provide against damage by fire a sprinkler system has been installed. To carry the pipes of this system, instead of placing hangers in the ceiling, thimbles were placed in beams in such position as not to interfere with the strength of the member. Figs. 7 and 8 show these thimbles in place.

stallation of the different accessories necessary for the protection of the building and convenience of the occupants.

The gravity system of steam heating has been installed, the boilers having been placed underneath the side-

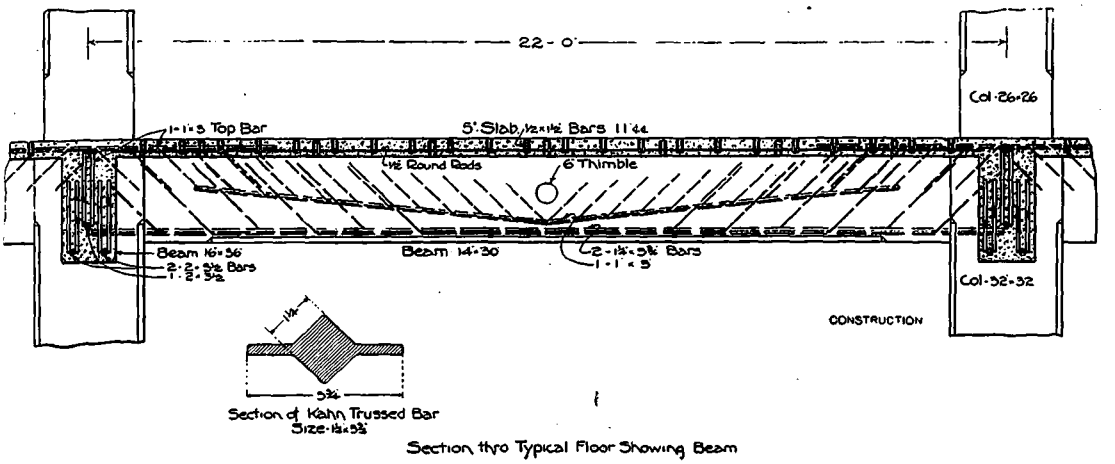

Fig. 6—SECTIONAL DIAGRAM OF TYPICAL BEAM, ANDREW DARLING BUILDING, TORONTO, SHOWING ARRANGEMENT OF REINFORCING STEEL, WHICH CONSISTS OF TWO 1¼ IN. X 3¾ IN. KAHN BARS, HAVING SHEAR DIAGONALS 30 IN. IN LENGTH, AND ONE 1 IN. X 3 IN. KAHN BAR, HAVING SHEAR DIAGONALS 18 IN. IN LENGTH.

By suspending the pipes in this manner an unsightly fixture is done away with, and the view along the ceiling below the beams is kept clear and uninterrupted, while the maximum amount of light is delivered to the centre of the building. For water storage required for this sprinkler system a 25,000 gallon tank has been provided, and the floors have been provided with waterways and scuppers to carry off water rapidly and to prevent flooding when sprinkler system is in operation. The electric wire system is placed close to the ceiling and is carried through

walk area well away from and well isolated from the rest of the building; thus all danger from fire from this source has been reduced to a minimum, and the annoyance caused by dirt from firing boilers is practically eliminated.

The building is equipped with three electrically driven beam to beam. The structure, as a whole, demonstrates stairs are of reinforced concrete, and encircle the passenger elevator shaft. The stair and elevator shafts are isolated from the rest of the building, being completely surrounded with brick walls

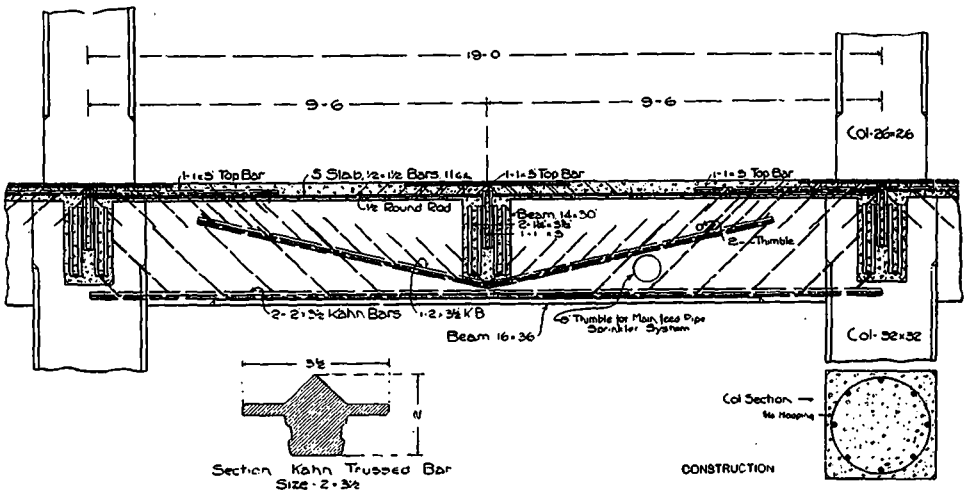

Fig. 7—SECTIONAL DIAGRAM OF TYPICAL GIRDER, ANDREW DARLING BUILDING, TORONTO, SHOWING ARRANGEMENT OF REINFORCING STEEL WHICH CONSISTS OF TWO 2 IN. X 3½ IN. KAHN BARS, HAVING SHEAR DIAGONALS 30 IN. IN LENGTH AND ONE 2 IN. X 3½ IN. KAHN BAR, HAVING SHEAR DIAGONALS 18 IN. IN LENGTH.

beams by properly insulated thimbles. Special provision was made in the ceiling so that porcelain cleats could be properly fastened where necessary to carry wires from beam to beam. The structure as a whole demonstrates very clearly how readily concrete lends itself to the in-

provided with fire doors. One great advantage that a building of this type enjoys over all other types is lack of vibration. In a structural steel frame building the vibration is many times as great as that in a reinforced concrete structure, and it is estimated that the latter lasts