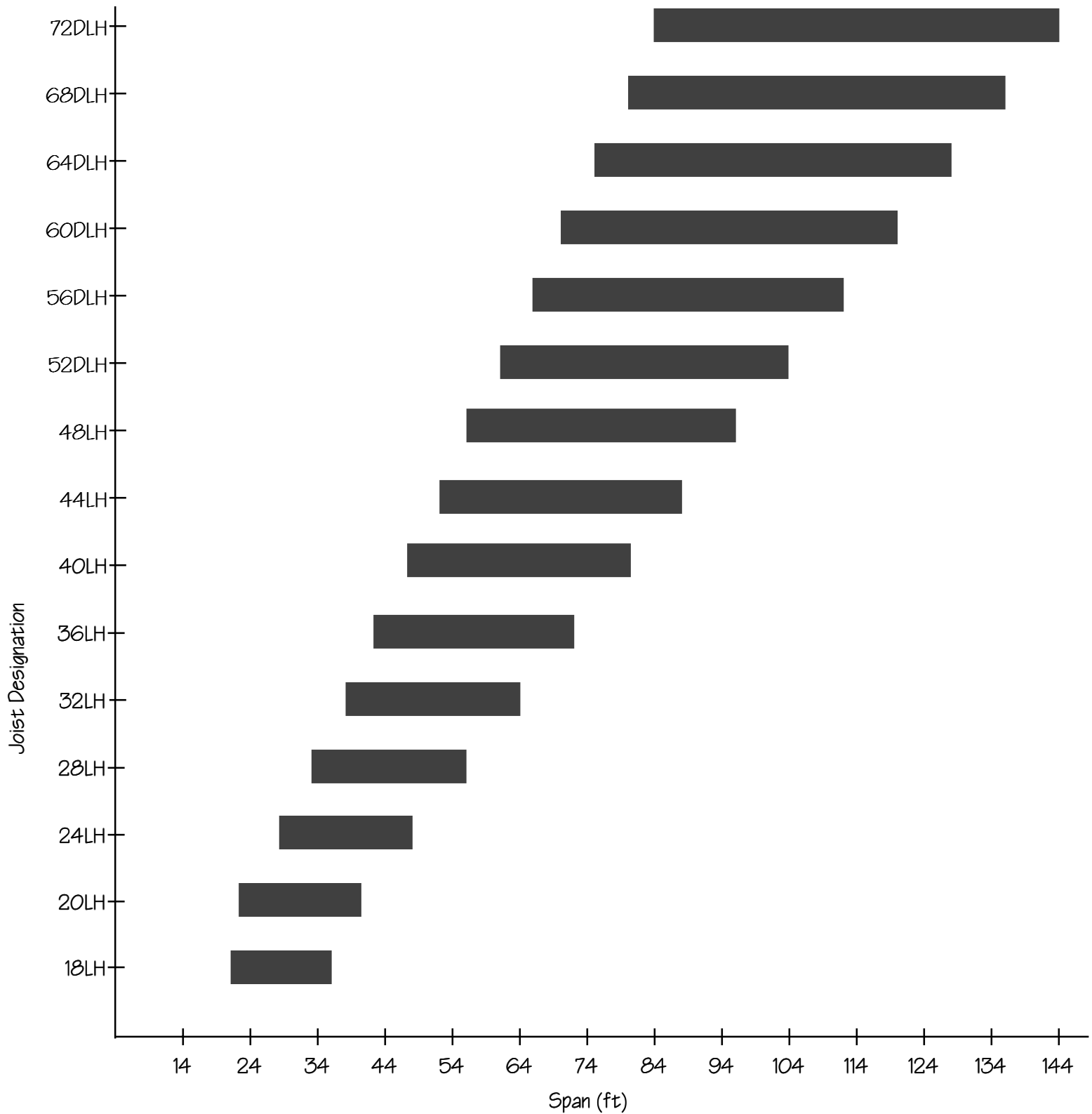


#### Assumptions:

1. These spans are based upon the SJI Specification, dated 1998.
2. Floors: Based upon 100 psf LL and 50 psf DL, the spacing of joists is between 1.67 ft o.c. and 3.67 ft o.c.
2. Roofs: Based upon 30 psf LL and 20 psf DL, the spacing of joists is between 4.0 ft o.c. and 11 ft o.c.

## Approximate Span Table for K-Series Open Web Joists



**Assumptions:**

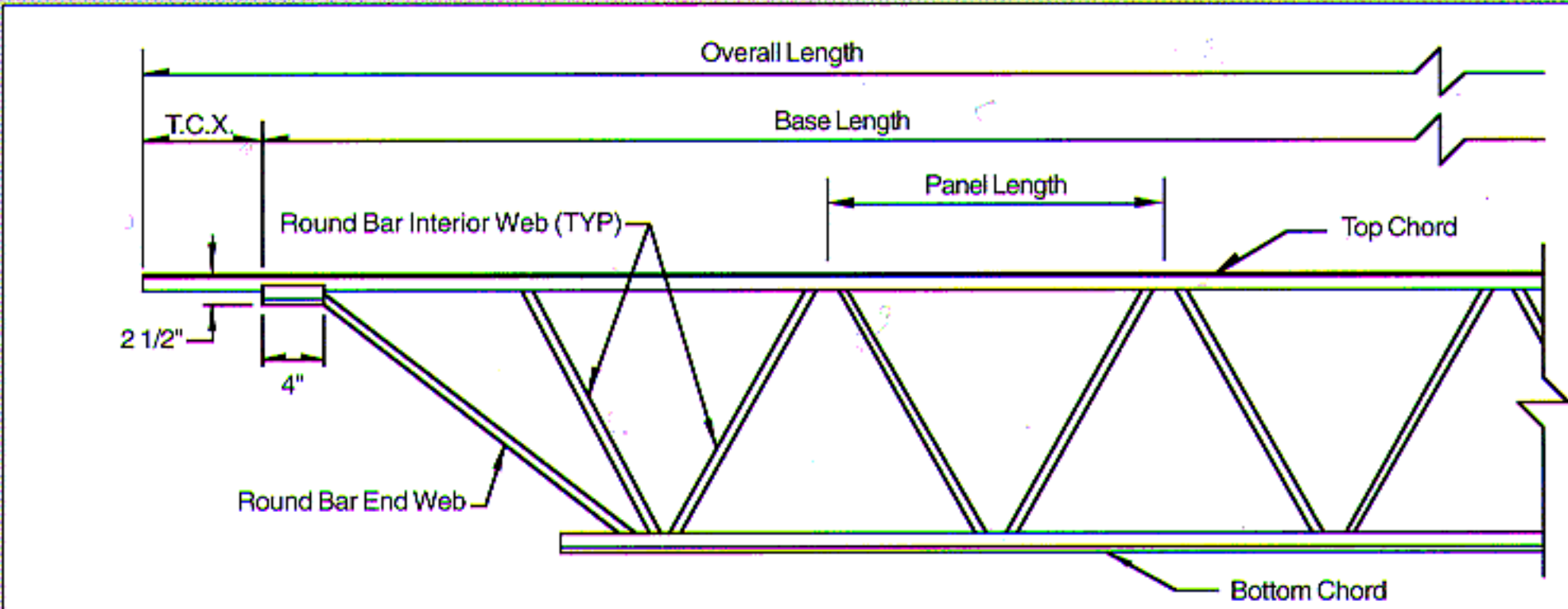
1. These spans are based upon the SJI Specification, dated 1998.
2. Floors: Based upon 100 psf LL and 50 psf DL, the spacing of joists is between 2.5 ft o.c. and 3.8 ft o.c.
2. Roofs: Based upon 30 psf LL and 20 psf DL, the spacing of joists is between 4.0 ft o.c. and 11 ft o.c.

## Approximate Span Table for LH & DLH Series Open Web Joists

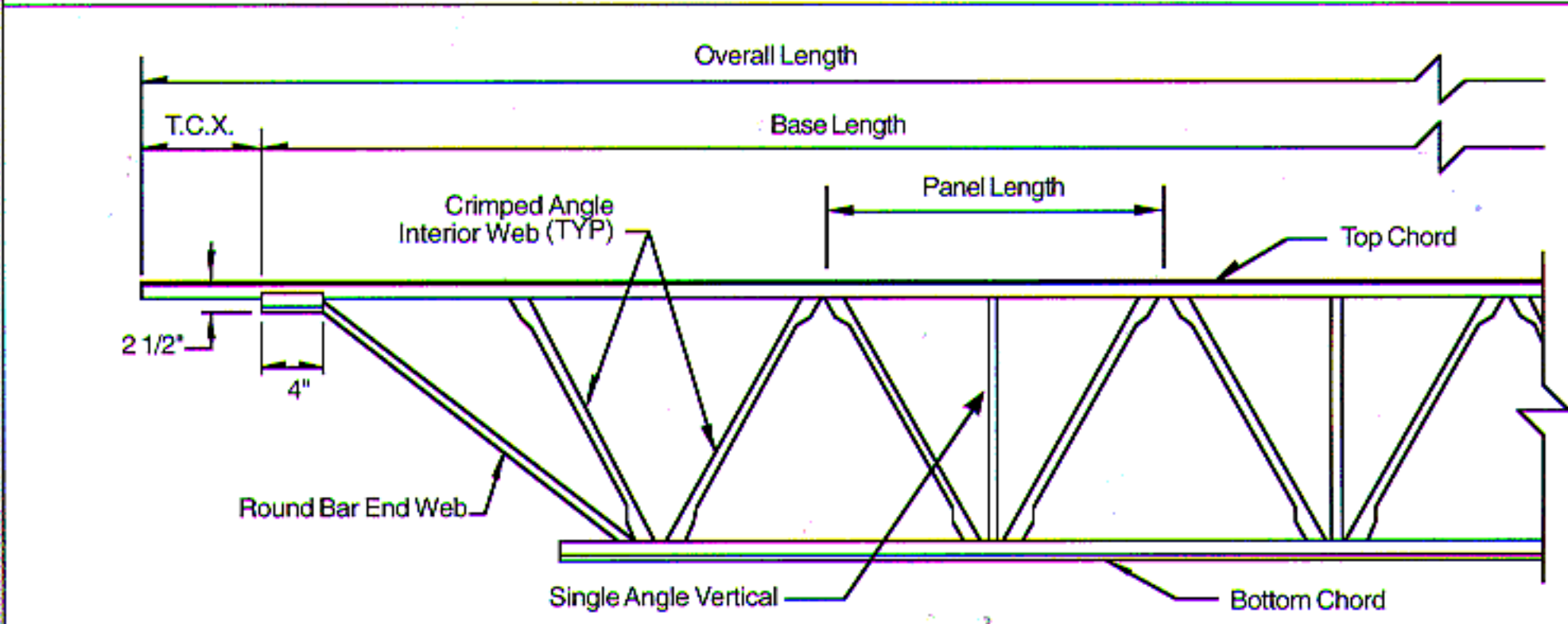


# GEOMETRY AND MINIMUM LENGTHS

K-Series joists are supplied with underslung or square ends. Top and bottom chords are parallel, they cannot be pitched relative to the bottom chords. Double or single pitched top chords must be specified as longspans. Joists can be supplied with tilted bearings in direction of joist slope only.



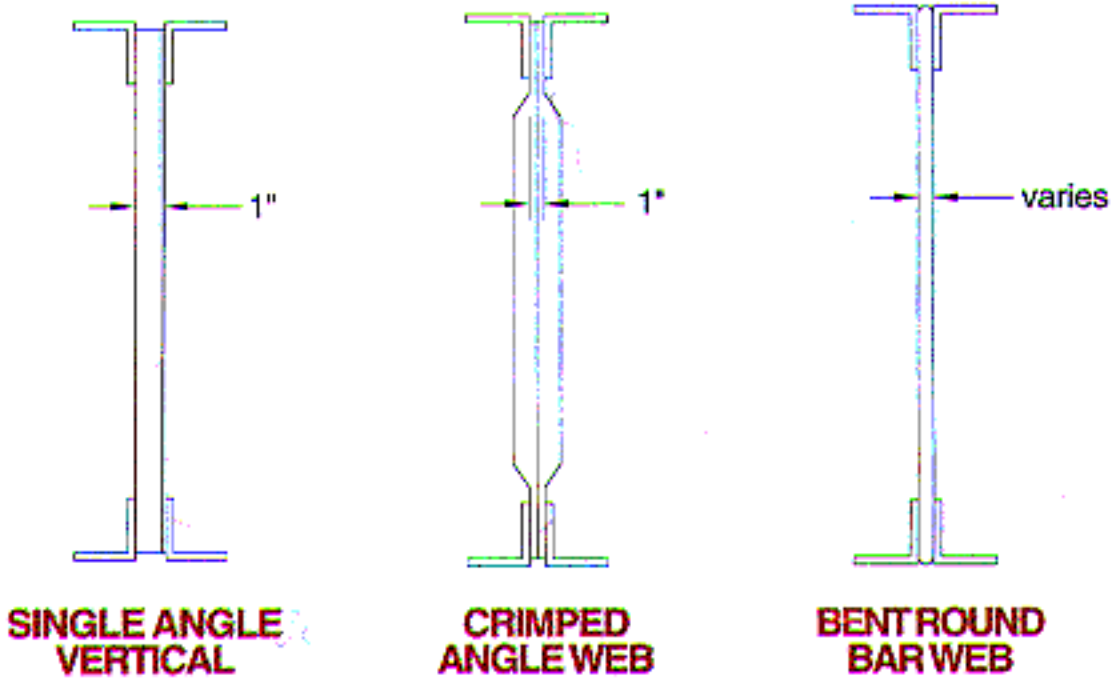
ROUND BAR WEB



CRIMPED ANGLE WEB

**Members**  
*Chords* are composed of two angles designed according to SJI criteria.  
*Webs* are single angle, crimped angle, or bent round bar.

TYPE	NOTE	JOIST DEPTH	PANEL LENGTH	MINIMUM JOIST LENGTH (see note 1) clear span+8"
ROUND BAR		8"	19"	5'-3 1/4"
		10"	19"	5'-3 1/4"
		12"	19"	5'-7 1/4"
		14"	19"	5'-7 1/4"
		16"	24"	6'-4 1/4"
	(2)	18"	24"	7'-4 1/4"
	(2)	20"	24"	7'-4 1/4"
CRIMPED	(2)	22"	24"	7'-8 1/4"
	(3)	24"	48"	12'-1/4"
		26"	48"	12'-1/4"
		28"	48"	13'-1/4"
		30"	48"	13'-1/4"

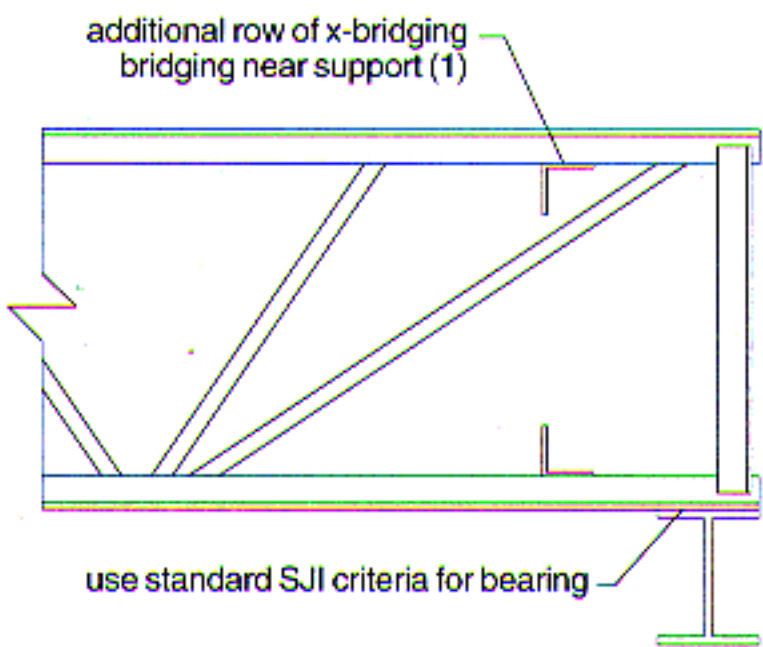


**Notes:** 1. Provide uniform design loads for joists less than standard SJI minimum length. See SJI load tables. 2. 18" thru 22" deep joists may be built as crimped angle web, depending on shop schedules at time of fabrication. 3. 24" deep joists may be built with round bar web, depending on shop schedules at the time of fabrication.



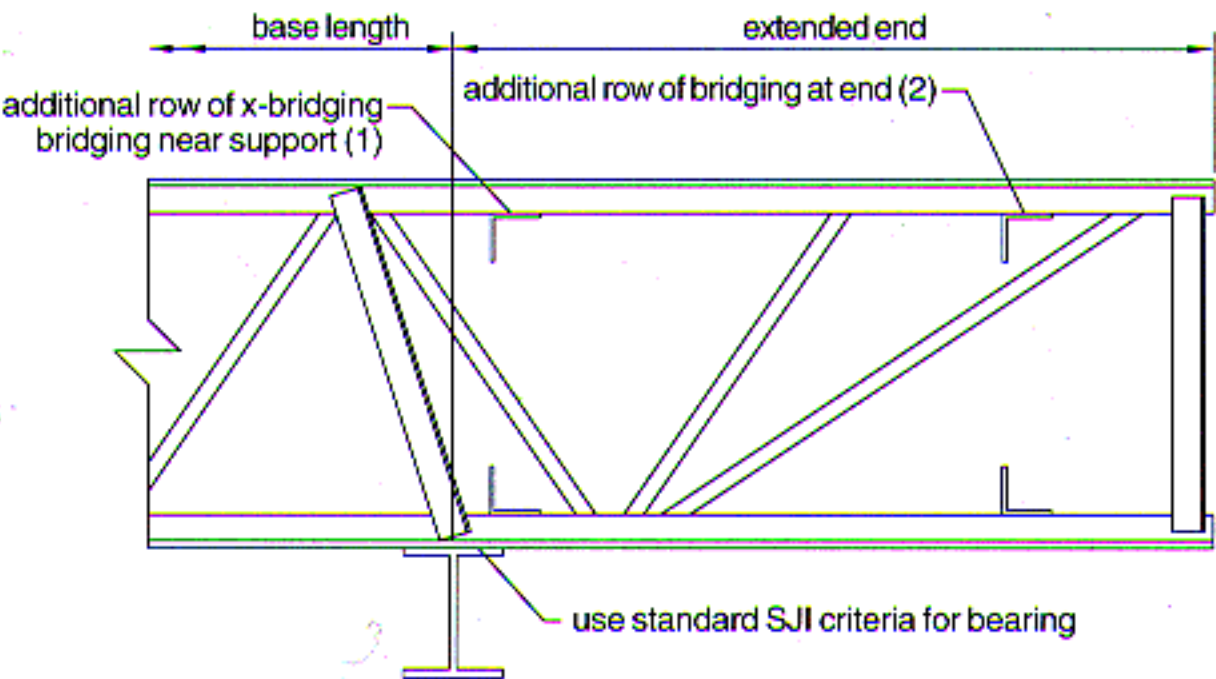
# END CONDITIONS

K, KCS Series SJI 5.3, 5.4  
LH, DLH Series SJI 104.4, 104.5  
Girder Series Not Recommended



**SQUARE ENDED, BOTTOM BEARING**

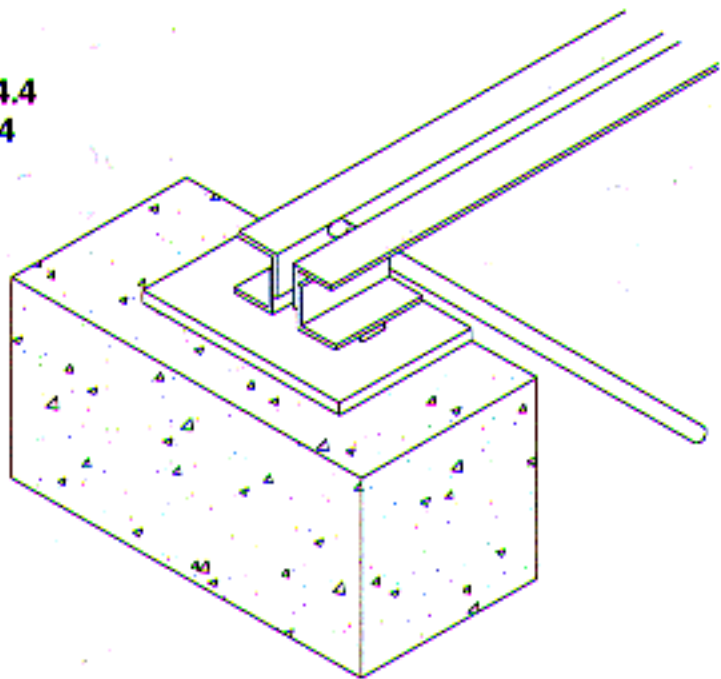
K, KCS Series SJI 5.3, 5.4  
LH, DLH Series SJI 104.4, 104.5  
Girder Series Not Recommended



**CANTILEVERED, BOTTOM BEARING, SQUARE END**

The setting plates should always be anchored to the masonry wall. The setting plate (designed and furnished by others) shall be located not more than one-half inch from the face of the wall.

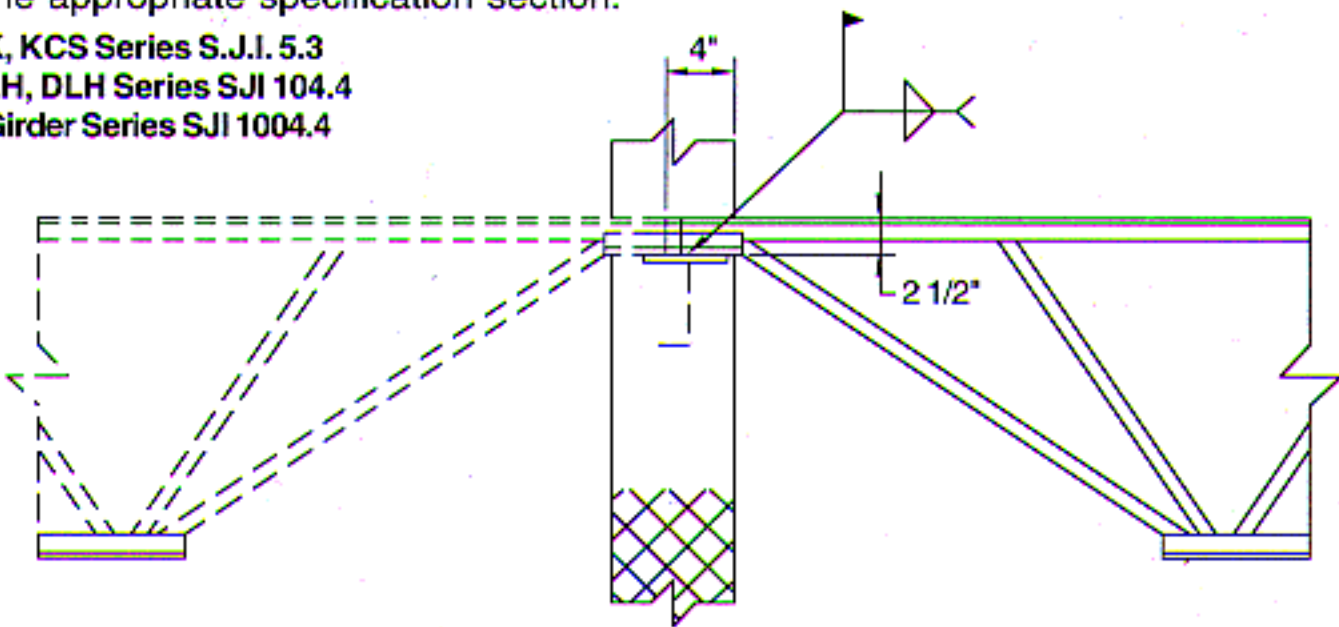
K, KCS Series SJI 5.3  
LH, DLH Series SJI 104.4  
Girder Series SJI 1004.4



**TYPICAL MASONRY BEARING**

Stagger Joist when less than minimum bearing is possible. Less than standard bearing length may be used if the specifying professional follows the guidelines in the appropriate specification section.

K, KCS Series S.J.I. 5.3  
LH, DLH Series SJI 104.4  
Girder Series SJI 1004.4

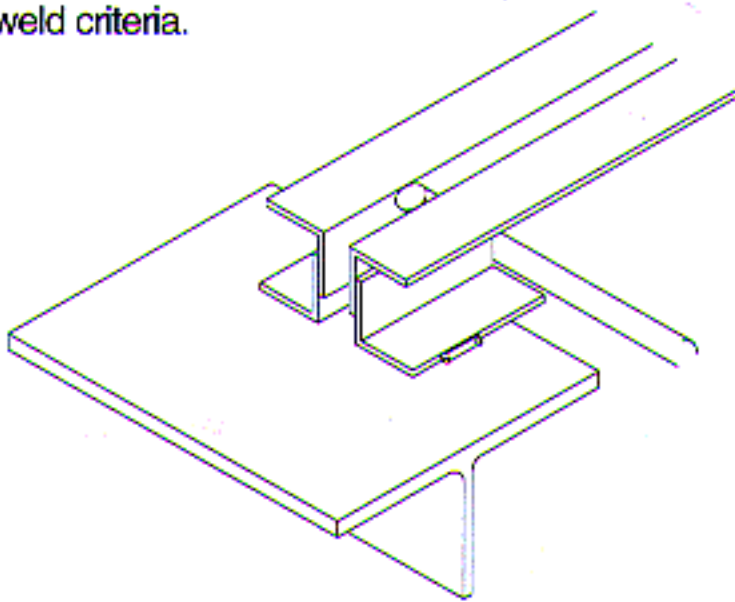


**STAGGERED JOISTS**

Field welds which are thicker than SJI requirements need non-standard seats. Additional costs are incurred when joist seat thickness must be increased for thicker field welds. See below for standard SJI weld criteria.

K, KCS Series SJI 5.6  
LH, DLH Series SJI 104.7  
Girder Series SJI 1004.6

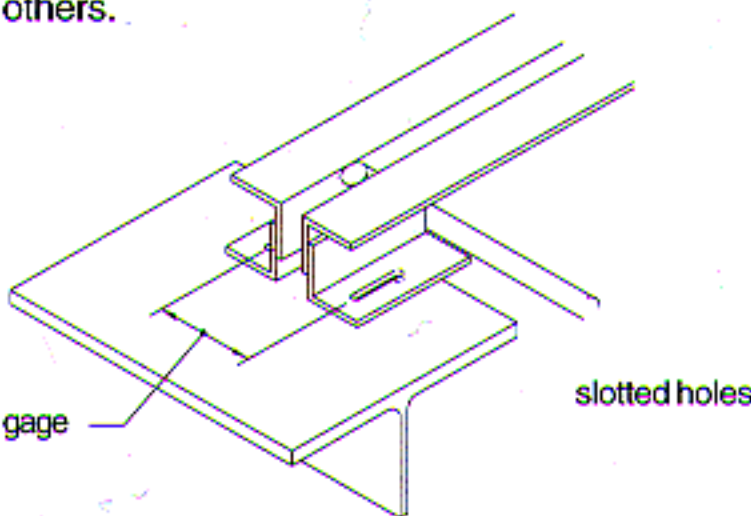
**WELDED CONNECTIONS**



Slotted holes in bearing seats are furnished whenever bolted connections are required. Bolts are furnished by others.

K, KCS Series SJI 5.6  
LH, DLH Series SJI 104.7  
Girder Series SJI 1004.6

**BOLTED CONNECTIONS**

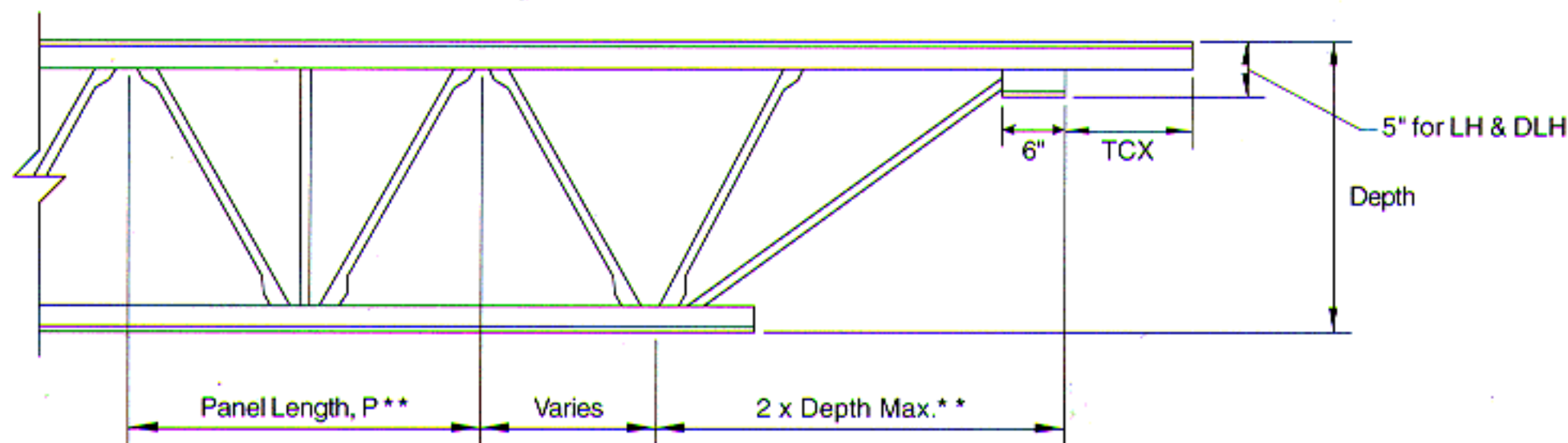


PRODUCT SERIES	FILLET WELD THICKNESS	FILLET WELD LENGTH	PRODUCT SERIES	DESCRIPTION (3)	SLOT	GAGE
K, KCS	1/8"	1" long, one-each side	K, KCS Series	1/2" $\phi$ Erection Bolts (4)	9/16" x 2 3/4"	3 1/4"
LH, DLH, Girders	1/4"	2" long, one-each side	LH, DLH Series	3/4" $\phi$ Erection Bolts (5)	13/16" x 2 3/4"	3 1/2"
			Girder Series	3/4" $\phi$ Erection Bolts	13/16" x 1 1/4"	4"
						5"

**Notes:** 1. The use of x-bolted or x-welded bridging is at the discretion of the specifier. 2. The use of horizontal, x-bolted, or x-welded bridging is at the discretion of the specifier. 3. NCJ only supplies bridging and field splice bolts. NCJ does not supply erection bolts. 4. Standard Per SJI 5.6 (a), (b). 5. Non-Standard.



# LH, DLH AND JOIST GIRDER GEOMETRY

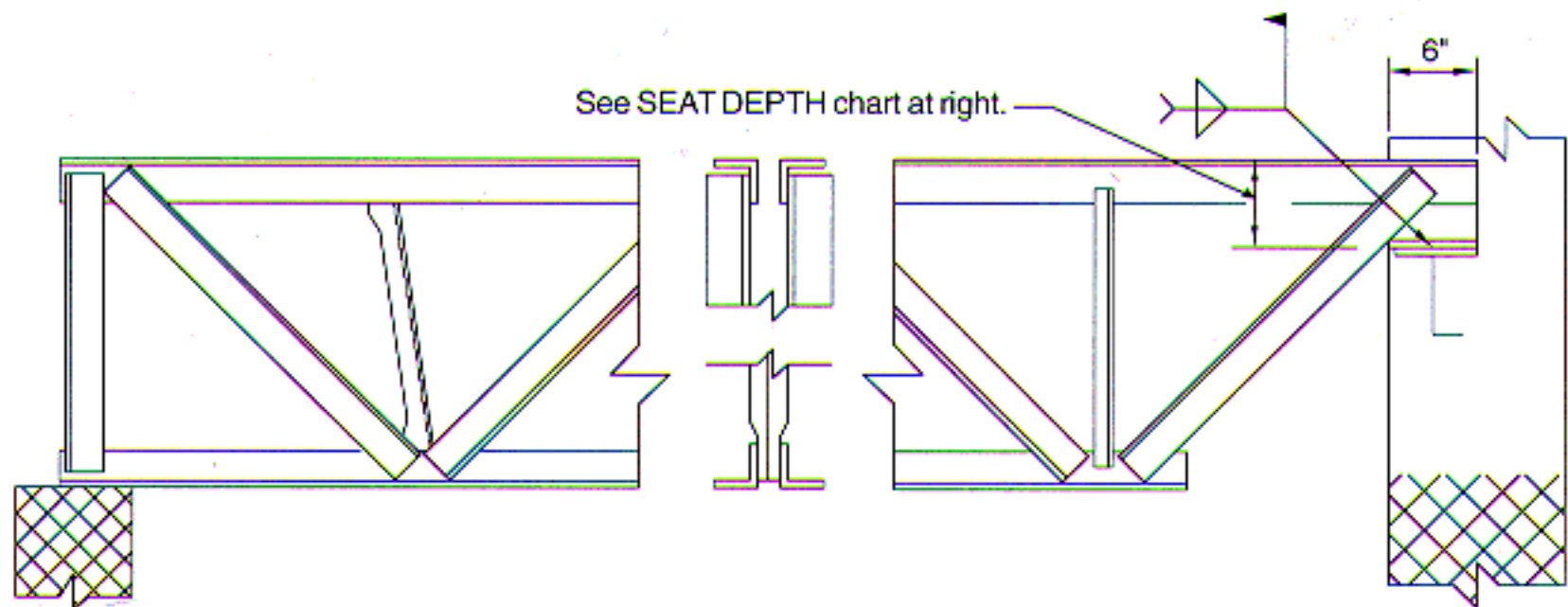


LONGSPAN WEB CONFIGURATION

Longspan joists can be fabricated with double or single pitched top chords. The nominal depth of sloping chord longspan joists is the depth at mid span.

DEPTH *	18	20	24	28	32	36	40	44	48	52	56	60	64	68	72
P**	4'-0	4'-0	4'-0	4'-8	5'-4	6'-0	6'-8	7'-4	8'-0	8'-8	9'-4	10'-0	10'-8	11'-4	12'-0

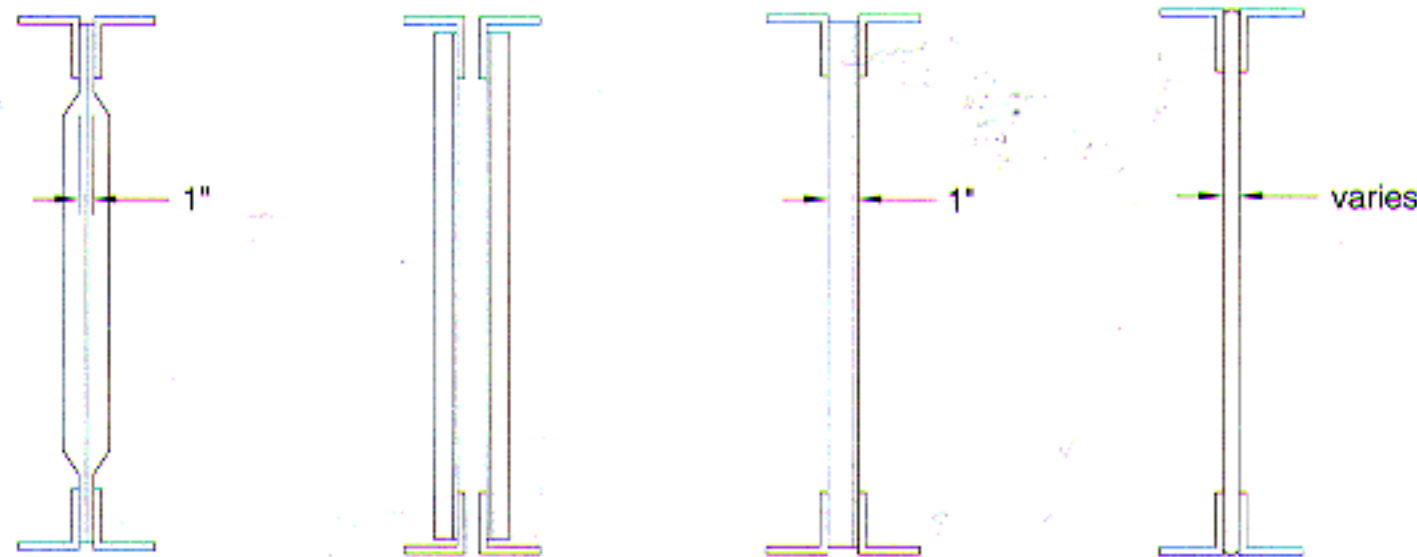
\* All depths shown are nominal dimension.  
\*\* Panel length may vary due to optimization of material. If standard panel length must be maintained, e.g., due to duct work passing through, be sure to clearly specify this on the contract documents.



LONGSPAN AND GIRDER CONFIGURATION (except as noted)  
LONGSPANS - S.J.I. 104.4

**Bottom bearing** joist girders are inherently unstable during erection and are **NOT** recommended.

TYPE	SEAT DEPTH
LH, DLH through 17 chord sizes	5"
DLH 18, 19	7 1/2"
Girders < 60 plf	6"
Girders ≥ 60 plf	7 1/2"



CRIMPED ANGLE WEB

DOUBLE ANGLE WEB

SINGLE ANGLE VERTICAL

ROUND BAR END WEB

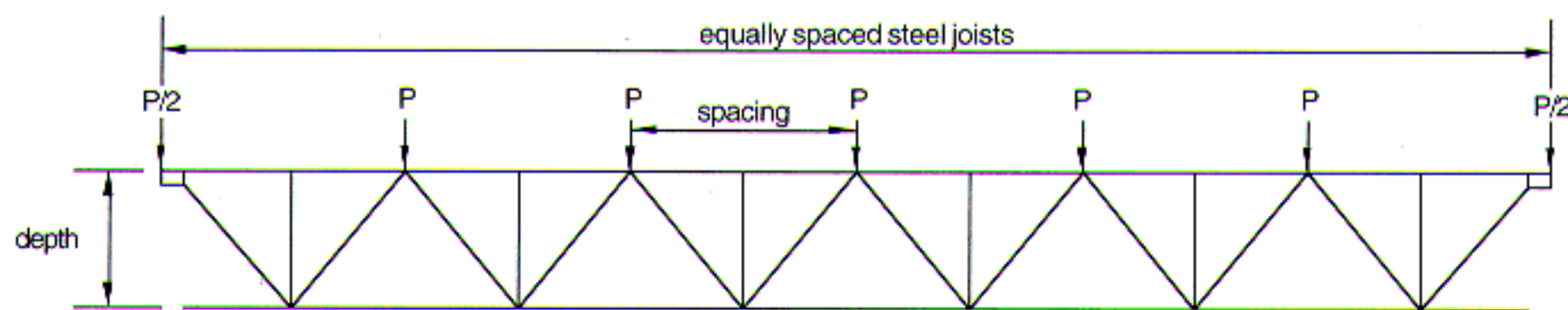
## Members

*Chords* are composed of two angles designed as continuous members.

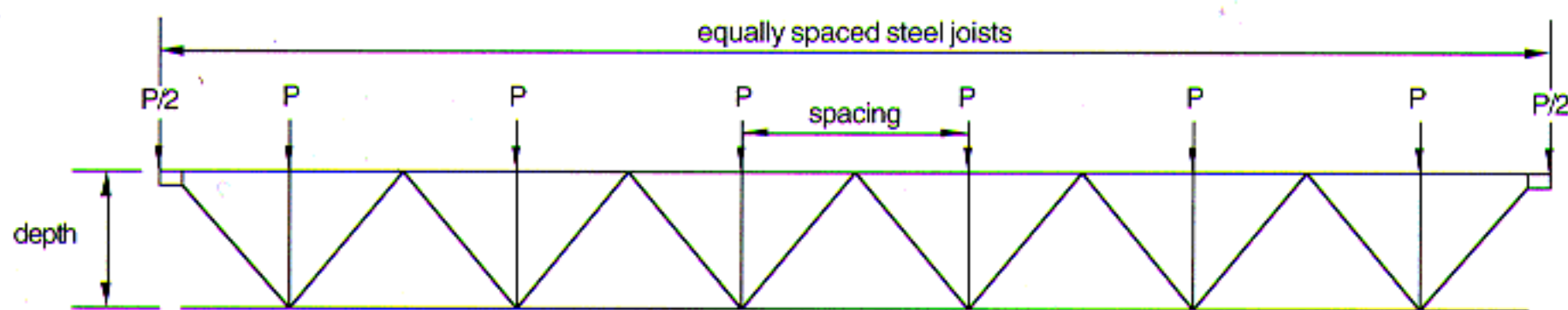
*Webs* are either single, double or crimped angles. End webs are either double angles or round bars.



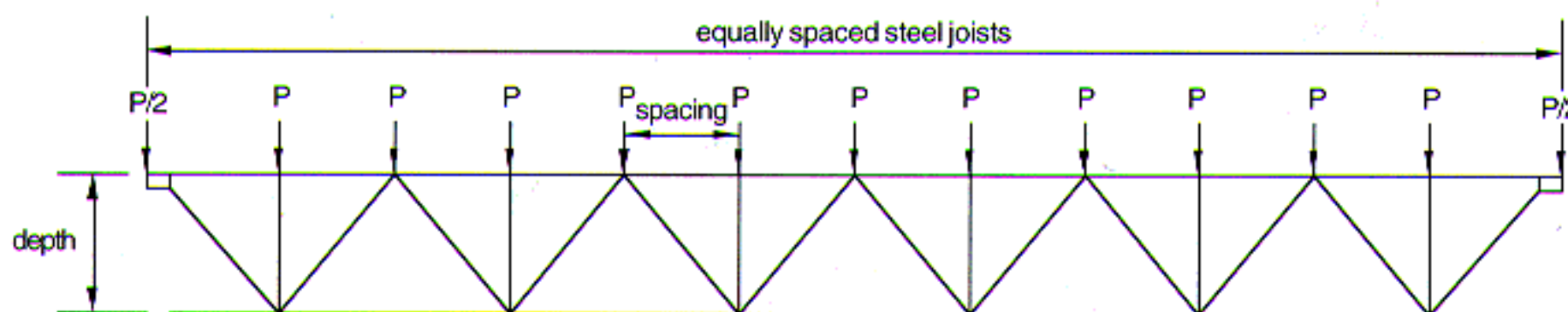
# JOIST GIRDERS



**G-SERIES**



**VG SERIES**



**BG SERIES**

Joist Girders are primary framing members which typically support other joist products at panel points. Joist Girders are typically designed as simply supported trusses, however they can be utilized in moment frames to resist live, seismic and wind load moments. Ideally the concentrated loads are at panel points, eliminating bending in the chord angles. Off panel loads can be accommodated but they can increase chord size requirements.

## NOTE REGARDING JOIST GIRDER CHORD SIZES:

If someone other than NCJ/NJB is providing detailing services or if you are providing a bill of material for fabrication please contact your NJB salesman for estimated Joist Girder top chord sizes after the contract has been awarded to NJB. This information is required to properly calculate base lengths of joists supported by Joist Girders and girder strut requirements.

## GUIDELINES FOR SELECTING TYPE OF JOIST GIRDERS

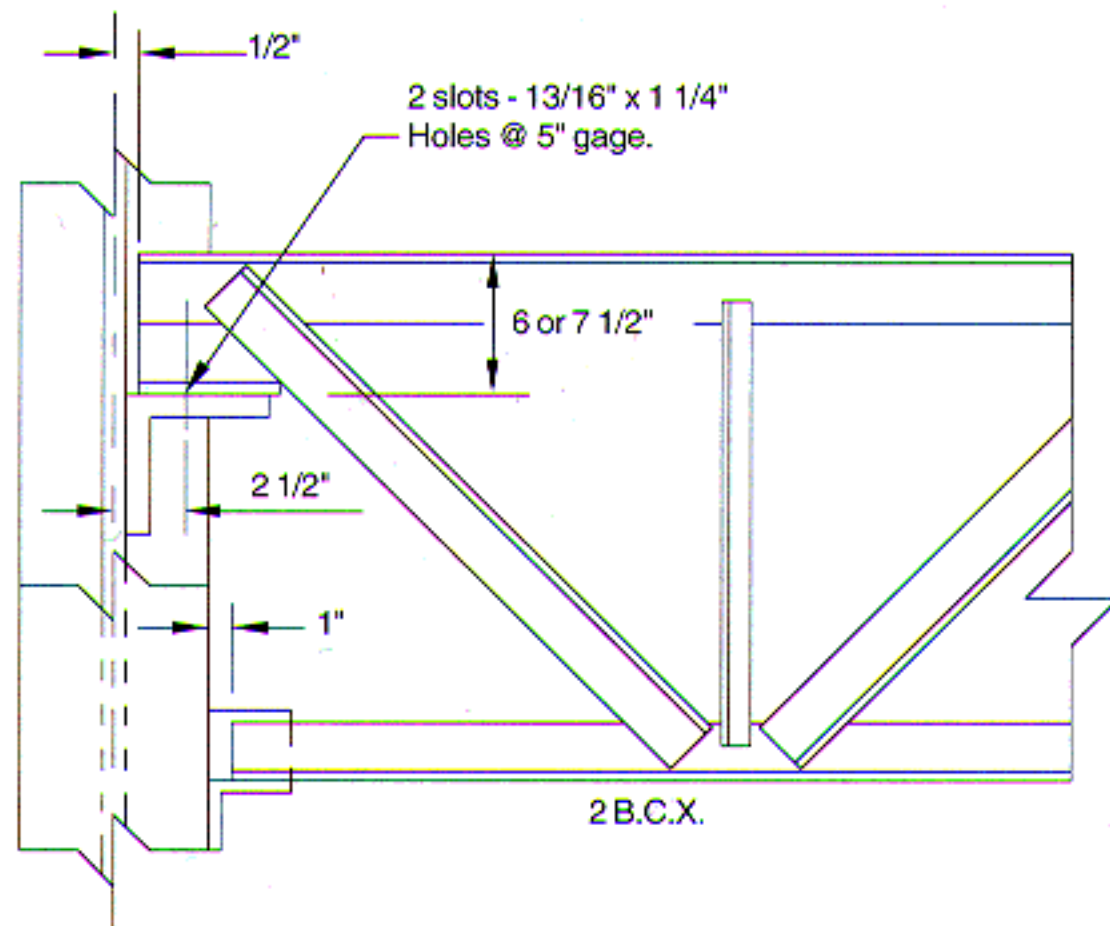
$0.67 \leq \frac{\text{Load Spacing}}{\text{Girder Depth}} \leq 1.5$	Use BG Series, load both diagonals and verticals.
$1.5 \leq \frac{\text{Load Spacing}}{\text{Girder Depth}}$	Use G or VG Series, load either diagonals or verticals.
$0.67 \leq \frac{\text{Load Spacing}}{\text{Girder Depth}}$	Consider a shallower girder.
$3.0 \leq \frac{\text{Load Spacing}}{\text{Girder Depth}}$	Consider a deeper girder or alternate diagonal and vertical loading.

This table utilizes the Load Spacing-to-Girder Depth ratio as a guideline to establishing the depth and configuration of a joist girder. It is an attempt to help specify girders that have economical web systems.

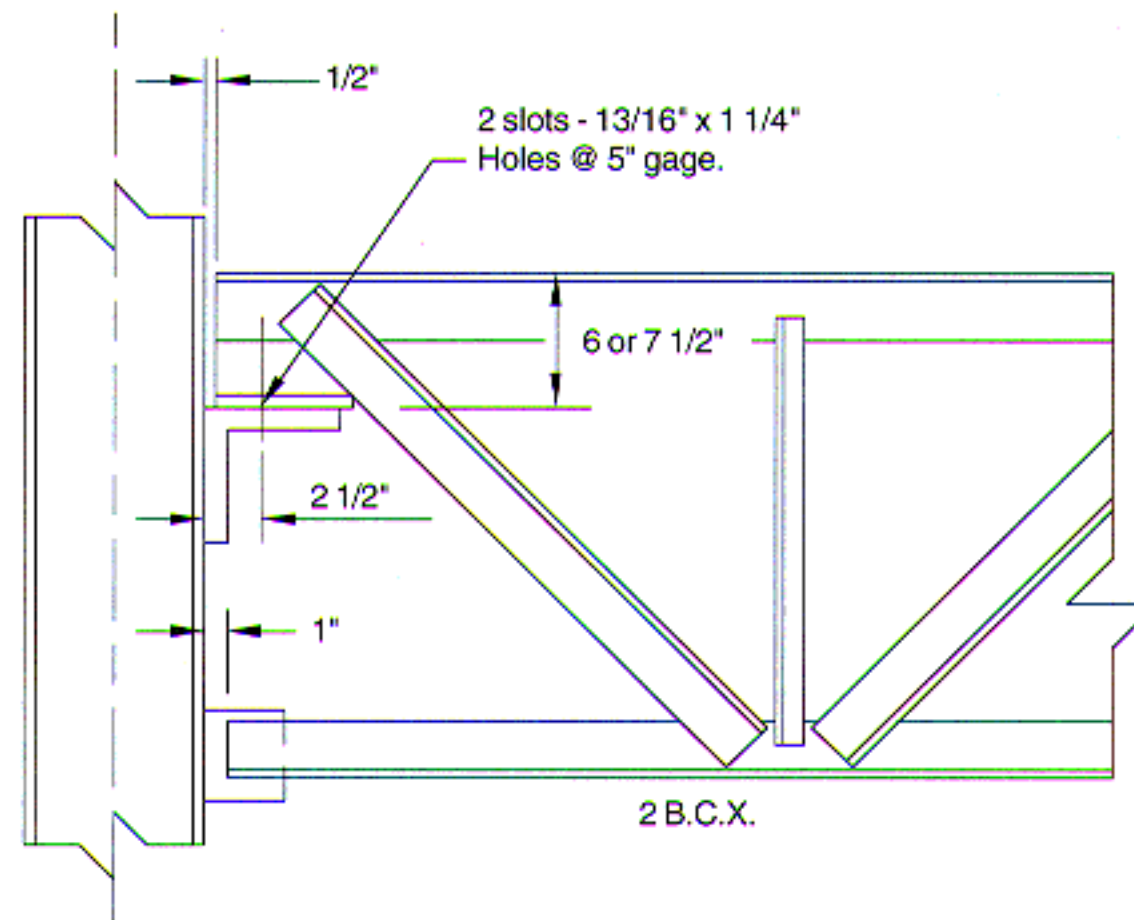


## JOIST GIRDERS WITHOUT END MOMENTS

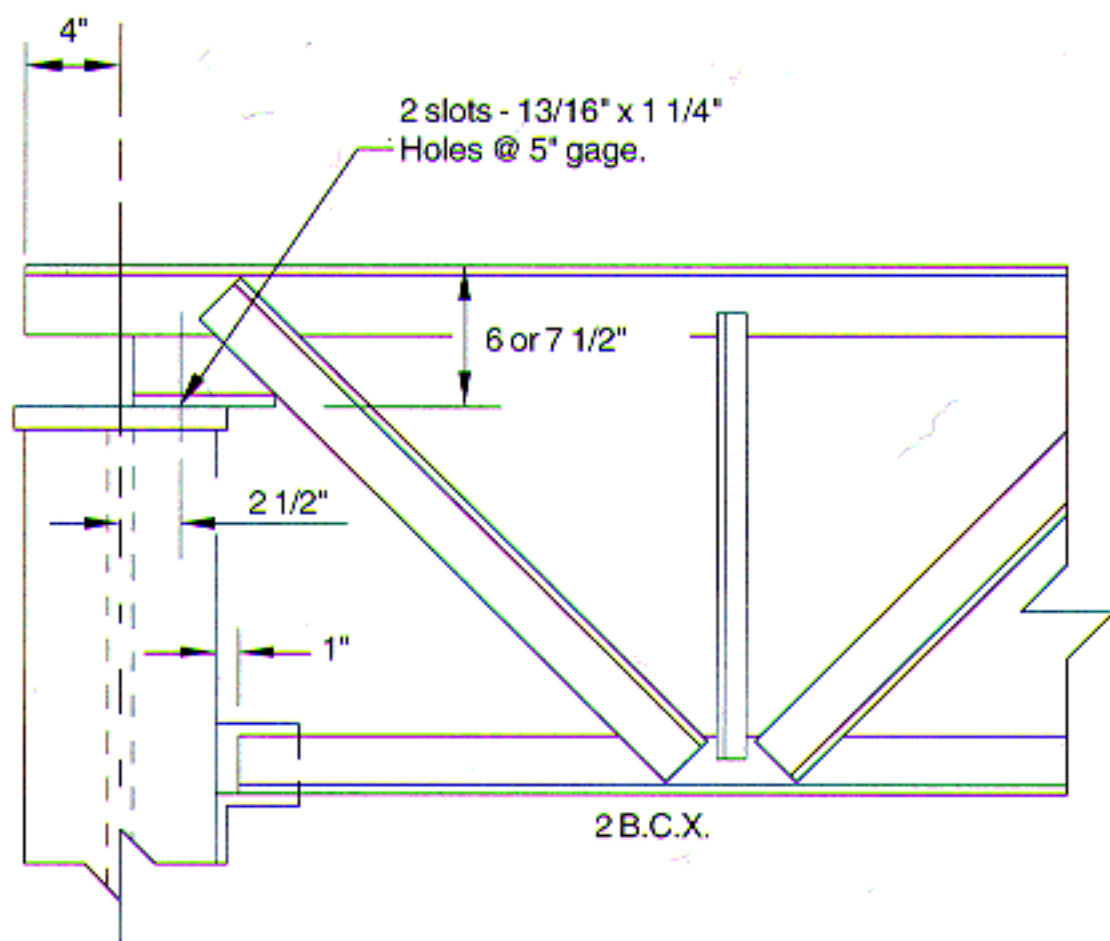
1



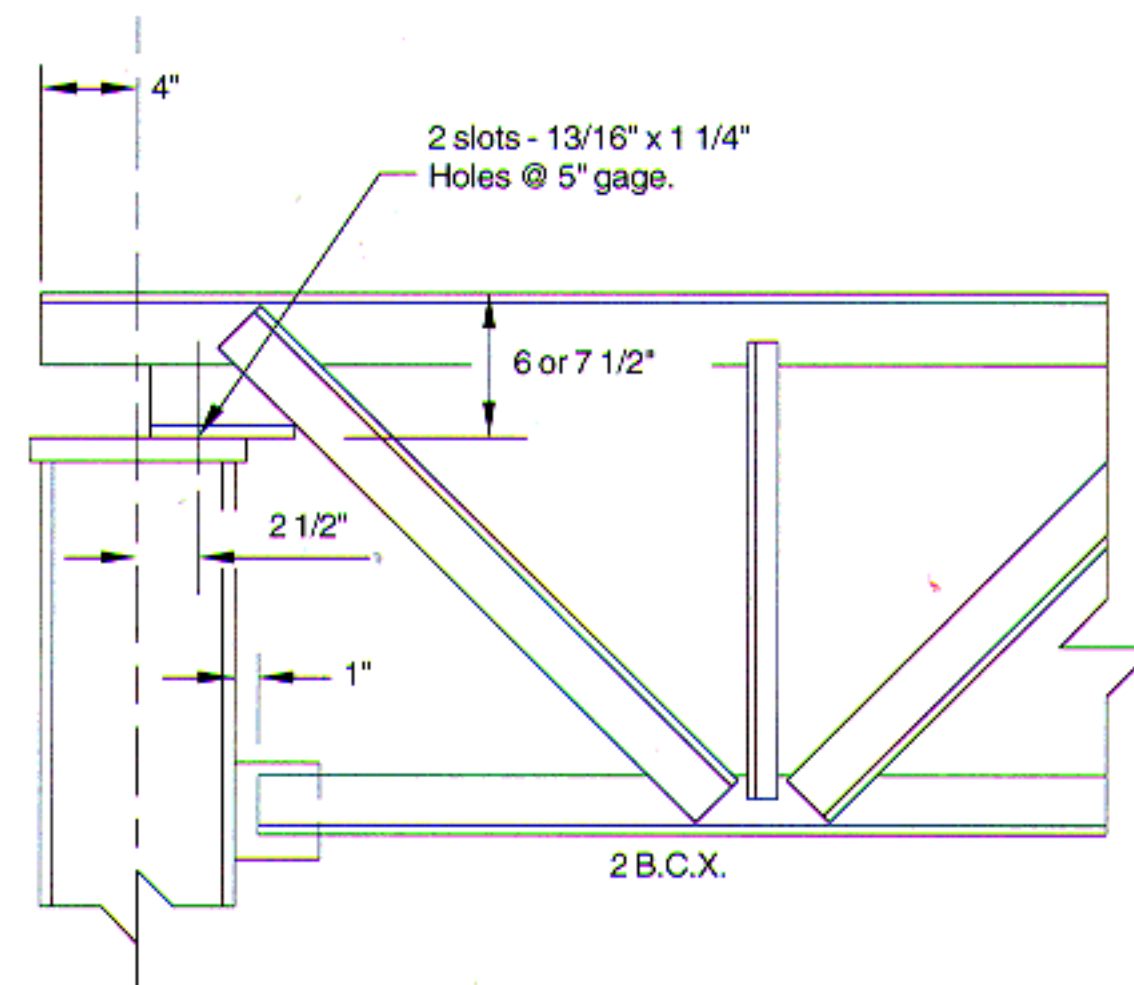
2



3



4



**Use 7 1/2" deep seats for Joist Girders weighing 60 pounds per foot or more or having 6" top chord angle legs."**