Non-Bearing 8" CMU wall Lintel - TMS 402 ASD
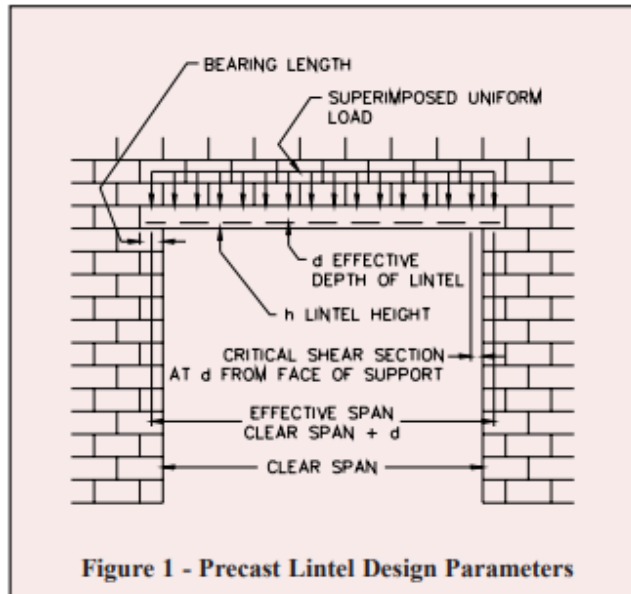
- Assumptions:

* 85 psf for Solid Grouted 8" CMU wall weight; 45 psf for Hollow 8" CMU wall weight

Figure 1 - Precast Lintel Design Parameters

Width of Wall Opening - Clear Span

Lc =

12	ft.

Width of CMU Wall Pier at Lintel Support

bs =

2	ft.

Height of Lintel Beam - Solid Grouted CMU Depth

h =

2	ft.

Total Height of CMU Wall above Opening

H =

4	ft.

<div align="right">

Calculate   Reset

</div>

The Effective Span Length :

Le = 14.00 ft.
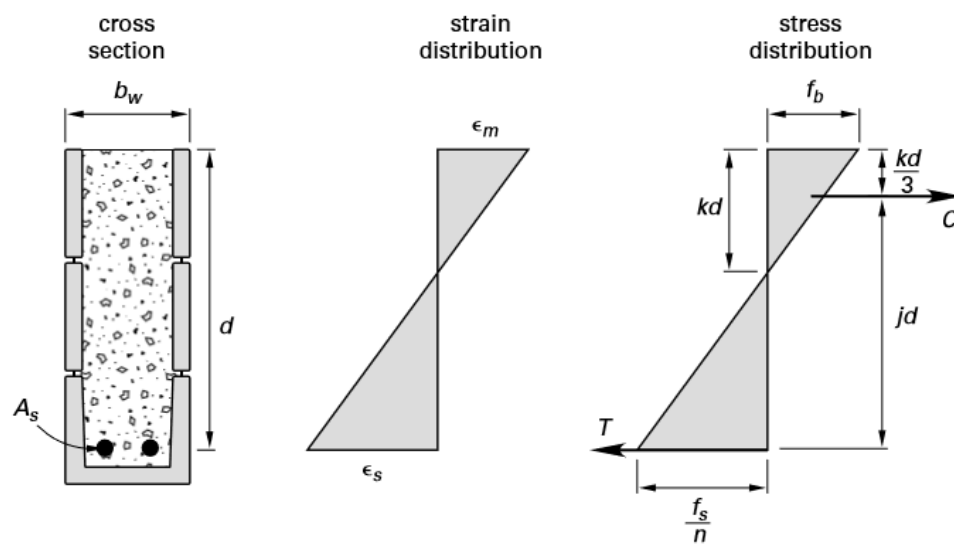
The Effective Beam Depth :

d = 1.75 ft.

The Uniform Load of CMU Wall above Opening:

w = 260.00 lb/ft

The Maximum Bending Moment:

M = 6.37 ft-kips

Tension Reinforcement Area (in^2)

As =

2 - #4 = 0.4 in2	⌄

Specified Masonry Compressive Strength

f'm =

1500	psi

Yeild Strength of Reinforcement

fy =

60,000 psi - Grade 60	⌄

Calculate	Reset

The Allowable Compressive Stress in Masonry :

F_b = 675.0 psi

The Allowable Tensile Stress of Rebar :

F_s = 32000.0 psi

The Tension Reinforcement Ratio :

rho = 0.00250

The Modular Ratio - Es/Em :

n = 21.48148

The Neutral Axis Depth Factor :

k = 0.2782

The Lever Arm Factor :

j = 0.907

The Maximum Masonry Stress:

$f\_m = 179.99$ psi

Stress Ratio:

$f\_m/Fb = 0.27$

The Reinforcement Stress:

$f\_s = 10030.24$ psi

$f\_s/Fs = 0.31$