MINI-RAIL FACILITY STANDARDS

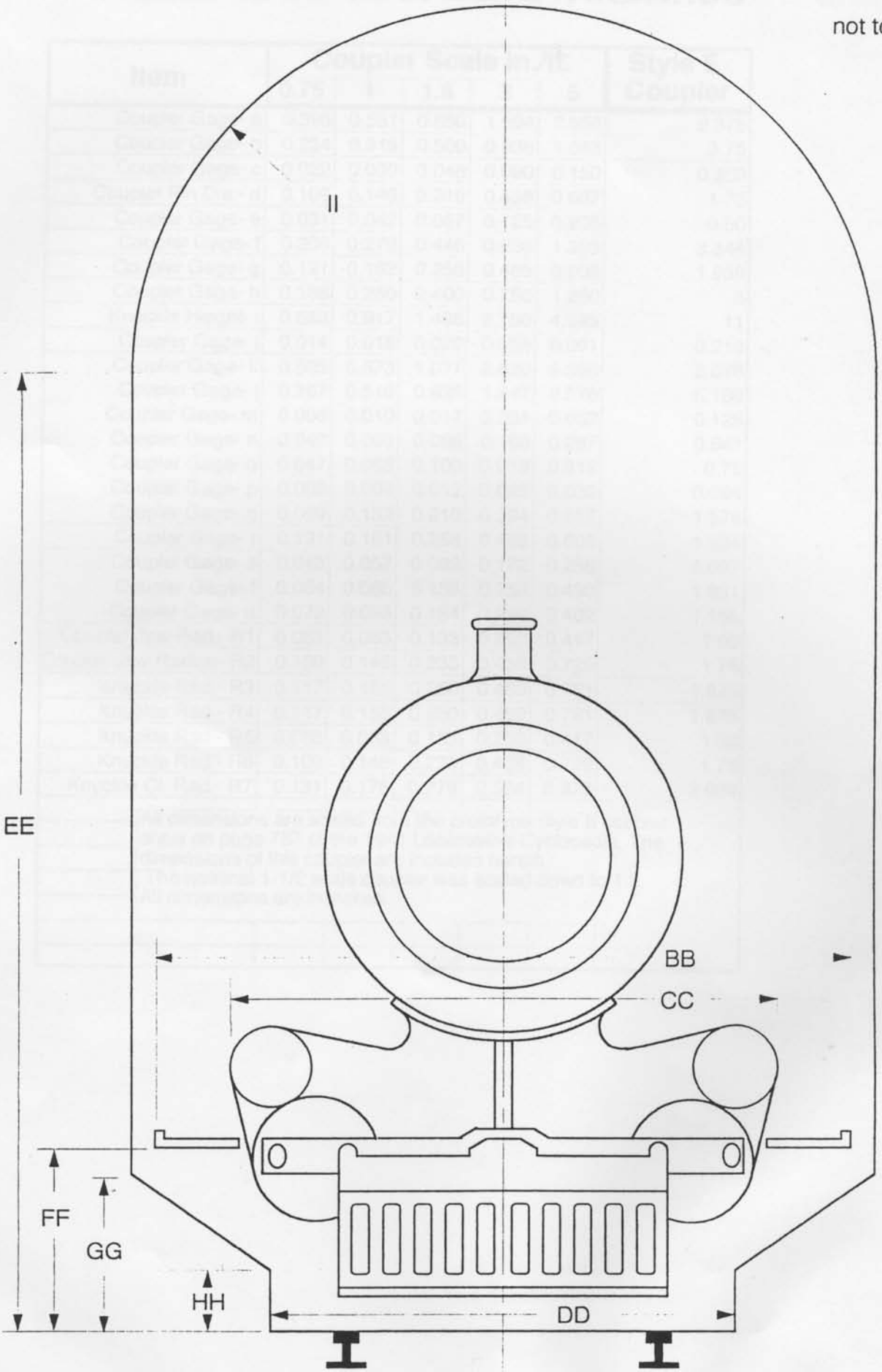
January 1

Item	Track Scale in./ft.						
	0.5	0.75	1	1.50	1.5	3	5
Straight Track Gauge- G	2.50	3.50	4.75	7.25	7.50	15.00	15.00
G tolerance	0.066	0.06	0.06	0.06	0.06	0.12	0.12
Curved track allowance	0	0.06	0.06	0.06	0.06	0.12	0.12
Frog Guard Rail Length- A		8	12	16.00	16	15	48
Frog Wing Rail Flangeway Width- F	0.134	0.11	0.16	0.19	0.19	0.65	0.65
F tolerance		min.	min.	min.	min.	min.	min.
Frog Flange Cl.- H	0.094	0.19	0.19	0.31	0.31	0.40	0.40
Bridge Guard Rail Sp.- I	0.0134	0.56	0.75	1.25	1.25	2.5	2.5
Track to Track Centerline Spacing	6.25	30	30	36	36	48	48
Frog Guard Rail Flangeway Width- L	0.134	0.19	0.19	0.25	0.25	0.5	0.5
Frog Point Gap- O	0.268	0.35	0.44	0.69	0.69	1.5	1.5
Frog Point		0.06	0.06	0.06	0.06	0.25	0.25
Tie Width		1	1	1.75	1.75	4	4
Tie Height		1	1	2	1.5	3	3
Standard Tie Length		7	9	14	14	32	32
Bridge Tie Length		9	12	18	18	36	36
Ballasted Tie Spacing		4	4	6	6	12	12
Bridge Tie Spacing		3	3	3	3	6	6
Rail Height		0.5	0.62	1	1	2	2
Rail Width		0.22	0.38	1	0.5	1	1
TUNNEL CLEARANCE DIMENSIONS							
Passenger Clearance Width- AA	6	30	30	36	36	48	48
Engine Overall Width- CC	6	10	12	18	18	36	36
Track Clearance Width- DD		10	12	15	15	30	30
Passenger Clearance Height- EE		48	48	48	48	60	60
Foot Bar Clearance- GG		1	2	4	4	10	10
Track Clearance Height- HH		0	0	2	2	4	4
Tunnel Head Clearance Radius- II		14	14	18	18	24	24
	All dimensions in inches						

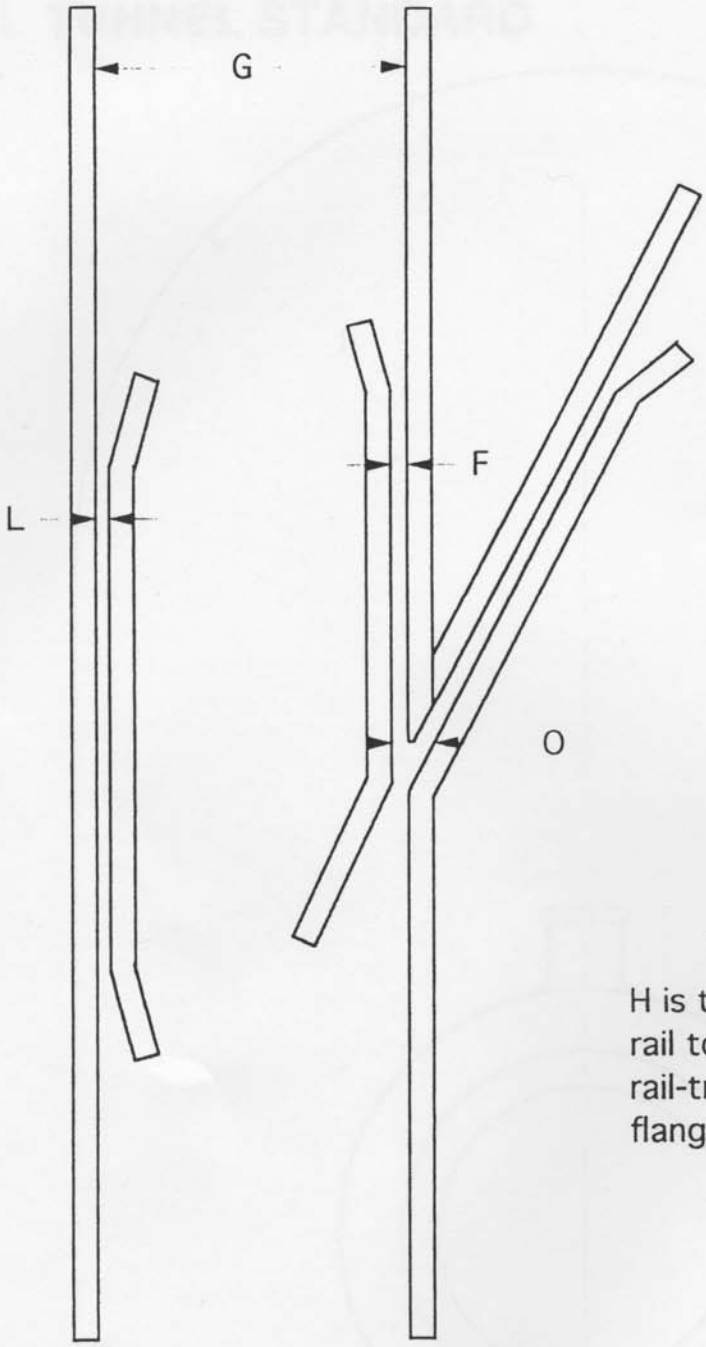
TUNNEL STANDARD

January 19

not to scale



January 1993



H is the depth from the top of the rail to the bottom of the guard rail-track groove for the wheel flange.

MINI-RAIL

CORPORATION

Track and guard rail sketch

MINI-RAIL CAR STANDARDS

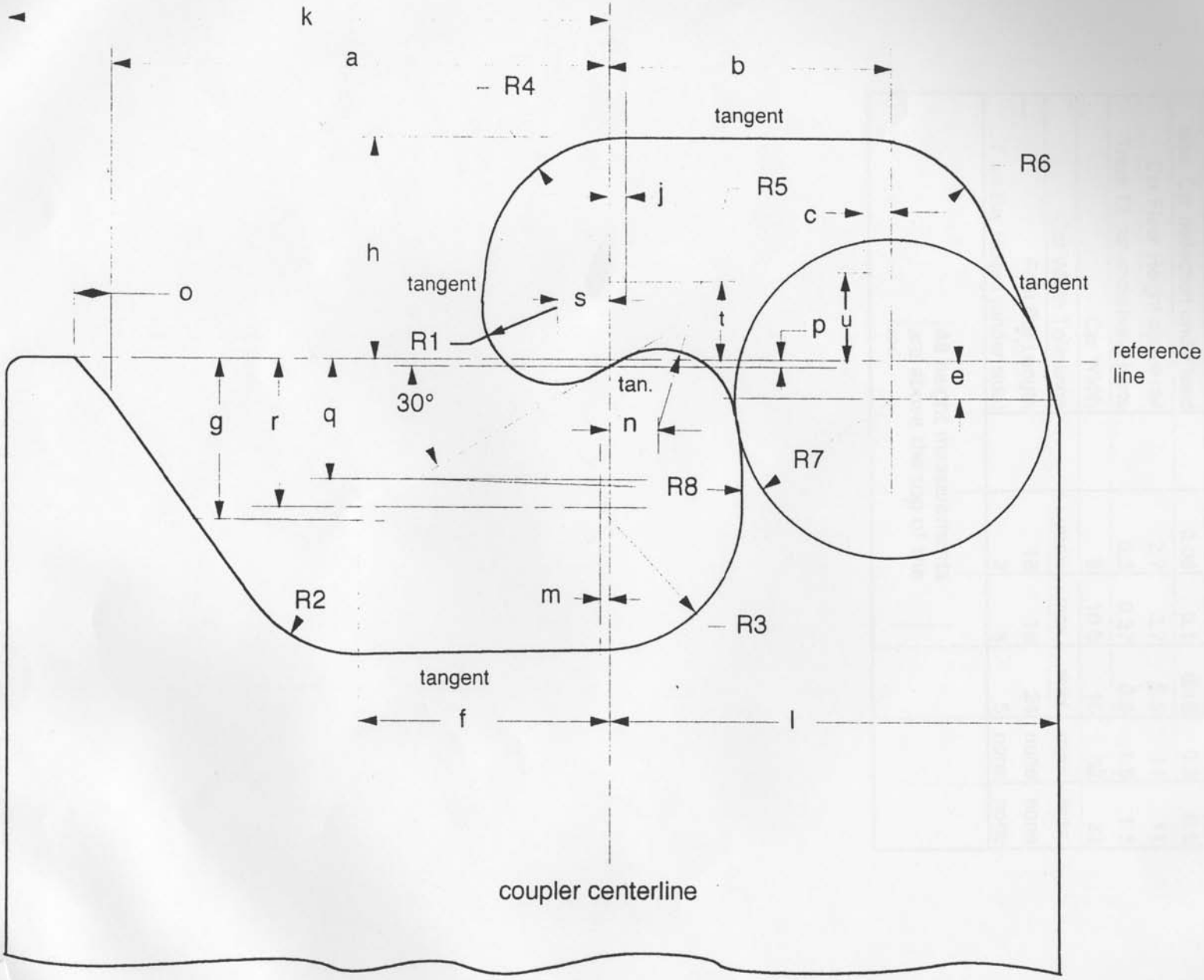
Item	Track Scale in./ft.					
	0.5	0.75	1	1.5	3	5
Coupler Centerline Height	1.44	2.2	2.88	4.38	10	10
Coupler Height Tolerance		±0.03	±0.04	±0.06	±0.2	±0.2
Max. Car deflection under load		0.08	0.1	0.15	0.3	0.5
Car Floor Height above rail		2.7	3.7	5.5	11	11
Track Cl. for underhung parts		0.3	0.37	0.6	1.5	1.5
Car Width		8	10.5	16	32	32
Car Width Tolerance		max.	max.	max.	max.	max.
Foot Bar Length		18	18	24	none	none
Foot Bar Height (under side)		2	3	5	none	none

All height measurements are above the top of the rail

MINI-RAIL COUPLER STANDARDS

Item	Coupler Scale in./ft.					Style E Coupler
	0.75	1	1.6	3	5	
Coupler Gage- a	0.398	0.531	0.850	1.594	2.656	6.375
Coupler Gage- b	0.234	0.313	0.500	0.938	1.563	3.75
Coupler Gage- c	0.022	0.030	0.048	0.090	0.150	0.359
Coupler Pin Dia.- d	0.109	0.146	0.219	0.438	0.687	1.75
Coupler Gage- e	0.031	0.042	0.067	0.125	0.208	0.50
Coupler Gage- f	0.209	0.279	0.446	0.836	1.393	3.344
Coupler Gage- g	0.121	0.162	0.258	0.485	0.808	1.938
Coupler Gage- h	0.188	0.250	0.400	0.750	1.250	3
Knuckle Height- i	0.688	0.917	1.466	2.750	4.583	11
Coupler Gage- j	0.014	0.018	0.029	0.055	0.091	0.219
Coupler Gage- k	0.505	0.673	1.077	2.020	3.366	8.078
Coupler Gage- l	0.387	0.516	0.825	1.547	2.578	6.188
Coupler Gage- m	0.008	0.010	0.017	0.031	0.052	0.125
Coupler Gage- n	0.040	0.053	0.086	0.160	0.267	0.641
Coupler Gage- o	0.047	0.063	0.100	0.019	0.312	0.75
Coupler Gage- p	0.006	0.008	0.012	0.023	0.039	0.094
Coupler Gage- q	0.099	0.132	0.210	0.394	0.657	1.578
Coupler Gage- r	0.121	0.161	0.258	0.483	0.806	1.934
Coupler Gage- s	0.043	0.057	0.092	0.172	0.286	0.687
Coupler Gage- t	0.064	0.086	0.138	0.258	0.430	1.031
Coupler Gage- u	0.072	0.096	0.154	0.289	0.482	1.156
Coupler Jaw Rad.- R1	0.063	0.063	0.133	0.250	0.417	1.00
Coupler Jaw Radius- R2	0.109	0.146	0.233	0.438	0.729	1.75
Knuckle Rad.- R3	0.117	0.156	0.250	0.469	0.781	1.875
Knuckle Rad.- R4	0.117	0.156	0.250	0.469	0.781	1.875
Knuckle Rad.- R5	0.063	0.083	0.133	0.250	0.417	1.00
Knuckle Rad.- R6	0.109	0.146	0.233	0.438	0.729	1.75
Knuckle Cl. Rad.- R7	0.131	0.175	0.279	0.524	0.873	2.094

All dimensions are scaled from the prototype style E coupler show on page 787 of the 1941 Locomotive Cyclopedia. The dimensions of this coupler are included herein.
The nominal 1-1/2 scale coupler was scaled down to 1.6.
All dimensions are in inches.


k
a
b
R4
tangent
R6
R5
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h
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R1
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30°
g
r
q
n
R7
R8
R2
m
R3
tangent
f
l
coupler centerline

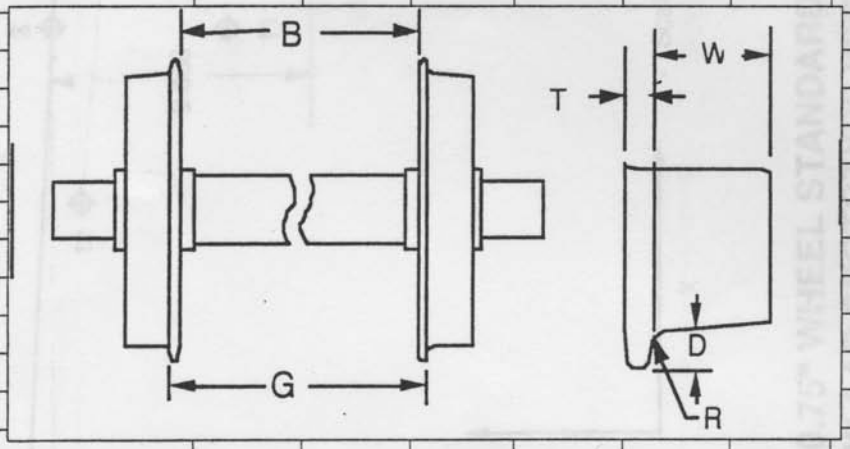
MINI-RAIL WHEEL STANDARDS

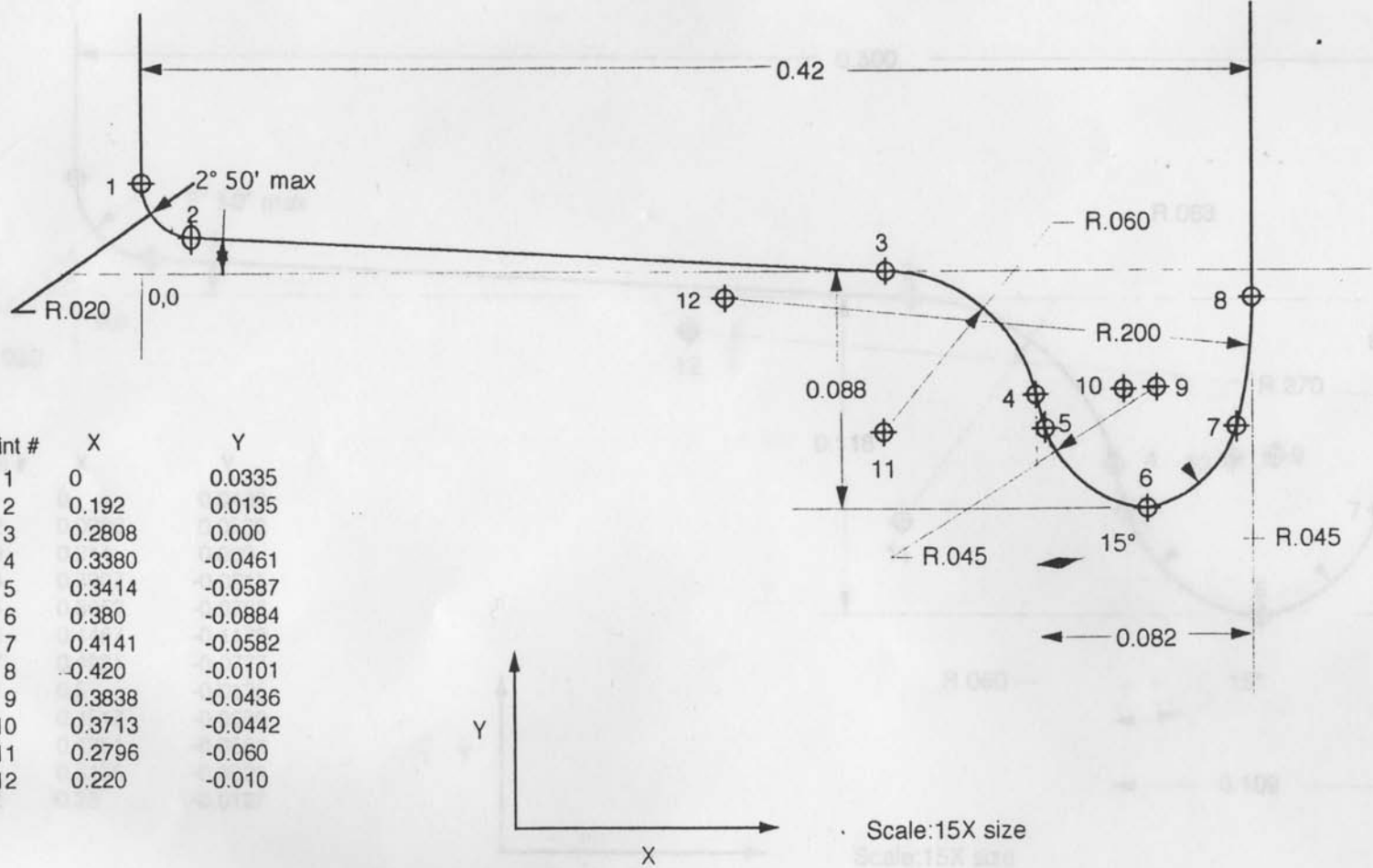
January 1993

Item	Scale in./ft.						
	0.5	0.75	1	1.5	1.5	3	5
TRACK GAUGE- G	2.5	3.5	4.75	7.25	7.5	15	15
Back to Back- B	2.281	3.34	4.46	6.87	7.12	14.24	14.24
B Tolerance		0.02	0.02	0.02	0.02	0.04	0.04
Tread Width- W Min.		0.34	0.38	0.59	0.59	1.18	1.18
W tolerance		min.	min.	min.	min.	min.	min.
Flange Thick.- T Max.		0.094	0.12	0.16	0.16	0.32	0.32
T Tolerance		max.	max.	max.	max.	max.	max.
Flange Depth- D	0.094	0.094	0.16	0.177	0.177	0.354	0.354
D tolerance		max.	max.	max.	max.	max.	max.
Gauge Radius- R	0.03	0.047	0.06	0.125	0.125	0.25	0.25
R. Tolerance	±0.008	±0.008	±0.010	±0.010	±0.010	±0.03	±0.03
Wheel Gauge- Z		3.47	4.68	7.19	7.44	14.88	14.88
Z tolerance		-0.02	-0.02	-0.02	-0.02	-0.04	-0.04

All dimensions in inches. Tolerances without a sign are plus.

Complete wheel contour machining information is included on the enclosed drawings.

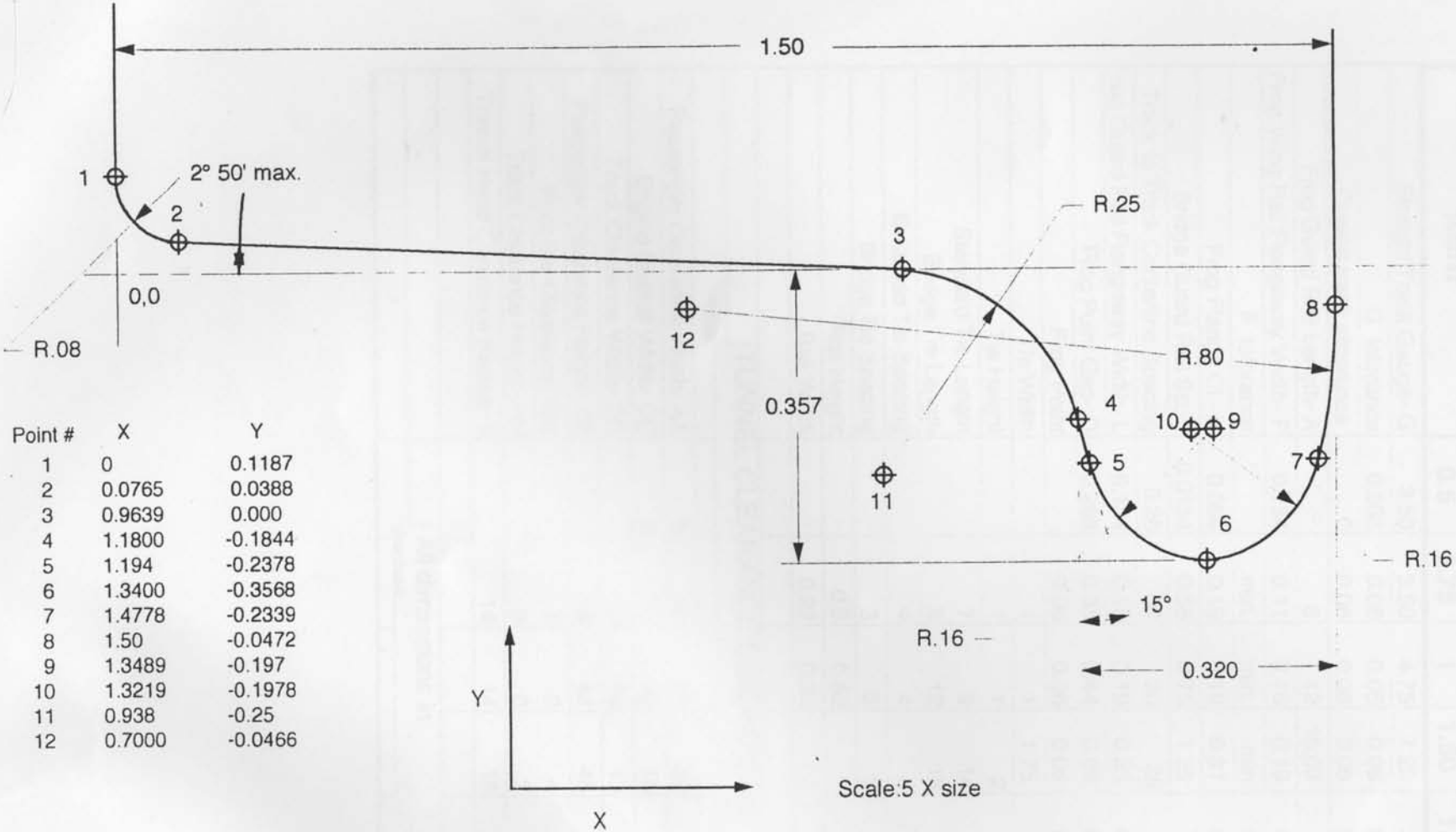




Point #	X	Y
1	0	0.0335
2	0.192	0.0135
3	0.2808	0.000
4	0.3380	-0.0461
5	0.3414	-0.0587
6	0.380	-0.0884
7	0.4141	-0.0582
8	0.420	-0.0101
9	0.3838	-0.0436
10	0.3713	-0.0442
11	0.2796	-0.060
12	0.220	-0.010

MIN-RAIL 0.75" WHEEL STANDARD BASED ON NEW AAR PROTOTYPE WHEEL

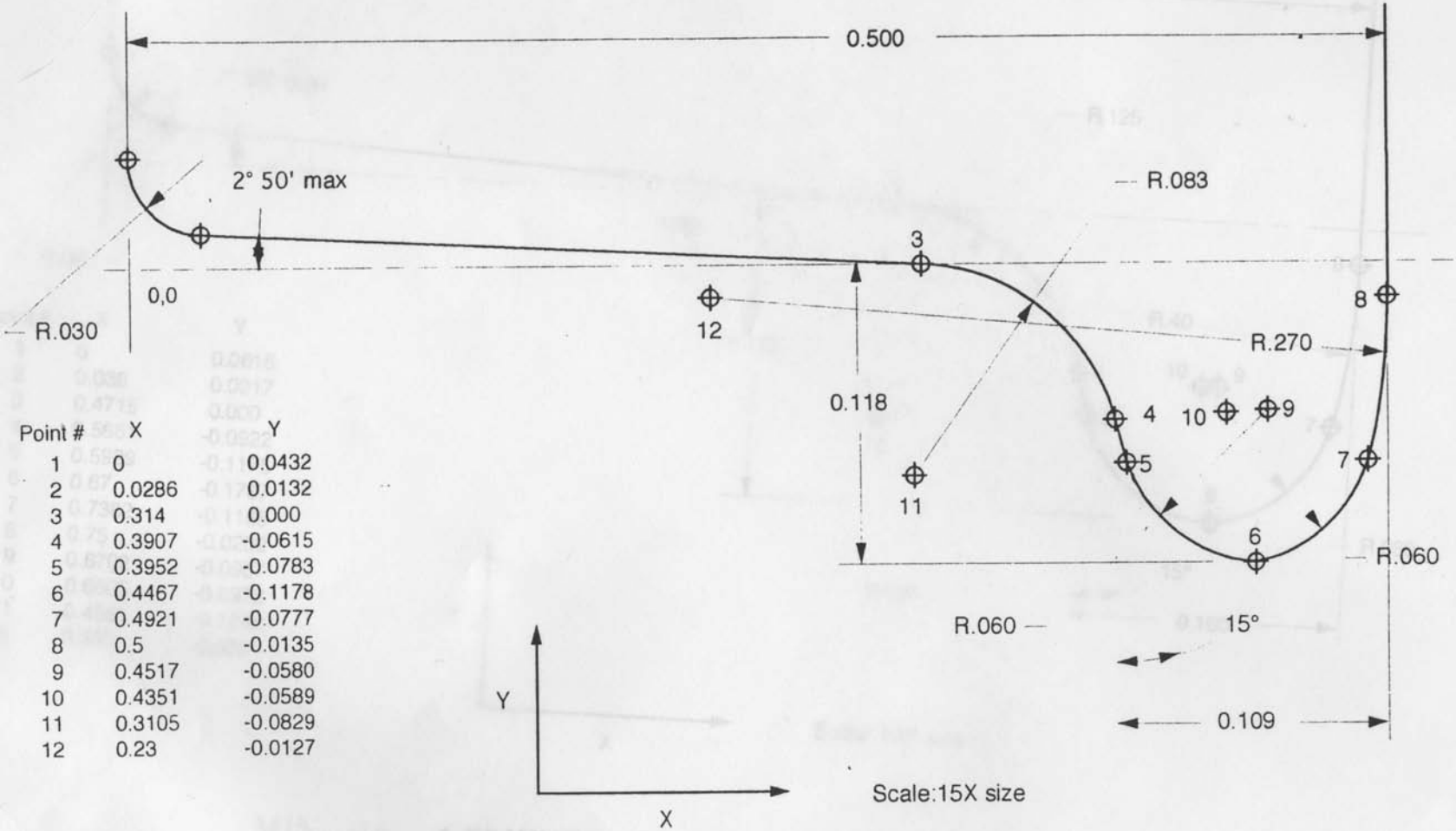
Designed for machining on NC equipment. Additional dimensions provided for fabrication on manual equipment.



Point #	X	Y
1	0	0.1187
2	0.0765	0.0388
3	0.9639	0.000
4	1.1800	-0.1844
5	1.194	-0.2378
6	1.3400	-0.3568
7	1.4778	-0.2339
8	1.50	-0.0472
9	1.3489	-0.197
10	1.3219	-0.1978
11	0.938	-0.25
12	0.7000	-0.0466

MINI-RAIL 3 & 5" WHEEL STANDARD BASED ON NEW AAR PROTOTYPE WHEEL

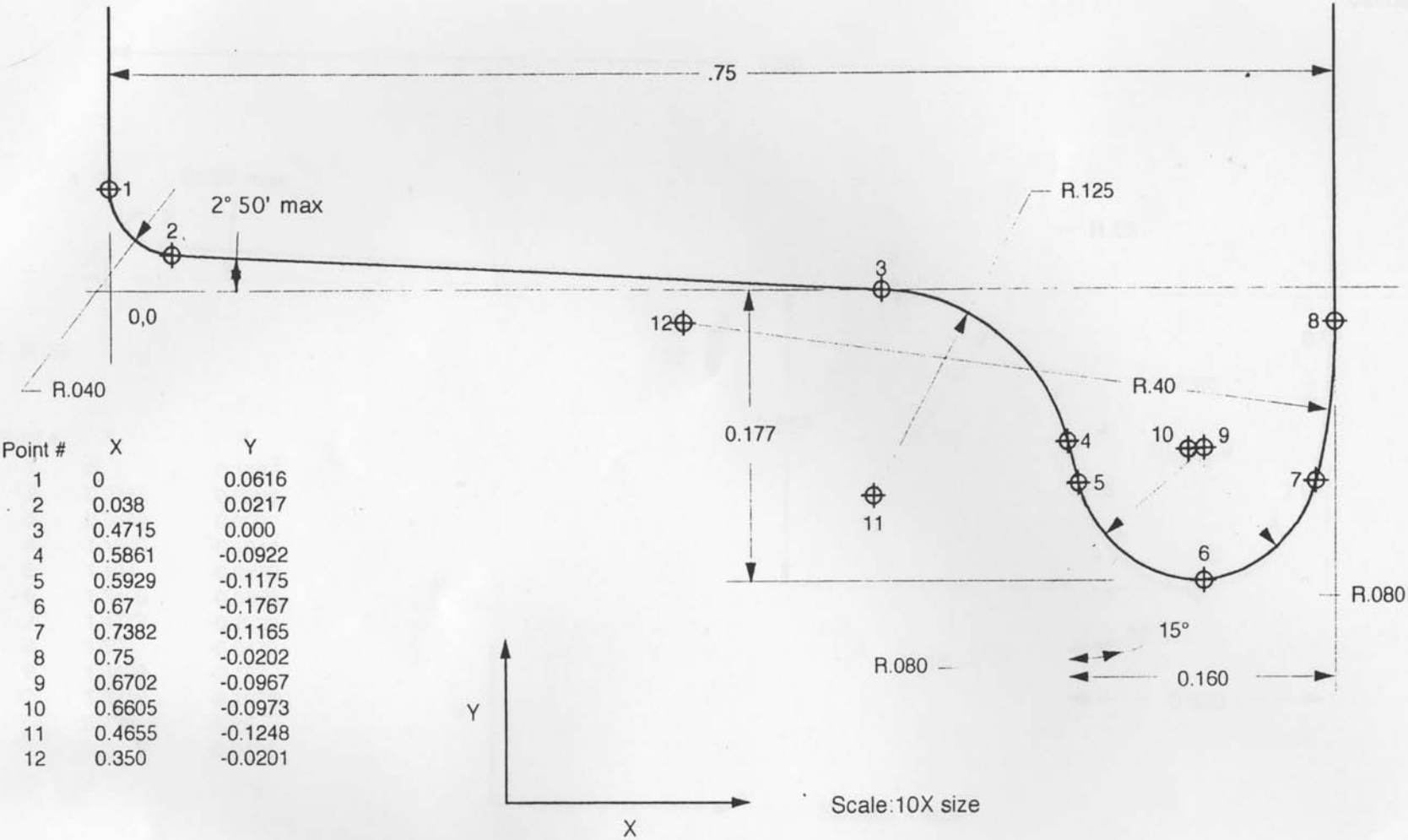
Designed for machining on NC equipment. Additional dimensions provided for fabrication on manual equipment.



Point #	X	Y
1	0	0.0432
2	0.0286	0.0132
3	0.314	0.000
4	0.3907	-0.0615
5	0.3952	-0.0783
6	0.4467	-0.1178
7	0.4921	-0.0777
8	0.5	-0.0135
9	0.4517	-0.0580
10	0.4351	-0.0589
11	0.3105	-0.0829
12	0.23	-0.0127

MINI-RAIL 1" WHEEL STANDARD BASED ON NEW AAR PROTOTYPE WHEEL

Designed for machining on NC equipment. Additional dimensions provided for fabrication on manual equipment.



Point #	X	Y
1	0	0.0616
2	0.038	0.0217
3	0.4715	0.000
4	0.5861	-0.0922
5	0.5929	-0.1175
6	0.67	-0.1767
7	0.7382	-0.1165
8	0.75	-0.0202
9	0.6702	-0.0967
10	0.6605	-0.0973
11	0.4655	-0.1248
12	0.350	-0.0201

MINI-RAIL 1.5" WHEEL STANDARD BASED ON NEW AAR PROTOTYPE WHEEL

Designed for machining on NC equipment. Additional dimensions provided for fabrication on manual equipment.