MEASUREMENTS
OF
FRACTIONAL BLOCKS
16

City Engineers Office
San Diego, Cal.

2

F.B. 78

Return to City Engineers Office
City Hall, San Diego, Cal.

78

MICROFILMED
DEC 7 1964

Table showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

Minutes.	Lks.	Minutes.	Lks.	Minutes.	Lks.
1	2⅓	21	49	41	95⅔
2	4⅔	22	51⅓	42	98
3	7	23	53⅔	43	100⅓
4	9⅓	24	56	44	102⅔
5	11⅔	25	58⅓	45	105
6	14	26	60⅔	46	107⅓
7	16⅓	27	63	47	109⅔
8	18⅔	28	65⅓	48	112
9	21	29	67⅔	49	114⅓
10	23⅓	30	70	50	116⅔
11	25⅔	31	72⅓	51	119
12	28	32	74⅔	52	121⅓
13	30⅓	33	77	53	123⅔
14	32⅔	34	79⅓	54	126
15	35	35	81⅔	55	128⅓
16	37⅓	36	84	56	130⅓
17	39⅔	37	86⅓	57	133
18	42	38	88⅔	58	135⅓
19	44⅓	39	91	59	137⅔
20	46⅔	40	93⅓	60	140

PUBLISHED BY

EDWARD DENNY & CO.

DRAWING PAPER & MATERIAL, MATHEMATICAL INSTRUMENTS, ETC.,

STATIONERS AND PRINTERS,

SAN FRANCISCO, CAL.

Table for Running on Slopes.

In the following table the first column shows the angle, the second, the number of links to be added to a chain on the slopes, to make one chain, horizontal measurement.

Angle.	Cor. in links.	Angle.	Cor. in links.	Angle.	Cor. in links.	Angle.	Cor. in links.
°		°		°		°	
4	0·24	11	1·88	18	5·14	25	10·54
5	0·38	12	2·24	19	5·76	26	11·26
6	0·55	13	2·63	20	6·42	27	12·24
7	0·76	14	3·06	21	7·11	28	13·37
8	0·98	15	3·53	22	7·85	29	14 34
9	1·24	16	4·02	23	8·64	30	15·47
10	1·55	17	4·56	24	9·47	35	22 07

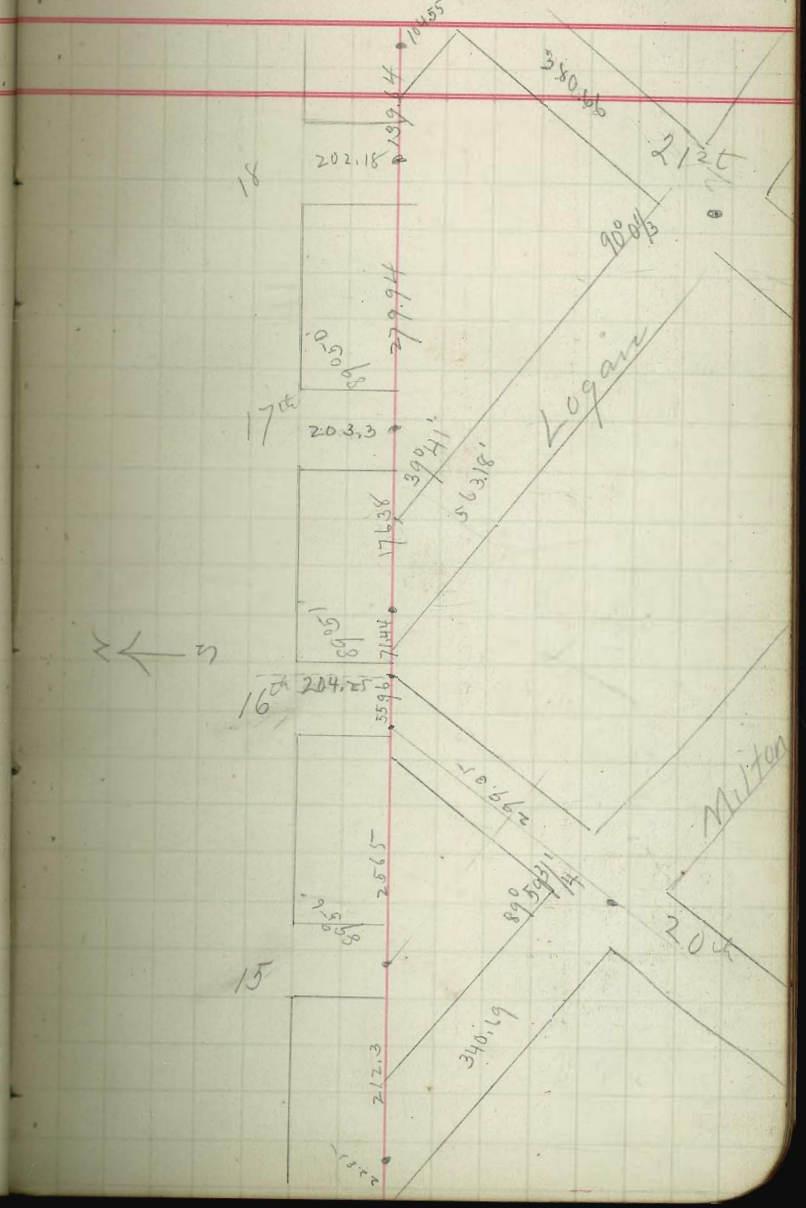
June 26 1886. 78

Return to City Engineers Office
City Hall, San Diego, Cal.

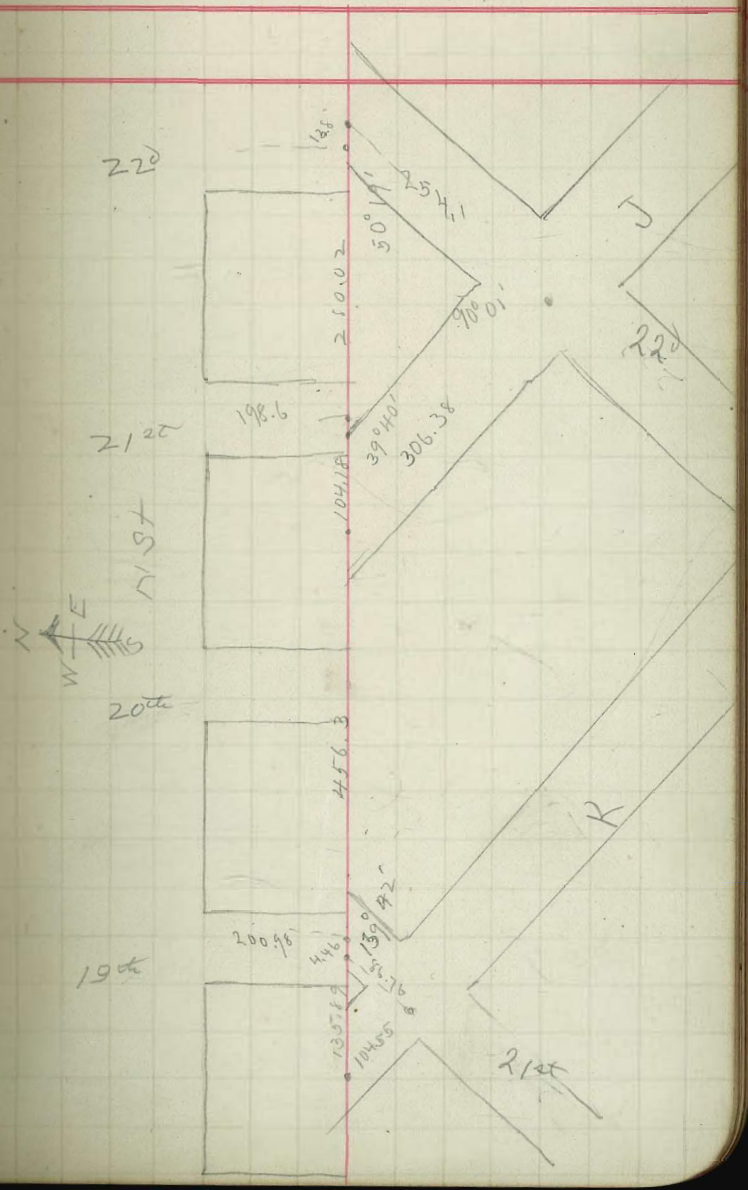
99.60
178.31
1.29

DIVISION LINE BET
Horton's & Cleveland's Addls

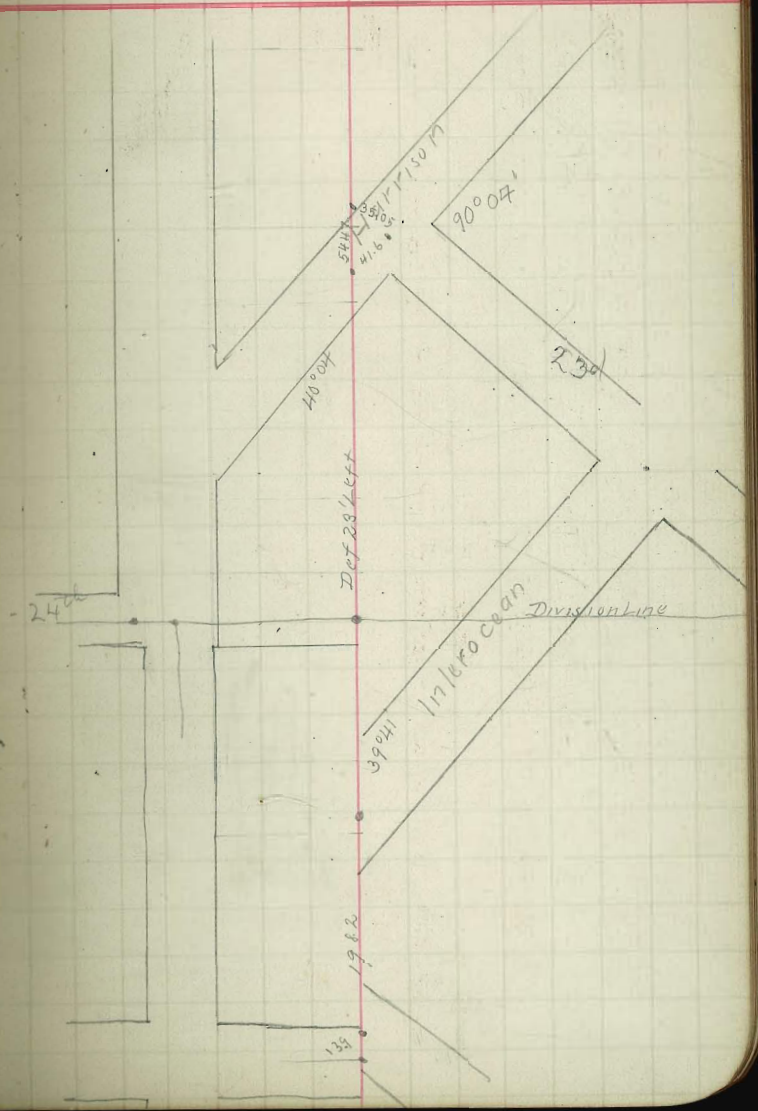
North Line of Manassee & Schiller's Add



North Line of
Manasse + Schillers



North Lines of
M & S Add & 6
L & T Co's Add



P.M. Thursday August 3rd 1888
Beginning at Sta 0 + running
West (See notes).

R.L.

23+28.75 = intersec of 9th St
Distance from this point to Mon in
SW cor of 9th + N St = 96 ft
angle at 23+28.75 from Mon
to Sta 24 = Left 48°06', to Sta
28 = Right = 132°50'

26	8°42'	
25	7°42'	
24	6°42'	
23	5°42'	
22	4°42'	
21	3°43'	
20	2°42'	Left
19	1°39'	
18	28'	
17 = B.C.		

tang

Saturday August 4th 1888

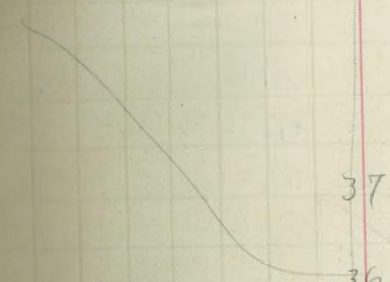
R C

at 5th St - measured 20' W from the points on the SE side of 5th at K + J

- chained from K + 5 SE cor on this line to the Ry track = 480.70 = Sta 36 + 46.45

angle from this line to sta 37 = 56° 32'

at 28 angle to tan B.S. on 26 = Right 30'



37

36

35

tan 28

2° 15'

27 + 82 = E.C.

2° 06'

27

1° 47'

Found mon in SW cor of 3rd & St also mon in SW cor of 3rd & H, produced this line from & to N rail = Sta 43+70.2
Distance from cor of 4 & 3rd = 841.85
Angle at 43+70.2 from 3rd St line to Tan of track Left = 56°31'

Tangent 43+70.2 3rd St

Sta 40+3 = intersec. of 4th st line & N rail
Found point in NE of 4th & I also point in SE cor 4th & J - offset 40' W and produced the line to 40+3, 730.2'
Angle at 40+3 from 4th st line to tan of track Left 56°30'

40
Tangent 40+3 4th St
40

Found point in the S W cor of H ~~also of~~ & Union also of of Union & G, produced this line 480.8' to Ry at sta 57+18.2 angle at sta 57+18.2 from line of St. to tan = Left 56°54'

57+18.2 Union

Found plug in SW cor of Front & I sts also in SW cor of H & Front offset 30' W and produced the line 300.3 to sta 53+54.25 ~~46.75~~ on the track, angle at sta 53+54.25 from line on Front to tangent is Left 56°54'

53+54.25 Front

Found cc point in S W cor of J & 2nd also point in SW cor of I & 2nd produced this line to Ry = 276.75 from cc point on J, = sta 47+5.8

47+5.8 2nd St

angle at 47+5.8 from 2nd to track ~~Left~~ Left 56°28'

Monday August 6th 1888

Indice Street (Page 30)

H st

Found ~~cor. of~~ plug in S E cor of H + State also plug + NE cor of the same produced this line to N rail, 342.70 to sta 59+73.5
angle from State st line to tan at 59+73.50 = Left 56° 52'
(see Page 30)

69 9° 23'

68 7° 51'

+47.15 — See Page 30

67 6° 23'

66

See Page 30 — +67.9 4° 53' Right

65 3° 24'

64 1° 50'

63 35'

62+63 = B.C.

State

59+73.5

81

1°34'

+50

50'

80 8°54'

+50 8°09'

79 7°22'

+50 6°37'

78 5°53'

+50 5°09'

77 4°24'

+50 3°39'

76 2°54'

+50 2°09'

75 1°28'

+50 38'

74 4°40'

+50 3°56'

73 3°10'

72 1°43'

71 12°23'

70 10°53'

arctic — 72+22.2

G St — 70+91.9

108
3° 00'
107
2° 15'
106
1° 27' Left
105
45'
104
33' BS
103
08'
102 + 83.38 = B.C.

85
+50
84
+50
at st 83 BS. 20 at 82
Left 4' & tangent
83
52' Left
+50
54' Left
82
20° 56'
+50
20° 21' Right
81

Tangent

117

+86.8 = E.C.

1°21'

116

44'

115

8°08' B.S.

114

7°24'

Lift

113

6°40'

112

5°57'

111

5°12'

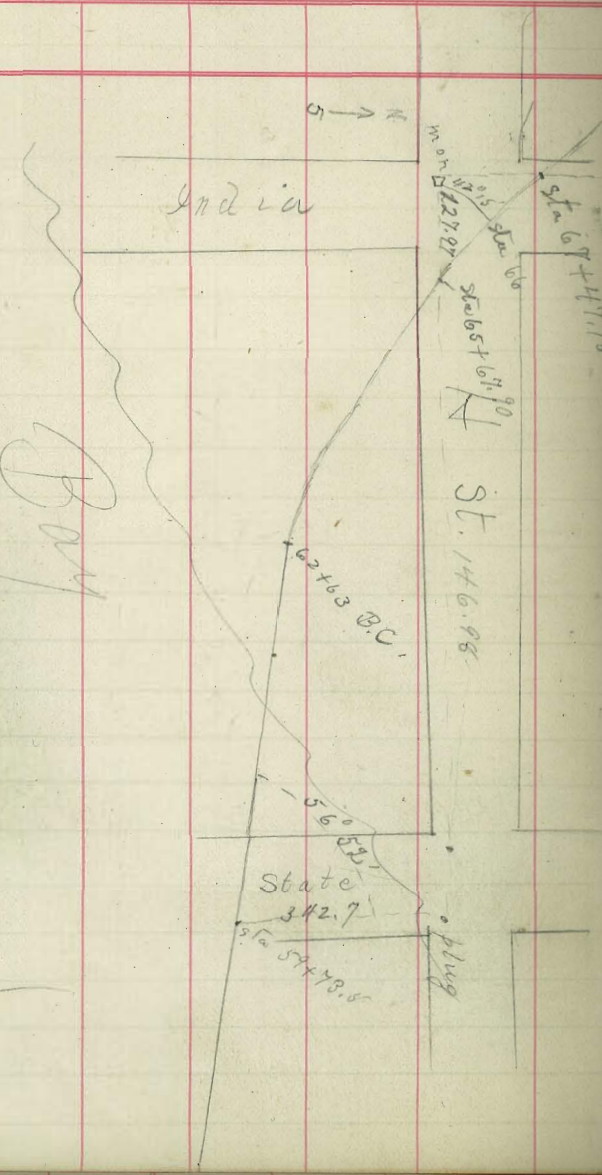
110

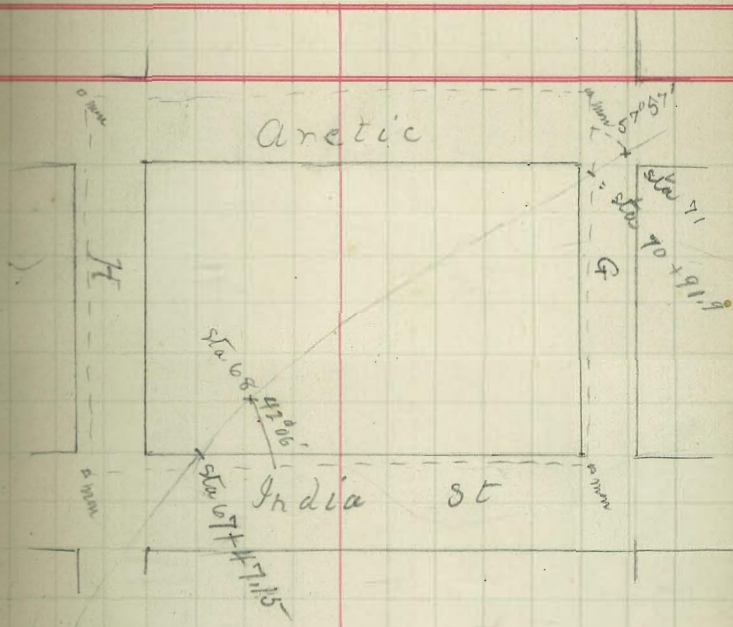
4°28'

109

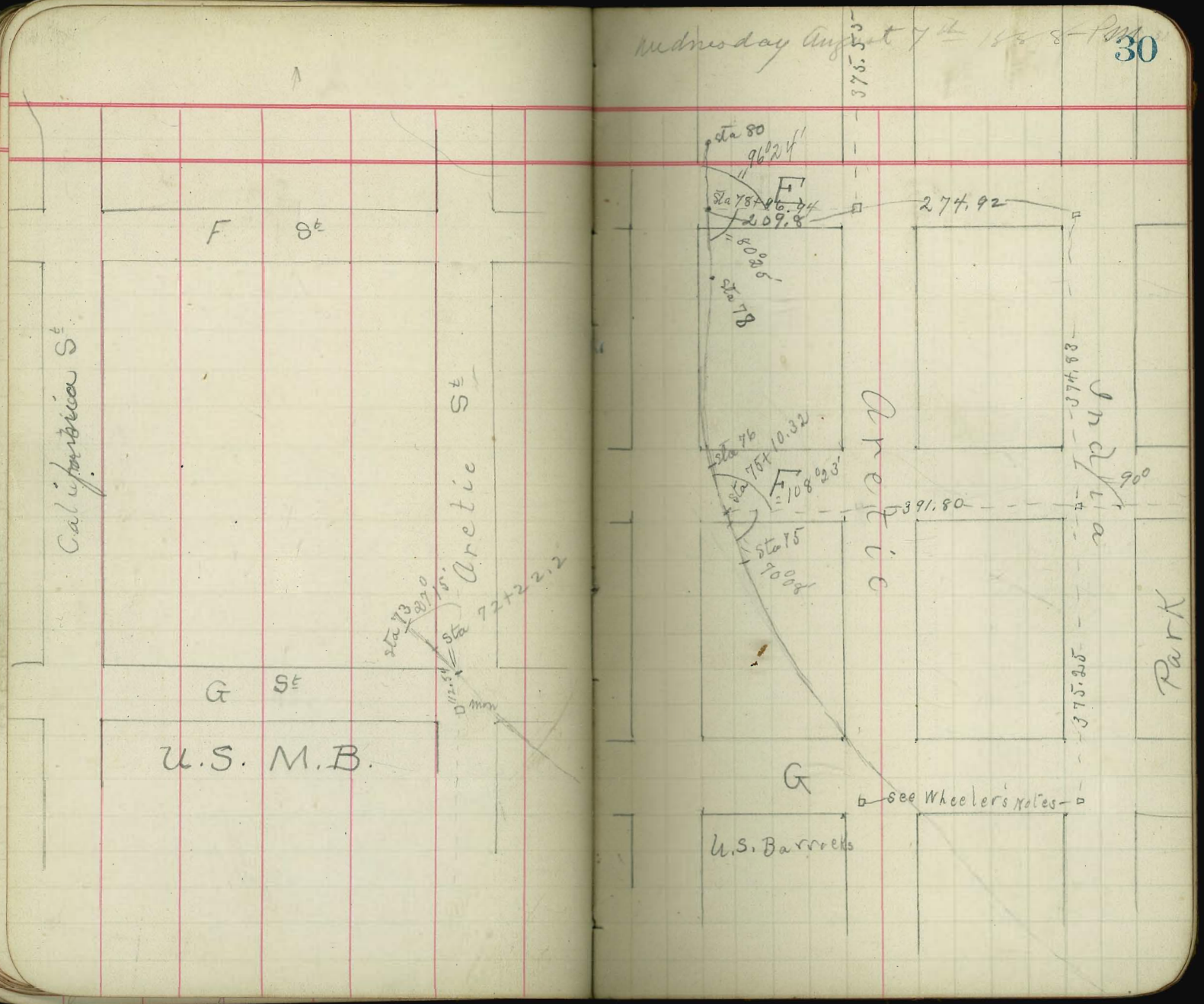
3°44'

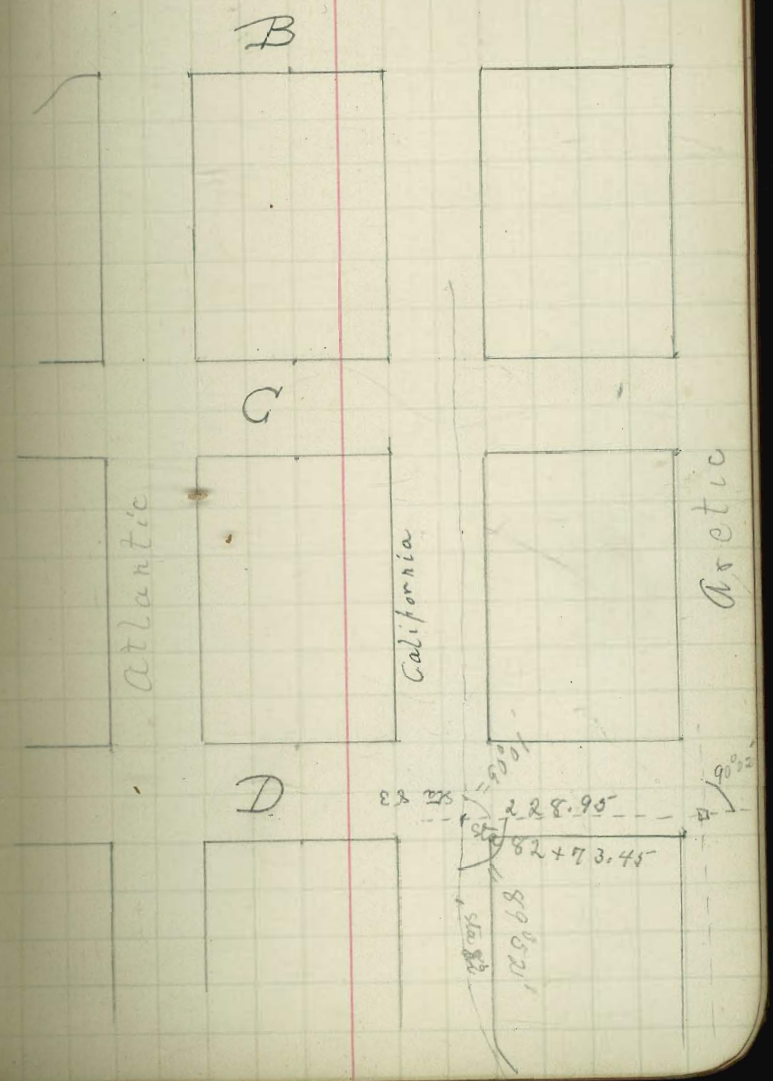
Copy in from notes cut outs by Wheeler

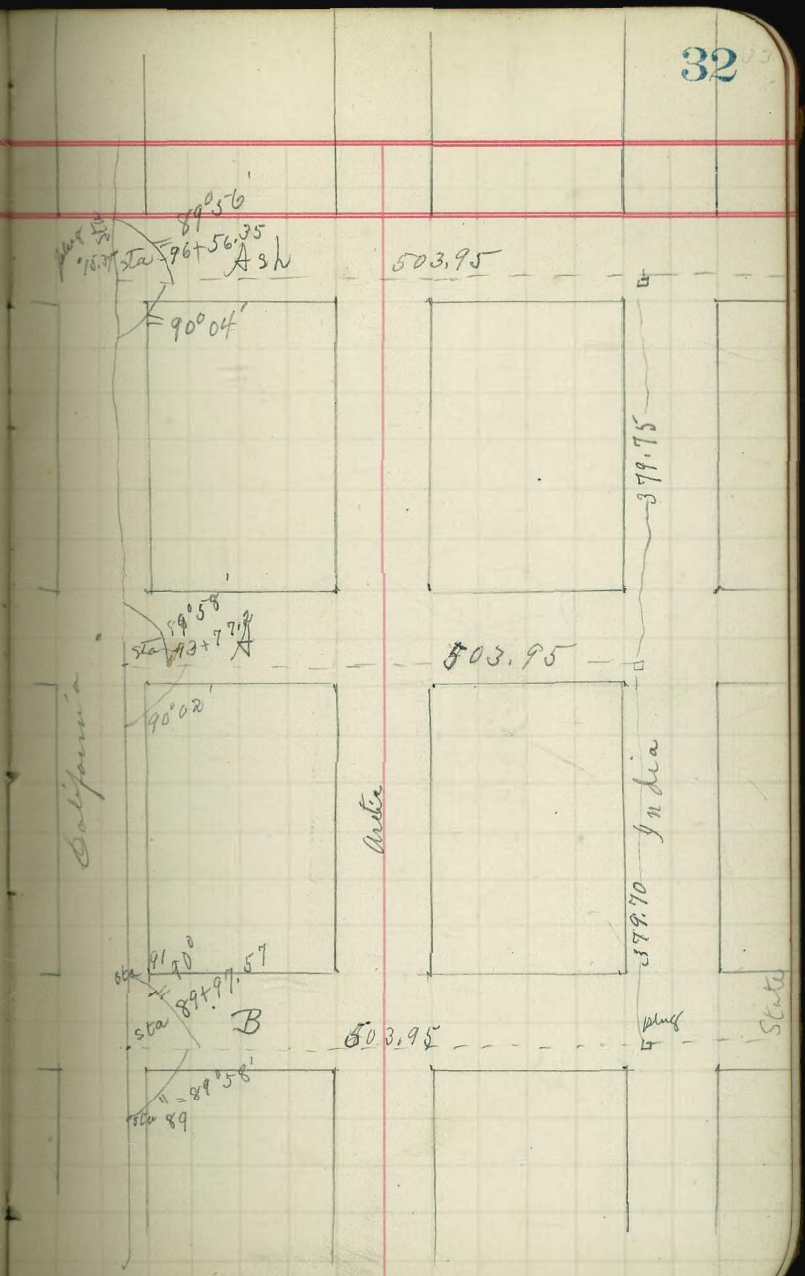


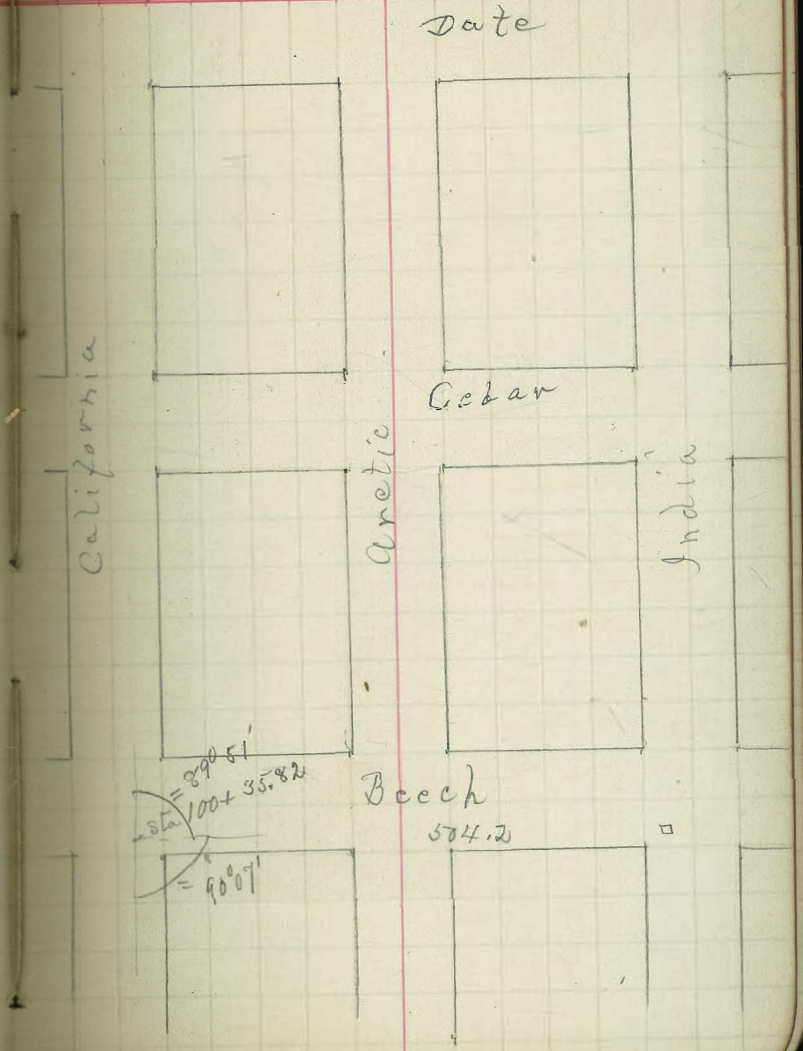


Wednesday August 4th 1886 8 PM




B
C
D
Atlantic
California
Arctic
228.95
82+73.45
89°52'
90°02'


89°56'
sta 96+56.35
Ash
503.95
90°04'
379.75
89°58'
sta 93+77.2
A
503.95
90°02'
California
Arctic
India
379.70
sta 91 90°
89+97.57
sta
B
503.95
plug
State
89°58'
sta 89


Date
California
Cedar
Arctic
India
Beech
504.2
= 89°51'
sta 100+35.82
= 90°07'

Beginning at the point 100 W of the point on the cal South which is the intersec of 21nd St (M+S) + the N rail of main track. Ran East

Angle at sta 1 from 22nd & sta 0, 75°13'
" " " " " " " 2102'57
From Cen of Pierce + 21 to sta 1 = ~~556.05~~
472.50

Tangent

opposite 22st Depot 10

1°31' R to tangent

9

6°35' L

Dis from Pierce to track 556.05 8

Intersec of 22nd St 7+68.7 5°47'

Angle from 22nd to sta 7 = 88°52'

7

4°47'

Angle from 22nd & 8 90°13'

6

3°48' Left

5

2°44'

4

1°49'

3

53'

2

1°50'

21nd St 1

22'

0 B.C. of curve

Tan

angle from 26 to sta 34 = 89°56'
distance from cen of 26 + Piece to sta
34+12.3 = 555.2

angle at 27+50.9 from 25th to 27 is
89°56'
distance from cen of Piece + 25 to
N rail is 555.5

From cen. of 24 + Piece to N rail

angle at 14+29.3 from 23rd st to 14, 89°58'
" " " " " " 15, 90°01'
distance from cen of Piece + 23rd to
N rail 555.90

	34+72.7 B.C.
	~~35~~
Intersec of 26 (L+S)	34+12.3
	34
	28
Intersec. of 25th st	27+50.9
	27
555.7	
	15
Intersec of 23rd st	14+29.3
	14

Distance from cen of Pierce + 27th to N rail of track
472.00

46

45+54 E.C.

45 1° 51'

44 16'

43 7° 11'

42 5° 41'

Left

41 4° 09'

40 2° 41'

39 5° 13'

38 3° 44'

37 2° 15'

36 58'

35 0° 12'

128
129

70	9° 28'	
69	8° 27'	Right
68	7° 27'	
67	6° 28'	
66	5° 27'	
65	4° 27	
64	3° 27'	
63	2° 26'	
62	1° 22'	
61+16.8 B.C.		
49		
48+20		

Angle ~~from~~ 48+20 from 28 to 49 = 59° 06'
Distance from Cen of 28 + Oliver to K rail
525.4

Intersec of 28th (L + T)

From cen of 26th & Topeka to N rail 272.86
" " " 27 " " " " 372.6
" " " 28 Colton " " 143.2
" " 29 " " " " 474.3
" " 30 " " " " 1008.65

From SE blk cor of M & Thor Sts South to rail 208.35
" (tangent " " Una " " " 209.35
" " " " " " Vesta " " " 262.65

tangent

77 25' & to tangent
76 15°28' R
75 14°28'
74 13°28
73 12°28' Right
72 11°28'
71 10°28'

Location of C.S.R.R.

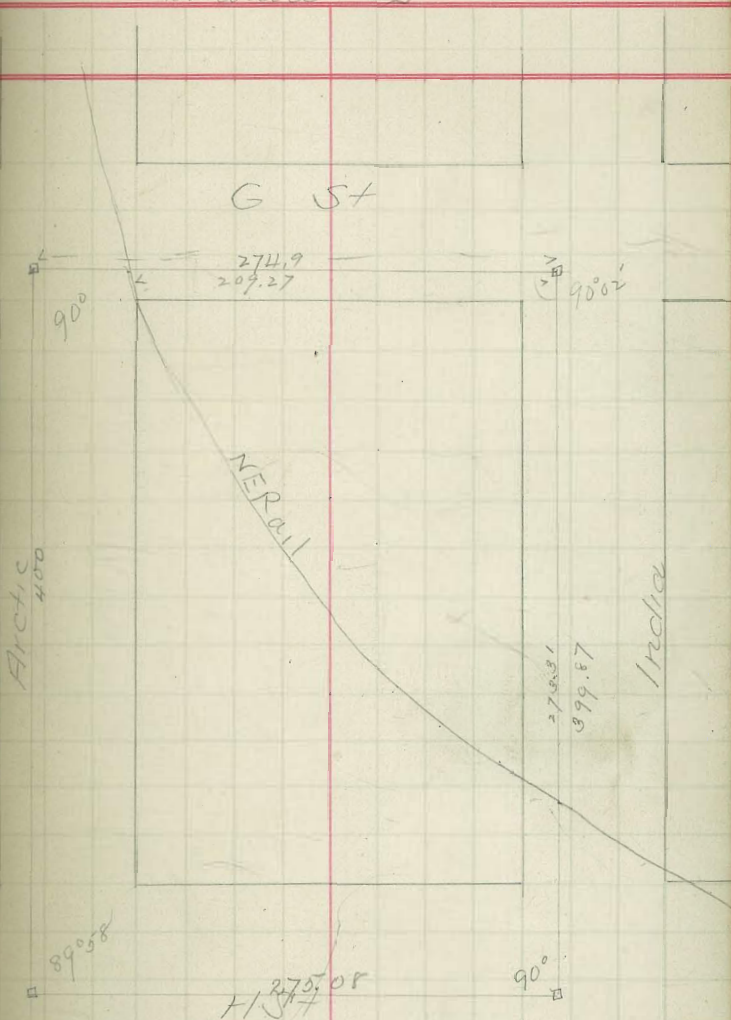
Through Blk Newtown

Set up on NERail on 7' line west side of India, sight on Mon at G & India take L to track Every 50' feet

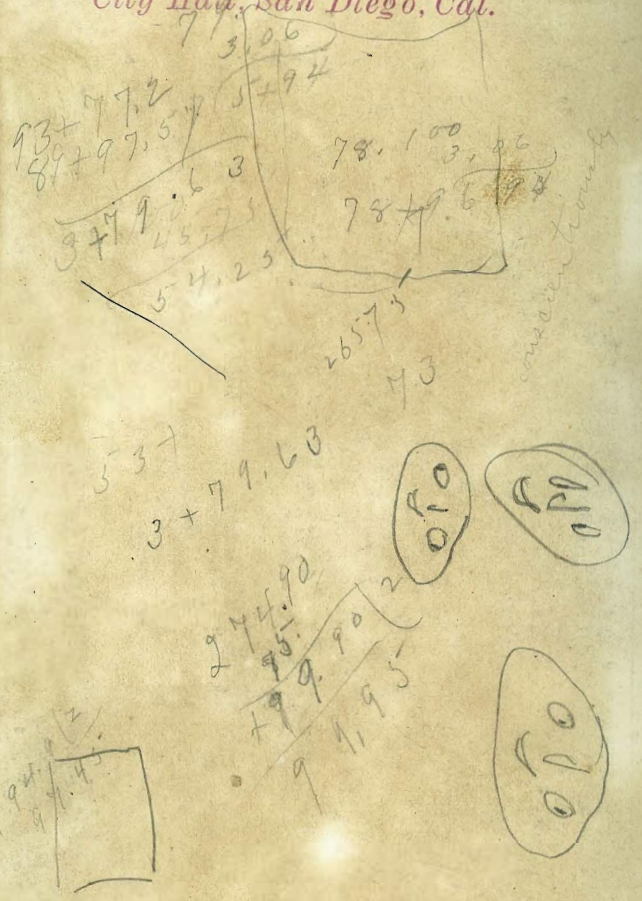
Sta	Angle
0+50	42°06'
+10	41°18'
+50	40°23'
2	39°35'
+50	38°51'
3	38°07'
+44.85	37°26'

E Wheeler
R Cadwallader Inst
Williams Tape
Silverthorn Tape
Thwaiti Flag

1/2



Return to City Engineers Office
City Hall, San Diego, Cal.



Return to City Engineers Office
City Hall, San Diego, Cal.

TRAVERSE TABLE FOR TRANSIT BOOK,

From 1° to 90° for a distance of 100.

Degrees.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.
	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
0			100.00	0.44	100.00	0.87	99.99	1.31	89
1	99.98	1.75	99.98	2.18	99.97	2.62	99.95	3.05	88
2	99.94	3.49	99.92	3.93	99.91	4.36	99.88	4.80	87
3	99.86	5.23	99.84	5.67	99.81	6.10	99.79	6.54	86
4	99.76	6.98	99.73	7.41	99.69	7.85	99.66	8.28	85
5	99.62	8.72	99.58	9.15	99.54	9.58	99.50	10.02	84
6	99.45	10.45	99.41	10.89	99.36	11.32	99.31	11.75	83
7	99.25	12.19	99.20	12.62	99.14	13.05	99.09	13.49	82
8	99.03	13.92	98.97	14.35	98.90	14.78	98.84	15.21	81
9	98.77	15.64	98.70	16.07	98.63	16.50	98.56	16.93	80
10	98.48	17.36	98.40	17.79	98.33	18.22	98.25	18.65	79
11	98.16	19.08	98.08	19.51	97.99	19 94	97.90	20.36	78
12	97.81	20.79	97.72	21.22	97.63	21.64	97.53	22.07	77
13	97.44	22.50	97.34	22.92	97.24	23.34	97.13	23.77	76
14	97.03	24.19	96.92	24.62	96.81	25.04	96.70	25.46	75
15	96.59	25.88	96.48	26.30	96.36	26.72	96.25	27.14	74
16	96.13	27.56	96.00	27.98	95.88	28.40	95.76	28.82	73
17	95.63	29.24	95.50	29.65	95.37	30.07	95.24	30.49	72
18	95.11	30.90	94.97	31.32	94.83	31.73	94.69	32.14	71
19	94.55	32.56	94.41	32.97	94.26	33.38	94.12	33.79	70
20	93.97	34.20	93.82	34.61	93.67	35.02	93.51	35.43	69
21	93.36	35.84	93.20	36.24	93.04	36.65	92.88	37.06	68
22	92.72	37.46	92.55	37.86	92.39	38.27	92.22	38.67	67
23	92.05	39.07	91.88	39.47	91.71	39.87	91.53	40.27	66
24	91.35	40.67	91 18	41.07	91.00	41.47	90.81	41.87	65
25	90.63	42.26	90.45	42.66	90 26	43 05	90.07	43 44	64
26	89.88	43.84	89.69	44.23	89.49	44.62	89.30	45.01	63
27	89.10	45.40	88.90	45.79	88.70	46.17	88.50	46.56	62
28	88.29	46.95	88.09	47.33	87.88	47.72	87.67	48.10	61
29	87.46	48.48	87.25	48.86	87.04	49 24	86.82	49.62	60
30	86.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	59
31	85.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	58
32	84.80	52.99	84.57	53.36	84.34	53.73	84.10	54.10	57
33	83.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	56
34	82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	55
35	81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	54
36	80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	53
37	79.86	60.18	79.60	60.53	79.34	60.88	79.07	61.22	52
38	78.80	61.57	78.53	61.91	78 26	62 25	77.99	62.59	51
39	77.71	62.93	77.44	63.27	77.16	63.61	76.88	63.94	50
40	76.60	64.28	76.32	64.61	76.04	64.94	75.76	65.28	49
41	75.47	65.61	75.18	65.93	74.90	66.26	74.61	66.59	48
42	74.31	66.91	74.02	67.24	73.73	67.56	73.43	67 88	47
43	73.14	68.20	72.84	68.52	72.54	68.84	72.24	69.15	46
44	71.93	69.47	71.63	69.78	71.33	70.09	71.02	70.40	45
45	70.71	70.71							
Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
	DEGREES.		¾ DEGREE.		½ DEGREE.		¼ DEGREE.		

Published by Edward Denny & Co., Stationers, Drawing Materials,
Mathematical Instruments, Etc., San Francisco.