## A.R.E.A. RECOMMENDED RAIL GRADING FOR RELAY RAIL

<table>
<thead>
<tr>
<th>Rail Weight</th>
<th>Maximum Top</th>
<th>Wear-Inches</th>
<th>General Rail Use &amp; Rail Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class I</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>140</td>
<td>1/4</td>
<td>1/2</td>
<td>Main Line use — Very</td>
</tr>
<tr>
<td>132-131</td>
<td>3/16</td>
<td>1/2</td>
<td>minor engine burns and corruga-</td>
</tr>
<tr>
<td>122</td>
<td>5/32</td>
<td>7/16</td>
<td>tion.</td>
</tr>
<tr>
<td>115</td>
<td>1/8</td>
<td>3/8</td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>1/8</td>
<td>1/4</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>1/8</td>
<td>1/8</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>1/8</td>
<td>1/8</td>
<td></td>
</tr>
<tr>
<td><strong>Class II</strong></td>
<td>140</td>
<td>3/8</td>
<td>Branch Lines — Small</td>
</tr>
<tr>
<td>132-131</td>
<td>5/16</td>
<td>3/4</td>
<td>engine burns and corruga-</td>
</tr>
<tr>
<td>122</td>
<td>5/16</td>
<td>3/4</td>
<td>tion.</td>
</tr>
<tr>
<td>115</td>
<td>5/16</td>
<td>3/4</td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>5/16</td>
<td>1/2</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>3/16</td>
<td>1/4</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>1/4</td>
<td>3/16</td>
<td></td>
</tr>
<tr>
<td><strong>Class III</strong></td>
<td>140</td>
<td>5/8</td>
<td>Light Branch Lines —</td>
</tr>
<tr>
<td>132-131</td>
<td>7/16</td>
<td>7/8</td>
<td>Medium engine burns and corruga-</td>
</tr>
<tr>
<td>122</td>
<td>1/2</td>
<td>7/8</td>
<td>tion, may be pitted and show some</td>
</tr>
<tr>
<td>115</td>
<td>3/8</td>
<td>3/4</td>
<td>oxidation.</td>
</tr>
<tr>
<td>112</td>
<td>3/8</td>
<td>3/4</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>1/4</td>
<td>1/4</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>5/16</td>
<td>5/16</td>
<td></td>
</tr>
<tr>
<td><strong>Class IV</strong></td>
<td>140</td>
<td>3/4</td>
<td>Yards.</td>
</tr>
<tr>
<td>132-131</td>
<td>9/16</td>
<td>1</td>
<td>Any burns not mashed or fractured.</td>
</tr>
<tr>
<td>122</td>
<td>11/16</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>115</td>
<td>1/2</td>
<td>7/8</td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>1/2</td>
<td>7/8</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>7/16</td>
<td>7/8</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>3/8</td>
<td>3/8</td>
<td></td>
</tr>
</tbody>
</table>

Taken from the A.R.E.A. manual for railway engineering. 4.2-6.6
### TEE RAIL SECTIONS - DATA

<table>
<thead>
<tr>
<th>Nominal Weight</th>
<th>Type of Rail</th>
<th>WT</th>
<th>BW</th>
<th>HW</th>
<th>HD</th>
<th>BD</th>
<th>E</th>
<th>SECTION DESIGNATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>16 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>20 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>25 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>30 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>35 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>40 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>45 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>50 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>55 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>60 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>65 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>70 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>75 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>80 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>85 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>90 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>100 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>105 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>110 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>115 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>120 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>125 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>130 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>135 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>140 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>145 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
<tr>
<td>150 lb. ASCE</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/32</td>
<td>-</td>
</tr>
</tbody>
</table>

**Dimensions for Tee Rail Data Table**

- **HT** - Height
- **BW** - Width of Base
- **HW** - Width of Head
- **W** - Web (at center point)
- **HD** - Depth of Head
- **FD** - Fishing
- **BD** - Depth of Base
- **E** - Bolt Hole Elevation
30-lb A.S.C.E.

RAIL—Section 3040
LBS/YD (Nominal) 30.0
TRACK FEET/Net Ton 100.0
NET TONS/Track Mile 52.8
Stock lengths 30'0"

ANGLE BARS
10.9 lbs. per pair

SPlice BARS
7.0 lbs. per pair
16½" length

40-lb A.S.C.E.

RAIL—Section 4040
LBS/YD (Nominal) 40.0
TRACK FEET/Net Ton 75.0
NET TONS/Track Mile 70.4
Stock length 30'0"

ANGLE BARS
15.2 lbs. per pair

SPlice BARS
12.0 lbs. per pair 20" length
50-lb A.S.C.E.
RAIL—Section 5040

LBS/YD (Nominal) 50.0
TRACK FEET/Net Ton 60.0
NET TONS/Track Mile 88.0
Stock lengths 33'0"

ANGLE BARS
20" length 20.2 lbs. per pair
24" length 25.4 lbs. per pair
60-lb A.S.C.E.

SPECIFICATIONS:

RAIL—Section 6040

LBS/YD (Nominal) 60.0
TRACK FEET/Net Ton 50.0
NET TONS/Track Mile 105.6

Stock lengths 30'0", 33'0", and 39'0"

ANGLE BARS

20" length 27.2 lbs. per pair
24" length 32.5 lbs. per pair
70-lb A.S.C.E.

SPECIFICATIONS:

RAIL—Section 7040
LBS/YD (Nominal) 69.5
TRACK FEET/Net Ton 42.9
NET TONS/Track Mile 123.2
Stock lengths 33'0" and 39'0"

ANGLE BARS
24" length 40.0 lbs. per pair
## 75-lb A.S.C.E. Specifications

**RAIL—Section 7540**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBS/YD (Nominal)</td>
<td>74.8</td>
</tr>
<tr>
<td>TRACK FEET/Net Ton</td>
<td>40.0</td>
</tr>
<tr>
<td>NET TONS/Track Mile</td>
<td>132.0</td>
</tr>
<tr>
<td>Stock lengths 33'0''</td>
<td></td>
</tr>
</tbody>
</table>

**ANGLE BARS**

- 24'' lengths 42.8 lbs. per pair
80-lb A.S.C.E.

SPECIFICATIONS:

RAIL—Section 8040
LBS/YD (Nominal) 80.2
TRACK FEET/Net Ton 37.5
NET TONS/Track Mile 140.8
Stock lengths 33'0" and 39'0"

ANGLE BARS
24" length 46.0 lbs. per pair
85-lb A.S.C.E.

SPECIFICATIONS:

RAIL—Section 8540

LBS/YD (Nominal) 85.0
TRACK FEET/Net Ton 35.3
NET TONS/Track Mile 149.6

Stock length 39'0"

ANGLE BARS

24" length 49.6 lbs. per pair
(Toeless and Headfree bars also available)
90-lb A.S.C.E.
SPECIFICATIONS:

RAIL—Section 9040
LBS/YD (Nominal) 90.1
TRACK FEET/Net Ton 33.3
NET TONS/Track Mile 158.4
Stock length 39'0"

ANGLE BARS
24" lengths 54.0 lbs. per pair
90-lb A.R.A.-A.

SPECIFICATIONS:

RAIL—Section 9020
LBS/YD (Nominal) 90.0
TRACK FEET/Net Ton 33.3
NET TONS/Track Mile 158.4
Stock length 39'0"'

ANGLE BARS
24" length 66.6 lbs. per pair
(Toeless and Headfree bars also available)
90-lb A.R.A.-B.

SPECIFICATIONS:

RAIL—Section 9030
LBS/YD (Nominal) 90.5
TRACK FEET/Net Ton 33.3
NET TONS/Track Mile 158.4
Stock lengths 33'0" and 39'0"

ANGLE BARS
24" length 57.7 lbs. per pair
**100-lb A.R.A.-A.**

**SPECIFICATIONS:**

**RAIL—Section 10020**

- **LBS/YD (Nominal):** 100.4
- **TRACK FEET/Net Ton:** 30.0
- **NET TONS/Track Mile:** 176.0

Stock length 39'0"

**ANGLE BARS**

- 24" length 76.2 lbs. per pair
100-lb A.R.A.-B.

SPECIFICATIONS:

RAIL—Section 10030
LBS/YD (Nominal) 100.5
TRACK FEET/Net Ton 30.0
NET TONS/Track Mile 176.0

Stock length 39'0"

ANGLE BARS
24" length 67.7 lbs. per pair
100-lb A.R.E.A.

SPECIFICATIONS:

RAIL—Section 10025
LBS/YD (Nominal) 101.5
TRACK FEET/Net Ton 30.0
NET TONS/Track Mile 176.0

Stock length 39'0"

ANGLE BARS
24" length 69.5 lbs. per pair
105-lb N.Y.C. (Dudley)

SPECIFICATIONS:

RAIL—Section 10524
LBS/YD 104.7
TRACK FEET/Net Ton 28.6
NET TONS/Track Mile 184.8
Stock length 39'0"

ANGLE BARS
24" length 61.7 lbs. per pair
110-lb A.R.E.A.

SPECIFICATIONS:

RAIL (33, 39 FT)
LBS/YD 110.4
TRACK FEET/Net Ton 27.3
NET TONS/Track Mile 193.6

ANGLE BAR
24" length 61.7 lbs. per pair
112-lb A.R.E.A.

SPECIFICATIONS:

RAIL—Section 11225
LBS/YD 112.3
TRACK FEET/Net Ton 26.8
NET TONS/Track Mile 197.1
Stock length 39'0"

ANGLE BARS
24" length 77.24 lbs. per pair
36" length 115.86 lbs. per pair
115-lb A.R.E.A.

SPECIFICATIONS:

RAIL—Section 11525

<table>
<thead>
<tr>
<th>LBS/YD</th>
<th>114.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRACK FEET</td>
<td>26.1</td>
</tr>
<tr>
<td>Net Ton</td>
<td></td>
</tr>
<tr>
<td>NET TONS/Track Mile</td>
<td>202.4</td>
</tr>
</tbody>
</table>

Stock length 39'0"

ANGLE BARS

24" length 62.54 lbs. per pair
36" length 93.84 lbs. per pair
119-lb A.R.E.A.

SPECIFICATIONS:
LBS/YD (Nominal) 118.8
TRACK FEET/Net Ton 25.21
NET TONS/Track Mile 209.4

(39 FT)
130-lb P.S.

SPECIFICATIONS:

RAIL—Section 13031

LBS/YD 129.5

TRACK FEET/Net Ton 23.1

NET TONS/Track Mile 228.8

Stock length 39'0"

ANGLE BARS

24" length 87.2 lbs. per pair
131-lb A.R.E.A.

SPECIFICATIONS:

RAIL—Section 13125
LBS/YD (Nominal) 131.0
TRACK FEET/Net Ton 22.95
NET TONS/Track Mile 230.0
Stock length 39'0"

ANGLE BARS
24" length 75.4 lbs. per pair
36" length 113.1 per pair
132-lb A.R.E.A.

SPECIFICATIONS:
RAIL—Section 13225

LBS/YD 132.1
TRACK FEET/Net Ton 22.7
NET TONS/Track Mile 232.3
Stock length 39'0"

ANGLE BARS
24" length 75.37 lbs. per pair
36" lengths 113.06 lbs. per pair
136-lb A.R.E.A.

SPECIFICATIONS:

RAIL
LBS/YD (Nominal) 136.8
TRACK FEET/Net Ton 22.06
NET TONS/Track Mile (39-FT) 240.8
Insulated joints also available.

HOW TO ORDER

To assure prompt accurate service, specify the following dimensions and identify rail section and weight.

D—Diameter of bolt hole (or bolt size)

F—Center-line of first hole to center-line of second hole (fifth to sixth holes should be same dimension)

G—Center-line of second hole to center-line of third hole (fourth to fifth holes should be same dimension)

H—Distance between center-lines of two center holes