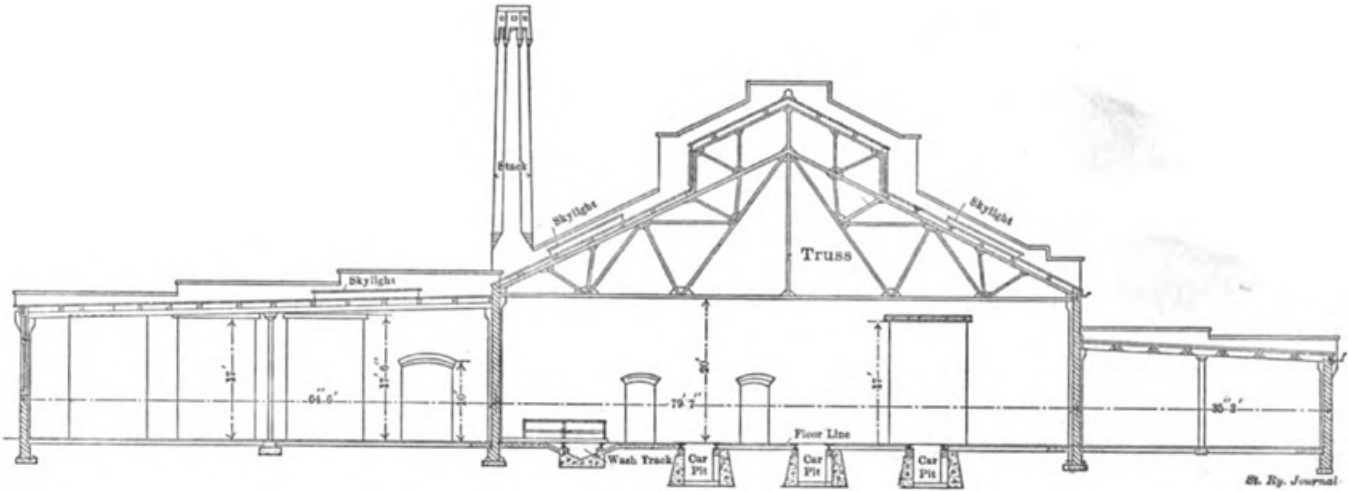


CAR HOUSES AND SHOPS

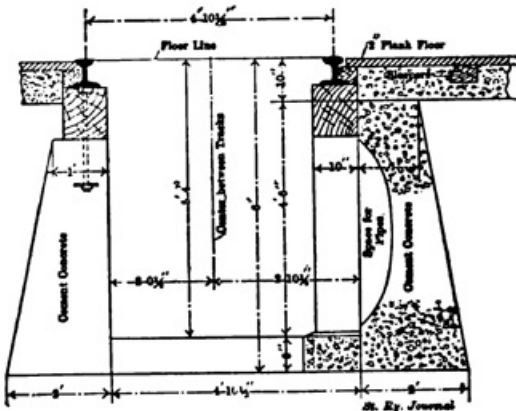
A number of the early interurban builders in Ohio "saved money" by either not building shops at all, or else putting up the cheapest forms of buildings with practically no equipment beyond a few hand tools. Cars were jacked up with hand jacks, and motors lifted out by man power. In one or two instances interurban roads equipped with the most expensive type of cars and power equipment actually did all their repairs on an open track with a hole in the ground for a pit and a small shack in which to keep a few hand tools and repair parts. Needless to

is provided at the start with tools for taking care of the work in a rapid and efficient manner, the item of maintenance in the long run is surprisingly smaller than by the other method. Unfortunately, while the majority of master mechanics and managers fully appreciate these facts they find it difficult to impress these conditions upon directors and stockholders who are anxious to have the roads pay dividends soon after they commence operation.

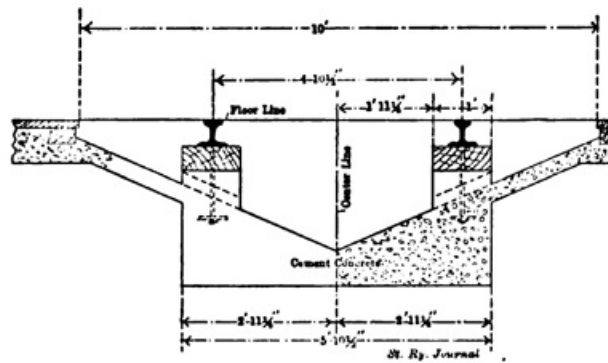
For the reason that the repair shop has too often been looked



ELYRIA CAR SHOPS, CLEVELAND & SOUTHWESTERN



DETAIL OF PITS, ELYRIA SHOPS



DETAIL OF WASH TRACK, ELYRIA SHOPS

say, the work performed by workmen laying on their backs in snow and water, with weather hovering around zero, was not of a character calculated to give the highest class of service, and while the directors of the roads themselves probably could not understand why their maintenance expenses were high, an experienced manager could doubtless have demonstrated the situation in short order. It is almost invariably the case that when an inexperienced lot of men build an electric road and buy good rolling stock, they labor under the delusion that it should not wear out for a long time to come and they see no reason for providing elaborate shop layouts at the start. The experienced operator knows that the old saying of "a stitch in time saves nine," is nowhere more applicable than in caring for the rolling stock of a traction line. If the equipment is allowed to run down, even for a very short period, it is difficult to get it back to its original efficiency and it depreciates very rapidly. On the other hand, if the equipment is thoroughly inspected at regular and frequent intervals and kept up from the very start, and if the shop

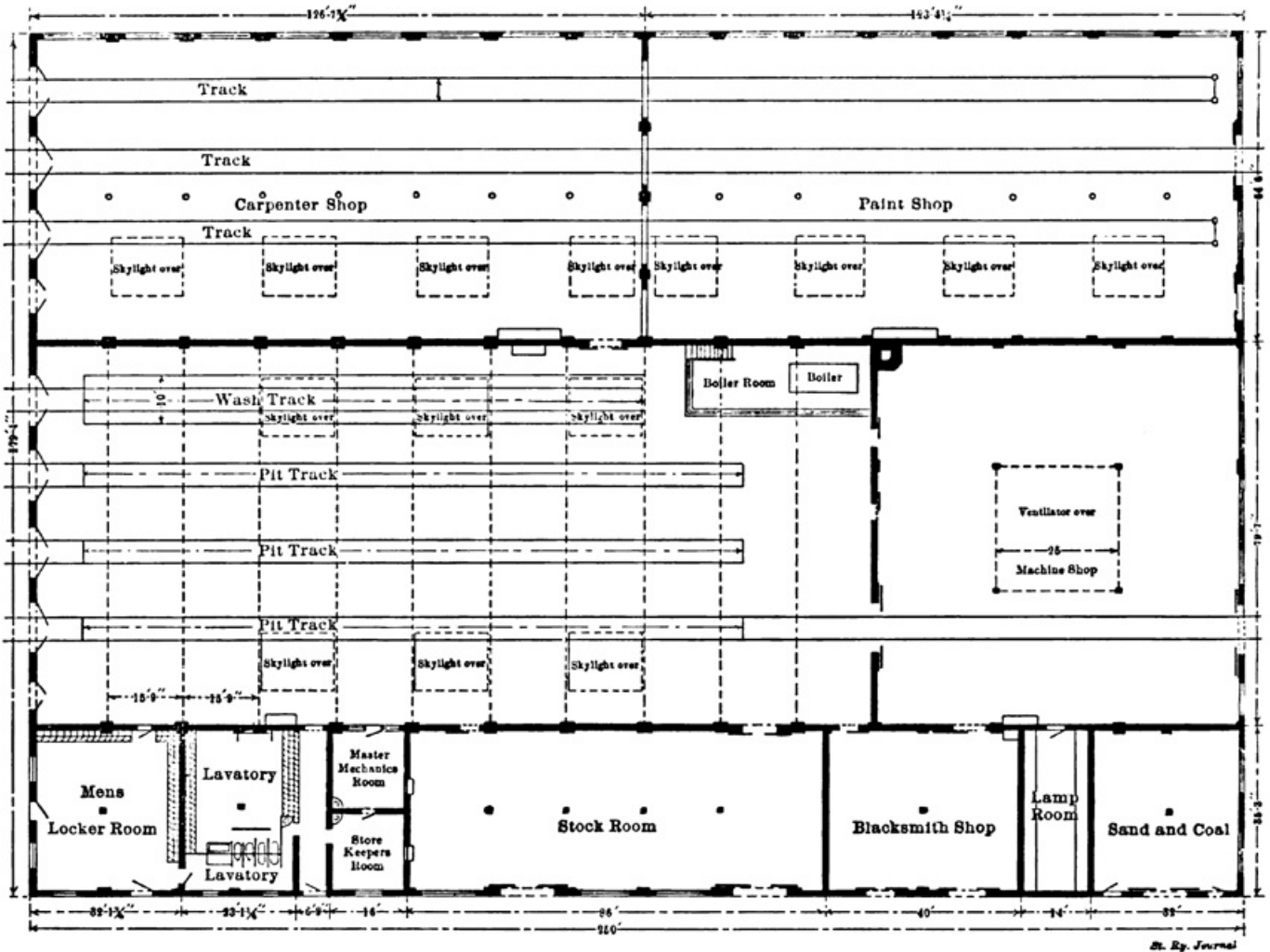
upon as a needless expense, complete, not to say elaborate outfits are the exception rather than the rule in Ohio, even at this late date. There is, however, a decided tendency for the better in this direction. Roads have outgrown their old shop equipments, which in the first place were designed for the then small properties and are preparing to erect more elaborate plants, while several new companies are planning to provide better facilities at the start than were formerly considered necessary. The grouping of roads into larger systems is also necessitating the erection of more elaborate and better equipped shops, where heavy work for a large system can be taken care of.

The Schoepf syndicate has commenced work at Lima on a very large shop and headquarters building for its four lines radiating from that city. It will be designed to take care of repairs for about 300 miles of road. The layout for these buildings is shown on page 664.

A very modern shop layout is being erected by the Cleveland & Southwest Traction Company at Elyria. It was designed

by C. N. Wilcoxson, general manager, and follows somewhat the arrangement of the Western Ohio shops, hereafter described, of which road Mr. Wilcoxson was formerly superintendent. The shops occupy a triangular shaped piece of property of thirteen acres, the main line of the road extending along one side a distance of 1200 ft. The entering tracks to shops and yard all lead from the apex of the triangle, so that there are practically no curves or special work in the layout. The building has an outside measurement of 250 ft. x 179 ft. The building is divided into three sections, the central section having a peaked roof, supported by steel trusses. The central portion contains the inspection room in front and the machine shop proper in the rear. There are two flat-roof wings, one containing the carpenter shop and

The Western Ohio Railway was not one of those that overlooked the value of a good shop. Its layout at Wapakoneta, erected three years ago, is one of the best exclusively interurban shop in Ohio at the present time. The main portion is the machine shops proper. There are open concrete inspection pits with a transfer table traveling across three tracks. There is an air hoist in the center for elevating one end of a car so that the trucks can be run off onto the transfer table and shifted to another track for inspection and repairs. An extra set of trucks is kept on hand and the trucks are substituted so that a car is usually out of service only a very short time. A swinging crane covers the transfer table, a wheel press and a large wheel lathe for turning steel-tire wheels. Among other tools are a



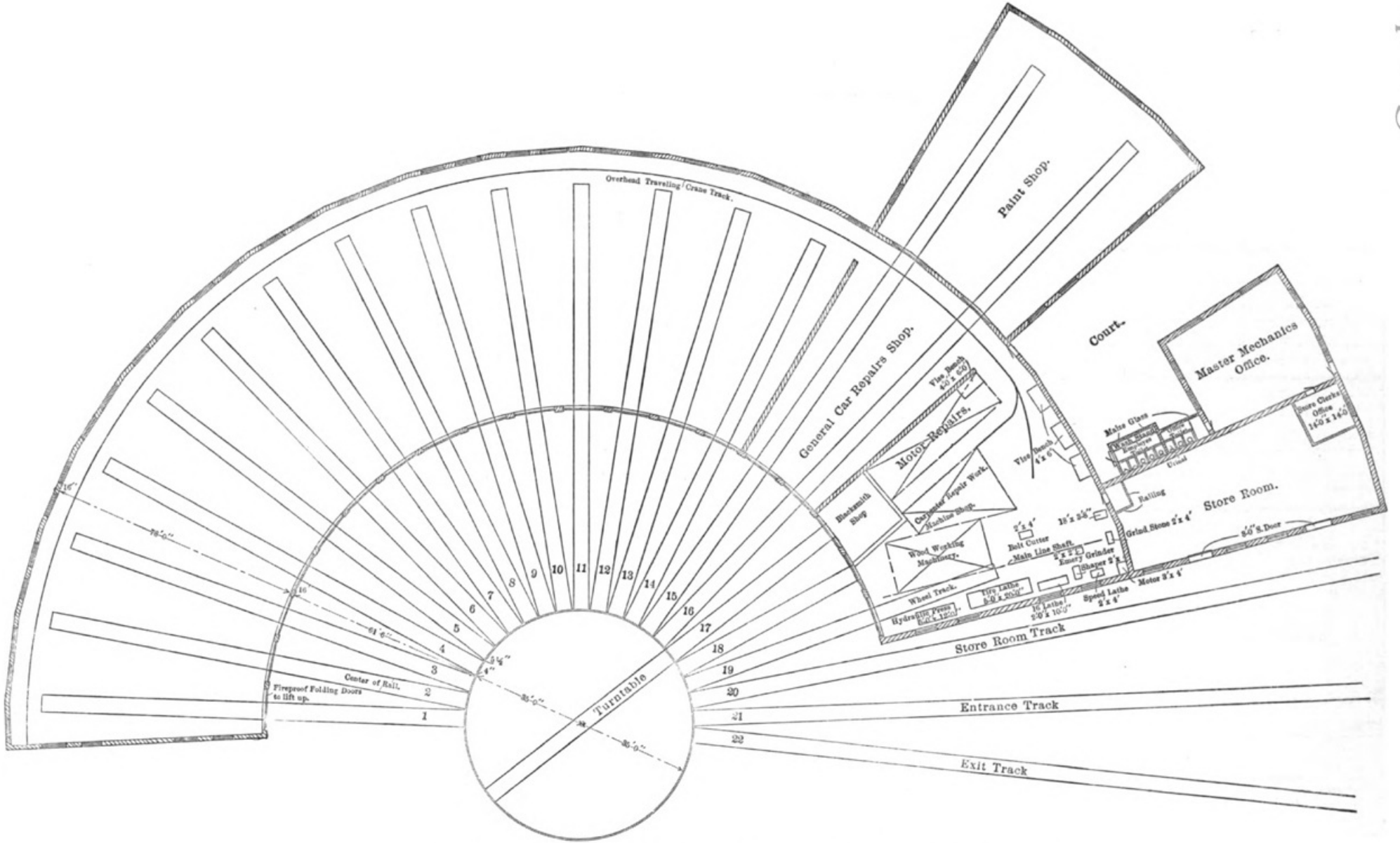
CAR SHOPS AT ELYRIA, CLEVELAND & SOUTHWESTERN

the paint shop and the other the men's locker room, offices and storekeeper's room, stock room, blacksmith shop, lamp room and sand and coal room. The building is admirably lighted with skylights over the wings and central section.

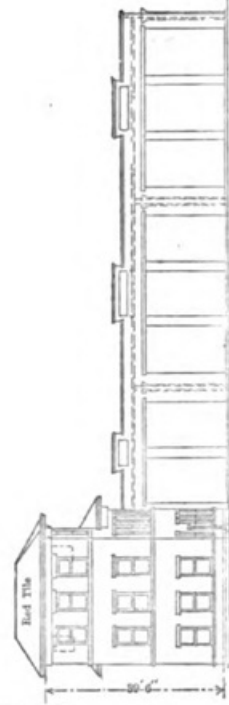
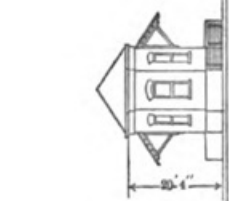
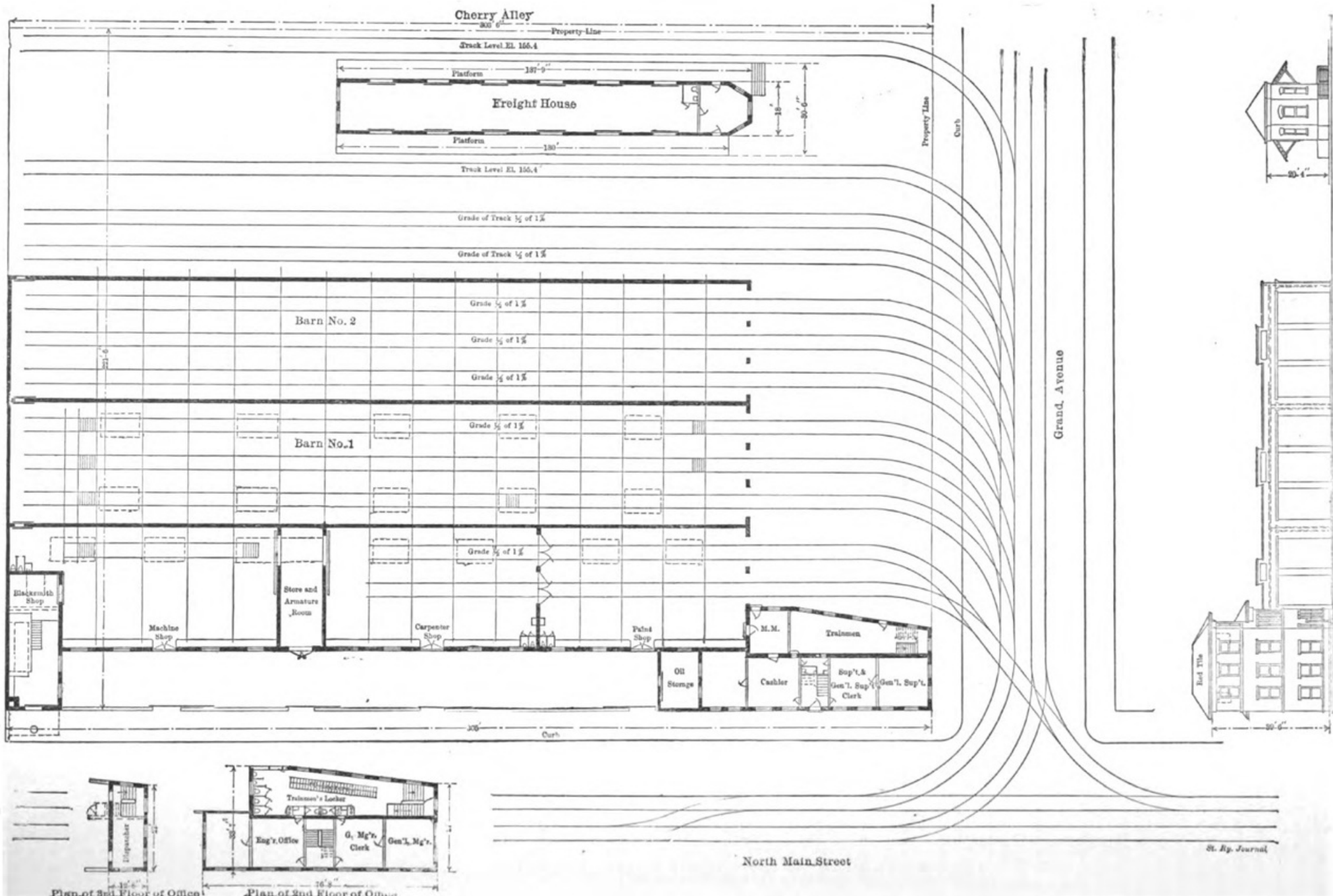
There are four pit tracks for repairs in the main room, the pits being built of concrete. The pit tracks rest on 10-in. x 12-in. sleepers, bolted through into anchors in the concrete. One side of the pit is hollowed out for heating pipes and wiring, and on this side the sleepers rest on concrete posts. Air hoists will be provided adjoining the pits for elevating car bodies. One of the tracks is a wash track with a V-shaped section 10 ft. wide with a depth of 17 ins. below the rail in the center. The tracks rest on timber and concrete sleepers and the rails are bolted through into concrete, and the track is drained at a number of points. The machine and carpenter-shop equipment will be of the most modern type, and air will be used for tools and hoists and for cleaning.

bolt threading machine, drill grinder, drill presses, bending machine, etc. Pits are provided with air hoists and air is conveyed to all parts of the shop for operating drills and blowing out machinery and car seats. The blacksmithing, babbiting and armature winding departments are fully equipped. A large carpenter shop in the rear of the machine shop is equipped with all necessary machinery for building as well as repairing cars. As stated in another part of this issue, the company is engaged in lengthening all its cars, about half of them having been completed. Two very substantial freight and express trailers have recently been built. In connection with the shop are recreation room, locker and wash rooms for the crews, large stock room and separate offices for the master mechanic, general superintendent and train dispatchers. Several tracks adjoining the buildings provide trackage for all the cars of the system, it being the policy to store cars out of doors when not in service.

The Canton-Akron Railway Company has a well-equipped



STUDY FOR PROPOSED CAR SHOPS, SCIOTO VALLEY TRACTION COMPANY, COLUMBUS, OHIO



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PLAN OF CAR HOUSE AND SHOPS AT LIMA, LIMA & TOLEDO TRACTION

shop at Canton, although it was built up piecemeal. It adjoins the company's large car house for the city and interurban cars, and, of course, work for both branches of the service is taken care of. Originally it consisted simply of a large room for machine shop with carpenter and paint shop in the rear. Special buildings with suitable equipments have recently been built for these departments with provision also for blacksmith shop and babbiting department, while the rear of the storage house has been partitioned off for a machinery room, leaving the main shop open for inspection and general overhauling. There is a transfer table with pit tracks provided with air jacks, and a large air hoist covering a considerable portion of the room. The machinery room in addition to the usual run of tools contains a wheel grinder, a boring mill for boring wheels and turning wheels, a vise for straightening axles and armature shafts, a tire-shrinking heater, taping machine, dipping tubs and electric bake oven for armature and coil work.

The Toledo & Indiana, Dayton & Troy, Toledo & Western, Indiana, Columbus & Eastern, Lake Shore Electric and several other roads also have rather complete shop layouts. The last mentioned road is said to be preparing to erect an elaborate plant to take care of its enlarged system.

A very interesting and novel shop layout has been planned by L. C. Bradley, superintendent of the Scioto Valley Traction Company. He was formerly a steam road man and follows steam road practice as closely as possible in all branches of the operation of his road, and he sees no reason why the round-house idea of a repair shop and storage house, which through many years of practice has been demonstrated to be the best for locomotive repair work, is not applicable for car maintenance work. The accompanying plan will probably be carried out wholly or partially in shops which the company will build within a year. Space for all of the cars may not be provided at once; possibly only half of the building shown will be built at first. It will be

seen that each car has an individual stall. Mr. Bradley believes that the great objection to nearly all shops of the usual type is that too much shifting of cars is necessary. A car goes into the shop and other cars are placed in front of it and it is necessary to shift these cars before the first car can be gotten out or another placed in the desired position for repair work. Under the round-house plan, ordinary inspection and the lighter classes of repairs will be taken care of in the stalls. The plans provide for space for working around the cars in the stalls, and there will be an overhead traveling crane for carrying any heavy parts around the rear of the cars through the general repair shop and into the machine shop, with tracks to some of the tools. The general repair shop will have pits for two cars with hoists for lifting car bodies. The various tools will be in a section by themselves. The paint shop, with capacity of two cars, will be back of the general repair shop, and the store room, master mechanic's office, locker room, etc., in the rear of the machine shop. A motor operated turntable will provide access to the various stalls, and there will be operating switches at several convenient places near the entrances so that the table can be turned for any desired track by an employee without the necessity of going to the turntable.

The various approaches to the turntable are long enough for one car each, if it is desirable to allow a car to stand there. Separate entrance and exit tracks will avoid delays in entering or leaving the shop.

Mr. Bradley claims that this type of layout will occupy no more space than a rectangular shop of similar capacity and believes that in many ways it will be more convenient and economical to work in. Although not shown in the plan, provision is made for a large water tank and pipe line extending around the rear of the round house and through the various shops. Each stall will have a fire-proof folding door and it is possible that fire-proof walls may separate some of the stalls.

