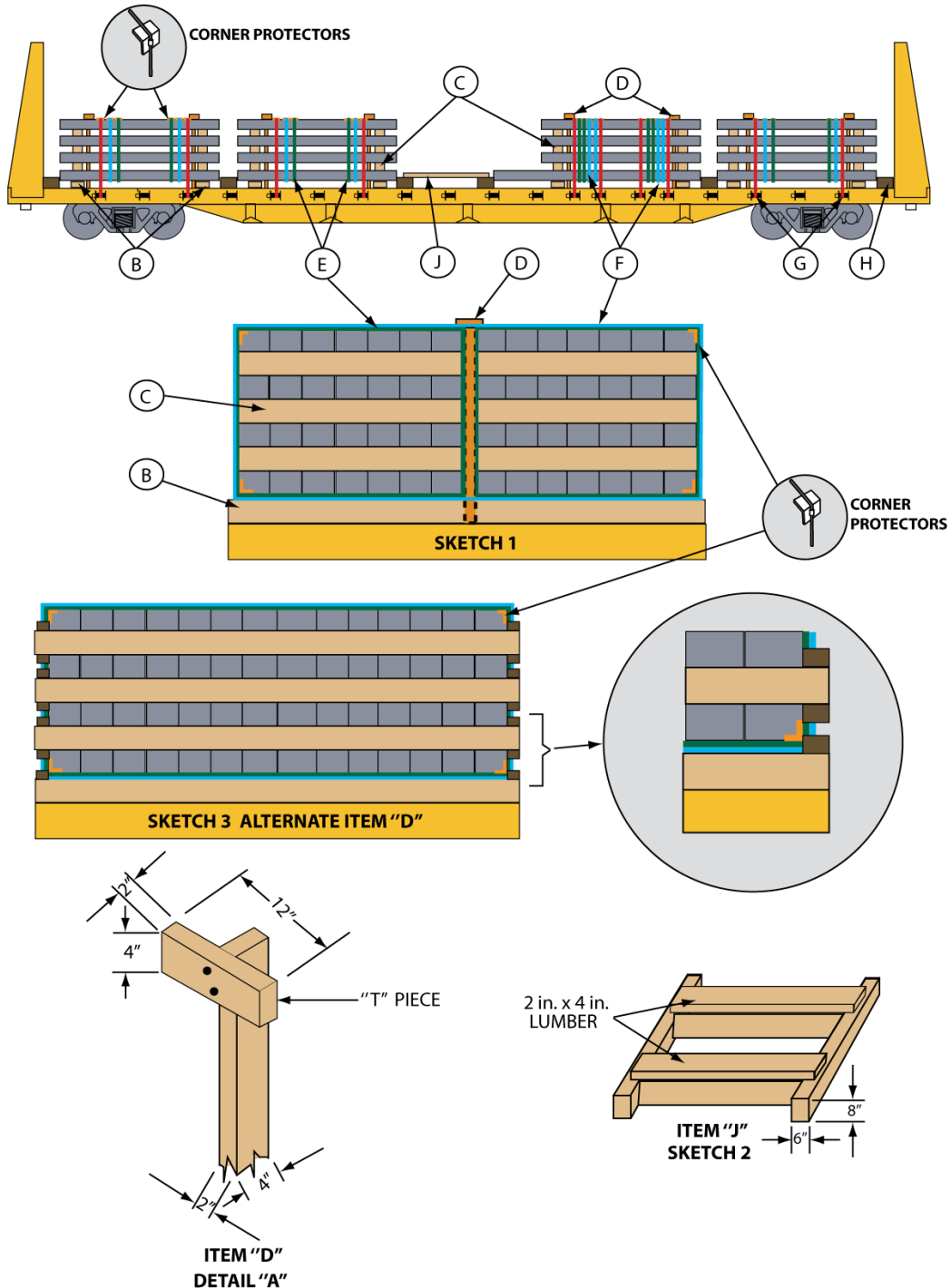


TIES, CONCRETE, SWITCH-AND CROSS TIES—BULKHEAD FLATCARS,  
WITH OR WITHOUT CONSTANT TENSIONING AND  
CUSHIONING DEVICES

RAC 13140

Revised Nov. 2021



TIES, CONCRETE, SWITCH-AND CROSS TIES—BULKHEAD FLATCARS, WITH  
OR WITHOUT CONSTANT TENSIONING AND  
CUSHIONING DEVICES

RAC 13140 (Continued)

Revised Nov. 2021

Item	No. of Pcs.	Description
A		Vacant
B	2 per pile	Bearing pieces: hardwood, 4 in. × 6 in., length equal to width of load. Locate approximately 12 in. from solid end of pile. An additional bearing piece is to be added under end of bottom layer that extends more than 4 ft beyond solid end of pile.
C	2 per layer.	Separators: hardwood, 4 in. × 4 in., length equal to width of load. Locate in line with Items B when possible.
D	2 per pile	Vertical stabilizers: lumber, 2 in. × 4 in., length to equal height of pile plus 4 in. Locate approximately one-fourth length in from solid ends of pile. T piece, 2 in. × 4 in. × 12 in., must be secured to top of vertical stabilizer with two 16-D nails. See <b>DETAIL A AND SKETCH 1</b> .
Alt. D	2 per bearing pieces, 4 per separators	Side blocks: lumber, 2 in. x 4 in. x 6 in. Locate against ties on the top and bottom of each Item C separator and top of each Item B, and secure each with four (4) 16-D nails. Side blocks to be used as alternate to Item D Vertical Stabilizers. See <b>SKETCH 3</b> .
E	2 per unit 12 ft long or less, 4 (2 pairs) per unit over 12 ft in length.	Unit bands: 2 in. × .044 in. high tension band. Encircle unit and locate approximately one-fourth length in from solid ends of unit. (Each pile consists of two side-by-side units separated by Item D.) See <b>SKETCH 1</b> . May be substituted by Type 1A, Grade 7 non-metallic strapping.
F	2 per pile 12 ft long or less, 4 (2 pairs) per pile over 12 ft long.	Encircling bands: 2 in. × .044 in. high tension band. Encircle pile and locate approximately one-fourth length in from solid ends of pile. See <b>SKETCH 1</b> . May be substituted by Type 1A, Grade 7 non-metallic strapping.
G	2 per pile 12 ft long or less, 4 per pile over 12 ft long.	Tie-down bands: 2 in. × .044 in. high tension band. Locate no closer or less than 8 in. from solid ends of pile. Must be applied through constant tensioning devices, tensioned and sealed on top of load with two seals double crimped or notched. May be substituted by Type 1A, Grade 7 non-metallic strapping.

**TIES, CONCRETE, SWITCH-AND CROSS TIES—BULKHEAD FLATCARS, WITH  
OR WITHOUT CONSTANT TENSIONING AND  
CUSHIONING DEVICES**

**RAC 13140 (Concluded)**

Revised Nov. 2021

<b>Item</b>	<b>No. of Pcs.</b>	<b>Description</b>
H	As required	Load blocking: hardwood, minimum 6 in. × 8 in., length equal to width of load. Locate laterally to fill void between piles, between end piles and steel bulkheads. Secure to prevent displacement.
J	As required	Pack-out filler: hardwood, minimum 6 in. × 8 in., length to suit. Use to fill void between piles where needed. Joints must be spliced with 2 in. × 4 in. lumber, length to suit, using 16-D nails. Assembly must be secured to prevent displacement. See <b>SKETCH 2</b> .

**Notes and Additional Requirements:**

1. Piles 12 ft long and less may contain up to four cross ties over 12 ft long.
2. It is the intent that all longitudinal void space in bottom layer be filled.
3. Corner protectors must be used under Items E, F, and G.
4. Reclaimed timbers may be used for Items H and J provided their condition is such that the structural integrity of the timber does not compromise its effectiveness.
5. Constant tensioning devices that are AAR approved and listed under General Rule 17.11.3 in Section 1 are mandatory with steel banding. They must be applied to car in a manner that the compression unit is not hindered, either by the loaded commodity and/or car structural member, in developing the minimum tension specified. (Not required with non-metallic strapping.)
6. Inspect stake pockets for cracks in welds and or deformity prior to attaching securement.
7. Car floor must be free of snow and debris in area where bearing pieces are applied.

For further details see General Rules.