1843

DIETZGEN

ENGINEERS

LEVEL BOOK

No. 410F

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.

1843

CITY ENGINEER'S OFFICE

INDEXED
Completely.

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.

Mission Valley Sewer profile Fairmount 1-59

" " X-Sec + River road 60

					Invert G.
1+60			8.5	73.3	71.59
1+20	M.H.#69 33°-07'-30Lt.		10.3	71.5	71.05
0+90			7.6	74.2	70.57
0+84	End pav.		7.7		
+65	High crown on pav.		6.9		
0+60			7.0	74.8	70.09
+46.8	Edge pav.		7.6		
0+30			7.9	73.9	69.61
0+23			12.5		
+15			9.7		
0+00	M.H #68		10.2	71.6	69.13 69.10
37+50	8.49	86.77		73.28	

From F.B. 1809 - P.75

↑ B.M. = □ cut west end south head wall Culvert under Camino Del Rio

1629 / 20 1703 / 43

Cut	Av Cut	Dist	Av C.Y. /100'	Exc. C.Y.
1.71				
	1.8	40	19.0	7.60
0.45				
	End of 15" Conc. Encase.			
	2.04	30	27.6	8.28
3.63				
	4.17	25	50.0	12.50
4.71				
	4.50	30	53.8	16.14
4.29				
	3.40	30	42.5	12.75
2.5				
				57.27

Start of 15" Conc. Enc To 1+20

Dist	Req. Back / 100'	Req. Back @ Y
40	2.0	0.80
30	3.29	0.99
25	25.0	6.25
30	28.8	8.64
30		
30	17.5	5.25
		21.93

					Invert.
4+40			4.0	77.8	75.34
4+00			4.6	77.2	74.80
3+60			5.5	76.3	74.27
3+20			6.2	75.6	73.73
2+80			7.1	74.7	73.19
2+40			7.8	74.0	72.66
2+00			7.8	74.0	72.12
		81.77			
1+60					

Cut	Av Cut	Dist.	Av C.Y. /100'	Etc. C.Y.
2.46				
	2.43	40	26.6	10.64
2.40				
	2.22	40	24.6	9.84
2.03				
	1.95	40	21.5	8.60
1.87				
	1.69	40	19.0	7.60
1.51				
	1.42	40	16.0	6.40
1.34				
	1.61	40	18.0	7.20
1.88				
	1.79	40	20.0	8.00
1.71				58.28

Dist.	Req. Back / 100'	Req. Back C.Y.
40	20.0	8.0
40	17.0	6.8
40	14.0	5.6
40	12.0	4.8
40	9.0	3.6
40	11.0	4.4
40	13.0	5.2
		38.4

					Invert
7+00			4.9	85.0	72.08
6+60			5.5	84.4	78.38
T.P. 20.06 Lt. of 6+38 54	5.08 M.H.=70 9°32' Rt.	89.88	5.08	84.80	
			6.1	83.8	78.00
6+00			7.3	82.6	77.48
5+60			10.5	79.4	76.85
5+20			11.5	78.4	76.41
	11.78	89.88	3.67	78.10	
4+80			3.9	77.9	75.87
		81.77			
4+40					

Cut	Av. Cut	Dist	Av. C.Y. / 100'	Exc C.Y.
5.97				
	5.97	40	64.0	25.60
6.02				
	5.91	21.46	63.2	13.56
5.80				
	5.46	38.54	58.6	22.60
5.12				
	3.88	40	42.0	16.80
2.45				
	2.22	40	24.5	9.80
1.99				
	2.01	40	22.2	8.88
2.03				
	2.50	40	27.4	10.96
2.46				108.20

Dist	Rag, Back /100'	Rag, Back C.Y.
40	58.4	23.36
21.46	56.8	12.19
38.54	52.0	20.04
40	35.6	14.24
40	17.0	6.80
40	16.0	6.40
40	21.0	8.40
		91.43

						Cut	Av Cut	Dist	C.Y. /100'	Exc C.Y.
9+80			9.1	90.1	84.01	6.09				
	9.66	99.19	0.35	89.53						
							6.14	40	65.4	26.16
9+40			0.4	89.5	83.31	6.19				
							6.09	40	65.0	26.00
9+00			1.3	88.6	82.60	6.00				
							6.05	40	64.5	25.80
8+60			1.9	88.0	81.90	6.10				
							6.05	40	64.5	25.80
8+20			2.7	87.2	81.19	6.01				
							5.61	40	60.0	24.00
7+80			3.2	86.7	80.49	5.21				
								40	60.0	24.00
							5.61			
7+40			4.1	85.8	79.79	6.01				
		79.88					5.96	40	63.6	25.44
7+00						5.92				177.20

Dist.	Req. Back 1/100'	Req. Back C.Y.
40	59. ✓	23.68
40	58.8	23.52
40	58.4	23.36
40	58.4	23.36
40	53.6	21.40
40	53.5	21.40
40	58.3	23.32
		160.04

12+40			4.18	94.14	88.59
12+00			5.4	93.8	87.88
11+60			6.3	92.9	87.18
11+20			7.0	92.2	86.47
Nail 20' Lt.			6.15	93.04	
10+80	P.O.T. M.H. 71		7.5	91.7	85.77
10+50			8.2	91.0	85.24
10+20			8.6	90.6	84.71
		99.19			
9+80					

Cut	Av. Cut	Dist	Av @ Y. / 100'	Exc. C.Y.
5.81				
	5.86	40	62.5	25.00
5.92				
	5.82	40	62.2	24.88
5.72				
	5.72	40	61.2	24.48
5.73				
	5.83	40	62.3	24.92
5.93				
	5.84	30	62.4	18.72
5.76				
	5.83	30	62.3	18.69
5.89				
	5.99	40	64.0	25.60
6.09				162.29

Dist.	Req. Back 1100'	Req. Back C.Y.
40	56.0	vv.40
40	55.6	vv.24
40	54.8	21.92
40	55.8	22.32
30	56.2	16.86
30	55.8	16.74
40	57.6	23.04
		145.52

14+80			9.4	100.1	92.81
T.P.	10.68	109.47	0.40	98.79	
14+40			0.1	99.1	92.11
14+00			1.1	98.1	91.40
13+60			1.9	97.3	90.70
13+20			3.0	96.2	89.99
12+80			4.0	95.2	89.29
12+40		99.19			

Cut	Av. Cut	Dist.	Av. C.Y. /100'	Exc. C.Y.
7.29				
	7.14	40	76.2	30.48
6.99				
	6.84	40	73.0	29.20
6.70				
	6.65	40	71.0	28.40
6.60				
	6.40	40	68.3	27.28
6.21				
	6.06	40	64.8	25.92
5.91				
	5.86	40	62.6	25.04
5.81				166.32

Dist	Req. Back 100'	Req. Back C.Y.
40	69.6	27.84
40	66.5	26.60
40	64.5	25.80
40	62.0	24.80
40	58.4	23.36
40	56.0	22.40
		150.80

						Cut	Av. Cut	Dist	C.Y. /100	Exc C.Y
17+20			5.7	103.8	97.30	6.50				
							6.53	40	70.0	28.00
16+80			6.4	103.1	96.54	6.56				
							6.39	40	68.2	27.28
16+40			7.5	102.0	95.78	6.22				
							6.55	40	70.0	28.00
16+00			7.6	101.9	95.02	6.88				
							7.16	40	76.2	30.48
15+60			7.8	101.7	94.26	7.44				
20' Lt. Nail			7.64	101.83			7.46	33.21	79.5	26.40
15+26.22	Δ 4°01'-30 Rt. MH # 72		8.4	101.1	93.63	7.47				
							7.38	46.79	78.8	36.84
14+80		109.47				7.29				177.00

Dist	Req. Back /100'	Req. Back @ Y
40	63.2	25.28
40	61.8	24.72
40	63.4	25.36
40	69.6	27.84
33.21	73.0	24.24
46.79	72.0	33.69
		161.13

						Av. Cut	Av. Cut	Dist.	Av. C.Y. / 100.	Exc. C.Y.
19+20			10.1	106.3	101.16	5.14				
T.P. Nail	9.25	117.39	1.33	108.14						
20± Lt of ↓							5.32	21.52	57.0	12.26
18+98 48	Δ 11° 32' Rt. M.H. # 73		2.3	107.2	100.69	6.51				
							6.53	18.48	69.8	13.10
18+80			2.6	106.9	100.34	6.56				
							6.54	40	69.8	27.92
18+40			3.1	106.1	99.58	6.52				
							6.50	40	69.5	27.80
18+00			4.2	105.3	98.82	6.48				
							6.51	40	69.6	27.84
17+60			4.9	104.6	98.06	6.54				
							6.52	40	69.7	27.88
17+20						6.50				
		109.17								136.80

Dist	Req. Back 1100'	Req. Back C.Y
21.52	50.4	10.85
18.48	63.3	11.70
40	63.4	25.36
40	63.0	25.20
40	63.1	25.24
40	63.2	25.28
		123.63

						Cut	Av. Cut	Dist	Ar. C.Y. /100'	Exc. C.Y.
21+60			5.2	112.2	106.44	5.76				
							5.95	40	63.5	25.40
21+20			5.7	111.7	105.56	6.14				
							5.98	40	64.0	25.60
20+80			6.7	110.5	104.68	5.82				
							5.71	40	61.0	24.40
20+40			8.0	109.4	103.80	5.60				
							5.59	40	60.0	24.00
20+00			8.9	108.5	102.92	5.58				
							5.67	40	60.7	24.28
19+60			9.6	107.8	102.04	5.76				
							5.45	40	59.5	23.80
19+20						5.14				147.48
		117.39								

Dist	Req. Back /100'	Req. Back C.Y.
40	57.4	22.96
40	57.7	23.08
40	54.6	21.84
40	53.2	21.28
40	54.0	21.60
40	52.0	20.80
		131.56

Agail 20' Lt of			7.32	118.35	
24+00	△ 1°-17'-30" Rt. M.H.W. 84		7.2	117.8	110.72
23+60			8.4	117.3	108.84
23+20			9.0	116.7	107.96
T.P.	9.50	125.67	1.22	116.17	
22+80			2.0	115.4	107.08
22+40			3.7	113.7	106.20
22+00			4.5	112.9	107.32
21+60		117.37			

Cut	Av. Cut	Dist.	Av. C.Y. / 100'	Exc. C.Y.
6.08				
	6.27	40	67.0	26.80
6.46				
	6.60	40	70.5	28.20
6.74				
	6.53	40	68.6	27.44
6.32				
	5.91	40	63.2	25.28
5.50				
	5.54	40	59.0	23.60
5.58				
	5.67	40	60.7	24.28
5.76				155.60

	Dist	Req. Back 1100'	Req. Back @.4
	40	60.5	24.20
	40	64.0	25.60
	40	63.4	25.36
	40	57.8	23.12
	40	53.0	21.20
	40	54.0	21.60
			141.08

				Invert
26+40		3.1	122.6	115.80
26+00		3.7	122.0	115.12
25+60		4.4	121.3	114.44
25+20		5.7	120.0	113.76
24+80		6.1	119.6	113.08
24+40		7.2	118.5	112.40
24+00	125.67			

Cut	Av. Cut	Dist	Av. C.Y / 100	Exc. C.Y
6.80				
	6.84	40	72.8	29.12
6.88				
	6.87	40	73.2	29.28
6.86				
	6.55	40	70.0	28.00
6.24				
	6.38	40	68.0	27.20
6.52				
	6.31	40	67.2	26.88
6.10				
	6.09	40	65.0	26.00
6.08				166.48

Dist	Reg Back 1100'	Reg Back C.Y.
40	66.4	26.56
40	66.7	26.68
40	63.5	25.40
40	61.6	24.64
40	61.0	24.40
40	58.8	23.52
		151.20

						Cut	Ar. Cut	Dist.	C.Y. / 100'	Exc C.Y.
28+60			7.4	129.8	119.48	10.32				
Take off B.M. As shown.	8.21	137.20		128.99						
Chisel □ N.W. wing wall culvert. Montezuma Rd + Fairmont			8.21	129.07	(128.99)		10.22	18.09	101.0	18.27
								Start of 12" Enc.		
= 28+41.91	△ 51°-15'30" Lt.									
28+39.02	M.H. # 75		8.0	129.3	119.18	10.12				
								End of 15"		
28+00			9.7	127.6	118.52	9.08	9.60	39.02	102.0	39.80
27+60			11.1	126.2	117.84	8.36	8.72	40	93.0	37.20
							8.45	40	90.0	36.00
27+20			11.6	125.7	117.16	8.54		1		
T.P.	12.62	137.28	1.01	124.66						
							8.53	40	90.8	34.32
26+80			1.7	124.0	116.48	8.52				
							7.66	40	81.6	32.64
26+40		125.67				6.80				300.23

Dist	Req. Back 1100'	Req. Back Q.4
18.09	82.0	14.83
	Start of 12" Enc.	
	End of 15"	
39.02	96.4	37.58
40	86.4	34.56
40	83.5	33.40
40	84.5	33.80
40	75.0	30.00
		184.17

						Cut.	Ar. Cut	Dist	Ar. C.Y. 1/100'	Exc C.Y.
31+00			9.7	127.3	125.98 ~~123.50~~	1.32				
							1.77	40	17.4	6.96
30+60			9.6	127.6	125.38 ~~122.83~~	2.22				
							4.32	40	41.0	16.40
30+20			6.0	131.2	124.78 ~~121.76~~	6.42				
							6.17	40	58.6	23.44
29+80			7.1	130.1	124.18 ~~121.99~~	5.92				
							6.92	40	65.2	26.08
29+40			5.7	131.5	123.58 ~~120.82~~	7.92			Start of 12" No. Encas.	
									End of 12" Enc.	
29+05					123.05		9.28	40	92.0	36.80
29+00			6.4	130.8	120.15	10.65				
							10.48	10	103.2	41.28
28+60		137.20				10.32				150.96

Dist	Req. Back / 100'	Req. Back C.Y
40	13.0	5.20
40	37.0	14.80
40	54.0	21.60
40	61.2	24.48
	Start of 12" No. Encas	
	End. of 12" Encas	
40	73.0	29.20
40	84.0	33.60
		128.88

					INVERT
33+40			7.3	138.7	132.18 ~~130.85~~
33+00			9.3	136.7	130.89 ~~129.29~~
32+60			13.3	132.7	129.57 ~~127.93~~
T.P.	11.28	145.97	2.51	134.69	
32+20			8.3	128.9	128.29 ~~126.17~~
31+90	P.O.T. M.H. #76		8.8	128.4	127.32 ~~125.20~~
31+45			9.6	127.6	126.65 ~~124.55~~
31+00		137.20			

Cut	Av. Cut	Dist	Av. C.Y. /100'	Exc C.Y
6.5v				
	6.16	40	58.v	23.28
5.81				
	4.47	40	42.7	17.08
3.13				
	2.37	40	23.0	9.20
0.61				
	0.85	30	8.5	2.55
1.08				
	1.0v	45	10.v	4.58
0.95				
	1.13	45	11.3	5.09
1.3v				61.78

Dist	Rag. Back / 100'	Rag. Back C.Y.
40	64.2	25.68
40	38.4	15.36
40	18.0	7.20
30	4.0	1.20
45	6.0	2.70
45	7.0	3.10
		55.24

T.P. 40°24' on M.4077	6.72	154.56	3.75	148.34	
35+60			5.0	149.1	139.11
35+44.56	Δ 11°-42' Rt. M.H. to 77		5.2	148.9	138.83
T.P.	8.62	154.09	0.50	145.47	
35+00			0.7	145.3	137.38 ~~139.09~~
34+60			5.3	140.7	136.07 ~~135.53~~
34+20			4.4	141.6	134.78 ~~133.97~~
33+80			4.7	141.3	133.48 ~~132.41~~
33+40		145.97			

Cut	Av. Cut	Dist	Ar. C.Y. / 100'	Exc. C.Y.
9.99				
	10.03	15.44	94.4	14.58
10.07				
	9.00	44.56	84.8	37.79
7.92				
	6.48	40	59.4	23.76
4.63				
	5.73	40	54.3	21.72
6.82				
	7.32	40	69.2	27.68
7.82				
	7.17	40	67.7	27.08
6.52				152.61

	Dist	Req. Back 1/100'	Req. Back C.Y.
	15.44	90.V	13.93
	44.56	89.V	39.75
	40	55.4	IV.16
	40	50.0	20.00
	40	65.0	26.00
	40	63.7	25.48
			147.32

					INVERT.
38+00			5.4	149.2	143.43
37+60			5.3	149.3	142.71
37+20			5.0	149.6	141.99
36+80			6.4	148.2	141.27
36+40			7.6	147.0	140.55
36+00			4.2	150.4	139.83
35+60		154.56			

Cut	Av. Cut	Dist.	Ar. C.Y. /100'	Exc. C.Y.
5.77				
	6.18	40	58.6	23.44
6.59				
	7.10	40	67.2	26.88
7.61				
	7.27	40	68.7	27.48
6.93				
	6.69	40	63.2	25.28
6.45				
	8.51	40	80.2	32.08
10.57				
	10.28	40	97.0	38.80
9.99				173.96

Dist	Req. Back /100'	Req. Back @ Y.
40	53.6	21.44
40	63.0	25.20
40	64.6	25.84
40	59.2	23.68
40	76.2	30.48
40	93.0	37.20
		+163.84

						Cut	Ar. Cut	Dist	Av. C.Y. /100'	Exc. C.Y
40+40			6.7	154.0	149.58	4.42				
							5.01	40	47.6	19.04
40+00			6.6	154.1	148.50	5.60				
							5.54	40	52.4	20.96
39+60			7.8	152.9	147.42	5.48				
							5.07	40	48.0	19.20
39+20			9.7	151.0	146.34	4.66				
							4.60	40	43.8	17.52
T.P.	12.04	160.70	5.90	148.66		4.54				
							4.57	43.2	43.5	18.79
38+80			4.8	149.8	145.26	4.61				
							5.19	36.8	49.2	17.10
20' Rt. of M.H.			6.29	148.27						
20.1+38.19 Rt. Δ 110° 42' Rt.										
38+36.80	M.H.	78	5.9	148.7	144.09	5.77				
										112.61
38+00		154.56								

Dist	Req. Back 1/100'	Req. Back C.Y.
40	43.6	17.44
40	48.4	19.36
40	44.0	17.60
40	39.8	15.92
43.2	39.5	17.06
36.8	45.2	16.83
		104.21

42+80			12.5	160.9	156.06
T.P.	13.25	173.42	0.53	160.17	
42+40			0.6	160.1	154.98
42+00			1.6	159.1	153.90
41+60			3.1	157.6	152.82
41+20			4.0	156.7	151.74
40+80			4.8	155.9	150.66
40+40		160.70			

Cut	Ar. Cut	Dist	Ar. C.Y. /100'	Exc. C.Y.
4.84				
	4.98	40	47.2	16.88
5.12				
	5.16	40	49.0	19.60
5.20				
	4.99	40	47.4	18.96
4.78				
	4.87	40	45.4	18.16
4.96				
	5.10	40	48.4	19.36
5.24				
	4.83	40	46.0	18.40
4.42				111.36

Dist	Req. Back / 100'	Req. Back @ Y
40	43.3	17.32
40	45.0	18.00
40	43.5	17.40
40	41.4	16.64
40	44.4	17.76
40	41.8	16.72
		103.84

						Cut	Av. Cut	Dist	Av. C.Y. / 100'	Exc. C.y
T.P.	3.10	176.01	0.51	172.91						
						9.90				
45+20			L.8	171.6	161.70		8.70	40	82.0	34.80
						7.50				
44+80			5.0	168.4	160.90		6.55	40	62.0	24.80
						5.80				
44+40			7.5	165.9	160.10		5.25	40	50.0	20.00
S.S. 20 Rt.	End C.B. 231					4.70				
℄	Start C.B. 238		9.21	164.21			4.84	40	46.0	18.40
	Δ 4°-04' Lt					4.98				
44+00	M.H. #79		9.4	164.0	159.30		4.72	40	45.0	18.20
						4.46				
43+60			10.2	163.2	158.22		4.65	40	44.2	17.68
						4.84				131.88
43+20			11.8	161.6	157.14					
42+80										
		173.42								

Dist	Rag. Back /100'	Rag. Back @ .4
40	78.0	31.20
40	57.8	23.12
40	46.0	18.40
40	42.0	16.80
40	41.0	16.40
40	40.4	16.16
		122.08

47+60			3.9	172.1	166.50
47+20			5.8	170.2	165.70
46+80			4.6	171.4	164.90
46+40			5.4	170.6	164.10
46+00			3.5	172.5	163.30
45+60			2.4	173.6	162.50
		176.01			
45+30					

Cut	Ar. Cut	Dist	Av. C.Y. /100'	Exc. C.Y.
5.60				
	5.05	40	48.0	19.20
4.50				
	5.50	40	52.2	20.88
6.50				
	6.50	40	62.0	24.80
6.50				
	7.85	40	74.2	30.88
9.20				
	9.65	40	91.0	36.40
11.10				
	10.50	40	98.8	39.52
9.90				171.68

Dist	Req. Back 1100'	Req. Back C.Y.
40	44.0	17.60
40	48.2	19.28
40	61.8	24.72
40	74.0	29.60
40	87.0	34.80
40	94.6	37.84
		163.84

						Cut	Ar. Cut	Dist	Ar. C.Y. /100'	Exc. C.Y.	
21+20			7.2	178.4	171.91	6.49					
							6.35	40	60.0	24.0	
20+80			8.5	177.1	170.90	6.70					
20+40			9.5	176.1	169.88	6.22					
							6.28	40	59.5	23.80	
= 20+00	Δ 19°-56' Lt.				168.86						
48+77.57	M.H. # 80		10.4	175.2	168.85	6.34					
							6.32	37.57	59.8	23.92	
T.P.	10.15	185.61	0.55	175.46							
48+40			1.6	174.4	168.10	6.30					
							6.25	40	59.5	23.80	95.52
48+00			2.5	173.5	167.30	6.20	End of Period 3/31/48				
							5.90	40	56.0	20.40	
47+60						5.60					
		176.01								20.40	

Dist	Req. Back 1100'	Req. Back C.Y.
40	51.00	22.40
40	55.5	22.20
37.57	51.00	21.04
40	59.1	23.76 8940
End of Period 3/31/48.		
40	52.0	20.80
		20.80

						Cut	Av. Cut	Dist	C.Y. /100'	Exc C.Y
23+60			2.2	183.3	178.01	5.29				
							5.5	40	57.2	20.88
23+20			2.9	182.7	177.00	5.70				
							5.51	40	57.3	20.97
22+80			4.3	181.3	175.98	5.32				
							5.58	40	53.0	21.20
22+40			4.8	180.8	174.96	5.84				
							16.35	40	60.0	24.00
22+00			4.8	180.8	173.95	6.85				
							6.76	40	64.0	25.60
21+60			6.0	179.6	172.93	6.67				
							6.58	40	62.2	24.88
21+20						6.49				137.48
		185.61								

Dist.	Req. Back. /100'	Req. Back. C.Y.
40	48.2	19.28
40	48.3	19.32
40	48.0	19.20
40	56.0	22.40
40	60.0	24.00
40	58.2	23.28
		127.48

						Cut	Av. Cut	Dist	Av. C.Y /100'	Exc C.Y
26+00			6.3	190.1	184.02	6.08				
							6.18	40	58.5	23.40
25+60			7.1	189.3	183.02	6.28				
T.P.	8.82	196.41	2.21	187.59						
							5.88	40	55.8	22.32
25+20			2.3	187.5	182.02	5.48				
							6.13	40	58.0	23.20
24+80			2.0	187.8	181.02	6.78				
							6.28	40	59.4	23.76
24+40			3.0	186.8	180.02	5.78				
Sta. 20.24 Rt. of ℄			5.77	184.03			5.98	44.04	56.8	25.00
23+95.96	Δ 17°35' Lt M.H. #81		4.7	185.1	178.92	6.18				
							5.73	35.96	54.3	19.53
23+60	6.23	189.80 / 185.61	2.04	183.57		5.29				
										137.21

Dist.	Req. Back. 1/100'	Req. Back. C.Y.
40	54.4	25.76
40	51.6	20.64
40	54.0	21.60
40	55.4	22.16
44.04	53.0	23.34
35.96	50.4	18.12
		131.72

						Cut	Av. Cut	Dist.	Av. C.Y. / 100.	Exc. C.Y.
28+40			7.4	196.8	190.02	6.78				
T.P.	856	204.20	0.77	195.64						
							6.58	40	62.7	24.88
28+00			1.0	195.4	189.02	6.38				
							6.13	40	58.0	23.20
27+60			2.5	193.9	188.02	5.88				
							6.38	40	59.4	23.76
27+20			2.7	193.7	187.02	6.68				
							5.93	40	56.3	21.92
26+80			5.2	191.2	186.02	5.18				
							5.63	40	53.3	21.32
26+40			5.3	191.1	185.02	6.08				
							6.08	40	57.6	22.98
26+00						6.08				
		196.41								138.06

Dist.	Req. Back. /100'	Req. Back. C.Y
40	58.1	23.24
40	54.0	21.60
40	55.3	22.12
40	52.3	20.92
40	49.3	19.72
40	53.5	21.40
		+129.00

30+80			5.2	202.3	196.25
30+40			5.9	201.6	195.17
30+00			7.0	200.5	194.09
T.P. 1&1 H+6					
208 Lt of	7.20	207.49	3.91	200.29	
	Δ 33°-00' Rt.				
29+63.96	M.H. ± 82		4.9	199.3	193.12
29+20			6.5	197.7	192.02
28+80			6.8	197.4	
					191.02
28+40		204.20			

Cut	Ar. Cut	Dist	Ar. C.Y / 100'	Exc. C.Y
6.05				
	6.24	40	59.0	23.60
6.43				
	6.42	40	61.0	24.40
6.41				
	6.30	36.04	59.6	21.48
6.18				
	5.94	43.96	56.4	24.79
5.68				
	6.03	40	57.0	22.80
6.38				
	6.58	40	62.2	24.88
6.78				
				+41.95

Dist	Req. Pack /100'	Req. Pack C.Y
40	55.0	22.00
40	57.0	22.80
36.04	55.5	20.00
43.96	52.2	22.95
40	53.0	21.20
40	58.0	23.20
		132.15

33+20			5.8	208.5	202.73
32+80			7.4	206.9	201.65
32+40			8.4	205.9	200.57
T.P.	8.52	214.25	1.76	205.73	
32+00			2.9	204.6	199.49
31+60			3.2	204.3	198.41
31+20			4.0	203.5	197.33
30+80		207.49			

Cut	Av. Cut	Dist.	Av. C.Y / 100'	Exc. C.Y.
5.77				
	5.51	40	52.3	20.92
5.25				
	5.29	40	50.0	20.00
5.33				
	5.22	40	49.5	19.80
5.11				
	5.60	40	57.0	20.80
5.89				
	6.03	40	57.0	22.80
6.17				
	6.11	40	58.0	23.20
6.05				127.52

Dist	Req. Back / 100'	Req. Back C.Y.
40	48.2	19.28
40	46.2	18.48
40	45.5	18.20
40	48.0	19.20
40	53.0	21.20
40	54.0	21.60
		117.96

						Cut	Av. Cut	Dist	Av. C.Y. 1.00'	Exc. C.Y.
35+60			8.2	215.6	208.89	6.71				
							6.76	40	63.5	25.40
35+20			7.1	214.7	207.89	6.81				
T.P.	10.65	223.72	6.18	213.07						
							6.51	40	61.5	24.60
34+80			1.2	213.1	206.89	6.21				
							5.31	40	50.4	20.16
34+40			4.0	210.3	205.89	4.41				
							4.21	40	40.0	16.00
34+00	R.O.T. M.H. # 83		5.4	208.9	204.89	4.01				
							4.80	40	45.6	18.24
33+60			4.9	209.4	203.81	5.59				
							5.88	40	55.8	22.32
33+40						5.77				
		214.25								126.82

Dist	Req. Back 1/100'	Req. Back C.Y
40	59.5	23.80
40	57.4	22.96
40	46.5	18.60
40	36.0	14.40
40	41.6	16.64
40	51.8	20.72
		117.02

						Cut	Av.Cut.	Dist	Av.C.Y. /100'	Exc. C.Y.
1x1 x 10 20' R + MH 84 ↓	SS		1.83	225.38						
38+00	△ 41°-16' Lt M.H. #84		5.4	221.9	214.89	7.01'				
T.P.	6.27	227.21	2.78	220.94						
							6.86	40	64.6	25.84
37+60			3.2	220.6	213.89	6.71				
							6.76	40	64.0	25.60
37+20			4.1	219.7	212.89	6.81				
							6.91	40	65.2	26.08
36+80			4.9	218.9	211.89	7.01				
							6.96	40	65.6	26.24
36+40			6.0	217.8	210.89	6.91				
							6.86	40	64.6	25.84
36+00			7.1	216.7	209.89	6.81'				
							6.76	40	64.0	25.60
35+60						6.71				
		223.72								155.20

Dist	Req. Back. /100'	Req. Back C.Y.
40	60.5	24.20
40	60.0	24.00
40	61.2	24.48
40	61.5	24.60
40	60.5	24.20
40	60.0	24.00
		145.48

						Cut	Av. Cut	Dist.	Av. C.Y. / 100'	Exc. C.Y.
40+40			4.4	226.8	221.13	5.67				
							5.54	40	57.2	22.88
40+00			5.7	225.5	220.09	5.41				
T.P.	6.90	231.17	2.94	224.27						
							5.43	40	56.3	22.52
39+60			2.8	224.5	219.05	5.45				
							4.67	40	49.0	19.60
39+20			5.4	224.9	218.01	3.89				
							4.46	40	47.2	18.88
38+80			5.3	222.0	216.97	5.03				
							5.80	40	59.8	23.92
38+40			4.8	222.5	215.93	6.57		38+46 Conc. Encasement Starts		
							6.79	40	64.0	25.60
38+00		227.21				7.01				
										133.40

Dist	Req. Back. /100'	Req. Back. C.Y.
40	38.0	15.20
40	37.3	14.92
40	30.0	12.00
40	28.0	11.20
40	40.4	16.16
	Edge Excav. Starts	
40	60.0	24.00
		93.48

X. on M.H.	Rim.				
F.B.			3.70	231.68	
	X on M.H. Rim over		out let	231.71	
				-0.03	
Invert of					
Exist M.H.					227.61
	End. of	job.			
41+86 Co	Connect to				
	Exist. 10" Sewer		3.9	231.15	224.94
41+60			4.8	230.6	224.25
T.P.	5.67	235.38	1.46	229.71	
41+20			2.0	229.2	223.21
40+80			4.9	226.3	222.17
40+40					
		231.17			

						59
	Back fill			Req. Back	Req. Back	
41+86			Dist	Fill C.Y.	Fill C.Y.	
			26.6	57.0	15.16	
41+60			40.	54.4	21.76	
41+20			40	44.0	17.60	
40+80			40.	32.8	13.12	67.64
				End. of Con. Encase.		
40+40						
Cut	Av. Cut		Dist.	Av. C.Y. /100'	Exc. C.Y.	
6.56						
	6.45		26.6	61.0	16.73	
6.35						
	6.17		40	58.4	23.36	
5.99						
	5.06		40	48.0	19.20	
4.13						
	4.90		40	52.6	35.04	
				End. of Conc. Ecasement		
5.67				40+60		
					83.83	

X. Sec. M.V. Sewer.

0+95 to M.H# 70										
2+25					4.3 / 60 T.B.	6.2 / 40	7.2 / 30	7.6	8.2 / 25	
2+00					4.5 / 67 T.B.	6.0 / 58	6.3 / 11	7.18 / 8	7.8	8.4 / 25
1+75					5.2 / 60 T.B.	6.3 / 50	7.1 / 12	7.9 / 8	7.7	8.8 / 25
1+50						5.6 / 50 T.B.	8.7 / 12	8.4	8.9 / 25	
1+20	90° to Fwd. Tang					6.2 / 28 T.B.	7.9 / 22	8.8	9.1 / 20	
	T.B. = ~~End~~ Edge of burm									
0+95	on burm of Camino del Rio					6.2 / 25		7.1	7.2 / 25	
0+00 M.H #68	(℄ = Sewer Line)									
B.M. chisel □ Headwall	7.88	81.16	—	73.28	FB 1809 P. 75					

81.16

5+00				
4+50				
4+00				
T.R	7.13	87.27	1.02	80.14
3+50				
3+00				
2+50				
		81.16		

6.4 / 17 T.B.	7.9 / 8	9.2 / 5	9.2	9.0 / 25
	7.1 / 24 T.B	9.2 / 15	9.5	9.4 / 25
7.8 / 32 T.B.	9.9 / 26	10.3 / 15	10.2	9.6 / 25
			87.27	
	2.3 / 38 T.B	4.8 / 30	5.1	5.1 / 25
3.2 / 50 T.B	4.7 / 44	5.8 / 30	5.9	6.1 / 25
	3.6 / 60 T.B.	6.6 / 50	7.1	7.1 / 25
			81.16	

20'24. M.H #70
Page 5 2,50 84.77 84.80

6+38.54 M.H. #70 (Page 5)

6+00

5+50

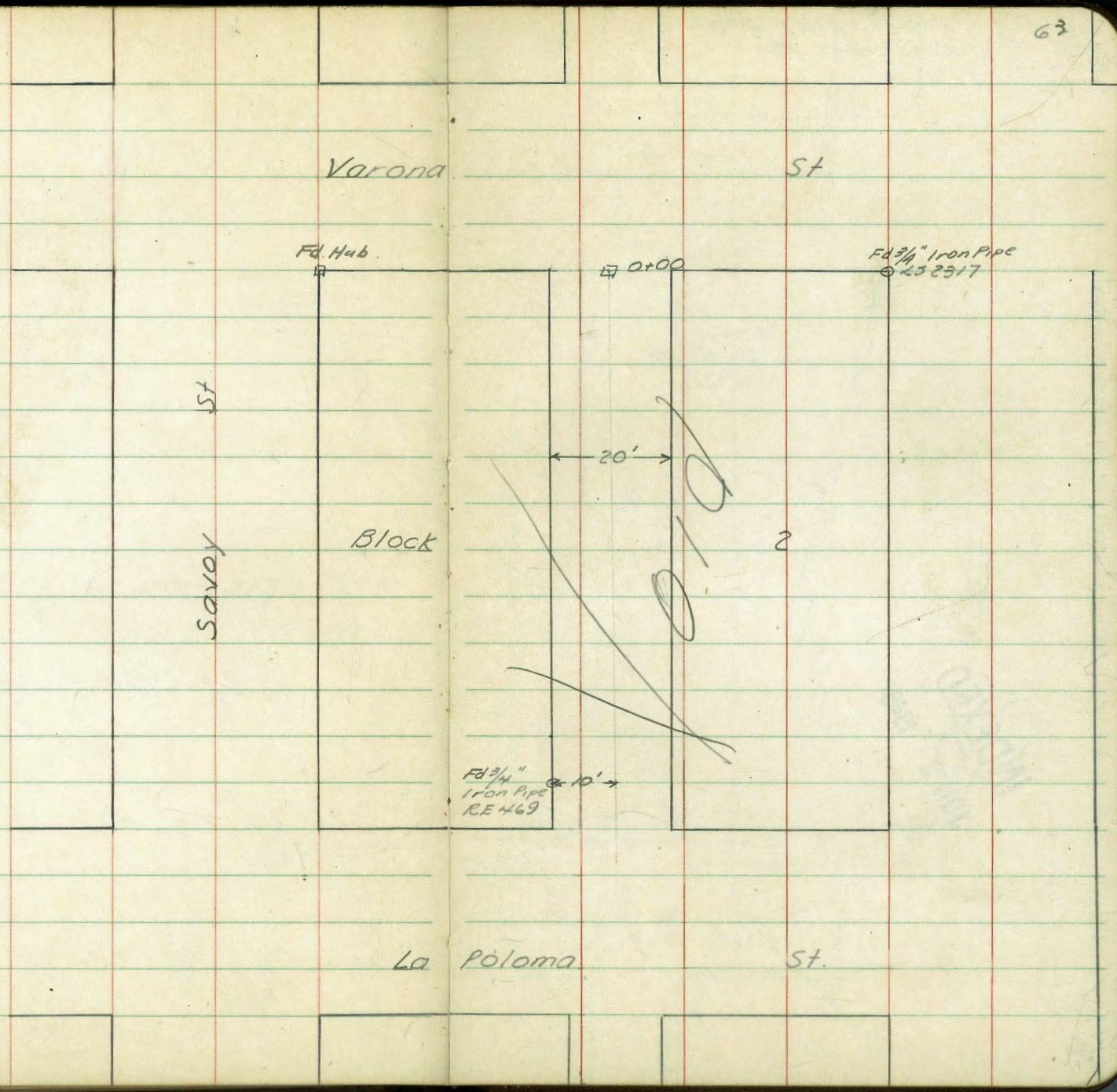
87.27

3,0/5 3,2 3,4/6 T.B 10,3/25

3,8/9 T.B 4,8/7 4,7 5,7/12 9,1/20 9,5/25

5,3/11 T.B. 7,6/7 7,5 7,7/17 10,0/30 10,2/35

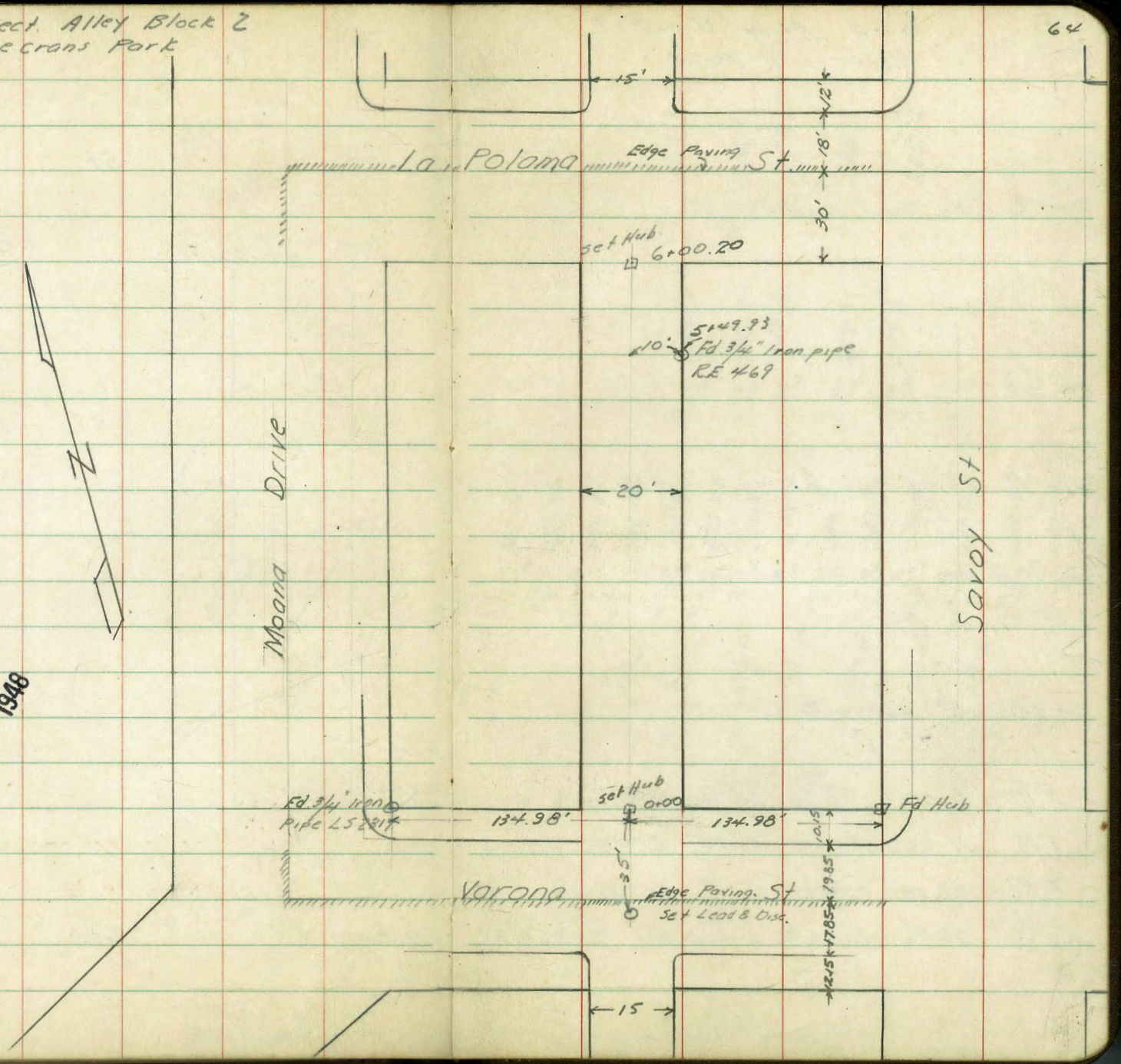
87,27


Varona St
Fd. Hub
0+00
Fd 3/4" Iron Pipe
23 2317
St
Savoy
20'
Block
2
Fd 3/4"
Iron Pipe
RE 469
10'
La Póloma St.

6-2-48
Hendricks
Becker
Oatley

X Sect. Alley Block 2
Rosecrans Park

64



INDEXED
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Levels Alley Block 2
Rosecrans Park

0+00	No. Line Varona St.				
0-02					
0-7.7	Power Pole 8.4 Lt. ℄ #4250				
0-10.15	No. Cb Line Varona St.				
0-30	℄ Varona St.				
TP	8.00	293.36	1.06	285.36	
TP	11.60	286.42	0.15	274.82	
TP	12.78	274.97	0.49	262.19	
BM	11.86	262.68			250.82

℄

286.0	286.1	285.4	285.4	285.0
7.4	7.3	8.0	8.0	8.4
20	10		10	20

285.9	285.9	285.2	284.9	284.5
7.5	7.5	8.2	8.5	8.9
20	10		10	20

287.58	287.46	286.81	286.16	285.16	285.0	284.9	284.6	284.2	283.9	284.19	281.66	282.43	280.06	280.32
5.78	5.9	6.55	7.2	8.20	8.4	8.5	8.8	9.2	9.5	9.17	11.7	10.93	13.3	13.04
100 Cb	100 G.	50 Cb	50 G.	13.5 Cb	13.5 G	10		10	12.5 G	12.5 Cb.	50 G	50 Cb	100 G	100 Cb.

287.65	286.81	285.15	284.80	284.28	282.61	280.36
5.71	6.55	8.21	8.56	9.08	10.75	13.00
100	50	10		10	50	100

293.36
On Hub ℄ Alley 0+00

S.W. B.P. Catalina & Verona FB 1671-68

℄

Station									
1+00	286.0	285.8	285.5	284.7	284.3				
	7.4	7.6	7.9	8.7	9.1				
	20	10		10	20				
0+80	287.4	287.1	287.1	286.4	286.3	286.1	285.6		
	6.0	6.3	6.3	7.0	7.1	7.3	7.8		
	20	10	8	6		10	20		
0+50	289.4	288.8	288.0	287.9	287.8	288.2	288.8		
	4.0	4.6	5.4	5.5	5.6	5.2	5.5		
	20	10	7		10	12	20		
0+20	290.3	288.8	287.9	287.7	288.1	287.8			
	3.1	4.6	5.5	5.7	5.3	5.6			
	20	10		7	10	20			
0+04	289.8	289.3	287.2	286.3	285.9	286.2	288.5	288.4	287.9
	3.6	4.1	6.2	7.1	7.5	7.2	4.9	5.0	5.5
	20	16	10	6		6.5	8	10	20

293.36

π

					℄
2+56	℄ Single Garage 28' Rt				4.11 / 28 Floor — 278.89
2+50					2.4 / 20 — 281.6; 3.1 / 10 — 279.9; 3.4 — 279.6; 4.0 / 10 — 279.0; 4.2 / 20 — 278.8
2+31	℄ Double Garage 20' Rt.				2.87 / 20 Floor — 280.13
T.P.	2.32	283.00	12.68	280.68	283.00
2+00					11.5 / 20 — 281.8; 12.1 / 10 — 281.3; 11.8 — 281.6; 12.9 / 10 — 280.5; 13.0 / 20 — 280.4
1+99	Power Pole 6.6 Lt. ℄ # A 1137				
1+50					9.4 / 20 — 284.0; 9.9 / 10 — 283.5; 10.1 — 283.3; 10.7 / 10 — 282.7; 11.1 / 20 — 282.3
		293.36			293.36

Station	Description	20	10	℄	10	20
3+50		277.3 5^{7}	277.0 6^{0}	277.0 6^{0}	276.5 6^{5}	276.4 6^{6}
3+49.5	Power Pole 9' Lt ℄ # PA 1159					
3+22.5	Dead Man to Pole 9' Lt ℄					
3+19.7	℄ Sewer M.H. 0.5 Lt.			277.41 5^{59} Rim		
3+00		278.9 4^{1}	278.7 4^{3}	278.3 4^{7}	277.8 5^{2}	277.4 5^{6}
2+74.8	End Conc Drive 10.5 Lt. ℄		279.06 3^{94} (10.5)			
2+63	Beg. Conc. Drive 10.5 Lt ℄	279.36 3^{64} (21)	279.21 3^{79} (10.5)			
	283.00			283.00		

5+34.9	℄ Double Garage 57.3 Rt ℄
5+00	
4+64	Power pole 10.2 Lt. ℄ # 447 099 H
4+60.5	℄ Garage
4+50	
4+00	
3+58	℄ Single Garage 22.3 Rt.
	283.00

℄ 279.35

274.1 273.6 273.5 3.65 273.1 272.8
57.3 Floor
8.9 9.4 9.5 9.9 10.2
20 10 10 20

272.91 273.00
10.09 10.00
45.7 48.7
Apron Floor

275.1 274.9 274.5 274.3 273.9
7.9 8.1 8.5 8.7 9.1
20 10 10 20

276.4 275.8 276.2 275.7 275.5 275.4
6.6 7.2 6.8 7.3 7.5 7.6
20 10 9 10 20

276.33 276.57
6.67 6.43
19.3 22.3
Apron Floor

283.00

6+10.20	So. Cb Line La Paloma (Cb in very poor condition)			
6+08	Power Pole H & LL & E # PA 1199			
6+00.20	So. Line La Paloma			
5+93				
5+76				
IP	1.80	274.57	10.23	27277
5+50				

283.00

269.16	268.7	267.50	267.2	267.3	266.8	266.1	266.35	264.2	264.29
5.41	5.9	7.07	7.4	7.3	7.8	8.5	8.22	10.4	10.28
50	50	11.5	11.5	10		10.4	10.4	50	50
Cb	G.	Cb	G			G	Cb	G.	Cb

268.5	268.4	268.16	267.7	267.4
6.1	6.2	6.41	6.9	7.2
20	10	Hub	10	20

272.0	271.6	270.2	270.2	269.7	270.2	271.1	270.8
2.6	3.0	4.4	4.4	4.9	4.4	3.5	3.8
20	16	10	4		10	15	20

273.6	273.6	272.8	272.2	272.0	272.1	272.2
1.0	1.6	1.8	2.4	2.6	2.5	2.4
20	10	4	2		10	20

274.57

on Pipe 10' Rt 5+49.97 (RE #69)

273.9	273.6	273.1	272.8	272.4
9.1	9.4	9.9	10.2	10.6
20	10		10	20

283.00

B.M			4.03	250.81 ~~250.79~~	250.82
T.P.	10.59	254.84 ~~254.86~~	1.67	244.25 ~~244.23~~	
T.P.	9.04	245.92 ~~245.90~~	12.46	236.88 ~~236.86~~	
T.P.	-0.04	249.34	12.94	249.38	
TP	0.89	262.32	13.14	261.43	

6 x 30.20 ℄ La Paloma. St.

274.57 ↗

J.W BP Catalina & Verona

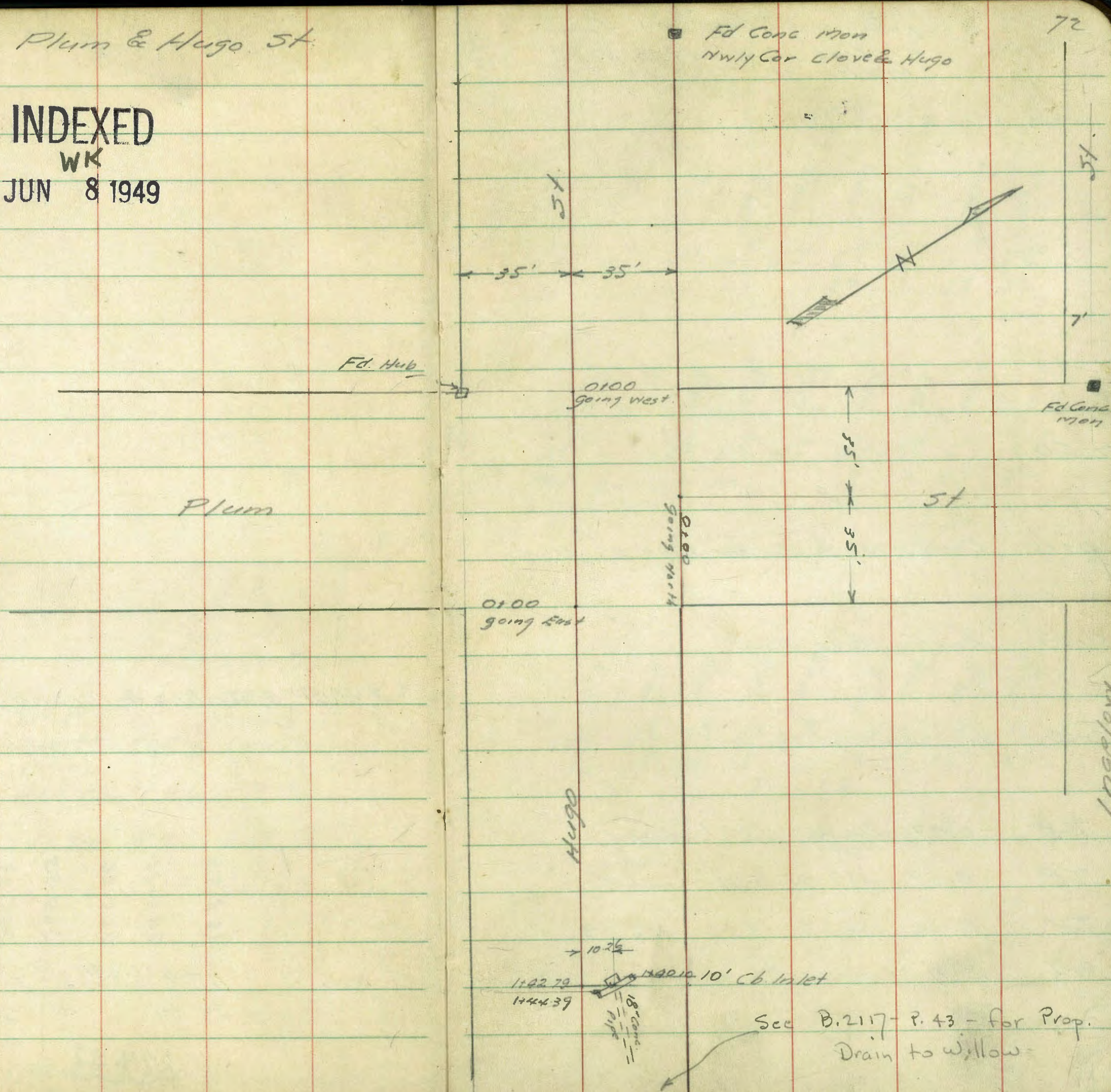
263.53
265.31
265.66
265.95
266.83

11.04 9.26 8.91 8.62 7.74
50 10 10 50

274.57

6-6-49 X Sect. Plum & Hugo St.

Hendricks
Roberts
Greer
Rorer
W.O.# 25001



148.61

X Section Plum St. from N/y Line Hugo to 150' N/y. towards Ingelow St.

New Drive - P. 78.

0+75				
0+50				
0+10	Dead Man to Anchor Pole 25' N.			
0+03	Anchor Pole 25' N.			
0+00	N/y. Line Hugo St.			
T.P.	-0.07	114.62	12.86	114.69
T.P.	0.59	127.55	5.71	126.96
T.P.	0.44	132.67	13.22	132.23
B.M.	12.71	145.42 ✓		132.71

(12)

110.8	110.5	110.3	109.7	109.4	108.6	108.7	108.3	107.6
3.8	4.1	4.3	4.9	5.4	6.0	5.9	6.3	7.0
50	35	25	17		27	28	35	50

111.9	111.7	110.8	109.1	108.9	108.2	108.7	108.4	107.9
2.7	2.9	3.8	5.5	5.7	6.4	5.9	6.2	6.7
44	35	22	15		18	19	35	50

111.6	111.3	110.8	108.5	108.3	107.6	108.0	107.8	107.5
3.0	3.3	3.8	6.1	6.2	7.0	6.5	6.8	7.1
50	35	25	15		18	19	35	50

114.62

Nail in Power Pole # 14X8 Plum & Hugo (6' High on Pole)

N.E.B.P. Clove & Fenelon

Station	Description					
4+04	Rim of Canyon	111.0 / 3^{6} / 50	110.3 / 4^{3} / 35	109.6 / 5^{0}	108.7 / 5^{9} / 35	107.4 / 7^{2} / 50
0+98	End Conc Ramp to Garage	110.52 / 4^{0} / 43.5 / Fl.	110.38 / 4^{24} / 41.5 / Ramp.			
0+81	Beg Conc Ramp to Garage	110.66 / 3^{96} / 43.5 / Fl.	110.57 / 4^{05} / 41.5 / Ramp			

114.62

114.62

X Sect. Hugo St ~ Plum towards Clove St.

0-09 Power Pole #1 14x48 35' Lt

0-11

0-23

0-27 Dead man to Pole 34' Lt

0-35 & Plum- & Sewer MH 1.1' Rt

0-70 E. Line Plum

114.62 (From P 74)

&

107.4	107.5	108.3	108.0	108.2	108.7	110.6
7.2	7.1	6.3	6.6	6.4	5.9	4.0
50	41	35	25		15	35

107.0	107.8	108.1	108.6
7.2	6.8	6.5	6.0
50	35		35

109.6	109.3	108.0	108.0	108.5
5.0	5.3	6.2	6.1	6.1
50	39	35		35

110.1	109.8	108.4	108.0	107.6	107.9	107.94	108.31
4.5	4.8	6.2	6.5	7.0	6.4	6.6.8	6.3
50	40	35	33	17		1.1 Lim.	35

109.8	109.1	107.0	106.5	106.7	106.4	106.8	107.8	107.9
4.8	5.5	7.2	8.1	7.7	8.3	7.8	6.8	6.2
50	35	17	15		19	21	35	50

114.62

X Sect. Hugo St. Cont'd

1+00		110.6	110.6	110.4	110.1	110.0	110.2	110.7	110.7	110.7
		4.0	4.0	4.2	4.5	4.5	4.4	3.9	3.8	3.9
		50	35	28	26	3		15	35	50
0+65		109.5	109.6	109.3	109.0	109.3	110.1	110.7	110.6
		5.1	5.0	5.3	5.6	5.3	4.5	3.9	4.0
		50	35	25	9		15	35	50
0+30		110.9	110.9	110.7	108.7	108.4	109.0	110.5	111.3	112.1
		3.2	3.2	3.9	2.1	6.2	5.6	4.1	3.3	2.5
		50	35	33	28	12		23	35	50
0+10	℄ 3.5' Conc. Walk 24.6' Rt.							110.99	111.45	
								3.63	3.17	
								24.6	35	
0+00	W Line Plum St.	111.7	111.4	108.2	108.5	109.0	110.9	111.3		
		2.8	3.2	6.4	6.1	5.6	4.2	3.3		
		50	35	25		11	27	35		

114.62

114.62

X Sect Hugo St. ℄ Line Plum to East.

0+47

105.9	105.7	104.6	103.8	103.2	103.6	103.4	108.1	108.9	108.5
8.2	8.9	10.0	10.8	11.4	11.0	11.3	6.5	5.7	6.1
50	35	27	18	15		15	35	43	50

0+25

107.2	107.1	105.6	105.4	105.0	105.4	104.8	106.1	109.8	109.6
7.4	7.5	9.0	9.3	9.6	9.2	9.8	8.5	4.8	5.0
50	35	25	17	15		14	22	35	50

0+23 End Conc. Drive on Rt. 20.5'

106.32	108.29	109.03
8.30	6.33	5.59
20.5	30.8	38.5

0+05 Beg. Conc. Drive on Rt. 20.5'

106.81	108.35	109.16
7.81	6.27	5.46
20.5	31	38.3

0+00 = 0-70 P-75

11+62 from P. 76

11+62

Hugo St. Cont'd.

1+27

Note: New Drive

1+04

I.P. 0.22 102.37 12.47 102.15

0+94 - 32.3 Rt. end Dr. 102.05 32.3 Cor. Dr.

0+91

Actual Elev. Shown

0+77 - 32.5 Rt = Beg. Conc. Dr. 102.66 32.5 Rt = Cor. Dr. 102.95 50.7 = floor Gar.

0+68

0+50

114.62

98.9 98.2 97.6 97.4 97.4 98.0 96.4 94.8

2.5 4.2 4.8 5.0 5.0 4.4 6.0 7.6

50 35 27 18 25 35 50

101.3 100.6 98.9 98.7 99.0 98.8 99.6 99.6 98.0

1.6 1.8 3.5 3.7 3.4 3.6 2.8 2.8 4.4

50 35 24 19 17 24 35 50

102.37

102.0 101.8 99.4 99.8 99.7 104.8 105.2

12.6 12.8 15.2 14.8 14.9 9.8 9.4

50 35 16 16 35 50

104.0 103.9 103.2 102.0 101.6 101.8 101.6 103.8 104.2 104.5

10.6 10.7 11.4 12.6 13.0 12.8 13.0 10.8 10.4 10.6

50 35 31 17 15 12 28 35 50

105.5 105.3 104.2 103.5 102.9 103.4 103.0 105.0 105.0

9.6 9.8 10.4 11.6 11.7 11.2 11.6 9.6 9.6

50 35 27 18 15 13 35 50

114.62

BM			3.49	51.46	51.43
I.P.	4.43	54.95	9.42	50.52	
TP	0.29	59.94	12.39	59.65	
TP	0.36	72.04	13.15	71.68	
TP	0.19	84.83	13.20	84.64	
1+67	End 18" Conc Pipe			135 Lt.	
TP	1.50	97.84	6.03	96.34	
1+44.39	End 10' Cb Inlet			55' Lt	
1+42.39	Ctr 10' Cb Inlet			10.26' Lt	
1+40.14	Beg 10' Cb Inlet			14.5' Lt	
1+39					

102.37

SW BP Garrison & Willow

83.0 86.2 85.9 84.2 86.7 87.5 89.4 89.5

14.8 11.6 11.3 13.59 11.1 10.3 8.4 8.3

29 20 15 13.5 11 25 50

EL

Key Cor. Top Cb Inlet

97.84

96.20 95.16

6.17 7.21

5.5 5.5

Cb. Gut

90.4 92.4 94.2 92.40 96.26 95.28 95.4 97.0 98.3 97.9 95.0 94.4 92.6

12.10 8.22 9.97 6.11 7.09 7.0 5.4 4.4 4.5 7.4 8.0 9.8

50 35 22 10.26 10.26 10.2 5 3 9 20 35 50

EL Cb Grate

96.34 95.37

6.03 7.00

14.5 14.5

Cb. Gut

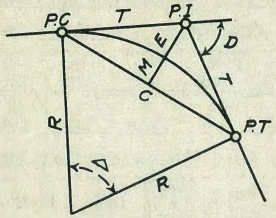
93.3 93.8 94.8 97.0 95.5 95.9 97.4 98.5 96.1 94.9 93.2

9.1 8.6 7.6 5.4 6.9 6.5 5.0 3.9 6.3 7.5 9.2

50 35 27 18 14 3 17 26 35 50

102.37

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 ÷ 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 ÷ (2 x 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 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.