

controlled under this principle, in a very simple manner, very similar to the operation of the elevator in an ordinary office building, the motors being used for lowering, as well as hoisting the loads. The manual work which will come upon the operator of the machine will be very simple, enabling high speed operation. The coal being handled in large units and prevented at all points from dropping, will be broken

much less than with the ordinary grab bucket system. It is expected that this plant will very readily handle the largest boats that are in use on the great lakes, in one day's time—10 hours.

To give an idea of the size and capacity of these machines it may be mentioned that the motor equipment on each of the unloaders will consist of a total of 550 h.p., and the bridge will have motors aggregating 700 h.p.

The unloaders will be built entirely of steel and weigh in the neighborhood of 600 tons each. There will be about 1,800 tons of bin and trestle system. The bridge will be approximately 800 tons. The most modern construction will be used in every detail.

The contract for furnishing the coal handling equipment has been given to the Wellman-Seaver-Morgan Co., Cleveland, Ohio.

The Canadian Pacific Railway Shops Near Calgary.

As officially announced in our last issue, the C.P.R. has let a contract for its western shops, which will be located on the main transcontinental line, about 4½ miles east of the present shops at Calgary, Alta.

THE MAIN LOCOMOTIVE SHOP building will contain the erecting shop, machine shop, blacksmith shop and boiler shop. The erecting shop will be of the transverse lift-over type, and will contain 35 bays of 22 ft. each. Its entire area will be served by travelling electric cranes carried on two levels. It will be of structural steel frame on concrete foundations. The exterior walls up to window sills will be of concrete, and the walls, which are carried on steel members, will be of hollow tile, plastered. It will be heated by indirect fan system distributed by concrete and tile ducts.

TENDER AND WHEEL SHOP.—The de-

high speed travelling crane, which will handle all material to and from the cars and from the storage place that is provided between the storehouse and the erecting shop. The concrete foundations will be carried up to bring the floor of the storeroom to car door height, and the walls above will be either brick or hollow concrete blocks, supported on concrete foundation walls, the woodwork of heavy timber comprising slow burning mill construction. The building will be heated by an indirect fan system, and sprinklers will be installed for fire protection.

THE OIL HOUSE, 102 by 42 ft., will be similar in construction to the storehouse.

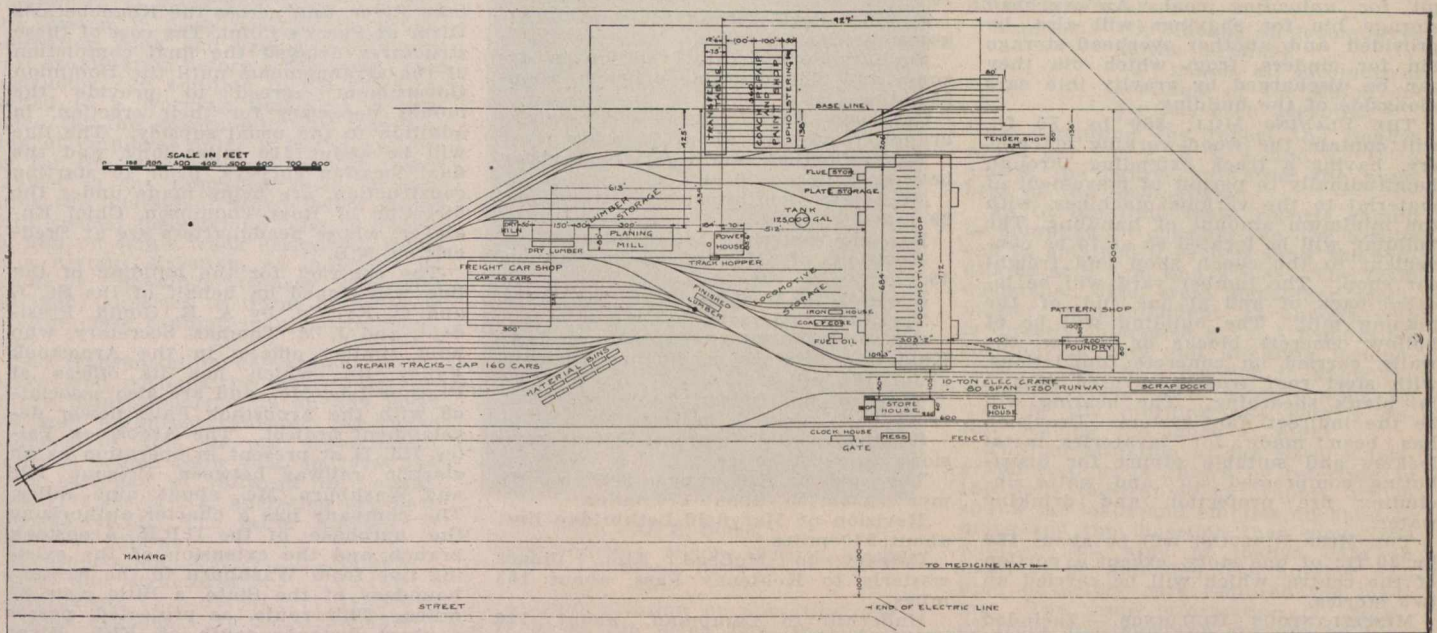
THE FOUNDRY will be 204 by 80 ft., of similar construction to the main building, having two bays, one of these of higher cross section to be served its en-

the foundry to storage or to the main shop, or loading for shipment.

THE PATTERN SHOP, 100 by 30 ft., for pattern storage and pattern making, will be of similar construction to storehouse.

THE COACH REPAIR AND PAINT SHOPS will be contained in one building 362 by 146 ft., having 15 tracks at 24 ft. centres. It will be of slow burning mill construction, having concrete block or hollow tile walls on concrete foundations. It will be heated with the indirect fan system distributed underground in concrete and tile ducts, and protected from fire by automatic sprinklers.

TRANSFER TABLE AND PITS.—For serving the coach shop there will be installed a 75 ft. transfer table of 150 tons capacity, equipped with an electric motor. The transfer pit and track foundations will be constructed of concrete.



General Location Plan, Canadian Pacific Railway Shops, near Calgary. (Copyright.)

partment for making repairs to locomotive tenders, steam shovels, ladderways and other maintenance of way equipment will be contained in an L shaped building 80 by 340 ft., and will be equipped with a 20 ton high speed travelling electric crane having two 10 ton trolleys. There will be a depressed track carried along the ends of the wheel storage tracks outside, to facilitate unloading and loading wheels and axles. The building will be of structural steel frame, with steel roof trusses, and its general construction will be similar to the main locomotive shop.

THE STOREHOUSE AND OFFICE BUILDING will be 250 by 60 ft., two stories, with offices at one end three stories high. It will contain an electric elevator, vaults and platform scales. It will be parallel with the main building, the space between to be spanned by a

tire length with a high speed travelling electric crane. Jib cranes attached to building columns will be provided and so arranged that they may be moved from one location to the other if desired, handled by the travelling crane. In the side bay of lower cross section space will be provided for core making and snap moulding floor. The charging floors and cupola will be located in the centre of the low bay. The heating will be indirect fan system distributing through galvanized iron pipes carried overhead. Steam, air and water service, including fire protection and drinking water, will be provided. The location of this building, alongside yard crane, will enable the unloading of scrap and pig iron to be taken care of by the crane. This close proximity of the foundry to the crane will also reduce to the minimum the handling of the castings from

This pit will extend far enough at either end of the building to provide entrance and egress at both ends.

THE FREIGHT CAR REPAIR SHOP, 300 by 231 ft., is designed to contain eight repair tracks placed in pairs, giving room for an industrial material track between each pair of tracks. A brick wall will partition off a shop 50 ft. wide along one side, which will contain the blacksmith forges, woodworking and machine tools, the heating plant and foreman's office. The location of this building alongside of the lumber yard will permit of handling lumber so that it can be passed through into the shop without rehandling. An overhead trolley beam will be erected to permit of handling timbers with a trolley into the shop. Material bins will be located convenient to the building for storing material used on the cars repaired in the