使用鋼材　H－ 300 ×300×10×15 (SS400)

断面積	A	=	118.4	cm^2			
断面係数	Zx	=	1350	cm^3	,	Zy = 450	cm^3
断面二次ﾓｰﾒﾝﾄ	Ix	=	20200	cm^4	,	Iy = 6750	cm^4
断面二次半径	ix	=	13.1	cm	,	iy = 7.55	cm
圧縮ﾌﾗﾝｼﾞ幅	b	=	30.0	cm			

応力度の計算

$$\sigma c = \frac{N}{A} = \frac{500.000 \times 10^3}{11840} = 42 \quad N/mm^2$$

$$\sigma b = \frac{M}{Zx} = \frac{100.000 \times 10^6}{1350000} = 74 \quad N/mm^2$$

$$\frac{lky}{iy} = \frac{900.0}{7.55} = 119.205 \quad (lk/iy > 92)$$

$$\sigma cay = \{1{,}200{,}000/6700 + (lk/iy)^2\} \times 1.5 = 86 \quad N/mm^2$$

$$\frac{lkx}{ix} = \frac{500.0}{13.10} = 38.168$$

$$\sigma eax = 1{,}200{,}000/(lk/ix)^2 = 824 \quad N/mm^2$$

$$\frac{l}{b} = \frac{500.0}{30.0} = 16.667 \quad (4.5 < l/b \leqq 30)$$

$$\sigma bagx = \{140 - 2.4 \times (l/b - 4.5)\} \times 1.5 = 166 \quad N/mm^2$$

＜照査式　1＞

$$\frac{\sigma c}{\sigma cay} + \frac{\sigma b}{\sigma bagx\ (1 - \sigma c / \sigma eax)}$$

$$= \frac{42}{86} + \frac{74}{166 \times (1 - 42 / 824)} = 0.958 \leqq 1.0$$

－　0.K　－

＜照査式　2＞

$$\sigma c + \frac{\sigma b}{(1 - \sigma c / \sigma eax)}$$

$$= 42 + \frac{74}{(1 - 42 / 824)} = 120 \quad N/mm^2 \leqq 210 \quad N/mm^2$$

－　0.K　－

使用鋼材　H－ 300 ×300×10×15 (SS400)

断面積	A	=	118.4	cm^2			
断面係数	Zx	=	1350	cm^3	,	Zy = 450	cm^3
断面二次ﾓｰﾒﾝﾄ	Ix	=	20200	cm^4	,	Iy = 6750	cm^4
断面二次半径	ix	=	13.1	cm	,	iy = 7.55	cm
圧縮ﾌﾗﾝｼﾞ幅	b	=	30.0	cm			

応力度の計算

$$\sigma c = \frac{N}{A} = \frac{500.000 \times 10^3}{11840} = 42 \quad N/mm^2$$

$$\sigma b = \frac{M}{Zx} = \frac{100.000 \times 10^6}{1350000} = 74 \quad N/mm^2$$

$$\frac{l ky}{i y} = \frac{900.0}{7.55} = 119.205 \quad (l k/ i y > 92)$$

$$\sigma cay = \{1{,}200{,}000/6700+(l k/ i y)^2\}\times 1.5 = 86 \quad N/mm^2$$

$$\frac{l kx}{i x} = \frac{900.0}{13.10} = 68.702$$

$$\sigma eax = 1{,}200{,}000/(l k/ i x)^2 = 254 \quad N/mm^2$$

$$\sigma bagx = 210 \quad N/mm^2$$

＜照査式　1＞

$$\frac{\sigma c}{\sigma cay} + \frac{\sigma b}{\sigma bagx\ (1-\sigma c/\sigma eax)}$$

$$= \frac{42}{86} + \frac{74}{210 \times (1 - 42 / 254)} = 0.911 \leqq 1.0$$

－　0.K　－

＜照査式　2＞

$$\sigma c + \frac{\sigma b}{(1-\sigma c/\sigma eax)}$$

$$= 42 + \frac{74}{(1 - 42 / 254)} = 131 \quad N/mm^2 \leqq 210 \quad N/mm^2$$

－　0.K　－

使用鋼材　H－ 300 ×300×10×15 (SS400)

断面積	A	=	118.4	cm^2			
断面係数	Zx	=	1350	cm^3	,	Zy = 450	cm^3
断面二次ﾓｰﾒﾝﾄ	Ix	=	20200	cm^4	,	Iy = 6750	cm^4
断面二次半径	ix	=	13.1	cm	,	iy = 7.55	cm
圧縮ﾌﾗﾝｼﾞ幅	b	=	30.0	cm			

応力度の計算

$$\sigma c = \frac{N}{A} = \frac{500.000 \times 10^3}{11840} = 42 \quad N/mm^2$$

$$\sigma b = \frac{M}{Zy} = \frac{10.000 \times 10^6}{450000} = 22 \quad N/mm^2$$

$$\frac{l ky}{i y} = \frac{900.0}{7.55} = 119.205 \quad (l k/ i y > 92)$$

$$\sigma cay = \{1,200,000/6700+(l k/ i y)^2\} \times 1.5 = 86 \quad N/mm^2$$

$$\sigma eay = 1,200,000/(l k/ i y)^2 = 84 \quad N/mm^2$$

$$\sigma bao = 210 \quad N/mm^2$$

＜照査式　1＞

$$\frac{\sigma c}{\sigma cay} + \frac{\sigma b}{\sigma bao\ (1-\sigma c/\sigma eay)}$$

$$= \frac{42}{86} + \frac{22}{210 \times (1 - 42 / 84)} = 0.698 \leqq 1.0$$

－ 0.K －

＜照査式　2＞

$$\sigma c + \frac{\sigma b}{(1-\sigma c/\sigma eax)}$$

$$= 42 + \frac{22}{(1 - 42 / 84)} = 86 \quad N/mm^2 \leqq 210 \quad N/mm^2$$

－ 0.K －