U.S. Department of Transportation
**Federal Aviation Administration**

# Advisory Circular

**Subject:** SPECIFICATION FOR TAXIWAY AND RUNWAY SIGNS | **Date:** 12/16/91 | **Initiated by:** AAS-200 | **AC No:** 150/5345-44E | **Change:**

1. PURPOSE. This advisory circular (AC) contains a specification for signs to be used on taxiways and runways.

2. CANCELLATION. AC 150/5345-44D, Specification for Taxiway and Runway Signs, dated April 30, 1984, is cancelled.

3. APPLICATION. The standards contained herein are recommended by the Federal Aviation Administration (FAA) in all applications involving airport development of this nature. The standards are mandatory for Federally-funded projects.

4. PRINCIPAL CHANGES. The following principal changes have been incorporated:

a. Addition of three new signs to denote "No Entry," "Runway Safety Area/Obstacle Free Zone (OFZ) Boundary and Runway Approach Area Boundary," and "ILS Critical Area Boundary;"

b. Addition of a sign type for yellow-on-black taxiway and runway location signs;

c. Enhancement of the wind loading a sign must withstand;

d. Addition of a new sign for installation on a 5.5 ampere circuit;

e. Addition of a sign luminance requirement;

f. Reconfiguration of the "Arrow" used on signs;

g. Deletion of the border on Types L-858R and L-858Y signs;

h. Deletion of the specification for externally lighted signs.
Note: An existing externally lighted sign need not be replaced unless the legend does not meet the standards contained in AC 150/5340-18C, or it is intended to be placed in an array containing internally lighted signs.

5. METRIC UNITS. To promote an orderly transition to metric units, the specification includes both English and metric dimensions. The metric conversions may not be exact equivalents and, until there is an official changeover to the metric system, the English dimensions will govern.

Leonard E. Mudd
Director, Office of Airport Safety and Standards

# SPECIFICATION FOR TAXIWAY AND RUNWAY SIGNS

## 1. SCOPE AND CLASSIFICATION.

1.1 Scope. This specification contains the requirements for signs used on airport taxiways and runways.

1.2 Classification. Four types of signs may be specified in any of five sizes, five styles, and two classes, except as noted below.

1.2.1 Types. Signs of the following types are included:

| | |
|---|---|
| Type L-858Y | Direction, Destination, and Boundary signs - black legend on a yellow background |
| Type L-858R | Mandatory Instruction sign - white legend on a red background |
| Type L-858L | Taxiway and Runway Location signs - yellow legend and border on a black background |
| Type L-858B | Runway Distance Remaining sign - white legend on a black background |

1.2.2 Sizes. Signs of the following sizes are included:

| | |
|---|---|
| Size 1 * | 18-inch (460 mm) legend panel with a 12-inch (300 mm) legend |
| Size 2 * | 24-inch (610 mm) legend panel with a 15-inch (380 mm) legend |
| Size 3 * | 30-inch (760 mm) legend panel with an 18-inch (460 mm) legend |
| Size 4 ** | 48-inch (1220 mm) legend panel with a 40-inch (1020 mm) legend |
| Size 5 ** | 30-inch (760 mm) legend panel with a 25-inch (640 mm) legend |

* Applicable only to Types L-858R, L-858Y, and L-858L.
** Applicable only to Type L-858B.

1.2.3 Styles. Signs of the following styles are included:

| | |
|---|---|
| Style 1 | Powered from a 120-volt AC power source |
| Style 2 | Powered from a series lighting circuit (4.8 to 6.6 amperes) |
| Style 3 | Powered from a series lighting circuit (2.8 to 6.6 amperes) or (8.5 to 20 amperes with 20 ampere primary, 6.6 ampere secondary isolation transformers) |
| Style 4 | Unlighted (Applicable only to Types L-858R, L-858Y, and L-858L) |
| Style 5 | Powered from a series lighting circuit (5.5 amperes) |

1.2.4 Classes. Lighted signs of the following classes are included:

| | |
|---|---|
| Class 1 | For operation down to -20° C |
| Class 2 | For operation down to -55° C |

2. APPLICABLE DOCUMENTS.

2.1 General. The following documents, of the issue in effect on date of application for qualification, are applicable to the extent specified in this AC.

2.2 Federal Aviation Administration (FAA) Advisory Circulars.

| | |
|---|---|
| AC 150/5340-18 | Standards for Airport Sign Systems |
| AC 150/5345-26 | Specification for L-823 Plug and Receptacle, Cable Connectors |
| AC 150/5345-42 | Specification for Airport Light Base and Transformer Housings, Junction Boxes, and Accessories |
| AC 150/5345-47 | Isolation Transformers for Airport Lighting Systems |

2.3 American Society for Testing and Materials (ASTM) Standard.

| | |
|---|---|
| D 4956 | Retroreflective Sheeting for Traffic Control, Specification for |

2.4 Military Standard.

| | |
|---|---|
| MIL-STD-810 | Environmental Test Methods |

(Copies of FAA advisory circulars may be obtained from the Department of Transportation, Publications Section, M-494.3, Washington, DC 20590.)

(Copies of ASTM standards may be obtained from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Copies of Military standards may be obtained from the Commanding Officer, Naval Supply Depot, 5801 Tabor Avenue, Philadelphia, PA 19120, Attention: Code CDS.)

3. REQUIREMENTS.

3.1 Equipment to be Supplied. Each sign shall meet all specification requirements and shall include: mounting legs and hardware (3.3, 3,3,2); electrical disconnect (3.3.4.2); any required series circuit adapter unit (3.3.4.3) for Style 2, 3, and 5 signs; and two instruction booklets (3.9).

3.2 Environmental Requirements. The signs, including all required components, shall be designed for continuous outdoor use under the following conditions:

3.2.1 Temperature. An ambient temperature range from -20° C to +55° C for Class 1 signs and from -55° C to +55° C for Class 2 and Style 4 signs.

3.2.2 Wind. Exposure to wind velocities up to 200 mph (322 km/h).

3.2.3 Rain. Exposure to driving rains.

3.3 Sign Construction. The signs shall be constructed of lightweight, non-ferrous materials and shall be designed for installation on a concrete pad or stakes. All required mounting hardware, except anchor bolts, shall be supplied with the sign.

3.3.1 Sizes. The dimensions of the signs shall be in accordance with Table 1. Sign lengths shall be chosen to accommodate only complete message elements. When required, a sign array may contain multiple signs of the same size (mounting height and face height) installed end-to-end on a straight line. When multiple signs are used, the separation distance between legend panels shall be 3 to 12 inches (76 to 305 mm). Internally and externally lighted signs shall not be installed in the same sign array. See Appendix 2 for examples of sign arrays.

Table 1. SIGN DIMENSIONS

| Size | Legend Height | | Legend Panel Height | | Overall Mounting Height | | Maximum Overall Length | |
|---|---|---|---|---|---|---|---|---|
| | Inches | mm | Inches | mm | Inches | mm | Inches | mm |
| 1 | 12 | 300 | 18 | 460 | 24-30 | 610-760 | 120 | 3050 |
| 2 | 15 | 380 | 24 | 610 | 30-36 | 760-910 | 145 | 3690 |
| 3 | 18 | 460 | 30 | 760 | 36-42 | 910-1070 | 170 | 4290 |
| 4 | 40 | 1020 | 48 | 1220 | 54-60 | 1370-1520 | | |
| 5 | 25 | 640 | 30 | 760 | 36-42 | 910-1070 | | |

Note: Legend heights for Runway Safety Area/Obstacle Free Zone (OFZ) and Runway Approach Area Boundary; ILS Critical Area Boundary; and No Entry signs are specified in Appendix 1, Tables VIII, IX, and X, respectively.

3.3.2 Mounting Legs. Mounting legs for each sign shall have frangible points located 2 inches (51 mm) or less above the concrete pad or stake. The frangible points shall withstand wind loads due to jet blasts of 200 mph (322 km/h) but will break before reaching an applied static load over the legend panel of 1.3 psi (8.96 kPa). Legend panels and panel supports shall withstand, at a minimum, the pressure at which the frangible points break.

3.3.3 Sign Faces. The signs may be either single face (message only on one side) or double face (messages on two sides). The sign faces shall have reflective material which for Style 1, 2, 3, and 5 signs shall meet the color and reflectivity requirements of ASTM D 4956, Type I Sheeting, and for Style 4 signs, shall meet the color and reflectivity requirements of ASTM D 4956, Type III or Type IV Sheeting. Reflective material, when installed, shall not be warped or wrinkled. The spacing, stroke, and shape of legend characters, numerals, and symbols shall be in accordance with Appendix 1 of this specification. Type L-858L sign faces shall have a border in accordance with paragraphs 3.3.3.1 and as shown in Appendix 2, Figures 5 and 6. Message dividers shall be in accordance with paragraph 3.3.3.2.

3.3.3.1 Border for Type L-858L signs. The sign faces of Type L-858L shall have a continuous border 13/16 inch (21 mm) wide for size 1; 1 1/16 inches (27 mm) wide for size 2; and 1 1/4 inches (32 mm) wide for size 3 signs. The outside edge of the border shall be 11/16 inch (17 mm) from the inside edge of the sign frame for Size 1; 1 7/16 inches (37 mm) for Size 2; and 2 inches (51 mm) for Size 3 signs. The border color shall be the same as that of the legend.

3.3.3.2 Message Dividers. Vertical message dividers shall be used to separate the message elements (e.g. "C→," "←T→," "15-APCH," etc.) of a sign array, as shown in Appendix 2, Figures 4, 5, and 7. Message dividers shall not be used to separate Type L-858L signs from Type L-858Y or Type L-858R signs when they are collocated. Message dividers shall be 1 5/16 inches (33 mm) in width for size 1; 1 11/16 inches (43 mm) for size 2; and 2 inches (51 mm) for size 3 signs. Message dividers shall extend from the top to the bottom of the legend panel. Message divider color shall be the same as that of the legend.

3.3.4 Lighted Signs. Style 1, 2, 3 and 5 signs shall be internally lighted. Style 1 signs shall be designed for operation from a 120-volt AC power source. Style 2 signs shall be designed for operation from an airport series lighting circuit with a current range of 4.8 to 6.6 amperes. Style 3 signs shall be designed for operation from an

airport series lighting circuit with a current range of 2.8 to 6.6 amperes or a current range of 8.5 to 20 amperes. Signs installed on a 20 ampere circuit should use an appropriate isolation transformer with a 6.6 ampere secondary. Style 2 and Style 3 signs shall meet the luminance requirement of 3.3.4.1 throughout the current range of the associated series circuit. Style 5 signs shall be designed for operation from an airport series lighting circuit with a current of 5.5 amperes. Style 5 signs shall be installed on a circuit, containing only these signs, which is powered with a three step regulator preset to 5.5 amperes output. The regulator control system shall be designed to meet the "Sign Operation" requirements provided in AC 150/5340-18C. Intensity controls shall not be provided for Style 5 sign circuits.

3.3.4.1 Sign Luminance. The background of Type L-858Y signs and the legends of Type L-858R and L-858L signs shall have an average luminance of 10 to 30 ft lamberts. The sign type shall be readily identifiable up to a distance of 800 feet (244 m) when viewed during the day or when lighted at night. Lamps shall be easily accessible for replacement. Lamps used to illuminate signs shall be readily available from commercial electrical supply dealers. Style 2 and 3 signs shall be compatible with all L-828 regulators, as specified in the latest edition of AC 150/5345-10 for Specification L-828 Constant Current Regulators.

3.3.4.2 Electrical Disconnect. All lighted signs shall be equipped with a power input disconnect cable terminated with a Type II plug, conforming to the requirement of AC 150/5345-26. The length of this cable shall permit the plug end to reach at least 6 inches (150 mm) below the top of the concrete pad or stake on which the sign is mounted. A cable clamp or similar restraining device shall be provided in the sign to prevent strain on the cable terminal connections when the cable plug is pulled apart.

3.3.4.3 Style 2, Style 3, and Style 5 Signs. Signs designed for operation from a series lighting circuit shall be capable of being energized and operated at any current value of that system without flickering. Power input from the series lighting circuit shall be made through an isolation transformer of the proper rating, conforming to AC 150/5345-47. This transformer is not supplied with the sign. If the design requires power adapter circuitry for installation outside the sign, the circuitry shall be enclosed in a watertight container for installation in a transformer housing, conforming to AC 150/5345-42. The housing will not be supplied with the sign, but the adapter unit shall be. This adapter unit shall be supplied with an output cable at least 24 inches (610 mm) in length and terminated with a Type II, Class A, Style 7 receptacle, conforming to AC 150/5345-26. If the isolation transformer is integral with the adapter unit, the power input leads shall be at least 24 inches (610 mm) in length, with one lead terminating in a Type I, Class A, Style 9 receptacle, conforming to AC 150/5345-26.

3.4 Materials and Components. All materials used in fabrication of the signs and mounting hardware shall be suitable for the signs' intended purpose and adequately protected against corrosion. All sign assembly hardware, including screws, bolts, nuts, washers, and latches, shall be 18-8 stainless steel. All wiring and components shall be adequately rated and shall not be operated in excess of the component manufacturer's recommended rating.

3.5 Finish. External surfaces of the signs, excluding the mounting legs and face panel, shall be painted with a primer coat and low luster, black, finish coat. The surface color treatment of the nonmetallic surfaces shall be equal in quality to that obtained on metal surfaces.

3.6 Nameplate. Each sign shall have a nameplate giving the Type, Size, Style, Class, manufacturer's name, address, catalog number, and lamp data, including type and rating. The nameplate on Style 1 signs shall give the total volt-amp load and power factor of the sign, including required ballasts, and/or adapter units. The nameplate on Style 2, 3, and 5 signs shall give the total maximum volt-amp load and power factor as seem from the primary of the isolation transformer. The total maximum volt-amp load indicated shall reflect the highest possible volt-amp loading on the regulator and shall include loading due to a "worst case" isolation transformer, and any required ballasts and/or adapter units.

3.7 Frangible Couplings. Each frangible coupling shall be permanently marked with the manufacturer name (which may be abbreviated) and size of sign for which the coupling is intended.

3.8 Workmanship. The equipment shall be fabricated in accordance with the highest quality workmanship. All wiring shall be neatly run and laced. All sharp edges and burrs shall be removed. Painted surfaces shall be free from runs, blotches, and scratches.

3.9 Instruction Booklet. Two instruction booklets shall be included with each order of signs which shall include installation instructions, maintenance procedures, troubleshooting procedures (including operating voltage and point readings), and a complete parts list. It shall also describe the lamp voltage or current needed to maintain the luminance levels specified in 3.3.4.1.

4. QUALITY ASSURANCE PROVISION.

4.1 Qualification Procedures. Procedures for obtaining product certification for equipment to be furnished for Federal grant assistance programs at airports, may be obtained from the Federal Aviation Administration, Office of Airport Safety and Standards, Attention: AAS-200, 800 Independence Avenue, SW, Washington, DC, 20591.

4.2 Qualification Tests. All tests contained in 4.3 are applicable for certification.

4.3 Tests.

4.3.1 Visual Examination. For this test, Type L-858Y signs shall have at least two message elements separated by a message divider, Type L-858R signs shall have a legend which reads "18-36," and Type L-858L signs shall have a legend which reads "B." The signs shall be examined for compliance with the requirements for dimensions, materials, component ratings, materials, finish, and quality of workmanship. Both lighted and unlighted signs shall be viewed in daylight from a distance of 800 ft (244 m). The sign type, as defined in paragraph 1.2.1, should be readily identifiable. The sign face and reflective material shall appear to be smooth and shall be free of any aberration (except at the panel joints of modular signs). Legend and/or background colors on modular signs shall be continuous across panel joints. Lighted signs shall be viewed from a distance of 800 ft (244 m) at nighttime to determine if the luminance level is sufficient to make the Type L-858Y and L-858R background colors, and Type L-858L legend and border color readily discernible, or in the case of distance remaining signs to determine if the legend is readily discernible. Style 2 and Style 3 signs shall be viewed while the input current is varied throughout the range on which the sign is to operate. Modular signs shall then be viewed from a distance of 200 feet (61 m) with the sign at full brightness. The panel joints shall not interfere with the legibility of the sign nor leak light which would cause a discontinuous color across the joint.

4.3.2 Wind Load and Frangibility Test. The signs shall be tested for their ability to withstand loads of 200 mph (322 km/h) without damage. The test shall be performed with the sign completely assembled and mounted by the base assembly. If the loading is applied with the sign mounted on a vertical surface, the weight of the sign shall be included as part of the total applied weight. The test shall be designed to ensure the legend panel receives the full load. Spring mounted signs designed to swing shall be locked to prevent movement during the test. A static load of 0.9 psi (6.21 kPa) shall be applied uniformly over the entire surface of the legend panel for a period of 10 minutes. The sign shall not break at the frangible points nor suffer permanent distortion. The static load shall then be increased until the sign breaks at the frangible points. The breaking shall occur before the loading reaches an applied static load over the legend panel of 1.3 psi (8.96 kPa). The legend panel and panel supports shall then be inspected for evidence of damage. Any breakage or deformation shall be cause for rejection. Note: Spring mounted signs may alternatively be tested according to the procedure in 4.3.2.1.

4.3.2.1 Spring Mounted Signs. With the legend panel protected, the sign shall be tested for frangibility according to 4.3.2. The sign shall then be unlocked and subjected to Pbreak (the pressure at which the frangible points break). The sign face swing angle, , caused by the pressure, Pbreak, shall be measured. The pressure, Pswing, shall then be computed as follows: Pswing = Pbreak x (Cosine ). With the sign relocked and the legend panel protection removed, the pressure Pswing shall be applied uniformly over the entire surface of the legend panel for 1 minute. The legend panel and panel supports shall then be inspected for evidence of damage. Any breakage or deformation shall be cause for rejection.

4.3.3 Photometric Test.

4.3.3.1 Photometer Parameters. A foot-candle meter or telephotometer shall be used for this test. Before testing, photometric equipment shall be calibrated in accordance with IES LM-52. The foot-candle meter shall be calibrated to measure luminance and shall have a 6 inch (150 mm) long collimating luminance adapter tube (black on the inside) placed between the sign and the meter. The telephotometer shall be color-corrected and calibrated to

measure luminance. Either system shall be designed to measure a "spot" on the sign face of 1.5 inches (38 mm) in diameter. Light emitted only from the sign shall be permitted to reach either meter. Style 2 and Style 3 signs shall be tested at each input current throughout the range on which the sign is to operate.

4.3.3.2 Sign Types and Sizes. Photometric testing shall be conducted for Sizes 1, 2, and 3 for each of Type L-858Y, L-858R and L-858L signs. If the luminaire design of a double face sign is symmetrical for both faces, then only one face should be tested. The length of Types L-858Y and L-858R to be tested shall be at least 45 inches (1140 mm). Signs employing modular construction shall contain at least two modules for this test.

4.3.3.3 Sign faces. Type L-858Y and L-858L signs shall have an entirely yellow sign face, made from the same material used to create the background on production L-858Y signs or the legend and border on production L-858L signs, respectively. Type L-858R signs shall have an entirely white sign face, made from the same material used to create the legend on production L-858R signs.

4.3.3.4 Measurements. Measurements shall be made on a 3 inch (76 mm) grid over the entire face of the sign, with no measurement being closer than 3 inches (76 mm) to the sign frame. The average of all measurements shall fall between 10 and 30 ft lamberts. Adjacent measurements shall not exceed a 1.5:1 ratio.

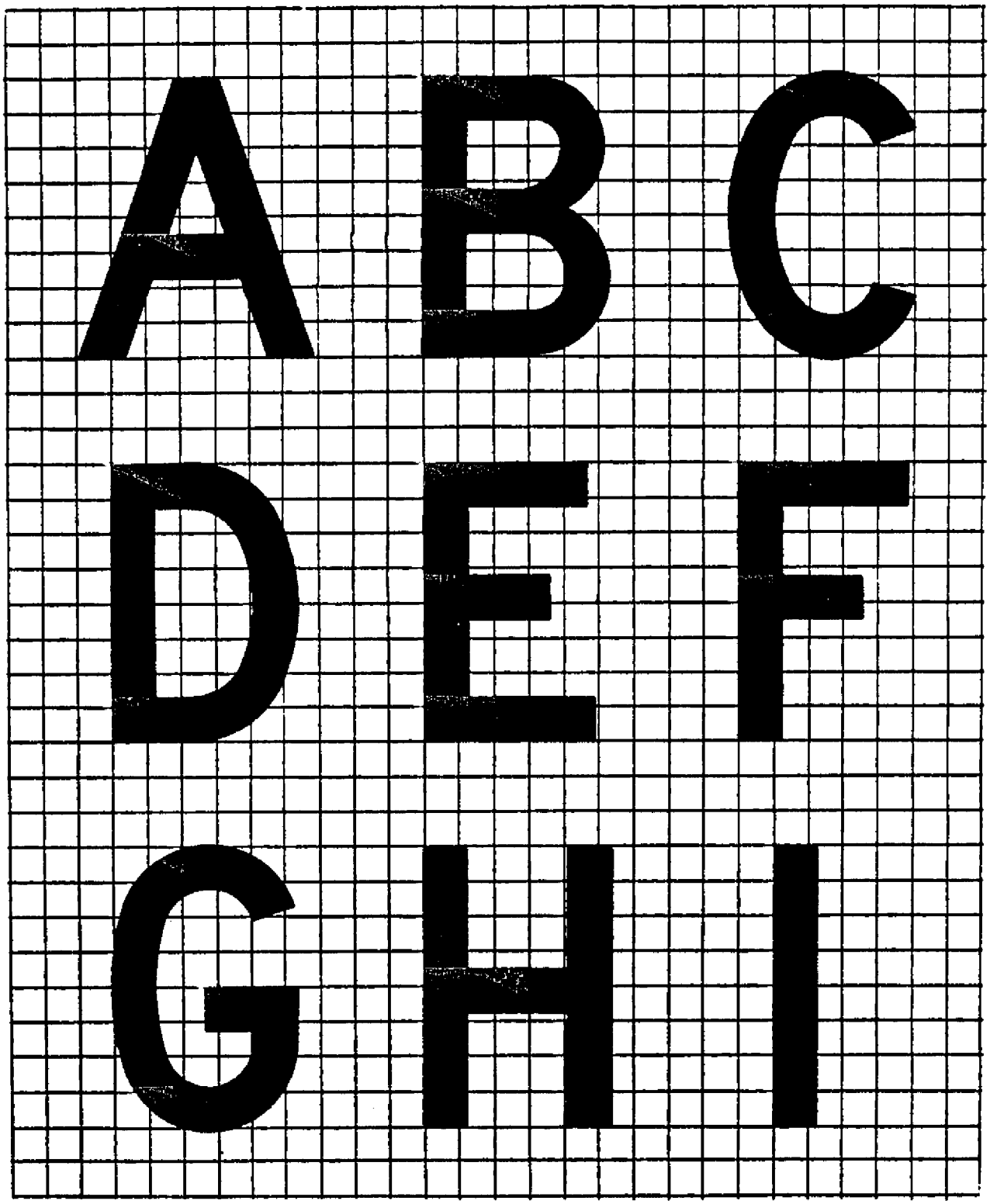
4.3.4 Rain Test. A rain test shall be conducted for Style 1, 2, 3, and 5 signs in accordance with MIL-STD-810, Procedure I. The sign shall be operated during the last 10 minutes of the test. Failure of the sign to operate shall be cause for rejection. If water enters the sign during the test, the sign shall be designed to drain the water quickly and circuit components shall not be mounted below the water line. The presence of water inside the sign shall not change the electrical load of the sign.

4.3.5 Low Temperature Test. A low temperature test shall be conducted for the signs, including any required adapter units for lighted signs, in accordance with MIL-STD-810, Procedure I. The lowest operating temperature shall be -20° C for Class 1 signs and -55° C for Class 2 and Style 4 signs. With the sign temperature stabilized at the lowest temperature, the sign face shall be inspected for any damage including cracking, peeling, bubbling, delaminating, and flaking. This or any other structural damage of the equipment shall be cause for rejection. Failure of a Style 1, 2, 3, or 5 sign to operate or failure to reach normal sign illumination within 2 minutes after it is energized shall also be cause for rejection. The sign shall be restabilized at the lowest temperature after examination.

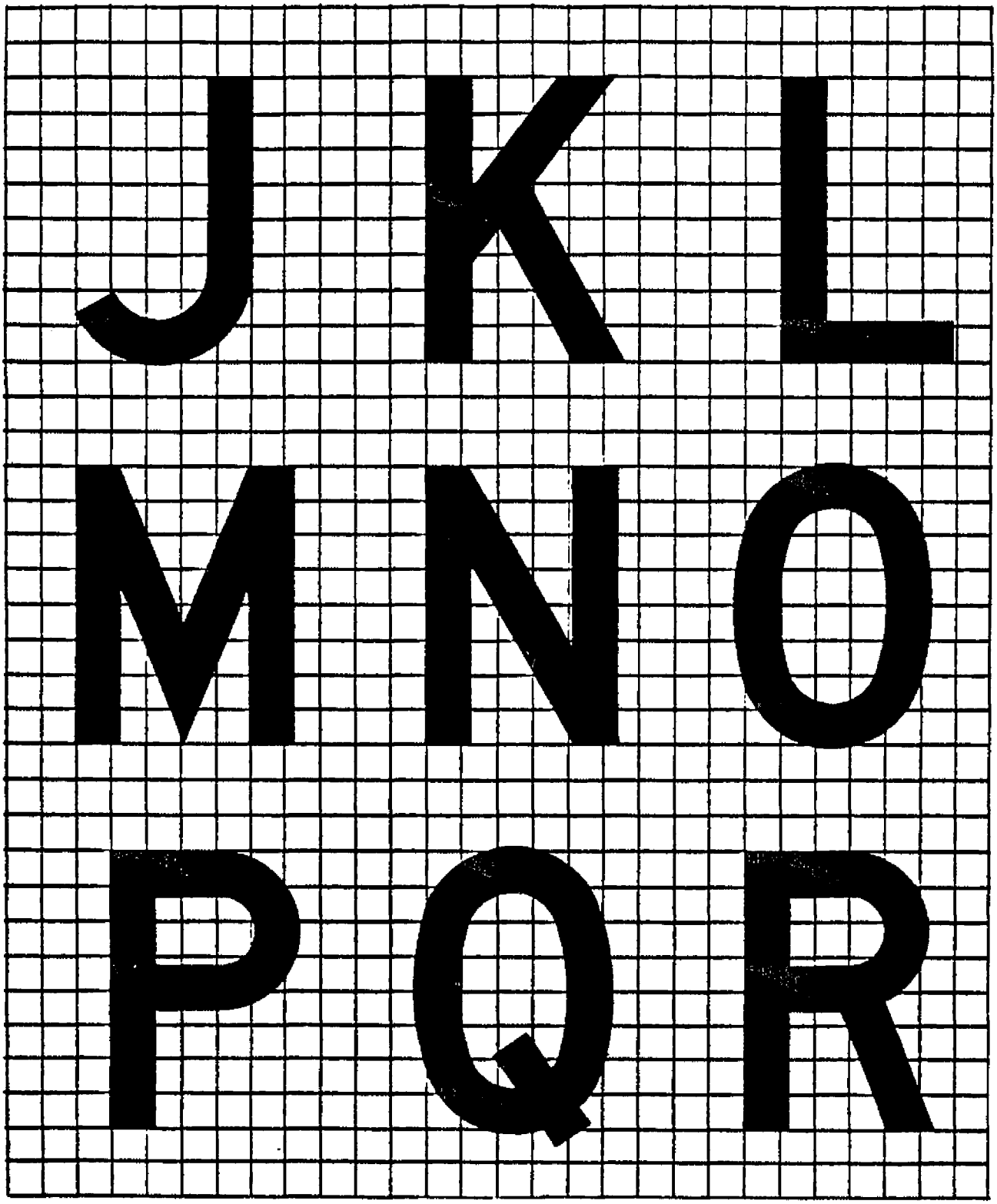
4.3.6 High Temperature Test. A high temperature test shall be conducted for the signs, including any required adapter units for lighted signs, in accordance with MIL-STD-810, Procedure II. The maximum chamber temperature in Step 7 shall be +55° C. This test shall immediately follow the low temperature test of 4.3.5. The high temperature chamber shall be preheated and stabilized at the maximum chamber temperature. The sign shall be transferred quickly from the low temperature chamber to the high temperature chamber. With the sign temperature stabilized at the maximum chamber temperature, the sign face shall be inspected for any damage including cracking, peeling, bubbling, delaminating, and flaking. This or any other structural damage of the equipment shall be cause for rejection. Failure of a Style 1, 2, 3, or 5 sign to operate shall also be cause for rejection. After the sign cools to ambient temperature, the sign face shall be reinspected. Any damage shall be cause for rejection.

4.3.7 Immersion Test. A water immersion test shall be performed on the adapter unit in accordance with MIL-STD-810, Procedure I. Evidence of water leakage shall be cause for failure. This test shall be conducted after the unit has been subjected to the high temperature test in 4.3.6 to ensure that the efficacy of the gasket material was not impaired.

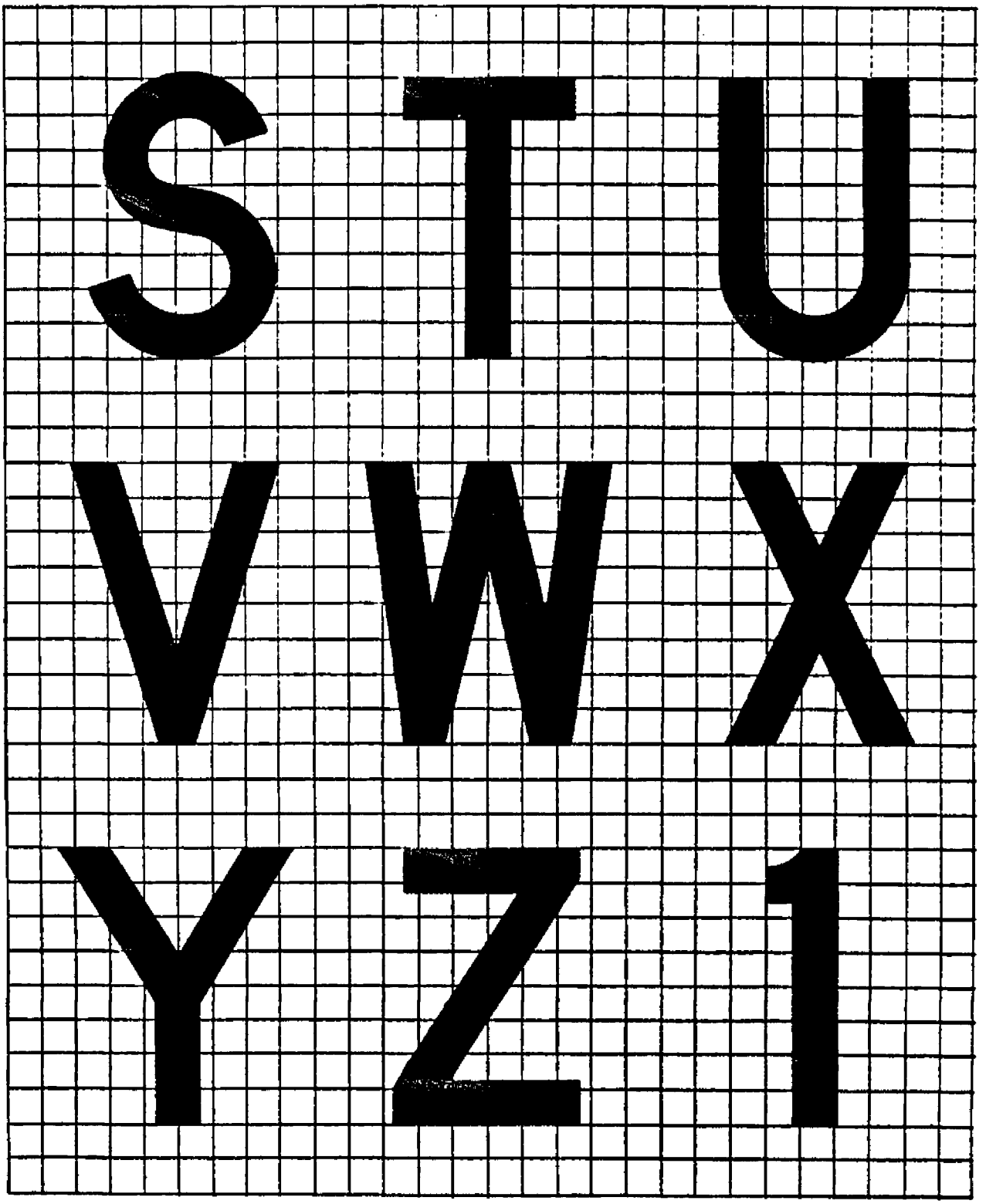
4.4 Production Testing. All production sign legend panels shall be inspected for compliance with all dimensions described herein. Reflective material shall appear to be smooth and be free of any aberration (except at the panel joints of modular signs). Panel joints of modular signs shall be observed to ensure that they not interfere with the legibility of the sign.



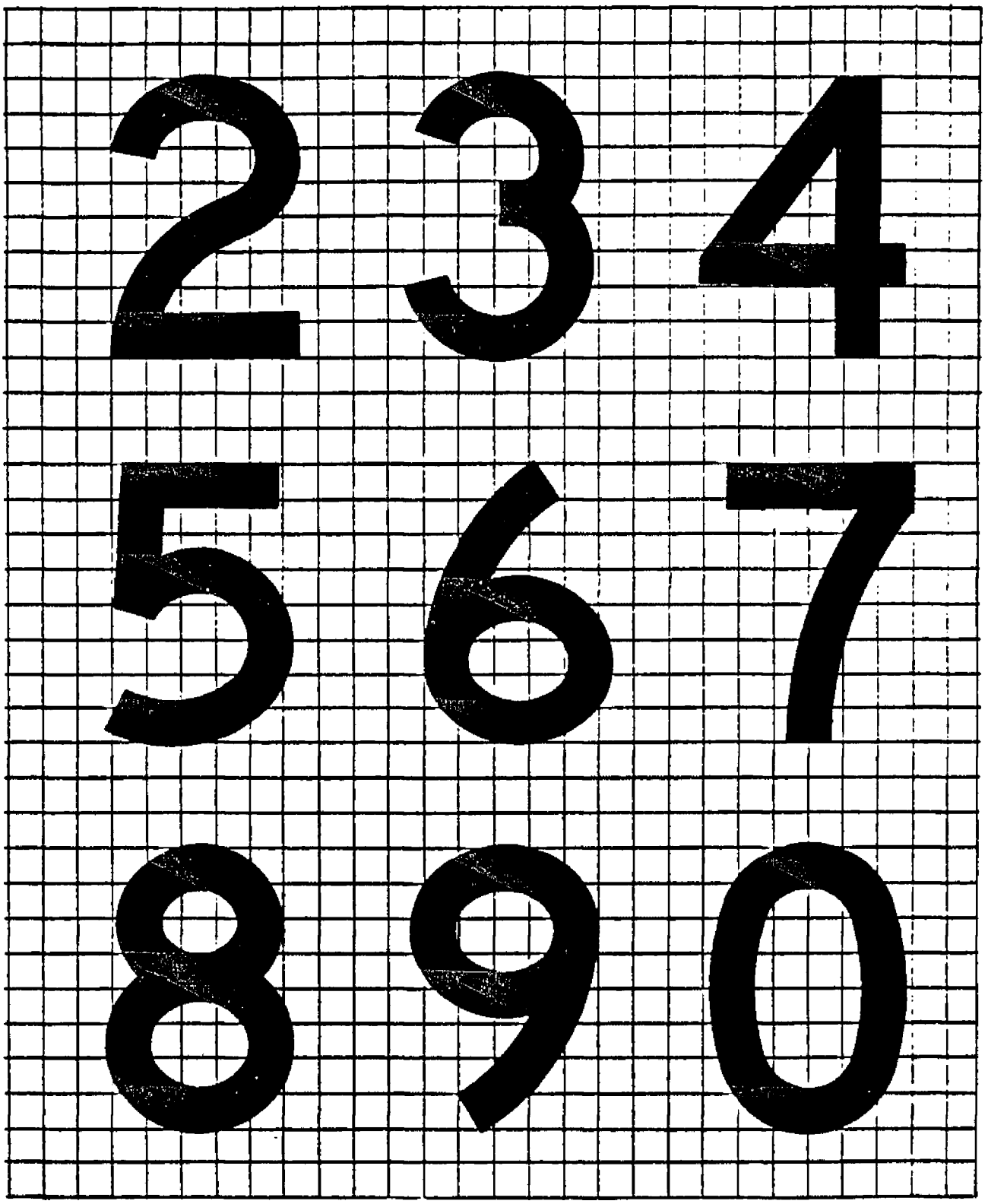

Sign legend characters



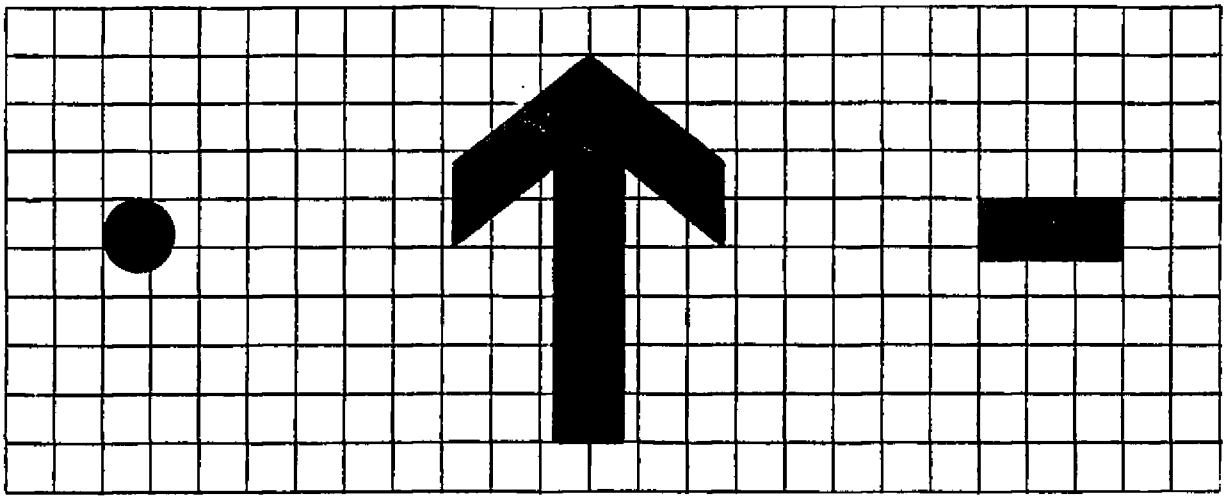

Sign legend characters




Sign legend characters and numeral 1
for Size 1, 2, and 3 signs




Numerals for Size 1, 2, and 3 signs



a) The arrow stroke width, diameter of the dot, and both width and length of the dash, shall be proportioned to the character stroke widths as defined in Table III.

b) The dimensions of the arrow shall remain constant for a particular sign size, regardless of orientation.

TABLE I

LETTER TO LETTER CODE NUMBER

| Preceding Letter | Following Letter | | |
|---|---|---|---|
| | B, D, E, F, H, I, K, L, M, N, P, R, U, | C, G, O, Q, S, X, Z, | A, J, T, V, W, Y, |
| A | 2 | 2 | 4 |
| B | 1 | 2 | 2 |
| C | 2 | 2 | 3 |
| D | 1 | 2 | 2 |
| E | 2 | 2 | 3 |
| F | 2 | 2 | 3 |
| G | 1 | 2 | 2 |
| H | 1 | 1 | 2 |
| I | 1 | 1 | 2 |
| J | 1 | 1 | 2 |
| K | 2 | 2 | 3 |
| L | 2 | 2 | 4 |
| M | 1 | 1 | 2 |
| N | 1 | 1 | 2 |
| O | 1 | 1 | 2 |
| P | 1 | 2 | 2 |
| Q | 1 | 2 | 2 |
| R | 1 | 2 | 2 |
| S | 1 | 2 | 2 |
| T | 2 | 2 | 4 |
| U | 1 | 1 | 2 |
| V | 2 | 2 | 4 |
| W | 2 | 2 | 4 |
| X | 2 | 2 | 3 |
| Y | 2 | 2 | 4 |
| Z | 2 | 2 | 3 |

To determine the proper space between letters or numerals, obtain the code number from Table I or II and enter Table VI for that code number to the desired letter or numeral height.

TABLE II

NUMERAL TO NUMERAL CODE NUMBER

| Preceding Numeral | Following Numeral | | |
|---|---|---|---|
| | 1, 5, | 2, 3, 6, 8, 9, 0, | 4, 7, |
| 1 | 1 | 1 | 2 |
| 2 | 1 | 2 | 2 |
| 3 | 1 | 2 | 2 |
| 4 | 2 | 2 | 4 |
| 5 | 1 | 2 | 2 |
| 6 | 1 | 2 | 2 |
| 7 | 2 | 2 | 4 |
| 8 | 1 | 2 | 2 |
| 9 | 1 | 2 | 2 |
| 0 | 1 | 2 | 2 |

**TABLE III, WIDTH OF STROKE**

| Letter Height (in) | Letter Height (mm) | Stroke Width (in) | Stroke Width (mm) |
|---|---|---|---|
| 12 | 304.8 | 1.88 | 47.8 |
| 15 | 381.0 | 2.35 | 59.7 |
| 18 | 457.2 | 2.81 | 71.4 |
| 25 | 635.0 | 3.53 | 89.5 |
| 40 | 1000.0 | 5.64 | 143.3 |

**TABLE IV, WIDTH OF LETTERS**

| | Letter Height | | | | | |
|---|---|---|---|---|---|---|
| | 12 in(300 mm) | | 15 in(380 mm) | | 18 in(460 mm) | |
| | (in) | (mm) | (in) | (mm) | (in) | (mm) |
| A | 10.03 | 254.8 | 12.55 | 318.8 | 15.06 | 382.5 |
| B | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |
| C | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |
| D | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |
| E | 7.31 | 185.7 | 9.14 | 232.2 | 10.97 | 278.6 |
| F | 7.31 | 185.7 | 9.14 | 232.2 | 10.97 | 278.6 |
| G | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |
| H | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |
| I | 1.88 | 47.8 | 2.35 | 59.7 | 2.81 | 71.4 |
| J | 7.50 | 190.5 | 9.38 | 238.3 | 11.25 | 285.8 |
| K | 8.25 | 209.6 | 10.32 | 262.1 | 12.38 | 314.5 |
| L | 7.31 | 185.7 | 9.14 | 232.2 | 10.97 | 278.6 |
| M | 9.28 | 235.7 | 11.61 | 294.9 | 13.94 | 354.1 |
| N | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |
| O | 8.44 | 214.4 | 10.55 | 268.0 | 12.66 | 321.6 |
| P | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |
| Q | 8.44 | 214.4 | 10.55 | 268.0 | 12.66 | 321.6 |
| R | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |
| S | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |
| T | 7.31 | 185.7 | 9.14 | 232.2 | 10.97 | 278.6 |
| U | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |
| V | 9.00 | 228.6 | 11.25 | 285.8 | 13.50 | 342.9 |
| W | 10.50 | 266.7 | 13.13 | 333.5 | 15.75 | 400.1 |
| X | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |
| Y | 10.12 | 257.0 | 12.66 | 321.6 | 15.19 | 385.8 |
| Z | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 |

**TABLE V, WIDTH OF NUMERALS**

| | Numeral Height | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 12 in(300 mm) | | 15 in(380 mm) | | 18 in(460 mm) | | 25 in(635 mm) | | 40 in(1000 mm) | |
| | (in) | (mm) | (in) | (mm) | (in) | (mm) | (in) | (mm) | (in) | (mm) |
| 1 | 2.91 | 73.9 | 3.65 | 92.5 | 4.38 | 111.3 | 5.08 | 129.0 | 8.12 | 206.2 |
| 2 | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 | 13.70 | 348.0 | 21.88 | 555.8 |
| 3 | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 | 13.70 | 348.0 | 21.88 | 555.8 |
| 4 | 8.81 | 223.8 | 11.02 | 279.9 | 13.22 | 335.8 | 15.23 | 386.8 | 24.36 | 618.7 |
| 5 | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 | 13.70 | 348.0 | 21.88 | 555.8 |
| 6 | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 | 13.70 | 348.0 | 21.88 | 555.8 |
| 7 | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 | 13.70 | 348.0 | 21.88 | 555.8 |
| 8 | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 | 13.70 | 348.0 | 21.88 | 555.8 |
| 9 | 8.06 | 204.7 | 10.08 | 256.0 | 12.09 | 307.1 | 13.70 | 348.0 | 21.88 | 555.8 |
| 0 | 8.44 | 214.4 | 10.55 | 268.0 | 12.66 | 321.6 | 14.40 | 365.8 | 23.12 | 587.2 |

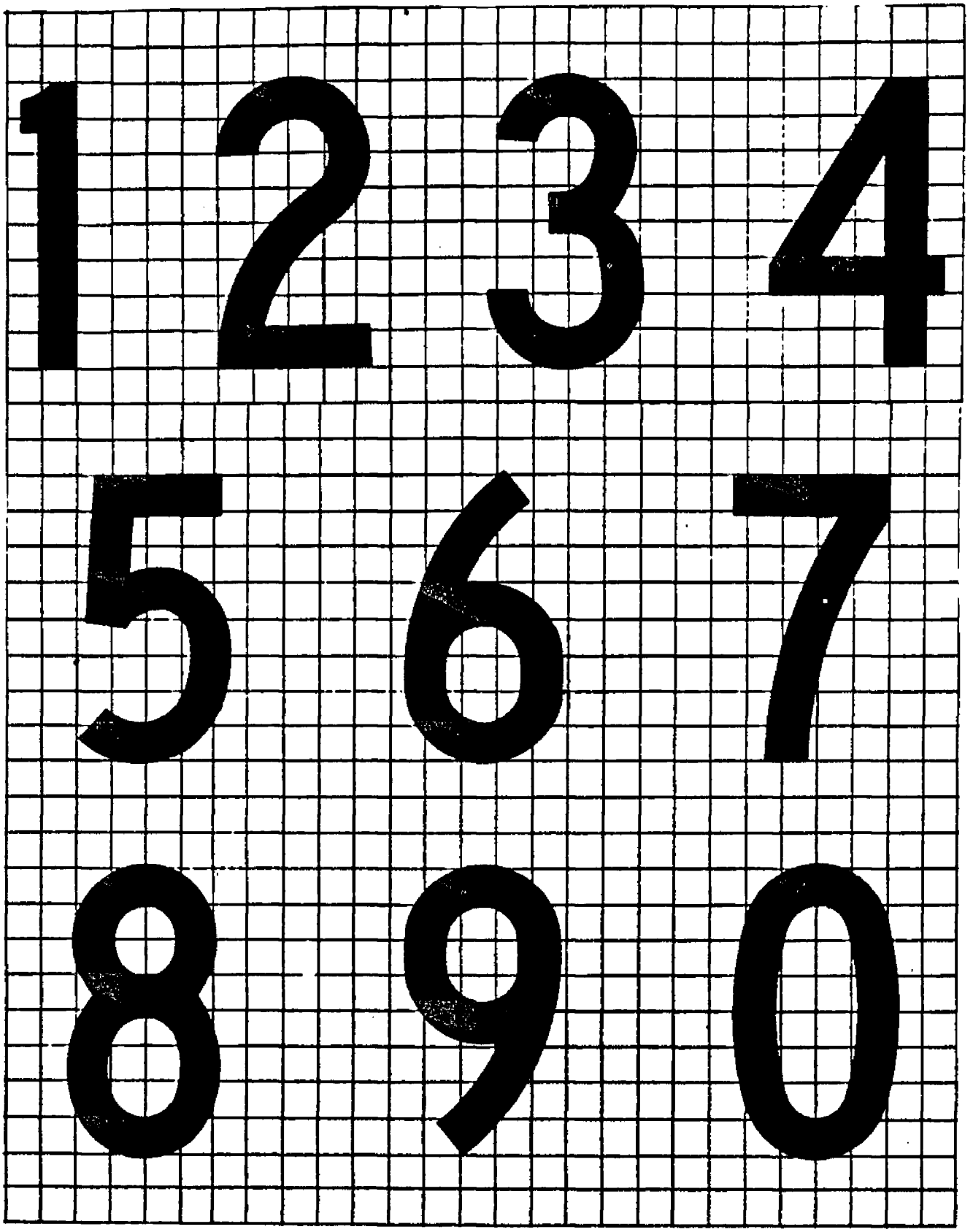
**TABLE VI, LETTER AND NUMERAL SPACING**

Space measured horizontally from the extreme right edge of the preceding letter or numeral to the extreme left edge of the following letter or numeral

| Code Number (See Table I or II) | Letter or Numeral Height | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 12 in(300 mm) | | 15 in(380 mm) | | 18 in(460 mm) | | 25 in(635 mm) | | 40 in(1000 mm) | |
| | (in) | (mm) | (in) | (mm) | (in) | (mm) | (in) | mm) | (in) | (mm) |
| 1 | 2.81 | 71.4 | 3.52 | 89.4 | 4.22 | 107.2 | 5.14 | 130.6 | 8.22 | 208.8 |
| 2 | 2.25 | 57.2 | 2.82 | 71.6 | 3.38 | 85.9 | 4.23 | 107.4 | 6.76 | 171.7 |
| 3 | 1.50 | 38.1 | 1.88 | 47.8 | 2.25 | 57.2 | 3.03 | 77.0 | 4.84 | 122.9 |
| 4 | 0.75 | 19.1 | 0.94 | 23.9 | 1.12 | 28.4 | 1.40 | 35.6 | 2.24 | 56.9 |

Note: The dimensions provided in these tables may be rounded to the nearest 16th of an inch in English units and the nearest millimeter in Metric units.

| TABLE VII, SPACING FOR BORDERS AND MESSAGE DIVIDERS | | | | |
|---|---|---|---|---|
| Letter or Numeral Height | | | | |
| 12 in(300 mm) | 15 in(380 mm) | 18 in(460 mm) | 25 in(640 mm) | 40 in(1020 mm) |
| (in) (mm) | (in) (mm) | (in) (mm) | (in) (mm) | (in) (mm) |
| Minimum Spacing Between Legend and Border (or Sign Edge, if no Border) | | | | |
| 1.50 38.1 | 2.00 50.8 | 2.50 63.5 | 3.00 76.2 | 4.00 101.6 |
| Minimum Horizontal Spacing Between Legend and Border for Type L-858L, Taxiway Location Signs, which contain a single character | | | | |
| 3.00 76.2 | 3.50 88.9 | 4.00 101.6 | | |
| Minimum Horizontal Spacing Between Legend and Border (or Sign Edge, if no Border) for Types L-858R or L-858L, Runway Location Signs, which contain a single digit | | | | |
| 6.00 152.4 | 6.50 165.1 | 7.00 177.8 | | |
| Minimum Spacing Between Legend and Message Divider | | | | |
| 3.00 76.2 | 3.50 88.9 | 4.00 101.6 | | |




Numerals for Size 4 signs

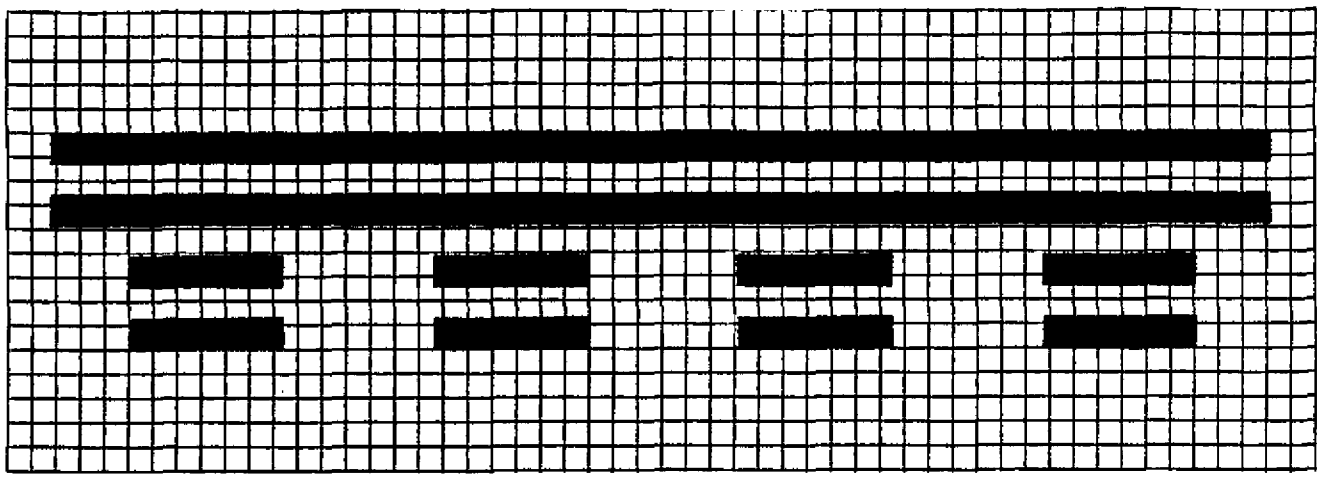


Figure 1. Runway Safety Area/OFZ and Runway Approach Boundary Sign.

TABLE VIII, DIMENSIONS FOR RUNWAY SAFETY AREA/OFZ AND RUNWAY APPROACH BOUNDARY SIGNS

| | Size 1 | | Size 2 | | Size 3 | |
|---|---|---|---|---|---|---|
| | (in) | (mm) | (in) | (mm) | (in) | (mm) |
| Legend Height | 9.0 | 228.8 | 12.0 | 304.8 | 15.0 | 381.0 |
| Legend Length | 57.5 | 1460.5 | 73.0 | 1854.2 | 84.0 | 2133.6 |
| Stroke Width | 1.29 | 32.8 | 1.72 | 43.7 | 2.14 | 54.4 |
| Dash Length | 7.18 | 182.4 | 9.12 | 231.6 | 10.5 | 266.7 |

a) Legend length may vary ±2 inches (50.8 mm).

b) Vertical spacing between bars shall be equal to the stroke width.

c) Horizontal spacing between dashes shall be equal to the dash length.

d) Dash length and horizontal spacing shall vary proportionally to legend length.

e) The yellow background of the boundary sign should not extend beyond the ends of the solid horizontal bars.

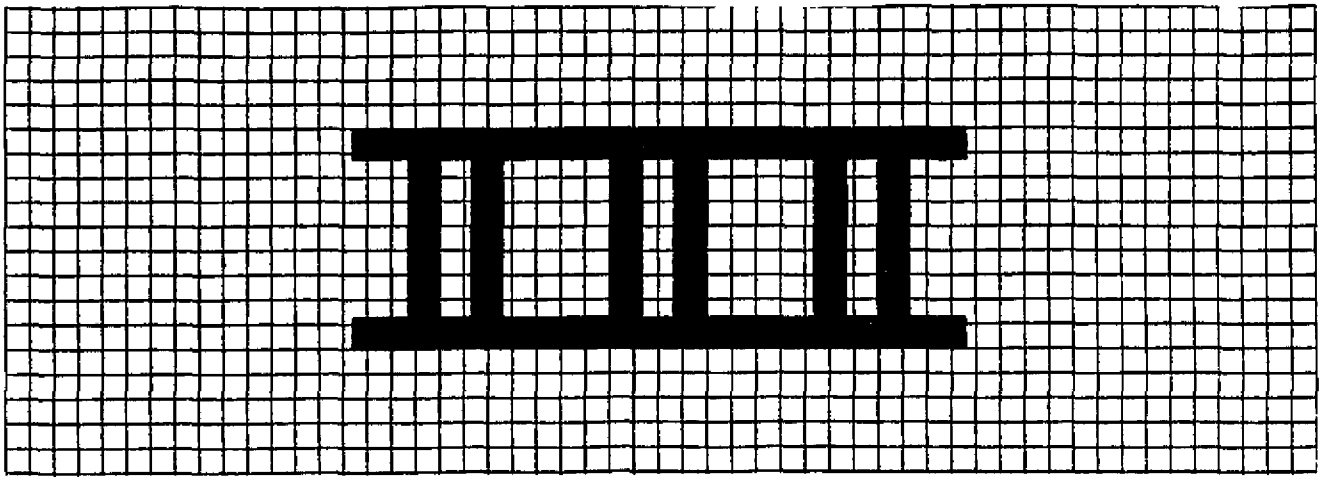


Figure 2. ILS Critical Area Boundary Sign.

TABLE IX, DIMENSIONS FOR ILS CRITICAL AREA BOUNDARY SIGNS

| | Size 1 | | Size 2 | | Size 3 | |
|---|---|---|---|---|---|---|
| | (in) | (mm) | (in) | (mm) | (in) | (mm) |
| Legend Height | 9.0 | 228.6 | 12.0 | 304.8 | 15.0 | 381.0 |
| Legend Length | 30.0 | 762.0 | 36.0 | 914.4 | 42.0 | 1066.8 |
| Stroke Width | 1.29 | 32.8 | 1.72 | 43.7 | 2.14 | 54.4 |

a) Legend length may vary ±2.2 inch (55.9 mm).

b) The space within a pair of vertical bars shall be equal to the stroke width.

c) The space between each pair of vertical bars shall vary proportionally to legend length.

d) The yellow background of the boundary sign should not extend beyond the ends of the horizontal bars.

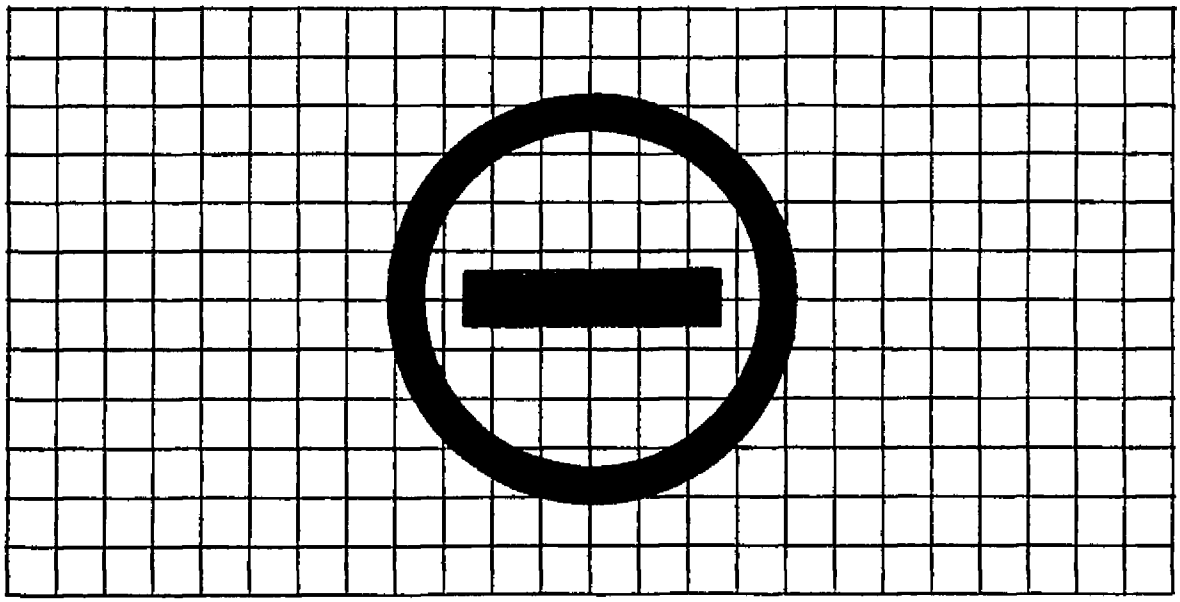


Figure 3. No Entry Sign

TABLE X, DIMENSIONS FOR NO ENTRY SIGNS

| | Size 1 | | Size 2 | | Size 3 | |
|---|---|---|---|---|---|---|
| | (in) | (mm) | (in) | (mm) | (in) | (mm) |
| Minimum Legend Panel Length | 24.0 | 609.6 | 32.0 | 812.8 | 40.0 | 1016.0 |
| Outer Radius | 7.35 | 186.7 | 9.75 | 247.7 | 12.2 | 309.9 |
| Inner Radius | 6.05 | 153.7 | 7.95 | 201.9 | 10.0 | 254.0 |
| Dash Length | 9.3 | 236.2 | 12.4 | 315.0 | 15.5 | 393.7 |
| Dash Width | 2.0 | 50.8 | 2.7 | 68.6 | 3.3 | 83.8 |

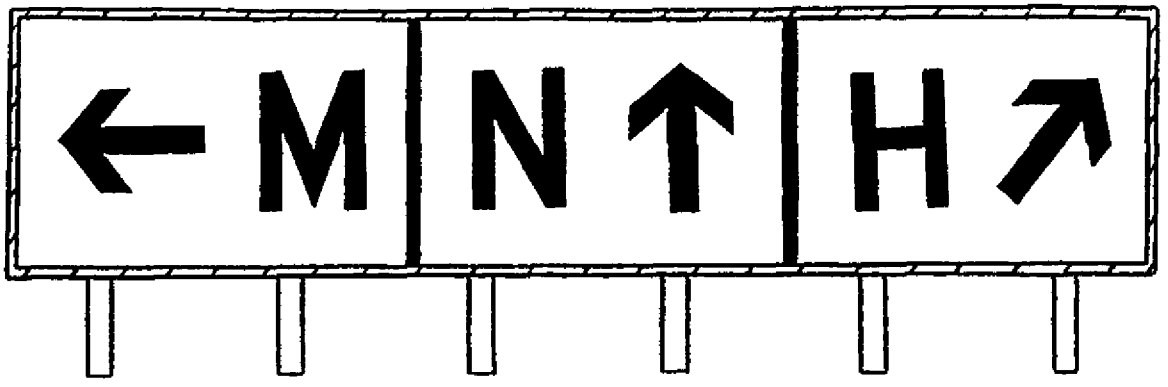



Figure 4. Type L-858Y Direction Sign array which contains three message elements separated by message dividers. On modular signs, the message dividers may be coincident with panel joints. Figure not drawn to scale.

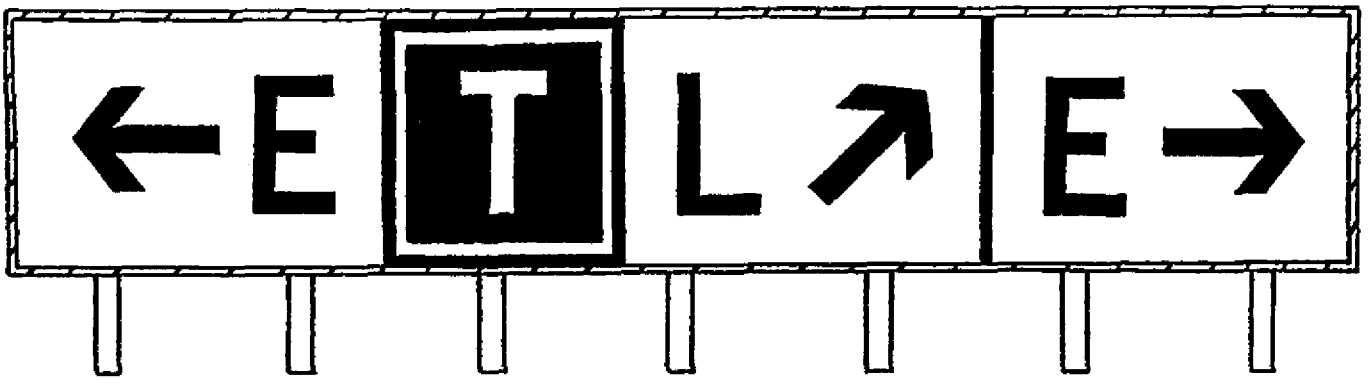



Figure 5. Sign array which contains two Type L-858Y Direction Signs separated by a Type L-858L Taxiway Location Sign. The Type L-858Y sign on the right contains two message elements separated by a message divider. Figure not drawn to scale.

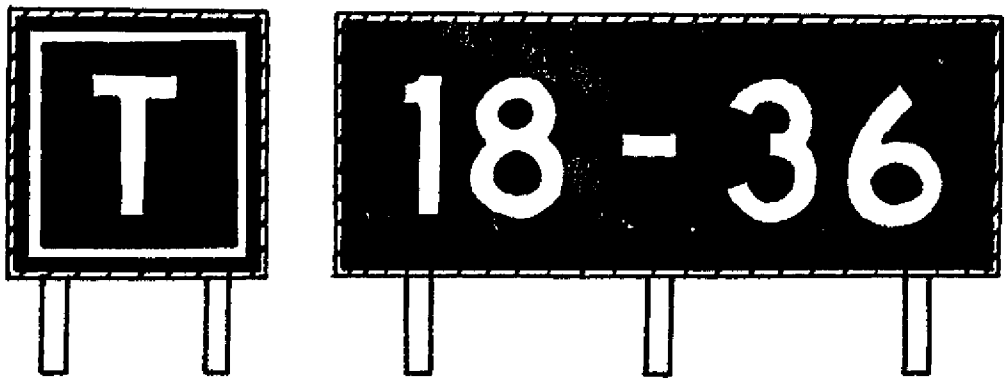



Figure 6. Sign array (made-up of multiple signs) which contains a Type L-858L Taxiway Location Sign and an L-858R Runway Holding Position Sign. Figure not drawn to scale.

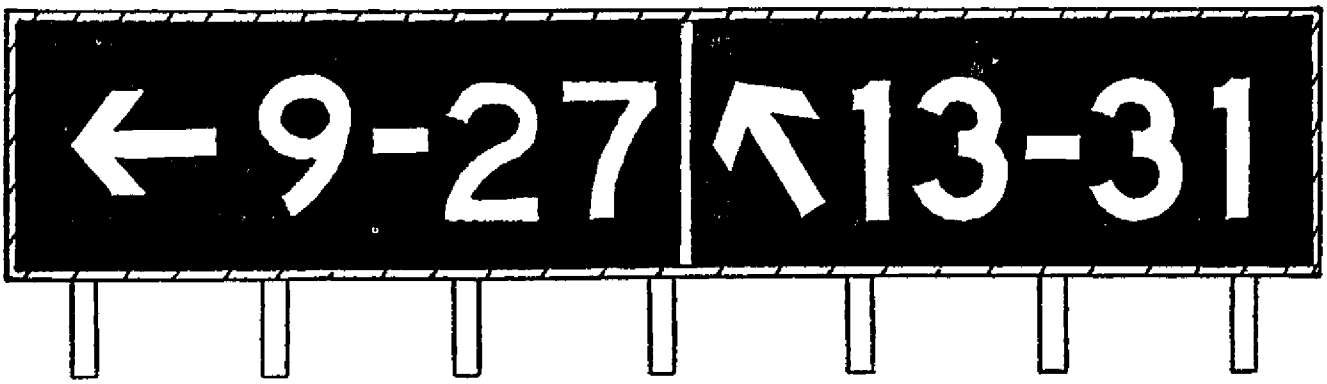



Figure 7. Type L-858R sign array which contains two message elements separated by a message divider. Figure not drawn to scale.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