externals.**—May be found in similar manner to tangents. Thus E for curve above is 115.37. For from Table IV for  $1^\circ$  curve  $E = 960.6$  for  $8^\circ 20' = 960.6 \div 8\frac{1}{3} = 115.27$  and from Table V correction = .10 or  $E = 115.37$  ft. Or suppose  $\Delta = 32^\circ$  and E is measured and found to be 42 ft. What is D? From Table IV  $E = 230.9$  and  $+42 = 5.5$  or  $D = 5^\circ 30'$ .

37.89

425820  
53-3930  
N 145 15

4850  
60-33  
111-573  
55-58-05

71.62 0 40-SPK  
9607 0-0186-PR

973

30.73  
30.73

65+16.8  
294  
6811976

East Shadler

923  
105 L & Bridge  
24' span

24+65.24  
19+39.16  
5 26 08  
1939.16

F131582

24 65.24  
19+39.16  
5 26 08

### DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1 1/2  
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	26.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	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 41.9. 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 41.9 + (20-16) + 2 or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

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