Estimating & Costing -1

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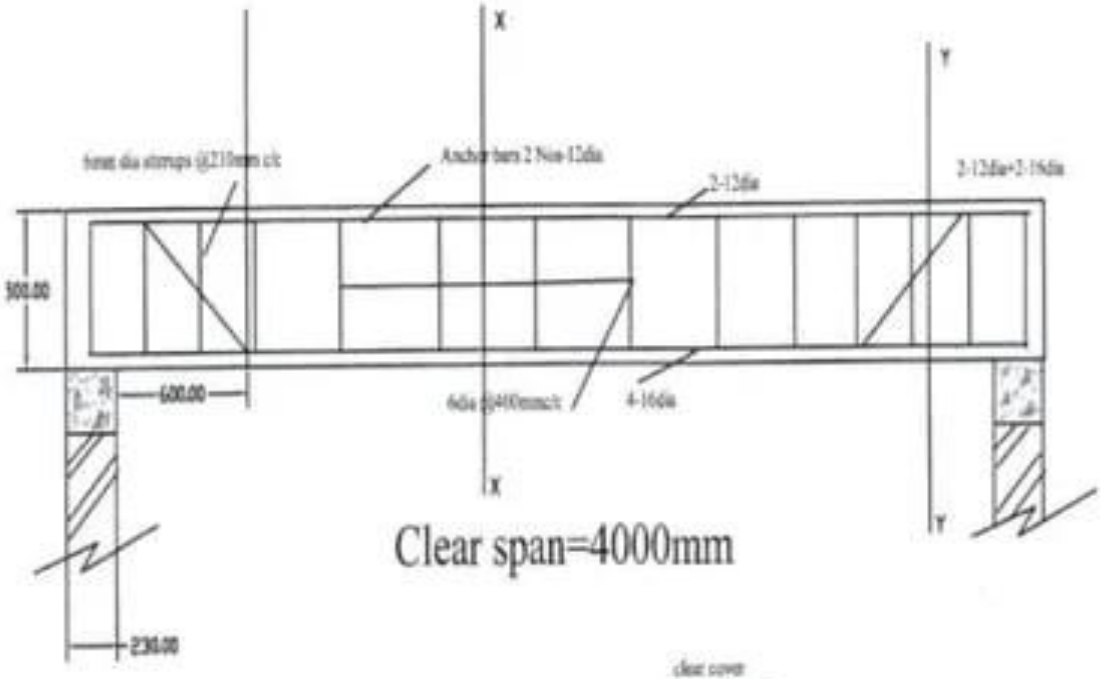
Chapter 6

ESTIMATION OF QUANTITIES OF STEEL & R.C.C. ELEMENTS

Example 1: Prepare the bar bending schedule of the given figure for R.C.C. beam.

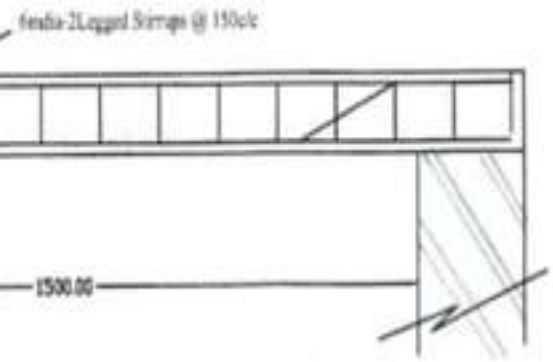


clear cover
bottom =25mm
top =25mm
ends =12mm
Sp. Wt of Steel=7860Kg/cu.m

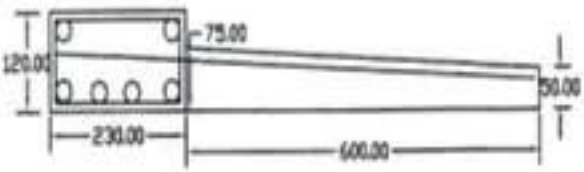
	Dia.	No.	Length in m	Total Length in m	Self weight in kg/m	Total Weight in Kg
	16	2	4396+2x(9x16) =4684mm =4.684m	4.684 x 2 =9.368m	$\frac{\pi}{4}\times\left(\frac{16}{1000}\right)^2\times 7860$ =1.58	1.58x 9.368 =14.8
	12	2	4396+2x(9x12) =4612mm =4.612m	4.612 x 2 =9.224m	$\frac{\pi}{4}\times\left(\frac{12}{1000}\right)^2\times 7860$ =0.89	0.89x 9.224 =8.2
	16	2	4396+2x(9x16)+ 2(0.414x434) =5043mm =5.043m Additional length for each crank = 0.414d	5.04 x 2 =10.08	$\frac{\pi}{4}\times\left(\frac{16}{1000}\right)^2\times 7860$ =1.58	1.58x 10.08 =15.92
	6	17	2(450+180) + 2x9x6 =1368mm =1.368m	1.368x17 =23.256	$\frac{\pi}{4}\times\left(\frac{6}{1000}\right)^2\times 7860$ =0.22	0.22x23.256 =5.16
			No. of stirups = ((798/210)+1)x2 +(2800/400) = 17 Nos			

g schedule of the given figure for R.C.C. Lintel

C.LINTEL



SECTION OF R.C.C.LINTEL



C/S OF LINTEL CUM SUNSHADE

	Dia.	No.	Length in m	Total Length in m	Self weight in kg/m	Total Weight in Kg
	12	2	1910+2x(9x12) =2126mm =2.1264m	2.126 x 2 =4.252m	$\frac{\pi}{4}\times\left(\frac{12}{1000}\right)^2\times 7860$ =0.89	0.89x 4.252 =3.78
	10	2	1910+2x(9x10) =2090mm =2.090m	2.09 x 2 =4.18m	$\frac{\pi}{4}\times\left(\frac{10}{1000}\right)^2\times 7860$ =0.62	0.62x 4.18 =2.59
	12	2	1910+2x(9x12)+ 2(0.414x58) =2174mm =2.174m Additional length for each crank = 0.414d	2.174 x 2 =4.348	$\frac{\pi}{4}\times\left(\frac{12}{1000}\right)^2\times 7860$ =0.89	0.89x 4.348 =1.87
	6	14	2(70+180) + 2x9x6 =608mm =0.608m	0.608x14 =8.512	$\frac{\pi}{4}\times\left(\frac{6}{1000}\right)^2\times 7860$ =0.22	0.22x8.512 =1.87
			No. of stirups = ((1910/150)+1) = 14 Nos			