h = 2.8m Av ≃ 2×18×2.8 = 100.8 (ignore lift shaft) Af ≃ 378 m² At = 2×378 + 2×18×4 + 2×21×4 = 1068

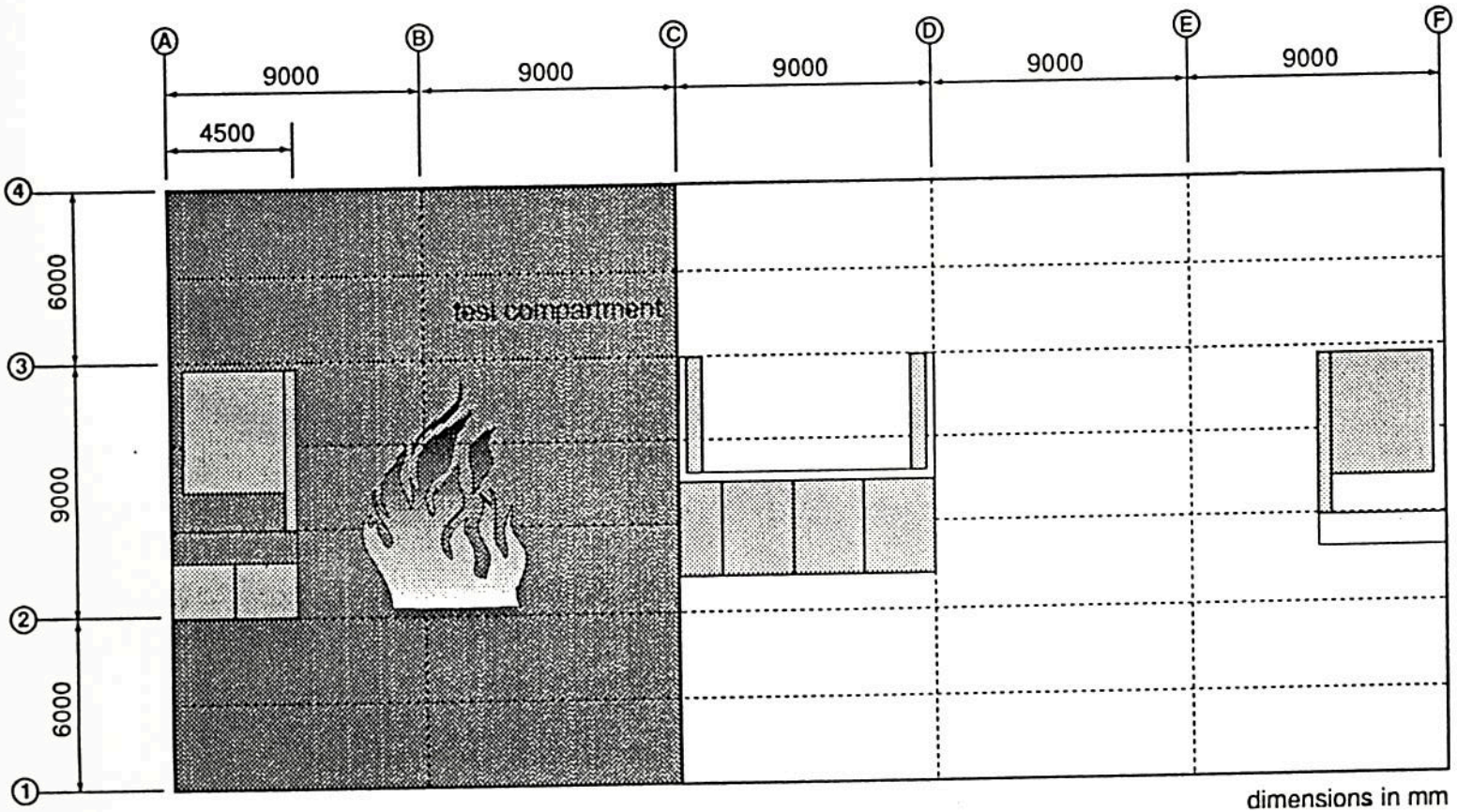


Figure 1 Location of Large Compartment Fire Test

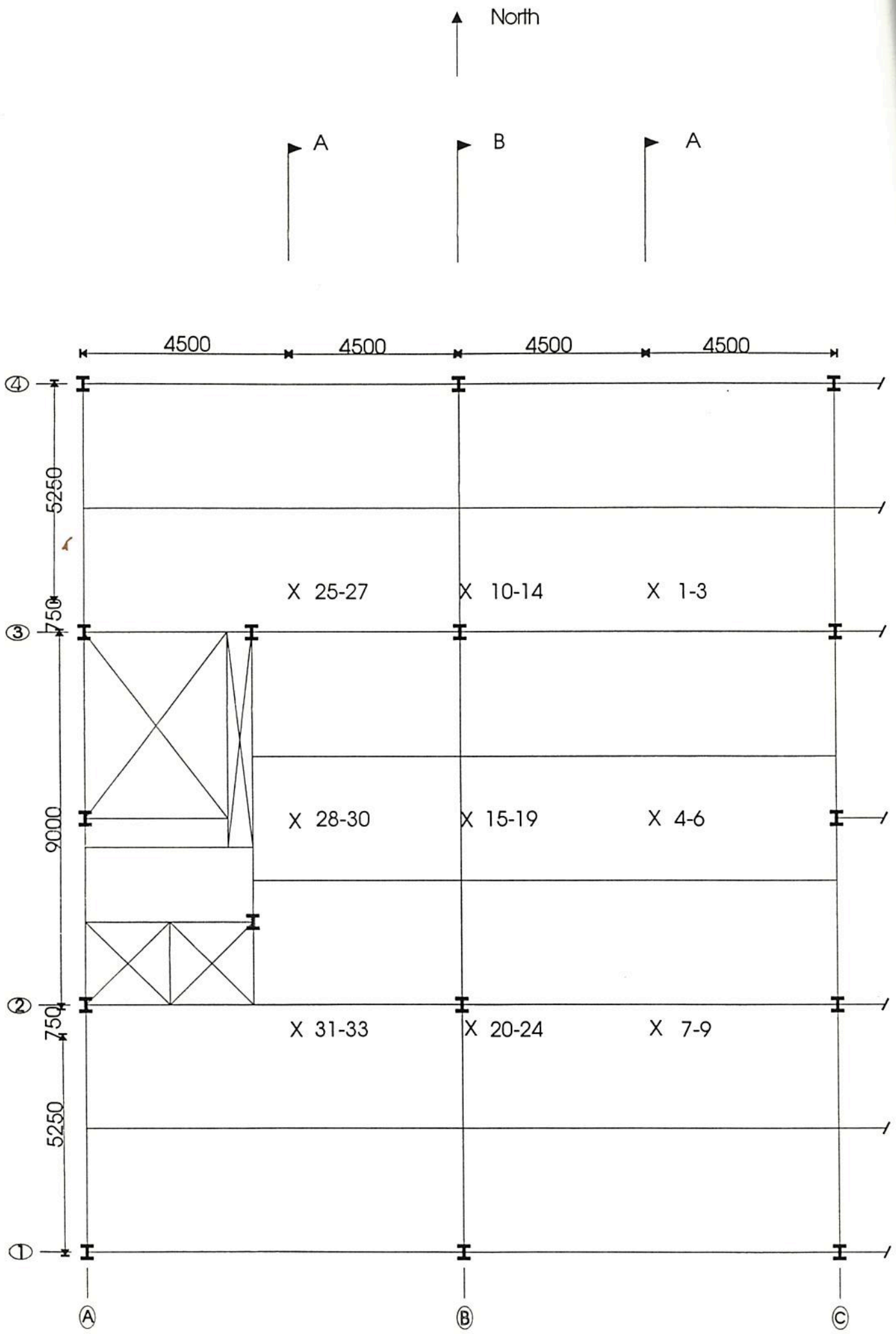
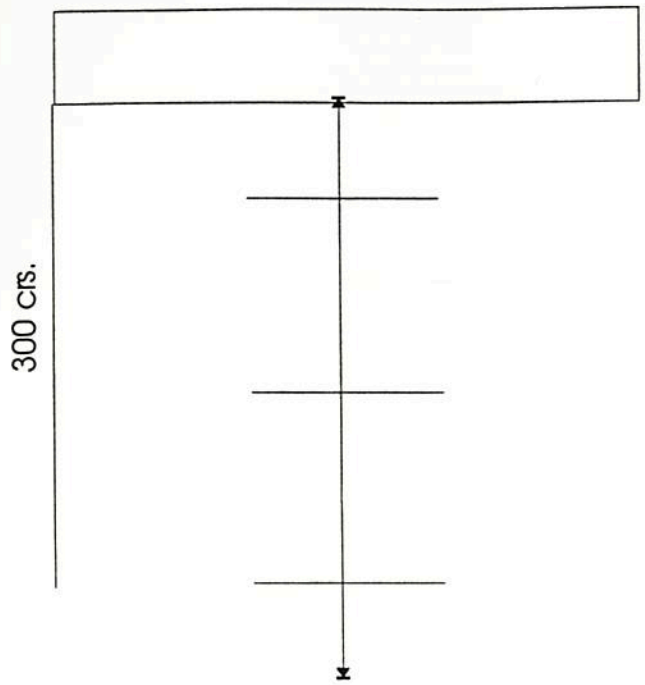


Figure 2 Atmosphere Thermocouple Locations - Large Compartment Fire Test

Section A



Section B

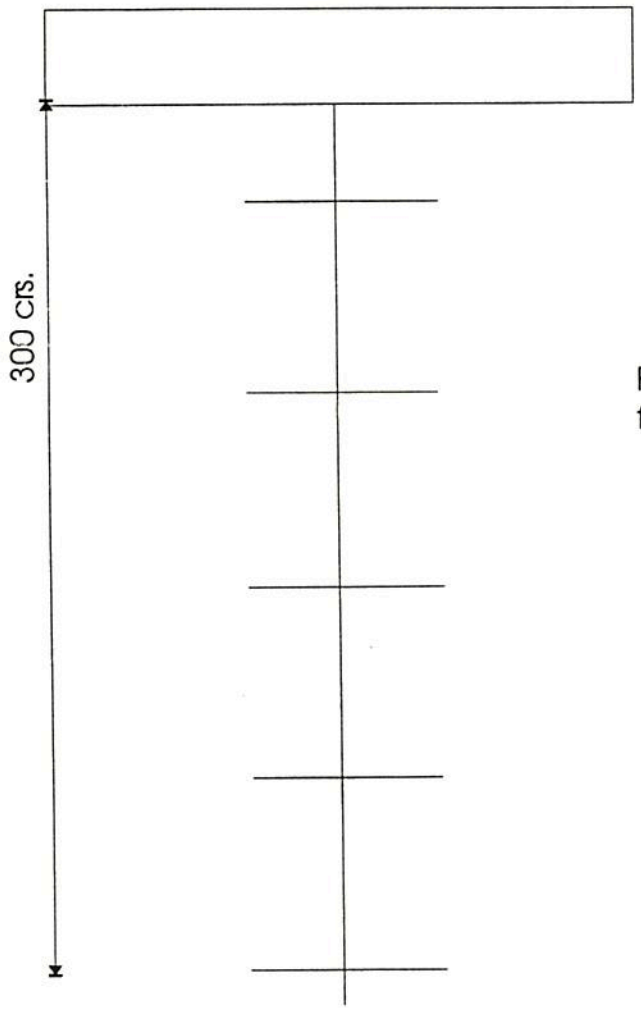


Figure 3 Location of Thermocouples from ceiling - Elevation

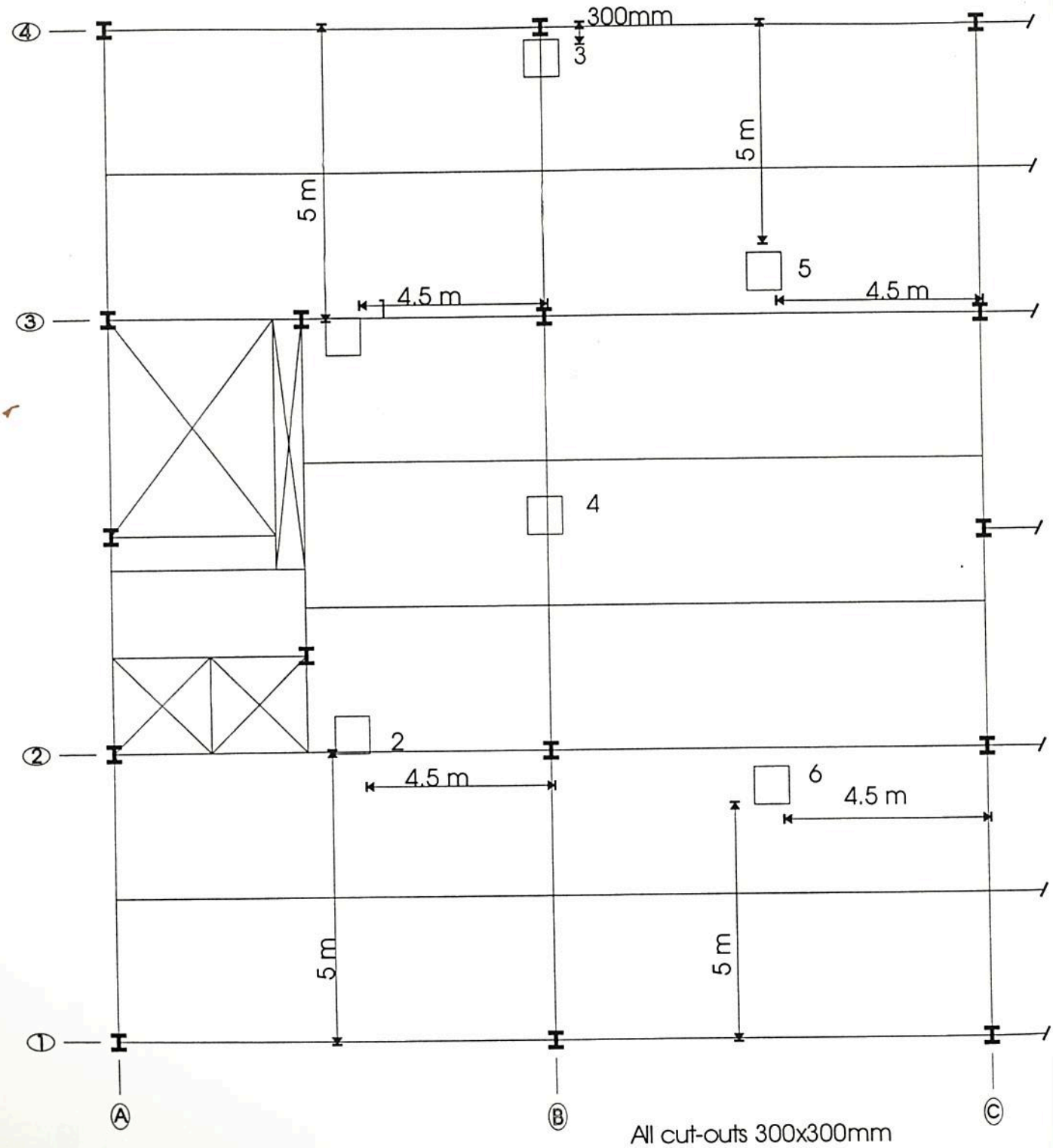


Figure 4 Location of cut-outs in concrete slab

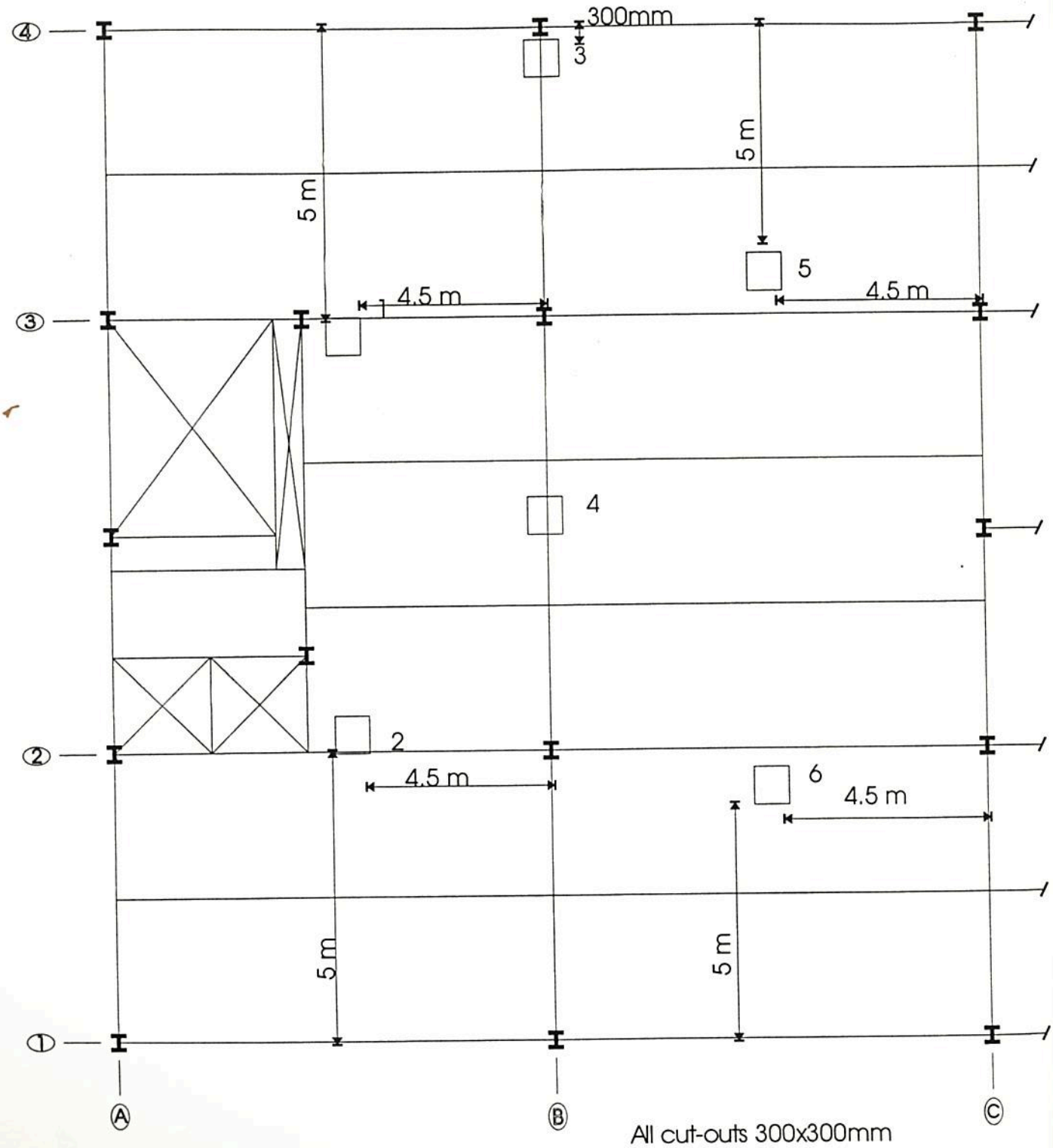
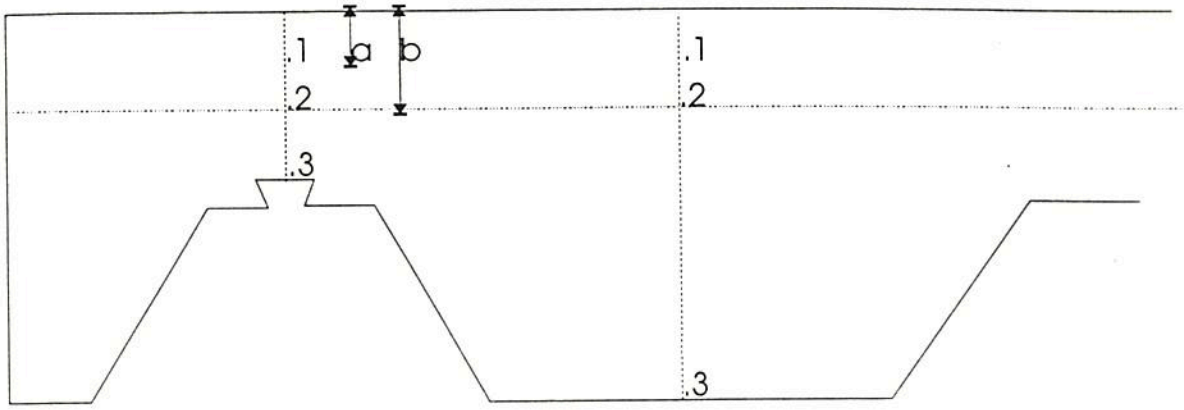


Figure 4 Location of cut-outs in concrete slab



cut-out no.	a (mm)	b (mm)
1	31.5	63
2	35	70
3	21	42
4	27.5	55
5	35	70
6	27.5	55

Figure 5 Concrete Slab Thermocouple Positions

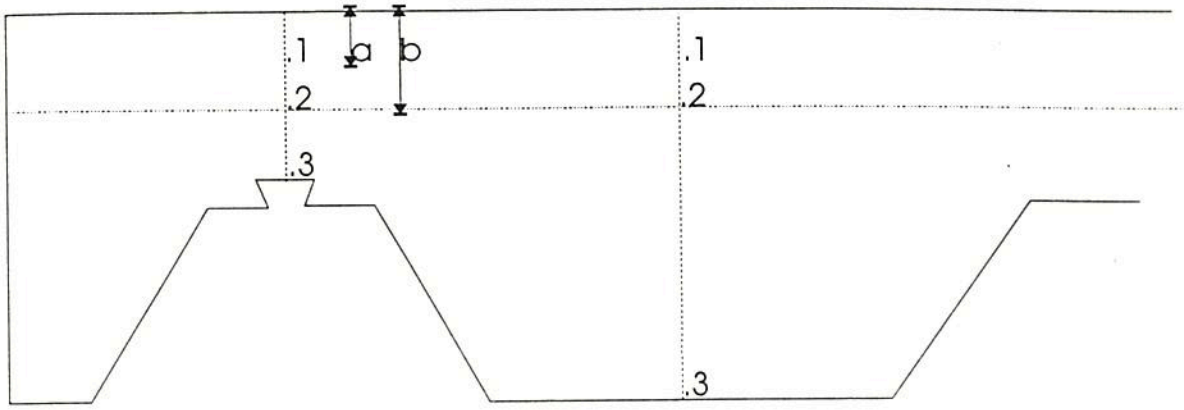


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Figure 5 Concrete Slab Thermocouple Positions

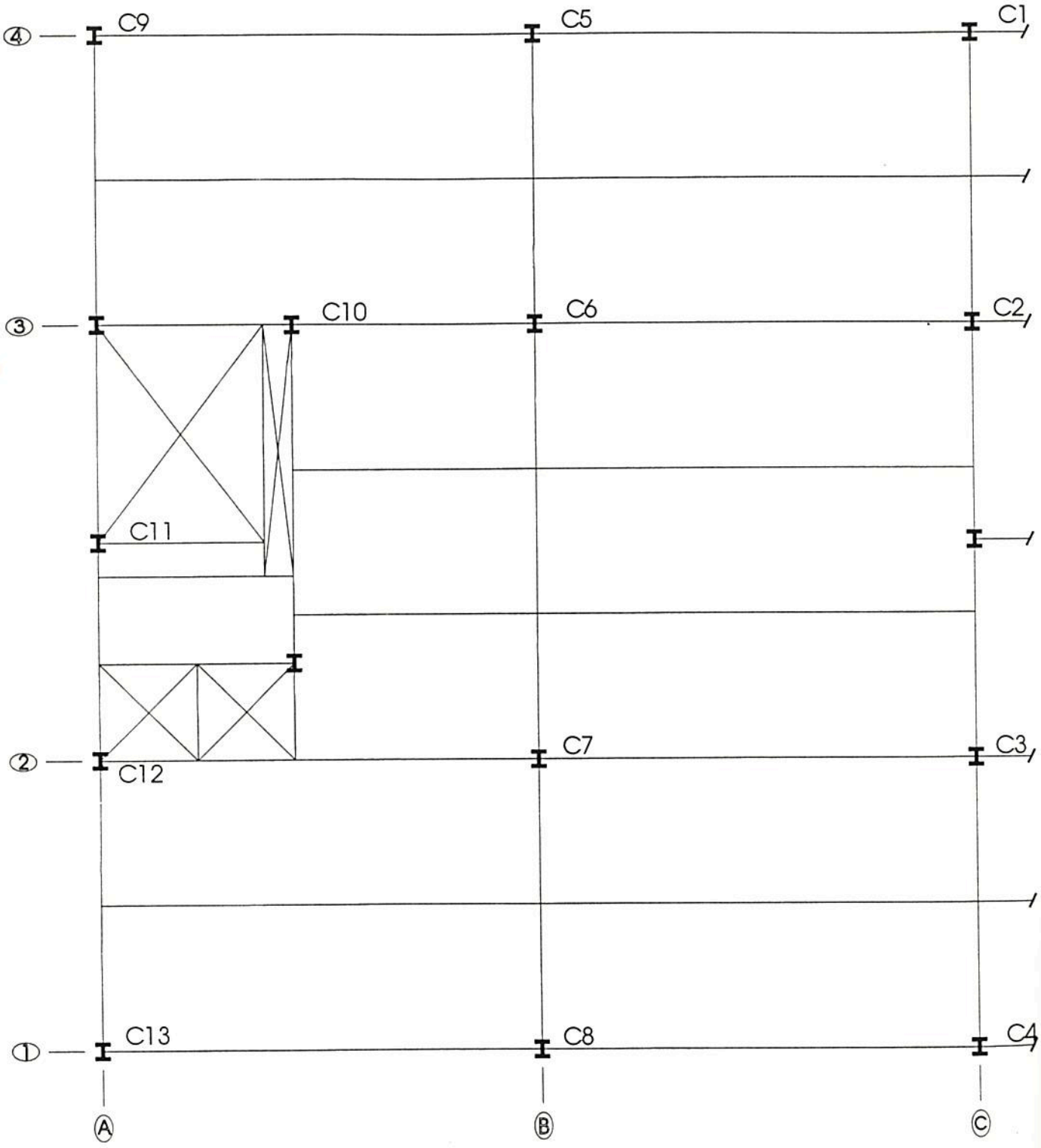


Figure 6 Column Identification - Large Compartment Fire Test

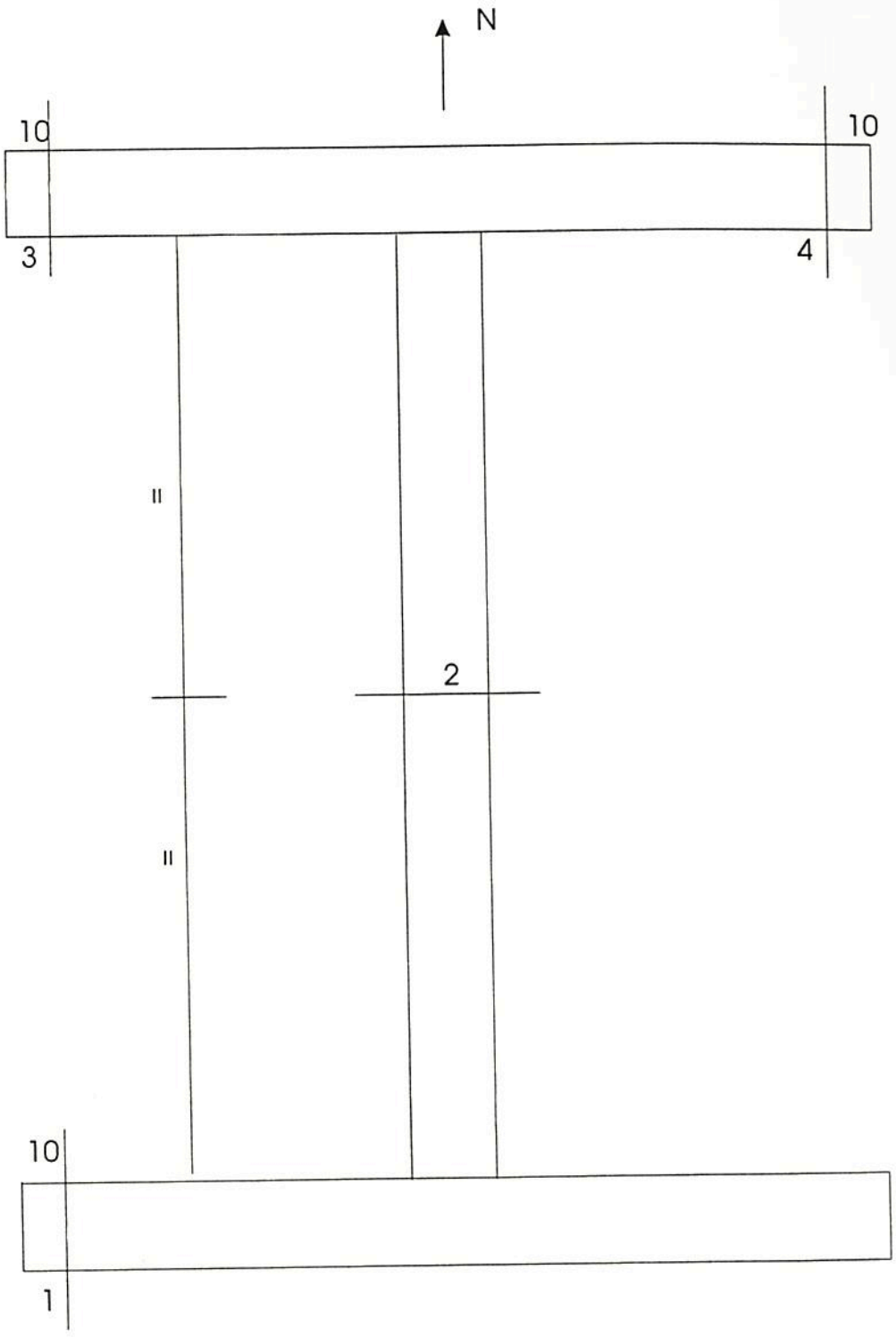


Figure 7 Cross-sectional Thermocouple Locations Column C5 (B4)

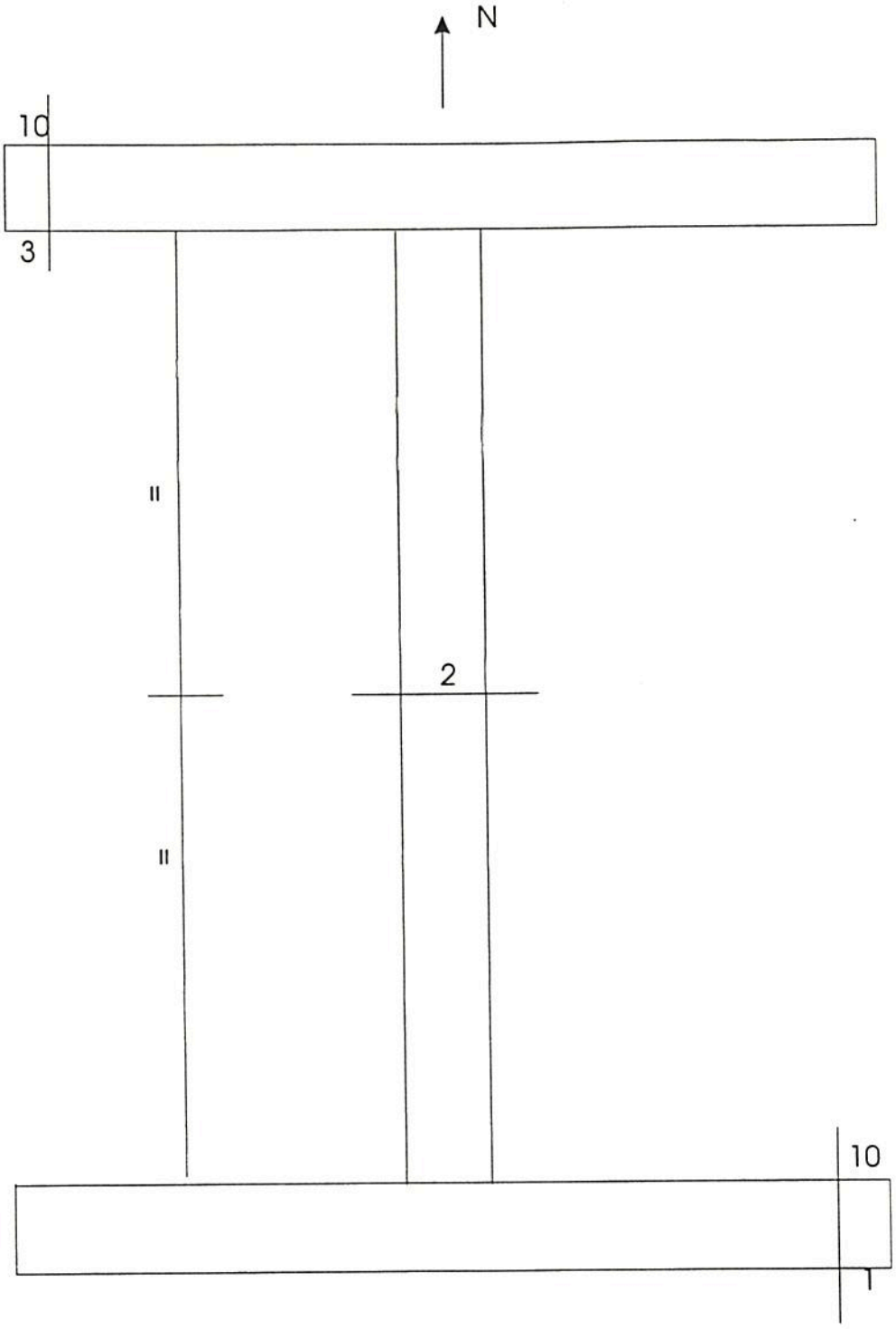


Figure 8 Cross-sectional Thermocouple Locations Columns C6 and C7 (B3&B2)

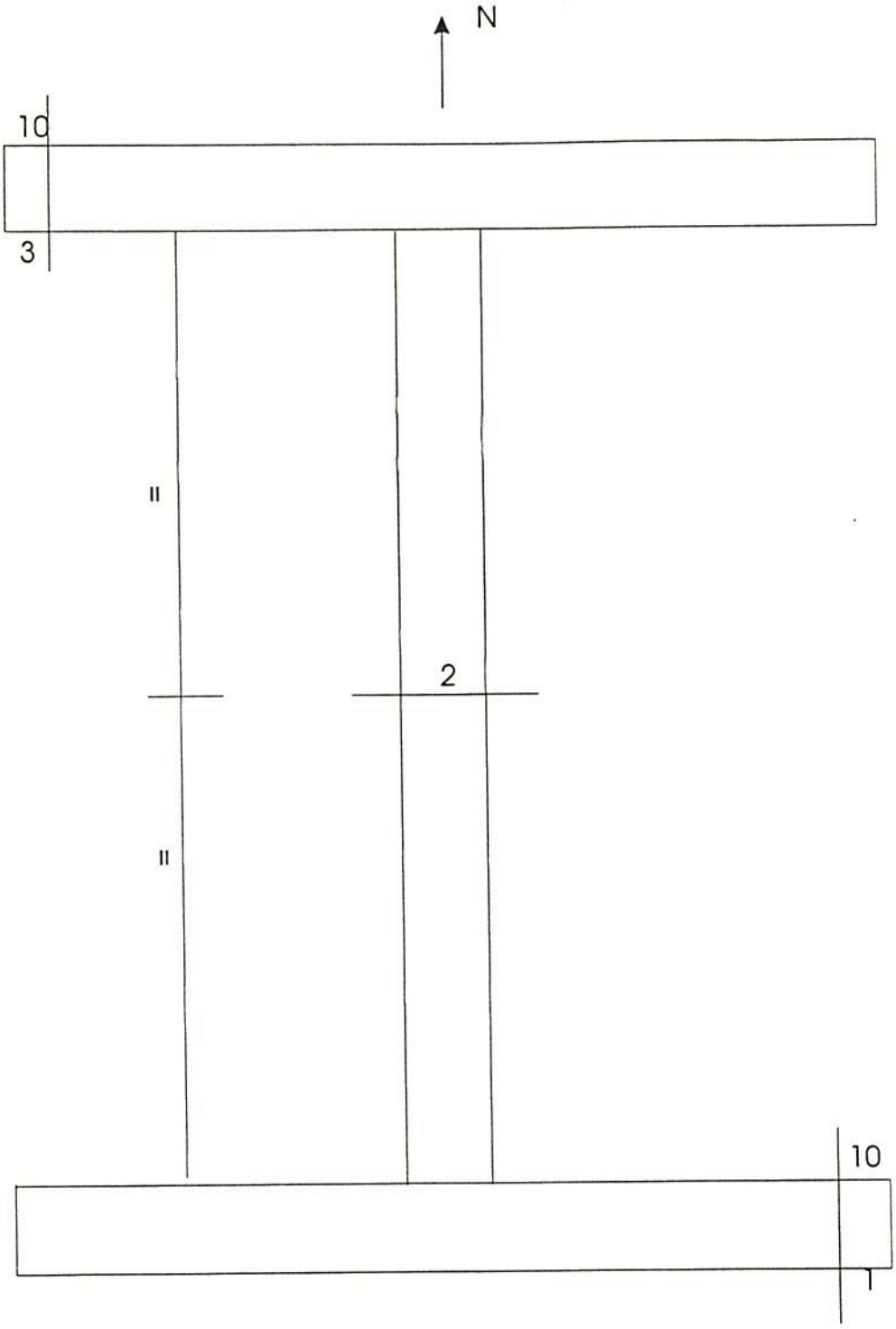


Figure 8 Cross-sectional Thermocouple Locations Columns C6 and C7 (B3&B2)

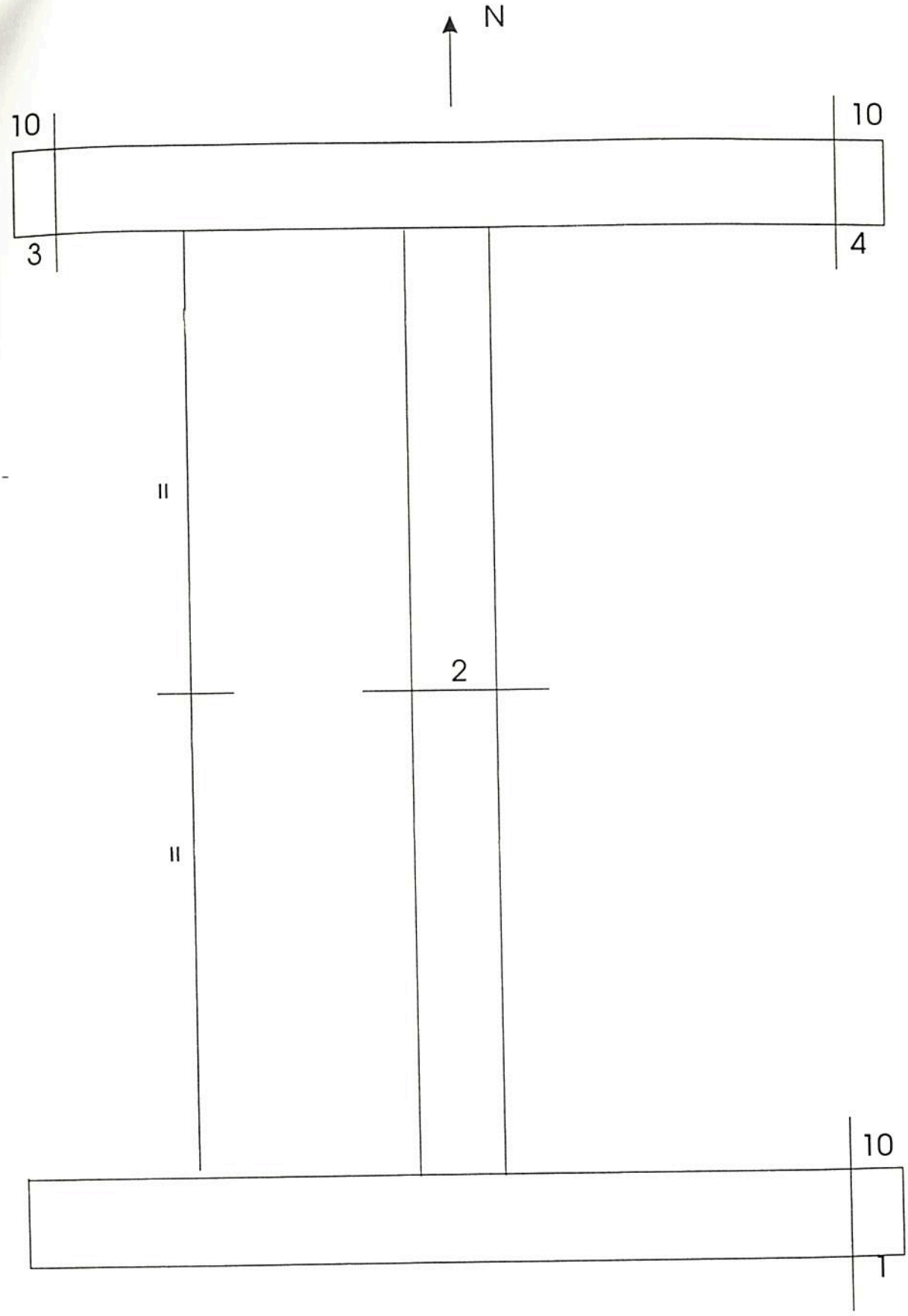


Figure 9 Cross-sectional Thermocouple Locations Columns C8 and C13 (B1&A1)

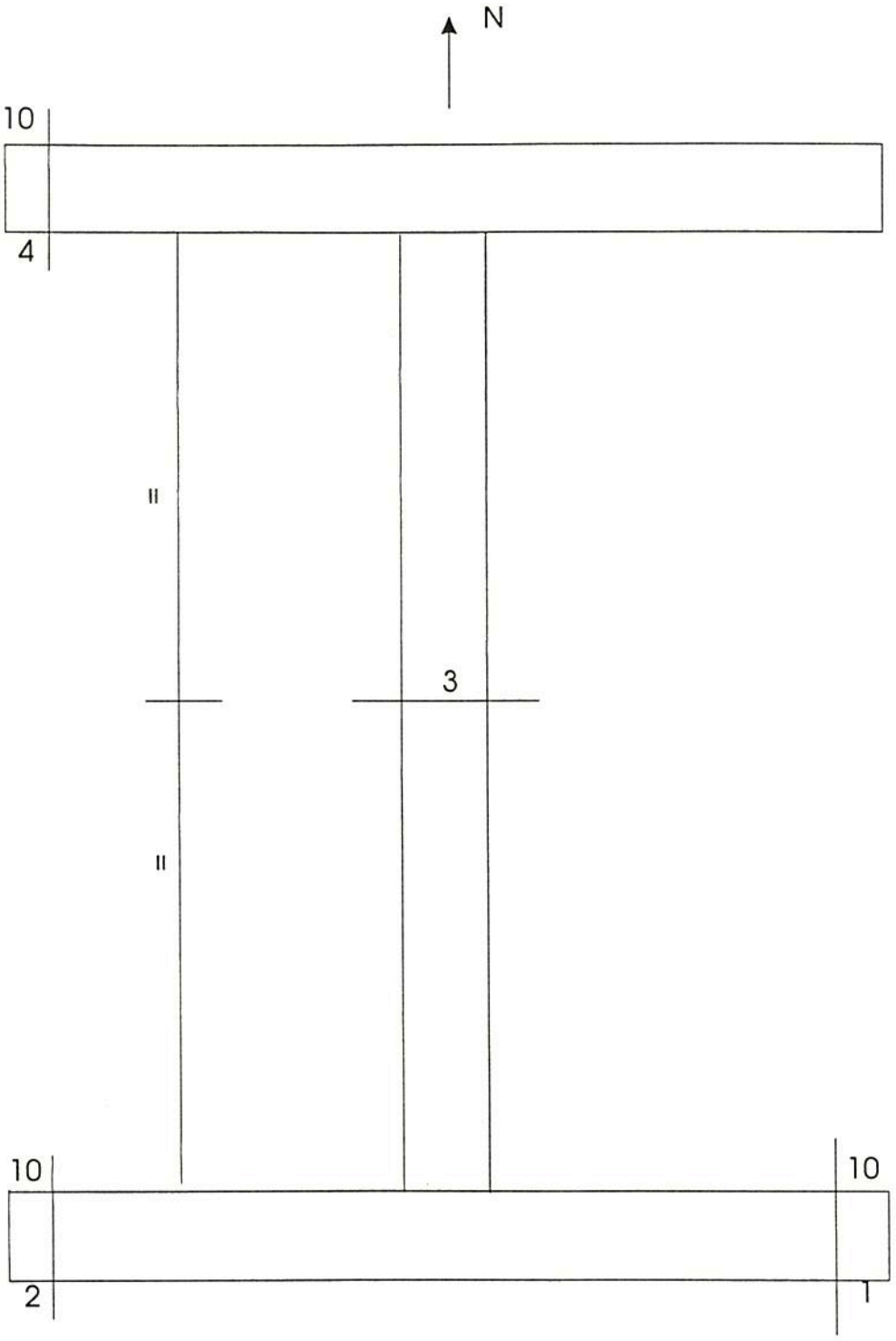
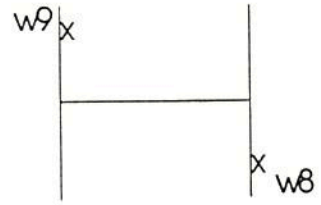
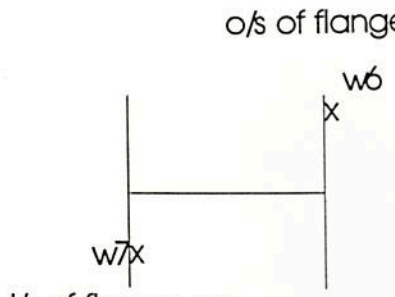


Figure 10 Cross-sectional thermocouple locations column C9 (A4)

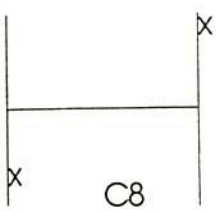


C13

o/s of flange 550 mm from slab

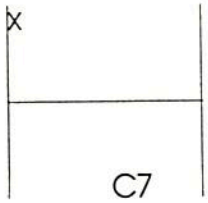


550mm up from slab



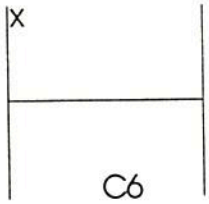
C8

o/s of flange 550 mm
up from surface of slab



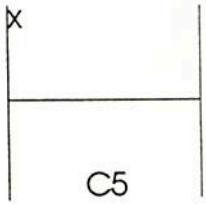
C7

as C5



C6

as C5

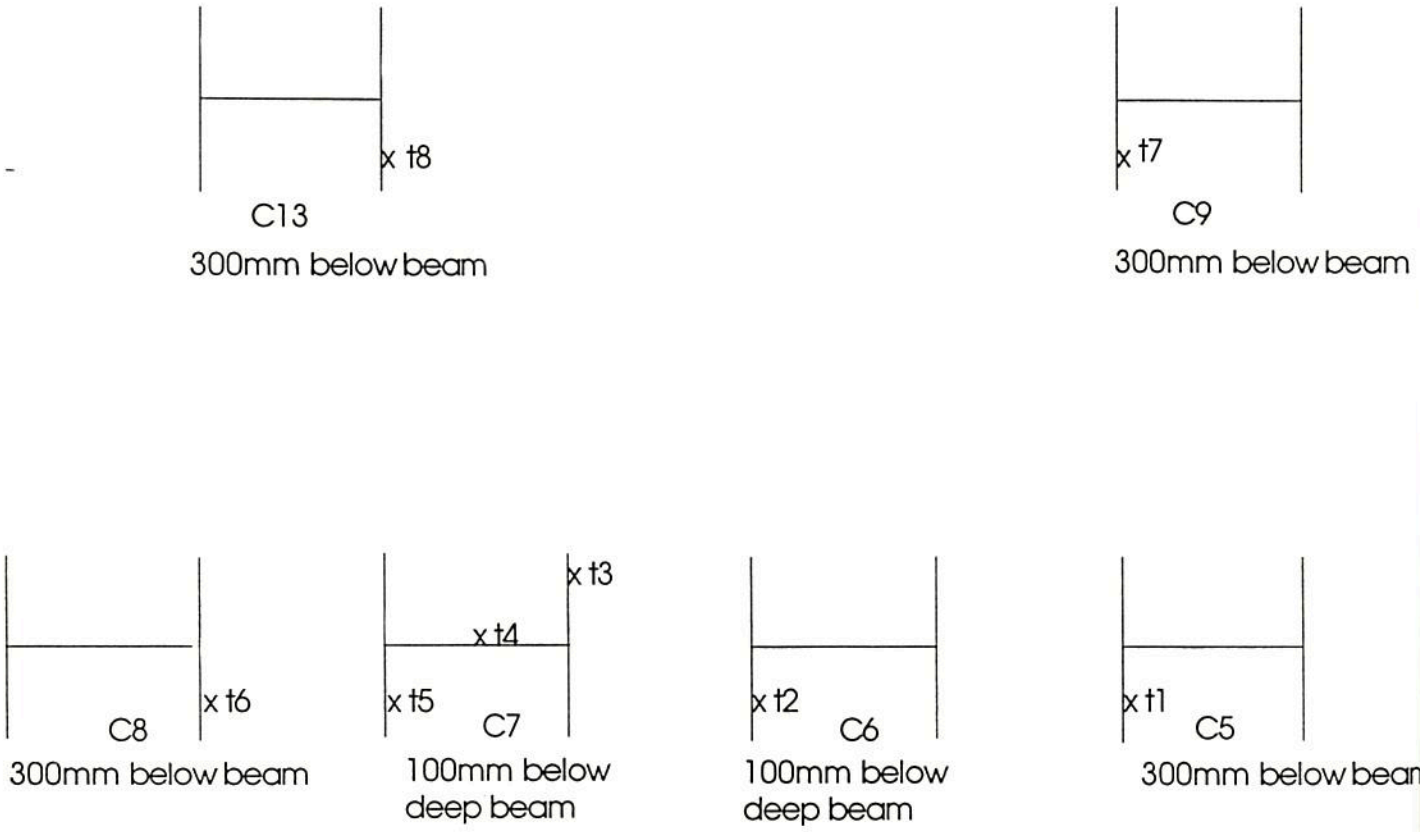


C5

i/s of flange 500mm from
surface of slab

Note: All thermocouples 25mm in from edge of flange , o/s = outside, i/s = inside

Figure 11 Position of Thermocouples associated with weldable strain gauges



Note: All thermocouples on outside of flange 25mm in from edge

Figure 12 Additional Thermocouples at top of columns (T1-T8)

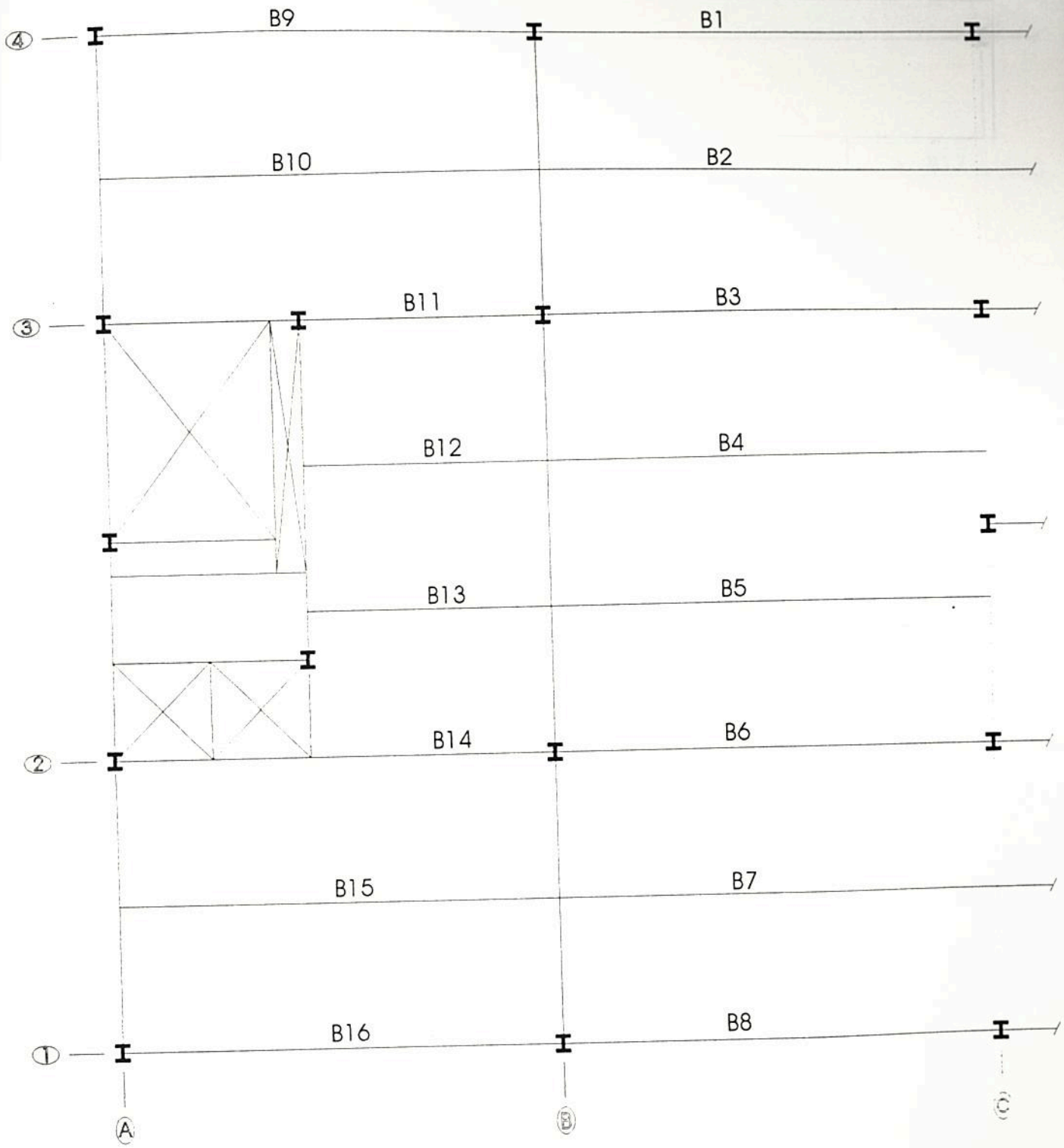


Figure 13 Secondary Beam Identification

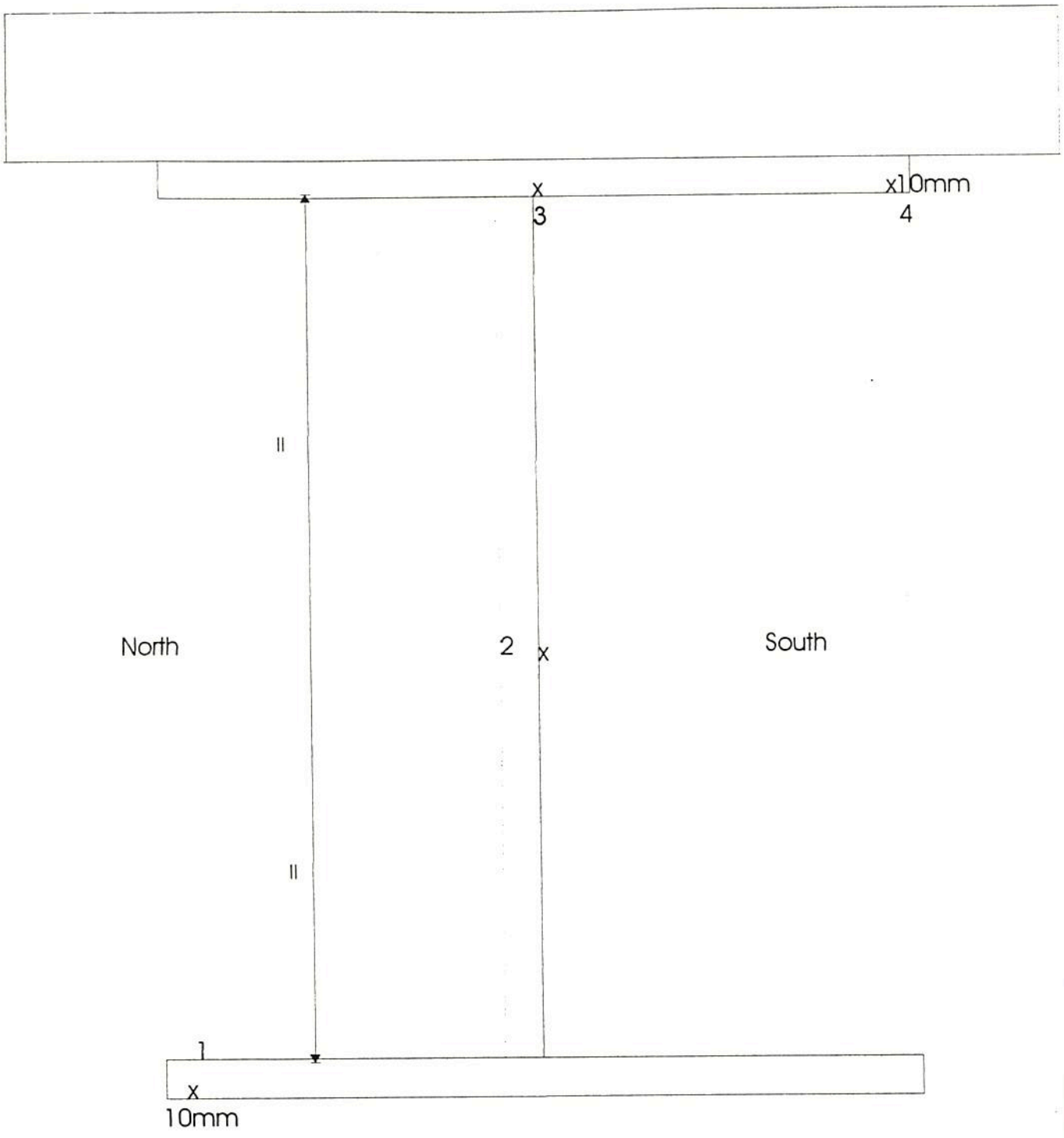


Figure 14 Thermocouple Locations for Secondary Beams B1,B6,B8,B9,B10,B12 and B16 looking East

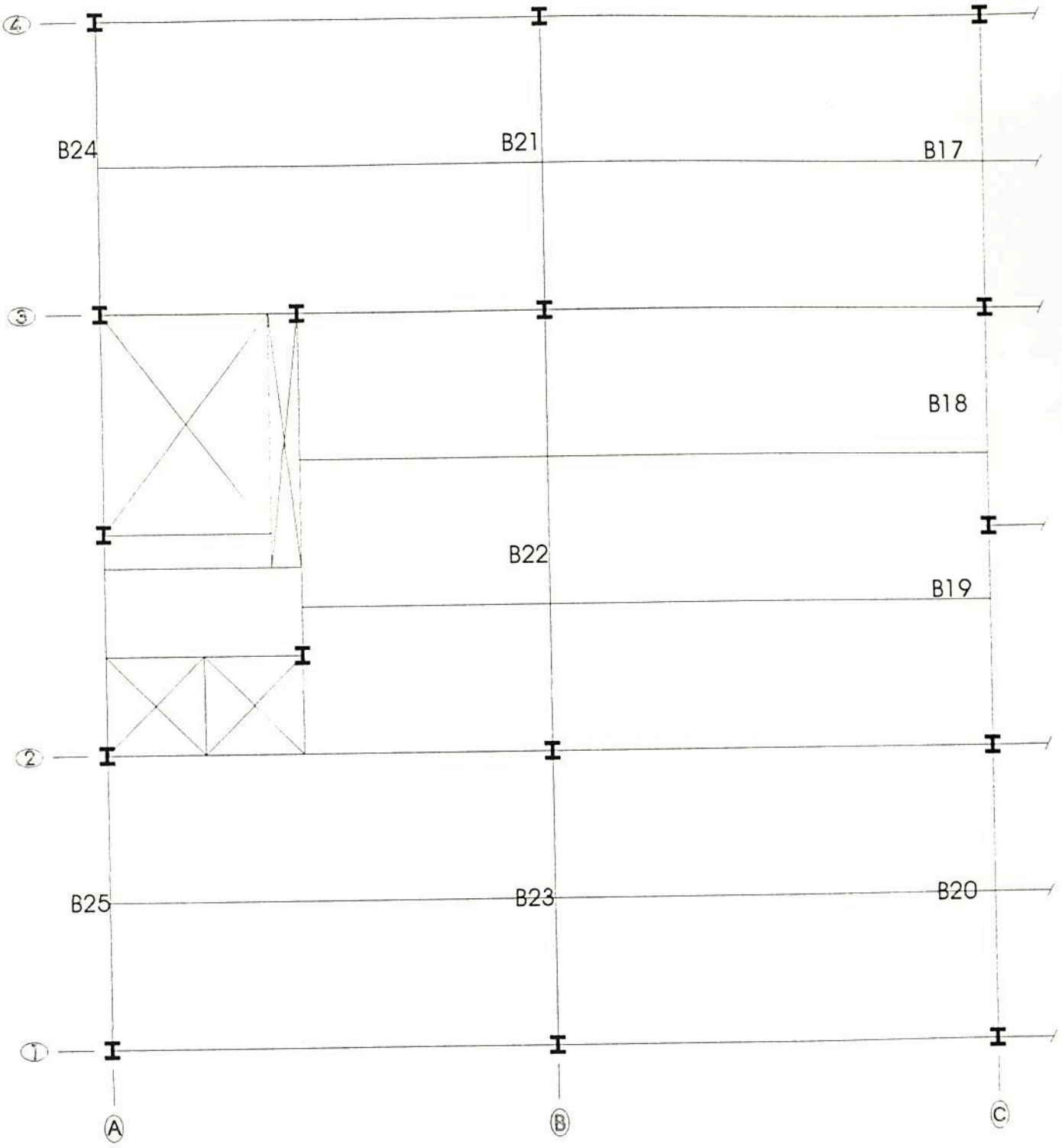


Figure 15 Primary Beam Identification

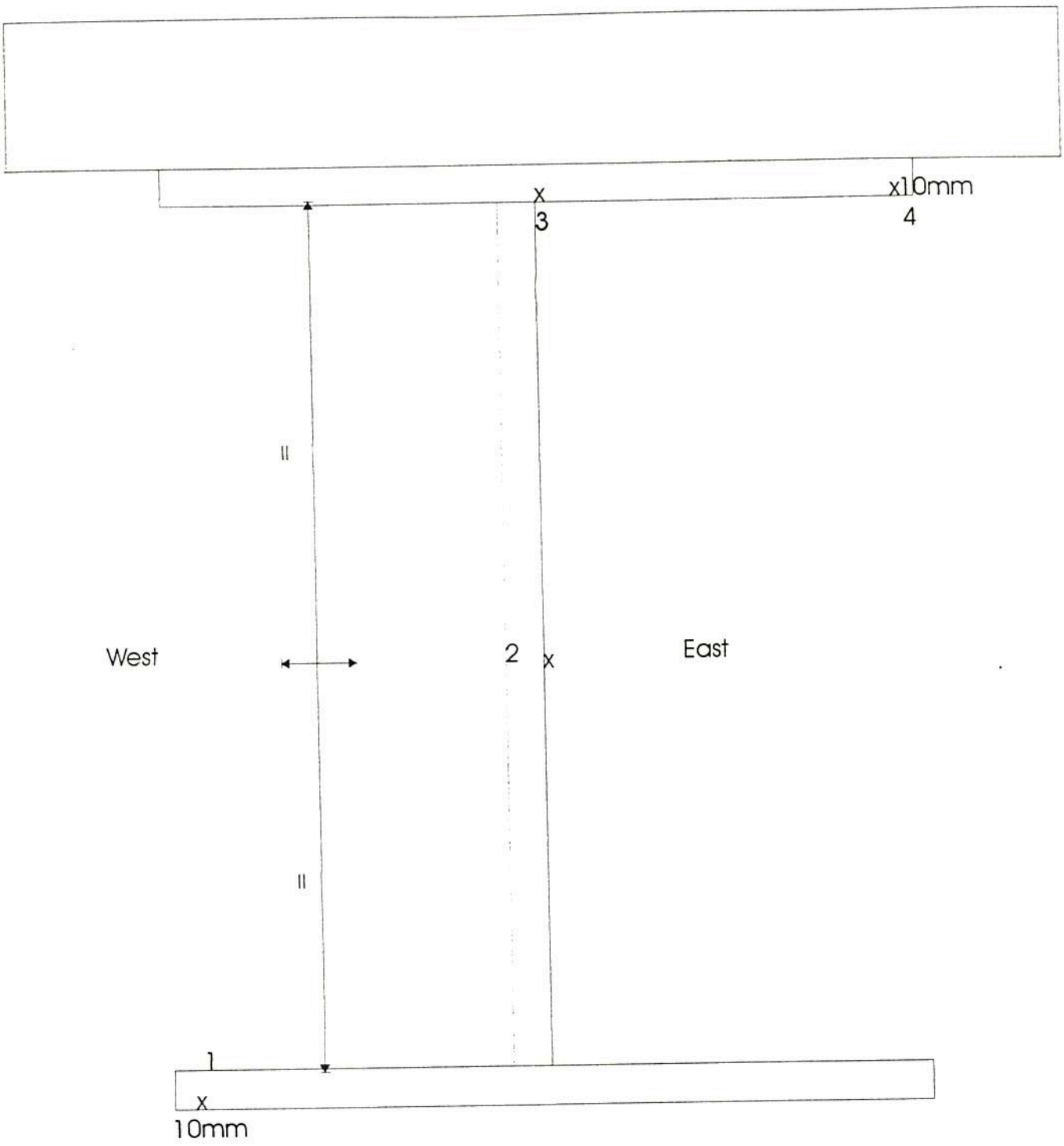
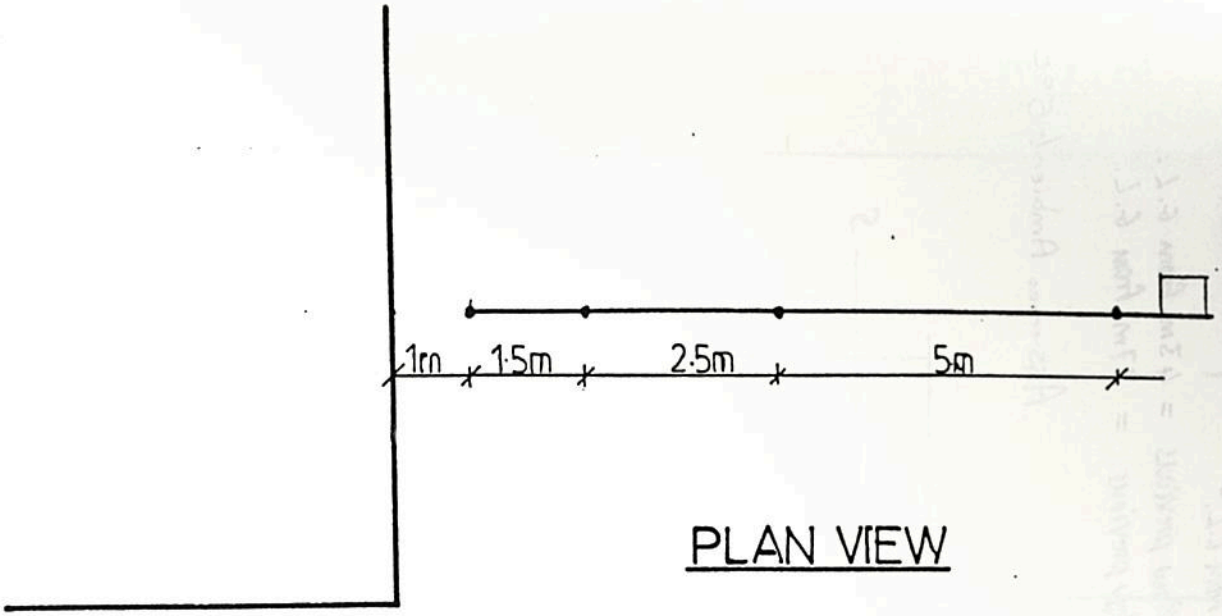


Figure 16 Thermocouple locations for primary beams B21-25 looking North



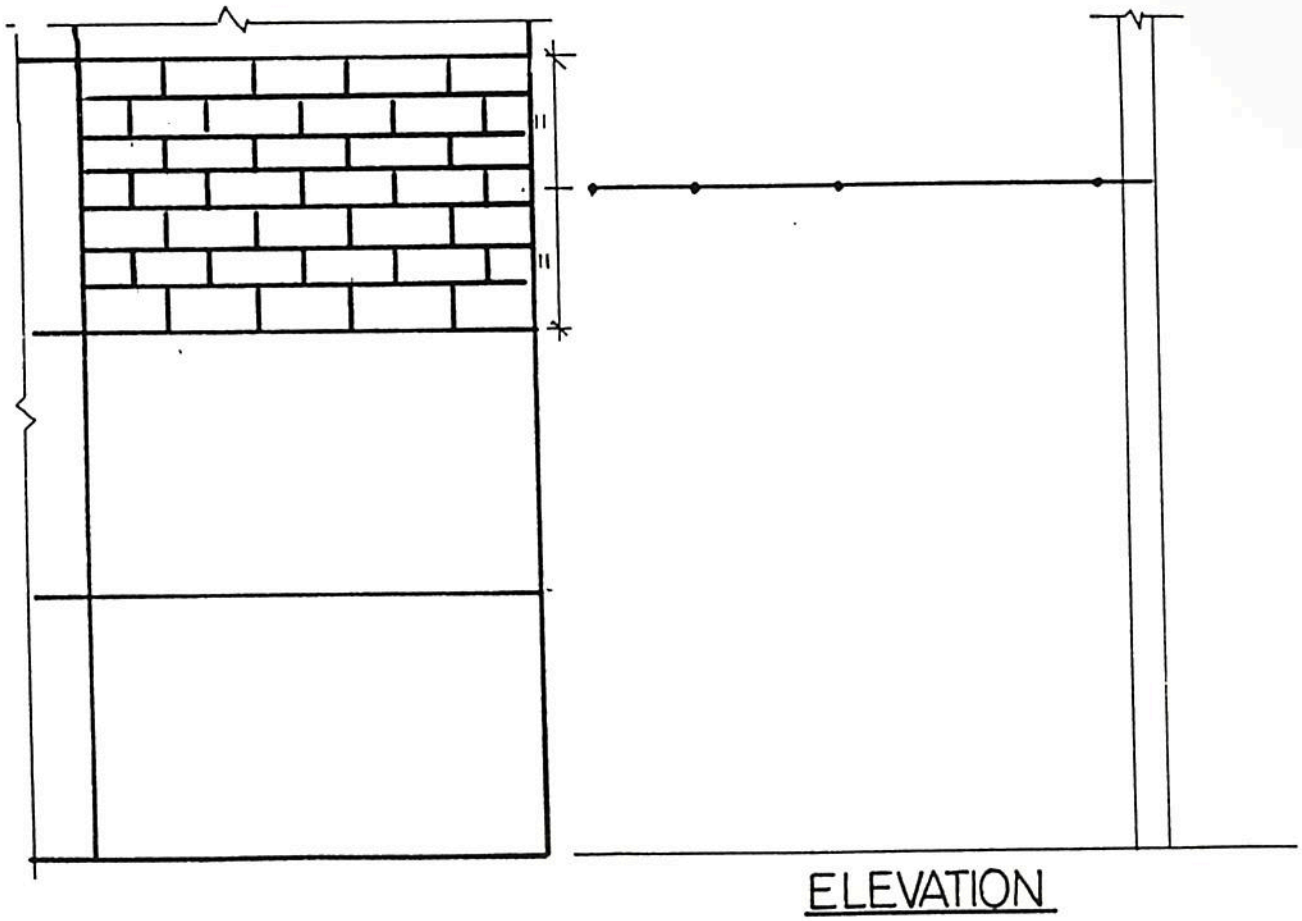


Figure 17 Position of Thermocouples Opposite the Compartment

4 = opposite top glazing panel, approx. 40m. from G.L., 5m. from glazing
5 = Ditto
6,7 = In front and behind main steel truss opposite compartment
8,9 = Ditto

1 = central walkway height above centre of compartment 49m from G.L.
2 = 6 m. below previous = 43m. from G.L.
3 = 6m. below previous = 37m. from G.L.

Assumes Ambient 5°C

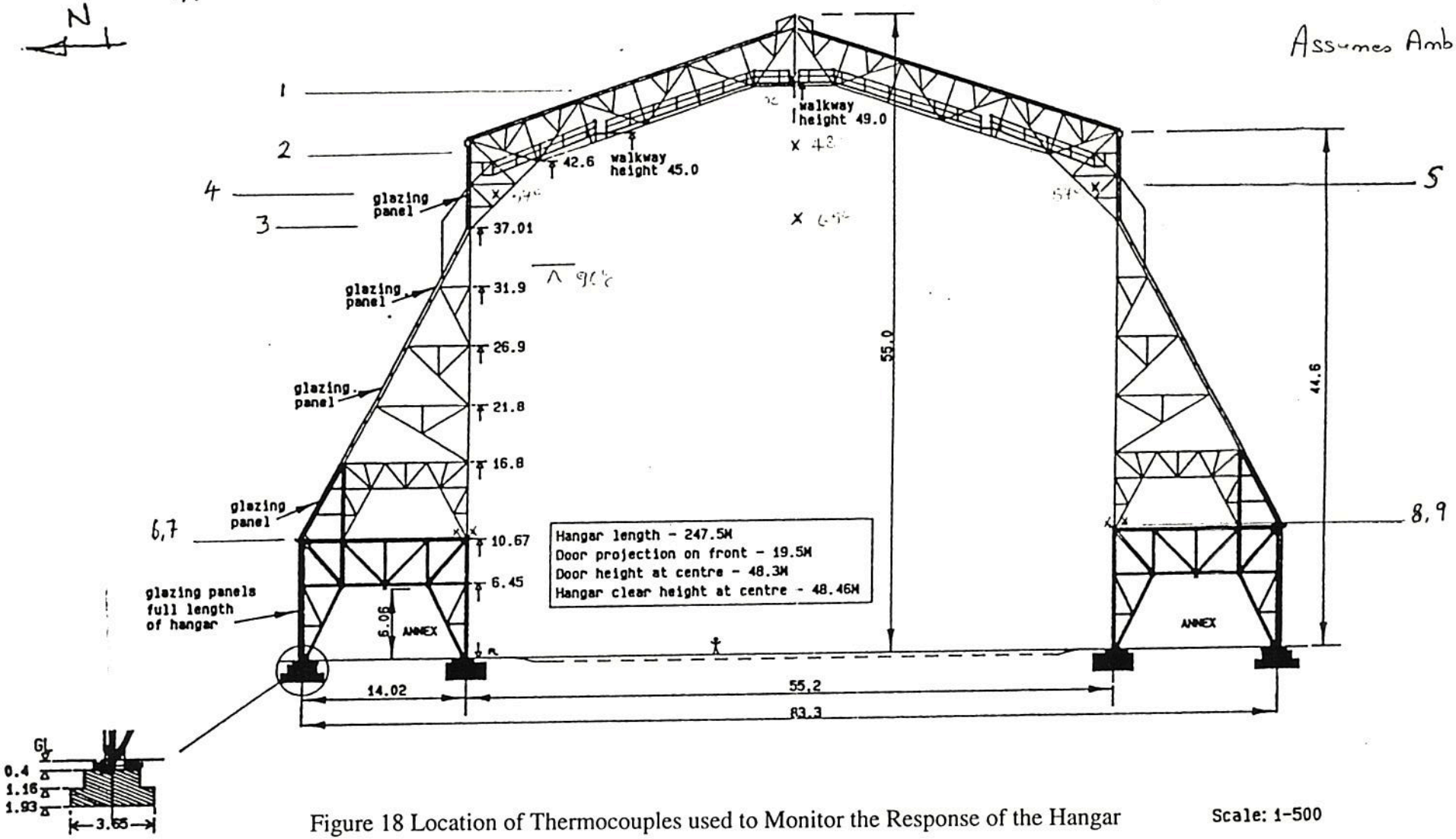


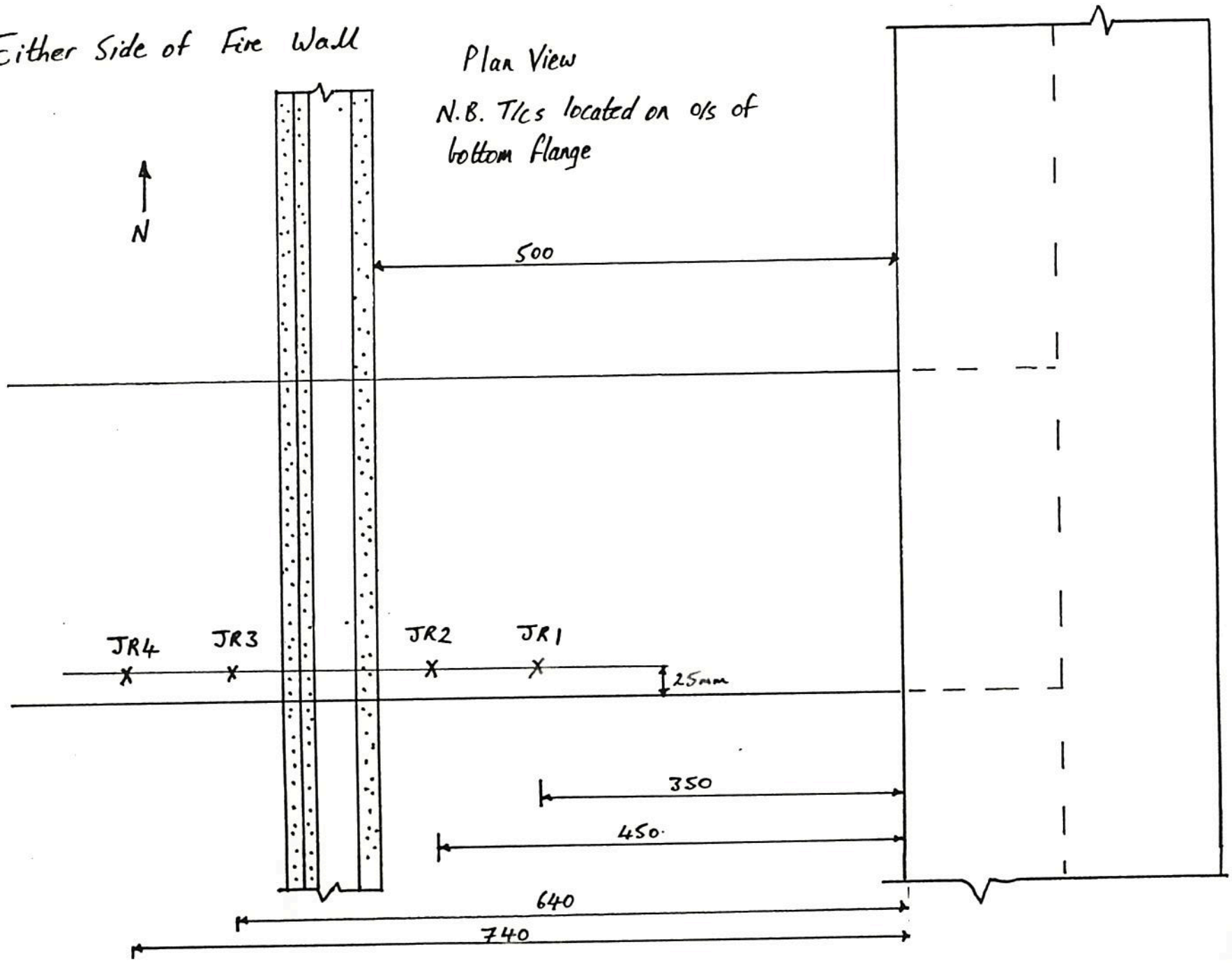
Figure 18 Location of Thermocouples used to Monitor the Response of the Hangar

Scale: 1-500

All dimensions are in metres

drawn: R. Saunders | date: 06.12.95

Figure 19 Additional Thermocouples - Beam B4 between Gridlines B and C



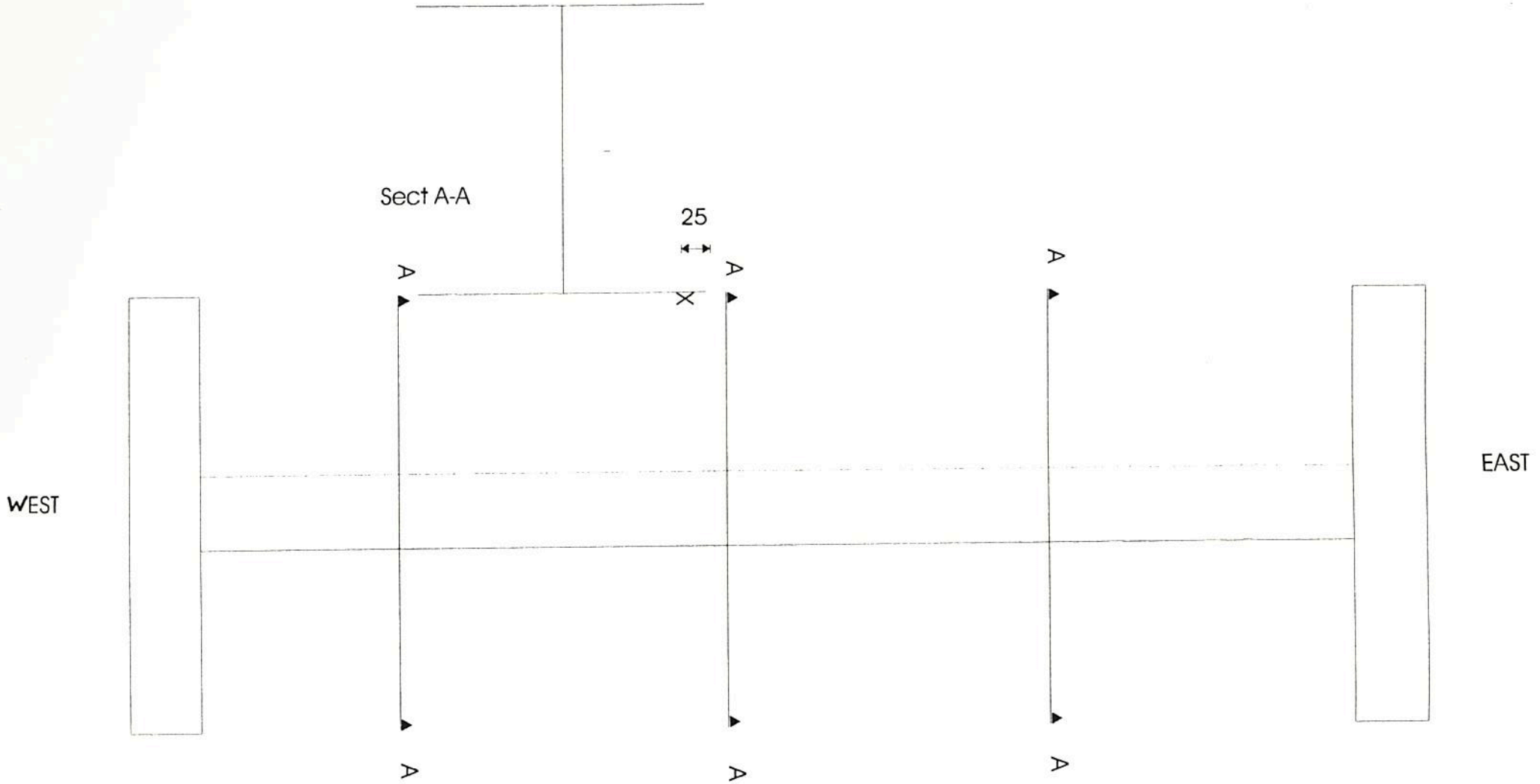
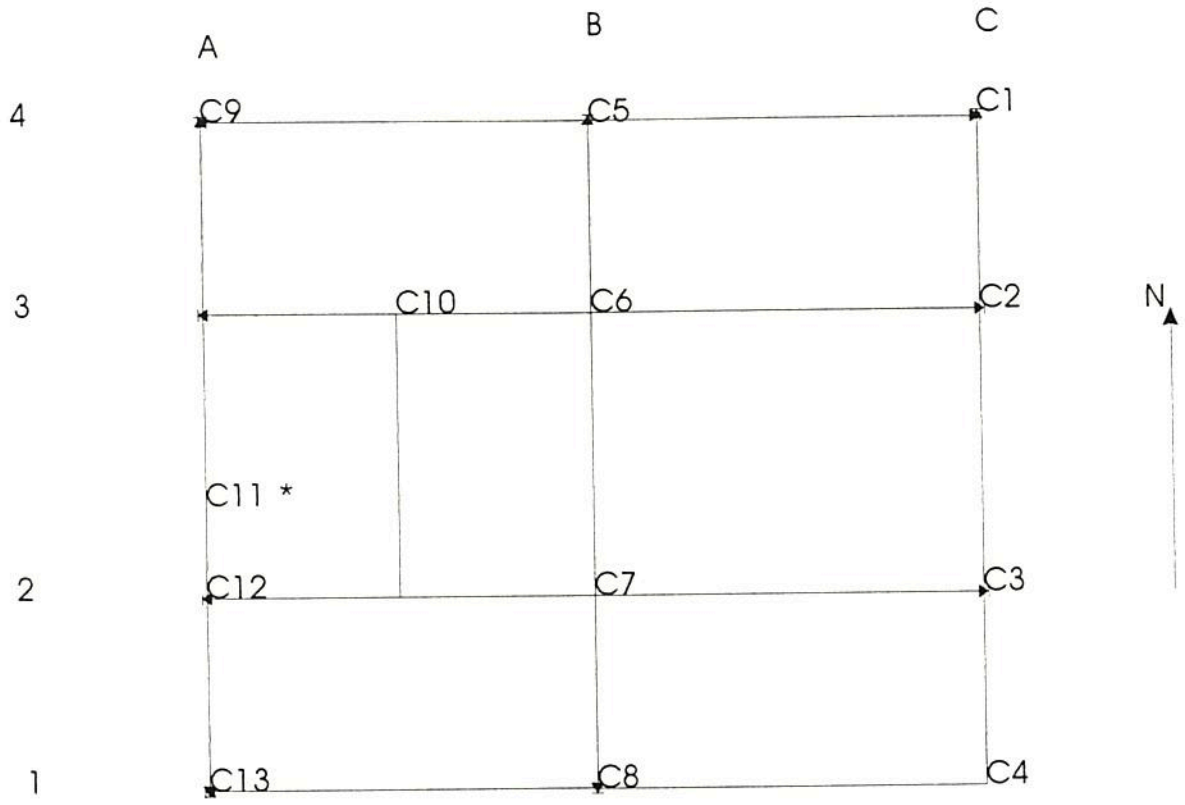
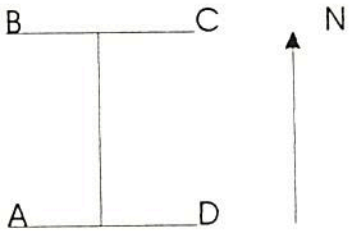


Figure 20 Additional Thermocouples beam B4

* C11 not used





Column orientation and gauge key

If gauge is located on inside of flange then this will be denoted by a ` alongside cable reference eg. 231

F denotes floor eg. F1 is floor 1, C denotes column eg. C1 is column 1

Figure 21 Column Strain Gauge Layout

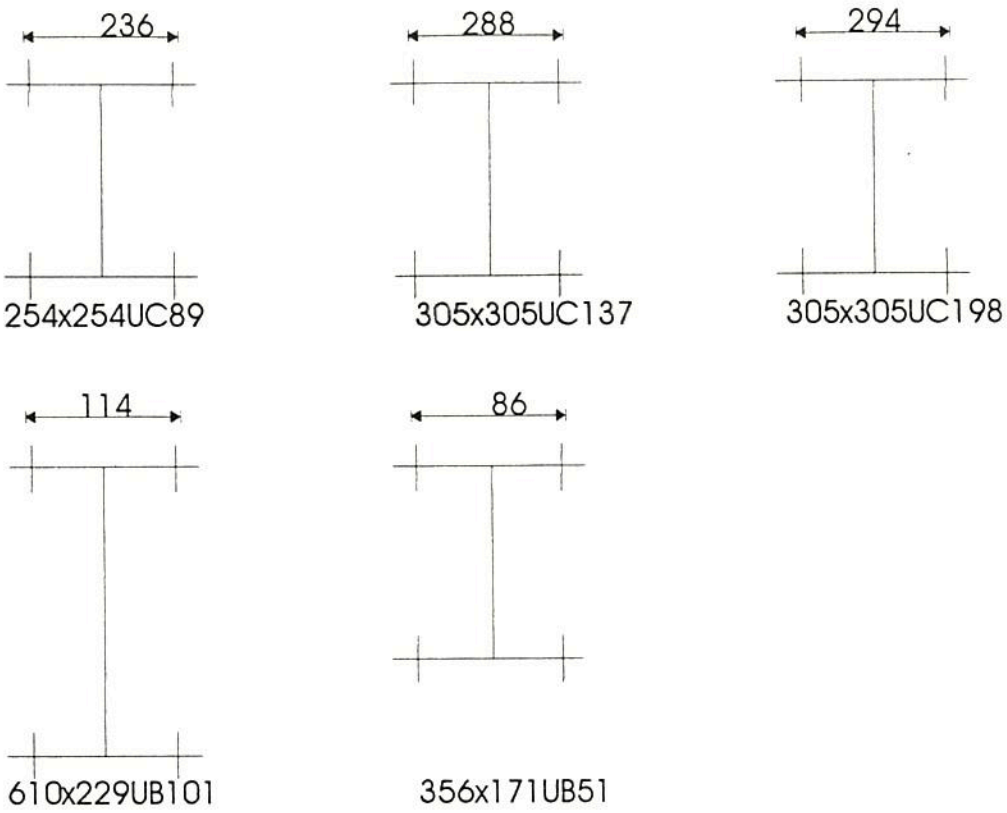


Figure 22 Cross-sectional strain gauge locations

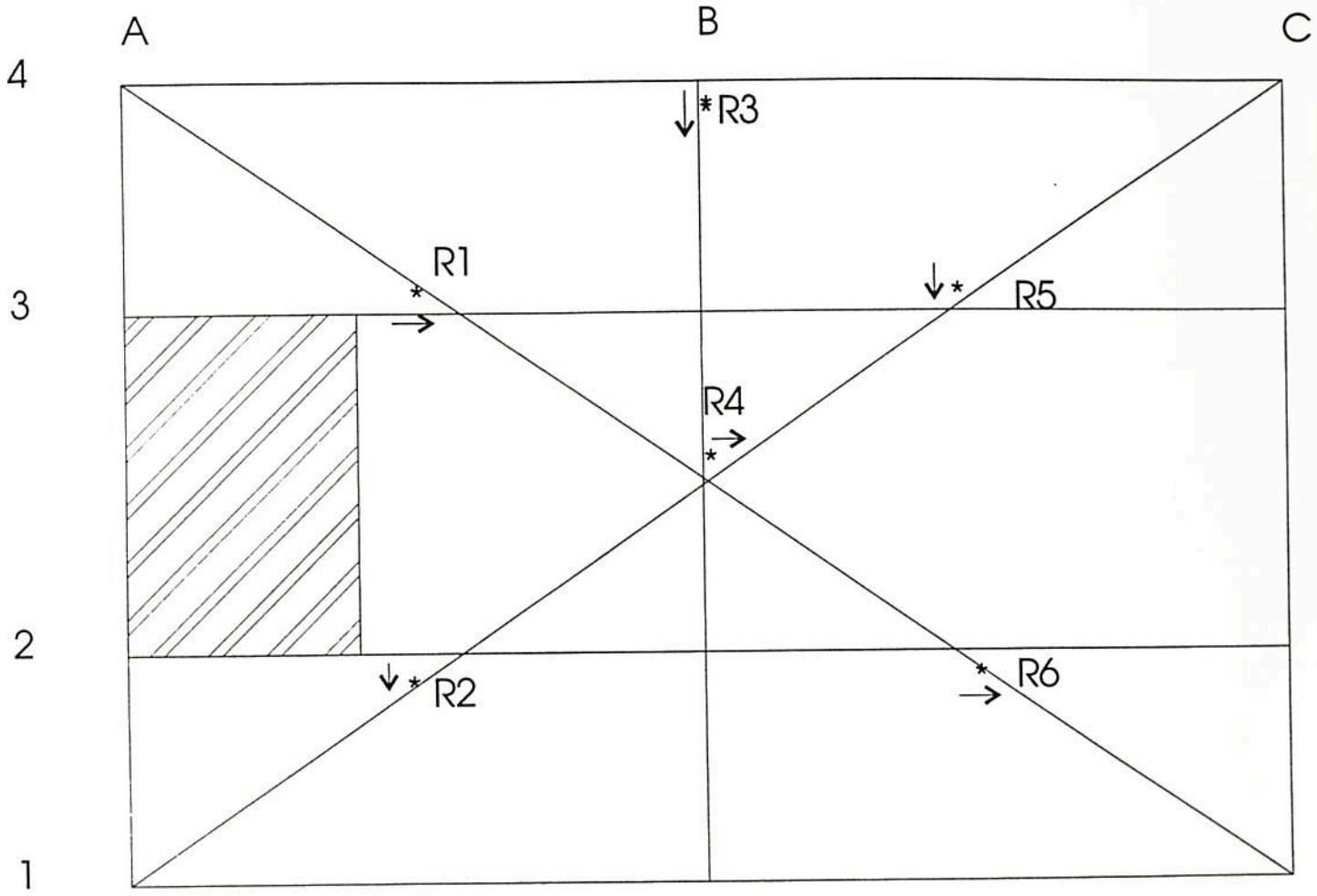


Figure 23 Reinforcement gauge layout 3rd floor

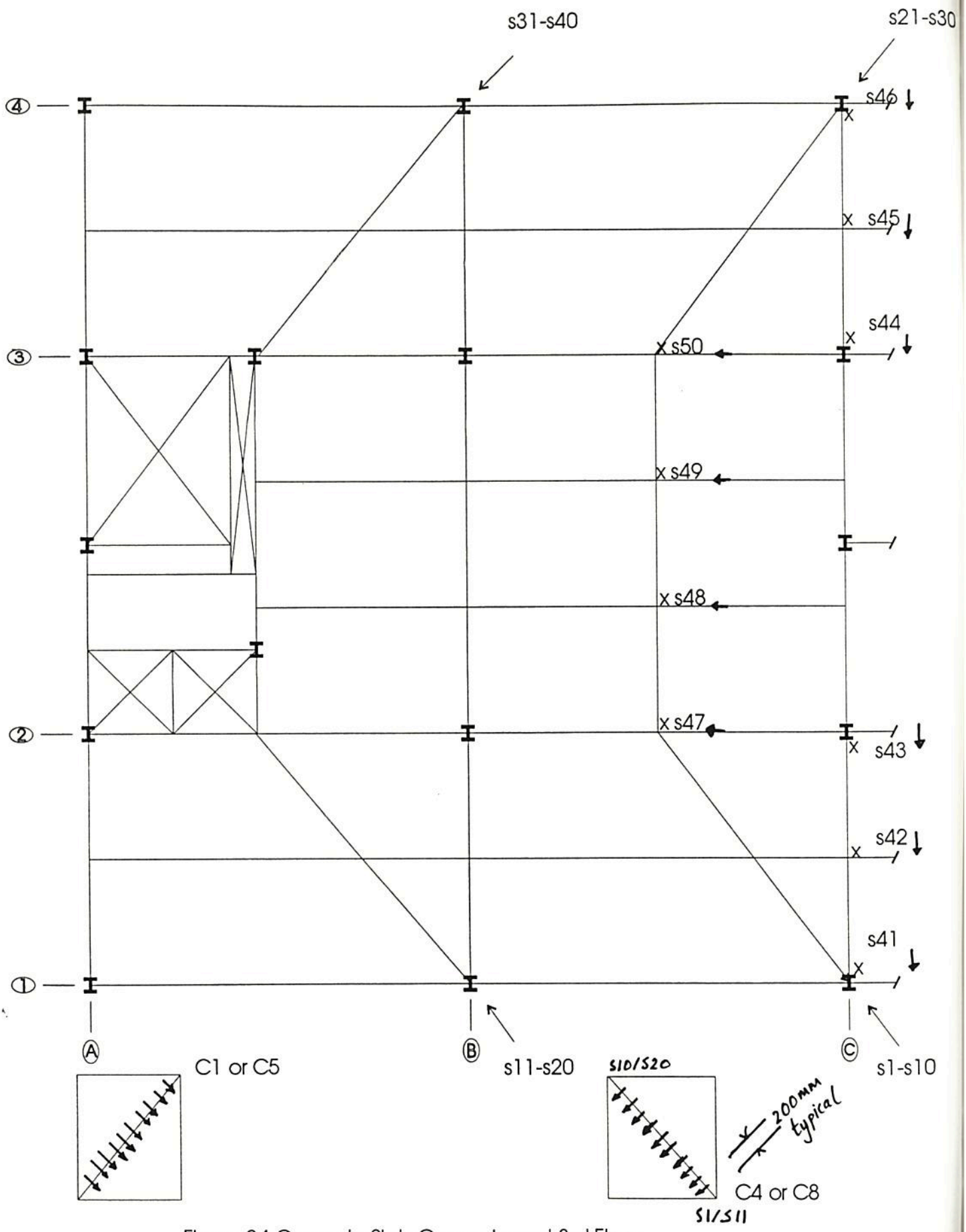


Figure 24 Concrete Slab Gauge Layout 3rd Floor

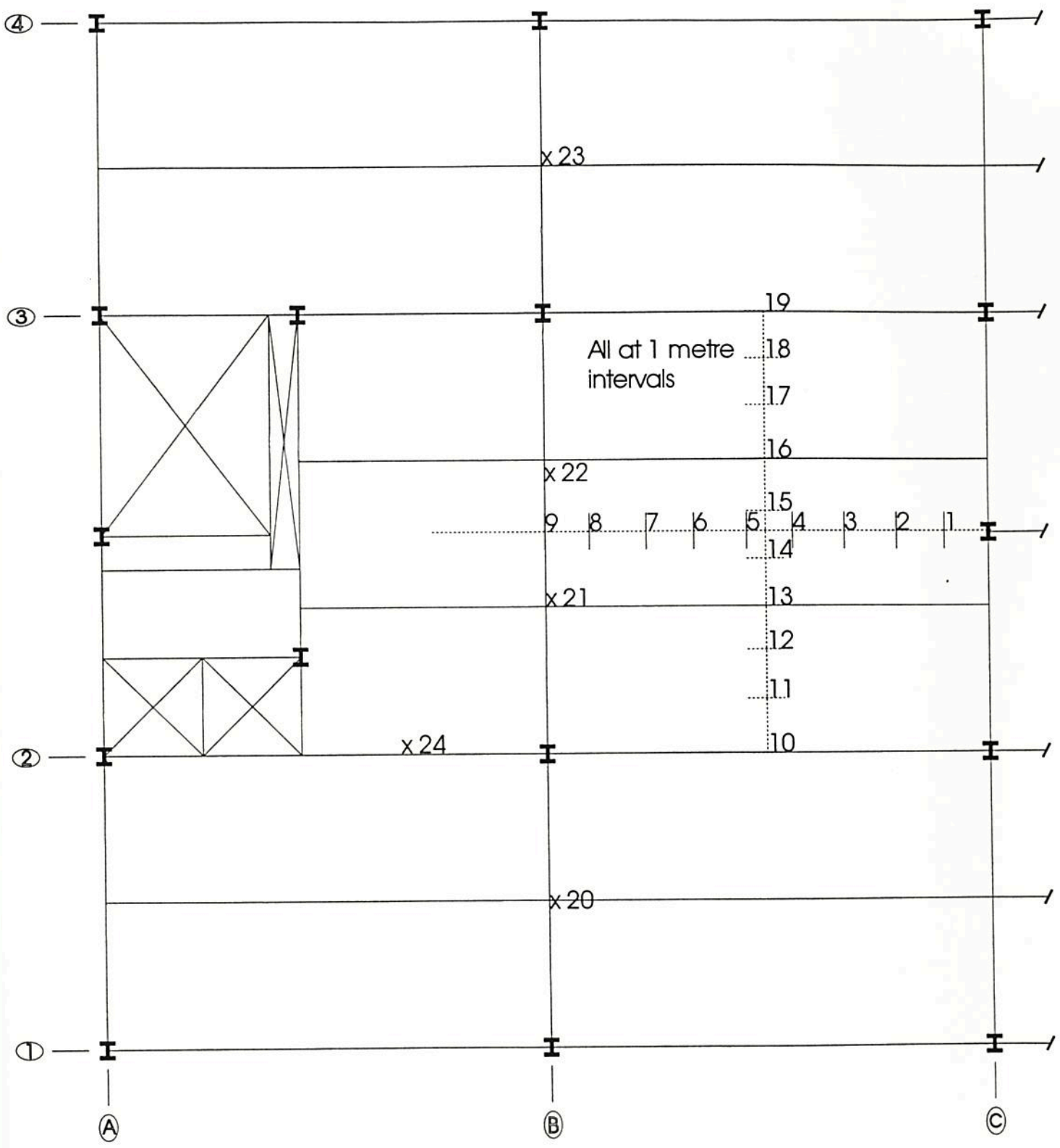


Figure 25 Location of Displacement Transducers 1-24

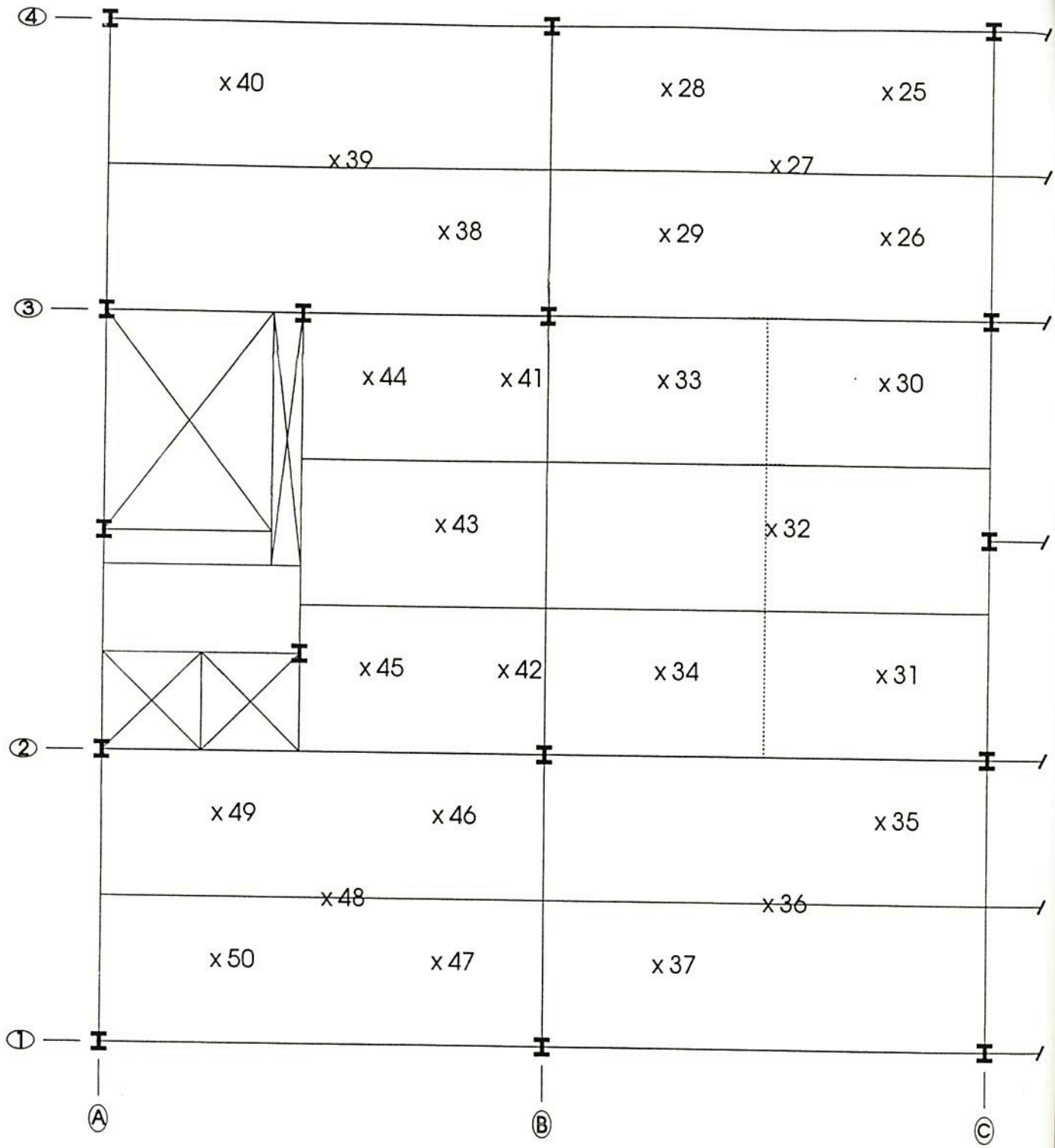


Figure 26 Location of Displacement Transducers 25-50

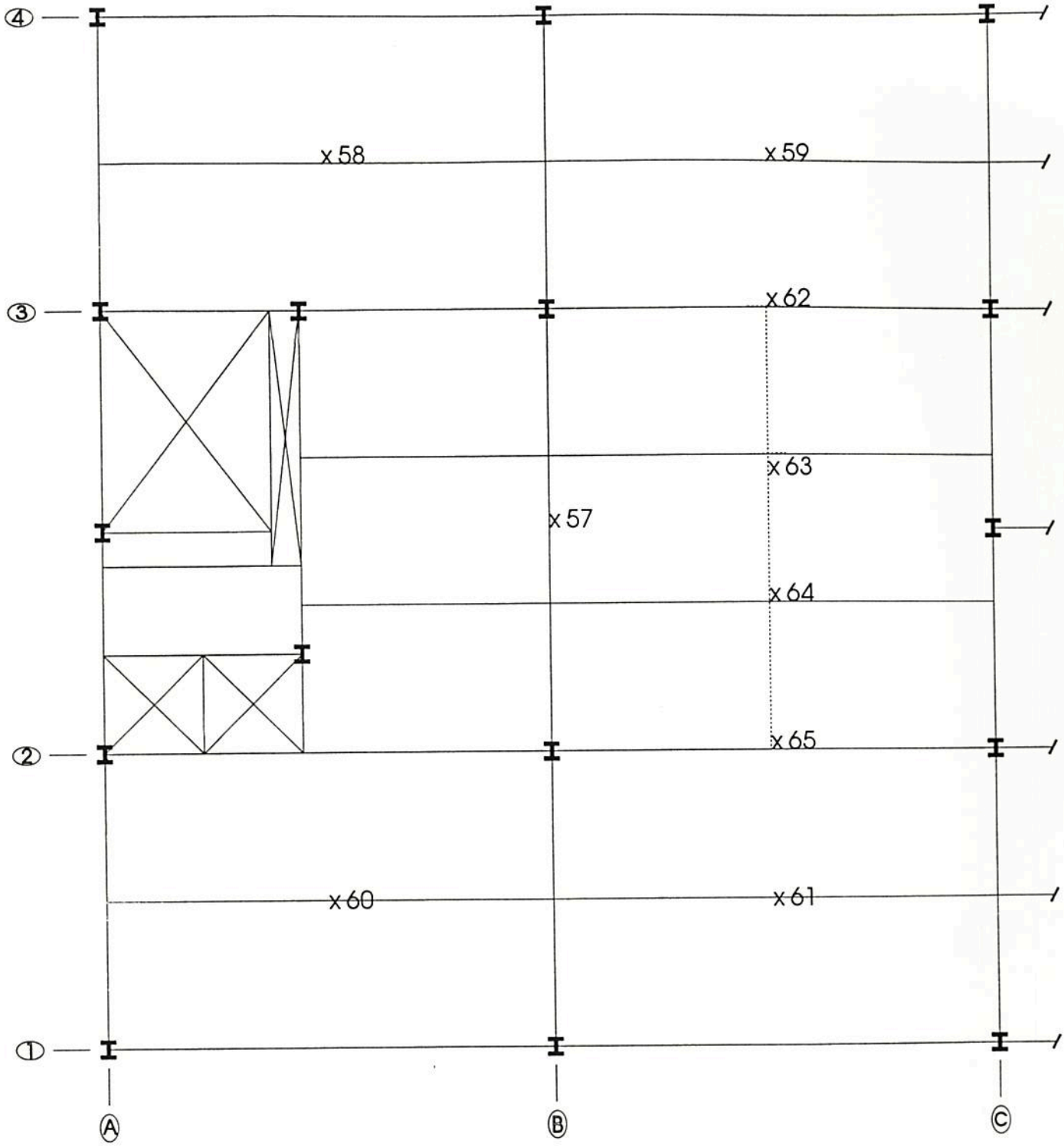
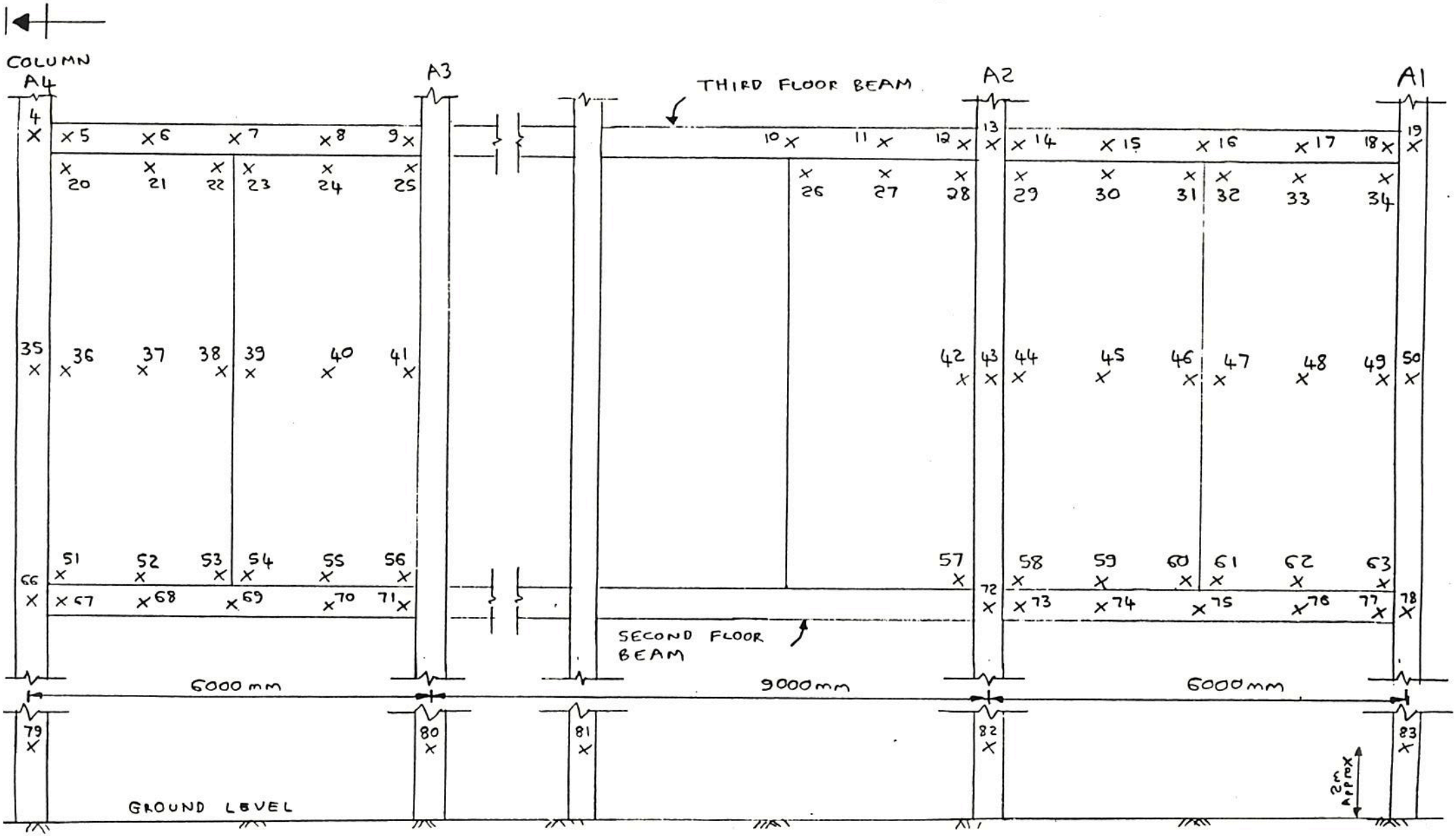


Figure 27 Location of Displacement Transducers on 4th floor

Target Positions For 3D-Laser Survey System Monitoring of West Wall Movement During the Half-Floor Fire Test at Cardington, 2/4/96



NOTES: NOT TO SCALE
TARGET NUMBERS 1, 2, 3, 64, 65 NOT USED

DRAWN BY ANDRÉ BOUGARD
STRUCTURAL PERFORMANCE DIVISION
BUILDING RESEARCH ESTABLISHMENT

Figure 28

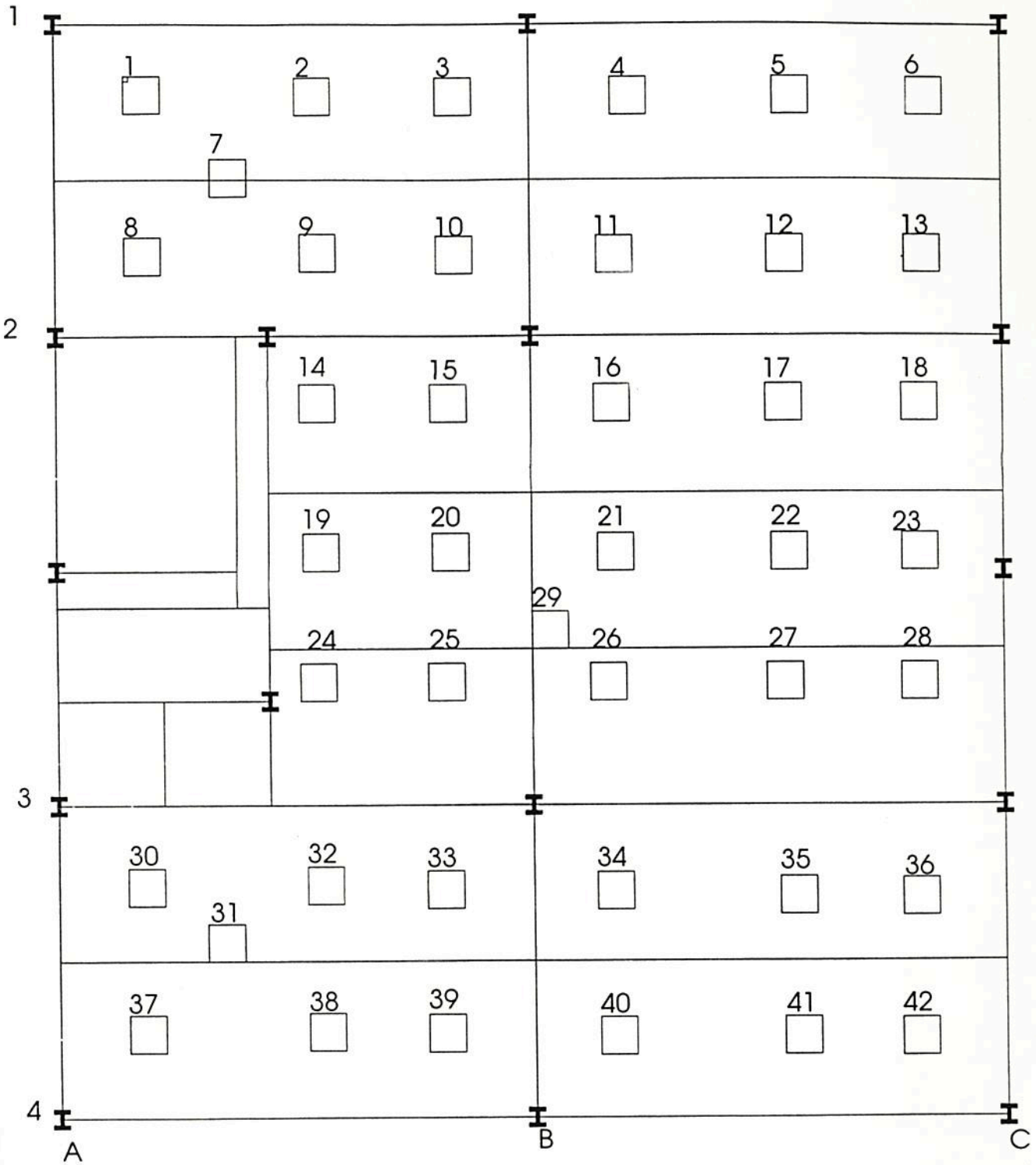


Figure 29 Crib Layout Large Compartment Fire Test

Figure 28

Max. Heat Output = 1.7 mW
Time to peak = 20 mins.
Steady burning = 40 mins.

Total mass = 425 kg
Total no. of sticks = 340

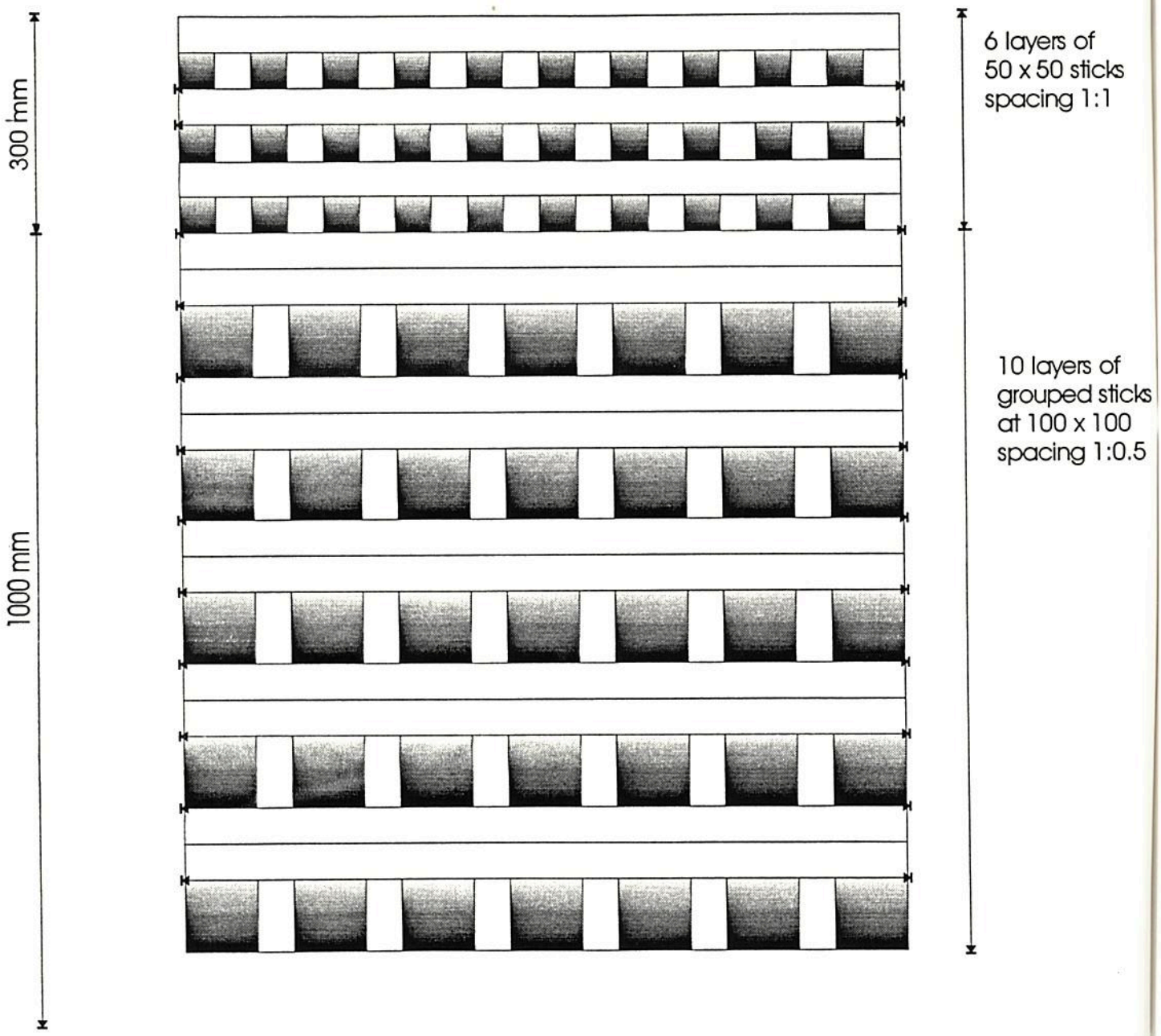


Fig 30 Crib Dimensions, Large Compartment Fire Test