LETTER

OF

THE SECRETARY OF THE INTERIOR,

COMMUNICATING,

In compliance with a resolution of the Senate of the 1st instant, a copy of the report of J. L. Williams, government director on the Union Pacific railroad, dated June 16, 1868.

FEBRUARY 3, 1869.—Ordered to lie on the table and be printed.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., February 3, 1869.

SIR: In accordance with a resolution adopted by the Senate on the 1st instant, I have the honor to transmit herewith "a copy of the report of J. L. Williams, government director on the Union Pacific railroad, dated June 16, 1868."

I am, sir, very respectfully, your obedient servant,

O. H. BROWNING, Secretary.

Hon. B. F. WADE,
President pro tempore of the Senate.

FORT WAYNE, INDIANA, June 16, 1868.

SIR: On the eve of departure for the line of operations in the locating and constructing of the Union Pacific railroad through the mountain district, I deem it proper to communicate to the Secretary of the Interior such facts as have come under my notice which may be of interest at the present time.

1. As to the location.—In my report to you of 23d November, 1866, the very advantageous route, at 90 feet maximum grade, across the first mountain range—the Black Hills—discovered after extensive surveys continued through three seasons, was fully described. The season of 1867 was occupied in further preliminary surveys, more minute and careful than before, between the Black Hills and Salt lake, under the immediate direction of General Dodge, chief engineer. In the spring of 1868 the final location of this division was commenced, preparatory to the building of the road. For the last section of 150 miles, embracing the crossing of Green river and the Wasatch range—more difficult than the Black Hills—the chief engineer was fortunate in securing the services of J. Blickensderfer, Jr., of Ohio, an engineer of large experience in railroad location, and of acknowledged ability. Recent advices from him show that the same limit of gradient adopted over the Black Hills—90 feet per mile—can be used over the Wasatch at reasonable cost; and this, therefore, should be established as the maximum grade of the Union Pacific railroad east of the Sierra Nevada. Between the
Black Hills and Wahsatch ranges, 60 feet per mile is the ruling grade. Mr. Blickensderfer further thinks it probable that the eastern ascent of the Wahsatch can be made at 60 feet per mile.

Having been placed at the beginning on the locating committee of the board, and appreciating the importance of securing the best location for this continental railroad, I have made this a matter of special duty; and now, as the location draws near a close, while minor mistakes have doubtless been made, yet I have great confidence that the general route, as selected and approved by the chief engineer, as far west as Salt Lake, is the proper one. The length of the road from the Missouri river to Salt Lake valley, near the mouth of the Weber, is 1,020 miles, and to the north end of the lake, 1,100 miles.

2. As to the construction.—The track has now reached a point about 640 miles west of Omaha. Its progress this season has been more rapid than could have been expected, considering the comparatively heavy work, and the remoteness from the sources of supply of men and materials.

The arrangements of the company for the construction of the mountain section seem to have been enlarged to a scale more than proportioned to the difficulties.

Hitherto, the year 1870 has been assumed as the time when the two companies, one working from the Missouri and the other from the Sacramento, would probably meet; but it now looks as if they would even sooner accomplish a junction. Indeed, Mr. Durant, vice-president and general agent, talks (I think wildly) of reaching Salt Lake from the east during the season of 1868.

It is, of course, apparent to every experienced builder of railroads that the present very rapid rate of progress in this undulating and in some places mountainous country presupposes the passing over of some points of heavy grading, and the temporary substitution in many places of timber trestle-work for permanent stone culverts and stone abutments and piers under the bridges.

In view of the desirability of the speedy opening of a railroad across the continent, temporary work, to some extent, is justifiable, provided a full force of workmen is maintained behind the tracklayers, cutting down to the true grade, completing the tunnels, and substituting stone masonry and earth embankments for this temporary trestle-work. This, I am assured by the managers, is being done, but to what extent and how rapidly the government directors will be better able to report on their return from the line of operations.

If the general gratification at the present unexampled progress of the track has, in my case, been somewhat mitigated, the reason lies in the apprehension that a well-finished road through this mountainous district could not be built in so short a time, and that the substitution of permanent work promised by the managing directors, no doubt in good faith, might not be accomplished before the available means of the company, after this hasty opening of the road, shall have passed beyond control of the board, and it may be divided in the shape of large profits to the contracting parties.

In the standard for the construction of the work, adopted at the convention of directors, commissioners, and other experienced railroad gentlemen, and approved by the Secretary of the Interior, February 24, 1866, the following well-considered paragraph occurs:

The argument in favor of speedy construction must be subordinate to the substantial objects of the road, and the government must be certain to have a work that will convey its mails, troops, munitions of war, and the commerce of the country, with entire certainty, safety, and convenience.

Apprehending that the tendencies under this very rapid progress were in the opposite direction, and might lead to subordinating the paramount object of a well-built and well-furnished road to that of progress, I visited New York last week, that being the regular time for the quarterly meeting of the board. Though no meeting was held, yet two of the government directors then present were favored with an interview with some half dozen members of the board, among the most influential in control, both in the Union Pacific Railroad Company and in the operations under the construction contract, including the president and vice president of the company. In this interview I endeavored to impress these gentlemen with some views which I have entertained, in substance as follows:

First. That a substantial, permanently built, and well equipped road, with stone culverts and bridge abutments, and with sufficient shops and station buildings, as contemplated by the law, will be required by the country and the government in consideration of the very liberal subsidies granted by Congress.

Second. That while temporary structures, and in some cases temporary high grades, are justifiable in order to get the track in use so as to carry forward the iron and materials, yet that stone masonry in culverts and abutments, the tunnels and cuts completed to the established grade, with sufficient shops and station buildings, should immediately follow, so that they may be paid for out of the current means derived so largely from the government and first mortgage bonds, especially on the mountain section, and not left dependent upon the net income of the road, which will be needed for other purposes than construction.

I referred also, at this informal meeting, to a paragraph in the standard of construction above alluded to, which reads as follows:

Culverts and abutments for bridges and drains should be of stone whenever a durable article can be obtained within a reasonable distance, say from five to eight miles, depending upon circumstances; provided, that temporary structures may be adopted upon assurance to the satisfaction of the commissioners that stone abutments will be substituted immediately after the line shall be opened so that stone can be transported thereto.

This standard of construction is referred to and made part of the contract under which the mountain section (where stone is generally convenient) is being constructed, as will be seen by the synopsis of the contract hereto annexed.

Assurance was promptly given by the managing directors present that these views as to the substitution of permanent work would be carried out; that on the first division east of the Black Hills, of 100 miles, where numerous small watercourses are crossed temporarily by trestle-work, contract had already been made for the substitution of stone culverts and abutments during the present season. It was also stated that in place of temporary trestle piers and abutments sustaining the Howe truss bridges over the Laramie and other rivers west of the Black Hills, stone abutments and piers are now in progress.

In this connection, while expressing gratification with these preparations for a full and prompt completion of the road by permanent structures, I further suggested an adequate reserve fund for this purpose, consisting of a fair proportion of the government bonds due to each twenty mile section, which, instead of being paid to the contracting parties, should be retained and held specially for this object, and applied for the benefit of the road and its stockholders, as needed for completing the construction.

The existence of a contract for construction of the road, the provisions of which this suggestion might seem to interfere with, should not prevent a prudential measure like this, so beneficial to the road, since the contractors and the company are mainly the same parties. For on this
work, as is understood, the stockholders virtually build their own road, the contract system having been resorted to for greater convenience.

The government directors have, of course, no means of knowing in what shape any agreements between the agents of the company and the commissioners who accept the work have been placed respecting the substitution of permanent work and the erection of shops. Without presuming to inquire regarding the official action of others, yet the inherent difficulties manifestly surrounding the subject may perhaps justify a suggestion that if binding agreements could be made, under the law, by the commissioners, on the acceptance of each 20 miles section hereafter received, which would authorize the proper department of the government to withhold a part of the bonds due to such section, or to any section in advance and not yet constructed, equal to the cost of substituting permanent work, excavating cuts to the proper grade, finishing tunnels, erecting shops, and otherwise completing the railroad in accordance with a reasonable construction of the Union Pacific Railroad act, such action would be far more effective than any measure which the government directors can enforce or suggest. I should add, however, that a safe judgment can be formed as to the necessity of some such measure after they shall have personally examined the work.

I regret that I have not the advantage of consultation with the other directors on the part of the government in regard to these facts and suggestions. But being widely scattered, from Massachusetts to Missouri, and not having been called together for a meeting of the board since early in March, a conference seems impracticable. I doubt not, however, that they would, equally with myself, contribute whatever may be in their power to promote the interests of the work and secure as nearly as may be a compliance with the true intent of the law.

Respectfully submitted:

J. L. WILLIAMS,
Government Director Union Pacific Railroad.
Hon. O. H. BROWNING,
Secretary of the Interior.

SYNOPSIS OF CONTRACT.

In August last a contract was made nominally with Hon. Oakes Ames, but really with the same contracting company under whom the entire road is being built, which company, as is generally understood, embraces nearly all the stockholding interests. In point of fact, the stockholders build their own road on this work, the contract being a matter of convenience merely. The main points in this contract are as follows:

1. As to prices:
   1st. 100 miles west from 100th meridian $42,000 per mile.
   2d. 167 miles west from 100th meridian $45,000 per mile.
   3d. 100 miles west from 100th meridian $96,000 per mile.
   4th. 100 miles west from 100th meridian $80,000 per mile.
   5th. 100 miles west from 100th meridian $90,000 per mile.
   6th. 100 miles west from 100th meridian $96,000 per mile.

   667 miles.

   The four sections last named embrace the Black Hill mountain range, the Battlesnake and Medicine Bow spurs, with other comparatively heavy

   work westward to near the Walsatch range, including the north fork of the Platte and the Green river.

   2. The prices include six per cent. of sidings, and an equipment not less than $7,500 per mile, cash cost.

   3. Rails to be 56 pounds to the yard, with fish-bar joints.

   4. The road to be built according to the standard recommended by the convention of directors and commissioners called at Washington, February 24, 1866, by the Secretary of the Interior, and adopted by that officer for the construction of the road.

   5. The chief engineer on final estimate of each section deducts what it may lack of $7,500 per mile of equipment. Also to deduct the cost of reducing any temporary grade, curvature, &c., to the grade or curvature established by the chief engineer, or as approved from time to time by the company.