

UPPER FL. PLAN

\* CHECK CAPACITY OF LOWER ROOF DIAPHRAGM

PER LATERAL CALCS, PG. 8, 'MAIN FL. FRONT (CLOS. BATH) SW

$$V = (7053 \# / 2) + (7309 (\frac{13}{52})) = 5354 \#$$

LOWER ROOF DIAP. LENGTH = 40 FT (CONSERVATIVE)

$$D = 5354 \# / 40' = 134 \text{ PLF}$$

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UPPER FL. FRAMING

\* PROVIDE METHOD TO COLLECT LAT. LOAD . . .

PER LAT. CALCS, PG 7, 'UPPER FL. RIGHT (MASTER/LAUN)

$$V = 8,440 \# / 2 = 4,220 \#$$

LOWER ROOF DIAPH LENGTH = 42 FT

$$D = 4,220 \# / 42 \text{ FT} = 100 \text{ PLF}$$

FOR 14' BM (WORST CASE) → 14' x 100 PLF = 1,400 #

AT BM TO FL = 1,400 # + 9(100) = 2,300 #

USE CS 14

←



Project Title:  
 Engineer:  
 Project ID:  
 Project Descr:

Printed: 19 FEB 2021, 5:14PM

**Wood Beam**

File: 19-061 Gravity.ec6  
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**DESCRIPTIO HDR#4 (2-19-2021)**

| Load Combination          | Segment Length | Span # | Max Stress Ratios |      |                |                  |                |                |                |                |                | Moment Values |         |      | Shear Values |                |     |
|---------------------------|----------------|--------|-------------------|------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|---------------|---------|------|--------------|----------------|-----|
|                           |                |        | M                 | V    | C <sub>d</sub> | C <sub>F/V</sub> | C <sub>i</sub> | C <sub>r</sub> | C <sub>m</sub> | C <sub>t</sub> | C <sub>L</sub> | M             | fb      | F'b  | V            | f <sub>v</sub> | F'v |
| Length = 12.0 ft          | 1              | 0.387  | 0.245             | 1.25 | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           | 12.77          | 1,160.68      | 3000.00 | 3.57 | 81.19        | 331.25         |     |
| +D+0.750L+0.750S+H        |                |        |                   |      | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           |                |               | 0.00    | 0.00 | 0.00         | 0.00           |     |
| Length = 12.0 ft          | 1              | 0.509  | 0.323             | 1.15 | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           | 15.47          | 1,406.13      | 2760.00 | 4.33 | 98.36        | 304.75         |     |
| +D+0.60W+H                |                |        |                   |      | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           |                |               | 0.00    | 0.00 | 0.00         | 0.00           |     |
| Length = 12.0 ft          | 1              | 0.162  | 0.102             | 1.60 | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           | 6.83           | 620.68        | 3840.00 | 1.91 | 43.42        | 424.00         |     |
| +D+0.750Lr+0.750L+0.450W- |                |        |                   |      | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           |                |               | 0.00    | 0.00 | 0.00         | 0.00           |     |
| Length = 12.0 ft          | 1              | 0.302  | 0.191             | 1.60 | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           | 12.77          | 1,160.68      | 3840.00 | 3.57 | 81.19        | 424.00         |     |
| +D+0.750L+0.750S+0.450W+  |                |        |                   |      | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           |                |               | 0.00    | 0.00 | 0.00         | 0.00           |     |
| Length = 12.0 ft          | 1              | 0.366  | 0.232             | 1.60 | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           | 15.47          | 1,406.13      | 3840.00 | 4.33 | 98.36        | 424.00         |     |
| +0.60D+0.60W+0.60H        |                |        |                   |      | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           |                |               | 0.00    | 0.00 | 0.00         | 0.00           |     |
| Length = 12.0 ft          | 1              | 0.097  | 0.061             | 1.60 | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           | 4.10           | 372.41        | 3840.00 | 1.15 | 26.05        | 424.00         |     |
| +1.135D+4.550E+0.60H      |                |        |                   |      | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           |                |               | 0.00    | 0.00 | 0.00         | 0.00           |     |
| Length = 12.0 ft          | 1              | 0.479  | 0.295             | 1.60 | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           | 20.21          | 1,837.58      | 3840.00 | 5.51 | 125.13       | 424.00         |     |
| +1.102D+0.750L+0.750S+3.4 |                |        |                   |      | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           |                |               | 0.00    | 0.00 | 0.00         | 0.00           |     |
| Length = 12.0 ft          | 1              | 0.581  | 0.377             | 1.60 | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           | 24.54          | 2,230.92      | 3840.00 | 7.02 | 159.64       | 424.00         |     |
| +0.4646D+4.550E+H         |                |        |                   |      | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           |                |               | 0.00    | 0.00 | 0.00         | 0.00           |     |
| Length = 12.0 ft          | 1              | 0.382  | 0.226             | 1.60 | 1.000          | 1.00             | 1.00           | 1.00           | 1.00           | 1.00           | 16.13          | 1,466.17      | 3840.00 | 4.22 | 96.01        | 424.00         |     |

**Overall Maximum Deflections**

| Load Combination           | Span | Max. "-" Defl | Location in Span | Load Combination | Max. "+" Defl | Location in Span |
|----------------------------|------|---------------|------------------|------------------|---------------|------------------|
| +D+0.750L+0.750S+0.5250E+H | 1    | 0.3045        | 6.000            |                  | 0.0000        | 0.000            |

**Vertical Reactions**

| Load Combination           | Support notation : Far left is #' |           | Values in KIPS |  |
|----------------------------|-----------------------------------|-----------|----------------|--|
|                            | Support 1                         | Support 2 |                |  |
| Overall MAXimum            | 5.541                             | 5.348     |                |  |
| Overall MINimum            | 0.733                             | 0.367     |                |  |
| +D+H                       | 2.276                             | 2.276     |                |  |
| +D+L+H                     | 4.916                             | 4.916     |                |  |
| +D+Lr+H                    | 2.276                             | 2.276     |                |  |
| +D+S+H                     | 3.476                             | 3.476     |                |  |
| +D+0.750Lr+0.750L+H        | 4.256                             | 4.256     |                |  |
| +D+0.750L+0.750S+H         | 5.156                             | 5.156     |                |  |
| +D+0.60W+H                 | 2.276                             | 2.276     |                |  |
| +D+0.750Lr+0.750L+0.450W+H | 4.256                             | 4.256     |                |  |
| +D+0.750L+0.750S+0.450W+H  | 5.156                             | 5.156     |                |  |
| +0.60D+0.60W+0.60H         | 1.365                             | 1.365     |                |  |
| +D+0.70E+0.60H             | 2.789                             | 2.532     |                |  |
| +D+0.750L+0.750S+0.5250E+H | 5.541                             | 5.348     |                |  |
| +0.60D+0.70E+H             | 1.879                             | 1.622     |                |  |
| D Only                     | 2.276                             | 2.276     |                |  |
| L Only                     | 2.640                             | 2.640     |                |  |
| S Only                     | 1.200                             | 1.200     |                |  |
| E Only                     | 0.733                             | 0.367     |                |  |
| H Only                     |                                   |           |                |  |