Mr. Mylrea's conclusions are as follows:—

Mr. Mylrea's Conclusions.—"The first lesson to be drawn from this conflagration is that absolutely 'fireproof' construction is a chimera, for if heat is sufficiently intense and long-enduring, no material can withstand it. This fact has been demonstrated in fires upon practically all the materials of 'fireproof' construction, and now the latest type of building succumbs to it.

"The fact that concrete stood so well in the Edison fire has been hailed far and wide, and the severity of that fire was so great that it has become somewhat of a

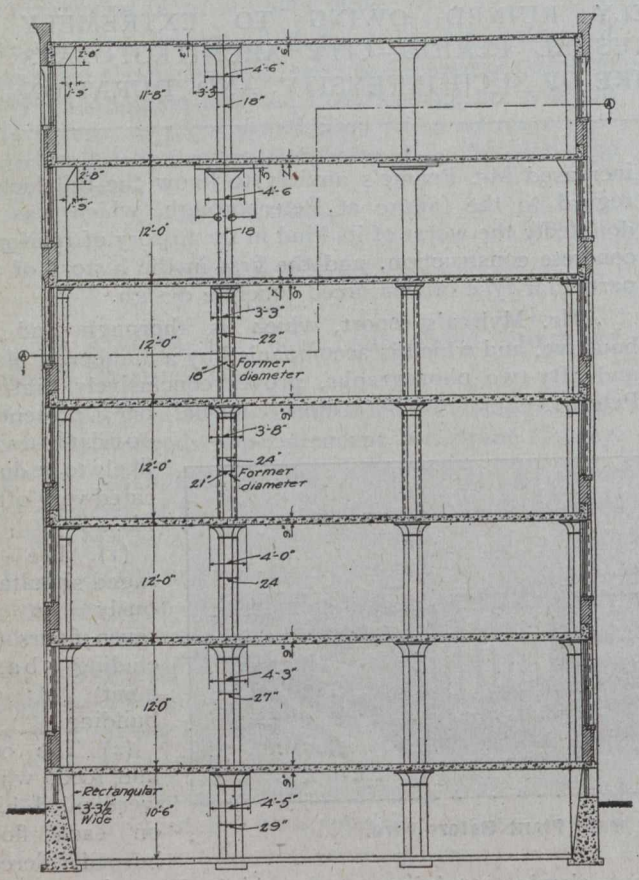

Fig. 3—Typical Cross-Section of Concrete Warehouse.

criterion of fire intensity. It seems almost sacrilige to say that at the Quaker Oats fire, we had a more severe fire than at the Edison plant. Yet, in the press of the time cuts were printed which show that not one of the large concrete buildings of the Edison plant had all the floors in full blaze at the same time. Nor did the fire remain in full intensity for more than an hour or two at any one place. Neither are there more abundant proofs of intense heat.

"But in the reinforced concrete warehouse at the Quaker Oats plant a fire occurred upon all the floors at the same time, of an intensity at least equal to that developed in the Edison fire, and it was seven hours after the fire started before collapse occurred. Even after two months there is considerable heat in the debris, and in some places there is fire still.

"It is not to be considered to the discredit of flat-slab construction that a building of this type failed under such extraordinary circumstances. There was no fusion of the concrete, but the fusion evident at the Edison fire may have been due to the nature of the combustible materials at the points where this occurred.

"A point emphasized again by this fire is that hazardous features should be isolated, preferably in buildings with large window areas. In this case the large blank wall areas of the dry-house tended to hold the pressure. Consequently, not only were the walls wrecked but the fire was flung far into the mill. In several small explosions in Toronto, wired glass has had the effect of holding the pressure, with consequent damage to walls, so the window areas recommended should preferably be glazed with plain glass.

"As far as the matter of fireproofing is concerned, if a fire is of sufficient intensity to heat a nine-inch floor slab through, it is evident that four and one-half inches of fireproofing would avail nothing. Moreover, if it is merely covered with mortar, the reinforcing will not oxidize. In the usual design of flat slab, the steel is not stressed to more than about one-third of its elastic limit under design load, so it could readily stand a temporary reduction in strength of 50%. This would correspond to a rise in temperature of about 1,250° F., at which temperature the cement in the concrete would be completely dehydrated. There is nothing to be gained, therefore, by excessive fireproofing of the rods."

Mr. Pearse's Conclusions.—In an interview concerning Mr. Mylrea's report, Mr. Pearse said:—

"In my opinion, it would be impossible at the present time to erect any building that could resist a fire of the magnitude and duration to which this building was subjected.

"The building apparently was constructed in what is known as the 4-way reinforced concrete type of construction. It will be noted that on the first four floors there were no drop panels at the columns, and also that there was more steel put in the diagonal than there was in the straight or direct strip. This is not in accordance with

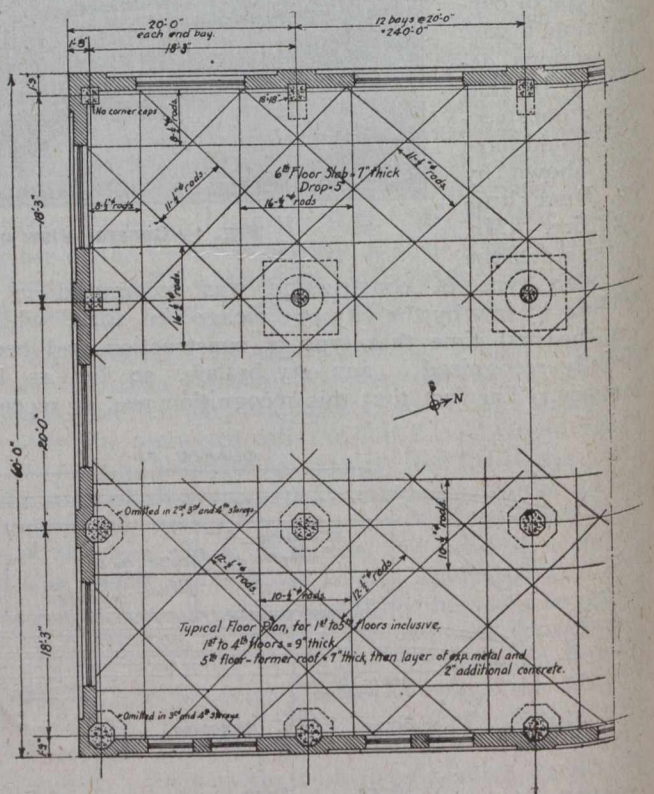

Fig. 4—Horizontal Section Through Warehouse.
(Section through A-A of Fig. 3)

the more recent by-laws which usually put more steel in the direct and less in the diagonal strip. Judging from the report, however, the building apparently had stood up under quite severe loading, and due to the fact that the different by-laws covering this type of construction