



Computation Equations

Sign Area
Viewer Reaction
ProjectionControl
Letter Height

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Computation Equations / Area of Sign

Perpendicular (head-on) orientation to viewer approaching sign
10 degree lateral offset R/L of viewer

$$A_{\text{sign}} = \frac{(\text{MPH})^2}{8}$$

Fixed Values:

30 Letters

10 second Viewer Reaction Time (VRT)

Legibility Index (LI) of 30

40/60 ratio, letters/negative space

Variable Value:

Miles Per Hour (MPH)

$$A_{\text{sign}} = \frac{[(\text{VRT})(\text{MPH})]^2}{800}$$

Fixed Values:

30 Letters

Legibility Index (LI) of 30

40/60 ratio, letters/negative space

Variable Values:

Viewer Reaction Time (VRT)

Miles Per Hour (MPH)

$$A_{\text{sign}} = \frac{3n}{80} \left[\frac{(\text{VRT})(\text{MPH})}{\text{LI}} \right]^2$$

Fixed Value:

40/60 ratio, letters/negative space

Variable Values:

Number of Letters (n)

Viewer Reaction Time (VRT)

Miles Per Hour (MPH)

Legibility Index (LI)



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Computation Equations / Viewer Reaction Time

Perpendicular (head-on) orientation to viewer approaching sign
10 degree lateral offset R/L of viewer

$$VRT = \frac{LI}{MPH} \sqrt{\frac{80}{3n} A_{\text{sign}}}$$

Fixed Value:

40/60 ratio, letters/negative space

Variable Values:

Number of Letters (n)

Miles Per Hour (MPH)

Legibility Index (LI)

Area of Sign

$$VRT = \frac{\sqrt{800 A_{\text{sign}}}}{MPH}$$

Fixed Values:

30 Letters

Legibility Index (LI) of 30

40/60 ratio, letters/negative space

Variable Values:

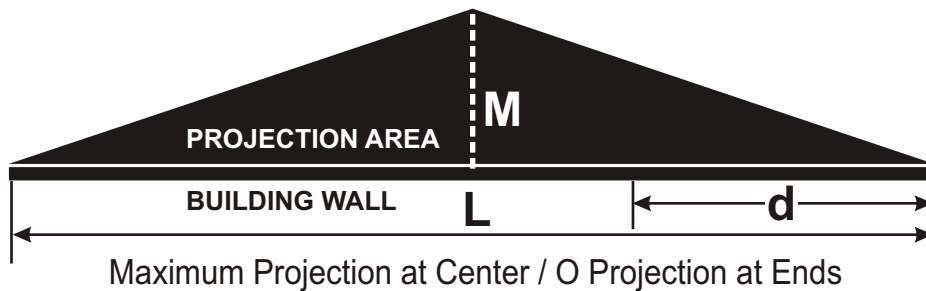
Miles Per Hour (MPH)

Area of Sign



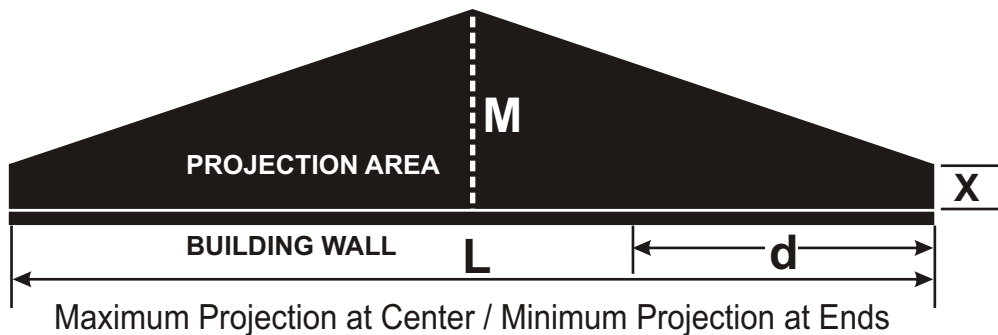
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Projecting Sign / Control Equations



$$P = \frac{2Md}{L}$$

P = Permitted Projection
 M = Maximum Projection
 d = Distance of Sign from Nearest End
 L = Length of Building



$$P = \left[\frac{2(M-X)d}{L} + X \right]$$

P = Permitted Projection
 M = Maximum Projection / X = Minimum Projection
 d = Distance of Sign from Nearest End
 L = Length of Building



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Parallel Signs / Letter Height Equations

Equation 1 - Legibility Index Unknown

$$LH = \frac{LN \times 10 + LO}{5}$$

LH = Letter Height in Inches
LN = Number of Lanes of Traffic
LO = Lateral Offset from Curb in Feet

Equation 2 - Legibility Index Known
See Table 1

$$LH = \frac{LN \times 10 + LO}{(LI / 6)}$$

LH = Letter Height in Inches
LN = Number of Lanes of Traffic
LO = Lateral Offset from Curb in Feet
LI = Legibility Index (Table 1)



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USSC Legibility Index

Table 1

| ILLUMINATION | LETTER STYLE | LETTER COLOR | Background COLOR | LEGIBILITY INDEX | |
|----------------------|--------------|--------------|------------------|--------------------|-----------|
| | | | | Upper & Lower Case | ALL CAPS |
| External | Helvetica | Black | White | 29 | 25 |
| External | Helvetica | Yellow | Green | 26 | 22 |
| External | Helvetica | White | Black | 26 | 22 |
| External | Clarendon | Black | White | 28 | 24 |
| External | Clarendon | Yellow | Green | 31 | 26 |
| External | Clarendon | White | Black | 24 | 20 |
| Internal Translucent | Helvetica | Black | White | 29 | 25 |
| Internal Translucent | Helvetica | Yellow | Green | 37 | 31 |
| Internal Translucent | Clarendon | Black | White | 31 | 26 |
| Internal Translucent | Clarendon | Yellow | Green | 37 | 31 |
| Internal Opaque | Helvetica | White | Black | 34 | 29 |
| Internal Opaque | Helvetica | Yellow | Green | 37 | 31 |
| Internal Opaque | Clarendon | White | Black | 36 | 30 |
| Internal Opaque | Clarendon | Yellow | Green | 37 | 28 |
| Neon | Helvetica | Red | Black | 29 | 25 |
| Neon | Helvetica | White | Black | 38 | 32 |



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