C-Channel Brochure
Red Iron

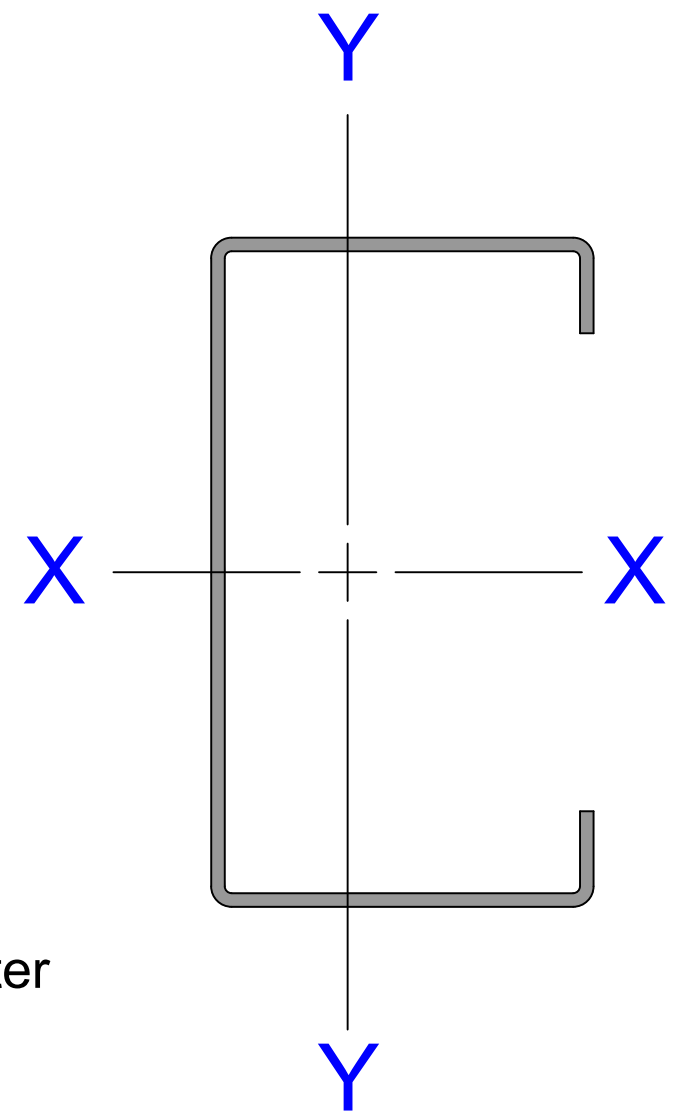
Quick Reference

Gross Properties

I	Moment of inertia of cross section about X,Y
S	Section modulus about X,Y
r	Radius of gyration of cross section about X,Y

Effective Properties

J	Torsional Constant
Cw	Warping Constant
Xo	Shear Center Location
Ro	Polar Radius of Gyration about the shear center
β	Monosymmetry Constant



Information

Members

The members represented in this publication are typically produced in G60, grade 50 cold formed steel. G90 is available upon request but may require longer lead times.

Documentation

This document is subject to change without notice. Please contact B&M Metals to make sure that you have the latest edition of this document.

Service Holes

Service holes in studs can be punched upon request. In the event that spacing for the service holes is not specified, they will be punched on 3 foot centers. Please contact B&M Metals for custom hole spacing or more details.

Red Iron Disclaimer

Use with product tables, details, and preliminary estimating only

1. Scope / Intended Use

- Reference use only. This brochure is a general product reference for preliminary review, estimating, and coordination. It is not a sealed design package.
- Engineer verification required. All spans, reactions, member adequacy, deflection, stability, bracing, connections, anchorage, and foundation requirements shall be verified by a licensed Professional Engineer in the project jurisdiction.
- Project-specific conditions govern. Final member selection depends on actual loads, unbraced length, end conditions, diaphragm action, serviceability limits, and governing code requirements.

2. Design / Fabrication

- Codes and standards. Verify design using the governing code and applicable standards, including current editions of AISC 360, ASCE/SEI 7, and MBMA references where applicable.
- Material and availability. Dimensions, grades, coatings, lengths, hole patterns, finishes, tolerances, and availability may vary by mill, supplier, and production schedule. Specifications are subject to change without notice.
- Fabrication and field changes. Shop drawings, weld procedures, bolt selection, detailing, substitutions, and field modifications must be reviewed and approved by the Engineer of Record before use.

3. Liabiltiy / Revision Control

- No warranty of fitness for design. Listed members and properties are provided without guarantee that they satisfy a specific building, loading case, or code condition.
- Tolerance / liability limitation. Sweep, camber, twist, finish variation, and minor dimensional variation may occur within accepted manufacturing tolerances.
- Confirm latest revision. Verify the latest brochure revision and current project criteria before ordering, engineering, or installation. Contact B&M Metals for updated data or project-specific support.

Suggested Reference Standards

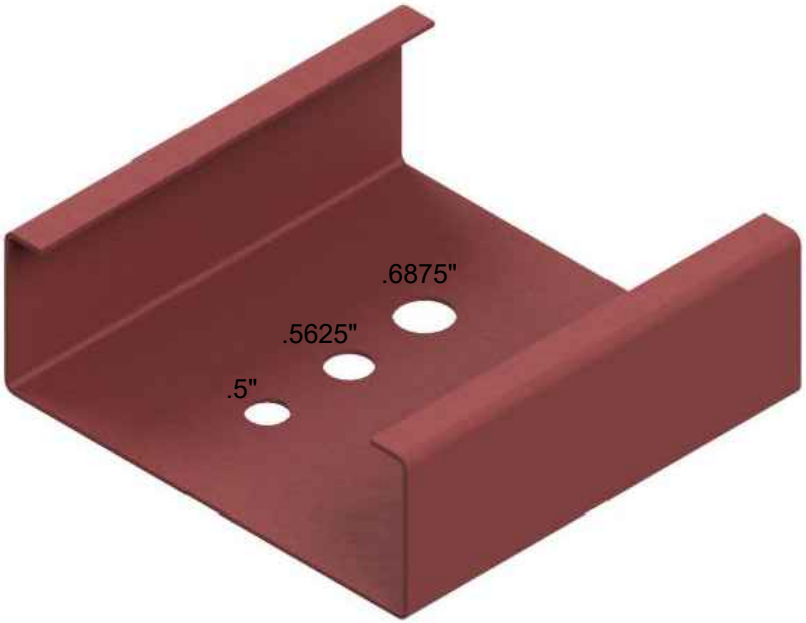
- AISC 360-22 - Structural steel design
- ASCE/SEI 7-22 - Design loads
- MBMA Metal Building Systems Manual - 2024
- Applicable ASTM material specs per project documents

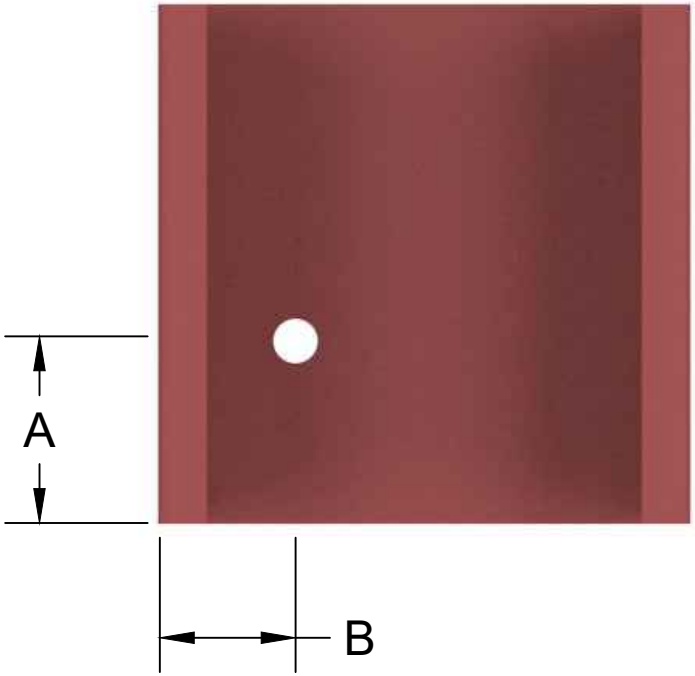
Other Notes

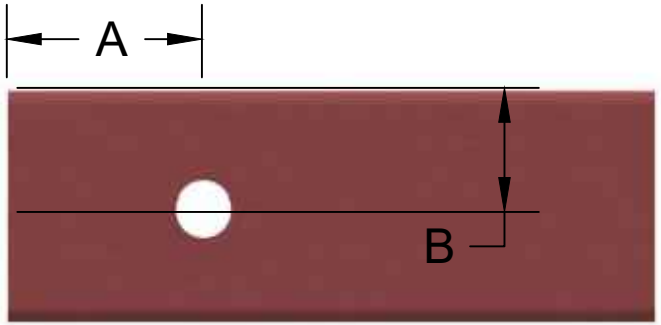
- Member weights and section properties are nominal unless noted otherwise.
- Connection details shown elsewhere are conceptual unless sealed by the Engineer of Record.
- Do not scale drawings. Use written dimensions only.
- Contact B&M Metals for updated data, custom members, or project support.

Last Updated: April 2026

Hole Punching







* A - Specify Dimension
* B - Specify Dimension

* All members shown in 14 gauge to show detail

HOLE_PUNCH_GUIDE

B&M METALS
6195 Hwy 52 East
Murrayville GA, 30564
www.BMMetals.com
Office: (706) 864-6068
Fax: (706) 864-2147

Member specs and limits

Name:	350S162
Depth:	3.5"
Flange:	1.625"
Lip:	.5"
Lengths:	6' - 60'
Gauges:	16,14,12

Name Breakdown

1050L162 - 43

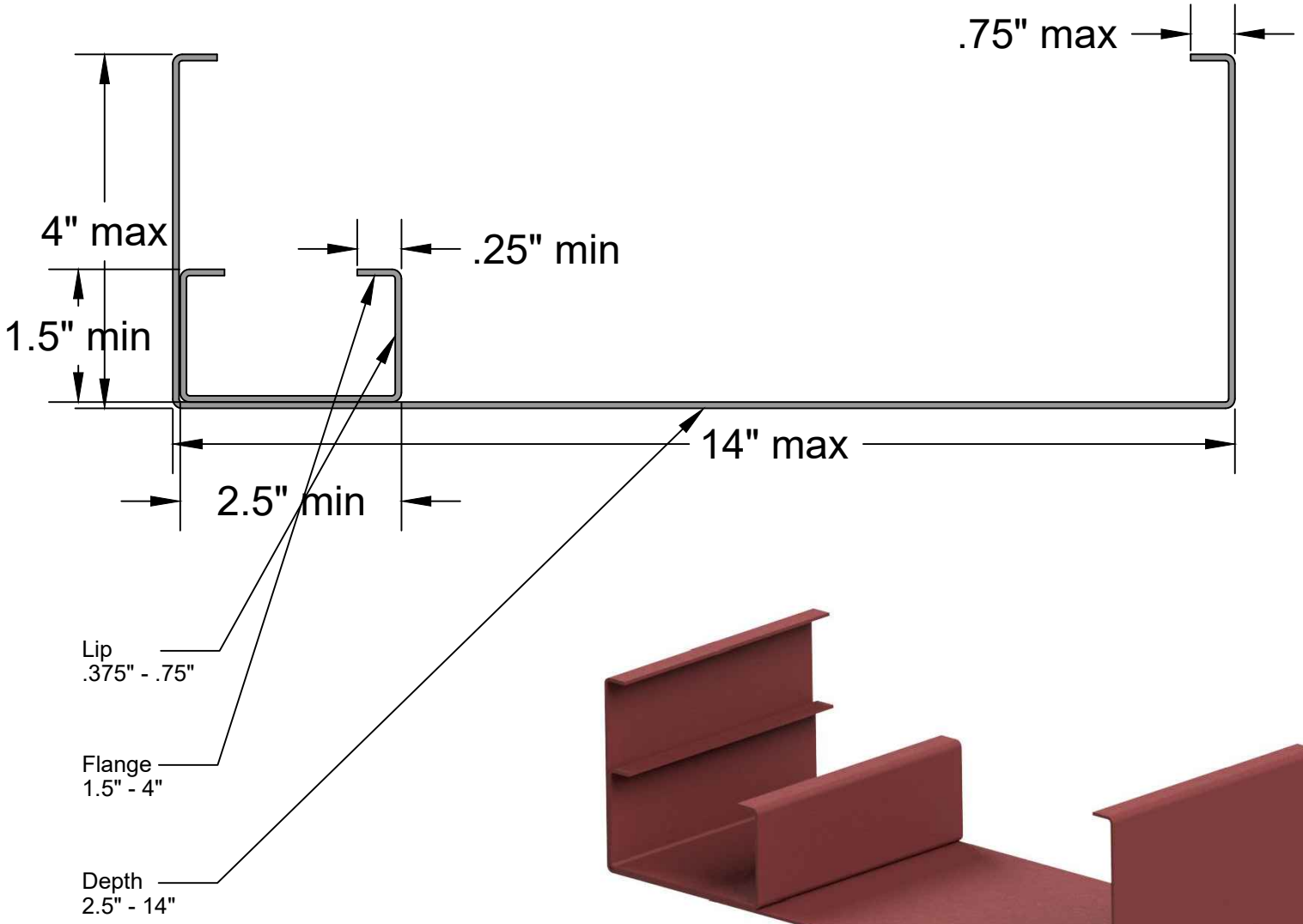
- 1050 — Depth in Inches: 1050 = 10.50"
- L — Member Key
- 162 — Flange Height: 162 = 1.625"
- 43 — Mill Thickness

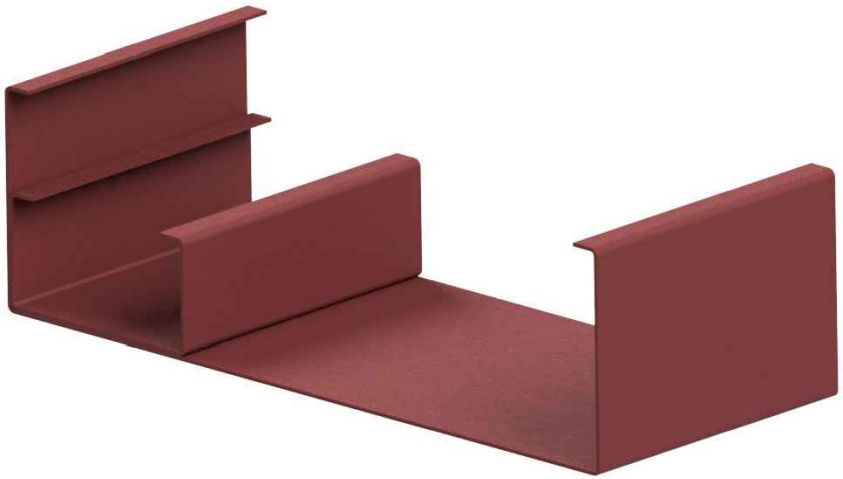
Member Key

S = Stud (C Shaped)
L = Lintel (L Shaped)
T = Track (U Shaped)
W = I-Beam (I Shaped)
E = Eave Strut (C Shaped)
D = Double Eave Strut
A = Angle (2 Legs, 1 Angle)
F = Hat (Top Hat Shaped)
B = Box (Rectangle Shaped)
FI = Strap/Flat (Flat Shaped)
Z = Zee (Z Shaped)

Mill - Gauge	Bend Radius
25 mill = 24 gauge	.0764
30 mill = 22 gauge	.0796
33 mill = 20 gauge	.0764
43 mill = 18 gauge	.0712
54 mill = 16 gauge	.0849
68 mill = 14 gauge	.1069
97 mill = 12 gauge	.1325

Custom Studs and Track





*Dimension changes in 1/16" increments

* All members shown in 14 gauge to show detail

CUSTOM_C_CHANNEL

B&M METALS
COVERING THE SOUTHEAST

6195 Hwy 52 East
Murrayville GA, 30564
www.BMMetals.com
Office: (706) 864-6068
Fax: (706) 864-2147

Member specs and limits

Name:	DepthSFlange
Depth:	3.5" - 14"
Flange:	1.5" - 4"
Lip:	.5" - .75"
Lengths:	6' - 60'
Gauges:	16,14,12

Name Breakdown

1050L162 - 43

- 1050 — Depth in Inches: 1050 = 10.50"
- L — Member Key
- 162 — Flange Height: 162 = 1.625"
- 43 — Mill Thickness

Member Key

- S = Stud (C Shaped)
- L = Lintel (L Shaped)
- T = Track (U Shaped)
- W = I-Beam (I Shaped)
- E = Eave Strut (C Shaped)
- D = Double Eave Strut
- A = Angle (2 Legs, 1 Angle)
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- B = Box (Rectangle Shaped)
- FI = Strap/Flat (Flat Shaped)
- Z = Zee (Z Shaped)

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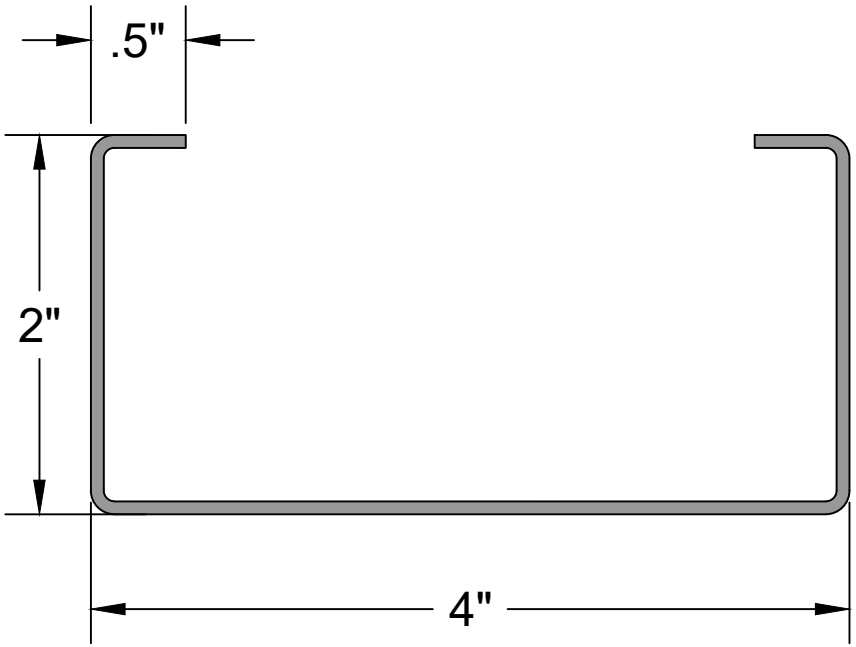
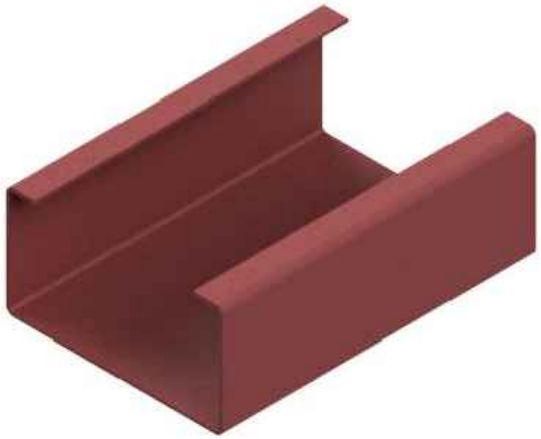
25 mill = 24 gauge	.0764
30 mill = 22 gauge	.0796
33 mill = 20 gauge	.0764
43 mill = 18 gauge	.0712
54 mill = 16 gauge	.0849
68 mill = 14 gauge	.1069
97 mill = 12 gauge	.1325

Steel Members Documentation

4" x 2" Cee





* All members shown in 14 gauge to show detail

						Gross Properties (x)			Gross Properties (y)			Torsional Properties				
Member Name	G	ksi	Area	Weight	Width	Ix	Sx	rx	Iy	Sy	ry	J	Cw	Xo	Ro	β
400S200-54	16	50	0.500	1.702	8.77	1.026	0.513	1.432	0.212	0.156	0.651	0.00054	0.476	1.211	1.985	0.628
400S200-68	14	50	0.627	2.135	8.71	1.276	0.638	1.426	0.262	0.192	0.646	0.00108	0.584	1.199	1.972	0.630
400S200-97	12	50	0.852	2.899	8.60	1.705	0.853	1.415	0.347	0.253	0.639	0.00278	0.761	1.177	1.948	0.635

400S200

*All calculations should be verified by licensed Engineer
** Full Sectional properties available upon request

6195 Hwy 52 East
Murrayville GA, 30564
www.BMMetals.com
Office: (706) 864-6068
Fax: (706) 864-2147

Member specs and limits

Name:	400S200
Depth:	4"
Flange:	2"
Lip:	.5"
Lengths:	6' - 60'
Gauges:	16, 14, 12

Name Breakdown

1050L162 - 43

- 1050 — Depth in Inches: 1050 = 10.50"
- L — Member Key
- 162 — Flange Height: 162 = 1.625"
- 43 — Mill Thickness

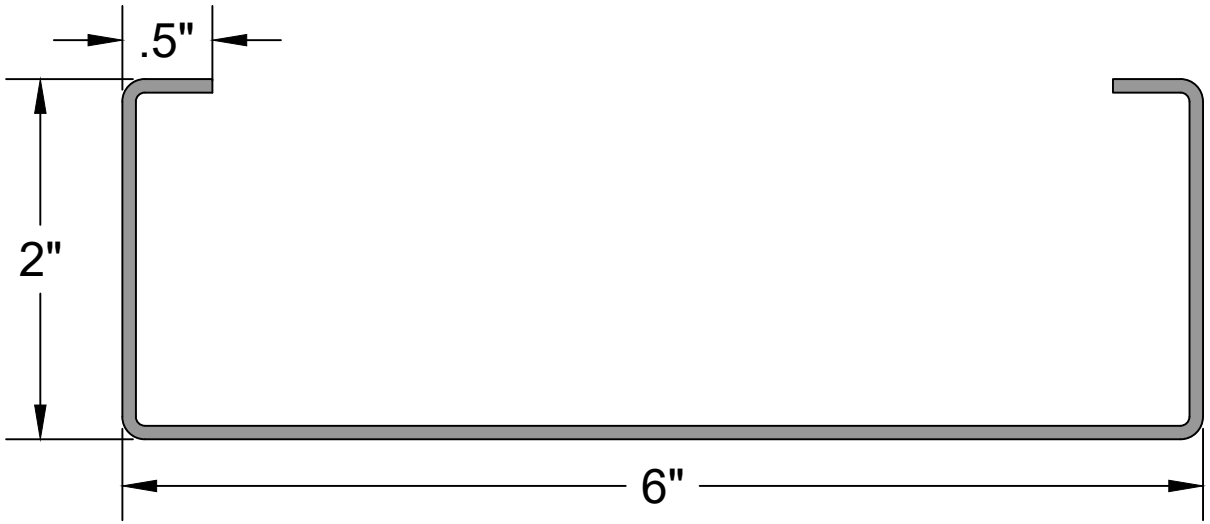
Member Key

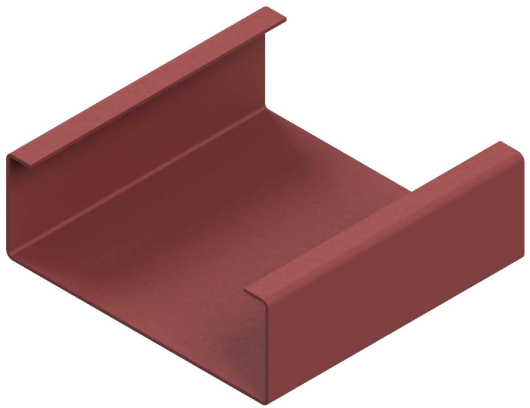
S = Stud (C Shaped)
L = Lintel (L Shaped)
T = Track (U Shaped)
W = I-Beam (I Shaped)
E = Eave Strut (C Shaped)
D = Double Eave Strut
A = Angle (2 Legs, 1 Angle)
F = Hat (Top Hat Shaped)
B = Box (Rectangle Shaped)
Fl = Strap/Flat (Flat Shaped)
Z = Zee (Z Shaped)

Mill - Gauge	Bend Radius
25 mill = 24 gauge	.0764
30 mill = 22 gauge	.0796
33 mill = 20 gauge	.0764
43 mill = 18 gauge	.0712
54 mill = 16 gauge	.0849
68 mill = 14 gauge	.1069
97 mill = 12 gauge	.1325

Steel Members Documentation

6" x 2" Cee





* All members shown in 14 gauge to show detail

						Gross Properties (x)			Gross Properties (y)			Torsional Properties				
Member Name	G	ksi	Area	Weight	Width	Ix	Sx	rx	Iy	Sy	ry	J	Cw	Xo	Ro	β
600S200-54	16	50	1.050	3.573	10.60	3.951	1.317	1.940	0.410	0.275	0.625	0.00343	1.996	1.162	2.346	0.755
600S200-68	14	50	0.771	2.625	10.71	2.944	0.981	1.954	0.309	0.209	0.633	0.00133	1.524	1.183	2.370	0.751
600S200-97	12	50	1.050	3.573	10.60	3.951	1.317	1.940	0.410	0.275	0.625	0.00343	1.996	1.162	2.346	0.755

600S200

*All calculations should be verified by licensed Engineer
** Full Sectional properties available upon request

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Murrayville GA, 30564
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Office: (706) 864-6068
Fax: (706) 864-2147

Member specs and limits

Name:	600S200
Depth:	6"
Flange:	2"
Lip:	.5"
Lengths:	6' - 60'
Gauges:	16, 14, 12

Name Breakdown

1050L162 - 43

- 1050 — Depth in Inches: 1050 = 10.50"
- L — Member Key
- 162 — Flange Height: 162 = 1.625"
- 43 — Mill Thickness

Member Key

S = Stud (C Shaped)
L = Lintel (L Shaped)
T = Track (U Shaped)
W = I-Beam (I Shaped)
E = Eave Strut (C Shaped)
D = Double Eave Strut
A = Angle (2 Legs, 1 Angle)
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Z = Zee (Z Shaped)

Mill - Gauge	Bend Radius
25 mill = 24 gauge	.0764
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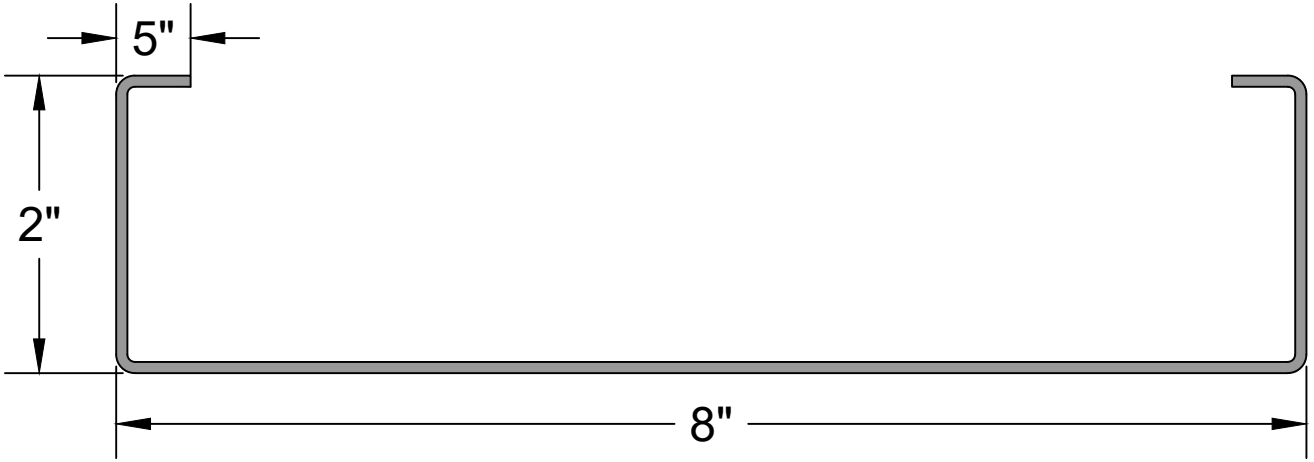
33 mill = 20 gauge	.0764
43 mill = 18 gauge	.0712
54 mill = 16 gauge	.0849
68 mill = 14 gauge	.1069
97 mill = 12 gauge	.1325

Steel Members Documentation

8" x 2" Stud



* All members shown in 14 gauge to show detail

						Gross Properties (x)			Gross Properties (y)			Torsional Properties				
Member Name	G	ksi	Area	Weight	Width	Ix	Sx	rx	Iy	Sy	ry	J	Cw	Xo	Ro	β
800S200-54	16	50	0.728	2.478	12.77	4.250	1.062	2.416	0.276	0.177	0.616	0.00079	2.435	1.186	2.761	0.815
800S200-68	14	50	0.915	3.115	12.71	5.302	1.326	2.407	0.342	0.219	0.611	0.00158	3.000	1.175	2.747	0.817
800S200-97	12	50	1.248	4.246	12.60	7.129	1.782	2.390	0.453	0.288	0.602	0.00408	3.941	1.154	2.722	0.820

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6195 Hwy 52 East
Murrayville GA, 30564
www.BMMetals.com
Office: (706) 864-6068
Fax: (706) 864-2147

Member specs and limits

Name:	800S200
Depth:	8"
Flange:	2"
Lip:	.5"
Lengths:	6' - 60'
Gauges:	16, 14, 12

Name Breakdown

1050L162 - 43

- 1050 — Depth in Inches: 1050 = 10.50"
- L — Member Key
- 162 — Flange Height: 162 = 1.625"
- 43 — Mill Thickness

Member Key

- S = Stud (C Shaped)
- L = Lintel (L Shaped)
- T = Track (U Shaped)
- W = I-Beam (I Shaped)
- E = Eave Strut (C Shaped)
- D = Double Eave Strut
- A = Angle (2 Legs, 1 Angle)
- F = Hat (Top Hat Shaped)
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Mill - Gauge	Bend Radius
25 mill = 24 gauge	.0764
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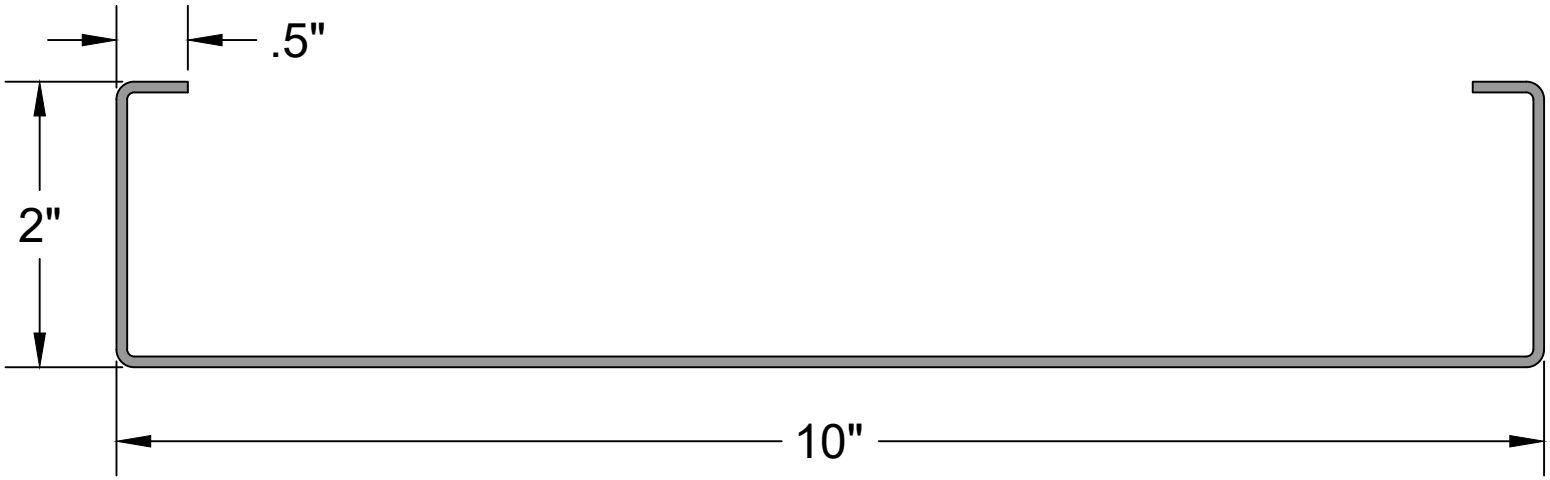
33 mill = 20 gauge	.0764
43 mill = 18 gauge	.0712
54 mill = 16 gauge	.0849
68 mill = 14 gauge	.1069
97 mill = 12 gauge	.1325

Steel Members Documentation

10" x 2" Stud



* All members shown in 14 gauge to show detail

						Gross Properties (x)			Gross Properties (y)			Torsional Properties				
Member Name	G	ksi	Area	Weight	Width	Ix	Sx	rx	Iy	Sy	ry	J	Cw	Xo	Ro	β
1000S200-54	16	50	0.842	2.866	14.77	6.687	1.337	2.818	0.295	0.183	0.592	0.00091	4.101	1.181	3.113	0.856
1000S200-68	14	50	1.059	3.605	14.71	8.349	1.670	2.807	0.366	0.225	0.587	0.00183	5.055	1.170	3.098	0.857
1000S200-97	12	50	1.446	4.920	14.60	11.24	2.247	2.788	0.484	0.296	0.578	0.00472	6.651	1.150	3.071	0.860

1000S200

*All calculations should be verified by licensed Engineer
** Full Sectional properties available upon request

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6195 Hwy 52 East
Murrayville GA, 30564
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Office: (706) 864-6068
Fax: (706) 864-2147

Member specs and limits

Name:	1000S200
Depth:	10"
Flange:	2"
Lip:	.5"
Lengths:	6' - 60'
Gauges:	16, 14, 12

Name Breakdown

1050L162 - 43

- 1050 — Depth in Inches: 1050 = 10.50"
- L — Member Key
- 162 — Flange Height: 162 = 1.625"
- 43 — Mill Thickness

Member Key

S = Stud (C Shaped)
L = Lintel (L Shaped)
T = Track (U Shaped)
W = I-Beam (I Shaped)
E = Eave Strut (C Shaped)
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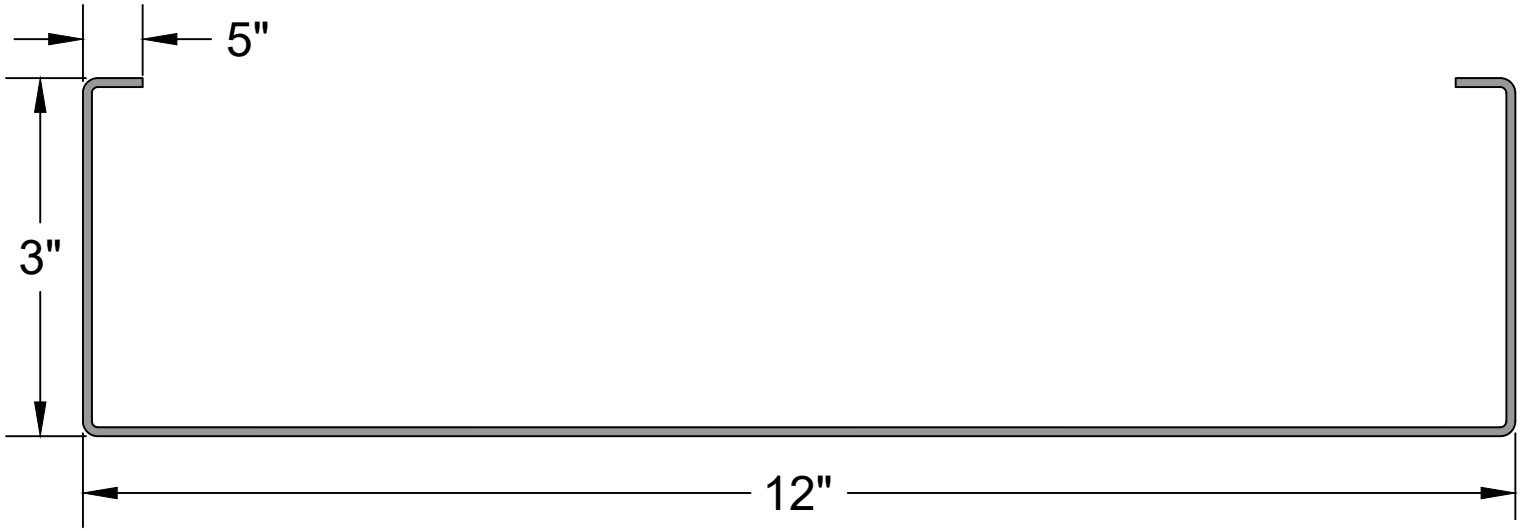
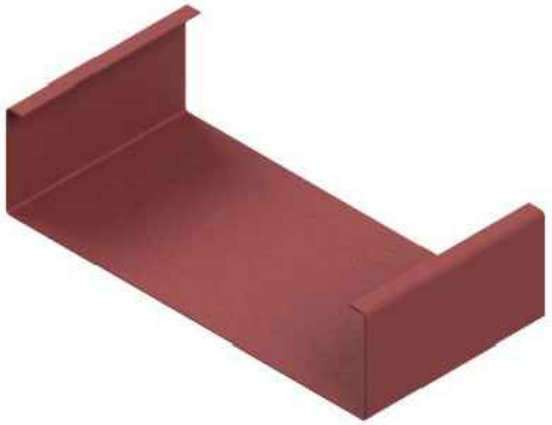
Z = Zee (Z Shaped)

Mill - Gauge	Bend Radius
25 mill = 24 gauge	.0764
30 mill = 22 gauge	.0796
33 mill = 20 gauge	.0764
43 mill = 18 gauge	.0712
54 mill = 16 gauge	.0849
68 mill = 14 gauge	.1069
97 mill = 12 gauge	.1325

Steel Members Documentation

12" x 3" Stud





* All members shown in 14 gauge to show detail

						Gross Properties (x)			Gross Properties (y)			Torsional Properties				
Member Name	G	ksi	Area	Weight	Width	Ix	Sx	rx	Iy	Sy	ry	J	Cw	Xo	Ro	β
1200S300-54	16	50	1.070	3.641	18.77	13.74	2.290	3.584	0.802	0.336	0.866	0.0012	19.09	1.692	4.056	0.826
1200S300-68	14	50	1.347	4.585	18.71	17.21	2.868	3.574	0.997	0.416	0.860	0.0023	23.71	1.680	4.042	0.827
1200S300-97	12	50	1.842	6.268	18.60	23.29	3.881	3.556	1.332	0.554	0.851	0.0060	31.64	1.660	4.015	0.829

1200S300

*All calculations should be verified by licensed Engineer
** Full Sectional properties available upon request

B&M METALS

6195 Hwy 52 East
Murrayville GA, 30564
www.BMMetals.com
Office: (706) 864-6068
Fax: (706) 864-2147

Member specs and limits

Name:	1200S300
Depth:	12"
Flange:	3"
Lip:	.5"
Lengths:	6' - 60'
Gauges:	16, 14, 12

Name Breakdown

1050L162 - 43

- 1050 — Depth in Inches: 1050 = 10.50"
- L — Member Key
- 162 — Flange Height: 162 = 1.625"
- 43 — Mill Thickness

Member Key

- S = Stud (C Shaped)
- L = Lintel (L Shaped)
- T = Track (U Shaped)
- W = I-Beam (I Shaped)
- E = Eave Strut (C Shaped)
- D = Double Eave Strut
- A = Angle (2 Legs, 1 Angle)
- F = Hat (Top Hat Shaped)
- B = Box (Rectangle Shaped)
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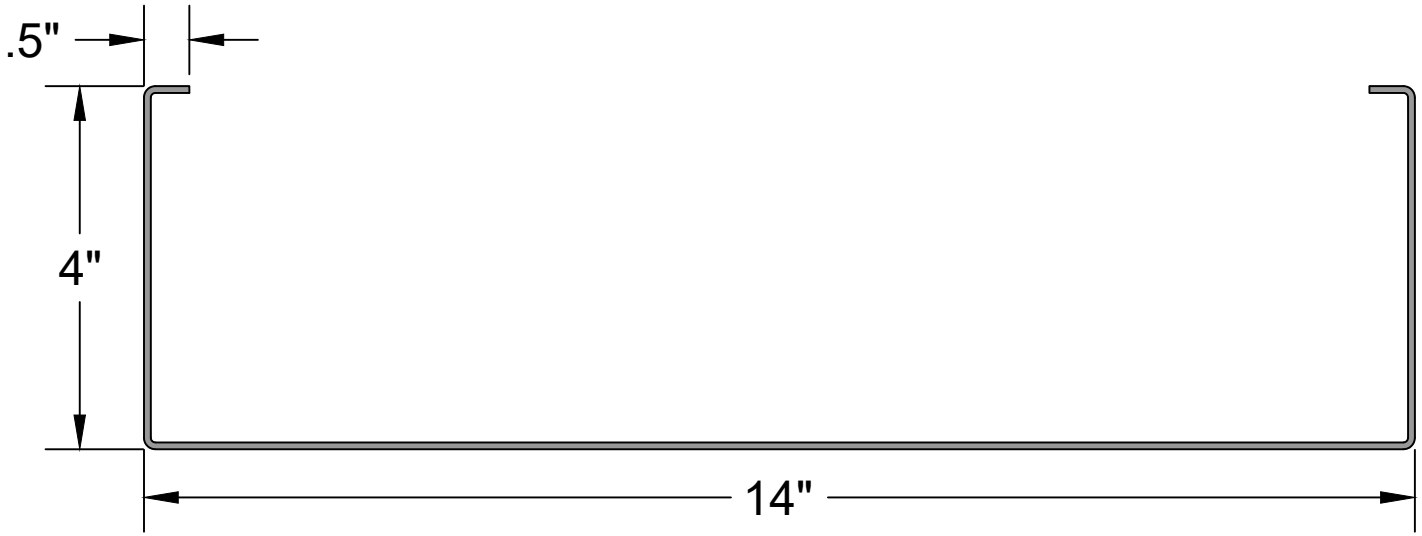
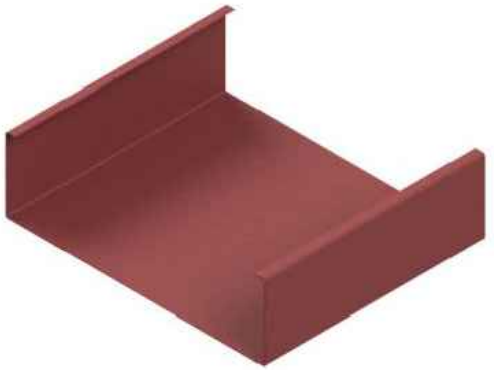
- Z = Zee (Z Shaped)

Mill - Gauge	Bend Radius
25 mill = 24 gauge	.0764
30 mill = 22 gauge	.0796
33 mill = 20 gauge	.0764
43 mill = 18 gauge	.0712
54 mill = 16 gauge	.0849
68 mill = 14 gauge	.1069
97 mill = 12 gauge	.1325

Steel Members Documentation

14" x 4" Stud





* All members shown in 14 gauge to show detail

						Gross Properties (x)			Gross Properties (y)			Torsional Properties				
Member Name	G	ksi	Area	Weight	Width	Ix	Sx	rx	Iy	Sy	ry	J	Cw	Xo	Ro	β
1400S400-54	16	50	1.298	4.417	22.77	24.30	3.471	4.326	1.663	0.528	1.132	0.0014	59.79	2.197	4.982	0.806
1400S400-68	14	50	1.635	5.565	22.71	30.48	4.354	4.317	2.074	0.657	1.126	0.0028	74.57	2.185	4.968	0.806
1400S400-97	12	50	2.238	7.616	22.60	41.38	5.911	4.300	2.786	0.879	1.116	0.0073	100.2	2.165	4.942	0.808

1400S400

*All calculations should be verified by licensed Engineer
** Full Sectional properties available upon request

6195 Hwy 52 East
Murrayville GA, 30564
www.BMMetals.com
Office: (706) 864-6068
Fax: (706) 864-2147

Member specs and limits

Name:	1400S400
Depth:	14"
Flange:	4"
Lip:	.5"
Lengths:	6' - 60'
Gauges:	16, 14, 12

Name Breakdown

1050L162 - 43

- 1050 — Depth in Inches: 1050 = 10.50"
- L — Member Key
- 162 — Flange Height: 162 = 1.625"
- 43 — Mill Thickness

Member Key

- S = Stud (C Shaped)
- L = Lintel (L Shaped)
- T = Track (U Shaped)
- W = I-Beam (I Shaped)
- E = Eave Strut (C Shaped)
- D = Double Eave Strut
- A = Angle (2 Legs, 1 Angle)
- F = Hat (Top Hat Shaped)
- B = Box (Rectangle Shaped)
- Fl = Strap/Flat (Flat Shaped)
- Z = Zee (Z Shaped)

Mill - Gauge	Bend Radius
25 mill = 24 gauge	.0764
30 mill = 22 gauge	.0796
33 mill = 20 gauge	.0764
43 mill = 18 gauge	.0712
54 mill = 16 gauge	.0849
68 mill = 14 gauge	.1069
97 mill = 12 gauge	.1325