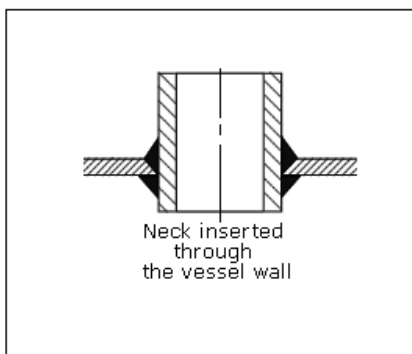
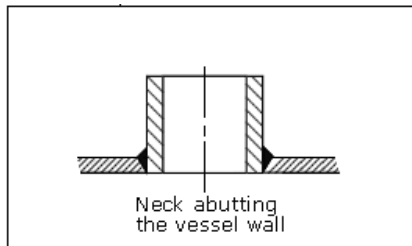
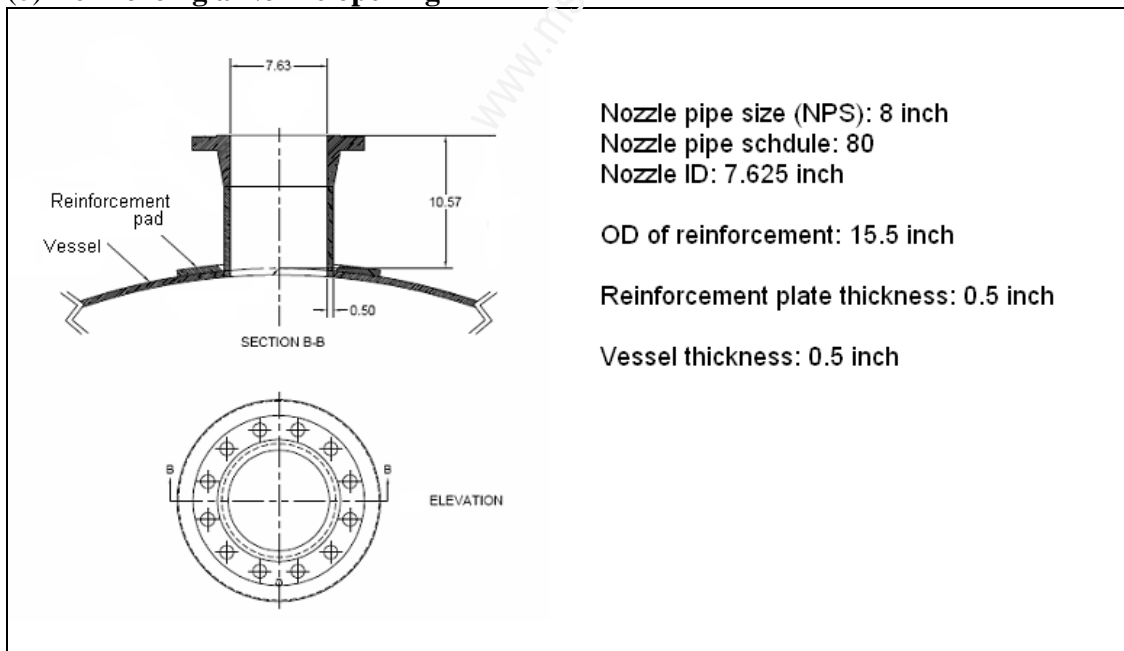


Drawing – 3 Nozzle opening, Reinforcements, and Manhole with support

(a) Attachment of Nozzle to a vessel



(b) Reinforcing a Nozzle opening

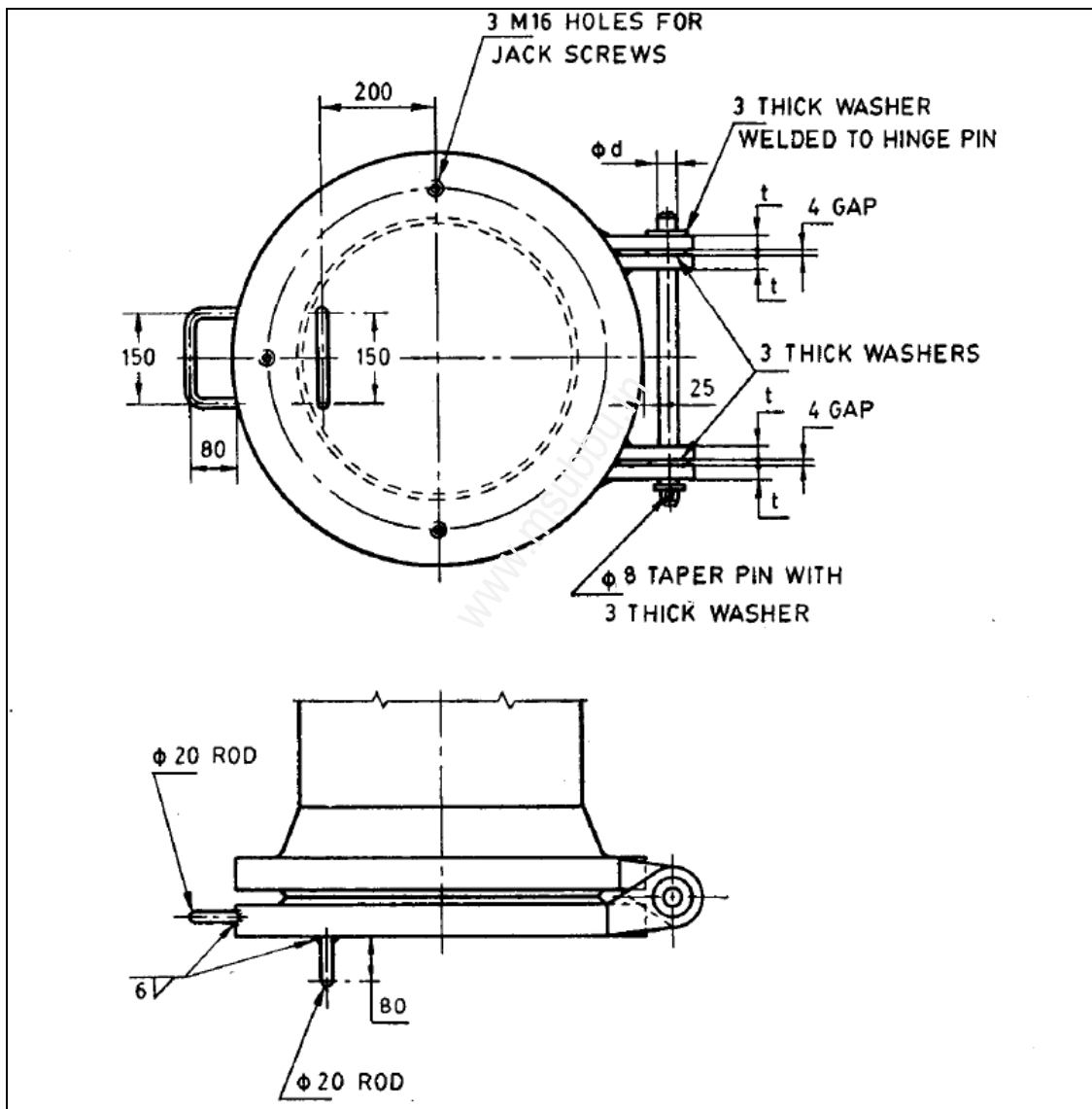


Nom. Pipe Size	O	T	T _J	R	X	#/Dia of Holes ^a	Bolt Circle Dia	B	B ₂ ^b	B ₃	H	L	L ₂	L ₃ ^c	r	D	Thr
24	32.00	1.81	1.88	27.25	26.12	20-1.38	29.50	24.25	23.25	24.25	24.00	3.19	5.94	4.38	0.50	2.50	3.25
8	13.50	1.06	1.12	10.62	9.69	8-0.88	11.75	8.72	7.98	8.75	8.63	1.69	3.94	1.75	0.50	1.25	1.75

Dimensions are in inches.

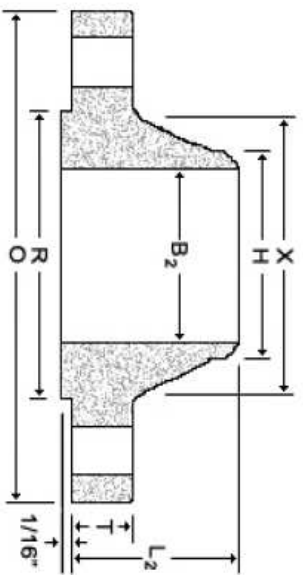
Dimensions of ANSI B16.5 class 150 psi flanges

(c) Draw to scale the sectional elevation and plan of a manhole (of OD 24inch) opening and the support arrangements for its cover. The manhole is at the side of a pressure vessel.

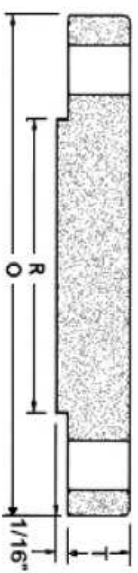


Details of Flange: (ANSI B 16.5 class 150 psi)

Welding neck flange is attached to the vessel manhole, which is closed by a blind flange.



Weld Neck



Blind