

Boiler House.—This building contains sufficient space for 21,000 horse-power water tube boilers that are required to provide steam for heating the shops and for other purposes for which steam is required throughout the shops. The building is constructed with brick walls carried on concrete foundations, with steel roof trusses and supports for coal bunkers. The chimney is of reinforced concrete, 200 feet high, with a minimum diameter of nine feet.

The overhead coal bunker for each boiler is divided by a reinforced concrete partition into two compartments to provide for storing and burning two kinds of coal. An overhead storage bin for ashes is provided, from which bin the cinders can be discharged by gravity into cars alongside of the building. A concrete dumping hopper is provided outside for dumping coal from cars. A pivot steel elevator raises and discharges the coal into the overhead bunker. A skip-bucket, with electric hoist, handles the ashes into the ash-bin.

The boiler units are 350 horse-power rating, and are set in three batteries of two each. Five of the boilers are equipped with chain grate stokers. The sixth boiler has the shaking grates to burn shavings and other planing mill refuse.

Space is also provided for three electrically driven air-compressors, each of a capacity of 1,500 cubic feet of free air per minute. Only two of these compressors are installed at this time.

Transformers and distributing panel are located in this building for transforming and distributing light and power current to the shop yard, freight car shop, planing mill, and coach repair shop. There is no direct current apparatus in this station.

Provision has been made for two incoming 2,200-volt lines, one of 2,000 k.w. and the second of 1,000 k.w. capacity for breakdown service.

The steam required for the steam hammers and other shop purposes during the summer time can be supplied by one boiler. The boiler capacity provided will afford one spare boiler during the extreme weather conditions when the maximum steam demand occurs.

Yard Crane.—A yard crane runway, 1,260 feet long, extends from the west line of the locomotive shop, and carries a 10-ton high-speed travelling electric crane with 80-foot span, serving the material yard and a portion of the storehouse platform and scrap dock. One of the storehouse tracks extends through under this crane, resulting in giving ample space for the storage of material alongside of the storehouse, foundry and locomotive shop. By this arrangement heavy material can be unloaded, stored, and rehandled to the shop or loaded out again by the crane for shipment, practically eliminating manual labor in the handling of all heavy material.

Miscellaneous Structures.—The transfer table for serving the coach shop is 75 feet long, of 150 tons capacity, equipped with electric motor, with concrete transfer table-pit 400 feet long, extending out far enough at either end of the building for providing entrance and egress at both ends.

The mess building is 269 feet 6 inches long by 31 feet 10 inches wide, of wooden frame construction, covered outside with sheathing, building paper and siding, and sealed on the inside with metal sheathing. It has a concrete floor, and contains a dining-room and lunch room for the workmen and a dining-room for the officials, together with kitchen and pantry. Sixty feet of the length of the building is carried up two stories to provide an apprentice schoolroom and quarters for the help. Heating is by the direct system and lighting with incandescent lamps.

There are also two small buildings located near the freight repair tracks for blacksmith shops and workmen's

tools, and in one of them is a small toilet and office. Dry kiln material bins, plate and iron racks, coal and coke sheds are also provided.

For obtaining water for shop purposes there have been put down two eight-inch wells equipped with electrically operated pumps. To supplement this supply and to provide a main source of supply for fire protection the city of Calgary has brought down into the shop site to a point midway the length of the main shop building on the west side a 10-inch cast-iron water main. The shop service and fire lines are connected onto this main and into a steel tank of 125,000 gallons capacity, which is erected on a 70-foot steel tower, principally for use in connection with automatic sprinklers in the various buildings where these are installed. A complete fire protection system has been put in, with hydrants distributed about the shop yard.

The sewage system in the shop yard may be divided into the sanitary and storm sewers. The city of Calgary is furnishing the main sanitary sewer, beginning at the east line of the freight car shop and extending to the eastern boundary of the shop property. All the sanitary sewage lines from the various buildings are connected into this sewer. Storm sewers are provided where necessary to carry off the roof water from the buildings where the roof construction is such that this cannot be discharged on to the ground.

The location of the shops is about four and one-half miles east of Calgary, practically on the open prairie, and on the beginning of construction arrangements had to be made to house and board on the shop property a considerable quantity of labor. To this end, frame bunk-houses were built with two tiers of bunks on each side of the building, eight bunks long, each house having a capacity of 32 men. Stoves were placed in the centre aisle and benches along the sides of the lower tier of bunks. On the coming of summer and as the labor forces were increased some of the men were housed in standard 12 x 14 wall tents, which accommodated four men each. A large mess-room and kitchen and store-room space was also fitted up with a capacity of feeding about 400 men at one time. Great care was exercised throughout the work in keeping the camp in a sanitary condition. This work was largely under the direction of doctors, who visited the camp each day to take care of all sickness, and an arrangement was also made whereby those who were employed on the work voluntarily contributed a small amount from their wages for the services of these doctors. This amount also included hospital service when necessary. Due to this care there was very little sickness on the job.

As there were no accommodations for men with families near the shops the railroad company put into temporary service a train to carry the men back and forth from Calgary, and several hundred men went back and forth on this train each day. This arrangement helped the situation considerably, especially as the season advanced and all kinds of skilled and unskilled labor became more difficult to obtain. A standing order was placed through several labor agencies in Calgary to send men daily to the job. As the work neared completion the bunk-houses and mess-house previously mentioned were turned over to the railroad to take care of their own men, who were at that time living in cars on the property. This, of course, released the cars and permitted their use at other points.

The progress schedule will show the prosecution of the work, but it should be again pointed out that it was not possible to break ground until April 1st, 1912, and by March 17th, 1913, the locomotive shop was in full operation. When the magnitude of the work is considered, as also its distance from the larger centres, it will be appreciated that a record for prompt performance has been established.