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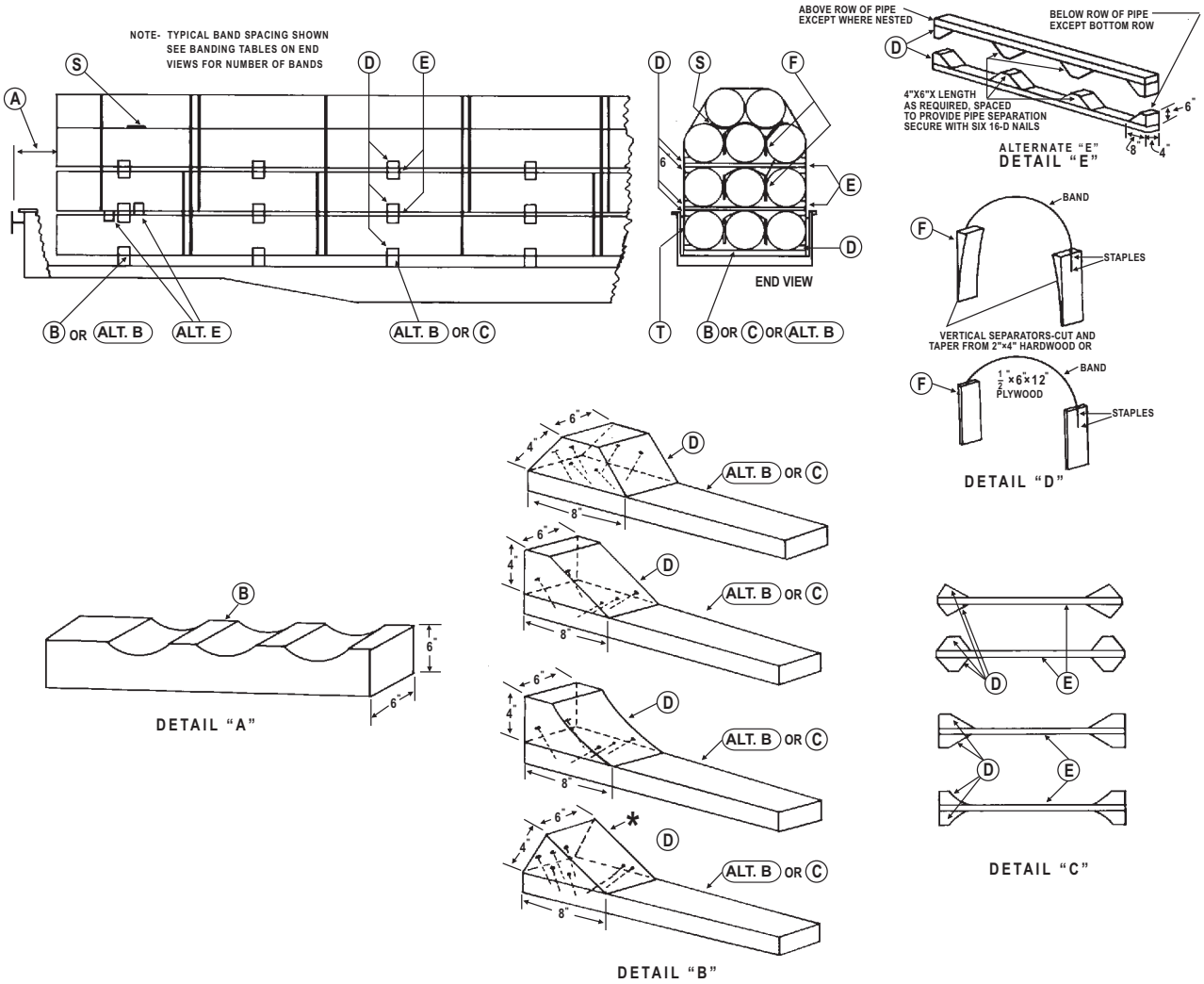
Fig. 240 (Rev. 11/15)
(New 10/73)

PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 54 IN. O.D., 40 FT LONG, SINGLE PILE—GONDOLAS



Item	No. of Pcs.	Description
A		Brake wheel clearance: see General Rule 2 in Section 1.
B	2 per pile (Not used with Alternate Item B.)	End bearing pieces: 6 in. × 6 in. minimum, hardwood, length about equal to width of car, contoured to fit pipe diameter, ends not more than 3 in. from inside face of stake pockets. Secure to car floor with ten 8-in. spikes (Detail A).
C	Minimum 2 per pile. (Not used with Alternate Item B.)	Intermediate bearing piece: 4 in. × 6 in. minimum hardwood, length about equal to width of car, ends not more than 3 in. from side of car (Detail B).
D	2 each Item C. 4 each Item E. 2 each Alternate Item B. 4 each Alternate Item E.	Wood chock blocks: 4 in. × 6 in. × 8 in., cut to fit contour of pipe or wedge-shaped. Locate to contact pipe and nail to Items C, E, Alternate B, and/or Alternate E with five or six 16-D nails (Detail B, C, and E). Alternate 6 in. × 4 in. × 8 in. wood chock blocks may be used. *Secure with seven 16-D power-driven nails.
E	Minimum of 4 between tiers not nested.	Separator: 2 in. × 6 in. hardwood, length about equal to width of load and sufficient to apply Items D (Detail C). Separator: 6 in. × 6 in. contoured to a maximum of 2 in. top and bottom may be used as an alternate.
F	As required.	Vertical separators: consisting of material such as plywood, hardwood, or hard rubber that will not easily compress. Use a minimum of two separators per row. Use optional (Detail D).
G thru R	See banding tables on sketches.	High tension bands: 2 in. × .044 in. All bands passing around bottom of load must be placed close together to allow maximum free space between Items B and C or Alternate Items B.

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Fig. 240 (Rev. 11/15) (Continued)
(New 10/73)

PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 54 IN. O.D., 40 FT LONG, SINGLE PILE—GONDOLAS

Item	No. of Pcs.	Description
G	"	To encircle bottom two tiers.
H	"	To encircle bottom three tiers.
J	"	To encircle bottom four tiers.
K	"	To encircle tiers 2 and 3.
L	"	To encircle tiers 2, 3, and 4.
M	"	To encircle top tier only.
N	"	To encircle top two tiers.
O	"	To encircle top three tiers.
P	"	To encircle top four tiers.
Q	"	To encircle top five tiers.
R	"	To encircle all tiers.
S	3 per nested tier.	Protective material: use optional.
T	4 per load, 2 each side.	Lumber protectors: secured to top of car side. Use optional.
Alternate Items B and E		
Alt B	Minimum 4 per pile.	Bearing piece: 2 in. × 6 in. hardwood, length about equal to width of car, ends not more than 3 in. from side of car (Detail B).
Alt E	Minimum of 3 pair per tier not nested.	Separators: a pair is two pieces as shown in Detail E. Place at three locations throughout length of load, one pair adjacent to each end Item E and one pair adjacent to Item E nearest center of load. Use optional.

Notes and Additional Requirements:

1. This figure is designed and intended for nominal pipe lengths of 40 ft.
2. Nominal in this figure is ±2 ft of differential in pipe length within the entire car load of pipe. Longest lengths of pipe must be located in the bottom of the load with shorter material loaded above the longer material.
3. Bands shown are sufficient for loads up to 120,000 lb. Add one band of each designation, on load sketch used, for each additional 20,000 lb or less of load weight.
4. Bearing pieces and separators, as shown, are sufficient for loads up to 140,000 lb. Add one additional bearing piece and separator for each additional 20,000 lb or less of load weight.
5. Pipe must be centrally located on car.
6. When pipe is coated and/or wrapped, adequate padding or protection must be used to prevent chafing at bearing points. (Shipper's discretion to use as optional requirement.)
7. More pieces per tier (width of load) may be loaded if the same end configuration and number of bands required by all sketches are applied as indicated.
8. Sweet gum is an acceptable substitute for hardwood in this figure.

Reference the General Rules in Section No. 1 of the *Open Top Loading Rules Manual* for additional details.

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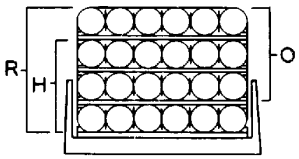
Fig. 240 (Rev. 11/15) (Continued)
(New 10/73)

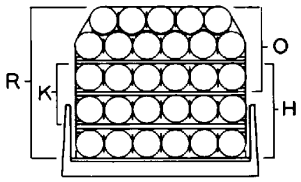
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 54 IN. O.D., 40 FT LONG, SINGLE PILE—GONDOLAS



OUSIDE DIAMETER (S) 16"–18"
NUMBER OF PIECES 24

G	H	J	K	L	M	N	O	P	Q	R
	4						4			5

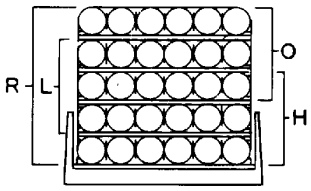
SKETCH NO. 1



OUTSIDE DIAMETER (S) 16"–18"
NUMBER OF PIECES 29

G	H	J	K	L	M	N	O	P	Q	R
	3		3				3			5

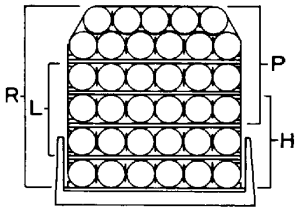
SKETCH NO. 2



OUTSIDE DIAMETER (S) 16"–18"
NUMBER OF PIECES 30

G	H	J	K	L	M	N	O	P	Q	R
	3		3				3			5

SKETCH NO. 3



OUTSIDE DIAMETER (S) 16"–18"
NUMBER OF PIECES 35

G	H	J	K	L	M	N	O	P	Q	R
	3			4				4		5

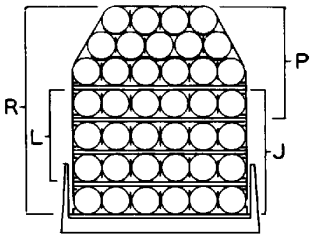
SKETCH NO. 4

Sketch Omitted Intentionally

OUTSIDE DIAMETER (S)
NUMBER OF PIECES

G	H	J	K	L	M	N	O	P	Q	R

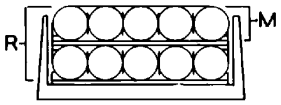
SKETCH NO. 5



OUTSIDE DIAMETER (S) 16"–18"
NUMBER OF PIECES 39

G	H	J	K	L	M	N	O	P	Q	R
		4		4				4		5

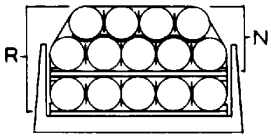
SKETCH NO. 6



OUTSIDE DIAMETER (S) 16"–22"
NUMBER OF PIECES 10

G	H	J	K	L	M	N	O	P	Q	R
					6					6

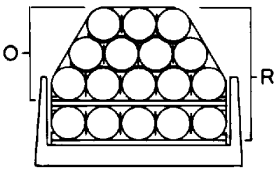
SKETCH NO. 7



OUTSIDE DIAMETER (S) 16"–22"
NUMBER OF PIECES 14

G	H	J	K	L	M	N	O	P	Q	R
						6				6

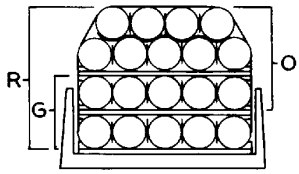
SKETCH NO. 8



OUTSIDE DIAMETER (S) 16"–22"
NUMBER OF PIECES 17

G	H	J	K	L	M	N	O	P	Q	R
							6			6

SKETCH NO. 9



OUTSIDE DIAMETER (S) 16"–22"
NUMBER OF PIECES 19

G	H	J	K	L	M	N	O	P	Q	R
4							4			5

SKETCH NO. 10

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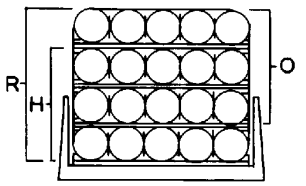
Fig. 240 (Rev. 11/15) (Continued)
(New 10/73)

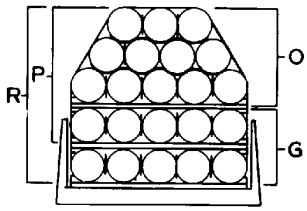
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 54 IN. O.D., 40 FT LONG, SINGLE PILE—GONDOLAS



OUSIDE DIAMETER (S) 16"–22"
NUMBER OF PIECES 20

G	H	J	K	L	M	N	O	P	Q	R
	4						4			5

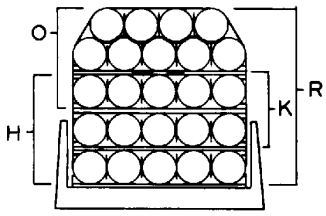
SKETCH NO. 11



OUTSIDE DIAMETER(S) 16"–22"
NUMBER OF PIECES 22

G	H	J	K	L	M	N	O	P	Q	R
3							3	3		5

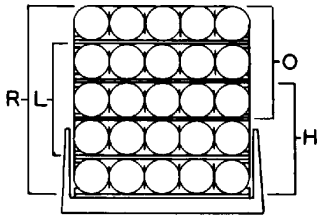
SKETCH NO. 12



OUTSIDE DIAMETER(S) 16"–22"
NUMBER OF PIECES 24

G	H	J	K	L	M	N	O	P	Q	R
	3		3				3			5

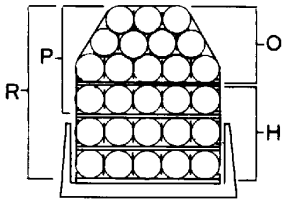
SKETCH NO. 13



OUTSIDE DIAMETER(S) 16"–22"
NUMBER OF PIECES 25

G	H	J	K	L	M	N	O	P	Q	R
	3			3			3			5

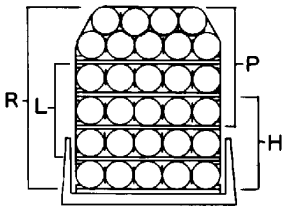
SKETCH NO. 14



OUTSIDE DIAMETER (S) 16"–22"
NUMBER OF PIECES 27

G	H	J	K	L	M	N	O	P	Q	R
	4						4	4		5

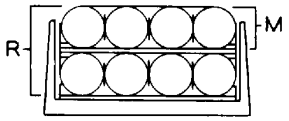
SKETCH NO. 15



OUTSIDE DIAMETER (S) 16"–22"
NUMBER OF PIECES 29

G	H	J	K	L	M	N	O	P	Q	R
	3			3				3		5

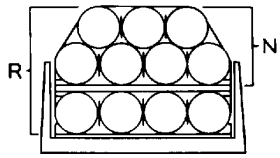
SKETCH NO. 16



OUTSIDE DIAMETER (S) 16"–26"
NUMBER OF PIECES 8

G	H	J	K	L	M	N	O	P	Q	R
					6					6

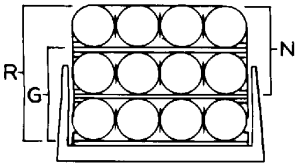
SKETCH NO. 17



OUTSIDE DIAMETER (S) 16"–26"
NUMBER OF PIECES 11

G	H	J	K	L	M	N	O	P	Q	R
						6				6

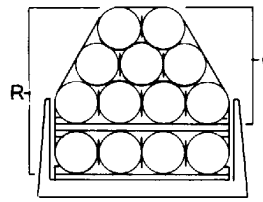
SKETCH NO. 18



OUTSIDE DIAMETER (S) 16"–26"
NUMBER OF PIECES 12

G	H	J	K	L	M	N	O	P	Q	R
4						4				5

SKETCH NO. 19



OUTSIDE DIAMETER (S) 16"–26"
NUMBER OF PIECES 13

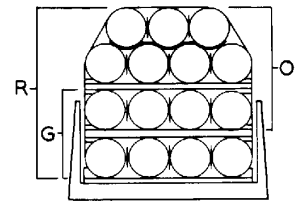
G	H	J	K	L	M	N	O	P	Q	R
							6			6

SKETCH NO. 20

IMPLEMENTED 11/2015

Fig. 240 (Rev. 11/15) (Continued)
(New 10/73)

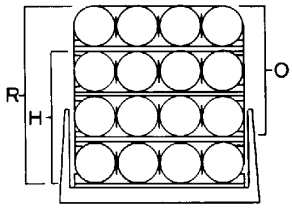
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 54 IN. O.D., 40 FT LONG, SINGLE PILE—GONDOLAS



OUSIDE DIAMETER (S) 16"– 26"
NUMBER OF PIECES 15

G	H	J	K	L	M	N	O	P	Q	R
4							4			5

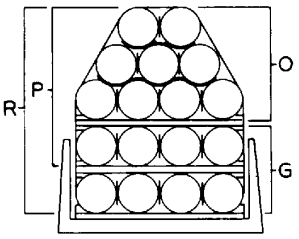
SKETCH NO. 21



OUTSIDE DIAMETER(S) 16"– 26"
NUMBER OF PIECES 16

G	H	J	K	L	M	N	O	P	Q	R
	4						4			5

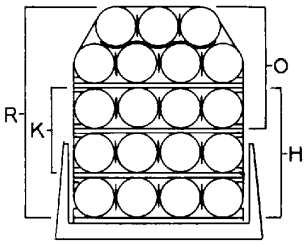
SKETCH NO. 22



OUTSIDE DIAMETER(S) 16"–26"
NUMBER OF PIECES 17

G	H	J	K	L	M	N	O	P	Q	R
3							3	3		5

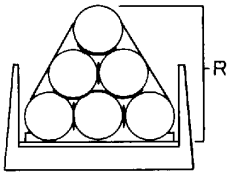
SKETCH NO. 23



OUTSIDE DIAMETER(S) 16"– 26"
NUMBER OF PIECES 19

G	H	J	K	L	M	N	O	P	Q	R
	3		3				3			5

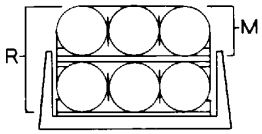
SKETCH NO. 24



OUTSIDE DIAMETER (S) 16"– 36"
NUMBER OF PIECES 6

G	H	J	K	L	M	N	O	P	Q	R
										8

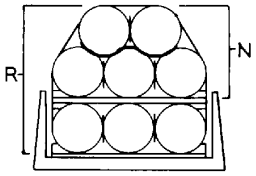
SKETCH NO. 25



OUTSIDE DIAMETER (S) 16"– 36"
NUMBER OF PIECES 6

G	H	J	K	L	M	N	O	P	Q	R
					6					6

SKETCH NO. 26



OUTSIDE DIAMETER (S) 16"– 36"
NUMBER OF PIECES 8

G	H	J	K	L	M	N	O	P	Q	R
						6				6

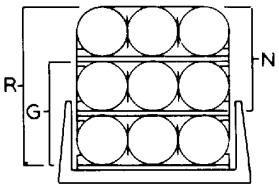
SKETCH NO. 27

Sketch Omitted Intentionally

OUTSIDE DIAMETER (S)
NUMBER OF PIECES

G	H	J	K	L	M	N	O	P	Q	R

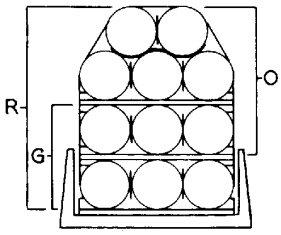
SKETCH NO. 28



OUTSIDE DIAMETER (S) 16"– 36"
NUMBER OF PIECES 9

G	H	J	K	L	M	N	O	P	Q	R
4						4				5

SKETCH NO. 29



OUTSIDE DIAMETER (S) 16"–36"
NUMBER OF PIECES 11

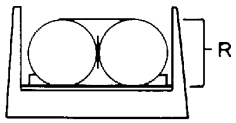
G	H	J	K	L	M	N	O	P	Q	R
4							4			5

SKETCH NO. 30

IMPLEMENTED 11/2015

Fig. 240 (Rev. 11/15) (Concluded)
(New 10/73)

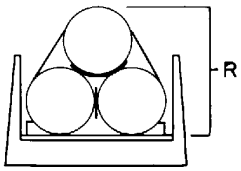
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 54 IN. O.D., 40 FT LONG, SINGLE PILE—GONDOLAS



OUSIDE DIAMETER (S) 16"– 54"
NUMBER OF PIECES 2
NUMBER OF BANDS

G	H	J	K	L	M	N	O	P	Q	R
										4

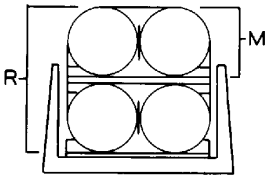
SKETCH NO. 31



OUTSIDE DIAMETER(S) 16"– 54"
NUMBER OF PIECES 3
NUMBER OF BANDS

G	H	J	K	L	M	N	O	P	Q	R
										6

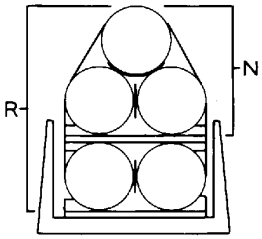
SKETCH NO. 32



OUTSIDE DIAMETER (S) 16"– 54"
NUMBER OF PIECES 4
NUMBER OF BANDS

G	H	J	K	L	M	N	O	P	Q	R
					6					6

SKETCH NO. 33



OUTSIDE DIAMETER(S) 16"– 54"
NUMBER OF PIECES 5
NUMBER OF BANDS

G	H	J	K	L	M	N	O	P	Q	R
					6					6

SKETCH NO. 34

OUTSIDE DIAMETER (S)
NUMBER OF PIECES
NUMBER OF BANDS

G	H	J	K	L	M	N	O	P	Q	R

OUTSIDE DIAMETER (S)
NUMBER OF PIECES
NUMBER OF BANDS

G	H	J	K	L	M	N	O	P	Q	R

OUTSIDE DIAMETER (S)
NUMBER OF PIECES
NUMBER OF BANDS

G	H	J	K	L	M	N	O	P	Q	R

OUTSIDE DIAMETER (S)
NUMBER OF PIECES
NUMBER OF BANDS

G	H	J	K	L	M	N	O	P	Q	R

OUTSIDE DIAMETER (S)
NUMBER OF PIECES
NUMBER OF BANDS

G	H	J	K	L	M	N	O	P	Q	R

OUTSIDE DIAMETER (S)
NUMBER OF PIECES
NUMBER OF BANDS

G	H	J	K	L	M	N	O	P	Q	R

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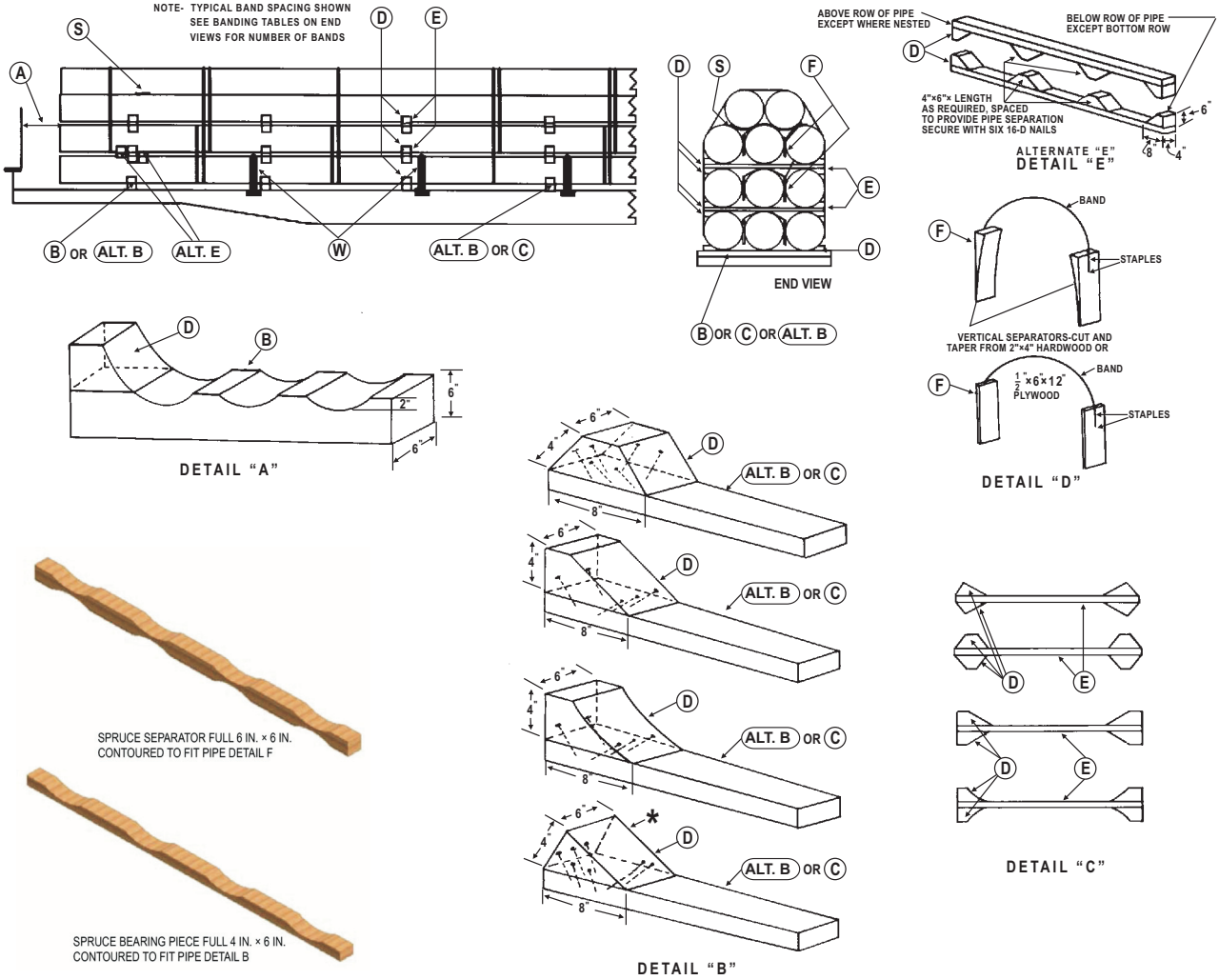
Fig. 244 (Rev. 11/15)
(New 10/73)

PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, SINGLE PILE—FLATCARS



Item	No. of. Pcs.	Description
A		Brake wheel clearance: see General Rule 2 in Section 1 and Note 7 below.
B	2 per pile (Not used with Alternate Item B).	End bearing pieces: 6 in. × 6 in. minimum, hardwood, length about equal to width of car, contoured to fit pipe diameter ends not more than 3 in. from inside face of stake pockets. Secure to car floor with ten 8-in. spikes (Detail A).
C	Minimum 2 per pile (Not used with Alternate Item B).	Intermediate bearing pieces: 4 in. × 6 in. minimum, hardwood, length about equal to width of car, ends not more than 3 in. from inside of stake pockets. Secure to car floor with six 60-D nails (Detail B).
D	2 each Item B. 2 each Item C. 4 each Item E. 2 each Alternate Item B. 4 each Alternate Item E.	Wood chock blocks: 4 in. × 6 in. × 8 in., cut to fit contour of pipe or wedge-shaped. Locate to contact pipe and nail to Items B, C, E, Alternate B, and/or Alternate E with five or six 16-D nails (Detail A, B, C, and E.) Alternate 6 in. × 4 in. 8 in. wood chock blocks may be used. *Secure with seven 16-D power-driven nails.
E	Minimum of 4 between tiers not nested.	Separators: 2 in. × 6 in. hardwood, length about equal to width of load and sufficient to apply Items D (Detail C). Separator: 6 in. × 6 in., hardwood or spruce, contoured to a maximum of 2 in. top and bottom may be used as an alternate.
F	As required.	Vertical separators: consisting of material such as plywood, hardwood, or hard rubber that will not easily compress. Use a minimum of two separators per row. Use optional (Detail D).

IMPLEMENTED 11/2015

Fig. 244 (Rev. 11/15) (Continued)
(New 10/73)

PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, SINGLE PILE—FLATCARS

Item	No. of. Pcs.	Description
G thru R	See banding tables on sketches.	High tension bands: 2 in. × .044 in. All bands passing around bottom of load must be placed close together to allow maximum free space between Items B and C or Alternate Items B.
G	See banding tables on sketches.	To encircle bottom two tiers.
H	"	To encircle bottom three tiers.
J	"	To encircle bottom four tiers.
K	"	To encircle tiers 2 and 3.
L	"	To encircle tiers 2, 3, and 4.
M	"	To encircle top tier only.
N	"	To encircle top two tiers.
O	"	To encircle top three tiers.
P	"	To encircle top four tiers.
Q	"	To encircle top five tiers.
R	"	To encircle all tiers.
S	3 per nested tier.	Protective material: use optional.
T		Vacant
U		Vacant
V		Vacant
W	3 per pile.	Tie-down assemblies: consisting of a ratchet and polyester woven straps 4 in. wide with 5,335-lb working load limit. 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. Not required for uncoated pipe or when pipe is loaded on cars equipped with bulkheads. Note: This application may be used only on sketches utilizing Item E separators between the bottom and second layers.
Alternate Items B and E		
Alt B	Minimum 4 per pile.	Bearing pieces: 6 in. × 6 in. minimum, hardwood, length about equal to width of car, contoured to fit pipe diameter ends not more than 3 in. from inside face of stake pockets. Secure to car floor with ten 8-in. spikes (Detail A).
Alt B1	Minimum 4 per pile.	Bearing pieces: 4 in. × 6 in. minimum, spruce, length about equal to width of car, contoured to fit pipe diameter ends not more than 3 in. from inside face of stake pockets. Secure to car floor with a minimum of ten 7-in. nails or two 3/4-in. bolts. Item D chocks optional (Detail A).
Alt E	Minimum 3 pair per tier not nested.	Separators: a pair is two pieces as shown in Detail E. Place at three locations throughout length of load, one pair adjacent to each end Item E and one pair adjacent to Item E nearest center of load. Use optional.

IMPLEMENTED 11/2015

Fig. 244 (Rev. 11/15) (Continued)
(New 10/73)

PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, SINGLE PILE—FLATCARS

Notes and Additional Requirements:

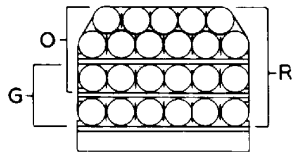
1. This figure is designed and intended for pipe lengths of 40 ft (±10 ft). Random-length variations are acceptable provided all other criteria of this figure are met (see Note 2).
2. Longer length pipe must be located on the bottom layer of the load. Place pipe shorter than 30 ft on the top two tiers. Length of pipe to be no less than 20 ft.
3. Bands shown are sufficient for loads up to 120,000 lb. Add one band of each designation, on load sketch used, for each additional 20,000 lb or less of load weight.
4. When short pipe lengths are loaded on the top two tiers (see Note 2), place two extra bands that encircle the top 2/3 of pile to include the shortest pipe length. A short length of pipe is defined as 10 ft less than the longest pipe.
5. Bearing pieces and separators, as shown, are sufficient for loads up to 140,000 lb. Add one additional bearing piece and separator for each additional 20,000 lb or less of load weight.
6. Bearing pieces may be extended beyond width of car deck to accommodate the application of Item D chock blocks. When this application is necessary, extended portion must be supported or the bearing piece size increased to 4 in. × 6 in.
7. Pipe must be centrally located on car at origin. Centerline of pipe must be within inside edge of car side sills. Coated pipe must have a minimum of 4 ft of void space and bare pipe a minimum of 3 ft of void space and bare pipe a minimum of 3 ft of void space between end of load and end of car, except on cars equipped with bulkheads.
8. When pipe is coated and/or wrapped, adequate padding or protection must be used to prevent chafing at bearing points. (Shipper's discretion to use as optional requirement.)
9. More pieces per tier (width of load) may be loaded if the same end configuration and number of bands required by all sketches are applied as indicated.
10. Sketches No. 26, 29, 34, 105, and 112 must be prepared with contoured chocks or bearing pieces.
11. All banding must be equally spaced throughout the entire pile.
12. Maximum two pipe lengths can be loaded end to end (double-ended) on the top two tiers. The distance between the pipe must be a minimum of 12 in. and a maximum of 24 in. Pipe that is double-ended can be no longer than the pieces directly beneath it.
13. Maximum two pipe lengths can be loaded end to end (double-ended) on the bottom layer and must be equal to the pipes above it. The distance between the pipe must be a minimum of 12 in. and a maximum of 24 in. Outside pipe must be a single piece and be the full length of the load.
14. Sweet gum is an acceptable substitute for hardwood in this figure.

Reference the General Rules in Section No. 1 of the *Open Top Loading Rules Manual* for additional details.

IMPLEMENTED 11/2015

Fig. 244 (Rev. 11/15) (Continued)
(New 10/73)

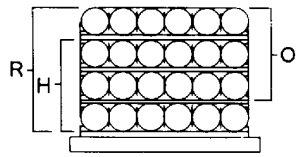
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, SINGLE PILE—FLATCARS



OUSIDE DIAMETER (S) 16"– 20"
NUMBER OF PIECES 23

G	H	J	K	L	M	N	O	P	Q	R
3							3			5

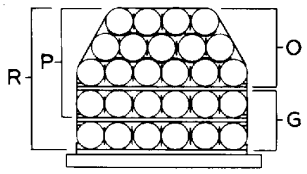
SKETCH NO. 1



OUTSIDE DIAMETER (S) 16"– 20"
NUMBER OF PIECES 24

G	H	J	K	L	M	N	O	P	Q	R
	4						4			5

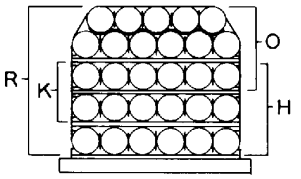
SKETCH NO. 2



OUTSIDE DIAMETER (S) 16"– 20"
NUMBER OF PIECES 27

G	H	J	K	L	M	N	O	P	Q	R
3							3	3		5

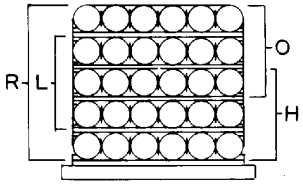
SKETCH NO. 3



OUTSIDE DIAMETER (S) 16"– 20"
NUMBER OF PIECES 29

G	H	J	K	L	M	N	O	P	Q	R
	3		3				3			5

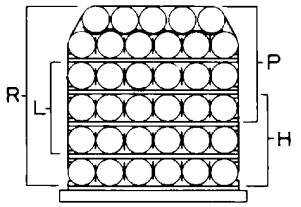
SKETCH NO. 4



OUTSIDE DIAMETER (S) 16"– 20"
NUMBER OF PIECES 30

G	H	J	K	L	M	N	O	P	Q	R
	3			3			3			5

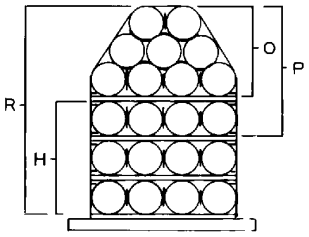
SKETCH NO 5



OUTSIDE DIAMETER (S) 16"– 20"
NUMBER OF PIECES 35

G	H	J	K	L	M	N	O	P	Q	R
	3			4				4		5

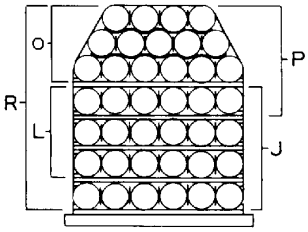
SKETCH NO 6



OUTSIDE DIAMETER (S) 16"– 26"
NUMBER OF PIECES 21

G	H	J	K	L	M	N	O	P	Q	R
	4						4	4		6

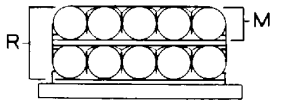
SKETCH NO 7



OUTSIDE DIAMETER (S) 16"– 20"
NUMBER OF PIECES 39

G	H	J	K	L	M	N	O	P	Q	R
		4		4			3	4		5

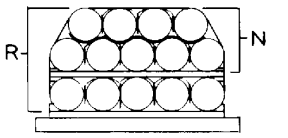
SKETCH NO. 8



OUTSIDE DIAMETER (S) 16"– 24"
NUMBER OF PIECES 10

G	H	J	K	L	M	N	O	P	Q	R
					6					6

SKETCH NO 9



OUTSIDE DIAMETER (S) 16"– 24"
NUMBER OF PIECES 14

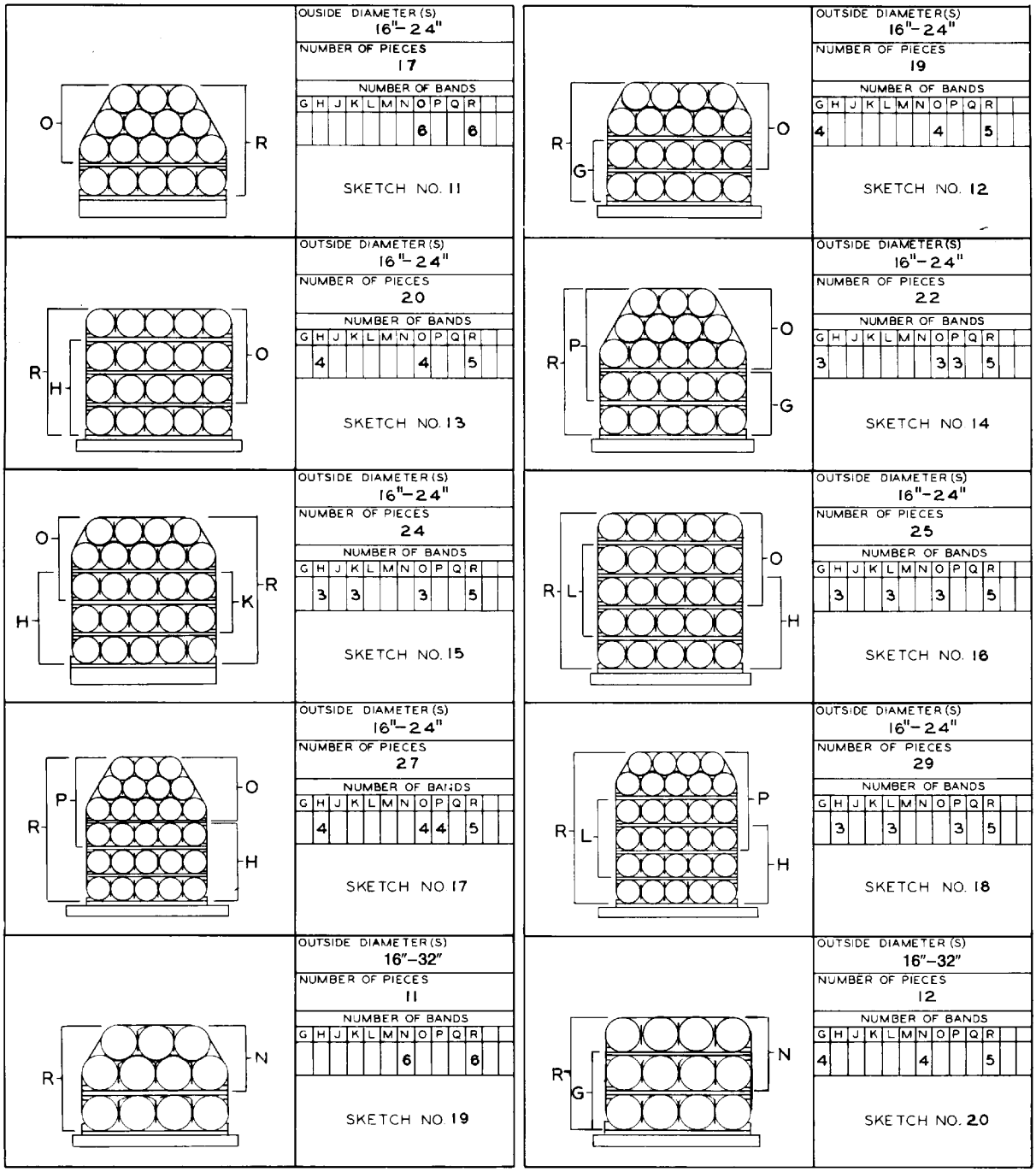
G	H	J	K	L	M	N	O	P	Q	R
						6				6

SKETCH NO. 10

IMPLEMENTED 11/2015

Fig. 244 (Rev. 11/15) (Continued)
(New 10/73)

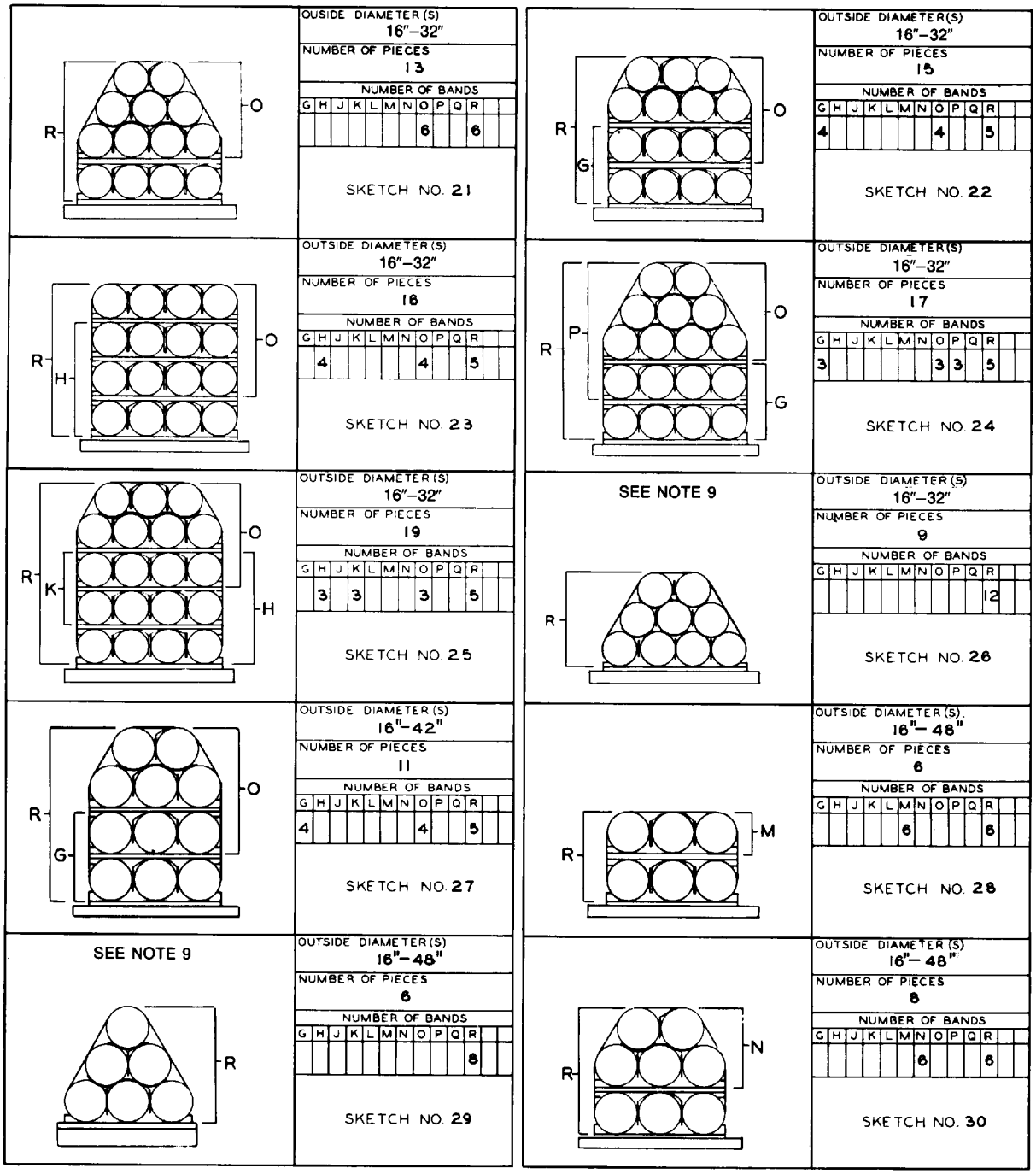
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, SINGLE PILE—FLATCARS



IMPLEMENTED 11/2015

Fig. 244 (Rev. 11/15) (Continued)
(New 10/73)

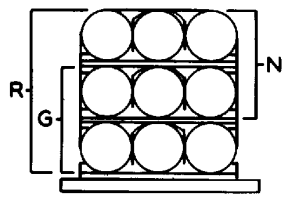
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, SINGLE PILE—FLATCARS



IMPLEMENTED 11/2015

Fig. 244 (Rev. 11/15) (Continued)
(New 10/73)

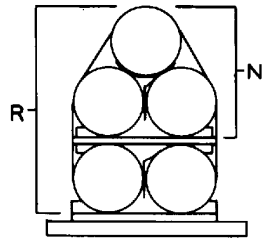
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, SINGLE PILE—FLATCARS



OUSIDE DIAMETER (S) 16"–48"
NUMBER OF PIECES 9

NUMBER OF BANDS													
G	H	J	K	L	M	N	O	P	Q	R			
4						4				5			

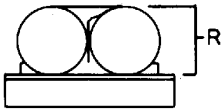
SKETCH NO. 31



OUTSIDE DIAMETER(S) 16"–54"
NUMBER OF PIECES 5

NUMBER OF BANDS													
G	H	J	K	L	M	N	O	P	Q	R			
						6				6			

SKETCH NO. 32

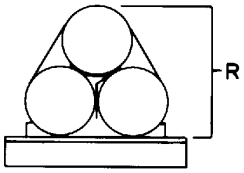


OUTSIDE DIAMETER(S) 16"–72"
NUMBER OF PIECES 2

NUMBER OF BANDS													
G	H	J	K	L	M	N	O	P	Q	R			
										4			

SKETCH NO. 33

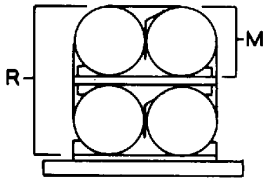
SEE NOTE 9



OUTSIDE DIAMETER(S) 16"– 72"
NUMBER OF PIECES 3

NUMBER OF BANDS													
G	H	J	K	L	M	N	O	P	Q	R			
										6			

SKETCH NO. 34



OUTSIDE DIAMETER (S) 16"– 72"
NUMBER OF PIECES 4

NUMBER OF BANDS													
G	H	J	K	L	M	N	O	P	Q	R			
					6					6			

SKETCH NO. 35

OUTSIDE DIAMETER (S)
NUMBER OF PIECES

NUMBER OF BANDS													
G	H	J	K	L	M	N	O	P	Q	R			

OUTSIDE DIAMETER (S)
NUMBER OF PIECES

NUMBER OF BANDS													
G	H	J	K	L	M	N	O	P	Q	R			

OUTSIDE DIAMETER (S)
NUMBER OF PIECES

NUMBER OF BANDS													
G	H	J	K	L	M	N	O	P	Q	R			

OUTSIDE DIAMETER (S)
NUMBER OF PIECES

NUMBER OF BANDS													
G	H	J	K	L	M	N	O	P	Q	R			

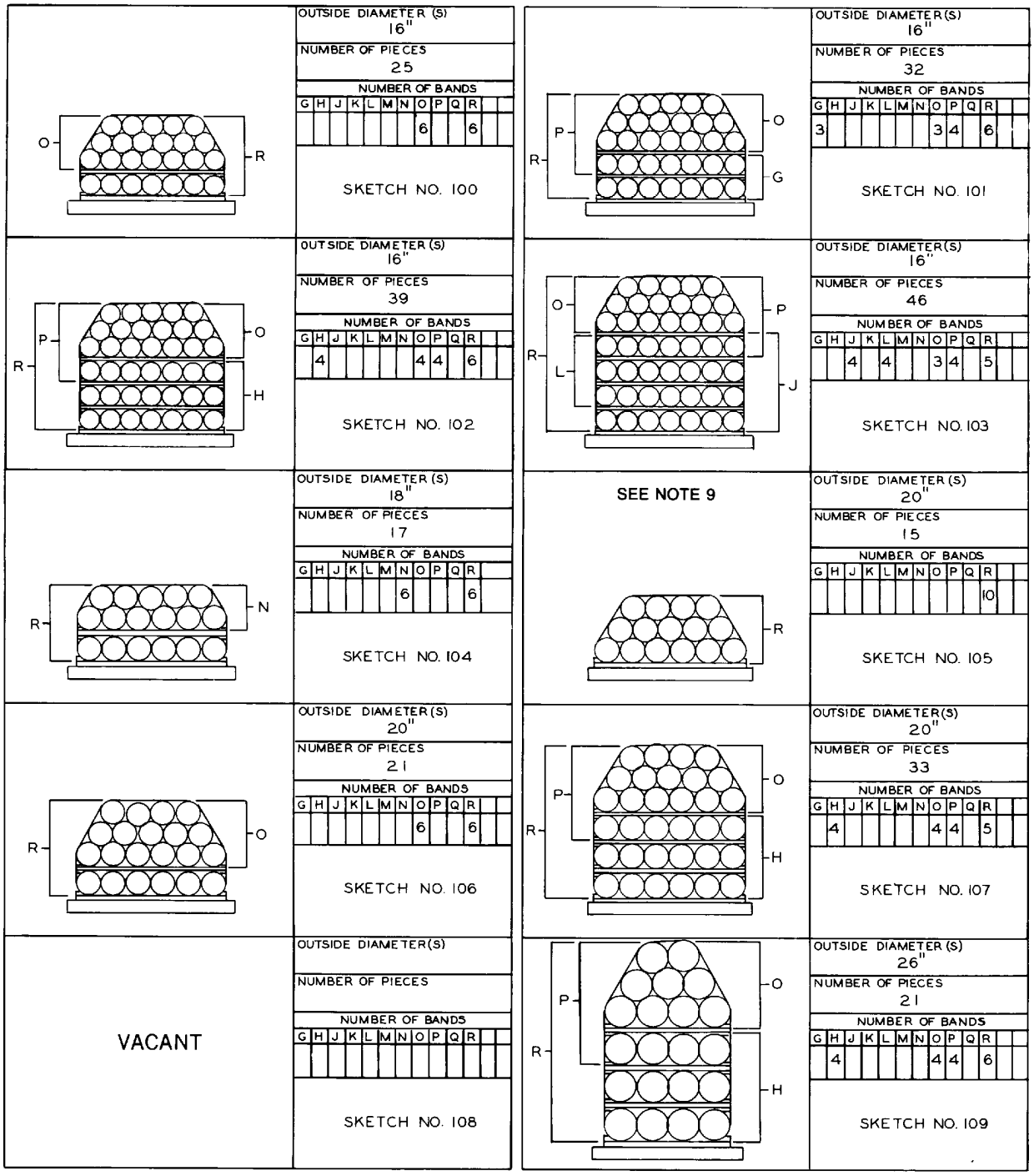
OUTSIDE DIAMETER (S)
NUMBER OF PIECES

NUMBER OF BANDS													
G	H	J	K	L	M	N	O	P	Q	R			

IMPLEMENTED 11/2015

Fig. 244 (Rev. 11/15) (Continued)
(New 10/73)

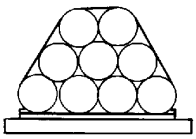
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, SINGLE PILE—FLATCARS



IMPLEMENTED 11/2015

Fig. 244 (Rev. 11/15) (Concluded)
(New 10/73)

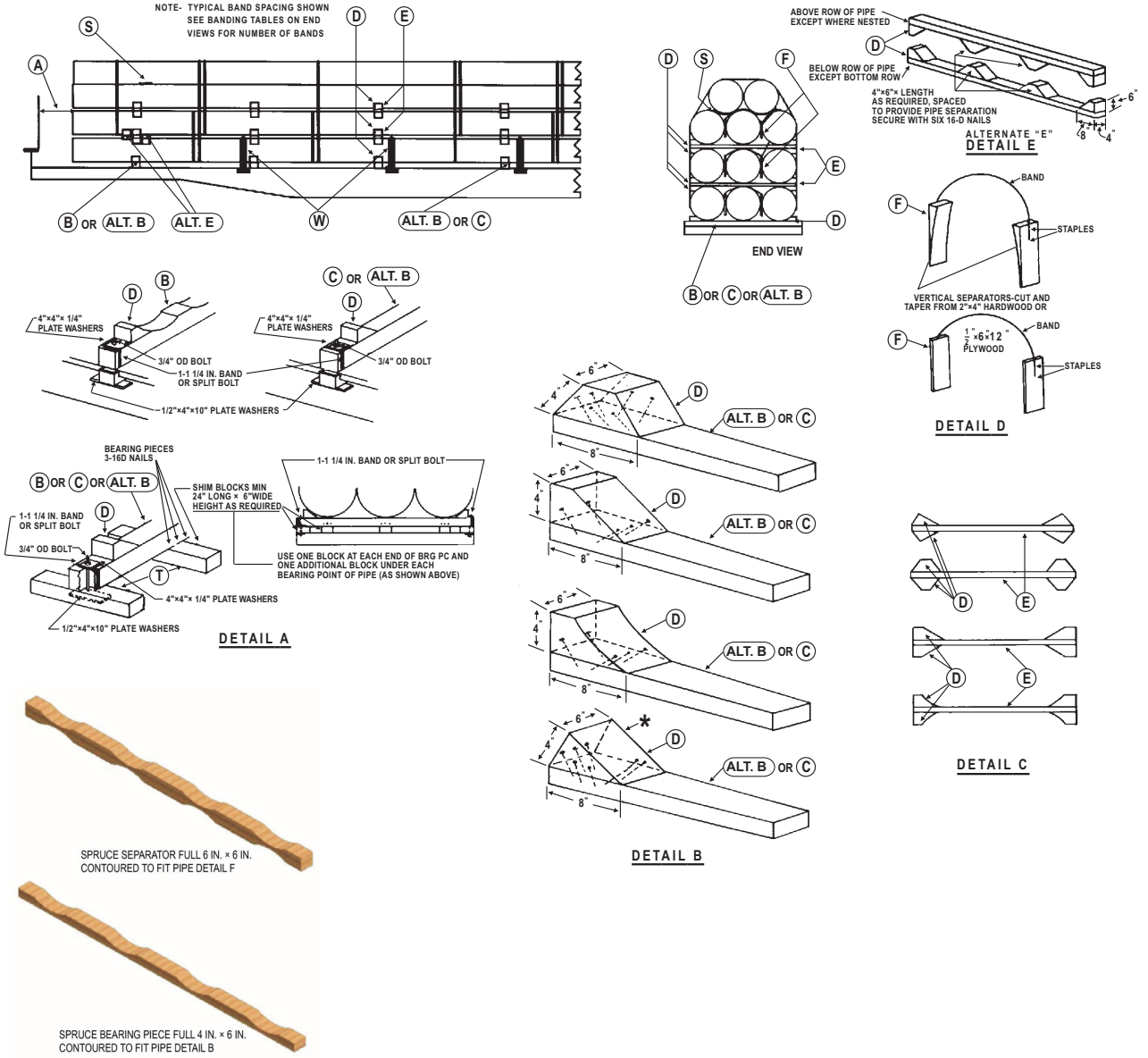
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, SINGLE PILE—FLATCARS

SKETCH OMITTED INTENTIONALLY	OUTSIDE DIAMETER (S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO. 110	SKETCH OMITTED INTENTIONALLY	OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO. 111
SEE NOTE 9 	OUTSIDE DIAMETER(S) 30" NUMBER OF PIECES 9 NUMBER OF BANDS G H J K L M N O P Q R 12 SKETCH NO. 112		OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.
	OUTSIDE DIAMETER (S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.		OUTSIDE DIAMETER (S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.
	OUTSIDE DIAMETER (S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.		OUTSIDE DIAMETER (S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.
	OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.		OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.

IMPLEMENTED 11/2015

Fig. 247 (Rev. 11/15)
(New 10/73)

PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, TWO PILES—FLATCARS, 85 FT TO 89 FT



IMPLEMENTED 11/2015

Fig. 247 (Rev. 11/15) (Continued)
(New 10/73)

PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, TWO PILES—FLATCARS, 85 FT TO 89 FT

Item	No. of Pcs.	Description
A		Brake wheel clearance: see General Rule 2 in Section 1 and Note 7 below.
B	2 per pile. (Not used with Alternate Item B-1 or Alternate Item B-2.)	End bearing pieces: 6 in. × 6 in. hardwood, length equal to width of car. Contour to fit pipe diameter. Secure with two 3/4-in.-diameter bolts. Bolts are also to pass through end Items T when used. Use a 1/2 in. × 4 in. × 10 in. plate on bottom of stake pocket or 1/2 in. × 4 in. × 18 in. plate under floor and a 1/4 in. × 4 in. × 4 in. washer on top of Item B. Where bolts are applied through stake pockets, they must be placed as close as possible to the inside face of the stake pocket (Detail A).
C	Minimum 2 per pile. (Not used with Alternate Item B-1 or Alternate Item C.)	Intermediate bearing pieces: 4 in. × 6 in. hardwood, length equal to width of car. Secure with three 3/4-in.-diameter bolts, one at each end and one as close as possible to center line of car. Hardwood, 6 in. × 6 in. or heavier to be secured with two 3/4-in.-diameter bolts, one at each end. Bolts are also to pass through end Items T when used. Plate washers are to be used in accordance with Item B. Where bolts are applied through stake pockets, they must be placed as close as possible to the inside face of the stake pocket (Detail A).
D	2 each Item B. 2 each Item C. 4 each Item E. 2 each Alternate Items B, B-2, and C. 4 each Alternate Item E.	Wood chock blocks: 4 in. × 6 in. × 8 in., cut to fit contour of pipe or wedge-shaped. Locate to contact pipe and nail to Items B, C, E, Alternate B and /or Alternate E with five or six 16-D nails. (Detail A, B, C, and E) Alternate 6 in. × 4 in. × 8 in. wood chock blocks may be used. *Secure with seven 16-D power-driven nails.
E	Minimum of 4 between tiers not nested.	Separators: 2 in. × 6 in., hardwood, length about equal to width of load and sufficient to apply Items D (Detail C). Separator: 6 in. × 6 in., hardwood or spruce, contoured to a maximum of 2 in. top and bottom may be used as an alternate.
F	As required.	Vertical separators: consisting of material such as plywood, hardwood, or hard rubber that will not easily compress. Use optional (Detail D).
G thru R	See banding tables on sketches.	High tension bands: 2 in. × .044 in. All bands passing around bottom of load must be placed as close together as possible to allow maximum free space between Items B and C or Alternate Items B.
G	"	To encircle bottom two tiers.
H	"	To encircle bottom three tiers.
J	"	To encircle bottom four tiers.
K	"	To encircle tiers 2 and 3.
L	"	To encircle tiers 2, 3, and 4.
M	"	To encircle top tier only.
N	"	To encircle top two tiers.
O	"	To encircle top three tiers.
P	"	To encircle top four tiers.
Q	"	To encircle top five tiers.
R	"	To encircle all tiers.
S	3 per nested tier.	Protective material: use optional.
T	As required.	Shim blocks: minimum 6 in. wide, 24 in. long, height as required. Use one at each end of Items B, C, or Alternate Item B and one for each row of pipe. Secure end Item T with bolts used to secure Items B, C, or Alternate B. Secure intermediate Items T with six 16-D nails (Detail A).
U		Vacant
V		Vacant

IMPLEMENTED 11/2015

Fig. 247 (Rev. 11/15) (Continued)
(New 10/73)

PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, TWO PILES—FLATCARS, 85 FT TO 89 FT

Item	No. of Pcs.	Description
W	3 per pile.	Tie-down assemblies: consisting of a ratchet and polyester woven straps 4 in. wide with 5,335-lb working load limit. 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. Not required for uncoated pipe or when pipe is loaded on cars equipped with bulkheads. Note: This application may be used only on sketches utilizing Item E separators between the bottom and second layers.
Alternate securement items		
Alt B-1	Minimum 4 per pile. (Not used with Alternate Items B-2 and C.)	All bearing pieces: 4 in. × 6 in. hardwood, length equal to width of car. Secure with three 3/4-in.-diameter bolts, one at each end and one as close as possible to center line of car. Hardwood, 6 in. × 6 in. or heavier, to be secured with two 3/4-in.-diameter bolts, one at each end. Bolts are also to pass through end Items T when used and must be applied according to Item B (Detail A).
Alt B-1A	Minimum 7 per pile. (Not used with Alternate Items B-2 and C.)	All bearing pieces: 4 in. × 6 in., spruce, contoured 2 in. deep to fit radius of pipe, length equal to width of car. Secure with ten 7-in. nails or with three 3/4-in.-diameter bolts, one at each end and one as close as possible to centerline of car. Item D chocks optional (Detail A).
Alt B-2	Minimum 2 per pile. (Use with Alternate Item C.)	End bearing pieces: 4 in. × 6 in. hardwood, length equal to width of car. Contour to fit pipe diameter and secure to car floor with ten 60-D nails. May be substituted with 2 in. × 6 in. hardwood, noncontoured, with Item D chock blocks applied on each side of each piece of pipe. Secure each bearing piece to car floor with eight 40-D nails.
Alt C	Minimum 2 per pile. (Use with Alternate Item B-2.)	Intermediate bearing pieces: 2 in. × 6 in. hardwood, length equal to width of car. Secure to car floor with six 20-D nails.
Alt E	Minimum 3 pair per tier not nested.	Separators: a pair is two pieces as shown in Detail E. Place at three locations throughout length of load, one pair adjacent to each end Item E and one pair adjacent to Item E nearest center of load. Use optional.

Notes and Additional Requirements:

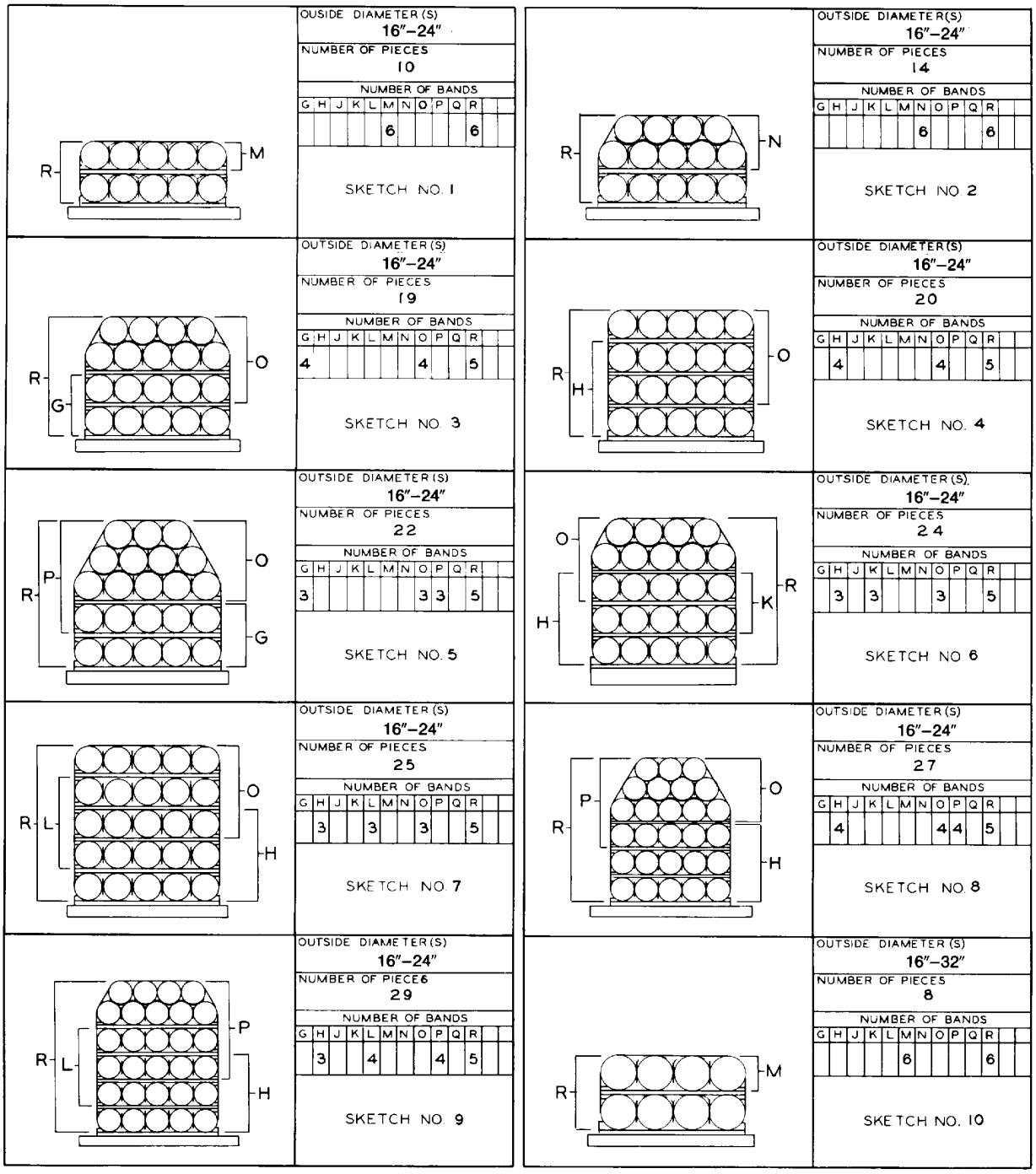
1. This figure is designed and intended for pipe lengths of 40 ft (±10 ft). Random-length variations are acceptable provided all other criteria of this figure are met (see Note 2).
2. Longer length pipe must be located on the bottom layer of the load. Place pipe shorter than 30 ft on the top two tiers. Length of pipe to be no less than 20 ft.
3. Bands are sufficient for single pile weights to 120,000 lb.
4. When short pipe lengths are loaded on the top two tiers (see Note 2), place two extra bands that encircle the top 2/3 of pile to include the shortest pipe length. A short length of pipe is defined as 10 ft less than the longest pipe.
5. Bearing pieces and separators are sufficient for each pile up to 140,000 lb. Add one additional bearing piece and separator for each additional 20,000 lb or less of load weight.
6. Bearing pieces may be extended beyond width of car deck to accommodate the application of Item D chock blocks. When this application is necessary, extended portion must be supported or the bearing piece size increased to 4 in. × 6 in.
7. Pipe must be centrally located on car at origin. Center line of pipe must be within inside edge of car side sills. Coated pipe must have a minimum of 4 ft of void space and bare pipe a minimum of 3 ft of void space between end of load and end of car, except on cars equipped with bulkheads.
8. Minimum space between piles, 10 in.
9. When pipe is coated and/or wrapped, adequate padding or protection must be used to prevent chafing at bearing points. (Shipper's discretion to use as optional requirement.)
10. More pieces per tier (width of load) may be loaded if the same end configuration and number of bands required by all sketches are applied as indicated.
11. Sketches No. 19, 22, 26, 101, 104, 105, 106, 108, and 111 must be prepared with contoured chocks or bearing pieces.
12. All banding must be equally spaced throughout the entire pile.
13. Sweet gum is an acceptable substitute for hardwood in this figure.

Reference the General Rules in Section No. 1 of the *Open Top Loading Rules Manual* for additional details.

IMPLEMENTED 11/2015

Fig. 247 (Rev. 11/15) (Continued)
(New 10/73)

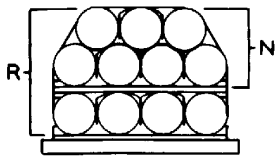
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, TWO PILES—FLATCARS, 85 FT TO 89 FT



IMPLEMENTED 11/2015

Fig. 247 (Rev. 11/15) (Continued)
(New 10/73)

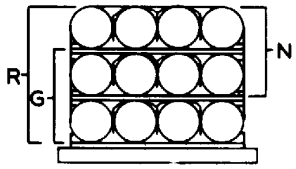
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, TWO PILES—FLATCARS, 85 FT TO 89 FT



OUSIDE DIAMETER (S): 16″–32″
NUMBER OF PIECES: 11

G	H	J	K	L	M	N	O	P	Q	R
						6				6

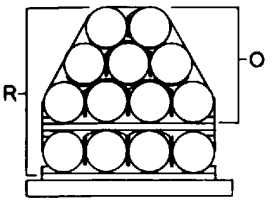
SKETCH NO. 11



OUTSIDE DIAMETER(S): 16″–32″
NUMBER OF PIECES: 12

G	H	J	K	L	M	N	O	P	Q	R
4						4				5

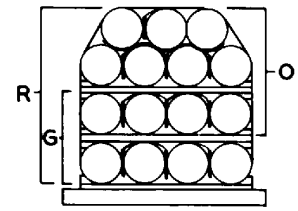
SKETCH NO. 12



OUTSIDE DIAMETER (S): 16″–32″
NUMBER OF PIECES: 13

G	H	J	K	L	M	N	O	P	Q	R
							6			6

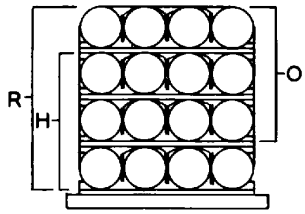
SKETCH NO. 13



OUTSIDE DIAMETER(S): 16″–32″
NUMBER OF PIECES: 15

G	H	J	K	L	M	N	O	P	Q	R
4							4			5

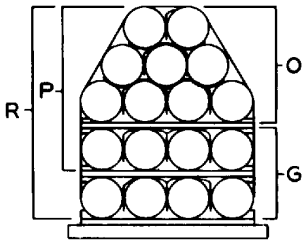
SKETCH NO. 14



OUTSIDE DIAMETER(S): 16″–32″
NUMBER OF PIECES: 16

G	H	J	K	L	M	N	O	P	Q	R
	4						4			5

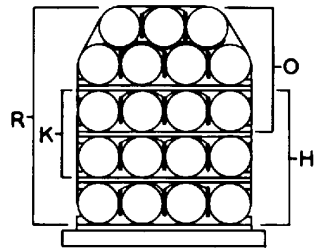
SKETCH NO. 15



OUTSIDE DIAMETER (S): 16″–32″
NUMBER OF PIECES: 17

G	H	J	K	L	M	N	O	P	Q	R
3							3	3		5

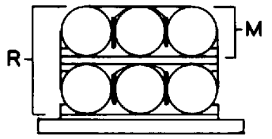
SKETCH NO. 16



OUTSIDE DIAMETER (S): 16″–32″
NUMBER OF PIECES: 19

G	H	J	K	L	M	N	O	P	Q	R
3		3					3			5

SKETCH NO. 17

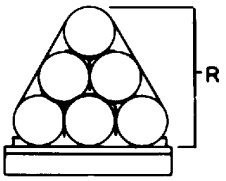


OUTSIDE DIAMETER (S): 16″–48″
NUMBER OF PIECES: 6

G	H	J	K	L	M	N	O	P	Q	R
					6					6

SKETCH NO. 18

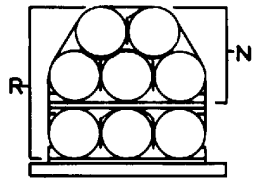
SEE NOTE 10



OUTSIDE DIAMETER (S): 16″–48″
NUMBER OF PIECES: 6

G	H	J	K	L	M	N	O	P	Q	R
										6

SKETCH NO. 19



OUTSIDE DIAMETER (S): 16″–48″
NUMBER OF PIECES: 8

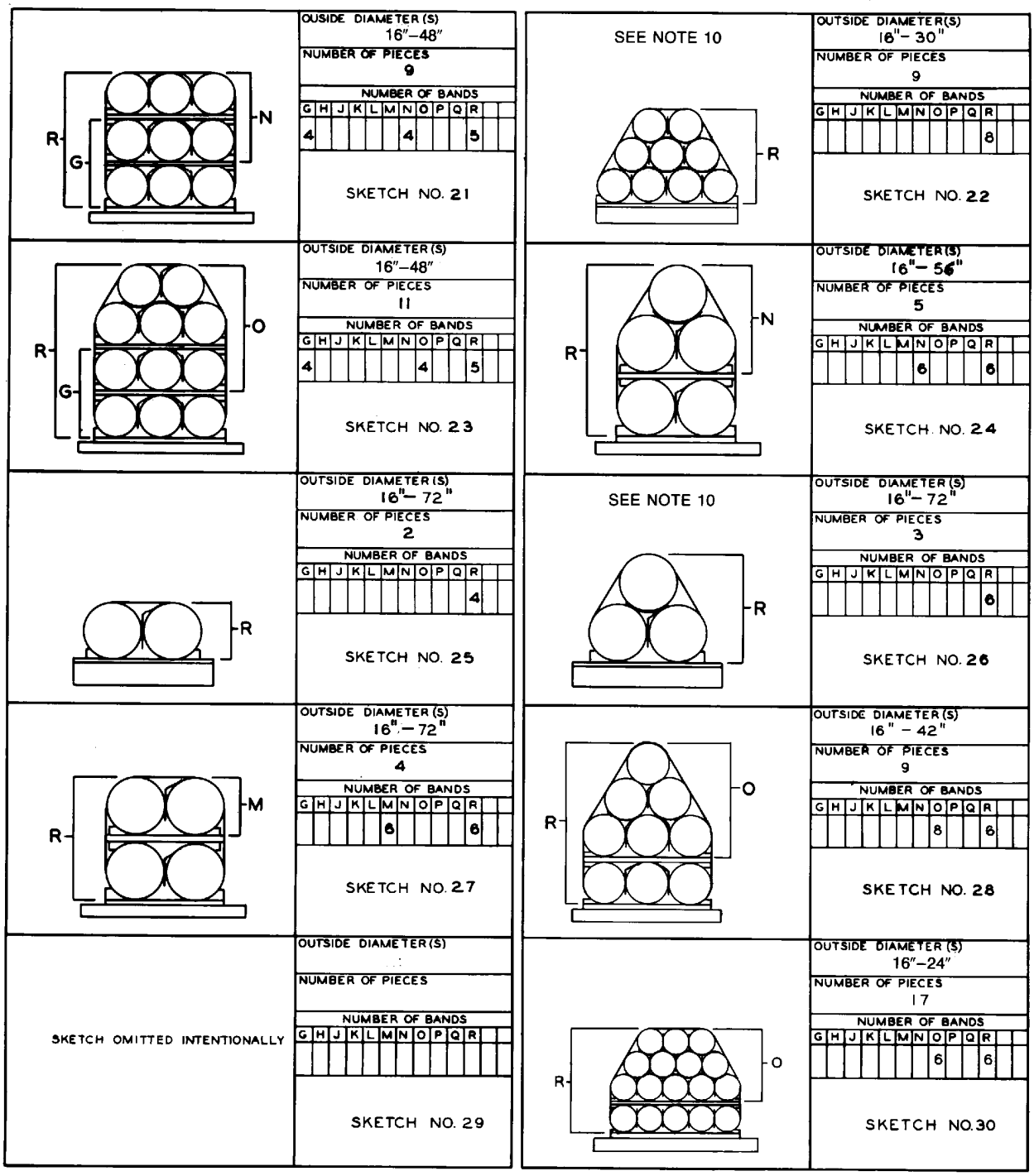
G	H	J	K	L	M	N	O	P	Q	R
						6				6

SKETCH NO. 20

IMPLEMENTED 11/2015

Fig. 247 (Rev. 11/15) (Continued)
(New 10/73)

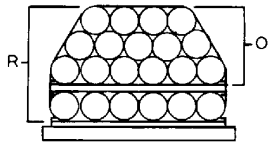
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, TWO PILES—FLATCARS, 85 FT TO 89 FT



IMPLEMENTED 11/2015

Fig. 247 (Rev. 11/15) (Continued)
(New 10/73)

PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, TWO PILES—FLATCARS, 85 FT TO 89 FT

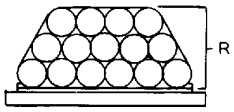


OUTSIDE DIAMETER(S) 16"–18"
NUMBER OF PIECES 21

G	H	J	K	L	M	N	O	P	Q	R
							6			6

SKETCH NO. 100

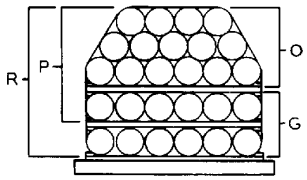
SEE NOTE 10



OUTSIDE DIAMETER(S) 16"–18"
NUMBER OF PIECES 15

G	H	J	K	L	M	N	O	P	Q	R
										10

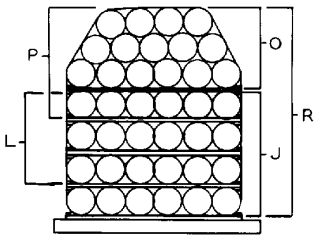
SKETCH NO. 101



OUTSIDE DIAMETER(S) 16"–18"
NUMBER OF PIECES 27

G	H	J	K	L	M	N	O	P	Q	R
3							3	3		5

SKETCH NO. 102

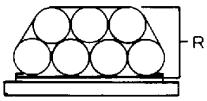


OUTSIDE DIAMETER(S) 16"–18"
NUMBER OF PIECES 39

G	H	J	K	L	M	N	O	P	Q	R
		4		4			4	4		5

SKETCH NO. 103

SEE NOTE 10

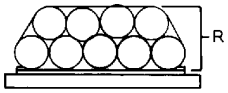


OUTSIDE DIAMETER(S) 16"–24"
NUMBER OF PIECES 7

G	H	J	K	L	M	N	O	P	Q	R
										10

SKETCH NO. 104

SEE NOTE 10

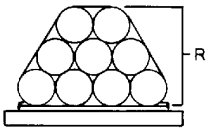


OUTSIDE DIAMETER(S) 16"–20"
NUMBER OF PIECES 9

G	H	J	K	L	M	N	O	P	Q	R
										10

SKETCH NO. 105

SEE NOTE 10



OUTSIDE DIAMETER(S) 16"–24"
NUMBER OF PIECES 9

G	H	J	K	L	M	N	O	P	Q	R
										12

SKETCH NO. 106

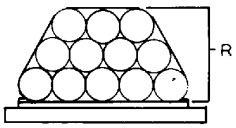
VACANT

OUTSIDE DIAMETER(S)
NUMBER OF PIECES

G	H	J	K	L	M	N	O	P	Q	R

SKETCH NO. 107

SEE NOTE 10



OUTSIDE DIAMETER(S) 16"–20"
NUMBER OF PIECES 12

G	H	J	K	L	M	N	O	P	Q	R
										12

SKETCH NO. 108

VACANT

OUTSIDE DIAMETER(S)
NUMBER OF PIECES

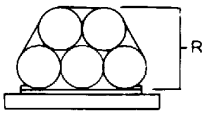
G	H	J	K	L	M	N	O	P	Q	R

SKETCH NO. 109

IMPLEMENTED 11/2015

Fig. 247 (Rev. 11/15) (Concluded)
(New 10/73)

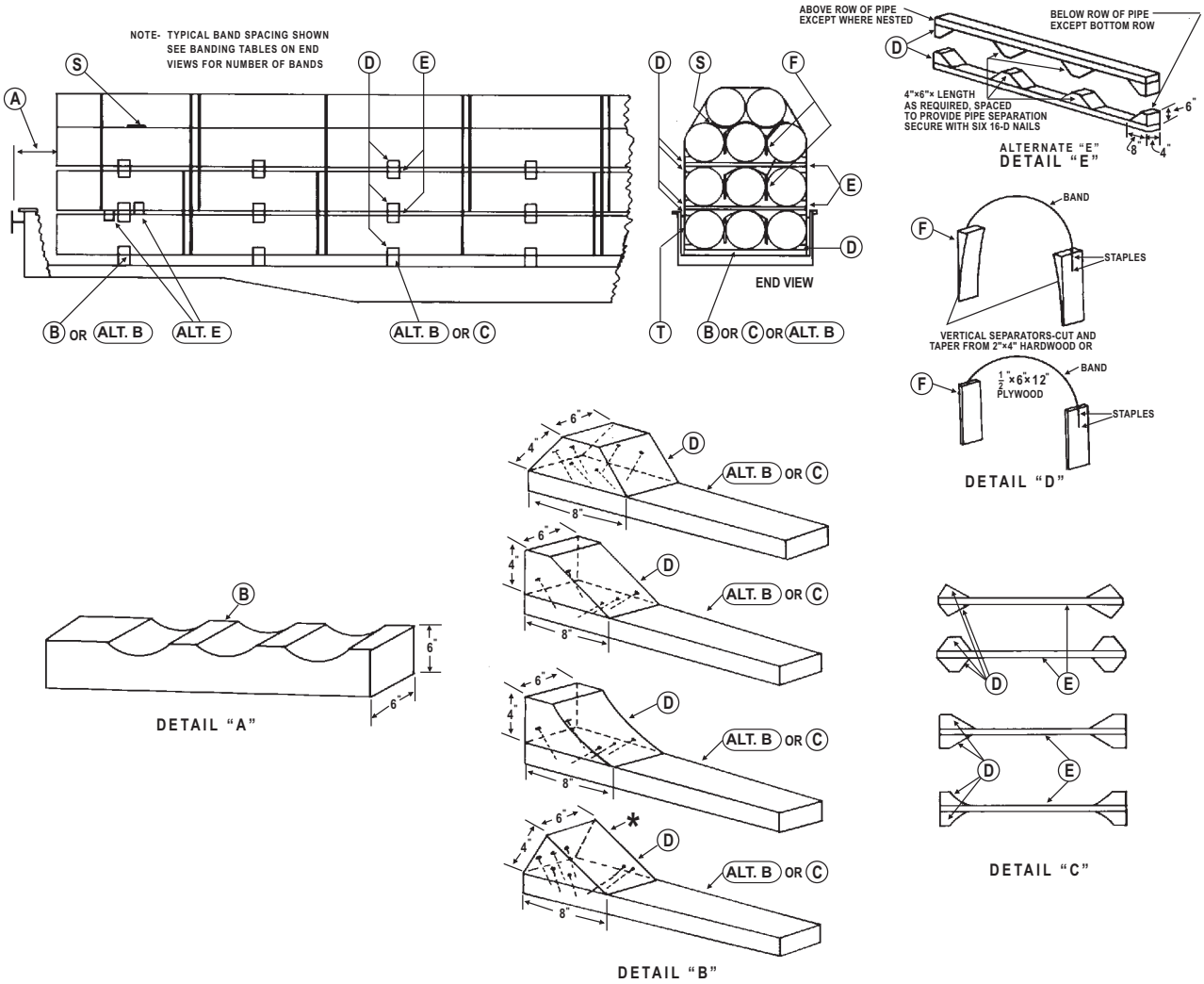
PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 72 IN. O.D., 40 FT LONG, TWO PILES—FLATCARS, 85 FT TO 89 FT

VACANT	OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO. 110	SEE NOTE 10  	OUTSIDE DIAMETER(S) 16"–48" NUMBER OF PIECES 5 NUMBER OF BANDS G H J K L M N O P Q R 10 SKETCH NO. 111
	OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.		OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.
	OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.		OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.
	OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.		OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.
	OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.		OUTSIDE DIAMETER(S) NUMBER OF PIECES NUMBER OF BANDS G H J K L M N O P Q R SKETCH NO.

IMPLEMENTED 11/2015

Fig. 260 (Rev. 10/15
(New 10/73)

PIPE, STEEL, BARE, COATED, OR WRAPPED, 16 IN. TO 54 IN. O.D., 60 FT LONG, SINGLE PILE—GONDOLAS, 65 FT



Item	No. of Pcs.	Description
A		Brake wheel clearance: see General Rule 2 in Section 1.
B	2 per pile. (Not used with Alternate Item B.)	End bearing pieces: 6 in. × 6 in. minimum, hardwood, length about equal to width of car, contoured to fit pipe diameter, ends not more than 3 in. for inside face of stake pockets. Secure to car floor with ten 8-in. spikes (Detail A).
C	Minimum 2 per pile. (Not used with Alternate Item B.)	Intermediate bearing piece: 4 in. × 6 in. minimum, hardwood, length about equal to width of car, ends not more than 3 in. from side of car (Detail B).
D	2 each Item C. 4 each Item E. 2 each Alternate Item B. 4 each Alternate Item E.	Wood chock blocks: 4 in. × 6 in. × 8 in., cut to fit contour of pipe or wedge-shaped. Locate to contact pipe and nail to Items C, E, Alternate B, and/or Alt E with five or six 16-D nails (Detail B, C, and E). Alternate 6 in. × 4 in. × 8 in. chock blocks may be used. *Secure with seven 16-D power-driven nails.
E	Minimum of 4 between tiers not nested.	Separator: 2 in. × 6 in. hardwood, length about equal to width of load and sufficient to apply Item D (Detail C). Separator: 6 in. × 6 in. contoured to a maximum of 2 in. top and bottom may be used as an alternate.
F	As required.	Vertical separators: consisting of material such as plywood, hardwood, or hard rubber that will not easily compress. Use a minimum of three separators per row. Use optional (Detail D).

IMPLEMENTED 11/2015