

ample size to pass any of the arch stones, above this opening a piece or two of the tunnel lagging was removed, and an iron bar placed upon the timber arches. A set of blocks were attached to this bar, and with their aid the arch stones were run up till they passed through the lagging, when they were swung off on to it. The difficulty was to get headway enough for the blocks to work in. Gas pipe rollers were placed under the stone, and it was run along on its side until it came opposite its destination. It was then canted upright, there being room to cant the stones at the joints of the timber arch only, and a single rope was passed round it. Six men were needed to bring it to place, two holding back on the rope from the opposite side of the centring, two aiding the slipping of the stone and guarding its edges from spawling, and two masons being below to receive it, throw off the rope and set the stone accurately, it requiring decided skill to bring the stone to its right place with an even mortar bed under it. The keystone was run into place dry and grouted. The head-wall of the portal was a rectan-

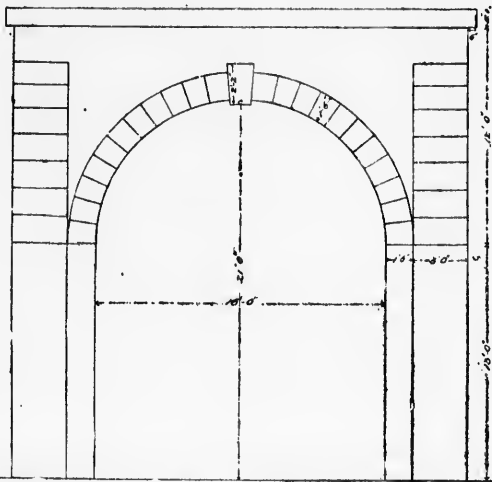


FIG 10 ELEVATION

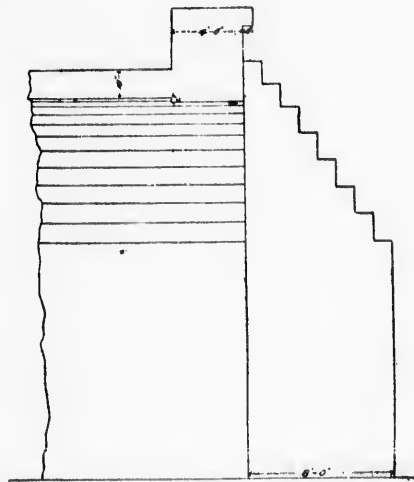


FIG 11 LONGITUDINAL SECTION