



STRUCTURAL CALCULATIONS

SL1000 PANEL

Zimmerman Metals, Inc.

Over 60 years of Quality Workmanship and Service

201 East 58th Avenue, Denver CO 80216
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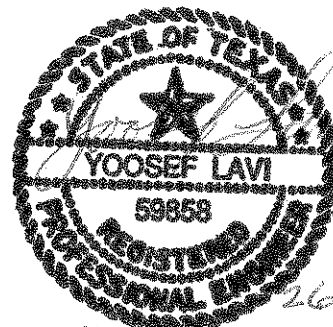
**STRUCTURAL CALCULATIONS FOR:
12" WIDE SL1000 PANEL**

Prepared For:

Zimmerman Metals, Inc.
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Denver, Colorado 80216

Prepared By:

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26 Pages

11-25-92

**ALLOWABLE LIVE LOAD (PSF) FOR:
Z- PANEL FORM SL1000**

PANEL GAUGE	PANEL WIDTH	#OF EQUAL SPANS	PANEL SPAN (FT.)							
			2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
26 GA STEEL	12"	1	64	41	28	21	15	11	8	6
		2	88	56	39	29	22	17	14	12
		3	102	65	45	33	26	20	16	12
24 GA STEEL	12"	1	85	55	38	28	20	14	10	8
		2	133	85	59	43	33	26	21	18
		3	138	88	61	45	34	27	21	16
22 GA STEEL	12"	1	106	68	47	35	25	18	13	10
		2	185	119	82	60	46	37	30	23
		3	172	110	76	56	43	34	26	20

NOTES:

1. All calculations for panel properties have been made in accordance with the 1986 edition of "Specification for Cold-Formed Steel Design Manual" published by American Iron and Steel Institute.
2. Values for 3 or more spans are based on 4 equal spans.
3. These load capacities are for the panel itself. Frames, purlins, clips, fasteners, and all supports must be designed to resist load imposed by the panel.
4. Material: ASTM A446 , grade "C"
5. All loads are in PSF.
6. Minimum panel support bearing length = 3.00 in.
7. Loads are calculated for deflection not to exceed 1/240 of the span.

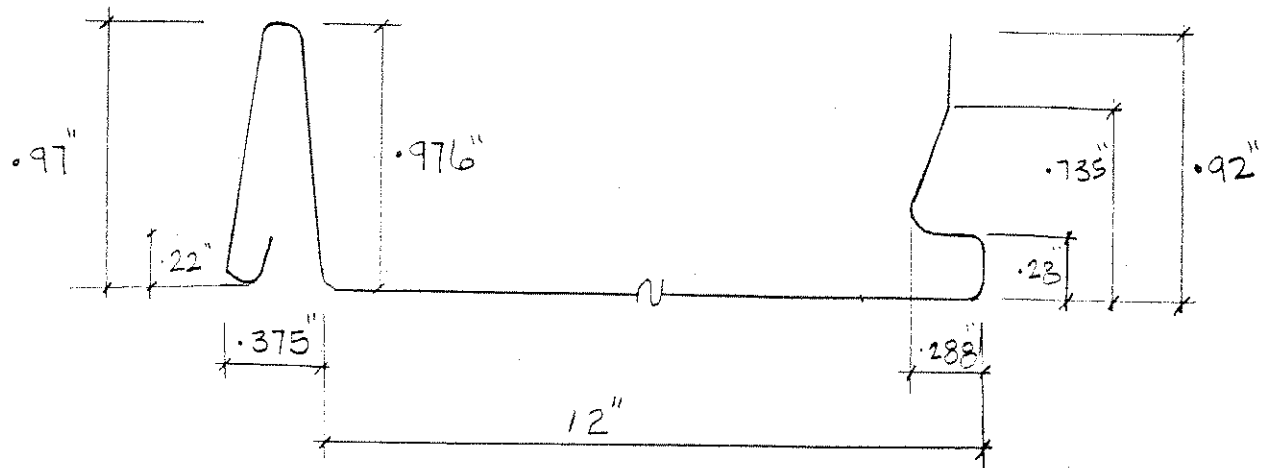
**ALLOWABLE WIND UPLIFT LOAD (PSF) FOR:
Z- PANEL FORM SL1000**

PANEL GAUGE	PANEL WIDTH	#OF EQUAL SPANS	PANEL SPAN (FT.)							
			2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
26 GA STEEL	12"	1	117	75	52	38	29	23	19	15
		2	85	55	38	28	21	17	14	11
		3	100	64	44	32	25	20	16	13
24 GA STEEL	12"	1	177	113	79	85	44	35	28	23
		2	114	73	50	37	28	22	18	15
		3	132	85	59	43	33	26	21	18
22 GA STEEL	12"	1	247	158	110	81	62	49	40	33
		2	142	91	63	46	35	28	23	19
		3	165	106	73	54	41	33	26	22

NOTES:

1. All calculations for panel properties have been made in accordance with the 1986 edition of "Specification for Cold-Formed Steel Design Manual" published by American Iron and Steel Institute.
2. Values for 3 or more spans are based on 4 equal spans.
3. These load capacities are for the panel itself. Frames, purlins, clips, fasteners, and all supports must be designed to resist load imposed by the panel.
4. Material: ASTM A446 , grade "C"
5. All loads are in PSF.
6. Above capacities have been increased by 33-1/3% as per AISI sec. A4.4.
7. Minimum panel support bearing length = 3.00 in.

WIDE SLIDING PANEL



1" High Snap-Lock Panel

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 12 IN WIDE BY 1 IN. SEAM

PANEL SECTION PROPERTIES
FOR : 12SL1000

Material: Steel, Yield of 40 ksi
(1986 AISI Specification)

GROSS SECTION PROPERTIES

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.000
2	11	0.1885	0.0218	0.0041	0.0001	0.000
3	3	0.8548	0.4850	0.4146	0.2011	0.051
4	11	0.1885	0.9482	0.1787	0.1694	0.000
5	9	0.8626	0.4850	0.4183	0.2029	0.051
6	11	0.0942	0.0218	0.0021	0.0000	0.000
7	2	11.8800	0.0000	0.0000	0.0000	0.000
8	11	0.0942	0.0218	0.0021	0.0000	0.000
9	9	0.1600	0.1400	0.0224	0.0031	0.000
10	11	0.0942	0.2582	0.0243	0.0063	0.000
11	11	0.1680	0.2800	0.0470	0.0132	0.000
12	11	0.0942	0.3018	0.0284	0.0086	0.000
13	1	0.4181	0.5325	0.2226	0.1186	0.005
14	11	0.0002	0.7250	0.0001	0.0001	0.000
15	11	0.1950	0.8225	0.1604	0.1319	0.000
TOTAL		15.4537		1.5478	0.8585	0.110

YBAR = 0.1002 IN

ELEMENT TYPES

- 1 - UNSTIFFENED COMPRESSION ELEMENT
- 2 - COMPRESSION ELEMENT STIFFENED BY 2 WEBS
- 3 - EDGE STIFFENED COMPRESSION ELEMENT
- 4 - COMPRESSION ELEMENT STIFFENED BY ONE INTERMEDIATE STIFFENER
- 5 - COMPRESSION ELEMENT WITH EDGE & INTERMEDIATE STIFFENERS
- 6 - COMPRESSION ELEMENT WITH MULTIPLE INTERMEDIATE STIFFENERS
- 7 - EDGE STIFFENER ELEMENT
- 8 - INTERMEDIATE STIFFENER ELEMENT
- 9 - WEB ELEMENT
- 10 - WEB R2 ELEMENT

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.000
2	11	0.1885	0.0218	0.0041	0.0001	0.000
3	3	0.8548	0.4850	0.4146	0.2011	0.051
4	11	0.1885	0.9482	0.1787	0.1694	0.000
5	9	0.8626	0.4850	0.4183	0.2029	0.051
6	11	0.0942	0.0218	0.0021	0.0000	0.000
7	2	11.8800	0.0000	0.0000	0.0000	0.000
8	11	0.0942	0.0218	0.0021	0.0000	0.000
9	9	0.1600	0.1400	0.0224	0.0031	0.000
10	11	0.0942	0.2582	0.0243	0.0063	0.000
11	11	0.1680	0.2800	0.0470	0.0132	0.000
12	11	0.0942	0.3018	0.0284	0.0086	0.000
13	1	0.4181	0.5325	0.2226	0.1186	0.005
14	11	0.0002	0.7250	0.0001	0.0001	0.000
15	11	0.1950	0.8225	0.1604	0.1319	0.000
TOTAL		15.4537		1.5478	0.8585	0.110

YBAR = 0.1002 IN

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0160 IN3

Ma FOR TOTAL PANEL WIDTH OF 12 IN. = 0.384 IN-KIP

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.000
2	11	0.1885	0.0218	0.0041	0.0001	0.000
3	3	0.8548	0.4850	0.4146	0.2011	0.051
4	11	0.1885	0.9482	0.1787	0.1694	0.000
5	9	0.8626	0.4850	0.4183	0.2029	0.051
6	11	0.0942	0.0218	0.0021	0.0000	0.000
7	2	11.8800	0.0000	0.0000	0.0000	0.000
8	11	0.0942	0.0218	0.0021	0.0000	0.000
9	9	0.1600	0.1400	0.0224	0.0031	0.000
10	11	0.0942	0.2582	0.0243	0.0063	0.000
11	11	0.1680	0.2800	0.0470	0.0132	0.000
12	11	0.0942	0.3018	0.0284	0.0086	0.000
13	1	0.4181	0.5325	0.2226	0.1186	0.005
14	11	0.0002	0.7250	0.0001	0.0001	0.000
15	11	0.1950	0.8225	0.1604	0.1319	0.000
TOTAL		15.4537		1.5478	0.8585	0.110

YBAR = 0.1002 IN

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0146 IN4

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.000
2	11	0.1885	0.0218	0.0041	0.0001	0.000
3	3	0.8548	0.4850	0.4146	0.2011	0.051
4	11	0.1885	0.9482	0.1787	0.1694	0.000
5	9	0.8626	0.4850	0.4183	0.2029	0.051
6	11	0.0942	0.0218	0.0021	0.0000	0.000
7	2	0.9083	0.0000	0.0000	0.0000	0.000
8	11	0.0942	0.0218	0.0021	0.0000	0.000
9	9	0.1600	0.1400	0.0224	0.0031	0.000
10	11	0.0942	0.2582	0.0243	0.0063	0.000
11	11	0.1680	0.2800	0.0470	0.0132	0.000
12	11	0.0942	0.3018	0.0284	0.0086	0.000
13	1	0.4181	0.5325	0.2226	0.1186	0.005
14	11	0.0002	0.7250	0.0001	0.0001	0.000
15	11	0.1950	0.8225	0.1604	0.1319	0.000
TOTAL		4.4821		1.5478	0.8585	0.110

YBAR = 0.3453 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 663.6872

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0219 IN3

Ma FOR TOTAL PANEL WIDTH OF 12 IN. = 0.525 IN-KIP

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0000
2	11	0.1885	0.0218	0.0041	0.0001	0.0000
3	3	0.8548	0.4850	0.4146	0.2011	0.0511
4	11	0.1885	0.9482	0.1787	0.1694	0.0000
5	9	0.8626	0.4850	0.4183	0.2029	0.0511
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.2577	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0000
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0051
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0000
TOTAL		4.8314		1.5478	0.8585	0.110

YBAR = 0.3204 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 663.6872

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0085 IN4

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.000
2	11	0.1885	0.0218	0.0041	0.0001	0.000
3	3	0.8548	0.4850	0.4146	0.2011	0.051
4	11	0.1885	0.9482	0.1787	0.1694	0.000
5	9	0.8626	0.4850	0.4183	0.2029	0.051
6	11	0.0942	0.0218	0.0021	0.0000	0.000
7	2	11.8800	0.0000	0.0000	0.0000	0.000
8	11	0.0942	0.0218	0.0021	0.0000	0.000
9	9	0.1600	0.1400	0.0224	0.0031	0.000
10	11	0.0942	0.2582	0.0243	0.0063	0.000
11	11	0.1680	0.2800	0.0470	0.0132	0.000
12	11	0.0942	0.3018	0.0284	0.0086	0.000
13	1	0.4181	0.5325	0.2226	0.1186	0.005
14	11	0.0002	0.7250	0.0001	0.0001	0.000
15	11	0.1950	0.8225	0.1604	0.1319	0.000
TOTAL		15.4537		1.5478	0.8585	0.110

YBAR = 0.1002 IN

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0213 IN³

Ma FOR TOTAL PANEL WIDTH OF 12 IN. = 0.511 IN-KIP

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.000
2	11	0.1885	0.0218	0.0041	0.0001	0.000
3	3	0.8548	0.4850	0.4146	0.2011	0.051
4	11	0.1885	0.9482	0.1787	0.1694	0.000
5	9	0.8626	0.4850	0.4183	0.2029	0.051
6	11	0.0942	0.0218	0.0021	0.0000	0.000
7	2	11.8800	0.0000	0.0000	0.0000	0.000
8	11	0.0942	0.0218	0.0021	0.0000	0.000
9	9	0.1600	0.1400	0.0224	0.0031	0.000
10	11	0.0942	0.2582	0.0243	0.0063	0.000
11	11	0.1680	0.2800	0.0470	0.0132	0.000
12	11	0.0942	0.3018	0.0284	0.0086	0.000
13	1	0.4181	0.5325	0.2226	0.1186	0.005
14	11	0.0002	0.7250	0.0001	0.0001	0.000
15	11	0.1950	0.8225	0.1604	0.1319	0.000
TOTAL		15.4537		1.5478	0.8585	0.110

YBAR = 0.1002 IN

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0194 IN⁴

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.000
2	11	0.1885	0.0218	0.0041	0.0001	0.000
3	3	0.8548	0.4850	0.4146	0.2011	0.051
4	11	0.1885	0.9482	0.1787	0.1694	0.000
5	9	0.8626	0.4850	0.4183	0.2029	0.051
6	11	0.0942	0.0218	0.0021	0.0000	0.000
7	2	1.2057	0.0000	0.0000	0.0000	0.000
8	11	0.0942	0.0218	0.0021	0.0000	0.000
9	9	0.1600	0.1400	0.0224	0.0031	0.000
10	11	0.0942	0.2582	0.0243	0.0063	0.000
11	11	0.1680	0.2800	0.0470	0.0132	0.000
12	11	0.0942	0.3018	0.0284	0.0086	0.000
13	1	0.4181	0.5325	0.2226	0.1186	0.005
14	11	0.0002	0.7250	0.0001	0.0001	0.000
15	11	0.1950	0.8225	0.1604	0.1319	0.000
TOTAL		4.7795		1.5478	0.8585	0.110

YBAR = 0.3238 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 497.0711

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0333 IN³

Ma FOR TOTAL PANEL WIDTH OF 12 IN. = 0.797 IN-KIP

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.000
2	11	0.1885	0.0218	0.0041	0.0001	0.000
3	3	0.8548	0.4850	0.4146	0.2011	0.051
4	11	0.1885	0.9482	0.1787	0.1694	0.000
5	9	0.8626	0.4850	0.4183	0.2029	0.051
6	11	0.0942	0.0218	0.0021	0.0000	0.000
7	2	1.6850	0.0000	0.0000	0.0000	0.000
8	11	0.0942	0.0218	0.0021	0.0000	0.000
9	9	0.1600	0.1400	0.0224	0.0031	0.000
10	11	0.0942	0.2582	0.0243	0.0063	0.000
11	11	0.1680	0.2800	0.0470	0.0132	0.000
12	11	0.0942	0.3018	0.0284	0.0086	0.000
13	1	0.4181	0.5325	0.2226	0.1186	0.005
14	11	0.0002	0.7250	0.0001	0.0001	0.000
15	11	0.1950	0.8225	0.1604	0.1319	0.000
TOTAL		5.2588		1.5478	0.8585	0.110

YBAR = 0.2943 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 497.0711

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0123 IN4

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.000
2	11	0.1885	0.0218	0.0041	0.0001	0.000
3	3	0.8548	0.4850	0.4146	0.2011	0.051
4	11	0.1885	0.9482	0.1787	0.1694	0.000
5	9	0.8626	0.4850	0.4183	0.2029	0.051
6	11	0.0942	0.0218	0.0021	0.0000	0.000
7	2	11.8800	0.0000	0.0000	0.0000	0.000
8	11	0.0942	0.0218	0.0021	0.0000	0.000
9	9	0.1600	0.1400	0.0224	0.0031	0.000
10	11	0.0942	0.2582	0.0243	0.0063	0.000
11	11	0.1680	0.2800	0.0470	0.0132	0.000
12	11	0.0942	0.3018	0.0284	0.0086	0.000
13	1	0.4181	0.5325	0.2226	0.1186	0.005
14	11	0.0002	0.7250	0.0001	0.0001	0.000
15	11	0.1950	0.8225	0.1604	0.1319	0.000
TOTAL		15.4537		1.5478	0.8585	0.110

YBAR = 0.1002 IN

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0266 IN³

Ma FOR TOTAL PANEL WIDTH OF 12 IN. = 0.637 IN-KIP

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.000
2	11	0.1885	0.0218	0.0041	0.0001	0.000
3	3	0.8548	0.4850	0.4146	0.2011	0.051
4	11	0.1885	0.9482	0.1787	0.1694	0.000
5	9	0.8626	0.4850	0.4183	0.2029	0.051
6	11	0.0942	0.0218	0.0021	0.0000	0.000
7	2	11.8800	0.0000	0.0000	0.0000	0.000
8	11	0.0942	0.0218	0.0021	0.0000	0.000
9	9	0.1600	0.1400	0.0224	0.0031	0.000
10	11	0.0942	0.2582	0.0243	0.0063	0.000
11	11	0.1680	0.2800	0.0470	0.0132	0.000
12	11	0.0942	0.3018	0.0284	0.0086	0.000
13	1	0.4181	0.5325	0.2226	0.1186	0.005
14	11	0.0002	0.7250	0.0001	0.0001	0.000
15	11	0.1950	0.8225	0.1604	0.1319	0.000
TOTAL		15.4537		1.5478	0.8585	0.110

YBAR = 0.1002 IN

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0243 IN⁴

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.000
2	11	0.1885	0.0218	0.0041	0.0001	0.000
3	3	0.8548	0.4850	0.4146	0.2011	0.051
4	11	0.1885	0.9482	0.1787	0.1694	0.000
5	9	0.8626	0.4850	0.4183	0.2029	0.051
6	11	0.0942	0.0218	0.0021	0.0000	0.000
7	2	1.4996	0.0000	0.0000	0.0000	0.000
8	11	0.0942	0.0218	0.0021	0.0000	0.000
9	9	0.1600	0.1400	0.0224	0.0031	0.000
10	11	0.0942	0.2582	0.0243	0.0063	0.000
11	11	0.1680	0.2800	0.0470	0.0132	0.000
12	11	0.0942	0.3018	0.0284	0.0086	0.000
13	1	0.4181	0.5325	0.2226	0.1186	0.005
14	11	0.0002	0.7250	0.0001	0.0001	0.000
15	11	0.1950	0.8225	0.1604	0.1319	0.000
TOTAL		5.0733		1.5478	0.8585	0.110

YBAR = 0.3051 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, $W/T = 397.3244$

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0464 IN³

Ma FOR TOTAL PANEL WIDTH OF 12 IN. = 1.111 IN-KIP

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0000
2	11	0.1885	0.0218	0.0041	0.0001	0.0000
3	3	0.8548	0.4850	0.4146	0.2011	0.0510
4	11	0.1885	0.9482	0.1787	0.1694	0.0000
5	9	0.8626	0.4850	0.4183	0.2029	0.0510
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	2.1193	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0000
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0050
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0000
TOTAL		5.6931		1.5478	0.8585	0.1100

YBAR = 0.2719 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 397.3244

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
IX FOR TOTAL PANEL WIDTH OF 12 IN. = 0.0164 IN4

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 12 IN WIDE BY 1 IN. SEAM

PANEL COVERAGE = 12.00 IN
 THEORETICAL FLAT WIDTH = 15.4537 IN
 DEPTH OF PANEL = 1.00 IN

PANEL SECTION PROPERTIES
 FOR : 12SL1000

Material : Steel, Yield of 40 ksi

GA	THICK in	WT PSF	PANEL TOP IN COMPRESSION			PANEL BOTTOM IN COMPRESSION		
			Ix in4/ft	Sx in3/ft	Ma in-kip/ft	Ix in4/ft	Sx in3/ft	Ma in-kip
26	0.0179	0.94	0.0146	0.0160	0.38	0.0085	0.0219	0.50
24	0.0239	1.26	0.0194	0.0213	0.51	0.0123	0.0333	0.80
22	0.0299	1.57	0.0243	0.0266	0.64	0.0164	0.0464	1.11

Section properties are calculated in accordance with 1986 AISI Specifications.
 Sx and Ma are for stress determination, Ix is for deflection determination.

END BEARING ALLOWED FOR 2.0 IN. IS 0.078 K/FT FOR 0.0179 IN. THICKNESS
 INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.182 K/FT FOR 0.0179 IN. THICKNESS

END BEARING ALLOWED FOR 2.0 IN. IS 0.148 K/FT FOR 0.0239 IN. THICKNESS
 INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.302 K/FT FOR 0.0239 IN. THICKNESS

END BEARING ALLOWED FOR 2.0 IN. IS 0.234 K/FT FOR 0.0299 IN. THICKNESS
 INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.447 K/FT FOR 0.0299 IN. THICKNESS

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 12 IN WIDE BY 1 IN. SEAM

PANEL SECTION PROPERTIES
FOR : 12SL1000

Material : Steel, Yield of 40 ksi

GA	THICK in	WT PSF	PANEL TOP IN COMPRESSION			PANEL BOTTOM IN COMPRESSION		
			Ix in4/ft	Sx in3/ft	Ma in-kip/ft	Ix in4/ft	Sx in3/ft	Ma in-kip
26	0.0179	0.94	0.0146	0.0160	0.38	0.0085	0.0219	0.53
24	0.0239	1.26	0.0194	0.0213	0.51	0.0123	0.0333	0.80
22	0.0299	1.57	0.0243	0.0266	0.64	0.0164	0.0464	1.11

MAXIMUM ALLOWABLE LOADS IN POUNDS PER SQUARE FOOT
FOR : 12SL1000
LIVE LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

SPAN FT	GA	SIMPLE SPAN			2 SPANS			3 OR MORE SPANS		
		STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)
2.0	26	64	64	64	88	88	88	102	102	102
	24	85	85	85	133	133	133	138#	138	138
	22	106	106	106	185	185	185	172#	172	172
2.5	26	41	41	41	56	56	56	65	65	65
	24	55	55	55	85	85	85	88#	88	88
	22	68	68	68	119	119	119	110#	110	110
3.0	26	28	28	28	39	39	39	45	45	45
	24	38	38	38	59	59	59	61#	61	61
	22	47	47	47	82	82	82	76#	76	76
3.5	26	21	21	21	29	29	29	33	33	33

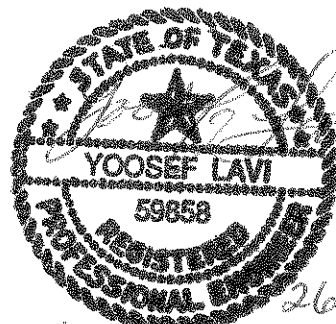
**STRUCTURAL CALCULATIONS FOR:
16" WIDE SL1000 PANEL**

Prepared For:

Zimmerman Metals, Inc.
201 E. 58TH Ave.
Denver, Colorado 80216

Prepared By:

Lavi & Associates
Consulting Engineers
9550 Forest Lane, Suite 313
Dallas, Texas 75243



11-25-92

26 Pages

**ALLOWABLE LIVE LOAD (PSF) FOR:
Z- PANEL FORM SL1000**

PANEL GAUGE	PANEL WIDTH	#OF EQUAL SPANS	PANEL SPAN (FT.)							
			2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
26 GA STEEL	16"	1	59	38	26	19	14	10	7	5
		2	66	42	29	21	16	13	11	9
		3	77	49	34	25	19	15	12	10
24 GA STEEL	16"	1	79	50	35	26	19	13	10	7
		2	100	64	44	33	25	20	16	13
		3	117	75	52	38	29	23	19	15
22 GA STEEL	16"	1	98	63	44	32	24	17	12	9
		2	140	89	62	46	35	28	22	18
		3	159	102	71	52	40	31	24	18

NOTES:

1. All calculations for panel properties have been made in accordance with the 1986 edition of "Specification for Cold-Formed Steel Design Manual" published by American Iron and Steel Institute.
2. Values for 3 or more spans are based on 4 equal spans.
3. These load capacities are for the panel itself. Frames, purlins, clips, fasteners, and all supports must be designed to resist load imposed by the panel.
4. Material: ASTM A446 , grade "C"
5. All loads are in PSF.
6. Minimum panel support bearing length = 3.00 in.
7. Loads are calculated for deflection not to exceed 1/240 of the span.

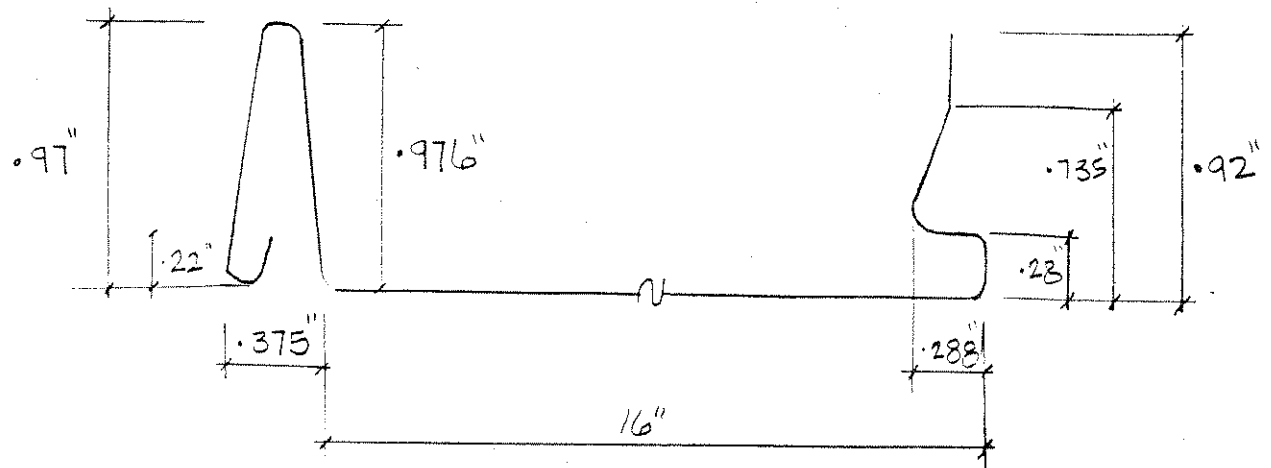
**ALLOWABLE WIND UPLIFT LOAD (PSF) FOR:
Z- PANEL FORM SL1000**

PANEL GAUGE	PANEL WIDTH	#OF EQUAL SPANS	PANEL SPAN (FT.)							
			2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
26 GA STEEL	16"	1	88	56	39	29	22	17	14	12
		2	79	51	35	26	20	16	13	10
		3	92	59	41	30	23	18	15	12
24 GA STEEL	16"	1	133	85	59	44	33	26	21	18
		2	105	67	47	34	26	21	17	14
		3	123	78	54	40	31	24	20	16
22 GA STEEL	16"	1	186	119	83	61	46	37	30	25
		2	131	84	58	43	33	26	21	17
		3	153	98	68	50	38	30	24	20

NOTES:

1. All calculations for panel properties have been made in accordance with the 1986 edition of "Specification for Cold-Formed Steel Design Manual" published by American Iron and Steel Institute.
2. Values for 3 or more spans are based on 4 equal spans.
3. These load capacities are for the panel itself. Frames, purlins, clips, fasteners, and all supports must be designed to resist load imposed by the panel.
4. Material: ASTM A446 , grade "C"
5. All loads are in PSF.
6. Above capacities have been increased by 33-1/3% as per AISI sec. A4.4.
7. Minimum panel support bearing length = 3.00 in.

WIDE SLIDING PANEL



1" High Snap-Lock Panel

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 16 IN WIDE BY 1 IN. SEAM

PANEL SECTION PROPERTIES
FOR : 10SL1000

Material: Steel, Yield of 40 ksi
(1986 AISI Specification)

GROSS SECTION PROPERTIES

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	15.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		19.4537		1.5478	0.8585	0.1101

YBAR = 0.0796 IN

ELEMENT TYPES

- 1 - UNSTIFFENED COMPRESSION ELEMENT
- 2 - COMPRESSION ELEMENT STIFFENED BY 2 WEBS
- 3 - EDGE STIFFENED COMPRESSION ELEMENT
- 4 - COMPRESSION ELEMENT STIFFENED BY ONE INTERMEDIATE STIFFENER
- 5 - COMPRESSION ELEMENT WITH EDGE & INTERMEDIATE STIFFENERS
- 6 - COMPRESSION ELEMENT WITH MULTIPLE INTERMEDIATE STIFFENERS
- 7 - EDGE STIFFENER ELEMENT
- 8 - INTERMEDIATE STIFFENER ELEMENT
- 9 - WEB ELEMENT
- 10 - WEB B2 ELEMENT

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY ² in ³	I ₀ in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2850	0.8033	0.2290	0.1839	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	15.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2850	0.8033	0.2290	0.1839	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.6032	0.3552	0.2142	0.0761	0.0181
TOTAL		19.6044		1.7792	1.0964	0.0798

YBAR = 0.0908 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)

S_x FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0198 IN³

M_a FOR TOTAL PANEL WIDTH OF 16 IN. = 0.474 IN-KIP

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY ² in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2850	0.8033	0.2290	0.1839	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	15.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2850	0.8033	0.2290	0.1839	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.6032	0.3552	0.2142	0.0761	0.0181
TOTAL		19.6044		1.7792	1.0964	0.0798

YBAR = 0.0908 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0182 IN⁴

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	0.9123	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		4.4861		1.5478	0.8585	0.1101

YBAR = 0.3450 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 887.1509

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0220 IN3

Ma FOR TOTAL PANEL WIDTH OF 16 IN. = 0.526 IN-KIP

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.2663	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		4.8401		1.5478	0.8585	0.1101

YBAR = 0.3198 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 887.1509

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
IX FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0085 IN4

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2850	0.8033	0.2290	0.1839	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	15.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2850	0.8033	0.2290	0.1839	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.6032	0.3552	0.2142	0.0761	0.0181
TOTAL		19.6044		1.7792	1.0964	0.0798

YBAR = 0.0908 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0263 IN3

Ma FOR TOTAL PANEL WIDTH OF 16 IN. = 0.631 IN-KIP

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2850	0.8033	0.2290	0.1839	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	15.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2850	0.8033	0.2290	0.1839	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.6032	0.3552	0.2142	0.0761	0.0181
TOTAL		19.6044		1.7792	1.0964	0.0798

YBAR = 0.0908 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0243 IN⁴

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.2128	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		4.7866		1.5478	0.8585	0.1101

YBAR = 0.3234 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, $W/T = 664.4351$

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

S_x FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0334 IN³

M_a FOR TOTAL PANEL WIDTH OF 16 IN. = 0.799 IN-KIP

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.7011	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		5.2748		1.5478	0.8585	0.1101

YBAR = 0.2934 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 664.4351

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
IX FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0123 IN⁴

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2850	0.8033	0.2290	0.1839	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	15.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2850	0.8033	0.2290	0.1839	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.6032	0.3552	0.2142	0.0761	0.0181
TOTAL		19.6044		1.7792	1.0964	0.0798

YBAR = 0.0908 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0328 IN3

Ma FOR TOTAL PANEL WIDTH OF 16 IN. = 0.786 IN-KIP

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2850	0.8033	0.2290	0.1839	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	15.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2850	0.8033	0.2290	0.1839	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.6032	0.3552	0.2142	0.0761	0.0181
TOTAL		19.6044		1.7792	1.0964	0.0798

YBAR = 0.0908 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0303 IN⁴

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.5107	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		5.0844		1.5478	0.8585	0.1101

YBAR = 0.3044 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 531.1037

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0466 IN³

Ma FOR TOTAL PANEL WIDTH OF 16 IN. = 1.116 IN-KIP

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	2.1458	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		5.7195		1.5478	0.8585	0.1101

YBAR = 0.2706 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 531.1037

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 16 IN. = 0.0164 IN4

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92
DESCRIPTION : 16 IN WIDE BY 1 IN. SEAM

DATE : 11-24-1992

PANEL COVERAGE = 16.00 IN
THEORETICAL FLAT WIDTH = 19.4537 IN
DEPTH OF PANEL = 1.00 IN

PANEL SECTION PROPERTIES
FOR : 10SL1000

Material : Steel, Yield of 40 ksi

GA	THICK	WT	PANEL TOP IN COMPRESSION			PANEL BOTTOM IN COMPRESSION		
			Ix	Sx	Ma	Ix	Sx	Ma
t	in	PSF	in4/ft	in3/ft	in-kip/ft	in4/ft	in3/ft	in-kip/f
26	0.0179	0.89	0.0136	0.0148	0.36	0.0064	0.0165	0.39
24	0.0239	1.19	0.0182	0.0197	0.47	0.0092	0.0250	0.60
22	0.0299	1.48	0.0228	0.0246	0.59	0.0123	0.0349	0.84

Section properties are calculated in accordance with 1986 AISI Specifications.
Sx and Ma are for stress determination, Ix is for deflection determination.

END BEARING ALLOWED FOR 2.0 IN. IS 0.059 K/FT FOR 0.0179 IN. THICKNESS
INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.136 K/FT FOR 0.0179 IN. THICKNESS
END BEARING ALLOWED FOR 2.0 IN. IS 0.111 K/FT FOR 0.0239 IN. THICKNESS
INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.226 K/FT FOR 0.0239 IN. THICKNESS
END BEARING ALLOWED FOR 2.0 IN. IS 0.176 K/FT FOR 0.0299 IN. THICKNESS
INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.335 K/FT FOR 0.0299 IN. THICKNESS

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 16 IN WIDE BY 1 IN. SEAM

PANEL SECTION PROPERTIES
FOR : 16SL1000

Material : Steel, Yield of 40 ksi

GA	THICK in	WT PSF	PANEL TOP IN COMPRESSION			PANEL BOTTOM IN COMPRESSION		
			Ix in ⁴ /ft	Sx in ³ /ft	Ma in-kip/ft	Ix in ⁴ /ft	Sx in ³ /ft	Ma in-kip/f
26	0.0179	0.89	0.0136	0.0148	0.36	0.0064	0.0165	0.39
24	0.0239	1.19	0.0182	0.0197	0.47	0.0092	0.0250	0.60
22	0.0299	1.48	0.0228	0.0246	0.59	0.0123	0.0349	0.84

MAXIMUM ALLOWABLE LOADS IN POUNDS PER SQUARE FOOT
FOR : 16SL1000
LIVE LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

SPAN FT	GA	SIMPLE SPAN			2 SPANS			3 OR MORE SPANS		
		STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)
2.0	26	59	59	59	66	66	66	77	77	77
	24	79	79	79	100	100	100	117	117	117
	22	98	98	98	140	140	140	159#	159	159
2.5	26	38	38	38	42	42	42	49	49	49
	24	50	50	50	64	64	64	75	75	75
	22	63	63	63	89	89	89	102#	102	102
3.0	26	26	26	26	29	29	29	34	34	34
	24	35	35	35	44	44	44	52	52	52
	22	44	44	44	62	62	62	71#	71	71
3.5	26	19	19	19	21	21	21	25	25	25

	22	32	32	32	46	46	46	52#	52	52
4.0	26	15	15	14*	16	16	16	19	19	19
	24	20	20	19*	25	25	25	29	29	29
	22	25	25	24*	35	35	35	40#	40	40
4.5	26	12	12	10*	13	13	13	15	15	15
	24	16	16	13*	20	20	20	23	23	23
	22	19	19	17*	28	28	28	31#	31	31
5.0	26	9	9	7*	11	11	11	12	12	12
	24	13	13	10*	16	16	16	19	19	19
	22	16	16	12*	22	22	22	25#	25	24*
5.5	26	8	7*	5*	9	9	9	10	10	10
	24	10	10*	7*	13	13	13	15	15	15*
	22	13	12*	9*	18	18	18	21#	21	18*
6.0	26	7	6*	4*	7	7	7	9	9	8*
	24	9	7*	6*	11	11	11	13	13	11*
	22	11	9*	7*	16	16	16	18#	18	14*
6.5	26	6	4*	3*	6	6	6	7	7	7*
	24	7	6*	4*	9	9	9	11	11	9*
	22	9	7*	6*	13	13	13	15#	15*	11*
7.0	26	5	4*	3*	5	5	5	6	6	5*
	24	6	5*	4*	8	8	8	10	9*	7*
	22	8	6*	4*	11	11	11*	13#	12*	9*

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

* DENOTES LOAD CONTROLLED BY DEFLECTION

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF. FRAMES, PURLINS, CLIPS, FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED BY THE PANEL.

FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED USING ACTUAL LOADS AND BEARING LENGTHS.

MAXIMUM ALLOWABLE LOADS IN POUNDS PER SQUARE FOOT
FOR : 10SL1000
WIND SUCTION (UPLIFT) LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

SPAN FT	GA	SIMPLE SPAN STRESS	2 SPANS STRESS	3 OR MORE SPANS STRESS
2.0	26	88	79	92
	24	133	105	123
	22	186	131	153
2.5	26	56	51	59
	24	85	67	78
	22	119	84	98
3.0	26	39	35	41
	24	59	47	54
	22	83	58	68
3.5	26	29	26	30
	24	44	34	40
	22	61	43	50
4.0	26	22	20	23
	24	33	26	31
	22	46	33	38
4.5	26	17	16	18
	24	26	21	24
	22	37	26	30
5.0	26	14	13	15
	24	21	17	20
	22	30	21	24
5.5	26	12	10	12
	24	18	14	16
	22	25	17	20
6.0	26	10	9	10
	24	15	12	14
	22	21	15	17
6.5	26	8	7	9
	24	13	10	12
	22	18	12	14
7.0	26	7	6	8
	24	11	9	10
	22	15	11	12

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

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ABOVE CAPACITIES HAVE BEEN INCREASED BY 33-1/3% AS PER AISI SEC. A4.4

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF. FRAMES, PURLINS, CLIPS, FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED BY THE PANEL.

FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED USING ACTUAL LOADS AND BEARING LENGTHS.

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 16 IN WIDE BY 1 IN. SEAM

PANEL SECTION PROPERTIES
FOR : 10SL1000

Material : Steel, Yield of 40 ksi

GA	THICK in	WT PSF	PANEL TOP IN COMPRESSION			PANEL BOTTOM IN COMPRESSION		
			Ix in ⁴ /ft	Sx in ³ /ft	Ma in-kip/ft	Ix in ⁴ /ft	Sx in ³ /ft	Ma in-kip/f
26	0.0179	0.89	0.0136	0.0148	0.36	0.0064	0.0165	0.39
24	0.0239	1.19	0.0182	0.0197	0.47	0.0092	0.0250	0.60
22	0.0299	1.48	0.0228	0.0246	0.59	0.0123	0.0349	0.84

MAXIMUM ALLOWABLE SPANS IN FEET
FOR : 10SL1000
LIVE LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

LOAD PSF	GA	SIMPLE SPAN			2 SPANS			3 OR MORE SPANS		
		STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)
20	26	3.4	3.4	3.4	3.6	3.6	3.6	3.9	3.9	3.9
	24	4.0	4.0	3.9*	4.5	4.5	4.5	4.8	4.8	4.8
	22	4.4	4.4	4.2*	5.3	5.3	5.3	5.6#	5.6	5.3*
25	26	3.1	3.1	3.1	3.2	3.2	3.2	3.5	3.5	3.5
	24	3.6	3.6	3.6	4.0	4.0	4.0	4.3	4.3	4.3
	22	4.0	4.0	3.9*	4.7	4.7	4.7	5.0#	5.0	5.0*
30	26	2.8	2.8	2.8	3.0	3.0	3.0	3.2	3.2	3.2
	24	3.2	3.2	3.2	3.7	3.7	3.7	3.9	3.9	3.9
	22	3.6	3.6	3.6	4.3	4.3	4.3	4.6#	4.6	4.6
35	26	2.6	2.6	2.6	2.7	2.7	2.7	3.0	3.0	3.0

	22	3.4	3.4	3.4	4.0	4.0	4.0	4.3#	4.3	4.3
40	26	2.4	2.4	2.4	2.6	2.6	2.6	2.8	2.8	2.8
	24	2.8	2.8	2.8	3.2	3.2	3.2	3.4	3.4	3.4
	22	3.1	3.1	3.1	3.7	3.7	3.7	4.0#	4.0	4.0
45	26	2.3	2.3	2.3	2.4	2.4	2.4	2.6	2.6	2.6
	24	2.6	2.6	2.6	3.0	3.0	3.0	3.2	3.2	3.2
	22	3.0	3.0	3.0	3.5	3.5	3.5	3.8#	3.8	3.8
50	26	2.2	2.2	2.2	2.3	2.3	2.3	2.5	2.5	2.5
	24	2.5	2.5	2.5	2.8	2.8	2.8	3.1	3.1	3.1
	22	2.8	2.8	2.8	3.3	3.3	3.3	3.6#	3.6	3.6
55	26	2.1	2.1	2.1	2.2	2.2	2.2	2.4	2.4	2.4
	24	2.4	2.4	2.4	2.7	2.7	2.7	2.9	2.9	2.9
	22	2.7	2.7	2.7	3.2	3.2	3.2	3.4#	3.4	3.4
60	26	2.0	2.0	2.0	2.1	2.1	2.1	2.3	2.3	2.3
	24	2.3	2.3	2.3	2.6	2.6	2.6	2.8	2.8	2.8
	22	2.6	2.6	2.6	3.0	3.0	3.0	3.3#	3.3	3.3

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

* DENOTES LOAD CONTROLLED BY DEFLECTION

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF. FRAMES, PURLINS, CLIPS, FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED BY THE PANEL.

FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED USING ACTUAL LOADS AND BEARING LENGTHS.

MAXIMUM ALLOWABLE SPANS IN FEET
FOR : 10SL1000
WIND SUCTION (UPLIFT) LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

LOAD PSF	GA	SIMPLE SPAN STRESS	2 SPANS STRESS	3 OR MORE SPANS STRESS
20	26	4.2	4.0	4.3
	24	5.2	4.6	5.0
	22	6.1	5.1	5.5
25	26	3.7	3.6	3.8
	24	4.6	4.1	4.4
	22	5.5	4.6	4.9
30	26	3.4	3.2	3.5
	24	4.2	3.7	4.0
	22	5.0	4.2	4.5
35	26	3.2	3.0	3.2
	24	3.9	3.5	3.7
	22	4.6	3.9	4.2
40	26	3.0	2.8	3.0
	24	3.7	3.2	3.5
	22	4.3	3.6	3.9
45	26	2.8	2.6	2.9
	24	3.4	3.1	3.3
	22	4.1	3.4	3.7
50	26	2.6	2.5	2.7
	24	3.3	2.9	3.1
	22	3.9	3.2	3.5
55	26	2.5	2.4	2.6
	24	3.1	2.8	3.0
	22	3.7	3.1	3.3
60	26	2.4	2.3	2.5
	24	3.0	2.6	2.9
	22	3.5	3.0	3.2

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

ABOVE CAPACITIES HAVE BEEN INCREASED BY 33-1/3% AS PER AISI SEC. A4.4

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF. FRAMES, PURLINS, CLIPS,
FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED
BY THE PANEL.

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FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED
USING ACTUAL LOADS AND BEARING LENGTHS.

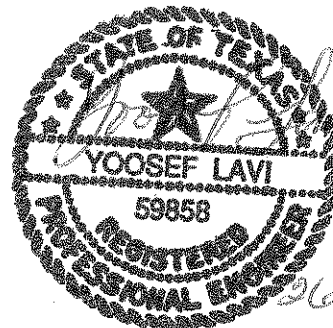
**STRUCTURAL CALCULATIONS FOR:
20" WIDE SL1000 PANEL**

Prepared For:

Zimmerman Metals, Inc.
201 E. 58TH Ave.
Denver, Colorado 80216

Prepared By:

Lavi & Associates
Consulting Engineers
9550 Forest Lane, Suite 313
Dallas, Texas 75243



26 pages

11-25-92

**ALLOWABLE LIVE LOAD (PSF) FOR:
Z- PANEL FORM SL1000**

PANEL GAUGE	PANEL WIDTH	#OF EQUAL SPANS	PANEL SPAN (FT.)							
			2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
24 GA STEEL	20"	1	63	41	28	21	16	11	8	6
		2	80	51	36	26	20	16	13	11
		3	93	60	42	31	13	18	15	12
22 GA STEEL	20"	1	79	51	35	26	19	14	10	7
		2	112	72	50	37	28	22	18	15
		3	128	82	57	42	32	25	20	15

NOTES:

1. All calculations for panel properties have been made in accordance with the 1986 edition of "Specification for Cold-Formed Steel Design Manual" published by American Iron and Steel Institute.
2. Values for 3 or more spans are based on 4 equal spans.
3. These load capacities are for the panel itself. Frames, purlins, clips, fasteners, and all supports must be designed to resist load imposed by the panel.
4. Material: ASTM A446 , grade "C"
5. All loads are in PSF.
6. Minimum panel support bearing length = 3.00 in.
7. Loads are calculated for deflection not to exceed 1/240 of the span.

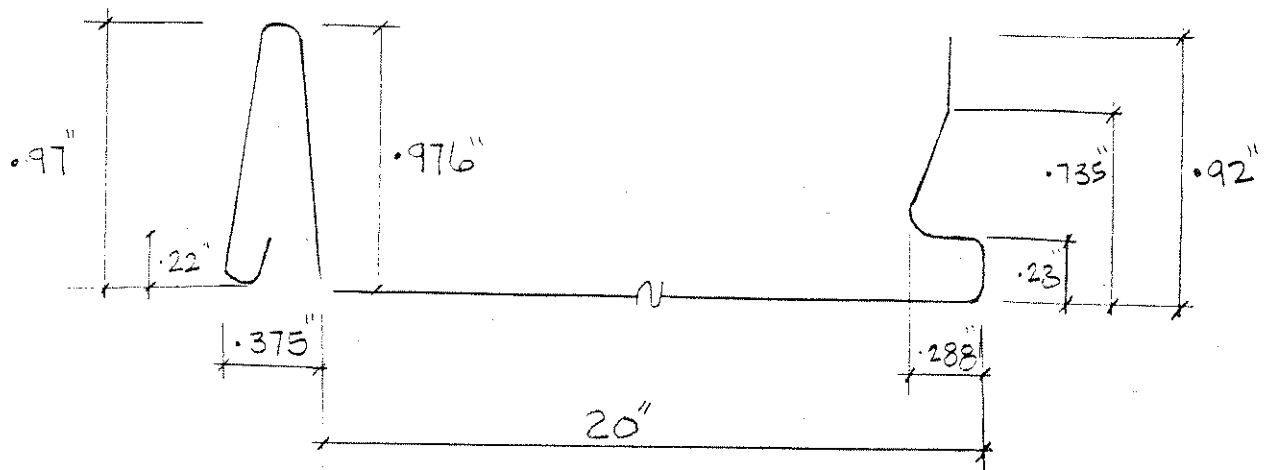
**ALLOWABLE WIND UPLIFT LOAD (PSF) FOR:
Z- PANEL FORM SL1000**

PANEL GAUGE	PANEL WIDTH	#OF EQUAL SPANS	PANEL SPAN (FT.)							
			2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
24 GA STEEL	20"	1	107	68	47	35	27	21	17	14
		2	85	54	38	28	21	17	14	11
		3	99	63	44	32	25	19	16	13
22 GA STEEL	20"	1	149	95	66	49	37	29	24	20
		2	106	68	47	34	26	21	17	14
		3	123	79	55	40	31	24	20	16

NOTES:

1. All calculations for panel properties have been made in accordance with the 1986 edition of "Specification for Cold-Formed Steel Design Manual" published by American Iron and Steel Institute.
2. Values for 3 or more spans are based on 4 equal spans.
3. These load capacities are for the panel itself. Frames, purlins, clips, fasteners, and all supports must be designed to resist load imposed by the panel.
4. Material: ASTM A446 , grade "C"
5. All loads are in PSF.
6. Above capacities have been increased by 33-1/3% as per AISI sec. A4.4.
7. Minimum panel support bearing length = 3.00 in.

WIDE SLIDING PANEL



1" High Snap-Lock Panel

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DESCRIPTION : 20 IN. WIDE BY 1 IN. SEAM

DATE : 11-24-1992

PANEL SECTION PROPERTIES
FOR : 20SL1000

Material: Steel, Yield of 40 ksi
(1986 AISI Specification)

GROSS SECTION PROPERTIES

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	19.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		23.4537		1.5478	0.8585	0.1101

YBAR = 0.0660 IN

ELEMENT TYPES

- 1 - UNSTIFFENED COMPRESSION ELEMENT
- 2 - COMPRESSION ELEMENT STIFFENED BY 2 WEBS
- 3 - EDGE STIFFENED COMPRESSION ELEMENT
- 4 - COMPRESSION ELEMENT STIFFENED BY ONE INTERMEDIATE STIFFENER
- 5 - COMPRESSION ELEMENT WITH EDGE & INTERMEDIATE STIFFENERS
- 6 - COMPRESSION ELEMENT WITH MULTIPLE INTERMEDIATE STIFFENERS
- 7 - EDGE STIFFENER ELEMENT
- 8 - INTERMEDIATE STIFFENER ELEMENT
- 9 - WEB ELEMENT
- 10 - WEB B2 ELEMENT

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2865	0.8025	0.2300	0.1845	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	19.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2865	0.8025	0.2300	0.1845	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5880	0.3476	0.2044	0.0711	0.0168
TOTAL		23.5923		1.7714	1.0926	0.0786

YBAR = 0.0751 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0199 IN³

Ma FOR TOTAL PANEL WIDTH OF 20 IN. = 0.477 IN-KIP

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2865	0.8025	0.2300	0.1845	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	19.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2865	0.8025	0.2300	0.1845	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5880	0.3476	0.2044	0.0711	0.0168
TOTAL		23.5923		1.7714	1.0926	0.0786

YBAR = 0.0751 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0186 IN⁴

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	0.9147	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		4.4884		1.5478	0.8585	0.1101

YBAR = 0.3448 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = %1110.6145

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0220 IN3

Ma FOR TOTAL PANEL WIDTH OF 20 IN. = 0.527 IN-KIP

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.2715	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		4.8452		1.5478	0.8585	0.1101

YBAR = 0.3194 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = %1110.6145

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0085 IN⁴

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2865	0.8025	0.2300	0.1845	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	19.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2865	0.8025	0.2300	0.1845	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5880	0.3476	0.2044	0.0711	0.0168
TOTAL		23.5923		1.7714	1.0926	0.0786

YBAR = 0.0751 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0265 IN³

Ma FOR TOTAL PANEL WIDTH OF 20 IN. = 0.634 IN-KIP

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2865	0.8025	0.2300	0.1845	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	19.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2865	0.8025	0.2300	0.1845	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5880	0.3476	0.2044	0.0711	0.0168
TOTAL		23.5923		1.7714	1.0926	0.0786

YBAR = 0.0751 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0248 IN4

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.2171	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		4.7908		1.5478	0.8585	0.1101

YBAR = 0.3231 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 831.7991

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0334 IN3

Ma FOR TOTAL PANEL WIDTH OF 20 IN. = 0.801 IN-KIP

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY ² in ³	I ₀ in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.7107	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		5.2844		1.5478	0.8585	0.1101

YBAR = 0.2929 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 831.7991

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
I_x FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0123 IN⁴

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2865	0.8025	0.2300	0.1845	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	19.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2865	0.8025	0.2300	0.1845	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5880	0.3476	0.2044	0.0711	0.0168
TOTAL		23.5923		1.7714	1.0926	0.0786

YBAR = 0.0751 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0330 IN³

Ma FOR TOTAL PANEL WIDTH OF 20 IN. = 0.791 IN-KIP

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2865	0.8025	0.2300	0.1845	0.0019
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	19.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2865	0.8025	0.2300	0.1845	0.0019
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5880	0.3476	0.2044	0.0711	0.0168
TOTAL		23.5923		1.7714	1.0926	0.0786

YBAR = 0.0751 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0310 IN⁴

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.5173	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		5.0911		1.5478	0.8585	0.1101

YBAR = 0.3040 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 664.8829

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0467 IN3

Ma FOR TOTAL PANEL WIDTH OF 20 IN. = 1.118 IN-KIP

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	2.1617	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		5.7355		1.5478	0.8585	0.1101

YBAR = 0.2699 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 664.8829

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 20 IN. = 0.0165 IN4

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 20 IN. WIDE BY 1 IN. SEAM

PANEL COVERAGE = 20.00 IN
THEORETICAL FLAT WIDTH = 23.4537 IN
DEPTH OF PANEL = 1.00 IN

PANEL SECTION PROPERTIES
FOR : 20SL1000

Material : Steel, Yield of 40 ksi

GA	THICK in	WT PSF	PANEL TOP IN COMPRESSION			PANEL BOTTOM IN COMPRESSION		
			Ix in4/ft	Sx in3/ft	Ma in-kip/ft	Ix in4/ft	Sx in3/ft	Ma in-kip/f
t								
26	0.0179	0.86	0.0112	0.0119	0.29	0.0051	0.0132	0.32
24	0.0239	1.14	0.0149	0.0159	0.38	0.0074	0.0201	0.48
22	0.0299	1.43	0.0186	0.0198	0.47	0.0099	0.0280	0.67

Section properties are calculated in accordance with 1986 AISI Specifications.
Sx and Ma are for stress determination, Ix is for deflection determination.

END BEARING ALLOWED FOR 2.0 IN. IS 0.047 K/FT FOR 0.0179 IN. THICKNESS
INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.109 K/FT FOR 0.0179 IN. THICKNESS

END BEARING ALLOWED FOR 2.0 IN. IS 0.089 K/FT FOR 0.0239 IN. THICKNESS
INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.181 K/FT FOR 0.0239 IN. THICKNESS

END BEARING ALLOWED FOR 2.0 IN. IS 0.141 K/FT FOR 0.0299 IN. THICKNESS
INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.268 K/FT FOR 0.0299 IN. THICKNESS

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 20 IN. WIDE BY 1 IN. SEAM

PANEL SECTION PROPERTIES
FOR : 20SL1000

Material : Steel, Yield of 40 ksi

GA t	THICK in	WT PSF	PANEL TOP IN COMPRESSION			PANEL BOTTOM IN COMPRESSION		
			Ix in4/ft	Sx in3/ft	Ma in-kip/ft	Ix in4/ft	Sx in3/ft	Ma in-kip/f
26	0.0179	0.86	0.0112	0.0119	0.29	0.0051	0.0132	0.32
24	0.0239	1.14	0.0149	0.0159	0.38	0.0074	0.0201	0.48
22	0.0299	1.43	0.0186	0.0198	0.47	0.0099	0.0280	0.67

MAXIMUM ALLOWABLE LOADS IN POUNDS PER SQUARE FOOT
FOR : 20SL1000
LIVE LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

SPAN FT	GA	SIMPLE SPAN			2 SPANS			3 OR MORE SPANS		
		STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)
2.0	26	48	48	48	53	53	53	62	62	62
	24	63	63	63	80	80	80	93	93	93
	22	79	79	79	112	112	112	128#	128	128
2.5	26	31	31	31	34	34	34	39	39	39
	24	41	41	41	51	51	51	60	60	60
	22	51	51	51	72	72	72	82#	82	82
3.0	26	21	21	21	23	23	23	27	27	27
	24	28	28	28	36	36	36	42	42	42
	22	35	35	35	50	50	50	57#	57	57
3.5	26	16	16	16	17	17	17	20	20	20

	22	26	26	26	37	37	37	42#	42	42
4.0	26	12	12	12*	13	13	13	15	15	15
	24	16	16	16*	20	20	20	23	23	23
	22	20	20	19*	28	28	28	32#	32	32
4.5	26	9	9	8*	10	10	10	12	12	12
	24	13	13	11*	16	16	16	18	18	18
	22	16	16	14*	22	22	22	25#	25	25
5.0	26	8	8	6*	8	8	8	10	10	10
	24	10	10	8*	13	13	13	15	15	15
	22	13	13	10*	18	18	18	20#	20	20*
5.5	26	6	6*	4*	7	7	7	8	8	8
	24	8	8*	6*	11	11	11	12	12	12*
	22	10	10*	7*	15	15	15	17#	17	15*
6.0	26	5	5*	3*	6	6	6	7	7	7
	24	7	6*	5*	9	9	9	10	10	9*
	22	9	8*	6*	12	12	12	14#	14	12*
6.5	26	5	4*	3*	5	5	5	6	6	5*
	24	6	5*	4*	8	8	8	9	9	7*
	22	7	6*	5*	11	11	11	12#	12*	9*
7.0	26	4	3*	2*	4	4	4	5	5	4*
	24	5	4*	3*	7	7	7	8	8	6*
	22	6	5*	4*	9	9	9*	10#	10*	7*

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

* DENOTES LOAD CONTROLLED BY DEFLECTION

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF. FRAMES, PURLINS, CLIPS, FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED BY THE PANEL.

FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED USING ACTUAL LOADS AND BEARING LENGTHS.

MAXIMUM ALLOWABLE LOADS IN POUNDS PER SQUARE FOOT
FOR : 20SL1000
WIND SUCTION (UPLIFT) LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

SPAN FT	GA	SIMPLE SPAN STRESS	2 SPANS STRESS	3 OR MORE SPANS STRESS
2.0	26	70	64	74
	24	107	85	99
	22	149	106	123
2.5	26	45	41	47
	24	68	54	63
	22	95	68	79
3.0	26	31	28	33
	24	47	38	44
	22	66	47	55
3.5	26	23	21	24
	24	35	28	32
	22	49	34	40
4.0	26	18	16	19
	24	27	21	25
	22	37	26	31
4.5	26	14	13	15
	24	21	17	19
	22	29	21	24
5.0	26	11	10	12
	24	17	14	16
	22	24	17	20
5.5	26	9	8	10
	24	14	11	13
	22	20	14	16
6.0	26	8	7	8
	24	12	9	11
	22	17	12	14
6.5	26	7	6	7
	24	10	8	9
	22	14	10	12
7.0	26	6	5	6
	24	9	7	8
	22	12	9	10

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

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ABOVE CAPACITIES HAVE BEEN INCREASED BY $33\frac{1}{3}\%$ AS PER AISI SEC. A4.4

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF. FRAMES, PURLINS, CLIPS, FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED BY THE PANEL.

FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED USING ACTUAL LOADS AND BEARING LENGTHS.

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 20 IN. WIDE BY 1 IN. SEAM

PANEL SECTION PROPERTIES
FOR : 20SL1000

Material : Steel, Yield of 40 ksi

GA	THICK in	WT PSF	PANEL TOP IN COMPRESSION			PANEL BOTTOM IN COMPRESSION		
			Ix in4/ft	Sx in3/ft	Ma in-kip/ft	Ix in4/ft	Sx in3/ft	Ma in-kip/f
26	0.0179	0.86	0.0112	0.0119	0.29	0.0051	0.0132	0.32
24	0.0239	1.14	0.0149	0.0159	0.38	0.0074	0.0201	0.48
22	0.0299	1.43	0.0186	0.0198	0.47	0.0099	0.0280	0.67

MAXIMUM ALLOWABLE SPANS IN FEET
FOR : 20SL1000
LIVE LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

LOAD PSF	GA	SIMPLE SPAN			2 SPANS			3 OR MORE SPANS		
		STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)
20	26	3.1	3.1	3.1	3.2	3.2	3.2	3.5	3.5	3.5
	24	3.6	3.6	3.6	4.0	4.0	4.0	4.3	4.3	4.3
	22	4.0	4.0	4.0*	4.7	4.7	4.7	5.1#	5.1	5.0*
25	26	2.8	2.8	2.8	2.9	2.9	2.9	3.1	3.1	3.1
	24	3.2	3.2	3.2	3.6	3.6	3.6	3.9	3.9	3.9
	22	3.6	3.6	3.6	4.2	4.2	4.2	4.5#	4.5	4.5
30	26	2.5	2.5	2.5	2.7	2.7	2.7	2.9	2.9	2.9
	24	2.9	2.9	2.9	3.3	3.3	3.3	3.5	3.5	3.5
	22	3.2	3.2	3.2	3.9	3.9	3.9	4.1#	4.1	4.1
35	26	2.3	2.3	2.3	2.5	2.5	2.5	2.7	2.7	2.7

	22	3.0	3.0	3.0	3.6	3.6	3.6	3.8#	3.8	3.8
40	26	2.2	2.2	2.2	2.3	2.3	2.3	2.5	2.5	2.5
	24	2.5	2.5	2.5	2.8	2.8	2.8	3.1	3.1	3.1
	22	2.8	2.8	2.8	3.3	3.3	3.3	3.6#	3.6	3.6
45	26	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3
	24	2.4	2.4	2.4	2.7	2.7	2.7	2.9	2.9	2.9
	22	2.7	2.7	2.7	3.2	3.2	3.2	3.4#	3.4	3.4
50	26	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2
	24	2.3	2.3	2.3	2.5	2.5	2.5	2.7	2.7	2.7
	22	2.5	2.5	2.5	3.0	3.0	3.0	3.2#	3.2	3.2
55	26	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.1
	24	2.1	2.1	2.1	2.4	2.4	2.4	2.6	2.6	2.6
	22	2.4	2.4	2.4	2.9	2.9	2.9	3.1#	3.1	3.1
60	26	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.0
	24	2.1	2.1	2.1	2.3	2.3	2.3	2.5	2.5	2.5
	22	2.3	2.3	2.3	2.7	2.7	2.7	2.9#	2.9	2.9

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

* DENOTES LOAD CONTROLLED BY DEFLECTION

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF. FRAMES, PURLINS, CLIPS, FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED BY THE PANEL.

FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED USING ACTUAL LOADS AND BEARING LENGTHS.

MAXIMUM ALLOWABLE SPANS IN FEET
FOR : 20SL1000
WIND SUCTION (UPLIFT) LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

LOAD PSF	GA	SIMPLE SPAN STRESS	2 SPANS STRESS	3 OR MORE SPANS STRESS
20	26	3.7	3.6	3.9
	24	4.6	4.1	4.4
	22	5.5	4.6	5.0
25	26	3.4	3.2	3.4
	24	4.1	3.7	4.0
	22	4.9	4.1	4.4
30	26	3.1	2.9	3.1
	24	3.8	3.4	3.6
	22	4.5	3.8	4.1
35	26	2.8	2.7	2.9
	24	3.5	3.1	3.4
	22	4.1	3.5	3.8
40	26	2.7	2.5	2.7
	24	3.3	2.9	3.1
	22	3.9	3.2	3.5
45	26	2.5	2.4	2.6
	24	3.1	2.7	3.0
	22	3.6	3.1	3.3
50	26	2.4	2.3	2.4
	24	2.9	2.6	2.8
	22	3.5	2.9	3.1
55	26	2.3	2.2	2.3
	24	2.8	2.5	2.7
	22	3.3	2.8	3.0
60	26	2.2	2.1	2.2
	24	2.7	2.4	2.6
	22	3.2	2.7	2.9

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

ABOVE CAPACITIES HAVE BEEN INCREASED BY 33-1/3% AS PER AISI SEC. A4.4

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF. FRAMES, PURLINS, CLIPS,
FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED
BY THE PANEL.

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FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED
USING ACTUAL LOADS AND BEARING LENGTHS.

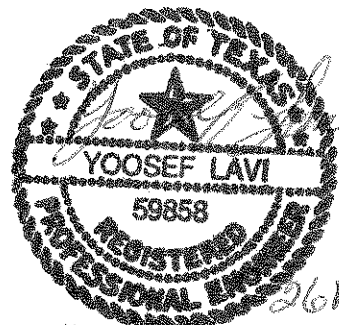
**STRUCTURAL CALCULATIONS FOR:
24" WIDE SL1000 PANEL**

Prepared For:

Zimmerman Metals, Inc.
201 E. 58TH Ave.
Denver, Colorado 80216

Prepared By:

Lavi & Associates
Consulting Engineers
9550 Forest Lane, Suite 313
Dallas, Texas 75243



11-25-92

26 Pages

**ALLOWABLE LIVE LOAD (PSF) FOR:
Z- PANEL FORM SL1000**

PANEL GAUGE	PANEL WIDTH	#OF EQUAL SPANS	PANEL SPAN (FT.)							
			2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
24 GA STEEL	24"	1	53	34	24	17	13	9	7	5
		2	67	43	30	22	17	13	11	9
		3	78	50	35	25	19	15	12	10
22 GA STEEL	24"	1	66	42	29	22	16	12	8	6
		2	93	60	42	30	23	18	15	12
		3	107	69	48	35	27	21	17	13

NOTES:

1. All calculations for panel properties have been made in accordance with the 1986 edition of "Specification for Cold-Formed Steel Design Manual" published by American Iron and Steel Institute.
2. Values for 3 or more spans are based on 4 equal spans.
3. These load capacities are for the panel itself. Frames, purlins, clips, fasteners, and all supports must be designed to resist load imposed by the panel.
4. Material: ASTM A446 , grade "C"
5. All loads are in PSF.
6. Minimum panel support bearing length = 3.00 in.
7. Loads are calculated for deflection not to exceed 1/240 of the span.

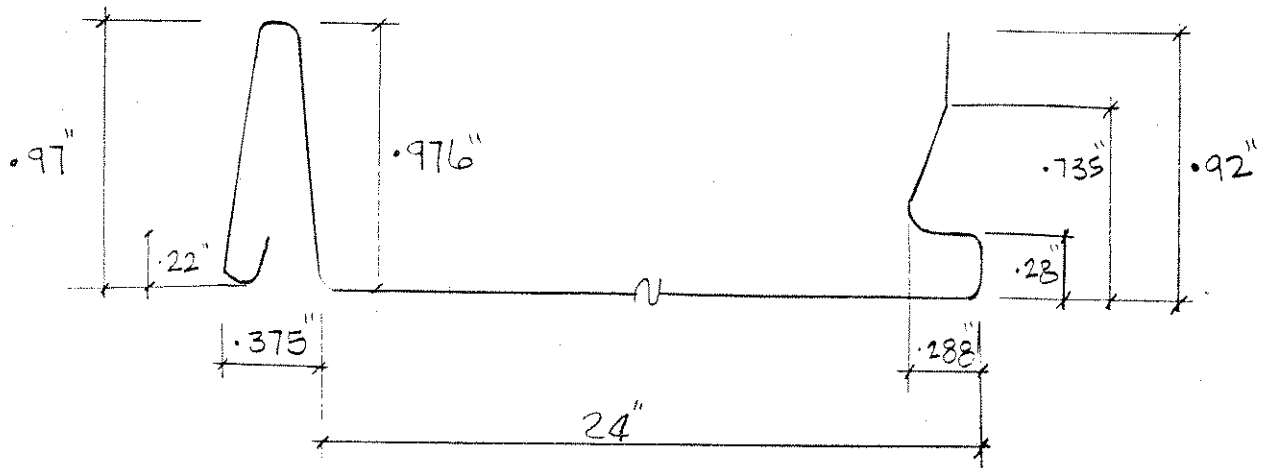
**ALLOWABLE WIND UPLIFT LOAD (PSF) FOR:
Z- PANEL FORM SL1000**

PANEL GAUGE	PANEL WIDTH	#OF EQUAL SPANS	PANEL SPAN (FT.)							
			2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
24 GA STEEL	24"	1	89	57	40	29	22	18	14	12
		2	71	45	31	23	18	14	11	9
		3	83	53	37	27	21	16	13	11
22 GA STEEL	24"	1	124	80	55	41	31	25	20	16
		2	88	57	39	29	22	17	14	12
		3	103	66	46	34	26	20	16	14

NOTES:

1. All calculations for panel properties have been made in accordance with the 1986 edition of "Specification for Cold-Formed Steel Design Manual" published by American Iron and Steel Institute.
2. Values for 3 or more spans are based on 4 equal spans.
3. These load capacities are for the panel itself. Frames, purlins, clips, fasteners, and all supports must be designed to resist load imposed by the panel.
4. Material: ASTM A446 , grade "C"
5. All loads are in PSF.
6. Above capacities have been increased by 33-1/3% as per AISI sec. A4.4.
7. Minimum panel support bearing length = 3.00 in.

WIDE SLIDING PANEL



1" High Snap-Lock Panel

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 24 IN. WIDE BY 1 IN. SEAM

PANEL SECTION PROPERTIES
FOR : 24SL1000

Material: Steel, Yield of 40 ksi
(1986 AISI Specification)

GROSS SECTION PROPERTIES

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	23.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		27.4537		1.5478	0.8585	0.1101

YBAR = 0.0564 IN

ELEMENT TYPES

- 1 - UNSTIFFENED COMPRESSION ELEMENT
- 2 - COMPRESSION ELEMENT STIFFENED BY 2 WEBS
- 3 - EDGE STIFFENED COMPRESSION ELEMENT
- 4 - COMPRESSION ELEMENT STIFFENED BY ONE INTERMEDIATE STIFFENER
- 5 - COMPRESSION ELEMENT WITH EDGE & INTERMEDIATE STIFFENERS
- 6 - COMPRESSION ELEMENT WITH MULTIPLE INTERMEDIATE STIFFENERS
- 7 - EDGE STIFFENER ELEMENT
- 8 - INTERMEDIATE STIFFENER ELEMENT
- 9 - WEB ELEMENT
- 10 - WEB B2 ELEMENT

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2876	0.8020	0.2307	0.1850	0.0020
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	23.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2876	0.8020	0.2307	0.1850	0.0020
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5773	0.3423	0.1976	0.0677	0.0159
TOTAL		27.5836		1.7660	1.0901	0.0777

YBAR = 0.0640 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0200 IN3

Ma FOR TOTAL PANEL WIDTH OF 24 IN. = 0.479 IN-KIP

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2876	0.8020	0.2307	0.1850	0.0020
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	23.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2876	0.8020	0.2307	0.1850	0.0020
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5773	0.3423	0.1976	0.0677	0.0159
TOTAL		27.5836		1.7660	1.0901	0.0777

YBAR = 0.0640 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0189 IN⁴

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	0.9163	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		4.4900		1.5478	0.8585	0.1101

YBAR = 0.3447 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = %1334.0782

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0220 IN3

Ma FOR TOTAL PANEL WIDTH OF 24 IN. = 0.527 IN-KIP

FOR THICKNESS = .0179 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.2750	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		4.8487		1.5478	0.8585	0.1101

YBAR = 0.3192 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = %1334.0782

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0085 IN4

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2876	0.8020	0.2307	0.1850	0.0020
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	23.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2876	0.8020	0.2307	0.1850	0.0020
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5773	0.3423	0.1976	0.0677	0.0159
TOTAL		27.5836		1.7660	1.0901	0.0777

YBAR = 0.0640 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0266 IN³

Ma FOR TOTAL PANEL WIDTH OF 24 IN. = 0.637 IN-KIP

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2876	0.8020	0.2307	0.1850	0.0020
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	23.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2876	0.8020	0.2307	0.1850	0.0020
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5773	0.3423	0.1976	0.0677	0.0159
TOTAL		27.5836		1.7660	1.0901	0.0777

YBAR = 0.0640 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0252 IN⁴

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.2199	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		4.7936		1.5478	0.8585	0.1101

YBAR = 0.3229 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 999.1631

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0335 IN3

Ma FOR TOTAL PANEL WIDTH OF 24 IN. = 0.802 IN-KIP

FOR THICKNESS = .0239 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.7256	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		5.2993		1.5478	0.8585	0.1101

YBAR = 0.2921 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 999.1631

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0123 IN4

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2876	0.8020	0.2307	0.1850	0.0020
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	23.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2876	0.8020	0.2307	0.1850	0.0020
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5773	0.3423	0.1976	0.0677	0.0159
TOTAL		27.5836		1.7660	1.0901	0.0777

YBAR = 0.0640 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
 Sx FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0332 IN³
 Ma FOR TOTAL PANEL WIDTH OF 24 IN. = 0.794 IN-KIP

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL TOP IN COMPRESSION
(POSITIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.2876	0.8020	0.2307	0.1850	0.0020
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	23.8800	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.2876	0.8020	0.2307	0.1850	0.0020
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
16	10	0.5773	0.3423	0.1976	0.0677	0.0159
TOTAL		27.5836		1.7660	1.0901	0.0777

YBAR = 0.0640 IN

WEB ELEMENTS ARE NOT FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL TOP IN COMPRESSION, POSITIVE BENDING)
IX FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0315 IN⁴

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

LOAD DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in2	LY2 in3	IO in3
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	1.5218	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		5.0955		1.5478	0.8585	0.1101

YBAR = 0.3038 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 798.6622

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR LOAD DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)

Sx FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0468 IN3

Ma FOR TOTAL PANEL WIDTH OF 24 IN. = 1.120 IN-KIP

FOR THICKNESS = .0299 IN

REDUCED SECTION PROPERTIES
FOR PANEL BOTTOM IN COMPRESSION
(NEGATIVE BENDING)

DEFLECTION DETERMINATION

ELEM NO.	ELEM TYPE	L in	Y in	LY in ²	LY2 in ³	IO in ³
1	7	0.1612	0.1400	0.0226	0.0032	0.0003
2	11	0.1885	0.0218	0.0041	0.0001	0.0001
3	3	0.8548	0.4850	0.4146	0.2011	0.0515
4	11	0.1885	0.9482	0.1787	0.1694	0.0001
5	9	0.8626	0.4850	0.4183	0.2029	0.0519
6	11	0.0942	0.0218	0.0021	0.0000	0.0000
7	2	2.1723	0.0000	0.0000	0.0000	0.0000
8	11	0.0942	0.0218	0.0021	0.0000	0.0000
9	9	0.1600	0.1400	0.0224	0.0031	0.0003
10	11	0.0942	0.2582	0.0243	0.0063	0.0000
11	11	0.1680	0.2800	0.0470	0.0132	0.0000
12	11	0.0942	0.3018	0.0284	0.0086	0.0000
13	1	0.4181	0.5325	0.2226	0.1186	0.0052
14	11	0.0002	0.7250	0.0001	0.0001	0.0000
15	11	0.1950	0.8225	0.1604	0.1319	0.0006
TOTAL		5.7461		1.5478	0.8585	0.1101

YBAR = 0.2694 IN

COMPRESSION ELEMENT 7 IS NOT FULLY EFFECTIVE, W/T = 798.6622

WEB ELEMENTS ARE FULLY EFFECTIVE

FOR DEFLECTION DETERMINATION (PANEL BOTTOM IN COMPRESSION, NEGATIVE BENDING)
Ix FOR TOTAL PANEL WIDTH OF 24 IN. = 0.0165 IN⁴

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 24 IN. WIDE BY 1 IN. SEAM

PANEL COVERAGE = 24.00 IN
 THEORETICAL FLAT WIDTH = 27.4537 IN
 DEPTH OF PANEL = 1.00 IN

PANEL SECTION PROPERTIES
 FOR : 24SL1000

Material : Steel, Yield of 40 ksi

GA	THICK	WT	PANEL TOP IN COMPRESSION			PANEL BOTTOM IN COMPRESSION		
			Ix	Sx	Ma	Ix	Sx	Ma
t	in	PSF	in4/ft	in3/ft	in-kip/ft	in4/ft	in3/ft	in-kip/f
26	0.0179	0.84	0.0094	0.0100	0.24	0.0042	0.0110	0.26
24	0.0239	1.12	0.0126	0.0133	0.32	0.0062	0.0167	0.40
22	0.0299	1.40	0.0158	0.0166	0.40	0.0082	0.0234	0.56

Section properties are calculated in accordance with 1986 AISI Specifications.
 Sx and Ma are for stress determination, Ix is for deflection determination.

END BEARING ALLOWED FOR 2.0 IN. IS 0.039 K/FT FOR 0.0179 IN. THICKNESS
 INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.091 K/FT FOR 0.0179 IN. THICKNESS

END BEARING ALLOWED FOR 2.0 IN. IS 0.074 K/FT FOR 0.0239 IN. THICKNESS
 INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.151 K/FT FOR 0.0239 IN. THICKNESS

END BEARING ALLOWED FOR 2.0 IN. IS 0.117 K/FT FOR 0.0299 IN. THICKNESS
 INTERIOR BEARING ALLOWED FOR 3.0 IN. IS 0.223 K/FT FOR 0.0299 IN. THICKNESS

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 24 IN. WIDE BY 1 IN. SEAM

PANEL SECTION PROPERTIES
FOR : 24SL1000

Material : Steel, Yield of 40 ksi

GA	THICK in	WT PSF	PANEL TOP IN COMPRESSION			PANEL BOTTOM IN COMPRESSION		
			Ix in4/ft	Sx in3/ft	Ma in-kip/ft	Ix in4/ft	Sx in3/ft	Ma in-kip/f
26	0.0179	0.84	0.0094	0.0100	0.24	0.0042	0.0110	0.26
24	0.0239	1.12	0.0126	0.0133	0.32	0.0062	0.0167	0.40
22	0.0299	1.40	0.0158	0.0166	0.40	0.0082	0.0234	0.56

MAXIMUM ALLOWABLE LOADS IN POUNDS PER SQUARE FOOT
FOR : 24SL1000
LIVE LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

SPAN FT	GA	SIMPLE SPAN			2 SPANS			3 OR MORE SPANS		
		STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)
2.0	26	40	40	40	44	44	44	51	51	51
	24	53	53	53	67	67	67	78	78	78
	22	66	66	66	93	93	93	107#	107	107
2.5	26	26	26	26	28	28	28	33	33	33
	24	34	34	34	43	43	43	50	50	50
	22	42	42	42	60	60	60	69#	69	69
3.0	26	18	18	18	20	20	20	23	23	23
	24	24	24	24	30	30	30	35	35	35
	22	29	29	29	42	42	42	48#	48	48
3.5	26	13	13	13	14	14	14	17	17	17

	22	22	22	22	30	30	30	35#	35	35
4.0	26	10	10	10*	11	11	11	13	13	13
	24	13	13	13*	17	17	17	19	19	19
	22	17	17	16*	23	23	23	27#	27	27
4.5	26	8	8	7*	9	9	9	10	10	10
	24	10	10	9*	13	13	13	15	15	15
	22	13	13	12*	18	18	18	21#	21	21
5.0	26	6	6	5*	7	7	7	8	8	8
	24	8	8	7*	11	11	11	12	12	12
	22	11	11	8*	15	15	15	17#	17	17*
5.5	26	5	5*	4*	6	6	6	7	7	7
	24	7	7*	5*	9	9	9	10	10	10*
	22	9	8*	6*	12	12	12	14#	14	13*
6.0	26	4	4*	3*	5	5	5	6	6	6
	24	6	5*	4*	7	7	7	9	9	8*
	22	7	6*	5*	10	10	10	12#	12	10*
6.5	26	4	3*	2*	4	4	4	5	5	5*
	24	5	4*	3*	6	6	6	7	7	6*
	22	6	5*	4*	9	9	9	10#	10	8*
7.0	26	3	2*	2*	4	4	4	4	4	4*
	24	4	3*	2*	5	5	5	6	6	5*
	22	5	4*	3*	8	8	7*	9#	8*	6*

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

* DENOTES LOAD CONTROLLED BY DEFLECTION

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF, FRAMES, PURLINS, CLIPS, FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED BY THE PANEL.

FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED USING ACTUAL LOADS AND BEARING LENGTHS.

MAXIMUM ALLOWABLE LOADS IN POUNDS PER SQUARE FOOT
FOR : 24SL1000
WIND SUCTION (UPLIFT) LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

SPAN FT	GA	SIMPLE SPAN STRESS	2 SPANS STRESS	3 OR MORE SPANS STRESS
2.0	26	59	53	62
	24	89	71	83
	22	124	88	103
2.5	26	38	34	40
	24	57	45	53
	22	80	57	66
3.0	26	26	24	28
	24	40	31	37
	22	55	39	46
3.5	26	19	17	20
	24	29	23	27
	22	41	29	34
4.0	26	15	13	16
	24	22	18	21
	22	31	22	26
4.5	26	12	11	12
	24	18	14	16
	22	25	17	20
5.0	26	9	9	10
	24	14	11	13
	22	20	14	16
5.5	26	8	7	8
	24	12	9	11
	22	16	12	14
6.0	26	7	6	7
	24	10	8	9
	22	14	10	11
6.5	26	6	5	6
	24	8	7	8
	22	12	8	10
7.0	26	5	4	5
	24	7	6	7
	22	10	7	8

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

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ABOVE CAPACITIES HAVE BEEN INCREASED BY 33-1/3% AS PER AISI SEC. A4.4

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF. FRAMES, PURLINS, CLIPS, FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED BY THE PANEL.

FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED USING ACTUAL LOADS AND BEARING LENGTHS.

CUSTOMER : ZIMMERMAN METAL, INC.

JOB NUMBER : 85J92

DATE : 11-24-1992

DESCRIPTION : 24 IN. WIDE BY 1 IN. SEAM

PANEL SECTION PROPERTIES
FOR : 24SL1000

Material : Steel, Yield of 40 ksi

PANEL TOP IN COMPRESSION

PANEL BOTTOM IN COMPRESSION

GA	THICK	WT	Ix	Sx	Ma	Ix	Sx	Ma
t	in	PSF	in4/ft	in3/ft	in-kip/ft	in4/ft	in3/ft	in-kip/f
26	0.0179	0.84	0.0094	0.0100	0.24	0.0042	0.0110	0.26
24	0.0239	1.12	0.0126	0.0133	0.32	0.0062	0.0167	0.40
22	0.0299	1.40	0.0158	0.0166	0.40	0.0082	0.0234	0.56

MAXIMUM ALLOWABLE SPANS IN FEET
FOR : 24SL1000
LIVE LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

LOAD PSF	GA	SIMPLE SPAN			2 SPANS			3 OR MORE SPANS		
		STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)	STRESS	DEFL. (L/180)	DEFL. (L/240)
20	26	2.8	2.8	2.8	3.0	3.0	3.0	3.2	3.2	3.2
	24	3.3	3.3	3.3	3.7	3.7	3.7	3.9	3.9	3.9
	22	3.6	3.6	3.6	4.3	4.3	4.3	4.6#	4.6	4.6
25	26	2.5	2.5	2.5	2.7	2.7	2.7	2.9	2.9	2.9
	24	2.9	2.9	2.9	3.3	3.3	3.3	3.5	3.5	3.5
	22	3.3	3.3	3.3	3.9	3.9	3.9	4.1#	4.1	4.1
30	26	2.3	2.3	2.3	2.4	2.4	2.4	2.6	2.6	2.6
	24	2.7	2.7	2.7	3.0	3.0	3.0	3.2	3.2	3.2
	22	3.0	3.0	3.0	3.5	3.5	3.5	3.8#	3.8	3.8
35	26	2.1	2.1	2.1	2.2	2.2	2.2	2.4	2.4	2.4

	22	2.8	2.8	2.8	3.3	3.3	3.3	3.5#	3.5	3.5
40	26	2.0	2.0	2.0	2.1	2.1	2.1	2.3	2.3	2.3
	24	2.3	2.3	2.3	2.6	2.6	2.6	2.8	2.8	2.8
	22	2.6	2.6	2.6	3.1	3.1	3.1	3.3#	3.3	3.3
45	26	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.1
	24	2.2	2.2	2.2	2.4	2.4	2.4	2.6	2.6	2.6
	22	2.4	2.4	2.4	2.9	2.9	2.9	3.1#	3.1	3.1
50	26	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.0
	24	2.1	2.1	2.1	2.3	2.3	2.3	2.5	2.5	2.5
	22	2.3	2.3	2.3	2.7	2.7	2.7	2.9#	2.9	2.9
55	26	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.9
	24	2.0	2.0	2.0	2.2	2.2	2.2	2.4	2.4	2.4
	22	2.2	2.2	2.2	2.6	2.6	2.6	2.8#	2.8	2.8
60	26	1.6	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8
	24	1.9	1.9	1.9	2.1	2.1	2.1	2.3	2.3	2.3
	22	2.1	2.1	2.1	2.5	2.5	2.5	2.7#	2.7	2.7

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

* DENOTES LOAD CONTROLLED BY DEFLECTION

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF. FRAMES, PURLINS, CLIPS, FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED BY THE PANEL.

FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED USING ACTUAL LOADS AND BEARING LENGTHS.

MAXIMUM ALLOWABLE SPANS IN FEET
FOR : 24SL1000
WIND SUCTION (UPLIFT) LOADS

(Per 1986 AISI Sections C3.2, C3.3, C3.4)

LOAD PSF	GA	SIMPLE SPAN STRESS	2 SPANS STRESS	3 OR MORE SPANS STRESS
20	26	3.4	3.3	3.5
	24	4.2	3.8	4.1
	22	5.0	4.2	4.5
25	26	3.1	2.9	3.2
	24	3.8	3.4	3.6
	22	4.5	3.8	4.1
30	26	2.8	2.7	2.9
	24	3.4	3.1	3.3
	22	4.1	3.4	3.7
35	26	2.6	2.5	2.7
	24	3.2	2.8	3.1
	22	3.8	3.2	3.4
40	26	2.4	2.3	2.5
	24	3.0	2.7	2.9
	22	3.5	3.0	3.2
45	26	2.3	2.2	2.3
	24	2.8	2.5	2.7
	22	3.3	2.8	3.0
50	26	2.2	2.1	2.2
	24	2.7	2.4	2.6
	22	3.2	2.7	2.9
55	26	2.1	2.0	2.1
	24	2.5	2.3	2.5
	22	3.0	2.5	2.7
60	26	2.0	1.9	2.0
	24	2.4	2.2	2.3
	22	2.9	2.4	2.6

VALUES FOR 3 OR MORE SPANS ARE BASED ON 4 SPANS

ABOVE CAPACITIES HAVE BEEN INCREASED BY 33-1/3% AS PER AISI SEC. A4.4

DENOTES LOAD CONTROLLED BY MOMENT IN BETWEEN SUPPORTS

THESE LOAD CAPACITIES ARE FOR THE PANEL ITSELF. FRAMES, PURLINS, CLIPS,
FASTENERS, AND ALL SUPPORTS MUST BE DESIGNED TO RESIST ALL LOADS IMPOSED
BY THE PANEL.

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FOR FULL PANEL CAPACITY (ESPECIALLY ON SHORT SPANS), BEARING MUST BE CHECKED
USING ACTUAL LOADS AND BEARING LENGTHS.