

**TORONTO
SUBURBAN
RAILWAY.**

The Car Barns on the Toronto Civic Railway.

The rear 176 ft. of the barn for on spaces the remaining 22 ft. being in the office end. The car space contains three tracks, each of which will accommodate three of the standard cars. A car pit extends across the barn at the centre, and forward under the centre track to the front of the barn, providing inspection facilities for four cars simultaneously. The space for the three central inspection pits is 21 ft. long, while the fourth, or repair pit, is 17 1/2 ft. long. The three inspection pits form practically one large pit, occupying the whole width of the building, and roofed over in part by the slab floor of the fourth track, while the repair pit is about 8 ft. wide. The tracks are supported on 6 in. x 12 in. I beam posts, spaced at 5 ft. centres. Overlappings between adjacent tracks are 8 in. x 8 in. I beams, with 6 in. x 12 in. I beams paralleling them, and 2 in. x 4 in. plates between each pair of tracks, two between each adjacent pair, to carry the 8 in. slab floor over the pit area.

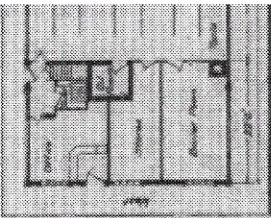
The building, with capacity to hold 9 cars, is a steel frame structure, 198 ft. by 38 ft., 4 in., with the walls of concrete, brick and hollow tile construction. The concrete four-

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dition extends to a depth of 4 ft, which is 1 ft below the water table. The wall, 14 ft high, is constructed of concrete. This wall is 6 ft thick at the base and tapers to 4 ft at the top. The bottom of the wall is 6 ft below the water table. The top of the wall is 4 ft above the water table. The wall is 6 ft thick at the base and tapers to 4 ft at the top. The bottom of the wall is 6 ft below the water table. The top of the wall is 4 ft above the water table.

The floor of the pit is the most important part of the flooring of the manure pit. At the entrance end of the pit one end of the three by six inch stumps is set in concrete and the other end is set in a brick track is used as the base from a concrete or brick building being employed. The floor of the pit is a foot wide at entrance end of the barn at entrance end of the pit and is concrete, and has drains under favorable conditions to be done in the open. To distance from the barn to the pit is paved both between and to the full width of the pit. In the barn are 116 ft. 6 in. to the south side of the barn is 23 ft. 6 in. from track end of the barn to the rear section, while the rear section, while the stall doors at that point must consist of a steel, sturdy girder, but was equipment, full car repairs. The office and auxiliary building, of a 2 ft. 6 in. ceiling height, of the building west end of the building.

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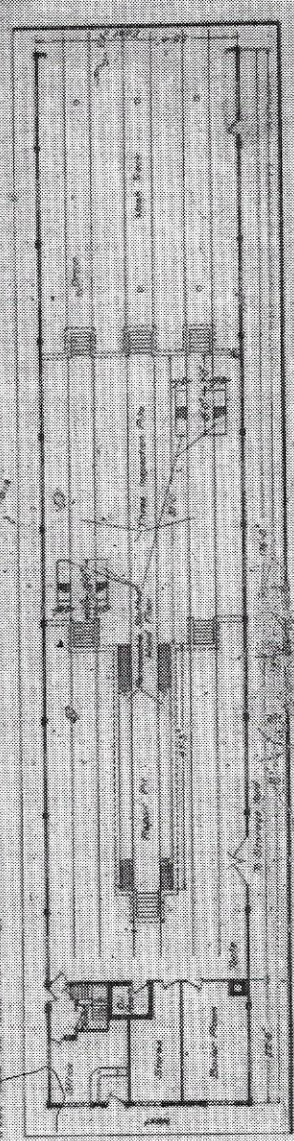
from a connection by the south side of the building being employed for that service. The floor of the pit is drained by means of floor drains at suitable intervals. The first car length outside the barn is similarly concreted, and has drainage ramps, so that under favorable conditions, car washing may be done in the open. The balance of the discharge from the barn to Bracondale Ave. is paved both between and outside the rails to the full width of the barn. The tracks in the barn are 11 1/2 ft. centers. Along the south side of the barn there is a service track, over which supplies can be brought to the repair section, which is in the south-west section of the barn, inside the large sliding door at that point. The tool equipment consists of a small drill press and many grinders, but even with this limited equipment, full car repairs are made.

The office and auxiliary rooms, having a ceiling height of 9 ft., are located at the west end of the building, and consist of

office, battery, stores room, boiler room, oil room and entrance way. The boiler room, oil room and entrance way open to the barn. The oil room has a 3 in. brick wall, and a 6 in. reinforced concrete roof with fireproof door. The partitions between the other rooms are of metal lath and plaster construction. Over the stores, office and oil room, there is an upper story, reached by a walking scaffold the car crew entered by a stairway from the entrance way. This upper floor is carried on two 8 by 8 in. 30 lb. I beams, supporting floor beams of 11 in. 31 1/2 lb. I beams.

DANFORTH AVE. CARN BARN—The site for this barn is an L shaped piece of land, opening out on Danforth and Hilliard Avenues, the car entrance being from the latter, from tracks branching off from the Danforth Ave. tracks, while the office, workshop, storerooms, etc., are in the small arm of the L, facing on Danforth Ave.

This barn will be of larger capacity than that on St. Clair Ave., accommodating 11 cars. In addition there will be a larger pit area as well as an increased shop accommodation. The building will be a steel frame structure with concrete foundation and hollow tile walls, situated on the grade following the street, between the St. Clair Ave. and the latter from the St. Clair Ave. barn. As shown on this accompanying plan, practically the whole of the car barn proper will have a pit beneath it, similar in construction to that in the St. Clair Ave. barn in most particulars, but more extensive. In



Ground Plan of St. Clair Avenue Car Barn, Toronto Civic Railway.

oil room in a corner, and from the store room there will be a stairway leading up to an additional store room in the second story, which will extend for the entire width of the building from the workshop to the Danforth Ave. end of the building. Back of the lower store room there will be a work room, containing all the machinery and other necessary equipment, the nature of which has not yet been decided on. A corner of this room will form the blacksmith shop. Between the work room and the repair track section will be the boiler room.

Both barns will be heated by hot air, forced through underground concrete ducts by a fan. The offices will also be equipped with auxiliary electric heaters, for use when heat is not required in the main barn.

We are indebted to C. A. McCarthy, Chief Engineer and Manager, for the information on which the foregoing description has been based and for the plans.

Lifting Jacks of Street Cars, for quickly releasing any person caught under a car, will be a feature of the safety policy of the Philadelphia Rapid Transit Co. The emergency release service has been improved. Since emergency districts, each with at least one emergency station, have been established in the city. The equipment of the service includes seven horse-drawn wagons, two auto wagons, two auto wreck wagons, 11 wreck cars and four tower cars—a total of 28 emergency vehicles.

former epidemic in Sherbrooke, although every precaution was taken in regard to fumigating the cars. The industrial depression which affected the whole of the Dominion during the past 18 months affected both the street railway earnings and the power revenue, as several manufacturers reduced their power requirements. The prospects, however, for increased earnings in 1916 are as favorable as can be expected although they must be necessarily affected to some extent by the war.

During the past year the company acquired the assets and undertakings of the Barre Falls Power Co., Ltd., at Barre, Que., which adds another electric lighting system to those already owned, and a big unit interest was acquired in the Lennoxville Light and Power Co., which controls the lighting and power business of Lennoxville and Montserrat. The acquisition of these companies should still further increase the revenue of the company. During the financial conditions of the past year your directors were unable to sell sufficient securities to cover the entire cost of these extensions and purchases, and advances were obtained from the company's bankers to cover the balance required. The company has contracted for the greater part of the power available from its present development, and the earnings should show a satisfactory increase as soon as normal conditions again prevail. The power plant and lighting system have been kept in a high

state of readiness, and the company has been able to meet all its obligations. The company has also been able to pay its dividends, and the earnings have been satisfactory. The company is confident that the future will be bright, and that the company will be able to meet all its obligations and pay its dividends in the future.

the year ended June 30, 1915. While the gross income shows a gain of 13.1%, the net earnings only show a gain of 4.0%. This is due to the fact that the operating expenses were \$77,841.58 against \$74,718.11, an increase of 4.2%. While the increase in gross earnings was considerable, but for the delays in meeting the monthly and quarterly payments of the Canadian National Cotton Mills Co., the Canadian Textile Co., and the Fawcett Rubber Co., the earnings from these contracts would have been considerably larger, whereas very little was realized from them during the year. The extended field of the company's operations and the preparation of these contracts accounted for the increase in the operating expenses. In the operating statement an item has been charged for taxes which have been in dispute for the last three years. The earnings of the street railway system were affected by a small

increase of 1.1%, because operating current track materials, which are 5 to 15% in 1 beam at 1 ft. centers, in the section of the shop track near the east end of a wired grating machine, the track in this section being removed in the manner explained for the removable track in the St. Clair Ave. barn. In the repair pit section, the track will have full length pit, connecting with each other through a cross passage. The pit adjoining the inspection section will connect with, and form a part of the latter's pit. Alongside the rails, in the other tracks, there will be flat wood floors, with removable rail sections.

In the Danforth Ave. wing there will be a passageway extending along the east side from the repair pit section to the work shop, store room and men's room in the front. It is a corner of the men's room there will be two lavatories, and on the other side of the wing the male office, back of the office there will be a store room, with a fireproof

September 1914

Toronto Suburban Railway's Car Barn Etc. at Lambton.

The Toronto Suburban Ry., in anticipation of the completion of its extension to Guelph, Ont., has built a car barn on the property between Dundas St. and the C.P.R. Toronto-Windsor line, at the top of the hill east of the Humber River and at the junction of the new Lambton-Guelph line with the old West Toronto-Lambton line. The buildings are as follows:—

Inspection shop.....	63 ft. 3 in. x 151 ft. 0 in.
Repair shop.....	61 ft. 1 in. x 83 ft. 7½ in.
Machine shop.....	40 ft. 10 in. x 66 ft. 7½ in.
Paint shop.....	19 ft. 6 in. x 66 ft. 7½ in.
Blacksmith shop.....	28 ft. 0 in. x 30 ft. 0 in.
Boiler room.....	30 ft. 0 in. x 33 ft. 0 in.
Coal store.....	30 ft. 0 in. x 29 ft. 1 in.
Men's lavatory.....	30 ft. 1 in. x 11 ft. 0 in.

floor is of concrete, 4 in. thick; 1, 2 and 4 mixture, with 1 in. fine finish and 3 in. mesh. Six gauge expanded metal, resting on 7 in. I's at 15 lb. at 8½ centres. These 7 in. I beams rest on and are bolted with angles to the 10 in. I beams and at external walls, and anchored to foundation wall at piers with ¾ in. diameter w.i. hook bolts, 4¾ x 6 x 6 in. w.i. plate to outside. The whole of the space under the repair shop is excavated for a depth of about 4 ft. and has a 4 in. concrete floor on 4 in. of gravel, laid with fall to sub pit of ¼ in. to the foot. Below the tracks, on this floor, rails 2½ ft. gauge are laid on solid concrete beds. On these

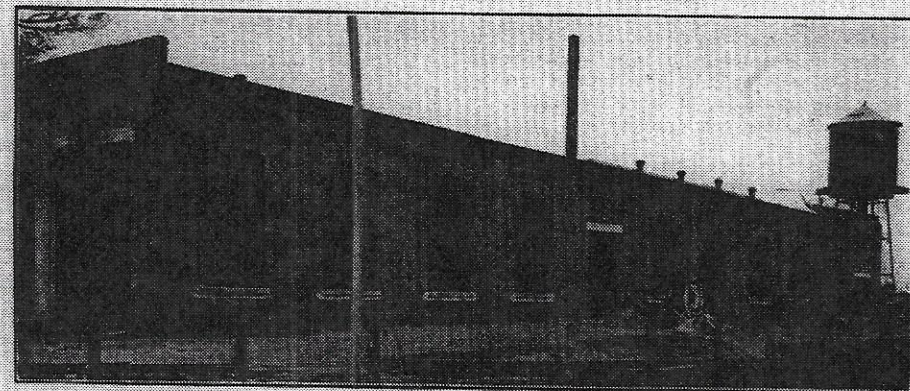
set at any desired height. Twelve standard skylights 8 x 17 ft. are framed in roof.

The machine shop is to be equipped with: 100 ton capacity wheel press; two in one lathe for axle, wheel and small work; spindle lathe; combination radial drill; air trip hammer; wheel grinder; shaper; slotting machine; hobbiting furnace; soldering iron furnace; forge; air compressor; 2 pit jacks; 2 cranes; travelling crane; benches, vises, machinist's and blacksmith's tools; full set wood working tools and machines. Two skylights, 8 x 68 ft., run longitudinally in centre of each span and provide excellent lighting to every portion of the shop.

In the paint shop, in addition to the windows, a skylight, 8 x 68 ft., is placed over tracks giving sufficient light for every purpose. The blacksmith shop also contains a standard ventilated skylight 8 x 11 ft. The men's lavatory is provided with 6 water closets, wash basin and urinal troughs and 6 lockers. There is a large ventilated top light.

The boiler room contains a 75 h.p. locomotive type boiler. There is a skylight 8 x 11 ft. The coal storage is very conveniently located, and is so arranged that the coal will be brought direct in cars over the company's own tracks and shovelled through a high doorway level with the coal car, thus necessitating a minimum of handling. The coal space is well placed in relation to boiler. The chimney rests on a solid concrete foundation and the brick work, 7 ft. square, is carried 15 ft. above grade. The steel stack, 36 in. diameter, is 65 ft. above grade.

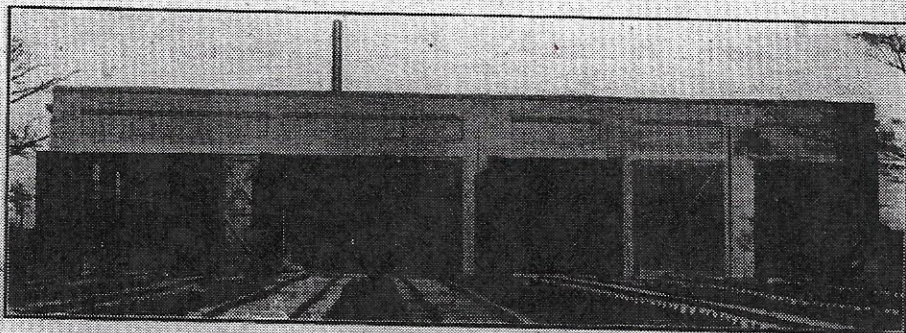
At the southeast corner of the building entrance is provided to the administrative offices on the first floor. They are placed over the store and lavatory and consist of five offices; public waiting space, separated from the larger office by counter, with office lavatory and private lavatory. The rooms are 9 ft. high and are finished with ¾ in. birch floors and the walls and partitions are plastered.



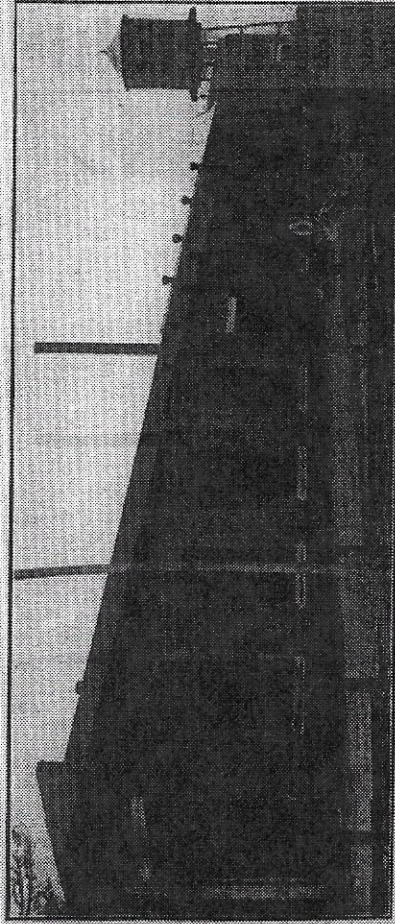
Lambton Car Barn, etc., Toronto Suburban Ry., South Elevation.
The track shown in the foreground is the main line, which joins the old line on Dundas St., immediately to the right of the view.

The administrative offices are on the first floor over the store and lavatory. The walls throughout are of good hard burned brick with massive buttresses to the outside. Toronto pressed brick is used for facing. The different shops, etc., are separated by brick walls, with substantial pilasters, and intercommunicating large sliding doors are provided between each. Excellent lighting is provided by large windows 8½ ft. wide and averaging about 13 ft. in height, and by ample roof lights to every portion. The roof is of mill construction, covered with asbestos and tarred and gravelled. One row of posts runs longitudinally down the centre of the inspection shop spaced at 17 ft. centres, and two rows similarly in the repair shop; one of these continuing through the machine shop. These rest on tapered concrete pedestals. The posts are 12 x 12 in., 22 ft. long, and have 6 x 8 in. braces with 10 x 12 in. corbel heads, the latter bolted to posts with ¾ x 24 in. drift bolts. These take the main 12 x 12 in. roof beams, the ends of which at brick walls are spiked to 3 x 8 in. wood plates bolted down to walls. Into these main beams are framed, with duplex hangers, the 6 x 8 in. transverse beams which carry the 2 x 8 in. dressed roof planking. Large skylights are framed in roof. The

a hand truck can be operated, on which a hydraulic jack will be mounted for dropping car parts. With the open construction employed this jack can be moved from point to point as required. The sub pit provided is 53 ft. long, 11 in. wide and 10¾ in. deep at highest point, laid with falls to 4 in. diameter in centre of pit, and carries away surface water, oil, waste, etc. Concrete steps lead from tracks at both ends down to the lower floor. Six standard ventilated skylights, two 8 x 17 ft. and four 10 x 17 ft., glazed



Lambton Car Barn, etc., Toronto Suburban Ry., Front or West Elevation.

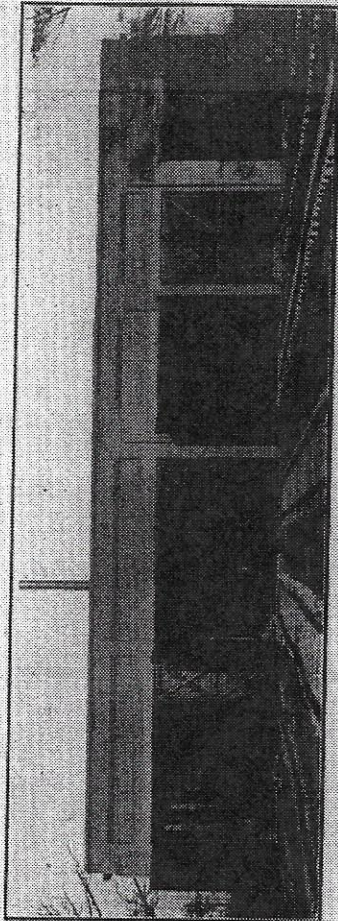


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The repair shop has three tracks; 4 in. x 60 lb. rails A.S.C.E. section are used, supported on 10 in. I's at 25 lb. resting on 4 in. steam pipe columns, set on concrete bases 24 x 24 x 9 in. These columns have companion flange cap and base. The 10 in. I's are secured to the companion cap flanges by four $\frac{1}{4}$ in. bolts and the column bases are anchored to the concrete bases with two $\frac{1}{2}$ in. pins 4 in. long. The

a hand truck can be operated, on which a hydraulic jack will be mounted for dropping car parts. With the open construction employed this jack can be moved from point to point as required. The sub pit provided is 58 ft. long, 11 in. wide and 10 in. deep at highest point, laid with falls to 4 in. diameter in centre of pit, and carries away surface water, oil, waste, etc. Concrete steps lead from tracks at both ends down to the lower floor. Six standard ventilated skylights, two 8 x 17 ft. and four 10 x 17 ft., glazed



Lambton Car Barn, etc., Toronto Suburban Ry., Front or West Elevation.

with wired rolled plate glass, set on 4 in. solid wood curbs, are placed in roof.

The inspection shop contains 4 cars, each of which will accommodate 2 cars. The rails rest on tapered concrete piers placed 4 ft. centres. The floor is hollowed out around these piers below the general floor level, thus permitting the workmen to make minor repairs. To further facilitate in the light repair work, cleaning and painting of the cars, movable iron brackets can be attached to the structural wood posts, on which plank scaffolding can be placed. The posts are bored at intervals to receive the ends of these brackets, so that the scaffolding can be

span and provide excellent lighting to every portion of the shop.

In the paint shop, in addition to the windows, a skylight, 8 x 68 ft., is placed over tracks giving sufficient light for every purpose. The blacksmith shop also contains a standard ventilated skylight 8 x 11 ft. The men's lavatory is provided with 6 water closets, wash basin and urinal troughs and 6 lockers. There is a large ventilated top light.

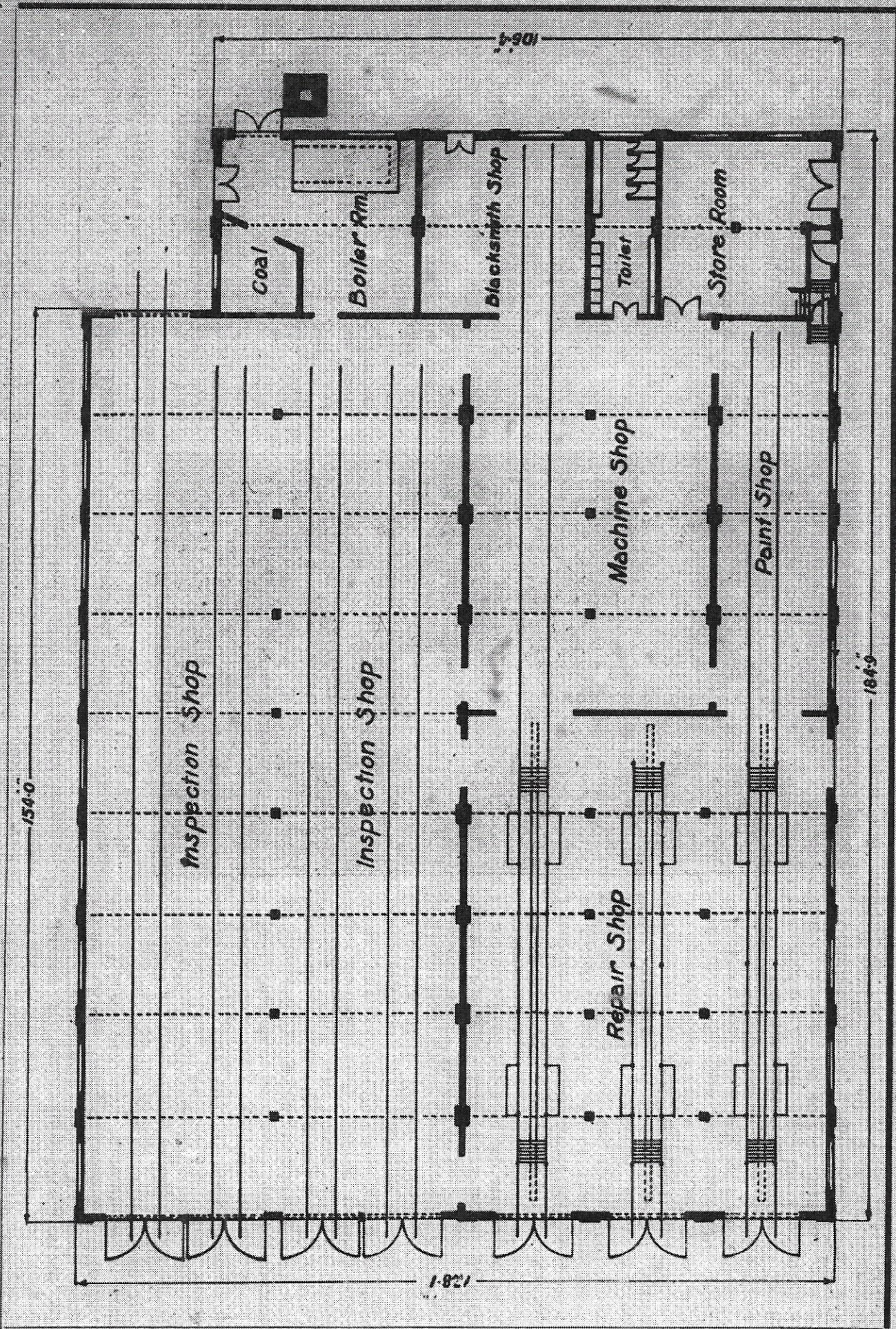
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At the southeast corner of the building entrance is provided to the administrative offices on the first floor. They are placed over the store and lavatory and consist of five offices; public waiting space, separated from the larger office by counter, with office lavatory and private lavatory. The rooms are 9 ft. high and are finished with $\frac{3}{4}$ in. birch floors and the walls and partitions are plastered.

A low pressure vacuum steam heating system has been installed. By means of a pressure reducing valve sufficient live steam is admitted automatically to effectively heat the buildings. The radiation amounts to 4,500 sq. ft., with the mains and returns included as radiation, and the following temperatures are provided for: Offices, 75° Fahr.; store, 60°; blacksmith shop, 50°; paint shop, 65°; machine shop, 60°; repair shop, 50°; inspection shop, 50°. These temperatures are guaranteed at 5° below zero, at 2 lbs. pressure, and at 15° below zero at 5 lbs. pressure.

A wood tank of 10,000 gall. capacity is placed outside the southeast corner of the

for the calendar year 1915, presented at the annual meeting in St. John, N.B., recently: The earnings for the year, after Streets were relaid, and the sharp curves eliminated. This work will remove a serious source of danger in the operation of the railway. At the end of June, July and August, by the operations of the so called jitney system. At the end of August the gross earnings had declined,



Lambton Car Barn, Toronto Suburban Ry., General Plan View.

providing for the interest on the bonds of that section of the railway. We were as compared with the same period of

May, 1915.]

CANADA

Additional Equipment for

Tenders were received recently by Toronto City Council for 4 double and single truck, p.a.y.e. cars for Lansdowne Ave. extension, Toronto Civic Ry., of the general design shown in the accompanying illustration. They are to have the single arch roof, with platforms arranged so as to separate entering and leaving passengers. The interior of the car body is to be constructed so as to avoid as far as possible, all ledges and projections or obscure corners where dust and dirt may lodge. Following are some of the principal particulars:

Gauge of track	4 ft. 10 $\frac{1}{2}$ ins.
Radius of shortest curve	25 ft.
Wheel base	8 ft.
Diameter and tread of wheel	33 ins.; 3 $\frac{1}{4}$ in.
Length of body	21 ft.
Length of vestibule	6 ft. 4 $\frac{1}{4}$ ins.
Length overall	34 ft. 8 $\frac{1}{4}$ ins.
Width over sheathing	8 ft. 5 $\frac{1}{4}$ ins.
Height to top of roof	10 ft. 9 $\frac{1}{2}$ ins.
Height to top of vestibule step	13 ins. or less.
Height from step to vestibule	12 ins. or less.
Height from vestibule to car floor	11 ins. or less.
Weight of car body, not over	12,500 lbs.
Seating capacity	22

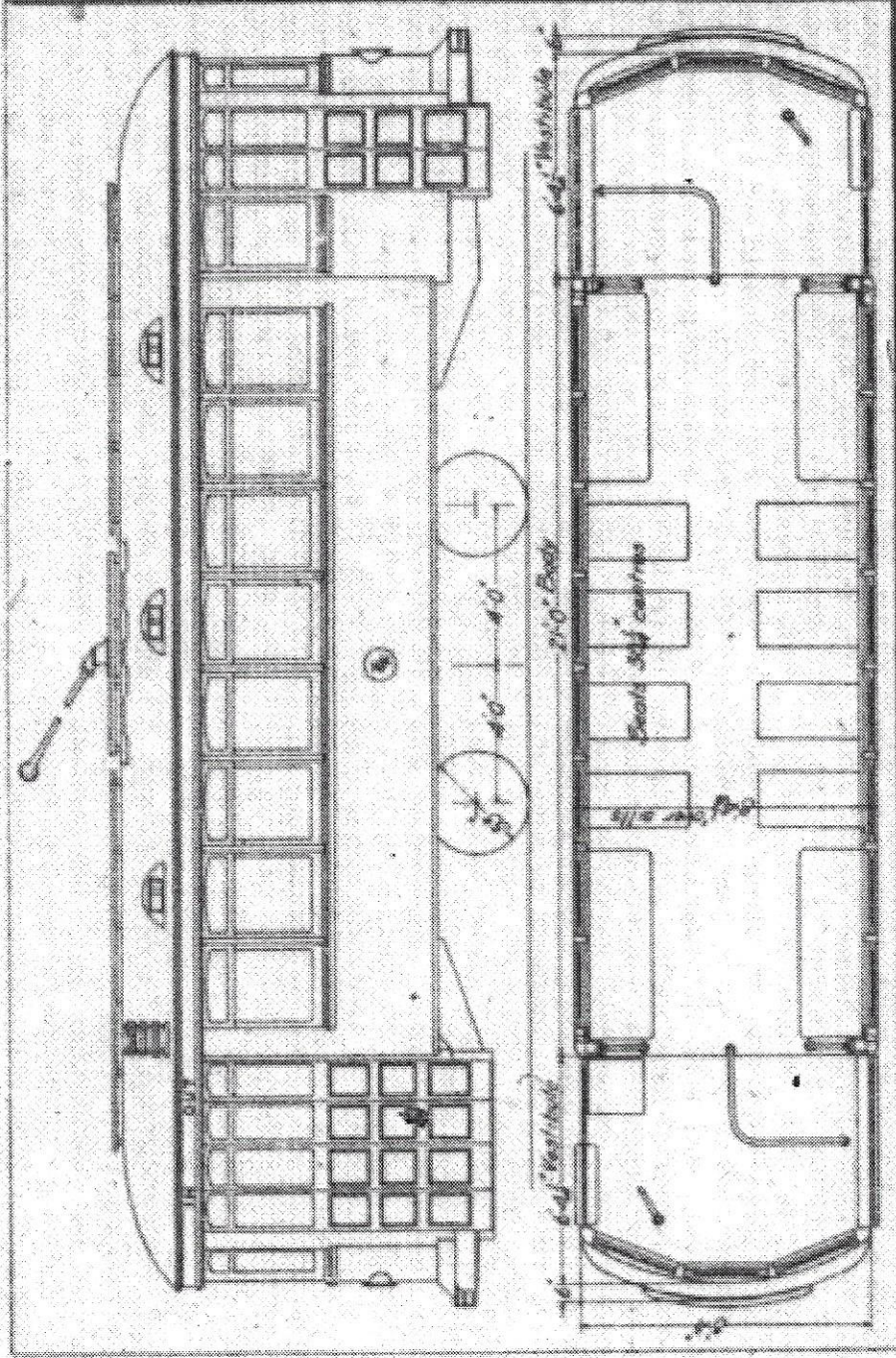
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vesibule. The interior of the car is to be
varnished quartered oak throughout. They

Weight of car body, not over ... 12,500 lbs.
Seating capacity ... 32



Single Truck Double End Operation Cars for Toronto Civic Railway.

MAY 1915