

SPECIFICATION FOR ALUMINUM SIGN BLANKS

April 16, 2019

1. DESCRIPTION

This specification covers the requirements and processing of flat sheet aluminum sign blanks to which a chemical conversion treatment coating has been applied. Size, shape, thickness, and weight shall be in accordance with the attached drawings.

2. MATERIALS

2.1 Aluminum. Blanks shall conform to ASTM-B209; Alloy 5052-H38 or 6061-T6. The manufacturer shall on the bid document indicate the specific ASTM Aluminum Alloy on which the bid is based and from which the aluminum sign blanks will be fabricated and furnished. Failure to select one or more of the Aluminum Alloys specified above and to indicate the selected alloy(s) on the bid document shall be cause for rejection of the vendor's bid.

2.2 Chemical Conversion Coating. The chemical conversion coating to be employed in the preparation of aluminum sign blanks shall conform to ASTM B 921 or ASTM B 449, and the coating material shall be included on the QPL-81706-15 Amendment 3 list or subsequent editions thereto. The chemical conversion treatment shall be completed after the blanks have been fabricated, including the punching of all holes.

3. FABRICATION

3.1 General. Blanks shall be a continuous section of the length, width and thickness, with required mounting holes as shown on the drawings. They shall conform to commercial tolerances with regard to length, width, thickness, flatness, hole spacing, hole diameter, corners and corner radii in accordance to ANSI-H35-2 (Tables 2.1, 3.1, 3.2, 3.3, 7.1, and 7.6 through 7.14). Blanks shall be free of buckles, dents and burrs prior to the application of the chemical conversion treatment. All shearing shall be from the same side of the blanks, the sheared side shall be placed and packaged face up.

3.2 Warp. When the aluminum sign blank is resting on a flat, level surface with either side down, all parts of the underside of the sign blank shall be within 1/4-inch of the flat surface without any external pressure.

4. CHEMICAL CONVERSION TREATMENT

Aluminum sign blanks must be conversion coated to comply with the requirements ASTM B 921 or ASTM B 449. All procedures used in the conversion coating process must comply with the recommendations of the manufacturers of retroreflective sheeting materials listed in Department publication 35 Section 1103.02(c).

5. INSPECTION

5.1 During Fabrication. The contractor shall provide sufficient testing and quality control throughout fabrication to ensure an acceptable product. The Engineer or the Engineer's accredited representative shall have access to all parts of the mill and shop during the manufacture and fabrication of the sign blanks.

5.2 After Receipt. Once the material has been received, it may be subject to random testing to ensure compliance with all requirements. If any test samples do not conform to the requirements of this specification, the entire order may be returned at vendor expense.

6. PACKAGING

Packaging shall consist of the following:

(a) Blanks shall be furnished on skids, packed or crated to protect against damage, according to blank size. Skids shall have 4"x 4" runners, with not less than 19 inches between runners. Blanks over 10, 12, and 16 ft. in length packaged together on the same skid shall have 4"x 4" runners between each vertical size. Steel banding shall be used for binding the blanks.

(b) Total weight of the loaded skid shall not exceed 2,000 pounds. In addition, the maximum number of blanks on a pallet shall be as follows, based on the longest dimension of the blank:

<u>Long Dimension</u>	<u>No. on Pallet*</u>
30" or less	250
36"	150
48"	100
60"	50

*One pallet for any type of blank may have less than this quantity to account for orders other than a multiple of this quantity.

(c) All delivery trucks shall be of the open body type. Skid runners shall be perpendicular to the edge of the truck, in order that the skids may be unloaded from the side with a forklift. Blanks with a dimension of 120 inches or greater may be stacked with spacer blocks in lieu of pallets.

(d) Packaging and separating materials shall be free of wax, ink, grease or any other substance which would damage the blank or conversion coating.

(e) Packaged blanks shall be properly identified on all four edges of the carton or crate by: (1) blank standard number; and (2) number of units contained therein.

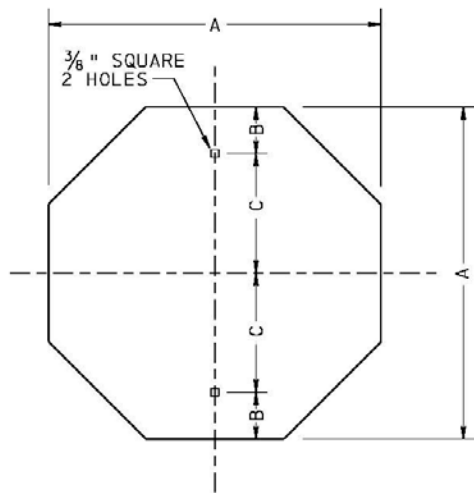
(f) All blanks shall be "stagger-stacked" in groups of 10 blanks for inventory purposes. (The groups should be offset about one-half to one inch from each other with odd groups aligned above each other and even groups above each other.)



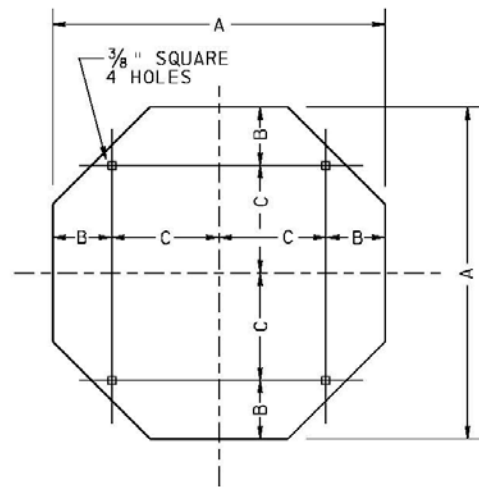
Robert J. Pento, P.E., Manager
Traffic Engineering and Permits

Attachment

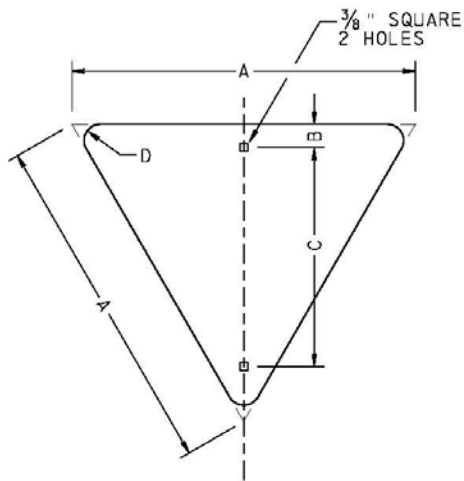
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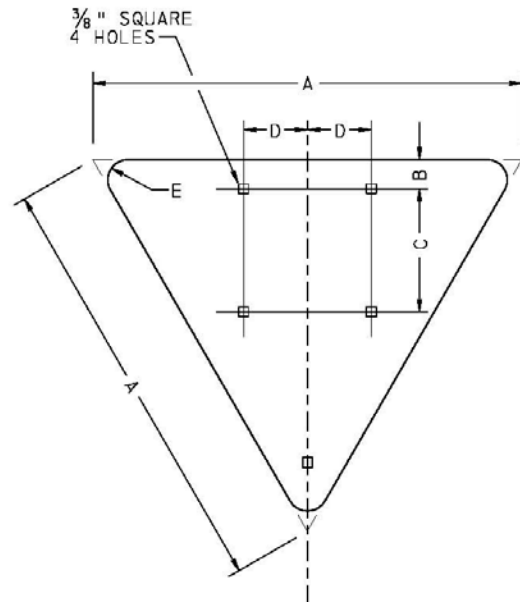
BLANK STD.	A	B	C	THICK.	AREA	WEIGHT
B1-24	24	3	9	0.080	477.17	3.66
B1-30	30	3	12	0.080	745.58	5.73
B1-36	36	3	15	0.100	1073.64	10.31



BLANK STD.	A	B	C	THICK.	AREA	WEIGHT
B1-48	48	9	15	0.100	1908.70	18.32

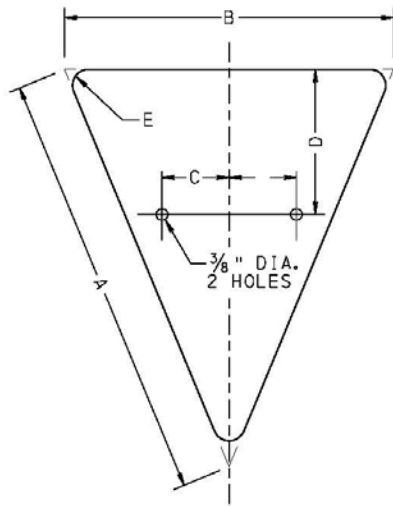


BLANK STD.	A	B	C	D	THICK.	AREA	WEIGHT
B2-36	36	3	21	2	0.080	561.24	4.31
B2-48	48	6	24	3	0.100	997.68	9.58

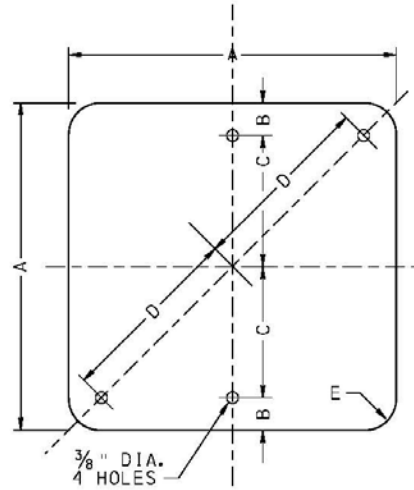


BLANK STD.	A	B	C	D	E	THICK.	AREA	WEIGHT
B2-60	60	3	18	15	4	0.125	1558.80	18.71

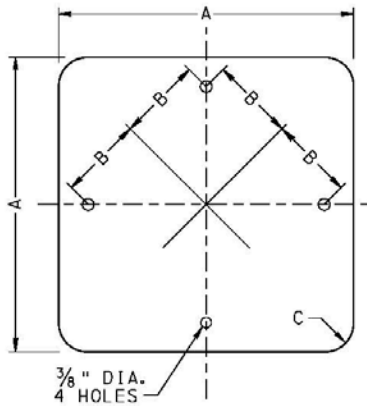
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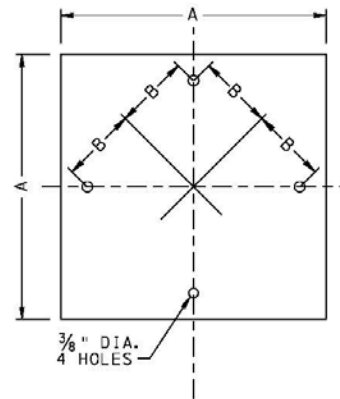
BLANK STD.	A	B	C	D	E	THICK.	AREA	WEIGHT
B2-4836	48	36	9	15	2 1/4	0.100	801	7.69



BLANK STD.	A	B	C	D	E	THICK.	AREA	WEIGHT
B3-10	10	1	4	-	1 1/2	0.063	100	0.60
B3-18	18	3	6	9	1 1/2	0.063	324	1.96
B3-24	24	3	9	12	1 1/2	0.080	576	4.42
B3-30	30	3	12	15	1 7/8	0.080	900	6.91
B3-36	36	6	12	18	2 1/4	0.100	1296	12.44

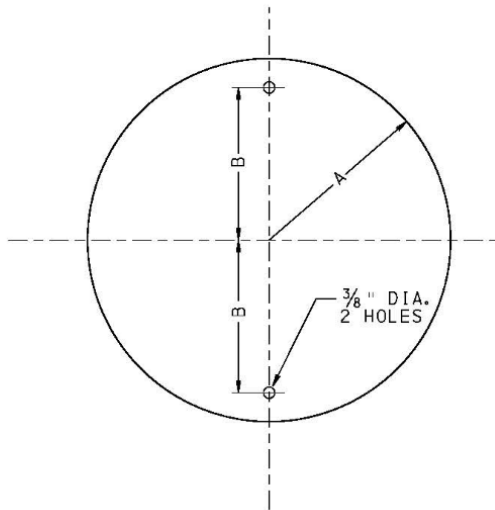


BLANK STD.	A	B	C	THICK.	AREA	WEIGHT
B3-48	48	15	3	0.100	2304	22.12

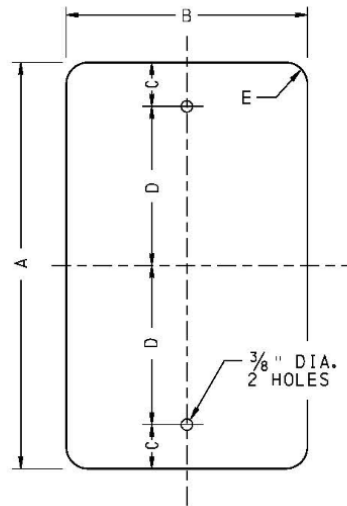


BLANK STD.	A	B	THICK.	AREA	WEIGHT
B3-60	60	18	0.125	3600	43.20

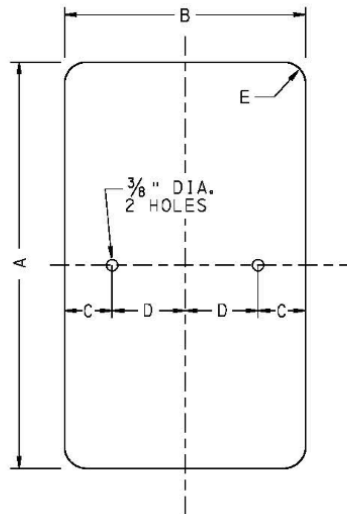
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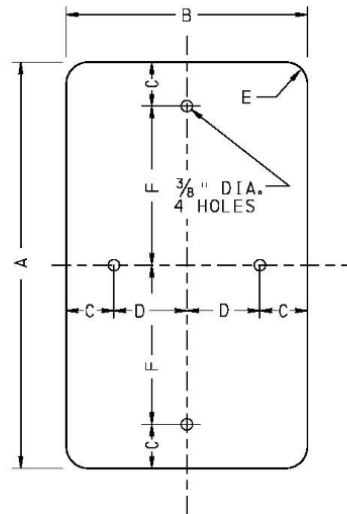
BLANK STD.	A	B	THICK.	AREA	WEIGHT
B4-36	18	15	0.100	1017.88	9.77



BLANK STD.	A	B	C	D	E	THICK.	AREA	WEIGHT
B5-1006	10	6	1	4	1/2	0.040	60	0.23
B5-1236	36	12	6	12	1/2	0.100	432	4.15
B5-1248	48	12	9	15	1/2	0.100	576	5.53
B5-1260	60	12	12	18	1/8	0.100	720	6.91
B5-5418	54	18	3	24	1/8	0.100	972	9.33
B5-6018	60	18	4	26	1/8	0.100	1080	10.37

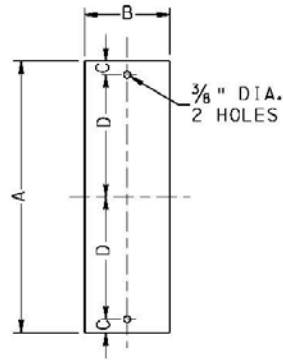


BLANK STD.	A	B	C	D	E	THICK.	AREA	WEIGHT
B5-1206	12	6	1	2	1/2	0.063	72	0.44
B5-1806	18	6	1	2	1/2	0.080	108	0.83
B5-2115	21	15	1/2	6	1/2	0.080	315	2.42
B5-2406	24	6	1	2	1/2	0.080	144	1.127
B5-3012	30	12	2	4	1/2	0.080	360	2.76
B5-3015	30	15	1/2	6	1/2	0.080	450	3.46
B5-3018	30	18	2	7	1/2	0.080	540	4.15



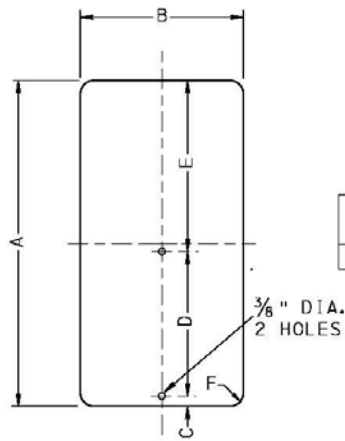
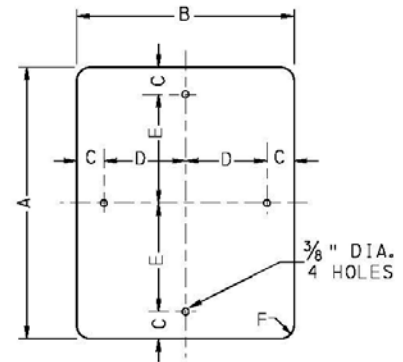
BLANK STD.	A	B	C	D	E	F	THICK.	AREA	WEIGHT
B5-2412	24	12	1/2	4 1/2	1 1/2	10 1/2	0.080	288	2.21
B5-2418	24	18	3	6	1 1/2	9	0.080	432	3.32
B5-3612	36	12	1 1/2	4 1/2	1 1/2	16 1/2	0.100	432	4.15

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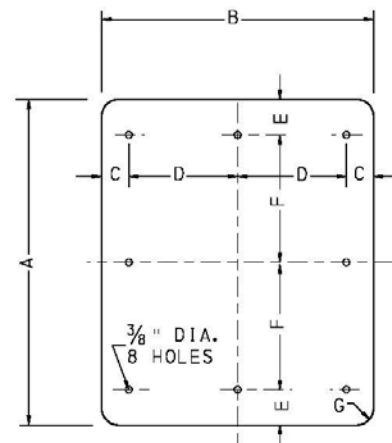
BLANK STD.	A	B	C	D	THICK.	AREA	WEIGHT
B5-3010	30	10	1 1/2	13 1/2	0.080	300	2.30

BLANK STD.	A	B	C	D	E	F	THICK.	AREA	WEIGHT
B5-3024	30	24	3	9	12	1 1/2	0.080	720	5.53
B5-1218	18	12	1 1/2	4 1/2	7 1/2	1 1/2	0.063	216	1.31

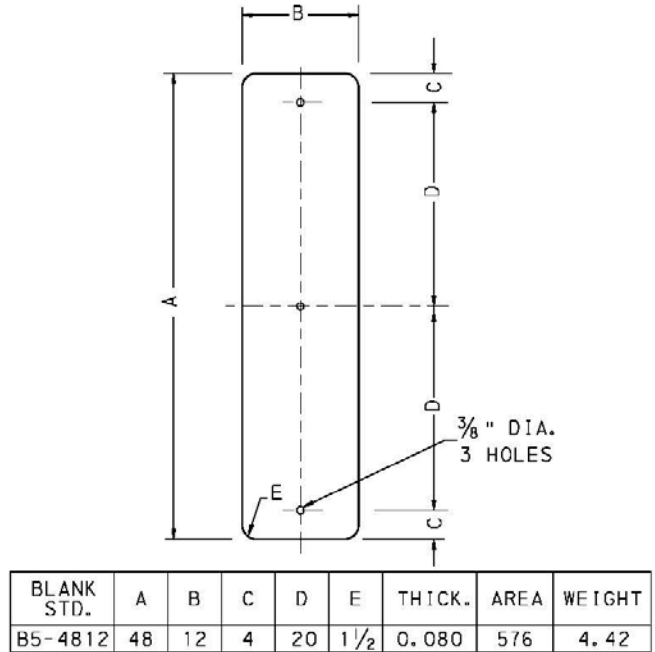
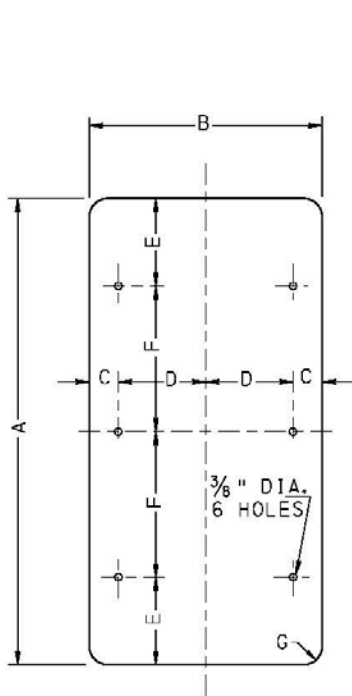


BLANK STD.	A	B	C	D	E	F	THICK.	AREA	WEIGHT
B5-3618	36	18	1	16	19	1 1/2	0.100	648	6.22

BLANK STD.	A	B	C	D	E	F	G	THICK.	AREA	WEIGHT
B5-3630	36	30	3	12	4	14	1 7/8	0.100	1080	10.37

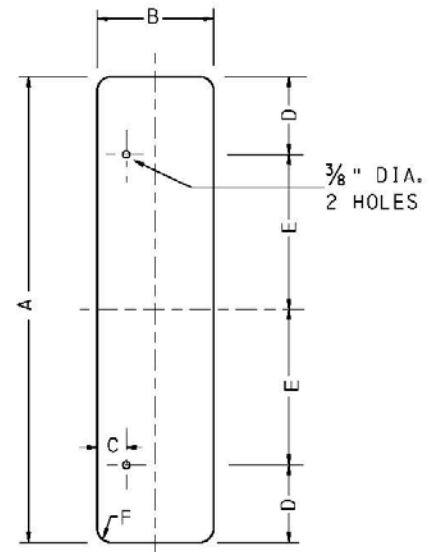


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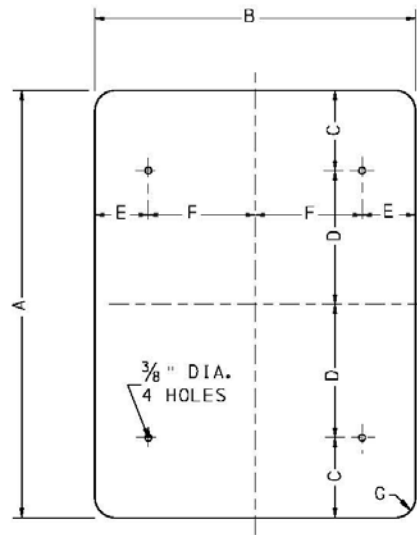
BLANK STD.	A	B	C	D	E	THICK.	AREA	WEIGHT
B5-4812	48	12	4	20	1 1/2	0.080	576	4.42

BLANK STD.	A	B	C	D	E	F	G	THICK.	AREA	WEIGHT
B5-3618	36	18	3	6	6	12	1 1/2	0.100	648	6.22
B5-3624	36	24	3	9	6	12	1 1/2	0.100	864	8.29
B5-4818	48	18	3	6	9	15	1 7/8	0.100	864	8.29
B5-4830	48	30	6	9	9	15	1 7/8	0.100	1440	13.82
B5-4860	60	48	9	15	6	24	3	0.125	2880	34.56

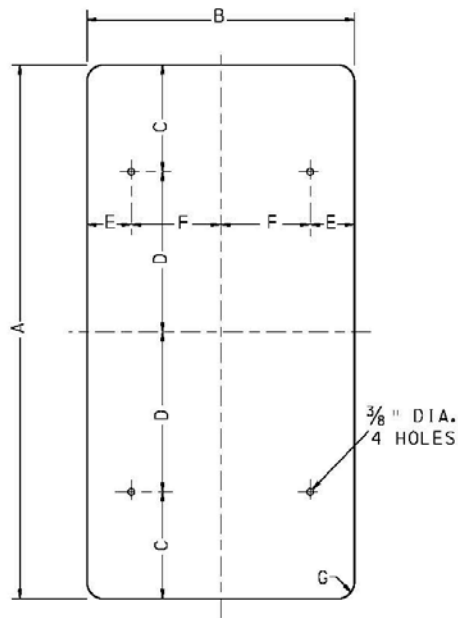


BLANK STD.	A	B	C	D	E	F	THICK.
B5-3608	36	8	2	6	12	1 1/2	0.100

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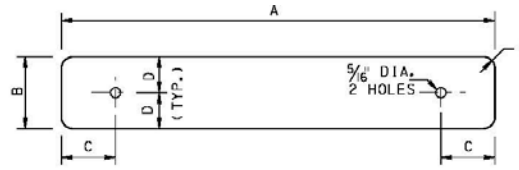


BLANK STD.	A	B	C	D	E	F	G	THICK.	AREA	WEIGHT
B5-4536	45	36	7 1/2	15	6	12	2 1/4	0.100	1620	15.55
B5-3648	48	36	9	15	6	12	2 1/4	0.100	1728	16.56

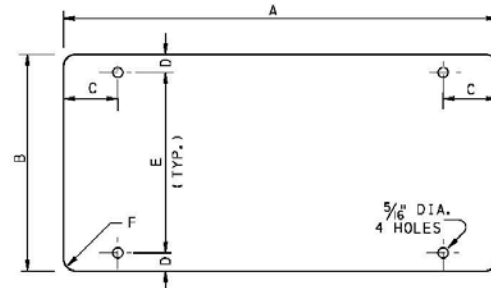


BLANK STD.	A	B	C	D	E	F	G	THICK.	AREA	WEIGHT
B5-6024	60	24	12	18	3 1/2	8 1/2	1 7/8	0.100	1440	13.82
B5-6030	60	30	12	18	3 1/2	11 1/2	1 7/8	0.125	1800	21.60

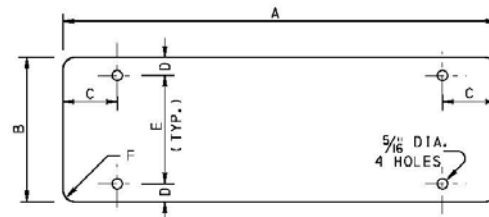
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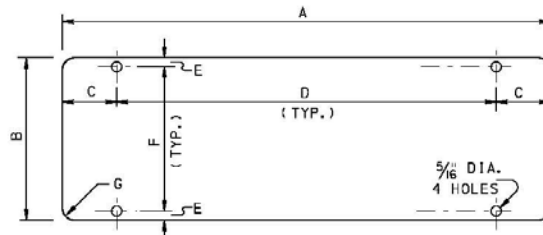
BLANK STD.	A	B	C	D	E	THICK.	AREA	WEIGHT
B5-4808	48	8	9	4	1 1/2	0.100	384	3.69



BLANK STD.	A	B	C	D	E	F	THICK.	AREA	WEIGHT
B5-4824	48	24	9	3	18	1 7/8	0.100	1152	11.06

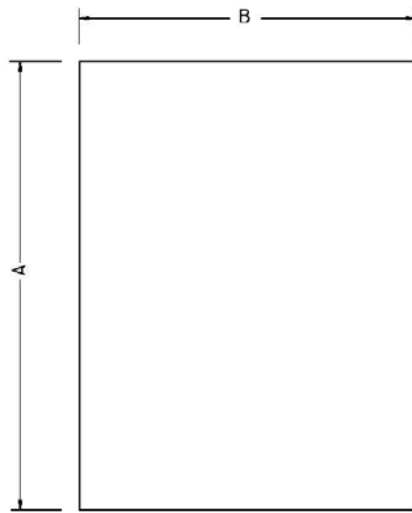


BLANK STD.	A	B	C	D	E	F	THICK.	AREA	WEIGHT
B5-4816	48	16	9	3	10	1 7/8	0.100	768	7.38



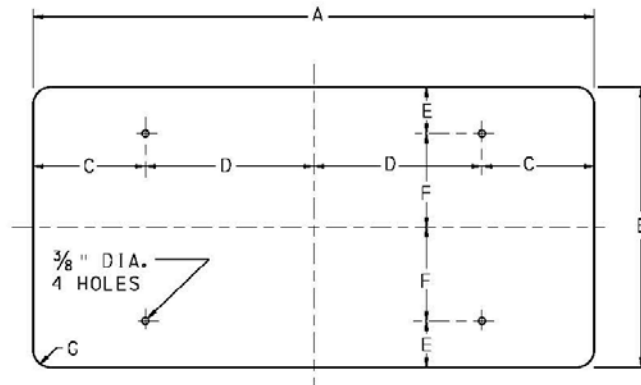
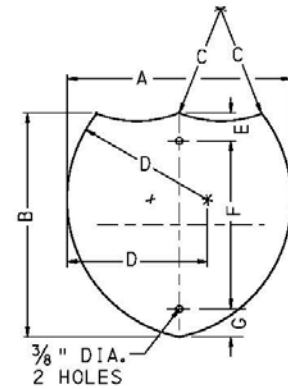
BLANK STD.	A	B	C	D	E	F	G	THICK.	AREA	WEIGHT
B5-7212	72	12	12	48	1	10	1 7/8	0.100	864	8.30
B5-7224	72	24	12	48	1	22	1 7/8	0.100	1728	16.59
B5-7236	72	36	12	48	1	34	1 7/8	0.100	2592	24.88
B5-7824	78	24	12	54	1	22	1 7/8	0.100	1872	17.98
B5-8424	84	24	12	60	1	22	1 7/8	0.100	2016	19.37
B5-9024	90	24	12	66	1	22	1 7/8	0.100	2160	20.75

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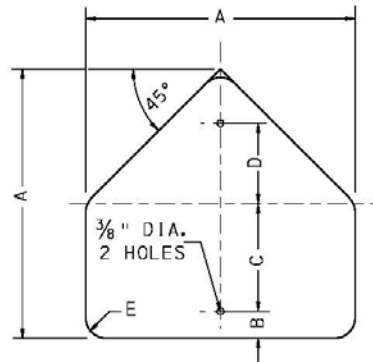
BLANK STD.	A	B	THICK.	AREA	WEIGHT
B5-7260	72	60	0.080	4320	33.18
B5-7860	78	60	0.080	4680	35.94
B5-8460	84	60	0.080	5040	38.71
B5-9660	96	60	0.080	5760	44.24

BLANK STD.	A	B	C	D	E	F	G	THICK.	AREA	WEIGHT
B6-24	24	24	15	15	3	18	3	0.080	469.26	3.60
B6-3024	30	24	24	17	3	18	3	0.080	572.18	4.39
B6-36	36	36	22 1/2	22 1/2	6	24	6	0.100	1108.30	10.64
B6-4536	45	36	36	25 1/2	6	24	6	0.100	1280.42	12.29



BLANK STD.	A	B	C	D	E	F	G	THICK.	AREA	WEIGHT
B7-3618	36	18	6	12	2	7	1 1/2	0.100	648	6.22
B7-4818	48	18	9	15	2	7	1 7/8	0.100	864	8.29
B7-4824	48	24	9	15	2	10	1 7/8	0.100	1152	11.06

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BLANK STD.	A	B	C	D	E	THICK.	AREA	WEIGHT
B8-30	30	3	12	9	1 7/8	0.080	675	5.18
B8-36	36	3	15	9	2 1/4	0.100	972	9.33



BLANK STD.	A	B	THICK.	AREA	WEIGHT
B10-14430	144	30	0.063	4320	26.13
B10-14436	144	36	0.063	5184	31.35
B10-14448	144	48	0.063	6912	41.80
B11-7248	72	48	0.080	3456	26.54
B11-9648	96	48	0.080	4608	35.39
B11-12018	120	18	0.080	2160	16.59
B11-12024	120	24	0.080	2880	22.12
B11-12030	120	30	0.080	3600	27.65
B11-12036	120	36	0.080	4320	33.18
B11-12048	120	48	0.080	5760	44.24
B11-12060	120	60	0.080	7200	55.30
B11-14418	144	18	0.080	2592	19.90
B11-14424	144	24	0.080	3456	26.54
B11-14430	144	30	0.080	4320	33.18
B11-14436	144	36	0.080	5184	39.81
B11-14448	144	48	0.080	6912	53.08
B11-14460	144	60	0.080	8640	66.36
B11-19218	192	18	0.080	3456	26.54
B11-19224	192	24	0.080	4608	35.39
B11-19230	192	30	0.080	5760	44.24
B11-19236	192	36	0.080	6912	53.08
B11-19248	192	48	0.080	9216	70.78
B12-12036	120	36	0.100	4320	41.47
B12-12048	120	48	0.100	5760	55.30
B12-14436	144	36	0.100	5184	49.78
B12-14448	144	48	0.100	6912	66.36
B11-7208	72	8	0.100	576	5.53
B13-12012	120	12	0.125	1440	17.28
B13-12018	120	18	0.125	2160	25.92
B13-12024	120	24	0.125	2880	34.56
B13-12030	120	30	0.125	3600	43.20
B13-12048	120	48	0.125	5760	69.12
B13-12060	120	60	0.125	7200	86.40
B13-14412	144	12	0.125	1728	20.74
B13-14418	144	18	0.125	2596	31.10
B13-14424	144	24	0.125	3456	41.47
B13-14430	144	30	0.125	4320	51.84
B13-14448	144	48	0.125	6912	82.94
B13-14460	144	60	0.125	8640	103.68