

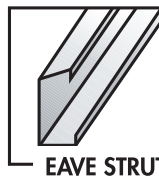
# COMPONENTS SUBSTRUCTURAL



ZEE



CEE



EAVE STRUT



SUB-GIRT



HAT



CHANNEL



MAC-GIRT

## Product Information



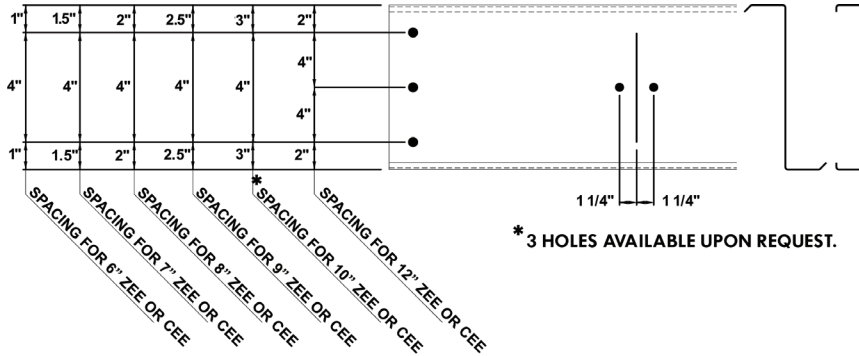


# ***SUBSTRUCTURAL INFORMATION***

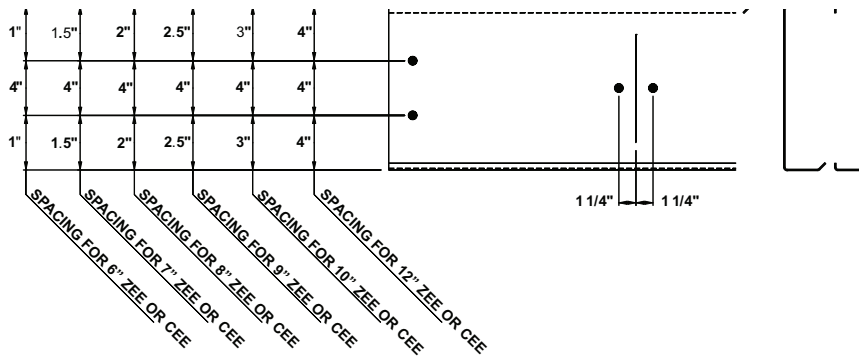
## **GENERAL INFORMATION**

### ***MCELROY METAL***

McElroy Metal manufactures a complete line of cold-formed substructural components including Cees, Zees, Eave Struts, Sub-Girts, Angles, Hats, and Channels. Purlins and girts are manufactured in popular gauges and in a variety of section depths and flange widths. Red oxide is standard for all components. Galvanized (G-90) is also available. Galvanized is standard finish in Adelanto, California. This wide range of availability offers unlimited design flexibility in a quality product. Cees, Zees and Eave Struts are punched according to universal punching patterns, or custom punching is available.



All Plants  
Except Ashburn  
and Sunnyvale



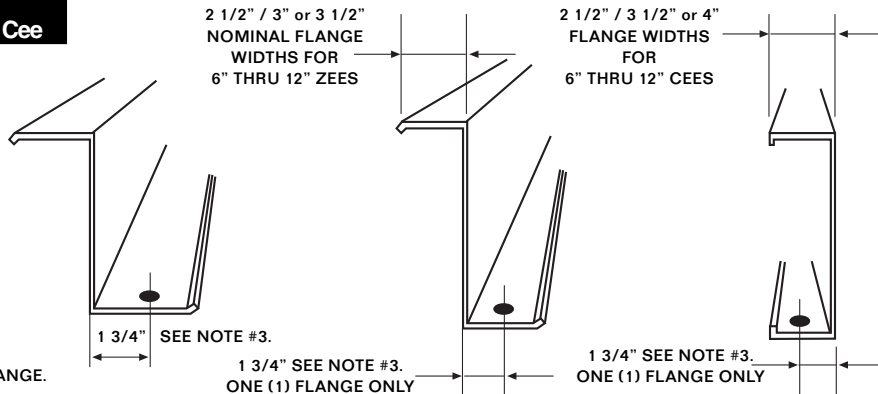
Ashburn and  
Sunnyvale Only

### Available Flange Widths For Symmetrical Zees & All Cee

AVAILABLE FLANGE WIDTHS  
FOR ZEES (6" THRU 12")

SECTION FLANGE	ACTUAL DIM. (ZEES)
2 1/2	2 1/8 & 2 3/8
3	2 5/8 & 2 7/8
3 1/2	3 1/8 & 3 3/8

NOTE:  
HOLES WILL ALWAYS  
BE PUNCHED IN WIDER FLANGE.



### GENERAL NOTES

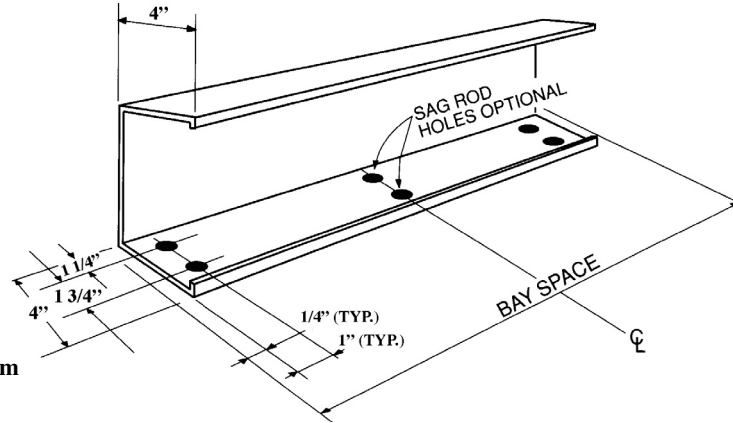
1. All Cees are manufactured with symmetrical flanges.
2. For code requirements, contact McElroy's Engineering Department.
3. Flange punching is available on 6" through 12" Zees and Cees, but must be requested.
4. Web punching is available on 6" through 12" Zees and Cees. For web punching on 4" members, contact McElroy's Customer Service Department or Sales Representative.
5. Limited web and flange holes may be added. A drawing must accompany the order.
6. Zees and Cees may have extra holes - these are used for alternate bolting patterns.
7. Sag rod holes, when requested, are located at the center of the Cee or Zee length, and at the center of the section depth. A drawing must accompany orders for other hole locations.
8. For lengths less than 8' that require punching, contact McElroy's Customer Service Department.
9. Round holes are 5/8" diameter, slots are 5/8" x 3/4".
10. Holes are punched to accommodate 1/2" diameter bolts.
11. Center hole all plants except Ashburn and Sunnyvale.

## STANDARD PUNCHING PATTERNS ORDER INFORMATION EAVE STRUTS

SIZE	GAUGE
10"	14
8"	14
7"	14

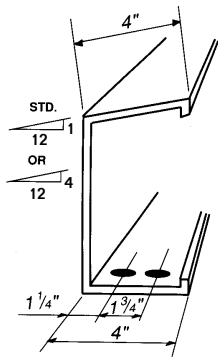
Other section depths compatible with cees and zees are available. Contact Customer Service for more information.

Note: Available in punched or unpunched.

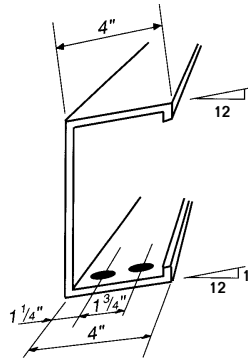


### ORDER INFORMATION

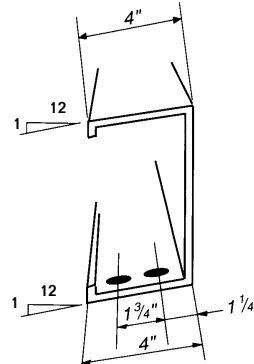
To determine actual order length, subtract 1/2" from bay spacing.



**STANDARD**



**DOUBLE SLOPE**



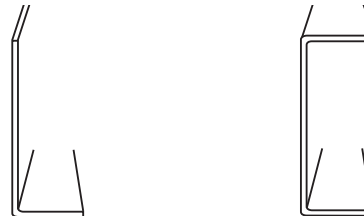
**HIGH SIDE**

Note: Double slope eave struts are available in the same sizes and gauges as standard eave struts. When ordering, please request double slope.

\* 5" Flange also available in Bossier City, Clinton, Adelanto, Asburn, and Sunnyvale.

### Substructural Angles and Channels

Note: Substructural Angles and Channels are available in 12, 14, and 16 gauge.

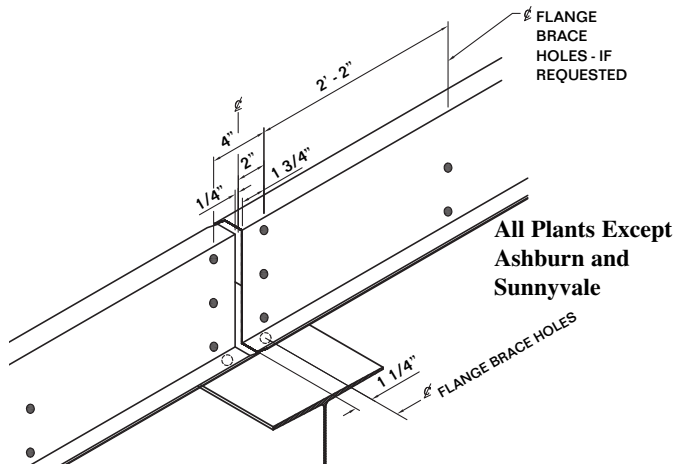


### IMPORTANT INFORMATION

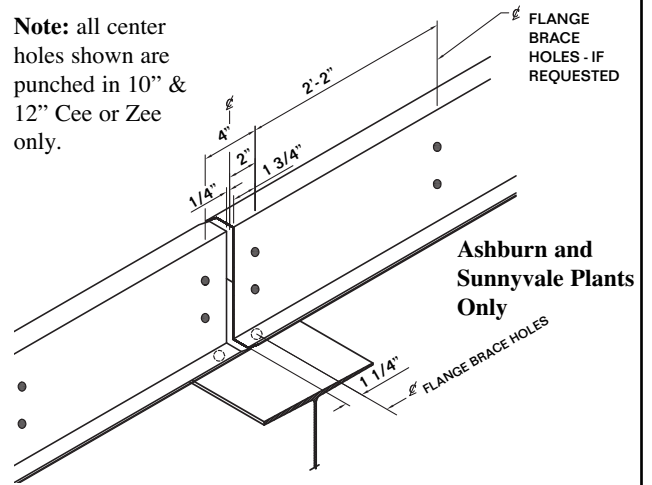
1. Standard structural shapes are available in 16, 14 and 12 gauge, hi-strength hot rolled material as per ASTM A1011 Grade 55 (57,000 PSI minimum yield strength) Steel.
2. Section properties have been calculated in accordance with the 2007 edition of AISI specifications.
3. Standard finish is red oxide primer. Galvanized (G-90) as per ASTM A653 is also available. Contact Customer Service for lead times. (Note: Galvanized is standard finish in Adelanto, CA.)
5. Please inquire concerning special custom shaped sections and special punching.
6. Engineering data available at: [www.mcelroymetal.com](http://www.mcelroymetal.com).

## STANDARD PUNCHING PATTERNS ORDER INFORMATION CEES AND ZEES

### SIMPLE SPAN

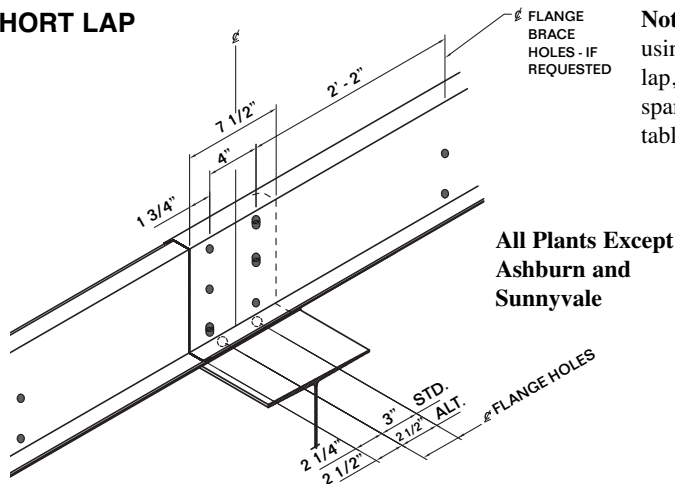


**Note:** all center holes shown are punched in 10" & 12" Cee or Zee only.

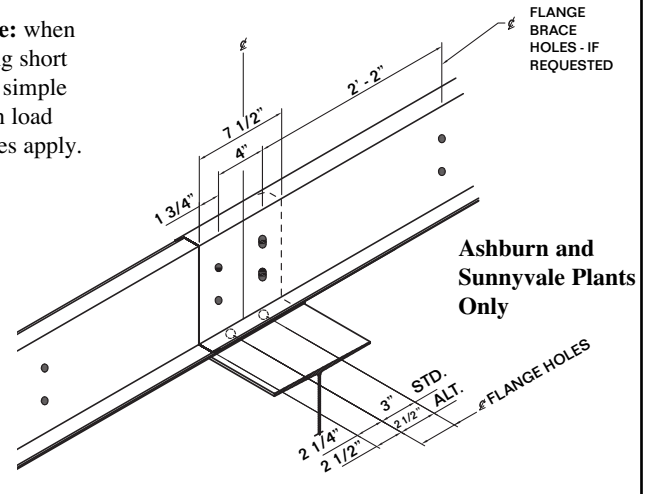


- Order Information:**
1. To determine actual order length, subtract 1/2" from bay spacing.
  2. To determine end bay actual order length, subtract 1/2" from bay spacing.

### SHORT LAP

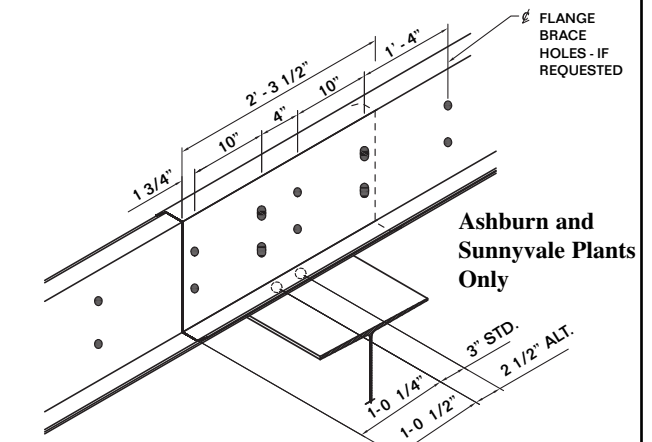
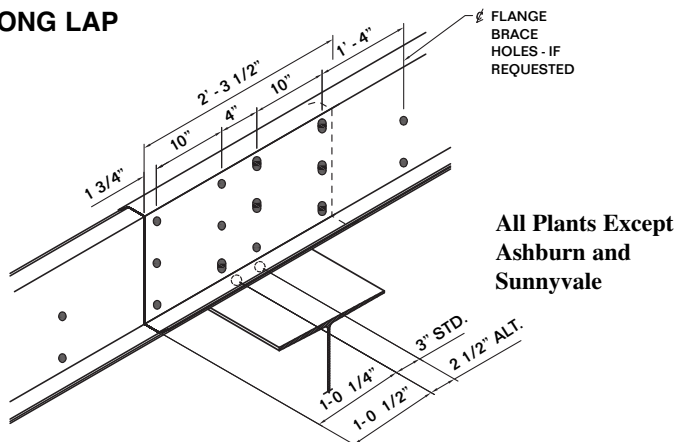


**Note:** when using short lap, simple span load tables apply.



- Order Information:**
1. To determine actual order length, add 7 1/2" to bay spacing.
  2. To determine end bay actual order length, subtract 1/4" for setback, then add 3 3/4" to bay spacing.

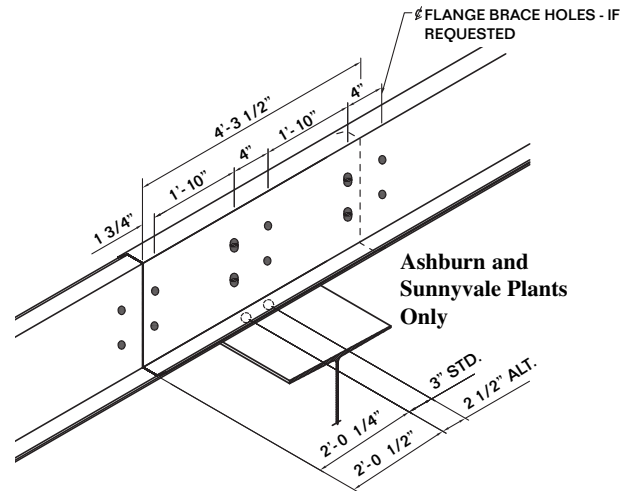
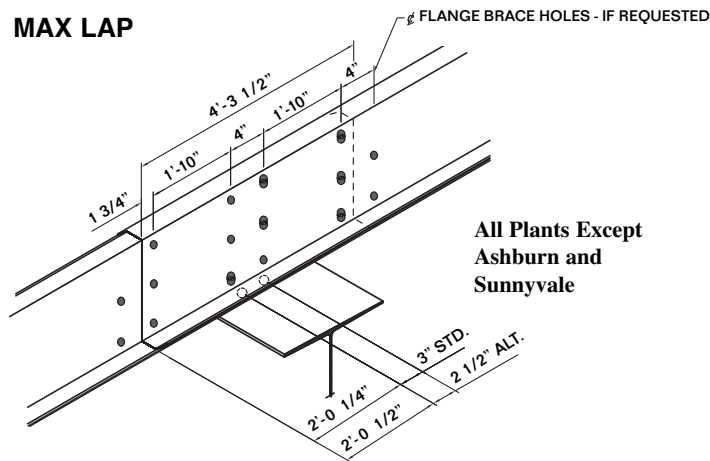
### LONG LAP



- Order Information:**
1. To determine actual order length, add 2'-3 1/2" to bay spacing.
  2. To determine end bay actual order length, subtract 1/4" for setback, then add 1'-1 3/4" to bay spacing.

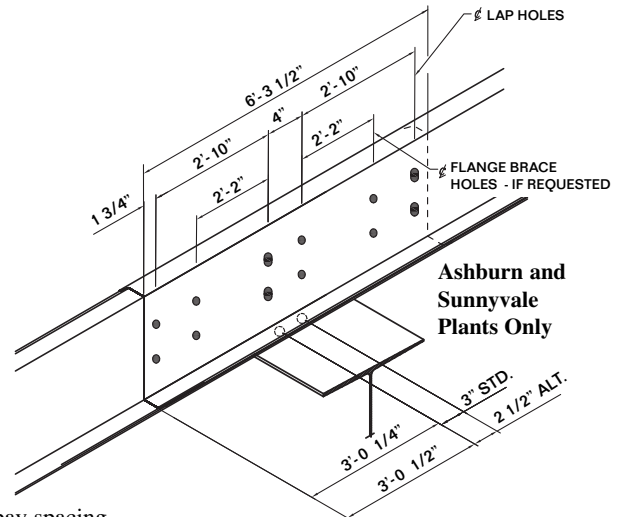
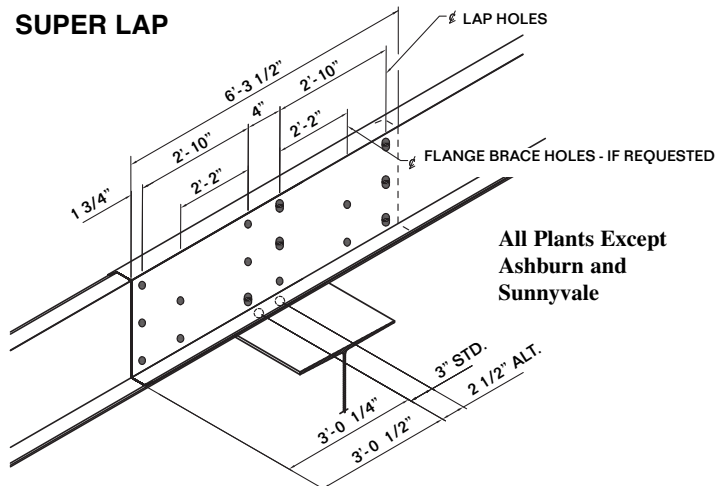
## STANDARD PUNCHING PATTERNS ORDERING INFORMATION CEES AND ZEES

### MAX LAP



**Order Information:** 1. To determine actual order length, add 4'- 3 1/2" to bay spacing.  
2. To determine end bay actual order length, subtract 1/4" for setback, then add 2'- 1 3/4" to bay spacing.

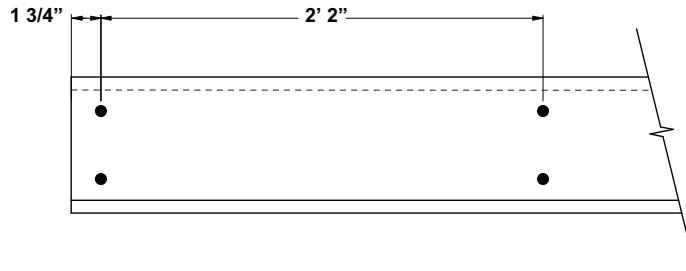
### SUPER LAP



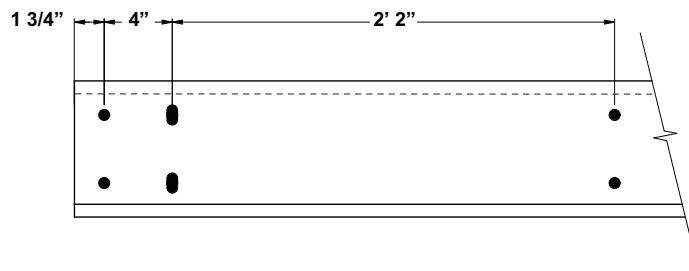
**Order Information:** 1. To determine actual order length, add 6'- 3 1/2" to bay spacing.  
2. To determine end bay actual order length, subtract 1/4" for setback, then add 3'- 1 3/4" to bay spacing.

## NOTES:

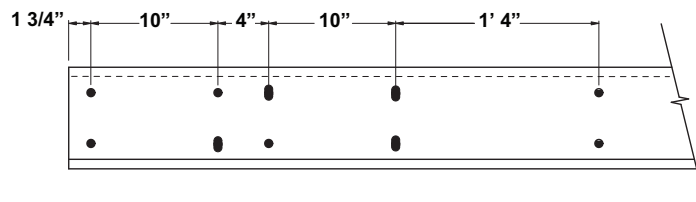
**\* SIMPLE SPAN PUNCH**



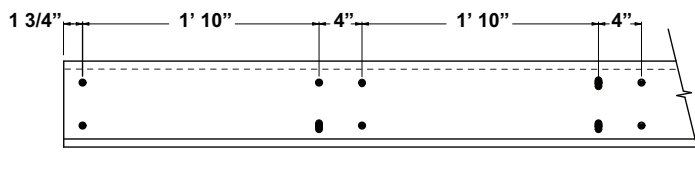
**\* SHORT LAP PUNCH**



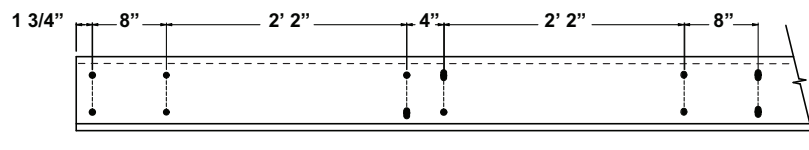
**\* LONG LAP PUNCH**



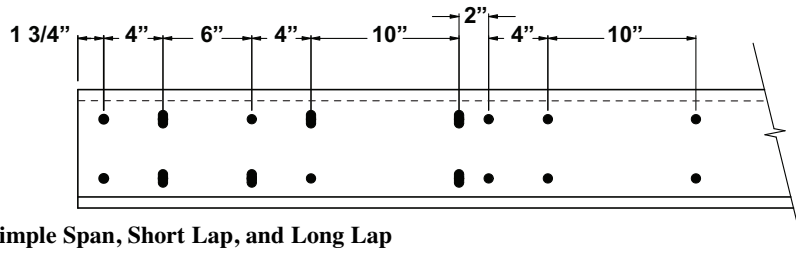
**\* MAX LAP PUNCH**



**\* SUPER LAP PUNCH**

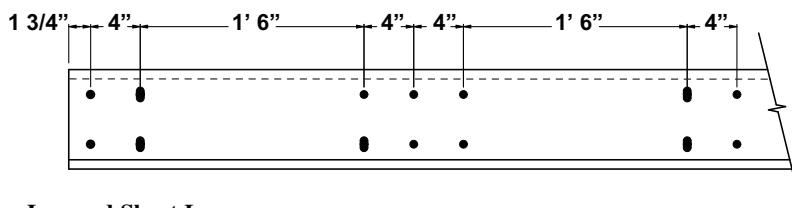


### \* UNIVERSAL PUNCH



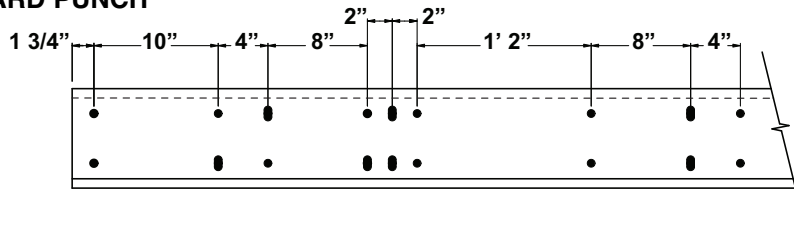
Includes: Simple Span, Short Lap, and Long Lap

### \* END BAY PUNCH



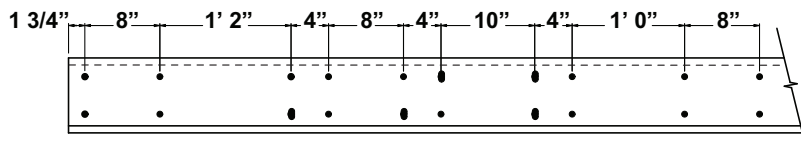
Includes: Max Lap and Short Lap

### \* STANDARD PUNCH



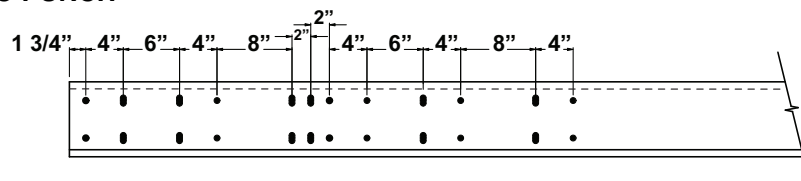
Includes: Max Lap and Long Lap

### \* EXTENDED PUNCH



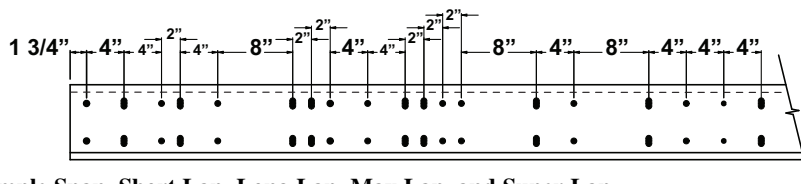
Includes: Super Lap and Max Lap

### \* CLASSIC PUNCH



Includes: Simple Span, Short Lap, Long Lap, and Max Lap

### \* COMPREHENSIVE PUNCH

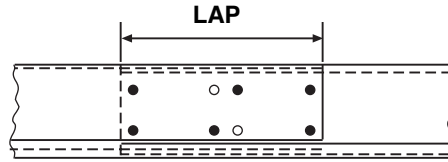


Includes: Simple Span, Short Lap, Long Lap, Max Lap, and Super Lap

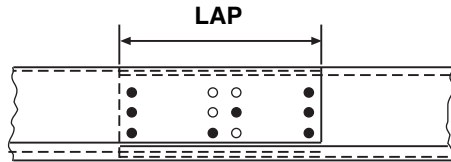


## BOLTS / HAT AND CHANNEL / MAC-GIRT / SUB-GIRT

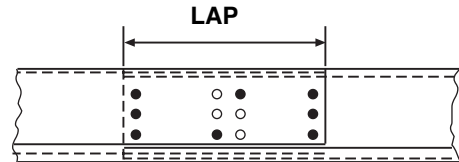
**Bolts Per Lap Type**  
**Bolts: 1/2" Diameter**



For 6" thru 9" Deep Zees, 6 Bolts required per Lap (and all depths in Ashburn and Sunnyvale).

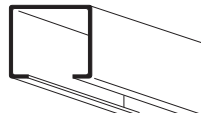
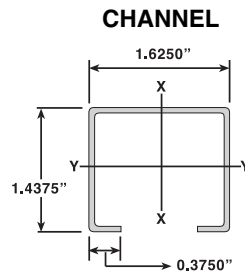
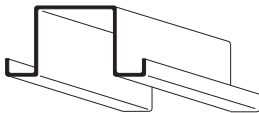
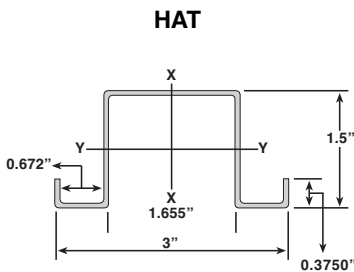


For 10" thru 12" Deep Zees, 8 Bolts  
required per Lap.



Alternate for 10" Deep Zees, 8 Bolts  
required per Lap.

### Hat and Channel

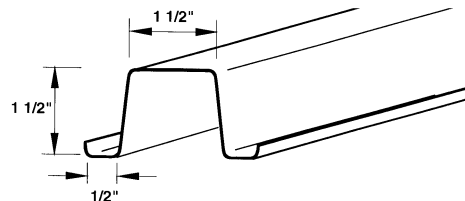


Section	Dimension	Gauge
Hat	1 3/4" x 1 1/2"	16
Hat	1 3/4" x 1 1/2"	18
Hat	1 3/4" x 1 1/2"	20
Channel	1 5/8" x 1 7/16"	16
Channel	1 5/8" x 1 7/16"	18

- McElroy Metal's standard hat and channel line is ideal for use in mansard, roof and canopy applications.
- Hats and channels are galvanized and come in a variety of gauges.
- Minimum length is 5'.
- Maximum length is 24'.
- Manufactured in Lewisport, Kentucky.

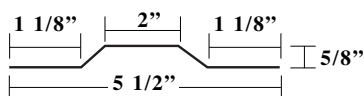
### Mac-Girt

- Available in 16, 18, and 20 Gauges.
- Minimum length is 5'.
- Maximum length is 24'.
- Manufactured in Lewisport, Kentucky.



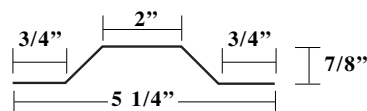
### Sub-Girt

#### MSG 1



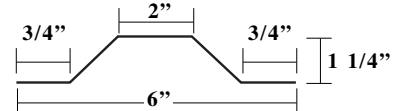
- 16, 18, & 20 Gauge
- 5/8" x 5 1/2"
- Galvanized
- Minimum length is 13'
- Maximum length is 24'

#### MSG 2



- 18, & 20 Gauge
- 7/8" x 5 1/4"
- Galvanized
- Minimum length is 13'
- Maximum length is 24'

#### MSG 3



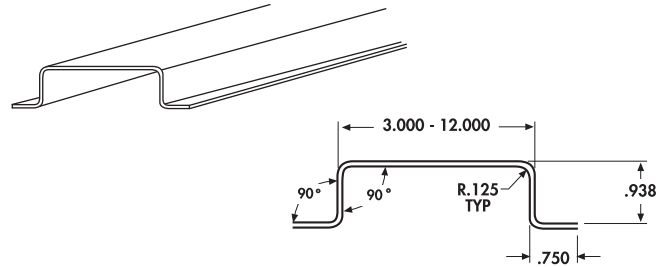
- 18, & 20 Gauge
- 1 1/4" x 6"
- Galvanized
- Minimum length is 13'
- Maximum length is 24'

Please note: MSG1, MSG2, and MSG3 are manufactured in Lewisport, Kentucky.

## Hat Channel

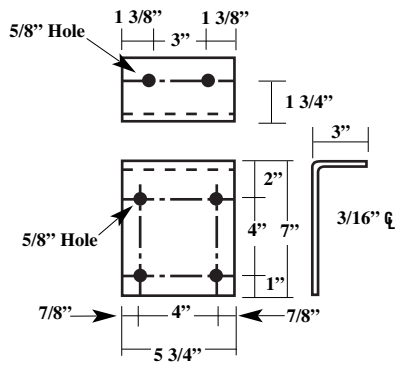
## HAT CHANNEL CEES AND ZEE CLIPS

Hat Channel	Dimension	GA
Red Primed Hat Channel	3" x 1.0069"	14
Red Primed Hat Channel	4" x 1.0069"	14
Red Primed Hat Channel	6" x 1.0069"	14
Red Primed Hat Channel	9" x 1.0069"	14
Galvanized Hat Channel	6" x 1.0069"	14
Galvanized Hat Channel	9" x 1.0069"	14

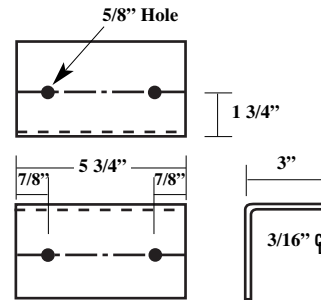


• Manufactured in Clinton, Illinois.

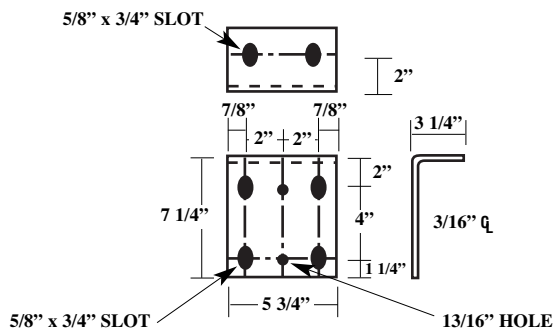
## Cee and Zee Clips



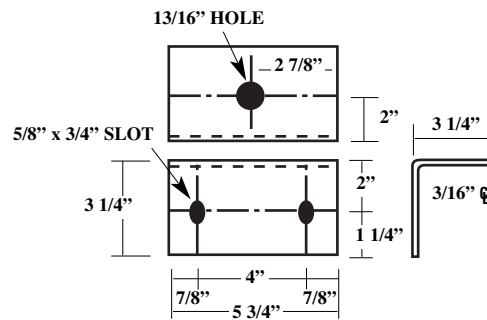
3" x 7" x 3/16" x 0' - 5 3/4"  
WT. = 3.22  
Item #: 76810



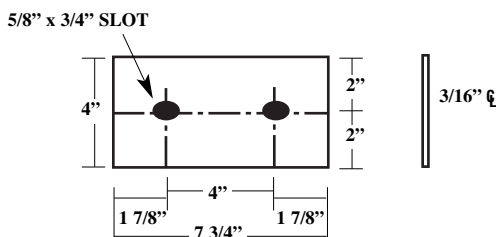
3" x 3" x 3/16" x 0' - 5 3/4"  
WT. = 1.92  
Item #: 76800



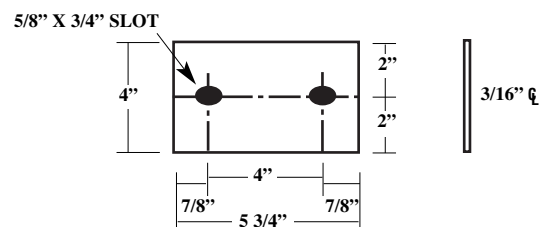
3 1/4" x 7 1/4" x 3/16" x 0' - 5 3/4"  
WT. = 3.52  
Item #: 76830



3 1/4" x 3 1/4" x 3/16" x 0' - 5 3/4"  
WT. = 2.22  
Item #: 76820



7 3/4" x 3/16" x 0' - 4"  
WT. = 1.70  
Item #: 76850



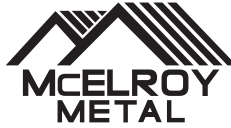
5 3/4" x 3/16" x 0' - 4"  
WT. = 1.28  
Item #: 76840



# SUBSTRUCTURAL INFORMATION

## STANDARD CEE AND ZEE AVAILABILITY

<b>ADELANTO</b>	<ul style="list-style-type: none"> <li>- Web size options vary from 4" to 12".</li> <li>- Flange size options vary from 2" to 4".</li> <li>- Return legs are 13/16" +/- 1/8".</li> <li>- Widest coil girth available is 20 15/16".</li> <li>- Web punching is standard - flange punching must be requested at time of order.</li> <li>- 4" web - contact a McElroy Representative.</li> <li>- 6" to 9" web gets standard 2 hole pattern (Example: 8" web is 2-4-2 pattern).</li> <li>- 10" web with 2", 2 1/2", or 3" flange - standard 2 hole punch (3-4-3 pattern) or standard 3 hole punch (1-4-4-1 pattern).</li> <li>- 10" web with 4" flange - standard 3 hole punch only (1-4-4-1 pattern).</li> <li>- 12" web gets standard 3 hole punch (2-4-4-2 pattern).</li> <li>- 12" web alternate is 2 hole punch (2-4-2 pattern).</li> <li>- Minimum length - 5'. Maximum length - 45' when rollformed.</li> <li>- 32' maximum length for special press broke purlins.</li> <li>- Stocks galvanized purlin coil only.</li> </ul>
<b>ASHBURN</b>	<ul style="list-style-type: none"> <li>- Web size options vary from 4" to 12".</li> <li>- Ashburn can make 2" flange on all web sizes and 5" flange on web sizes 8" or larger.</li> <li>- Return legs are 13/16" +/- 1/8".</li> <li>- Widest coil girth available is 24 15/16".</li> <li>- Web and flange can be punched in any location - flange punching must be requested at time of order.</li> <li>- Minimum length - 5'. Maximum length - 65' when rollformed.</li> <li>- 32' maximum length for special press broke purlins.</li> </ul>
<b>BOSSIER</b>	<ul style="list-style-type: none"> <li>- Web size options vary from 4" to 12".</li> <li>- Flange size options vary from 2" to 4".</li> <li>- Return legs are 13/16" +/- 1/8".</li> <li>- Widest coil girth available is 20 15/16".</li> <li>- Web punching is standard - flange punching must be requested at time of order.</li> <li>- 4" web - contact a McElroy Representative.</li> <li>- 6" to 9" web - standard 2 hole punch (Example: 8" web has 2-4-2 pattern).</li> <li>- 10" web with 2", 2 1/2", or 3" flange - standard 2 hole punch (3-4-3 pattern) or standard 3 hole punch (1-4-4-1 pattern).</li> <li>- 10" web with flange greater than 3" can not be punched.</li> <li>- 12" web with 2" or 2 1/2" gets standard 3 hole punch (2-4-4-2 pattern).</li> <li>- 12" web with flange greater than 2 1/2" can not be punched.</li> <li>- Minimum length - 5'. Maximum length - 60' when rollformed.</li> <li>- 32' maximum length for special press broke purlins.</li> </ul>
<b>CLINTON</b>	<ul style="list-style-type: none"> <li>- Web size options vary from 4" to 12".</li> <li>- Flange size options vary from 2" to 4".</li> <li>- Return legs are 13/16" +/- 1/8".</li> <li>- Widest coil girth available is 20 15/16".</li> <li>- Web punching is standard - flange punching must be requested at time of order.</li> <li>- 4" web - contact a McElroy Representative.</li> <li>- 6" to 9" web gets standard 2 hole pattern (Example: 8" web is 2-4-2 pattern).</li> <li>- 10" web with 2", 2 1/2", 3" flange - standard 2 hole punch (3-4-3 pattern) or standard 3 hold punch (1-4-4-1 pattern).</li> <li>- 10" web with 4" flange - standard 3 hole punch only (1-4-4-1 pattern).</li> <li>- 12" web gets standard 3 hole punch (2-4-4-2 pattern).</li> <li>- Minimum length - 5'. Maximum length - 45' when rollformed.</li> <li>- 32' maximum length for special press broke purlins.</li> </ul>
<b>SUNNYVALE</b>	<ul style="list-style-type: none"> <li>- Web size options vary from 4" to 12".</li> <li>- Flange size options vary from 2" to 4".</li> <li>- Return legs are 13/16" +/- 1/8".</li> <li>- Widest coil girth available is 23 15/16".</li> <li>- Web and flange can be punched in any location - flange punching must be requested at time of order.</li> <li>- Minimum length - 5'. Maximum length - 65' when rollformed.</li> <li>- 3 1/2" x 1 1/2" zee capability.</li> <li>- 32' maximum length for special press broke purlins.</li> </ul>
<b>WINCHESTER</b>	<ul style="list-style-type: none"> <li>- Web size options vary from 4" to 12".</li> <li>- Flange size options - 1 1/2", 2", 2 1/2", 3", 3 1/2" (zee only).</li> <li>- 2 1/2", 3 1/2", 4" (cee only).</li> <li>- Return legs are 13/16" +/- 1/8".</li> <li>- Widest coil girth available is 20 15/16".</li> <li>- Web punching is standard - flange punching must be requested at time of order.</li> <li>- 4" web - contact a McElroy Representative.</li> <li>- 6" to 9" web gets standard 2 hole pattern (Example: 8" web is 2-4-2 pattern).</li> <li>- 10" web with 2", 2 1/2", or 3" flange - standard 2 hold punch (3-4-3 pattern) or standard 3 hole punch (1-4-4-1 pattern).</li> <li>- 10" web with 4" flange - standard 3 hole punch only (1-4-4-1 pattern).</li> <li>- 12" web gets standard 3 hole punch (2-4-4-2 pattern).</li> <li>- Minimum length - 5'. Maximum length - 45' when rollformed.</li> <li>- 26' maximum length for special press broke purlin.</li> </ul>
<b>SPECIAL CEES AND ZEES</b>	<ul style="list-style-type: none"> <li>- Confirm critical dimensions.</li> <li>- Formula: web + flange + flange + 15/16" = coil girth.</li> <li>- Contact a McElroy Representative regarding special punching.</li> </ul>



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