

KEUFFEL & ESSER CO.

DRAWING MATERIALS AND SURVEYING INSTRUMENTS.

NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

Tables for Excavations and Embankments.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.
FOR SINGLE TRACK EXCAVATION.

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	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	0
1	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	1
2	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	2
3	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	3
4	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	4
5	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	5
6	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	6
7	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	7
8	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	8
9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	9
10	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	10
11	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	11
12	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	12
13	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	13
14	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	14
15	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	15
16	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	16
17	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	17
18	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	18
19	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	19
20	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	20
21	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	21
22	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	22
23	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	23
24	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	24
25	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	25
26	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	26
27	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	27
28	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	28
29	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	29
30	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	30
31	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	31
32	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	32
33	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	33
34	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	34
35	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	35
36	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.

FOR KEITH'S RAILROAD CURVE TABLES SEE END OF BOOK.

Emf
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5 Keyline # 2 ✓

Sta	Pt	Ht	Vt	SD	HD
Pt D	Pt C				
	33	88-03L	^{9.1} -5-15	.87	86.0-75
	34	74-08R	^{14.15} -4-15	.69	67.0-95
	Pt E	141-15R	^{8.97} -5-10	2.05	203.0-182
Pt E	Pt D				
	35	81-00L	^{13.75} -8-00	.62	61.0-84
	36	101-45R	^{17.10} -10-00	.60	58.0-99
	37	171-08R	^{20.50} -12-06	1.93	186.0-381
	38	158-29R	^{11.33} -6-33	4.40	434.0-922
	39	158-07R	^{16.17} -7-26	3.66	356.0-57.6
	40	121-08R	^{5.00} -2-53	3.87	386.0-44.3
	41	124-46R	^{9.16} -5-17	3.30	327.0-30.0
	42	91-20R	^{2.56} -1-28	4.15	415.0-10.6
	43	88-23R	^{6.8} -3-55	3.39	337.0-42.9
	44	74-20R	0-00	5.13	513.0 0.0
	45	68-26R	^{2.4} -1-23	4.50	450.0-10.4
Ctr. 34	S40C134				
	Pt F	29-55R	^{8.68} -5-00	4.95	491.0-42.6
	46	18-30R	^{11.59} -6-42	4.25	419.0-46.6
	47	0-00	^{13.99} -8-04	4.70	461.0-64.0
Pt F	Ctr. 34				
1	48	3-06R	^{6.24} +3-35	4.60	458.0+21.6
2	49	10-20L	^{6.09} +3-30	3.58	349.0+21.0
3	50	28-23L	^{5.28} +3-02	1.93	193.0+10.2

π	Vt	+	-	Elev.
3701.3		4.9		3696.4
			4.9	3689.0
			4.9	3687.0
			4.9	3678.20
3683.20		5.0		
			5.0	3670.0
			5.0	3668.0
			5.0	3640.0
			5.0	3629.0
			5.0	3622.0
			5.0	3659.0
			5.0	3648.0
			5.0	3664.0
			5.0	3655.0
			5.0	3678.0
			5.0	3667.0
		5.0		3750.0
			5.0	3707.4
			5.0	3701.0
			5.0	3686.0
3712.2		4.8		
			4.8	3736.0
			4.8	3729.0
			4.8	3718.0

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Sta	Pc	H ₂	V ₄	S.D.	H ₁ D	T	V ₅	T	-	Elev.
P&F	ctr. 34					3712.2		4.8		3707.4
4	51	12-20L	^{2.62} +1-30	1.96	196.0+5.1				9.8	3707.0
5	52	40-00L	0-00	1.92	192.0 0.0				4.8	3707.0
6	53	44-55L	^{6.67} +3-50	3.00	299.0+19.9				4.8	3727.0
7	54	51-50L	^{5.4} +3-06	3.26	325.0+17.6				4.8	3725.0
8	55	62-20L	^{4.07} +2-20	2.70	270.0+11.0				4.8	3718.0
9	56	81-40L	^{2.62} +1-30	3.45	345.0+9.0				4.8	3716.0
10	57	66-10L	^{5.86} +3-23	3.70	369.0+21.6				4.8	3729.0
11	58	75-20L	^{3.34} +1-55	4.00	400.0+10.4				4.8	3721.0
12	59	102-00L	^{4.34} -2-47	3.40	340.0-16.5				4.8	3691.0
13	60	100-55L	^{4.82} -2-46	4.20	419.0-20.2				9.8	3682.0
14	61	112-10L	^{7.6} -4-22	2.90	298.0-21.9				4.8	3686.0
15	62	120-36L	^{6.5} -3-45	3.90	388.0-25.2				4.8	3682.0
16	63	115-30L	^{5.75} -3-18	5.08	506.0-29.1				4.8	3678.0
17	64	129-52L	^{13.64} -7-55	2.63	258.0-35.2				4.8	3672.0
18	65	146-24L	^{13.45} -7-48	3.35	329.0-44.3				4.8	3663.0
19	66	150-05L	^{9.4} -5-25	4.95	491.0-46.2				4.8	3661.0
20	67	159-56L	^{16.24} -9-30	4.85	472.0-76.4				4.8	3631.0
21	68	159-42L	^{18.3} -10-45	3.38	326.0-59.6				9.8	3645.0
22	69	139-20L	^{23.22} -13-50	2.25	212.0-49.2				8.8	3654.0
23	70	71-43L	^{19.12} -11-15	1.80	173.0-33.1				4.8	3674.0
24	71	109-30L	^{24.1} -14-25	.37	36.0-8.4				4.8	3679.0
25	72	154-40L	^{13.46} -10-50	1.76	170.0-31.4				4.8	3676.0
26	73	173-30L	^{14.56} -8-10	2.80	274.0-6.5				4.8	3699.0
27	74	162-00L	^{12.44} -7-30	2.17	213.0-27.6				4.8	3680.0

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Sta	Pz	Hx	Vx	S.D.	H.D.	π	Vx	+	-	Elev.
PzF	ctr. 34					3712.2				3707.4
28	75	125-00R	^{10.4} -6-00	3.25	321.0-33.4				9.8	3669.0
29	76	141-20R	^{11.08} -6-24	4.00	395.0-41.6					3661.0
30	77	154-32R	^{9.97} -5-45	4.00	399.0-39.4					3668.0
31	78	158-33R	^{8.68} -5-00	5.25	521.0-45.2					3662.0
32	79	168-46R	^{6.96} -4-00	5.60	557.0-45.2				9.8	3657.0
33	80	165-49R	^{7.48} -4-18	6.80	676.0-50.56					3657.0
34	81	169-47R	^{9.08} -5-14	3.73	370.0-33.6					3674.0
35	82	172-18L	^{10.51} -6-04	4.04	399.0-41.7					3665.0
36	83	177-57L	^{6.36} -4-00	5.35	532.0-37.0					3679.0
37	84	171-03L	^{7.82} -4-30	5.85	581.0-45.4					3662.0
	G	178-49L	^{5.4} -3-06	6.95	693.0-54.4					3670.0
G	F					3675.0		5.0		
	85	105-20R	^{4.74} -2-50	.94	94.0-9.6				5.0	3665.0
	86	162-05L	^{11.7} -6-47	1.85	182.0-21.0					3649.0
	87	144-27L	^{14.67} -8-32	1.21	118.0-17.3					3653.0
	88	78-08L	^{15.45} -9-00	.59	58.0-9.0					3661.0
	89	40-10L	^{2.34} -1-23	3.63	363.0-8.6					3661.0
	90	65-10L	^{4.84} -2-50	3.11	310.0-5.3					3655.0
	91	94-56L	^{7.19} -4-08	2.85	283.0-20.7					3650.0
	92	117-54L	^{10.11} -5-50	3.35	332.0-33.4					3636.0
	93	137-40L	^{10.8} -6-15	4.55	450.0-44.1					3665.0