1800

DIVISION

ENGINEERS'

FIELD BOOK

No. [illegible]

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

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

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

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

1800

INDEXED
to page # 50

051

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.

1-9 X-Sec. Blk 39 City Hgts

10-18 " Snowdrops Arbor Vitae

19 Location Bldg Merlin & Imperial Lot 11 Block H West Hollywood

20-31 X Sect. Udal St. Plum to Voltaire

32-39 X Sect Drainage Ditch Keats & Shatter to Harbor Drive

47-50 Storm Drain Thru. Lot "D" Mission Bay Park Tract.

Cross Section Alley 32 City Hgts.

Oct. 8, 1917

Sommermeyer
W Moore
E Sherman

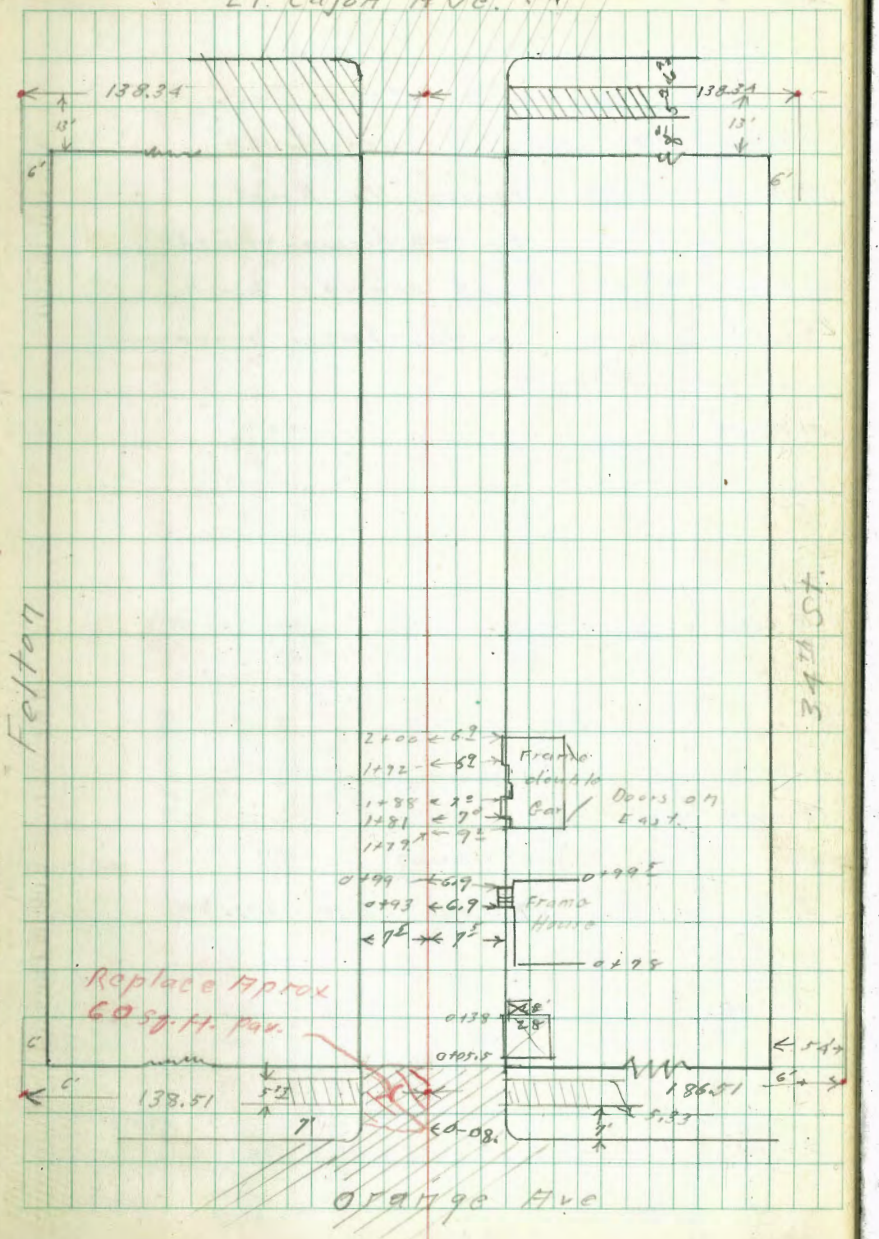
INDEXED

N.W. B.P.
Orange Ave
& 33rd

8.22 374.88 — 366.66

Indexed
C.S.K.

1



0+38 =	7⁹ Rt. = S.W. Cor stucco Gar.			
	7³ Rt. = N.W. Cor stucco House			
0+37⁵	6³ Rt. Bougainvilla Bush			
0+20	6³ Rt. = Monkey flower bush			
0+09	6⁴ Rt = Mock orange bush			
0+05⁵	7⁴ Rt. = S.W. cor. stucco house			
0+00¹				
0+00	= N.L. Orange			
0-08				
T.P.	7.23	380.01	2.10	372.78
0-14	Cont.			
0-14	= N. Cb. line Orange			
		374.88		

Lt. ℄ Rt.

374.6 — 5.4 / 7.5
374.0 — 5.6
374.5 — 5.5 / 4
374.8 — 5.2 / 5
374.9 — 5.1 / 7.3 Rt. House

373.3 — 6.7 / 7.5
373.4 — 6.6
373.4 — 6.6 / 5
374.4 — 5.6 / 5.1
374.2 — 5.8 / 7.5

373.10 — 6.91 / 7.5 cl.
373.05 — 6.96 / 7.5 pav.
373.28 — 6.73
373.39 — 6.62 / 7.1 pav.
373.39 — 6.62 / 7.18 rep cc.

372.99 — 7.02 / 7.5 cl.
372.82 — 7.17 / 7.5 pav
372.96 — 7.05
373.07 — 6.94 / 7.1 pav
373.28 — 6.73 / 7.18 cc.

380.01

372.11 — 2.77 / 100 cc
371.62 — 3.26 / 100 pav
1" Drive — 50 cc.
1" Drive — 50 cc.
372.92 — 1.96 / 100 pav
373.04 — 0.94 / 100 cc

372.16 — 2.72 / 50 pav
372.85 — 2.03 / Top 21 Alloy cc. Rot.
372.88 — 2.40 / 7.5 pav
372.42 — 2.46
372.44 — 2.94 / 7.5 pav
373.14 — 1.74 / Top 2. Alloy cc. Rot.
372.71 — 2.17 / 50 pav

1+22	7^{9} Lt. = End board fence
1+00	
+99.5	9^{3} Rt. = N.W. Cor. Frame house
+99	6^{9} Rt. = End same
0+93	6^{3} Rt. = start porch & steps (Frame)
0+88.5	16.5 Lt. = ℄ Sing Gar. Conc. Floor 9^{3} Lt. = ℄ 8' wide Apron to Sing Gar.
0+78	9^{2} Rt. = S.W. Cor. Frame House
0+77	7.0 Lt. = P. pole # P.R. 4219 6.9 Rt. = End board Fence
0+57	12^{2} Rt Ex Gar. New House. doors boarded up. 7^{4} Rt. = ℄ Sing. Gar. Apron.
0+50	7^{4} Rt. = start board fence
0+47	6^{9} Lt. = start board fence.
0+44	8^{0} Rt. = ℄ Sing. Gar. Conc. Floor. No Apron.

380.01

Lt. ℄ Rt.

375.9 4.1 / 7.5
375.9 4.1
376.2 3.8 / 6
376.2 3.8 / 7.5
375.93 4.18 / 7.3 Edge Apron
375.86 4.15 / 16.3 Gar
375.7 4.7 / 7.4 Apron
375.7 4.3 / 12.2
375.1 4.7 / 7.5
375.4 4.6 / 6
375.2 4.8 / 5
375.3 4.7
375.3 4.7 / 5
375.8 4.2 / 6
375.7 4.3 / 7.5
375.1 4.9 / 7.5
375.1 4.9
375.1 4.9 / 5
375.7 4.3 / 6
375.7 4.3 / 7.5
375.8 4.2 / 8

380.01

2+20				
	slat Fence.			
2+18	7^{9} Lt. = End board fence & start			
2+14.5	7^{7} Rt. = start lath fence.			
2+01	9^{2} Lt. = ℄ 1 wide conc. gutter. runs E+W.			
2+00	6^{9} Rt. End same.			
1+92	6^{9} Rt. = start Frame Gar in alley			
1+88	7^{0} Rt. End Gar. in alley			
	7^{3} Lt. Start Board Fence			
1+84.5	7^{1} Lt. = P. pole # P.H. 4235			
1+81	7^{0} Rt. = start Frame Gar. in alley door on east End.			
1+63	8^{0} Rt. = End same			
1+51	7^{7} Rt. = Start Frame shed.			
1+50				
T.P.	5.83	382.28	3.56	376.45
		380.01		

Lt. ℄ Rt.

377.3 — 5.0 / 7.5

5.0

377.3 — 4.9 / 5

377.4 — 4.7 / 6

377.6 — 4.5 / 7.5

377.3 — 5.0 / 7.5

377.4 — 4.9 / 7.5

4.8

377.5 — 4.7 / 4

377.4 — 4.6 / 5

377.7 — 4.6 / 7.5

377.7

376.1 — 4.2 / 7.5

376.2 — 4.1 / 6

377.5 — 4.8 / 5

377.4 — 4.9

377.4 — 4.9 / 5

377.4 — 4.6 / 6

377.7 — 4.7 / 7.5

377.6

377.5 — 4.8 / 7.5

377.0 — 5.3 / 5

376.9 — 5.4

376.9 — 5.4 / 5

377.1 — 5.2 / 7.5

382.28

3+35				
3+24	8.2 Lt. = End board fence			
3+01	7.8 Rt. = Start wire fence			
3+00	9.2 Rt. = End Frame dwelling			
2+90	7.8 Lt. = P. pole # P.A. 4251			
2+75				
2+70	9.2 Rt. = Start frame dwelling			
2+68	8.1 Rt. = End Frame Bldg.			
T.P.	5.22	382.94	4.56	377.72
2+52	8.1 Rt. = Start Frame Bldg 7.2 Rt. End lath Fence board fence.			
2+50	8.2 Lt. = End slat fence & start			
2+30				
		382.28		

378.1	377.9	378.1	378.1	378.4		
4.8 / 7.5	5.10 / 4	4.8	4.8 / 4	4.5 / 7.5		
377.8	377.6	377.6	377.5	377.9	377.9	
5.1 / 7.5	5.3 / 4	5.3	5.4	5.0 / 6	5.0 / 7.5	
377.6	377.8	377.4	377.3	377.6	377.8	
5.3 / 7.5	5.6 / 4	5.5	5.6 / 3	5.3 / 6	5.1 / 7.5	
		382.94				
377.4	377.2	377.2	377.4	377.7	377.8	
4.9 / 7.5	5.1 / 4	5.1	5.0 / 5	4.6 / 6	4.5 / 7.5	
377.5	377.9	376.9	377.1	377.0	377.3	377.5
4.8 / 7.5	4.7 / 6	5.4 / 4	5.2	5.3 / 4	4.8 / 6	4.8 / 7.5
			382.28			

4+11 18⁶ Lt. = ℄ Sing Gar. Conc. floor.

North Enterance. Conc. floor.

4+08 12¹ Lt. = ℄ door of Sing Gar.

T. P. 4.60 382.79 4.75 378.19

4+07 7⁶ Lt. = P. pole # P.A. 4267

4+00 8⁰ Rt. = End chicken wire fence - start fence board

3+93 7⁶ Rt. = End board shack

3+89 7² Rt. = ℄ in chicken wire fence

3+87⁶ 8⁰ Lt. = start frame shed.

3+87⁵ 8⁴ Lt. = End picket fence + Slab. conc.

3+82 7⁴ Rt. = start board shack.
conc. slab. yard

3+75 8⁶ Lt. = start picket fence +

3+50 7⁴ Rt. = 5th start chicken wire fence
7² Rt. = End wire fence +

3+48 21' Lt. = ℄ 9⁵ wide conc. drive

382.94

Lt. ℄ Rt

377.56
5.27
18⁶
Gar Floor.

377.87
4.92
12'
Gar Floor

382.79

377.9
5.0
7.5

5.0

377.9
5.0
7.5

377.50
5.44
15'
Conc

377.53
5.41
8.4
Conc

378.0
4.9
8.3
Slab

377.52
5.40
15

377.55
5.39
8.7
Conc.

377.9
5.0
8.5

377.9
5.0
7.5

377.9
5.0

377.9
5.0
7.5

5.27
21

382.94

5+00
7.5 Lt. Also = face of wall.
7.5 Lt. = Start stucco store Bldg.
7.5 Lt. = End conc. wall
7.2 Lt = End Footing for conc. wall
6.8 Lt. = P. pole # P.A. 42.89
9' Rt = Fence line

4+62.5 — $7^{7.5}_{\text{start}}$ Lt. = Face of wall. 7 Lt. = Footing for 9" wide conc. wall

Picket fence on top of wall

4+58 — 16^{9} Lt. = End 3 car Gar. 6^{9} Lt. = End conc. Apron

4+51 — 8^{7} No good wire & lath fence Rt. = End board fence start

4+30.5 — 17 Lt. = Start 3 car. Gar. 7^{3} Lt. = Start Apron to 3 car. Gar.

4+27.5 — 14^{3} Lt. = ℄ 6" Walk

4+20 — 18^{6} Lt. = ℄ Sing Gar. dirt floor

382.79

Lt. ℄ Rt.

378.01	377.8	377.4	377.0	377.9	378.0
4.78	5.0	5.4	5.8	4.9	4.8
7.5 top wall	7.5 Grd	7.5 top of Footing	7.2 Bottom Footing		7.5

378.04	377.4	377.0	377.0		
4.75	5.4	5.8	4.9		
7.5 top wall	7.9 top of Footing	7.2 Bottom of Footing	7.2 Grd		

377.58	377.39	377.37	377.8	377.9	377.8	378.1
5.21	5.40	5.42	5.0	4.9	5.0	4.7
16.9 Gar Floor	7.5	6.9 Apron	6.8 Grd		6	7.5

377.56	377.33	377.7	
5.23	5.46	5.1	
17.3 Gar Floor	7.3 Apron	7.2 Grd.	

377.58	377.8	378.0	377.9	
5.30	5.0	4.8	4.9	
14.7 Walk	7.5		7.5	

377.57
5.22
18.6
Gar. Floor

382.79

5+75

T.P. 4.92 383.05 4.66 378.13

5+68.5 7.6 Rt. = ℄ 2' wide conc. walk

5+52 7.2 Lt. = ctr. clean out 4" drain

5+50 7.3 Lt. = start lath fence
8.1 Lt. = End wire fence

5+42 7.2 Lt. = ctr. clean out - 4" drain

5+24.5 7.5 Lt. = ℄ 4' wide into store doorway

5+12 7.5 Lt. = ℄ 4' wide into store doorway

382.79

377.8
5.3
7.5

378.0
5.1

383.05

378.1
5.0
7.5

378.26
4.53
7.6
walk

377.87
4.92
7.2
on cap

377.7
5.1
7.5

378.0
4.8

378.0
4.9
7.5

377.05
4.84
7.2
on cap

377.94
4.85
7.5
door sill

377.8
5.0
7.5
Gr.d.

377.94
4.85
7.5
Door sill

377.8
5.0
7.5
Gr.d.

S.W. B.P.	S.W. B.P. El Cajon + 33rd	4.17	− 0.04 / .92 / 378.88	378.92

+27[3] Cont.

6+27[3] = S. Cb. line El Cajon

6+20[25] = Intersect 13' line on El Cajon

6+07[6] 7± Lt. = End of Alley curb
= 7± Lt. = End store Bldg

6+07[4] 7± Rt. = End Curb. 7± Lt. = store Bldg
= Edge paving

383.05

1" drive / 100 / Cb.

6.80 / 100 / Gutter — 376.25

5.78 / 50 / Cb. — 377.27

Drive / 50 / Cb.

4.88 / 100 / Gutter — 378.17

4.35 / 100 / Cb. — 378.70

6.33 / 50 / Gutter — 376.72

5.41 / Top 2' Cb. Ret — 377.64

5.95 / 7.6 / Gutter — 377.10

5.90 — 377.15

5.80 / 7.0 / Gutter — 377.25

5.27 / Top 2' Curb Ret — 377.78

5.27 / 50 / Gutter — 377.78

5.12 / 7.7 / top Cb — 377.93

5.37 / 7.7 / pav — 377.68

5.37 / 7.5 / Pav. — 377.68

5.40 / Pav — 377.65

5.22 / 7.1 / pav — 377.83

4.99 / 7.1 / Top Curb End — 378.06

383.05

Walker
Becker
Williams
3-15-48

Cross Section: Snowdrop
from Poplar to Arbor Vitae
Sketch p. 11

℄ Stations

1+00

INDEXED

0+50

0+00 = N&Y Line Poplar St.

0-12

0-16 = Approx Modge oil Rock Paving

0-40' = ℄ Poplar St. Section Paving

7.15 29.29 289.14

Note: Cross Sections
on Poplar St. in FB 1628

Indexed
J.B.

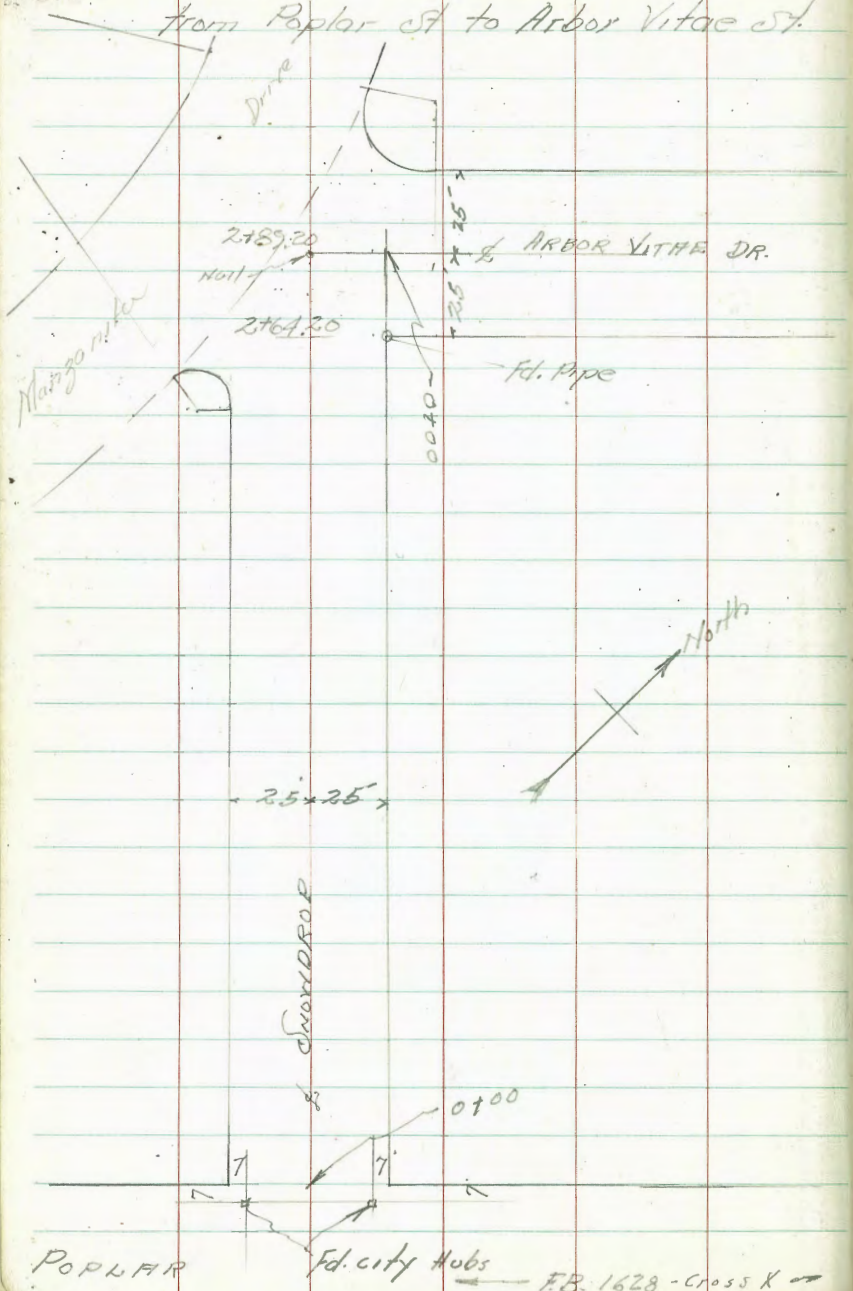
10

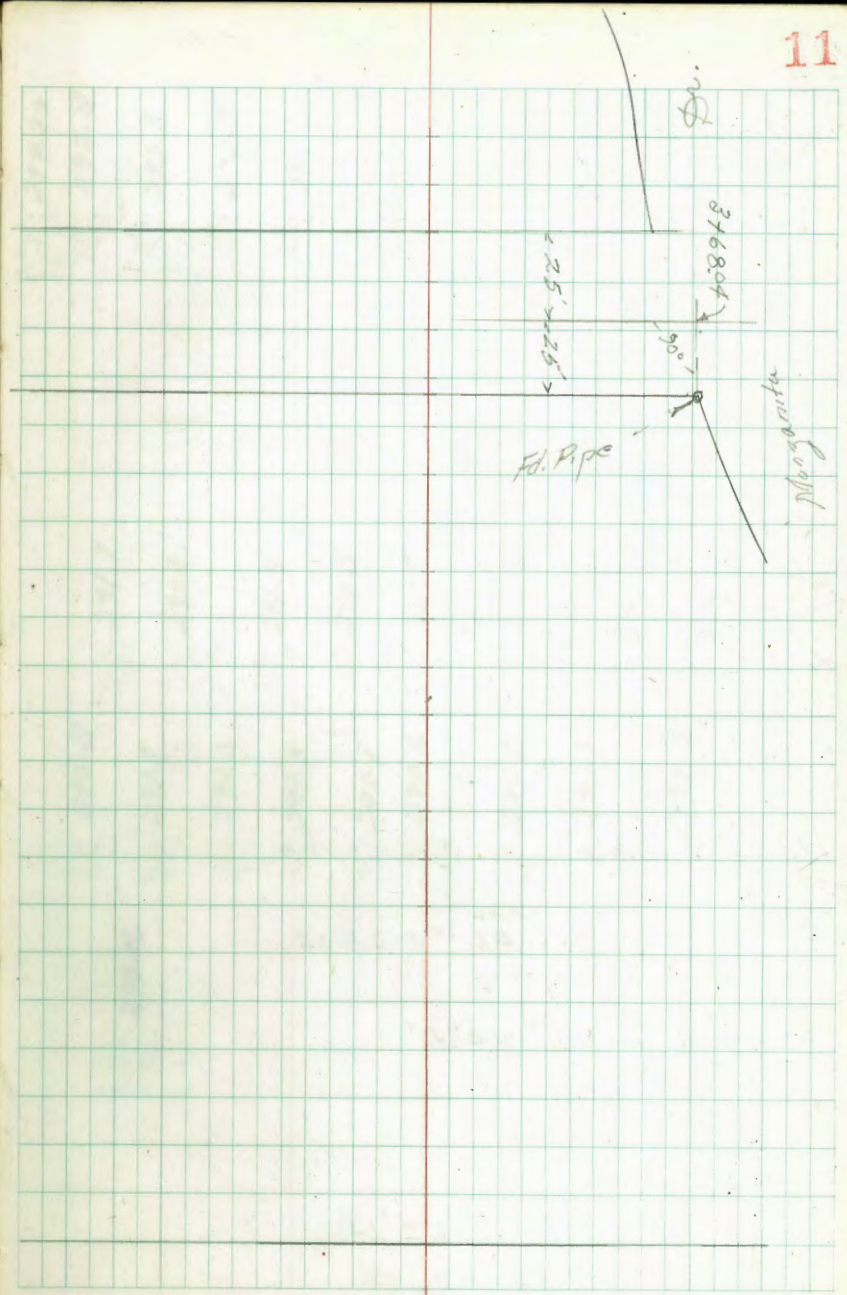
							290.8	290.8	291.3	290.6
							5.5 35	5.3 25	5.0 13	5.7 12
						291.0	290.7	291.1	291.3	291.4
						5.3	5.6 11	5.2 12	5.0 25	4.9 35
		289.9	290.4	290.3	288.6	290.0	289.7	291.1	291.4	291.0
		6.9 35	5.9 25	6.0 13	6.7 12	6.3	6.6 10	5.2 16	4.9 25	5.3 35
	288.1	289.16	289.1	288.4	288.7	288.4	288.7	289.1	290.1	287.8
	7.2 35	7.13 25 on BM 25+29=36	7.2 14	7.9 12	7.6	7.9 12	6.6 15	6.2 25	6.5 35	
	288.5	288.7	287.2	288.5	288.3	289.9	289.2			
	7.8 35	7.6 25	8.4 15	7.8	8.0 14	6.4 25	6.4 35			
	287.3	287.7	288.2	288.3	288.4					
	9.0 50	8.6 25	8.1	8.0 25	7.9 50					
287.60	288.00	288.25	288.44	288.58						
8.61	8.29 25	8.04	7.85 25	7.71 50						
		296.39								

B.M. S.E. 3/4" Iron Pipe Poplar & Snowdrop

FB 1695
27

CROSS SECTION - SNOWDROP ST.
from Poplar St. to Arbor Vitae St.





Snowdrop - Cross Sections

Cont. from P-11

Stations

2+00

1+85

1+61.5 = ℄ Conc. Porch on Rt

1+50

1+32.5 = ℄ Alley

1+23 16.3 Lt = Elec Pole ⁴ P·2H·24

1+08 = ℄ Conc. Porch 26.4' Lt.

1+04 = Pole Anchor 16.3' Lt

296.29

Lt ℄ Rt

294.20 292.5 292.5 292.3 291.9 291.7 292.2 292.0 292.8 293.0

2.09 3.8 3.8 4.0 4.4 4.6 4.1 4.3 3.5 3.3

37 Conc. Porch 35 25 23 13 12 13 25 35

292.67

3.62

26.5

Broken Conc. Dr.

293.29

3.00

29.5

on Porch

291.7 291.8 291.4 291.3 291.8 291.6 292.3 292.3

4.6 4.5 4.9 5.0 4.5 4.7 4.0 4.0

35 25 12 11 16 25 35

290.5 291.1 291.2 291.3 291.1 291.6 291.6 291.7 292.5

5.8 5.2 5.1 5.0 5.2 4.7 4.7 4.6 3.8

100 50 25 12 11 25 50 100

292.16

4.13

26.4

on Porch

296.29

Snowdrop. Cross sections

Cont. from P. 12

for check out of levels see Cont. P-14

3+40 = End of Sections

3+14.20

2+89.20

2+64.20 = Sky Lino Arbor Vitae

T.P. 7.12 301.57 1.84 294.45

2+50

2+44 Elec Pole # P-2H-28 15.8 Lt.

2+42.0 Guy Pole 17.3 Rt.

2+03.5 = ℄ 3' Conc. Walk

296.29
3

4	2	
291.0	291.2	
10.6	10.4	
35	35	
291.5	291.9	
10.1	9.7	
25	25	
292.1	292.5	
9.5	9.1	
35	14	
291.5	292.9	
10.1	8.7	
35		
292.7	293.1	
8.9	8.5	
15	16	
292.2	293.4	
9.4	8.2	
25	22	
292.4	293.8	
9.2	7.8	
15	25	
291.7	294.0	
9.9	7.6	
25	35	
291.9	292.8	
9.7	8.8	
19		
292.7	293.1	
8.9	8.5	
15	16	
292.8	293.3	
8.8	8.3	
	25	
292.2	293.2	
9.4	9.4	
25	25	
292.4	293.4	
9.2	8.2	
15	25	
292.8	293.8	
8.8	7.8	
	25	
292.7	294.0	
8.9	7.6	
15	35	
292.7	293.4	
8.9	8.2	
15	25	
292.8	293.8	
8.8	7.8	
	25	
292.8	294.0	
8.8	7.6	
	35	
301.57		
292.1	292.3	
4.2	4.0	
35	13	
292.4	292.8	
3.9	3.5	
25	16	
292.6	293.3	
3.7	3.0	
19	25	
292.2	293.4	
4.1	2.9	
15	35	
292.6		
3.7		
292.39		
3.90		
25		
Walk		

296.29
3

Walker
Becker
Williams
3-15-48

Cross Sections - Arbor Vitae

Sketch P. 11

Stations

INDEXED

1+39 = ℄ 3.4' Conc. Walk 24.9' Rt

1+04 = ℄ 6' Conc. Walk 24.9' Lt

1+00 = ℄ 2' Conc. Walks on Rt. 24.7' from ℄

0+52 to 0+81 = 5½" Conc. Wall 24.5' Rt

0+47 = ℄ Conc Drive

0+39 = ℄ 3' Conc. Walk

0+00 to 0+40 = 4' Fence on Rt 0.3' in St.

0+00 = E.L.Y. Line Snowdrop

301.57
→ Cont. from P. 12

indexed
J.B.

296.62
4.95
21.4
on walk

296.54
5.03
34.4
on walk

296.71
4.86
34.4
on walk

296.56
5.01
24.9
on walk

296.4 | 296.4 | 296.3 | 295.6 | 295.8 | 295.4 | 295.50 | 295.55
5.2 | 5.52 | 5.3 | 6.0 | 5.8 | 6.2 | 6.07 | 6.02
35 | 25 | 13 | 10 | | 10 | 24.7 on walk | on walk

295.37
6.20
24.5
on wall

295.2 | 294.9 | 294.6 | 294.2 | 294.5 | 294.1 | 294.14 | 293.80
6.4 | 6.7 | 7.0 | 7.4 | 7.1 | 7.5 | 7.43 | 7.77
35 | 25 | 13 | 9 | | 11 | 27.4 on drive | 37.4 on drive

294.12
6.65
36
Walk

294.80
6.77
26
on walk

293.3 | 293.2 | 293.5 | 293.2 | 293.0 | 293.4 | 293.4
8.3 | 8.4 | 8.1 | 8.4 | 5.6 | 8.2 | 8.2
25 | 18 | 10 | | 15 | 19 |

301.57
2

Cross Section of Arbor Vitae
Cont. from P 14

2+00

1+83 = ℄ 3.5' Conc. Walk 24' Rt

1+74 = Beg. Conc. Ribbon Drive on ℄

1+61 = ℄ 3' Conc. Walk 25.8' ℄

1+50

301.57
5

℄ ℄ ℄

297.3 297.2 296.9 296.2 296.5 296.2 296.4 296.3

4.3 4.4 4.7 5.4 5.1 5.4 5.2 5.3
35 26 25 11 N 25 35

296.97
4.60
24'
on Walk

296.94
4.63
34'
on Walk

297.51
4.06
36
on Dr

297.33
4.24
26
on Dr.

297.47
4.10
36
on Drive

297.33
4.24
26
on Drive

297.43
4.14
35.8
Walk

297.38
4.19
23.8
Walk

297.3 297.3 296.9 296.6 296.3 296.6 296.3 296.5 296.5 296.5

4.3 4.3 4.7 5.0 5.3 5.0 5.3 5.1 5.1 5.1
35 27 25 13 11 9 13 25 35

301.57

Arbor Vitae - Cross sections

2+78 = end Conc. Drive

2+70 = beg. of 8' Conc. Dr 24.4' Rt.

2+75 = ℄ 3.2' Conc. Walk 25.4' Lt.

2+58 = ℄ 2' Conc. Walk 24.2' Rt.

2+50

2+34 = ℄ 9.2' Conc. Drive = 25' Lt. Flat across

2+32 = ℄ 7' Conc. Drive, 24.5' Rt.

2+22 = ℄ 2.8' Conc. Walk 25.5' Lt.

2+20 = ℄ 4' Conc. Walk 25.2' Rt.

301.57

Lt ℄ Rt

297.1 4.5 35

296.7 4.3 25

296.3 5.3 13

295.9 5.7 11

296.0 5.6

297.25 4.32 35.4 Walk

296.68 4.89 25.4 Walk

297.11 4.16 35 on Dr.

297.09 4.48 25 on Drive

297.11 4.16 35.5 on Walk

297.12 4.46 25.3 on Walk

295.6 6.0 11

295.8 5.8 25

295.9 5.7 33

295.34 6.23 24.4 on Dr

295.30 6.27 34.4 on Dr

295.45 6.12 24.4

295.36 6.21 34.4

295.70 5.87 24.2 on Walk

295.64 5.93 34.2 on Walk

296.16 5.41 24.5 on Dr.

296.13 5.44 40 on Dr.

296.26 5.31 25.2 on Walk

296.24 5.33 25.7 on Walk

301.57

Arbor Vitae Dr.

Cross Sections

℄ Stations

3+68 ℄

3+50

3+22 = ℄ 3' Conc Walk

3+15 = ℄ 7' Conc Drive 24.7 Rt

3+00

2+83 = ℄ 9' Conc. Dr 24.4 Rt

30157

℄

Lt ℄ Rt

293.6 293.6 293.3 293.2 292.6 293.2 293.05 293.0

8.0 8.0 8.8 8.4 9.0 8.4 8.52 8.6

35 25 21 15 17 25 35

on Pipe

294.0 294.2 293.9 293.7 293.1 293.8 293.5 293.3

6.8 7.4 7.7 7.9 8.5 7.8 8.1 8.3

35 25 11 12 16 25 35

295.64 295.07

5.93 6.50

39.5 24.5

on Conc. walk Conc. walk

294.73 294.68

6.84 6.89

24.7 39.7

on Conc. Dr. on Conc. Dr.

294.0 295.0 295.3 294.9 295.0 294.7 294.0 295.0

5.6 5.8 6.3 6.7 6.6 6.9 6.8 6.6

35 25 11 10 12 25 35

297.09 296.70 296.46

4.49 4.87 5.11

35.5 25.5 24

Bit on Dr. Tar Conc. Apron

30157

℄

Cross Section - Arbor Vitae

				002	
				287.89	= FB 1628-25
Chk BM	Top Fire Hyd		3.82	287.91	Nail in Elec Pole - SE. Paplar + Hollywood Park
T.P.	3.31	291.73	8.49	288.42	SW. Marlborough & Manzanita
T.P.	3.86	296.91	8.52	293.05	
3+93					
		301.57			

292.8	292.7	292.3	292.2	291.5	291.2
8.8	8.9	9.3	9.4	10.1	10.4
40	30	25		25	35

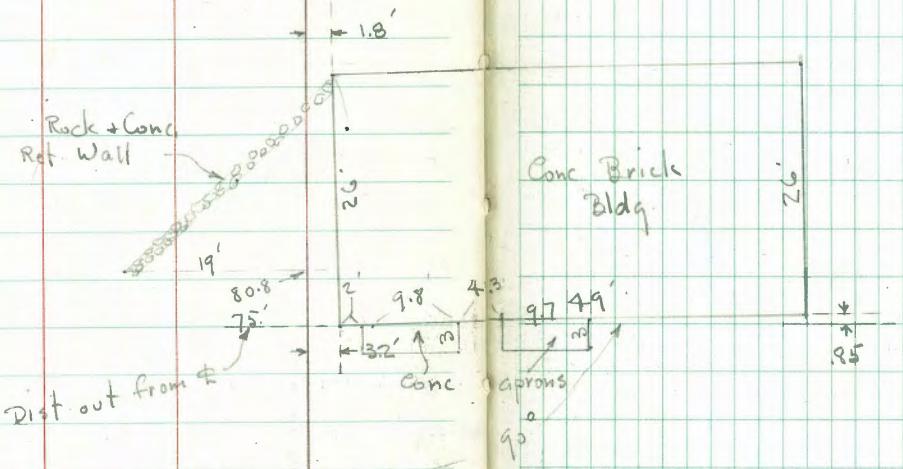
301.57

Lot 11 Block H
WEST HOLLYWOOD SUB.

Location of Bldg.
Imperial + Merlin

1-3-49
7.0.

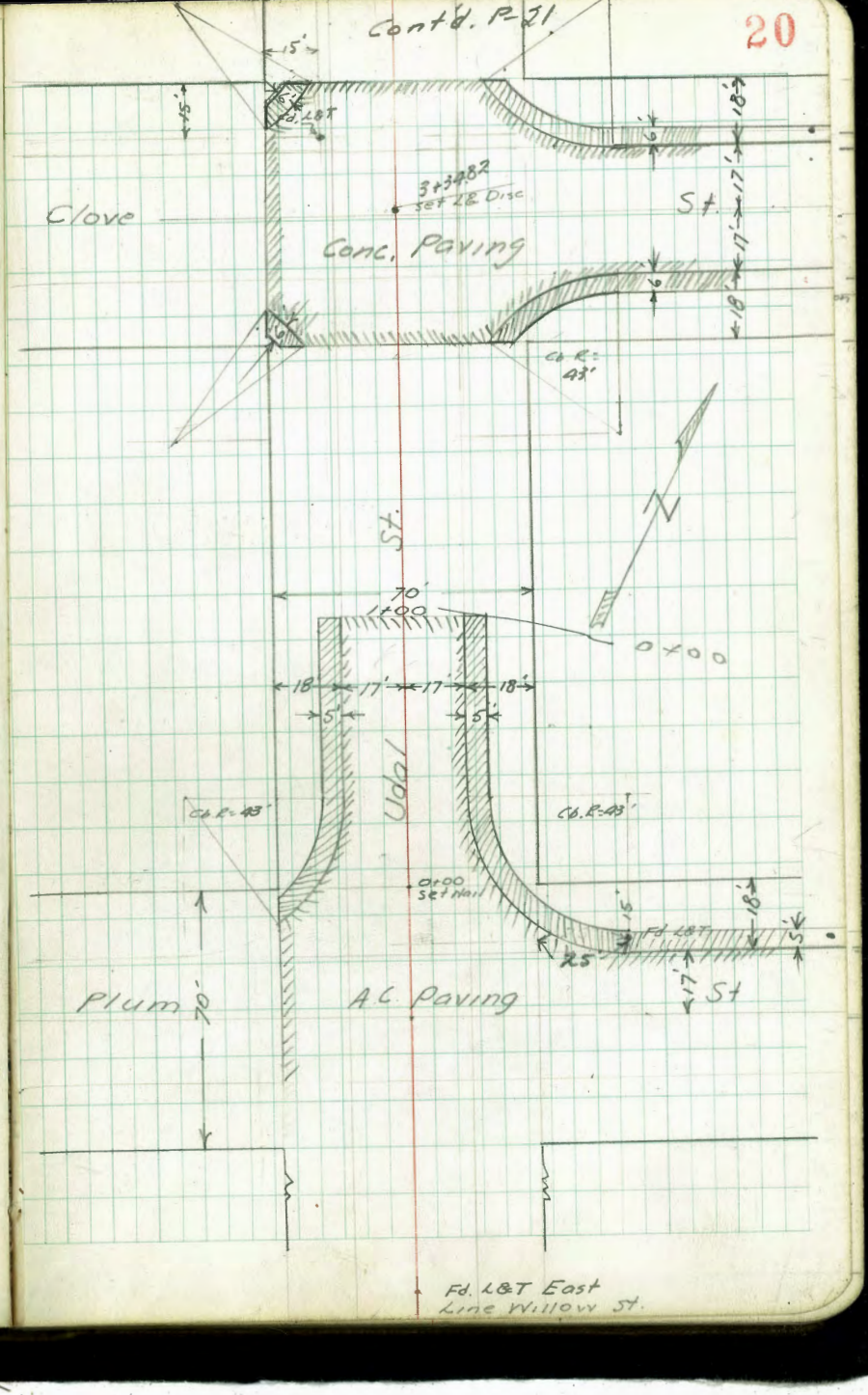
17+90 - Radial



1-31-49
Hendricks
Bramby
Greer
Rorer
W.O #31080

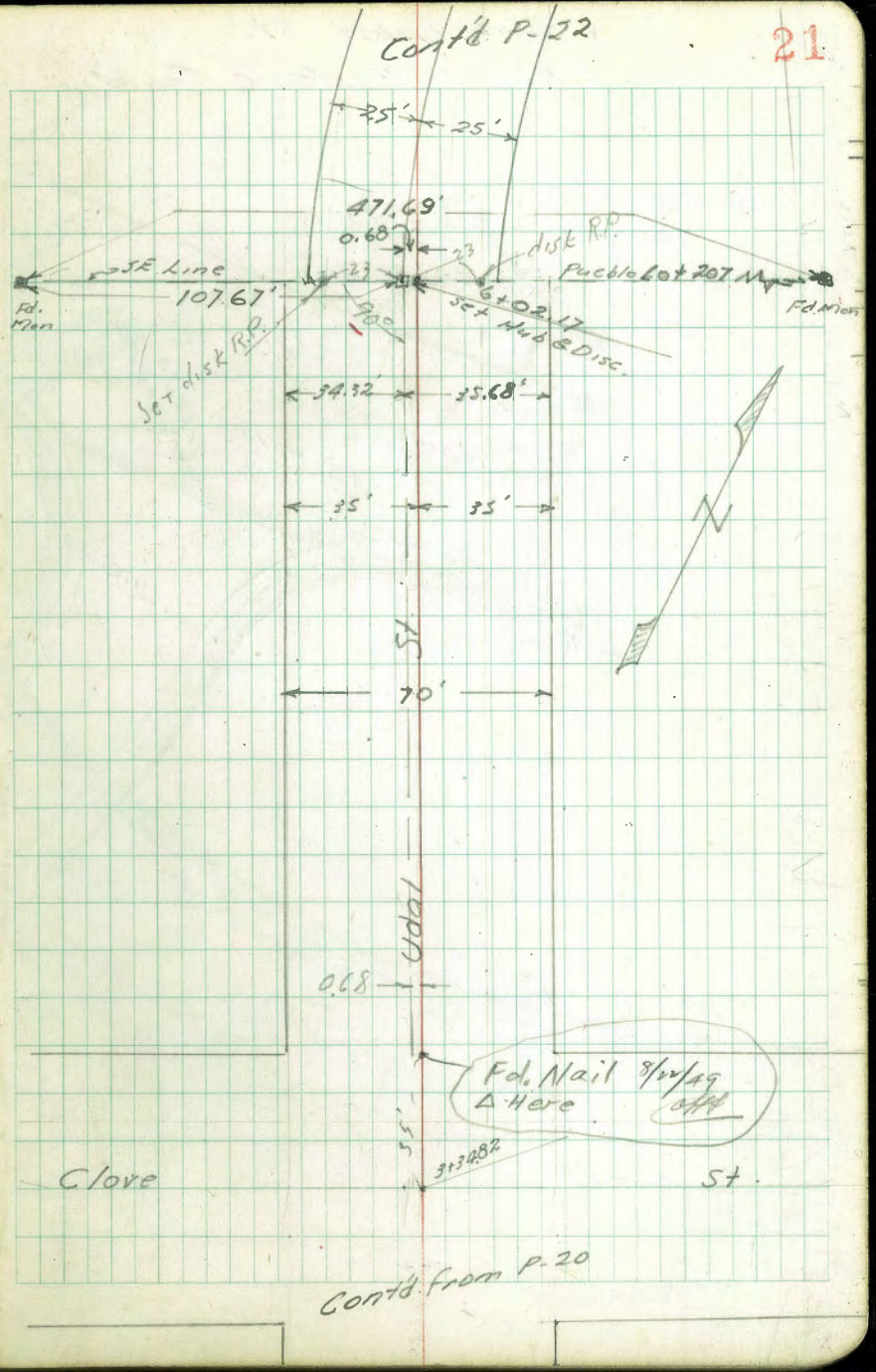
X Section Udal St.
Plum to Voltaire

Map #1863 (Reference)



X Sect. Udal St
Plum to Voltaire Contd.

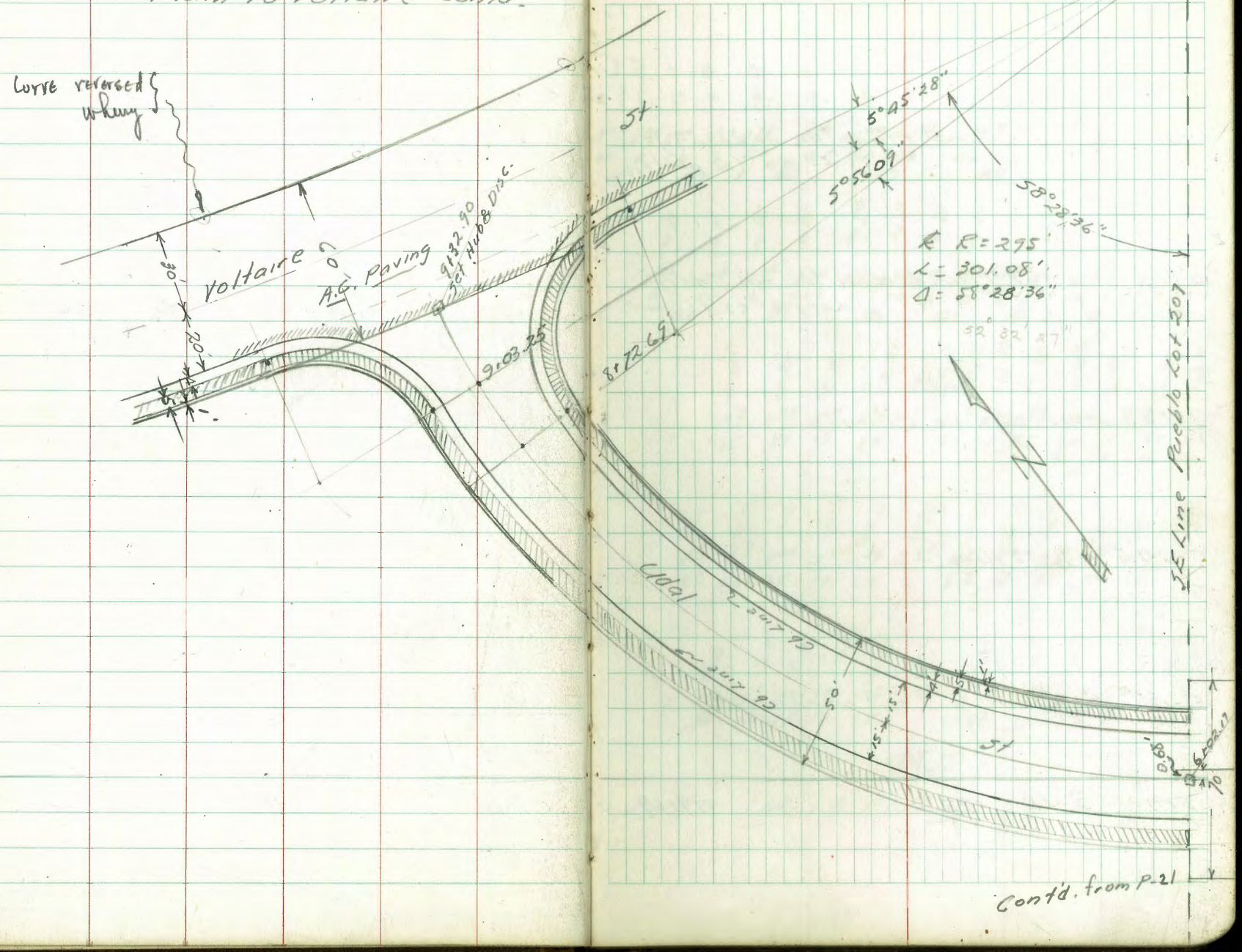
Contd P-22



Contd. from P. 20

15.
0.68
15.32

X Sect. Udal St.
Plum to Voltaire Cont'd.



Levels Udal 54

Plum to Voltaire

SWly Cb. Ref. Udal & Plum (BC on Udal)
Σ = 40' (4 parts)

NWly Cb. Ref. Plum & Udal (BC on Udal)
Length: 67.9 (6 parts)

0-18 West Cb. Line Plum

0-26.5 W½ Plum

0-35 E Plum

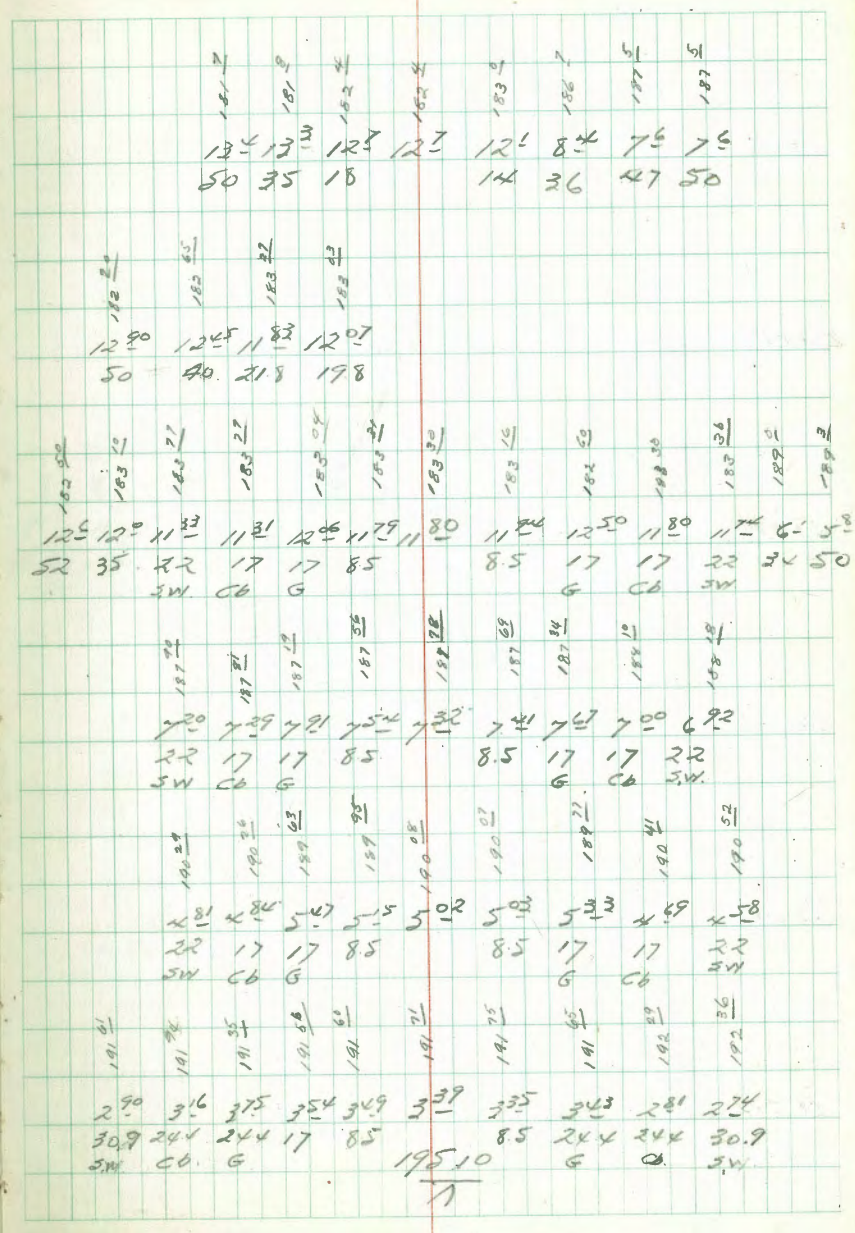
B17 3.41 195.10 19169

SWBP Udal & Plum

195.10

Cont'd. from P-23

T.P.	1.24	183.68 ↗	12.66	182.44
1+48				
1+14	℄ 10' Conc. Drive			
1+00	End of Paving & Cbs			
0+50				
0+25				
0+00	N Line Plum			
		185.10 ↑		



Contd from P 24

3+26.32	E ¼ Clove St.			
3+17.82	East CL Line Clove St.			
2+99.82	East Line Clove St.			
T.P.	0.57	171.89	12.36	171.32
2+50				
2+00				
1+54				
		183.68		

171.89

183.68

Contd. from P. 25

SE Cb. Ret. Cidal & Clove #1 on Cidal Length 1+43
(2 parts)

NE. Cb. Ret Cidal & Clove #1. on Cidal
Length: 409
(5 parts)

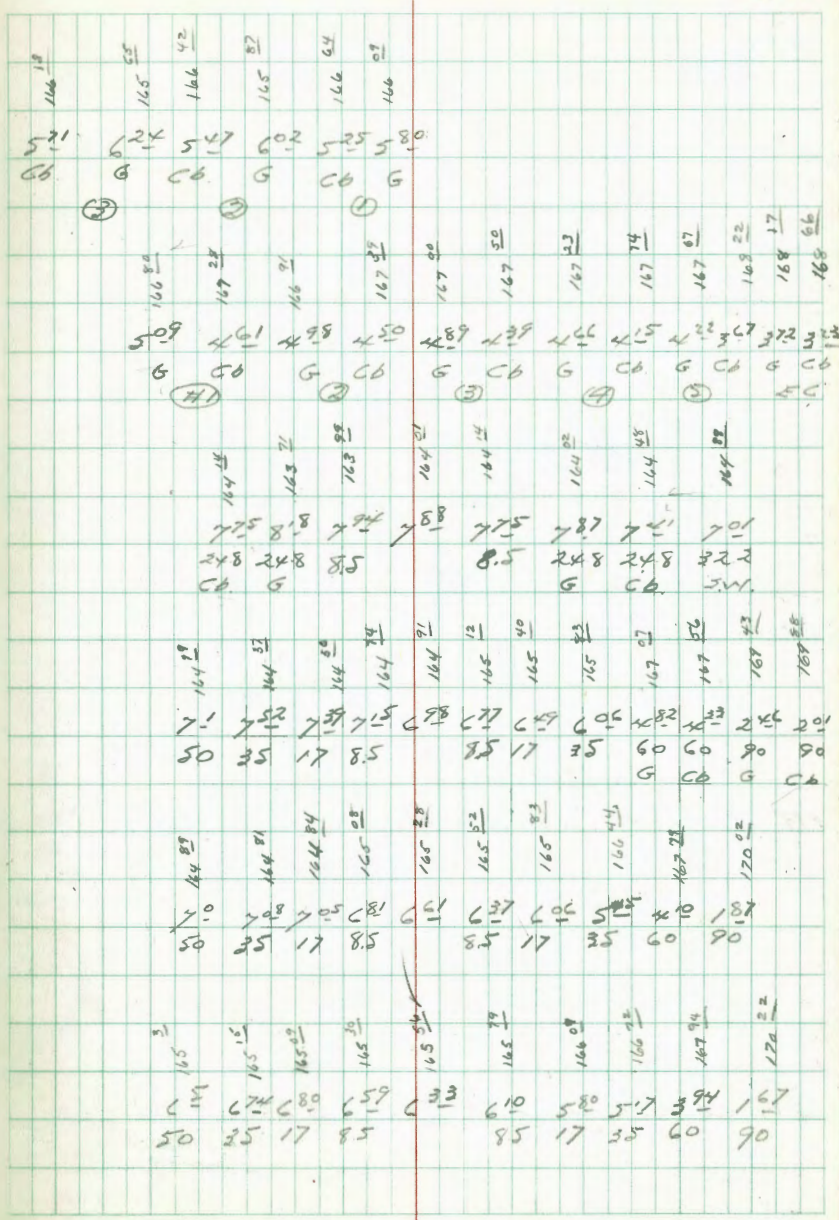
3+69.82 W. Line Clove

3+51.82 W Cb. Line Clove

3+43.32 W 1/4 Clove

3+34.82 E Clove St.

171.89



171.89

Cont'd From P. 26

5+00

4+60

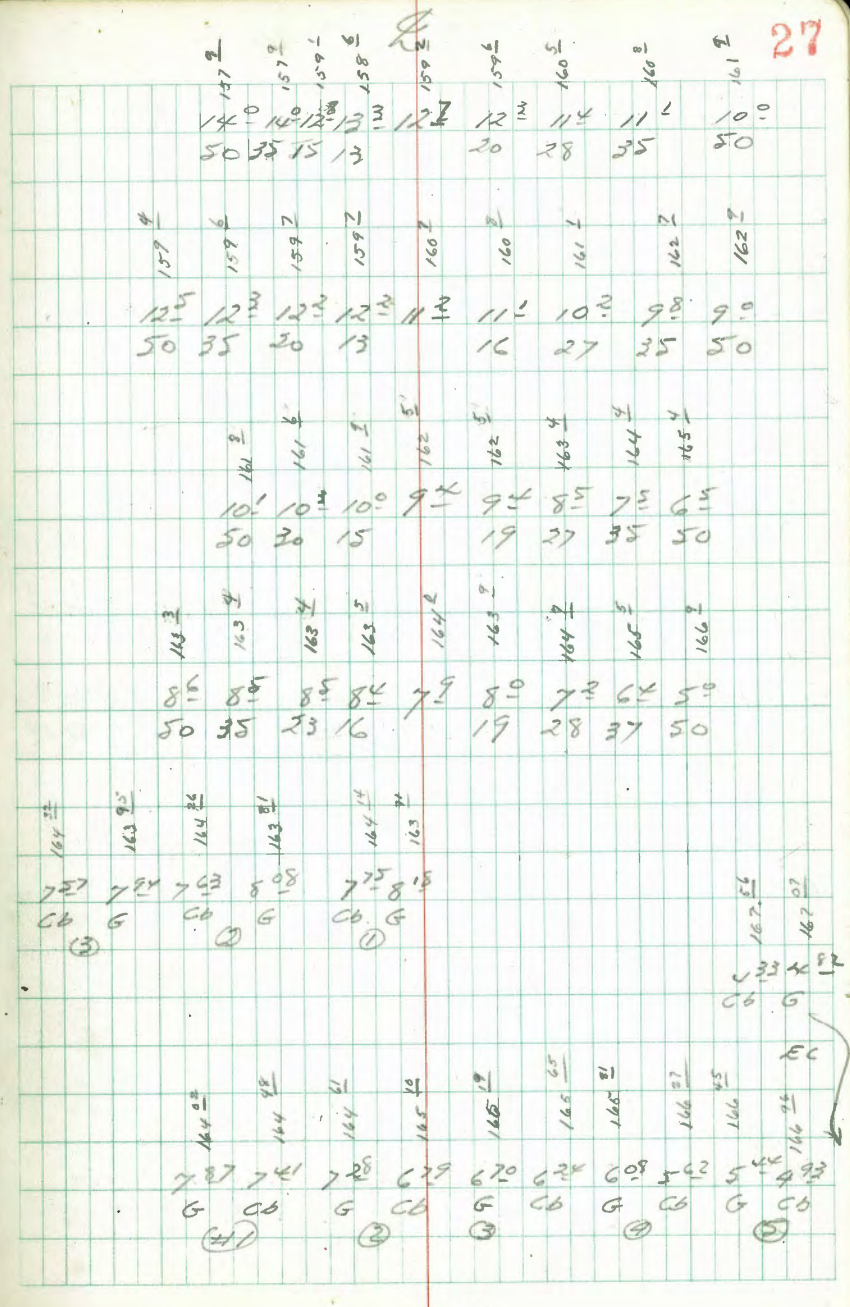
4+18

3+85

NW Cb Ret Udal & Clove #1 on Udal
Length = 14.4
(2 parts)

NW Cb Ret Udal & Clove #1 on Udal.
Length = 10.9
(5 parts)

171.89



171.89

Cont'd from P-27

6+77.44					
6+52.35					
6+27.26					
	Bet. 6+02.17 & 9+03.25 Curve divided into 12 equal Parts of 25.09' each				
6+02.17	B.C. (Section taken using hub as ℄ which is 0.68 So. of ℄ Udal St coming from the East.)				
5+55					
5+15					
T.P.	3.24	162.15	12.98	158.91	

171.89

153 64 | 154 5 | 154 2 | 154 8 | 154 7 | 154 6 | 155 06
8 51 | 8 0 | 8 0 | 7 4 | 7 5 | 7 6 | 7 09
15 | 15 | 11 | 3 | | 15 | 15
G Drive | Dirt | | | | G | Cb

154 51 | 154 5 | 155 0 | 154 9 | 154 85
7 64 | 8 2 | 7 3 | 7 2 | 7 3 | 7 30
15 | 15 | | | 8 | 15
Cb | G | | | | G Drive.

154 17 | 155 4 | 155 9 | 155 2 | 155 7 | 155 6 | 155 32
7 30 | 6 | 7 2 | 7 0 | 6 5 | 6 6 | 6 32
15 | 15 | 11 | 9 | | 15 | 15
Cb. | Dirt | | | | G | Cb

155 43 | 156 31 | 155 9 | 156 5 | 156 5 | 156 2 | 156 4 | 156 2 | 156 6 | 156 2 | 156 32 | 156 37
6 72 | 6 28 | 6 26 | 5 7 | 5 3 | 6 0 | 5 8 | 5 5 | 5 6 | 5 99 | 5 88 | 5 78
24 | 19 | 14.8 | 15 | 13 | 12 | 9 | | 9 | 15 | 19 | 24
Sw | Sw | Cb | Dirt | | | | 5 74 Hub | | Cb & G | Sw |

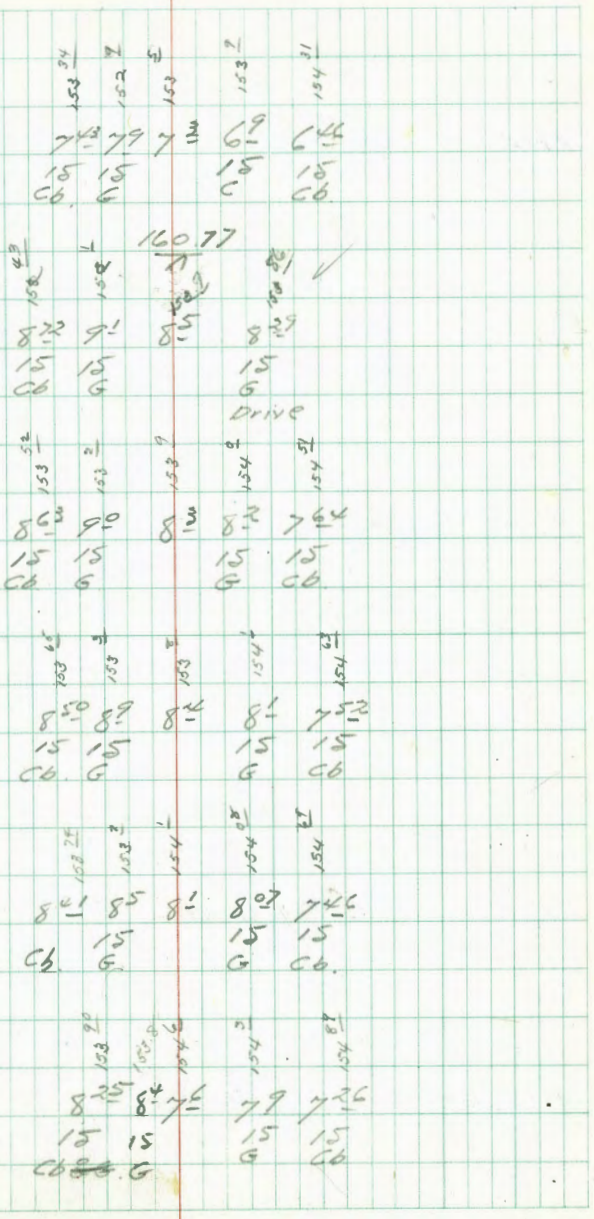
156 7 | 156 5 | 156 5 | 157 3 | 157 1 | 157 3 | 158 5 | 159 2 | 159 | 159 | 159 4 | 160 2
5 5 | 5 7 | 5 7 | 4 9 | 4 3 | 4 9 | 3 7 | 3 6 | 3 2 | 3 2 | 2 8 | 2 0
50 | 35 | 29 | 18 | 14 | 13 | | 13 | 18 | 26 | 35 | 50

157 6 | 157 6 | 157 5 | 158 2 | 158 8 | 158 3 | 158 7 | 159 3 | 160 4 | 161 4
4 6 | 4 4 | 4 7 | 4 0 | 3 4 | 3 9 | 3 5 | 2 7 | 1 8 | 0 8
50 | 35 | 29 | 16 | 15 | 13 | 162.15 | 20 | 35 | 50

on NW Cor. Drive 35' Lt 6+75

171.89

		Cont'd from P. 28		
8+27.98				
T.P.	7.15	160.77	8 57	153 62
8+02.89				
7+77.80				
7+52.71				
7+27.62				
7+02.53				
		162.15		



Contd. from P. 29

9+42.9± 30. Cb Line Voltaire
(Section taken along Cb. Line)

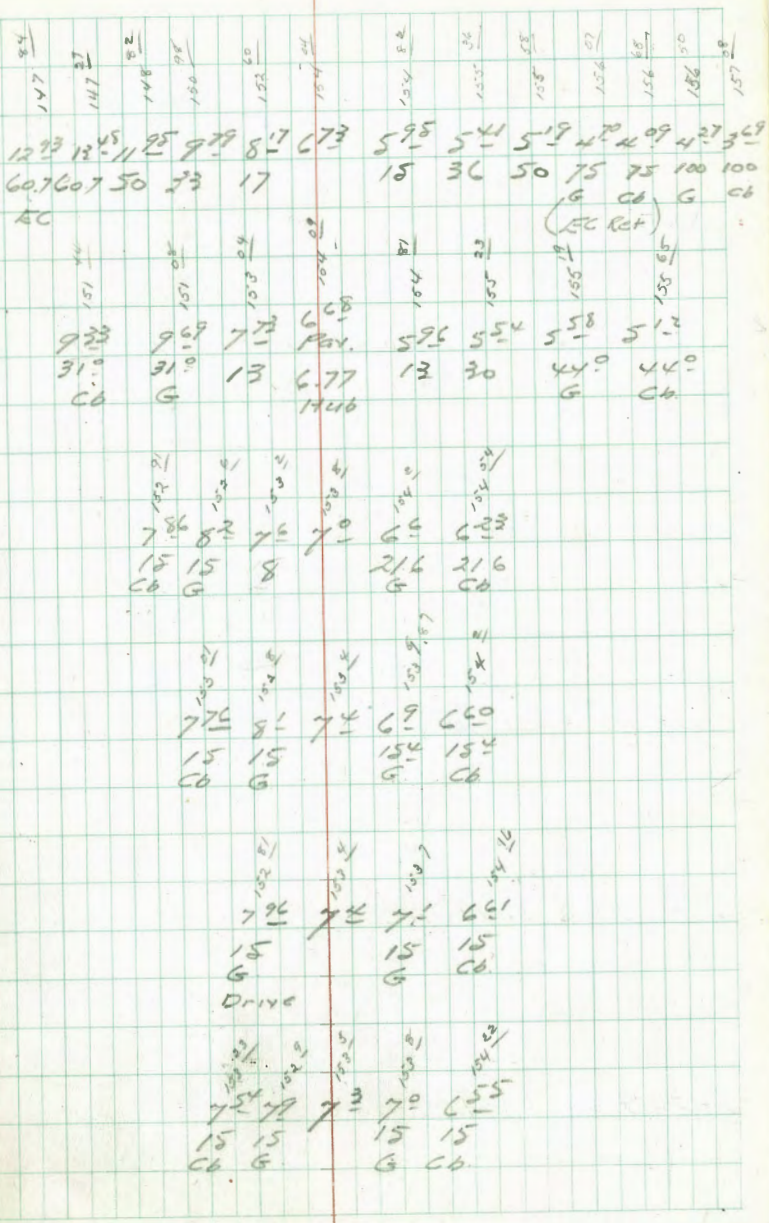
9+33.90 30. Line Voltaire Edge Asph. Paving

9+03.25 B.C. Cb Ret on Lt.

8+78.16

8+72.69 B.C. Cb Ret. on Rt.

8+53.07



160.77

160.77

Cont'd. from P. 30
X Sect Udal St. Plum to Voltaire

BM			11.58	116.91	116.79
T.P.	3.68	128.49	10.18	124.81	
T.P.	0.17	134.99	13.13	134.82	
T.P.	0.41	147.95	13.23	147.54	

So. Westerly Cb Cb Ref. Udal & Voltaire BC on Udal
(Length = 71.4 7pts)

So. Easterly Cb Ref Udal & Voltaire BC on Udal
(Length = 94.28 parts)

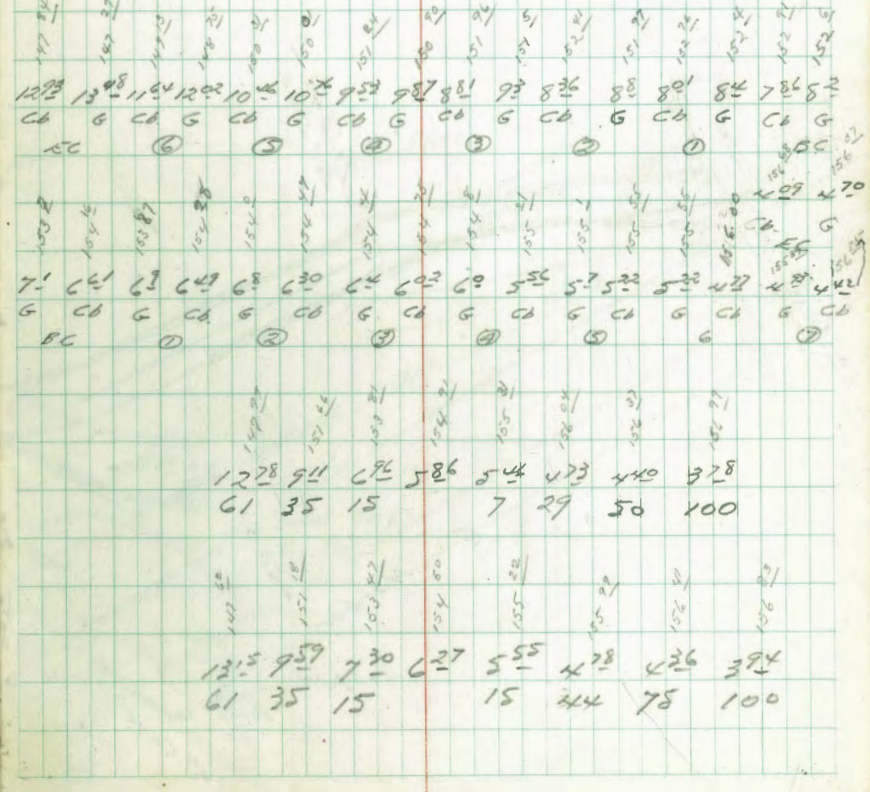
9+62.9 ± E Voltaire

9+52.9 So ± Voltaire

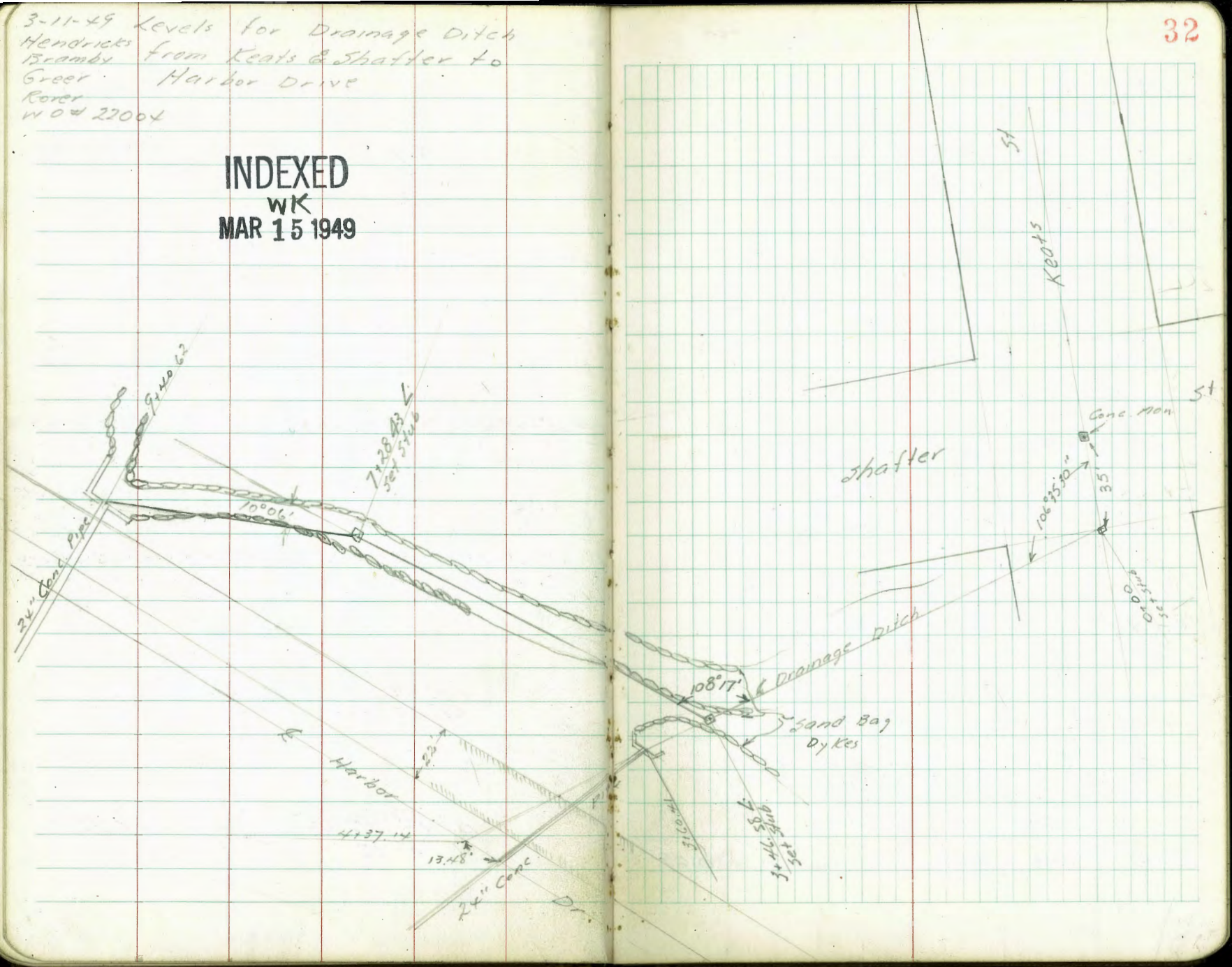
16077

4

S.W.B.P Voltaire & Chatsworth



3-11-49 Levels for Drainage Ditch
Hendricks from Keats & Shaffer to
Bramby Harbor Drive
Greer
Rorer
W O # 22004



Levels for Drainage Ditch

1+50				
1+00				
0+47				
0+22				
0+11				
0+00	℄ Keats & Scaline Shaffer			
B17	8.00	8.69		0.69

3.4 3.4 −1.3 ℄ −2.31 −0.8 3.6 3.7
5 5 10 11 9 5 5
36 20 6 7 19 33

3.9 3.6 −1.4 −1.91 −2.1 −0.7 4.2 4.1
4.8 5 10 10 10.8 9 4.5 4.6
36 21 5 1 7 20 32

4.0 3.9 −0.5 −1.91 −1.2 3.4 3.8
4.7 4.8 9.2 10 9.9 5 4.8
36 20 7 6 17 30

4.4 4.5 −1.0 −1.91 −2.21 −1.7 −0.6 2.4 2.8
4.3 4.2 9.7 10 10.8 10 9.3 6.3 5.9
37 23 6 3 6 9 17 27

4.3 4.4 0.3 −1.71 −2.21 −1.5 −1.0 1.2 1.7
4.4 4.3 8.4 10 10.8 10.3 9.7 7.5 7.9
50 28 12 5 9 16 20 28

4.1 3.9 2.0 −0.2 −1.41 −1.91 1.1 0.4 2.3
4.6 4.8 6.7 8.9 10 10.5 9.8 8.3 6.4
57 44 27 7 24 36 44 50

8.69

℄ Hub Lowell & Shaffer FB 1777 P. 14

Drainage Ditch Contd.

3+21				
3+00				
2+92	6" Iron Pipe across Ditch			
2+50				
2+08	2" Iron pipe across Ditch			
T.P.	3.95	6.79	5.85	2.84
2+00				
		8.69		

0.9 0.1 2.1 2.1 -0.1 -2.1 -3.3 -2.9 3.4 2.9
6.4 6.1 4.1 4.1 6.2 9.2 10.1 9.2 3.4 3.9
40 35 23 12 5 4 9 24 40

3.2 3.3 2.1 -1.8 -3.0 -2.4 3.4 2.9
3.6 3.5 4.1 8.4 9.2 9.2 3.4 3.9
36 19 15 4 6 23 40

-0.54
7.33
Top of Pipe

3.2 2.9 -0.1 1.1 -2.3 -2.5 -0.9 3.9 3.4
3.4 3.2 7.5 8.5 9.1 9.3 7.2 2.9 3.4
32 17 9 2 1 6 22 36

1.76
5.03
Top of Pipe

(Top of 1" Iron Pipe
20'± Lt. 2+00) 6.79

3.3 3.2 -1.5 -2.6 -1.4 3.9 3.4
5.4 5.5 10.2 11.3 10.1 4.8 5.3
34 18 5 5 20 35

8.69

CK FL 24" Pipe	7.81	-1.02	-1.07
3+60.41 FL 24" Conc. Pipe			
3+54			
3+50			
3+33			
3+30			

6.79

FB 1773 P 78

-1.02

7.81

1.5 1.4 -1.0 -0.6 1.8 -0.2 -2.4 -2.1 -2.4 1.8 2.5

5.3 5.4 7.8 7.4 5.0 7.9 9.2 9.5 9.3 5.9 4.4

34 12 3 1 18 20 25 29 31 48

1.7 0.8 -0.7 -0.9 -0.6 1.9 0.3 -2.4 -3.0 -2.4 1.9 2.1

5.5 6.0 7.5 7.7 7.4 4.9 6.5 9.2 9.8 9.2 4.9 4.5

50 18 10 4 2 14 15 20 27 30 47

-0.6 0.2 2.4 1.5 -0.1 -1.8 -2.4 -3.0 -2.6 0.8 1.8 2.6

7.4 6.5 4.4 5.3 6.9 8.6 9.2 9.8 9.4 6.0 5.0 4.2

30 16 15 8 2 3 7 13 16 42 39

-0.5 0.1 2.4 1.5 0.2 -1.9 -3.0 -2.4 -0.2 1.5 3.1 2.9

7.3 6.7 4.4 5.3 6.5 8.1 9.8 9.2 7.0 5.3 3.7 3.5

33 18 16 10 1 6 11 12 21 26 41

6.79

3-14-59 Continuation of X Sections
Hendricks Drainage Ditch from Keats & Shaffer to Harbor Drive
(See P-32)

4+50					
4+00					
3+71					
3+66					
3+46.58	L.				
BM	3.98	6.82			2.84

1.3 0.7 -2.1 -2.3 -2.2 -1.2 1.9 2.4 2.6
5.5 6.1 8.9 9.1 9.0 8.0 5.5 4.5 4.3
23 11 3 2 5 6 13 20

1.5 0.8 -2.2 -2.3 -1.8 2.4 2.6
5.3 6.0 9.0 9.1 8.6 4.5 4.3
23 11 3 4 7 17

1.3 -0.2 2.0 -2.6 -2.4 1.6 2.3
5.5 7.0 8.8 9.4 9.2 5.3 4.5
16 7 5 9 11 20

1.8 1.2 -0.3 -2.6 -2.8 -2.6 -2.3 1.7 2.5
5.0 5.6 7.1 9.4 9.6 9.4 9.1 5.1 4.3
25 9 2 6 8 9 11 20

1.5
5.4

6.82

Top of 1" I.P. Left 3+00
P-34 this Book

X Sect Drainage Ditch Contd.

7+28.43 ℄ Lt. (Sec. Taken Rt ℄ to Back Line)					
TP.	7.99	6.02		8.79	−1.97
7+00					
6+50					
6+00					
5+50					
5+00					

6.52

℄

0.3 0.2 2.1 2.0 1.4 0.9 0.9
5.7 6.2 8.1 8.0 7.4 5.1 5.1
22 4 3 3 4 20

℄ Stub 7+28.43 6.02

0.1 0.9 2.0 2.0 1.2 1.7 1.7
6.7 7.7 8.8 8.8 8.0 5.1 5.1
19 5 4 3 5 15

1.0 0.4 1.4 1.9 1.0 1.9 2.6
5.8 7.2 8.2 8.7 7.8 4.9 4.2
27 11 7 3 4 22

1.1 0.5 1.7 1.9 1.3 2.1 2.7
5.7 7.3 8.5 8.7 8.1 4.2 4.1
24 7 5 4 6 22

0.6 0.4 1.9 1.9 1.0 1.7 2.1
5.9 7.3 8.7 8.7 7.8 5.4 4.1
23 8 4 5 6 21

1.0 0.3 1.0 2.1 1.2 1.2 2.5
5.8 6.5 7.8 8.9 8.0 5.6 4.3
23 9 6 4 5 21

6.82

X Sect. Drainage Ditch Cont'd.

9+00

0.7	0.9	2.3	2.6	2.0	0.1	0.4
5.3	6.5	8.3	8.5	8.0	6.1	5.5
17	1		6	7	8	12

8+85

1.1	0.8	2.3	2.6	2.0	0.3	1.0
4.9	6.8	8.3	8.5	8.0	5.7	5.0
17		1	7	8	8	18

8+50

1.0	0.9	1.0	2.5	2.3	1.9	0.0	0.4
5.0	6.9	7.0	8.5	8.3	7.9	6.0	5.6
20		2	2	8	10	10	17

8+00

0.9	0.9	1.1	2.3	2.3	1.6	0.5	0.4
5.1	6.9	7.1	8.3	8.3	7.6	5.5	5.6
19		2	2	6	9	9	20

7+74

0.9	0.8	2.1	2.2	1.7	0.5	0.4
5.1	6.5	8.1	8.3	7.7	5.5	5.6
22		1	4	6	7	20

7+66

0.5	0.4	2.1	1.9	1.0	0.9
5.5	6.4	8.1	7.9	5.0	5.1
19	1		6	7	27

6.02

6.02

x Sect. Drainage Ditch Cont'd.

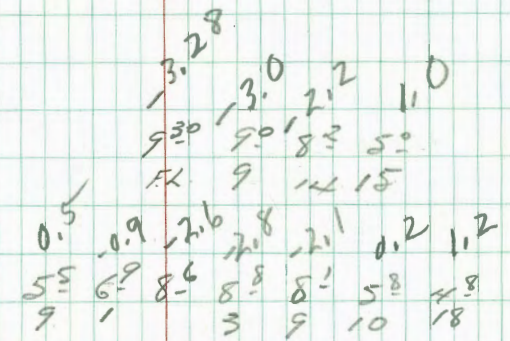
(CL FL 24" Pipe 3+60.41 R.35)

7.05 -1.03 -1.02

9+40.62 F.L. 24" Conc. Pipe

9+27

6.02



6.02

5-10-49
Hendricks
Greer
Rorer
WO#

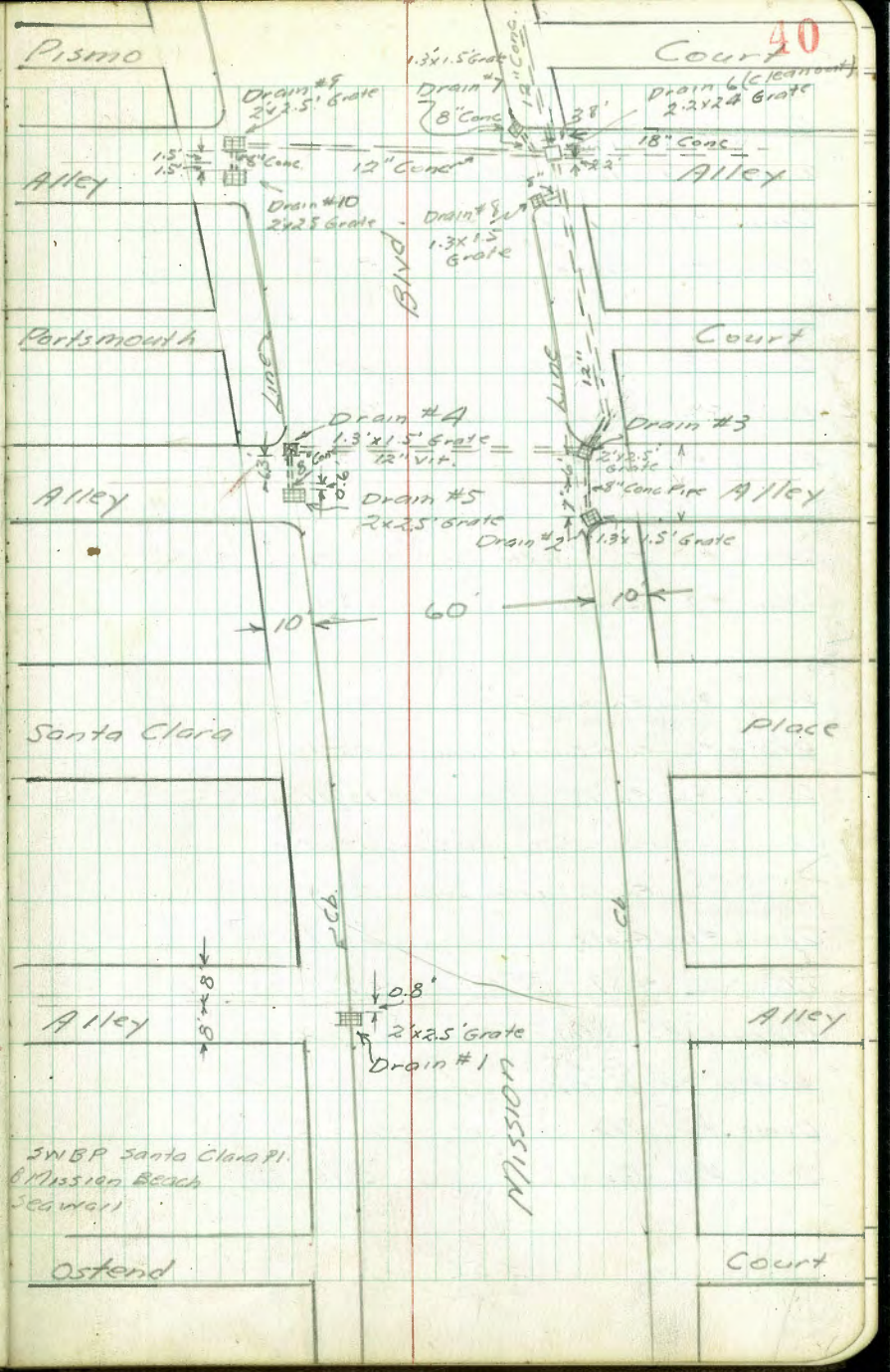
Location & Elevs of Drainage Structures on Mission Blvd (Ostend Court to Pismo Court)

Drain #4	(Btm Conc Sump)	8.50
Drain #4	(FL 8" Conc Pipe From Drain #5)	8.46
Drain #4	(FL 12" Vit. Pipe to Drain #3)	7.89
Drain #4	Grate	6.10
Drain #3	FL 12" V.t. From Cleanout #6	9.03
Drain #3	(FL 12" Vit Pipe from Drain #4)	8.97
Drain #3	FL 8" Lateral from Drain #1	9.01
Drain #3	Btm Conc Sump	7.94
Drain #3	Grate	6.33
Drain #2	Btm 12" Conc. Sump Pipe	9.29
Drain #2	FL 8" Conc Lateral to Drain #3	8.50
Drain #2	Grate	6.39
Drain #1	Btm 24" pipe	9.18
Drain #1	Top 24" Pipe	6.85
Drain #1	Grate	6.07

into Ground

Note (At Drain #1 24" C.M.P. goes down Vertical)

TP	5.54	5.56	9.67	0.02	
BM	2.50	9.69			7.19



Cont'd from P-40

Drain #11	(FL. 8" Conc. to Drain #10)		7.29	
Drain #9	Btm Conc. Sump		8.74	
Drain #9	FL 12" Conc to Cleanout #6		8.12	
Drain #9	Grate		5.95	
Drain #8	FL 8" Conc Pipe		8.41	
Drain #8	FL. Btm Sump		9.16	
Drain #8	Grate		6.34	
Drain #7	FL 8" & Btm Sump		7.93	
Drain #7	Grate		6.30	
Drain #6 (to Drain #9)	FL. 12" From (west)		10.25	
Drain #6	Btm Sump (conc)		10.21	
Drain #6	FL 18" From East		10.41	
Drain #6	FL 12" From North		10.10	
Drain #6 (Cleanout)	FL 12" From South		10.20	
Drain #6	Grate		6.27	
TP	4.89	5.48	4.97	0.59
Drain #5	Btm 24" vert. CMP.		9.2	
Drain #5	(FL. 8" Conc Pipe to Drain #6)		8.36	
Drain #5	Top 24" vert CMP.		6.82	
Drain #5	Grate		6.16	

5.56
T

Cont'd from P 41

B.M.			4.21	7.17	7.19
TP.	11.38	11.38	5.48	0.00	

Drain #10 Btm 24" Vert CMP 9.9

Drain #10 Top 24" Vert CMP 6.78

Drain #10 FL 8" From Drain #9 7.42

Drain #10 Grate 6.03

5' 4.8

JW BP Santa Clara Pl.
@ Mission Beach Sea wall

D Smith
W Moore
J Clark
F Acuna

Re Check X Sec Blk "B" Riviera

Note; Added Notes to FB 1806 21-27

	1+92	73 Lt	Top End of wall		.28333
TP			11 42	283 32	

INDEXED
W.K.
JUL 28 1949

5+10 73 Lt ℄ single garage con floor + apron

3+16 ℄ SMH

2+75 135 Rt ℄ double garage con floor + apron

TP		85°	294 74	2 64	286 24
BM	1+60	7 05	288 88		281 83 SW cor Apron

18 9 Lt start con apron to double garage

Lt ℄ Rt

292.56
2 48
13 9
floor

297.37
2 37
7 2
apron

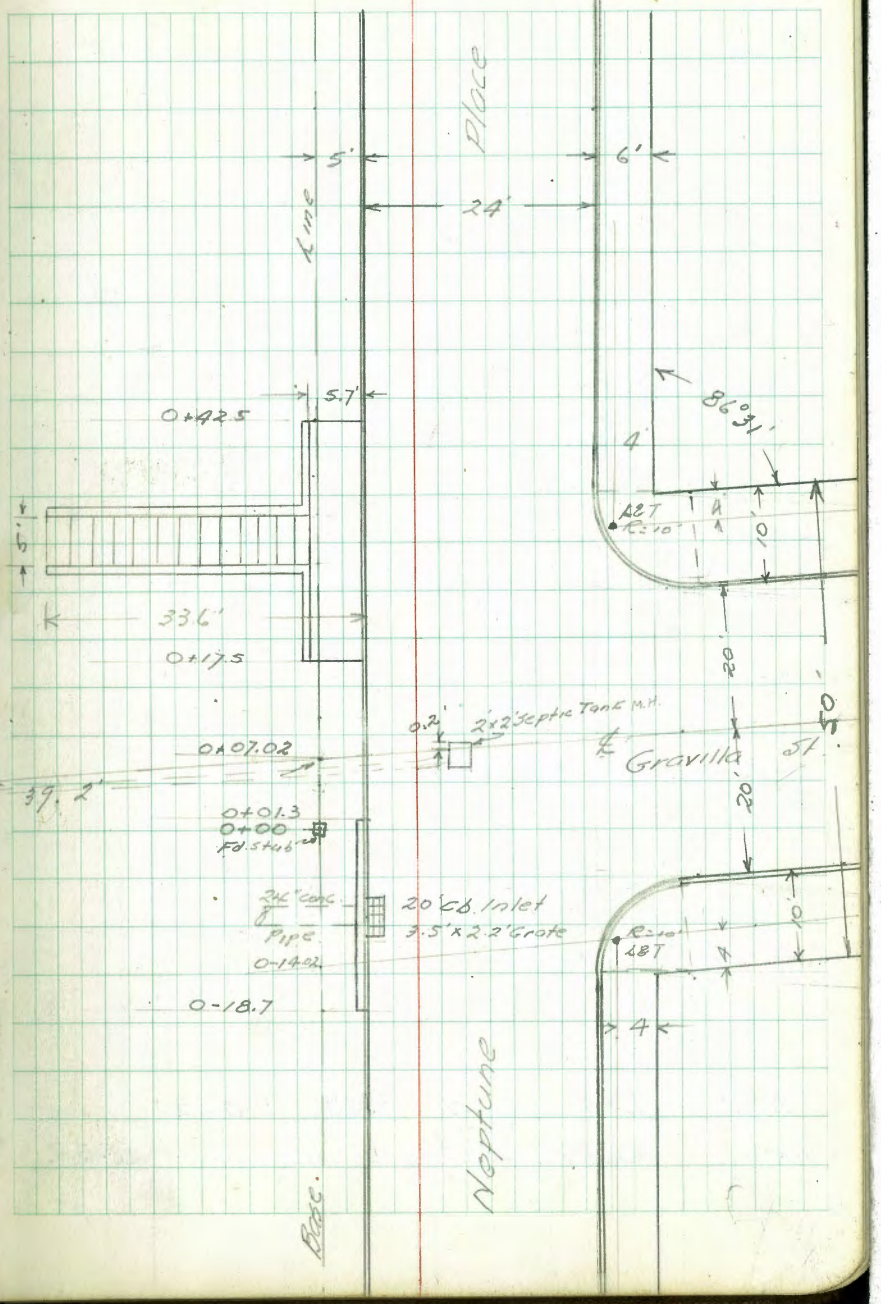
290.06
4 68
on rim

288.25
6 49
13 5
apron

288.54
6 20
18 5
floor

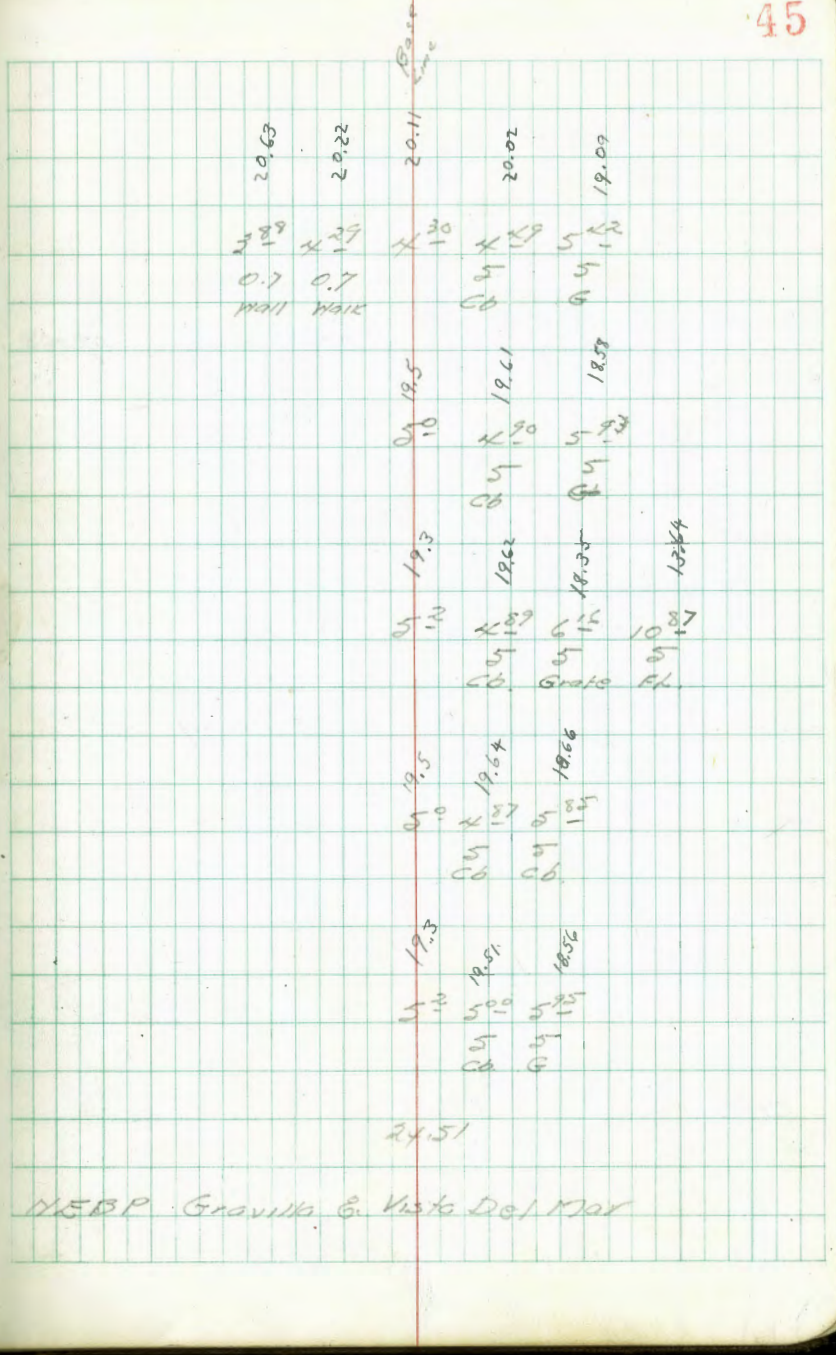
29474

8-25-49 Location of Stairway & Inlet &
Hendricks Septic Tank & Elevs.
Roberts Neptune Pl. & Gravilla St.
Burch (Original Notes FB 1646)
Gregory (15)
W.O. 2094



Levels Neptune & Gravilla

0+17.5	Beg Conc Slab for Hairway				
0+01.3	End Cb Inlet.				
0-08.7	& Cb. Inlet. & 24" Conc. Pipe				
0-18.7	Beg Cb Inlet				
0-40					
T.P.	3.88	24.51	8.20	20.63	
B.M.	0.51	23.83			28.32

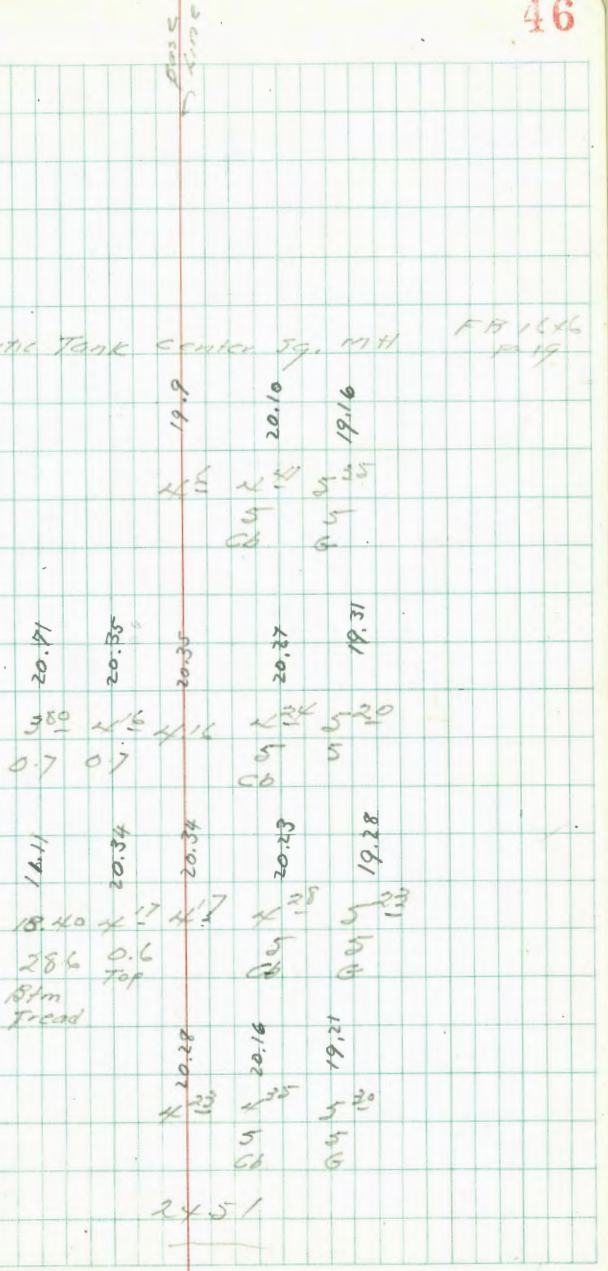


Cont'd.

CC Bm		5.03	1948	1948
0+60				
0+25	End Conc. Slab for Stairway			
0+30	℄ Stairway			
0+21.9				
	24.51			

W.Ly Edge Septic Tank Center Sq. MH

FB 1646 p. 49



Storm Drain through Lot #10
Mission Bay Park tract.

Sommermeyer
McCoy
Allen
Bunch

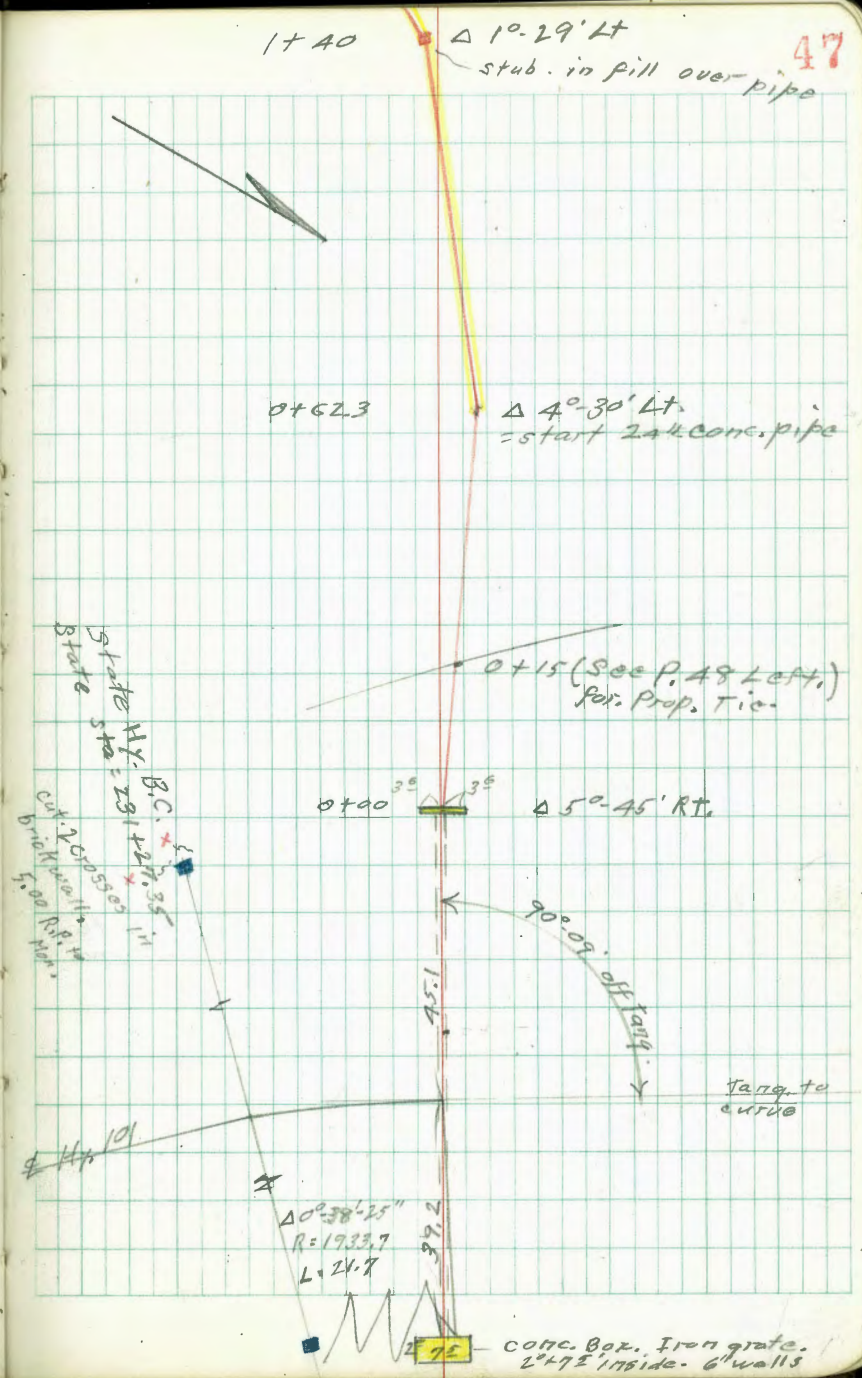
INDEXED
MAR 7 1950
W.K.

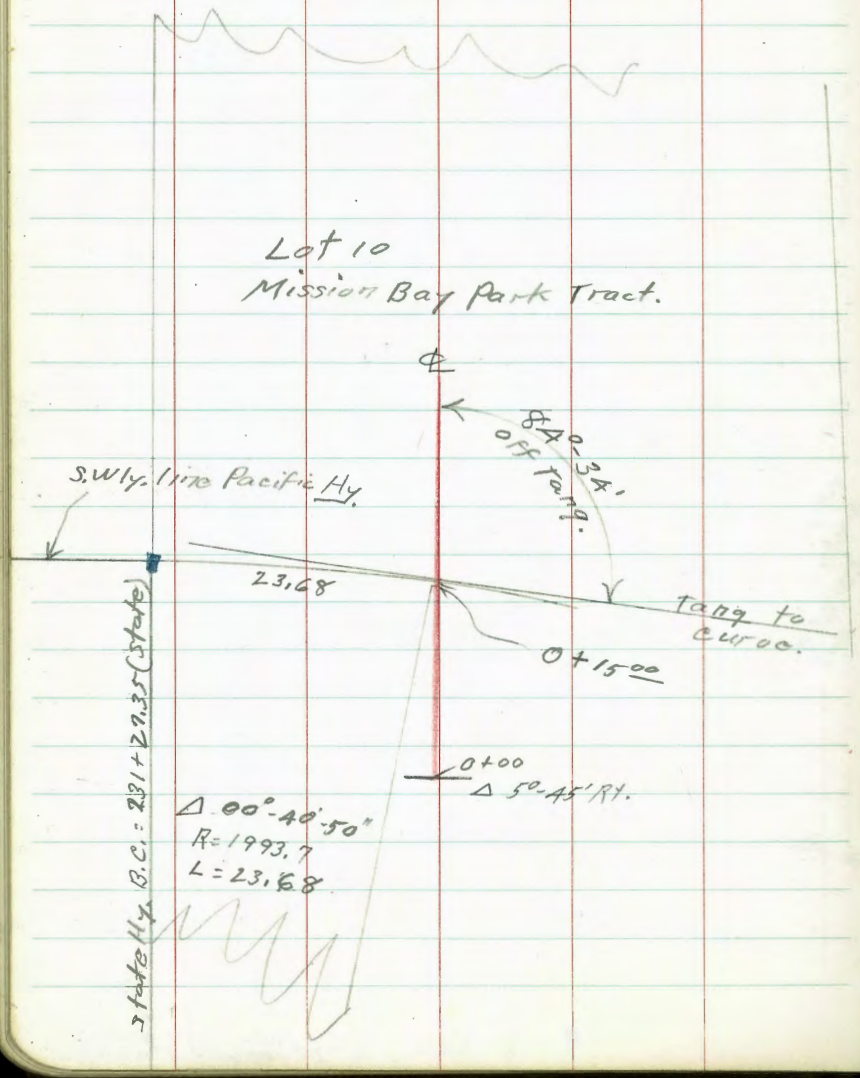
3-6-50
W.O. ~~20006~~
20651

▫ = Fd. Conc. Mon.
▫ = set 1/2" disk
× = Cut chisel cross

Map 1120
Tie Pt. sheet #1516
" " " 1610

Def. rate for 1933.7 Rad: .889' per foot.
" " " 1993.7 " = .862' " "





3+00 End of ditch

2+07.1 End of pipe

1+40 Δ 1°29'44".

Levels Culvert
Lot 10 Mission Bay Park Tract.

Δ 4°-30" Rt.
0+62.3 = start existing 24" Conc. culvert.

= Δ 5°-45' Rt.
0+00 Invert. end of existing 24" Conc. Culvert.

0-00.1 Top of Head wall

0-84 on Head wall of box

Hy. 101.
0-84.3 = intake existing culvert under

Ely. B.C. Mon State Hy. 101 231+27.35	5.69	15.70 ✓	7.06	10.01 ✓
T.P.	2.51	17.07 ✓	7.46	14.56 ✓
	1.00	22.02 ✓	—	21.02 ✓

B.P. in Service Station pump island
Mty. Co.: Balboa + Pacific

4

4.75
10.95
I.E.

7.90
7.80

8.88
6.82
3"

8.90
6.80

8.90
6.80
3"

10.54
5.16
4"

10.51
5.19

10.48
5.22
4"

13.5?(?)
2.55
4" Grate

7.53
8.18
I.E. (INVERT ELEV).

15.70 ✓

REDUCED AERIAL

DATA FROM STATE X-SECTS.:

℄ EL. = 11.31 INCREASED TO 11.50

INV. EL. N. END = 7.5±

" " S. " = 5.9 , HDWL = 6.9

S. CREST =039'5 EL = 11.8

N. " =0-33 EL = 11.0

STATION = 231+50

Mon. Ely. Cor. Bunker Hill + Pacific (Hy. 101) 6.19 9.51 ✓

ditch thru. filled ground

3+00 = ground shot at end of

2+07 T = End of pipe.

1+40 = Δ 1° 29' Lt.

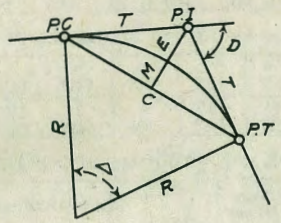
2.5
13.2

3.32
12.38

4.09
11.61
I.E.

15.70

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES



CURVE FORMULAS

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

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

Middle ordinate=M=R(1—cos. $\frac{\triangle}{2}$) (5)=Rvers $\frac{\triangle}{2}$ (6)

External=E=Ttan$\frac{\triangle}{4}$-(7)=R ÷ cos.$\frac{\triangle}{2}$—R(8)=Rexsec$\frac{\triangle}{2}$(9)

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

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.=Sta. 161+60.35 to find Sta. of P. C. and P. T. △=62° 10′ D=8° 20′. From Table IV for 1° curve T=3454.1 and ÷8⅓=414.49 ft. From Table V correction=.36 or T=414.85 ft. P. C.=Sta. P.I.—T=157 +45.50. Also from (4) L=746.00 and P. T.=Sta. P. C.+L=164+91.50.

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

Deflections.—Deflection angle=½ D for 100 ft., ¼ D for 50 ft., etc. For c ft.=(in minutes) .3 x C x D° or=defl. for 1 ft. from Table III x C. For Sta. 158 of above curve=.3 x 54.5 x 8⅓=136.2′ or 2° 16.2′, or=2.50 x 54.5=136.2′ from Table III. For Sta. 159 deflection angle=2° 16.2′ +8° 20′ ÷2=6° 26.2′, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 115.37. For from Table IV for 1° curve E=960.6 for 8° 20′=960.6 ÷8⅓=115.27 and from Table V correction=.10 or E=115.37 ft. Or suppose △=32° and E is measured and found to be 42 ft. What is D? From Table IV E=230.9 and ÷42=5.5 or D=5° 30′.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½

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 readbed 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.

MADE IN U.S.A.