	Ø							
	5°	10°	15°	20°	25°	30°	35°	40°
cosØ	0.99619	0.98481	0.96593	0.93969	0.90631	0.86603	0.81915	0.76604
sinØ	0.08716	0.17365	0.25882	0.34202	0.42262	0.50000	0.57358	0.64279
tanØ	0.08749	0.17633	0.26795	0.36397	0.46631	0.57735	0.70021	0.83910

TWO COLUMNS

A = 0.2L

B = 0.6L

THREE COLUMNS

A = 0.15L

B = 0.35L

D = 0.35L

FOUR COLUMNS

A = 0.125L

B = 0.25L

D = 0.25L

E = 0.25L

L =

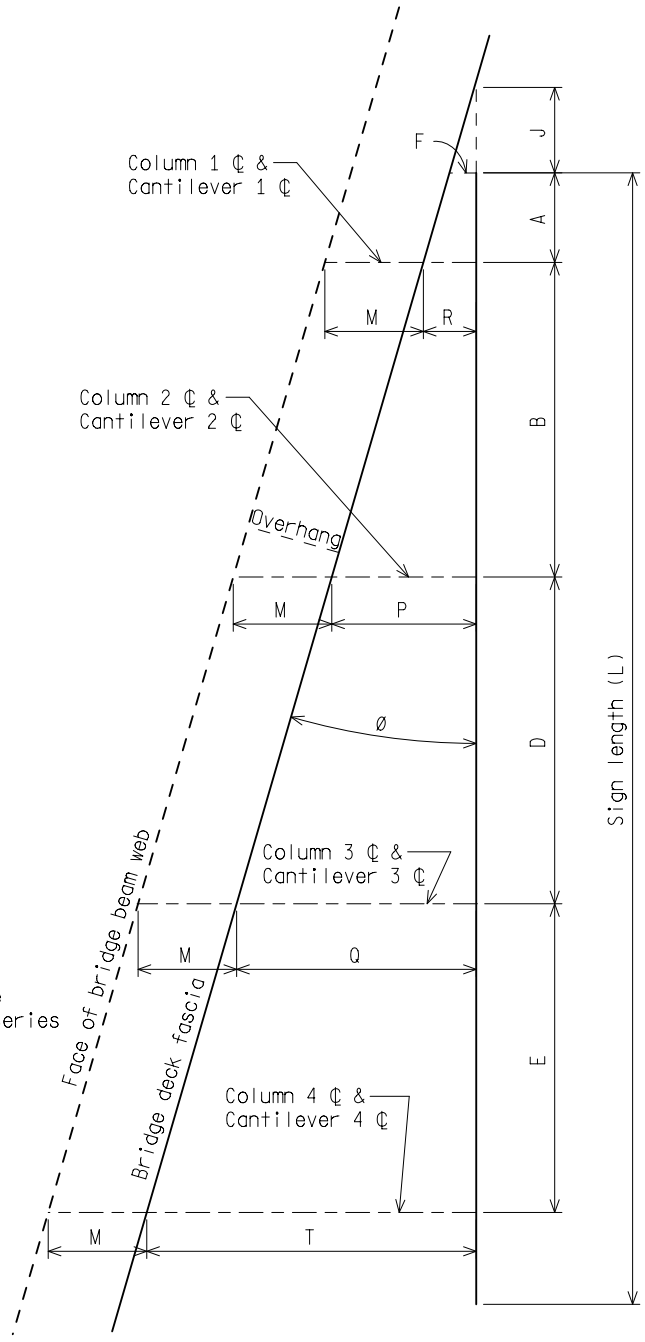
H =

Sign Area = Sq.ft.

$\frac{J = F}{\tan Ø}$

J =

F= Fascia clearance refer to Sign-830-Series for appropriate dimensions.



$\frac{M = \text{Overhang}}{\cos Ø}$

M =

R = (J+A)tanØ

R =

P = (J+A+B)tanØ

P =

Q = (J+A+B+D)tanØ

Q =

T = (J+A+B+D+E)tanØ

T =

TWO COLUMNS

Cantilever 1 length = M+R
Cantilever 2 length = M+P = C

THREE COLUMNS

Cantilever 1 length = M+R
Cantilever 2 length = M+P
Cantilever 3 length = M+Q = C

FOUR COLUMNS

Cantilever 1 length = M+R
Cantilever 2 length = M+P
Cantilever 3 length = M+Q
Cantilever 4 length = M+T = C

C= Value to verify diaphragm need.

NOTE:
THIS TYPICAL DOES NOT APPLY TO CURVED BRIDGES.

MDOT Michigan Department of Transportation

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APPROVED BY: (SPECIAL DETAIL)
DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

BRIDGE SIGN CONNECTION ANGLE CALCULATIONS

(SPECIAL DETAIL)	11/15/11	SIGN-840-A	SHEET 1 OF 1
F.H.W.A. APPROVAL	PLAN DATE		