

Textron Stone Rd High Bay
Safety Harness Support

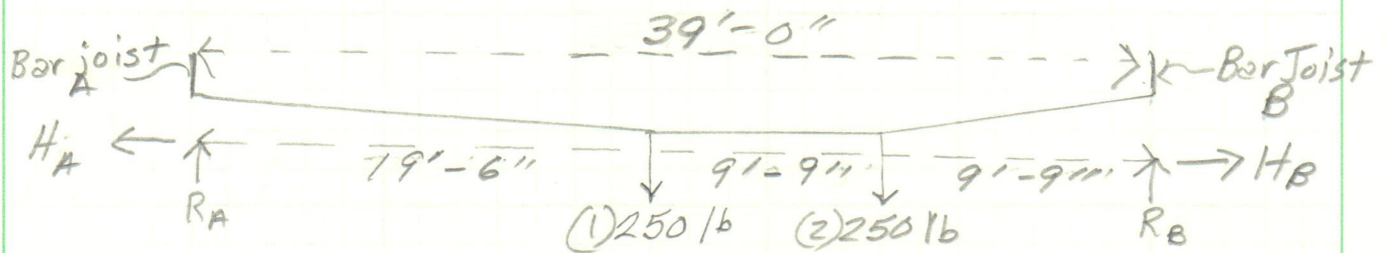
2 person Analysis 250# Each

Given:

Maximum Span between support bar joist = 38'-10"

Spoke(s) shall be supported between 2 different

bar joist: 54G-8N-11.0K & 48G-8N-11.0K



$$R_A = \frac{[(1) 250\# \times 19.5'] + [(2) 250\# \times 9.75']}{39'} = 187.5\#$$

$$R_B = \frac{[(1) 250\# \times 19.5'] + [(2) 250\# \times 29.25']}{39'} = 312.5\#$$

Allow cable to deflect 12" under load

$$H_A = H_B = \frac{19.5'}{1'} \times R_A = 19.5 \times 187.5\# = 3,656.25$$

$$F_{(2) \rightarrow B} = \sqrt{(312.5)^2 + (3,656.25)^2} = 3,669.6\#$$

Tension

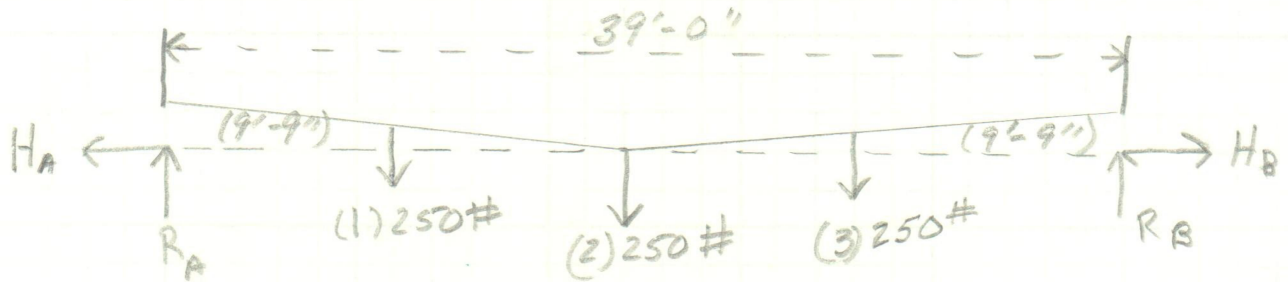
$$\text{Factor of Safety} = 3.5 \therefore 3,670\# \times 3.5 = 12,845\#$$

Each end of the span shall be attached to bar joist with a cable tie rated at a minimum of 15 kips & the safety wire shall be a minimum 6x19 Wire Rope with a diameter of 7/16" or capable of supporting 13 kips

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3 person Analysis 250# Each

Given: a span between support bar joist = 38'-10"
Spans shall be supported between 2 different
bar joist: 54G-8N-11.0k & 48G-8N-11.0k



$$R_A = \frac{[(1) 250\# \times 29.25'] + [(2) 250\# \times 19.5'] + [(3) 250\# \times 9.75']}{39'}$$

$$R_A = 375\# = R_B$$

Allow the cable to deflect 12" under load

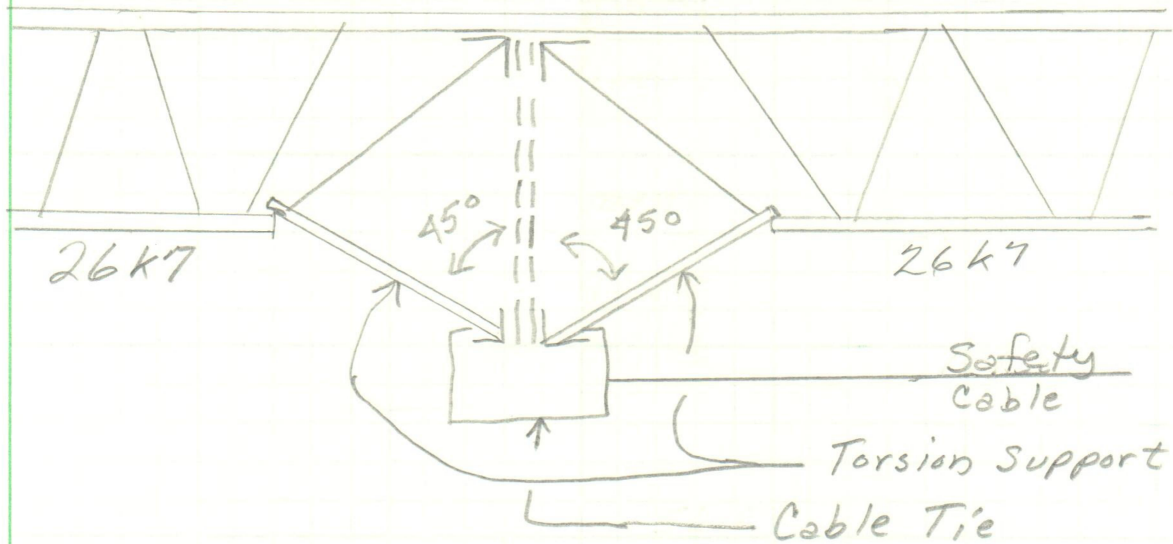
$$H_A = H_B = \frac{19.5'}{12"} \times R_A = 19.5' \times 375\# = 7,312.5$$

$$F_{(3) \rightarrow B} = \sqrt{(375\#)^2 + (7,312.5)^2} = 7,322\# \text{ Tension}$$

$$\text{Factor of Safety} = 3.5 \therefore 7,322 \times 3.5 = 25,627$$

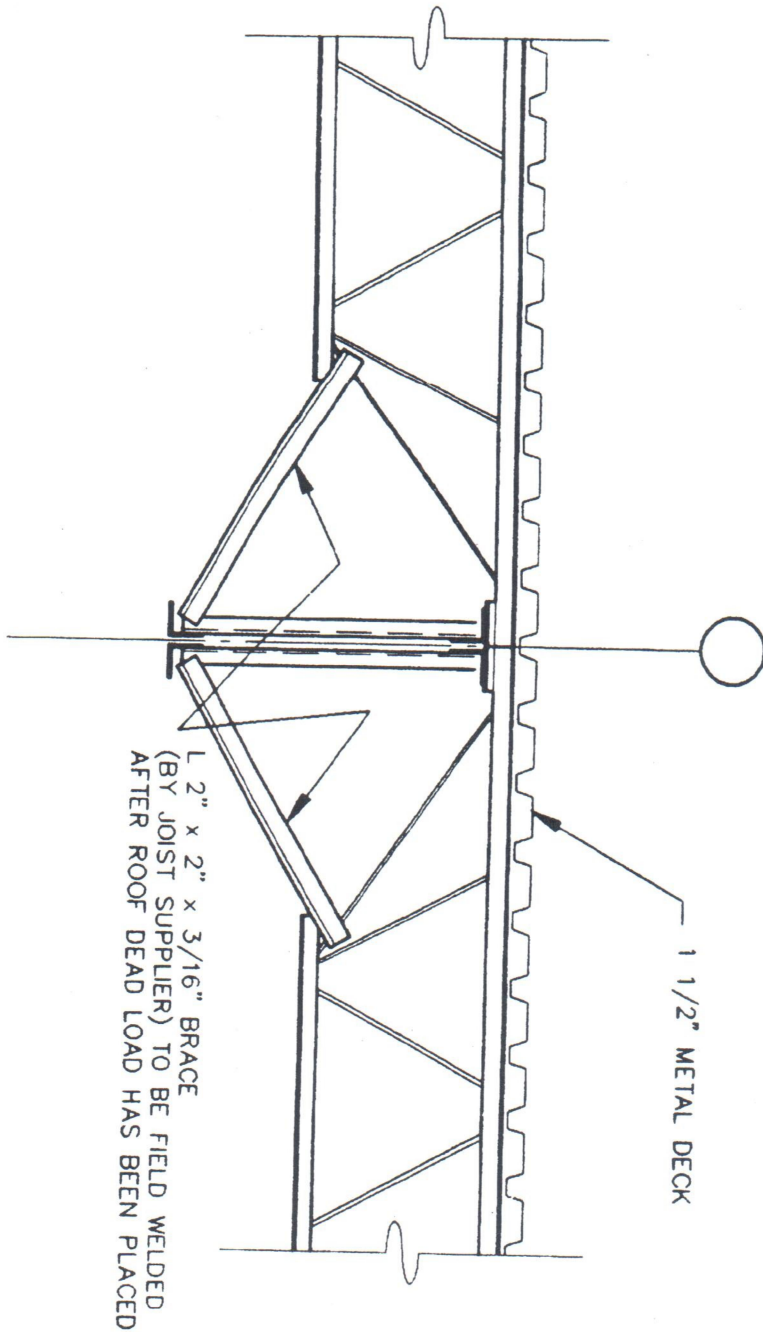
Each end of cable span shall be attached to bar joist with a cable tie rated at a minimum of 25 kips & the safety wire shall be a minimum 6x19 Wire Rope with a diameter of 5/8" or capable of supporting 26 kips.

Determine Lateral Support Required to counter-act torsion in Bar Joist



$$5,137\# \times \sin 45^\circ = 3,632\#$$

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TYPICAL JOIST GIRDER BOTTOM CHORD BRACE NEAR MID-SPAN
SECTION



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