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EDITION

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UP-TP
-US DOT FHWA
STANDARD ALPHABETS FOR HIGHWAY SIGNS

Standard Alphabets

FOR HIGHWAY SIGNS

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.872

Reprinted May 1972 by
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC OPERATIONS

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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FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC OPERATIONS

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SECTION **1**

STANDARD
UPPER CASE

ALPHABETS
for Highway Signs

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

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

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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

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

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

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

TABLE III WIDTH of STROKE		TABLE VI 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"					
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								

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 LETTER TO LETTER CODE NUMBER Following Letter				TABLE IV WIDTH of LETTER 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,	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 NUMERAL TO NUMERAL CODE NUMBER Following Numeral				TABLE V WIDTH of NUMERALS in inches							
Preceding Numeral	1, 5,	2, 3, 6, 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 WIDTH of STROKE		TABLE VI 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								

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

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

TABLE III WIDTH of STROKE		TABLE VI 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	4.88	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"	5.31 0.75	1	1.13	1.41	1.69	2.25	2.71	3.37	5.06
5"	0.94	2	0.90	1.13	1.35	1.80	2.25	2.70	4.05
6"	1.12	3	0.60	0.75	0.90	1.20	1.50	1.80	2.70
8"	1.50	4	0.30	0.38	0.45	0.60	0.75	0.90	1.35
10"	1.88								
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

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 OR PRECEDING 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 g o g				b h i k l m n p r u				f w				j				s t				v y				x				z						
	10"	12"	15"	18"	10"	12"	15"	18"	10"	12"	15"	18"	10"	12"	15"	18"	10"	12"	15"	18"	10"	12"	15"	18"	10"	12"	15"	18"	10"	12"	15"	18"	10"	12"	15"
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 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			