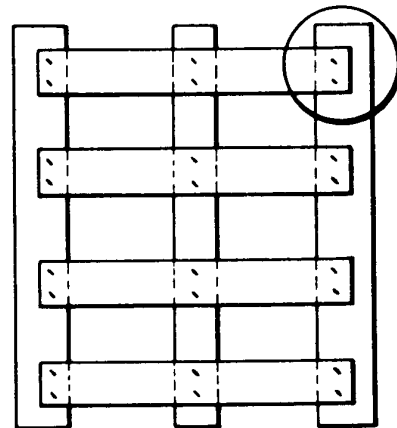


design facts

Volume 1 Number 9

Wirebound boxes and crates



STITCHING BASES standard limitations

- design
- quality
- manufacture



▪ Rockaway, New Jersey

STANDARD LIMITATIONS

FOR STITCHING BASES

Design Facts No. 6 deals with some *Styles of Bases* and the methods of attaching those bases to container blanks.

Design Facts No. 9 goes one step further and deals with three types of limitations that influence bases *stitched* on the BF-5T and BF-7T Top and Base machines. These are DESIGN, QUALITY, and MACHINE LIMITATIONS.

Design Limitations include the amount of overhang on various styles of bases and the size of staples used. All staples are normally driven through both slats and battens and adequately clinched. Not less than two staples are used where a *weight-bearing* slat and a batten join. A *non-weight-bearing* slat and a batten may be held together with one staple if other slats provide all of the resistance to distortion during handling and transportation.

WBA-148, Tables 10 and 11, show minimum width of slats and battens (or skids) to carry a specific weight of contents.

Quality Limitations are those minimum widths of slats and battens and the staple position, below which the base would not be a satisfactorily manufactured product. For example, if staples were closer to the edges or ends of slats or battens than specified in the illustrations on the following pages, splitting of slats or battens might result, or the staple legs might protrude. Staples normally are centered between edges of battens. Minimum width of batten - 7/8" - is another "Quality Limitation".

On the following pages, six bases are illustrated and identified according to the type of blank with which they are used. These bases are:

1. Used with conventional type blank having single row of bottom cleats. (Page 3)
2. Used with blank having double row of bottom cleats. (Page 4)
3. Used with blank having interrupted row of cleats near bottom row. (Page 5)
4. Used with blank having bottom row

5. Used with blank whose entire bottom row of cleats and slats rests on base. (Page 7)
6. Used with blank whose alternate bottom cleats and slats rest on base; others rest on floor. (Page 7)

The arrangement of slats and battens on each of these six bases is not necessarily typical, but does provide Design and Quality Limitations that cover nearly every possible combination of weight-bearing and non-weight-bearing slats.

Machine Limitations (BF-5T and BF-7T Top and Base Machines) not evident from the illustrations mentioned above, are:

- a. The minimum spacing of slats is 1/4" apart (slats can also be run flush, one against another).
- b. Maximum combined thickness of slat and batten is 2-1/2" (with special equipment - 4-3/8").
- c. Maximum length of board (perpendicular to direction of travel through the machine) is:
*48" on 48" BF-5T or BF-7T
*72" on 72" BF-5T or BF-7T
- d. Staple spacing - 1" to 2-1/2". As staple length is increased, staple spacing must be decreased.
- e. Maximum length staple - 1-7/8".

**May be exceeded by special arrangement.*

Applications involving the bases shown on these pages may be found in

Minimum Width of Batten and Minimum Size Staple

Combined thickness of faceboards and battens	Groups I & II Woods		Group III Woods		Group IV Woods	
	Minimum size of staple	Minimum width of batten	Minimum size of staple	Minimum width of batten	Minimum size of staple	Minimum width of batten
3/4" to 13/16"	7/8" - 16°	7/8"*	7/8" - 16°	7/8"*	7/8" - 16°	7/8"*
7/8" to 15/16"	1" - 16°	7/8"*	1" - 16°	7/8"*	1" - 16°	7/8"*
1" to 1-1/16"	1-1/8" - 16°	7/8"*	1-1/8" - 16°	7/8"*	1-1/8" - 16°	7/8"*
1-1/8" to 1-3/16"	1-1/4" - 15°	1-1/8"	1-1/4" - 14°	1-1/8"	1-1/4" - 14°	1-1/4"
1-1/4" to 1-5/16"	1-3/8" - 15°	1-1/8"	1-3/8" - 14°	1-1/8"	1-3/8" - 14°	1-3/8"
1-3/8" to 1-7/16"	1-5/8" - 15°	1-1/8"	1-5/8" - 14°	1-1/8"	1-5/8" - 14°	1-1/2"
1-1/2" to 1-11/16"	1-3/4" - 15°	1-1/8"	1-3/4" - 14°	1-1/8"	1-3/4" - 14°	1-1/2"
1-3/4" to 1-7/8"	1-7/8" - 14°	1-1/8"	1-7/8" - 14°	1-1/8"	1-7/8" - 14°	1-1/2"

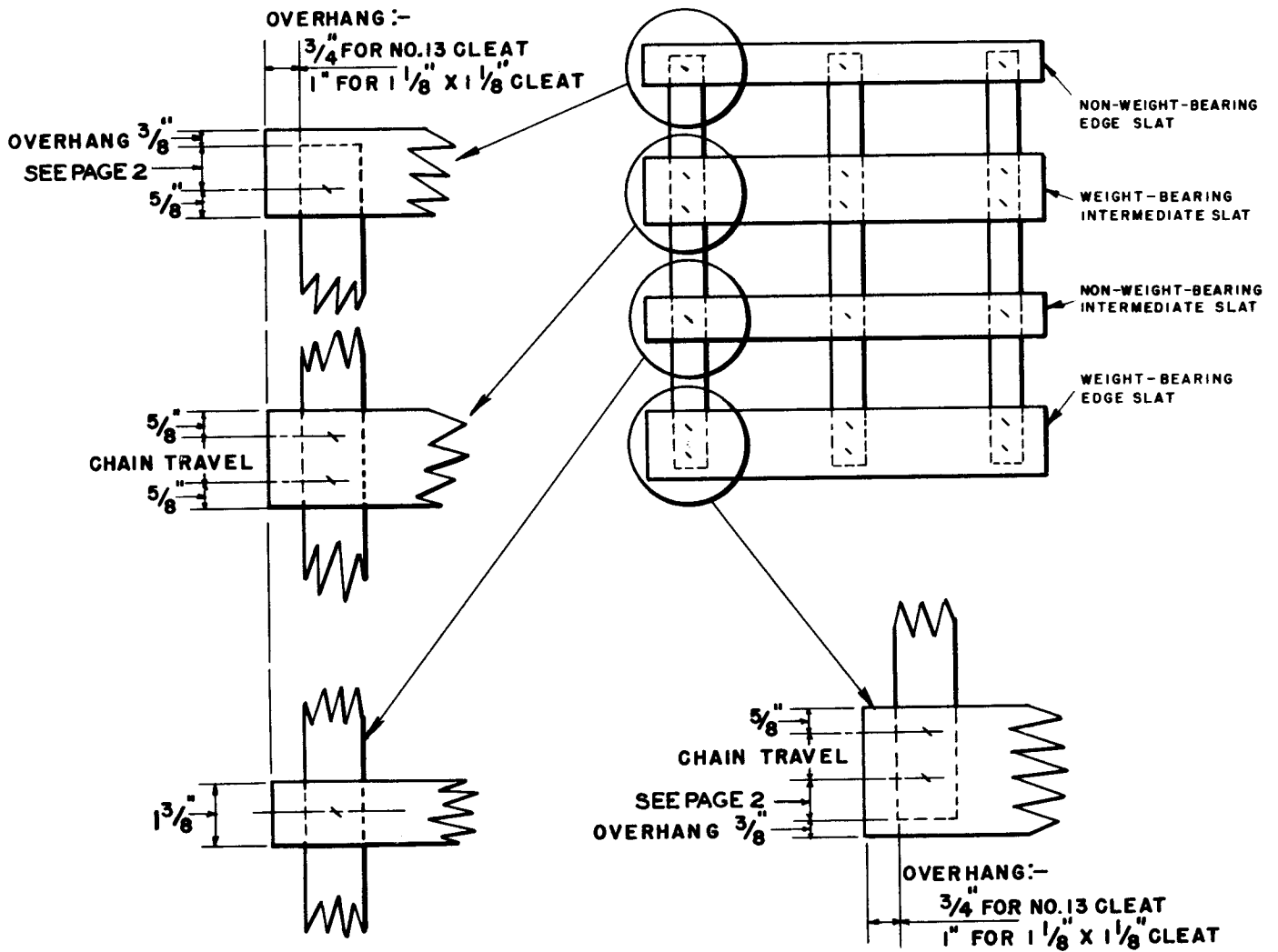
*If 30° sticher is used, the minimum width is 15/16".

Distance of First Staple From End of Batten

Length of staple	Distance from end of batten
7/8"	3/4"
1" to 1-1/8"	7/8"
1-1/4"	1"
1-3/8" to 1-7/8"	1-1/8"

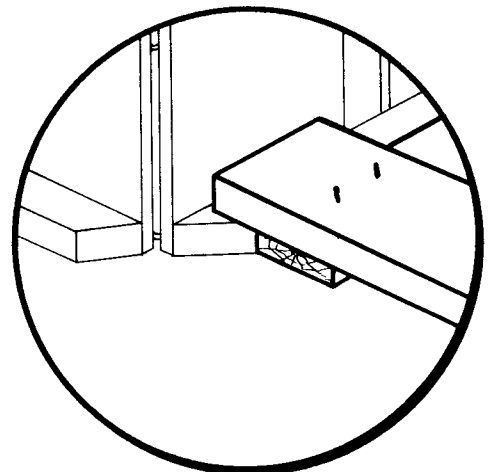
BASE...

Used with conventional type blank having single row of bottom cleats



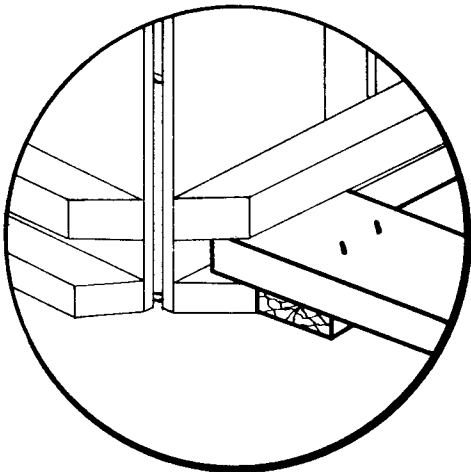
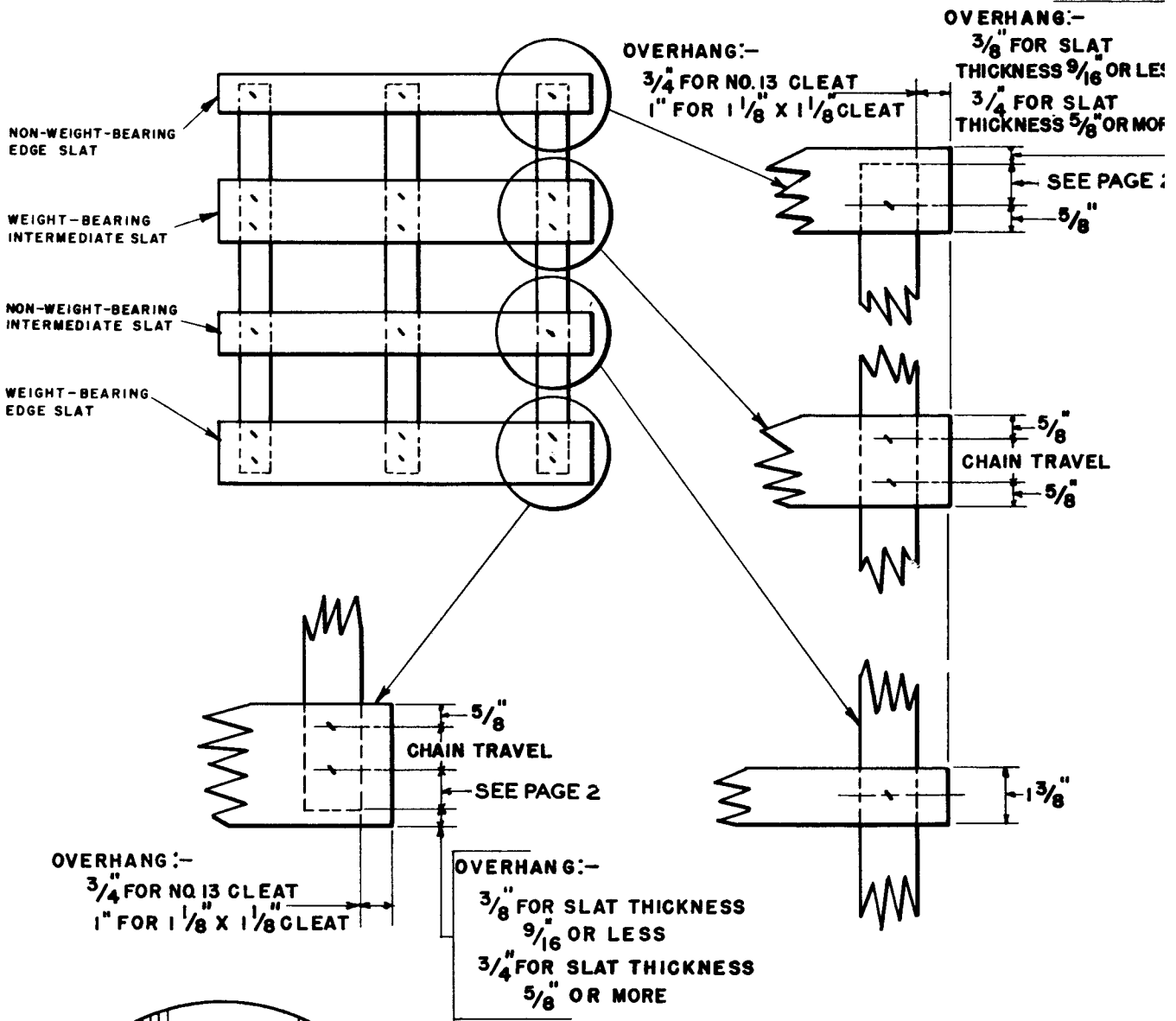
Notes

1. Overhang dimensions are DESIGN limitations.
2. All other dimensions are *minimum* QUALITY limitations.
3. See Design Facts No. 6 (page 5, top) for application of this design.



BASE...

Used with blank having double row of bottom cleats

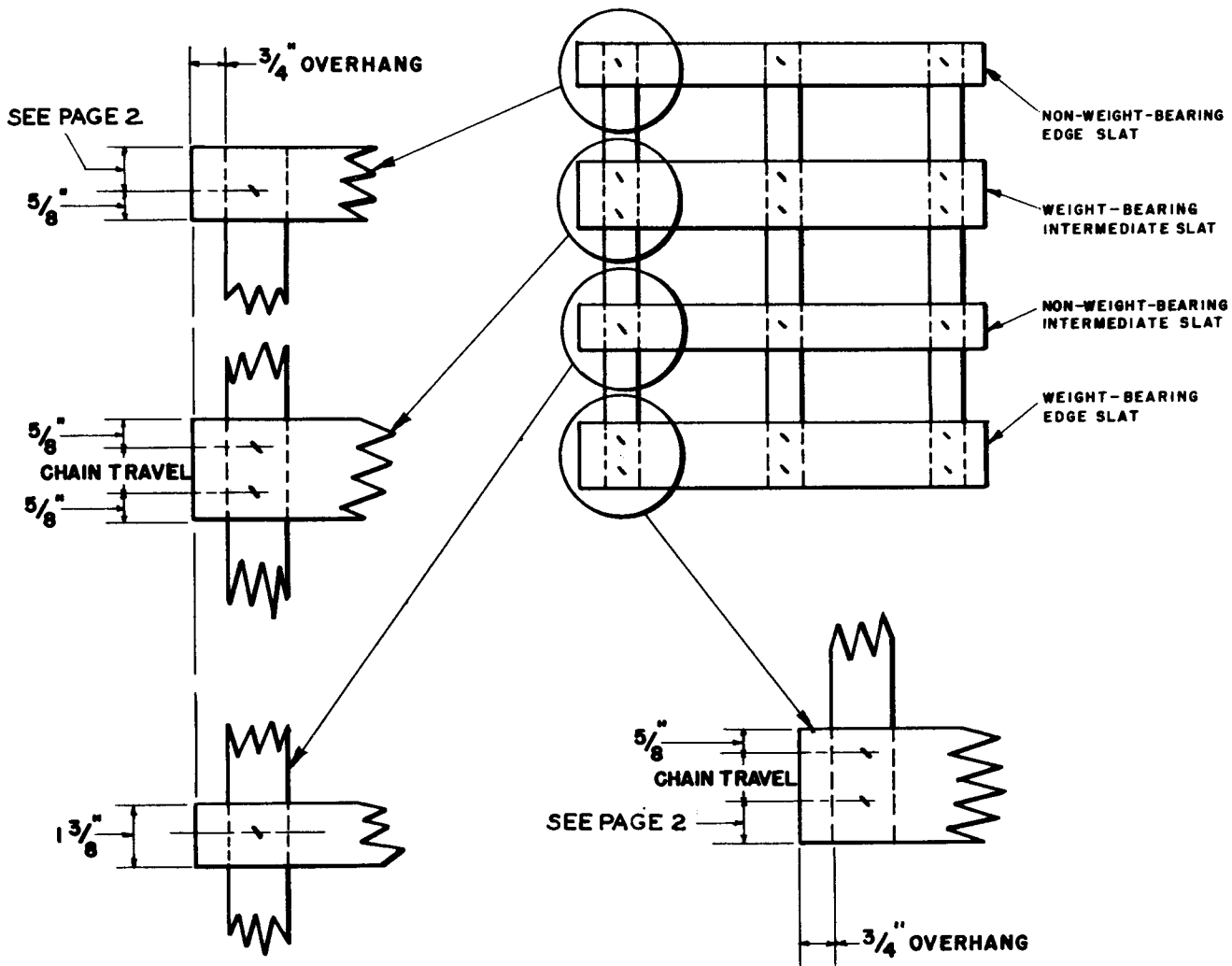


Notes

1. Overhang dimensions are DESIGN limitations.
2. All other dimensions are *minimum* QUALITY limitations.
3. See Design Facts No. 6 (page 5, bottom) for application of this design.

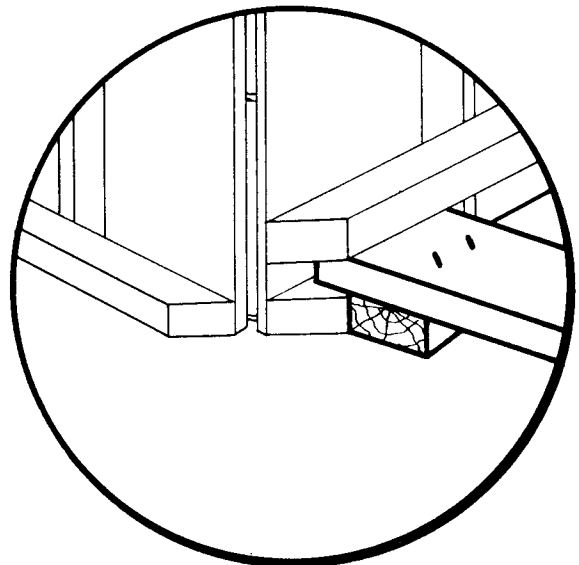
BASE...

Used with blank having * interrupted row of cleats near bottom row



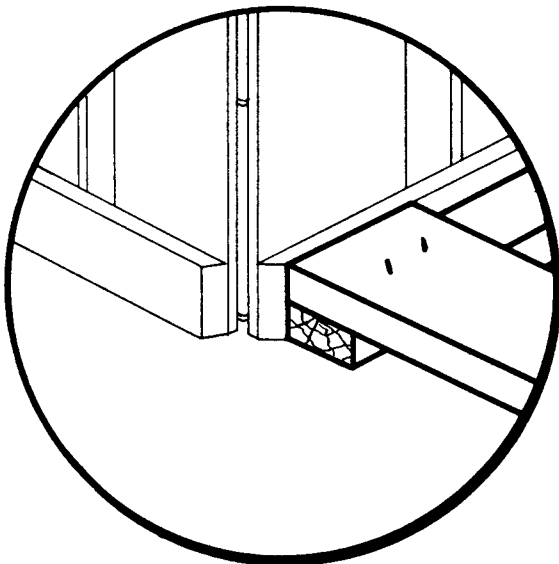
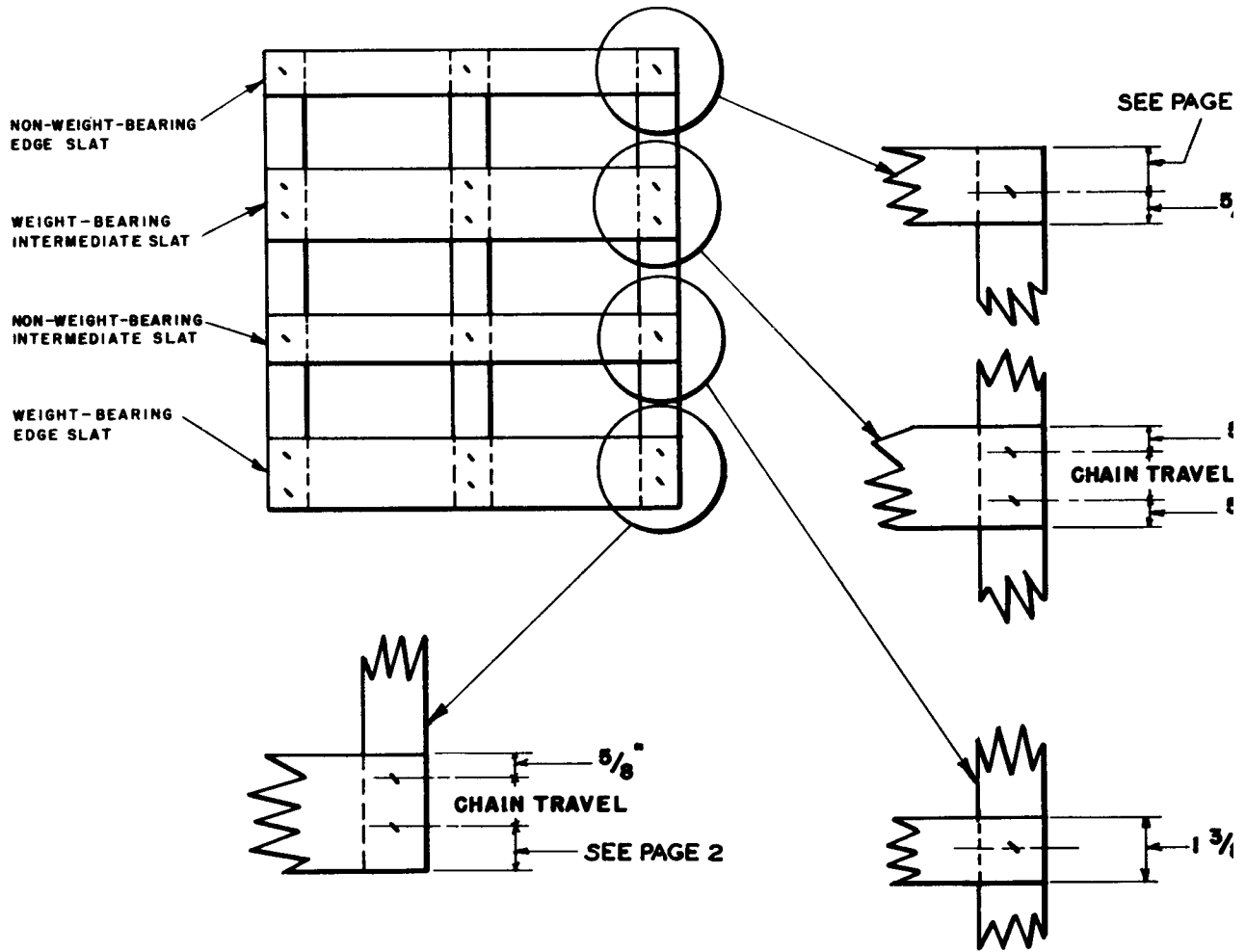
Notes

1. Overhang dimensions are DESIGN limitations.
2. All other dimensions are *minimum* QUALITY limitations.
3. See Design Facts No. 6 (page 4) for application of this design.



BASE...

**Used with blank having
bottom row of wide cleats**

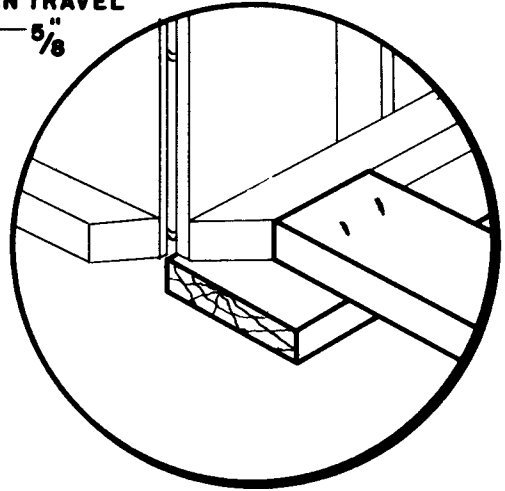
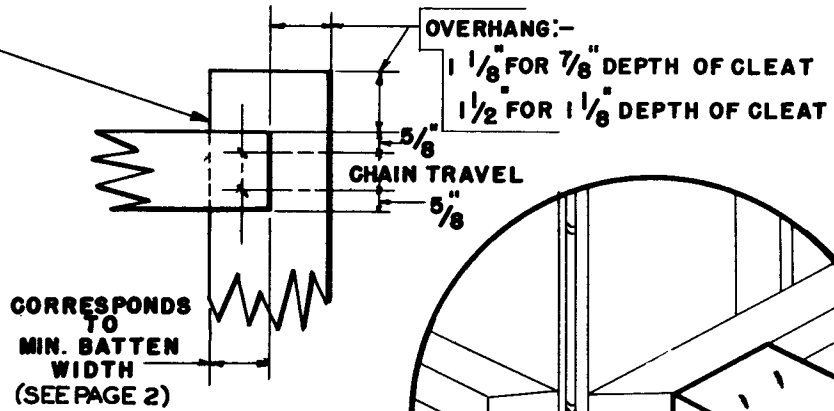
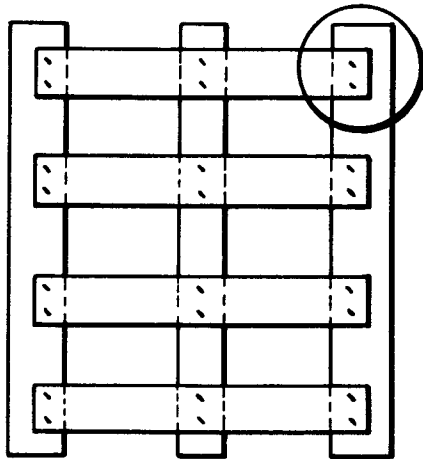


Notes

1. All dimensions are *minimum* QUALITY limitations.
2. See Design Facts No. 6 (page 3) for application of this design.

Used with blank whose entire
bottom row of cleats and slats
rest on base

BASE...



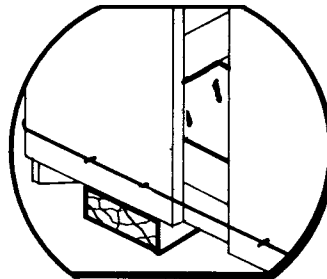
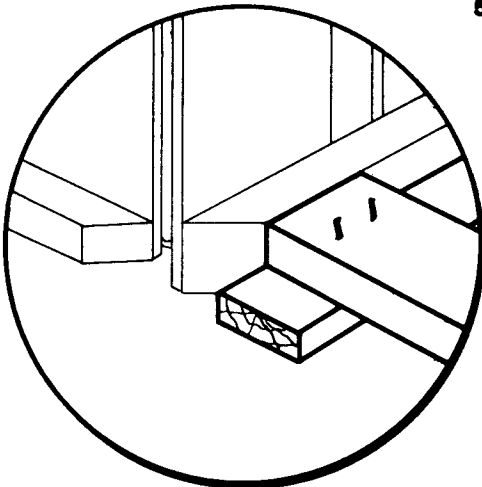
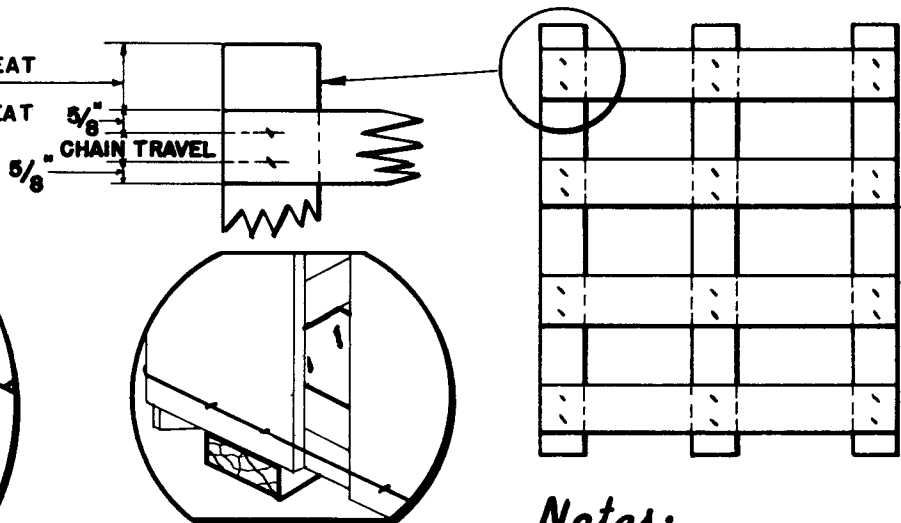
Notes

1. Overhang dimensions are DESIGN limitations.
2. All other dimensions are *minimum* QUALITY limitations.

Used with blank whose alternate
bottom cleats and slats
rest on base; others rest on floor

BASE...

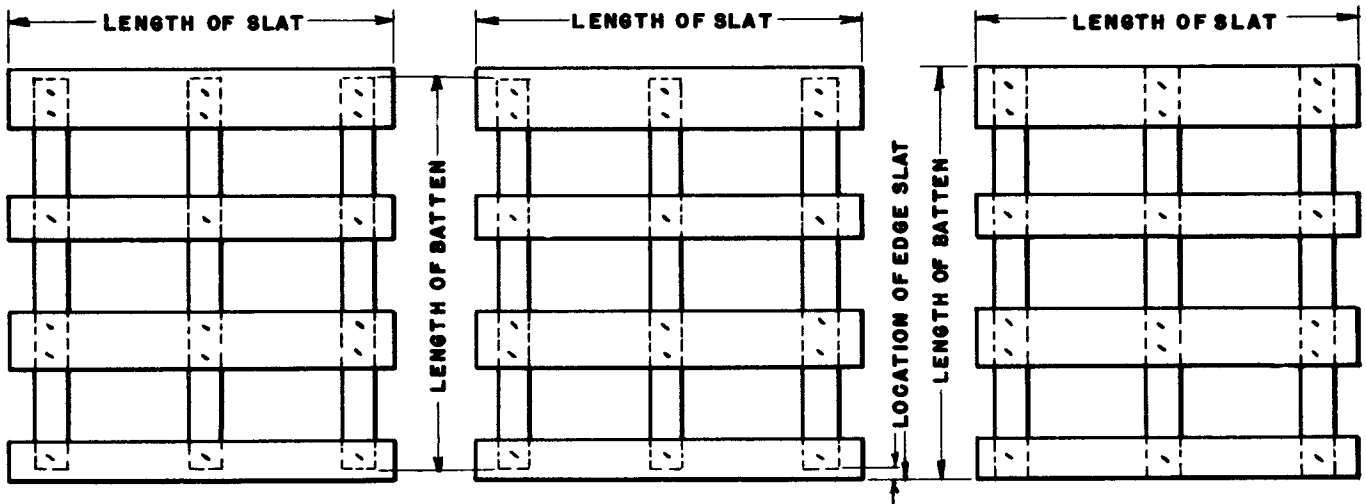
OVERHANG:-
 $1 \frac{1}{8}$ " FOR $\frac{7}{8}$ " DEPTH OF CLEAT
 $1 \frac{1}{2}$ " FOR $1 \frac{1}{8}$ " DEPTH OF CLEAT



Notes:

1. Overhang dimensions are DESIGN limitations.

FIGURING CUTTING SIZES OF MATERIALS



BASE NO. 1

used with conventional type blank having single row of bottom cleats.

BASE NO. 2

used with blank having double row of bottom cleats.

BASE NO. 3

used with blank having interrupted row of cleats near bottom row.

Battens should fit against bottom cleats of blank on edges and ends. Slats should clear slats of blank inside the box by 1/8" on length, and more on width.

A. Length of Batten

The length of batten is equal to the length of cleat (parallel to batten) minus twice the depth of cleat.

TOLERANCE: $-1/16"$

Example: For cleats $7/8"$ deep: minus $1-3/4"$ (Tol. $-1/16"$)

B. Location of Batten

The position of battens is determined by setting up the assembly operation so battens fit against cleats of blank.

C. Length of Slat

The length of slat is equal to length of cleat (parallel to slat) minus $1/4"$.

TOLERANCE: $\pm 1/16"$

D. Location of Edge Slat

Base No. 1 and No. 2:

Edge slat overhangs ends of battens by $3/8"$ when slat thickness is $9/16"$ or less; edge slat overhangs ends of battens by $3/4"$ when slat thickness is $5/8"$ or more.

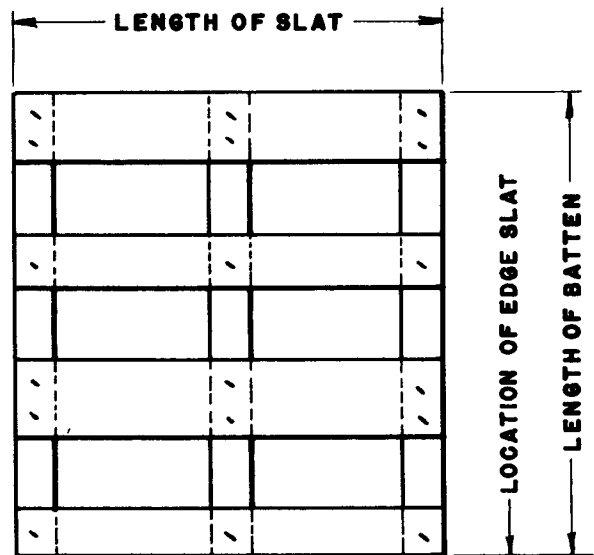
Base No. 3:

Edge slats are flush ($0"$ overhang) with ends of battens.

BASE NO. 4

used with blank having bottom row of wide cleats.

Battens and slats should fit against the wide bottom cleat of the blank on edges and ends.



A. Length of Batten

The length of batten is equal to the length of cleat (parallel to batten) minus twice the depth of cleat.

TOLERANCE: $-1/8$ "

B. Location of Batten

The position of battens is determined by setting up the assembly operation so battens fit against cleats.

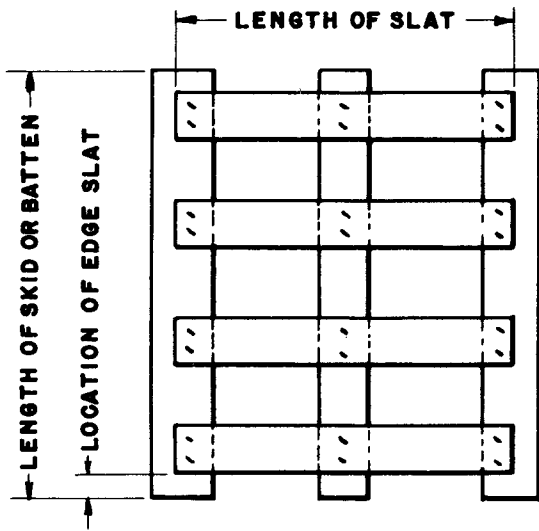
C. Length of Slat

Length of slat is equal to length of cleat (parallel to slat) minus twice cleat depth.

TOLERANCE: $-1/8$ "

D. Location of Edge Slat

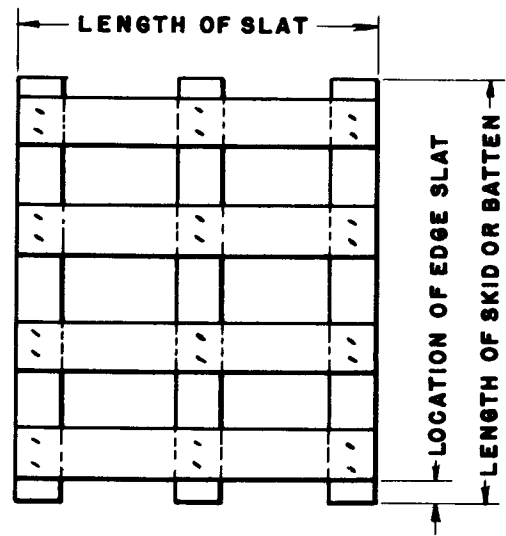
Edge slats are flush (0" overhang) with ends of battens.



BASE NO. 5

used with blank whose entire bottom row of cleats and slats rest on skids or battens of base.

Edges and ends of slats on base fit against cleats on blank.



BASE NO. 6

used with blank whose alternate bottom cleats and slats rest on skids or battens; others rest on floor.

Ends of slats and edges of skids or battens fit against wide bottom cleats on blank; edges of slats fit against other bottom cleats on blank.

A. Length of Skid or Batten

The length of skid or batten is equal to the length of cleat (parallel to it) plus 2-1/2" for 7/8" depth of cleat, or plus 3" for 1-1/8" depth of cleat.

TOLERANCE: -1/16"

B. Location of Skids or Battens

The position of skids or battens is determined by setting up the assembly operation so cleats on blank fit against slats on base.

C. Length of Slat

The length of slat is equal to the length of cleat (parallel to it) minus twice cleat depth.

TOLERANCE: -1/8"

D. Location of Edge Slat

Edge slats are set back from ends of battens by 1-1/8" when depth of cleat is 7/8". Edge slats are set back from ends of battens by 1-1/2" when depth of cleat is 1-1/8".