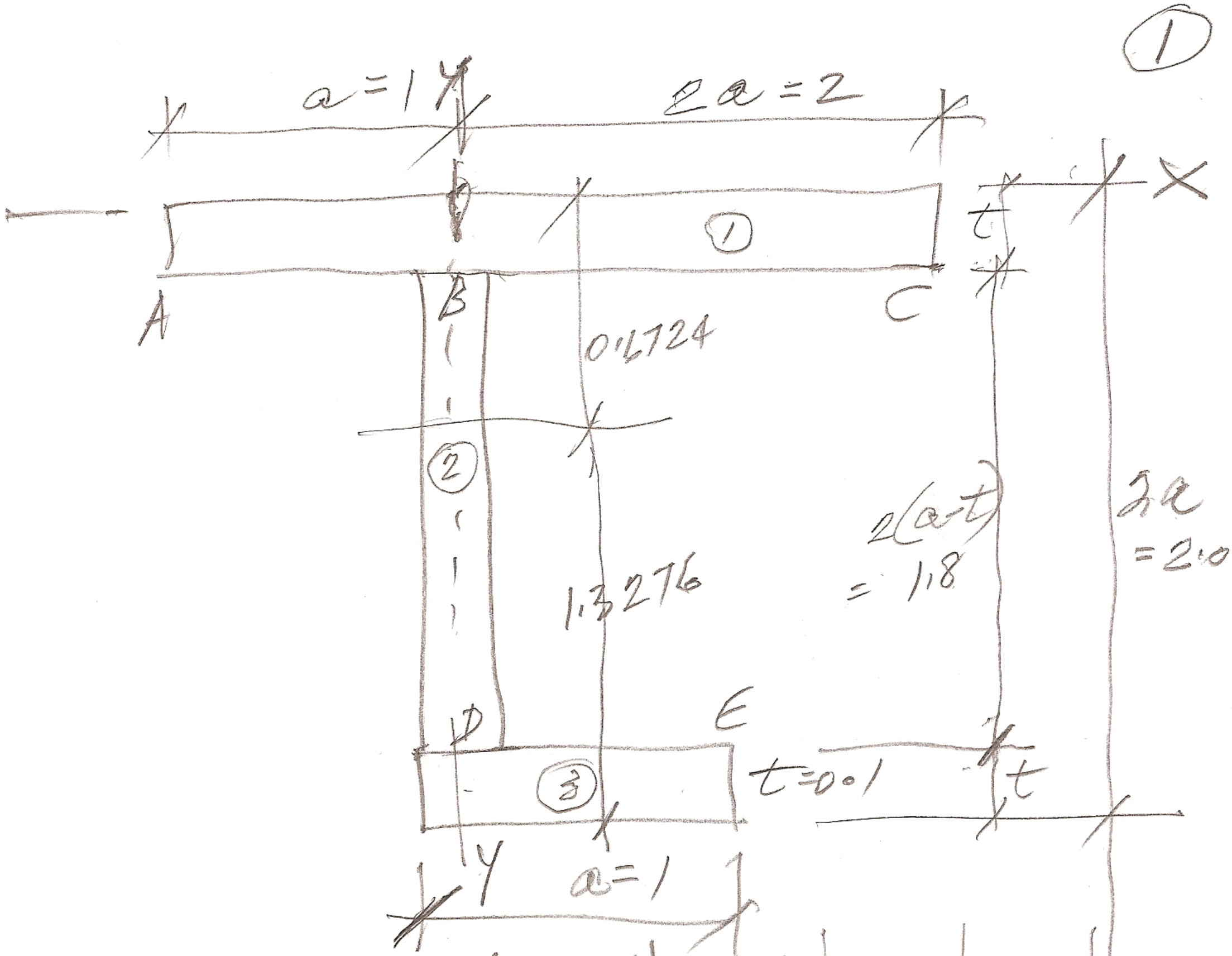
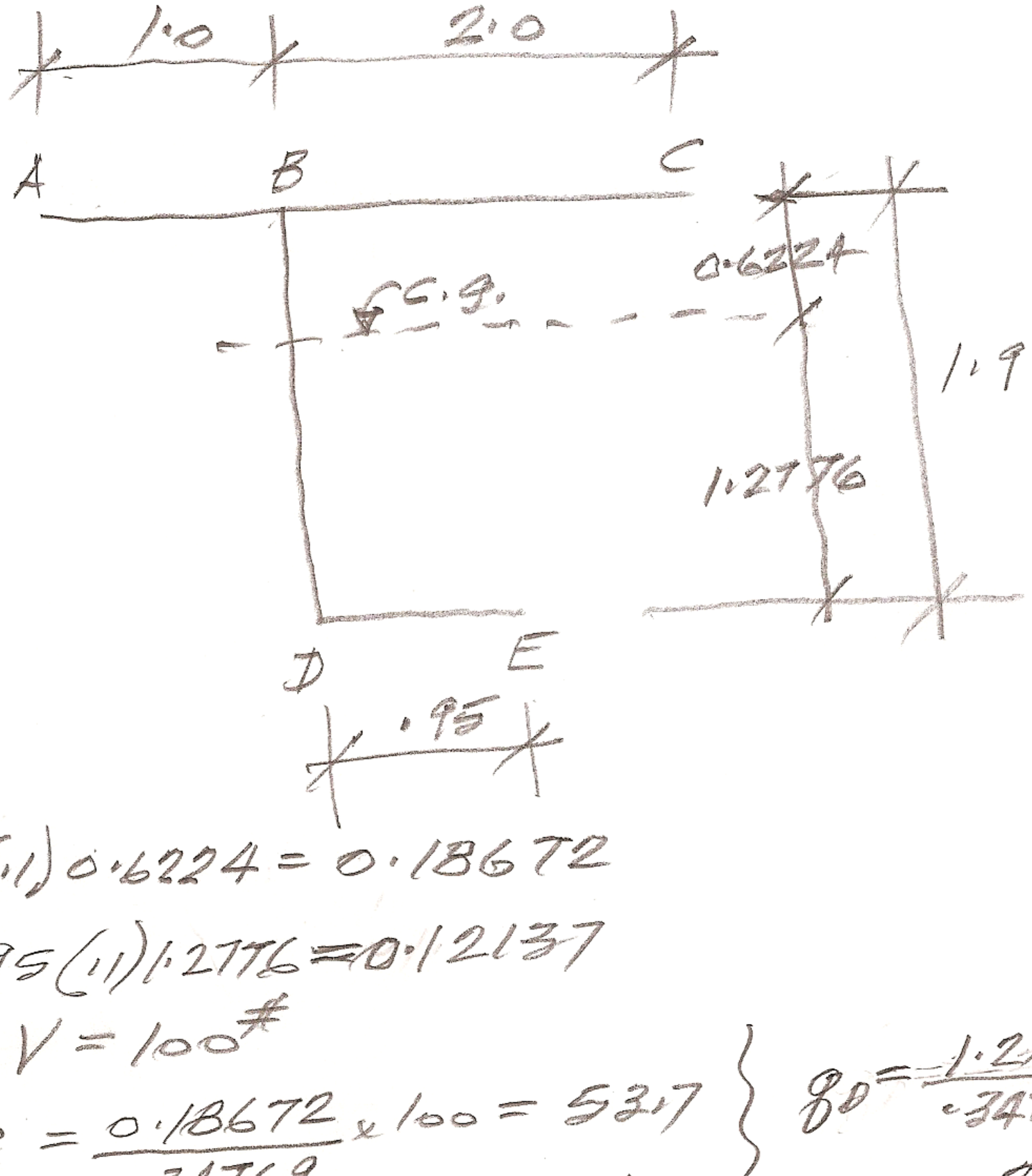


Element	Area	$\bar{y}$	$A\bar{y}$	I_{self}	y_{cg}	Ay^2
①	0.3	.05	0.015	0.00025	0.6224	.11621
②	0.18	1.0	0.18	0.0486	0.3276	.01932
③	0.1	1.95	0.195	0.00008	1.2776	0.16325
Σ	0.58		0.39	0.04893		.29876

$$\bar{y} = \frac{.39}{.58} = 0.6724''$$

$$I = .04893 + .29876 = 0.34769$$ ①

Shear Center J Section



$Q_B = 2(.1)0.6224 = 0.18672$

$Q_D = 0.95(.1)1.2776 = 0.12137$

Assume $V = 100^{\#}$

$$f_B = \frac{VQ}{I} = \frac{0.18672}{0.34769} \times 100 = 53.7$$

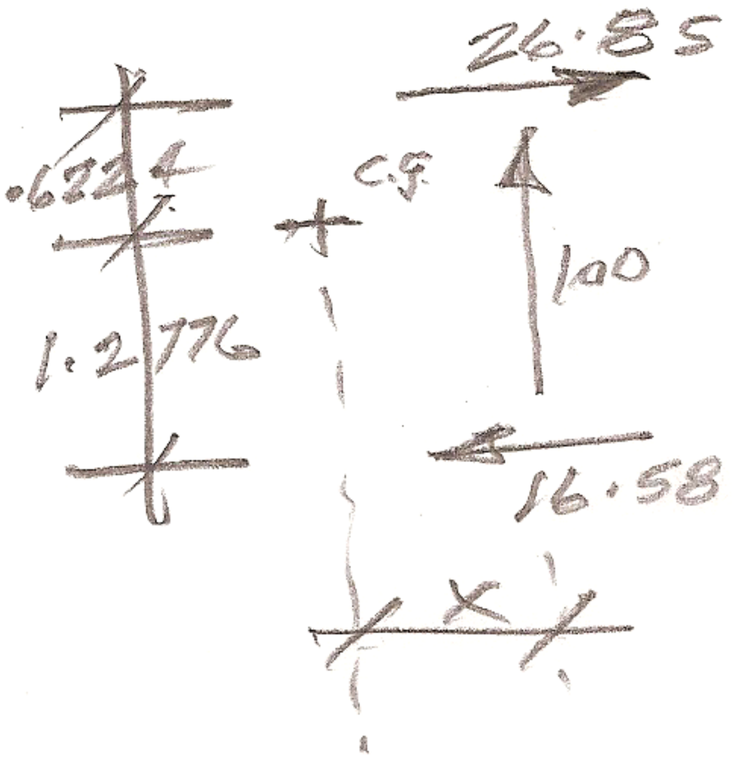
$$F_{BA} = \frac{53.7}{3} \times \frac{1}{2} = -8.95^{\#}$$

$$F_{BC} = \frac{2}{3} \times 53.7 \times \frac{2}{2} = \underline{35.8}^{\#}$$

$$F_{Top\ Flg} = 26.85^{\#}$$

$$f_D = \frac{1.2137}{.34769} \times 100 = 34.9 \text{ p.s.i.}$$

$F_{Bot.\ Flg} = -16.58$



Solving for x

$$x = \left[\frac{26.85(.6224) + 16.58(1.2776)}{100}\right]$$

$$= -0.379''$$