Canadian Northern Railway Elevator.

The elevator which is being built at the south-western end of Port Arthur, Ont., is located out in the water nearly half a mile from shore. The dimensions are 100 ft. wide, 250 ft. long, and 175 ft. high above water line. The storage capacity is 1,250,000 bush. The unloaidng capacity is 250 cars a day, and the loading capacity into steamships 100,000 bush an hour. The elevator is of semi-fireproof type, having a large amount of steel and concrete in its construction ; and all wood used, both inside and outside the building, is covered with sheet steel ; a minimum rate of insurance will thus be obtained.

The foundation consists of 3,500 piles, driven in clusters of 12, 15 and 20 each. The piles are cut off 2½ ft. under water, then capped with hardwood grillage plank 8 ins. thick, which completely covers the top of clusters. On this, concrete piers are carried to 8 ft. above water level. A heavy frame story, 24 ft. in height, forms the workfloor of the elevator, through which two railway tracks run. Ten cars of grain can be unloaded simultaneously by means of 10 pair of automatic car shovels. On this floor is also erected the cleaning machinery and cleaners, car haul for moving cars, and many other special appliances. Below the workfloor is an 8 ft. basement, having a cement floor. Immediately above the workfloor are located the hopper bottoms of the bins, which are all built by patented fireproof system of steel bands and cement, being in the shape of an inverted pyramid, so that the bins will be absolutely smooth and self-cleaning. From the top of the hopper bottoms, the bins extend to a height of 70 ft. The majority of the bins are 14 ft. square by 70 ft. deep, but a number are subdivided to form smaller ones for the storage of small lots of grain. Above the bins is the cupola, which runs the full length of the building, and is 42 ft. wide by 68 ft. in height. It consists of four stories, the top one being called the lofter head floor. On this story is situated the top of all the lofters and elevating legs, by means of which the grain is carried from tanks in the basement, and discharged into the garners in the story below. The grain from each leg can be discharged into either of two garners by means of switch valves. The story below the lofter head floor is called the garner floor. Here are located the 10 garners, each capable of holding 84,000 lbs. of grain, or more than a full carload. The next story below this is called the scale floor, where are located 10 hopper scales, each capable of holding and weighing 84,000 lbs. of grain. Below the scale floor is the distributing floor. In this story are located the revolving distributing spouts, connected with each scale, they in turn being connected with the permanent system of spouting, leading from a ring to the different storage bins, so that the grain from each scale can be distributed into 21 different bins. The revolving distributing spout is carried on a vertical shaft resting on ball-bearing step, the spout being counterweighted so that when no grain is passing through it, it raises free from permanent spouting, but on the grain being let down from the scales the revolving spout is weighed down, making a tight connection with the spouts. This revolving spout is connected by light flexible steel cables with a hand wheel and pointer and dial on the scale floor, and is under the perfect and accurate control of the weighman without his having to leave his scale. Connected with this spout is also a lock-up device, connection with which also leads to the scale floor, so that spout once being connected cannot be moved except by the operator on the scale floor. Connection from the switch valve on the lofter floor is also brought down to the scale floor, so that the whole operation of handling and distributing the grain in the cupola is under control of the weighman without leaving his scales. This is claimed to be unquestionably the most perfect system of grain distribution used in any elevator.

The machinery consists of main shaft running the full length of the elevator, located in the basement. All machinery is driven direct from this shaft by rope transmission. Connected to each driving pulley on this shaft is a friction clutch, so that each separate piece of machinery can be stopped or started at will. On the work floor are located three lines of shaft, two to operate automatic car shovels, and one for operating cleaner machines. In the cupola there are no long shafts, each of the elevating legs being driven direct from the main shaft in the basement, by rope drive, to large grooved pulleys at the head of the leg. This avoids any undue friction of machinery by using short shafts only. All bearings are of the highest type of genuine ball and socket ring oiling bearings, which will run on an average six months with one filling of oil. The whole of the machinery is of the very highest class that can be manufactured.

The power plant is located in a brick power house at the end of the elevator, 45x60 ft. in size, and 17 ft. high. In the power house is located one 750 h.p. engine, three boilers, condenser, boiler feed pump, and one 1,000 gallon underwriters' fire pump ; also one 35 h.p. automatic engine, electric generator of 35 k. w. direct connected to shaft of engine ; also marble panel switch board, etc. At the end of the power house is located a brick chimney 170 ft. high, having 4½ ft. flue. The outside size at base is 14 ft. square to a height of 20 ft., where the shape changes from square to octagon, and from octagon to round, the round part of the chimney being 150 ft. high, 13½ ft. at the bottom and tapering to 8 ft. at the top.

The whole exterior of the elevator is covered with corrugated sheet steel, and all interior woodwork is covered with crimped sheet steel. All floors are of steel and concrete, and this with the steel and concrete hopper bottoms ensures a practically fireproof elevator.

Plans and specifications for this building were prepared by J. A. Jamieson, of Montreal, who also secured the contract for construction. All the machinery and special labor-saving appliances, as well as the system of fireproofing, are of his design. On account of a large amount of dredging being required before the foundations could be put in, work was late in getting started, but it is now being rushed with a view of getting the elevator ready to handle this season's crop.

Chicago and Western Indiana Road.

At a meeting of the directors and officials at Montreal, July 24, there were present :—President Thomas and E. A. Bancroft, General Counsel, C. & W. I. Rd. ; G. B. Reeve, 2nd Vice-President, and F. W. Morse, 3rd Vice-President, G.T.R. ; President McDoel, and G. W. Kretzinger, General Counsel, Chicago, Indianapolis and Louisville Rd. ; President Underwood and O. W. Johnson, General Counsel, Erie Rd. ; President Carpenter and O. S. Lyford, General Counsel, Chicago and Eastern Illinois Rd. ; President Ramsay, and Col. Blodgett, Cenaral Counsel, Wabash Rd. The object of the meeting was to confer as to what was to be done in order to comply with the decision of the Chicago City Council to compel the road to elevate its track between 16th and 23rd streets in that city. The work will doubtless be undertaken at an early date, but the negotiations, which involve a multitude of

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