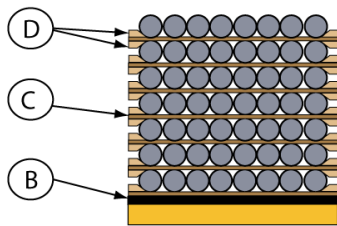
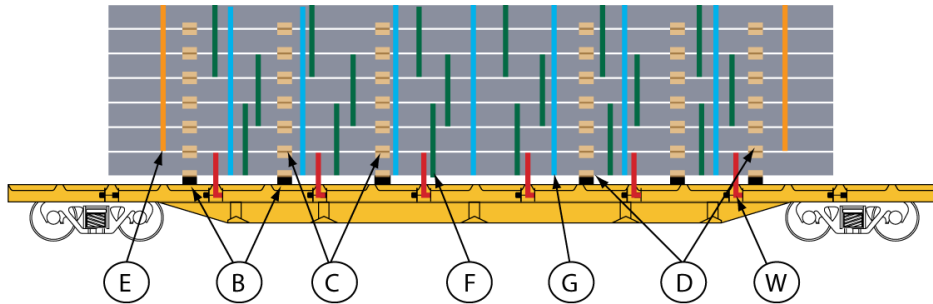


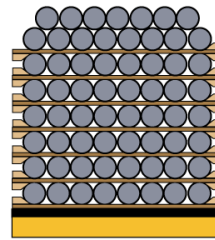
PIPES, STEEL BARE, COATED or WRAPPED 6-5/8 IN. TO 16 IN. OUTSIDE  
DIAMETER, 80 FT. IN LENGTH, INCLUSIVE, FLAT CARS 89 FT. WITH  
CUSHIONING DEVICES

RAC 12159B

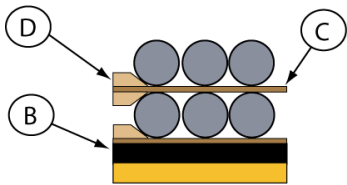
New 11-2018



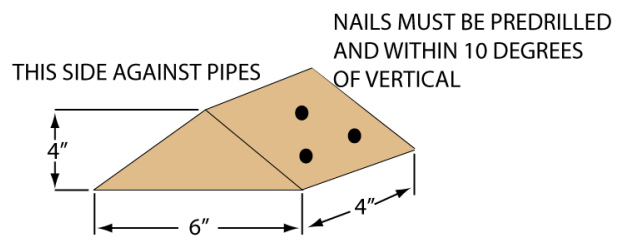
**END VIEW A**  
**FULL TOP LAYER**  
(TIE-DOWN NOT SHOWN)



**END VIEW B**  
**NESTED TOP LAYER**  
(TIE-DOWN NOT SHOWN)



**SKETCH 1**



**SKETCH 2**



SPRUCE BEARING PIECE FULL 4 in. X 6 in.  
CONTOURED TO FIT PIPE

**SKETCH 3**



SPRUCE SEPARATOR FULL 6 in. X 6 in.  
CONTOURED TO FIT PIPE

**SKETCH 4**



PIPES, STEEL BARE, COATED or WRAPPED 6-5/8 IN. TO 16 IN. OUTSIDE  
DIAMETER, 80 FT. IN LENGTH, INCLUSIVE, FLAT CARS 89 FT. WITH  
CUSHIONING DEVICES

RAC 12159B (Continued)  
New 11-2018

Item	No. of Pcs.	Description
A		Vacant
B	Minimum 6 per pile	Bearing Pieces: Hardwood, 2 in. x 6 in., preferably rough, in one piece. Length equal to width of car. Intermediate bearing pieces will be spaced uniformly to support the load. Secure each to car floor with six (6) common nails, the length to be not less than 2 in. greater than thickness of bearing piece.
C	Minimum 6 per pile	Separators: Hardwood, 2 in x 6 in., length equal to width of load but not to extend beyond width of car. Locate between each layer and in line with items "B", when possible.
D	2 per each item "B" 4 per each item "C"	Chock Blocks: Hardwood 4 in. x 4 in. x 6 in., pre-drilled. Locate at each end on top of Items "B", and on top and bottom of Item "C" against pipe and secure each with six (6) 20-D common nails. Not required when items A & B are full contoured.
E	2 per pile	End encircling Bands: 2 in. x .044 in. high tension. Pass between first and second bottom layers encircling all layers above it. Place one at each end of pile and locate 2/3 distance in from end of pipe and first separator. May be substituted with Type 1A Grade 6 polyester cord strapping.
F	6 per each layer	Load interlacing bands: 2 in. x .044in high tension. Interlace entire load together by encircling first, second and third layers then third, fourth and fifth layers etc., to top of load. Top set may consist of 4 layers. May be substituted with Type 1A Grade 6 polyester cord strapping.
G	7	Encircling Bands: 2 in. x .044 in. high tension. Encircle entire load, evenly spaced and locate as far as possible from bearing pieces, separators and other bands. May be substituted with Type 1A Grade 6 polyester cord strapping.



**PIPES, STEEL BARE, COATED or WRAPPED 6-5/8 IN. TO 16 IN. OUTSIDE  
DIAMETER, 80 FT. IN LENGTH, INCLUSIVE, FLAT CARS 89 FT. WITH  
CUSHIONING DEVICES**

**RAC 12159B (Continued)**  
New 11-2018

Item	No. of Pcs.	Description
W	6 per pile	Tie-down assemblies: consisting of a ratchet and polyester woven straps 4 in. wide with 20,000 lb. minimum breaking strength (M.B.S.) Locate near bearing pieces where practical. Place over bottom layer of pipe and anchor to opposite side of car, securing to prevent displacement. Winch taut using a minimum 30-in bar. Maintain as much clearance from steel bands as possible to avoid damage to straps.

<b>ALTERNATE ITEMS:</b>		
Item	No. of Pcs.	Description
Alt. B	Minimum 6 per pile	Bearing Pieces: Spruce, full 4 in. x 6 in. contoured minimum 2” to fit pipe, preferably rough, in one piece. Length equal to width of car. Intermediate bearing pieces spaced uniformly to support the load. Secure each to car floor with six (6) common nails, the length to be not less than 2 in. greater than thickness of bearing piece. (Sketch 3)
Alt. C	Minimum 6 per pile	Separators: Spruce, full 6 in x 6 in. double contoured minimum 2” to fit pipe, preferably rough, in one piece. Length equal to width of load but not to extend beyond width of car. Locate between each layer and in line with items “B”, when possible. (Sketch 4)

**Notes:**

1. This figure is designed and intended for nominal pipe lengths of 80ft. With variances within a load of no greater than -15ft
2. Longer lengths of pipe must be located in the bottom layer of the load with shorter material loaded above.
3. Load must be located centrally on car at origin. Centerline of outside pipe must be within the inside edge of car side sills. Coated pipe must have a minimum of 4 ft of void space and bare pipe a minimum of 3ft of void space between end of load and end of the car.
4. More pieces per tier (width of load) may be loaded if the same end configuration and number of bands required by Figure are applied as indicated (also see **NOTE 3**).



**PIPES, STEEL BARE, COATED or WRAPPED 6-5/8 IN. TO 16 IN. OUTSIDE DIAMETER, 80 FT. IN LENGTH, INCLUSIVE, FLAT CARS 89 FT. WITH CUSHIONING DEVICES**

**RAC 12159B (Concluded)**

New 11-2018

5. When pipe is coated, adequate padding or protection must be used to prevent chafing at bearing points. (Shippers discretion use optional)
6. Height of load must not exceed 10 ft above car floor.
7. Height of pile cannot exceed width of pile. Exception: if the top layer is nested, the height may be one layer taller than wide. Only one layer may be nested in this Figure.
8. All banding should be equally spaced throughout the entire pile. Paying attention for proximity to bearing pieces and Item W.
9. Type 1A Grade 8 non-metallic strapping may be used if Item W tie-down assemblies are missing or defective. Attach strapping to either lading anchors or stake pockets using appropriate hooks and or buckles.
10. Bands are sufficient for loads up to 140,000 lb. Add one additional Item F load interlacing band and one additional Item G encircling band for each 20,000 lb or less of load weight.

Load Weight	No. Item F	No. Item G
140,000 or less	6	7
140,001 to 160,000	7	8
160,001 to 180,000	8	9
180,001 to 210,000	9	10

11. Bearing pieces and separators, as shown, are sufficient for loads up to 140,000 lb. Add one bearing piece and separator for each 20,000 lb or less of load weight.

Load Weight	No. Bearing Pieces per Pile	No. Separators per Pile
140,000 or less	6	6
140,001 to 160,000	7	7
160,001 to 180,000	8	8
180,001 to 210,000	9	9

Reference the General Rules in Section 1 of the *Open Top Loading Rules Manual* for additional details.