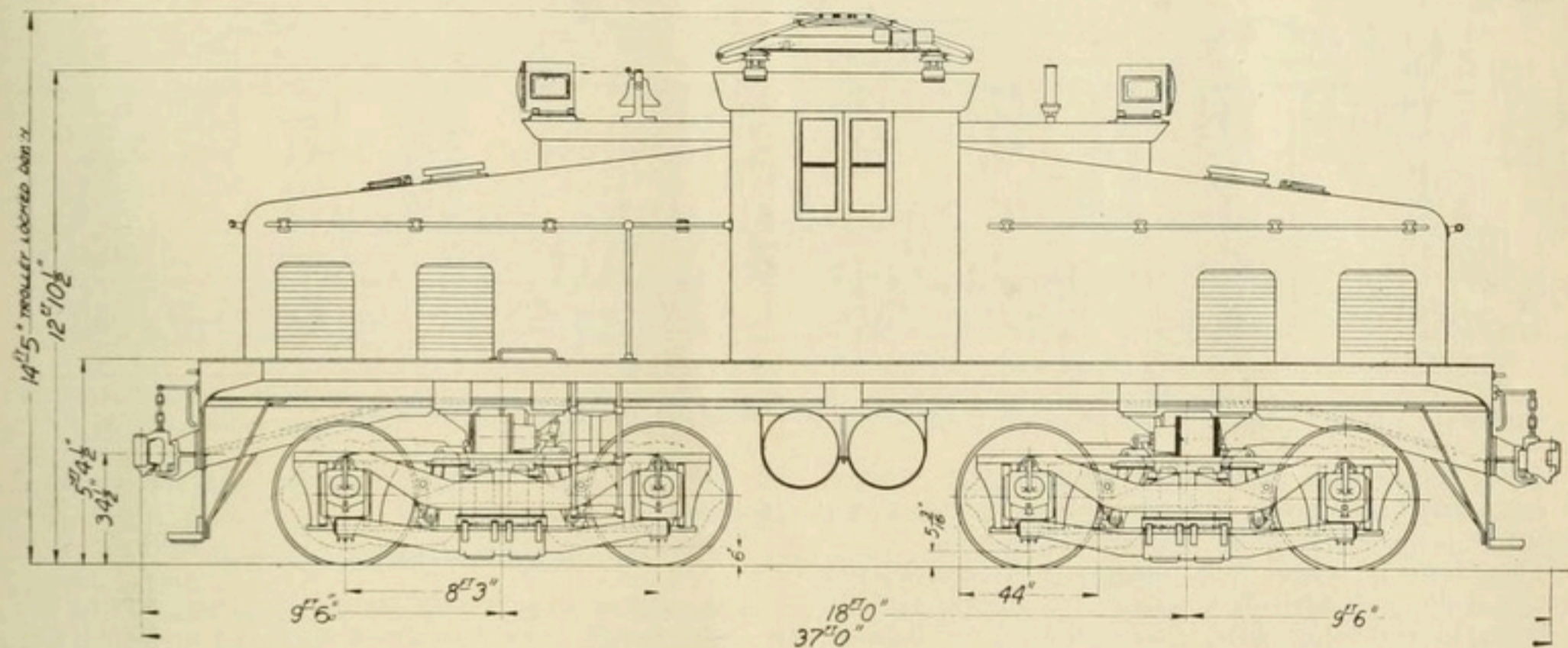


# New York Central Railroad Electric Freight Locomotives

The New York Central Railroad Company has placed orders with the General Electric Company for seven 100-ton electric switching locomotives and two 170-ton electric road freight locomotives, to be put in service on the Elec-

The specification for the switching locomotives provide for handling a 1,500-ton trailing train, consisting of 75 per cent empties and the balance of loaded cars, at a speed of not less than 25 miles per hour. The road locomotives

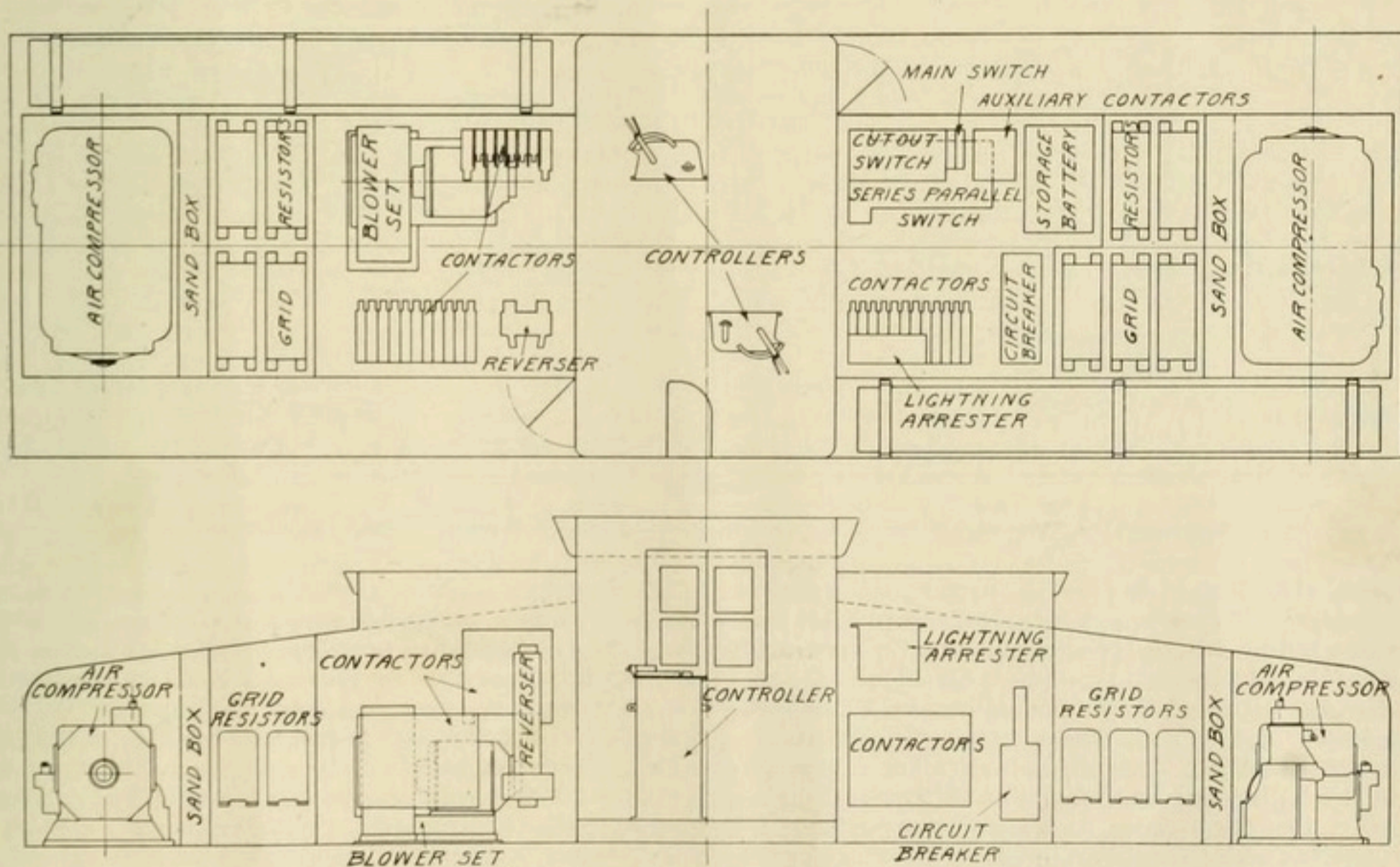


Side Elevation of New York Central Railroad 100-Ton Electric Switching Locomotives

tric Division at New York City and vicinity. These locomotives will be thoroughly tried out, in anticipation of the future electrification of the West Side freight tracks

will handle a 3,000-ton train of the same general make-up, at speeds not less than 32 miles an hour.

The switching locomotives are of the steeple cab type,



Arrangement of Apparatus on New York Central Railroad 100-Ton Electric Switching Locomotives

running from Spuyten Duyvil to Canal street in the city of New York. The locomotives, which are being built jointly by the General Electric Company and the American Locomotive Company, will be equipped for both third rail and overhead collection of current.

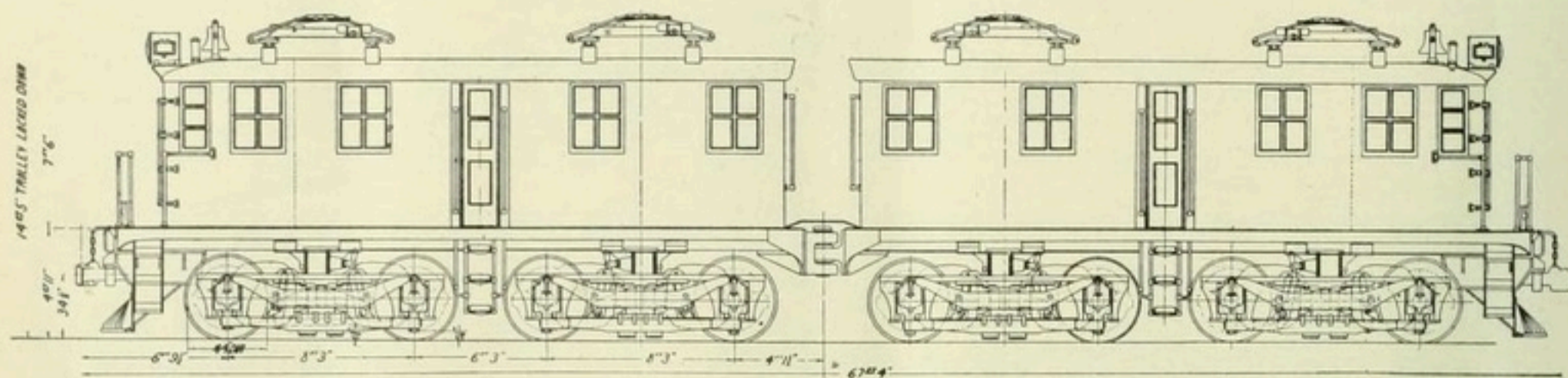
carrying two swivel, equalized trucks equipped with four 600 volt motors. The outline of the locomotive is shown in one of the illustrations and the general arrangement of the apparatus in the cab in the other. The nominal continuous rating of these locomotives is 1,240 horse-



power, or approximately 310 horsepower per motor. A gear ratio of 72 to 17 is used with the cushion type gear. This has given satisfactory service on the Paulista locomotives, and is being used with similar success on the Mexican Railway Company's locomotives.

The cab platform consists of an integral steel casting to insure ample strength for this character of service.

parallel and full parallel. In addition, two reduced field steps may be used with each motor arrangement, giving a total of nine free running speeds. Two compressors provide a total of 200 cubic feet displacement at 130 pounds pressure for the air brakes. Other accessories include a motor-driven blower located in the end cab for ventilating the traction motors, a bell and whistle mounted



Side Elevation of New York Central Railroad 170-Ton Freight Locomotives

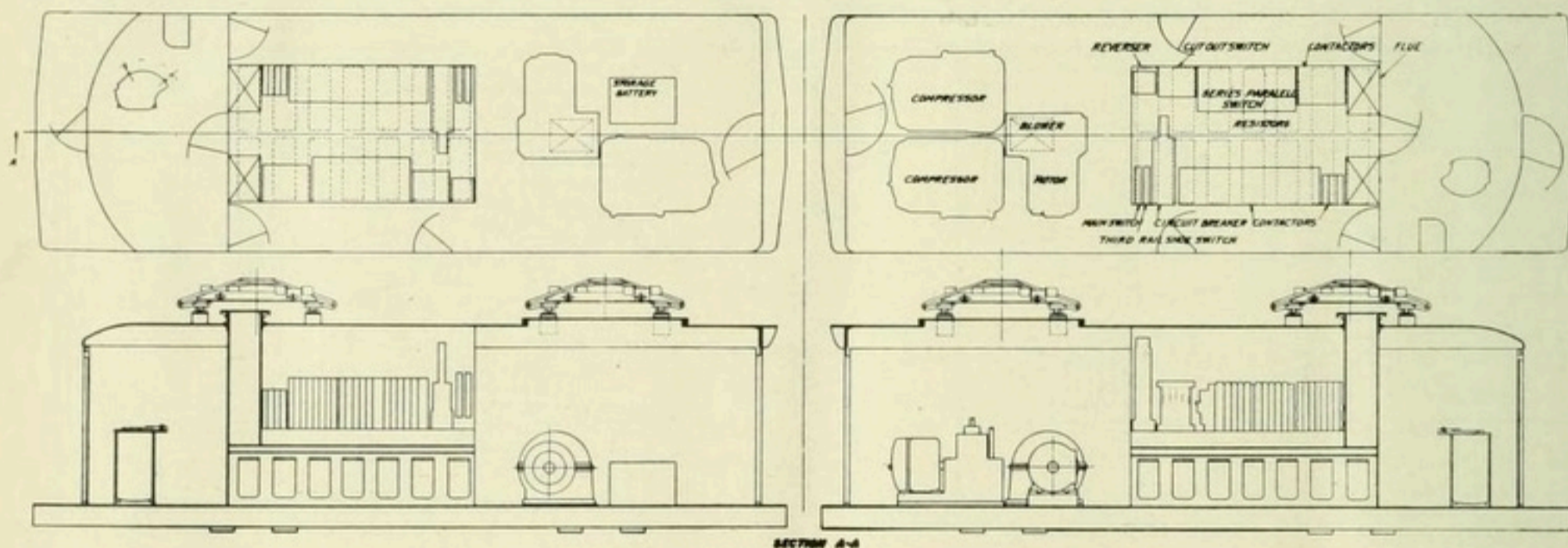
A master controller is provided at the engineer's position on each side of the cab, and the control and auxiliary apparatus is installed in the sloping end cabs.

The control is Type PCL, operating from a 32-volt storage battery. The 32-volt supply, in addition to operating all control circuits, is also used for cab lighting and for headlights. The type of control eliminates high voltage from the master controller and employs electro-pneumatic contactors located in the end cabs for operating the main circuits. Remote control is used for all

on the roof, and suitable equipment of air-operated sanders.

### Road-Freight Locomotives

The running gear for the freight locomotives is similar to two switching locomotives coupled by an articulated joint, and the motor and control equipment duplicates those used on the switchers. The out line of this locomotive is also shown in the drawings as is the arrangement of the apparatus in the cabs. A gear ratio of 69



Arrangement of Apparatus on New York Central Railroad 170-Ton Electric Freight Locomotives

accessories, including blower motor circuit, compressors, reversers, etc. Protection against overload or short circuit is obtained by a high speed circuit breaker connected in the high side of the main supply. An additional protection against injury to the individual motors is provided by overload relays in each motor circuit. These are so arranged that a short circuit on an individual motor will trip out the high speed breaker. The battery is charged by being connected in series with the blower motor. To protect against over-charging, a by-pass resistance is used in parallel with the battery thus reducing the charging current. The use of this resistance is controlled by an ampere-hour meter.

The master controller is of the standard design, using three handles—the main operating handle, a reversing handle, and a reduced field handle. Three full running speeds are provided, with the motors in series, series

to 20, however, is used, giving a higher running speed and permitting a maximum speed of 60 miles per hour. Two box type cabs are provided. These are carried on cast platforms similar to those used in the switchers. Two compressors, giving a total displacement of 300 cubic feet of free air at 130 pounds pressure, will be installed. The box cabs will be somewhat similar in appearance to the present passenger locomotives, having rounded ends of the same general character. A high speed circuit breaker will be installed in each cab, protecting each half unit independent of the other. The pantographs are of the hornless design, operating through a range of 25 inches. Two of these are mounted on each cab. In order to operate over the present Electric Division and such portion of the West Side tracks as will be equipped with third rail, shoes are provided on both sides of each truck.



One of the novel details is the provision of forced grease lubrication for the pins in the spring rigging. A bell and whistle are also provided on each cab. All locomotives will be equipped with solid rolled steel wheels, in accordance with the railroad company's specifications.

Provision is also made for a complete set of tests, to be made by the General Electric Company and the New York Central Railroad jointly, after these locomotives have been delivered to the electric division, when details of their performance will be published in the pages of this magazine.

The principal features of these two locomotives are as follows:

	Road	Switcher
Length .....	67 ft. 4 in.	37 ft. 0 in.
Height (over trolley locked down) .....	14 ft. 5 in.	14 ft. 5 in.
Wheel base .....	53 ft. 9 in.	26 ft. 3 in.
Rigid wheel base .....	8 ft. 3 in.	8 ft. 3 in.
Maximum emergency, m.p.h. ....	60	60
Gauge .....	4 ft. 8½ in.	4 ft. 8½ in.

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Analysis Shows Output and Costs