

### Assignment 1 General Layout

A factory building is to be constructed using a suitable system of steel structures over an area of (BxL) as shown in Figure 1. Columns are allowed on outer perimeter only. The main systems used to cover this area are shown in figure 2. Trapezoidal corrugated sheets are used as covering material. Live loads and wind loads are considered according to the Egyptian code of practice. It is required to:

For the two main systems in figure 2.

- 1- Draw a complete general layout to scale 1:100 showing all structural elements, roof purlins, side girts, end gable columns and different bracing systems.
- 2- Calculate the loads affecting the main system from the main loads (Dead load, Live load and wind load).

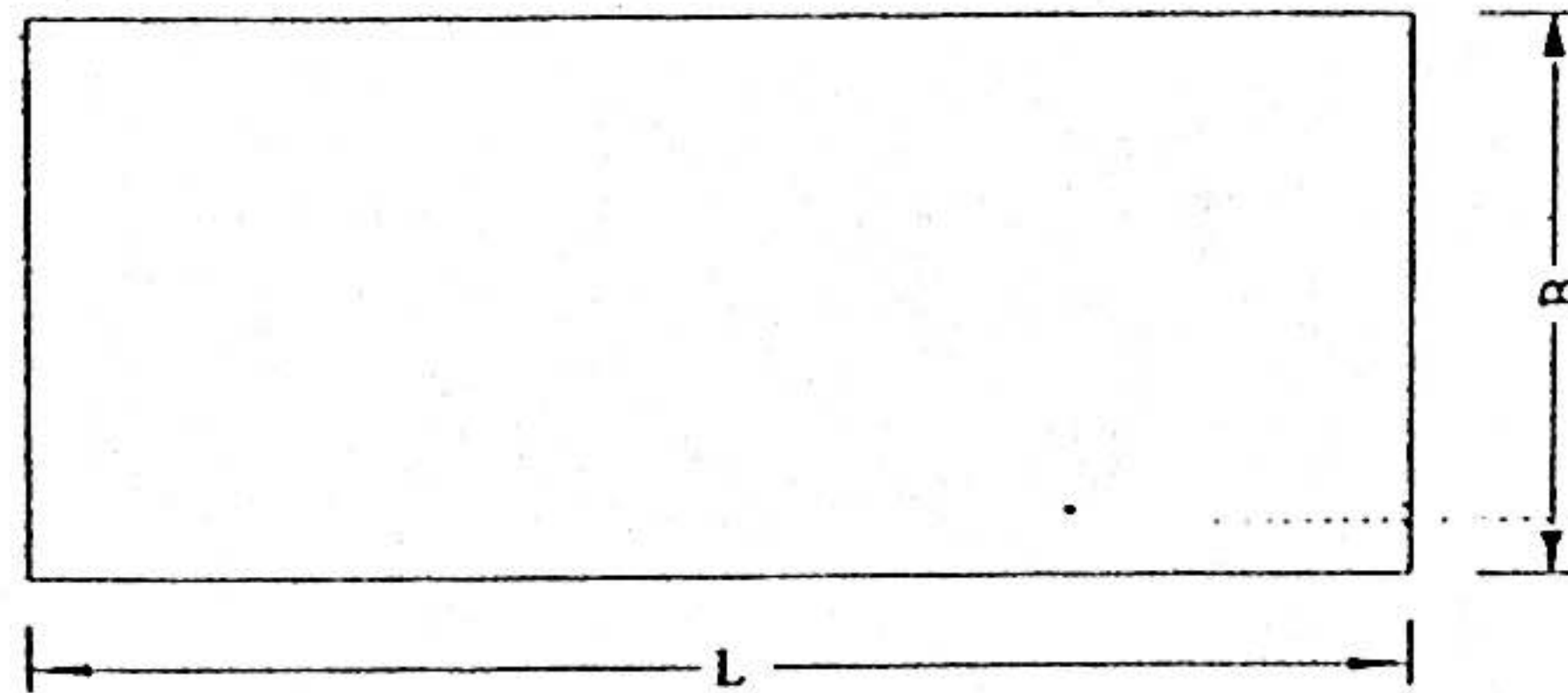


Figure 1

Table of dimension:

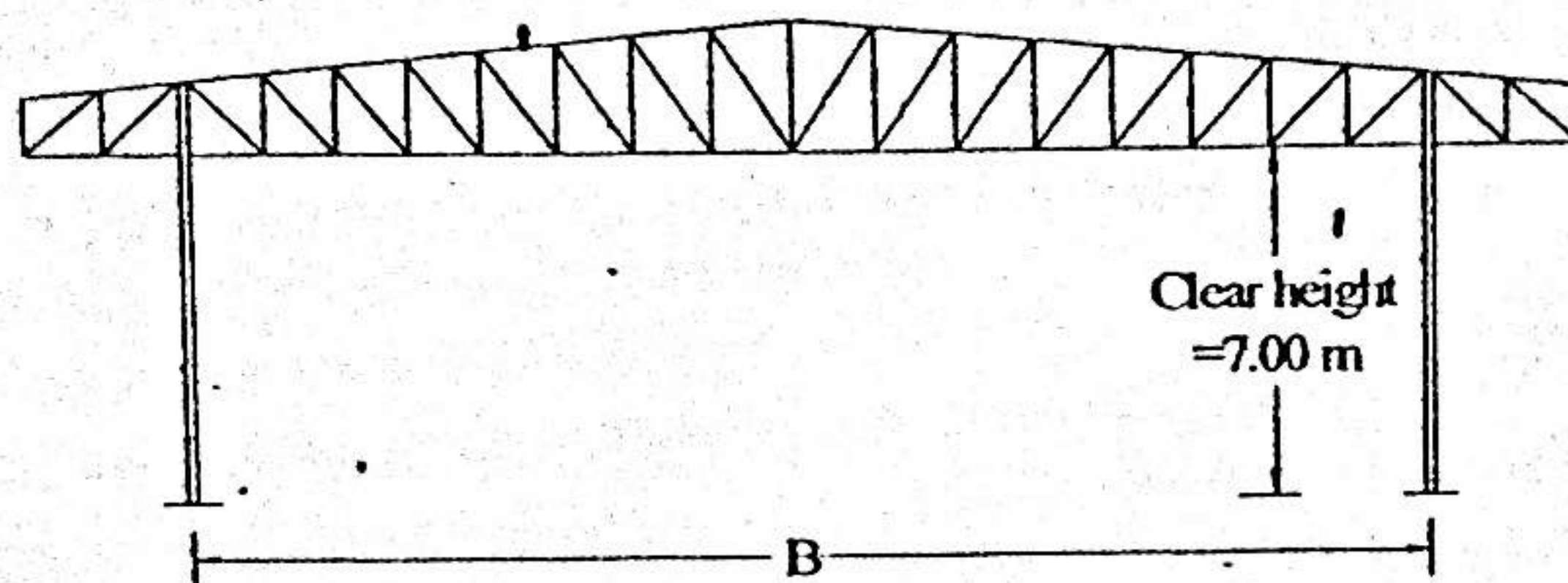
B.No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
(L)	65	52	62	58	66	62	60	72	69	55	53	72	70	61	52	62	68	61	60
(B)	22	16	34	20	35	24	32	38	26	18	28	36	25	21	27	34	18	32	34
Type	A	B	C	B	D	A	C	D	A	B	A	C	A	B	A	D	B	C	D

B.No.	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
(L)	72	54	70	63	55	56	66	50	55	56	70	60	70	55	55	50	56	70
(B)	16	35	28	21	36	24	20	26	32	40	18	22	18	36	25	38	35	18
Type	B	C	A	B	D	A	B	A	D	C	B	A	B	D	A	C	C	B

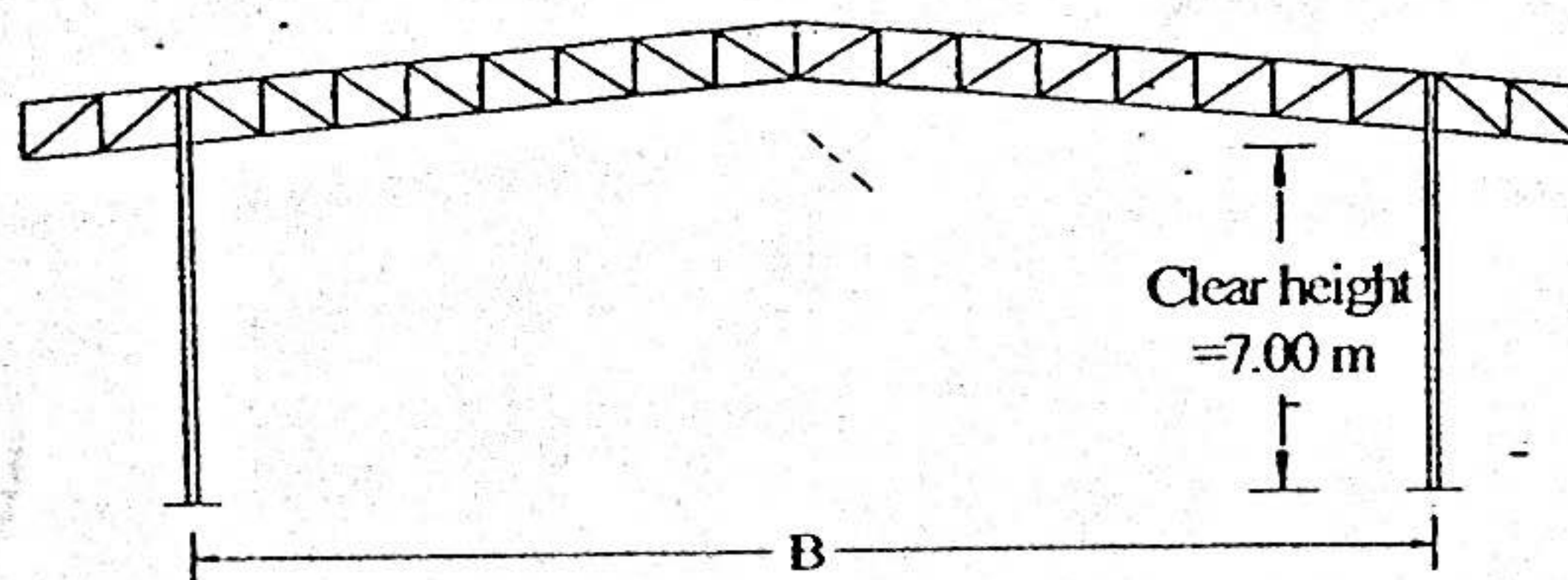


B.No.	38	39	40	41	42	43	44	45	46	47	48	49	50
(L)	55	63	60	66	60	72	63	70	55	72	56	72	56
(B)	36	21	22	20	34	27	32	28	36	27	40	16	24
Type	D	B	A	B	D	A	C	A	D	A	C	B	A

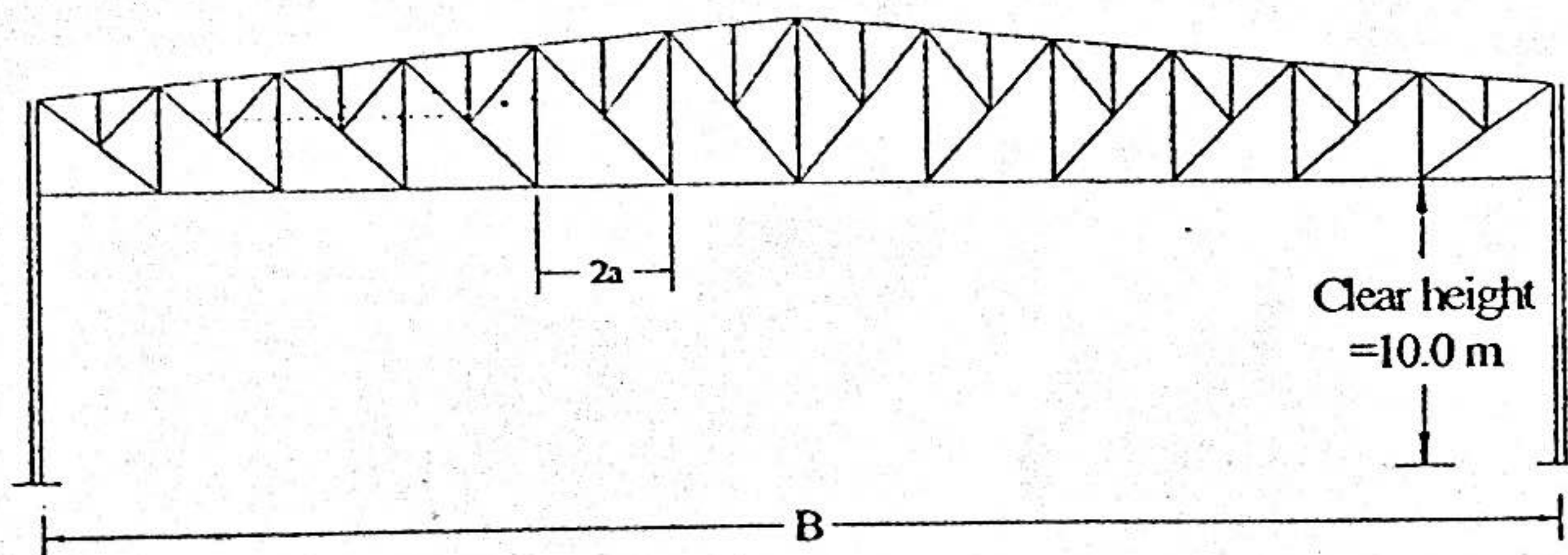
Type "A"



Type "B"



Type "C"



Type "D"

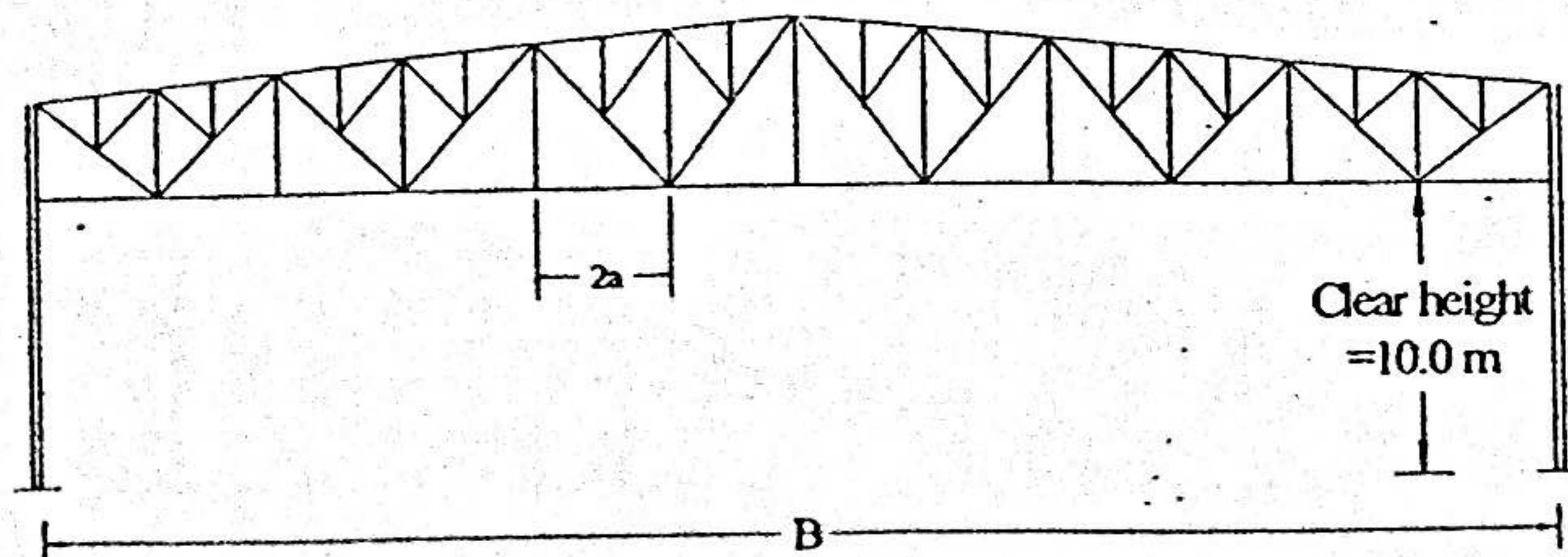


Figure 2