

# **Steel Members Brochure**

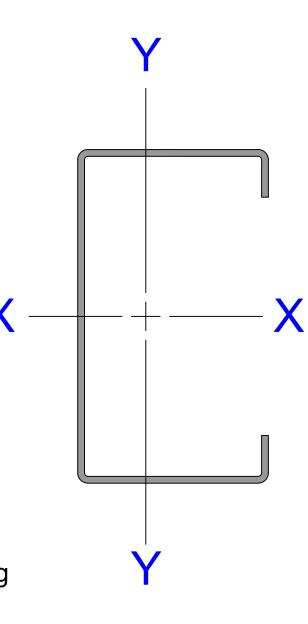
# Quick Reference

### **Gross Properties**

- I<sub>x</sub> Moment of inertia of cross section about X
- S<sub>x</sub> Section modulus about X
- R<sub>x</sub> Radius of gyration of cross section about X
- I<sub>y</sub> Moment of inertia of cross section about Y
- R<sub>y</sub> Radius of gyration of cross section about Y

### **Effective Properties**

- I<sub>x</sub> Effective moment of inertia about X
- M<sub>d</sub> Allowable moment based on local buckling
- $M_{da}$  Allowable moment based on distortional buckling \*assuming K $\phi$  = 0



# 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 requir longer lead times.

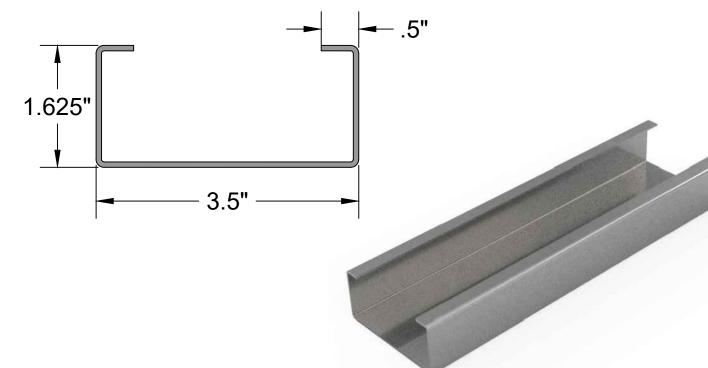
### Documentation

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.

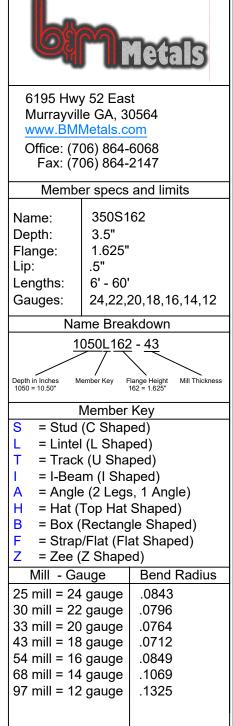
### **Service Holes**

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.

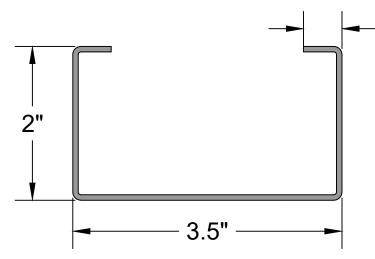
# 3 1/2" x 1 5/8" Stud



* All members shown in 14 gauge to show detail						Gros	ss Propert	ies	Effec	Coil			
Member	Gauge	Fy (ksi)	Area (in^2)	Weight (lbs/ft)	l <sub>×</sub> (in^4)	S <sub>x</sub> (in^3)	R <sub>x</sub> (in)	l <sub>y</sub> (in^4)	R <sub>y</sub> (in)	l∝ (in^4)	M d (ft-lb)	M <sub>da</sub> (ft-lb)	Flat Width
362S162-25	24	50	.14126	.6367	.3710	.21203	1.4113	.0721	.9364	.35057	417.68	367.54	7.5139"
362S162-30	22	50	.26109	.7628	.4188	.23936	1.4071	.0812	.6189	.41889	548.34	472.48	7.4758"
362S162-33	20	50	.25780	.8826	.5084	.29051	1.4043	.0982	.6171	.50840	638.56	573.59	7.4507"
362S162-43	18	50	.33413	1.137	.6546	.37405	1.3997	.1254	.6126	.65459	841.36	816.45	7.4086"
362S162-54	16	50	.41484	1.412	.8047	.45982	1.3927	.1525	.6063	.80468	1215.7	1167.3	7.3923"
362S162-68	14	50	.51479	1.752	.9851	.56293	1.3834	.1840	.5978	.98513	1574.6	1571.3	7.2201"
362S162-97	12	50	.71130	2.421	1.322	.75558	1.3634	.2392	.5799	1.3223	2230.3	2230.3	6.9941"
350	)S1	62			*All calculations based on unpunched stud ** Full Sectional properties available upon req						Non	7.45"	



# 3 1/2" x 2" Stud





* All members shown in 14 gauge to show detail						Gross Properties						Effective Properties			
Member	Gauge	Fy (ksi)	Area (in^2)	Weight (lbs/ft)	ا× (in^4)	S <sub>×</sub> (in^3)	R <sub>×</sub> (in)	l <sub>y</sub> (in^4)	R <sub>y</sub> (in)	l∝ (in^4)	M⊣ (ft-lb)	M <sub>da</sub> (ft-Ib)	Flat Width		
350S200-25	24	50	.2058	.639	.4277	.2443	1.4414	.1179	.7432	.3881	434.4	347.2	8.233"		
350S200-30	22	50	.2465	.838	.5107	.2918	1.4393	.1404	.7548	.4792	568.2	493.9	8.225"		
350S200-33	20	50	.2924	.995	.5984	.3420	1.4306	.1746	.7529	.5717	705.3	650.9	8.200"		
350S200-43	18	50	.3792	1.29	.7713	.4407	1.4261	.2238	.7683	.7713	975.9	927.4	8.158"		
350S200-54	16	50	.4714	1.60	.9500	.5430	1.4197	.2737	.7620	.9502	1233	1238	8.079"		
350S200-68	14	50	.5861	1.99	1.166	.6668	1.4110	.3328	.7535	1.166	1779	1767	7.970"		
350S200-97	12	50	.8130	2.77	1.576	.9008	1.3925	.4398	.7355	1.576	2589	2589	7.744"		
350	)S2	00			*All calculations based on unpunched stud ** Full Sectional properties available upon request							ninal	8.2"		

<b>bim Metals</b>												
6195 Hwy 52 East Murrayville GA, 30564 <u>www.BMMetals.com</u> Office: (706) 864-6068 Fax: (706) 864-2147												
Member specs and limits												
Name:350S200Depth:3.5"Flange:2"Lip:.5"Lengths:6' - 60'Gauges:24,22,20,18,16,14,12												
Na	me Brea	ikdown										
<u>1</u>	050L162	<u>2 - 43</u>										
1050 = 10.50"		ilange Height Mill Thickness 162 = 1.625"										
	Member											
	Top Hat Rectang	bed) ped) aped) s, 1 Angle) Shaped) Ile Shaped) at Shaped)										
Mill - Ga	iuge	Bend Radius										
25 mill = 24 gauge .0843   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												

## 3 1/2" x 1 1/2" Stud



1.5"	-					5"						•		6195 Hwy 52 Ea: Murrayville GA, 3 www.BMMetals.c Office: (706) 864 Fax: (706) 864	0564 
											- ALLER BURGE	-		Member spece	and limits
			3.5" –		-									Name:350S <sup>2</sup> Depth:3.5"Flange:1.5"Lip:.5"Lengths:6' - 60Gauges:24,22,	
					5	del		100	and the second s	- Harley Mar				Name Brea	akdown
							-	/						Depth in Inches 1050 = 10.50" Member Key	2 - 43 Flange Height Mill Thickness 162 = 1.625"
														Member	,
														S = Stud (C Shap	
														L = Lintel (L Sha T = Track (U Sha	
* 411		44								r				I = I-Beam (I Sh	
* All members s	snown in	14 gau	ige to show			Gros	s Propert	ies	r	Effec	ctive Pro	perties	Coil	A = Angle (2 Leg	
Member	Gauge	Fy (ksi)	Area (in^2)	Weight (lbs/ft)	l∝ (in^4)	S∝ (in^3)	R∝ (in)	l <sub>y</sub> (in^4)	R <sub>y</sub> (in)	l∝ (in^4)	M₄ (ft-lb)	M <sub>da</sub> (ft-Ib)	Flat Width	H = Hat (Top Hat B = Box (Rectang F = Strap/Flat (F	gle Shaped)
350S150-25	24	50	.1808	.6150	.3370	.1647	1.3950	.0678	.5749	.3370	410.97		7.2639"	Z = Zee (Z Shap	
350S150-30	22	50	.2165	.7368	.4204	.2402	1.3934	.0711	.5728	.4133	533.92		7.2258"	Mill - Gauge	Bend Radius
350S150-33	20	50	.2730	.9290	.5272	.3013	1.3897	.0885	.5693	.5272	687.69		7.2007"	25 mill = 24 gauge	.0843
350S150-43	18	50	.3429	1.167	.6580	.3760	1.3852	.1094	.5649	.6580	918.11		7.1586"	30 mill = 22 gauge	.0796
350S150-54	16	50	.4034	1.373	.7674	.4385	1.3792	.1264	.5597	.7674	1094.0		7.0793"	33 mill = 20 gauge 43 mill = 18 gauge	.0764 .0712
350S150-68	14	50	.5016	1.707	.9403	.5373	1.3692	.1522	.5508	.9403	1340.7		6.9701"	54  mill = 16  gauge	.0849
350S150-97	12	50	.6597	2.244	1.208	.6904	1.3533	.1899	.5366	1.2082		1722.5	6.7441"	68 mill = 14 gauge	.1069
350	)S1	50					based or propertie					ninal	7.45"	97 mill = 12 gauge	.1325

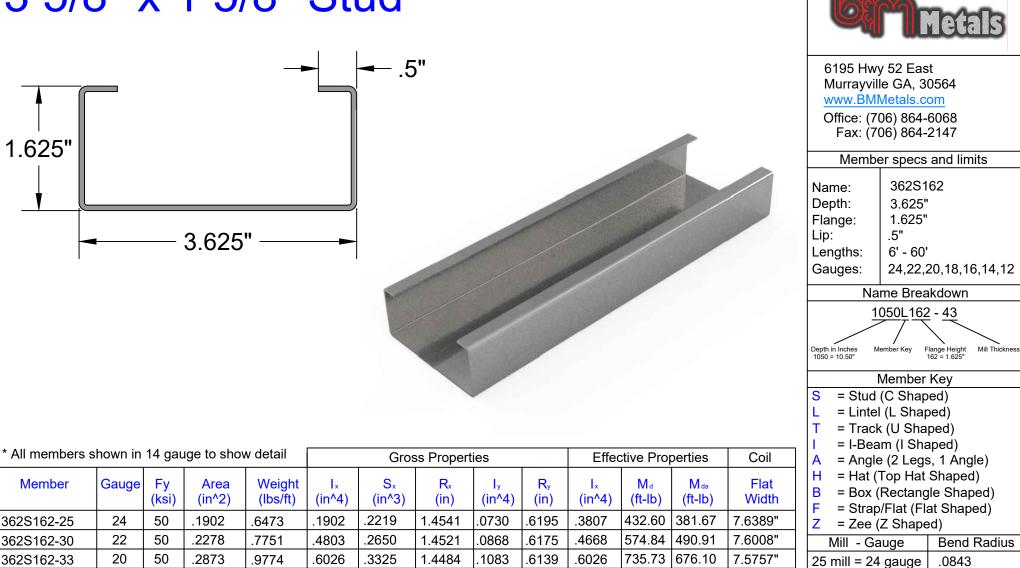


1.625"

Member

362S162-25

362S162-30



30 mill = 22 gauge

33 mill = 20 gauge

43 mill = 18 gauge

54 mill = 16 gauge

68 mill = 14 gauge

97 mill = 12 gauge

.0796

.0764

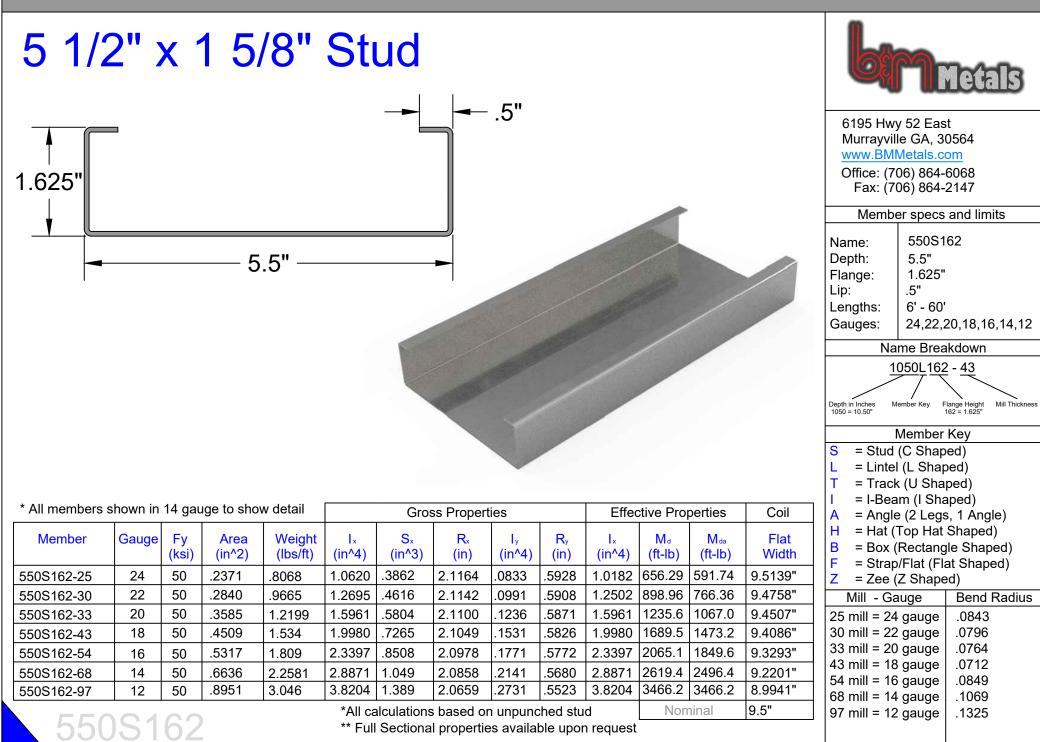
.0712

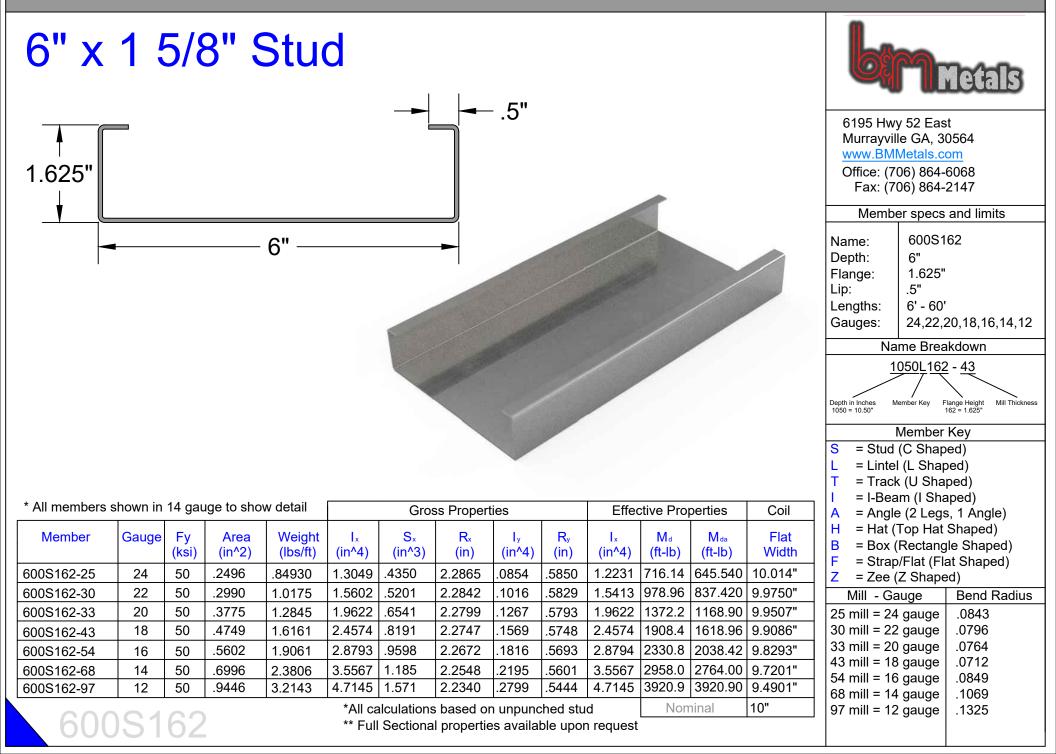
.0849

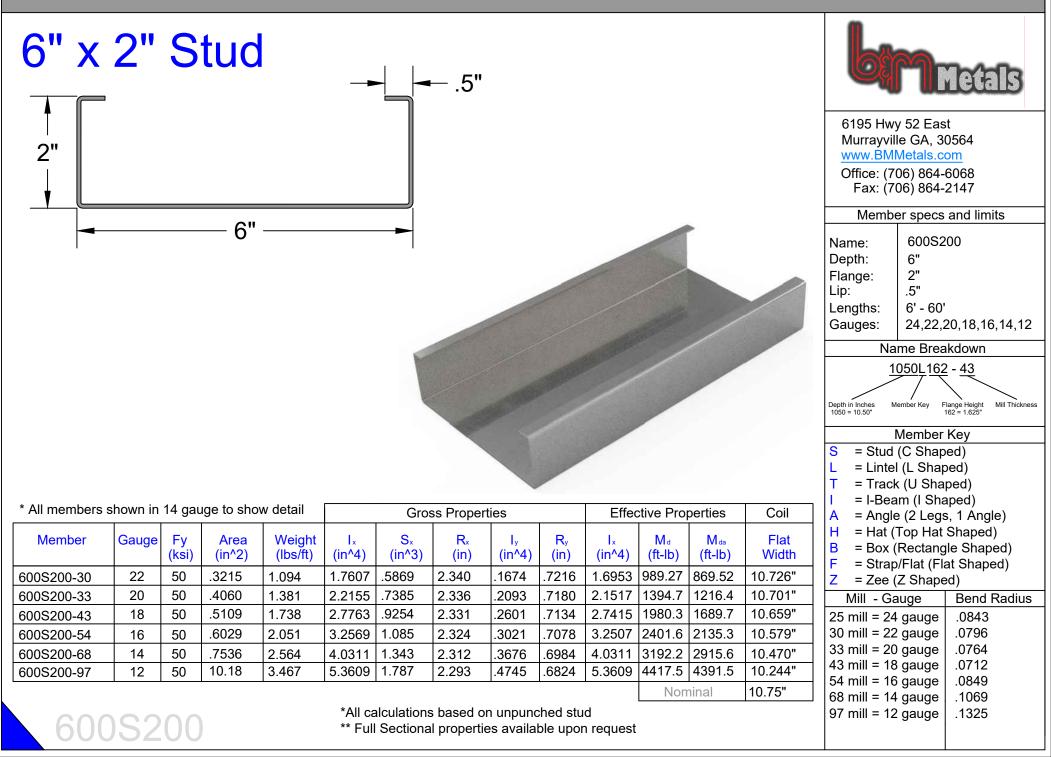
.1069

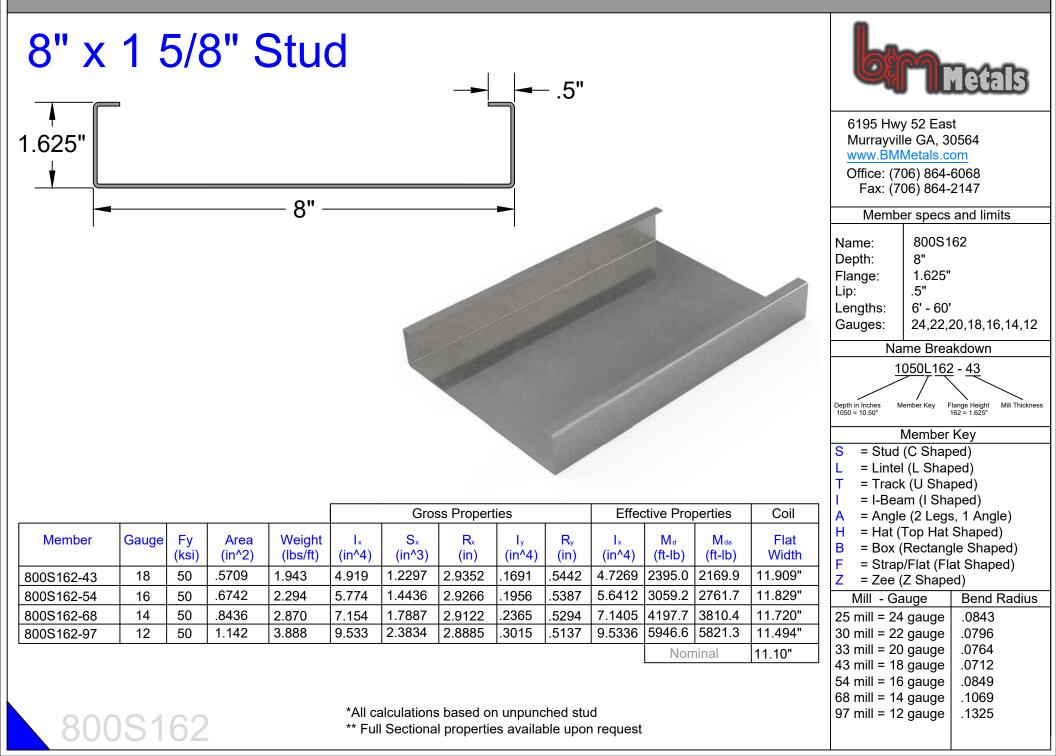
.1325

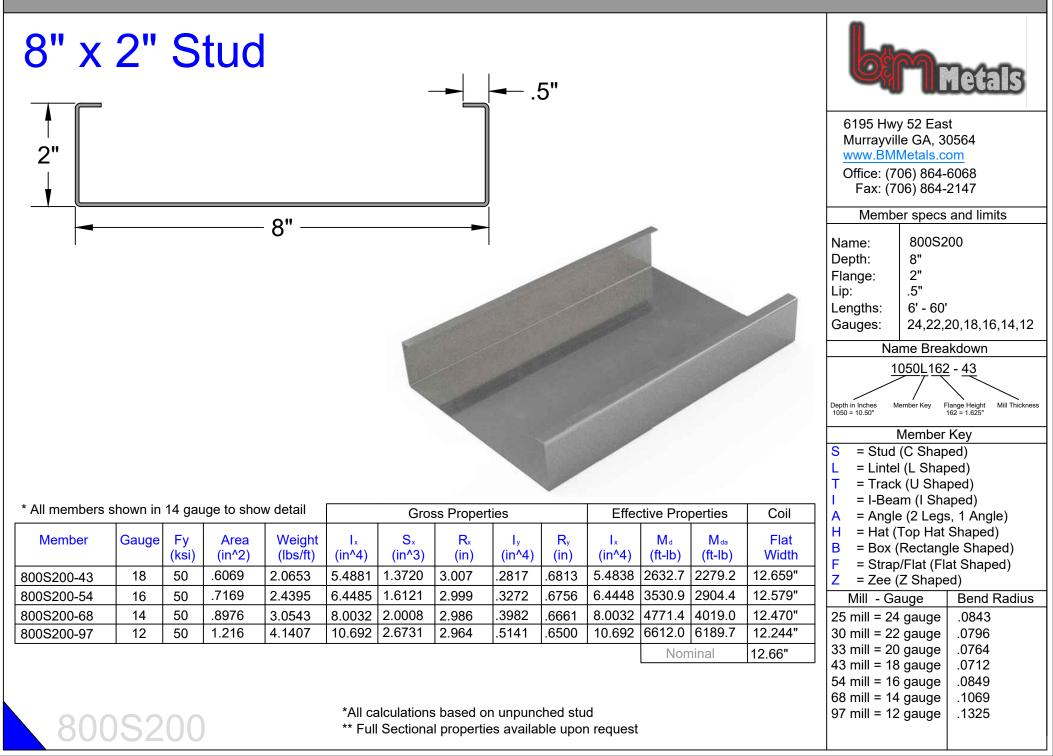
002010200			-										
362S162-33	20	50	.2873	.9774	.6026	.3325	1.4484	.1083	.6139	.6026	735.73	676.10	7.5757"
362S162-43	18	50	.3609	1.228	.7525	.4152	1.4439	.1341	.6095	.7525	959.36	921.54	7.5336"
362S162-54	16	50	.4248	1.445	.8784	.4846	1.4380	.1551	.6042	.8784	1175.7	1142.9	7.4543"
362S162-68	14	50	.5286	1.799	1.078	.5948	1.4282	.1873	.5953	1.078	1484.1	1484.1	7.3451"
362S162-97	12	50	.7095	2.414	1.413	.7799	1.4115	.2387	.5800	1.413	1945.8	1945.8	7.1191"
		00		*All calculations based on unpunched stud Nominal 7.45"									7.45"
** Full Sectional properties available upon request													

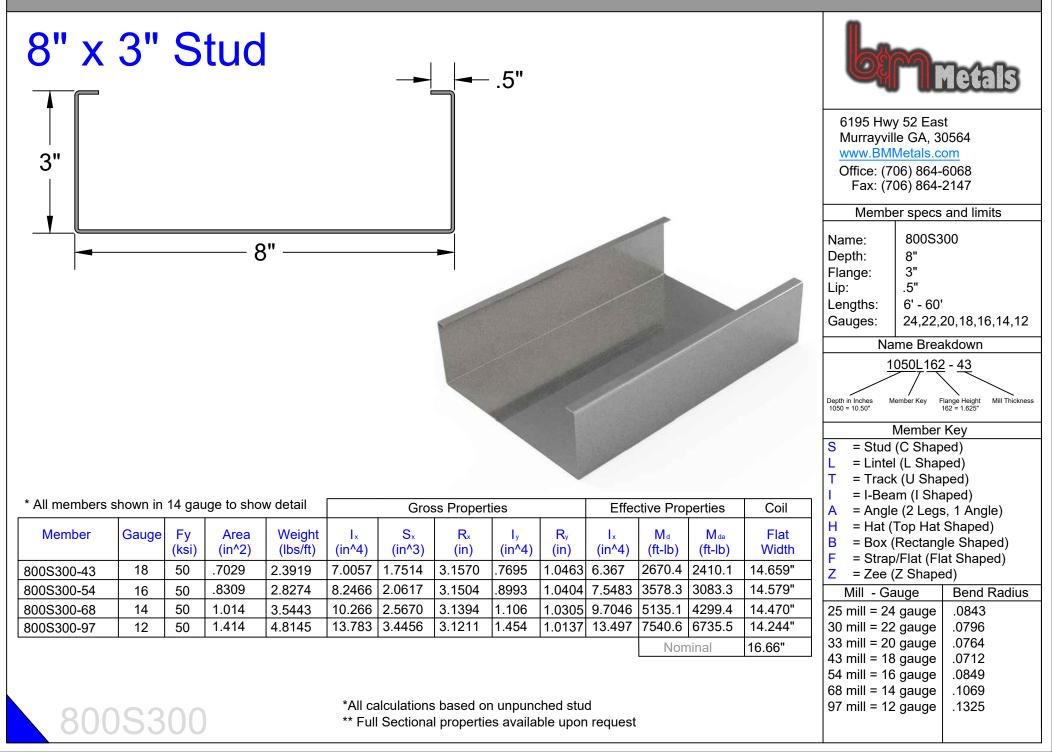


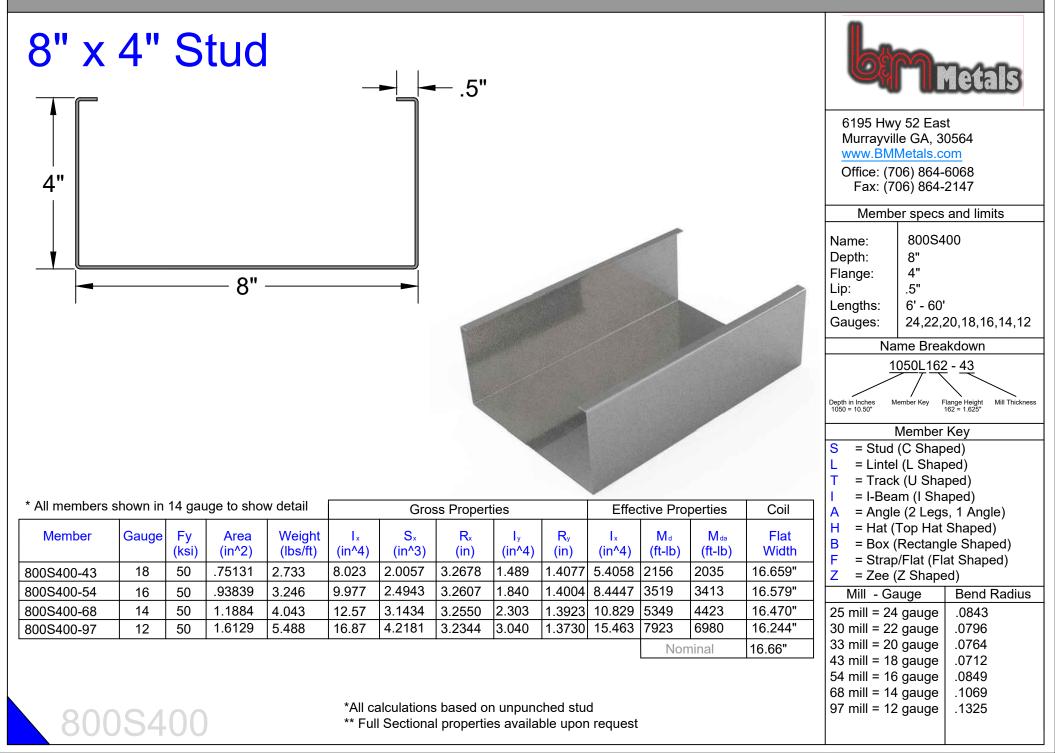


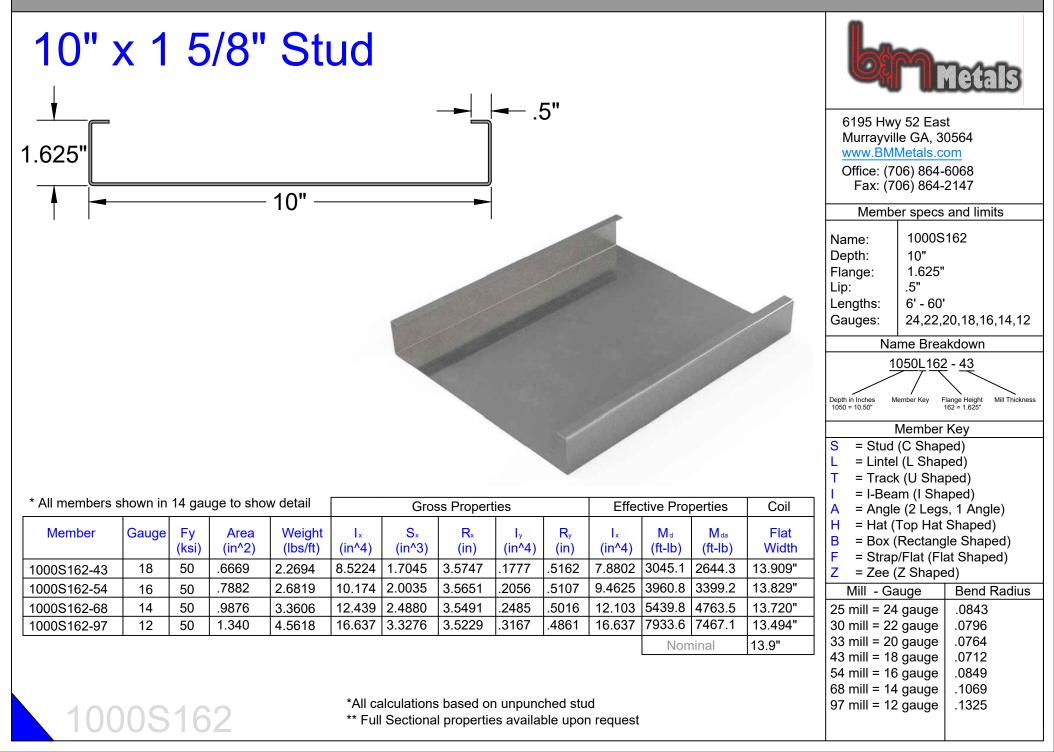


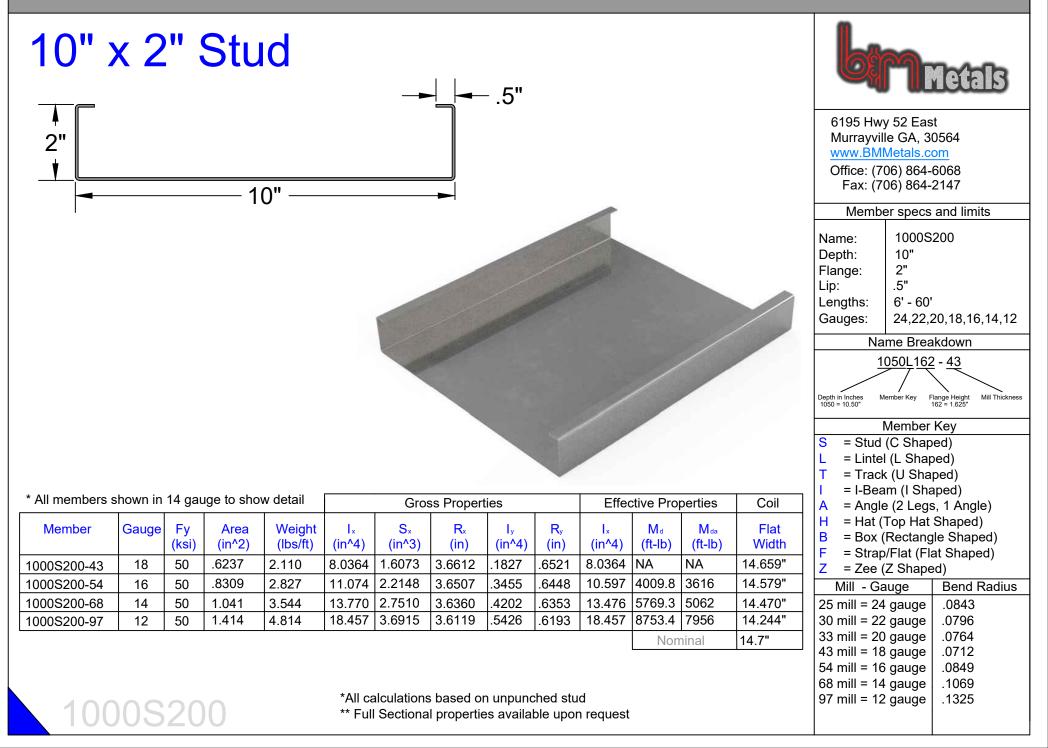


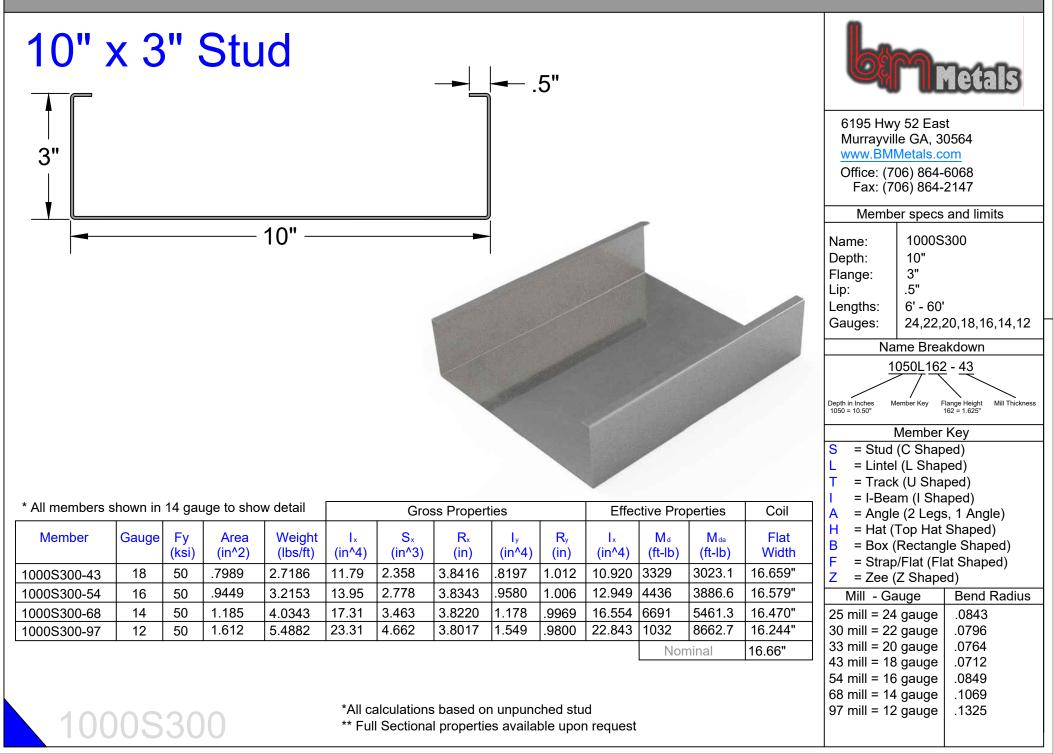


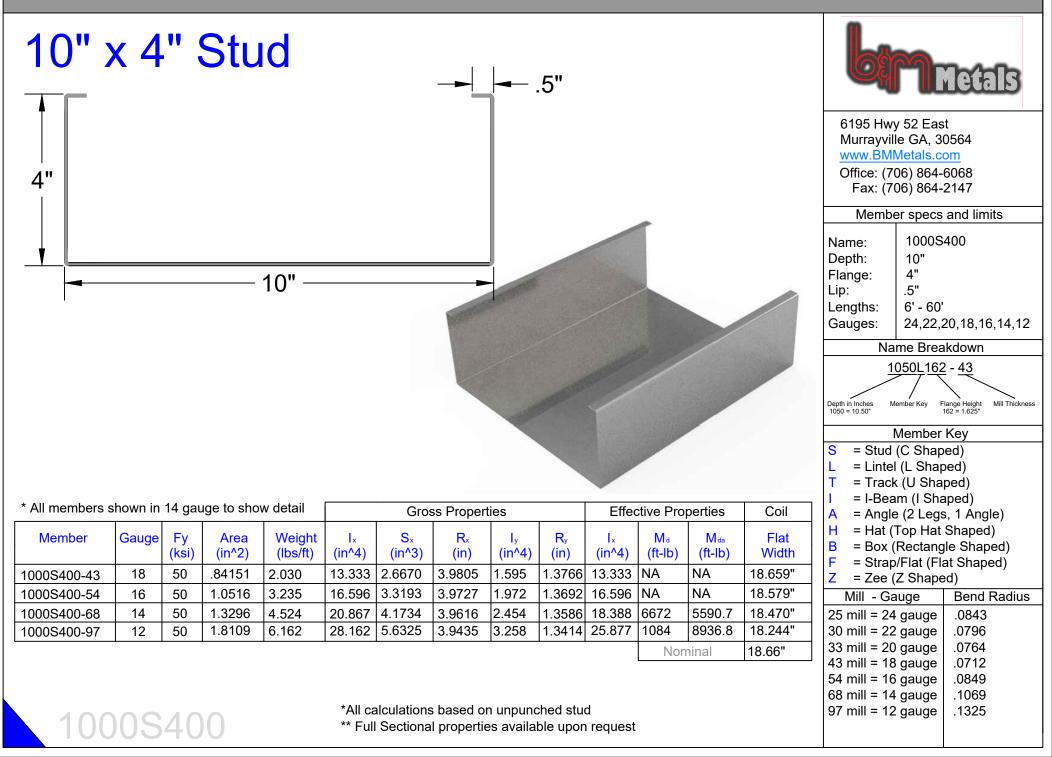


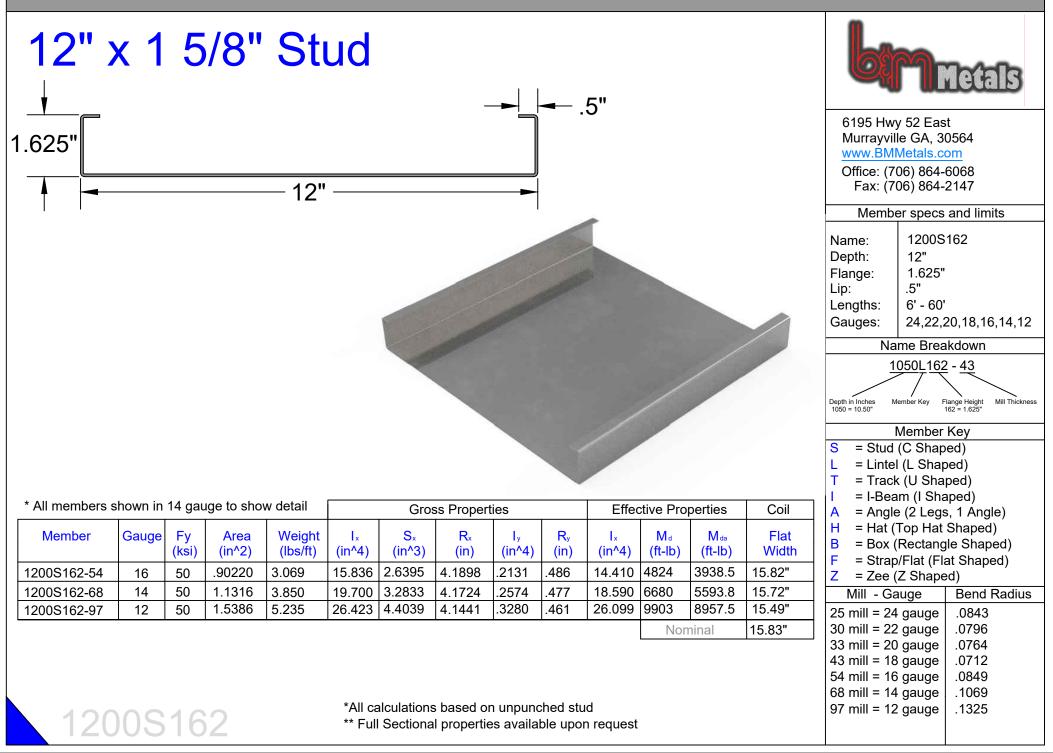


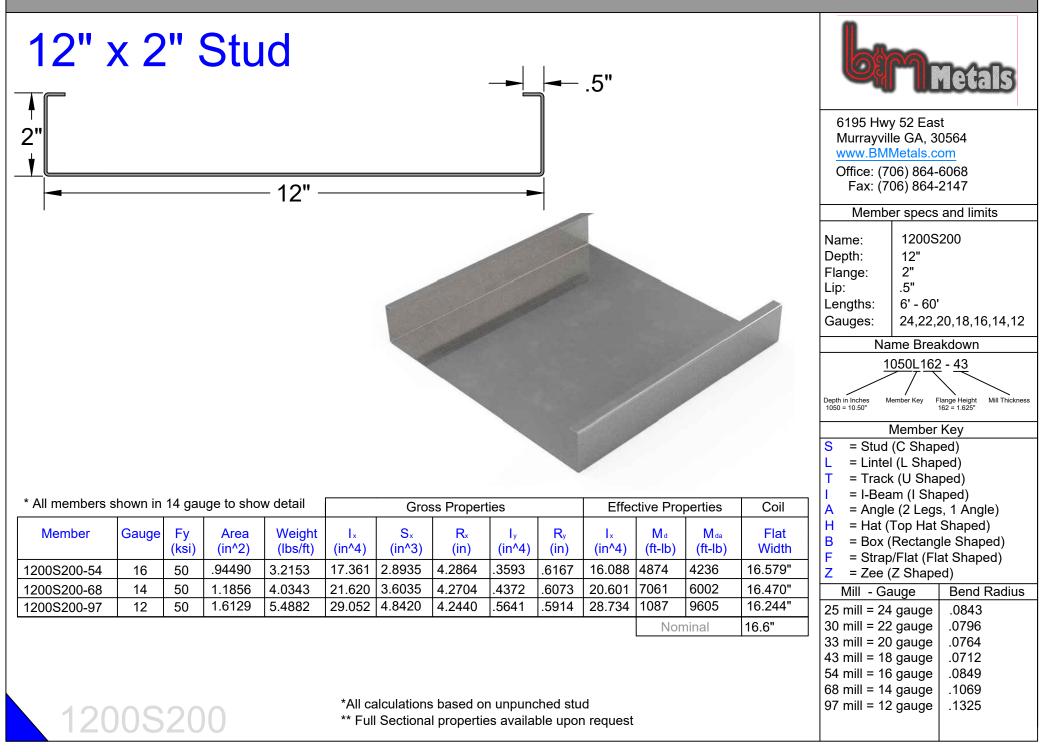


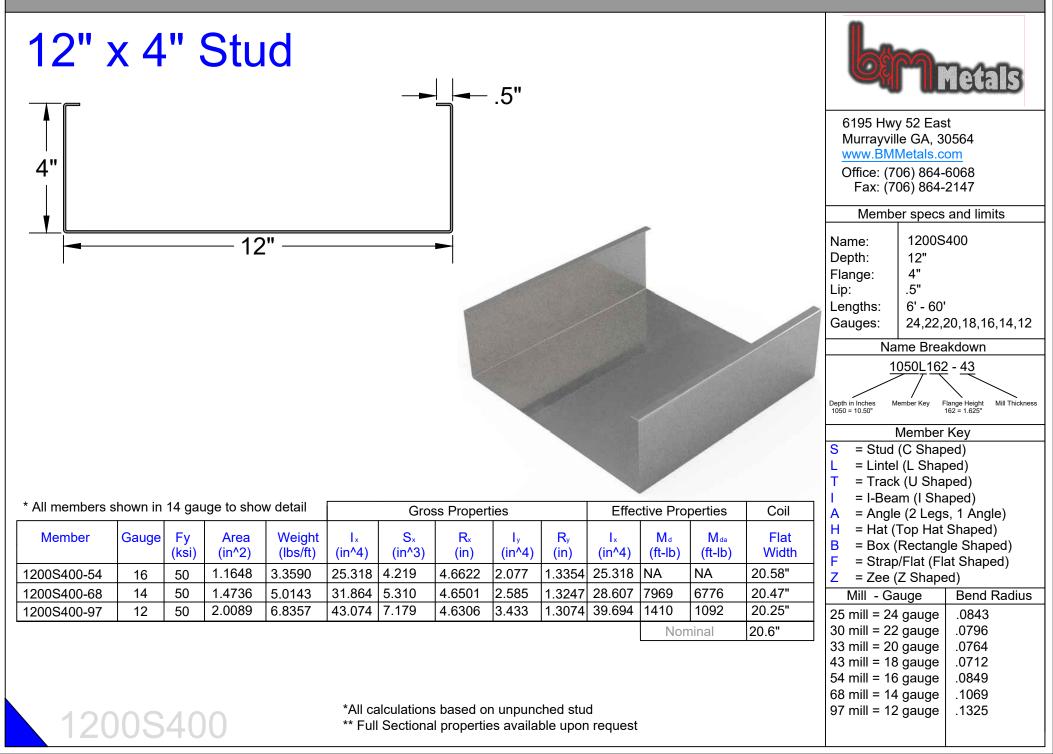


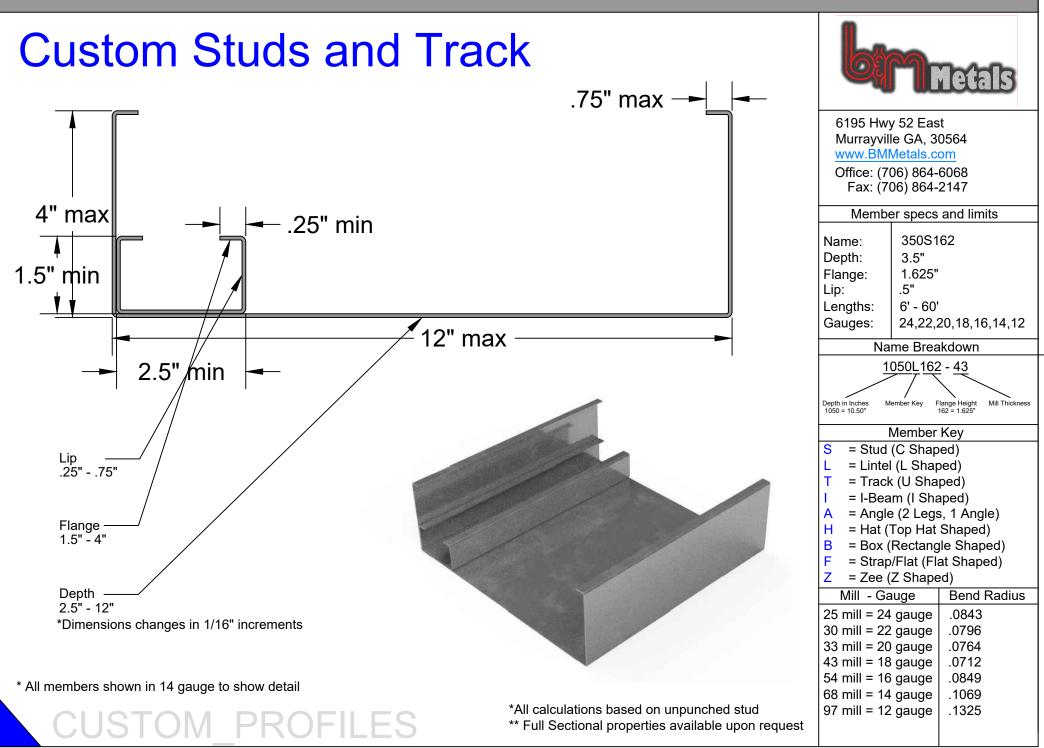




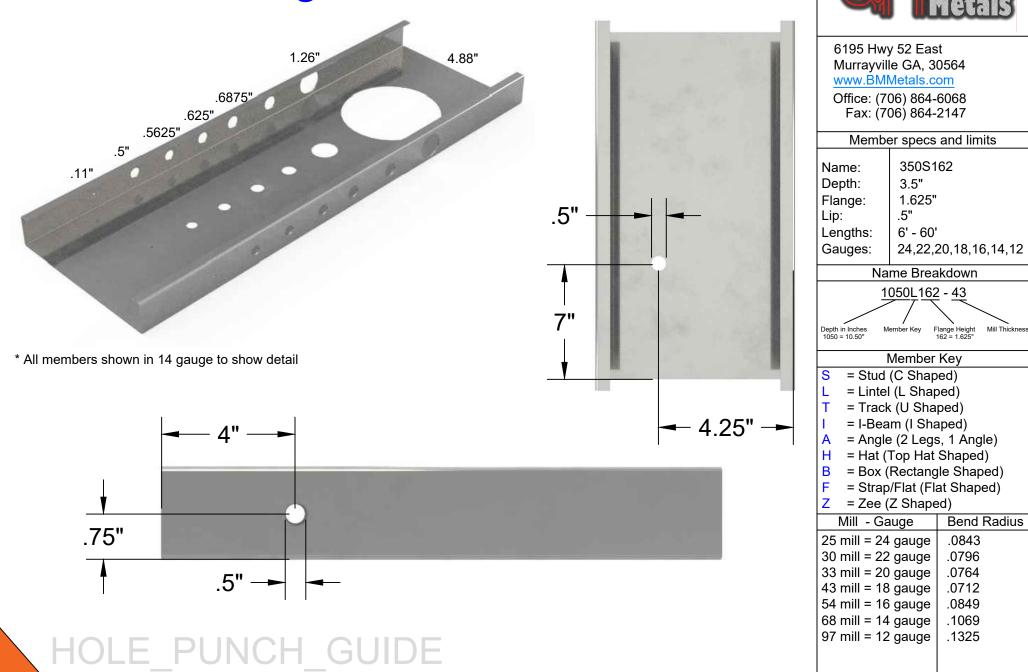


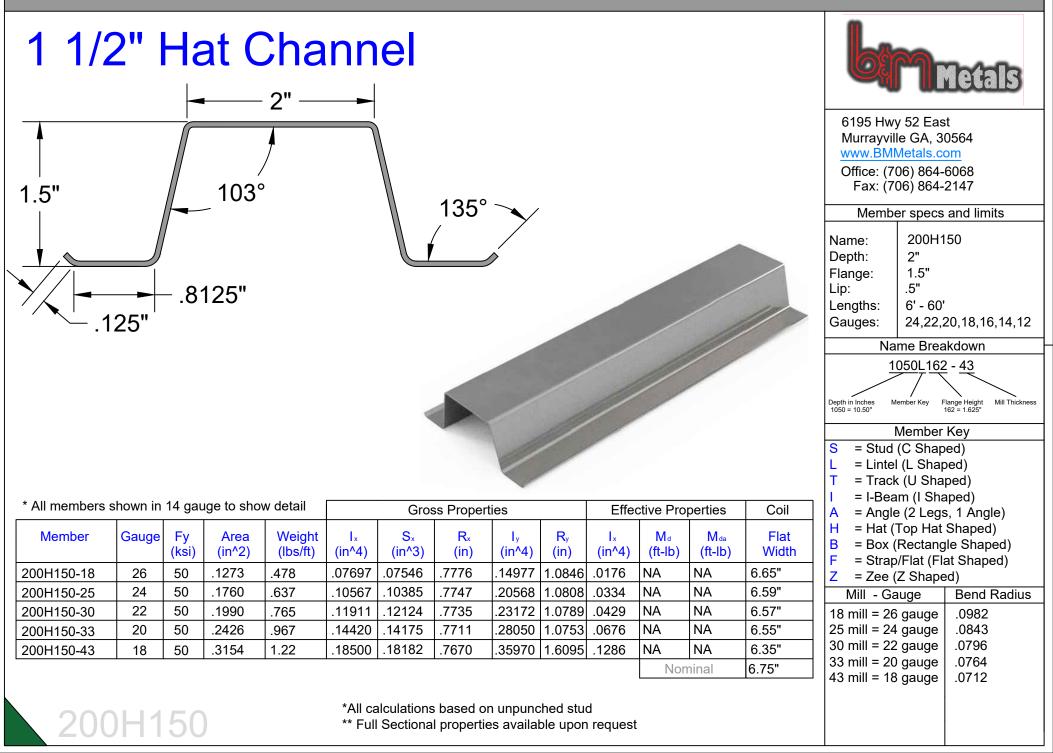


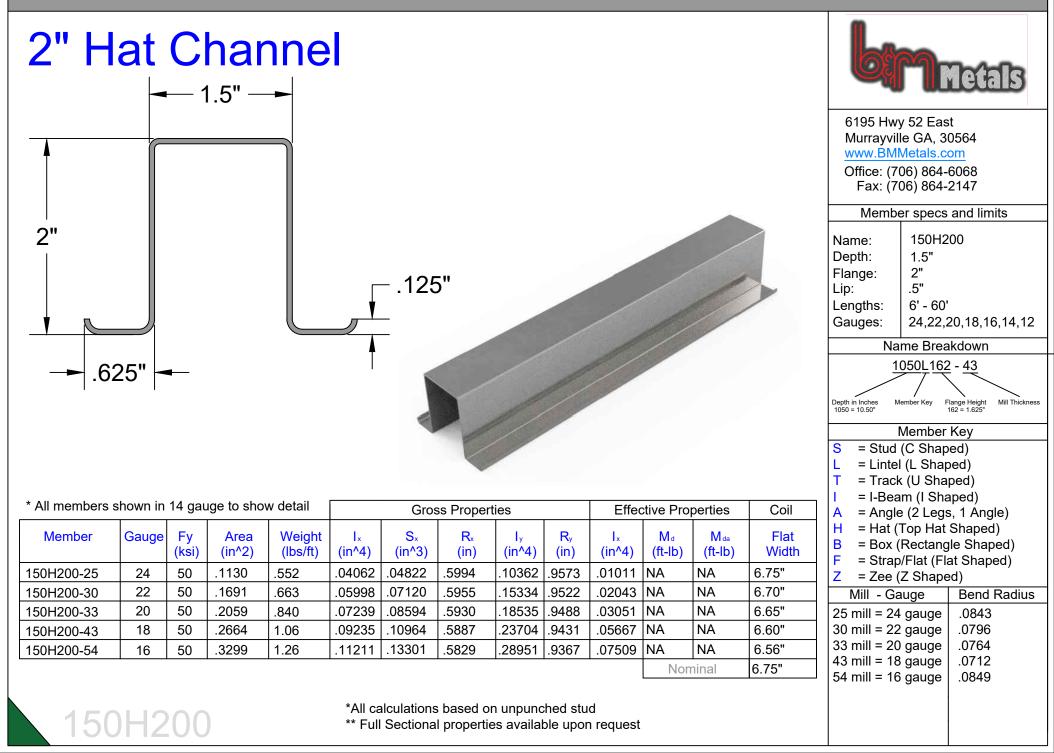




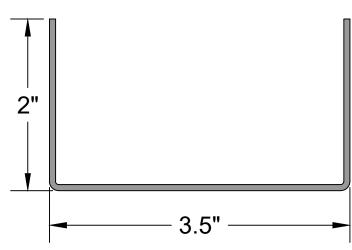
# **Hole Punching**

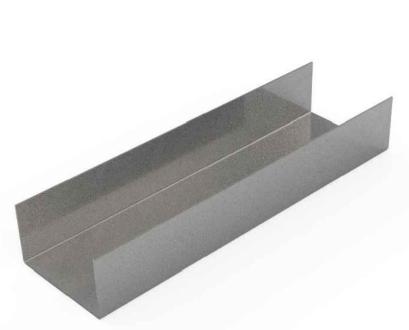






# 3 1/2" Track





* All members shown in 14 gauge to show detail					Gross Properties						Effective Properties			
Member	Gauge	Fy (ksi)	Area (in^2)	Weight (lbs/ft)	l∝ (in^4)	S <sub>x</sub> (in^3)	R∝ (in)	l <sub>y</sub> (in^4)	R <sub>y</sub> (in)	l∝ (in^4)	M₄ (ft-lb)	M <sub>da</sub> (ft-Ib)	Flat Width	
350T200-25	24	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.45"	
350T200-30	22	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.45"	
350T200-33	20	50	.2848	.96910	.6309	.3455	1.4884	.1188	.6459	.4578	478.99	NA	7.45"	
350T200-43	18	50	.3595	1.2233	.7977	.4351	1.4896	.1491	.6440	.6155	650.62	NA	7.45"	
350T200-54	16	50	.4268	1.4523	.9559	.5169	1.4966	.1761	.6423	.9559	828.60	NA	7.45"	
350T200-68	14	50	.5389	1.8336	1.225	.6532	1.5077	.2202	.6393	1.067	1158.3	NA	7.45"	
350T200-97	12	50	.7402	2.5186	1.717	.8967	1.5232	.2975	.6340	1.632	1829.8	NA	7.45"	
	*All calculations based on unpunched stud												7.45"	

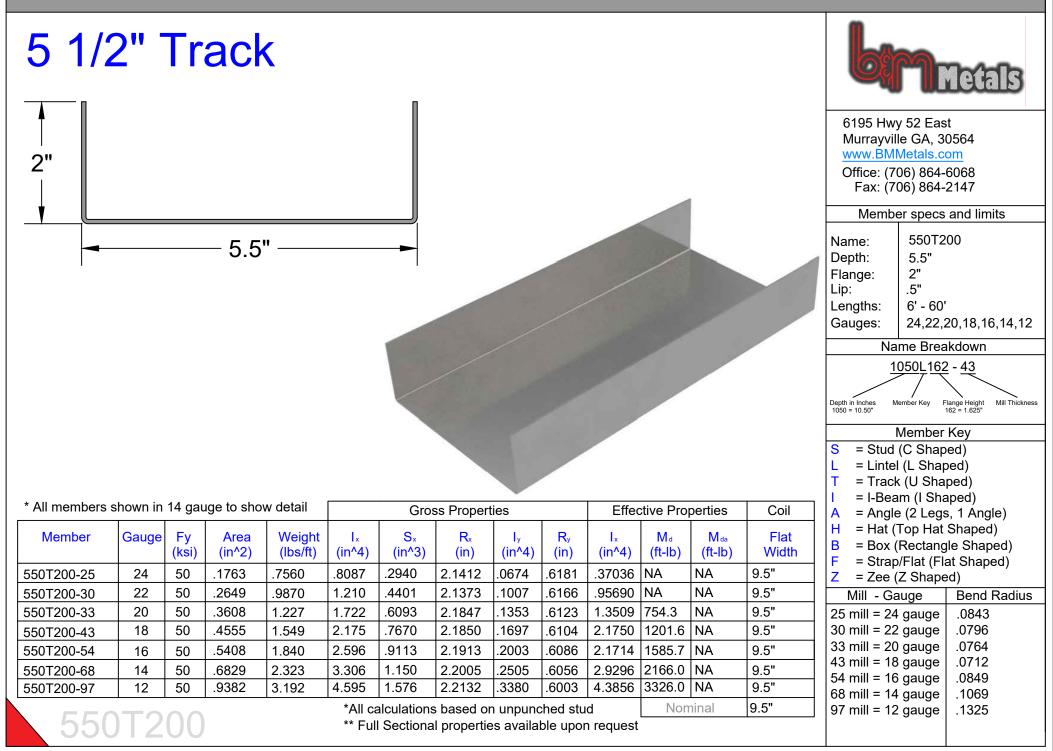
\*\* Full Sectional properties available upon request

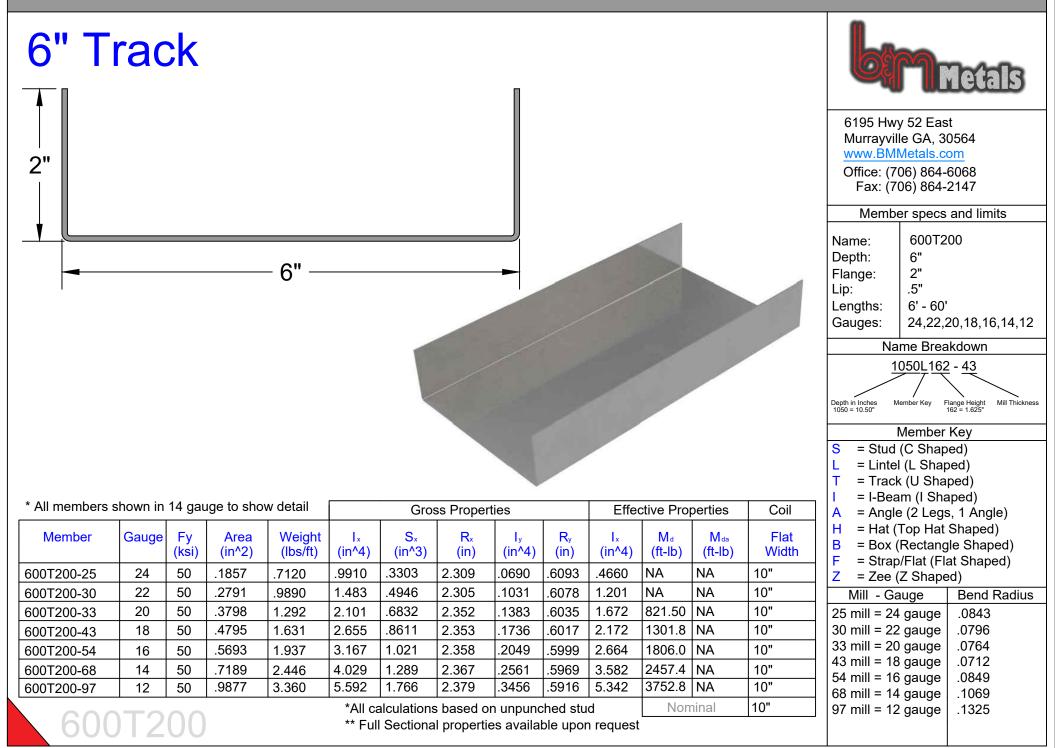
6195 Hwy 52 East Murrayville GA, 30564 www.BMMetals.com Office: (706) 864-6068 Fax: (706) 864-2147 Member specs and limits 350T200 Name: Depth: 3.5" Flange: 2" .5" Lip: 6' - 60' Lengths: Gauges: 24,22,20,18,16,14,12 Name Breakdown 1050L162 - 43 Depth in Inches 1050 = 10.50" Flange Height Mill Thickness Member Key Member Key = Stud (C Shaped) S = Lintel (L Shaped) L = Track (U Shaped) Т = I-Beam (I Shaped) = Angle (2 Legs, 1 Angle) Α H = Hat (Top Hat Shaped) = Box (Rectangle Shaped) В F = Strap/Flat (Flat Shaped) = Zee (Z Shaped) Ζ Mill - Gauge Bend Radius 25 mill = 24 gauge .0843 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

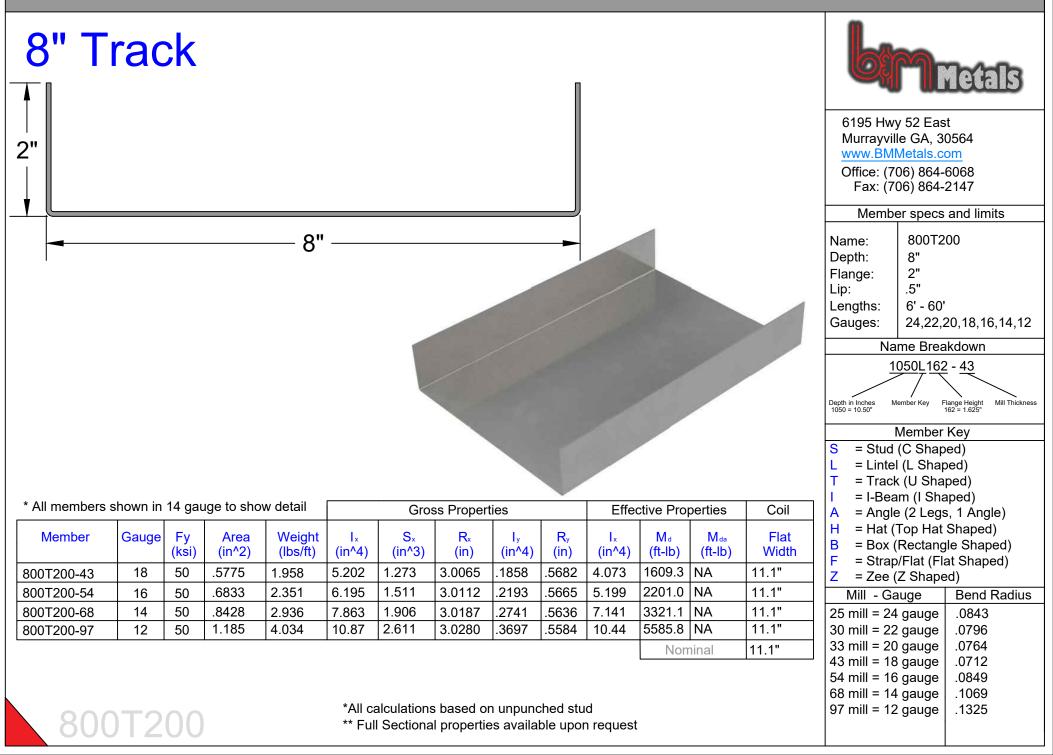
#### 3 5/8" Track 6195 Hwy 52 East Murrayville GA, 30564 www.BMMetals.com Office: (706) 864-6068 2" Fax: (706) 864-2147 Member specs and limits 362S200 Name: Depth: 3.625" Flange: 2" Lip: .5" 3.625" Lengths: 6' - 60' Gauges: 24,22,20,18,16,14,12 Name Breakdown 1050L162 - 43 Depth in Inches Member Key Flange Height 162 = 1.625" Mill Thickness 1050 = 10.50" Member Key = Stud (C Shaped) = Lintel (L Shaped) L = Track (U Shaped) = I-Beam (I Shaped) \* All members shown in 14 gauge to show detail **Gross Properties** Effective Properties Coil = Angle (2 Legs, 1 Angle) Н = Hat (Top Hat Shaped) Weight S<sub>x</sub> Flat Member Gauge Fy **x** Rx l<sub>v</sub> R<sub>v</sub> I<sub>x</sub> Md Mda Area = Box (Rectangle Shaped) В (in^3) (lbs/ft) (in^4) (in^4) (ksi) (in^2) (in) (in^4) (in) (ft-lb) (ft-lb) Width = Strap/Flat (Flat Shaped) F 362S200-25 24 50 .1874 .6540 4126 .2276 1.4840 .0787 .6484 .1244 NA NA 7.45" = Zee (Z Shaped) Ζ NA NA 362S200-30 22 50 .2119 .8775 4675 .2569 1.4825 .0889 .6479 .3223 7.45" Mill - Gauge **Bend Radius** 7.45" .49620 362S200-33 20 50 .2859 9852 .6808 .3605 1.5334 .1201 .6440 .4962 NA 25 mill = 24 gauge.0843 50 .4540 1.5347 .1507 .6661 684.09 7.45" 30 mill = 22 gauge .0796 18 .3655 1.243 .8608 .6422 NA 362S200-43 33 mill = 20 gauge .0764 362S200-54 .4339 1.476 1.031 .5393 1.5415 .1779 .6404 1.031 870.05 NA 7.45" 16 50 43 mill = 18 gauge.0712 362S200-68 14 .5479 .6814 1.5525 .2226 .6374 1.152 1214.0 NA 7.45" 50 1.864 1.320 54 mill = 16 gauge .0849 .7525 9353 1.5678 .3006 .6321 1.758 1913.4 NA 7.45" 12 50 2.560 1.849 362S200-97 68 mill = 14 gauge .1069 7.45" Nominal 97 mill = 12 gauge.1325

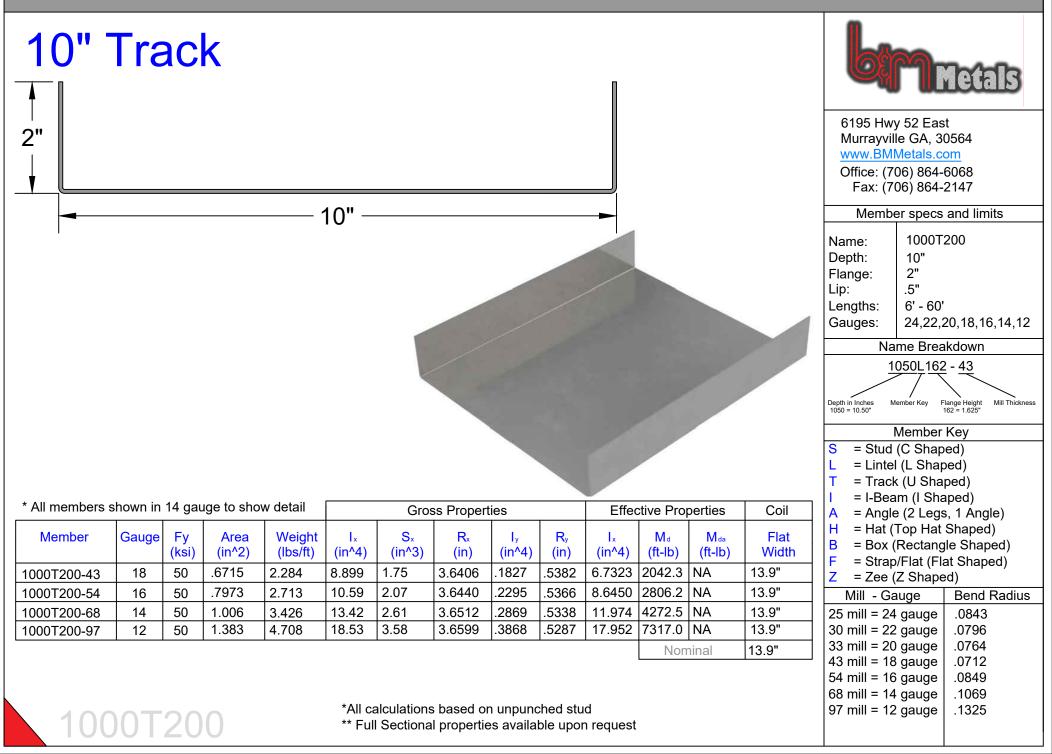
\*All calculations based on unpunched stud

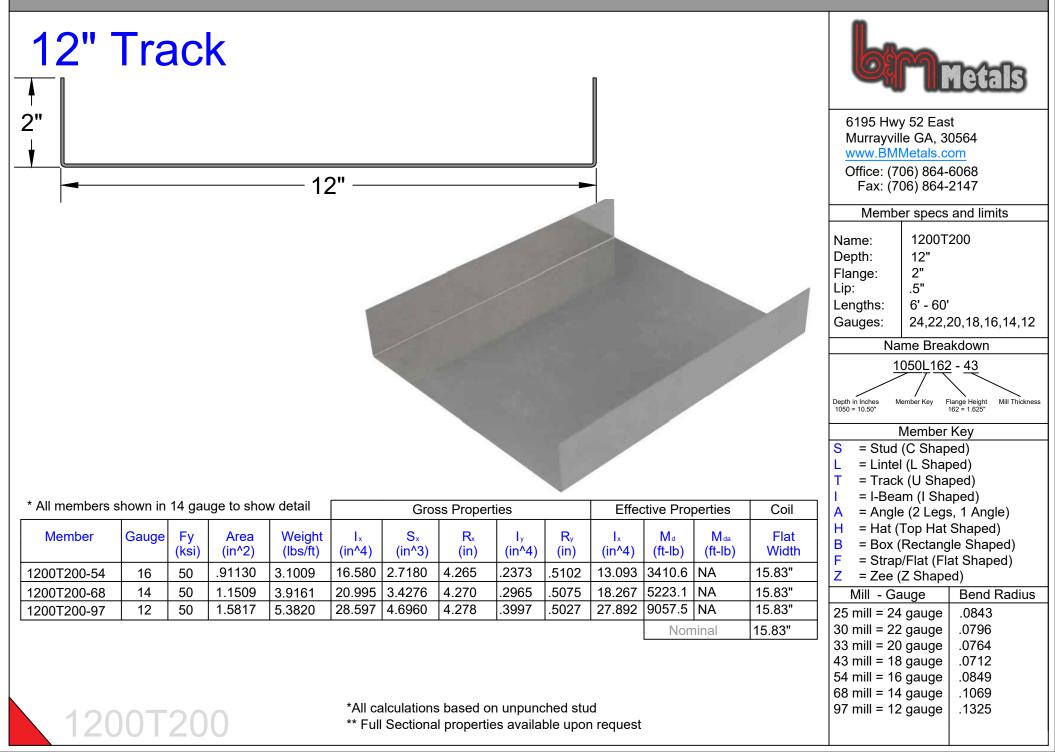
\*\* Full Sectional properties available upon request

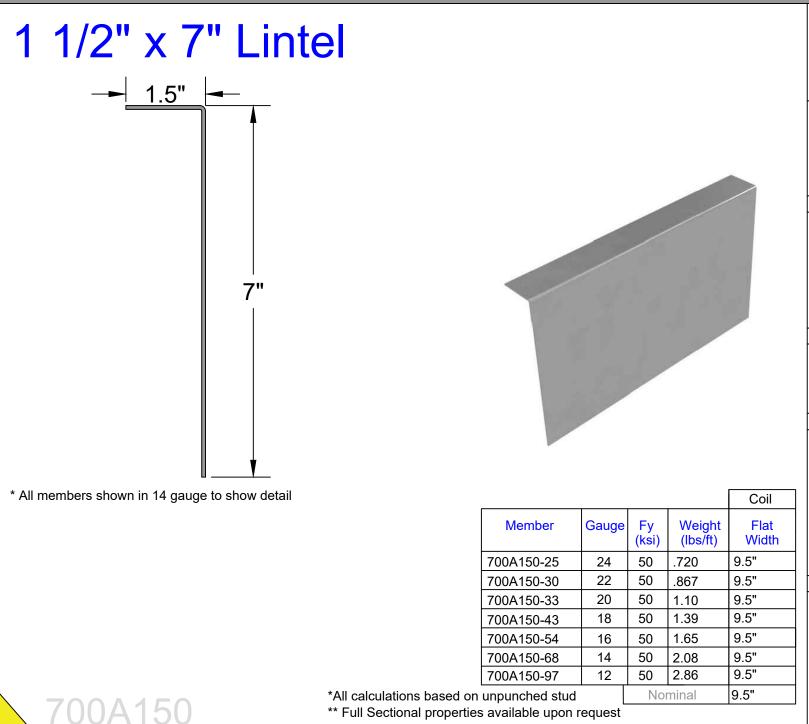




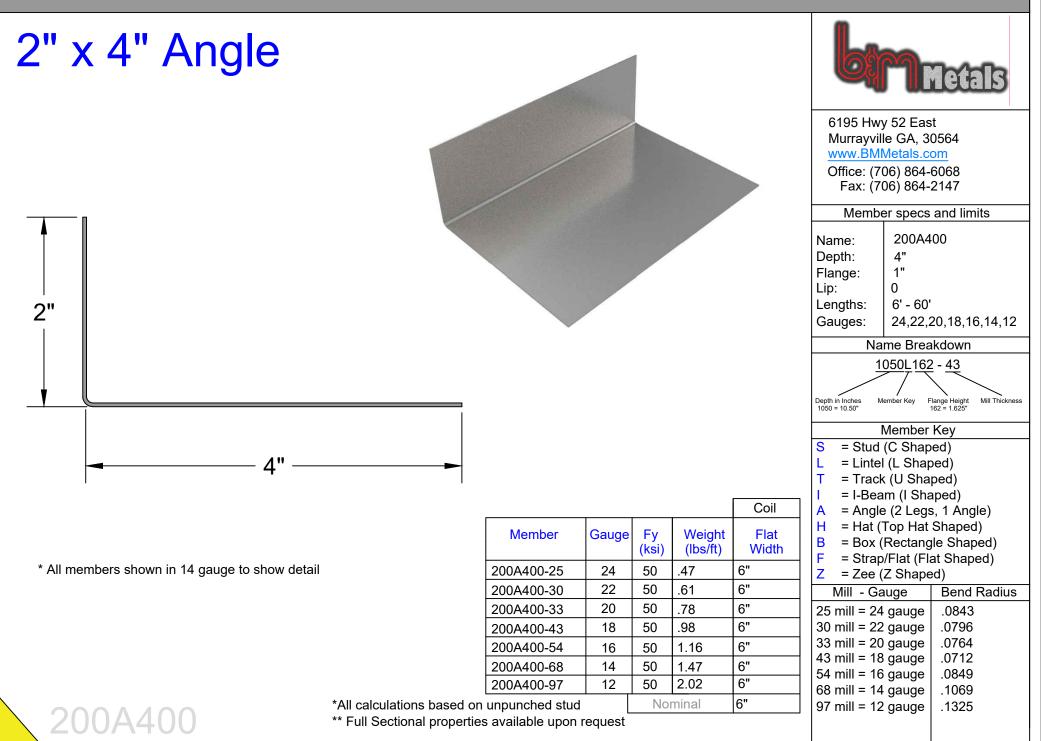






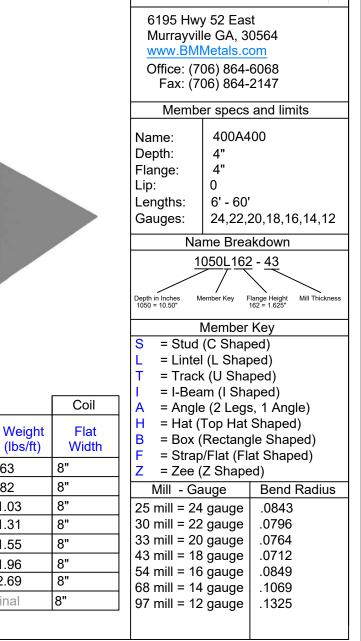


Metals 6195 Hwy 52 East Murrayville GA, 30564 www.BMMetals.com Office: (706) 864-6068 Fax: (706) 864-2147 Member specs and limits 700A150 Name: Depth: 7" 1.5" Flange: Lip: .5" Lengths: 6' - 60' 24,22,20,18,16,14,12 Gauges: Name Breakdown 1050L16<u>2</u> - <u>43</u> Depth in Inches Flange Height 162 = 1.625" Member Key Mill Thickness 1050 = 10.50" Member Key = Stud (C Shaped) S = Lintel (L Shaped) L = Track (U Shaped) Т = I-Beam (I Shaped) Α = Angle (2 Legs, 1 Angle) Н = Hat (Top Hat Shaped) = Box (Rectangle Shaped) В F = Strap/Flat (Flat Shaped) = Zee (Z Shaped) Ζ Bend Radius Mill - Gauge 25 mill = 24 gauge.0843 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



# 4" x 4" Angle





⊿"

\* All members shown in 14 gauge to show detail

400A400

\*All calculations based on unpunched stud \*\* Full Sectional properties available upon request

Member

400A400-25

400A400-30

400A400-33

400A400-43

400A400-54

400A400-68

400A400-97

Fy

(ksi)

50

50

50

50

50

50

50

.63

.82

1.03

1.31

1.55

1.96

2.69

Nominal

Gauge

24

22

20

18

16

14

12

4"

