

SECTION 7.

CEILING HEIGHTS FOR INTERNAL PLANT BUILDINGS

1. GENERAL.

- 1.1 A high ceiling assists in the lighting and ventilation of exchange switch rooms, allows reasonable staff comfort during installation of overhead superstructure and space for cabling.
- 1.2 Provision must also be made for the installation of air conditioning ducts, which should generally be sited in positions outside the areas occupied by the rack equipment, that is, over passageways or in the ceilings. In multi-storey buildings the ducts can be installed over the equipment racks where the lofts between beams allow extra working space. Alterations to the cabling plans and to the levels of the superstructure may be made in special cases to allow for air ducts.

2. EXCHANGE EQUIPMENT OTHER THAN MANUAL.

- 2.1 Standard ceiling heights are shown in the attached Figs. 1, 2 and 3. However with the introduction of modified cabling practices it may be desirable to reduce the ceiling heights. These must be planned in collaboration with the Buildings Branch.

The lower ceiling heights which may operate as a result of field trials with the new cabling method are set down in Table A. These must not be introduced until the results of the field trials have been assessed.

Type of Equipment	Type of Building	Reduced Ceiling Height	Remarks
2000 type	<u>Standard Construction</u> Main or Branch Exch. Single Storey, Flush Ceiling.	13'	Where 12' 9-7/16" high M.D.F. is on same floor and cable tunnel is provided.
2000 type	<u>Standard Construction</u> Main or Branch Exch. Single Storey, Flush Ceiling.	12'	Where 12' 9-7/16" high M.D.F. is on ground floor.
2000 type	<u>Standard Construction</u> Branch Exch. Single Storey, Flush Ceiling.	13'6"	Where 12' 9-7/16" high M.D.F. and U.G. racking is on same floor.
2000 type	<u>Prefabricated Constn.</u> Branch Exch. Single Storey, Flush Ceiling.	13'6"	Where 12' 9-7/16" high M.D.F. and U.G. racking is on same floor.
2000 type	<u>Prefabricated Constn.</u> Branch Exch. Single Storey, Flush Ceiling.	12' for equipment 13'6" for M.D.F.	Where M.D.F. and U.G. racking is sited in separate area to Equip. Switch room.
Trunk Switching Equipment	<u>Standard Construction</u> Multi Storey. Beam Construction.	12' to under face of lowest beam.	Plan should be supplied by Dept. Of Works, showing tentative location of air ducts, before confirming lower ceiling heights.
Trunk Switching Equipment	<u>Standard Construction</u> Multi Storey. Wide slab with mushroom column supports.	12' to lower face of ceiling.	Plan should be supplied by Dept. Of Works, showing tentative location of air ducts, before confirming lower ceiling heights.

TABLE A.

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2.2 Other Types of Buildings. The ceiling heights for the following type buildings shall not exceed those listed -

Garage units, either single, double or triple fringe exchanges	12' for 2000 type equipment. 10'6" for pre-2000 type equipment.
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3. MANUAL EXCHANGE SWITCHROOMS.

3.1 The clear ceiling heights to be provided in manual switchrooms are shown in Figs. 4 and 5 attached to this Instruction.

Where large semi-automatic manual switchboard installations are provided, and allowance may need to be made for -

- (a) the provision of a false floor to permit the installation of pneumatic tube distribution system;
- (b) "sound-proof" ceilings.

The ceiling heights will be measured between the underface of the ceiling and the upper surface of the false floor.

4. CEILING HEIGHTS IN OTHER THAN AUTOMATIC AND MANUAL EXCHANGE SWITCHROOMS.

4.1 Ceiling heights required for the accommodation of Power, Battery and Staff Rooms are as follows -

Power Rooms	9'/10'
Battery Rooms	9'/10'
Staff Rooms	9'/10'

Details for ceiling heights over M.D.F's when not included in the switchroom are included in Table B hereunder -

Capacity	Height of Frame	Clearance over Head of Frame	Clear Ceiling Height Required		
			Flush Ceiling	Prefabricated Building with Underground Cable Entry	Beam Constn.
200/300	12'10-7/16"	0'1-9/16" 0'7-9/16"	13'0"	13'6"	13'0"
300/400	17'6-1/16"	1'5-15/16"	19'	-	19'
160/ $\frac{250}{200}$	9'2-1/16"	2'9-15/16"	12'	-	12'0" x

X Used when pre-2000 type equipment is to be installed on same floor as M.D.F.

TABLE B.

4.2 When an M.D.F. of 400 line capacity per vertical is to be installed in any exchange on a floor other than equipment floor, the ceiling height required should only be provided for the area required by the M.D.F. The remainder of that floor should receive a mezzanine treatment to make the most economical use of the remaining portion of the floor area as in Fig. 6.

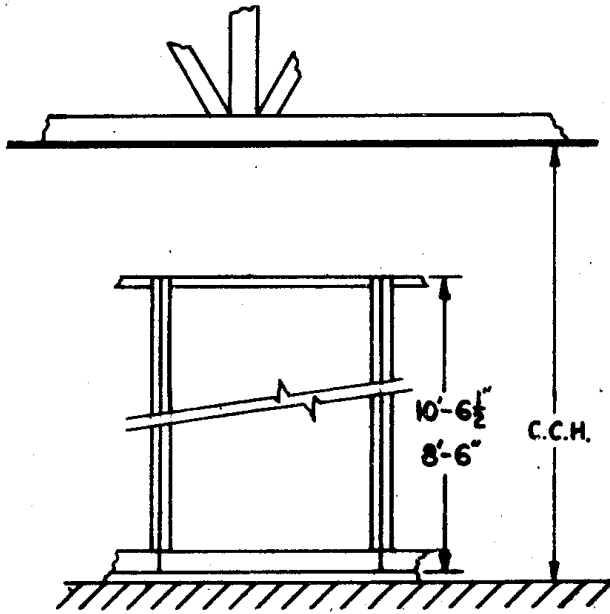


FIG. 1. 2000 TYPE EQUIPMENT.

10' 6¹/₂" Racks Flush Ceiling 13' 6"
8' 6¹/₂" Racks Flush Ceiling 11' 6"

FIG. 2. 2000 TYPE EQUIPMENT.

10' 6¹/₂" Racks Beam Construction
14' to lowest beam face.
8' 6¹/₂" Racks Beam Construction
12' to lowest beam face.

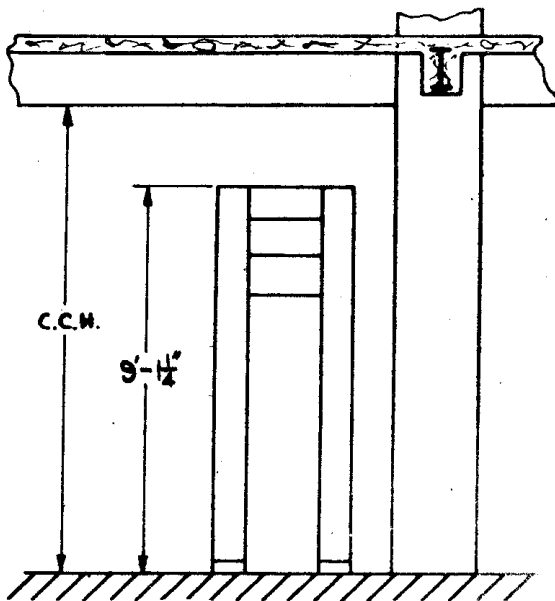
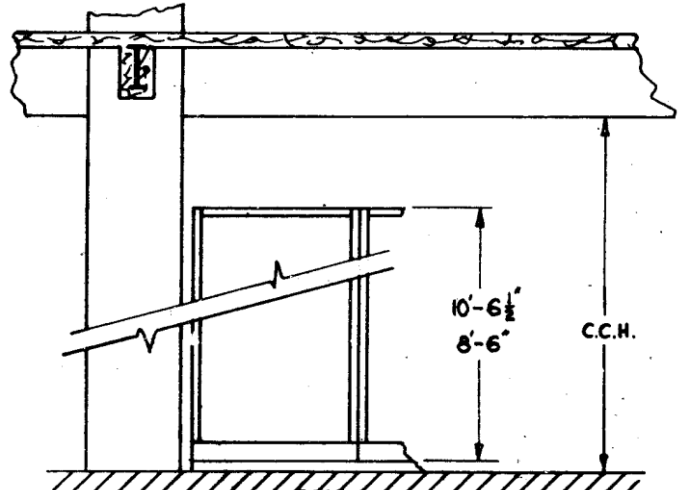


FIG. 3. PRE 2000 TYPE EQUIPMENT.

12' 0" to lowest face.

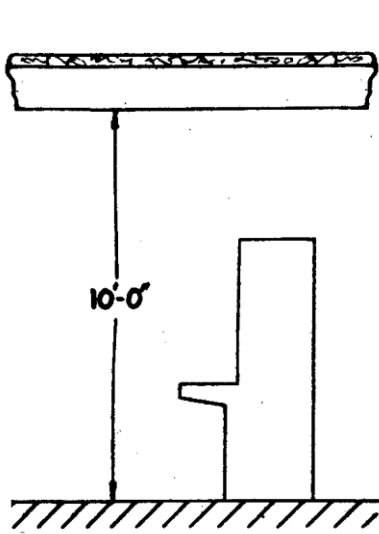


FIG. 4. MANUAL SWITCH ROOMS.
10 feet to Beam or Flush
Ceiling.

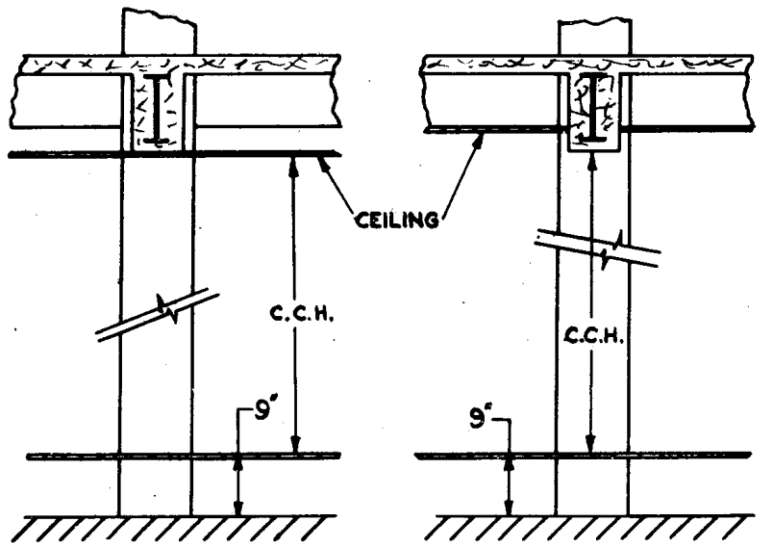


FIG. 5. MANUAL SWITCH ROOM WITH FALSE FLOOR.
10 feet to beam or to under face of Sound-
proof Ceiling if provided.

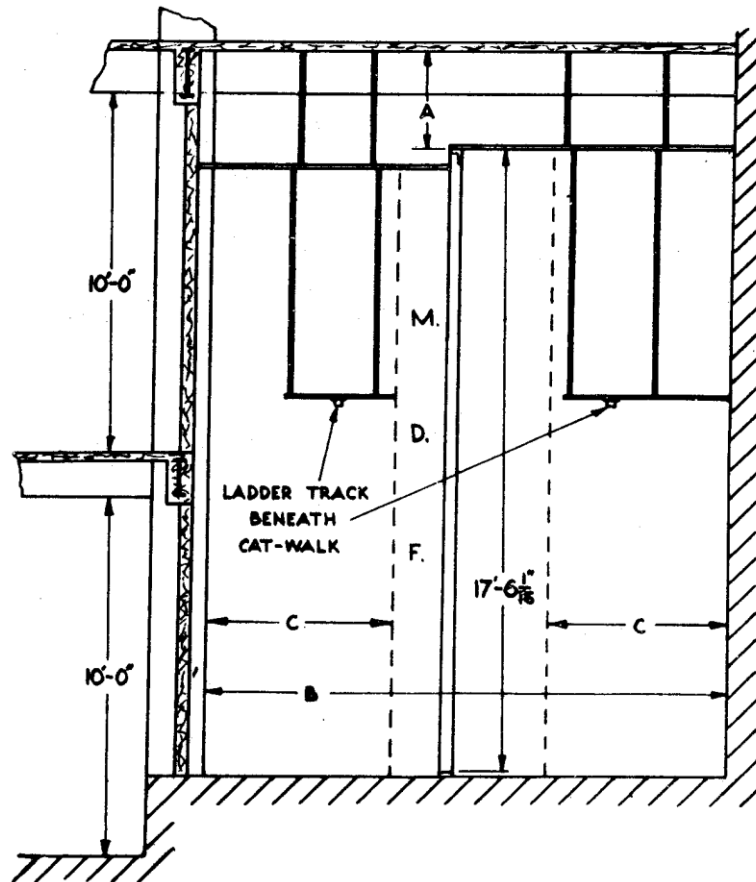


FIG. 6. MEZZANINE TREATMENT OF GROUND FLOOR
for office or minor ceiling height room. Typical only.
A = 1' .5-15/16" B = Minimum 1'0" C = 6' 6"