VECTOR ENGINEERS
DRAPER, UTAH
(801) 990-1775
WWW.VECTORSE.COM

SUBJECT MANUFACTURED METAL BUILDING SURVEY

INSTRUCTIONS:

1. Always attempt to obtain as-built plans before resorting to this survey. Verify with the building owner, and the authority having jurisdiction that plans are not available.
   1.1. If plans are available, obtain a PDF or photograph every page.
2. Tools you will need: calipers, a tape measure, access/reach to the underside and topside of the roof
3. Completely fill out the survey forms. Incomplete forms will delay our analysis and will be sent back to be completed. Mark non-applicable fields as 'N/A'
4. PHOTOS ARE REQUIRED. (See photo checklist below.) The lack of photos will delay our analysis and will be requested if missing.

BUILDING SITE INFORMATION:

Project Name: _____ Address: _____

City: _____ State/Zip: _____

Building Manufacturer: _____

Many steel buildings will have a placard listing the manufacturer somewhere on the building. Some manufacturers are: Ameribuilt, Butler, Canam, Ceco, Chief, Clearspan, Metallic, Rhino, Rigid, Star, Worldwide, and many more.

PHOTO CHECKLIST: (All photos listed below are required.)

- ☐ Exterior elevation photos showing all (4) sides of the structure.
- ☐ Photos showing the underside of the roof and any hanging items (heaters, sprinkler pipes, lights, ducts, etc)
  Photos showing the steel building framing
  - ☐ Photos showing the framing from a distance
  - ☐ Photos showing the purlins and their attachment to the frames
  - ☐ Photos showing any additional supports such as interior columns
  - ☐ Photos of any damaged framing
- ☐ Photos of the roofing from above, photos of roof fasteners, where occur
  - ☐ Photos of roof fasteners, where occur

PANEL LAYOUT:

- ☐ Provide a roof plan showing the solar panel locations.
- ☐ Clearly identify the connection type and spacing.
- ☐ Clearly identify if the system uses (2) rails per panel, or if it is a rail-less (i.e. shared rail) system.

FRAMING CONDITION:

Check the boxes below for any observed damage to the structure. If damage was observed, please describe below and provide photos of the damage.

- ☐ Cuts into metal framing
- ☐ Bent steel
- ☐ Visible Sagging
- ☐ Loose or missing bolts/anchors
- ☐ Other

Describe Damage:

If you have questions, please call Vector Structural Engineering at (800) 558-0013.

3/27/2021 4:36 PM

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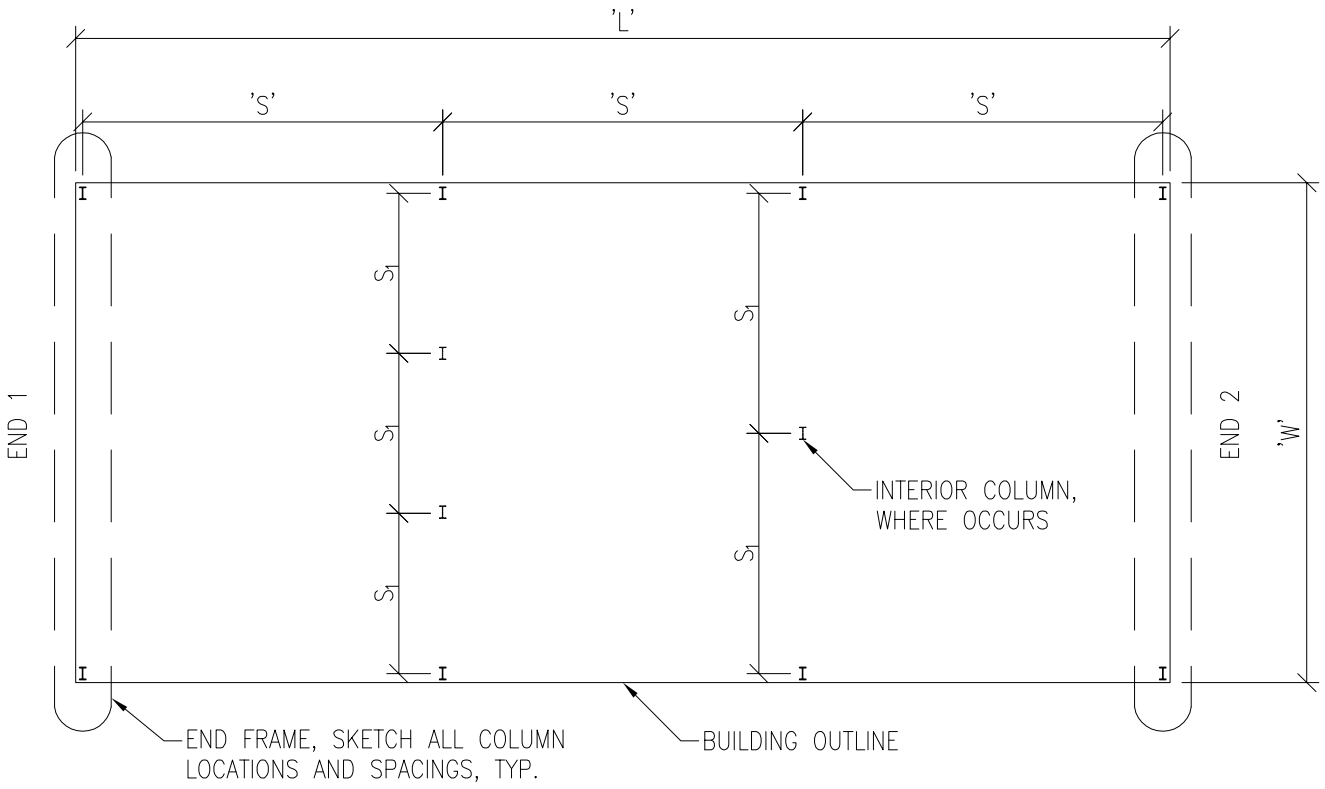
BUILDING CONFIGURATION:

On the back of this sheet, sketch the building layout, like the diagram shown below

Building Length (L): _____ Building Width (W): _____

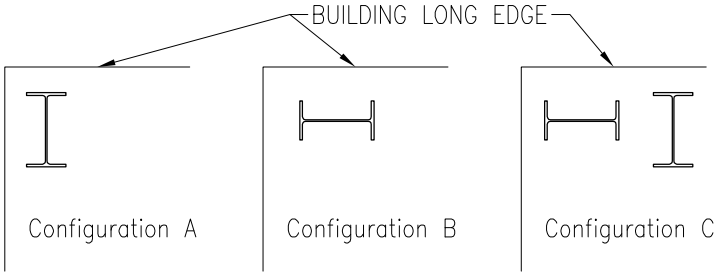
Frame Spacing (S): _____ (note any irregular spacings)

Interior Column Spacing (S_1): _____



END FRAME CONFIGURATION:

End Frame Configuration, End 1 (see below): _____ End Frame Configuration, End 2 (see below): _____



3/27/2021 4:36 PM

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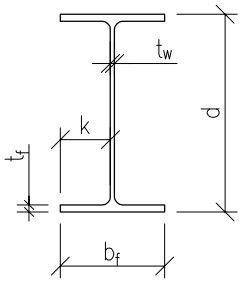
MEASUREMENT KEY



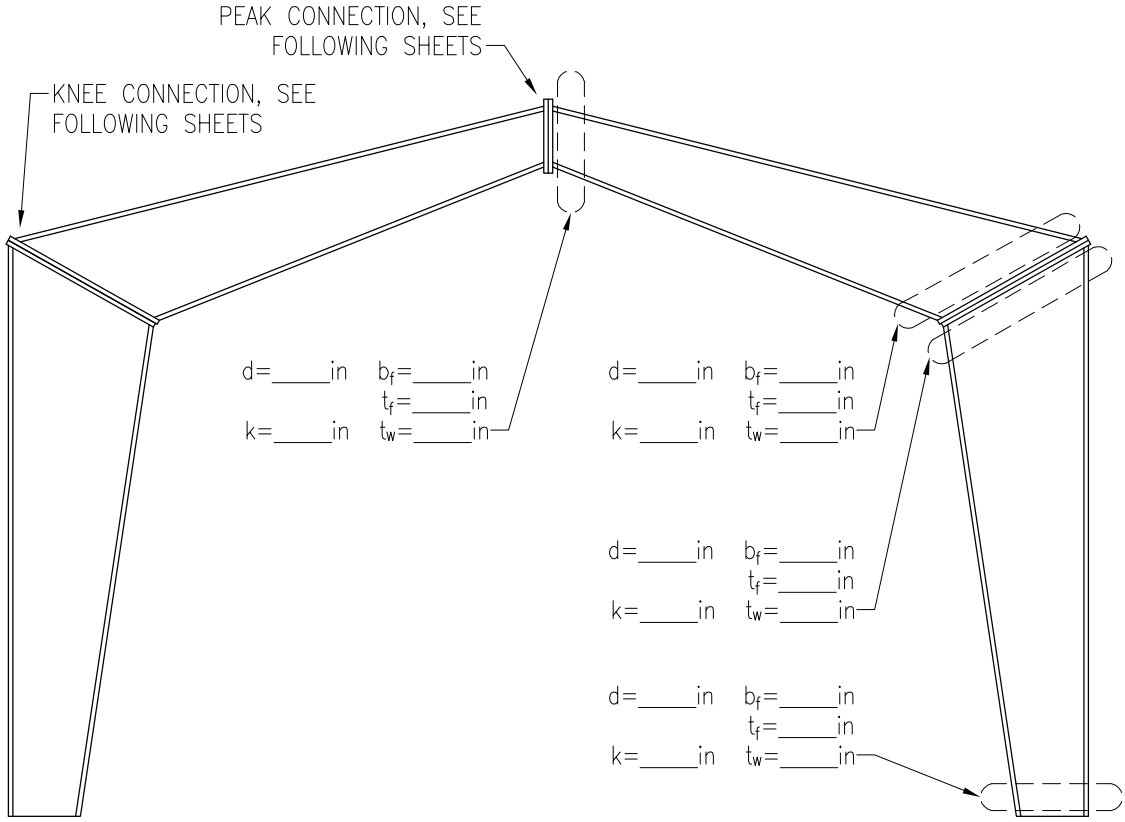
FRAME CONFIGURATION, TYPE I:

Fill out this form for each frame that has a different spacing, and the end frame. For example, if the building has all frames at the same spacing, you would fill out two frame surveys; one for all the interior frames, and one for the end frame. Mark the corresponding number on the building sketch

MEASUREMENT INSTRUCTIONS:

1. t_f must be measured with calipers, measuring tape will not give sufficient accuracy.
2. t_w usually can't be measured directly, measure b_f and k. Subtract k from bf twice to get t_w $t_w=b_f-(2*K)$

Frame Number: _____



3/27/2021 4:36 PM

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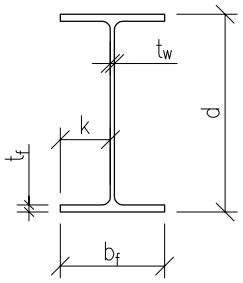
MEASUREMENT KEY



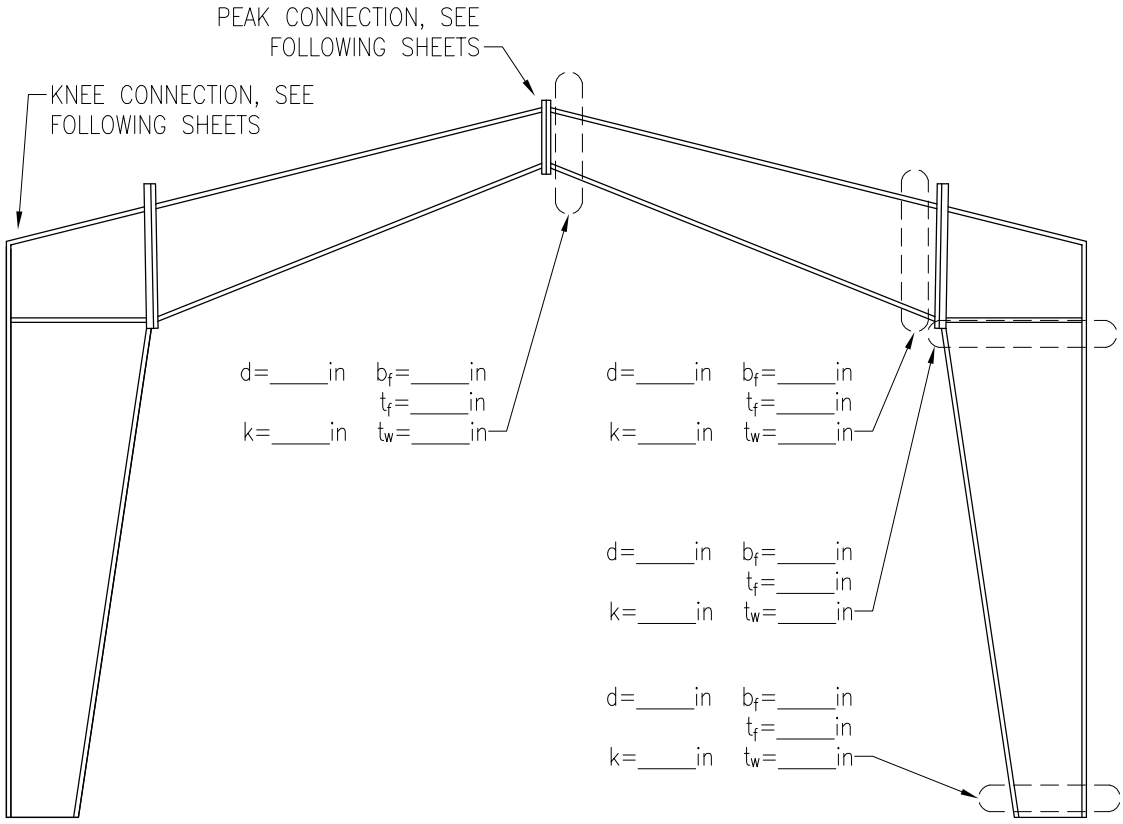
FRAME CONFIGURATION, TYPE II:

Fill out this form for each frame that has a different spacing, and the end frame. For example, if the building has all frames at the same spacing, you would fill out two frame surveys; one for all the interior frames, and one for the end frame. Mark the corresponding number on the building sketch

MEASUREMENT INSTRUCTIONS:

1. t_f must be measured with calipers, measuring tape will not give sufficient accuracy.
2. t_w usually can't be measured directly, measure b_f and k. Subtract k from bf twice to get t_w $t_w=b_f-(2*K)$

Frame Number: _____



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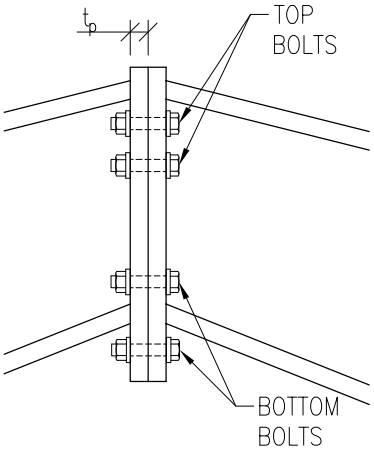
FRAME CONNECTIONS:

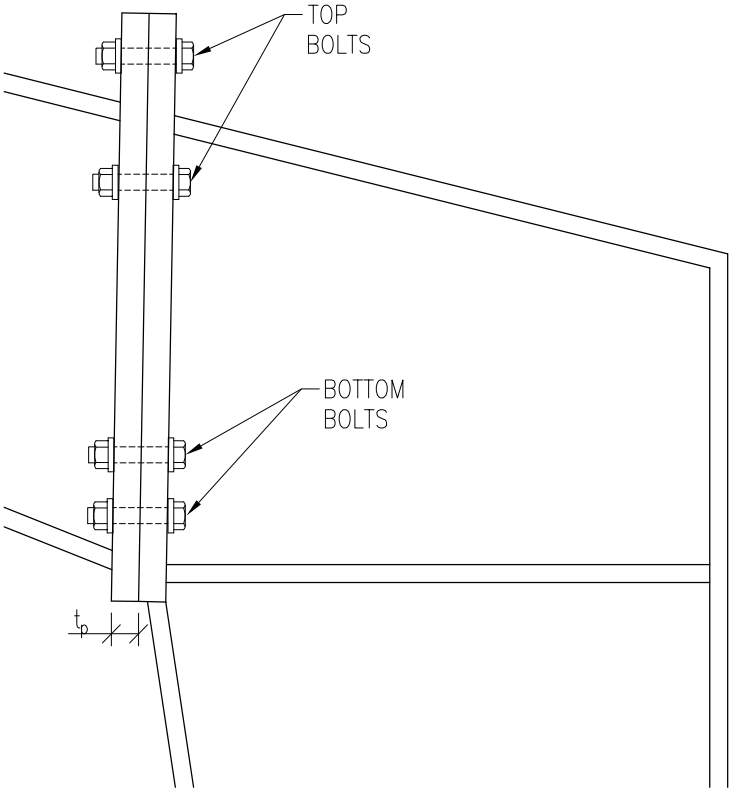
1. Make all plate thickness measurements with calipers
2. Measure bolt diameter at exposed threads

Frame Number: _____



PEAK CONNECTION:

Plate Thickness (t_p): _____
Bolt Diameter: _____
Number of Top Bolts: _____
Number of Bottom Bolts: _____



KNEE CONNECTION:

Plate Thickness (t_p): _____
Bolt Diameter: _____
Number of Top Bolts: _____
Number of Bottom Bolts: _____

3/27/2021 4:36 PM

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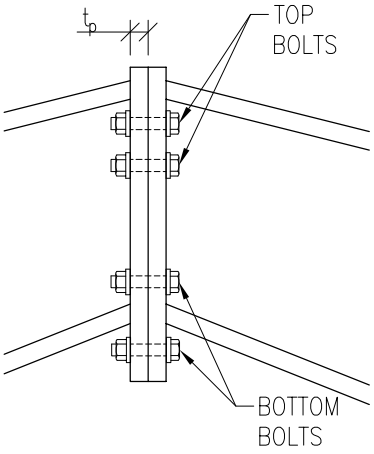
FRAME CONNECTIONS:

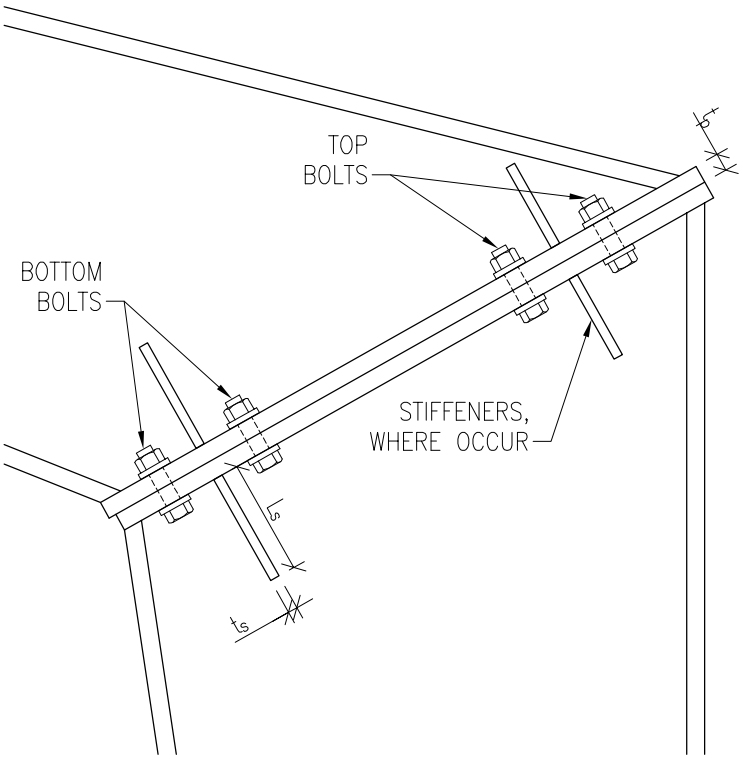
1. Make all plate thickness measurements with calipers
2. Measure bolt diameter at exposed threads

Frame Number: _____



PEAK CONNECTION:

Plate Thickness (t_p): _____
Bolt Diameter: _____
Number of Top Bolts: _____
Number of Bottom Bolts: _____



KNEE CONNECTION:

Plate Thickness (t_p): _____
Bolt Diameter: _____

Number of Top Bolts: _____
Top Stiffener Thickness (t_s): _____
Top Stiffener Length (L_s): _____

Number of Bottom Bolts: _____
Bottom Stiffener Thickness (t_s): _____
Bottom Stiffener Length (L_s): _____

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PURLIN CONFIGURATION:

Provide the purlin layout information below.

End Bay Purlin Configuration: ☐ End Zone ☐ End Zone w/ Corner Zone Purlins
* Note that corner zone purlins may be at the same spacing as the end zone purlins, but a thicker gauge steel

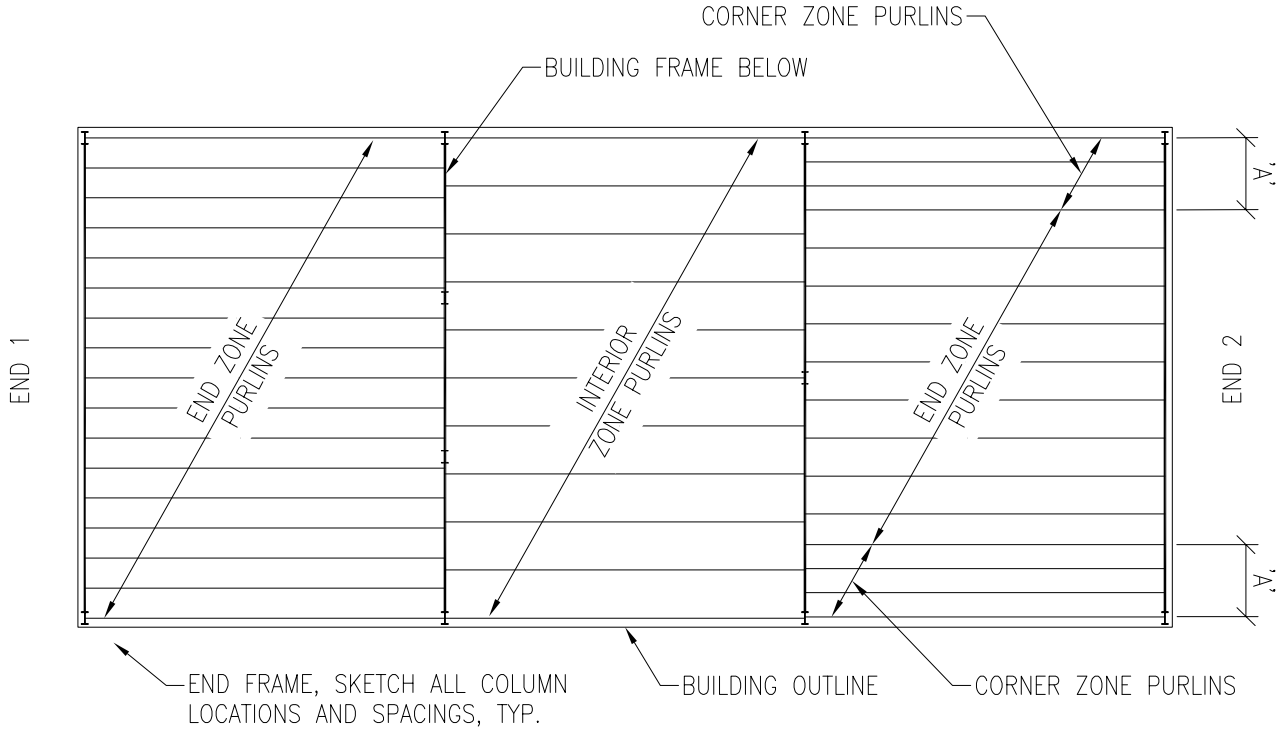
Interior zone purlin spacing: _____

End zone purlins occur in how many bays from the edge? _____

End zone purlin spacing: _____

Corner zone purlin spacing: _____

Corner zone extents 'A': _____



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INSTRUCTIONS:

1. Complete information for each purlin type from preceding page.
2. Provide a minimum of (1) photo of each purlin.

Purlin Type (see below): ☐ C–Purlin ☐ C–Purlin w/Lip ☐ Z–Purlin ☐ Z–Purlin w/Lip

INTERIOR ZONE PURLINS
Purlin Depth: _____ Purlin Width: _____(minimum accuracy is 1/16th of an inch)

Purlin Thickness: _____ (measure with calipers or sheet metal thickness gauge)

Does the purlin have a lip: ☐ Yes ☐ No Lip Length: _____ (minimum accuracy is 1/16th of an inch)

END ZONE PURLINS
Purlin Depth: _____ Purlin Width: _____(minimum accuracy is 1/16th of an inch)

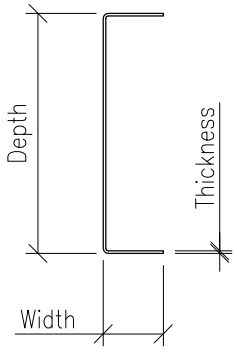
Purlin Thickness: _____ (measure with calipers or sheet metal thickness gauge)

Does the purlin have a lip: ☐ Yes ☐ No Lip Length: _____ (minimum accuracy is 1/16th of an inch)

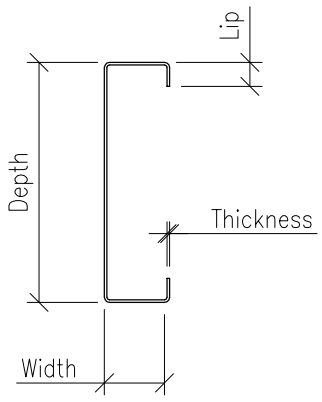
CORNER ZONE PURLINS
Purlin Depth: _____ Purlin Width: _____(minimum accuracy is 1/16th of an inch)

Purlin Thickness: _____ (measure with calipers or sheet metal thickness gauge)

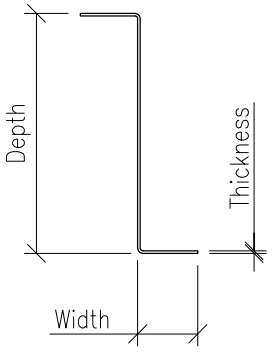
Does the purlin have a lip: ☐ Yes ☐ No Lip Length: _____ (minimum accuracy is 1/16th of an inch)



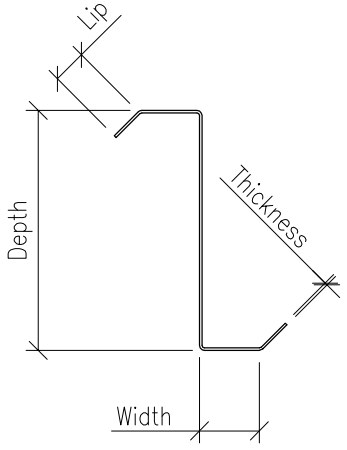
C–PURLIN



C–PURLIN w/ LIP



Z–PURLIN



Z–PURLIN w/ LIP

3/27/2021 4:36 PM