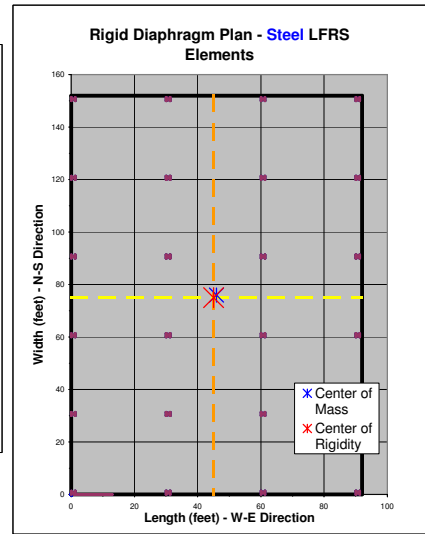
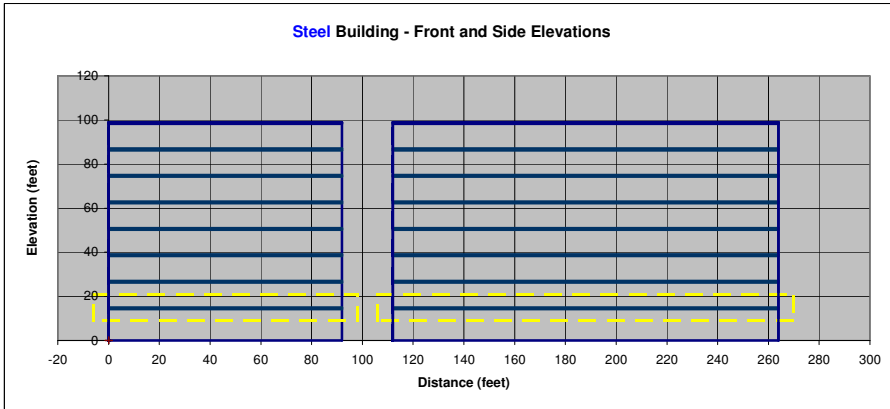


INPUT DATA FOR STEEL LFRS BUILDING - TYPE, DIMENSIONS, AND WEIGHT
ASCE 7-10 CHAPTER 12 - SEISMIC REQUIREMENTS FOR BUILDING STRUCTURES
SAMPLE PROJECT, ANYTOWN - NEW DESIGN



1. Seismic Parameter Data (ASCE 7 Chapter 12 - Building Structures)

$h_n = 99.0$ feet (Building Height)

| | N-S Direction | W-E Direction |
|-------|---------------|---------------|
| LFRS | SMRF | |
| C_r | 0.028 | |
| x | 0.80 | |

| ASCE 7-10 Table 12.8-2 | | |
|------------------------|-------|------|
| System | C_r | x |
| Steel MRF | 0.028 | 0.80 |
| Concrete MRF | 0.016 | 0.90 |
| EBF | 0.030 | 0.75 |
| All other systems | 0.020 | 0.75 |

$R = 8.0$ Response Modification Factor (Table 12.2-1)

$C_s = 0.071$ g 's (Seismic Coefficient - Sect 12.8.1)

$\rho = 1.0$ Redundancy Factor (Section 12.3.4)

$E_s = 29,000$ ksi

2. Building Cross-Section Dimensions

| Diaphragm Dimensions Table | | | | | | |
|----------------------------|---------------|--------------|--------------------|------------|------------|-----------------------|
| Section | Length (feet) | Width (feet) | Thickness (inches) | x (feet) | y (feet) | Section Weight (kips) |
| 1 | 92.00 | 152.00 | 9.00 | - | - | 1,521 |
| 2 | | | | | | |
| 3 | | | | | | |

for $\rho = 145$ pcf (Unit Weight)

Sum = 1,521 Kips

Note: Weight of diaphragm is provided here for reference only, is not used elsewhere. However, building cross section is used everywhere, including below.

3. Building Elevation and Story Weight Data

$W_w = 30.0$ psf (Weight of Exterior Walls or Cladding)

| Floor Level | Floor Height, H_f (feet) | Floor Elevation, H_x (feet) | Diaphragm Section 1 | | | | Diaphragm Section 2 | | | | Diaphragm Section 3 | | | | Story Weight, W_x (kips) | | | |
|-------------|----------------------------|-------------------------------|---------------------|--------------|--------------------|---------------------|-----------------------------|---------------|--------------|--------------------|---------------------|-----------------------------|---------------|--------------|----------------------------|--------------------|---------------------|-----------------------------|
| | | | Length (feet) | Width (feet) | Floor Weight (psf) | Floor Weight (Kips) | Exterior Wall Weight (Kips) | Length (feet) | Width (feet) | Floor Weight (psf) | Floor Weight (Kips) | Exterior Wall Weight (Kips) | Length (feet) | Width (feet) | | Floor Weight (psf) | Floor Weight (Kips) | Exterior Wall Weight (Kips) |
| R | 12.0 | 99.0 | 92 | 152 | 115 | 1,608 | 88 | | | | | | | | | | | 1,696 |
| 8 | 12.0 | 87.0 | 92 | 152 | 100 | 1,398 | 176 | | | | | | | | | | | 1,574 |
| 7 | 12.0 | 75.0 | 92 | 152 | 100 | 1,398 | 176 | | | | | | | | | | | 1,574 |
| 6 | 12.0 | 63.0 | 92 | 152 | 100 | 1,398 | 176 | | | | | | | | | | | 1,574 |
| 5 | 12.0 | 51.0 | 92 | 152 | 100 | 1,398 | 176 | | | | | | | | | | | 1,574 |
| 4 | 12.0 | 39.0 | 92 | 152 | 100 | 1,398 | 176 | | | | | | | | | | | 1,574 |
| 3 | 12.0 | 27.0 | 92 | 152 | 100 | 1,398 | 176 | | | | | | | | | | | 1,574 |
| 2 | 15.0 | 15.0 | 92 | 152 | 100 | 1,398 | 198 | | | | | | | | | | | 1,596 |
| | | | | | | | | | | | | | | | | | | |
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Σ Weight = 12,737 Kips