

MACOMBER

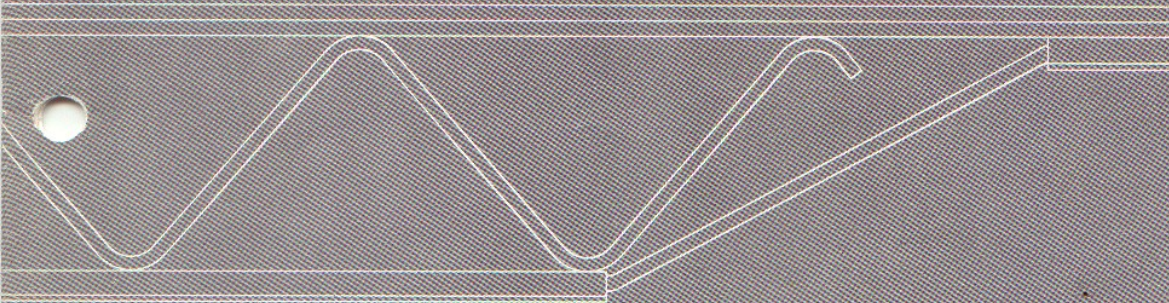
STEEL JOISTS • STEEL JOISTS • STEEL JOISTS • STEEL JOISTS •

V-BEAM SERIES

CATALOG VB

S
T
E
E
L

J
O
I
S
T
S



PAUL • HALLBECK • ASSOCIATES
ARCHITECTS • INC.

OCT 23 1968

RECEIVED
GJP JRH ARCH MECH ELEC SUPV

open-web steel framing
members that are
rugged and economical

For Spans To 56 Feet

MACOMBER INCORPORATED

CANTON, OHIO 44701

SUBSIDIARY OF SHARON STEEL CORPORATION

S
T
E
E
L

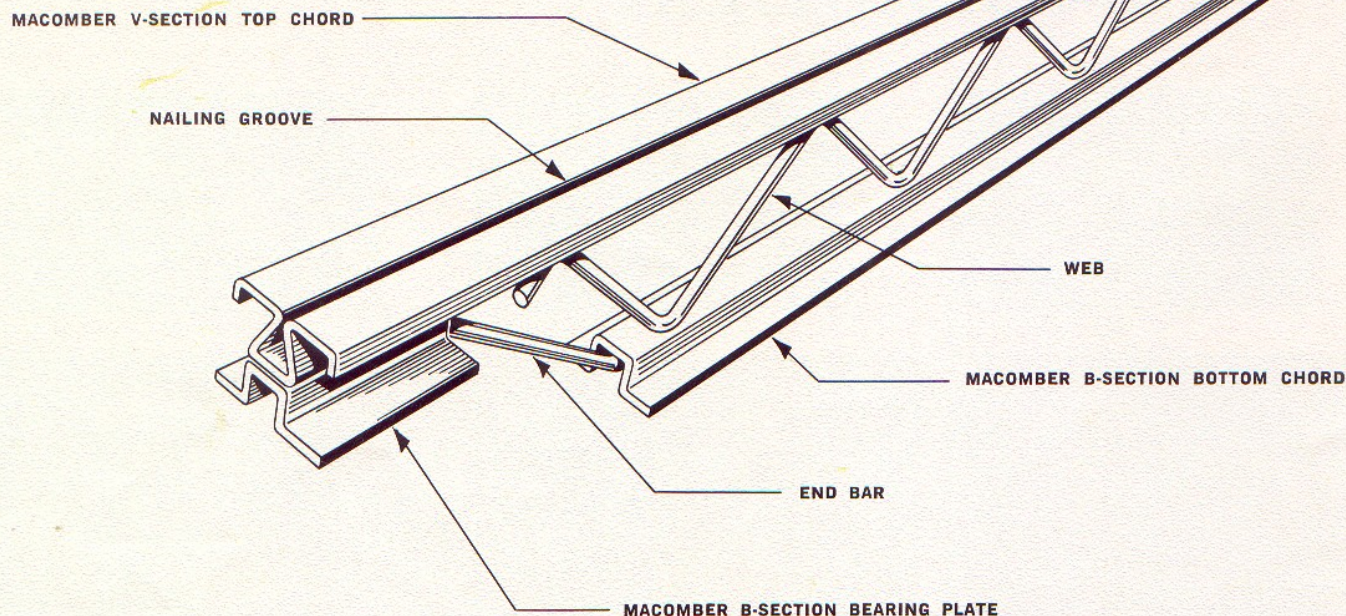
J
O
I
S
T
S
•
S
T
E
E
L

J
O
I
S
T
S
•
S
T
E
E
L

J
O
I
S
T
S
•
S
T
E
E
L

J
O
I
S
T
S

THE MACOMBER V-BEAM



A DEPENDABLE JOIST FROM A RELIABLE MANUFACTURER

The Macomber V-BEAM is the product of more than forty years of leadership in the steel building field. V-BEAMS are engineered to provide you with unexcelled performance and quality. The performance and design of this member is verified by the results of more than a thousand load tests on full size joists, conducted since 1950 in the V-BEAM development sequence. In addition, the success of hundreds of thousands of V-BEAMS on the job lends proof to our claims for this product.

SUGGESTED SPECIFICATION

Steel joists shall be designed to support the live and dead loads shown on the drawings and shall have factor of safety and live load deflections as follows:

Roof Joists

Factor of safety 1.65. Maximum live load deflection $1/360$ - $1/240$ or $1/180$ of span.

Floor Joists

Factor of safety 1.65. Maximum live load deflection $1/360$ of span.

See footnotes of V-BEAM load table for limitations on use of this member as floor joist.

The clear span of all joists shall not exceed 550 times the top chord radius of gyration about the vertical axis.

The Macomber V-BEAM is available in depths from 8" to 28" and in spans to 56'. The V-BEAM is made with cold rollformed chords. The Macomber V-Section is utilized as the top chord and a Macomber B-Section serves as the bottom chord, providing the joist with unusual lateral stability. The chords are proportioned in accordance with the latest AISI specifications.

It will be to your advantage to check on the V-BEAM for use in your next project, it's a dependable joist. For information, help, or a quotation on your needs, call or write to the Macomber representative nearest you.

Paint

Joists and accessories shall be painted one shop coat of manufacturer's standard protective paint which can be readily field painted in exposed areas without bleeding through.

Inspection and Test Reports

The joist manufacturer must provide resident inspection of his production by a nationally recognized independent testing laboratory, in addition to the product inspection done by his own forces. The manufacturer must submit, with his approval drawings, representative certified reports by such independent testing laboratory covering tests of his joists, as proof of the performance and quality of workmanship of his products.

If the manufacturer does not have resident testing laboratory inspectors in his plant, he may provide independent testing laboratory inspection of this specific project continuously during manufacture; and make load tests, supervised by that testing laboratory, of one out of every 50 joists (including one joist of each different top chord size and depth) to prove compliance with the safety factor and live load deflection requirements of this specification.

Bridging

Bridging shall be horizontal angles or other shapes, attached to the chords by welding or other mechanical means. The slenderness ratio of the bridging between joists shall not

exceed 300. The slenderness ratio of the joist top chord between bridging lines shall not exceed 150. The slenderness ratio of the bottom chord between bridging points shall not exceed 150 for floor joists or 300 for roof joists.

Erection

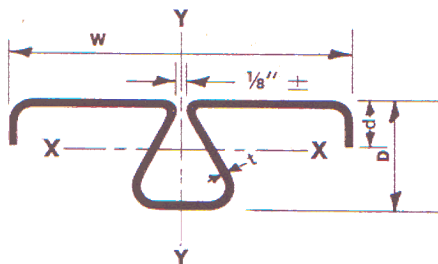
Joists shall be carefully handled to prevent damage. Joists shall be accurately spaced, anchored, and completely bridged prior to the application of construction loads.

Deflections

The V-BEAM load table shows maximum live loads for deflection limits of 1/360 and 1/240 of the span.

MACOMBER CHORD PROPERTIES

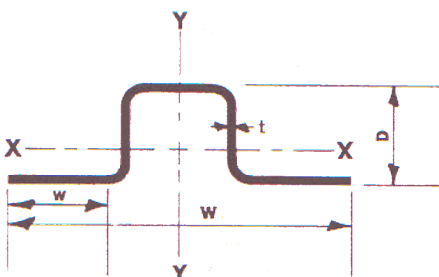
V-SECTION TOP CHORD



DIMENSIONS ARE SUBJECT TO
BLANK-GAGE AND ROLLING TOLERANCE

V-Beam Size	Area In. ²	Gage t In.	W In.	d	D	AXIS X-X			r _y y In.
						I	S	r	
A	0.374	0.057	2 ¹³ / ₁₆	⁹ / ₁₆	1.31	0.08	0.09	0.46	0.70
B	0.454	0.068	2 ¹³ / ₁₆	⁵ / ₈	1.32	0.09	0.10	0.46	0.72
C	0.563	0.085	2 ¹³ / ₁₆	⁵ / ₈	1.34	0.11	0.13	0.45	0.72
D	0.698	0.098	3 ¹ / ₂	⁹ / ₁₆	1.35	0.14	0.16	0.46	0.87
E	0.833	0.115	3 ¹ / ₂	¹¹ / ₁₆	1.37	0.16	0.18	0.45	0.90
F	0.921	0.126	3 ¹ / ₂	³ / ₄	1.38	0.19	0.21	0.45	0.94
G	1.008	0.126	4 ⁵ / ₁₆	¹¹ / ₁₆	1.38	0.21	0.22	0.45	1.12
H	1.202	0.148	4 ⁵ / ₁₆	³ / ₄	1.40	0.23	0.24	0.45	1.15
I	1.372	0.139	5 ¹⁵ / ₁₆	⁷ / ₈	1.39	0.25	0.25	0.43	1.60
J	1.705	0.176	5 ¹⁵ / ₁₆	⁷ / ₈	1.43	0.32	0.32	0.43	1.61

B-SECTION BOTTOM CHORD



DIMENSIONS ARE SUBJECT TO
BLANK-GAGE AND ROLLING TOLERANCE

V-Beam Size	Area In. ²	Gage t In.	W In.	w	D	AXIS X-X			r _y y In.
						I	S	r	
A	0.352	0.084	2 ¹⁵ / ₁₆	⁵ / ₈	1.02	0.05	0.09	0.38	0.78
B	0.436	0.099	3 ³ / ₁₆	³ / ₄	1.04	0.06	0.10	0.38	0.83
C	0.542	0.124	3 ¹ / ₈	¹¹ / ₁₆	1.06	0.08	0.13	0.38	0.82
D	0.654	0.124	4 ¹ / ₁₆	1 ³ / ₁₆	1.06	0.09	0.14	0.38	1.06
E	0.778	0.173	3 ³ / ₈	³ / ₄	1.11	0.12	0.18	0.39	0.85
F	0.854	0.173	3 ³ / ₄	1	1.11	0.13	0.18	0.38	0.96
G	0.929	0.173	4 ¹ / ₄	1 ³ / ₁₆	1.11	0.13	0.19	0.38	1.08
H	1.054	0.173	4 ¹⁵ / ₁₆	1 ⁹ / ₁₆	1.11	0.14	0.19	0.37	1.27
I	1.240	0.190	5 ⁵ / ₈	1 ³ / ₄	1.13	0.16	0.21	0.37	1.43
J	1.623	0.223	6 ¹ / ₈	2 ¹ / ₈	1.16	0.21	0.25	0.36	1.64

V-BEAM DESIGN

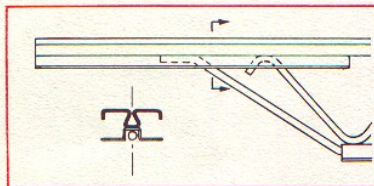
With this, the latest in the series of V-BEAMS, Macomber continues its leadership in the steel building field. This member embodies the experience gained since 1950 when Macomber introduced the original V-BEAM to the market. Development of the V-BEAM is based on information from the great number of tests performed on full sized members, since that date.

The V-BEAM top chord, consisting of the V-Section, has been in constant use on all Macomber products since 1946. Test data and engineering information on this section support its usage. The B-Section making up the bottom chord has been in use since 1960 in the Macomber "S" series joists, and more recently in the J & H series joists. The information gathered justifies its use in the V-BEAM.

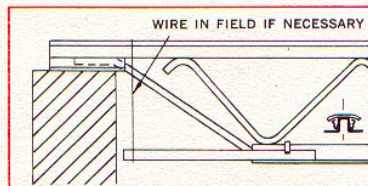
The components of the V-BEAM — chords, bearing plates, end bars and web system — lend themselves admirably to modern fabricating standards and Macomber's up-to-date fabricating facilities.

In preparing the load tables, it was recognized that under some conditions, the deflection of a member governs its design. To simplify the selection of V-BEAMS under these conditions, additional loads, in color, have been incorporated listing the live load carrying capacities for each joist size and span, for limiting deflections of $1/360$ and $1/240$ of the span.

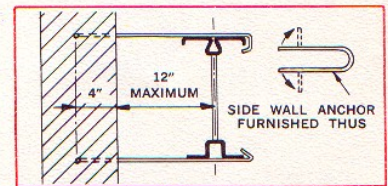
V-BEAM CONSTRUCTION DETAILS



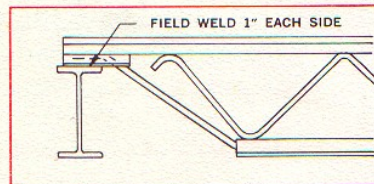
EXTENDED END



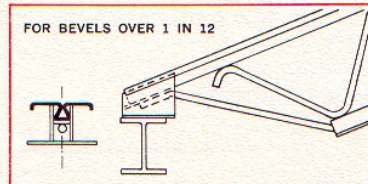
CEILING EXTENSION



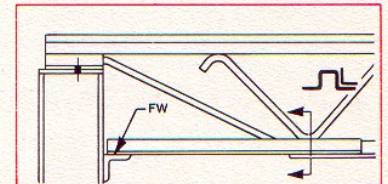
SIDE WALL ANCHORAGE



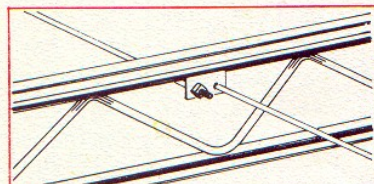
WELDED END CONNECTION



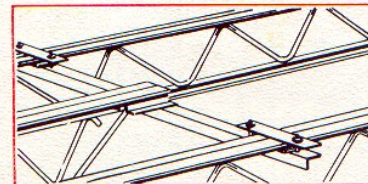
SLOPED BEARING PLATE



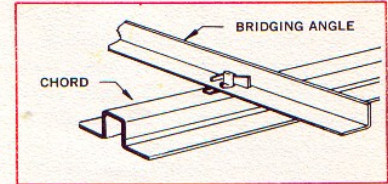
COLUMN TIE



SAG ROD BRIDGING



HEADER ANGLE FRAMING SMALL OPENINGS



WEDGE TYPE BRIDGING DETAIL

V-BEAM DIMENSIONS AND PROPERTIES

Designation Number	Nominal Depth (In.)	I of Chords (In. ⁴)	End Panel Length		Interior Panel Length	Bearing Plate		Standard End Bearing Depth (In.)
			Minimum	Maximum		Width (In.)	Thickness (In.)	
8A	8	9.5	2'-0"	2'-10"	2'-0"	4½	¾	2½
10A	10	15.5	2'-0"	2'-10"	2'-0"	4½	¾	2½
12A	12	22.8	2'-0"	2'-10"	2'-0"	4½	¾	2½
8B	8	11.7	2'-0"	2'-10"	2'-0"	4½	¾	2½
10B	10	19.0	2'-0"	2'-10"	2'-0"	4½	¾	2½
12B	12	28.1	2'-0"	2'-10"	2'-0"	4½	¾	2½
14B	14	39.0	2'-0"	2'-10"	2'-0"	4½	¾	2½
16B	16	51.6	2'-0"	2'-10"	2'-0"	4½	¾	2½
10C	10	23.7	2'-0"	2'-10"	2'-0"	4½	¾	2½
12C	12	35.0	2'-0"	2'-10"	2'-0"	4½	¾	2½
14C	14	48.5	2'-0"	2'-10"	2'-0"	4½	¾	2½
16C	16	64.2	2'-0"	2'-10"	2'-0"	4½	¾	2½
18C	18	82.1	2'-0"	2'-10"	2'-0"	4½	¾	2½
10D	10	29.6	2'-0"	2'-10"	2'-0"	6	¾	2½
12D	12	43.6	2'-0"	2'-10"	2'-0"	6	¾	2½
14D	14	60.2	2'-0"	2'-10"	2'-0"	6	¾	2½
16D	16	79.6	2'-0"	2'-10"	2'-0"	6	¾	2½
18D	18	101.6	2'-0"	2'-10"	2'-0"	6	¾	2½
20D	20	126.4	2'-0"	2'-10"	2'-0"	6	¾	2½
22D	22	153.9	2'-0"	2'-10"	2'-0"	6	¾	2½
24D	24	184.0	2'-0"	2'-10"	2'-0"	6	¾	2½
26D	26	216.9	2'-0"	2'-10"	2'-0"	6	¾	2½
28D	28	252.4	2'-0"	2'-10"	2'-0"	6	¾	2½
12E	12	51.7	2'-0"	2'-10"	2'-0"	6	¾	2½
14E	14	71.6	2'-0"	2'-10"	2'-0"	6	¾	2½
16E	16	94.6	2'-0"	2'-10"	2'-0"	6	¾	2½
18E	18	120.6	2'-0"	2'-10"	2'-0"	6	¾	2½
20E	20	150.3	2'-0"	2'-10"	2'-0"	6	¾	2½
22E	22	183.0	2'-0"	2'-10"	2'-0"	6	¾	2½
24E	24	218.9	2'-0"	2'-10"	2'-0"	6	¾	2½
26E	26	258.0	2'-0"	2'-10"	2'-0"	6	¾	2½
28E	28	300.3	2'-0"	2'-10"	2'-0"	6	¾	2½
12F	12	57.4	2'-0"	2'-10"	2'-0"	6	¾	2½
14F	14	79.3	2'-0"	2'-10"	2'-0"	6	¾	2½
16F	16	104.7	2'-0"	2'-10"	2'-0"	6	¾	2½
18F	18	133.7	2'-0"	2'-10"	2'-0"	6	¾	2½
20F	20	166.2	2'-0"	2'-10"	2'-0"	6	¾	2½
22F	22	202.3	2'-0"	2'-10"	2'-0"	6	¾	2½
24F	24	241.9	2'-0"	2'-10"	2'-0"	6	¾	2½
26F	26	285.1	2'-0"	2'-10"	2'-0"	6	¾	2½
28F	28	331.8	2'-0"	2'-10"	2'-0"	6	¾	2½
14G	14	87.3	2'-0"	2'-10"	2'-0"	6	¾	2½
16G	16	115.1	2'-0"	2'-10"	2'-0"	6	¾	2½
18G	18	146.9	2'-0"	2'-10"	2'-0"	6	¾	2½
20G	20	182.5	2'-0"	2'-10"	2'-0"	6	¾	2½
22G	22	222.0	2'-0"	2'-10"	2'-0"	6	¾	2½
24G	24	265.3	2'-0"	2'-10"	2'-0"	6	¾	2½
26G	26	312.5	2'-0"	2'-10"	2'-0"	6	¾	2½
28G	28	363.6	2'-0"	2'-10"	2'-0"	6	¾	2½
16H	16	134.2	2'-0"	2'-10"	2'-0"	6	¾	2½
18H	18	171.2	2'-0"	2'-10"	2'-0"	6	¾	2½
20H	20	212.6	2'-0"	2'-10"	2'-0"	6	¾	2½
22H	22	258.5	2'-0"	2'-10"	2'-0"	6	¾	2½
24H	24	308.9	2'-0"	2'-10"	2'-0"	6	¾	2½
26H	26	363.8	2'-0"	2'-10"	2'-0"	6	¾	2½
28H	28	423.2	2'-0"	2'-10"	2'-0"	6	¾	2½
16I	16	157.1	2'-0"	2'-10"	2'-0"	6	¾	2½
18I	18	200.1	2'-0"	2'-10"	2'-0"	6	¾	2½
20I	20	248.3	2'-0"	2'-10"	2'-0"	6	¾	2½
22I	22	301.8	2'-0"	2'-10"	2'-0"	6	¾	2½
24I	24	360.4	2'-0"	2'-10"	2'-0"	6	¾	2½
26I	26	424.3	2'-0"	2'-10"	2'-0"	6	¾	2½
28I	28	493.3	2'-0"	2'-10"	2'-0"	6	¾	2½
20J	20	319.5	2'-0"	2'-10"	2'-0"	6	¾	2½
22J	22	388.0	2'-0"	2'-10"	2'-0"	6	¾	2½
24J	24	463.2	2'-0"	2'-10"	2'-0"	6	¾	2½
26J	26	544.9	2'-0"	2'-10"	2'-0"	6	¾	2½
28J	28	633.4	2'-0"	2'-10"	2'-0"	6	¾	2½

MACOMBER V-BEAM LOAD TABLE

Allowable Total Loads in Pounds per Lineal Foot. Factor of Safety = 1.65.

Size	Nom. Depth (In.)	Resist. Moment (In.—K.)	Max. End Reaction (Lbs.)	CLEAR SPAN IN FEET																												Size
				8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32				
8A	8	76.36	1630	407	362	326	296 259	271 200	250 157 236	232 126 189	217 102 153	198 84 126																8A				
8B	8	93.21	2245	561	498	449 426	408 320	374 246 369	345 193 290	317 155 232	276 126 189	242 104 156																8B				
10A	10	97.63	1943	485	431	388	353	323	299 256	277 205	259 137 250	242 114 206	225 96 172	200 82 145	180 22 123	162 70 105												10A				
10B	10	119.09	2984					497	459 314	405 252 378	352 205 307	310 168 253	274 140 211	245 118 177	219 100 151	198 86 129												10B				
10C	10	147.81	2917					486	448 392	416 314	389 210 383	364 175 316	340 148 263	304 125 222	272 107 188	246 107 161												10C				
10D	10	184.84	3614					602	556 490	516 392	481 263 479	451 219 394	425 184 329	380 157 277	341 134 235	308 134 202												10D				
12A	12	118.96	1988	497	441	397	361	331	305	284	265 246	242 202	233 169	220 142 213	209 121 181	198 103 155	179 89 134	163 77 116	149 68 102	137 60 90								12A				
12B	12	144.90	3124					520	480 465	446 372	416 303	377 249 374	334 208 312	298 175 263	267 149 223	241 127 191	219 110 165	199 96 144	182 84 126	167 74 111								12B				
12C	12	179.87	3630					605	558	518 464	484 377	453 311	414 259 389	370 218 327	332 185 278	299 159 239	271 137 206	247 119 179	226 104 157	208 92 138								12C				
12D	12	224.48	3979					663	612	568	530 470	497 387	468 323	442 272 408	414 231 347	374 198 297	339 171 257	309 149 223	282 130 195	259 114 172								12D				
12E	12	266.60	3773					628	580	539	503	471 459	443 383	419 322	397 274	377 235 353	359 203 304	343 176 265	328 154 232	308 136 204								12E				
12F	12	293.69	4716									589 510	554 425	524 358	496 304 457	471 261 391	443 225 338	404 196 294	370 171 257	339 151 226								12F				
14B	14	170.78	3699							528 517	493 420	444 346	393 289	351 243	315 207 310	284 177 266	258 153 230	235 133 200	215 116 175	197 102 154	182 90 136	168 80 121	156 72 108	145 64 97				14B				
14C	14	212.00	4367					623	582 523	545 431	489 359	436 302	391 257 386	353 220 331	320 190 286	292 165 248	267 145 217	245 127 191	226 113 169	209 100 150	193 89 134	180 80 120					14C					
14D	14	264.12	4023					574	536	502	473 446	447 375	423 319	402 274	383 236 355	363 205 308	332 180 270	305 158 237	281 140 210	260 124 187	241 99 167	224 99 149					14D					
14E	14	313.75	4850							606	570 530	538 447	510 380	485 325	461 281 422	432 244 367	395 214 321	363 188 282	334 166 250	309 148 222	286 132 198	266 118 178					14E					
14F	14	345.45	5266							658	619 587	585 495	554 421	526 361	501 311 467	475 271 406	435 237 356	399 208 313	368 164 277	340 146 246	315 127 220	293 131 197					14F					
14G	14	377.45	5141							642	604	571 545	541 463	514 397	489 343	467 298 447	447 229 391	428 203 344	402 180 305	372 161 271	345 144 242	320 144 217					14G					
16B	16	196.66	2699									337	317	299	284 273	269 234	257 202	245 176	234 154 231	224 135 203	209 120 180	193 95 160	179 85 143	167 58 128				16B				
16C	16	244.06	4074									509	479 475	452 400	428 340	406 292	368 252	336 192 329	307 169 253	282 149 224	260 133 199	240 118 178	223 106 159	207 86 143	193 78 129	180 169 117	169 71 107	158 157	16C			
16D	16	303.75	4810									601	565	534 497	506 422	481 362	458 313	418 238	382 209	351 185	324 164	299 147	277 132	258 107	240 97	225 78	210 157	197 132	16D			
16E	16	360.90	5290									661	622	587	556 502	529 430	503 372	480 323	454 275 424	417 244 373	384 193 330	355 175 294	330 156 262	306 141 235	286 115 211	267 191	250 173	234 105 157	16E			
16F	16	397.21	5163													516 476	491 411	469 358	448 313	430 275 413	413 244 366	391 216 325	363 193 290	337 173 260	314 141 234	294 127 211	275 116 191	258 117 174	16F			
16G	16	433.75	5070													507	482 452	460 393	440 303	422 268 402	405 238 357	390 122 319	375 212 286	362 190 257	343 155	321 140	300 127	282 191	16G			
16H	16	493.09	6292														629 610	599 527	572 459	547 401	524 353	503 312 469	484 278 417	450 248 372	419 222 300	390 200	365 181	342 164	321 149	246 223	16H	

Allowable Total Loads in Pounds per Lineal Foot. Factor of Safety = 1.65.

WHERE LIVE LOAD IS NOT INDICATED, LIVE LOAD CAPACITY EQUALS TOTAL LOAD CAPACITY.
CARRYING CAPACITIES TO RIGHT OF HEAVY LINE ARE GOVERNED BY RESISTING MOMENT OF CHORDS.
CARRYING CAPACITIES TO LEFT OF HEAVY LINE ARE GOVERNED BY THE END REACTION.
SPANS TO THE RIGHT OF THE DASHED LINES ARE TO BE USED FOR ROOF CONSTRUCTION ONLY.

MACOMBER V-BEAM LOAD TABLE (Continued)

Allowable Total Loads in Pounds per Lineal Foot. Factor of Safety = 1.65.

Size	Nominal Depth (In.)	Resisting Moment (In.—K.)	Max. End Reaction (Lbs.)	CLEAR SPAN IN FEET																		
				20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36		
24D	24	462.30	5275	527	502	479	458	439	422	405 381	390 340	376 305	363 274	342 248	320 224	300 204	283 186 279	266 170 255	251 156 234	237 143 215		
24E	24	549.51	5694	569	542	517	495	474	455	438	421 405	406 363	392 326	379 295	367 267	355 243	336 221 332	316 202 304	299 185 278	282 170 256		
24F	24	604.24	6889					574	551	529 501	510 447	492 401	475 361	447 326	419 295	393 268	369 245 367	348 224 336	328 205 308	310 188 283		
24G	24	658.96	6784					565	542	521	502 490	484 440	467 396	452 357	437 324	424 294	403 268	380 245 368	358 225 338	338 207 310		
24H	24	748.60	8850									632 512	593 461	554 416	519 377	487 343	458 313	431 286 429	407 262 393	385 241 361		
24I	24	883.39	8599									614 597	593 538	573 486	554 440	537 400	521 365	505 333 500	480 306 459	454 281 421		
24J	24	1145.63	8768									626	604	584	565	548 514	531 469	515 429	501 393	487 361		
26D	26	501.93	6332	633	603	575	550	527	506 505	487 449	459 401	426 355	397 323	371 292	348 265	326 241	307 219	289 200	273 184	258 169 253		
26E	26	596.66	6130					510	490	471	454	437 428	422 385	408 348	395 315	383 286	365 261	344 239	324 219	306 201 302		
26F	26	656.00	6041					503	483	464	447	431	416	402 384	389 348	377 316	366 288	355 264	345 242	335 222 333		
26G	26	715.27	8190							630	606 578	585 518	564 466	529 421	496 382	465 347	437 316	412 289	389 265	367 243 365		
26H	26	812.48	8013							616	593	572	552 543	534 490	516 444	500 404	485 368	468 337	442 309	417 283		
26I	26	958.54	9430									673	650 633	628 572	608 518	589 471	571 429	552 393	521 360	493 331		
26J	26	1242.78	9303									664	641	620	600	581	563 552	547 504	531 462	516 425		
28D	28	541.57	7720									534 523	495 467	460 418	429 376	401 340	375 308	352 280	331 255	312 233	294 214	278 197
28E	28	643.81	7433									571	550	530 498	510 448	476 405	446 367	419 333	394 304	371 278	350 255	331 234
28F	28	707.75	7310									562	541	522	504 495	487 447	471 405	456 368	433 336	408 307	385 281	364 259
28G	28	771.57	7211									554	534	515	497	480	465 444	450 404	437 368	424 336	412 308	396 283
28H	28	876.36	8156									627	604	582	562	543	526 517	509 470	494 428	479 392	466 359	450 330
28I	28	1033.69	9220											658	635	614	594	576 548	558 499	542 457	526 419	512 385
28J	28	1339.93	8950											639	617	596	577	559	542	526	511	497 494

CAPACITY SHOWN ON FIRST LINE FOR EACH SIZE IS TOTAL LOAD CAPACITY.
 CAPACITY SHOWN IN BLUE IS LIVE LOAD CAPACITY FOR DEFLECTION OF 1/360 OF SPAN.
 CAPACITY SHOWN IN RED IS LIVE LOAD CAPACITY FOR DEFLECTION OF 1/240 OF SPAN.
 SPANS TO THE RIGHT OF THE DASHED LINES ARE TO BE USED FOR ROOF CONSTRUCTION ONLY.

MACOMBER V-BEAM LOAD TABLE (Continued)

Allowable Total Loads in Pounds per Lineal Foot. Factor of Safety = 1.65.

CLEAR SPAN IN FEET																				Size
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	
225 132 198	213 122 183																			24D
267 157 236	253 145 217	240 134 201	228 124 186																	24E
294 173 260	278 160 240	264 148 222	251 137 206																	24F
320 190 286	304 176 264	288 162 244	274 150 226	261 140 210	249 131 195	237 121 182	226 113 170	216 106 159	207 99 148	198 93 139	190 87 131								24G	
364 222 333	345 205 307	328 189 284	311 175 263	296 163 244	282 151 227	269 141 212	257 132 198	246 123 185	235 115 173	225 108 162	216 101 152								24H	
430 259 388	407 239 358	387 221 331	368 205 307	350 190 285	333 177 265	318 165 247	304 154 231	290 144 216	278 134 202	266 126 189	255 118 178								24I	
473 333	461 307	449 284 426	438 263 395	427 244 367	417 227 341	407 212 318	394 198 297	377 185 277	360 173 259	345 162 243	331 152 228								24J	
244 155 233	231 143 215																			26D
290 185 278	275 171 256	261 158 237	248 146 220																	26E
319 204 307	302 189 383	287 175 262	273 162 243																	26F
348 224 337	330 207 311	313 191 287	298 177 266	283 165 247	270 153 230	257 143 214	246 133 200	235 124 187	225 116 175	215 109 164	206 102 154	198 96 145	190 91 136						26G	
395 261 392	375 241 362	356 223 335	338 207 310	322 192 288	307 178 268	292 166 249	279 155 233	267 145 218	255 136 204	245 127 191	235 119 179	225 112 168	216 105 158						26H	
466 305 457	442 281 422	420 260 390	399 241 362	380 224 336	362 208 312	345 194 291	330 181 272	315 169 254	301 158 238	289 148 223	277 139 209	266 131 197	255 123 185	245 116 174	236 109 164				26I	
502 391	489 361	477 334	465 310	453 287 431	443 267 401	432 249 374	422 232 349	409 217 326	391 203 305	375 191 286	359 179 269	345 168 253	331 158 238	318 149 224	306 141 211				26J	
263 181	250 167																			28D
313 215	297 199	282 184 276	268 170 256																	28E
344 238	326 220	310 203 305	294 188 283																	28F
375 261	356 241	338 223 334	321 206 310	305 192 288	291 178 268	278 166 249	265 155 233	254 145 217	243 136 204	232 127 191	223 119 179	214 112 168	205 105 158						28G	
426 304	404 280	384 259	365 240 361	347 223 335	331 208 312	315 193 290	301 180 271	288 169 253	276 158 237	264 148 222	253 139 209	243 131 196	233 123 184						28H	
498 354	477 327	453 302	430 280 421	409 260 391	390 242 363	372 225 338	355 210 316	340 197 295	325 184 276	311 173 259	299 162 243	287 152 229	275 143 215	264 135 203	254 127 191	245 120 181	236 114 171	227 107 161	219 102 153	28I
483 455	471 420	458 388	447 360	436 334	426 311	416 290	406 270	397 253 379	389 236 355	380 222 333	372 208 312	365 196 294	357 184 276	343 260	330 246	318 232	306 219	295 207	284 131 197	28J

WHERE LIVE LOAD IS NOT INDICATED, LIVE LOAD CAPACITY EQUALS TOTAL LOAD CAPACITY.
 CARRYING CAPACITIES TO RIGHT OF HEAVY LINE ARE GOVERNED BY RESISTING MOMENT OF CHORDS.
 CARRYING CAPACITIES TO LEFT OF HEAVY LINE ARE GOVERNED BY THE END REACTION.
 SPANS TO THE RIGHT OF THE DASHED LINES ARE TO BE USED FOR ROOF CONSTRUCTION ONLY.

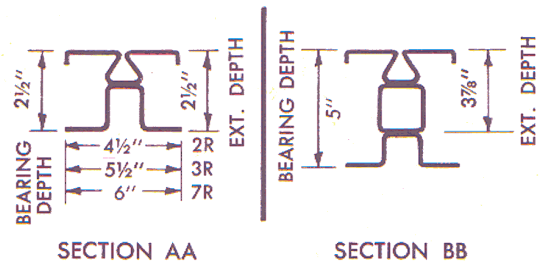
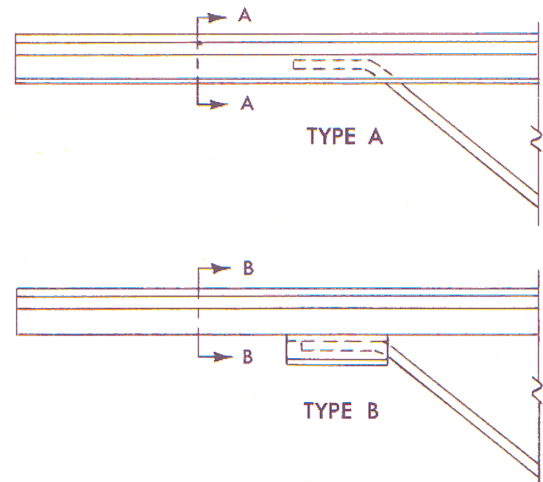
LOAD TABLE FOR V-BEAM EXTENDED ENDS

TYPE	Top Chord Extension		SPANS IN FEET — UNIFORM LOAD CAPACITIES IN POUNDS / LINEAL FOOT						
	Chord Number	Extension	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"
AA	31	2R	350	350	322	236	181	142	103
BA	32	2R	350	350	350	273	209	160	116
CA	33	2R	350	350	350	326	250	184	134
DA	34	7R	350	350	350	350	328	248	181
EA	35	7R	350	350	350	350	350	280	204
FA	36	7R	350	350	350	350	350	298	217
GA	37	7R	350	350	350	350	350	323	235
HA	38	7R	350	350	350	350	350	350	259
IA	39	7R	350	350	350	350	350	350	288
JA	40	7R	350	350	350	350	350	350	330
AB	31	2 1/2" x 1 3/8" Rectangular Tube	350	350	350	350	295	233	188
BB	32		350	350	350	350	305	240	195
CB	33		350	350	350	350	317	250	203
DB	34		350	350	350	350	340	268	217
EB	35		350	350	350	350	350	278	225
FB	36		350	350	350	350	350	284	230
GB	37		350	350	350	350	350	294	238
HB	38		350	350	350	350	350	300	243
IB	39		350	350	350	350	350	312	252
JB	40		350	350	350	350	350	325	264

NOTE: Capacities to the left of break line are governed by stress, those to the right by deflection of $L/120$. The allowable uniform load in pounds per lineal foot of extended end shall not exceed the allowable uniform load for the member to which it is attached.

PROPERTIES OF V-BEAM EXTENDED ENDS

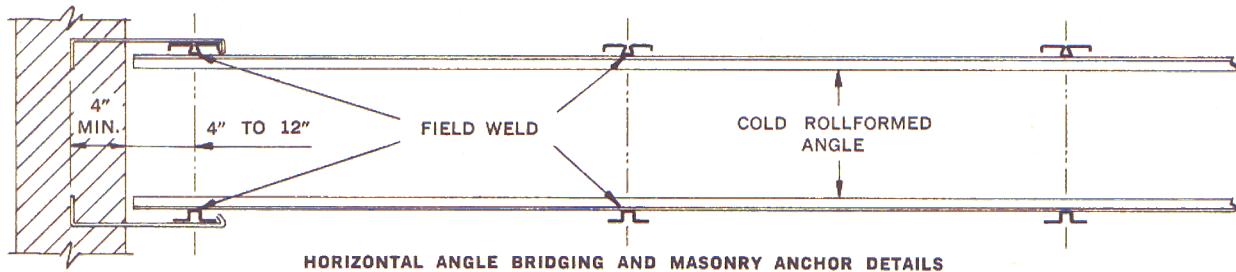
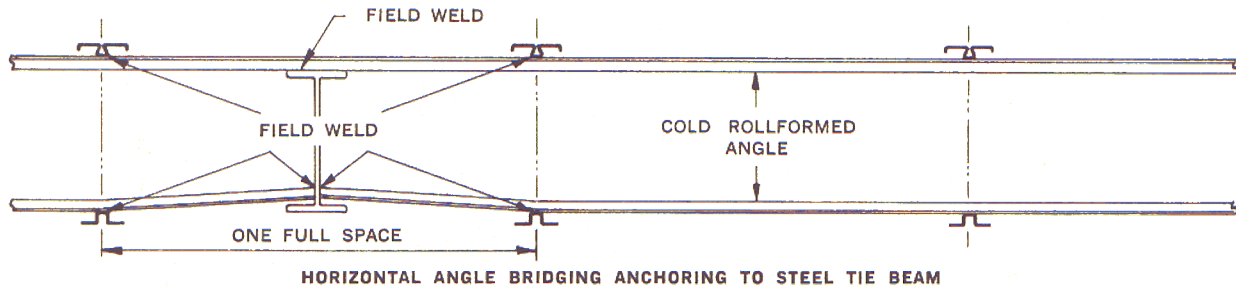
TYPE	I_{xx} (in. ⁴)	S_{xx} (in. ³)	r_{xx} (in.)	r_{yy} (in.)
AA	0.95	0.58	0.81	1.08
BA	1.07	0.67	0.84	1.06
CA	1.23	0.80	0.87	1.04
DA	1.66	1.05	0.90	1.39
EA	1.87	1.23	0.92	1.37
FA	1.99	1.34	0.94	1.37
GA	2.16	1.50	0.96	1.42
HA	2.38	1.72	0.96	1.40
IA	2.64	2.05	0.98	1.58
JA	3.03	2.28	0.99	1.60
AB	2.14	1.08	1.24	0.69
BB	2.31	1.20	1.26	0.69
CB	2.56	1.27	1.28	0.69
DB	2.90	1.36	1.30	0.76
EB	3.14	1.41	1.31	0.78
FB	3.29	1.44	1.31	0.82
GB	3.48	1.49	1.31	0.93
HB	3.73	1.52	1.30	0.95
IB	4.02	1.58	1.30	1.26
JB	4.43	1.65	1.28	1.34



V-BEAM BRIDGING

RECOMMENDED BRIDGING

NUMBER OF ROWS		SPAN OF V-BEAMS IN FEET			
FLOORS	ROOFS	A, B, C	D, E, F	G, H	I, J
None	None	0-7	0-9	0-11	0-13
1T-1B	1T-1B	7-14	9-18	11-22	13-26
2T-2B	2T-1B	14-21	18-27	22-33	26-39
3T-3B	3T-2B	Over 21	Over 27	Over 33	Over 39



QUALITY CONTROL

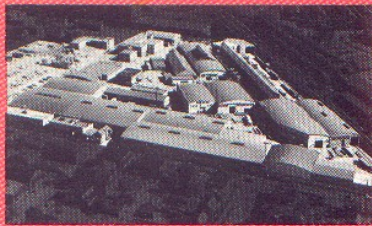
In serving the architects, engineers and contractors of America, Macomber Incorporated has developed a quality control program unequalled in the industry. Macomber open-web steel joist production is regularly checked by inspectors of the Pittsburgh Testing Laboratory.

As an added quality control measure, Macomber maintains a full force of product inspectors. These inspectors are responsible to the Director of Quality Control.

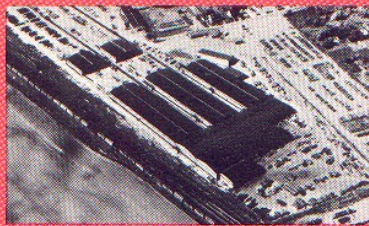
All production welding is performed by personnel certified by the Pittsburgh Testing Laboratory.

The customer purchasing Macomber open-web steel framing products produced under this program is assured that these products will perform as he has a right to expect.

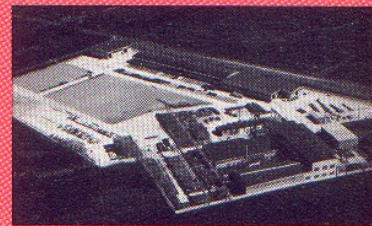
MACOMBER FABRICATING FACILITIES



CARAHAN PLANT
CANTON, OHIO



FAIRHOPE PLANT
CANTON, OHIO



ROCK ISLAND PLANT
ROCK ISLAND, ILLINOIS

MACOMBER PRODUCTS ARE ALSO MANUFACTURED
IN ENGLAND, FRANCE AND CANADA . . .

YOUR MACOMBER REPRESENTATIVE

STRUCTURAL PRODUCTS CORPORATION
DISTRICT SALES OFFICE
1017 North Jackson St. Green Bay, Wis.
Phone 432-8685

MACOMBER INCORPORATED
CANTON, OHIO 44701
SUBSIDIARY OF SHARON STEEL CORPORATION