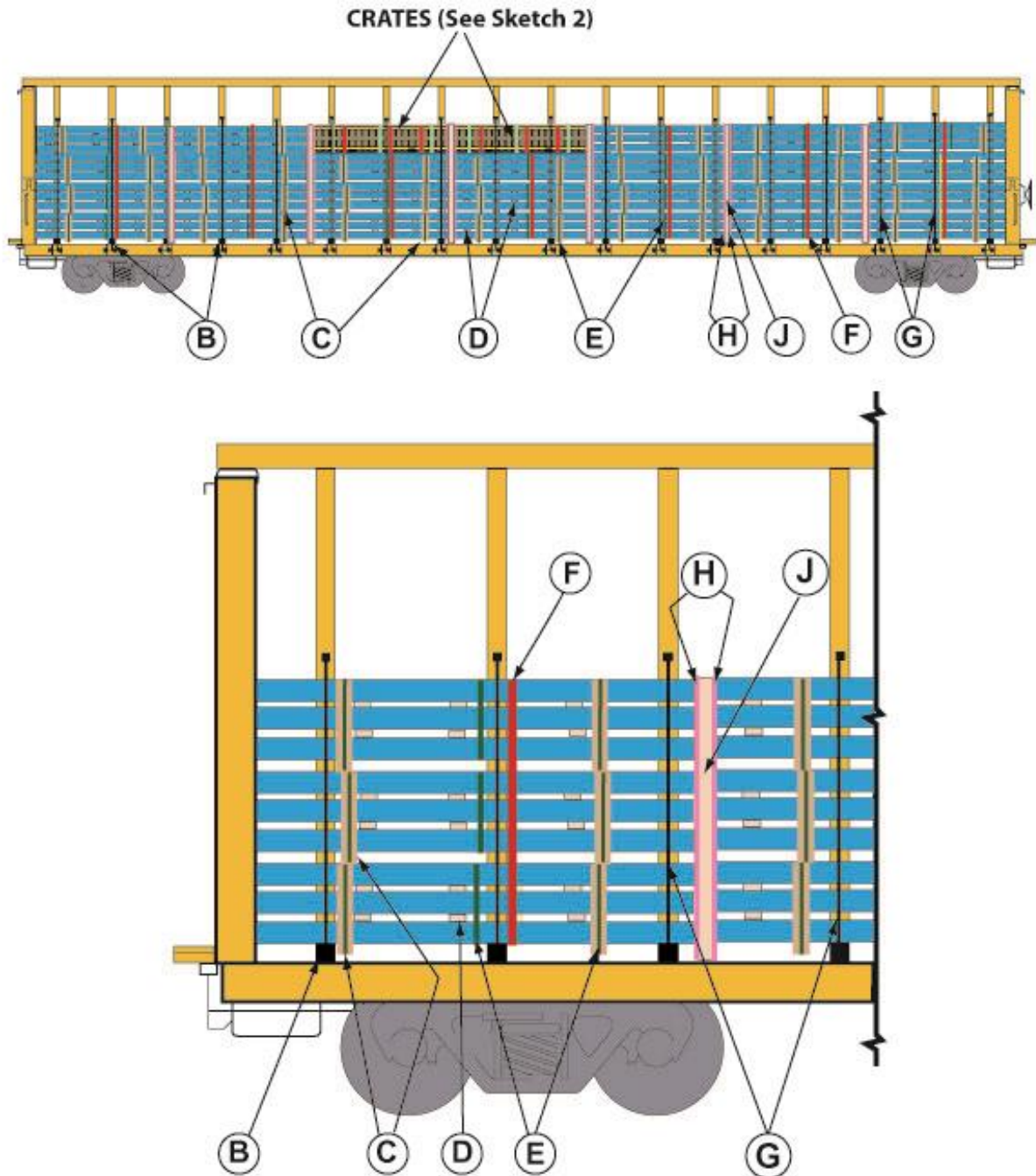


PIPES, STEEL AND CAST IRON 1 1/2 IN. TO 12 IN. O.D., 10 FT LONG OR OVER
RISERLESS FLATCARS WITH CENTER A-FRAME, PERMANENT END
BULKHEADS AND CABLE TIE-DOWN ASSEMBLIES

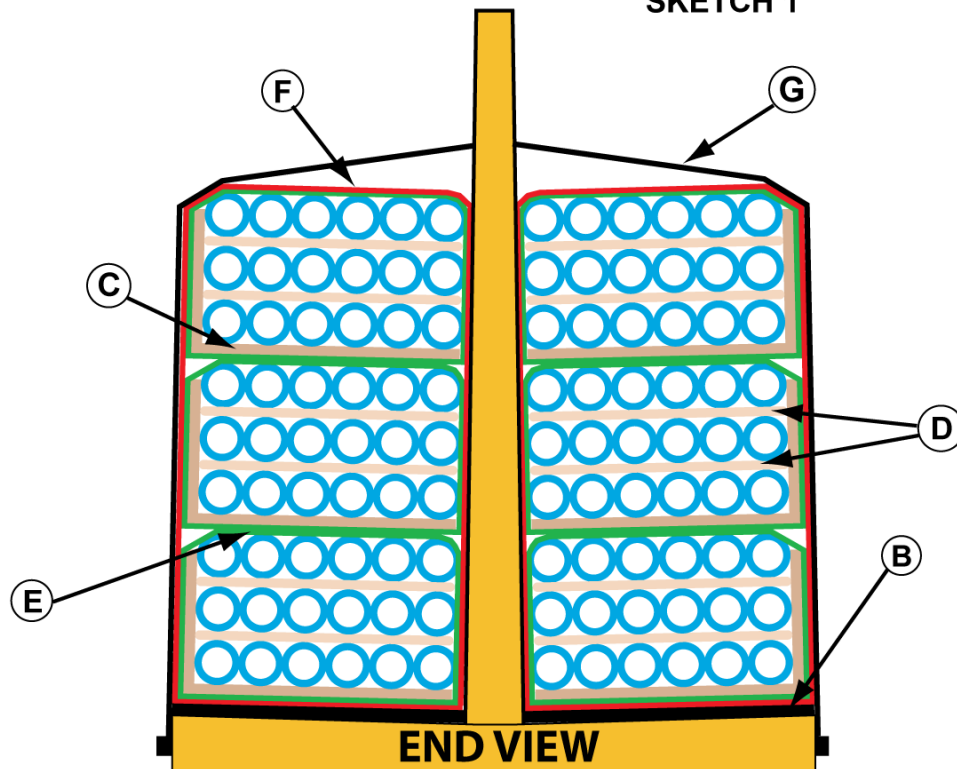
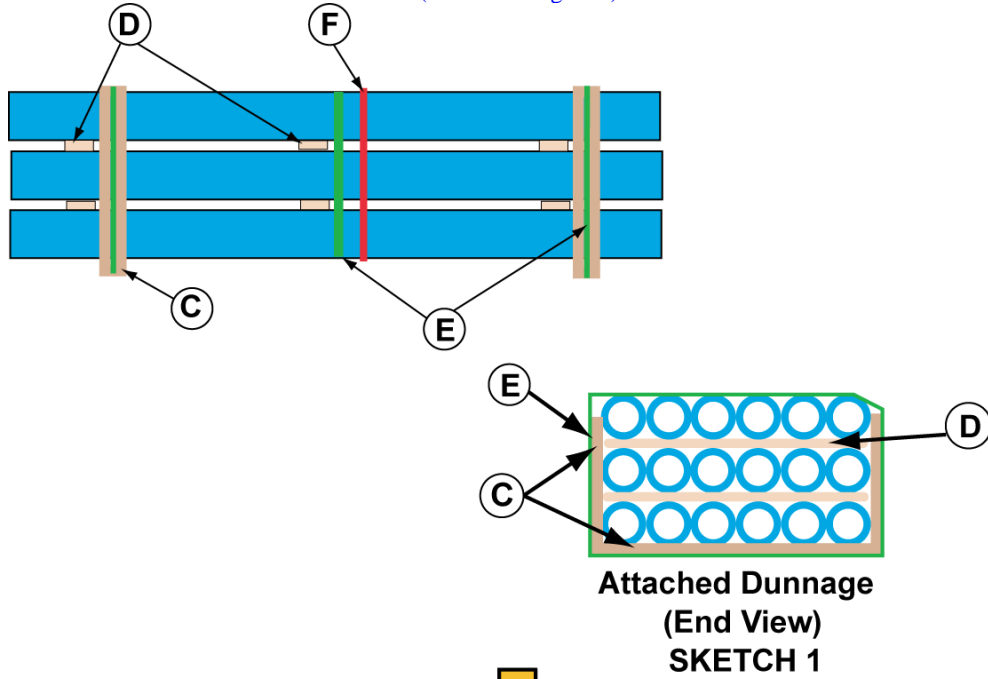
RAC 12155

New 05-2005 2005 (Ref: AAR Fig. 144)



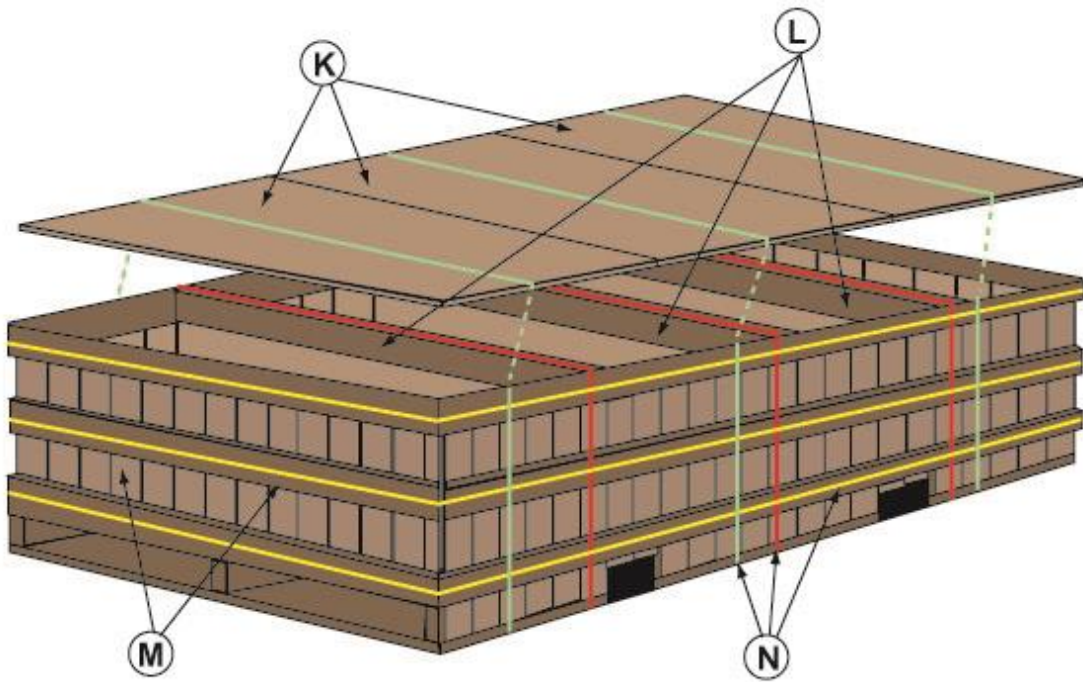
PIPES, STEEL AND CAST IRON, 1 1/2 IN. TO 10 IN. O.D., 10 FT LONG OR OVER
RISERLESS FLATCARS WITH CENTER A-FRAME, PERMANENT END
BULKHEADS AND CABLE TIE-DOWN ASSEMBLIES

RAC 12155 (Continued)
New 05-2005 (Ref: AAR Fig. 144)



PIPES, STEEL AND CAST IRON, 1 1/2 IN. TO 10 IN. O.D., 10 FT LONG OR OVER
RISERLESS FLATCARS WITH CENTER A-FRAME, PERMANENT END
BULKHEADS AND CABLE TIE-DOWN ASSEMBLIES

RAC 12155 (Continued)
New 05-2005 (Ref: AAR Fig. 144)



SKETCH 2
4 ft. x 10 ft. CRATE FOR FITTINGS

Item	No. of Pcs.	Description
A		Vacant
B	Min. 2 per package 12 ft long or less. Add 1 for each additional 4 ft.	Bearing pieces: lumber of one piece, preferably rough. Width must be 2 in. greater than height and the length equal to width of bottom package. Locate approximately 18-24 in. from each end of package with remaining pieces equally spaced. Maybe substituted with attached dunnage as per item C.

**PIPES, STEEL AND CAST IRON, 1 1/2 IN. TO 10 IN. O.D., 10 FT LONG OR OVER
RISERLESS FLATCARS WITH CENTER A-FRAME, PERMANENT END
BULKHEADS AND CABLE TIE-DOWN ASSEMBLIES**

RAC 12155 (Continued)
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Item	No. of Pcs.	Description
C	Min. 2 per package 12 ft long or less. Add 1 for each additional 4 ft	Attached dunnage: hardwood, minimum, 2 in. × 4 in., height must not exceed width. Length must be equal to width of package, in one piece and preferably rough. All attached dunnage in same layer separation must be of equal height. Attached dunnages are secured to bottom and sides (Sketch 1) of package with one ¾ in. package band. Locate approximately 18 in. from each end of package. Where possible, attached dunnages are to be positioned in line with Item B bearing pieces.
D	3 per package.	Stickers: Lumber minimum ¾ in. x 2 in., length must be equal to width of package and must be uniform thickness throughout.
E	Min. 3 per package 10 ft. long. Including 2 Item C.	Package bands: 3/4 in. x .029 in. high tension steel bands to encircle each bundle of pipe. Locate one band near each end of package with third band in between.
F	1 per pile.	Encircling band: 1 1/4 in. x .029 in. high tension steel bands to encircle all packages in a pile. Locate one band near the center of each pile.
G	Minimum 2 per each top package 12 ft long or less. 3 per each top package over 12 ft long.	Cables: 3/8-in. diameter, 8,800-lb minimum breaking strength. Winch assemblies must be equipped with a device to maintain tension. Prior to tightening, there must be a minimum of 2 1/2 wraps of cable around the winch drum. When practical, all cables must be used, and must be free of kinks and tangles. Tension to be applied with the use of an 18 in. bar or 3/8 in. ratchet. Cables are to be secured to A-frame in slot nearest to top of package.
H	As required	Buffer sheets: plywood, minimum 1/2 in. thick, width and height to equal width and height of adjoining tiers. Position plywood sheet between ends of adjacent tiers of pipe. Secure in place with wire or banding sufficient to prevent displacement. (Not shown in drawings.)
J	As required	Void filler: Inflatable dunnage bag as required. One Item H buffer sheet is to be positioned on each side of filler bag(s). Place bag(s) near the center of the load as the void should be kept to a minimum and located near the center of the load.



**PIPES, STEEL AND CAST IRON, 1 1/2 IN. TO 10 IN. O.D., 10 FT LONG OR OVER
RISERLESS FLATCARS WITH CENTER A-FRAME, PERMANENT END
BULKHEADS AND CABLE TIE-DOWN ASSEMBLIES**

RAC 12155 (Continued)
New 05-2005 (Ref: AAR Fig. 144)

Item	No. of Pcs.	Description
K	3 sheets 48 in. x 42 in.	5/8 po Plywood
L	3	Lumber 2 in. x 4 in.
M	3 per each end	Lumber 1 in. x 3 1/2 in. See SETCH 2
N	9	Encircling bands: 5/8 in. high tension steel bands. . See SETCH 2

Notes:

1. Load must be equally balanced on both sides of center partition.
2. All longitudinal void space must be packed out using Items H and J as indicated above. No void at any location may be greater than 8 in. If total lengthwise void space is greater than 8 in., the void must be distributed between pipe stacks beginning from the center of the load, then toward the ends of the car.
3. Pipes must be packaged as shown, with maximum package height of 24 inches.
4. All pipes in a package must be of the same diameter and type.
5. All packages in a layer must be of equal height.
6. All pipes in a stack must be of equal length.
7. Pipes in adjacent packages may be of different diameter, but all packages in a layer must be of equal height.
8. Application of filler:
 - A. Make the height and width dimensions of the faces of the filler material as near as practicable to the dimensions of the faces of the units they will be separating.
 - B. Load voids greater than 8 in. may be spread equally over length of load with no more than 8 in. of void space at any one location and subsequently filled with this material.
 - C. Filler must be secured to prevent displacement.
 - D. Filler material may not be reused if it has been damaged, subjected to water infiltration, or otherwise is no longer capable of filling the void.

PIPES, STEEL AND CAST IRON, 1 1/2 IN. TO 10 IN. O.D., 10 FT LONG OR OVER
RISERLESS FLATCARS WITH CENTER A-FRAME, PERMANENT END
BULKHEADS AND CABLE TIE-DOWN ASSEMBLIES

RAC 12155 (Concluded)
New 05-2005 (Ref: AAR Fig. 144)

9. Load weight distribution must be in accordance with AAR General Rule 3.5.2 indicating the percentage of deck length utilized versus correspondent permissible percentage of load limit for that length, see table below.

Allowable load limit on reduced deck length utilized

<i>Percent of deck length utilized</i>	<i>100</i>	<i>75</i>	<i>50</i>	<i>25</i>
<i>Percent of load limit permitted</i>	<i>100</i>	<i>75</i>	<i>50</i>	<i>25</i>

See General Rules for further details.