B Street Conduit.

214

F.B. 214

214

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	2 1/3	21	49	41	95 2/3
2	4 2/3	22	51 1/3	42	98
3	7	23	53 2/3	43	100 1/3
4	9 1/3	24	56	44	102 2/3
5	11 2/3	25	58 1/3	45	105
6	14	26	60 2/3	46	107 1/3
7	16 1/3	27	63	47	109 2/3
8	18 2/3	28	65 1/3	48	112
9	21	29	67 2/3	49	114 1/3
10	23 1/3	30	70	50	116 2/3
11	25 2/3	31	72 1/3	51	119
12	28	32	74 2/3	52	121 1/3
13	30 1/3	33	77	53	123 2/3
14	32 2/3	34	79 1/3	54	126
15	35	35	81 2/3	55	128 1/3
16	37 1/3	36	84	56	130 1/3
17	39 2/3	37	86 1/3	57	133
18	42	38	88 2/3	58	135 1/3
19	44 1/3	39	91	59	137 2/3
20	46 2/3	40	93 1/3	60	140

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

MICROFILMED

DEC 8 1964

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
o		o		o		o	
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

214

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

2.26
34
904
678.
7684

271.5) 24300 (0.89
~~24435~~
21720
25800
24435

200
75 Col.
200
75 Stat
200
95 Min
200 ~~Front~~
80 Front
200
40
15
33
1346

0.89
34
356
267
3026

265.5) 6.140 (2.31
5310
8300
7965
3350

6375
0.89
3375
3000
33375

2.31
24.5
1155
924
462
56595
200

~~278.5~~
24.5
41
65.5

2.31
41
231
924
9471

5.56
8.05
13.61
2.99
10.62
3.43
10.18
3.88
9.73

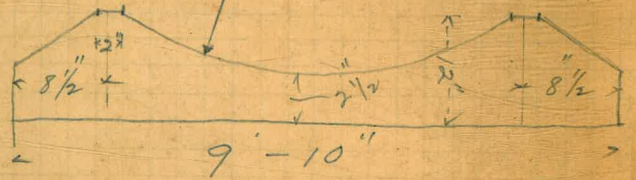
G. at W. of Atlantic = -3.23
" " E " India = 7.833
" " C. " First = 23.00

23
7.83
15.17 | 13.45
13.45 | 1.128 1.13%
1720
1345
3750
2690
10600

2155
418
25.73
1863
7.10

38.16
129
36.87

Sec E.



49.89 NE Cor. Hyd. nozzle. 4th C
49.27 SE " " " " "

1128
.22560

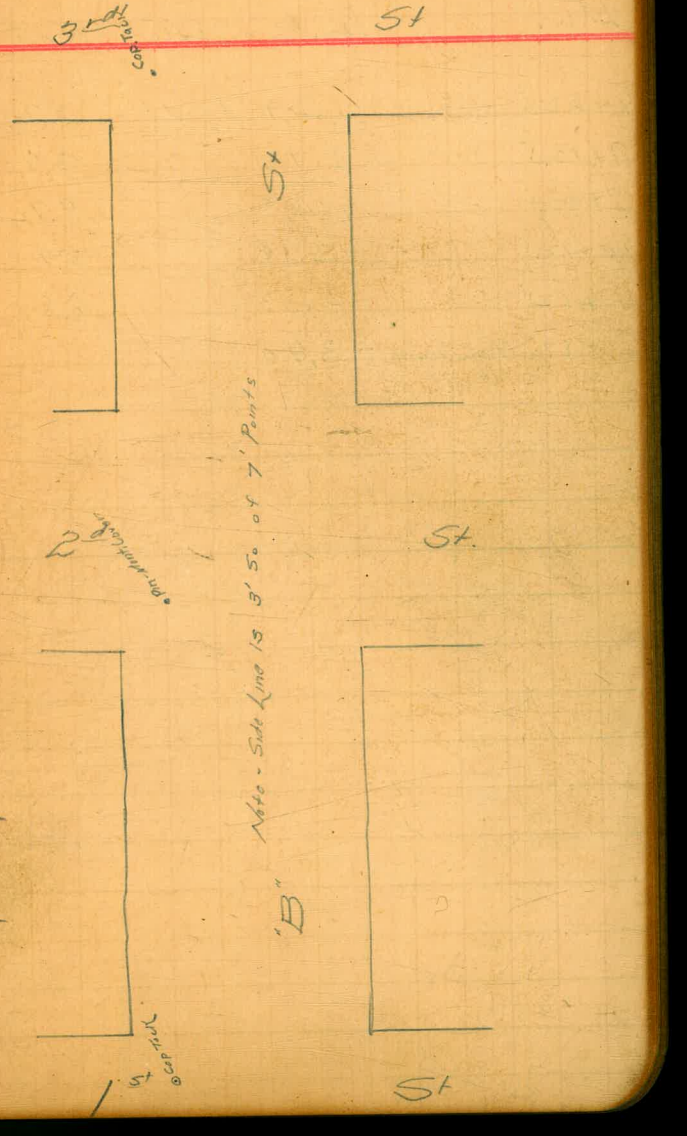
7.83
226
8.056
8.282
8.438
8.564
8.920 -100
9.146
9.372
9.598
9.824
10.050 200

B.M. 18.63 N.E. cor. B & India

Noz. of Hyd.

B Street Sewer Line

Sta		Grade	H.I.	Rod	Elev.	Cut
0.0	C. Columbia	14.97	23.71			
0+37.5		14.40		2.7	21.0	6.6
+87.5		13.63		3.5	20.2	6.6
1+37.5		12.87		4.5	19.2	6.3
+87.5		12.11		5.3	18.4	6.3
2+37.5		11.35		6.0	17.7	6.4
+75	C. Sirdia	10.78				
3+12.5		9.95	19.58	2.8	16.8	6.9
+62.5		8.83		4.1	15.5	6.7
4+12.5		7.72		5.1	14.5	6.8
+62.5		6.61		6.2	13.4	6.8
5+12.5		5.50		7.1	12.5	7.0
+50.0	C. Artic	4.67				
+87.5		4.33		8.3	11.3	7.0
6+37.5		3.88		8.9	10.7	6.8
+87.5		3.43		9.7	9.9	6.5
7+37.5		2.99		10.6	9.0	6.0
+87.5		2.54		11.53	8.05	5.5
8+21.5	3.5 East of C. of Calif.	2.24				



Sta.		Grade	H.I.	Rod	Elev.	cut
8+62.5		1.29	10.11	2.7	7.4	6.1
9+12.5		0.14		3.8	6.3	6.2
+62.5		-1.02		4.7	5.4	6.4
10+12.5		-2.18		5.9	4.2	6.4
+62.5		-3.33		6.8	3.3	6.6
+87	Main Sewer at Atlantic	-3.90				

Grades for Sewer in "B" St bet Columbia & India. 4/6/06 { Davis, Brooks, Thomas

3

	H.I.			BM
4.43	23.06			18.63
11.52 / 11.54	12.26 / 10.80	13.00 / 10.06	13.75 / 9.31	
14.49 / 8.57	9.95 / 13.11			

Sta	Rod	Ground	Grade	±
0 = Ctr India			10.78	
+50			11.52	
1			12.26	
+50			13.00	
2.			13.75	
+50			14.49	
+75 = Ctr Col.			14.86	

Line Stakes from Union to India
Set 18.95' S. of N. 7' Line 5/12/06

Line Stakes from Union - E. Set
18.45 S of N 7' Line -

Line Stakes from First - 3d
set 3' S of N 7' Line

Line Stakes from India - Arctic
= 25.95 S. of N Property Line

Cr. Stakes India - Arctic
6.75 N. of 18" line

Cr. Stakes Arctic - Atlantic
11.75 S of 4' line

Section "F" Cr. Line 12.27 from
N 7' Line of "B" St as far as E. Union

Section "E" Cr. Line 12' from N 7' line
Cr. Line 6.42 N of side line

Grades for Conduit

5/17/06 {Hatch / Wooste

Cut Stakes

(add ~~0.42~~ 0.86 for Cr
" ~~1.79~~ 1.66 " Side)

			Red.	Elev	Grade	Cut	R	El	R	El	R	El
	7.04	25.67						2.35 / 3.82	20.98 / 13.62		11.78	18.63 / 9.20
B.M. NE. India		Hydt Nozzle		18.63			Cr.		North		South	
E.L. India			8.37	17.30	7.83	9.47 +						
			7.97	17.70	8.06	9.64	4.04	8.98				
			7.90	17.77	8.29	9.49	11.78	9.20				
			7.50	18.17	8.51	9.73	3.59	9.43				
			7.26	18.41	8.74	9.75	3.36	9.66				
			6.87	18.80	8.97	9.88	3.13	9.89				
			6.48	19.19	9.20	10.04	2.90	10.12				
			6.06	19.61	9.42	10.24	2.68	10.34				
			5.77	19.90	9.65	10.30	2.45	10.57				
			5.42	20.25	9.88	10.43	2.22	10.80				
W.L. Columbia			5.01	20.66	10.10	10.61	2.00	11.02				
19			4.37	corrected 21.30	10.32	11.04						
41			3.80	21.87	10.57	11.36						
64			3.55	22.12	10.83	11.35						
86			3.17	22.50	11.08	11.48						
108			2.62	23.05	11.33	11.78						
130			2.20	23.47	11.58	11.95						
153			1.56	24.11	11.83	12.33						
175			0.93	24.74	12.09	12.71						

Rate = 1.136

		38.16					
198	1275	38.16	026	25.41	12.36	13.12	
219			1217	25.99	12.59	13.46	
242			11.59	26.57	12.85	13.79	
264			10.95	27.21	13.10	14.18	
286			10.20	27.96	13.35	14.68	
308			926	28.90	13.60	15.37	
329			893	29.43	13.84	15.66	
350	E. L State		851	29.65	1408	~~15.65~~	15.57
365			824	29.92	14.25	~~15.75~~	15.67
386			780	30.36	1449	~~15.95~~	1589
406			711	31.05	14.71	~~16.41~~	16.34
427			650	31.66	14.95	~~16.79~~	16.71
448			577	32.39	15.19	~~17.28~~	17.20
469			523	32.93	15.43	~~17.58~~	17.50
489			455	33.61	15.66	~~18.04~~	17.95
510			388	34.28	15.90	~~18.47~~	1838
530			334	34.82	16.12	~~18.78~~	18.70
550	W L Union				16.35		

Cont. P 61

5/29/06
6/25/06

Grade Stakes

				Bottom Grade	
	2.35	20.98			18.63
	3.82	13.02	11.78		9.20
E Line	India			7.83	
10				7.94	
20	3.47	12.96	3.53	8.06	9.49
30	3.80	12.95		8.17	9.15
40				8.29	
50				8.40	
60				8.51	
70				8.62	
80				8.74	
90				8.85	
100				8.97	
110				9.08	
120				9.20	
130				9.31	
140				9.42	
150				9.53	
160				9.65	
170				9.76	
180				9.88	

Rate – 1.136%

HI = 12.65

Cr		Side	
+0.86		1.85 + 1.66 / 1.31 / 13.16 HI	
Rod	Cr grade	Rod	Side grade
3.96	8.69	3.16	9.49
3.85	8.80	3.05	9.60
4.10	8.92	3.44	9.72
3.93 / 3.99	9.03	3.33	9.83
3.81 / 3.87	9.15	3.00	9.95
3.76	9.26	2.89	10.06
3.65	9.37	2.78	10.17
3.54	9.48	2.67	10.28
3.42	9.60	2.55	10.40
3.31	9.71	2.44	10.51
3.19	9.83	2.32	10.63
3.08	9.94	2.21	10.74
2.96	10.06	2.09	10.86
2.85	10.17	1.98	10.97
2.74	10.28	1.87	11.08
2.63	10.39	1.76	11.19
2.51	10.51	1.64	11.31
2.40	10.62	1.74	11.42
2.28	10.74	1.62	11.54

								+.86		+166	
								Cr		Side	
		13.02									13.16 HI
190				9.99		11.76		2.17	10.85	1.51	11.65
200						452					
W.L. Columbia				10.10		1628 HI		2.06	10.96	1.40	11.76
						413				1473	
210				10.21		1215		5.21	11.07	2.86	11.87
						372					
220				10.33		1587 HI		5.09	11.19	2.74	11.99
						292					
230				10.44		12.95		4.98	11.30	2.63	12.10
						322					
240				10.55		1617 HI		4.87	11.41	2.52	12.21
							5/29/06				
250				10.67				4.75	11.53	2.40	12.33
						1181					
260				10.78		292		4.64	11.64	2.29	12.44
										16.17 HI	
E.L. Columbia						1473 HI					
275				10.95				4.47	11.81	3.56	12.61
10				11.07				4.35	11.93	3.44	12.73
20				11.18				4.24	12.04	3.33	12.84
										15.87 HI	
30				11.29				4.13	12.15	2.92	12.95
40				11.41			15.87 HI	3.60	12.27	2.80	13.07
50				11.52				3.49	12.38	2.69	13.18
60				11.63				3.38	12.49	2.58	13.29
70				11.75				3.26	12.61	2.46	13.41
80				11.86				3.15	12.72	2.35	13.52
90				11.97				3.04	12.83	2.24	13.63
100				12.09				2.92	12.95	2.12	13.75
110				12.20				2.81	13.06	2.01	13.86
120				12.32				2.69	13.18	1.89	13.98

< 4.48 × 4.48 >
< 8.96 >
+.86 +1.66

	Bottom Grade		Cr. R	Cr. Grade	Ride R	Ride Grade
					15.87 HI	
	12.43	15.87 HI	1.58	13.29	1.78	14.09
	12.54	400	1.47	13.40	1.67	14.20
	12.66	17.40 HI	3.88	13.52	3.08	14.32
	12.77		3.77	13.63	2.97	14.43
	12.88		3.66	13.74	2.86	14.54
	13.00		3.54	13.86	2.74	14.66
200 W.L. State	13.11		3.43	13.97	2.63	14.77
10	13.22		3.32	14.08	2.52	14.88
20	13.34		3.20	14.20	2.40	15.00
			3.81	14.39	3.01	15.19
30	13.45	18.20 HI.	3.09	14.31	2.29	15.11
40	13.56		3.73	14.47	2.93	15.27
			3.78	14.42	2.98	15.32
50	13.68		3.66	14.54	2.86	15.34
60	13.79		3.55	14.65	2.75	15.45
75 E.L. State	13.96		3.38	14.82	2.58	15.62
10	14.07	18.51 HI	3.27	14.93	2.78 2.47	15.73
20	14.19	15.73	3.29	15.05	2.49	15.85
30	14.30	2.61 18.34 HI	3.18	15.16	2.38	15.96
40	14.41	16.19	3.07	15.27	2.27	16.07
50	14.53	2.71 18.90	2.95	15.39	2.15	16.19
60	14.64	4.31	4.40	15.50	3.60	16.30
70	14.76		4.29	15.61	3.49	16.41

80				14.87	
90				14.98	
100				15.10	
110				15.21	
120				15.34	
130				15.47	
140				15.59	
150				15.72	
160				15.84	
170				15.97	
180				16.10	
190				16.22	
200	W L. Union			16.35	
10				16.46	
20				16.58	
30				16.69	
40				16.80	
50				16.92	
60				17.03	
67	E L. Union			17.11	
15				17.28	
30				17.45	
40				17.57	

Corrected

Sec "F" (8'-10" x 6'-0")

Sec "E"

	Cr. +.86		Side +1.66	
19.90			3.37	
	4.17	15.73		16.53
20.64 HI	4.06	15.84	3.26	16.64
	4.68	15.96	20.56 HI 3.80	16.76
	4.57	16.07	3.69	16.87
	4.44	16.20	3.56	17.00
	4.31	16.33	3.43	17.13
	4.19	16.45	3.31	17.25
20.32	4.06	16.58	3.26	17.38
	3.62	16.70	3.06	17.50
	3.49	16.83	2.93	17.63
	3.68	16.96	2.80	17.76
	3.56	17.08	20.70 HI 2.82	17.88
	3.43	17.21		18.01
	3.32	17.32		18.12
HI 20.70	3.26	17.44	2.46	18.24
17.78 / 3.15 / 20.93 HI / 1.68 / 19.25 / 1.66 / 20.91	3.15	17.55	2.35	18.35
	3.04	17.66	2.24	18.46
	2.92	17.78	2.12	18.58
	3.04	17.89	2.24	18.69
Add.	2.96	17.97	2.16	18.77
0.78 & 1.58	2.85	18.06	2.05	18.86
20.91	2.68	18.23	1.88	19.03
	2.56	18.35	1.76	19.15

					8½" × 4.20' × 4.20' × 8½"				8-5 4-2½
					Cr add. 0.78		Side add. 1.58		
50				17.68	2091 HI 1886 492 2378 HI	2.45	18.46	1.65	19.26
60				17.79		5.21	18.57	4.41	19.37
70				17.90		510	18.68	4.30	19.48
80				18.02		4.98	18.80	4.18	19.60
90				18.14		486	18.92	4.06	19.72
100				18.25		4.75	19.03	395	19.83
110				18.36		4.64	19.14	3.84	19.94
120				18.47		4.53	19.25	373	20.05
130				18.59	2051 418 2469	441	19.37	3.61	20.17
140				18.70		5.21	19.48	4.41	20.28
150				18.81		510 ~~4.19~~	19.59	4.30 ~~3.27~~	20.39
160				18.93		4.07	19.71	327	20.51
170				19.04		3.96	19.82	3.16	20.62
180				19.15		3.85	19.93	305	20.73
190				19.26		3.74	20.04	2.94	20.84
198	Wl. Front			19.36	2051 469 2520 HI	3.64	20.14	284	20.94
10				19.47		—	20.25	—	21.05
20				19.59	2051 427 2478 HI	441	20.37	3.61	21.17
30				19.70		430	20.48	3.50	21.28
40				19.81		419	20.59	3.39	21.39
50				19.92		408	20.70	3.28	21.50

Section E (5'-4" × 6'-0")

						0.78			1.58
60				20.04	~~2520 HI~~ 2478 HI	4.38	20.82	3.49	21.62
70				20.16		3.84	20.94	3.04	21.74
80	E Line Front			20.27		3.73	21.05	2.93	21.85
10				20.38		3.62	21.16	2.82	21.96
20				20.49		3.51	21.27	2.71	22.07
30				20.60	20.82 4.29 25.11 HI	3.73	21.38	2.93	22.18
40				20.72		3.61	21.50	2.81	22.30
50				20.84		3.49	21.62	2.69	22.42
60				20.95		3.38	21.73	2.58	22.53
70				21.06		3.27	21.84	2.47	22.64
80				21.17		3.16	21.95	2.36	22.75
90				21.29		3.04	22.07	2.24	22.87
100				21.40		2.93	22.18	2.13	22.98
110				21.51		2.82	22.29	2.02	23.09
120				21.63		2.70	22.41	1.90	23.21
130				21.75		2.58	22.53	1.78	23.33
140				21.86		2.47	22.64	1.67	23.44
150				21.97		2.36	22.75	1.56	23.55
160				22.08		2.25	22.86	1.45	23.66
170				22.20		2.13	22.98	1.33	23.78
180				22.31		2.02	23.09	1.22	23.89

For Tie Points from E. Line of 1st to W. Line of 3d See P. 1

				0.78	1.58
190		22.43			
200 W L. First		22.54			
10		22.65			
20		22.76			
30		22.88			
40		23.00			
50		23.13			
60		23.27			
70		23.40			
80 E L. First		23.54			
	23.09 4.22 27.31	1.90	23.21	1.10	24.01
		3.99	23.32	3.19	24.12
			23.43		24.23
		3.76	23.55	2.96	24.35
			23.66		24.46
		3.53	23.78	2.73	24.58
			23.91		24.71
		3.26	24.05	2.46	24.85
			24.18		24.98
		2.99	24.32 good	2.19	25.12

Continued on Page 20

Grades - India - Arctic

		7.83
10	W of E.L. India	7.72
20		7.60
30		7.48
40		7.36
50		7.24
60		7.12
75	W.L. India	6.94
10	W. of W.L. India	6.82
20		6.70
30		6.58
40		6.46
50		6.34
60		6.22
70		6.10
80		5.98
90		5.86
100		5.74
110		5.62
120		5.50
130		5.38

+.86 +1.65

4.15	8.58	3.35	938
4.22	8.46	3.42	926
4.18	8.34	3.38	914
3.97	8.22	3.17	902
4.09	8.10	3.29	890
4.21	7.98	3.41	878
4.24	7.80	3.44	860
4.36	7.68	3.56	848
4.48	7.56	3.68	836
3.99	7.44	3.19	824
4.32	7.32	3.52	812
4.20	7.20	3.40	800
4.32	7.08	3.52	788
4.21	6.96	3.41	776
4.12	6.84	3.32	764
4.24	6.72	3.44	752
4.36	6.60	3.56	740
4.48	6.48	3.68	728
4.60	6.36	3.80	716
4.72	6.24	3.92	704

1.195 × 3 = .03.585 | 1195 × 20 = .23900 | 5.07 × .24 = 483 | 3.92

+.86 | +1.66

140				5.26	1096 HI	4.84	612	4.04	6.92
150				5.15	692 / 391 / 1083 — 704 / 377 / 1081 HI	4.80	601	400	6.81
160				503	559 / 364 / 923 HI — 577 / 327 / 904 HI	492	5.89	412	669
170	Begining of ~~wide~~ Taper section-			4.91		504	577	424	6.57
185	" " wide "			4.73	511 / 459 / 970 HI	3.45	5.59	2.65	639
200				4.55	457 / 418 / 875 HI	3.63	541	2.83	621
210				443		3.94	529	3.14	609
225				425		4.12	511	3.32	591
228						4.63	5.07	3.83	587
248						3.92	4.83	3.12	563
270				3.71		3.39	4.57		537
280				3.59	559 / 237 / 796 HI — 433 / 397 / 830 HI	3.51	4.45		525
290				3.47		3.63	433		
300				3.35	457 / 308 / 765 HI	4.09	4.21		
310				323	477 / 274 / 751 HI	4.21	4.09		
320				3.11		4.33	3.97	288	4.77
330				2.99		445	385	286	465
340				289		457	373	298	453
350				276		4.03	362	323	442

1.195 % Grade

22.1
460
482.1

Last Stake on E of S Fe
— S-is 05 E of N. —
+.86 +1.66

360	218 363 581 HI	(482.1 = Sta of E R. of E O.)	2.64		
370			2.52		
380			2.40		
390			2.28		
400			2.16		
410			2.04		
420			1.92		
430			1.80		
440			1.68		
450			1.56	0.56	
460			1.44	0.44	
470			1.32	0.32	
480			1.20	0.20	

765 HI	4.15	3.50	335	430
	4.27	3.38	347	418
	4.39	3.26	359	406
	4.51	3.14	371	394
	4.63	3.02	383	382
	4.75	2.90	3.95	3.70
	4.87	2.78	4.07	3.58
	4.99	2.66		
	5.11	2.54		
Grade drops 1' here -		1.42		
		1.30		
		1.18		
		1.06		

Continued on P 21

aug. 23d 1906

10.60 NI

	④	⑤	⑥	⑦
Grade Top of Cap	5.86	6.01	6.15	6.29
Rod	4.74	4.59	4.45	4.31

⑧	⑨	⑩
6.44	6.61	6.79
4.16	4.69	3.81

7			
6	4.11	0.48 Sight	6.49
5	4.02	0.43 "	
4	3.93	0.38 "	
3	3.72	0.44 "	
2	3.76	0.33 "	
1	3.58	0.23 "	7.02

(sink 2'-2" below stake.

497
236
49950

bottom of Column.
for 1" below Top of Column

					Grade	+1.15	+5.42
482.1	Sta of E.R(cr) of E.T.		S.Fe.	1.18		2.33	
487.0	W	T.1 House track	0.18	1.12		2.27	
497.0	E	T.2 Main Line	0.12	1.00		2.15	
501.9	W		0.0	0.94		2.09	
512.0	E	T.3	-0.06	0.82		1.97	
516.9	W		-0.18	0.77		1.92	
524.05	E	T.4	-0.23	0.68		1.83	
528.95	W		-0.32	0.62		1.77	
536.05	E	T.5	-0.38	0.54		1.69	
540.95	W		-0.46	0.48		1.63	
548.15	E	T.6	-0.52	0.39		1.54	
553.05	W		-0.61	0.34		1.49	
560.00	E	T.7	-0.66	0.25		1.40	
564.90	W		-0.75	0.19		1.34	

wharf track -0.81

1.195
156
7170
5975
1195
1.86420
19
1.674
-2.674

Grade E R. -2.64
6.67
El of Cap. 4.03 E
3.97 W

6.93 BM
3.57
10.60 HI

397
6.63

482.1
236
484.46

497
236
49936
48446
14.9

6.67

482.2
475
7.2
25
32.2

0.18
6.67
6.85
= 6'-10 1/4"

6.93 BM
= 6'-11"
2 8 1/2
9-7 1/2
2-8 1/4
6-11 1/4

118
62
56

-66
6.67
.601

7"
18
2'.3" (4th Trk below
Grade stake E
2-4 1/2" 5th Trk.

118
98
7.0

14
7
84

84
15
99

10
1-8
2-6

77
68
49

94
67
61

112
67
79

218		2.33	2.27	2.15	2.09
246	HI	2.31	2.37	2.49	2.35
4.64		1.97	1.92	1.83	1.77

Continued from Page 13

EL 1st.		23.54
15		23.74
30		23.94
40		24.08
50		24.21
60		24.35
70		24.48
80		24.62
90		
100		24.89
110		
120		25.16
130		
140		25.43
150		
160		25.70
170		
180		25.97
190		
200	WL 2d	26.24

Continued on P. ~~2~~ 23

4.57
.63
3.94
.67
.27

3.88

24.32
1.38
30.70

		+.78			+1.58
26.49 / 2.86 / 29.35 HI		24.32 / +0.70			25.12 / +1.33
	6.26	24.44		5.63	25.07
		24.64			25.27
	5.92	24.78		5.29	25.41
	4.30	25.05		3.67	25.68
	4.03	25.32		3.40	25.95
	3.76	25.59		3.13	26.22
	4.84	25.86		4.21	26.49
	4.57	26.13		3.94	26.76
	4.30	26.40		3.67	27.03
26.69 / 4.57 / 31.26 HI	4.03	26.67		3.40	27.30
	~~3.76~~	26.94		3.67	27.57

3.29
54
383

3.29
1.08
4.37

Continued from. P 16

1.08 | 6.58 | 1.08 | 6.58 | 1.08

4.37

+86

9/11/06

430				1.80	2.66 1.76 ~~4.42 HI~~				
440				1.18	150 284 4.34 HI		2.66		3.46
450	Beginning of Santa Fe Section — 0.5 East			0.56			~~2.04~~		~~2.90~~
460				0.44		3.00	1.42	2.20	2.22
470				0.32			1.30		2.10
480				0.20		3.24	1.18	2.44	1.98
490				0.08			1.06		1.86
500				-0.04		3.48	0.94	2.68	1.74
510				-0.16			0.82		1.62
520				-0.28		3.72	0.70	2.92	1.50
530				-0.40			0.58		1.38
540				-0.51		3.96	0.46	3.08	1.26
550				-0.63			0.35		1.15
560				-0.75		4.19	0.23	3.31	1.03
570	End of Santa Fe Section 0.5 West —			-0.88			0.11		0.91
580				-1.00		4.44	-0.02	3.56	0.78
590				-1.12			-0.14		0.66
600				-1.24		4.68	-0.26	3.80	0.54
610				-1.35			-0.38		0.42
620				-1.46		4.91	-0.49	4.03	0.31
630				-1.58			-0.60		0.20
						5.14	-0.72	4.26	0.08

640				-1.70	
650				-1.82	
660				-1.94	
670				-2.06	
680				-2.18	
690				-2.30	
700	~~Santa fe Section~~			-2.42	
710	~~Beginning of wide~~			-2.54	
720	~~Break~~			-2.66	
730	~~Atlantic St line~~			-2.73	
750	~~End of Santa fe Ste~~			-2.89	
775	~~Sewer Pipe~~			-3.07	
	outlet			-4.23	
	1.09	8.02			6.93
		-3.37	2.57		
		11.39	10.59		

9/11/06

372
210
1.62

294
210
84

+.86 +1.66

22

		Centre		Side
~~442 HI~~				
434 HI		-0.84		-0.04
	5.38	-0.96	4.50	-0.16
693		-1.08		-0.28
208				
9.01	5.62	-1.20	4.74	-0.40
975				
-0.74		-1.32		-0.52
284	5.86	-1.44	4.98	-0.64
+2.10 HI				
		-1.56		-0.76
	6.10	-1.68	5.22	-0.88
	3.97	~~-1.80~~		~~-1.00~~
		-1.87	3.17	-1.07
	4.13	-2.03	3.33	-1.23
770	4.28	-2.18	3.58	-1.45
		~~-2.21~~		~~-1.41~~
		-3.37		-2.57

B.M. 6.93 Spk. in end of 8"x8" at South side of Water Tower.

Continued from P 20

					+0.7.0	+1.33
WL 2d				26.24		
20				26.51		
40				26.78		
60				27.05		
80 EL 2d				27.34		
20				27.61		
40				27.88		
60				28.15		
80				28.42		
100				28.70		
120				28.97		
140				29.24		
160				29.51		
180				29.78		
200 WL 3d				30.05		
20				30.32		
35				30.51		
60				30.86		
80 EL 3d				31.14		
15				31.34		
40				31.68		

31.24 HI				
4.30	26.94	3.67	27.57	
4.03	27.21	3.40	27.84	
3.76	27.48	3.13	28.11	
3.39	27.75	2.86	28.38	
3.20	27.04	2.57	28.67	
2.93	28.31	2.30	28.94	
5.79	28.58	5.16	29.21	
5.52	28.85	4.89	29.48	
5.25	29.12	4.62	29.75	
4.97	29.40	4.34	30.03	
4.70	29.67	4.07	30.30	
4.43	29.94	3.80	30.57	
4.16	30.21	3.53	30.84	
3.89	30.48	3.26	31.11	
3.62	30.75	2.99	31.38	
5.56	31.02	4.93	31.65	
5.29	31.29	4.74	31.84	
5.02	31.56	4.39	32.19	
4.74	31.84	4.11	32.47	
	+0.60		+1.33	
4.64	31.94	4.57	32.47	
4.30	32.28	4.21	33.01	

		Bottom grade
60		31.95
80		32.22
100		32.49
120		32.76
140		33.02
160		33.30
180		33.57
200	W L A 1h	33.84
20		34.11
40		34.38
60		34.65
80	E L A 1h	34.93
00		35.20
40		35.47
60		35.74
80		36.02
100		36.29
120		36.56
140		36.83
160		37.10
180		37.37

		+0.60 Rod	+0.60 Subgrade	+1.33 Rod	+1.33 Subgrade
36.58 HI					
3.49	✓	4.03	32.55	3.96	33.28
3.09	✓	3.76	32.82	3.69	33.55
4.15	✓	3.49	33.09	3.42	33.82
37.24 HI	✓	3.22	33.36	3.15	34.09
3.17	✓	3.62	33.62	2.89	34.35
3.54	✓	3.34	33.90	2.61	34.63
38.71 HI	✓	3.07	34.17	2.34	34.90
	✓	2.80	34.44	2.07	35.17
3.92 HI	✓	4.00	34.71	3.27	35.44
36.53	✓	3.73	34.98	3.00	35.71
3.95	✓	3.97	35.25	3.24	35.98
40.48 HI	✓	3.69	35.53	2.96	36.26
	✓	3.42	35.80	2.69	36.53
37.07	✓	4.41	36.07	3.68	36.80
1.30	✓	4.14	36.34	3.41	37.07
41.37 HI	✓	3.86	36.62	3.14	37.34
37.34	✓	4.75	36.89	4.02	37.62
4.36	✓	4.48	37.16	3.75	37.89
41.70 HI	✓	3.60	37.43	2.87	38.16
37.89	✓	3.33	37.70	2.60	38.43
3.14	✓	3.06	37.97	2.33	38.70
41.03					

	Sta.	Bottom Grade							
	200	WL 6.1	37.64						
	220		37.91						
	240		38.18						
	260		38.46						
	280		38.73						
	15	5.48 BM SE. 6.63 60.11 12.84 47.27 3.93 50.20	38.93						
	40		39.27						
	60		39.54						
	80		39.81						
	100		40.08						
	120		40.35						
	140		40.62						
	160		40.90						
	180		41.17						
	200	WL 6.1	41.44						
	20		41.71						
	40		41.98						
	60		42.25						
	80	EL 6.1	42.52						
	90		42.79						
	40		43.06						

(7.16 ft offset from Ridge line to Cr line)

Centre grade +0.60

Side grade +1.3

	Rod		Rod	
38.70 3.12 41.82	3.58	38.24	2.85	38.97
38.97 3.97 4294 HI	4.43	38.51	3.70	39.24
39.51 2.57 43.08 HI	4.16	38.78	3.43	39.51
	4.02	39.06	3.29	39.79
	3.75	39.33	3.02	40.06
40.26 3.58 43.84 HI	3.55	39.53	2.82	40.26
3.16 40.87 44.03 HI	3.97	39.87	3.24	40.60
	3.70	40.14	2.97	40.87
4.68 3.43 45.11 HI	3.62	40.41	2.89	41.14
	3.35	40.68	2.62	41.41
50.20 HI 42.50 3.60 46.10	3.08	40.95	2.35	41.68
43.04 3.61 46.65	3.89	41.22	3.16	41.95
	3.61	41.50	2.88	42.23
	3.43	41.77	2.70	42.50
43.91 3.58 46.89 HI	4.06	42.04	3.33	42.77
	3.79	42.31	3.06	43.04
	4.07	42.58	3.34	43.31
	4.04	42.85	3.31	43.58
	3.77	43.12	3.04	43.85
	3.50	43.39	2.77	44.12
	3.23	43.66	2.50	44.39

							+.60		+1.33
60				43.33	44.39	3.95	43.93	3.22	44.66
80				43.60	3.49	3.68	44.20	2.95	44.93
100				43.87	47.88	8.29	44.47	7.56	45.20
120				44.14	52.76 H.I.	8.02	44.74	7.29	45.47
140				44.41	45.01	7.[illegible]	45.01		45.74
150				44.54	8.03	7.90	45.14	7.17	45.87
160				44.68	53.04	7.32	45.28	6.59	46.01
170				44.81	52.73 H.I.	[illegible]	45.41		46.14
180				44.95			45.55		46.28
200 W.L. 7th				45.23		6.90	45.83	6.18	46.55
20				45.50			46.10		46.83
40				45.77		6.36	46.37	5.63	47.10
60				46.04	46.37	4.52	46.64	3.79	47.37
80 E.L. 7th				46.32	4.79	4.24	46.92	3.51	47.65
20				46.59	51.16 H.I.	3.97	47.19	3.24	47.92
40				46.86		3.70	47.46	2.97	48.19
60				47.13		3.43	47.73	2.70	48.46
80				47.40		3.16	48.00	2.43	48.73
100				47.67	49.00	2.89	48.27	2.16	49.00
120				47.94	3.35	3.81	48.54	3.08	49.27
140				48.21	52.35 H.I.	3.54	48.81	2.81	49.54
160				48.48	56.23 H.I.	3.27	49.08	2.54	49.81
180				48.75		6.88	49.35	6.15	50.08

Side 0 Stake	2.29	Ctr Stake	2.29	Side 0 Stake	6.91' from side line to ctr		+0.6		+1.33
200 = W.L. 8th				49.02	56.23 HI	6.61	49.62	5.88	50.35
+20				49.29	50.16 / 4.29 / 54.45 HI	6.34	49.89	5.61	50.62
+40				49.56		6.07	50.16	5.34	50.89
+60				49.83		4.02	50.43	3.29	51.16
+80 = EL. 8th				50.11		3.74	50.71	3.01	51.44
+10				50.24	50.84 / 4.27 / 55.11 HI	3.61	50.84	2.88	51.57
+40				50.65		3.86	51.25	3.13	51.98
+50					59.30 HI	3.73	51.38	3.00	52.11
+60				50.92			51.52		52.25
+80				51.19		7.51	51.79	6.78	52.52
1+00				51.46	52.33 / 3.63 / 55.96 HI	7.24	52.06	6.51	52.79
+20				51.73		6.97	52.33	6.24	53.06
+40				52.01		3.35	52.61	2.62	53.34
+60				52.28	57.24 HI	3.08	52.88	2.35	53.61
+70						2.95	53.01	2.21	53.75
+80				52.55			53.15		53.88
2+00 = W.L. 9th				52.82		3.82	53.42	3.09	54.15
+20				53.09	53.69 / 4.26 / 57.95 HI	3.55	53.69	2.82	54.42
+40				53.36		3.99	53.96	3.24	54.69
+60				53.63		3.72	54.23	2.99	54.96
00 = +80 = EL 9th				53.91		3.44	54.51	2.71	55.24
+30				54.31		3.04	54.91	2.31	55.64

3.76
56.39
60.15 HS

55.97
4.23
56.65
3.50

								+0.6		+1.33
				Bottom		59.02 HS				
30' E9th = 310				54.31						
340				54.65			3.77	55.25	3.04	55.98
360				54.87		56.43 3.37 59.80 HS	3.55	55.47	2.82	56.20
380				55.10			3.32	55.70	2.59	56.43
400				55.32		56.40 4.98 61.38 HS	3.88	55.92	3.15	56.65
420				55.54			3.66	56.14	2.93	56.87
431 = B.C.				55.67			3.53	56.27	2.80	57.00
441.8				55.79		61.38 HS	3.41	56.39	2.68	57.12
453.6				55.91		56.63 TP 4.13 60.76 HS	4.87	56.51	4.14	57.24
464.4				56.03			4.75	56.63	4.02	57.36
475.2				56.15		56.72 3.89 60.61 HS	4.01	56.75	3.28	57.48
486.0				56.27				56.87	3.01	57.60
496.8				56.40		57.97 2.89 60.86 HS		57.00	2.88	57.73
507.6				56.52				57.12	2.76	57.85
518.4				56.64		57.24 4.44 61.68 HS	3.62	57.24	2.64	57.97
529.2				56.77				57.37	3.58	58.10
540.0				56.94				57.54	3.41	58.27
550.8				57.11				57.71	3.24	58.44
561.6				57.29			3.79	57.89	3.06	58.62
572.4				57.46		LS	3.62	58.06	2.89	58.79

							+0.6	+1.33
586 = 86 No B				57.67				
106				57.99			58.27	3.73 59.00
126				58.31			58.59	3.41 59.32
146				58.63			58.91	3.09 59.64
166				58.95		3.50	59.23	2.77 59.96
186				59.26			59.55	1.95 60.28
206				59.58			59.86	1.64 60.59
226				59.90			60.18	1.32 60.91
246				60.22		1.73	60.50	1.00 61.23
266				60.50	6499 HT		60.82	3.44 61.55
286				60.77			61.10	3.16 61.83
300 - SLA				60.96		3.62	61.37	2.89 62.10
320				61.23	6583 HT		61.56	3.54 62.29
340				61.50			61.83	3.27 62.56
360				61.67	6717 HT	5.17	62.00	4.44 62.73
380 - NLA				61.94			62.27	4.17 63.00
400				62.21			62.54	3.90 63.27
420				62.48			62.81	63.54
440				62.75			63.08	3.36 63.81
460				63.02			63.35	3.09 64.08
480				63.30			63.62	2.82 64.35
						3.27	63.90	2.54 64.63

								+06		+1.33
500				63.57		63.90 5.95 69.85 Hi		64.17	4.95	64.90
520				63.84				64.44	4.68	65.17
540				64.11				64.71	4.41	65.44
560				64.38		70.90 Hi	4.87	64.98	4.14	65.71
580				64.65				65.25	4.92	65.98
600				64.92				65.52	4.65	66.25
620 = B.C.				65.30		65.90 4.67 70.57 Hi	5.00	65.90	4.27	66.63
630.5				65.44				66.04	3.80	66.77
641.0				65.58				66.18	3.66	66.91
651.5				65.73				66.33	3.51	67.06
662.0				65.87				66.47	3.37	67.20
672.5				66.01				66.61	3.23	67.34
683.0				66.15				66.75	3.09	67.48
693.5				66.29				66.89	2.95	67.62
707.5 = E.C.				66.48		71.82 Hi	3.49	67.08	2.76	67.81
727.5				66.75					3.74	68.08
747.5				67.02					3.47	68.35
759.5 = B.C.				67.18					3.31	68.51
770.0				67.32					3.17	68.65
780.5				67.46					3.03	68.79
791.0				67.60					2.89	68.93

								+0.6		+1.33
801.5				67.75		71.82 HS.	3.47	68.35	2.74	69.08
812.0				67.89		82.95				69.22
819=E.C. Face Inlet.				68.00		0.40				
						83.34 HS				
						11.21	9.92	68.60	9.19	69.33
						72.13 TP				
						6.39				
						78.52 HS				

69.33
63.2
6.13
1.23
9.80

Cuts from spikes on Santa Fe.
tracks to bottom of trench
8/27/06 Evans
Haslam

				Grade.	Cut.
Sta	El. 8.73 3.92 12.65 HI	Sta 4+40			
4+88		3.95	8.70	+ 0.11	8.59
5+04		4.05	8.60	− 0.08	8.68
5+18		3.77	8.88	− 0.25	9.13
5+30		4.00	8.65	− 0.39	9.04
5+42		4.15	8.50	− 0.53	9.03
5+54		4.22	8.43	− 0.67	9.10
5+66		4.48	8.17	− 0.82	8.99

8.70
3.95

8.60
+ 4.05

12.65
6.93
5.72

Santa Fe.

666
- 081
5.85

666
18
6.84

		10.95			
E		9.11	1 1.84	El Cap 6.84	5'
W.		10.10	0.85	" 5.85	5'
720		+ 4.55	- 2.66	7.21	
740		+ 3.74	- 2.81	6.55	
750.6		+ 3.45	- 2.89	6.34	
20		+ 2.44	- 3.04	5.48	

below, top of Cap -

4.02
6.93
10.95 HI

Base E of E - 7.9
3.06 grade = +0.18
7.90 7.7

Base W of W. 7.10
grade -0.81
7.91

Santa Fe Tracks

Grade to Top of Cap = 6.67
for 4" Clearance

	3.85/7.10	
460	1.44	0.44
480	1.20	0.20
500	0.96	-0.04
520	0.72	-0.28
540	0.49	-0.51
560	0.25	-0.75
580	0.01	-1.0
600	-0.22	-1.22

Wharf track
E sta 718 = 6.8/4.15 el.
grade -2.64
6.79 cut

W/ sta 718 = 6.5/4.45 el.
grade -2.70
7.15 cut

E R E T.
el. = 7.9
grade = +0.18
7.7 cut.

W R W T
el. = 7.10
grade = -0.81
7.9 cut

620	-0.46	-1.46
640	-0.70	-1.70
660	-0.94	-1.94
680	-1.18	-2.18
700	-1.42	-2.42
720	-1.66	-2.66
740	-1.90	-2.81
760.6	-2.03	-2.89
775 Lewis, V		+ 3.07
850.6 outlet V		+ 4.23

End of 1.95 grade

Rate = 0.76 %

Rate 1.5 %

11.95 HI
E of E -
W of W -
E -
W -

La Jolla Tracks

17 2.0

16.505

12.64
3.865
16.505 HI
4.86
11.645

1	2		
9.623	9.567	9.481	9.425
6.882	6.938	7.024	7.080

12.64 E.L. Arctic
3.42
16.06 HI

ET		CrT		WT	
E	W	E	W	E	W
N. S	N. S	N-S	N-S	N. S	N. S

3.91	4.24	3.89	4.22	3.98	4.32	3.95	4.32	4.10	4.40	4.13	4.41
1215	11.82	1217	11.84	1208	1174	1211	1174	11.96	11.66	1193	11.65
1182		1184		1174		1174		1166		1165	
2397		2401		2382		2385		2362		2358	
11.985		12.005		11.91		11.925		11.81		11.79	
9.623		9.567		9.481		9.425		9.34		9.28	
2.362		2.438		2.43		2.500		2.47		2.51	
0.67		0.67		0.67		0.67		0.67		0.67	
1.69		1.77		1.76		1.83		1.80		1.84	

12.64
4.25
16.89 HI

9.34
7.55

9.28
7.61

9.43
7.46

1606
663
9.43

El. Top of Columns.

4.203 + 5.42 = 9.623 E } E. Track.
4.147 " = 9.567 W

4.061 " = 9.481 E } Cr. "
4.005 = 9.425 W

3.919 " 9.339 E } W "
3.863 " 9.283 W

from India - Bay -

6/28/06 { Hatch / Wrote

47.5

4.31
34
9

2.2
12
34

				Elev.	Grade	cut.
	1.42	20.05		18.63		
E. L. India					7.83	9.47
15			3.01	17.04	7.65	9.39
35			3.24	16.81	7.42	9.39
55			3.46	16.59	7.18	9.41
75 W L India			3.95	16.10	6.94	9.16
20			4.26	15.79	6.70	9.09
40			4.72	15.33	6.46	8.87
60			5.09	14.96	6.22	8.74
80			5.49	14.56	5.98	8.58
100			5.88	14.17	5.74	8.43
120			6.24	13.81	5.50	8.31
140			6.63	13.42	5.26	8.16
160			7.01	13.04	5.03	8.01
170	S 215	14.98	7.22	12.83	4.91	7.92 = 7'-11"
"	N		1.80	13.18	4.91	8.27
185			1.95	13.03	4.73	8.30
200	E L. Arctic		2.34	12.64	4.55	8.09
220			2.96	12.02	4.31	7.71
240			2.74	12.24	4.07	8.17
260			3.34	11.64	3.83	7.81
280			3.41	11.57	3.59	7.98

1.195 % Rate India - Bay

8 of track
bet tracks
W of tracks

11.64
550
17.14 HI
530
11.84 El.
3.95 grade
7.89 cut
7.10½

383
12
3.95 grade

E

4.31
.107
4.203 - 1st R.
056
4.147 - 2d R.
086
4.061 1st R.
056
4.005 2d R
086
3.919 - 1st R
056
3.863 - 2d R

W

Bottom grades under rails of La Jolla Ry.

		14.98				
300			3.72	11.26	3.35	7.91
320			4.17	10.81	3.11	7.70
340			4.41	10.57	2.87	7.68
360			4.77	10.21	2.64	7.56
380			5.15	9.83	2.41	7.42
400			5.46	9.52	2.10	7.35
420			5.79	9.19	1.98	7.26
440			6.25	8.73	1.68	7.04
460			6.46	8.52	1.44	7.07
480			7.19	7.79	1.20	6.58
T.P.	2.41	10.45	6.94	8.04		
500			2.41	8.04	0.96	7.07
520			2.54	7.91	0.72	7.18
540			3.02	7.43	0.49	6.93
560	stake beside rail				0.25	
580			3.89	6.56	0.01	6.54
600			4.06	6.39	-0.22	6.61
620			4.39	6.06	-0.46	6.52
640			4.94	5.51	-0.70	6.21
660			5.20	5.28	-0.94	6.19
680			5.42	5.03	-1.18	6.21
700			5.96	4.49	-1.42	5.91

.01195
1.58
9560
5975
1195
.018881 0

Grade of Bottom at 2" Pipe
= 1.22

0-11" Invert
4-6" Clear
1" Base I 12"
2½" Plate

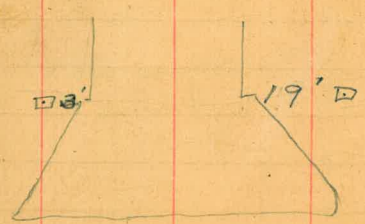
4-20½
5-8½
5.71

1.22
5.71
6.93 El bottom 2" Pipe

693 B.M.
406
10.99
402
6.97 El of nails for bottom 2" Pipe

244
5.37
7.81 HI

		10.45				
720			5.90	4.55	-1.66	6.21
740			6.71	3.74	-1.90	5.60
750 6	E.L. Atlantic		7.00	3.45	-2.03	5.48
20	(+24.5 - Cr Sewer)		8.01	2.44	-2.27	4.71
B.M. Spk in Water Tower			3.52	6.93		
T.P.	11.15	19.31	2.29	8.16		
Check			0.68	18.63	18.63	
40		7.81			-2.51	
60			6.38	1.43	-2.75	4.18
80					-2.99	
100	W.L. Atlantic				-3.23	



121
139
4
300

- 3.31
86
- 2.45

450
750
3000

1745
200
14.85
26.6
12.2

15
6.4
8.6

- 13.3
2.29
10.6

986
746
- 2.40 al to of Sewer -

240 - 2.45 grade
16
~~259~~

0.53
6.93
7.46
2.45
9.91
9.86
(5)

7/30/06
Bottom
Andy

2.66 HI

25' E. = Sewer

30' 11.2

40' N 12.4, S 14.25

50' N 12.8 Cr 17.45 S 12.8

60' N 1/3 11.1, S 1/3 15.9, S. 10.4

70 Cr. 12.5 S. 10.7 N. 9.8

80 Cr. 11.0 N. 10.6 S 13.0

90 N 1/3 11.8 Cr. 10.3 S. 10.9

100 Cr. 11.6 S. 11.0 S. Wing - 8.6

30 - 7.2 ℄ surface -4.6

50 - 7.2 -4.6

100 - 7.3 -4.7

5/28/06 from P.G.

Sta.	+	HI	−	Elev.	Grade	cut
	3.93	40.82		36.89		
W.L. Union			5.46	35.36	16.35	19.01
27			4.79	36.03	14.46	19.37
47			4.81	36.01	16.88	19.13
67 E.L. Union			5.28	35.54	17.11	17.43
15			5.28	35.54	17.28	18.26
40			5.12	35.70	17.57	18.13
60			5.30	35.52	17.79	17.73
80			5.15	35.67	18.02	17.65
100			5.10	35.72	18.25	17.47
120			5.01	35.81	18.47	17.34
140			4.92	35.90	18.70	17.20
160			4.88	35.94	18.93	17.01
180			4.76	36.06	19.15	16.91
198	W.L. Front	(Angle Left)	4.68	36.14	19.36	16.78
20			4.14	36.68	19.59	17.09
40			4.14	36.68	19.81	16.87
60			4.11	36.71	20.04	16.67
80	E.L. Front		4.57	36.25	20.27	15.98
100			4.67	36.15	20.49	15.76

4082
506
3576 } check.
3576

38.30
23
15

	+	HI 40.82	−	Elev.	Grade	Cut.
120			4.65	36.17	20.72	15.45
140			4.65	36.17	20.95	15.22
160			4.60	36.22	21.17	15.05
180		41.02	4.46	36.36	21.40	14.96
200			4.42	36.60	21.63	14.97
220			4.35	36.67	21.86	14.81
240			4.38	36.64	22.08	14.56
260			4.11	36.91	22.31	14.60
280	W L First		4.15	36.87	22.54	14.33
20			3.52	37.50	22.76	14.74
40 cr.	First St.		3.20	37.82	23.00	14.82
60			2.71	38.31	23.27	15.03
80	E L First	44.97	3.07	37.95	23.54	14.40
15			6.97	38.15	23.74	14.41
40			6.59	38.38	24.08	14.30
60			6.10	38.87	24.35	14.52
80			5.86	39.11	24.62	14.49
100			5.49	39.48	24.89	14.59
120			5.21	39.76	25.16	14.60
140			4.71	40.26	25.43	14.83
160			4.26	40.71	25.70	15.01

1.355 % Rate of Grade

		N. 44.97				
180			4.15	40.82	25.97	14.85
200 - W.L. 2d			3.94	41.03	26.24	14.79
220			3.74	41.23	26.51	14.72
240 - Cr			3.39	41.58	26.78	14.80
260			3.16	41.81	27.05	14.76
280 - E.L. 2d - 0+00			2.89	42.08	27.34	14.74 ✓
20			2.66	42.31	27.61	14.70
40			2.35	42.62	27.88	14.74
60			2.08	42.89	28.15	14.74
80			1.92	43.05	28.42	14.63
100			1.57	43.40	28.70	14.70
120			1.28	43.69	28.97	14.72
140			1.13	43.84	29.24	14.60
160			0.70	44.27	29.51	14.76
180	BM 4" B.	5135 41.8 ~~55.54~~ HI	0.62	44.35	29.78	14.57
200 - W.L. 3d		55.49	0.40	44.57	30.05	14.52
20			10.83	44.66	30.32	14.34
40			10.71	44.78	30.59	14.19
60			11.01	44.48	30.86	13.62
80 - E.L. 3d			10.01	45.48	31.14	14.34
15			9.75	45.74	31.34	14.40 ✓

8/9/06

B.M. on Hydrant at NW Cor. of 4th & B Streets is incorrect

		55.49							
40			9.27	46.22	31.68	14.54			54.59 / 0.98
60			8.82	46.67	31.95	14.72			
80			8.34	47.15	32.22	14.93			50.53 / 4.69 / 55.22 / 11.64 / 43.58 / 0.36 / 43.94
100		✓	7.71	47.78	32.49	15.29			
120			7.03	48.46	32.76	15.70			
140			6.50	48.99	33.02	15.97			
160			5.97	49.52	33.30	16.22			60.53 / 5.04 / 55.57
180			5.49	50.00	33.57	16.43			16.69 / 7.33 / 9.36
200	WL 4th	X	4.96	50.53	33.84	16.69			
220			5.66	49.83	34.11	15.72			
240			5.34	50.15	34.38	15.76			
260			5.66	49.83	34.65	16.18			
280	EL 4th		4.96	50.53	34.93	15.60		1	15.60
300			4.61	50.88	35.20	15.68	4.72	50.85	15.65
320			4.39	51.10	3547	15.63	4.60	50.97	15.50
340			3.93	51.56	35.74	15.82	3.96	51.61	15.87
360			3.53	51.96	36.02	15.94	3.76	51.81	15.79
380			3.04	52.45	36.29	16.16	3.07	52.50	16.21
400			2.63	52.86	36.56	16.30	2.72	52.85	16.29
420			2.90	52.59	36.83	15.76	2.62	52.95	16.12
440			1.80	53.69	37.10	16.59	1.94	53.53	16.43

55 49
5 3 71

8.0
6 5 4 7
9 8 1
53.79

55 54 - NW HI
55 49 - Davis. Stor.
5- 55 57 - SW H H -
6- 69.4 8 - SE N. H -

9.1
54 5 7

55 49

460			1,51	53,98	37.37
480	WL 5.4	X	1,03	54,46	37.64
500			1,55	53,94	37.91
520			1.19	54.30	38.18
540	5.4 13.4	55 57 8,1 6 3,67 HI	1,72	53,77	38.46
560	EL 5.4		0 90	54 59	38.73
15			9,08	54.59	38.93
40			8,65	55,02	39.27
60			8.26	55.41	39.54
80			7,77	55,90	39.81
100			8.10	55,57	40.08
120			7.48	56.19	40.35
140			6.85	56.82	40.62
160			6.48	57.19	40.90
180			6,24	57.43	41.17
200	WL 6.7		5.67	58.00	41.44
220			5.36	58.31	41.71
240			5,16	58,51	41.98
260	on cement.		5.16	58 51	42.25
280	EL 6.7	X	5 16	58 51	42.52
290			5.15	58.52	42.65

55 57

~~16.11~~	1.65	53.92	16.65
~~16.82~~	1.13	54.44	16.80
16.03			
16.12			
15.31			
15.86			
15.66	8.38	54.64	
15.85	7.96	54.96	
15.87	7.56	55.36	
16.09	7.15	55.77	
15.49	7.34	55.58	
15.84	6.71	56.21	
16.20	6.07	56.85	
16.29	5.74	57.18	
16.26	5.51	57.41	
16.56			
16.60			
16.53			
16.26			
15.99			
15.87			

54.59
8.33
6292 HI

4 HI

15.6

6-7th 8/6/06

119
595

		63.67				
310			5,16	58.51	42.90	15.61
330			4.80	58.87	43.19	15.68
350			4.54	59,13	43.46	15.67
370			4,43	59.24	43.73	15.51
390			4.24	59.43	44.00	15.43
410			4,03	59.64	44.27	15.37
430			3.68	59,99	44.54	15.45
450			3.52	60.15	44.81	15.34
470			3,30	60.37	44.95	15.42
480	WL 7th	X	3,18	60.49	45.23	15.26
500			2.28	61.39	45.50	15.89
520			1.59	62.08	45.77	16.31
540			1,80	61.87	46.04	15.83
560	EL 7th 6.21	67.75	2.13	61.54	46.32	15.22
580			6.35	61.40	46.59	14.81
600			6.24	61.71	46.86	14.85
620			6.08	61.67	47.13	14.54
640			5.70	62.05	47.40	14.65
660			5.41	62.34	47.67	14.67
680			5,22	62.53	47.94	14.59
700			5.05	62.70	48.21	14.49
720			4.91	62,84	48.48	14,36

54.59
2.76
57.35
8.05
49.30 El Tap Sewer Pipe
Bolts grade 40
9.30
7.25
2.05
.75
1.30

		67.75				
740			4.56	63.19	48.75	14.44
760	WL 8th	X	4.36	63.39	49.02	14.37
780			3.70	64.05	49.29	14.76
800			3.24	64.51	49.56	14.95
820			3.28	64.47	49.83	14.64
840	EL 8th		3.20	64.55	50.11	14.44
10			3.15	64.60	50.24	14.36
20			3.00	64.75	50.38	14.37
40			2.58	65.17	50.65	14.52
60			2.38	65.37	50.92	14.45
80			1.98	65.77	51.19	14.58
100			1.60	66.15	51.46	14.69
120			1.30	66.45	51.73	14.72
140			1.08	66.67	52.01	14.66
160	577	72 85	0.67	67.08	52.28	14.80
180			5.52	67.33	52.55	14.78
200	WL 9th	X	5.19	67.66	52.82	14.84
220			5.05	67.80	53.09	14.71
240			4.84	68.01	53.36	14.65
260			4.68	68.17	53.63	14.54
280	EL 9th		4.80	68.05	53.91	14.14

70.93
7.27
78.20
1.35
10th — 76.85 club

76.85

7214

6.54
5

		72.85				
300		Grades	5.57	67.28	54.18	13.10
310		54.31		3+10 — Break	54.31	
320			5.76	67.09	54.45	12.64
340		54.65	5.66	67.19	54.72	12.47
360		54.87	5.38	67.47	55.00	12.47
380		55.10	5.18	67.67	55.27	12.40
400		55.32	3.56	69.29	55.54	13.75
420		55.54	3.24	69.61	55.81	13.80
431	BC	55.67	3.58	69.27	55.96	13.31
441.8		55.79	3.25	69.60	56.11	13.49
453.6		55.91	3.32	69.53	56.25	13.28
464.4		56.03	2.57	70.28	56.40	13.88
475.2	7.27	56.15	1.92	70.93	56.54	14.39
486.0		56.27	6.88	71.32	56.69	14.63
496.8		56.40	—		56.84	
507.6		56.51	7.24	70.96	56.98	13.98
518.4		56.64	7.03	71.17	57.13	14.04
529.2		56.77	6.77	71.43	Break 56.77 ~~57.27~~	14.16
540.0		56.94	6.29	71.91	57.42	14.49
550.8		57.11	6.06	72.14	57.57	14.57
561.6		57.29	5.92	72.28	57.71	14.57

Grade Change cd.

11/28/06

72.39
3.44
75.83
11.18
64.65 El to Pipe
6.6
64.8 Bottom of Pipe
57.35
6.45

72.39
5.25
77.64
12.7
64.94
.75
64.20
57.33
6.85
5

El to Pipe

57.35 grade

Rate = ~~1.381~~ 1.355 %

		78.20					
5724			590	72.30	57.86	14.44	
586 = 86 N of (10)^β		E	5.98	72.22		14.16	57.46
		W	5.81	72.39	58.06	14.33	57.67
106			5.98	72.22	58.33	13.89	57.99
126			6.05	72.15	58.60	13.55	58.31
146			602	72.18	58.87	13.31	58.63
166			602	72.18	59.14	13.04	58.95
186			613	72.07	59.41	12.66	59.26
206			607	72.13	59.68	12.45	59.58
226			5.86	72.34	59.95	12.39	59.90
246	1649	79.00	5.69	72.51	60.22	12.29	60.22
266			6.43	72.57	60.50	12.07	
286	(10)		6.35	72.65	60.77	11.88	
300 (1)							
300	S.L.A		6.53	72.47	60.96	11.51	
320			6.24	72.76	61.23	11.53	
340			6.29	72.71	61.40	11.31	
360			6.33	72.67	61.67	11.00	
380	N.L.A		6.57	72.43	61.94	10.49	
400			6.32	72.68	62.21	10.47	
420			6.12	72.88	62.48	10.40	
440			Flume		62.75		
460					63.02		
480			51.8	73.82	63.30	10.52	

431 586 155 · 431 5724 1414 · 451 147 598

6.10 10 7.66

A.H. 73.14

		7900	Prod	elev	grade	cut.
500			5.02	73.98	63.57	10.41
520			4.57	74.43	63.84	10.59
540			4.12	74.88	64.11	10.77
560			3.72	75.28	64.38	10.90
580			3.39	75.61	64.65	10.96
600			2.85	76.15	64.92	11.23
620	B.C.	W	2.08	76.92		11.62
		E	2.50	76.50	65.30	11.20
630.5		W	5.60	77.40	65.44	12.96
641		W	5.36	77.64	65.58	12.06
651.5		W	5.21	77.79	65.73	12.06
662		W	5.23	77.77	65.87	11.90
672.5					66.01	
683		W	5.08	77.92	66.15	11.77
693.5		E	5.18	77.82	66.29	11.53
707.5	E.C.	E	5.31	77.69	66.48	11.21
7595	BC	E	4.32	78.68	67.18	11.50
770			4.16	78.84	67.32	11.22
7805			4.67	78.32	67.46	10.87
791			4.87	78.13	67.60	10.53
8015			5.20	77.80	67.75	10.05
812					67.89	

7900 589 73.11 club —

620 86 534

620 380 240

8.2 74.1 7975 5.6 ±

(33' Pavt. Dr. + Cr.

7846 317 81.83 INT

7.2 7.4 7.9 7806

74.6 72.8 73.9 49.7 79.8 77.7 5.1 58

7 35 10.5

81.83 4.20 77.63 Bm Dua

52.9 0.06 83.00 INT

76.15 6.58 82.73 407 83.66 TP 3.75 82.41 INT

74.1 7.8 81.9 4.2 77.7 Cl. at Cr. on plan

			Rod	Elev	Grade	Cut
	Face of Inlet.					
819	E.C.		E 6.06	76.94	68.00	8.94

76
3
46
23
69

13
6
19
3

21
103
315

18
9
27
3

23
3
35
3
135
3

12

175
87
261
3
56
27
84

19
95
285

64
3
34
17
51

88
3
58
29
87
11.

54
3
24
12
36

69.33
1341

82.94
.68
83.62 HI

56
78.02
472
82.74 HI

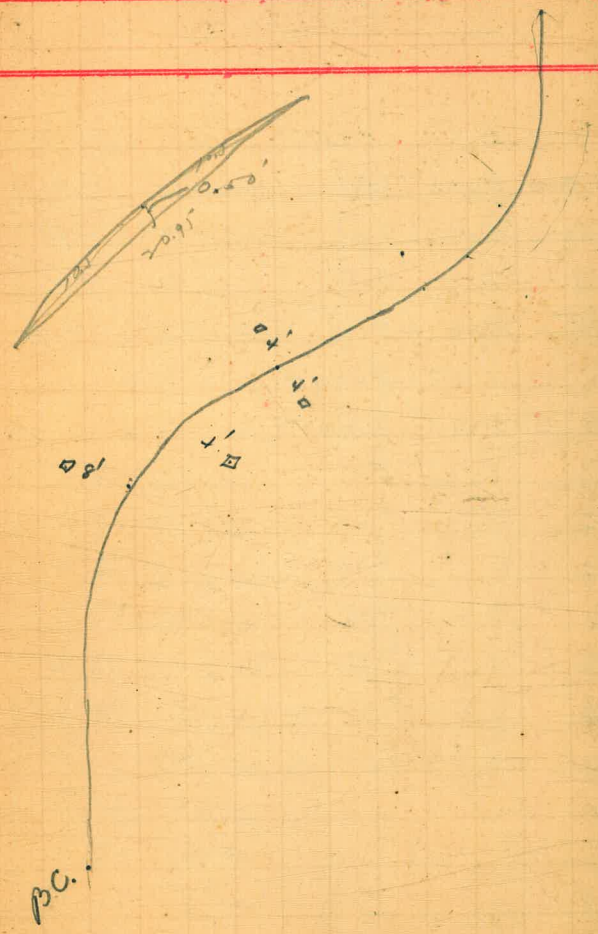
79.75
~~3.87~~
3.00

.75
1138

71.75
1100

8.7
74.0

7.9
3
49
74.0
74.0
3


P.C.

7/15/06 Lowering of Water Main Arctic-B.

	11.00	16.77		5.77	
N. top Pipe (-1.2)			7.76	9.0	7.8
N side Conduit			7.40	9.4	8.2
S " "			7.40	9.4	
S top Pipe (-1.2)			7.40	9.4	

Topline

N. from Conduit				S from Conduit				
-	4.7	12.1	2.2	9.9	-	4.7	12.1	2.2	9.9
12	4.7	12.1	2.7	9.4	12	4.8	12.0	2.7	9.3
24	4.66	12.1	3.2	8.9	24	4.8	12.0	3.2	8.8
36	4.66	12.1	3.7	8.4	36	4.9	11.9	3.7	8.2
48	4.6	12.2	4.2	8.0	48	4.9	11.9	4.2	7.7
60	4.6	12.2	4.7	7.5	60	4.9	11.9	4.7	7.2
72	4.5	12.3	5.2	7.1	72	5.0	11.8	5.2	6.6
84	4.5	12.3	5.7	6.6	84	5.0	11.8	5.7	6.1
96	4.4	12.4	6.2	6.2	96	5.0	11.8	6.2	5.6
108	4.3	12.5	6.7	5.8	108	5.1	11.7	6.7	5.0
120	4.2	12.6	7.2	5.4	120	5.1	11.7	7.2	4.5
132	4.2	12.6	7.7	4.9	132	5.0	11.8	7.7	4.1
					145	5.0	11.8	8.2	3.6

Survey for Drain from
Turn table for L.A. & S.D. B. Ry
to B St Conduit

	281	14.64		12.83	= 6.0
	425	1476	4.13	10.51	= 4.51
Base Rail			432		
Top of Stake (Cr TT) = 0400			432		
ground El	"	"	5.97		
0 + 50			5.6		
1			5.5		
+ 50			5.7		
2			5.5		
+ 20			5.8		
+ 40	St line		4.4		
+ 50			4.5		
3			4.7		
grade at 375.7 W of E L India.					3.34
(42.5 W of W Guage L of W Track)					
El of ~~botto~~ -					426
(310 Cr TT to 4' line)					

4.5
1.5
6.0
10.6
4.5

4.51
4.26
0.25

fall from -
Cr of TT Pit to
Bottom of Invert

1.95
3.75,7
17785
33813
37157
37557
4.488.615
783
5.84
92
4.26
601
1.75

601
462
481

601
506
95

346
116
462
482

692
116
8.08
404
283
0.2

11.33 ~~[illegible]~~ L. S. Ele

22.52 no stakes
0.65 M.O.

10.05					
215					
10.265					
249					
10.514					
26					
10.774					
248					
11.022					
249					
11.271					
248					
11.519					
26					
11.779					
249					
12.028					
26					
12.288					
237					
12.525					
26					
12.785					
248					
13.033					
249					
13.282					
248					
13.530					
237					
13.767					
237					
14.004					
169					
14.173					
237					
14.410					
226					
14.636					
237					
14.873					
237					
15.110					
237					
15.347					
226					
15.573					
237					
15.810	226				
	16.036				

6.91
.25
18.09

81.195
.05975

100) 280
840) .357
1600
1400
2000
1980
200

00.357
80
.28560

25
75
121.0
21
139'
407

Plate

5 | 66 | 4

466
250
7.16

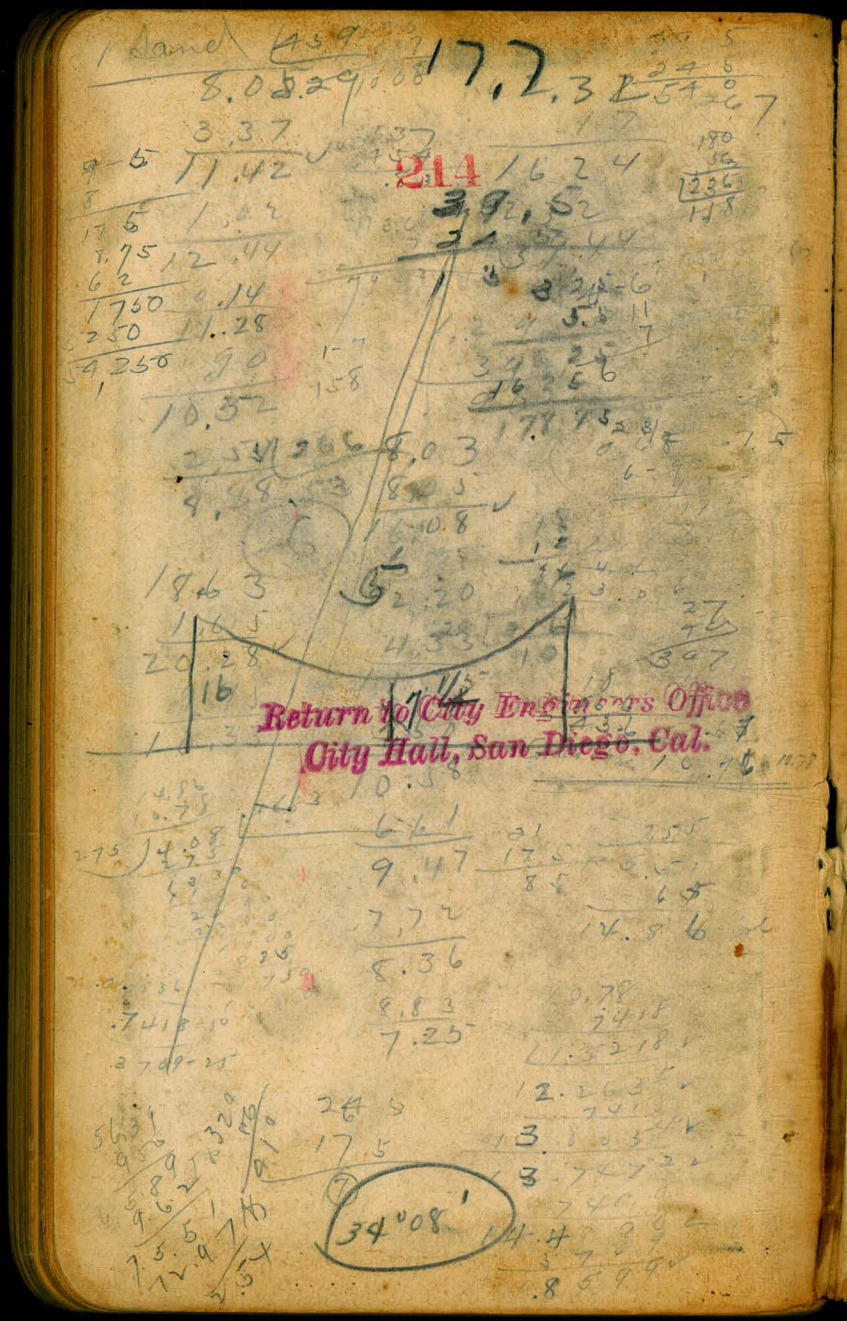
69.60
1.72
71.32 1st
12.66
58.66 T.P.
66.05
65.265 1st
12.26
53.20 T.P.
5.24
57.24 1st

Degrees.

89 88 87 86 85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45

Degrees.

rials,



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	7 .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.		

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