

APPENDIX R.

A copy of circular No. 2 having been sent to Hon. Jesse L. Williams, government director of the Union Pacific railroad, he prepared the following paper submitted it to the business committee, and subsequently sent it, with the prefatory letter, to be included with the records of the convention:

FORT WAYNE, February 19, 1866.

COLONEL: In response to your request of the 12th instant, I append a copy of the paper respecting a standard for the construction of the Pacific railroad, submitted to a committee of the late convention of the government commissioners, directors, engineer, and others. This paper was not designed as a full answer to all the points of inquiry embraced in your circular No. 2, and is of less general interest to railroad men than the elaborate replies from distinguished engineers read before the convention. Its purpose was, under a reasonable view of the circumstances, so to apply the requirements of the Pacific railroad act in its letter and spirit to the condition, topography, and building materials of that distant and sparsely inhabited region, as to secure the twofold object of Congress, to wit: first, a reliable and efficient first-class railroad, which, on its full completion, shall subserve in the highest degree the great public interests by reducing both time and cost of transit to a minimum; and second, the speediest possible opening of the work to the mining districts, both from the Missouri river and the Pacific seaboard.

Very respectfully,

J. L. WILLIAMS.

Lieut. Col. J. H. SIMPSON,
Corps of Engineers.

PACIFIC RAILROAD—WHAT SHALL BE ITS STANDARD OF CONSTRUCTION.

This is a great national work, to be built mainly by the nation's means, for important public and governmental objects. From considerations of public policy and convenience, the instrumentality of an incorporate company is used in its construction and working. The munificence of the grants made by Congress, and the great interests which the road is to subserve, no less than the language of the law, demand the construction of a first-class railroad.

In what sense and scope is the term "first-class" used in the law? Very few railroads in this country, even though the company may have had abundant means, have met at their first opening, in every particular, the characteristics here specified. Railroads do not ordinarily spring at once into perfection of track and equipment. In respect to solidity of road-bed, on which smoothness of track chiefly depends, completeness and extent of shops, station buildings, and rolling stock, railroads rather grow into the condition described by the term "first class."

But while this is true, the plans from the beginning may embrace the idea of a perfect and complete road to be realized very soon, and every step should be taken in accordance with such plans. There are certain leading characteristics, both of location and construction, fixing and governing the future character of the work, in which even a new road can and should conform literally and strictly to the specification contained in the law. Some of these I will enumerate:

1. *As to grades and alignments.*—While the letter of the law makes the Baltimore and Ohio railroad the standard, this must be considered as a limit to be