

1966

EDITION

# Standard Alphabets

FOR HIGHWAY SIGNS



U.S. Department  
of Transportation

**Federal Highway  
Administration**

Reprinted April 1984

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1984

# Standard Alphabets

## FOR HIGHWAY SIGNS

A Reference Guide for the Standardization of  
Letters and Numerals Used on Highway Signs

*specified in*

THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES  
FOR STREETS AND HIGHWAYS

*as approved by*

AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS  
INSTITUTE OF TRAFFIC ENGINEERS

NATIONAL COMMITTEE ON UNIFORM TRAFFIC LAWS AND ORDINANCES

NATIONAL ASSOCIATION OF COUNTIES

NATIONAL LEAGUE OF CITIES

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U.S. Department  
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The standard UPPER CASE ALPHABETS for highway signs were prepared by the Bureau of Public Roads at the request of the National Transportation Builders Association and approved by that committee.

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## **STANDARD**

# **UPPER CASE**

## **ALPHABETS**

### **for Highway Signs**

The Standard UPPERCASE Alphabet series for highway signs were prepared by the Bureau of Public Roads at the request of the National Joint Committee on Uniform Traffic Control Devices and approved by that committee.

This 1966 edition has eliminated the tables of dimensions by printing the characters in exact detail for two-inch letter height. The characters may be enlarged to the desired letter height with any conventional enlarging process such as: photographic, shadowgraph, or by manual transfer and the letters will remain in the proper proportion. A one-quarter inch grid has been superimposed on the letters to facilitate the enlarging process. For example, to obtain six-inch letter height, enlarge the grid squares to three-quarters of one inch.

A set of spacing tables is provided for each alphabet series. These tables give the letter and numeral width by direct reading for several standard letter heights. In addition, the recommended dimension for space between any combination of letters or numerals may be obtained through a two-step process described in the table. This space is the distance measured horizontally between the extreme right edge of the preceding letter and the extreme left edge of the following letter. No part of these letters may extend into this space.

The width of a word or name may be readily determined by adding the sum of the letter widths to the sum of the space between letters.

All characters having an arc at the top or bottom are extended slightly above or below the grid lines. This is in accord with accepted practice for rounded letters.

Although the tables of dimensions have been eliminated, there is no basic change in the design or dimensions of any character. Since the Series A alphabet is no longer acceptable for use in highway signs, it is not included in this publication.

If the design of a particular letter or numeral in a given size is incompatible with the manufacturing process, minor modifications may be made.



A

B

C

D

E

F

G

H

I

**J K L**

**M N O**

**P Q R**

**S**

**T**

**U**

**V**

**W**

**X**

**Y**

**Z**

**1**



2

3

4

5

6

7

8

9

0



A B C

D E F

G H I

**J K L**

**M N O**

**P Q R**

S

T

U

V

W

X

Y

Z

1



2

3

4

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6

7

8

9

0

A B C

D E F

G H I

**J K L**

**M N O**

**P Q R**



S T U

V W X

Y Z 1

2 1 8

3 9 6

4 7 0

A B C

D E F

G H I



**J K L**

**M N O**

**P Q R**

S T U

V W X

Y Z 1

2

3

4

5

6

7

8

9

0



A B C

D E F

G H I

**J K L**

**M N O**

**P Q R**

S T U

V W X

Y Z 1



**2 3 4**

**5 6 7**

**8 9 0**

# LETTER & NUMERAL WIDTHS and SPACE between letters or numerals

**SERIES B**

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 I                      |                                        |                      |                   | TABLE IV                |      |      |      |      |      |       |  |
|------------------------------|----------------------------------------|----------------------|-------------------|-------------------------|------|------|------|------|------|-------|--|
| LETTER TO LETTER CODE NUMBER |                                        |                      |                   | WIDTH of LETTER         |      |      |      |      |      |       |  |
| Following Letter             |                                        |                      |                   | Letter height in inches |      |      |      |      |      |       |  |
| Preceding 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, | 4"                      | 5"   | 6"   | 8"   | 10"  | 12"  | 18"   |  |
| A                            | 2                                      | 2                    | 4                 | 2.12                    | 2.66 | 3.19 | 4.25 | 5.31 | 6.38 | 9.56  |  |
| B                            | 1                                      | 2                    | 2                 | 1.69                    | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59  |  |
| C                            | 2                                      | 2                    | 3                 | 1.69                    | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59  |  |
| D                            | 1                                      | 2                    | 2                 | 1.69                    | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59  |  |
| E                            | 2                                      | 2                    | 3                 | 1.50                    | 1.88 | 2.25 | 3.00 | 3.75 | 4.50 | 6.75  |  |
| F                            | 2                                      | 2                    | 3                 | 1.50                    | 1.88 | 2.25 | 3.00 | 3.75 | 4.50 | 6.75  |  |
| G                            | 1                                      | 2                    | 2                 | 1.69                    | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59  |  |
| H                            | 1                                      | 1                    | 2                 | 1.69                    | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59  |  |
| I                            | 1                                      | 1                    | 2                 | 0.50                    | 0.62 | 0.75 | 1.00 | 1.25 | 1.50 | 2.25  |  |
| J                            | 1                                      | 1                    | 2                 | 1.75                    | 2.19 | 2.62 | 3.50 | 4.38 | 5.25 | 7.88  |  |
| K                            | 2                                      | 2                    | 3                 | 1.75                    | 2.19 | 2.62 | 3.50 | 4.38 | 5.25 | 7.88  |  |
| L                            | 2                                      | 2                    | 4                 | 1.50                    | 1.88 | 2.25 | 3.00 | 3.75 | 4.50 | 6.75  |  |
| M                            | 1                                      | 1                    | 2                 | 1.94                    | 2.42 | 2.91 | 3.88 | 4.84 | 5.81 | 8.72  |  |
| N                            | 1                                      | 1                    | 2                 | 1.69                    | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59  |  |
| O                            | 1                                      | 2                    | 2                 | 1.81                    | 2.27 | 2.72 | 3.62 | 4.53 | 5.44 | 8.16  |  |
| P                            | 1                                      | 2                    | 2                 | 1.69                    | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59  |  |
| Q                            | 1                                      | 2                    | 2                 | 1.81                    | 2.27 | 2.72 | 3.62 | 4.53 | 5.44 | 8.16  |  |
| R                            | 1                                      | 2                    | 2                 | 1.69                    | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59  |  |
| S                            | 1                                      | 2                    | 2                 | 1.69                    | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59  |  |
| T                            | 2                                      | 2                    | 4                 | 1.50                    | 1.88 | 2.25 | 3.00 | 3.75 | 4.50 | 6.75  |  |
| U                            | 1                                      | 1                    | 2                 | 1.69                    | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59  |  |
| V                            | 2                                      | 2                    | 4                 | 1.84                    | 2.30 | 2.77 | 3.69 | 4.61 | 5.53 | 8.31  |  |
| W                            | 2                                      | 2                    | 4                 | 2.50                    | 3.12 | 3.75 | 5.00 | 6.25 | 7.50 | 11.25 |  |
| X                            | 2                                      | 2                    | 3                 | 1.84                    | 2.30 | 2.77 | 3.69 | 4.61 | 5.53 | 8.31  |  |
| Y                            | 2                                      | 2                    | 4                 | 2.12                    | 2.66 | 3.19 | 4.25 | 5.31 | 6.38 | 9.56  |  |
| Z                            | 2                                      | 2                    | 3                 | 1.69                    | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59  |  |

| TABLE II                       |       |                   |       | TABLE V                  |      |      |      |      |      |      |  |
|--------------------------------|-------|-------------------|-------|--------------------------|------|------|------|------|------|------|--|
| NUMERAL TO NUMERAL CODE NUMBER |       |                   |       | WIDTH of NUMERALS        |      |      |      |      |      |      |  |
| Following numeral              |       |                   |       | Numeral height in inches |      |      |      |      |      |      |  |
| Preceding Numeral              | 1, 5, | 2, 3, 6, 8, 9, 0, | 4, 7, | 4"                       | 5"   | 6"   | 8"   | 10"  | 12"  | 18"  |  |
| 1                              | 1     | 1                 | 2     | 0.81                     | 1.02 | 1.22 | 1.62 | 2.03 | 2.44 | 3.66 |  |
| 2                              | 1     | 2                 | 2     | 1.69                     | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59 |  |
| 3                              | 1     | 2                 | 2     | 1.69                     | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59 |  |
| 4                              | 2     | 2                 | 4     | 1.94                     | 2.42 | 2.91 | 3.88 | 4.84 | 5.81 | 8.72 |  |
| 5                              | 1     | 2                 | 2     | 1.69                     | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59 |  |
| 6                              | 1     | 2                 | 2     | 1.69                     | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59 |  |
| 7                              | 2     | 2                 | 4     | 1.69                     | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59 |  |
| 8                              | 1     | 2                 | 2     | 1.69                     | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59 |  |
| 9                              | 1     | 2                 | 2     | 1.69                     | 2.11 | 2.53 | 3.38 | 4.22 | 5.06 | 7.59 |  |
| 0                              | 1     | 2                 | 2     | 1.81                     | 2.27 | 2.72 | 3.62 | 4.53 | 5.44 | 8.16 |  |

| TABLE III       |                        | TABLE VI                                                                                                                                              |      |      |      |                          |      |      |      |     |
|-----------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|--------------------------|------|------|------|-----|
| WIDTH of STROKE |                        | SPACE in inches measured horizontally from the extreme right edge of the preceding letter to the extreme left edge of the following letter (numeral). |      |      |      |                          |      |      |      |     |
| Letter Height   | Stroke Width in inches | CODE NUMBER                                                                                                                                           | 4"   | 5"   | 6"   | Letter or numeral height | 8"   | 10"  | 12"  | 18" |
| 4"              | 0.50                   | 1                                                                                                                                                     | 0.75 | 0.94 | 1.13 | 1.50                     | 1.88 | 2.25 | 3.37 |     |
| 5"              | 0.62                   | 2                                                                                                                                                     | 0.60 | 0.75 | 0.90 | 1.20                     | 1.50 | 1.80 | 2.70 |     |
| 6"              | 0.75                   | 3                                                                                                                                                     | 0.40 | 0.50 | 0.60 | 0.80                     | 1.00 | 1.20 | 1.80 |     |
| 8"              | 1.00                   | 4                                                                                                                                                     | 0.20 | 0.25 | 0.30 | 0.40                     | 0.50 | 0.60 | 0.90 |     |
| 10"             | 1.25                   |                                                                                                                                                       |      |      |      |                          |      |      |      |     |
| 12"             | 1.50                   |                                                                                                                                                       |      |      |      |                          |      |      |      |     |
| 18"             | 2.25                   |                                                                                                                                                       |      |      |      |                          |      |      |      |     |

# SERIES C

## LETTER & NUMERAL WIDTHS and SPACE between letters or numerals

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 I<br>LETTER TO LETTER CODE NUMBER<br>Following Letter |                                                 |                            |                      | TABLE IV<br>WIDTH of LETTER<br>in inches |      |      |      |      |      |      |       |
|-------------------------------------------------------------|-------------------------------------------------|----------------------------|----------------------|------------------------------------------|------|------|------|------|------|------|-------|
| Preceding Letter                                            | B, D, E, F,<br>H, I, K, L,<br>M, N, P, R,<br>U, | C, G, O,<br>Q, S, X,<br>Z, | A, J, T,<br>V, W, Y, | Letter height                            |      |      |      |      |      |      |       |
|                                                             |                                                 |                            |                      | 4"                                       | 5"   | 6"   | 8"   | 10"  | 12"  | 18"  |       |
| A                                                           | 2                                               | 2                          | 4                    | A                                        | 2.50 | 3.12 | 3.75 | 5.00 | 6.25 | 7.50 | 11.25 |
| B                                                           | 1                                               | 2                          | 2                    | B                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| C                                                           | 2                                               | 2                          | 3                    | C                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| D                                                           | 1                                               | 2                          | 2                    | D                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| E                                                           | 2                                               | 2                          | 3                    | E                                        | 2.00 | 2.50 | 3.00 | 4.00 | 5.00 | 6.00 | 9.00  |
| F                                                           | 2                                               | 2                          | 3                    | F                                        | 2.00 | 2.50 | 3.00 | 4.00 | 5.00 | 6.00 | 9.00  |
| G                                                           | 1                                               | 2                          | 2                    | G                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| H                                                           | 1                                               | 1                          | 2                    | H                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| I                                                           | 1                                               | 1                          | 2                    | I                                        | 0.56 | 0.70 | 0.84 | 1.12 | 1.41 | 1.69 | 2.53  |
| J                                                           | 1                                               | 1                          | 2                    | J                                        | 2.00 | 2.50 | 3.00 | 4.00 | 5.00 | 6.00 | 9.00  |
| K                                                           | 2                                               | 2                          | 3                    | K                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| L                                                           | 2                                               | 2                          | 4                    | L                                        | 2.00 | 2.50 | 3.00 | 4.00 | 5.00 | 6.00 | 9.00  |
| M                                                           | 1                                               | 1                          | 2                    | M                                        | 2.59 | 3.23 | 3.89 | 5.19 | 6.48 | 7.78 | 11.67 |
| N                                                           | 1                                               | 1                          | 2                    | N                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| O                                                           | 1                                               | 2                          | 2                    | O                                        | 2.31 | 2.89 | 3.47 | 4.62 | 5.78 | 6.94 | 10.41 |
| P                                                           | 1                                               | 2                          | 2                    | P                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| Q                                                           | 1                                               | 2                          | 2                    | Q                                        | 2.31 | 2.89 | 3.47 | 4.62 | 5.78 | 6.94 | 10.41 |
| R                                                           | 1                                               | 2                          | 2                    | R                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| S                                                           | 1                                               | 2                          | 2                    | S                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| T                                                           | 2                                               | 2                          | 4                    | T                                        | 2.00 | 2.50 | 3.00 | 4.00 | 5.00 | 6.00 | 9.00  |
| U                                                           | 1                                               | 1                          | 2                    | U                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| V                                                           | 2                                               | 2                          | 4                    | V                                        | 2.44 | 3.05 | 3.66 | 4.88 | 6.09 | 7.31 | 10.97 |
| W                                                           | 2                                               | 2                          | 4                    | W                                        | 3.00 | 3.75 | 4.50 | 6.00 | 7.50 | 9.00 | 13.50 |
| X                                                           | 2                                               | 2                          | 3                    | X                                        | 2.34 | 2.92 | 3.52 | 4.69 | 5.86 | 7.03 | 10.56 |
| Y                                                           | 2                                               | 2                          | 4                    | Y                                        | 2.50 | 3.12 | 3.75 | 5.00 | 6.25 | 7.50 | 11.25 |
| Z                                                           | 2                                               | 2                          | 3                    | Z                                        | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |

  

| TABLE II<br>NUMERAL TO NUMERAL CODE NUMBER<br>Following Numeral |       |                      |       | TABLE V<br>WIDTH of NUMERALS<br>in inches |      |      |      |      |      |      |       |
|-----------------------------------------------------------------|-------|----------------------|-------|-------------------------------------------|------|------|------|------|------|------|-------|
| Preceding Numeral                                               | 1, 5, | 2, 3, 6,<br>8, 9, 0, | 4, 7, | Numeral height                            |      |      |      |      |      |      |       |
|                                                                 |       |                      |       | 4"                                        | 5"   | 6"   | 8"   | 10"  | 12"  | 18"  |       |
| 1                                                               | 1     | 1                    | 2     | 1                                         | 0.81 | 1.02 | 1.22 | 1.62 | 2.03 | 2.44 | 3.66  |
| 2                                                               | 1     | 2                    | 2     | 2                                         | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| 3                                                               | 1     | 2                    | 2     | 3                                         | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| 4                                                               | 2     | 2                    | 4     | 4                                         | 2.44 | 3.05 | 3.66 | 4.88 | 6.09 | 7.31 | 10.97 |
| 5                                                               | 1     | 2                    | 2     | 5                                         | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| 6                                                               | 1     | 2                    | 2     | 6                                         | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| 7                                                               | 2     | 2                    | 4     | 7                                         | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| 8                                                               | 1     | 2                    | 2     | 8                                         | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| 9                                                               | 1     | 2                    | 2     | 9                                         | 2.19 | 2.73 | 3.28 | 4.38 | 5.47 | 6.56 | 9.84  |
| 0                                                               | 1     | 2                    | 2     | 0                                         | 2.31 | 2.89 | 3.47 | 4.62 | 5.78 | 6.94 | 10.41 |

  

| TABLE III<br>WIDTH of STROKE |                        | TABLE VI<br>SPACE in inches measured horizontally from the extreme right edge of the preceding letter to the extreme left edge of the following letter (numeral). |      |      |      |      |      |      |      |
|------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|------|------|
| Letter Height                | Stroke Width in inches | CODE NUMBER                                                                                                                                                       | 4"   | 5"   | 6"   | 8"   | 10"  | 12"  | 18"  |
| 4"                           | 0.56                   | 1                                                                                                                                                                 | 0.84 | 1.05 | 1.26 | 1.68 | 2.11 | 2.53 | 3.79 |
| 5"                           | 0.70                   | 2                                                                                                                                                                 | 0.67 | 0.84 | 1.01 | 1.34 | 1.69 | 2.03 | 3.04 |
| 6"                           | 0.84                   | 3                                                                                                                                                                 | 0.45 | 0.56 | 0.68 | 0.90 | 1.12 | 1.36 | 2.04 |
| 8"                           | 1.12                   | 4                                                                                                                                                                 | 0.22 | 0.28 | 0.34 | 0.44 | 0.56 | 0.68 | 1.02 |
| 10"                          | 1.41                   |                                                                                                                                                                   |      |      |      |      |      |      |      |
| 12"                          | 1.69                   |                                                                                                                                                                   |      |      |      |      |      |      |      |
| 18"                          | 2.53                   |                                                                                                                                                                   |      |      |      |      |      |      |      |



# LETTER & NUMERAL WIDTHS and SPACE between letters or numerals

**SERIES D**

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 I                      |                                        |                      |                   | TABLE IV        |      |           |      |      |      |       |       |
|------------------------------|----------------------------------------|----------------------|-------------------|-----------------|------|-----------|------|------|------|-------|-------|
| LETTER TO LETTER CODE NUMBER |                                        |                      |                   | WIDTH of LETTER |      |           |      |      |      |       |       |
| Preceding Letter             | Following Letter                       |                      |                   | Letter height   |      | In inches |      |      |      |       |       |
|                              | 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, | 4"              | 5"   | 6"        | 8"   | 10"  | 12"  | 18"   |       |
| A                            | 2                                      | 2                    | 4                 | A               | 3.34 | 4.19      | 5.02 | 6.69 | 8.36 | 10.03 | 15.06 |
| B                            | 1                                      | 2                    | 2                 | B               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |
| C                            | 2                                      | 2                    | 3                 | C               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |
| D                            | 1                                      | 2                    | 2                 | D               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |
| E                            | 2                                      | 2                    | 3                 | E               | 2.44 | 3.05      | 3.66 | 4.88 | 6.09 | 7.31  | 10.97 |
| F                            | 2                                      | 2                    | 3                 | F               | 2.44 | 3.05      | 3.66 | 4.88 | 6.09 | 7.31  | 10.97 |
| G                            | 1                                      | 2                    | 2                 | G               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |
| H                            | 1                                      | 1                    | 2                 | H               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |
| I                            | 1                                      | 1                    | 2                 | I               | 0.62 | 0.78      | 0.94 | 1.25 | 1.56 | 1.88  | 2.81  |
| J                            | 1                                      | 1                    | 2                 | J               | 2.50 | 3.12      | 3.75 | 5.00 | 6.25 | 7.50  | 11.25 |
| K                            | 2                                      | 2                    | 3                 | K               | 2.75 | 3.44      | 4.12 | 5.50 | 6.88 | 8.25  | 12.38 |
| L                            | 2                                      | 2                    | 4                 | L               | 2.44 | 3.05      | 3.66 | 4.88 | 6.09 | 7.31  | 10.97 |
| M                            | 1                                      | 1                    | 2                 | M               | 3.09 | 3.86      | 4.64 | 6.19 | 7.73 | 9.28  | 13.94 |
| N                            | 1                                      | 1                    | 2                 | N               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |
| O                            | 1                                      | 2                    | 2                 | O               | 2.81 | 3.50      | 4.22 | 5.62 | 7.03 | 8.44  | 12.66 |
| P                            | 1                                      | 2                    | 2                 | P               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |
| Q                            | 1                                      | 2                    | 2                 | Q               | 2.81 | 3.50      | 4.22 | 5.62 | 7.03 | 8.44  | 12.66 |
| R                            | 1                                      | 2                    | 2                 | R               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |
| S                            | 1                                      | 2                    | 2                 | S               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |
| T                            | 2                                      | 2                    | 4                 | T               | 2.44 | 3.05      | 3.66 | 4.88 | 6.09 | 7.31  | 10.97 |
| U                            | 1                                      | 1                    | 2                 | U               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |
| V                            | 2                                      | 2                    | 4                 | V               | 3.00 | 3.75      | 4.50 | 6.00 | 7.50 | 9.00  | 13.50 |
| W                            | 2                                      | 2                    | 4                 | W               | 3.50 | 4.38      | 5.25 | 7.00 | 8.75 | 10.50 | 15.75 |
| X                            | 2                                      | 2                    | 3                 | X               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |
| Y                            | 2                                      | 2                    | 4                 | Y               | 3.38 | 4.22      | 5.06 | 6.75 | 8.44 | 10.12 | 15.19 |
| Z                            | 2                                      | 2                    | 3                 | Z               | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06  | 12.09 |

| TABLE II                       |                   |                   |       | TABLE V           |      |           |      |      |      |      |       |
|--------------------------------|-------------------|-------------------|-------|-------------------|------|-----------|------|------|------|------|-------|
| NUMERAL TO NUMERAL CODE NUMBER |                   |                   |       | WIDTH of NUMERALS |      |           |      |      |      |      |       |
| Preceding Numeral              | Following Numeral |                   |       | Numeral height    |      | in inches |      |      |      |      |       |
|                                | 1, 5,             | 2, 3, 6, 8, 9, 0, | 4, 7, | 4"                | 5"   | 6"        | 8"   | 10"  | 12"  | 18"  |       |
| 1                              | 1                 | 1                 | 2     | 1                 | 0.97 | 1.20      | 1.45 | 1.94 | 2.42 | 2.91 | 4.38  |
| 2                              | 1                 | 2                 | 2     | 2                 | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06 | 12.09 |
| 3                              | 1                 | 2                 | 2     | 3                 | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06 | 12.09 |
| 4                              | 2                 | 2                 | 4     | 4                 | 2.94 | 3.67      | 4.41 | 5.88 | 7.34 | 8.81 | 13.22 |
| 5                              | 1                 | 2                 | 2     | 5                 | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06 | 12.09 |
| 6                              | 1                 | 2                 | 2     | 6                 | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06 | 12.09 |
| 7                              | 2                 | 2                 | 4     | 7                 | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06 | 12.09 |
| 8                              | 1                 | 2                 | 2     | 8                 | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06 | 12.09 |
| 9                              | 1                 | 2                 | 2     | 9                 | 2.69 | 3.36      | 4.03 | 5.38 | 6.72 | 8.06 | 12.09 |
| 0                              | 1                 | 2                 | 2     | 0                 | 2.81 | 3.50      | 4.22 | 5.62 | 7.03 | 8.44 | 12.66 |

| TABLE III       |                        | TABLE VI                                                                                                                                              |      |      |      |      |      |      |      |
|-----------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|------|------|
| WIDTH of STROKE |                        | SPACE in inches measured horizontally from the extreme right edge of the preceding letter to the extreme left edge of the following letter (numeral). |      |      |      |      |      |      |      |
| Letter Height   | Stroke Width in inches | CODE NUMBER                                                                                                                                           | 4"   | 5"   | 6"   | 8"   | 10"  | 12"  | 18"  |
| 4"              | 0.62                   | 1                                                                                                                                                     | 0.94 | 1.17 | 1.41 | 1.88 | 2.34 | 2.81 | 4.22 |
| 5"              | 0.78                   | 2                                                                                                                                                     | 0.75 | 0.94 | 1.12 | 1.50 | 1.88 | 2.25 | 3.38 |
| 6"              | 0.94                   | 3                                                                                                                                                     | 0.50 | 0.62 | 0.75 | 1.00 | 1.25 | 1.50 | 2.25 |
| 8"              | 1.25                   | 4                                                                                                                                                     | 0.25 | 0.31 | 0.38 | 0.50 | 0.62 | 0.75 | 1.12 |
| 10"             | 1.56                   |                                                                                                                                                       |      |      |      |      |      |      |      |
| 12"             | 1.88                   |                                                                                                                                                       |      |      |      |      |      |      |      |
| 18"             | 2.81                   |                                                                                                                                                       |      |      |      |      |      |      |      |

# SERIES E

## LETTER & NUMERAL WIDTHS and SPACE between letters or numerals

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 I<br>LETTER TO LETTER CODE NUMBER |                                                 |                            |                      |  | TABLE IV<br>WIDTH of LETTER |      |      |      |       |       |       |  |
|-----------------------------------------|-------------------------------------------------|----------------------------|----------------------|--|-----------------------------|------|------|------|-------|-------|-------|--|
| Following Letter                        |                                                 |                            |                      |  | in inches                   |      |      |      |       |       |       |  |
| Preceding Letter                        | B, D, E, F,<br>H, I, K, L,<br>M, N, P, R,<br>U, | C, G, O,<br>Q, S, X,<br>Z, | A, J, T,<br>V, W, Y, |  | Letter height               |      |      |      |       |       |       |  |
|                                         |                                                 |                            |                      |  | 4"                          | 5"   | 6"   | 8"   | 10"   | 12"   | 18"   |  |
| A                                       | 2                                               | 2                          | 4                    |  | 4.00                        | 5.00 | 6.00 | 8.00 | 10.00 | 12.00 | 18.00 |  |
| B                                       | 1                                               | 2                          | 2                    |  | 3.19                        | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |  |
| C                                       | 2                                               | 2                          | 3                    |  | 3.19                        | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |  |
| D                                       | 1                                               | 2                          | 2                    |  | 3.19                        | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |  |
| E                                       | 2                                               | 2                          | 3                    |  | 2.94                        | 3.67 | 4.41 | 5.88 | 7.34  | 8.81  | 13.22 |  |
| F                                       | 2                                               | 2                          | 3                    |  | 2.94                        | 3.67 | 4.41 | 5.88 | 7.34  | 8.81  | 13.22 |  |
| G                                       | 1                                               | 2                          | 2                    |  | 3.19                        | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |  |
| H                                       | 1                                               | 1                          | 2                    |  | 3.19                        | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |  |
| I                                       | 1                                               | 1                          | 2                    |  | 0.69                        | 0.86 | 1.03 | 1.38 | 1.72  | 2.06  | 3.09  |  |
| J                                       | 1                                               | 1                          | 2                    |  | 3.00                        | 3.75 | 4.50 | 6.00 | 7.50  | 9.00  | 13.50 |  |
| K                                       | 2                                               | 2                          | 3                    |  | 3.25                        | 4.06 | 4.88 | 6.50 | 8.12  | 9.75  | 14.62 |  |
| L                                       | 2                                               | 2                          | 4                    |  | 2.94                        | 3.67 | 4.41 | 5.88 | 7.34  | 8.81  | 13.22 |  |
| M                                       | 1                                               | 1                          | 2                    |  | 3.69                        | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |  |
| N                                       | 1                                               | 1                          | 2                    |  | 3.19                        | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |  |
| O                                       | 1                                               | 2                          | 2                    |  | 3.31                        | 4.14 | 4.97 | 6.62 | 8.28  | 9.94  | 14.91 |  |
| P                                       | 1                                               | 2                          | 2                    |  | 3.19                        | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |  |
| Q                                       | 1                                               | 2                          | 2                    |  | 3.31                        | 4.14 | 4.97 | 6.62 | 8.28  | 9.94  | 14.91 |  |
| R                                       | 1                                               | 2                          | 2                    |  | 3.19                        | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |  |
| S                                       | 1                                               | 2                          | 2                    |  | 3.19                        | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |  |
| T                                       | 2                                               | 2                          | 4                    |  | 2.94                        | 3.67 | 4.41 | 5.88 | 7.34  | 8.81  | 13.22 |  |
| U                                       | 1                                               | 1                          | 2                    |  | 3.19                        | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |  |
| V                                       | 2                                               | 2                          | 4                    |  | 3.62                        | 4.53 | 5.44 | 7.25 | 9.06  | 10.88 | 16.31 |  |
| W                                       | 2                                               | 2                          | 4                    |  | 4.19                        | 5.23 | 6.28 | 8.38 | 10.47 | 12.56 | 18.84 |  |
| X                                       | 2                                               | 2                          | 3                    |  | 3.44                        | 4.30 | 5.16 | 6.88 | 8.59  | 10.31 | 15.47 |  |
| Y                                       | 2                                               | 2                          | 4                    |  | 4.00                        | 5.00 | 6.00 | 8.00 | 10.00 | 12.00 | 18.00 |  |
| Z                                       | 2                                               | 2                          | 3                    |  | 3.19                        | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |  |

  

| TABLE II<br>NUMERAL TO NUMERAL CODE LETTER |       |                      |       |  | TABLE V<br>WIDTH of NUMERALS |      |      |      |      |       |       |  |
|--------------------------------------------|-------|----------------------|-------|--|------------------------------|------|------|------|------|-------|-------|--|
| Following Numeral                          |       |                      |       |  | in inches                    |      |      |      |      |       |       |  |
| Preceding Numeral                          | 1, 5, | 2, 3, 6,<br>8, 9, 0, | 4, 7, |  | Numeral height               |      |      |      |      |       |       |  |
|                                            |       |                      |       |  | 4"                           | 5"   | 6"   | 8"   | 10"  | 12"   | 18"   |  |
| 1                                          | 1     | 1                    | 2     |  | 1.19                         | 1.48 | 1.78 | 2.38 | 2.97 | 3.56  | 5.34  |  |
| 2                                          | 1     | 1                    | 2     |  | 3.19                         | 3.98 | 4.78 | 6.38 | 7.97 | 9.56  | 14.34 |  |
| 3                                          | 1     | 2                    | 2     |  | 3.19                         | 3.98 | 4.78 | 6.38 | 7.97 | 9.56  | 14.34 |  |
| 4                                          | 2     | 2                    | 4     |  | 3.69                         | 4.61 | 5.53 | 7.38 | 9.22 | 11.06 | 16.59 |  |
| 5                                          | 1     | 1                    | 2     |  | 3.19                         | 3.98 | 4.78 | 6.38 | 7.97 | 9.56  | 14.34 |  |
| 6                                          | 1     | 2                    | 2     |  | 3.19                         | 3.98 | 4.78 | 6.38 | 7.97 | 9.56  | 14.34 |  |
| 7                                          | 2     | 2                    | 4     |  | 3.19                         | 3.98 | 4.78 | 6.38 | 7.97 | 9.56  | 14.34 |  |
| 8                                          | 1     | 2                    | 2     |  | 3.19                         | 3.98 | 4.78 | 6.38 | 7.97 | 9.56  | 14.34 |  |
| 9                                          | 1     | 2                    | 2     |  | 3.19                         | 3.98 | 4.78 | 6.38 | 7.97 | 9.56  | 14.34 |  |
| 0                                          | 1     | 2                    | 2     |  | 3.31                         | 4.14 | 4.97 | 6.62 | 8.28 | 9.94  | 14.91 |  |

  

| TABLE III<br>WIDTH of STROKE |                        | TABLE VI<br>SPACE in inches measured horizontally from the extreme right edge of the preceding letter to the extreme left edge of the following letter (numeral). |      |      |      |      |      |      |      |
|------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|------|------|
| Letter Height                | Stroke Width in inches | CODE NUMBER                                                                                                                                                       | 4"   | 5"   | 6"   | 8"   | 10"  | 12"  | 18"  |
| 4"                           | 0.69                   | 1                                                                                                                                                                 | 1.03 | 1.29 | 1.55 | 2.05 | 2.58 | 3.09 | 4.64 |
| 5"                           | 0.86                   | 2                                                                                                                                                                 | 0.82 | 1.03 | 1.24 | 1.65 | 2.06 | 2.48 | 3.71 |
| 6"                           | 1.03                   | 3                                                                                                                                                                 | 0.55 | 0.69 | 0.82 | 1.10 | 1.37 | 1.65 | 2.47 |
| 8"                           | 1.38                   | 4                                                                                                                                                                 | 0.28 | 0.34 | 0.41 | 0.55 | 0.68 | 0.82 | 1.24 |
| 10"                          | 1.72                   |                                                                                                                                                                   |      |      |      |      |      |      |      |
| 12"                          | 2.06                   |                                                                                                                                                                   |      |      |      |      |      |      |      |
| 18"                          | 3.09                   |                                                                                                                                                                   |      |      |      |      |      |      |      |

# LETTER & NUMERAL WIDTHS and SPACE between letters or numerals

**SERIES F**

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 I                      |                                        |                      |                   | TABLE IV                |      |      |      |      |       |       |       |
|------------------------------|----------------------------------------|----------------------|-------------------|-------------------------|------|------|------|------|-------|-------|-------|
| LETTER TO LETTER CODE NUMBER |                                        |                      |                   | WIDTH of LETTER         |      |      |      |      |       |       |       |
| Following Letter             |                                        |                      |                   | Letter height in inches |      |      |      |      |       |       |       |
| Preceding 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, | 4"                      | 5"   | 6"   | 8"   | 10"  | 12"   | 18"   |       |
| A                            | 2                                      | 2                    | 4                 | A                       | 4.50 | 5.62 | 6.75 | 9.00 | 11.25 | 13.50 | 20.25 |
| B                            | 1                                      | 2                    | 2                 | B                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| C                            | 2                                      | 2                    | 3                 | C                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| D                            | 1                                      | 2                    | 2                 | D                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| E                            | 2                                      | 2                    | 3                 | E                       | 3.19 | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |
| F                            | 2                                      | 2                    | 3                 | F                       | 3.19 | 3.98 | 4.78 | 6.38 | 7.97  | 9.56  | 14.34 |
| G                            | 1                                      | 2                    | 2                 | G                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| H                            | 1                                      | 1                    | 2                 | H                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| I                            | 1                                      | 1                    | 2                 | I                       | 0.75 | 0.94 | 1.12 | 1.50 | 1.88  | 2.25  | 3.38  |
| J                            | 1                                      | 1                    | 2                 | J                       | 3.25 | 4.06 | 4.98 | 6.50 | 8.12  | 9.75  | 14.62 |
| K                            | 2                                      | 2                    | 3                 | K                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| L                            | 2                                      | 2                    | 4                 | L                       | 3.38 | 4.22 | 5.06 | 6.75 | 8.44  | 10.12 | 15.19 |
| M                            | 1                                      | 1                    | 2                 | M                       | 4.25 | 5.31 | 6.38 | 8.50 | 10.62 | 12.75 | 19.12 |
| N                            | 1                                      | 1                    | 2                 | N                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| O                            | 1                                      | 2                    | 2                 | O                       | 4.12 | 5.16 | 6.19 | 8.25 | 10.32 | 12.38 | 18.56 |
| P                            | 1                                      | 2                    | 2                 | P                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| Q                            | 1                                      | 2                    | 2                 | Q                       | 4.12 | 5.16 | 6.19 | 8.25 | 10.32 | 12.38 | 18.56 |
| R                            | 1                                      | 2                    | 2                 | R                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| S                            | 1                                      | 2                    | 2                 | S                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| T                            | 2                                      | 2                    | 4                 | T                       | 3.38 | 4.22 | 5.06 | 6.75 | 8.44  | 10.12 | 15.19 |
| U                            | 1                                      | 1                    | 2                 | U                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| V                            | 2                                      | 2                    | 4                 | V                       | 4.12 | 5.16 | 6.19 | 8.25 | 10.32 | 12.38 | 18.56 |
| W                            | 2                                      | 2                    | 4                 | W                       | 4.62 | 5.78 | 6.94 | 9.25 | 11.56 | 13.88 | 20.81 |
| X                            | 2                                      | 2                    | 3                 | X                       | 4.00 | 5.00 | 6.00 | 8.00 | 10.00 | 12.00 | 18.00 |
| Y                            | 2                                      | 2                    | 4                 | Y                       | 4.50 | 5.62 | 6.75 | 9.00 | 11.25 | 13.50 | 20.25 |
| Z                            | 2                                      | 2                    | 3                 | Z                       | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |

| TABLE II                       |       |                   |       | TABLE V                  |      |      |      |      |       |       |       |
|--------------------------------|-------|-------------------|-------|--------------------------|------|------|------|------|-------|-------|-------|
| NUMERAL TO NUMERAL CODE LETTER |       |                   |       | WIDTH of NUMERALS        |      |      |      |      |       |       |       |
| Following Numeral              |       |                   |       | Numeral height in inches |      |      |      |      |       |       |       |
| Preceding Numeral              | 1, 5, | 2, 3, 6, 8, 9, 0, | 4, 7, | 4"                       | 5"   | 6"   | 8"   | 10"  | 12"   | 18"   |       |
| 1                              | 1     | 1                 | 2     | 1                        | 1.31 | 1.64 | 1.97 | 2.62 | 3.28  | 3.94  | 5.91  |
| 2                              | 1     | 2                 | 2     | 2                        | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| 3                              | 1     | 2                 | 2     | 3                        | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| 4                              | 2     | 2                 | 4     | 4                        | 4.00 | 5.00 | 6.00 | 8.00 | 10.00 | 12.00 | 18.00 |
| 5                              | 1     | 2                 | 2     | 5                        | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| 6                              | 1     | 2                 | 2     | 6                        | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| 7                              | 2     | 2                 | 4     | 7                        | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| 8                              | 1     | 2                 | 2     | 8                        | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| 9                              | 1     | 2                 | 2     | 9                        | 3.69 | 4.61 | 5.53 | 7.38 | 9.22  | 11.06 | 16.59 |
| 0                              | 1     | 2                 | 2     | 0                        | 3.81 | 4.77 | 5.72 | 7.62 | 9.53  | 11.44 | 17.16 |

| TABLE III       |                        | TABLE VI                                                                                                                                              |      |      |      |      |      |      |      |
|-----------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|------|------|
| WIDTH of STROKE |                        | SPACE in inches measured horizontally from the extreme right edge of the preceding letter to the extreme left edge of the following letter (numeral). |      |      |      |      |      |      |      |
| Letter Height   | Stroke Width in inches | CODE NUMBER                                                                                                                                           | 4"   | 5"   | 6"   | 8"   | 10"  | 12"  | 18"  |
| 4"              | 5.1 0.75               | 1                                                                                                                                                     | 1.13 | 1.41 | 1.69 | 2.25 | 2.71 | 3.37 | 5.06 |
| 5"              | 0.94                   |                                                                                                                                                       | 0.90 | 1.13 | 1.35 | 1.80 | 2.25 | 2.70 | 4.05 |
| 6"              | 1.12                   |                                                                                                                                                       | 0.60 | 0.75 | 0.90 | 1.20 | 1.50 | 1.80 | 2.70 |
| 8"              | 1.50                   |                                                                                                                                                       | 0.30 | 0.38 | 0.45 | 0.60 | 0.75 | 0.90 | 1.35 |
| 10"             | 1.88                   | 2                                                                                                                                                     |      |      |      |      |      |      |      |
| 12"             | 2.25                   |                                                                                                                                                       |      |      |      |      |      |      |      |
| 18"             | 3.38                   |                                                                                                                                                       |      |      |      |      |      |      |      |



SECTION **2**

**STANDARD**  
**lower case**  
**ALPHABETS**  
**for Highway Signs**

## STANDARD

# lower case

## ALPHABETS

### for Highway Signs

The Standard LOWERCASE Alphabet for Highway Signs has been prepared by the Bureau of Public Roads for the American Association of State Highway Officials. It is based on the research and development of the California Division of Highways. The alphabet is the approved standard for directional signs on the National System of Interstate and Defense Highways.

The letters are printed in exact detail for two-inch letter height, having a nominal loop height of one and one-half inches. These letters may be enlarged to the desired letter height with any conventional enlarging process such as: photographic, shadowgraph or by manual transfer and the letters will remain in the proper proportion. A one-quarter inch grid has been superimposed on the letters to facilitate the enlarging process. For example, to obtain six inch letters, enlarge the grid squares to three-quarters of one inch.

The *"Manual for Signing and Marking of the National System of Interstate and Defense Highways"* specifies that all names of places and highways on guide signs shall be in lowercase letters with initial capitals. The initial capital letters shall be one-third higher than the nominal lowercase loop height. Also, the *"Manual on Uniform Traffic Control Devices for Streets and Highways"* states that lowercase letters are an equally acceptable alternate to capital letters for guide signs on other highways.

It is recommended that the initial capitals and numerals used with these lowercase letters be Series E uppercase, but with the stroke width widened to approximately one-fifth of the letter height.

A spacing table is provided at the end of the lowercase alphabet series. The recommended dimension for space between any combination of letters may be obtained directly for most standard letter heights. This space is the distance measured horizontally between the extreme right edge of the preceding letter and the extreme left edge of the following letter. No part of these letters may be extended into this space.

All letters having an arc at the top or bottom are extended slightly above or below the grid lines. This is in accord with accepted practice for rounded letters.

If the design of a particular letter in a given size is incompatible with the manufacturing process, minor modifications may be made.

a b c

d e f

g h i



lower case

j k l

m n o

p q r

**s t u**

**v w x**

**y z**

# SPACING TABLE FOR LOWER CASE ALPHABET

To determine the proper space between letters, start on the horizontal line of the preceding letter and proceed to the desired following letter and letter height column, read the space dimension directly. This space is the distance measured horizontally between the extreme right edge of the preceding letter and the extreme left edge of the following letter.

| CAPITAL<br>OR<br>PRECEDING<br>LETTER | Following Letter Letter Height |                 |                 |                 |                        |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | Capital letters shall be 1/2 higher than the normal loop height of the lower-case letters |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|--------------------------------------|--------------------------------|-----------------|-----------------|-----------------|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                      | a c d e<br>g o q               |                 |                 |                 | b h i k l<br>m n p r u |                 |                 |                 | f w             |                 |                 |                 | j               |                 |                 |                 | s t                                                                                       |                 |                 |                 | v y             |                 |                 |                 | x               |                 |                 |                 | z               |                 |                 |                 |
|                                      | 10 <sup>a</sup>                | 12 <sup>a</sup> | 15 <sup>a</sup> | 18 <sup>a</sup> | 10 <sup>a</sup>        | 12 <sup>a</sup> | 15 <sup>a</sup> | 18 <sup>a</sup> | 10 <sup>a</sup> | 12 <sup>a</sup> | 15 <sup>a</sup> | 18 <sup>a</sup> | 10 <sup>a</sup> | 12 <sup>a</sup> | 15 <sup>a</sup> | 18 <sup>a</sup> | 10 <sup>a</sup>                                                                           | 12 <sup>a</sup> | 15 <sup>a</sup> | 18 <sup>a</sup> | 10 <sup>a</sup> | 12 <sup>a</sup> | 15 <sup>a</sup> | 18 <sup>a</sup> | 10 <sup>a</sup> | 12 <sup>a</sup> | 15 <sup>a</sup> | 18 <sup>a</sup> | 10 <sup>a</sup> | 12 <sup>a</sup> | 15 <sup>a</sup> | 18 <sup>a</sup> |
| A W X                                | 3.13                           | 3.75            | 4.75            | 5.63            | 3.50                   | 4.25            | 5.25            | 6.38            | 2.88            | 3.50            | 4.38            | 5.25            | 2.00            | 2.38            | 3.00            | 3.50            | 2.50                                                                                      | 3.00            | 3.75            | 4.50            | 2.13            | 2.50            | 3.13            | 3.75            | 2.50            | 3.00            | 3.75            | 4.50            | 3.25            | 3.88            | 4.88            | 5.75            |
| B                                    | 3.75                           | 4.50            | 5.63            | 6.75            | 4.75                   | 5.75            | 7.13            | 8.63            | 3.50            | 4.25            | 5.25            | 6.38            | 2.50            | 3.00            | 3.75            | 4.50            | 3.50                                                                                      | 4.13            | 5.13            | 6.13            | 2.88            | 3.50            | 4.38            | 5.25            | 2.88            | 3.50            | 4.38            | 5.25            | 3.88            | 4.63            | 5.75            | 6.88            |
| C E G                                | 3.50                           | 4.25            | 5.25            | 6.38            | 4.38                   | 5.25            | 6.50            | 7.88            | 3.25            | 3.88            | 4.88            | 5.75            | 2.25            | 2.75            | 3.50            | 4.13            | 3.13                                                                                      | 3.75            | 4.75            | 5.63            | 3.13            | 3.75            | 4.75            | 5.63            | 3.38            | 4.00            | 5.00            | 6.00            | 3.63            | 4.38            | 5.50            | 6.50            |
| D O Q R                              | 3.50                           | 4.13            | 5.13            | 6.13            | 4.50                   | 5.38            | 6.75            | 8.00            | 3.38            | 4.00            | 5.00            | 6.00            | 2.25            | 2.63            | 3.25            | 3.88            | 3.13                                                                                      | 3.75            | 4.75            | 5.63            | 3.13            | 3.75            | 4.75            | 5.63            | 3.38            | 4.00            | 5.00            | 6.00            | 3.50            | 4.25            | 5.25            | 6.38            |
| F                                    | 1.63                           | 2.00            | 2.50            | 3.00            | 3.38                   | 4.00            | 5.00            | 6.00            | 2.13            | 2.50            | 3.13            | 3.75            | 1.63            | 2.00            | 2.50            | 3.00            | 1.88                                                                                      | 2.25            | 2.75            | 3.38            | 1.88            | 2.25            | 2.75            | 3.38            | 2.00            | 2.38            | 3.00            | 3.50            | 2.50            | 3.00            | 3.75            | 4.50            |
| H I M N                              | 4.63                           | 5.50            | 6.88            | 8.25            | 5.38                   | 6.50            | 8.13            | 9.75            | 4.38            | 5.25            | 6.50            | 7.88            | 3.50            | 4.25            | 5.25            | 6.38            | 4.25                                                                                      | 5.13            | 6.38            | 7.63            | 4.25            | 5.13            | 6.38            | 7.63            | 4.50            | 5.38            | 6.75            | 8.00            | 4.75            | 5.63            | 7.00            | 8.38            |
| J U                                  | 4.50                           | 5.38            | 6.75            | 8.00            | 4.75                   | 5.75            | 7.13            | 8.63            | 4.25            | 5.13            | 6.38            | 7.63            | 3.50            | 4.13            | 5.13            | 6.13            | 4.00                                                                                      | 4.75            | 6.00            | 7.13            | 4.00            | 4.75            | 6.00            | 7.13            | 4.13            | 5.00            | 6.25            | 7.50            | 4.63            | 5.50            | 6.88            | 8.25            |
| K L                                  | 2.75                           | 3.25            | 4.00            | 4.88            | 4.00                   | 4.75            | 6.00            | 7.13            | 2.50            | 3.00            | 3.75            | 4.50            | 1.63            | 1.88            | 2.38            | 2.75            | 2.38                                                                                      | 2.88            | 3.63            | 4.25            | 2.38            | 2.88            | 3.63            | 4.25            | 2.63            | 3.13            | 3.88            | 4.63            | 2.88            | 3.50            | 4.38            | 5.25            |
| P                                    | 3.25                           | 3.88            | 4.88            | 5.75            | 3.75                   | 4.50            | 5.63            | 6.75            | 3.00            | 3.63            | 4.50            | 5.38            | 1.63            | 2.00            | 2.50            | 3.00            | 2.75                                                                                      | 3.25            | 4.00            | 4.88            | 2.75            | 3.25            | 4.00            | 4.88            | 2.88            | 3.50            | 4.38            | 5.25            | 3.13            | 3.75            | 4.75            | 5.63            |
| S                                    | 3.13                           | 3.75            | 4.75            | 5.63            | 4.25                   | 5.13            | 6.38            | 7.63            | 2.88            | 3.50            | 4.38            | 5.25            | 2.13            | 2.50            | 3.13            | 3.75            | 2.88                                                                                      | 3.38            | 4.25            | 5.00            | 2.88            | 3.38            | 4.25            | 5.00            | 3.00            | 3.63            | 4.50            | 5.38            | 3.25            | 3.88            | 4.88            | 5.75            |
| T                                    | 2.50                           | 3.00            | 3.75            | 4.50            | 4.00                   | 4.75            | 6.00            | 7.13            | 2.25            | 2.75            | 3.50            | 4.13            | 1.88            | 2.25            | 2.75            | 3.38            | 2.50                                                                                      | 3.00            | 3.75            | 4.50            | 2.50            | 3.00            | 3.75            | 4.50            | 2.75            | 3.25            | 4.00            | 4.88            | 2.88            | 3.50            | 4.38            | 5.25            |
| V                                    | 2.25                           | 2.75            | 3.50            | 4.13            | 3.75                   | 4.50            | 5.63            | 6.75            | 2.50            | 3.00            | 3.75            | 4.50            | 2.00            | 2.38            | 3.00            | 3.50            | 2.88                                                                                      | 3.38            | 4.25            | 5.00            | 2.88            | 3.38            | 4.25            | 5.00            | 3.00            | 3.63            | 4.50            | 5.38            | 3.25            | 3.88            | 4.88            | 5.75            |
| Y                                    | 1.63                           | 2.00            | 2.50            | 3.00            | 3.38                   | 4.00            | 5.00            | 6.00            | 2.13            | 2.50            | 3.13            | 3.75            | 1.50            | 1.75            | 2.25            | 2.63            | 1.63                                                                                      | 1.88            | 2.38            | 2.88            | 1.63            | 1.88            | 2.38            | 2.88            | 1.88            | 2.25            | 2.75            | 3.38            | 2.75            | 3.25            | 4.00            | 4.88            |
| Z                                    | 4.13                           | 5.00            | 6.25            | 7.50            | 5.00                   | 6.00            | 7.50            | 9.00            | 4.00            | 4.88            | 6.13            | 7.25            | 2.88            | 3.50            | 4.38            | 5.25            | 4.00                                                                                      | 4.75            | 6.00            | 7.13            | 4.00            | 4.75            | 6.00            | 7.13            | 4.13            | 5.00            | 6.25            | 7.50            | 4.38            | 5.25            | 6.50            | 7.88            |
| a d g h i l<br>m n q u               | 4.00                           | 4.88            | 6.13            | 7.25            | 5.13                   | 6.13            | 7.63            | 9.13            | 3.88            | 4.63            | 5.75            | 6.88            | 2.88            | 3.50            | 4.38            | 5.25            | 3.75                                                                                      | 4.50            | 5.63            | 6.75            | 3.75            | 4.50            | 5.63            | 6.75            | 4.00            | 4.75            | 6.00            | 7.13            | 4.13            | 5.00            | 6.25            | 7.50            |
| b f k o p s                          | 2.88                           | 3.50            | 4.38            | 5.25            | 4.00                   | 4.88            | 6.13            | 7.25            | 2.75            | 3.25            | 4.00            | 4.88            | 1.75            | 2.13            | 2.63            | 3.13            | 2.63                                                                                      | 3.13            | 3.88            | 4.63            | 2.63            | 3.13            | 3.88            | 4.63            | 2.88            | 3.38            | 4.25            | 5.00            | 3.00            | 3.63            | 4.50            | 5.38            |
| c e                                  | 3.13                           | 3.75            | 4.75            | 5.63            | 4.13                   | 5.00            | 6.25            | 7.50            | 2.88            | 3.50            | 4.38            | 5.25            | 2.00            | 2.38            | 3.00            | 3.50            | 2.88                                                                                      | 3.38            | 4.25            | 5.00            | 2.88            | 3.38            | 4.25            | 5.00            | 3.00            | 3.63            | 4.50            | 5.38            | 3.25            | 3.88            | 4.88            | 5.75            |
| r                                    | 2.00                           | 2.38            | 3.00            | 3.50            | 3.13                   | 3.75            | 4.75            | 5.63            | 1.88            | 2.25            | 2.75            | 3.38            | 0.87            | 1.00            | 1.25            | 1.50            | 1.63                                                                                      | 2.00            | 2.50            | 3.00            | 1.63            | 2.00            | 2.50            | 3.00            | 1.88            | 2.25            | 2.75            | 3.38            | 2.13            | 2.50            | 3.13            | 3.75            |
| t z                                  | 3.00                           | 3.63            | 4.50            | 5.38            | 4.13                   | 5.00            | 6.25            | 7.50            | 2.88            | 3.38            | 4.25            | 5.00            | 1.88            | 2.25            | 2.75            | 3.38            | 2.75                                                                                      | 3.25            | 4.00            | 4.88            | 2.75            | 3.25            | 4.00            | 4.88            | 2.88            | 3.50            | 4.38            | 5.25            | 3.13            | 3.75            | 4.75            | 5.63            |
| v y                                  | 2.63                           | 3.13            | 3.88            | 4.63            | 3.75                   | 4.50            | 5.63            | 6.75            | 2.38            | 2.88            | 3.63            | 4.25            | 1.50            | 1.75            | 2.25            | 2.63            | 2.25                                                                                      | 2.75            | 3.50            | 4.13            | 2.25            | 2.75            | 3.50            | 4.13            | 2.50            | 3.00            | 3.75            | 4.50            | 2.75            | 3.25            | 4.00            | 4.88            |
| w                                    | 2.75                           | 3.25            | 4.00            | 4.88            | 3.75                   | 4.50            | 5.63            | 6.75            | 2.50            | 3.00            | 3.75            | 4.50            | 1.63            | 1.88            | 2.38            | 2.75            | 2.38                                                                                      | 2.88            | 3.63            | 4.25            | 2.38            | 2.88            | 3.63            | 4.25            | 2.63            | 3.13            | 3.88            | 4.63            | 2.88            | 3.38            | 4.25            | 5.00            |
| x                                    | 2.88                           | 3.38            | 4.25            | 5.00            | 3.88                   | 4.63            | 5.75            | 6.88            | 2.63            | 3.13            | 3.88            | 4.63            | 1.63            | 2.00            | 2.50            | 3.00            | 2.50                                                                                      | 3.00            | 3.75            | 4.50            | 2.50            | 3.00            | 3.75            | 4.50            | 2.75            | 3.25            | 4.00            | 4.88            | 2.88            | 3.50            | 4.38            | 5.25            |



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