1839

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.

1839

CITY ENGINEER'S OFFICE

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.

Align & Ties on Sewer

TRUNK Sewer #2
Linda Vista Conn.
to Balboa Ave

W.O. ~~60057~~
60208

ALIGN. and Ties

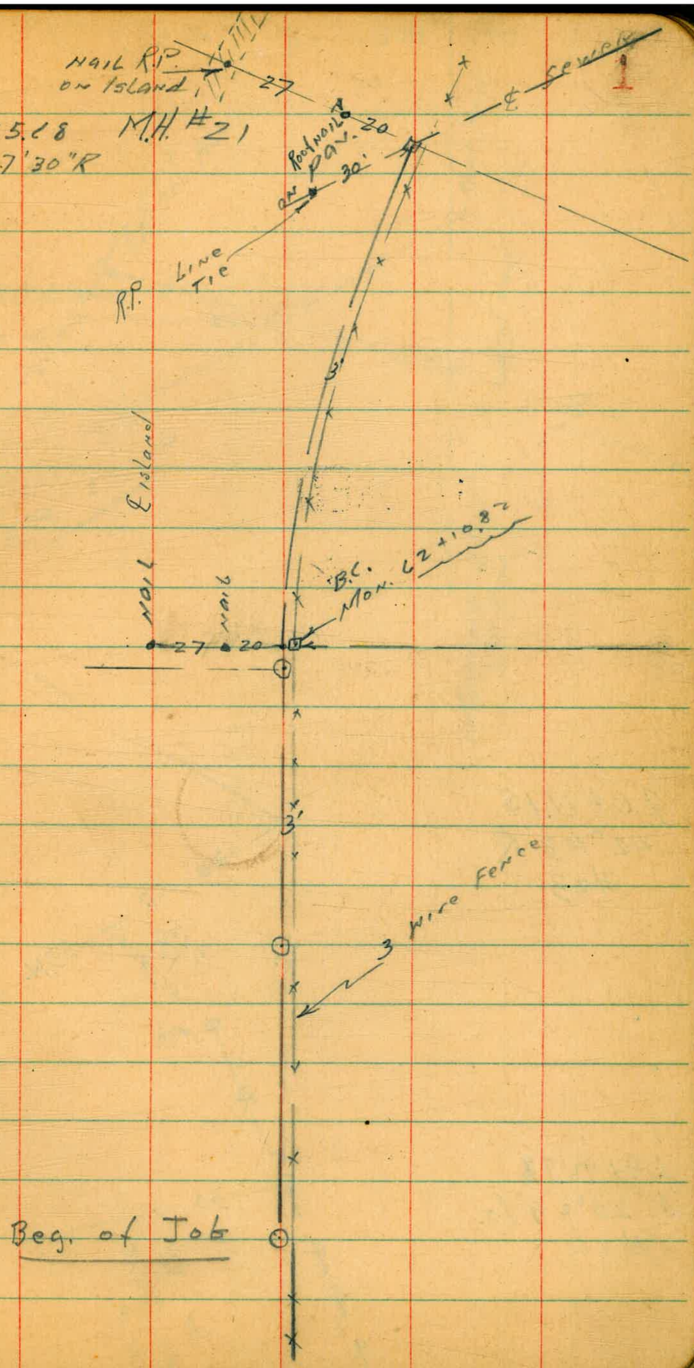
INDEXED
WK
NOV 17 1948

62+00 #20

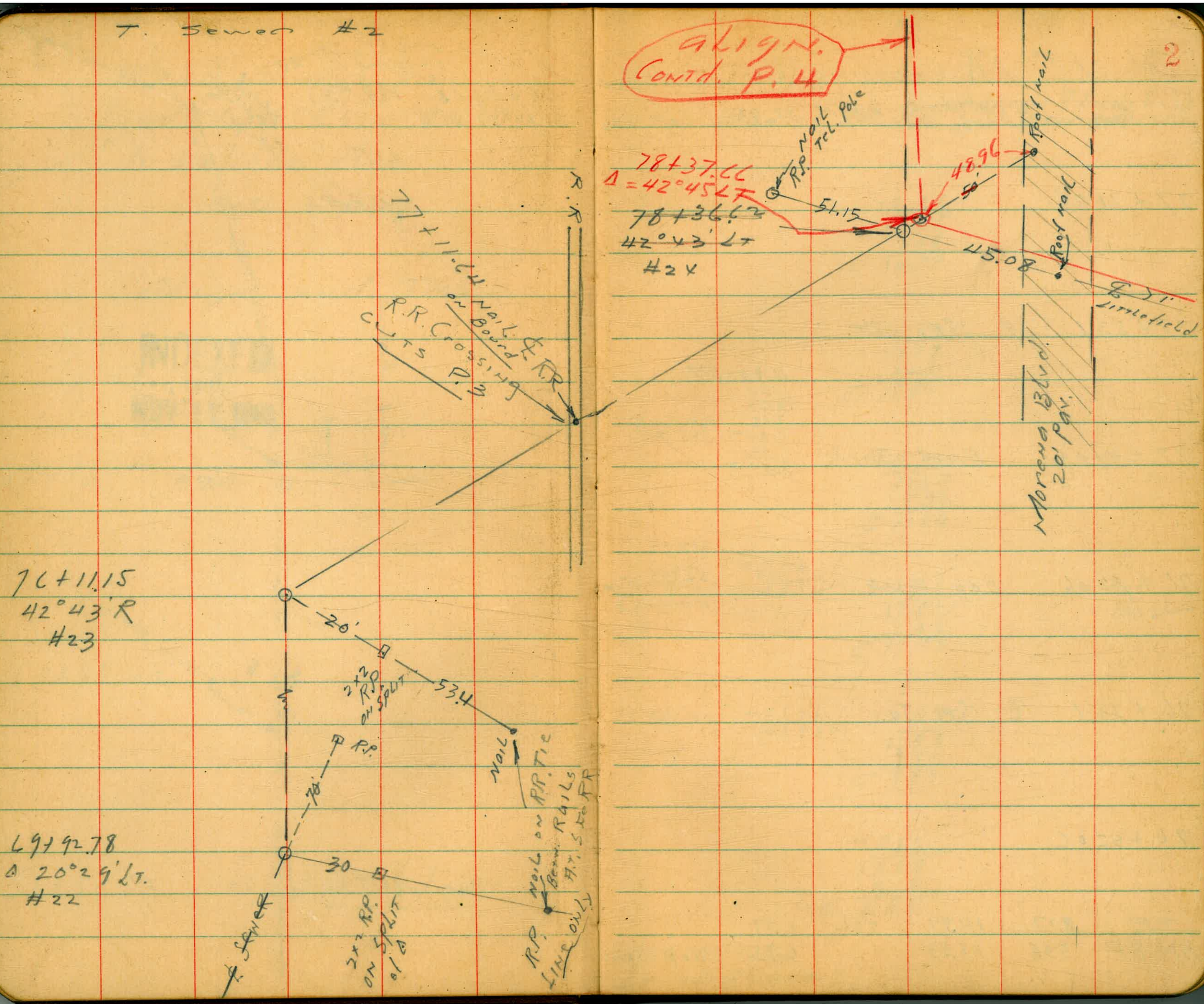
57+85.42 #19

53+56.52 M.H. #18 as built.

66+55.68 M.H. #21
Δ 34°47'30"R



T. Sewer #2


Align. Contd. P. 4
78+37.66
Δ=42°45 LT
~~78+36.62~~
~~42°43' Lt~~
#24
R.P. Nail Tel. Pole
51.15
48.96
50'
Roof nail
Roof nail
45.08
℄ > 1'
Littlefield
Morena Blvd. 20' Pav't.
R.R.
77+11.64 Nail ℄ R.R. on Board
R.R. Crossing cuts P. 3
76+11.15
42°43' R
#23
20'
2×2 R.P. on split
53.4
Nail
R.P. Tie
R.P.
70'
69+92.78
Δ 20°29' Lt.
#22
30
℄ Sewer
2×2 R.P. on split of ℄
Nail on Beam Rails At 5 Str R.R.
R.P. Line only

Jack Job

1st R.R. Crossing (Littlefield)

F.L.

Set Constr. B.M. Chisel Square 3.01 11.93 Top Slx Cor. Con. Base of RR. Sig. approx. ℄ Littlefield at S. Fé R.R.

77+71.0C

-2.51
17.45
2.68
C 14.77

77+53.1 ℄ Sp. Jt.

-2.53
17.47
4.63
C 12.84

11.93 = BM.
1.67
13.60
7.10
6.50 ← T.P. spike Tel. Pole
1.80
8.30

77+41.0C End Jack

-2.54
17.48
5.90
C 11.58

Jack stake set 4-26-48 →

76+82.0C Beg. Jack

76+78.44 -2.58 10.88

-2.58
17.52
6.05
C 11.47

1618
471
C 11.47

76+73.1 ℄ Sp. Jt.

76+61.44 -2.593 10.893

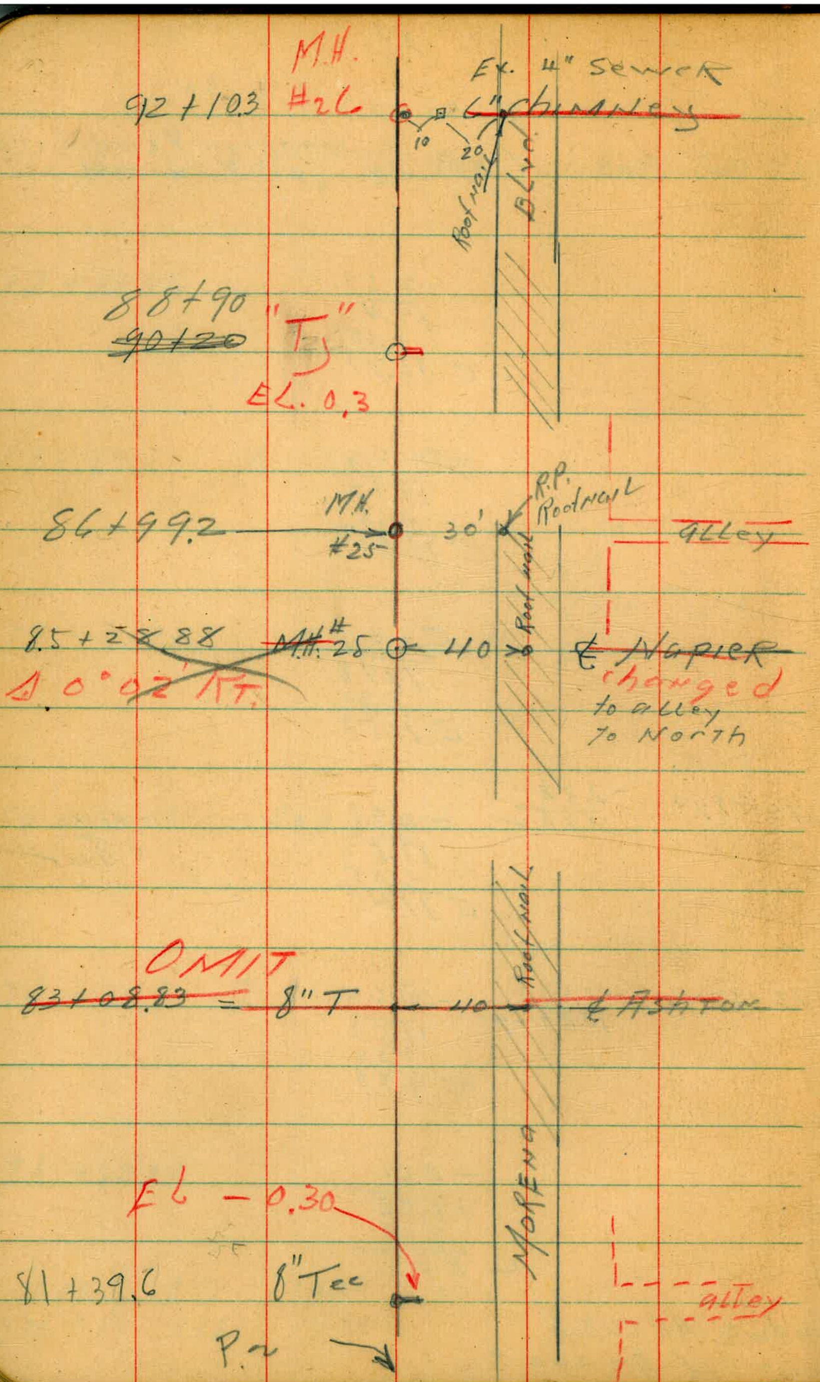
-2.59
17.53
7.54
C 9.99

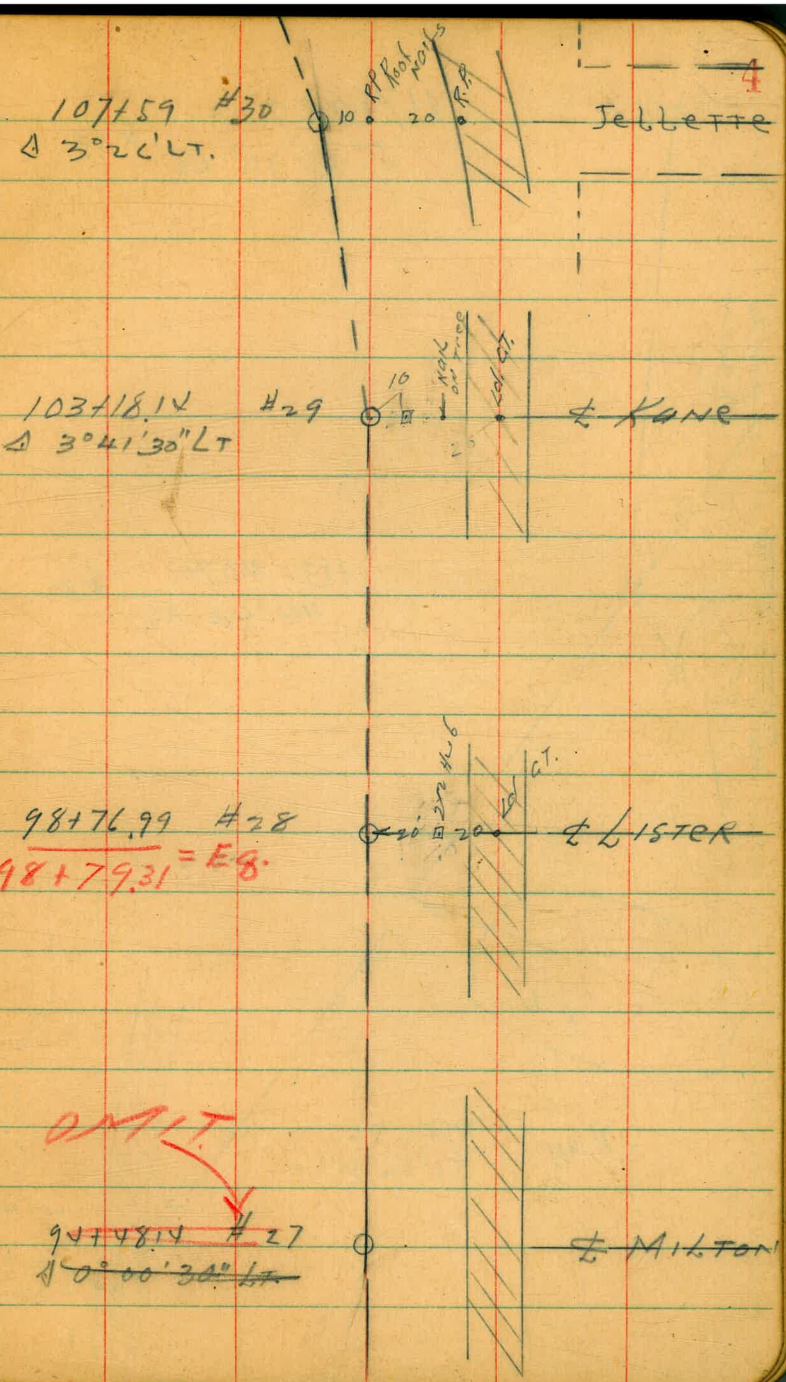
76+52.0C

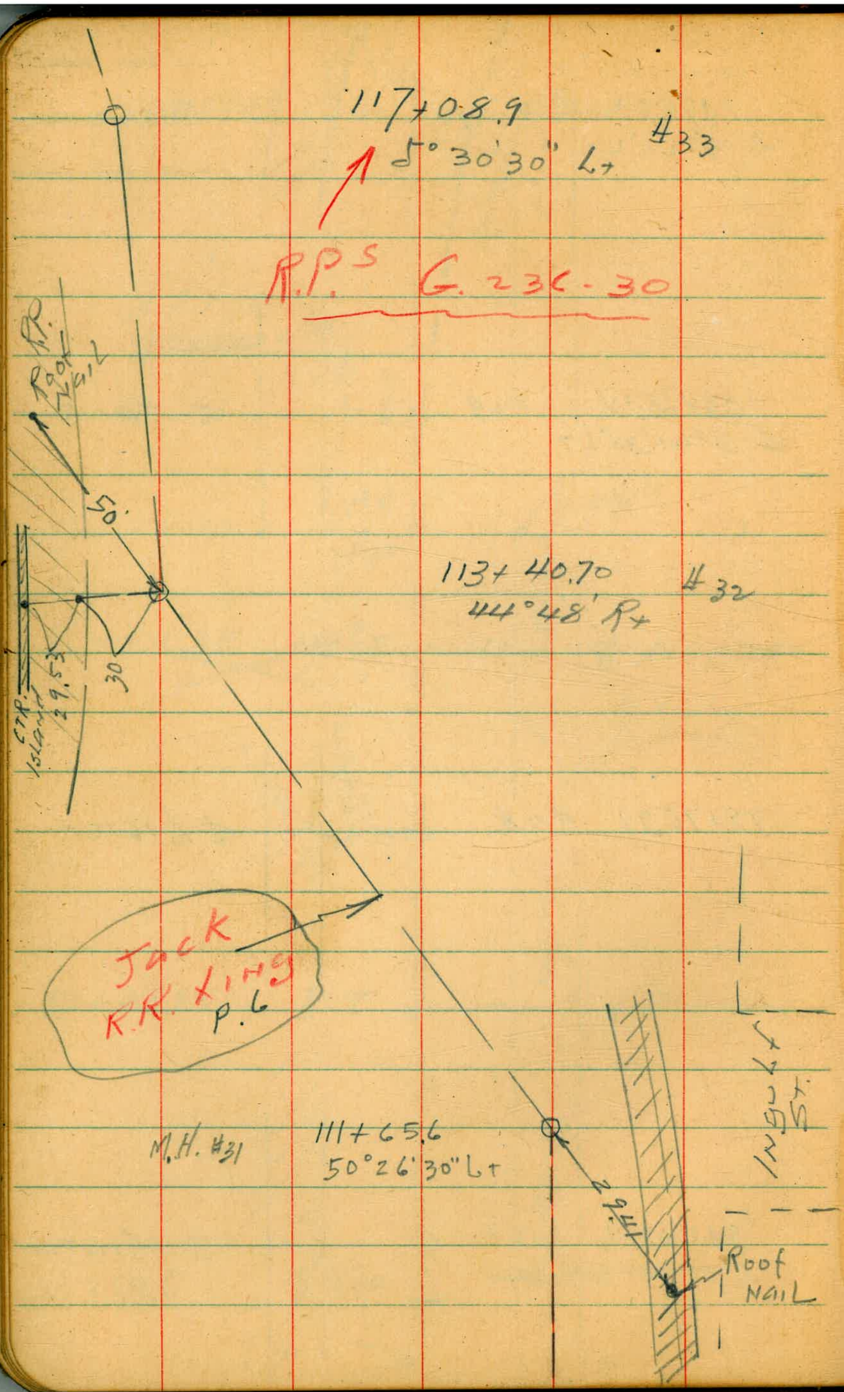
-2.61
17.55
9.19
C 8.36

T.P. 8.17 14.94 5.56 6.77

B.M. B.P. 5.58 12.33 6.75 Top West hdwl RR Culv. Lt. of 82+00 ±


M.H.
92+10.3 #26
Ex. 4" Sewer
~~6" chimney~~
10
20
Roof nail
Blvd.
88+90
~~90+20~~
"T"
EL. 0.3
86+99.2
M.H. #25
30'
R.P. Roof nail
Roof nail
~~alley~~
~~85+28.88~~
~~M.H. #25~~
~~Δ 0°02' RT.~~
110
℄ ~~Napier~~
changed to alley to North
OMIT
~~83+08.83~~ = ~~8" T~~
110
Roof nail
~~℄ Ashton~~
EL − 0.30
81+39.6
8" Tee
P.~
MORENO
alley


107+59 #30
Δ 3°26' LT.
10
20
RP Roof nails
R.P.
~~Jellette~~
103+18.14 #29
Δ 3°41'30" LT
10
20
Nail on tree
Lot Ct.
~~℄ Kane~~
98+76.99 #28
98+79.31 = Eq.
20
2 nails #6
20
Lot Ct.
~~℄ Lister~~
OMIT
~~94+48.14 #27~~
~~Δ 0°00'30" Lt.~~
~~℄ Milton~~



117+08.9 #33
5°30'30" Lt

R.P.S G. 236-30

113+40.70 #32
44°48' Rt

Jack
R.R. Xing
p. 6

M.H. #31
111+65.6
50°26'30" Lt

M.H.
113+40.7 = #32

Jellett
Jack
Job

113+20

113+00

112+63.6 ℄ Spec. Joint

112+58 End Jack

112+23.6 = Ctr. Betw. Spec. Jts.
112+22 = " " ends of Jacks

111+86 Beg. Jack

111+83.6 ℄ Spec. Joint

111+65.6 Δ 50°26'30" Lt. M.H. #31

T.P.	4.16	18.45	3.14	14.29
B.M. Mon. Jellett Morena	6.02	17.43		11.41

F.L.
+ 0.35

18.10
11.18
C 6.92

0.33

18.12
8.62
C 9.50

0.31
18.14
8.20
C 9.94

0.28
18.17
7.57
C 10.60

B.M.
14.32
0.50
T.P. Cut Stub 14.82
2.48
12.34
0.24
12.58 ⊼
0.28
12.30 ✓

18.45 = ⊼
4.13
14.32

Fd. Set B.M.
B.P. Ctr. Top
of West bd.wl. ℄
of R.R. Culv. ℄ 262
N. of Jellett

0.28
18.17
6.11
C 12.06

0.22
18.23
10.14
C 8.09

0.22
18.23
10.60
C 7.63

+ 0.21
18.24
3.74
C 14.50

2.00 = 12" Stub
16.45
3.74
C 12.71

~~Sewer Cuts~~

~~Beg. S. end of Job~~

+50

+25

Void

~~Beg. P. 16~~

54

+75

53+56.52 M.H. #18 as built Beg. Job — -4.44

BM BP 4.85
Top E. hdwl. culv.
12' Lt. of 53+39

F.L.

Levels on Bottom of
3.5 Steel Casing at
1st Jacking Job, Littlefield St
at 5' intervals

+20			2.75	-3.21 ✓	
+15			2.71	-3.17 ✓	
+10			2.69	-3.15 ✓	
0+05			2.68	-3.14 ✓	
0+00 76+82.06	Beg. Jack		2.68	-3.14 ✓	
2"x2" T.P. Stake	2.12	(-0.46) ✓	11.14	-2.58 ✓	West End Grade Stake
B.M. Spike P.3.	2.06	8.56 ✓		6.50	

5-14-48 Moore Begg Green

77+41.06 +59	Ely end		3.38	-3.84 ✓	-2.54
+55			3.29	-3.75 ✓	
+50			3.18	-3.64 ✓	
+45			3.08	-3.54 ✓	
+40			3.00	-3.46 ✓	
+35			2.92	-3.38 ✓	
+30			2.85	-3.31 ✓	
0+25			2.80	-3.26 ✓	

(-0.46)

57+85.42 M.H. #19

+75

+50

+25 Void

57

+75

56+50

5 +50

+25

59

+75

Void

57 +50

+25

56 58

+25

61

+75

+50 Void

+25

60

59+75

+75	0° 51.0
+50	0° 31.1
+25	0° 11.3'
62+10.82 =	B.C. RT.
62+00	M.H. # 20
+75	
61+50	

Void

R = 2163
.7946' = 1'

+50	3° 10.0
+25	2° 50.2
64	2° 30.3
+75	2° 10.4
	Void
+50	1° 50.6
+25	1° 30.7
63	1° 10.9

+25	5°29.1
66	5°09.3
+75	4°49.3
+50	Void 4°29.5
+25	4°09.6
65	3°49.7
64+75	3°29.9

67

66+75 Void

5°53.5' doft.

66+55.7 E.C. M.H. #21

Δ=34°47'30" Rt.

Beg. Job S. end.
offsets 10' RT.

W.O. 60057

				℄ Elev. ground	F.L.	Cut.
+75			4.6	0.6	- 4.35 9.52 7.07 C 2.45 ✓	
+50			4.0	1.2	- 4.37 9.54 6.95 C 2.59 ✓	5.57
+25			4.4	0.8	- 4.39 9.56 6.89 C 2.67 ✓	
54			4.2	1.0	- 4.41 9.58 5.92 C 3.66 ✓	5.41
+75			3.7	1.5	- 4.43 9.60 5.13 C 4.47 ✓	
53+56.52 M.H. #18 asbuilt	Beg. Job		3.6	1.6 4.85	- 4.44 9.61 9.63 0.02 ↑ ℄ MH	6.04
BM.B.P. Top E. hdwl Culv. 53+39	0.32	(5.17)		4.85		

Dist	Av. Cut	C.Y. /100'	C.Y. Ex.

				Elev. ground		F.L.	
+50			5.0	0.2		- 4.21 9.38 7.13 C 2.25	4.41 ✓
+25			4.8	0.4		- 4.23 9.40 7.21 C 2.19	✓
50			4.7	0.5		- 4.25 9.42 7.24 C 2.18	4.75 ✓
+75			4.9	0.3		- 4.27 9.44 7.16 C 2.28	✓
+50			5.2	0.0		- 4.29 9.46 7.48 C 1.98	4.49 ✓
+25			5.1	0.1		- 4.31 9.48 7.43 C 2.05	✓
55			4.8	0.4		- 4.33 9.50 7.16 C 2.34	4.73 ✓
		(5.17)					

4-26-48				Elev. ground	F.G.	
+25			4.2	-2.0	-4.07 6.24 4.71 C 1.53	✓
58			0.7	1.5	-4.09 6.26 0.75 C 5.51	5.59 ✓
T.P. cut stake →	0.39	(2.17)	3.39	1.78		
57+85.42	M.H. #19		3.2	2.0	-4.10 9.27 3.39 C 5.88	✓
+50			6.0	-0.8	-4.13 9.30 7.51 C 1.79	3.33 ✓
+25			4.6	0.6	-4.15 9.32 7.20 C 2.12	✓
57			3.8	1.4	-4.17 9.34 6.65 C 2.69	5.57 ✓
56+75			4.6	0.6	4.19 9.36 7.04 C 2.32	✓
		(5.17)				

Soil moved Bulldozer

						F.L.					
60+0			4.9	-2.7	-3.93 9.78 8.79 C 0.99	-3.93 6.10 5.18 C 0.92 ✓	1.27 3.66 ←				
+75			4.7	-2.5	-3.95 9.80 8.64 C 1.16	-3.95 6.12 5.05 C 1.07 ✓					
+50			4.8	-2.6	-3.97 9.82 8.30 C 1.52	-3.97 6.14 4.88 Raised up C 1.26 ✓	1.37				
+25			4.6	-2.4	-3.99 9.84 8.43 C 1.41 ✓	-3.99 6.16 4.76 C 1.40 ✓					
59			4.7	-2.7	-4.01 9.86 9.04 C 0.82 ✓	-4.01 6.18 5.36 C 0.82 ✓	1.31				
+75			4.5	-2.3	-4.03 9.88 8.33 C 1.55 ✓	-4.03 6.20 4.65 C 1.55					4-5-48 Restake B.M. BP culv hdwl 53+39
						T.P.	3.37 2.40	(5.85) 7.25	4.77	2.48 4.85	
58+50		(2.17)	4.3	-1.9	-4.05 9.90 9.91 .01 ↗ FL end Pipe	-4.05 6.22 5.19 C 1.03 ✓	4.15				

				℄ EL.		F.L.		
+75			2.9	−0.4		−3.79 6.25 4.38 C 1.87 ✓		
T.P. (cut stake)	4.39	(2.46)	4.10	−1.93				
+50			2.5	−0.3		−3.81 5.98 4.10 C 1.88 ✓	3.51	
+25			2.6	−0.4	−3.83 9.68 7.86 C 1.82 ✓	−3.83 6.00 4.18 C 1.82 ✓		
61			3.2	−1.0	−3.85 9.70 8.58 C 1.12 ✓	−3.85 6.02 4.91 C 1.11 ✓	2.85	
+75			4.2	−2.0	−3.87 9.72 8.99 C 0.73 ✓	−3.87 6.04 5.35 C 0.69 ✓		
+50			4.2	−2.0	−3.89 9.74 8.64 C 1.10 ✓	−3.89 6.06 5.02 C 1.04 ✓	1.89	
60+25			4.8	−2.6	−3.91 9.76 8.67 C 1.09 ✓	−3.91 6.08 5.05 C 1.03 ✓		
		(2.7)						(5.85)

				℄ EL.		F.L.	
+25	1°30.7		1.4	1.1		-3.66 6.12 4.61 C 1.51 ✓	
13	1°10.9		1.0	1.5		-3.68 6.14 4.60 C 1.54 ✓	5.18
+75	0° 51.0		1.3	1.2		-3.70 6.16 4.47 C 1.69 ✓	
+50	0°31.1		2.7	-0.2		-3.72 6.18 4.55 C 1.63 ✓	3.57
+25	0°11.3'		3.0	-0.5		-3.74 6.20 3.68 C 2.52 ✓	
62+10.82	B.C. Rt		3.0	-0.5		-3.76 6.22 4.21 C 2.01 ✓	
62+00	MH #20		2.4	+0.1	6.23 0.25 C 5.98 ✓	-3.77 6.23 4.26 C 1.97 ✓	3.87
		(2 x 6)					

				℄ F.L.	F.L.	
15	3°49.7 ✓		2.8	-0.3	-3.52 5.98 5.13 C 0.85 ✓	3.22 ✓
+75	3°29.9 ✓		2.7	-0.2	-3.54 6.00 4.89 C 1.11 ✓	3.3
+50	3°10.0 ✓		2.4	0.1	-3.56 6.02 4.93 C 1.09 ✓	3.66
+25	2°50.2		3.0	-0.5	-3.58 6.04 4.95 C 1.09 ✓	
14	2°30.3 ✓		2.5	0.0	-3.60 6.06 4.86 C 1.20 ✓	3.60
+75	2°10.4		2.5	0.0	-3.62 6.08 4.92 C 1.16 ✓	
13+50	1°50.6		1.3	1.2	-3.64 6.10 4.78 C 1.32 ✓	4.84
		(2.46)				

#1				Elev. ground ℄	Bot. Pier − 5.50	F.L.	
66+74	Beg. Piers		6.4	−3.0		−3.38 6.56 6.00 C 0.56	
B.P. BM. Culv	1.01	(3.18)		2.17	5-7-48		
E.C. 34°47'30" Rt 66+55.68	5°53.5	M.H. #21 6.78 4.63 2.15 0.02	6.8	0.0	10' Lt 10.18 3.23 C 6.95 ✓	−3.40 10.18 9.42 C ~~0.75~~ ✓ C 0.76	3.40
BMBP	−2.17						
+25	5°29.1		7.4	−0.6		−3.42 10.20 9.52 C 0.68 ✓	
66	5°09.3 ✓		7.5	−0.7		−3.44 − 10.22 9.51 C 0.71 ✓	2.74
+75	4°49.3 ✓		7.3	−0.5		−3.46 10.24 9.54 C 0.70 ✓	
T.P. on cut stake	9.52	(6.78)	5.20	−2.74			
+50	4°29.5		2.5	0.0		−3.48 5.94 5.20 C 0.74 ✓	3.48
65+25	4°09.6		3.0	−0.5		−3.50 5.96 5.24 C 0.72 ✓	
		(2.46)					

\# 8-9-10-11. -8.50

				℄ Ground	Bot. Pier	F.L.	
67+86	#8		4.9	-1.7	-8.50	-3.29 6.47 4.94 c 1.53	
+70	#7		5.1	-1.9	-5.50	-3.30 6.48 5.14 c 1.34	
+54	#6		5.2	-2.0	-5.50	-3.31 6.49 5.41 c 1.08	1.31
+38	#5		5.6	-2.4	-5.50	-3.33 6.51 5.50 c 1.01	
+22	#4		5.7	-2.5	-5.50	-3.34 6.52 5.49 c 1.03	
67+06	#3		5.8	-2.6	-5.50	-3.35 6.53 5.50 c 1.03	
66+90	Pier #2		5.8	-2.6	-5.50	-3.37 6.55 5.67 c 0.88	.71
		(3.18)					

				ground.	Bot Pier	F.L.	
Special Jt. 68+975±			4.5	-1.3		-3.20 6.38 4.29 C 2.09	1.90
68+82	#14		4.8	-1.6	-5.50	-3.21 6.39 4.44 C 1.95	
#12 to #14	-5.50						
68+66	#13		5.0	-1.8	-5.50	-3.22 6.40 4.62 C 1.78	
+50	#12		5.5	-2.3	-5.50	-3.23 6.41 4.98 C 1.43	0.93
+34	#11		5.3	-1.9	-8.50	-3.25 6.43 5.00 C 1.43	
68+18	#10		4.7	-1.5	-8.50	-3.26 6.44 4.58 C 1.86	
68+02	#9		5.1	-1.9	-8.50	-3.28 6.46 4.46 C 2.00	1.38
		(3.18)					

				ground ℄		F.L.					
+75			4.0	5.4		-3.07 12.51 3.50 C 9.01					
+50			4.6	4.8		-3.09 12.53 4.08 C 8.45	7.89				
70+25			4.9	4.5		-3.11 12.55 4.32 C 8.23					
69+92.78	20°29' Lt.	M.H. #22	6.0	3.4	Stub west -1.20 side 10.64 5.69 C 4.95	-3.13 12.57 5.69 C 6.88	6.53				
check to B.M. B.P.	7.27	(9.44)	1.01	2.17	Hwy BM. Culv.						
+75			1.4	+1.8		-3.14 6.32 1.21 C 5.11					
+50			3.[illegible]	0.0		-3.16 6.34 3.03 C 3.31	3.16				
69+25			4.0	-0.8		-3.18 6.36 3.86 C 2.50					
		3.18									

				ground		F.L.	
+50			5.5	5.4		-2.93 13.84 4.68 c 9.16	8.33
+25			5.2	5.7		-2.95 13.86 4.16 c 9.70	
72			5.0	5.9		-2.97 13.88 4.19 c 9.69	8.87
T.P. sta 6	4.27	(10.91)	2.80	6.64			
+75			3.8	5.6		-2.99 12.43 2.80 c 9.63	
+50			3.8	5.6		-3.01 12.45 2.92 c 9.53	8.61
+25			4.0	5.4		-3.03 12.47 3.12 c 9.35	
71			4.2	5.2		-3.05 12.49 3.45 c 9.04	8.25
		9.44					

				Ground		F.L.	
+25			6.7	4.2		−2.79 13.70 6.30 c 7.40	
74			6.6	4.3		−2.81 13.72 6.18 c 7.54	7.11
+75			6.4	4.5		−2.83 13.74 5.29 c 8.45	
+50			6.1	4.8		−2.85 13.76 4.99 c 8.77	7.65
+25			6.5	4.4		−2.87 13.78 5.54 c 8.24	
73			6.2	4.7		−2.89 13.80 5.23 c 8.57	7.59
72 +75			5.8	5.1		−2.91 13.82 4.99 c 8.83	
		(10.91)					

75

				Ground		F.L.	
M.H. #23							
76+11.15	42°43' Rt		7.4	3.5	Stub West side -0.70 11.61 6.54 C 5.07	-2.64 13.55 6.54 C 7.01	6.14
+75			7.3	3.6		-2.67 13.58 6.86 C 6.72	
+50			7.5	3.4		-2.69 13.60 6.87 C 6.73	6.09
+25			7.5	3.4		-2.71 13.62 6.65 C 6.97	
75+00			7.3	3.6		-2.73 13.64 6.45 C 7.19	6.33
+75			6.9	4.0		-2.75 13.66 6.64 C 7.02	
74+50		(10.91)	7.0	3.9		-2.77 13.68 6.58 C 7.10	6.67

	5-11-48.			ground ℄		F.L	
77+71.06			6.5	11.4		-2.51 20.40 5.63 C 14.77 ✓	13.94
77+53.1	spec. JOINT		8.6	9.3		-2.53 20.42 7.57 C 12.85 (C 12.84)	
77+41.06	End Jack		9.0	8.9		-2.54 20.43 8.85 C 11.58 ✓	11.44
B.M. chisel sq. 519. Block	5.96	(17.89)		11.93	P.3 11.93		
76+82.06	Beg. Jack		2.9	8.0		-2.58 13.54 2.07 11.47 ✓	10.58
76+73.1	special JOINT		3.5	7.4		P.3 -2.59 13.55 3.56 C 9.99 ✓	
+50			5.0	5.9		-2.61 13.57 5.29 C 8.28	6.51
76+25			6.3	4.6		-2.63 13.59 6.25 C 7.34	
T.P. spike Tel. Pole	4.46	(10.96) 10.91	4.41	6.50	6.50 0.00		

P.3

				ground ℄		F.L.	
+25			4.5	13.4		-2.39 20.28 3.66 C 16.62	
79			4.5	13.4		-2.41 20.30 3.98 C 16.32	15.81
+75			4.5	13.4		-2.43 20.32 4.08 C 16.24	
78+50			4.5	13.4		-2.45 20.34 4.04 C 16.30	15.85
78+37.66 M.H. #24	43°45' Lt		4.1	13.8	Stub -0.60 E side 18.49 4.03 C 14.46	-2.46 20.35 4.03 C 16.32	
78+00			5.9	12.0		-2.49 20.38 5.76 C 14.62	14.49
		(17.89) H.I.					

					F.L.	
81			5.1	12.8	−225 20.14 5.04 C 15.10	15.05
+75			5.1	12.8	−227 20.16 4.94 C 15.22	
+50			4.3	13.6	−229 20.18 4.28 C 15.90	15.89
+25			4.7	13.2	−231 20.20 3.47 C 16.73	
80			4.8	13.1	−233 20.22 3.92 C 16.30	15.43
+75			4.7	13.2	−235 20.24 2.96 C 17.28	
79+50			4.8	13.1	−237 20.26 415 C 16.11	15.47
		(17.89)				

				℄		F.L.	
83			4.9	10.5		-2.09 17.45 4.65 C12.80	12.59
+75			3.8	11.6		-2.11 17.47 3.38 C14.09	
+50			4.7	10.7		-2.13 17.49 4.45 C13.04	12.83
+25			4.1	11.3		-2.15 17.51 3.30 C14.21	
82			3.5	11.9		-2.17 17.53 2.85 C14.68	14.07
+75			2.8	12.6		-2.19 17.55 2.27 C15.28	14.79
T.P.	1.94	(15.36)	4.47	13.42			
81+39.6 alley S. of Ashton	8" T ON E.		5.2	12.7	STUB -0.30 18.19 4.47 C13.72	-2.22 20.11 4.47 C15.64	
		(17.89)					

						F.L.	
+75			4.8	8.8		- 1.95 15.50 3.62 C 11.88	
+50			4.6	9.0		- 1.97 15.52 3.90 C. 11.62	10.97
+25			4.8	8.8		- 1.99 15.54 4.57 C 10.97	
T.P. BM BP	6.80	(13.55)	8.61	6.75	RR C.Lx. P. 3 6.75		
84			4.9	10.5		- 2.01 17.37 4.50 C 12.87	17.51
+75			6.2	9.2		- 2.03 17.39 5.56 C 11.83	
+50			8.4	7.0		- 2.05 17.41 7.90 C 9.51	9.05
83+25			8.0	7.4		- 2.07 17.43 7.47 C 9.96	
		(15.36) H.I.					

					F.L.	
+50			5.4	8.2	-1.81 15.36 3.27 C12.09	10.01
+25			3.7	9.9	-1.83 15.38 4.09 C11.29	
86			2.4	11.2	-1.85 15.40 3.16 C12.24	13.05
+75			5.3	8.3	-1.87 15.42 3.54 C11.88	
+50			5.4	8.2	-1.89 15.44 2.98 C12.46	10.09
+25			4.2	9.4	-1.91 15.46 3.74 C11.72	
85			4.4	9.2	-1.93 15.48 3.68 C11.80	11.13
		(13.55)				

4l : 75

				℄ ground		F.L.	
+25			5.4	8.8		-1.67 15.89 4.80 C 11.09 ✓	
88			6.6	7.6		-1.69 15.91 6.74 C 9.17 ✓	9.29
+75			5.9	8.3		-1.71 15.93 4.68 C 11.25 ✓	
+50			5.9	8.3		-1.73 15.95 4.92 C 11.03 ✓	10.07
87 +25			5.9	8.3		-1.75 15.97 4.80 C 11.17 ✓	
BM. nail See Last Page	5.10	(14.22)		9.12			
86 + 99.20 M.H. #25 alley N. of Napier St			5.6	8.0	Stub E side +0.10 13.45 4.45 C 9.00	-1.77 15.32 4.45 C 10.87	9.77
86+75			5.4	8.4		-1.79 15.34 4.44 C 10.90	

(13.55) ← Set BMs to North See Last Page

Final X sec

Moore
Begg
Sherm
Bunch
11-16-48

Tr. Sew. #2
Linda Vista Junc.
to Balboa W.O. 60208

Cont'd P59

					L	℄		R
55					3.3 $\frac{4.4}{11}$	3.3 4.4	3.1 $\frac{4.6}{5}$	0.3 $\frac{7.4}{14}$
+50					3.8 $\frac{3.9}{10}$	3.7 3.8	3.3 $\frac{4.4}{5}$	−1.2 $\frac{8.9}{14}$
54					4.1 $\frac{3.6}{10}$	4.4 3.3	3.9 $\frac{3.8}{4}$	−0.6 $\frac{8.3}{14}$
+63					3.9 $\frac{3.8}{11}$	3.7 4.0	2.7 $\frac{5.0}{6}$	0.2 $\frac{7.5}{11}$
53+56.5±						3.1 4.6 RIM M.H. B18		
BMBP Top E hdwl culv. at 53+39	2.85	7.70		4.85		7.70 6.70		

						F.L.	
90			3.1	11.1		-1.53 15.75 2.95 C 12.80 ✓	12.63
+75			3.3	10.9		-1.55 15.77 3.18 C 12.59 ✓	
+50			4.0	10.2		-1.57 15.79 3.68 C 12.11 ✓	11.77
89+25			5.3	8.9		-1.59 15.81 3.88 C 11.93 ✓	
88+90	8" stub E. side	PLAN. ?	4.9	9.3	+0.30 13.92 4.42 C 9.50 ✓	-1.61 15.83 4.42 C 11.41 ✓	10.91
88+75			5.1	9.1		-1.63 15.85 4.67 C 11.18 ✓	
88+50			5.5	8.7		-1.65 15.87 4.47 C 11.40 ✓	10.35
		(14.22) H.I.					

Cont'd P 61

	L	℄		R
57	2.8 4.9 9	2.5 5.2	2.0 5.7 8	-1.5 9.2 13
+95	2.9 4.8 9	2.5 5.2	2.4 5.3 8	-1.2 8.9 13
+72	2.6 5.1 9	2.7 5.0	2.1 5.6 4	-2.4 10.1 12
+50	3.0 4.7 10	2.3 5.4	1.9 5.8 5	-2.5 10.2 12
+37 Emb. Protection on Lt. Not yet replaced	2.05 5.65 10 INV. 9" Corr. I.P.	E. end Ex. Pipe at shoulder		
56	3.2 4.5 10	2.7 5.0	2.1 5.6 5	-2.4 10.1 14
55+50	3.7 4.0 11	3.2 4.5	2.9 4.8 5	-2.2 9.9 14

7.70
2

7.70
2

					F.L.	
91+75			4.3	12.2	−1.39 17.87 3.79 C14.08 ✓	
+50			5.9	10.6	−1.41 17.89 4.90 C12.99 ✓	14.01
+25			6.2	10.3	−1.43 17.91 5.98 C11.93 ✓	
91			5.9	10.6	−1.45 17.93 5.84 C12.09 ✓	14.05
T.P.	4.96	(16.48)	2.70	11.52		
+75			2.5	11.7	−1.47 15.69 2.70 C12.99 ✓	
+50			2.3	11.9	−1.49 15.71 2.45 C13.26 ✓	13.39
90+25			3.7	10.5	−1.51 15.73 2.53 C13.20 ✓	
		(14.22) H.I.				

Cont'd P. 63

					L	℄		R
+09					3.0 $\frac{4.0}{9}$	2.5 4.5	1.9 $\frac{5.1}{13}$	-1.1 $\frac{8.1}{18}$
58					2.8 $\frac{4.2}{9}$	2.8 4.2	1.9 $\frac{5.1}{10}$	1.0 $\frac{6.0}{11}$
T.P.	4.98	7.03	5.65	2.05		7.03		
+85±2 MH #19						-4.08 11.78 INV	2.05 5.65 RIM	
+70					2.9 $\frac{4.8}{9}$	2.4 5.3	2.3 $\frac{5.4}{6}$	-1.3 $\frac{9.0}{13}$
+60					3.0 $\frac{4.7}{9}$	2.9 4.8	2.1 $\frac{5.6}{6}$	-1.9 $\frac{9.6}{12}$
57+50					2.9 $\frac{4.8}{9}$	3.0 4.7	2.3 $\frac{5.4}{6}$	-2.2 $\frac{9.9}{13}$
		7.70				7.70		

				℄ EL.		F.L.	
+50			5.1	11.4		-1.25 17.80 5.33 C12.47	12.65
+25			4.6	12.0		-1.27 17.82 4.60 C13.22	
93			4.5	12.0		-1.29 17.84 5.27 C12.57	13.29
+75			4.3	12.2		-1.31 17.86 4.68 C13.18	
+50			4.1	12.4		-1.33 17.88 5.10 C12.78	13.73
+25			4.1	12.4		-1.35 17.90 4.94 C12.96	
T.P.	4.37	(16.55)	2.58	12.18	← cut stub 92+10.3		
nail B.M. P. 80	5.64	14.76		9.12	50' Lt. of 87+00		
92+10.3	M.H. #26		4.1	12.4		-1.37 17.85 4.30 C 13.55 ✓	13.77
4" Ex. Sewer trailer camp							
16.48 3.42 13.06		(16.48)					

5-27-48.

↖ B.M. Lost Page ← Destroyed by Pipe Co.

Cont'd P 65

	L		¢		R
61		2.2 4.8 8	1.8 5.2	1.6 5.4 13	-3.0 10.0 20
+50		2.0 5.0 8	1.7 5.3	0.9 6.1 12	-2.7 9.7 17
60		2.0 5.0 8	1.5 5.5	0.9 6.1 10	-1.7 8.7 15
+50		2.3 4.7 9	2.0 5.0	0.8 6.2 12	-2.0 9.0 17
59		2.4 4.6 9	2.1 4.9	1.0 6.0 13	-2.2 9.2 19
+50		2.6 4.4 9	2.4 4.6	1.7 5.3 14	-2.4 9.4 19
58+20		3.0 4.0 9	2.4 4.6	1.7 5.3 13	-1.6 8.6 18

7.03

7.03

				℄ EL		F.L.	
+25			7.9	8.6		−1.10 17.65 8.63 C9.02	
95			5.3	11.2		−1.12 17.69 8.50 C9.17	12.32
+75			4.9	11.6		−1.14 17.69 8.19 C9.50 3	
94+50	MILTON ST.		4.4	12.1		−1.17 17.72 6.15 C11.57	13.27
+25			4.5	12.0		−119 17.74 4.93 C12.81	
94			3.2	13.3		−1.21 17.76 4.68 C13.08	14.51
93+75			3.5	13.0		−1.23 17.78 4.47 C13.31	
		16.55					

Cont'd P 67

					L	℄		R
+40					3.0 $\frac{4.8}{10}$	2.8 5.0	1.6 $\frac{6.2}{8}$	-2.3 $\frac{10.1}{17}$
63					3.0 $\frac{4.8}{10}$	3.0 4.8	1.6 $\frac{6.2}{8}$	-2.5 $\frac{10.3}{15}$
+50					2.7 $\frac{5.1}{10}$	2.3 5.5	1.0 $\frac{6.8}{10}$	-2.1 $\frac{9.9}{16}$
62+10.82 BC Rt.					2.3 $\frac{5.5}{10}$	2.2 5.6	1.4 $\frac{6.4}{8}$	-1.9 $\frac{9.7}{14}$
T.P	5.56	7.85	4.74	2.29		7.85		
62+01.8 (Set at 62+00)		M.H. #20				-3.81 10.84 Inv.	2.29 4.74 Rim	
61+50					2.1 $\frac{4.9}{9}$	1.5 5.5	0.3 $\frac{6.7}{15}$	-2.8 $\frac{9.8}{19}$
	7.03					7.03		

			℄ EL			F.L.	
97		3.8	7.6			−0 96 12.32 4 74 C7.58	8.56
+75		3.5	7.9			−0 98 12.34 4 69 C7.65	
+50		4.1	7.3			−1.00 12.36 4 53 C7.83	8.3
+25		3.6	7.8			−1 02 12.38 4 25 C8.13	
96		3.2	8.2			−1 04 12.40 4 10 C8.30	9.[illegible]
+75		1.5	9.9			−1 06 12.42 4 00 C8.42	
T.P.	3.90	11.36	9.09	7.46			
95+50			7.4	9.1		−1.08 17.63 9.09 C8.54	10.18
		16.55					

Cont'd P 69

		L	℄		R
66		3.5 4.3 10	3.4 4.4	3.3 4.5 3	-2.4 10.2 13
+50		3.4 4.4	3.4 4.4	2.7 5.1 4	-2.3 10.1 14
65		3.1 4.7 10	3.1 4.7	2.8 4.9 3	-2.4 10.2 14
+50		3.0 4.8 10	2.6 5.2	2.5 5.3 3	-2.6 10.4 15
+31	Emb. Protector Not Replaced	1.85 6.00 9 Inv. 9" Corr. I.P.			
64		3.2 4.6 10	3.1 4.7	2.3 5.5 10	-2.2 10.0 17
	7.85		7.85		

State has Rebuilt raised oil Shoulder and Emb. Protectors, I believe, are changed since orig. Xsec was taken

LISTER ST.			1.09	10.27 ℄ El	BM Lister 10.27 E. side STUB 6 10"	F.L.	
M.H. 98+7699 } #28 98+79.31 } = E ℄			5.2	6.2	+ 1.00 10 36 C 4.51	− 0.82 12.18 5.85 C 6.33	
+50			5.3	6.1		− 0.84 12.20 5.75 C 6.45	6.94
+25			5.0	6.4		− 0.86 12.22 5.47 C 6.75	
98			3.5	7.9		− 0.88 12.24 5.31 C 6.93	9.78
+75			4.5	6.9		− 0.90 12.26 5.04 C 7.22	
+50			3.8	7.6		− 0.92 12.28 5.01 C 7.27	8.52
97+25			4.1	7.3		− 0.94 12.30 4.83 C 7.47	
		11.36					

Check to BM BP 5.67 2.18 2.17
Top Hwy Culv. hdwl. 0.01
at E. side about
Ctr of Hwy Curve

+74 1st. Pier

+65

66+55.68 MH #21 Sec. on Split
Δ 34° 47' 30" Rt.

7.85

L ℄ R

Toe of Hwy Fill + Sewer Fill		-2.6 10.4 10	-0.35 8.20 Top Pier	-2.7 10.5 ℄ Mud	-2.6 10.4 10	
	3.4 4.4 13	2.6 5.2 4	2.6 5.2	2.5 5.3 2	-2.3 10.1 13	
	3.5 4.3 9	3.4 4.4 3	-3.43 11.28 Inv.	2.5 5.3 Rim	2.4 5.4 3	-2.0 9.8 15

7.85

		℄ EL.	F.L.
+50			-0.68
+25			-0.70
100			-0.72
+75			-0.74
+50			-0.76
+25	Cuts in G 2x3		-0.78
99+00			-0.80
B.M. Listen St. P. 80		10.27	

F.6.

+25	-0,54
102	-0,56
+75	-0,58
+50	-0.60
+25	-0.62
101	-0.64
100+75	-066

		F.L.
104		-0.40
+75		-0.42
103+50		-0.44
M.H. #29 103+1814 Δ 3°41'30" LT Kane St.	8" Stub E. Side +1.40	-0.47
103		-0.48
+75		-0.50
102+50		-0.52

	F.L.
+75	-0.26
+50	-0.28
+25	-0.30
105	-0.32
+75	-0.34
+50	-0.36
104+25	-0.38

Contd. G.Bk 236-16

M.H. #30

			F.L.
107+59 Jellett St.	3°26' Lt.	8" stub E. side +1.70	-0.12
+25			-0.14
107			-0.16
+75			-0.18
+50			-0.20
+25			-0.22
106			-0.24

Sewer B.M.s on Morena Blvd
Napier to Jellett

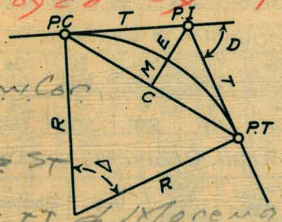
B.M. B.P. R.R. Culv.	6.80	13.55		6.75	P.3
B.M T.P. NAIL	5.38	14.50	4.43	9.12 ✓	R.R. Tel. Pole
B.M T.P. spike	3.65	16.71	1.4[illegible] Destroyed	~~[illegible]~~ ✓	Tel. Pole
T.P.	3.92	14.75	5.88	10.83	
T.P. B.M. RR spike	3.23	13.50	4.48	10.27	✓ Tel. P.
T.P. RR spike	4.07	15.35	2.22	11.28	✓ Eucal.
check to B.M. Mon.			3.93	11.42	11.41 0.01
B.M. B.P. W. hdwl R.R. Culv.	N. of Jellett St.			14.32	P.6

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

50' LT 87+00

25' RT.

Destroyed by Pipe Co.



at Lister NW Cor.

Tree & Kane St

SW Jellett & Morena Blvd.

CURVE FORMULAS

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

Tangent=T=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 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.

MADE IN U.S A.