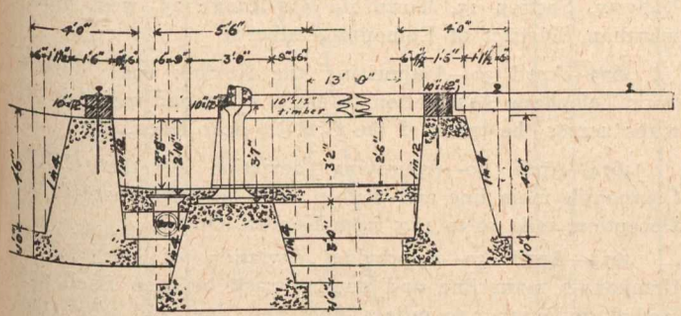
THE HANDLING OF ASHES.

One of the most important features in connection with the despatching of locomotives at roundhouses is the ashpit, over which the fire is cleaned, and into which the ashes are dumped; also the means for removing the ashes from the pit and loading them on to cars.

The first form of ashpit for this purpose was constructed with its sides immediately under the rails of the track upon which the locomotive would come on to the turntable, and thence to the roundhouse. The track is usually called the "incoming" track.

These pits were of different lengths, according to the number of engines arriving per day. They would be of sufficient depth so that a man could stand in them, and conveniently work a hoe or scraper at either end of the



Cross Section of Pit.

ashpan and draw the ashes out, allowing them to fall into the pit. The locomotive would then be moved off the pit into the roundhouse, and the ashes would be shovelled out of the pit on to the surface of the ground, and while this was being done another engine could not come over that portion of the pit, but, if the pit was long enough, it could have its fire cleaned at another point on same. If, however, not long enough for this, it would have to wait until the ashes in the pit were thrown out, or else have its ashes dumped in the same place, which would soon result in the pit becoming full of ashes, so that it would be absolutely necessary for the engines to be kept off the pit until the ashes were thrown out. It was, therefore, better, after each engine had had its fire cleaned, to throw out the ashes, no matter whether the pit was long or short. This was not only expensive in the handling of ashes, but often caused delay to power.

The ashes now at the side of the pit had to be thrown on to the cars, and if the pit was long there would require to be a sufficient number of ash cars to correspond to the length of pit, so that the ashes thrown out of pit at any point could be thrown on to a car. If the switching out of cars when loaded and placing of empty cars was not regularly attended to, a pile of ashes would collect at the side of the pit, and in winter time would freeze on account of having been wetted as they are drawn out of the pan to prevent the dust from getting on the engine. The removal of the frozen pile would cost still more, and in summer, if hostlers were not very careful, the steam from the cylinder cocks would blow the ashes over the engine. The only satisfactory way, therefore, of doing this work was not to allow the ashes to accumulate in the pit or at the side of the pit.

To overcome the difficulties above outlined different improvements have been introduced. In some cases buckets have been placed in the pit to receive the ashes direct from the pan, and when the engine was moved off the pit the buckets would be hoisted and dumped on to the ash car and the bucket returned again to the pit, but until the buckets were replaced another engine could not come on to the pit. This, therefore, was objectionable on account of delay to engines.

Other arrangements have been introduced where a bucket on wheels would run down rails on an inclined plane, entering the pit from the side by going underneath the rail. This form would not keep the engine waiting while the bucket was being drawn out when full, but it worked from one end of the ashpan only, and a second apparatus of the same type would be needed to dispose of the ashes at the other end of the ashpan.

It further would dump the ashes on a car at the same point as each following bucketful was drawn up, and the car would need constant shifting. The arrangement was further objectionable, as the rails upon which the bucket ran upward extended over the ash car track, preventing a high car from being loaded by hand.

There is another form of ash pit, known as the "Open-side Ashpit," with depressed ash car track. This pit has the rail on one side, supported on columns or standards, and the ashes can be shovelled out from the side; the man doing the work of shovelling stands at the side of pit on the same level as bottom of pit, and in order that he will not have too high a throw for the ashes the ash car track is depressed, the rails being about on a level with the bottom of ashpit. With one shovelling, therefore, the ashes are thrown from the bottom of ashpit on to car.

With this kind of pit there need be no delay to engines, but it is expensive, as in the first place the ashes are all loaded by hand, and where many engines are coming in the pit must be long, and there would require to be sufficient cars to cover its full length; also, a laborer cannot throw ashes over a high-sided car and heap them up, consequently more cars are needed. Watering facilities are also needed to cover the length of a long pit of this description so the ashes can be wetted at whatever point the engine may be stopped. These arrangements, if not properly protected, will freeze, and a free use of water washes the ashes into the drain, floods the depressed track and covers it with ice.

It must also be remembered that where the first engine comes on a long pit it is placed at the end nearest the turntable; other engines follow and take positions on the pit, and the work of fire-cleaning is begun as each engine is placed. When the first and second have had their fires cleaned, the third may only have its fire half done. This

Bird's Eye View of Pit.

prevents that portion of the pit which was occupied by the first and second engine being used until the third has had its fire cleaned and is moved off the pit.

The accompanying photograph gives a view of an ash pit which was designed by C. R. Ord, master mechanic of the Atlantic Division of the Canadian Pacific Railway, and which was installed in the Muskoka yards, the new divisional point on the C. P. Railway, Toronto-Sudbury line.

From this view it can be seen that the locomotives can be moved on and off the pit without in any way interfering with the removal of ashes, as the loaded buckets are drawn out under the rail, and while the loaded bucket is being hoisted, if need be, the empty one can immediately be pushed under to receive any remaining ashes, or to be ready for another engine. There are four buckets in the pit, two