1342

FIELD BOOK

774

1342

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	10.46	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	98.78	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	96.16	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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SECTION

6TH St. Extension
From Univ. Ave. to Linda Vista Rd. (1)

STA.	LEFT Grade ELEVA.	Rt. Grade GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
	282.88	282.13								
NL. Univ. Ave										
=0+00=P.C.										
							34.85		7.2	
+34.85	281.6	281.5	281.3	-0.5/15.7	-0.5/0	0.0/15.0	11.4			
								11.4		
							34.86		14.6	
+69.76 P.C.	800	800	799	-0.7/16.0	-0.6/0	0.0/5.0 +0.6/15.3	3.0 11.6		2.0	
							3.1	11.8		
							21.71		7.9	
+91.42	790	791	789.0	-0.2/15.3	-0.6/0	0.0/6.0 +0.4/15.2	1.8 7.9		2.0	
							1.8	7.9		
							24.71		7.1	
1+18.13	780	780	779.0	+0.1/16.0 -0.6/12.0	-0.6/0	0.0/6.0 +0.4/15.2	1.8 9.9		1.4	
							1.8	9.8		
							21.71		8.7	
+34.84	768	769.0	768	0.0/15.0 -0.5/11.0	-0.8/0	0.0/9.0 +0.1/15.0	0.3 11.8		0.8	
							0.3	11.8		
							21.72		15.4	
1+56.56	756	757	756	-0.4/15.6 -0.8/15.0	-1.2/10 -1.0/0	-0.6/7.0 0.0/15.0	26.7		0.1	
							0	26.6		
							21.71		21.5	
+78.27	742	743	743	0.0/15.0	-1.4/9.0 -1.0/0	-0.6/14.5 0.0/15.8	27.0			
								27.0		
							21.73		18.7	
E+00=E.C.	728	729	728	+1.0/15.3 0.0/12.0	-1.3/8.0 -1.0/0	0.0/14.5 -0.5/15.9	1.5 19.2		0.6	
							1.5	19.4		
							23.81		20.8	
+23.81	713	714	713	+4.3/17.1 0.0/12.9	-1.7/7.0	-1.3/0 -0.3/15.5	4.5 27.8		2.6	
							4.4	-27.8		
							23.81		3.2	26.8
+47.62	697	698	697	+2.2/16.1 -0.7/12.5	-0.7/12.0 -2.0/8.0	-1.4/0 -0.4/15.6	2.8 33.1		12.7	148.9 Page Total
							2.8	33.1		
							23.81			

SECTION

STA.	ELEVA. (Grade) Left	GRADE ℄	Rt.	CUT OR FILL LEFT	C	RIGHT	AREAS EXCAVATION	EMBANKMENT	CUBIC YDS. EXCAV.	EMBANK.	REMARKS
							2.8	33.1			
2+71.43	2682	2683	2682	-0.2/154 -1.4/120	-1.4/0	-1.0/130 0.0/150	36.2 0	23.81 36.2	1.2	30.6	
										34.1	
+95.24=BC	66.6	66.7	66.6	-1.3/169 -2.0/15.0	-1.4/0	-1.0/11 0.0/12 0/15	41.1 0	23.81 41.1			
								31.17	2.2	38.7	
3+26.41	646	647	646	-1.8/177	-0.9/0	0/10 +1.5/11 0.0/15	3.8 25.9 3.8	26.0			
								31.17	2.2	137.0	
+57.58=BC	62.5	62.6	62.5	-1.3/17	-0.4/0	0/3 -14.0/24.5 -15.7/31.0 -19.0/39 -19.[illegible]/44.2	211.4	211.4			
								20.17		255.1	
+97.75	61.2	61.3	61.2	-1.2/168 -0.6/5.0 0/3.0	-1.4/0	-11.5/15.0 -18.4/17.2 -22.[illegible]/27.6 -24.7/50.0	471.7	471.7			
								20.16 948 2		354.1	
+97.91=EC	2598.6	2599.6	2598.6	-1.2/16.8 -0.8/9.0 -0.6/8.0 0.0/7.0 -1.0/5.0	-5.9/0	-14.9/15 -17.5/26 -22.3/37 -28.6/45 -32.5/53.2	476.5	476.5			
								44.41 1144 9		941.6	
4+42.82	56.93	57.03	56.93	0.0/15	-10.6/0	-17.0/15 -17.4/19 -21.3/26.0 -24.5/34.0 -25.[illegible]/53.[illegible]	668.4	668.4			
								44.41	0.7	1054.6	
+86.73	54.01	54.11	54.01	+0.7/15.3 0.0/12.5	-10.4/0	-16.1/15 -17.2/21.0 -21.1/28.0 -22.6/34.0 -2[illegible]/55	0.9 613.8 0.9	614.0			
								44.41	3.5	715.5	
5+31.14	51.08	51.18	51.08	-0.3/15.5 0/9.3 +1.0/4.5 0/2.5	-2.0/0	-11.0/15 -12.0/21 -17.2/37.1 -32.5/48.7	3.4 256.0 3.4	256.0			
								44.42	7.5	252.0	
+75.56	48.16	48.26	48.16	-0.3/15.5	0/0	+0.4/5.0 +2.3/5.5 0/9 -4.2/15 -11.2/31.[illegible]	5.7 [illegible]0.3 5.7	50.4			
								22.44	7.9	20.9	
5+98	46.8	46.9	46.8	+0.4/15.[illegible]	+0.2/0.0	+0.4/10.0 +1.5/11.0 +1.5/13.0 0.0/15.3 -5.[illegible]/23.2	13.2	0			
								22.0	25.2	3834.2	Page Total

Cont. on Page 5

SECTION

STA.	GRADE ELEVA. Lt.	GRADE E	GRADE Rt.	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
6+64.35=PC L=844.60'	2423/	2429/	2423/								
+88.75	4071	4081	4071								
7+18.10	3911	3921	3911								
+37.55	3750	3760	3750								
+61.95	3589	3599	3589								
+86.87=E.C.	3428	3438	3428								
+99.74=B.C.	3340	3350	3340								
8+49.74	3023	3033	3023								
+99.74	2706	2716	2706								
9+49.74	2389	2399	2389								
+99.74	2072	2082	2072								

SECTION

STA.	GRADE ELEVA. Lt	℄	GRADE Rt.	CUT OR FILL LEFT	C	RIGHT	AREAS EXCAVATION	EMBANKMENT	CUBIC YDS. EXCAV.	EMBANK.	REMARKS
10+49.74	21755	21765	21755								
+99.74	1438	1448	1438								
11+49.74	1131	1131	1131								
+99.74	20804	20814	20804								
12+49.74	20487	20497	20487								
+99.74 Bk	20170	20180	20170								
13+81.77	19969	19981	19989								
13+63.8=PC Lt. 31°02'10"	19768	19788	19808								

Cont. from P-2

SECTION

STA.	GRADE ELEVA. LEFT		GRADE	CUT OR FILL (LEFT — C — RIGHT)	AREAS EXCAVATION		AREAS EMBANKMENT		CUBIC YDS EXCAV.	CUBIC YDS EMBANK.	REMARKS
						13.2		0			547.78=π
6+50	245.23	45.33	45.23	+1.1/15.5 +1.1/0.0 +1.5/13.0 +2.5/16.2	38.6	38.5	22.0				Lath by PC = 240.55=TP (7.23−, 1.25) 241.80=π
									21.1		
						10.6 0	44.35	check ✓	87.1		
+64.35=PC Lt. 8°44'20"	242.31	242.41	242.31	+3.5/16.8 +1.7/0.0 +1.8/15.9	67.5	67.5	16.40				
									38.1		
6+80.75	241.25	241.35	241.25	+2.4/16.2 +1.6/0.0 +1.8/16.9	58.0	58.0	8.00				
									27.8		
6+88.75	240.71	240.81	240.71	+22.6/26.3 +18.8/18.3 +2.3/15.0 +1.6/0.0 +2.0/16.0	129.8	129.8	12.25				
									75.4		
7+01	239.9	240.0	239.9	+22.7/26.3 +17.4/16.0 +13.3/14.0 +7.7/10.0 +2.3/8.0 +1.4/0.0 +2.0/16.0	202.6	202.6	12.15				
									83.8		
+13.15	239.1	239.2	239.1	+21.2/25.6 +17.0/17 +11.2/15 +1.4/7.0 +1.5/0.0 +2.3/16.1	170.0	170.0	24.40				
									116.8		
+37.55	237.50	237.6	237.5	+17.6/23.8 +5.8/15.0 +1.4/14.0 +1.7/0.0 +2.7/8.0 +4.8/9.0 +0.5/15.2	88.6	88.6		0			
							12.45		36.0	0.4	
7+50	236.7	236.8	236.7	+1.5/15.7 +2.3/0.0 +2.9/5.0 +5.4/7.0 0.0/13.3 −2.2/18.3	67.6 1.9	67.6		1.9			
							11.95		30.5	7.7	
+61.95	235.9	236.0	235.9	+1.7/15.8 3.1/0.0 +3.3/1.0 +15.5/3.0 +3.6/6.0 0.0/10.0 −1.3/17.6	32.8 70.1	70.1		32.8			
							24.42		74.9	141.1	
7+86.97=EC	234.3	234.4	234.3	+3.1/17 +4.5/12 +5.3/10 +6.7/3.0 +4.1/0.0 0.0/7.5 −27.0/41.5 −26.5/54.2	279.3 955	95.5		279.3			
							13.37		39.4	142.8	
						63.6		297.4	630.9	292.0	Page Total

Cont. on P-6

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL LEFT / C / RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS EXCAV.	CUBIC YDS EMBANK.	REMARKS
7+99.74=8+	233.40	233.5	233.4 $\frac{+5.6}{17.8}$ $\frac{+6.0}{15.0}$ $\frac{+1.2}{0}$ $\frac{0.0}{2.0}$ $\frac{-9.2}{15}$ $\frac{-26.3}{49}$ $\frac{-29.8}{69.7}$	63.6 297.4 63.6	297.4			221.80=T 12.26- 229.54=TP 0.10+ 229.64=T 12.21- 217.43=T 1.30+ 218.73 0.91- 217.82=TP 3.11+ 220.93=T 3.11- 217.82=TP 1.69+ 219.51=T
						29.4	464.6	
8+24.7	231.80	231.90	231.80 $\frac{0.0}{15}$ $\frac{-7.6}{0}$ $\frac{-13.9}{18}$ $\frac{-19.2}{26}$ $\frac{-33.0}{43}$ $\frac{-31.0}{62.0}$	706.1	706.1			
							841.8	
8+49.7	230.2	230.3	230.2 $\frac{-8.5}{27.7}$ $\frac{-13.3}{0}$ $\frac{-25.1}{15}$ $\frac{-30.1}{40}$ $\frac{-33.2}{44}$ $\frac{-33.2}{56}$ $\frac{-32.5}{58}$ $\frac{-30.6}{60.3}$	1112.1	1112.1			
							1324.1	
8+74.7	228.6	228.7	228.6 $\frac{-11.7}{42.0}$ $\frac{-20.2}{32.0}$ $\frac{-17.4}{15.0}$ $\frac{-21.6}{0}$ $\frac{-26.4}{15.0}$ $\frac{-33.3}{36.0}$ $\frac{-25.8}{53.9}$ $\frac{-24.4}{44.0}$ $\frac{-33.4}{55.0}$ $\frac{-29.3}{59.0}$	1747.7	1747.7			
							1909.4	
8+99.74	227.06	227.16	227.06 $\frac{-26.0}{54.0}$ $\frac{-27.5}{42}$ $\frac{-32.4}{0}$ $\frac{-37.0}{30}$ $\frac{-33.3}{40}$ $\frac{-27.7}{55.5}$	2376.2	2376.2			
							1807.4	
9+24.74	225.46	225.56	225.46 $\frac{-18.8}{28.2}$ $\frac{-26.0}{15.0}$ $\frac{-26.6}{0}$ $\frac{-35.5}{40.0}$ $\frac{-30.4}{45.6}$	1527.5	1527.5			
							1127.1	
9+49.7	223.9	224.0	223.9 $\frac{-5.9}{24.0}$ $\frac{-5.7}{18.0}$ $\frac{-9.4}{0}$ $\frac{-37.0}{43.0}$ $\frac{-34.0}{56.0}$	906.2	906.8			
							491.1	
9+69.7	222.3	222.4	222.3 $\frac{-5.4}{23.1}$ $\frac{-5.2}{0}$ $\frac{-5.3}{9.0}$ $\frac{-36.6}{69.9}$	419.0 0	419.0			
						12.9	314.8	
9+99.74	220.72	220.82	220.70 $\frac{+2.0}{16.0}$ $\frac{0.0}{10.5}$ $\frac{-6.0}{3.0}$ $\frac{-6.1}{0}$ $\frac{-5.1}{22.5}$ $\frac{14.9}{22.1}$ $\frac{+13.9}{19.0}$	23.2 147.5 23.2	147.6			
						223.5	1226	
			Cont. on P. 7	379.1	73.0	265.8	8402.9	Page Total

SECTION

STA.	ELEVA. (Grade) Lt.	GRADE ℄	Rt.	CUT OR FILL LEFT C RIGHT	AREAS EXCAVATION	Dist.	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
10+29.74 ✓	218.82	218.92	218.82	+24.8/27.4 +12.3/0 0.0/4.0 -6.0/8.0 -5.0/22.5	379.1		73.0			219.51 = π 10.68 − 208.83 = TP 3.12 + 211.95 = π 3.12 − 208.83 = TP 2.27 + 211.10 = π
						20.		316.0	42.5	
10+49.74	217.55	217.65	217.55	+28.7/29.3 +13.1/0 +10.7/4.50 0.0/7 -5.4/15.0 -5.0/27.5	474.1		41.8			
						35.		536.0	57.6	
10+84.74	215.33	215.43	215.33	+17.8/24.0 +17.2/20.0 +11.9/0 +8.9/5.0 0.0/7.5 -5.7/11.0 -5.?/22.5	352.9		47.1			
						15.		141.5	35.5	
10+99.74	214.38	214.48	214.38	+8.8/19.4 +10.1/13.0 +7.2/2.0 +5.2/0 0.0/3.0 -5.7/5.0 -5.0/22.5	156.5		80.6			
						15.		43.5	44.9	
11+14.74 ✓	213.45	213.55	213.45	0.0/15.0 -1.0/0 -0.9/4.0 -5.6/11.0 -5.8/23.7			81.2			
						20.		30.6	57.2	
11+34.74	212.2	212.3	212.2	+12.7/21.3 0.0/2.0 -2.0/0 -4.3/8.0 -4.6/21.9	82.6		73.2			
						15.		104.4	33.8	
11+49.74	211.21	211.31	211.21	+20.7/25.3 +9.4/0.0 0.0/4 -4.5/11 -4.4/21.6	293.3		48.4			
						15.		215.0	22.6	
11+64.74	210.26	210.36	210.26	+27.1/28.5 +15.0/0 0.0/8.5 -4.5/13.0 -4.2/21.3	480.8		33.0			
						25.00		538.6	22.9	
11+89.74	208.67	208.77	208.67	+32.7/31.3 +21.7/6.0 +18.6/0 +15.8/4.0 0.0/13.0 -4.1/15 -4.0/21.0	682.5		16.4			
						10.00		243.6	6.0	
11+99.74	208.04	208.14	208.04	+32.1/31.0 +24.6/12.0 +15.5/0 +11.0/5 0.0/13 -4.0/15.0 -4.0/21.0	632.7	8?	16.0			
						17		365.5	9.7	
					528.2		14.8	2534.7	332.7	Page Total

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL (LEFT / C / RIGHT)	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
12+16.74	206.96 207.06	206.96	+31.6/30.8 +12.5/0 +6.8/9.0 0.0/12.5 -3.7/15.0 -3.7/20.5	528.2 14.8 528.2	14.8			211.10 = π 11.86
					15.0	334.4	8.4	199.24 = TP 4.08+ 203.32 = π
12+31.74	206.02 206.12	206.02	+34.3/32.1 +17.2/0 +10.4/7.0 0.0/12.5 -3.6/14 -3.5/20.2	675.7 15.6 675.7	15.6			11.06 192.26 = TP 2.70
					18.0	464.5	11.2	194.96 9.91 185.05 = TP
12+49.74	204.87 204.97	204.87	+33.6/31.8 +4.2/8.0 +17.7/0 +13.8/7.0 0.0/12.0 -3.6/13.0 -3.4/20.1	717.9 16.0 717.9	18.0			BM = 185.06 Error = 0.01
					90.0	865.8	34.4	
12+89.74	202.33 202.43	202.33	+30.1/30 +12.5/0 -0.0/6 -3.0/7 -2.4/18.6	450.8 28.5 450.8	28.5			
					10.	142.5	8.1	
12+99.74	201.70 201.80	201.70	+26.6/25.3 +13.6/6.0 6/out 0.0/1.0 -2.2/18.3	318.9 15.4 318.9	15.4			
					32.03	189.2	42.2	
13+31.77	199.69 199.84	199.89	0.0/19.0 -2.1/0 -2.2/18.3	55.7	55.7			
	Note: for this Cross Section see Book 1343				32.06	121.8	58.5	
13+63.83	197.68 197.88	198.08	-2.0/18.0	205.25	42.9			See F.B. 1343
						2118.2	162.8	Page total

Yardage between Stas 0+00 + 13+63.83 =

cut	fill
5,586.8	13,173.3

Sixth St Extension

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL Left	CUT OR FILL C	CUT OR FILL Right	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
			Continued from F.B. 1343 Pg 18							
5+11.39 = EC	23.81	23.63	23.06							
							51.99			
							138.1			
6+63.38	23.91	23.43	23.01			68.9				
			21.9	21.5	21.4		68.9			
							57.99		111.8	
10+15.87 = BK	22.96	23.23	22.91			47.2				
			21.4	21.6	21.6		47.2			
							34.63		59.2	
7+50	22.89	23.11	22.80			45.1				
			21.6	21.6	21.5		45.1			
							50		78.6	
6+70	22.79	23.06	22.79			39.8				
			21.6	21.5	21.7		39.8			
							50		69.5	
7+50	22.69	22.96	22.69			35.3				
			21.8	21.7	21.6		35.3			
							50		57.9	
6+70	22.59	22.86	22.59			27.2				
			21.6	21.8	21.7		27.2			
							15.33		15.7	
10+15.87 = BK	22.51	22.83	22.56			27.9				
			21.6	21.8	21.8		27.9			
							31.53		35.3	
7+63.9	22.35	22.18	22.58			21.6				
			21.3	22.0	21.9		21.6			
							38.54 34.0		24.3	
7+92.44 = EC	22.14	22.51	22.60			12.4				
			22.1	22.0	21.9		12.4			
							23.86 26.8		11.8	
							14.4		464.1	

5-9-29 Sisson Replace Section

9

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
63+14.30	2216	2245	22.2	22.1	22.0	14.4	14.4			
						0				
								1.3	11.4	
63+40.16	2218	2248	22.7	21.9	22.4	3.0	11.5			
						11.5				
								1.9	9.0	
63+66.07	2220	2250	22.3	21.9	22.3	1.3	8.9			
						8.9				
								4.3	8.5	
63+87.80	2222	2252	22.6	21.9	22.2	8.5	10.3			
						10.3				
						14.8	20.3	6.5	9.0	
64+11.21	2224	2254	22.4	21.8	22.3	6.3	10.0			
						10.0				
								2.8	11.2	
64+35.10	2226	2256	22.3	21.7	22.2	15.4	15.4			
						0				
						1.0	29.5	0.4	13.0	
64+59.92	2228	2258	22.6	22.1	22.4	1.0	14.1			
						14.1				
						2.0	27.4	0.9	12.1	
64+82.33	2230	2260	22.6	22.3	22.3	1.0	13.3			
						13.4				
						2.0	27.0	1.3	18.1	
65+19.63	2233	2263	22.8	22.2	22.6	1.0	13.7			
						13.7				
						3.1		2.1	19.1	
65+59.30	2235	2265	23.2	22.1	22.1	2.1	14.7			
						14.7				
						3.8	28.7	3.1	23.4	
						1.7	14.0			
								24.6	134.8	

GRADE Change ↑ ↓ See Page 18 & 24 this Book

Sixth St Extension

SECTION

STA.	ELEVA. Left	ELEVA. ℄	ELEVA. Right	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
66+0	22.62	22.89	22.13		+0.6 16.2 0.0 9.5 -0.6 9.0	-0.7	-0.3 16.5	14.0 1.7	14.0			
					23.1	22.2	22.3	1.7 4.0	℄ 26.5	3.7	24.5	
65+0	22.18	22.95	22.62		+0.9 16.5 0.0 10.0 -0.8 9.5	-0.5	+0.3 16.5	23 12.5 2.3	12.5			
					23.4	22.5	22.8	3.3	℄ 21.9	3.1	20.3	
64+0	22.73	23.00	22.23		+0.2 16.2 0.0 10.0 -0.7 9.5	-0.4	-0.2 12.0 0.0 16.0	1.0 9.9 1.0	9.4			
					23.0	22.6	22.6	2.5	℄ 15.6	2.3	14.4	
63+50	22.79	23.01	22.79		+0.5 16.3 0.0 9.0 -0.6 9.5	-0.1	-0.3 16.5	1.5 6.2 1.5	6.2			
					23.2	23.0	22.5	1.9	℄ 20.1	1.8	18.6	
63+0	22.85	23.12	22.85		+0.2 16.1 0.0 11.6 -0.6 10.0	-0.5	-0.5 16.5	0.9 13.9 0.4	13.9			
					22.9	22.6	22.4		℄ 34.0	0.4	31.5	
62+50	22.91	23.18	22.9		0.0 16.0 -0.8 11.5	-0.9	-0.5 16.5	20.1 0	20.1			
					22.7	22.5	22.4		℄ 45.1		45.1	
62+0	22.96	23.23	22.91		0.0 16.0 0.0 12.5 +1.1 11.5	-1.2	-0.4 11.5	28.6	28.6			
					23.0	22.0	22.6		℄ 58.6		52.4	
61+50	23.02	23.30	23.04		0.0 16.0 -1.0 13.0	-1.2	-0.3 11.5	28.0	28.0			
					22.7	22.1	22.6		℄ 58.6		54.3	
61+0	23.08	23.35	23.08		0.0 16.0 -1.1 13.0	-1.1	-0.3 11.1	30.6	30.6			
					22.8	22.3	22.3		℄ 72.5		67.1	
60+50	23.14	23.41	23.14		-0.8 17.0 -1.3 13.0	-1.3	-1.2 13.0	41.9	41.9			
					22.0	22.1	21.8		℄ 84.5		78.2	
									42.6	11.3	406.4	

GRADE CHANGE

Sixth St Extension

SECTION

STA.	ELEVA. Left	ELEVA. Right	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
71+0	23.19	23.19		-1.5 -1.4 / 185 185	-1.1	-1.2 -1.9 / 110 160	42.6	42.6			
				21.7	22.4	21.6		82.2		85.1	
+5.93	23.16	23.16		-2.1 -1.1 / 210 160	-0.7	-0.9 -1.4 / 0.0	39.6	39.6			
				21.9	22.8	21.4		56.6		41.9	
72+9.93	23.59	23.59		-0.7 / 140	-0.6	-0.8 / 155	16.8	17.0			
				22.9	23.2	23.3		41.6		30.8	
72+25.93	24.00	24.05		0.0 -0.8 / 150 160	-0.9	-0.9 / 140	24.6	24.6			
				24.0	23.4	23.1		85.2		63.1	
73+0.93	24.16	24.09		-1.0 / 150	-1.7	-1.8 / 150	60.6	60.6			
				22.7	23.2	22.7		145.7		81.0	
73+25.93	25.37	25.52	25.07	-2.0 -2.6 / 175 170	-3.2	-3.2 -3.5 / 160 205	85.1	85.1			
				22.5	23.2	23.0		198.1		110.1	
73+43.93	Pvc 25.91	25.11	25.91	-1.1 -2.8 / 210 120	-2.8	-3.1 -3.9 / 205 200	113.0	113.0			
				22.7	23.4	22.4		249.1		184.5	
73+75.93	25.52	25.99	25.54	-3.2 -3.5 / 220 220	-3.2	-2.1 -3.1 / 145 145	136.1	136.1			
				23.4	23.6	22.4		231.6		171.6	
74+15.93	25.92	25.97	25.92	-2.0 -2.4 / 211 145	-2.3	-2.3 -3.1 / 175 210	95.5	95.5			
				24.5	24.9	23.6		95.5		70.7	
74+55.93	Pvc 25.85	25.20	25.85		-2.8			0			BM 24.45
	South End Bridge				27.1						
								0		438.8	

SECTION

Mill St. Extension

STA.	ELEVA. Left	ELEVA. Center	ELEVA. Right	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
75+93.93 = 76+00 Abut.					27.4 Elev. Flat Bridge			0			
							17.5	77.5		31.6	
76+15.93 = P.I.	27.05	27.30	27.05	-.97 / 1.11	-.09	-1.10 / -.92 / -.87 / 1.00					
				26.4	26.4	23.0					
							107.1	107.1		170.9	
76+65.93	27.81	27.09	27.81	-.73 / .80 / -.72 / .80 / -.16 / 1.10	-1.3	-.16 / 1.05 / -.77 / .80 / -.57 / .71					
				24.6	25.8	24.3					
							65.1	65.1		94.2	
77+15.93	26.20	26.45	26.20	-.73 / .75.8 / -.72 / .80 / -.18 / 17.5	-.10	-.13 / 1.45 / -.64 / .71.6					
				23.5	25.5	24.6					
							36.6	36.6		85.4	
77+65.93	25.51	25.81	25.51	-.52 / .58 / -.47 / 18.0 / -.09 / 1.10	-.06	-.04 / 1.52					
				22.1	25.2	25.5					
							55.6	55.6		60.0	
78+15.93	25.25	25.40	25.35	-.51 / .57 / -.46 / 18.0 / -.10 / 1.15	-.09	-.12 / 1.45 / -.48 / .52					
				22.1	24.7	24.7					
							39.5	39.5		59.6	
78+50	25.35	25.60	25.35	-.42 / 2.13	-.38 / 1.89 / -.06 / .75	-.06 / -.08 / 1.05 / -.24 / 1.45					
				22.8	25.0	24.3					
							24.9	24.9		13.3	
79+0				.39 / 2.09	-.37 / 1.70 / -.02 / 1.15	-.03	-.06 / -.28 / 1.50				
				23.0	25.3	24.8					
							3.8	3.8		7.0	
+25				-.00 / 1.60	0.0	-.05 / 1.58					
				25.9	25.6	24.9					
							11.3	11.3		47.7	
+50				-.06 / 1.59	0.0	-.07 / 1.58					
				24.8	25.6	24.5					
								40.2		729.1	

Grade change

Sixth St Extension

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
						40.2	40.2			
80+0	35.35	35.40	35.25				e. 91.2		84.4	
			23.4	24.7	24.0	51.0	51.0			
+50							e. 98.4		91.1	
			22.9	24.5	24.0	47.4	47.4			
81+0							e. 94.4		87.4	
			23.2	24.3	24.2	47.0	47.0			
+50							e. 100.2		92.8	
			23.2	24.3	24.2	53.2	53.2			
82+0							e. 107.6		99.6	BM 24.99 Nails Pk & 82+25 on B
			23.0	24.3	23.9	54.4	54.4			
+50							e. 115.1		106.6	
			23.7	24.0	23.8	60.7	60.7			
83+0							e. 103.2		95.6	
			23.3	24.0	23.2	42.5	42.5			
+50							e. 54.9		50.8	
			22.9	24.6	24.1	12.4	12.4			
84+0							30. 23.1		13.2	
			24.6	25.3	25.1	11.3	11.3			
							20 45.9		17.0	
+30							34.6			
			24.4	25.4	24.2				138.5	

GRADE change

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
84+50			23.1	25.5	23.7	34.6	34.6			
							20 48 1		17.8	
						13.5	13.5			
+70			24.1	25.5	24.2		30 32.4		18.0	
						18.9	18.9			
85+70			23.8	25.5	24.2		P 62.9		58.2	
						44.0	44.0			
+50			23.8	24.8	23.7		P 114.2		105.7	
						70.2	70.2			
86+70			22.0	24.1	22.8		P 174.9		161.9	
						104.7	104.7			48" RCP Culvert
+50			21.5	23.8	21.4		P 196.4		182.8	84+50 - Culvert
						92.7	92.7			Invert at Elevation 23.0
87+0			22.3	23.6	21.9		1493 181.9		53.7	Invert at 80.0 8.33 9.35 -1.02
						89.2	89.2			
+1594			22.7	23.6	21.9		1623 173.0		128.9	
						83.8	83.8			
+56.16			22.7	23.7	22.8		1623 160.7		119.7	
						76.9	76.9			
+96.39 - PC			22.8	23.8	23.7		1562 V 143.4		41.5	4.5 on ℄
						66.5				
									888.2	

GRADE change
See Page 5. 18 to 24
This Book.

See Page 675
For finish Stakes

SECTION

Checked 6-13-29. G.M.I

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
						66.5	66.5			
			23.3	23.8	24.2		19.68 1626		59.3	
						96.1	96.1			
			23.1	23.8	22.6		19.68 1891		68.9	
						93.0	93.0			
			24.4	24.2	21.9		19.69 1923		70.2	
						99.5	99.5			
			25.2	24.5	22.3		19.64 2150		78.4	
						115.5	115.5			
			25.9	23.5	22.4		19.69 2515		91.7	
						136.0	136.0			
			26.4	23.5	22.6		20.59 2386		91.0	
						102.6	102.6			
			27.5	28.0	23.2		20.59 1296		47.5 ✓	
						22.0 0	22.0			
			29.0	29.0	28.6	11.8	20.59 22.0	4.5 ✓	8.4 ✓	
						11.8	00			
			30.1	30.5	29.6	45.1	20.59	17.2 ✓		
						33.3	33.3			
			30.8	31.5	31.6					
								21.7	515.4	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT
90+1329-PC	3145	3120	3095		

F Book 1343

AREAS		CUBIC YDS.		REMARKS
EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
Pg 20				38°40'

Yardage between stas 59+11.39 + 89+92.80

Cut	Fill
57.6	4715.3

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
	Lt. 8	Rt.								
66+00	22.75 / 4.29 ✓	22.75 / 4.29 ✓								2283=RP P-10 391+ 2704=π 421- =2283-7P 728+ 5011=π See P-20
+50	22.76 / 4.28 ✓	22.76 / 4.28 ✓								
67+00	22.77 / 4.27 ✓	22.77 / 4.27 ✓								
+50	22.78 / 4.26 ✓	22.78 / 4.26 ✓								
68+00	22.79 / 4.25 ✓	22.79 / 4.25 ✓								
+50	22.81 / 4.23 ✓	22.81 / 4.23 ✓								
69+00	22.82 / 4.22 ✓	22.82 / 4.22 ✓								
+50	22.83 / 4.21 ✓	22.83 / 4.21 ✓								
70+00	22.84 / 4.20 ✓	22.84 / 4.20								
+50	22.86 / 4.18 ✓	22.86 / 4.18 ✓								
71+00	22.87	22.87								

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	C	RIGHT	AREAS EXCAVATION	EMBANKMENT	CUBIC YDS. EXCAV.	EMBANK.	REMARKS
	Lt	℄ Rt.								
65+55.93	2274	2274								
										30.11=π from P-18
70+66=P.C.	22.86 / 7.25 ✓	22.86 / 7.25 ✓								24.45=B.M. Page 12 / 6.88+ / 31.33=π
71+16 =End Curv.	23.05 / 7.06 ✓	23.05 / 7.06 ✓	7.29							

Note: For these Grades to Sta 71+16. See Page 18 this Book.

PPL Grades

per. Grades

PAVING GRADES.

SECTION

C+h ST. Ext.

21

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
						End Cov. Section 006 High.				
71+66=EVC	23.43	23.43 = Pav. Grades	6.91			4.	11.			
59 96	6.68	6.68				23.45	23.45	31.33 = T P.V.C.		30.11 = T from P-20
						7.88	7.88			567
										24.44 = T P.B.M. P-12
72+5.96	24.30	24.30	6.04							24.45 = B.M.
	5.81	5.81				24.30	24.30			635.1
	25.18	25.18	"5.16"			7.03	7.03			30.80 = T
72+85.93=PVC	4.93	4.93								
						25.18	25.18			
						6.15	6.15			
73+35.93=PVC	25.85	25.85	"4.99"							
	4.95	4.95				25.85	25.85			
						5.48	5.48			
+85.93=PVC	26.39	26.39	"3.95"							
	4.41	4.41				26.39	26.39			
						4.94	4.94			
74+0.93	26.72	26.72	3.63							
	4.08	4.08				26.72	26.72			
						4.61	4.61			
Sta. Bridge										
74+55.93	27.05	27.05	"			27.05	27.05			
						4.28	4.28			
= North Bridge =						4.18				
75+93.93						0.10 High.				
76+15.93 Sta.	27.05	27.05	"3.47"							
	3.75	3.75				27.05	27.05			
						4.28	4.28			
							7.21			
							7.93			
+80	26.72	26.72				26.72	26.72			
	4.08	3.8				4.61	4.61			

SECTION

STA.	ELEVA. Lt	GRADE & Rt	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT
77+00	26.26 4.34 ✓	26.26 3.24 +			
77+50	25.80 3.00 ✓	25.80 3.72 +			
78+00	25.34 3.59 ✓	25.34 4.18 +			
78+50	24.88 4.05 ✓	24.88 4.64 +			
79+00	24.42 4.51 ✓	24.42 5.10 +			
79+50=P.V.C	23.96 4.97 ✓	23.96 5.56 +			
80+00 B.V.C	23.60 5.33 ✓	23.60 5.92 +			
+50 B.V.C	23.40 5.53 4.48 +1.05	23.40 6.12 +			
81+00	23.30 5.63 4.91 +.66	23.30 6.34 +			
+50	23.20 5.73 6.08 +.65	23.20 6.44 +			
82+00	23.10 5.83 1.73 +1.10	23.10 6.54 +			

Grades for Edge Paving

AREAS EXCAVATION Lt	AREAS EMBANKMENT Rt	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
		T P.21		
26.26 5.07 ✓	26.26 5.07 ✓	31.33 6.45 − 24.88 = T P		30.80 = T − 5.00 − 25.80 = T P
25.80 5.53 ✓	25.80 5.53 ✓	3.68 +		3.13 +
25.34 5.99 ✓	25.34 5.99 ✓	28.56 = T		28.93 = T
24.88 6.45 ✓	24.88 3.68 ✓			
24.42 4.14 ✓	24.42 4.14 ✓			
23.96 4.60 3.77 +.83	23.96 4.60 3.60 +1.0			2714 M
23.60 4.96 ✓	23.60 4.96 3.96 +1.0			
23.40 5.16 4.66 +.90	23.40 5.16 4.16 +1.00			
23.30 5.26 4.78 +.52	23.30 5.26 4.76 +1.00			
23.20 5.36 4.86 +.50	23.20 5.36 3.34 +1.00			
23.10 5.46 4.98 +.48	23.10 5.46 4.46 +1.00			

SECTION

6TH ST. Ext.

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT
82+50 = Brk.	23.00 5.73 4.28 +1.45	23.00 4.64 ✓			
83+00	23.10 5.83 4.76 +1.07	23.10 4.64 ✓			
+50	23.20 5.73 4.72 +1.01	23.20 4.64 ✓			
84+00	23.30 7.00 5.41 +1.55	23.30 4.64 ✓			
84+50 = P.V.C.	23.40 6.90 5.49 +1.41	23.40 4.64 ✓			
85+00 Brk.	23.60 6.70 5.15 +1.55	23.60 4.64 ✓			
+50 = E.V.C.	23.90 6.40 5.38 +1.02	23.90 6.74 ✓			
86+00	24.29 6.01 536 6.42 -.041	24.19 611 546 6.97 -.086			
+50	24.69 196 5.61 7.33 -1.72	24.49 516 ✓ 5.81 6.66 -.085			
87+00	25.08 454 5.22 7.35 -2.13	24.78 4.87 ✓ 5.52 7.09 -1.57			
+50	25.48 4.17 4.82 6.72 -1.90	25.08 1.511 ✓ 5.22 6.57 -1.35			

Grades are Edge Paving

AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
Lt.	Rt.			28.93 = π 3.17 – 25.76 = T.P. on Abt 4.54 – 30.30 = π
23.00 5.56 4.62 +.94	23.00 5.56 4.56 +1.00	28.56 = π R 22 2.13 – 25.73 = TD 2.86 +		
23.10 5.46 4.75 +.71	23.10 5.46 4.76 +.70	28.59 = π		
23.20 5.36 ✓	23.20 5.36 4.86 +.50			
23.30 5.29 4.87 +.42	23.30 5.29 4.11 +1.18			37.64 41 8.73 HP 28.91 29.25
23.40 5.19 ✓	23.40 5.19 4.69 +.50			
23.60 4.99 ✓	23.60 4.99 4.19 +.80			
23.90 4.69 ✓	23.90 4.69 4.19 +.50			
24.29 4.30 ✓	24.19 4.40 ✓			
24.69 3.90 ✓	24.49 4.10 ✓			
25.08 3.51 4.41 -.90	24.78 3.81 ✓			
25.48 3.11 3.54 -.43	25.08 3.51 2.58 +.93			

SECTION

Proj. Grades.

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
87+96.89 = PC Rt.	25.85	25.85								
88+15.61 = Rt.										
+32 61 = 1"										
+75 61 = 2"										
+95 61 =										
89+15. = PCC										
+32.84 = PC										
89+50.03 = PCC on Rt.										
87+71.89 = PC on Rt.										
def. = 2°15'45"										
4°31'26"										
6°47'09"										
9°02'52"										
11°18'35" = PCC on Rt.										

chords = 164'
= 2' Rt of Rt. edge Paving

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
	Lt.	Rt.		Lt.						
87+71.39 = 12 on Rt.	25.65 on Lt.	25.23			25.63					16.28' Rt.
		5.07			3.42					
		6.55								
		−1.48								
	25.85	25.35	25.32		25.32	25.65	25.23		3030 = TP-23	
87+96.39 = 12 on Lt.	4.45	4.85	4.98			7.94	3.36		0.08	
	6.49	5.44	5.24	25.85	25.32				3022 = TP	
	−1.04	−0.89	−0.82	7.95	3.33				9.31 +	
def = 3°25'33"						25.85	25.32		37.13 = T	
chd = 21.01 = 15'Lt. & Rt.		17.78' = chds 12' Rt & Lt.				7.74	3.27		25.76 = TP Page 23	
						2.68	3.19		28.9+	
88+15.61 = Brk.	25.91	25.41	25.36	25.91	25.36	0.08 High.	0.08 High.		28.65 = T	17.26' Rt.
(3°33'54")	4.39	4.89	4.74	7.89	8.44				3.33 −	
	6.99	5.61	5.61						25.32 = TP	
6°59'37"	−2.60	−0.72	−0.67						8.48 +	
5 (718') chds 15'24.6	1851' = chds 12' Rt & Lt.								33.80 = T	
+35.61 = "	26.09	25.59	25.51	26.09	25.51					18.30' Rt.
10°33'21"	4.21	4.71	4.79	7.71	8.29					
	6.56	8.16	8.16							
	−2.35	−3.45	−3.37							
+55.61 = "	26.38	25.88	25.78	26.38	25.78					17.33' Rt.
14°07'15"	3.92	4.42	4.52	7.42	8.02					
	5.64	8.21	8.21							
	−1.72	−3.79	−3.69							
+75.61 = "	26.80	26.30	26.18	26.80	26.18					20' Rt.
17°41'13"	3.50	4.00	4.12	7.00	7.62					
	5.06	8.32	8.32	Rest.						
	−1.56	−4.32	−4.20							
+95.61 = "	27.33	26.83	26.71	27.33	26.71					20' Rt.
21°15'07"	2.87	3.47	3.37	6.47	7.09					
	4.51	8.08	8.08							
	−1.60	−4.61	−4.49							
89+15.61 = ℄ ℄	27.98	27.48	27.36	27.98	27.36					20' Rt.
(3°04')	2.32	2.87	2.74	5.82	6.44					
24°19'07"	4.11	8.04	8.04							
18.81 = chds 15' Lt. & Rt.	−1.79	−5.22	−5.10							
		15.97' = chds 12' Rt & Lt.								
+32.82	28.59	28.09	27.97	28.59	27.97					20' Rt.
	1.71	2.21	2.33	5.21	5.83					
	2.93	7.35	7.35							
27°23'07"	−1.22	−5.14	−5.02							
+50.03 = ℄ ℄ on Rt.	29.26	28.76	28.64	29.26	28.64					20' Rt.
(2°49'17")	1.04	1.54	1.66	4.34	5.16					
	4.53	2.44	2.74		4.39					
30°12'24"	−0.51	−0.90	−0.78		14.77					
17.30 = chds 15'Lt. & Rt.		12.64' = chds 12' Rt & Lt.								
+65.87	29.81	29.31	29.22	29.91	29.22					18.73' Rt.
33°01'41"	9.72	0.99	1.08	3.89	4.58					
		0.81	0.81		3.58					
		+0.18	+0.27		+1.00					

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL ℄	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
	Lt.	Rt.		Lt.						
89+81.71	30.36	29.86	29.79	30.36	29.79				39.53=T P-25	17.9' Rt
35°50'58"	9.17	9.67	9.74	3.44	4.01				.086	
	9.23	5.48	14		3.76				38.67=T.P.D No. 1	
	.06	+.19	+.06		+.25				5.11	
									43.78=T	
97.55	30.91	30.41	30.36	30.91	30.36				for Cont.	17.09' Rt
38°40'15"	8.62	9.12	9.17	2.89	3.44				See Book 1343-P-20	
	9.21	4.92	4.92		3.21					
	.59	+1.20	+1.25	Reset.	+1.23					
90+13.89=E.C. on Lt.	31.45	30.95	30.92	31.45	30.92				33.88=T P-25	16.2' Rt
	8.98	8.58	8.61	2.35	2.88				.077	
	9.70	4.50	4.30	4.03	.07				33.03=T.P.	
	-1.67	+2.08	+2.11	1.68	+2.11				10.23	
									43.26=T	
13.89=E.C. on Rt.	32.20	31.84								
63.68=B.K.	32.80	32.80								

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL						AREAS		CUBIC YDS.		REMARKS
			LEFT			C		RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL					
			LEFT		C		RIGHT	

AREAS				CUBIC YDS.		REMARKS
EXCAVATION		EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

Sixty St Extension
Drainage Channel

SECTION

10' Wide Bottom
Slopes 1:1

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
0+0 = Wall Ref Wall		20870		+13.0 18.0	+15.0	+4.2 5.0 - Wall				
1+30		20192		+11.0 14.0	+5.0 5.0	+3.7	+0.8 5.0			
1+60		20013		+11.4 6.4	+1.4	+2.6 5.0 Wall				
1+90		19885	+4.0 4.0	+3.0 7.0	+1.9 1.5	+3.0	+2.4 6.0 - Wall Ref			
2+30		19157		+1.3 1.3	+1.1		+1.8 6.0			
2+50		19475	+2.0 7.0	+2.8 7.0	+2.7		+2.0 7.0			
2+80 = Brk.		19300		+2.3 9.3	+2.3		+2.0 7.0			
3+07		19124		+2.2 9.1	+2.3		+2.3 7.6			
3+31		18948		+2.5 7.5	+1.9		+2.1 9.1			
3+61		18772		+3.0 8.0	+2.7		+2.0 7.5			

Ref Wall 20+00
Wall 20+50

Sixth St Extension. Drainage Channel

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
2+88		185.91		+3.0 / 8.0	+2.8	+2.1 / 7.1				2015.0 / 13.08 / 188.74 / 0.64
3+15		184.2		+3.2 / 8.3	+2.0	+2.9 / 7.9				1990.3 / 12.92 / 1768.7
+42		182.45		+3.0 / 7.0	+2.6	+2.9 / 7.9				
+69		180.69		+1.4 / 6.4	+1.9	+2.9 / 7.9				
+96		178.92		+2.6 / 7.6	+1.8	+2.8 / 7.8				
4+23		177.17		+4.8 / 9.8	+2.7	+2.4 / 7.4				
+50		175.41		+3.6 / 8.6	+2.3	+3.2 / 8.2				
+77		173.65		+4.2 / 9.2	+2.2	+1.6 / 6.6				
5+04		171.89		+8.8 / 13.3	+1.5	+2.4 / 7.4				
+31		170.10		+10.0 / 15.0	+1.1	+1.6 / 4.0	+1.6 / 6.6			

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
5+58		1.1830	+8.8 / 13.8	+5.7	+4.4 / 9.0					174.87
+85 = Brk		1.1660	+10.5 / 16.5	+5.3	+3.8 / 8.9					179.75
6+12		1.1595	+11.4 / 16.4	+5.8	+3.0 / 8.0					168.50
+39		1.1530	+9.0 / 14.0	+6.3	+4.4 / 9.4					169.10
+79.96 = Brk		1.1460	+9.6 / 13.6	+5.1	+3.9 / 8.9					
7+08.6		1.1430	+5.7 / 10.7	+2.7	+2.0 / 7.0					
+49.3		1.1400	+2.0 / 7.0	+0.3	0.0 / 3.0	+0.4 / 5.4				
+69.6		1.1435	+0.7 / 5.7	+0.3	+0.4 / 5.4					
+89.94		1.1470	+5.0 / 10.0	+3.0	+1.4 / 6.4					
8+25.91	Top Wall 1.1690	1.1407	+9.2 / 14.2	+4.1	+2.1 / 8.0					

constructed
1.1730
1.1500
20.80

Sixth St Extension

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
8+55.94	Top Wall 151.36	153.53	+6.7 11.7	+4.4	+3.7 Wall 5.0					5'W.W. 1284 1334 +4.0 16.9 to HI
+75.94 Ope St Wall	154.31	151.53	+7.4 12.4	+6.1	+6.4 Face Wall 5.0					5'W.W. 1476 1299 +1.75
9+25.94		146.60	+3.2 8.2	+3.1	+0.8 5.0					16.9 to HI 12.99 15.41 1.12
+57.94		143.50	+2.0 7.0	+1.9	+0.1 5.0					15.23 12.43 .0285 HP 144.80 91.57
+89.94 - 8%		140.40								
										15.41 .368 16.173 .283 16.90 = 15.887 20% 11.425

Drainage Channel No 2 North of Box Culvert No 2

SECTION

L Wide in Bottom
Slope 1:1
2 of Channel 22'0" Wide

STA.	ELEVA.	GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
0+0		29.0 = Flowline outlet Culv.	0.0 / 3.0	0.0	0.0 / 3.0					
+21 = 18"@2.5%		29.3	+2.1 / 5.1	+2.1	+2.5 / 6.5					
+50		28.8	+2.1 / 5.1	+2.5	+2.5 / 6.5					
1+0		28.1	+1.5 / 4.5	+1.5	+1.5 / 4.5					
+50		27.4	+0.6 / 3.6	+0.7	+0.6 / 3.6					
2+0		26.7	+0.3 / 3.3	+0.3	+0.3 / 3.3					
+50 - End		26.0	3.0	0.0	0.0 / 3.0					

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT

AREAS		CUBIC YDS.		REMARKS
EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL						AREAS			CUBIC YDS.		REMARKS
			LEFT			C		RIGHT	EXCAVATION		EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL						AREAS		CUBIC YDS.		REMARKS
			LEFT		C		RIGHT		EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL					
			LEFT		C		RIGHT	

AREAS		CUBIC YDS.		REMARKS
EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL						AREAS		CUBIC YDS		REMARKS
			LEFT			C		RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

NATURAL TRIGONOMETRICAL RATIOS

Angle	Sine.	Tan.	Sec.	Cosec.	Cotg.	Cosin.	
° ′							
16	.2756	.2867	1.0403	3.628	3.487	.96126	74
10	.2784	.2899	1.0412	3.592	3.450	.96046	50
20	.2812	.2931	1.0423	3.556	3.412	.95964	40
30	.2840	.2962	1.0429	3.521	3.376	.95882	30
40	.2868	.2994	1.0438	3.487	3.340	.95799	20
50	.2896	.3026	1.0448	3.453	3.305	.95715	10
17	.2924	.3057	1.0457	3.420	3.271	.95630	73
10	.2952	.3089	1.0466	3.388	3.237	.95545	50
20	.2979	.3121	1.0476	3 357	3.204	.95459	40
30	.3007	.3153	1.0485	3.326	3.172	.95372	30
40	.3035	.3185	1.0495	3.295	3.140	.95284	20
50	.3062	.3217	1.0505	3.265	3.108	.95195	10
18	.3090	.3249	1.0515	3.236	3.078	.95106	72
10	.3118	.3281	1.0525	3.207	3.048	.95015	50
20	.3145	.3314	1.0535	3.179	3.018	.94924	40
30	.3173	.3346	1.0545	3.152	2.989	.94832	30
40	.3201	.3378	1.0555	3.124	2.960	.94740	20
50	.3228	.3411	1.0566	3.098	2.932	.94646	10
19	.3256	.3443	1.0576	3.072	2.904	.94552	71
10	.3283	.3476	1 0587	3.046	2.877	.94457	50
20	.3311	.3508	1.0598	3.020	2.850	.94361	40
30	.3338	.3541	1.0608	2.996	2.824	.94264	30
40	.3365	.3574	1.0619	2.971	2.798	.94167	20
50	.3393	.3607	1.0631	2.947	2.773	.94068	10
20	.3420	.3640	1.0642	2.924	2.747	.93969	70
10	.3448	.3673	1.0653	2.900	2.723	.93869	50
20	.3475	.3706	1.0665	2.878	2.699	.93769	40
30	.3502	.3739	1.0676	2.856	2.675	.93667	30
40	.3529	.3772	1.0688	2.833	2.651	.93565	20
50	.3557	.3805	1.0700	2.811	2.628	.93462	10
21	.3584	.3839	1.0711	2.790	2.605	.93358	69
10	.3611	.3872	1.0723	2.769	2.583	.93253	50
20	.3638	.3906	1.0736	2.749	2.560	.93148	40
30	.3665	.3939	1.0748	2.729	2.539	.93042	30
40	.3692	.3973	1.0760	2.709	2.517	.92935	20
50	.3719	.4006	1.0773	2.689	2.496	.92827	10
22	.3746	.4040	1.0785	2.670	2.475	.92718	68
10	.3773	.4074	1.0798	2.650	2.455	.92609	50
20	.3800	.4108	1.0811	2.632	2.434	.92499	40
30	.3827	.4142	1.0824	2.613	2.414	.92388	30
40	.3854	.4176	1.0837	2.595	2.394	.92276	20
50	.3881	.4210	1.0850	2.577	2.375	.92164	10
23	.3907	.4245	1.0864	2.559	2.356	.92050	67
10	.3934	.4279	1.0877	2.542	2.337	.91936	50
20	.3961	.4314	1.0891	2.525	2.318	.91822	40
30	.3987	.4348	1.0904	2.508	2.300	.91706	30
40	.4014	.4383	1.0918	2.491	2.282	.91590	20
50	.4041	.4417	1.0932	2.475	2.264	.91472	10
							66
	Cosin.	Cotg.	Cosec.	Sec.	Tan.	Sine.	Angle.

Angle	Sine.	Tan.	Sec.	Cosec.	Cotg.	Cosin.	
° ′							
24	.4067	.4452	1.0946	2.459	2.246	.91355	66
10	.4094	.4487	1.0961	2.443	2.229	.91236	50
20	.4120	.4522	1.0975	2.427	2.211	.91116	40
30	.4147	.4557	1.0989	2.411	2.194	.90996	30
40	.4173	.4592	1.1004	2.396	2.177	.90875	20
50	.4200	.4628	1.1019	2.381	2.161	.90753	10
25	.4226	.4663	1.1034	2.366	2.145	.90631	65
10	.4253	.4699	1.1049	2.351	2.128	.90507	50
20	.4279	.4734	1.1064	2.337	2.112	.90383	40
30	.4305	.4770	1.1079	2.323	2.097	.90259	30
40	.4331	.4806	1.1095	2.309	2.081	.90133	20
50	.4358	.4841	1.1110	2.295	2.066	.90007	10
26	.4384	.4877	1.1126	2.281	2.050	.89879	64
10	.4410	.4913	1.1142	2.268	2.035	.89752	50
20	.4436	.4950	1.1158	2.254	2.020	.89623	40
30	.4462	.4986	1.1174	2.241	2.006	.89493	30
40	.4488	.5022	1.1190	2.228	1.991	.89363	20
50	.4514	.5059	1.1207	2.215	1.977	.89232	10
27	.4540	.5095	1.1223	2.203	1.963	.89101	63
10	.4566	.5132	1.1240	2.190	1.949	.88968	50
20	.4592	.5169	1.1257	2.178	1.935	.88835	40
30	.4617	.5206	1.1274	2.166	1.921	.88701	30
40	.4643	.5243	1.1291	2.154	1.907	.88566	20
50	.4669	.5280	1.1308	2.142	1.894	.88431	10
28	.4695	.5317	1.1326	2.130	1.881	.88295	62
10	.4720	.5354	1.1343	2.119	1.868	.88158	50
20	.4746	.5392	1.1361	2.107	1.855	.88020	40
30	.4772	.5430	1.1379	2.096	1.842	.87882	30
40	.4797	.5467	1.1397	2.085	1.829	.87743	20
50	.4823	.5505	1.1415	2.073	1.816	.87603	10
29	.4848	.5543	1.1434	2.063	1.804	.87462	61
10	.4874	.5581	1.1452	2.052	1.792	.87321	50
20	.4899	.5619	1.1471	2.041	1.780	.87178	40
30	.4924	.5658	1.1490	2.031	1.767	.87036	30
40	.4950	.5696	1.1509	2.020	1.756	.86892	20
50	.4975	.5735	1.1528	2.010	1.744	.86748	10
30	.5000	.5774	1.1547	2.	1.732	.86603	60
10	.5025	.5812	1.1566	1.990	1.720	.86457	50
20	.5050	.5851	1.1586	1.980	1.709	.86310	40
30	.5075	.5890	1.1606	1.970	1.698	.86163	30
40	.5100	.5930	1.1626	1.961	1.686	.86015	20
50	.5125	.5969	1.1646	1.951	1.675	.85866	10
31	.5150	.6009	1.1666	1.942	1.664	.85717	59
10	.5175	.6048	1.1687	1.932	1.653	.85567	50
20	.5200	.6088	1.1707	1.923	1.643	.85416	40
30	.5225	.6128	1.1728	1.914	1.632	.85264	30
40	.5250	.6168	1.1749	1.905	1.621	.85112	20
50	.5275	.6208	1.1770	1.896	1.611	.84959	10
							58
	Cosin.	Cotg.	Cosec.	Sec.	Tan.	Sine.	Angle.

NATURAL TRIGONOMETRICAL RATIOS

Angle	Sine.	Tan.	Sec.	Cosec.	Cotg.	Cosin.	
° ′							
32	.5299	.6249	1.1792	1.887	1.600	.84805	58
10	.5324	.6289	1.1813	1.878	1.590	.84650	50
20	.5348	.6330	1.1835	1.870	1.580	.84495	40
30	.5373	.6371	1.1857	1.861	1.570	.84339	30
40	.5398	.6412	1.1879	1.853	1.560	.84182	20
50	.5422	.6453	1.1901	1.844	1.550	.84025	10
33	.5446	.6494	1.1924	1.836	1.540	.83867	57
10	.5471	.6536	1.1946	1.828	1.530	.83708	50
20	.5495	.6577	1.1969	1.820	1.520	.83549	40
30	.5519	.6619	1.1992	1.812	1.511	.83389	30
40	.5544	.6661	1.2015	1.804	1.501	.83228	20
50	.5568	.6703	1.2039	1.796	1.492	.83066	10
34	.5592	.6745	1.2062	1.788	1.483	.82904	56
10	.5616	.6787	1.2086	1.781	1.473	.82741	50
20	.5640	.6830	1.2110	1.773	1.464	.82577	40
30	.5664	.6873	1.2134	1.766	1.455	.82413	30
40	.5688	.6916	1.2158	1.758	1.446	.82248	20
50	.5712	.6959	1.2183	1.751	1.437	.82082	10
35	.5736	.7002	1.2208	1.743	1.428	.81915	55
10	.5760	.7046	1.2233	1.736	1.419	.81748	50
20	.5783	.7089	1.2258	1.729	1.411	.81580	40
30	.5807	.7133	1.2283	1.722	1.402	.81412	30
40	.5831	.7177	1.2309	1.715	1.393	.81242	20
50	.5854	.7221	1.2335	1.708	1.385	.81072	10
36	.5878	.7265	1.2361	1.701	1.376	.80902	54
10	.5901	.7310	1.2387	1.695	1.368	.80730	50
20	.5925	.7355	1.2413	1.688	1.360	.80558	40
30	.5948	.7400	1.2440	1.681	1.351	.80386	30
40	.5972	.7445	1.2466	1.675	1.343	.80212	20
50	.5995	.7490	1.2494	1.668	1.335	.80038	10
37	.6018	.7536	1.2521	1.662	1.327	.79864	53
10	.6041	.7581	1.2549	1.655	1.319	.79688	50
20	.6065	.7627	1.2577	1.649	1.311	.79512	40
30	.6088	.7673	1.2605	1.643	1.303	.79335	30
40	.6111	.7720	1.2633	1.636	1.295	.79158	20
50	.6134	.7766	1.2661	1.630	1.288	.78980	10
38	.6157	.7813	1.2690	1.624	1.280	.78801	52
10	.6180	.7860	1.2719	1.618	1.272	.78622	50
20	.6202	.7907	1.2748	1.612	1.265	.78442	40
	Cosin.	Cotg.	Cosec.	Sec.	Tan.	Sine.	Angle.

Angle	Sine.	Tan.	Sec.	Cosec.	Cotg.	Cosin.	
° ′							
30	.6225	.7954	1.2778	1.606	1.257	.78261	30
40	.6248	.8002	1.2808	1.601	1.250	.78079	20
50	.6271	.8050	1.2838	1.595	1.242	.77897	10
39	.6293	.8098	1.2868	1.589	1.235	.77715	51
10	.6316	.8146	1.2898	1.583	1.228	.77531	50
20	.6338	.8195	1.2929	1.578	1.220	.77347	40
30	.6361	.8243	1.2959	1.572	1.213	.77162	30
40	.6383	.8292	1.2991	1.567	1.206	.76977	20
50	.6406	.8342	1.3022	1.561	1.199	.76791	10
40	.6428	.8391	1.3054	1.556	1.192	.76604	50
10	.6450	.8441	1.3086	1.550	1.185	.76417	50
20	.6472	.8491	1.3118	1.545	1.178	.76229	40
30	.6494	.8541	1.3151	1.540	1.171	.76041	30
40	.6517	.8591	1.3184	1.535	1.164	.75851	20
50	.6539	.8642	1.3217	1.529	1.157	.75661	10
41	.6561	.8693	1.3251	1.524	1.150	.75471	49
10	.6583	.8744	1.3284	1.519	1.144	.75280	50
20	.6604	.8796	1.3318	1.514	1.137	.75088	40
30	.6626	.8847	1.3352	1.509	1.130	.74896	30
40	.6648	.8899	1.3386	1.504	1.124	.74703	20
50	.6670	.8952	1.3421	1.499	1.117	.74509	10
42	.6691	.9004	1.3456	1.494	1.111	.74314	48
10	.6713	.9057	1.3492	1.490	1.004	.74120	50
20	.6734	.9110	1.3527	1.485	1.098	.73924	40
30	.6756	.9163	1.3563	1.480	1.091	.73728	30
40	.6777	.9217	1.3600	1.476	1.085	.73531	20
50	.6799	.9271	1.3636	1.471	1.079	.73333	10
43	.6820	.9325	1.3673	1.466	1.072	.73135	47
10	.6841	.9380	1.3711	1.462	1.066	.72937	50
20	.6862	.9435	1.3748	1.457	1.060	.72737	40
30	.6884	.9490	1 3786	1.453	1.054	.72537	30
40	.6905	.8545	1.3824	1.448	1.048	.72337	20
50	.6926	.9601	1.3863	1.444	1.042	.72136	10
44	.6947	.9657	1.3902	1.440	1.036	.71934	46
10	.6967	.9713	1.3941	1.435	1.030	.71732	50
20	.6983	.9770	1.3980	1.431	1.024	.71529	40
30	.7009	.9827	1.4020	1.427	1.018	.71325	30
40	.7030	.9884	1.4061	1.422	1.012	.71121	20
50	.7050	.9942	1.4101	1.418	1.006	.70916	10
	.7071	1.	1.414	1.414	1.	.70711	45
	Cosin.	Cotg.	Cosec.	Sec.	Tan.	Sine.	Angle.