Contour lines in Rouns
Ton "Dam sites"
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TRANSIT

F.B. 162

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

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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.

MICROFILMED

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

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d'Hemecourt
Crowell
Fortiner
Doris
} 9-16-02

Contours in Pound Canyon City Park

	Hor.	Vert.	Rod		
Station 20+53 → 18'					
	Contour No. 0				
	9° 20' L	1° 15'	2.25	225	✓
	17° 20' L	2° 45'	1.72	172	✓
	33° L	3°	1.08	108	✓
	67° 45' L	5°	0.63	63	✓
	126° L	5° 30'	0.63	62	✓
	162° L	3°	1.05	105	✓
	168° 10' L	2°	1.58	158	✓
	169° 40' L	2°	2.20	220	✓
	161° 30' R	2°	2.40	240	✓
	144° 20' R	2°	2.20	220	✓
	132° 20' R	2° 15'	1.80	180	✓
	120° 35' R	2° 30'	1.50	150	✓
	97° R	2° 30'	1.15	115	✓
	71° R	2° 30'	1.12	112	✓

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Hor.	Vert.	Rod		
Contour 115.0				
76°20' R	4°	1.25	125	✓
100°15' R	4°	1.25	125	✓
123° R	4° 15'	1.65	165	✓
133°45' R	4° 15'	2.05	205	✓
145° R	3° 30'	2.40	240	✓
154°45' R	3° 30'	2.80	280	✓
162°55' R	2° 45'	3.40	340	✓
174°10' L	2° 45'	2.12	212	✓
162°30' L	3° 45'	1.78	178	✓
155°55' L	5°	1.25	125	✓
134°45' L	6° 15'	0.90	89	✓
94°10' L	7° 15'	0.75	74	✓
55°25' L	7° 30'	1.20	118	✓
33°15' L	7° 15'	1.40	138	✓
22°35' L	5° 30'	1.70	168	✓
15°50' L	4° 15'	2.15	215	✓
10°55' L	3° 15'	2.62	262	✓

	Hor.	Vert.	Rod		
	Contour 120.0				
	17° L	4°	2.32	232	✓
	25° L	4° 45'	1.82	182	✓
	39° 15' L	5° 30'	1.48	147	✓
	56° 10' L	7°	1.40	139	✓
	67° 30' L	8°	1.50	147	✓
	84° 30' L	8° 30'	1.00	98	✓
	112° 45' L	9°	1.05	102	✓
	138° 45' L	6° 45'	1.25	123	✓
	154° L	5° 45'	1.62	160	✓
	159° 30' L	4° 30'	2.15	215	✓
	163° L	3° 30'	2.52	252	✓
	Contour 125.0				
	159° 45' L	5°	2.50	250	✓
	153° 55' L	5° 45'	2.00	198	✓
	143° 30' L	7° 45'	1.58	155	✓
	123° 5' L	9°	1.30	127	✓
	99° 35' L	10°	1.12	109	✓

Hor.	Vert.	Rod		
77°55' L	9°45'	1.32	128	✓
71° L	9°30'	1.55	151	✓
58°52' L	8°30'	1.50	147	✓
35° L	7°	1.70	167	✓
25°30' L	6°	2.05	203	✓
20°15' L	5°	2.42	242	✓
84° R	8°	1.45	142	✓
99°35' R	8°15'	1.62	159	✓
116°10' R	6°	1.80	178	✓
129°10' R	5°30'	2.22	220	✓
141°10' R	4°30'	2.62	262	✓
145°15' R	4°30'	2.95	295	✓
153° R	3°30'	3.42	342	✓
159°30' R	3°15'	3.55	355	✓
Contour		120.0		
161°45' R	2°45'	3.50	350	✓
153°35' R	2°45'	3.25	325	✓
146°15' R	3°30'	2.65	265	✓

	Hor.	Vert.	Rod.		
	137°30' R	3° 45'	2.40	240	✓
	129°5' R	4° 30'	2.05	205	✓
	118°45' R	5°	1.70	170	✓
	100°35' R	5° 30'	1.40	139	✓
	77°45' R	6° 30'	1.32	130	✓
Sta. 25+75 → 74					
	Contour 100.0				
	5°30' L	1°	3.30	330	✓
	3°30' L	1°	2.70	270	✓
	0°18' R	1°	2.20	220	✓
	9°45' R	1°	1.80	180	✓
	28°5' R	2°	1.70	170	✓
	29°5' R	2°	1.25	125	✓
	23°25' R	3° 15'	0.78	78	✓
	46°25' R	6° 15'	0.48	47	✓
	24°45' R	6° 15'	0.90	89	✓
	35°35' R	2° 45'	1.42	142	✓
	28°45' R	2°	1.80	180	✓
	9°30' R	1° 30'	2.10	210	✓

	Hor.	Vert.	Rod		
	1°5' R	1°30'	2.55	255	✓
	2° L	1°30'	3.00	300	✓
	Contour 105.0				
(1)	6°45' R	1°	2.78	278	✓
	14°25' R	1°	2.22	222	✓
	33° R	2°	1.82	182	✓
	42°30' R	1°45'	1.35	135	✓
	44°25' R	3°30'	0.80	80	✓
	76°50' R	8°15'	0.54	53	✓
	110°45' R	7°30'	0.68	67	✓
	130°30' R	4°15'	0.95	95	✓
	145°55' R	2°	1.25	125	✓
	165°15' R	0°30'	1.70	170	✓
	176°45' R	1°30'	1.62	162	✓
	158°30' R	1°	1.15	115	✓
	140°55' R	3°30'	0.75	75	✓
	106°30' R	8°15'	0.35	34	✓
	34° R	7°30'	0.38	37	✓

	Hor.	Vert.	Rod		
	16°35' R	3°45'	0.80	80	✓
	23° R	3°	1.40	140	✓
	7°30' R	2°	1.72	172	✓
	2°25' L	1°30'	2.25	225	✓
	Contain		110.0		
	7° L	0°45'	2.35	235	✓
	8°45' L	0°45'	1.78	178	✓
	6°10' L	0°30'	1.30	130	✓
	1°45' L	0°30'	0.80	80	✓
	0°15' L	1°30'	0.30	30	✓
	174° R	1°15'	0.40	40	✓
	176° R	1°30'	1.05	105	✓
	171°30' R	1°30'	1.35	135	✓
	155°30' R	0°0'	1.62	162	✓
	137°45' R	0°0'	1.30	130	✓
	108°50' R	0°30'	0.82	82	✓
	75°45' R	0°30'	0.88	88	✓
	57°50' R	0°30'	1.35	135	✓

	Hor.	Vert.	Rod		
	40°50' R	0°30'	1.72	172	✓
	33°15' R	0°30'	2.15	215	✓
	24°15' R	0° 0'	2.50	250	✓
	16°20' R	0° 0'	2.85	285	✓
	Contour 1150				
	33°25' R	0°45'	2.35	235	✓
	42° 5' R	0°45'	2.00	200	✓
	49°15' R	1°45'	1.88	188	✓
	62°45' R	1°45'	1.60	160	✓
	75° R	1°30'	1.32	132	✓
	94°15' R	2°15'	1.25	125	✓
	115°25' R	2°	1.32	132	✓
	134°40' R	2°15'	1.68	168	✓
	149°45' R	0°45'	1.82	182	✓
	159°35' R	0°30'	2.25	225	✓

Hor.	Vert.	Rod		
	Contour	120.0		
156°35'R	2°15'	2.32	232	✓
146°40'R	2°15'	1.95	195	✓
137°8'R	2°15'	1.75	175	✓
121°5'R	2°15'	1.68	168	✓
107°35'R	3°30'	1.50	150	✓
88°30'R	3°30'	1.42	142	✓
69°35'R	3°30'	1.52	152	✓
55°25'R	3°30'	1.80	180	✓
42°5'R	1°30'	2.08	208	✓
34°45'R	1°30'	2.48	248	✓
30°15'R	2°	2.70	270	✓
26°15'R	2°	3.10	310	✓
	Contour	125.0		
32°30'R	2°45'	2.75	275	✓
37°15'R	3°	2.50	250	✓
46°37'R	3°30'	2.20	220	✓
54°30'R	3°30'	2.00	200	✓

Hor.	Vert.	Rod		
66°5' R	4°	1.75	175	✓
76°35' R	4°	1.62	162	✓
96°35' R	4° 15'	1.58	158	✓
107°10' R	4°15'	1.78	178	✓
115°5' R	4°	2.12	212	✓
127°30' R	4°	2.00	200	✓
138°30' R	4°	2.00	200	✓
148°25' R	4°	2.20	220	✓
153°40' R	3°	2.42	242	✓
122°20' L	17°45'	0.40	36	✓
65°45' L	19°15'	0.55	49	✓
35°45' L	9°30'	0.85	83	✓
25°5' L	6°30'	1.40	138	✓
22°45' L	6°	1.82	180	✓
Contour 120.0				
15°45' L	4°45'	1.72	172	✓
19°5' L	5°	1.30	130	✓
32° L	5°15'	0.75	74	✓

	Hor.	Vert.	Rod		
	54°10' L	18°	0.37	33	✓
	130°50' L	15°30'	0.30	28	✓
		Contour 115.0			
	147° L	11°15'	0.25	24	✓
	54°15' L	11°45'	0.18	17	✓
	27°15' L	6°30'	0.55	54	✓
	12°15' L	4°45'	0.92	92	✓
	13°50' L	2°30'	1.40	140	✓
	11°10' L	1°15'	2.00	200	✓
	11°30' L	1°15'	2.30	230	✓
Sta. 30 → 27					
		Contour 110.0			
	6°55' L	0°30'	2.50	250	✓
	13°45' L	0°45'	1.90	190	✓
	17°45' L	0°30'	1.35	135	✓
	28°35' L	0°45'	0.92	92	✓
	46°15' L	1°	0.58	58	✓

	Hor.	Vert.	Rod		
	55°15' L	2°45'	0.12	12	✓
	121°30' R	0°30'	0.38	38	✓
	128°10' R	0°30'	0.90	90	✓
	145°55' R	0°30'	1.38	138	✓
	162° R	0°30'	1.70	170	✓
	171°35' R	1°	2.05	205	✓
	176°50' R	1°30'	3.00	300	✓
	172° R	1°30'	2.25	225	✓
	163° R	1°	1.80	180	✓
	140°35' R	0°30'	1.35	135	✓
	105° R	0°15'	0.70	70	✓
	49°20' R	0°0'	0.22	22	✓
	5° L	0°0'	0.65	65	✓
	6°20' L	0°15'	1.40	140	✓
	2° L	0°15'	2.20	220	✓
	11°50' R	1°	2.50	250	✓
	13°55' R	1°	3.20	320	✓
	16° R	0°45'	3.65	365	✓

Hor.	Vert.	Rod		
Contour 115.0				
24°45' R	2°	1.82	182	✓
43°20' R	2°30'	1.20	120	✓
73°45' R	2°30'	0.72	72	✓
116°30' R	2°30'	1.10	110	✓
146°20' R	1°15'	1.70	170	✓
151°5' R	1°15'	2.05	205	✓
157°15' R	1°30'	2.65	265	✓
179°50' L	2°15'	1.90	190	✓
179°30' L	2°30'	1.22	122	✓
178° R	3°45'	0.60	60	✓
96°20' L	4°	0.23	23	✓
55°35' L	5°	0.58	58	✓
32°35' L	3°	1.00	100	✓
22°20' L	1°45'	1.45	145	✓
16°15' L	1°45'	1.95	195	✓
11°25' L	1°	2.55	255	✓
7°10' L	1°	3.10	310	✓

	Hor.	Vert.	Rod		
	Contour 120.0				
	7° L	1°30'	3.52	352	✓
	11°40' L	1°30'	3.00	300	✓
	17°15' L	1°30'	2.10	210	✓
	7° L	2°30'	1.70	170	✓
	39°30' L	3°30'	1.00	100	✓
	74°15' L	7°45'	0.52	51	✓
	144°15' L	7°15'	0.50	49	✓
	163° L	5°15'	0.95	94	✓
	168°30' L	4°15'	1.50	150	✓
	168°15' L	4°30'	2.00	200	✓
	169°15' L	3°45'	2.45	245	✓
	Contour 125.0				
P	163°30' L	5°	2.40	240	✓
	164° L	5°	1.85	185	✓
	160°45' L	5°	1.35	135	✓
	140°30' L	9°15'	0.75	73	✓
	94°55' L	11°30'	0.65	62	✓

	Hor.	Vert.	Rod		
	59°10' L	8°	0.95	93	✓
	38°10' L	5°15'	1.40	139	✓
	27°15' L	4°	1.85	185	✓
	18°30' L	3°15'	2.42	242	✓
	14°45' L	2°30'	3.00	300	✓
	9° L	2°15'	3.45	345	✓
	5°15' L	2°15'	3.90	390	✓
	Continued 20.0				
	27°45' R	3°30'	1.72	172	✓
	39°25' R	3°30'	1.47	147	✓
	62°15' R	4°	1.20	120	✓
	88°40' R	4°15'	1.00	100	✓
	112°5' R	4°30'	1.17	117	✓
	122°25' R	4°15'	1.38	138	✓
	142°35' R	2°30'	1.75	175	✓
	148°40' R	2°15'	2.18	218	✓
	155°45' R	2°15'	2.75	275	✓
	162°45' R	2°	2.85	285	

	Hor.	Vert.	Rod		
		Contour	125.0		
	161°35' R	2°30'	2.92	292	✓
	153°10' R	2°30'	2.62	262	✓
	145°20' R	4°	2.15	215	✓
	132°45' R	5°	1.65	165	✓
	109°10' R	5°	1.20	120	✓
	68°30' R	5°30'	1.18	117	✓
	45°30' R	5°30'	1.40	139	✓
	33° R	5°30'	1.70	168	✓
Sta 33+80 → 35					
		Contour	125.0		
	148°45' L	4°	0.90	90	✓✓
	122°30' L	6°30'	0.59	58	✓✓
	67° L	6°	0.59	58	✓✓
	37° L	5°15'	0.88	87	✓✓
	36°55' L	5°	1.35	135	✓✓
	24°35' L	1°30'	1.80	180	✓✓

Hor.	Vert.	Rod		
Contour 122.5				
21°45' L	1°30'	1.78	178	✓
27°45' L	1°30'	1.48	148	✓
31°30' L	3°30'	0.88	88	✓
44°15' L	4°	0.58	58	✓
122°55' L	3°45'	0.45	45	✓
157°30' L	3°45'	0.92	92	✓
Contour 120.0				
167°45' L	3°45'	0.97	97	✓✓
160°45' L	3°15'	0.59	59	✓✓
129°45' L	2°15'	0.25	25	✓✓
55°25' L	1°30'	0.44	44	✓✓
23°55' L	1°30'	0.76	176	✓✓
34°40' L	3°30'	1.35	135	✓✓
16°40' L	2°	1.72	172	✓✓

	Hor.	Vert.	Rod		
	Contour 117.5				
	13°15' L	2°15'	1.68	168	✓
	14°45' L	2°15'	1.30	130	✓
	21°30' L	2°15'	0.78	78	✓
	39°5' L	2°30'	0.45	45	✓
	66°30' L	2°30'	0.35	35	✓
	75°30' L	3°30'	0.25	25	✓
	72°40' L	3°30'	0.12	12	✓
	165°40' L	3°15'	0.11	11	✓
	171°15' L	1°	0.38	38	✓
	175°20' L	1°15'	1.00	100	✓
+					
9-24-02	Contour 117.5			Cromwell McLaren Fortines Davis	
Sta 13 + 85	→ 35				
	148°30' R	1°15'	1.25	1.25	✓
	128° R	0°0'	0.90	0.90	✓
	100° R	0°0'	0.61	.61	✓
	63°45' R	0°0'	0.75	75	✓
	48°15' R	0°0'	1.05	1.05	✓
	34°45' R	0°15'	1.35	1.35	✓
	17°30' R	0°15'	1.55	155	✓

	Hor.	Vert.	Rod		
	5°45' R	0°15'	1.72	172	✓
			Contour 145.0		
	10°30' R	0°15'	2.55	255	✓✓
	12°45' R	0°15'	2.10	210	✓✓
	1°15' R	0°15'	2.00	200	✓✓
	5° L	0°30'	1.70	170	✓✓
	6°30' R	0°30'	1.22	122	✓✓
	28°35' R	0°45'	1.10	110	✓✓
	35°35' R	1°30'	0.58	58	✓✓
	73°5' R	7°45'	0.15	15	✓✓
	178°30' R	0°45'	0.55	55	✓✓
	176° R	0°30'	1.30	130	✓✓
	176°22' L	0°30'	1.90	190	✓✓
	177°30' L	0°30'	2.60	260	✓✓
	157°45' R	1°15'	1.48	148	✓✓
	150°20' R	1°15'	1.08	108	✓✓
	125°45' R	1°45'	0.60	60	✓✓
	71°45' R	1°30'	062	62	✓✓

Hor.	Vert.	Rod		
48° R	1°	1.00	100	✓✓
27°45' R	0°45'	1.32	132	✓✓
4° R	0°30'	1.40	140	✓✓
1°30' L	0°15	1.82	182	✓✓
14°30' R	0°15	2.10	210	✓✓
11°5' R	0°0'	2.58	258	✓✓
6°45' R	0°15'	2.80	280	✓✓
	Continue	112.6		
3°10' L	0°45	1.70	170	✓
6°10' R	0°30	1.30	130	✓
22°35' R	0°30'	1.20	120	✓
36°37' R	0°45	1.10	110	✓
47°30' R	1°	0.75	75	✓
89°30' R	2°30'	0.40	40	✓
134°25' R	2°	0.50	50	✓
175° R	1°45'	0.82	82	✓
171°45' R	2°	1.25	125	✓
163°30' R	2°	125	125	✓

	Hor.	Vert.	Rod		
	159°5' R	2°	0.70	70	✓
	128°20' R	2°	0.48	48	✓
	76° R	2°	0.52	52	✓
	51°45' R	2°	0.75	75	✓
	34°35' R	1°	1.20	120	✓
	11°35' R	0°45'	1.35	135	✓
	3° L	0°45'	1.70	170	✓
		Contour	120.0		
	15°0' R	0°30'	1.95	195	✓ ✓
	30°45' R	0°30'	1.55	155	✓ ✓
	43°20' R	0°30'	1.25	125	✓ ✓
	85°30' R	0°0'	0.72	72	✓ ✓
	115° R	0°0'	0.82	82	✓ ✓
	136°15' R	0°15'	1.22	122	✓ ✓
	154°35' R	0°15'	2.70	270	✓ ✓

Hor.	Vert.	Rod		
Contour 122.5				
140°30' R	0°45'	1.70	170	✓
129°30' R	0°45'	1.30	130	✓
114° R	1°45'	1.08	108	✓
82°25' R	1°45'	0.90	90	✓
57° R	2°	1.08	108	✓
38°15' R	0°30'	1.40	140	✓
26° R	0°45'	1.78	178	✓
18°15' R	0°45'	2.28	228	✓
16°55' R	0°45'	2.75	275	✓
Contour 127.5				
28°30' L	3°30'	1.85	185	✓
41°10' L	5°	1.90	190	✓
40°7' L	5°15'	1.12	111	✓
49° L	6°15'	0.82	81	✓
86°15' L	8°30'	0.60	59	✓
122°15' L	8°30'	0.69	68	✓
143° L	6°	0.95	94	✓

	Hor.	Vert.	Rod		
	153°45' L	4°30'	1.35	135	✓
		Contour	130.0		
	148°25' L	6°	1.32	131	✓ ✓
	137°45' L	6°30'	0.95	94	✓ ✓
	113° L	8°30'	0.72	70	✓ ✓
	70°35' L	8°30'	0.72	70	✓ ✓
	46°10' L	6°30'	1.08	107	✓ ✓
		Contour	132.5		
	49°15' L	8°	1.20	118	✓
	60°50' L	8°30'	0.90	88	✓
	93°20' L	11°15'	0.72	69	✓
	128° L	9°	0.92	90	✓
	137°30' L	7°	1.15	113	✓

Hor.	Vert.	Rod		
Contour		135.0		
142°45' L	7°	1.40	139	✓ ✓
125°45' L	9°30'	0.95	92	✓ ✓
98°45' L	11°	0.80	77	✓ ✓
70°15' L	11°15'	0.90	87	✓ ✓
52°30' L	9°	1.25	122	✓ ✓
Contour		137.5		
55°20' L	9°30'	1.25	122	✓
63°50' L	11°	1.05	101	✓
82°40' L	13°30'	0.85	80	✓
105°45' L	13°30'	0.88	83	✓
125°45' L	10°	1.02	99	✓
135°30' L	9°	1.28	125	✓
145° L	7°	1.62	160	✓

Hor.	Vert.	Rod		
Contour 140.0				
144°30'L	7°30'	1.70	169	✓✓
139°30'L	8°30'	1.50	147	✓✓
128°45'L	10°30'	1.15	111	✓✓
109°5'L	13°	0.95	90	✓✓
70° L	11°45'	1.00	96	✓✓
57°30'L	10°30'	1.32	128	✓✓
Contour 142.5				
59°45'L	11°30'	1.35	130	✓
65°30'L	12°45'	1.18	112	✓
87°10'L	15°	0.95	89	✓
106°10'L	14°45'	0.97	97	✓
123°45'L	13°15'	1.20	114	✓
134°25'L	10°30'	1.42	137	✓
142°10'L	8°30'	1.70	164	✓

	Hor.	Vert.	Rod		
	Contour 1145.0				
	141°35' L	6°30'	1.78	174	✓
	130°15' L	11°15'	1.42	137	✓
	116°35' L	13°45'	1.15	109	✓
	98° L	16°	1.03	95	✓
	75°10' L	16°	1.08	100	✓
	62°10' L	12°30'	1.38	132	✓
	Contour 1117.5				
	64° L	18°	1.42	135	✓
	73° L	15°35'	1.12	104	✓
	98°20' L	15°30'	1.07	99	✓
	119°10' L	14°30'	1.28	120	✓
	130°5' L	12°30'	1.55	148	✓
	137° L	10°30'	1.70	164	✓

	Hor.	Vert.	Rod		
	Contour 150.0				
	135°45' L	10°45'	1.75	169	✓✓
	128°15' L	12°45'	1.55	147	✓✓
	106°25' L	16°	1.25	116	✓✓
	88°20' L	16°15'	1.18	109	✓✓
	64°50' L	13°30"	1.55	147	✓✓
	Contour 152.5				
	66°30' L	14°	1.55	147	✓
	78°20' L	17°	1.25	114	✓
	95°40' L	17°	1.20	110	✓
	107°30' L	16°30'	1.25	115	✓
	123° L	14°15'	1.47	138	✓
	131°40' L	12°	1.58	151	✓
	138°20' L	10°30'	1.97	187	✓

	Hor.	Vert.	Rod		
		Contour 155.0			
8	136°35' L	11°	1.97	190	✓✓
	128°10' L	13°30'	1.68	159	✓✓
	120° L	14°45'	1.50	140	✓✓
	108°15' L	16°45'	1.45	133	✓✓
	87°15' L	18°	1.27	115	✓✓
	68° L	14°45'	1.70	160	✓✓
		Contour 122.5			
	137°10' R	2°	1.55	155	
	126°30' R	2°15'	1.20	120	
	99°15' R	2°15'	0.92	92	
	61°10' R	2°	1.00	100	
	43° R	2°	1.35	135	
	30°45' R	2°	1.65	165	
	18°15' R	1°	2.25	225	
	17°10' R	1°	2.72	272	
	Taken twice.				

	Hor.	Vert.	Rod		
	Contour		1250		
	17°20' R	1°	2.85	2.85	✓✓
	20°45' R	1°	2.22	222	✓✓
	31°45' R	1° 15'	1.90	190	✓✓
	45° R	1° 30'	1.40	140	✓✓
	61°45' R	3° 30'	1.05	105	✓✓
	88°45' R	3° 45'	1.00	100	✓✓
	124°30' R	3° 45'	1.28	128	✓✓
	137°50' R	1° 45'	1.72	172	✓✓
	46°30' R	1° 45"	2.12	212	✓✓
	Contour		1270		
	32°25' R	3°	1.72	172	✓
	121°30' R	4°	1.28	128	✓
	104°15' R	4°	1.08	108	✓
	76° R	4°	1.00	100	✓
	56° R	3° 45'	1.18	118	✓
	41°35' R	3° 45'	1.52	152	✓
	31°15' R	2° 30'	1.90	190	✓

	Hor.	Vert.	Rod		
	23° R	2°30'	2.45	245	✓
		Contour	130.0		
	18°10' R	2°15'	3.32	332	✓✓
	20°40' R	2°30'	3.00	300	✓✓
	27°15' R	2°45'	2.20	220	✓✓
	37°45' R	3°15'	1.75	175	✓✓
	46°15' R	3°45'	1.45	145	✓✓
	56°50' R	4°	1.21	121	✓✓
	75°20' R	4°30'	1.04	104	✓✓
	104°22' R	4°45'	1.12	112	✓✓
	124° R	5°	1.45	145	✓✓
	128°30' R	3°45'	1.81	181	✓✓
		Contour	132.5		
	125°30' R	5°	1.82	182	✓
	122° R	5°	150	150	✓

	Hor.	Vert.	Rod		
	117°40'R	6°	1.20	119	✓
	85° R	6°	1.08	107	✓
	57° R	6° 15'	1.25	127	✓
	47°30'R	6°	1.50	149	✓
	35°25'R	3° 30	1.92	192	✓
	27°45'R	3°30'	2.30	230	✓
		Condense	1350		
	22°15'R	3°30'	2.90	290	✓✓
	27°35'R	3°30'	2.42	242	✓✓
	35°50'R	4°45'	1.95	195	✓✓
	47°35'R	6°	1.55	153	✓✓
	58°15'R	6°45'	1.30	128	✓✓
	75°35'R	6°30'	1.15	113	✓✓
	103° R	6°45'	1.22	120	✓✓
	111°20'R	6°30	1.45	143	✓✓
	123° R	6°	1.82	180	✓✓

Hor.	Vert.	Rod		
		Contour 137.5		
120°35'R	6°30'	1.65	163	✓
113°30'R	7°15'	140	138	✓
102°45'R	7°	1.25	123	✓
81°15'R	7°30'	1.18	116	✓
67° R	7°30'	1.25	123	✓
52°30'R	7°30'	1.52	150	✓
38°45'R	5°30'	1.92	190	✓
		Contour 140.0		
23°45'R	4°	290	290	✓✓
30°10'R	5°	240	243	✓✓
37°30'R	6°	205	203	✓✓
45°10'R	6°45'	178	176	✓✓
59°40'R	8°30'	1.45	142	✓✓
71°30'R	10°	1.30	126	✓✓
91°30'R	9°45'	128	124	✓✓
115°45'R	8°	148	145	✓✓
118°30'R	8°	1.75	172	✓✓

	Hor.	Vert.	Rod		
	Contour	1425			
	115°45'R	8°	1.70	167	✓
	110°45'R	9°	1.50	146	✓
	100°15'R	10°	1.35	131	✓
	84°25'R	10°	1.30	126	✓
	67°30'R	10°15'	1.45	140	✓
	53°20'R	8°	1.60	157	✓
	45°45'R	8°	1.80	177	✓
	34°50'R	6°45'	2.22	219	✓
	Contour	1450			
	26°15'R	4°45'	3.00	300	✓✓
	20°10'R	5°30	2.65	263	✓✓
	39°10'R	7°	2.10	207	✓✓
	46°50'R	8°15'	1.82	178	✓✓
	58°45'R	9°	1.60	156	✓✓
	76°30'R	10°30'	1.40	135	✓✓
	98°45'R	10°45'	1.45	140	✓✓
	113°15'R	9°	1.70	166	✓✓

	Hor.	Vert.	Rod		
		Contour 1475			
	110° R	10°	1.70	165	✓
	104°20' R	10°30'	1.55	150	✓
	88°50' R	11°	1.40	135	✓
	72° R	10°45'	1.45	140	✓
	58° R	9°45'	1.65	160	✓
	47°30' R	9°	1.89	183	✓
	39°30' R	7°30'	2.20	216	✓
	30° R	6°45'	2.55	252	✓
		Contour 1500			
	26°30' R	6°	3.00	297	✓✓
	31°20' R	6°45'	2.75	271	✓✓
	38°5' R	8°	2.30	225	✓✓
	46°15' R	9°30'	2.00	195	✓✓
	59° R	10°30'	1.72	166	✓✓
	80°20' R	12°45'	1.50	143	✓✓
	102°5' R	11°15'	1.58	152	✓✓
	107°20' R	10°45'	1.68	162	✓✓

Hor.	Vert.	Rod		
Contour 152.5				
103°45' R	11°45'	1.72	165	✓
94°45' R	12°30'	1.60	153	✓
81° R	12°45'	1.52	145	✓
64°50' R	12°	1.68	161	✓
52°50' R	10°	1.85	179	✓
36°50' R	8°	2.40	235	✓
Contour 155.0				
28° R	6°45'	3.00	296	✓✓
34°45' R	8°	2.65	260	✓✓
40°45' R	9°	2.40	234	✓✓
48°50' R	10°30'	2.05	198	✓✓
62°35' R	11°45'	1.75	168	✓✓
77° R	13°	1.60	152	✓✓
94°30' R	13°	1.65	157	✓✓
103°10' R	12°	1.88	180	✓✓

Sta. 34+24.5 = axis of Upper Dam

Sta 34+24.5 → 33+85 105°10' L

Sta. 33+85 → Sta. 30 27°08' L to □ 200.9'

9-26-02

Crowell
McLaren
Forbines
Dawes

	Hor.	Vert.	Rod		
Sta. D → 33+85					
	Contour 132.5				
	91°30' R	3°30'	0.30	30	✓
	115°10' R	5°45'	0.38	38	✓
	150°15' R	5°45'	0.25	25	✓
	Contour 135.0				
	160°05' R	11°	0.32	31	✓✓
	130° R	8°30'	0.48	48	✓✓
	116°35' R	6°30'	0.52	51	✓✓
	74°15' R	7°15'	0.40	39	✓✓
	Contour 137.5				
	85°5' R	7°	0.52	51	✓
	108°45' R	7°	0.72	71	✓
	140° R	10°	0.50	48	✓

	Hor.	Vert.	Rod		
	Contour 140.0				
	138°40' R	9°45'	0.60	58	✓✓
	110°15' R	7°	0.95	94	✓✓
	83°40' R	9°45'	0.60	58	✓✓
	Contour 142.5				
	82°15' R	11°	0.68	66	✓
	104°45' R	7°	1.04	102	✓
	109°10' R	7°15'	1.15	113	✓
	125° R	9°45'	0.90	88	✓
	135°30' R	11°15'	0.70	67	✓
	Contour 145.0				
	136°50' R	11°	0.73	70	✓✓
	122° R	9°	1.10	107	✓✓
	108° R	6°30'	1.42	140	✓✓
	100°45' R	8°30'	1.08	106	✓✓
	83°30' R	11°	0.72	69	✓✓

Hor.	Vert.	Rod		
Contour 147.5				
75°10' R	12°	0.78	76	✓
98°30' R	9°30'	1.12	110	✓
107°20' R	7°30'	1.60	157	✓
126°10' R	10°30'	1.10	106	✓
126°30' R	11°	0.95	91	✓
Contour 150.0				
131°45' R	12°15'	1.00	96	✓✓
119°15' R	9°	1.35	132	✓✓
108°40' R	7°15'	1.95	192	✓✓
101°30' R	9°	1.32	129	✓✓
81° R	13°30'	0.90	85	✓✓
Contour 152.5				
85°15' R	13°15'	1.03	98	✓
104°22' R	9°15'	1.45	141	✓
108°30' R	7°	2.15	212	✓
116°35' R	8°45'	1.62	158	✓

	Hor	Vert	Rod		
	Contour 155.0				
	120°55'R	10°	1.40	136	✓ ✓
	123°25'R	10°45'	1.40	135	✓ ✓
	115°45'R	9°	1.85	181	✓ ✓
	111°20'R	7°30'	2.20	216	✓ ✓
	107°40'R	7°	2.42	239	✓ ✓
	102°10'R	9°	1.82	178	✓ ✓
	92°35'R	11°30'	1.22	117	✓ ✓
Sta. 35 → 33+85					
	Contour	127.5			
	65°25'R	3°30'	0.78	78	✓
	87°35'R	3°30'	1.00	100	✓
	95°45'R	3°30'	1.30	130	✓
	120°45'R	3°	1.00	100	✓

	Hor	Vert.	Rod	
	Contour 130.0			
	82°20'R	4°	1.00	100 ✓
	92°30'R	4°30'	1.30	130 ✓
	94°50'R	4°	1.75	175 ✓
	102°30'R	3°45'	1.40	140 ✓
	126°35'R	4°	1.12	112 ✓
	140°35'R	4°	1.30	130 ✓
	151°30'R	3°30'	1.60	160 ✓
	162°10'R	2°30'	2.12	212 ✓
	166°25'R	2°1	2.82	282 ✓
2	Contour 135.0			
	162°10'R	4°	2.82	282 ✓
	159°30'R	4°	2.30	230 ✓
	147°45'R	5°	1.68	168 ✓
	128°15'R	6°	1.25	124 ✓
	107°5'R	5°15'	1.48	147 ✓
	98°35'R	4°15'	2.00	200 ✓
	93°55'R	4°15'	2.52	252 ✓
	90°20'R	5°30'	2.05	204 ✓

	Hor.	Vert.	Rod	
	79°45' R	6°	1.20	119 ✓
3	Courtown		140.0	
	81°45' R	7°30'	1.50	147 ✓
	87°40' R	5°30'	205	203 ✓
	90°45' R	4°45'	2.62	262 ✓
	91°45' R	4°30'	3.40	340 ✓
	98° R	4°45	2.52	252 ✓
	110° R	6°45'	1.58	156 ✓
	130°30' R	7°	1.45	143 ✓
	146°35' R	6°15'	1.87	186 ✓
	157°45 R	5°	2.55	253 ✓
	159°55' R	4°30'	290	290 ✓
4	Courtown		145.0	
	157°5' R	5°30'	2.90	287 ✓
	153°15' R	6°	2.42	239 ✓
	145°45' R	7°15'	2.00	197 ✓
	125°50' R	8°45'	1.55	151 ✓

	Hor.	Vert.	Rod	
	123°50' R	6°15'	2.00	198 ✓
	99°5' R	5°	2.68	266 ✓
	94°30' R	4°30'	3.45	345 ✓
	92°50' R	4°30'	4.00	400 ✓
	90°45' R	4°45'	3.60	360 ✓
	86°15' R	6°45'	2.22	219 ✓
	71°5' R	10°45'	1.28	124 ✓
	Contour 150.0			
	80° R	9°15'	1.88	185 ✓
	84°50' R	7°30'	2.30	226 ✓
	88°15' R	6°	3.28	324 ✓
	91°10' R	4°45'	4.10	407 ✓
	94°55' R	4°30'	4.50	447 ✓
	95° R	5°	3.90	387 ✓
	98°10' R	5°30'	3.00	297 ✓
	105°15' R	8°	2.20	216 ✓
	126°10' R	10°	1.68	163 ✓
	140° R	8°45'	1.90	186 ✓
	148° R	8°	2.25	221 ✓

	Hor.	Vert.	Rod	
	154°50' R	6°30'	3.05	301 ✓
6	Contour 155.0			
	152°30' R	7°15'	3.10	305 ✓
	148°25' R	8°	2.62	257 ✓
	141°25' R	9°45'	2.15	209 ✓
	127°10' R	10°45'	1.82	176 ✓
	106°30' R	8°30'	2.35	230 ✓
	99°25' R	6°30'	3.10	306 ✓
	93°45' R	5°45'	3.60	356 ✓
	96°10' R	5°15'	4.00	397 ✓
	94°55' R	4°30'	4.50	447 ✓
	90°40' R	5°	4.00	397 ✓
	87°35' R	6°15'	3.50	346 ✓
	81°20' R	9°30'	2.22	216 ✓

	Hor.	Vert.	Rod	
Sta.	39+50 → 33+85			
	Contour		120.0	
	10°55' R	1°	3.40	340 ✓
	10°55' R	1°	2.75	275 ✓
	13°15' R	1°15'	2.05	205 ✓
	21°35' R	2°30'	1.60	160 ✓
	6° R	5°15'	0.95	94 ✓
	87°15' R	5°30'	0.80	79 ✓
	115° R	7°	0.95	94 ✓
	37°10' R	7°15'	0.80	79 ✓
	21°45' R	2°15'	0.97	97 ✓
	4°25' R	2°15'	1.48	148 ✓
	14° L	2°30'	2.30	230 ✓
	14°15' L	1°30	3.00	300 ✓
	Contour		125.0	
	23° L	1°15'	2.30	230 ✓
	37° L	1°30'	1.85	1.85 ✓
	52°25' L	1°30'	1.18	118 ✓
	24° L	1°30'	0.60	60 ✓

	Hor.	Vert.	Rod	
	74°30' R	1°45'	0.50	50 ✓
	129°30' R	0°45'	0.90	90 ✓
	129°15' R	0°30'	1.22	122 ✓
	92°50' R	0°30'	1.05	105 ✓
	71°15" R	0°30'	1.15	115 ✓
	35°10' R	0°30'	1.42	142 ✓
	15°5' R	0°30'	1.90	190 ✓
	12°15' R	0°0'	2.30	230 ✓
	13°45' R	1°30'	4.00	400 ✓
2		Contour 130.0		
	139°45' R	2°	2.00	200 ✓
	130°35' R	0°45'	1.45	145 ✓
	91°30' R	0°30'	1.10	110 ✓
	52°40' R	1°30'	1.48	148 ✓
	27°35' R	1°15'	1.70	179 ✓

	Hor.	Vert.	Rod	
3	Contour 135.0			
	38° R	2°30'	1.60	160 ✓
	72°50' R	2°30'	1.33	133 ✓
	102°15' R	2°45'	1.25	125 ✓
	134°10' R	3°	1.90	190 ✓
4	Contour 140.0			
	130°50' R	3°30'	1.95	195 ✓
	111° R	4°15'	1.40	140 ✓
	77°15' R	4°30'	1.55	155 ✓
	52°45' R	4°30'	1.65	165 ✓
	35° R	4°15'	1.88	188 ✓
5	Contour 145.0			
	39°10' R	4°45'	1.82	182 ✓
	54°15' R	4°45'	1.82	182 ✓
	66°30' R	4°45'	1.95	195 ✓
	85°45' R	6°00'	1.65	165 ✓

	Hor.	Vert.	Rod		
	102°45'R	5°45'	150	148	✓
	129°10'R	4°30'	205	205	✓
6	Contour 150.0				
	126°15'R	6°	218	216	✓
	111°45'R	6°15'	175	173	✓
	52° R	6°15'	190	188	✓
	74°30'R	6°	223	221	✓
	59° R	6°	203	201	✓
	40°5' R	6°15'	210	208	✓
7	Contour 155.0				
	51° R	7°30'	210	207	✓
	67° R	7°	230	227	✓
	76°50'R	6°30'	260	257	✓
	82° R	7°30'	218	215	✓
	96°50'R	7°15'	188	185	✓
	115°10'R	7°30'	200	197	✓
	122°45'R	7°30'	215	212	✓
	163°40'L	5°45'	258	255	✓

	Hor.	Vert.	Rod	
	151° L	5° 45'	2.52	249 ✓
	139° 35' L	6° 30'	275	272 ✓
	133° 15' L	7° 45'	228	224 ✓
	123° L	5° 30'	190	186 ✓
	111° 50' L	7° 30'	200	197 ✓
	104° 10' L	6° 30'	2.40	237 ✓
	98° 30' L	5° 15'	292	290 ✓
	95° L	4° 30'	345	346 ✓
	93° 25' L	4° 30'	510	510 ✓
	89° 30' L	4° 15'	440	443 ✓
	83° 50' L	6° 30'	2.50	247 ✓
	77° L	7° 15'	200	197 ✓
	66° 15' L	7° 15'	1.75	172 ✓
	48° 20' L	7° 15'	2.20	217 ✓
	38° 30' L	6° 30'	2.50	247 ✓
	30° L	5° 30'	290	287 ✓

Hor.	Vert.	Rod	
Contour 150.0			
30°25' L	5° 15'	2.80	278 ✓
39°10' L	5° 15'	2.38	236 ✓
53°10' L	6° 15'	2.00	198 ✓
73° L	7°	1.82	179 ✓
84°10' L	6° 30'	2.28	226 ✓
88°15' L	5° 30'	2.80	277 ✓
92°15' L	4° 15'	3.40	340 ✓
96°10' L	4° 30'	2.90	290 ✓
102°15' L	6°	2.30	227 ✓
109°45' L	7°	1.82	179 ✓
122°15' L	9° 15'	1.60	156 ✓
135°45' L	7°	1.97	194 ✓
143°45' L	6° 30'	2.38	235 ✓
152°5' L	4° 45'	2.30	230 ✓
169°20' L	4° 45'	2.40	240 ✓

	Hor.	Vert.	Rod		
	Contour 145.0				
	169°5' L	4°30'	2.37	237	✓
	150°45' L	4°30'	1.92	192	✓
	134°30' L	6°15'	1.45	148	✓
	118°5' L	6°15'	1.40	138	✓
	107°5' L	6°	1.63	161	✓
	100°10' L	5°	2.10	208	✓
	92°20' L	4°30'	2.78	278	✓
	88°15' L	4°30'	2.20	220	✓
	80° L	5°45'	1.82	180	✓
	64°55' L	6°	1.68	166	✓
	51°40' L	4°30'	1.90	190	✓
	35°10' L	4°25'	2.30	230	✓
	29°	4°	2.80	280	✓
	Contour 140.0				
	24°30' L	3°30'	290	290	✓
	31°30' L	4°	242	241	✓
	37°30' L	2°45'	220	220	✓
	51°20' L	3°	180	180	✓

	Hor.	Vert.	Rod		
	64°25' L	4°30'	155	155	✓
	81°20' L	4°15'	160	160	✓
	89°45' L	4°15'	220	220	✓
	105°15' L	4°30'	140	140	✓
	120° L	4°30'	120	120	✓
	153°45' L	4°15'	145	145	✓
	171°20' L	4°30	225.	225	✓
	Contour 1850				
	174°25' L	1°15'	218	218	✓
	168°30' L	1°45'	160	160	✓
	131° L	1°45'	110	110	✓
	72°15' L	1°30'	135	135	✓
	45°45' L	1°30'	192	192	✓
	30°45' L	1°15'	230	230	✓
	22°40' L	1°30'	300	300	✓

	Hor.	Vert.	Rod	
	Contour 130.0			
	20°45' L	0° 45"	2.70	270 ✓
	26° L	0° 0'	2.40	240 ✓
	40°10' L	0° 0'	2.00	200 ✓
	66°40' L	0° 0'	1.48	148 ✓
	96°30' L	0° 15'	0.88	88 ✓
	156° L	0° 30'	0.60	60 ✓
	139°40' R	0° 15	0.75	75 ✓
	161° R	1°	0.85	85 ✓

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

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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.		

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