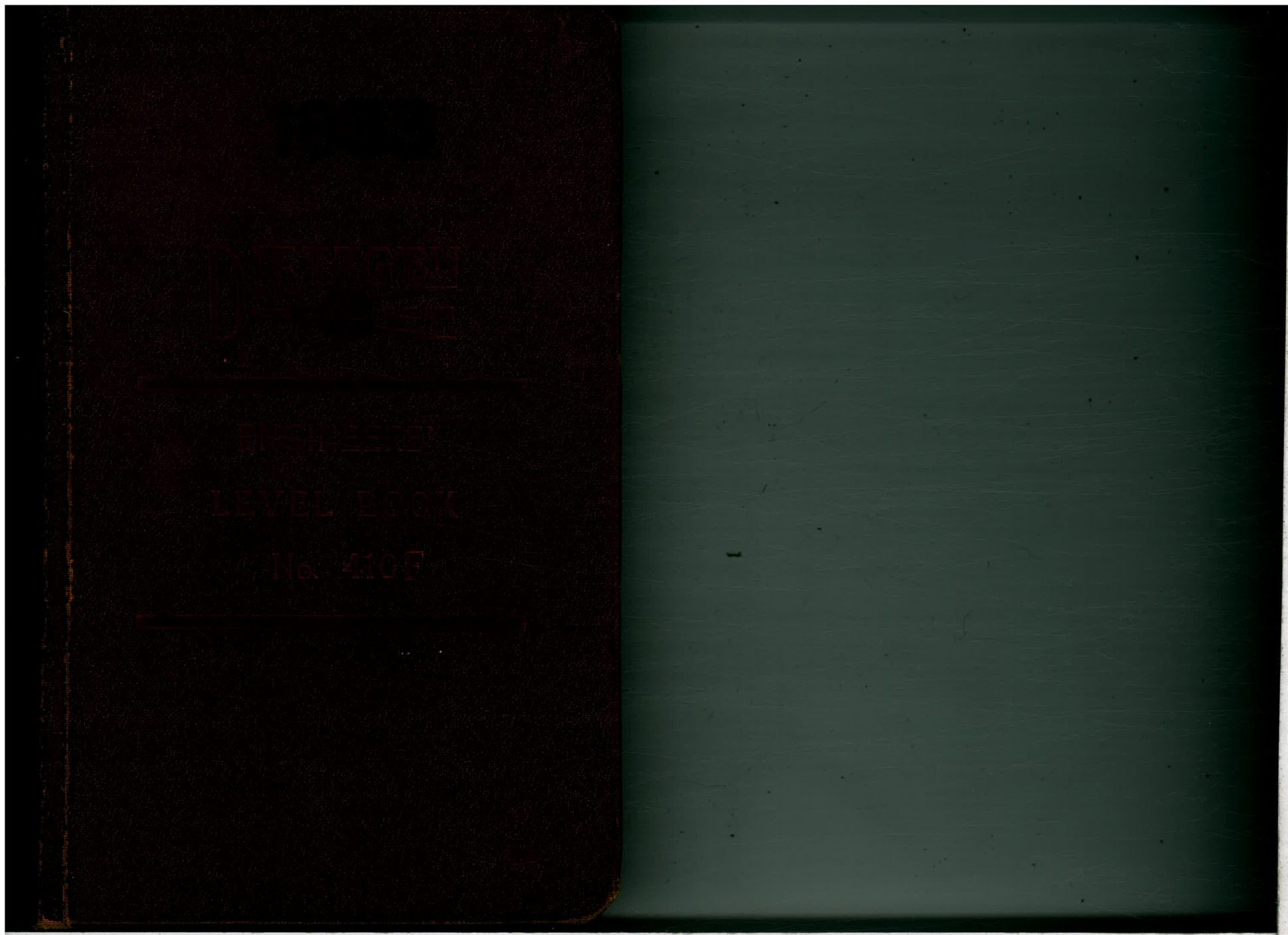

LEVEL BOOK
No. 410F

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.

1833

B.M. 2×2 Hub
7.17 = 0400 - 1821-9
Napier

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.

Sewers Bayside V. L.
Main trunk sewer
on Frankfort St.
(2' west of ℄) From
Napier to Littlefield
Sketch F.B. 1821
4,5,6

+50

W O 31477X

0+83 S. E. Cor House — This sewer lat. can drop to Napier Line

+50

0+00 2x2 Hub ℄ Napier St.

B.M. NW B.P. 5.85 ⟨61.01⟩ 55.16 Rec. 55.13
Frankfort Napier

Lt	℄	℄ Sewer		Rt
Moore Begg Green Roberts 1-27-48				
65.5 +4.5 55 Fl. El.	61.7 +0.7 55 grd.	56. [illegible] 2/17/48 4.9		
		56.0 5.0		
		56.0 5.0	53.3 7.7 54 dirt	53.9 7.1 89 Back Line House Fl. El. ; 51.0 10.0 89 ground
		56.0 5.0		
		56.2 4.6		
		⟨61.01⟩		

+29 E Gar. same house

3

2+95 N.W. Cor. house

+50

House to Lt. is high
+36 N.W. Cor. house

2

1+64 SW Cor gar. & House

61.01

Lt		℄		Rt
		56.6 / 4.4	56.4 / 4.6 / 53 / FL. EL.	
		56.4 / 4.6		
		56.4 / 4.6	57.0 / 4.0 / 84 / FL. EL.	50.8 / 10.2 / 84 / grd
		56.3 / 4.7		
65.0 / +4.0 / FL. EL.	61.0 / 0.0 / 55 / W.L. House grd	56.3 / 4.7	57.0 / 4.0 / 91 / FL. el. Main	50.5 / 10.5 / 91 / grd.	48.8 / 12.2 / 120
		56.2 / 4.8		
		56.1 / 4.9	53.0 / 8.0 / 75 / FL. EL.	51.3 / 9.7 / 75 / grd	49.8 / 11.2 / 100 / grd.
				53.6 / 7.4 / FL. el. House

(61.01)

4+60 ℄ Gar. same house

+50

4+30.5 = ℄ Orton St. to East

T.P. 6.50 ⟨63.27⟩ 4.24 ⟨57.7⟩

4+24 NW Cor. house

4

3+50 House to LT is high

⟨61.01⟩

Lt	℄	Rt
	57.1	55.0
	6.2	8.3
		FL. EL. gar.
	57.3	
	6.0	
	0	
	6.0	
57.3	56.80	"2×4"
6.0	6.47	← on Hub 6
grd		
	⟨63.27⟩	
	57.2	58.3 / 53.6
	3.8	2.7 / 7.4
		50 / 50
		FL. EL. / grd
	57.1	
	3.9	
	56.6	
	4.4	
6.0 / 6.0		
FL. EL. / grd		
	⟨61.01⟩	

Sta.	Description	Lt	℄		Rt
6	℄ gar & house 58.1 / 5.2 / FL. el of house		57.5 / 5.8	56.5 / 6.8 / FL. el.	+54.1 / 9.2 / 125 grd
+73	N W Cor house	63.8 / +0.5 / 58 FL EL; 61.1 / 2.2 / 58 grd	57.6 / 5.7		
+69	SW Cor house & gar. in rear of house and Tank & Cesspool in rear of garage		57.6 / 5.7	58.0 / 5.3 / 88 FL. EL. house; 55.7 / 7.6 / 88 grd.	55.2 / 8.1 / 110 FL. gar; 53.9 / 9.4 / 130 grd. over cesspool
+50			57.6 / 5.7		
+16	SW Cor house		57.4 / 5.9	57.8 / 5.5 / 81 FL. EL.	54.7 / 8.6 / 81 grd
J	same		57.4 / 5.9		
4+80	℄ gar.		57.3 / 6.0	55.4 / 7.9 / 62 FL. EL. gar	

(1327)

(1327)

8

7+50 SW Cor house garage NW rear with Wash Trays

T.P. 4.13 (61.17) 6.28 (56.99)

+50 House on LT

7

6+90 SW Cor house and garage NW rear Wash Room

+50

(63.27)

Lt

56.5
4.6

56.1 53.1 57.4 52.8
4.4 8.0 3.7 8.3
93 93 108
grd. house garage
Floor FL.
FL.

(61.17)

62.51
0.8
50
FL EL.
house

56.1
6.6

57.0
6.3

60.4
2.4
60
FL EL.
House

57.0 57.9 55.3 54.9
6.3 5.4 8.0 8.4
90 90 117
FL EL. grd garage FL
house at Tray

58.1
5.2

(63.27)

11+00

+50

10 Gar. S. side house

+67 NW cor house

+50

9

8+50

(C1.17)

55.8
5.3

55.9
5.7

56.1
5.0

56.4
4.7
6.6
Gar. FL.

56.1
8.0

57.4
3.7
8.0
FL. EL

54.1
7.0
8.0
grd

56.1
5.0

56.3
4.8

49.1
12.9
1.30
grd

56.3
4.8

(C1.17)

		Lt	℄	Rt	
12+16	Sep. Tank in Front of house	6.0 / 3.0 / 8.3 grd. Top Tank	56.8 / 8.6		
+50			56.5 / 8.7		
12+30	N E Cor house and SL garage; gar. in rear		56.3 / 8.9	58.4 / 6.8 / 6.0 Fl.El. house	54.3 / 10.9 / 7.5 Fl.El.gar.
T.P.	8.87 ⟨65.18⟩ 4.81 ⟨56.31⟩		65.18		
1?			55.8 / 5.3		
11+50			55.5 / 5.6		
Check to N.W. B.P. BM Frankfort + Ashton	5.46 55.66 Rec. 55.63 / 0.03				
11+09.63 ℄ Ashton			55.6 / 5.5 grd.		
	⟨61.12⟩		⟨61.12⟩		

8

15+30 gar. & Wash Room

15+00 Note! 5 houses in This Block on Lt. Will show off alley as Tanks are in rear and on ctr. of houses

+50

+33 SE Cor house

14

+70 House on Lt. Will Show off alley Sewer

+49 NE Cor house & S.L. gar.

13+00

⟨65.18⟩

Lt — ℄ — Rt

62.0 ✓ / 3.2 — 64.9 ✓ / 0.3 / 75 FL. EL.

61.6 ✓ / 3.6

60.8 ✓ / 4.4

60.4 ✓ / 4.8 — 61.9 ✓ / 3.3 / 55 House — 60.1 ✓ / 5.1 / 69 gar. F.L.

59.7 ✓ / 5.5

Tank ctr of house in rear

58.4 ✓ / 6.8 — 60.8 ✓ / 4.4 / 57 FL.EL. house — 57.2 ✓ / 8.0 / 47 gar. FL.

57.5 ✓ / 7.7

⟨65.18⟩

+93 ℄ garage + house 8' N = House SL

+50

+25 ctr house

16

15+90 ℄ gar. wash room

T.P. 547 ⟨68.58⟩ 2.07 ⟨61.11⟩

15+50 CTR. house gar below 97, 15+30

⟨65.18⟩

℄ R7

63.6 66.4 68.4
5.0 2.2 0.4
gar. FL. House FL.

63.6
5.0

63.5 69.3
5.1 +0.7
5.1
FL. EL.

63.3
5.3

63.4 66.6
5.4 2.0
6.2
gar. FL.

⟨68.58⟩

62.6 67.4
2.6 +2.0
5.5
FL EL.

⟨65.18⟩

Check to NWBP 4.36 64.22 Rec. 64.12 / 0.10
Frankfort + Gardena
19+24.94 Littlefield St and House to Lt.

19

+50

+08 House to Lt. on W. Cor.

18

+50

17+19.15 = ℄ Gardena Ave

17

(68.58)

Lt. 66.8 / 1.8 / 65 / FL. EL.	℄ 65.8 / 2.8		Rt	10
	64.8 / 3.8			
	63.9 / 4.7			
60.9 / 7.7 / 54 / FL. EL.	63.8 / 4.8			
	63.8 / 4.8			
	63.4 / 5.2			
	63.6 / 5.0			
	63.7 / 4.9			
	(68.58)			

Sewer Levels in alley
Bet. Frankfort & Galveston
Beg. at NL Gardena

Station	Notes	Lt	℄	Rt
+88	grd. over Tank Rear of house	60.1 / 3.4 / 8.5 grd	58.1 / 6.0	
+50			57.0 / 7.1	
0+41	septic Tank rear of house	59.8 / 4.3 / 8.5 grd. over Tank	56.7 / 7.4	
0+36	NW Cor house		56.6 / 7.5	55.5 / 8.6 / 92 FL. EL. ; 54.6 / 9.5 / 92 grd.
0+25	10' Lt Tel P 450839 H.			
T.P.	7.70 (64.08) 12.20 (56.38)		(64.08)	
0+00	= NL Gardena Ave		56.4 / 12.2	
	(68.58) Fwd P10		(68.58)	

T.P.	8.85	⟨70.72⟩	2.21	⟨61.87⟩		
2					61.5	
					2.6	
+90	House to Rt.				61.2	
					2.9	
+85	grd. over Tank Cor. House					
+55	10' Lt. 45 08 40 H To P.					
+50						
+44	grd. over Tank Cor of house					
1+00						
		⟨64.08⟩				

Lt	℄	Rt	
65.1	61.1	62.1	59.7
+1.0	3.0	2.0	4.4
100		125	125
		FL. EL.	grd
	59.1		
	5.0		
63.1	59.0		
1.0	5.1		
100			
	58.4		
	5.7		
	⟨64.08⟩		

		Lt	℄	Rt
5			69.0 ✓ 1.7	
+50			69.0 ✓ 1.7	
+30	C.S Lt. 4 L 90 11 H Tel P.			
4			66.5 ✓ 2.2	
+50			67.4 ✓ 3.3	
3	Sep. Tank Cto House in Rear	64.1 ✓ L.C 95 grd over T	65.8 ✓ 4.9	70.4 ✓ 0.5 / 100 — House Floor
+80	10 Lt Tel. P. 4 L 9010 H			
2+50			63.9 ✓ 6.8	
	⟨70.7⟩ ✓		⟨70.7⟩ ✓	

0+00 = M.H. at Frankfort and Ashton See sketch F. Bk. 1.821/5

T.P. 1.69 ⟨68.96⟩ 3.45 ⟨67.27⟩ 2x2 Hub Δ PT. — ⟨68.96⟩

5+69.64 ℄ Ashton = 1792.78 — 67.6 / 3.1

+59 — 66.8 / 3.9

+55 — 67.8 / 2.9

+49 11 Lt P 4349 PT.

5+50 — 67.8 / 2.9

5+14 9 Lt 46900 H Tel.P. — ⟨70.72⟩ — ⟨70.72⟩

55.4 / 13.6

+15				
+10				
2+00	Now Nly; via alley			
1+96.78	Δ = 89°58' LT			
	5+69.64 on P.I.X			
+50				
1				
0+50				
	East in Ashton			
	<68.96>			

		68.5 / 0.5		
		67.0 / 2.0		
		67.5 / 1.5		
		67.6 / 1.4		
		64.1 / 4.9		
		60.7 / 8.3		
		57.9 / 11.1		
		<68.96>		

		LT	℄	RT
+50			70.4 ✓ 5.7	
+36	9 LT Tel. P. 472415 H			
4			70.8 ✓ 4.8	
+50			71.0 ✓ 4.6	
3+00	to RT is High ground	61.6 ✓ 14.0 125 grd.	69.8 ✓ 5.8	
+87	10 LT 472414 H			
2+70	House on RT Tank in Rear		69.2 ✓ 6.4	71.8 ✓ 3.8 20 grd. at Tank
2+50			68.8 ✓ 6.8	
T.P.	7.33 ⟨75.65⟩ ✓ 68.96 0.64 ⟨68.32⟩ ✓		⟨75.65⟩ ✓	

+50

T.P. 4.99 (74.84) 5.80 (69.85)

7 House to Pt High

+87 9 Lt 47 24 17 H Tel P.

+50

6

+87 9 Lt 47 24 16 H Tel P.

+50

5+00

(75.65)

Lt

℄

68.0
6.8

(74.84)

69.1
6.6

68.7
7.0

67.8
8.0

68.4
7.2

70.8
4.8

(75.65)

76.7
+1.0
90
grd

79.2
+3.5
90
FL.

		LT	℄	RT
+50			68.2 ✓ 6.6	
9	con't nly to Napier St.		68.2 ✓ 6.6	
8+76.71	℄ Orten St.		67.8 ✓ 7.0	
+50			67.6 ✓ 7.2	
8			67.9 ✓ 6.9	
+86	9 LT 472418 H.Tel.P.			
7+64	Small Dwelling, No Septic Tank House Planned in future to face on Frankfort	63.5 ✓ 11.3 7.6 [?] grd. rear of house	67.6 ✓ 7.2	
	⟨7+84⟩ ✓	6 [?]	⟨7+84⟩ ✓	

Via alley E of Frankford

check to T.P. & Pt. alley to N. 4.25 71.81

Please check to F.B. 18,21

1+66.7 SL

+50

1+

+50

T.P. 4.80 (78.06) 1.58 (73.26)

11

+50

10+00

(74.84)

℄

75.0
3.1

75.4
2.7

74.8
3.3

74.7
3.4

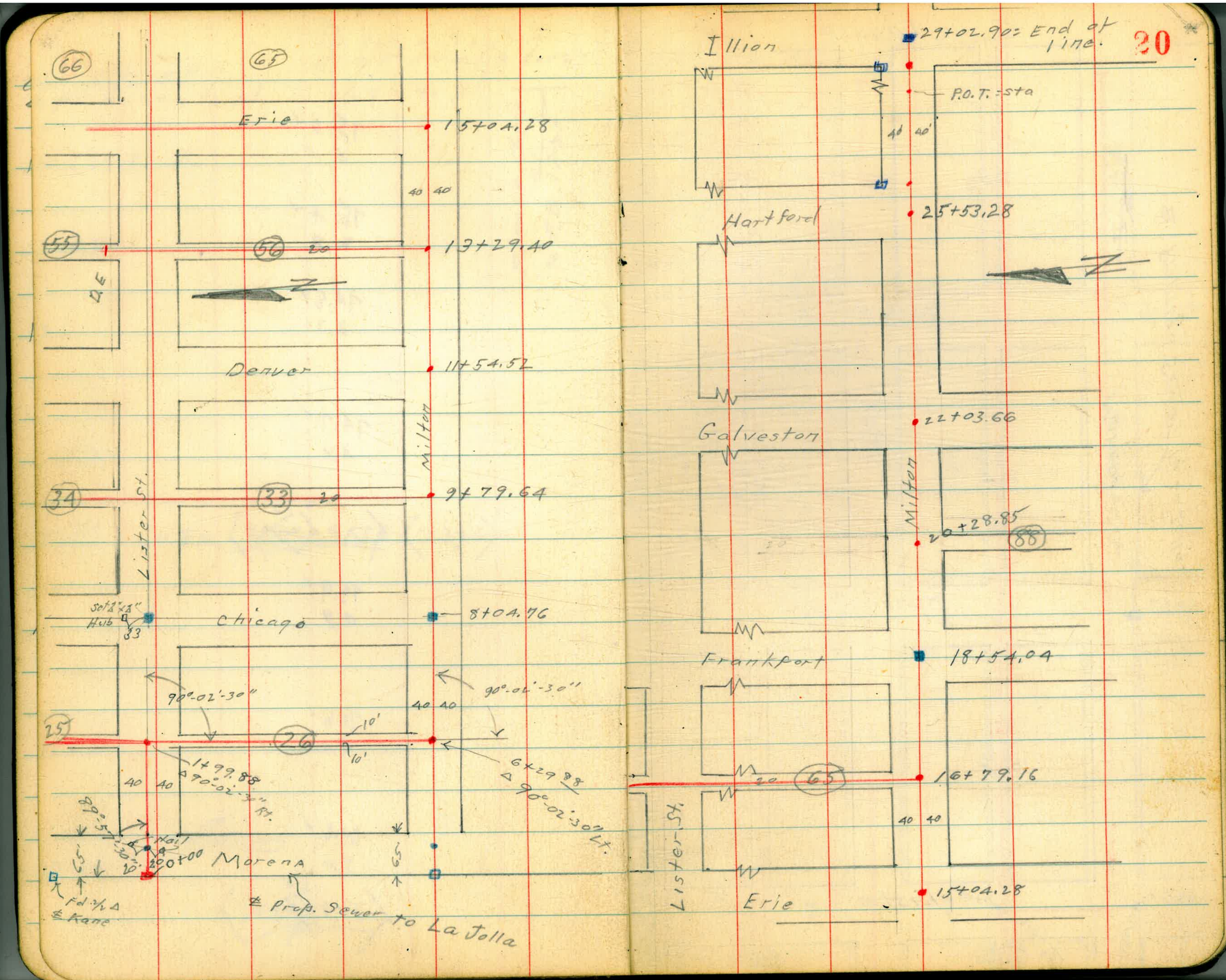
(78.06)

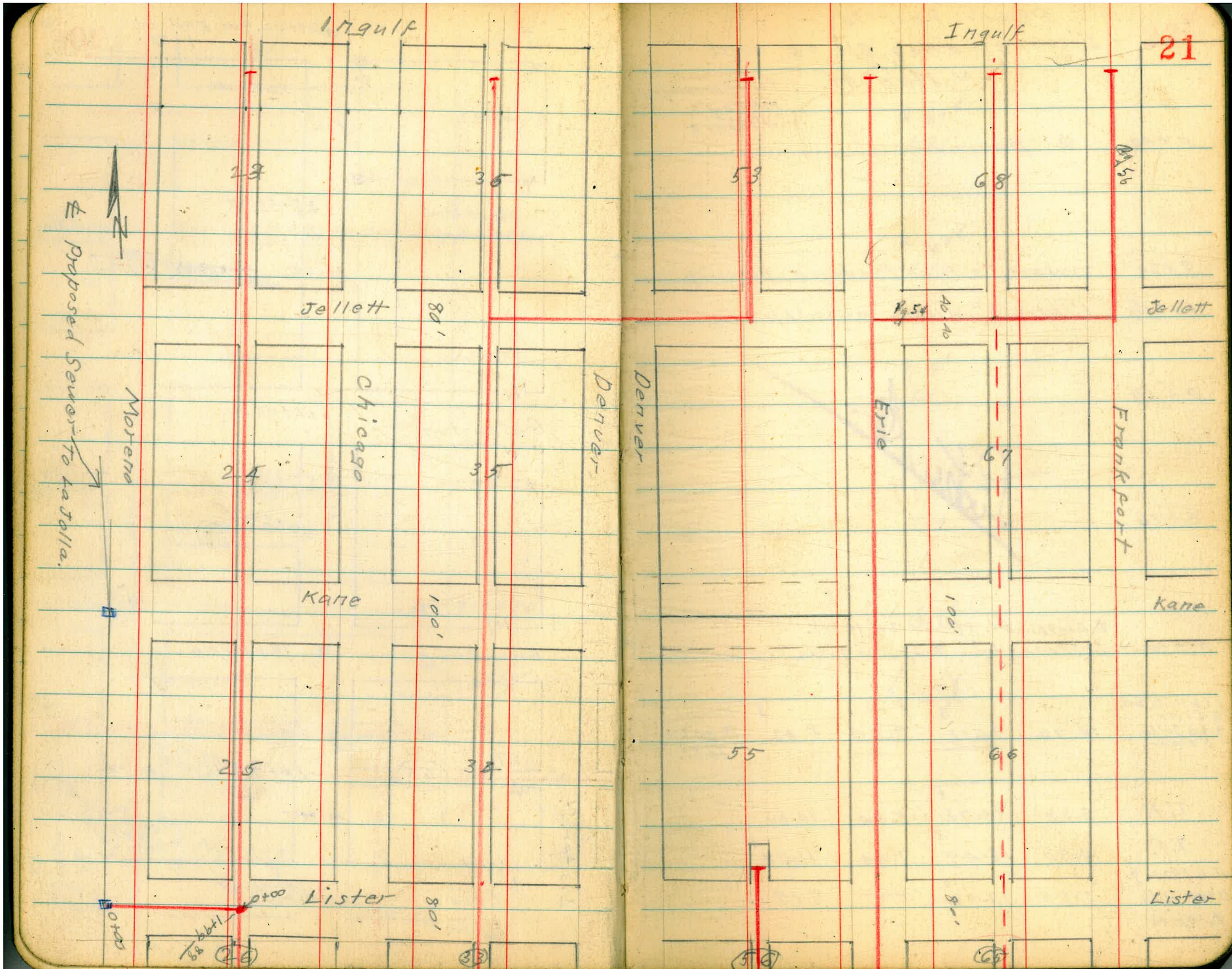
73.9
0.9

71.8
3.0

69.8
5.0

(74.84)


66
65
Erie
15+04.28
40 40
55
56
20
13+29.40
Denver
11+54.52
Milton
34
33
20
9+79.64
Lister St.
Set 2"x2" Hub
33
Chicago
8+04.76
90°-02'-30"
90°-02'-30"
40 40
25
26
10'
10'
6+29.88
Δ 90°-02'-30" Lt.
1+99.88
Δ 90°-02'-30" Rt.
40
40
89°-57'-30"
Nail
0+00
Morena
65'
Fd. ½ Δ
℄ Kane
℄ Prop. Sewer to La Jolla
Illion
29+02.90 = End of line
P.O.T. = sta
40 40
25+53.28
Hartford
Galveston
22+03.66
Milton
20+28.85
88
Frankfort
18+54.04
65
20
16+79.16
40 40
Lister St.
Erie
15+04.28


Ingulf
Ingulf
Jellett
Jellett
Kane
Kane
Lister
Lister
Moreno
Chicago
Denver
Denver
Erie
Frankfort
℄ Proposed Sewer to La Jolla.
N
23
36
53
68
24
35
67
25
34
55
66
80'
100'
80'
100'
0+00
0+00
26
33
56
65

Sewer profile
Lister St- Alley Blk 26 and
Milton St. Sommermeyer
McCoy
W Moore

0+40 = ℄ paving

0+30 = West. edge Moreno paving

0+21± 1° Lt. = 8" diam. eucalyptus

0+19

0+16

℄ Lister St. (Page 20-left).
0+00 = Intersection Prop. La Jolla sewer ℄

2+2 Hub. Int. ℄ Lister ℄ La Jolla Sewer.	10.70	16.12	9.30	5.42	=0+00 Page 20 left.
T.P.	3.88	14.72	5.64	10.84	
T.P.	4.90	16.48	1.44	11.58	
FB 1821-9. 0+00 Hub. ℄ Napier	5.85	13.02	—	7.17	

℄

9 61
6.31

9 62
6.50

9.0
7.1

5.1
10.4

5.1
10.4

16.12

Lister St. Alley Blk 26 and Milton St. (sketch Page 24)

2+25

Alley Bl. 26

1+99.88 = ∠ 90°-02'-30" Rt. Also = 0+00 to North

1+50

Lister St.

1+00

0+90 27' Rt. = ctr. 4' diam. eucalyptus

0+75

0+55

0+50 = East edge paving

(16.12)

℄

12.1 ✓
4.0

12.2 ✓
3.9

11.3 ✓
4.8

10.6 ✓
5.5

10.1 ✓
6.0

9.4 ✓
6.7

9.58 ✓
6.54
(16.12) ✓

3+00 to 18+21.58

T.P. 5.78 (20.19) 1.71 (14.41)

2+50

(16.12)

(20.19)

19.8

3.3

(16.12)

Sewer Levels for Blk.
IN Bay Park Village, Betw.
Monona Blvd

0+61	Δ to Pt. on Sky	See Sketch 1821 5x		12.3 ✓ 1.8
0+50	Top curb			12.56 1.56 curb
0+50				11.8 ✓ 2.3
0+30	W. edge Pav. Conc Base			11.8 ✓ 2.3
0+00	= on Main Line Trunk Sewer # 2			11.6 ✓ 2.5
check to xxx ℄ Napier		6.95	7.17 ✓	7.17
B.M.B.P. Top W. hdwl R.R. Culv. 150' S of Napier	7.36 (14.12) ✓		6.76	(14.12) ✓

3 + 22.5 = D E

3 + 03 4' Rt = Gr. 4' di. Eucal tree

3

+ 50

2

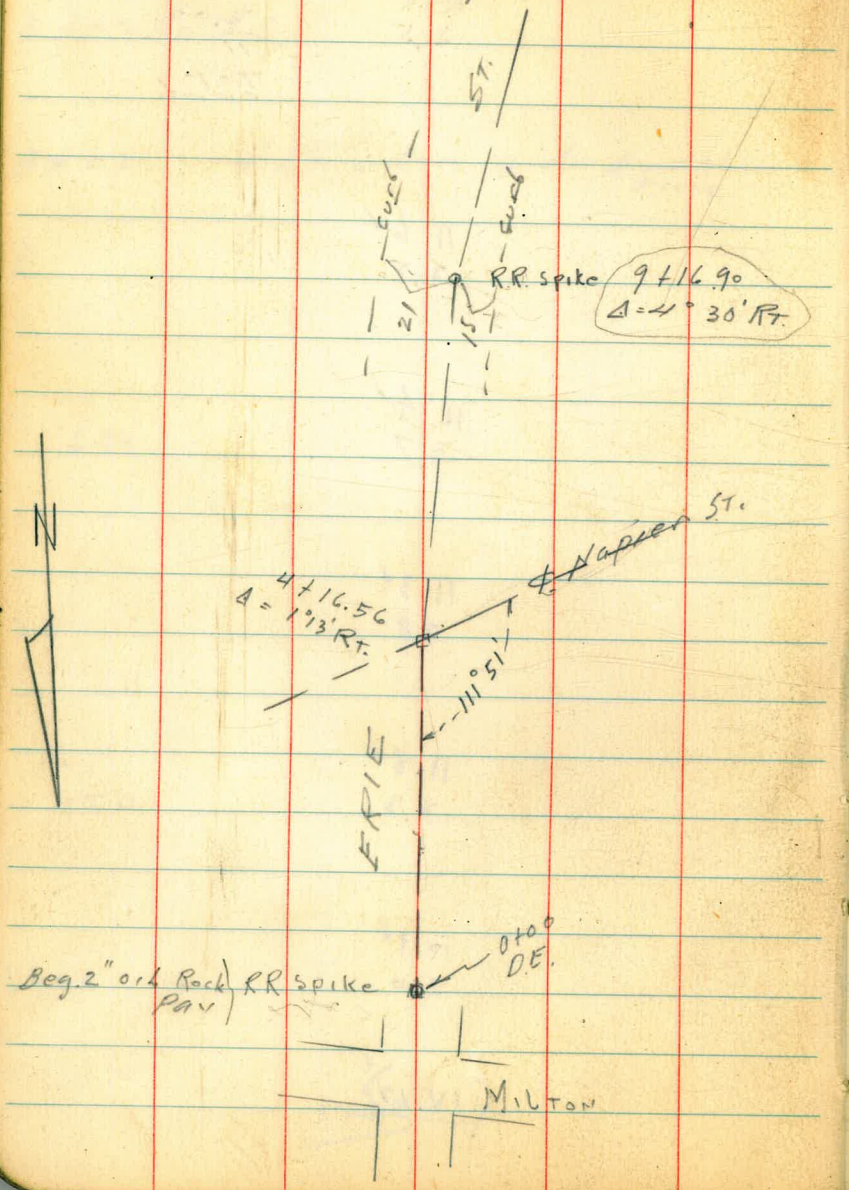
+ 50

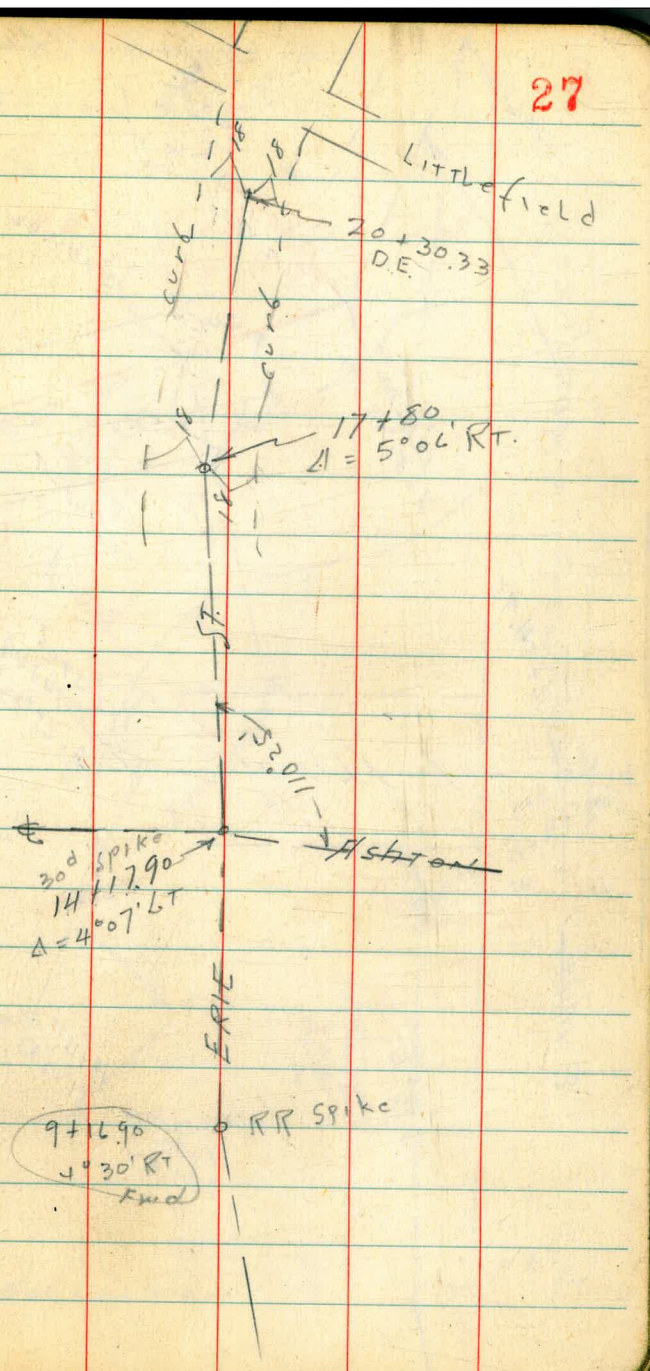
1 + 00

14.12

	℄	Rt
	11.6 ✓ 2.5	12.10 2.02 / 11 Top curb
	11 6 ✓ 2.5	
	11 4 ✓ 2.7	
	11.3 ✓ 2.8	
	11.8 ✓ 2.3	
	12.1 ✓ 2.0	
	{14.12} ✓	

Sewer Levels on ERIE ST.
Milton St. to Littlefield.



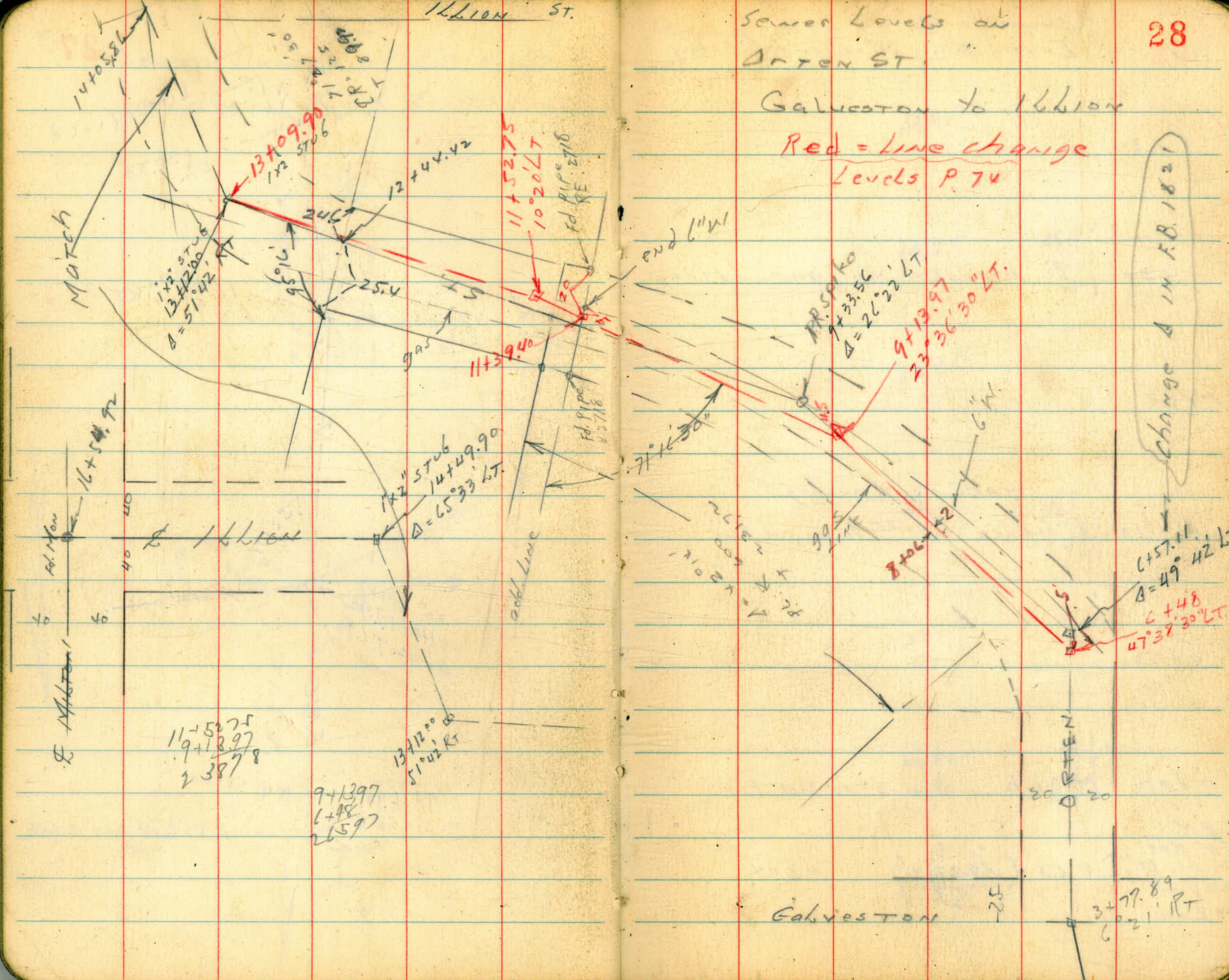


Sewer Levels on Orten St.

Galveston to Illion

Red = Line change

Levels P. 74



Sewer Levels on Erie St. Milton to Little field

Sketch P. 27

		℄	R+
1+50		44.9 ✓ 4.8	
+30	℄ house No gar. Ld. Tray.	44.8 ✓ 4.9	45.7 ✓ 4.0 48 Fl. el.
1+00		44.6 ✓ 5.1	
	gar. no Laundry		
0+70	℄ house (1st. house on Rt.	44.1 ✓ 5.6	45.5 ✓ 4.2 48 Fl. el.
0+50		43.7 ✓ 6.0	
0+00	R.R. S Pike Beg. 2" oil Rock Pav.	42.81 ✓ 6.80	39.6 ✓ 10.1 125
	B.M. S.E. Ret. Chisel □ Top cc. 6.63 (49.67) ✓ Napier + Erie	(49.67) ✓	43.0 ✓

Erie

4

+50

3

+80 ℄ gar. With 2 dy. Trays

Same P.O.

+55 ℄ House

2 +05 ℄ House

1 +87 ℄ gar.

(49.67)

℄ 42.7
7.0

43.3
C.x

43.8
5.9

44.1
5.6

42.4
7.3
80 Fl. el.

44.n
5.5

45.7
4.0
50 Fl. el.

44.7
5.0

45 n
4.5
50 Fl. el.

44.8
4.9

43.6
6.1
57 gar. Fl. el.

(49.67)

Erie

6+04	℄ gar. with 2 dy. trays		
	Same P.O.		
+80	℄ House		
+50			
5			
4+50			
T.P.	4.97 ⟨48.01⟩	6.63 ⟨43.04⟩	
4+16.56	Δ = 1°13' Rt ℄ Napier St		
	⟨49.67⟩		

℄	Pr
43.4	40.4
4.6	7.1
	85 Fl. el.
43.1	43.9
4.9	4.1
	48 Fl. el.
42.8	
5.2	
42.4	
5.6	
42.0	
6.0	
⟨48.01⟩	
42.7	
7.0	
⟨49.67⟩	

Erie St

7+85	℄ gar.		Ldy trays	℄ 45.4 ✓ 2.6	Pt 43.4 ✓ 4.6 / 82	Fl. el.
	same p.o.					
+62	℄ house			45.2 ✓ 2.8	46.4 ✓ 1.6 / 46	Fl. el.
+50				45.1 ✓ 2.9		
7+25	℄ gar. with Ldy. trays			44.9 ✓ 3.1	43.0 ✓ 5.0 / 85	Fl. el.
	same p.o.					
7+00	℄ house			44.7 ✓ 3.3	45.8 ✓ 2.2 / 40	Fl. el.
6+65	℄ gar. with Ldy. trays			44.2 ✓ 3.8	42.0 ✓ 6.0 / 85	Fl.
	same p.o.					
6+40	℄ house			43.8 ✓ 4.2	45.0 ✓ 3.0 / 46	Fl. el.

⟨48.01⟩ ✓ ⟨48.01⟩ ✓

Erie St

9+40	49 R gar Ldy Tray					
9+16.90	⊿ 4°30' Rt.	℄ gar. with Ldy. Trays				
+87	℄ house					
+50	℄ gar. with Ldy. Trays					
	same R.O.					
+25	℄ house					
8+00						
T.P.	5.59	⟨51.00⟩	2.60	⟨45.41⟩		
		⟨48.01⟩				

℄	Rt
46.2 ✓ ✓	45.0 ✓
4.8	6.0
	49
46.2 ✓ ✓	43.0 ✓
4.8	8.0
	95 Fl. el.
46.0 ✓	46.1 ✓ ✓
5.0	4.9
	45 Fl. el.
45.8 ✓	43.0 ✓
5.2	8.0
	82 Fl. el.
45.7 ✓	46.5 ✓
5.3	4.5
	47 Fl. el.
45.5 ✓	
5.5	
⟨51.00⟩ ✓	

Erie

11+20	49	R	gar	Tray		
11+00						
10+80	49	R	House	℄		
10+61	49	R	gar	Tray		
10+20	48	R	House	℄		
10+00	48	R	House	℄		
+58	House	49	R			
			(51.00)			

℄	R
45.4 ✓ 5.6	44.0 ✓ 7.0 49
45.6 ✓ 5.4	
45.7 ✓ 5.3	45.8 ✓ 5.2 49
45.8 ✓ 5.2	44.5 ✓ 6.5 49
46.2 ✓ 4.8	45.9 ✓ 5.1 48
46.2 ✓ 4.8	44.8 ✓ 6.2 48
46.3 ✓ 4.7	46.3 ✓ 4.7 Flat 49
(51.00) ✓	

Erie

+50

13

+61 E House

same P.O.

+v3 9 gar. with Ldy trays

12+00 E House

+80 9 gar. with Ldy. trays

T.P. 5.79 [50.87] 5.92 [45.08]

11 +40 49 R House

[51.00]

44.6
6.3

44.7
4.7

44.9
6.0

44.9
6.0

45.0
5.9

45.1
5.8

[50.87]

45.3
5.7

[51.00]

41.3
9.6
125 Vac. Lot

45.6
5.3
50 Fl. cl.

44.
6.7
50 Fl. cl.

45 5
5.4
44 Fl. cl.

43.3
7.6
65

45.4
5.6
49 Fl cl

Erie

+50

+40 E sta with 2dy. trays

+13 E house

15

+50

14 +17.90 Δ 4°07'2T. ℄ Ashton

14

(50.87)

℄ Pr.

46.3 ✓
4.4

46.2 ✓
4.7

47.7 ✓
3.2
43 Fl. el.

45.9 ✓
5.0

50.6 ✓
0.3
45 Fl. el.

45.8 ✓
5.1

45.2 ✓
5.7

45.2 ✓
5.7.

44.6 ✓
6.3

(50.87)

R.R. Spike

T.P. 17+80 — 10.40 ⟨C 0.31⟩ ✓ — 0.96 ⟨49.91⟩ ✓

17+80 — Δ 5°00' Rt

+50 — 50.0 ✓ / 0.9

49.3 ✓ / 1.6

17 — 48.3 ✓ / 2.6 — 44.5 ✓ / 6.4 / 125

+50 — 47.6 ✓ / 3.3

16 — E gar. with Ldy. trays — 47.0 ✓ / 3.9 — 45.7 ✓ / 5.2 / 95 Fl. el.

Same P.D.

15+73 — E House — 46.6 ✓ / 4.3 — 48.6 ✓ / 2.3 / 45 Fl. el.

⟨50.87⟩ ✓ — ⟨50.87⟩ ✓

Erie St

20+00		℄	Pt.
		57.4 ✓	
		2.9	
+65	℄ House	56. ✓ ✓	58.5 ✓
	same p.o.	4.1	1.8
			54 FL. el.
+40	℄ gar.	55 ✓ ✓	54.9 ✓
		5.1	5.4
			95 FL. el.
19		53.6 ✓	50.9 ✓
		6.7	9.4
			125
+50		51.9 ✓	
		8.4	
18		50.3 ✓	47.6 ✓
		10.0	12.7
			125
	(0.3) ✓	(0.3) ✓	

Erie St. | | ℄ | Rt

Check to NWBP Frankfort and Gardena Ave			6.50	64.20 (64.22 P. 10)	Rec. 64.12						
T.P.	3.19	70.70	5.27	67.51							
T.P.			0.35	59.96							
20+30-33	D.E. opposite North Line Last house on Lt. which is on Higher ground								58.6 / 1.7		
20+15	℄ house		Last house on Rt.			gar. in rear	With Ldy. Trays		58.0 / 2.3	59.0 / 1.3 / 50 ← fl. el.	53.8 / 6.5 / ↑ 100 gar.

(6031) (6031)

Seven Levels on
Orton ST.
Frankfort & Ly
to Nelson ST.

8

					72.1 ✓
2+50					9.5
T.P	12.78	81.64 ✓	0.52	68.86 ✓	81.64 ✓
1+96.9	△ to Lt. see sketch 1821				67.1 ✓
					1.7
+50					64.5 ✓
					4.9
1					62. ✓✓
					7.2
0+50					60 ✓✓
					9.2
0+00					46.8 46.
B.M. 2x2 Hub					
4+30.5	12.58	69.38 ✓		56.80	69.38
Page 3					

Orton St.

					℄	Rt.
5+50					90.8 / 1.9	85.1 / 7.6 / 80 Swale
5+00					90.2 / 2.5	
4+50					89.2 / 3.5	80.2 / 12.5 / 90 swale
Set B.M. on 2" pipe Cor. S.E. cor. of Orton and Galveston			8.48	84.21		
4+00 Beg. of ½" oil Pavi.					85.3 / 7.4	
3+77.89± Δ Rt. (check this)			Sketch F.B. 182		83.5 / 9.2	
T.P.	12.37	(92.69)	1.32	(80.32)	(92.69)	
+50					80.6 / 1.0	
3+00					76.6 / 5.0	
		(81.14)			(81.14)	

Orton St.

T.P. → 0.37 ⟨92.32⟩

6+57.11 Δ = 49°42' Lt.
New angle

2×2 Hub

6+57.11
Δ = 49°42' Lt.

6+16.5 Cross 24" iron pipe drain

42°
20'

6+15

6+00

⟨92.69⟩

Lt | ℄ | Rt

42

91.9
0.8

88.56
4.13
8.2
INV.

91.2
1.5

85.65
7.0
43.4
INV.

91.2
1.5

90.7
2.0

88.3
4.4
50

⟨92.69⟩

Sewer Levels & Alley
Betw. ERIE & Frankfort.
Milton Nly to Ingalls

T.P.	11.07	(64.96) ✓	0.1 ✓	(53.89) ✓
+ 66				53.3 ✓
				0.7
+ 50				49.9 ✓
				4.1
+ 21				49.8 ✓
				4.2
+ 16				49.0 ✓
				5.0
+ 13				46.3 ✓
				7.7
+ 7				46 ✓
				7.8
0+00 & Milton				48.1 ✓
				5.9
BM BP SW curb Milton and Erie	11.93	(54.03) ✓	(42.10)	48.1 ✓
				5.9
				(54.03) ✓

4

3+60 Rear house (Septic Tank in front

3+50

TP 7.50 ⟨71.09⟩ 1.37 ⟨63.59⟩

3+00

+78 Large Orange Tree on ℄

+72 5' Rt ℄ W. side 18' Shed

+50

+20 house

2

1+50

⟨64.96⟩

Lt.

65 5 7

61.9 9.2 35 FL el.

63 7 7.4

63.6 7.5

⟨71.09⟩

55 5 9.5 80

64 9 2.1

64.7 2.3

56.0 9.0 70 Fl. el.

61 7 3.3

61 1 3.9

58.3 6.7

⟨64.96⟩

owner says he will

T.P.	8.38	79.46 ✓	0.01 (71.08) ✓
7+00	House		
+45	house		
6			
+91	house		
+45	house		
5			
+80	house		
+50			
4+30	℄ Lister	(71.09) ✓	

℄

	67.4 ✓	70.3 ✓
	8.7	0.8
	90	
	61.9 ✓	69.0 ✓
	9.2	2.1
	90	
	FL. EL.	
		69.2 ✓
		1.9
	62.6 ✓	69.3 ✓
	8.5	1.8
	90	
	FL. EL.	
	61.3 ✓	69.0 ✓
	9.8	2.1
	90	
	FL. EL.	67.6 ✓
		3.5
	58.1 ✓	67.5 ✓
	12.4	3.6
	90	
	FL. EL.	
		66.8 ✓
		4.3
		66.1 ✓
		4.4
		(71.09) ✓

		Lt	℄
+50			77.7 ✓ 1.8
11		67.5 12.0 100	75.3 ✓ 4.2
+50			75.0 ✓ 4.5
10	NO houses in this Blk.	65.0 14.5 100	74.1 ✓ 5.4
+50			73.6 ✓ 5.9
9			73.1 ✓ 6.4
8+70	E Kane		73.0 ✓ 6.5
+50			72.5 ✓ 7.0
8+00	House	63.5 16.0 97 FL.EL.	72.4 ✓ 7.1
7+50	House	62.3 17.2 97 FL.EL.	71.5 ✓ 8.0
	79.46		79.46 ✓

						27		℄
+50								86.0 ✓ 3.0
15							73.9 ✓ 15.1 100	85.8 ✓ 3.2
+50								83.7 ✓ 5.3
14							70.0 ✓ 19.0 100	81.8 ✓ 7.2
+50								81.0 ✓ 8.0
+10	℄ dellett ±							79.8 ✓ 9.2
13								79.5 ✓ 9.5
T.P.	10.54	⟨89.00⟩ ✓	1.00	⟨78.46⟩ ✓				⟨89.00⟩ ✓
+50								79.1 ✓ 0.4
12							68.4 ✓ 11.1	78.3 ✓ 1.2
		⟨79.46⟩ ✓						⟨79.46⟩ ✓

20 drops into CAÑON

+50

19

18+50

Set NAIL B.M. on P.P # J.P 4252 10' Rt. of 17+00 — 8.22 ⟨84.48⟩

18+00

17+40 ℄ Ingult

17+40 ℄ Ingult 45° Rt. approx. S.W. Cor. of 2½ story house

17

T.P. 10.73 ⟨92.79⟩ 7.03 ⟨81.97⟩

+50

16

⟨89.00⟩

Lt	℄	Rt.
	75.7 ✓	
	17.0	
	81.4 ✓	
	11.3	
	82.4 ✓	
	10.3	
	83.4 ✓	
	9.3	
	83.0 ✓	
	9.7	
71.1 ✓	75.6 ✓	
21.6	17.1	
100	50	
	80.8 ✓	
	11.9	
	80.8 ✓	93.1 ✓
	11.9	+0.4
		93.5 Basemt. Fl. el.
Note this		
	82.7 ✓	
	10.0	
	⟨92.70⟩ ✓	
	84.9	
	4.1	
77.6	86.4	
16.4	2.6	
100		
	⟨89.00⟩ ✓	

Sewer Levels on
℄ Erie St.

Betw. Milton & Ingolf.

3				
+74	S.E. Cor. of House			
+50				
2				
+50				
1+00				
+50				
0+00	℄ Milton			
B.M. SW BP Milton and Erie	9.70	(51.80)	42.10	

Lt	℄
	48.1 ✓
	3.7
46.4 ✓	47.1 ✓
5.4	4.7
70	
	46.0 ✓
	5.8
	44.1 ✓
	7.7
39.3	43.5 ✓
12.5	8.3
100	
grd	
	43.4 ✓
	8.4
	42.8 ✓
	9.0
	42.7 ✓
	9.1
	(51.80) ✓

7				Lt	Rt
+50				49.1 ✓	55.0 ✓
				10.8	4.9
6				100	
+50					54.8 ✓
					5.1
					54.3 ✓
					5.6
					53.4 ✓
					6.5
5				45.8 ✓	52.5 ✓
				14.1	7.4
T.P.	8.27	⟨59.87⟩ ✓	0.20	100	
					⟨59.87⟩ ✓
+50					51.0 ✓
					0.8
+30	E Liston				50.6 ✓
					1.2
4					50.6 ✓
					1.2
					49.4 ✓
3 +50					2.4
		⟨51.80⟩ ✓			⟨51.80⟩ ✓

11

+50

T.P. 11.02 ⟨70.39⟩ 0.50 ⟨59.37⟩

10

+50

9

+70 E Kane St.

+50

8

7+50

⟨59.87⟩

Lt

56.2
14.2
100

53.6
6.3
100

Rt

62.1
8.3

60.1
9.7

⟨70.39⟩

59.5
0.4

58.0
1.9

57.0
2.9

56.7
3.2

56.5
3.4

55.1
4.2

55.3
4.6

⟨59.87⟩

+29 house

14

#4149
Set Nail B.M. on P.P.
SW Cor of Jellett 6.51 (63.88)
and Erie Sts.

+71 house

+50

13 +10 ℄ Jellett ✓

13

+50

12

11+50

(70.39)

Lt ℄

65.0 66.1
5.4 4.3
69
Fl. el.

66.0
4.4

64.4 65.7
6.0 4.7
72
Fl. el.

65.5
4.9

66.0
4.4

65.9
4.5

64.9
5.5

64.1
6.3

63.8
7.2

(70.39)

		Lt	℄	Rt
				Note!
+40 ℄ Ingulf	1740 1310 430		64.7 ✓ 5.7	68.8 ✓ 1.6 50
17			65.4 ✓ 5.0	
+50			65.3 ✓ 5.1	
16			65.5 ✓ 4.9	
+50			65.6 ✓ 4.8	
+24 house		63.4 ✓ 7.0 69 Fl. el.	65.8 ✓ 4.6	
15			66.1 ✓ 4.3	
+80 house		65.0 ✓ 5.4 69 Fl. el.	66.2 ✓ 4.2	
14+50			66.2 ✓ 4.2	

⟨7039⟩ ✓

⟨7039⟩ ✓

Sewer Levels on
℄ of Jellett St.
Erie to Frankfort
thence Nly to Ingulf

2+50

T.P. 13.01 (95.03) ✓
~~95.03~~ ~~13.01~~ 0.82 (82.02) ✓

2

+75 ℄ alley

- - +50

1

T.P. 13.04 (82.84) ✓ 0.59 (69.80) ✓

0+50

0+00 = 13+10 P.S2 (ERIE)

(70.39) ✓

℄

86.5 ✓
8.5

(95.03) ✓

82.1 ✓
0.7

19.8 ✓
3.0

17.5 ✓
5.3

13.5 ✓
9.3

82.84 ✓

69.8 ✓
0.6

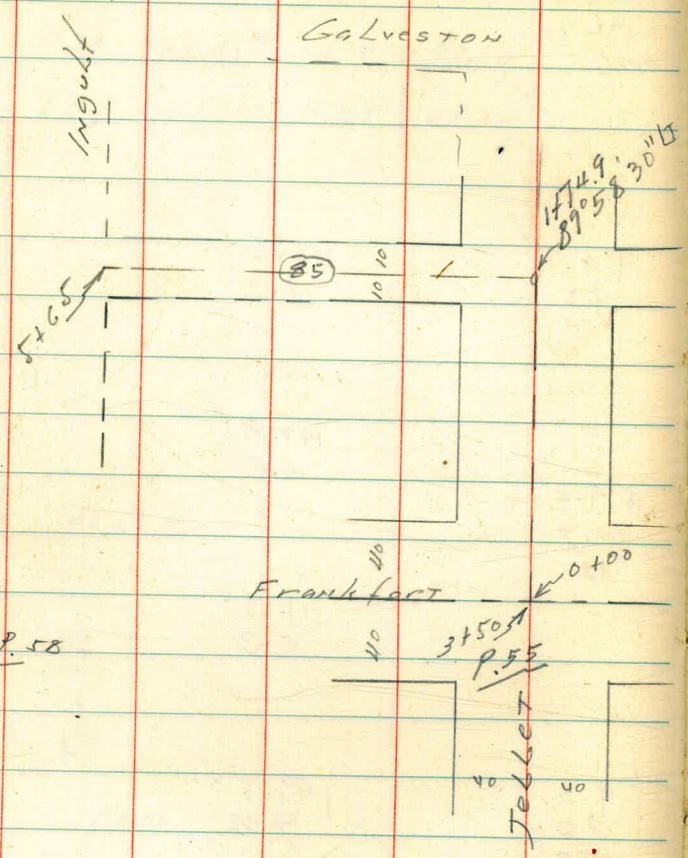
66.0 ✓
4.4

(70.39) ✓

	+	#1	−	Lt	℄
T.P.	10.68	(116.67)	0.40	(105.99)	
5+00				93.2 / 13.2 / 100	104.4 / 2.0
4+50		Frankfort			102.1 / 4.3
4+0					99.9 / 6.5
3+50	△Lt.	Frankfort			98.4 / 8.0
T.P.	11.72	(106.39)	0.36	(94.67)	(106.39)
3+0		Joliet			92.9 / 2.1
		(95.03)			(95.03)

						Lt		℄		
					see P 48					
			9.48	84.47	84.48	nail on PP				
	0.83	⟨93.95⟩	12.19	⟨93.12⟩	.01	425-2 on Ingulls				
T.P	0.07	⟨105.31⟩	11.43	⟨105.24⟩						
7+50						94.1 22 100		113.5 3.2		
7+0								112.4 4.3		
6+75	68 L House					97.0 19.7 68				
6+50	Frankfort							111.5 5.2		
6+00	House 130 Lt					93.8 22.9 130		109.5 7.2		
5+5								107.1 9.6		
		⟨116.67⟩						⟨116.67⟩		

Sewer levels in alley
Betw. Frankfort & Galveston
to Ingalls & Jellett



Cont'd. P.58

1+00

0+50

0+00 = 3+50

Ground at
3+50 Alt. 13.10 (111.50) 98.40
P.55

109.1
1.8

103.5
8.0

98.4
13.1

(111.50)

T.P.	5.36	140.31		0.58	134.95		
K 4+45							
3+90							
4+45							
3							
T.P.	13.01	135.53		1.65	122.52		
4+50							
N							
1+74.9	89°58'30"						
1+35							
T.P.	12.82	124.17		0.15	111.35		
		111.50					

L.T.		℄	
	127.1		132.0
	13.4		0.5
R. House	90		
	119.5		131.1
	16.0		3.4
FL. house	90		
	117.3		129.6
	18.4		5.9
FL. house	90		
	113.1		126.6
	22.4		8.9
	90		
Floor			
house			
			135.53
			123.1
			1.1
			120.3
			3.9
			119.4
			5.0
			114.4
			9.8
			124.17

check to	nail B.M. P.P. (T.P. # 4252) p.48		8.99	84.51	84.48
T.P.	0.35	93.50	12.49	93.16	
T.P.	0.37	105.65	11.41	105.28	
T.P.	0.26	116.69	12.19	116.43	
T.P.	0.56	128.62	12.25	128.06	
5+65	52 lagulf				
4+90					

(140.31)

4+   8

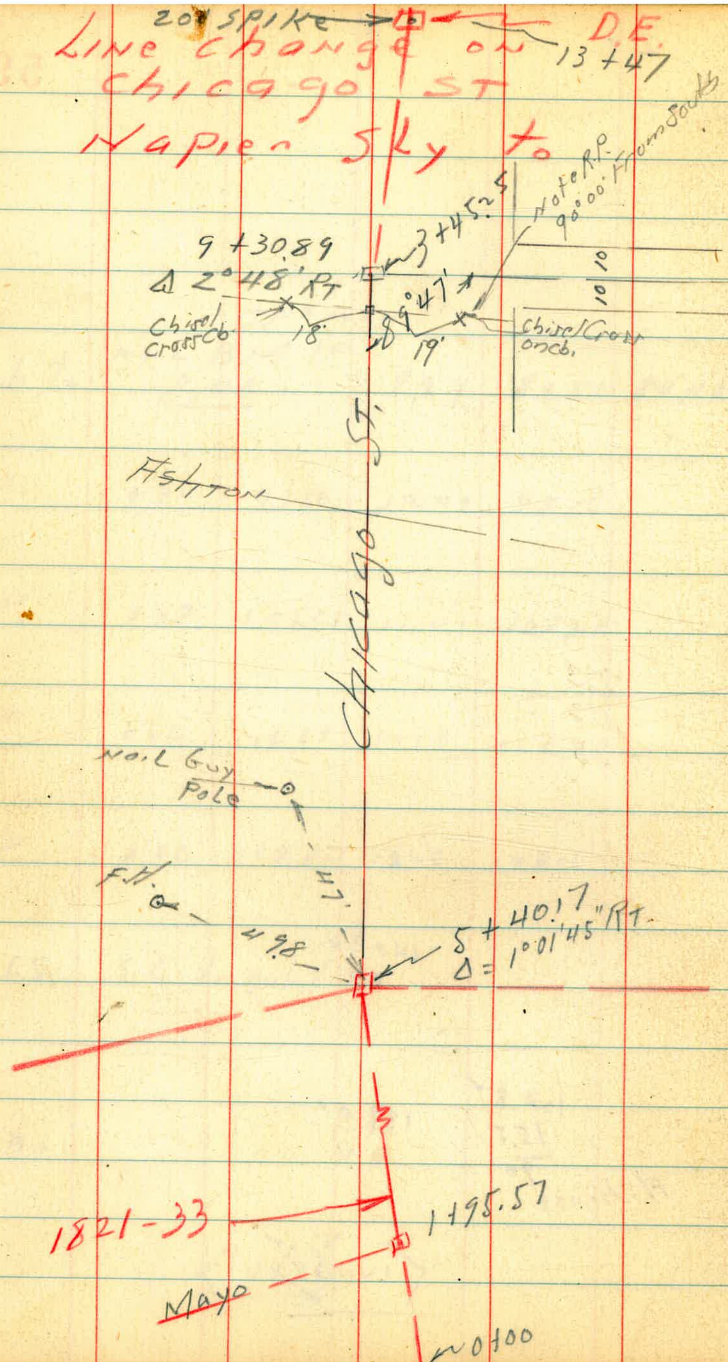
140.3
0.0

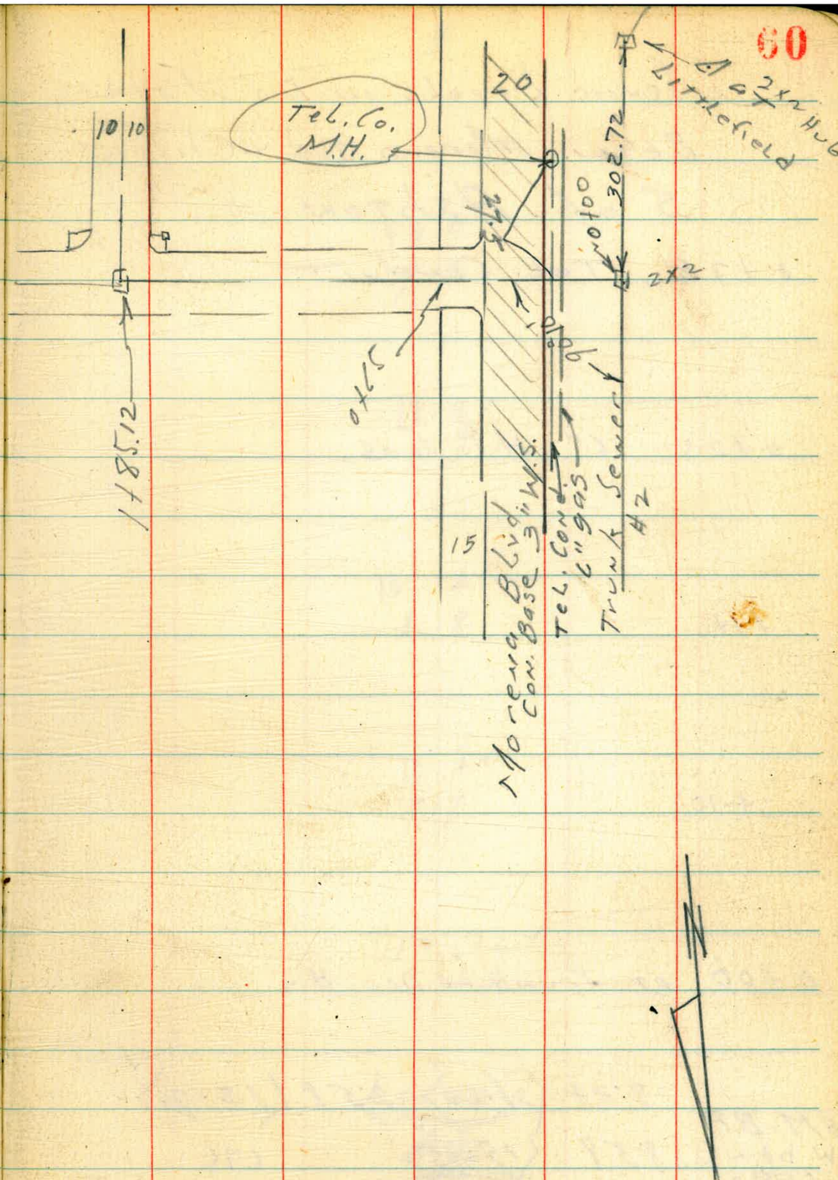
124.8
15.5
90

137.9
2.4

Fl. house

(140.31)


20d SPIKE
D.E.
13+47
Line change on
Chicago St
Napier Sky to
9+30.89
Δ 2°48' Rt
3+45±5
Note R.P. 90°00' From South
Chisel cross cb.
18'
19'
Chisel Cross on cb.
Ashton
Chicago St.
Nail Guy Pole
F.H.
4.98
5+40.17
Δ = 1°01'45" Rt.
1821-33
1+95.57
Mayo
0+00


20
Tel. Co. M.H.
Δ at 2x2 Hub Littlefield
10 10
302.72
0+00
2x2
1+85.12
0+65
15
Morena Blvd.
Con. Base 3" W.S.
Tel. Conc.
6" gas
Trunk Sewer #2
N

Sewer Levels in E+W alley
Betw. Morena Bld. + Chicago
S of Ashton St.

	℄
0+28 Tel. Conduit	12.0 ✓ / 9.2
0+25 6" H.P. Gas	11.9 ✓ / 9.3
+14	12.4 ✓ / 8.8
+10	13.5 ✓ / 7.7
0+00 at Trunk Sewer #2	12.76 ✓ / 8.44

8.44 ⟨21.20⟩ ✓ 2.58 ⟨12.76⟩ ✓
B.M. B.P. W. hdwl. of RR Culv. 150' S of Napier or 900' N of ~~Kennedys~~ Rd. House 8.58 ⟨15.34⟩ ✓ 676

⟨21.20⟩ ✓
15.34

2+00

1+85.12

+50

1+00

0+65

0+50 E edge Pav.

MORENA Blvd.

0+30 W edge Pav. 6" Con. Base 3" AC.S

21.20

17.8 ✓
3.4

17.6 ✓
3.4

16.7 ✓
4.5

14.8 ✓
6.7

12.6 ✓
8.6

12.15 ✓
9.05

~~9.05~~

12.07 ✓
9.13

(21.20) ✓

℄

check to old hub Δ Pt. 0,38 20,82 20,81
10' N Ly

3+45,25 = ℄ Chicago

+15

3

2+50

2120

20.9 ✓
0.3

20.4 ✓
0.8

19.9 ✓
1.3

18.7 ✓
2.5

(2120) ✓

Sewer Levels
ON ASHTON ST.
Denver to abbey
EAST of FRONT ST.

2+44 cross HP gas line

2

+50

1

0+50

0+07 = Cross 6" WATERLINE

0+00 = 30d spike & Denver and ASHTON 10+91.3V

30d BM. Spike 1821-23 11.3V (49.1V) 37.80

&

44.1 4V

43.1 5.V

42.1 6.7

40.9 8.2

39.1 9.7

37.8 11.3

Beg. of 2" Pav.

(49.1V)

℄

5

54.0 ✓
6.6

+50

52.0 ✓
8.6

4

50.0 ✓
10.6

T.P. 11.60 [60.61] ✓ 0.13 [49.01] ✓

[60.61] ✓

+50

48.0 ✓
1.1

3

46.1 ✓
3.0

2+72 Cross 6" Water Line

45.1 ✓
4.0

2+63.6 Δ 9°58' Lt ℄ ERIC ST.

[49.14]

7+43.25	2x2 Hub & Alloy	3.68	67.24	67.27	P.I.#
7				0.03	
6+50					
T.P.	10.68	70.92	0.37	60.24	
6+00					
5+53 = Cross 6" waterline					
5+46.42 Δ 3°07' LT. = 2' W of ℄ of Frankfort					
5+41 end of 2" Blk Pav.					
5+21					
				(60.61) ✓	

℄

67.5 ✓
3.4 ← ground

64.3 ✓
6.6

60.8 ✓
10.1

70.92

58.0 ✓
2.6

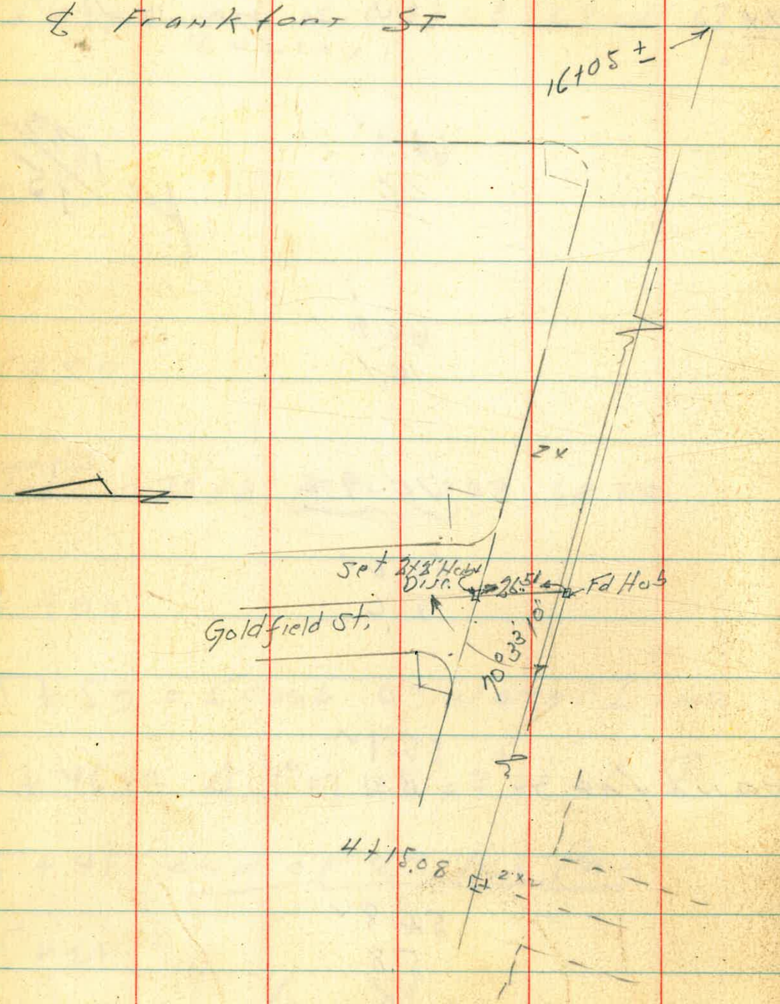
55.7 ✓
4.9

54.8 ✓
5.8

(60.61) ✓

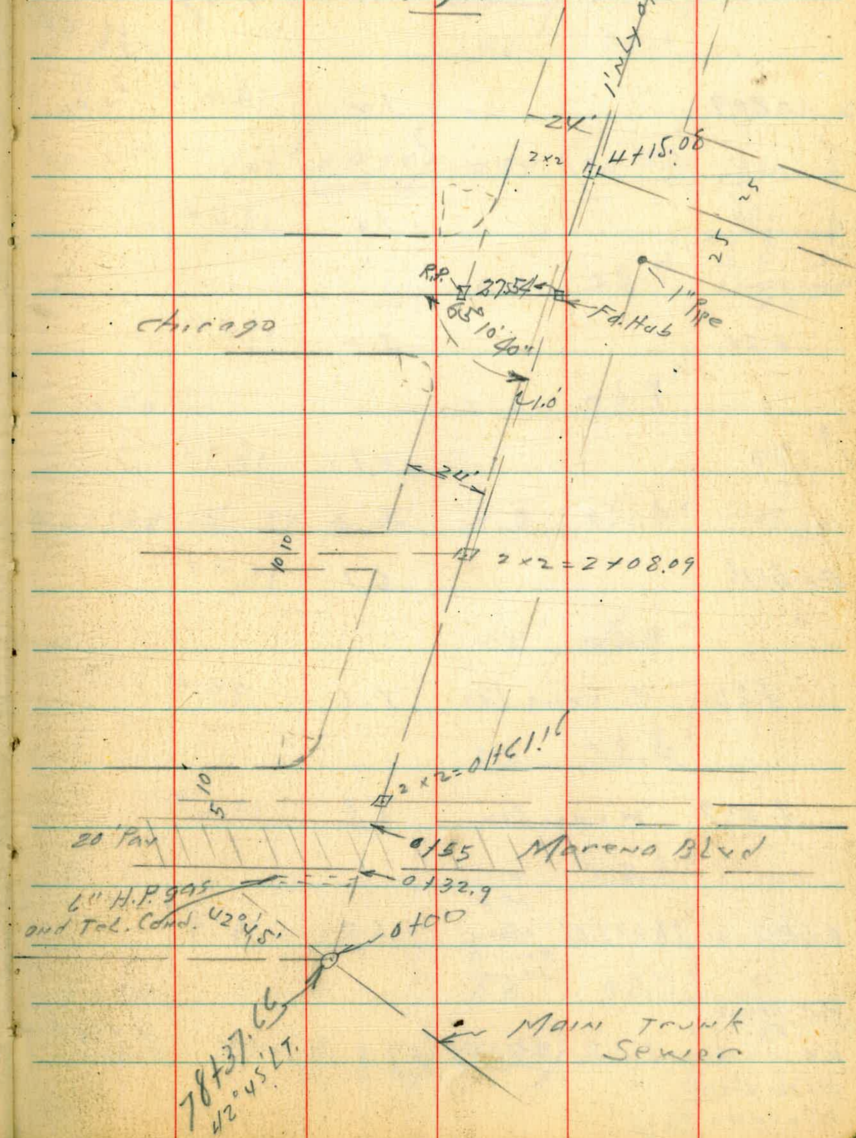
1833/15

Sewer Levels on Littlefield
1' nly of ℄ St.
Old Sketch 1821-67



4-28-48

Sly 50 Mile Wind?
don't tell Mo Deyco



Sewer Levels on Littlefield

			℄ Sewer		RT
T.P.	9.59	⟨29.53⟩	0.46	⟨19.94⟩	
					17.5
2+08.09			1.2	19.2	2.9 / T50
2			1.4	19.0	
+50			3.0	17.4	
1+00			4.7	15.7	
0+61.16			6.7	13.7	
+55	E. edge Pav		6.6	13.8	
+32.9	W edge Pav		6.8	13.6	
0+00	= 78+37.66	M.H. Main Trunk Sewer	6.5	13.9	
BM Chisel Sq. N.E. curb Littlefield Morena Blvd	5.65	⟨20.40⟩		14.75	10' Sly from ℄ Return

Morena Blvd Ely to Frankfort

			℄		RT
					30.0
6			7.9	32.0	9.9 / T50
+50			9.8	30.1	
T.P.	11.00	⟨39.94⟩	0.59	⟨28.94⟩	
5			0.8	28.7	Floor House 26.6 / 2.9; ground 26.8 / 3.1 / T60
+50			2.6	26.9	
					22.3
4+15.08	℄ St to Rt		3.9	25.6	7.2 / T50
4			4.5	25.0	
+50			5.9	23.6	
3			7.2	22.3	
2+50			8.8	20.7	
		⟨29.53⟩			

			℄ sewer		Rt
+50			2.4	49.0 ✓	
10			4.0	47.4 ✓	47.8 ✓ 3.6 / 150
+50			5.3	46.1 ✓	
9			6.6	44.8 ✓	
+50			7.9	43.5 ✓	
8			9.4	42.0 ✓	40.0 ✓ 11.4 / 150
T.P.	11.90	⟨51.39⟩ ✓	0.45	⟨39.49⟩ ✓	
+50		±	0.0	39.9 ✓	
7			3.1	36.8 ✓	
6+50			5.5	34.4 ✓	
		⟨39.94⟩ ✓			

			℄ sewer		Rt
+75			2.9	68.1 ✓	
+50			4.6	66.4 ✓	
+25			6.9	64.1 ✓	
T.P.	8.77	⟨70.98⟩ ✓	0.17	⟨62.21⟩ ✓	
13			0.4	62.0 ✓	
{x 83.8 x 88	℄ Morenci St sec @ 19" cross Erie St water line				
+50			3.4	59.0 ✓	
12			7.1	55.3 ✓	54.0 ✓ 8.4 / 150
11+50			9.9	52.5 ✓	
T.P.	11.65	⟨62.38⟩ ✓	0.66	⟨50.73⟩ ✓	
11+00			0.9	50.5 ✓	
		⟨51.39⟩ ✓			

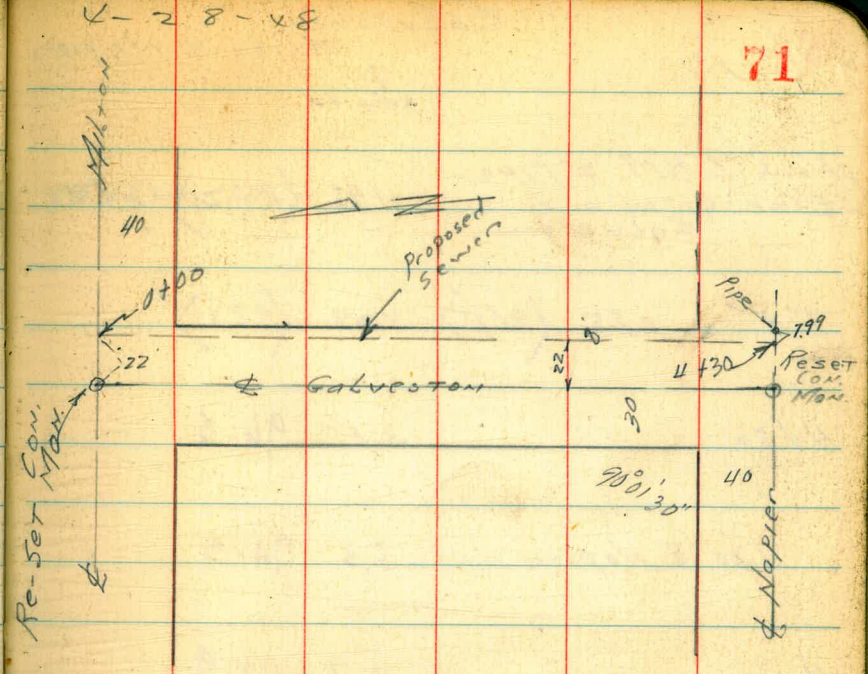
		℄		℄T
				P.10
Check to NW BP BM Frankfort & Gardena		6.85	(64.13) ✓	Record 64.12
16+05 ±	approx ℄ Frankfort	4.8	66.2 ✓	
				56.6 ✓
16		4.9	66.1 ✓	14.4 / 150
+50		6.8	64.2 ✓	
15		6.7	64.3 ✓	
+75		5.9	65.1 ✓	
+50		4.4	66.6 ✓	
+25		3.2	67.8 ✓	
				6.8 ✓
14+00		2.4	68.6 ✓	8.2 / 150
	(70.98) ✓			

{ 50' E. = 66.2 + 2' South thence
℄ point opposite Lance
100+ to E.

Sewer Levels on Galveston

Milton to Napier St & Sewer

2			1.0	88.1 ✓
+50			4.5	84.6 ✓
1+00			8.6	80.5 ✓
T.P.	11.49	(89.09) ✓	0.60	(77.60) ✓
+50			1.2	77.0 ✓
0+00	℄ Milton		1.8	76.4 ✓
T.P.	13.02	(78.20) ✓	0.93	(65.18) ✓
T.P.	11.85	(66.1) ✓	0.50	(54.26) ✓
B.M. B.P. SW Ret.	12.67	(54.76) ✓		(42.09) ✓



Milton & Erie Sts F.B. 1821-62

Galveston: Milton to Napier

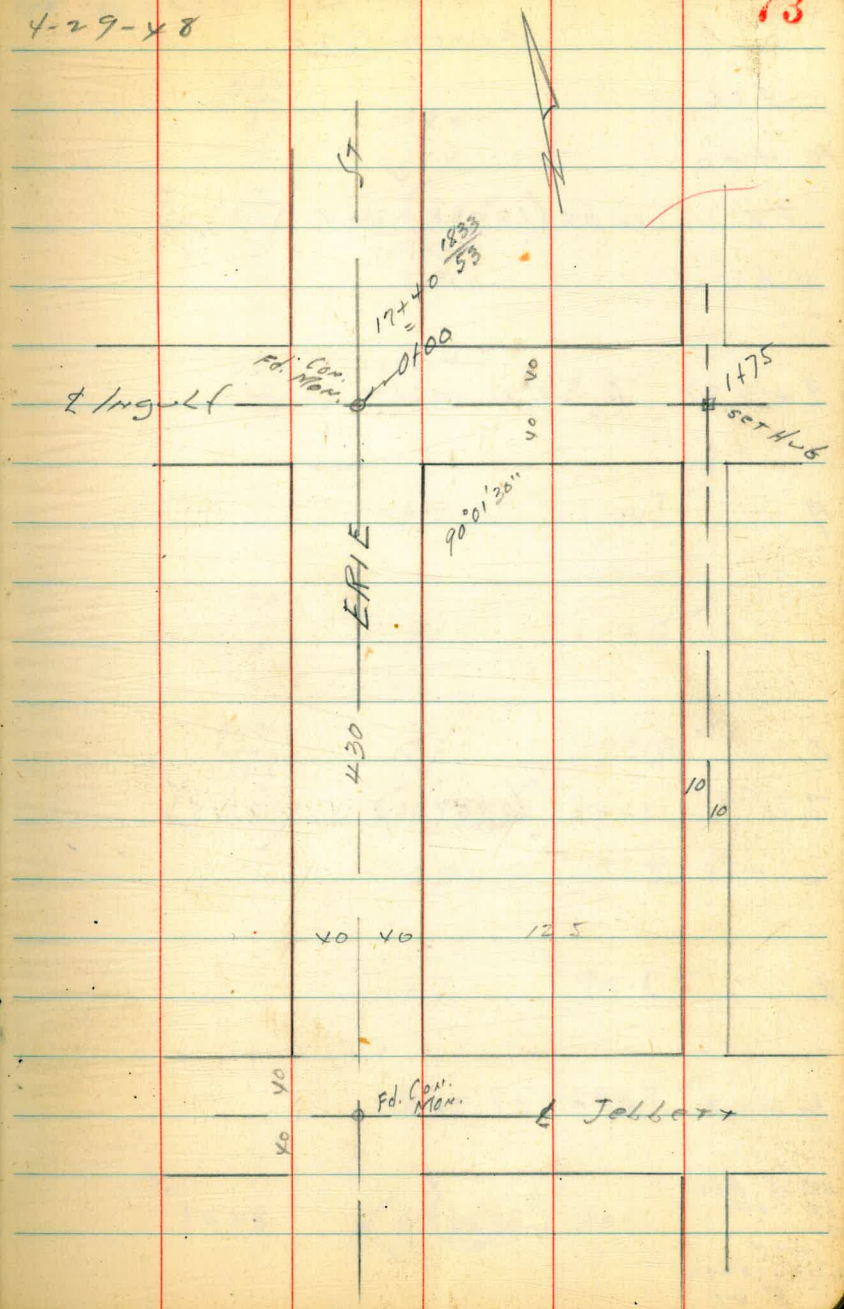
& sewer

Check to BM. 2" Pipe SE Cor Orten and Galveston			11.95	⟨84.20⟩ ✓	84.21	FB. 1821 - 57
T.P.	0.85	⟨96.15⟩ ✓	4.29	⟨95.30⟩ ✓		
4+50			3.1	96.5		
+30 E Napier			5.3	94.3		
4			6.7	92.9		
+50			6.5	93.1		
3			7.6	92.0		
2+50			9.3	90.3		
T.P.	10.68	⟨99.59⟩ ✓	0.18	⟨88.91⟩ ✓		
		⟨99.09⟩ ✓				

Sewer Levels on Ingalls St.
Erie St. Ely to E. alley
See P. 48 and 53

1+75	E alley		3.9	80.8 ✓
1+30			8.8	75.9 ✓
T.P.	12.55	(84.73) ✓	1.85	(72.18) ✓
1+00			0.9	73.1 ✓
+65			3.8	70 N ✓
+35			6.5	67 5 ✓
+10			7.8	66 N ✓
0+00			9.3	64.7 ✓
BM. Nail Sw. P.P. 4149 Jollett and Erie P. 52	10.15	(74.03) ✓		63.88

4-29-48



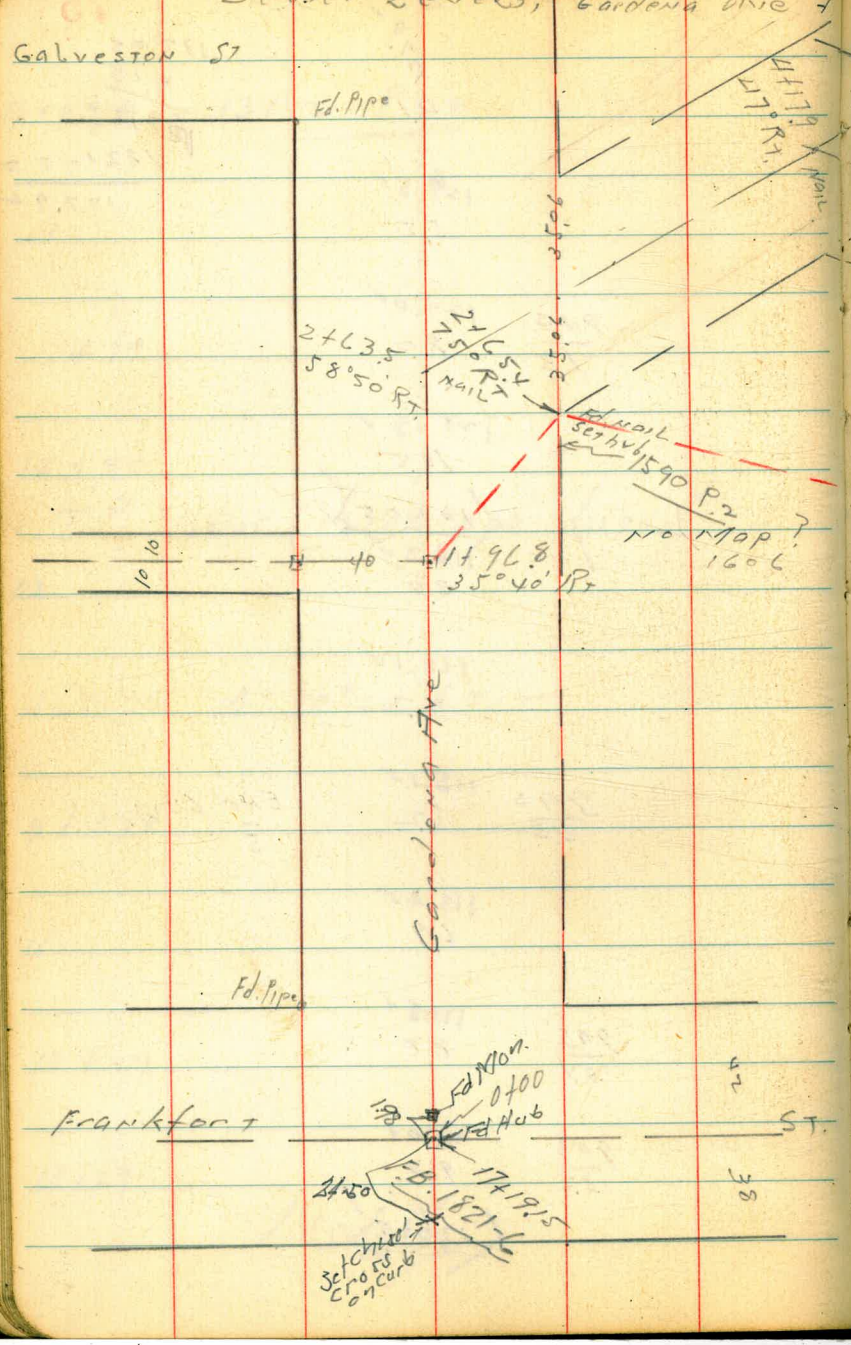
Levels on Sewer Line change on Orten St.
sketch P.28

Station						Lt	℄	Rt
+06						99.5 / 3.3	109.9	
10+00							104	
T.P.	12.85	(120.28)	21.4	(107.43)			120.28 / 107.3	
+50							2.3	
9+13.97	Δ 23°36'30" LT					99.5 / 13	105.4 / 4.2	6" W. / 4.5
9							4.9	104.7
+50						94.5 / 3	7.1	102.5
8						99.5 / 2.3	9.6	100.0
T.P.	12.42	(109.57)	0.11	(97.15)			(109.57)	
+50							0.0	97.3
7							2.7	94.6
6+48	Δ 47°38'30" LT						5.6	91.7
BM. 2" Pipe S.E. Cor. Orten and Galveston P. 41	13.05	(97.26)		84.21			(97.26)	

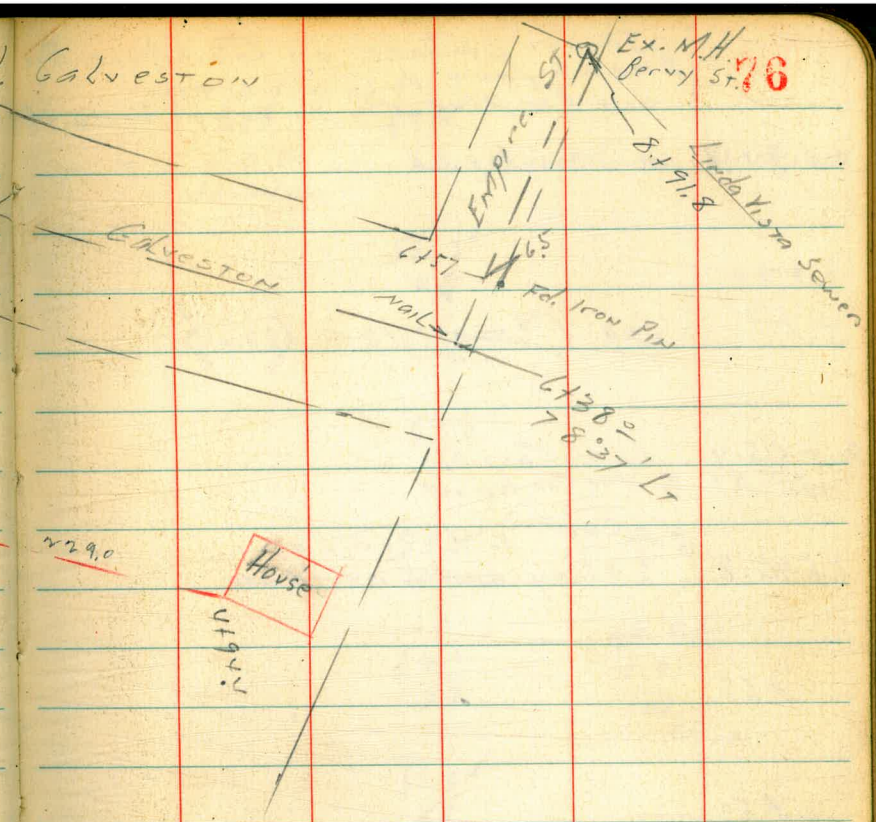
ORTEGA ST

						Lt	℄	Rt	
13+09.9 = 13+12 P 2.8							127.9 ✓ 4.1		132.05 x .15 127.9 1821-5.5 127.9
13							129.5 ✓ 5.5		
+79						99S / 13	124.0 ✓ 8.0		
12+50							121.5 ✓ 10.5		
T.P.	12.45	(132.05) ✓	0.68	(119.60) ✓			(132.05) ✓		
12							118.3 ✓ 2.0		
11+52.75 Δ 10°20' Lt.							116.1 ✓ 4.2		
11+39x						99S / 13	115.1 ✓ 5.2	End 6" W. 5	
11							113.4 ✓ 6.9		
10+49						99S / 3.x	111.5 ✓ 8.8		
10+29						99S / 3.2	111.0 ✓ 9.3		
		(120.28) ✓					(120.28) ✓		

Sewer Levels, Gardena Ave +



Galveston



Sewer Levels on Gardenia Ave
Frankfort to Galveston
via Empire St. to Linda Vista MH

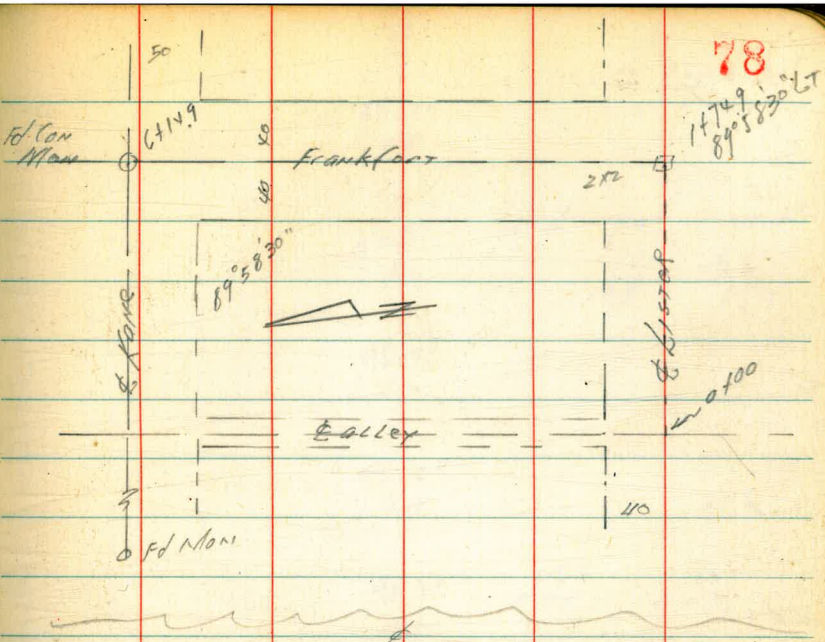
				Lt	℄	Rt
4+94.4	NW Cor house			60.5	57.9	
				+0.3	3.3 = ground NW Cor house	
				Fl. elev.		
3+40					55.7	
					4.5	
T.P.	679	(60.23)	12.41		60.23	
					57.8	
					13.0	
2+65.4	Lot Cor.					
75° Rt	to NW Cor house					
	Δ 35°40' Rt to Cor. Lot				54.4	
	& alley and Gardena				11.4	
1+96.8						
					56.1	59.0
					9.7	6.9
						103 Fl. House
+65					57.0	
					8.8	
+50						
					58.5	
					7.3	
					60.6	
					5.2	
0+42 = 0+00	FB. 1590-2	E.L. Frankfort				
					63.3	
					2.5	
0+00						
N-W BP						
Frankfort and Gardena Ave	1.73	(15.85)	64.12		(65.85)	

Sewer Levels on Frankfort St
Listen to Kane

Moore
Bagg
Sherman
Bunch
L-16-48

H.O. 31x74

1+50					
1+00					
T.P.	12.52	(87.73) ✓	0.78	(75.21) ✓	
0+50					
0+00					
+ P	12.65	(75.99) ✓	0.35	(63.34) ✓	
T.P.	12.90	(63.09) ✓	0.79	(50.19) ✓	
SW B.P. Milton Erie	9.48	(51.58) ✓		42.10	P.48



℄ Sewers
4 ✓
83.3 ✓

9.2
78.5 ✓
87.73 ✓

2.8
73.2 ✓

9.3
66.7 ✓

(75.99) ✓

5				
+50				
4				
+50				
3+00				
T.P.	8.36	⟨101.88⟩ ✓	2.07	⟨93.52⟩ ✓
+50				
2				
+90				
1+74.9	89°58'30" Lt.			
T.P. R.P. spike on P.P. SW Cor Liston & Franklon	11.22	⟨95.59⟩ ✓	3.36	⟨91.37⟩ ✓
		87.73		

93.1 ✓
8.8

92.7 ✓ 107.4 ✓ 114.9 ✓ 114.4 ✓
9.2 +5.5 +13.0 +12.5
75 105 150

95.7 ✓
6.2

95.0 ✓
6.9

91.7 ✓ 105.7 102.1
10.2 +3.8 +0.7
75 150

⟨101.88⟩ ✓
89.3 ✓
6.3

86.8 ✓
8.8

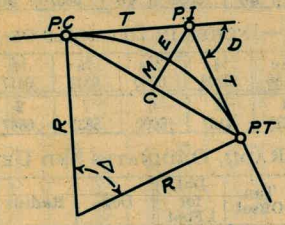
84.9 ✓
10.7

85.8 ✓ 90.9 ✓ 89.2 ✓ 87.7 ✓
9.6 4.7 6.4 7.8
75 135 150

⟨95.59⟩ ✓

on Liston

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

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

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

Long Chord=C=2 R sin.$\frac{\Delta}{2}$ (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 $(54.50\div100)^2$=2.16 ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2\div(2\times688.26)$=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.