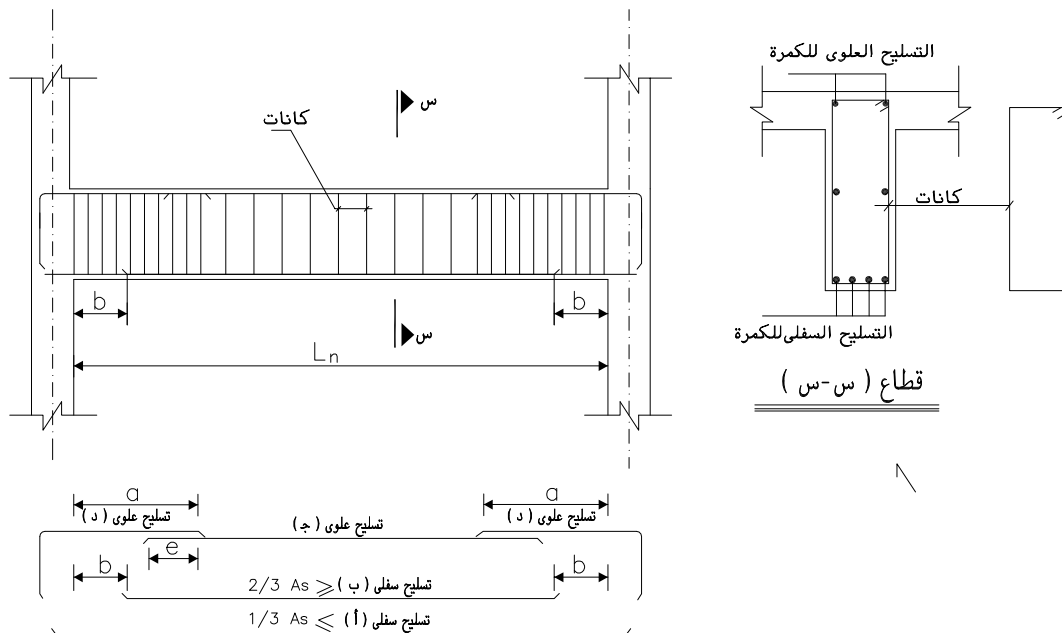


Using the beams table and details

- 1- Draw the elevation and sections of Beams B1, B2 and B3 the AutoCAD program.
- 2- Calculate the necessary reinforcement quantities for all beams.
- 3- Draw the bar bending schedule (BBS) for all beams using the AutoCAD program.

The Beam span is 6.0m with width of 0.25m and a depth of 0.60m, assume the column width is 0.50m.



Beams' Table :

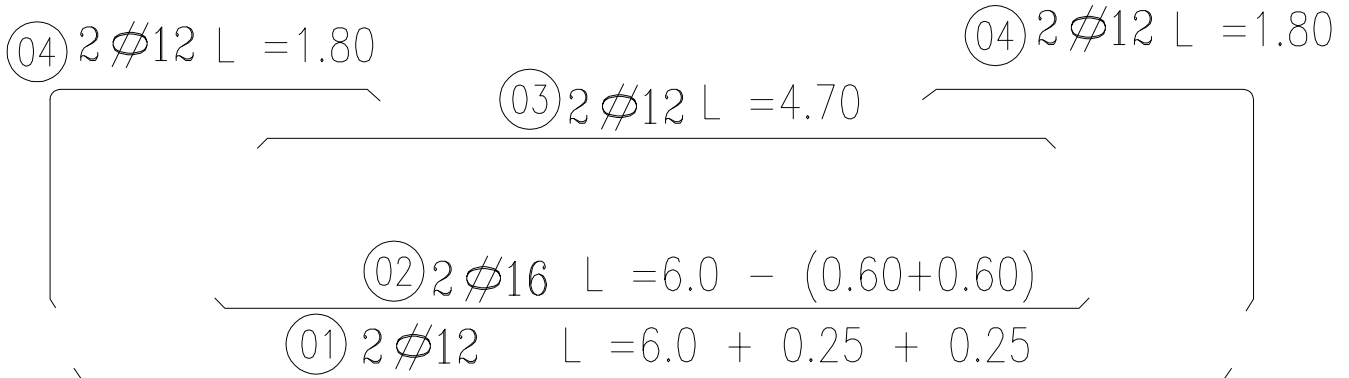
TYPE	Length
a	Min. 0.15 L _n
b	Max. 0.10 L _n
e	Bigger of (12 ϕ or 25 cm)

Beam Type	Bot. Rft.		Top. Rft.			Stirrups/m			Remarks
	Long	Short	Right	Mid.	Left	Right	Mid.	Left	
B1	2ϕ12	2ϕ16	2ϕ12	2ϕ12	2ϕ12	628	528	628	
B2	2ϕ16	2ϕ16	2ϕ16	2ϕ12	2ϕ16	5ϕ10	528	5ϕ10	
B3	2ϕ18	2ϕ18	2ϕ16	2ϕ12	2ϕ16	7ϕ10	628	7ϕ10	

Rebars Weight		Diameter	Unit Wt (kg/m)
Diameter	Unit Wt (kg/m)		
ϕ 8	0.394	ϕ 16	1.578
ϕ 10	0.617	ϕ 18	1.998
ϕ 12	0.888	ϕ 20	2.466
ϕ 14	1.208	ϕ 22	2.984
		ϕ 25	3.853

* Concrete grade
For Plain Concrete $f_{cu}=20 \text{ N/mm}^2$
For Reinforcing Concrete $f_{cu}=30 \text{ N/mm}^2$

LOCATION	CLEAR COVER
FOUNDATION	75 mm
BEAMS AND COLUMNS	30 mm
SLABS	25 mm



Beam B1 Bar Bending Schedule

SC. 1/100

Bar mark	Type and size	No. of memb.	No. of bars in each memb.	Total No.	Length	Shape & Dimension	Total Weight (Kg)
	mm				mm		(Kg)
01	$\phi 12$	1	2	2	6500	A=6500	.....
02	$\phi 16$	1	2	2	4800	A=4800	.....
03	$\phi 12$	1	2	2	4700	A=4700	.....
04	$\phi 12$	1	4	4	1800	A=500 B=1300	.....
05	$\phi 8$	1	.....	.....	1620	A=540 B=190 St = 160	.....

Total Weight			
Diameter	Weight (kg)	Diameter	Weight (kg)
$\phi 8$	$\phi 16$	.....
$\phi 12$		