Union Pacific Railroad. Letter from the Secretary of the Treasury, in answer to a resolution of the House of February 4, relative to reports of the Union Pacific and other railroads to be made according to law.
LETTER

FROM

THE SECRETARY OF THE TREASURY,

IN ANSWER TO

A resolution of the House of February 4, relative to reports of the Union Pacific and other railroads to be made according to law.

FEBRUARY 23, 1868.—Referred to the Committee on the Pacific Railroad and ordered to be printed.

FEBRUARY 26, 1868.—Motion to reconsider the order to print.

MARCH 26, 1868.—Ordered to be printed.

TREASURY DEPARTMENT, February 18, 1868.

Sir: In response to House resolution of the 4th instant, "requesting the Secretary of the Treasury to inform this house if the Union Pacific Railroad Company and other railroad companies named in an act approved July 1st, 1862, entitled 'An act to aid in the construction of a railroad,' &c., have complied with section 20 of said act, and if so, to furnish this house with copies of said reports," I have the honor to transmit herewith the following:

Statement marked A.—Printed report of the Union Pacific Railroad Company for the years 1863 and 1864.

Statements marked B, C, and D.—Copies of reports of said company for the years 1864, 1865, and 1866.

Statements marked E, F, G, H, and I.—Copies of annual reports of the Central Pacific Railroad Company from 1863 to 1866, inclusive.

Statement marked J.—Copy of a report of the Sioux City and Pacific Railroad Company for 1866; and

Statement marked K.—Copy of report of the Western Pacific Railroad Company for 1866.

It will be perceived that the reports of the last two named companies are for the year 1866. The antecedent reports, although doubtless made according to the requirements of law, have not been found in this department.

Letters have been addressed to the presidents of all the companies requesting them to forward their reports in pursuance of law.

As soon as additional reports are received they will be forwarded.

I am, very respectfully,

H. McCulloch,
Secretary of the Treasury.

Hon. Schuyler Colfax,
Speaker of the House of Representatives.
OFFICERS AND DIRECTORS OF THE UNION PACIFIC RAILROAD COMPANY.

Officers.—General John A. Dix, president; Thomas C. Durant, vice-president; John J. Cisco, treasurer; Henry V. Poor, secretary.


PROCEEDINGS OF THE COMMISSIONERS OF THE UNION PACIFIC RAILROAD AND TELEGRAPH COMPANY, AT THEIR CONVENTION HELD AT CHICAGO, ILLINOIS, SEPTEMBER 2, 1862.

The act of Congress incorporating the Union Pacific Railroad Company made it the duty of the corporators, who were styled in said act, “the commissioners of the Union Pacific Railroad and Telegraph Company,” to meet for organization at Chicago, at the call of the commissioners named for the State of Illinois. The commissioners from said State, pursuant to such authority, appointed the second day of September, 1862, at noon, and Bryan Hall, at Chicago, as the time and place for the first meeting of said commissioners for the organization of the company.

Pursuant to such appointment, the commissioners met at the time and place named, and organized, temporarily, by the choice of Major General Samuel R. Curtis, a commissioner from Iowa, as chairman, and Henry V. Poor, of New York, and J. R. Robinson, of California, as secretaries.

The following commissioners, being a larger number than that required by the act to constitute a quorum, reported themselves in attendance, viz:


New Hampshire.—Joseph A. Gilmore.

Massachusetts.—Edward R. Tinker.

Rhode Island.—Charles Fosdick Fletcher.

Connecticut.—Cornelius S. Bushnell.

New Jersey.—Ephraim Marsh, Charles M. Harker.


Ohio.—Amasa Stone, William Denison.

Indiana.—Charles Paine, Samuel Hanna, Jesse L. Williams, Jonas Votaw, Isaac C. Elston.

Illinois.—William B. Ogden, Charles G. Hammond, Henry Farnam.


Minnesota.—David Blakely.

Iowa.—Wm. F. Coolbaugh, Lucius H. Langworthy, Hoyt Sherman, Lyman Cook, Samuel R. Curtis, Lewis A. Thomas, Platt Smith.

Missouri.—Wm. M. McPherson, Armstrong Beatty, John Corby.

Kansas.—John C. Stone, Werter R. Davis, Josiah Miller.

Nebraska.—Gilbert C. Monell, Augustus Kountz, T. M. Marquette, Alvin Saunders.

Colorado.—John Evans.


Appointed by the Secretary of Interior—Samuel J. Tilden, New York; Henry V. Poor, of New York; R. W. Latham, District of Columbia; O. M. Wozencroft, of California; and W. D. Griswold, of Indiana.

The commissioners then proceeded to an election of permanent officers of the company, which resulted in the choice of Wm. B. Ogden, esquire, of Chicago, as president; Thomas W. Olcott, esquire, of New York, as treasurer; and Henry V. Poor, esquire, of New York, as secretary.

Upon motion of Mr. Bushnell, a commissioner from Connecticut, a committee of one commissioner from each State and Territory represented, and one from the number appointed by the Secretary of the Interior, was appointed to report an order of business for the convention, viz:

Samuel B. Ruggles, of New York, chairman; John M. Wood, Maine; Charles W. Woodman, New Hampshire; Edward R. Tinker, Massachusetts; John Catlin, Wisconsin; Charles F. Fletcher, Rhode Island; David Blakely, Minnesota; C. S. Bushnell, Connecticut; W. F. Coolbaugh, Iowa; Ephraim Marsh, New Jersey; John Corby, Missouri; G. W. Cass, Pennsylvania; J. C. Stone, Kansas; Amasa Stone, Ohio; Alvin Saunders, Nebraska; Samuel Hanna, Indiana; John Evans, Colorado; Charles Gorham, Michigan; D. O. Mills, California; Henry Farnam, Illinois; Samuel J. Tilden, appointed by the Secretary of the Interior.

The convention then adjourned to meet at the same place on Wednesday morning, September 3, at 10 o'clock.

Upon the reassembling of the convention, September 3, the committee on the order of business reported the following resolutions, which were adopted:

1. That the speedy completion through the territory of the United States, from the Atlantic to the Pacific, of a railway communication affording adequate means of transit for persons and property, has become an urgent necessity, not only in facilitating and augmenting the commerce and developing the agricultural, mineral, and fiscal resources of our continental Union, but pre-eminently in providing for the public defence, and perpetuating the political unity of the Atlantic and Pacific portion of the republic.

2. That the eastern division of this great continental chain, extending from the Atlantic ocean to the Missouri river, having already been completed by the capital and enterprise of companies incorporated by the several States, it was eminently proper for the United States to incorporate a national company for completing the residue, reaching from the Missouri to the Pacific, with such aid from the national treasury and resources as seemed to be necessary; and that the country may well rely on the continuance of the same wise and paternal policy to expedite the efforts of the company to complete the work with all practicable dispatch.

3. That it was peculiarly the duty of the nation, which had assumed and exercised the right greatly to extend its original limits by annexing the broad area between the Mississippi and the Pacific, and that, too, for the avowed purpose of protecting the commerce and territory of the Union from foreign interference,
UNION PACIFIC RAILROAD.

to exert all its powers to secure the completion of a chain of communication so virtually important to both.

4. That the denationalizing and treasonable effort, now in progress, to separate the slaveholding portion of the Union from the residue, could it be successful, would inevitably be followed by attempts still more flagitious, not only to detach the States on the Pacific, but even to separate the States on the lakes and the Missouri from those on the Atlantic, and possibly from each other; that this audacious and abominable attempt to demolish the fabric of our national government is secretly encouraged, if not openly approved, by at least a portion of the European world; and that the American people are now impelled by every motive of interest, duty, pride and honor, and every instinct of self respect and self preservation, to avert from themselves and their posterity a calamity so enormous.

5. That the peculiar character of the pending rebellion, involving, if successful, the utter destruction of our national organization, and the consequent reduction of our hitherto powerful republic to the fragmentary and feeble condition of central Europe, enlisting on our continent, for centuries to come, perpetual internal strife if not interminable war, imperatively requires not only the utmost exertion of the military and naval power of the government, but the immediate adoption of every measure of civil administration for strengthening the bonds of our existing Union; that nothing will contribute more permanently and effectually to that object than the binding, by an adequate chain of communication, our Pacific coast and the rich metalliferous regions of the interior to the large and powerful group of food-producing States on the Atlantic; and that such a channel of intercourse through this central portion of the continent, occupied by a populous and homogeneous race enjoying easy and daily access to the two great oceans of the globe, would enable it not only to resist and defy any further attempt, either at home or abroad, to dismember our territory, but to exercise a commanding influence over the commerce if not over the political destinies of the civilized world.

6. That Congress has acquired a new claim to the gratitude of the people by delegating to an incorporated company the duty and responsibility of constructing and managing this great work of national improvement, and in aiding it by the public credit, and grants of public lands; that through this instrumentality the enterprise will enjoy the benefit of a permanent and steady direction, exempt from the uncertainty and delay of yearly appropriations, and especially from the vicissitudes of party conflicts and the demoralizing effects of party interference, permitting its directors to carry forward the work with activity, intelligence and honesty, on a continuous and systematic plan, undisturbed by any changes or vacillations in our public counsels, or any fluctuations in our public affairs.

7. That the commissioners are profoundly impressed with the conviction that, under the exigencies of our present struggle for national existence, this great channel of intercourse, with its rich and invigorating streams of national commerce and its unrivalled military facilities, is more than ever needed to preserve the American Union from political dissolution; that the pressure of the pending war, so far from affording any reason for delaying its prosecution, shows only the more urgent necessity; that no time should be lost in securing its speedy completion by every reasonable effort, and that, in a crisis so grave as the present the company and the country may properly and confidently rely on the government promptly to afford to the work any further aid or facility which the virtual interest involved in its vigorous prosecution so evidently requires.

8. That the commissioners will duly proceed to open books of subscription to the stock of the Union Pacific Railroad Company, in the manner and on the terms prescribed in the act of incorporation; that said books be opened on the first Wednesday of November next, at twelve o'clock at noon, in Portland, Maine; Concord, New Hampshire; Rutland, Vermont; Boston, Massachusetts;
Providence, Rhode Island; Hartford, Connecticut; New York city; Trenton, New Jersey; Philadelphia city; Wilmington, Delaware; Baltimore, Maryland; Washington city; Columbus, Ohio; Indianapolis, Indiana; Chicago, Illinois; Detroit, Michigan; Milwaukee, Wisconsin; St. Paul, Minnesota; Burlington, Iowa; St. Louis, Missouri; Leavenworth, Kansas; Omaha, Nebraska; Denver City, Colorado; Salt Lake City, Utah; Cleveland and Cincinnati, Ohio; Buffalo and Albany, New York; Wheeling, Virginia; Louisville, Kentucky; Pittsburgh, Pennsylvania; Portland, Oregon; Dubuque, Iowa; Carson City, Nevada; San Francisco, California; to be opened in such localities therein as may be designated by or under authority of the president, secretary, and treasurer of this board, or any two of them, and by such persons as they may in like manner appoint. The said books shall remain open at all said places at least two weeks; but if, in the judgment of the president, secretary, and treasurer, or any two of them, it shall prove impracticable to open and keep open the said books at any or either of the said places, such places shall be dispensed with.

A cash payment of ten per cent. on the amount of every subscription shall be made by a certificate of deposit to the credit of the treasurer in some bank of good standing, to be approved by him; and on receiving such certificate he shall issue his receipt to the subscriber for the amount.

9. That the security to be given by the treasurer shall be his bond, conditioned for his faithfully accounting for all moneys which may come into his hands, with two sureties to be approved by the president and secretary, for one hundred thousand dollars. The treasurer shall be responsible only for due care in the safe keeping of all moneys which shall actually come into his hands. He shall keep on interest any funds that may accumulate in his hands, at the highest rate consistent with safety.

10. That a committee, consisting of one member from each State and Territory and one from the members at large, be appointed by the president to apply to Congress for any auxiliary legislation which may be necessary and proper to facilitate and expedite the construction of the work which the present board was appointed to promote.

11. That the president, secretary, and treasurer shall, ex officio, be members of each of the committees; and five members, exclusive of the officers of the board, shall constitute a quorum of said committee, convened on due notice to all the members.

12. That a committee of thirteen members be appointed by the president, which shall have advisory powers when the board is not in session, which it may lawfully exercise.

13. That when this board adjourn it shall adjourn subject to the call of the president and secretary, upon notice of not less than ten days, addressed by mail to each member, whose address shall be known to those officers.

Mr. Tilden, of New York, offered the following resolution, which was adopted.

Resolved, That a committee, consisting of five members, be appointed by the president to collect useful information in respect to the contemplated Pacific railroad, the various routes proposed, and the agricultural, mineral, and topographical character of the regions travelled by such routes, and that all the members of this board be requested to transmit to the said committee such information as they may possess or acquire on these subjects.

Mr. Cass, of Pennsylvania, offered the following resolutions, which were adopted:

Resolved, That the treasurer is authorized and directed to pay the warrants drawn on him by the president and countersigned by the secretary, in sums not less than $50 each, which warrants shall only be drawn for the legitimate expenses of the organization, which occur subsequent to the time of the meeting of the commissioners; but no expense incurred prior to date shall be paid, excepting for the advertising required by the act of incorporation.

Resolved, That it shall be the duty of the secretary to keep an account of all warrants drawn on the treasurer by the president and countersigned by him, showing the date, purpose for which drawn, and the amount of said warrant; he shall also have in his office the original bill or voucher, receipted, for which the warrant was drawn.
Mr. Ruggles offered the following resolution, which was adopted:

Resolved, That it be referred to a committee of three members from New York, to be appointed by the president, to petition the Land Board of New York to exempt from canal tolls all the railroad iron carried on the canals of that State to be used in the construction of the Union Pacific railroad.

The communication from the legislature of the Territory of Colorado was then taken from the table, read, and ordered to be placed on file.

Mr. Robinson, of California, offered the following resolution, which was adopted:

Resolved, unanimously, That the president of the board of commissioners is hereby instructed to petition Congress, immediately after its reassembling in December next, to amend the Pacific Railroad Company's act so that it shall read, "that the capital stock of said company shall consist of 1,000,000 shares of $100 each, which shall be subscribed for and held in not more than 2,000 shares by any one person."

On motion of Governor Evans, of Colorado, the following resolution was adopted:

Resolved, That the development of prosperous settlements in Colorado, Utah, and Nevada Territories on the direct east and west line between New York and San Francisco has furnished one of the greatest desiderata to the construction and maintenance of the Pacific railroad, and encourages us in our efforts.

On motion, a resolution was adopted instructing the officers of the company to accept of the act of incorporation on behalf of the company, and file a certified copy of the proceedings of the convention in the Department of the Interior.

Resolved, That the thanks of the board of commissioners of the Union Pacific Railroad Company are hereby tendered to the Hon. W. B. Ogden, president of the board, for the dignified, able, and courteous manner in which he has presided over their deliberations at this first meeting, so important to the interests of the country.

The convention then adjourned without day.

Proceedings of the Union Pacific Railroad Company, in the matter of opening the books of subscription to the capital stock of said Company.

In obedience to the instructions of the board of commissioners of the Union Pacific Railroad Company, at their meeting in Chicago, on the 2d day of September, 1862, and succeeding days, and in compliance with the act of Congress approved July 1, 1862; establishing said company, the undersigned president, secretary, and treasurer, of said company, proceeded to the discharge of the duties appointed them, and caused books of subscription to the capital stock of said company to be prepared, in form and words following, to wit:

UNION PACIFIC RAILROAD COMPANY.

Books of subscription to the capital stock of said company.

The parties whose names are subscribed hereto, each for himself, and not one for another, hereby agree to take and fill the number of shares set against their respective names, of the capital stock of the Union Pacific Railroad Company, and to pay thereon to the treasurer of said company, at the time of subscribing the per centum on the amount of such subscription, and to make further payments on shares so subscribed by them, as may be called for by the directors of said company, to be hereafter chosen.

Having prepared the books of subscription as aforesaid, the undersigned officers of said company prepared a notification of the opening of said books, of which the following is a copy:
UNION PACIFIC RAILROAD.

Books of subscription to the capital stock of the Union Pacific Railroad Company will be open on Wednesday, the 5th day of November, 1862, at noon, on terms and conditions therein set forth, at the places and with the persons following, at their respective places of business:

Albany, New York, Thomas W. Olcott.
Baltimore, Maryland, Thomas Swan.
Buffalo, New York, Dean Richmond.
Boston, Massachusetts, Samuel T. Dana.
Burlington, Iowa, Lyman Cook.
Cincinnati, Ohio, S. S. L'Hommedieu.
Columbus, Ohio, William Dennison.
Chicago, Illinois, William B. Ogden.
Cleveland, Ohio, Amasa Stone.
Concord, New Hampshire, Joseph A. Gilmore.
Carson City, Nevada Territory, Wells, Fargo & Co.
Detroit, Michigan, Charles A. Trowbridge.
Dubuque, Iowa, Platt Smith.
Denver City, Colorado, George W. Clayton.
Indianapolis, Indiana, James M. Ray.
Louisville, Kentucky, James Guthrie.
Leavenworth, Kansas, General J. C. Stone.
New York city, New York, H. V. Poor, at the office of the secretary of the company, 54 William street.
Omaha, Nebraska Territory, Alvin Saunders.
Portland, Maine, Charles E. Barrett.
Portland, Oregon, Wells, Fargo & Co.
Providence, Rhode Island, Walter T. Burgess.
Rutland, Vermont, Henry H. Baxter.
St. Louis, Missouri, Wm. M. McPherson.
St. Paul, Minnesota, Parker Paine.
Salt Lake City, Utah, Brigham Young.
San Francisco, California, Wells, Fargo & Co.
Trenton, New Jersey, Philemon Dickerson.
Wilmington, Delaware, R. R. Robinson & Co.
Wheeling, Virginia, S. Brady.

By order of the board of commissioners of the Union Pacific Railroad Company:

HENRY V. POOR, Secretary.
THOMAS W. OLCOTT, Treasurer.

Dated at New York, the 25th day of October, 1862.

Which notification aforesaid they caused to be printed, and the publication of the same was requested in the following-named newspapers, in nearly all of which said notification was inserted as an advertisement one or more times, to wit:

Baltimore: Baltimore Patriot.
Buffalo: Buffalo Advertiser.
Accompanying a printed copy of the advertisement of the opening of the books was the following note:

UNION PACIFIC RAILROAD COMPANY, SECRETARY'S OFFICE,
54 William street, New York, October 30, 1862.

To the Proprietors of the ---:

GENTLEMEN: Enclosed please find advertisement of the opening of the books of subscription to the capital stock of the Union Pacific Railroad Company. The present organization being only provisional, for the purpose of securing subscriptions to the capital stock to the amount of $2,000,000, is without funds or authority to contract any debt whatever. Certain charges will, however, be recommended to the company to be organized by the stockholders, for payment; and among them an advertisement of the opening of books of subscription, looking to the new company for payment. You will please give — insertion—of the enclosed, forwarding your bill for the same to this office.

Very respectfully,

HENRY V. POOR, Secretary.

Dated in New York, this 30th day of October, 1862.

With each book of subscription, printed and prepared in the manner and form above set forth, a letter of instruction was sent to each person to whom books of subscription to the capital stock was committed, in the form following, the blanks in the copy in each case being appropriately filled:

UNION PACIFIC RAILROAD COMPANY, SECRETARY'S OFFICE,
54 William street, New York.

Whereas, at a meeting of the board of commissioners of the Union Pacific Railroad Company, held at Bryan Hall, in the city of Chicago, on the 2d day of September, 1862, agreeable to the provisions of an act entitled "An act to aid in the construction of a railroad and telegraph line from the Missouri river to the Pacific ocean, and to secure to the government the use of the same for postal, military, and other purposes," the following resolution was adopted by said board, viz:

Resolved, That the commissioners will duly proceed to open books for subscription to the Union Pacific Railroad Company, in the manner and on the
terms prescribed in the act of incorporation. That said books be opened on the first Wednesday of November next, at 12 o'clock, at noon, in Portland, Maine; Concord, New Hampshire; Rutland, Vermont; Boston, Massachusetts; Providence, Rhode Island; Hartford, Connecticut; New York city; Trenton, New Jersey; Philadelphia city; Wilmington, Delaware; Baltimore, Maryland; Washington city; Columbus, Ohio; Indianapolis, Indiana; Chicago, Illinois; Detroit, Michigan; Milwaukee, Wisconsin; St. Paul, Minnesota; Burlington, Iowa; St. Louis, Missouri; Leavenworth, Kansas; Omaha, Nebraska; Denver City, Colorado; Salt Lake City, Utah; Cleveland and Cincinnati, Ohio; Buffalo and Albany, New York; Wheeling, Virginia; Louisville, Kentucky; Pittsburgh, Pennsylvania; Portland, Oregon; Dubuque, Iowa; Carson City, Nevada; San Francisco, California; to be opened in such localities therein as may be designated by or under the authority of the president, secretary, and treasurer of the board, or any two of them. If it shall prove impracticable to open or keep open said books at any or either of said places, such plans shall be dispensed with. A cash payment of ten per cent. on the amount of every subscription shall be made by a certificate of deposit to the treasurer, in some bank of good standing, to be approved by him, and on receiving such certificate he shall issue his receipt to the subscriber for the amount.

Now, therefore, the undersigned, the president, secretary, and treasurer of said board, named in said resolutions, do, by authority vested in us, hereby designate and appoint the office or place of business, as the place at which books to receive subscriptions to the capital stock of said corporation shall be opened in said ---, agreeably to the provisions of the act and of the resolutions aforesaid; and the undersigned president, secretary, and treasurer of said board do, by virtue of the authority of said act and of the resolutions aforesaid, commit the charge, care, and custody of said books opened for subscription to the capital stock of said corporation in said ---, who are hereby, for and in behalf of said board, authorized to open said books for subscription to the capital stock of said company, agreeably to the provisions of said act, and of the resolutions aforesaid, at the place above named in said ---, on the first Wednesday of November, 1862, at 12 o'clock m., and to keep and maintain said books open for subscription to the capital stock of said corporation for at least two weeks from the said first Wednesday of November, 1862; and said --- are hereby authorized to receive, in manner prescribed by said resolution, all certificates of deposits, checks, bills of exchange, for the moneys subscribed by the act to be paid by each person subscribing to the capital stock of said company, and to forward the same to the treasurer of said company at Albany as fast as received, and upon closing the aforesaid books to forward them to said treasurer, or the secretary of the company in New York, with a statement or account of their action in the premises.

Dated New York, --- day of ---, 1862.

WM. B. OGDEN, President.
THOMAS W. OLcott, Treasurer.
HENRY V. POOR, Secretary.

Form of a return by the persons intrusted with the opening of books.

To ---: We, the undersigned, ---, to whom were committed the books to be opened in ---, ---, for subscription to the capital stock of the Union Pacific Railroad Company, agreeably to the act of Congress incorporating the same, and of the resolution of the board of commissioners of the Union Pacific Railroad Company held at Bryan Hall, Chicago, on the 2d day of September, 1862, hereby certify that said books of subscription were opened in said --- on the first Wednesday of November, 1862, at 12 o'clock m., and kept open by us for subscription to the capital stock of said company for at least two weeks.
continuously, from the said first Wednesday of November, 1862; and we further
certify that subscriptions were made on the same capital stock of said company
by the persons and amounts as follows: ————, ————; and
we further certify that the following sums have been paid us by the parties sub­
scribing, being ten per cent. on the amount of the subscription, viz: ————,
which sums, as aforesaid, we have forwarded to the treasurer of the company at
Albany, New York.

To be sworn to before some commissioner of deeds, justice of the peace, or
judge of the United States courts.

And whereas it was thought advisable to secure the assistance and co-opera­
tion of other parties to aid the person or persons to whom the book or books of
subscription were committed, the undersigned filled the blanks in the letters of
instruction respectively with the names of the followi1Jg persons, to wit: ————.

UNION PACIFIC RAILROAD COMPANY.

Persons to whom books of subscription to the capital stock have been com­
mitted:

Albany, New York, Thomas W. Olcott.
Baltimore, Maryland, Thomas Swann, Chauncey Brooks, Edward Wilkins.
Buffalo, New York, Dean Richmond.
Boston, Massachusetts, Samuel T. Dana, W. H. Swift, John Bertram.
Burlington, Iowa, Lyman Cook, H. T. Reid.
Carson City, Nevada Territory, Wells, Farago & Co.
Cleveland, Ohio, Amasa Stone.
Columbus, Ohio, William Dennison.
Cincinnati, Ohio, S. S. L'Hommedieu, William H. Clement.
Detroit, Michigan, Charles A. Trowbridge, R. N. Rice, Ransom Gardner.
Dubuque, Iowa, Platt t'mith, L. H. Langworthy, Lewis A. Thomas.
Louisville, Kentucky, James Guthrie.
Leavenworth, Kansas, J. C. Stone, John Kerr.
Milwaukee, Wisconsin, John Cattin, E. D. Holton.
New York city, New York, H. V. Poor, secretary of the company, 54 William
street.
Omaha, Nebraska Territory, Alvin Saunders, Gilbert C. Morrell, Augustus
Kountze.
Portland, Oregon, Wells, Fargo & Co.
Harrison.
Pullman, Vermont, Henry H. Baxter.
St. Louis, Missouri, William M. McPherson.
St. Paul, Minnesota, Parker Paine, David Blakely.
Salt Lake City, Utah, Brigham Young.
San Francisco, California, Wells, Fargo & Co.
Trenton, New Jersey, Philemon Dickenson, Ephraim Marsh, Charles M.
Harker.
The books of subscription aforesaid, the letter of instruction, with a blank form of return, a printed copy of the notice of the opening of the books, and a printed copy of the list of persons to whom the books of subscription to the capital stock of said company were committed, were enclosed in an envelope and properly directed to the several persons named, and deposited in the post office, in the city of New York, postage paid, in due season to reach their place of destination in due time, and before the time mentioned therein for the opening of said books, with the exception of books prepared for the States of Oregon and California, and the Territory of Nevada, which were delivered to Wells, Fargo & Co., and were forwarded by said Wells, Fargo & Co., the last books referred to being prepared at an earlier day in consequence of the length of time required to reach their place of destination, and differ in some respects, though not materially, from books opened in other places, and were not accompanied by a blank form of return; and said president, secretary and treasurer, on the seventeenth day of November, 1862, for the purpose of ascertaining whether an amount of stock had been subscribed, to wit, 2,000 shares, and ten per cent. of this amount paid to the treasurer of the company, which will make it obligatory on the part of the officers to call a meeting for choice of directors, caused a notification to be addressed to the several persons to whom books of subscription of the capital stock of said company had been committed, with the exception of the parties in the city of New York, to whom books of subscription had been committed, in the words and figures following:

UNION PACIFIC RAILROAD COMPANY, SECRETARY'S OFFICE,

54 William Street, New York, November 17, 1862.

Pursuant to the authority vested in them by the act incorporating the Union Pacific Railroad Company, and by the commissioners of said company, at their meeting, held at Chicago, on the 2d day of September, 1862, the officers of the company hereby direct that the books of subscription to its capital stock, and committed to your charge, be closed after the same shall have remained open for subscription for at least 15 days, exclusive of Sundays, from and after the 5th day of November, instant, at 12 o'clock at noon; and you are requested to forward immediately to the office of the secretary, in this city, such books, with a statement of the amount subscribed, and of your action in the premises, agreeably to the letter of instruction accompanying the said books.

By order of the officers of said company,

HENRY V. POOR, Secretary.

Pursuant to the foregoing notifications and instructions, the books of subscription to the capital stock of said company were returned to the office of said company, they having first remained open for subscription to the capital stock of said company in each place designated for at least fifteen days, as provided in the act incorporating said company, and upon said books twenty-two shares were subscribed to the capital stock of said company, as follows:

Upon the books opened in the city of St. Louis, Missouri, five shares were subscribed by William M. McPherson, and ten per cent. thereof paid in to the treasurer of the company; upon the books opened in the city of Milwaukee, Wisconsin, five shares were subscribed by George A. Thompson, and ten per cent. thereof paid into the treasury of said company; upon the books opened in Omaha, Nebraska, twelve shares were subscribed by the following persons: by Augustus Kountze, five shares; by Francis Smith, one share; by John Rickby, one share; by O. P. Hospord, one share; by James G. Megeath, one share; George R. Smith, one share; John McCormick, one share; and W. J. Sweeley, one share; upon all of which ten per cent. of the amount was paid into the treasury of the company; and the aforesaid subscriptions are all that have, up to the date hereof, been made to the capital stock of said company. The books opened in the city of New York have remained open for subscription to the capital stock of said company.

WILLIAM B. OGDEN, President.
HENRY V. POOR, Secretary.

Treasurer.
Names of parties subscribing | No. of shares subscribed by each | Amount paid into the treasury of the company | Names of parties subscribing | No. of shares subscribed by each | Amount paid into the treasury of the company
---|---|---|---|---|---
Andrews, S. | 20 | $2,000 | Harston, G. B. | 5 | $500
Ahern, T. J. | 20 | $2,000 | Harirman & Jerome | 20 | $2,000
Ashley, O. D. | 20 | $2,000 | Hodges, G. W. | 20 | $2,000
Blood, H. | 20 | $2,000 | Henry, J. E. | 50 | $5,000
Bastord, H. W. | 20 | $2,000 | Hosford, O. P. | 1 | 100
Belmont, Aug. | 20 | $2,000 | Haven, Franklin | 10 | 1,000
Basford, C. S. | 10 | 1,000 | Holiday, Ben | 20 | 2,000
Broadhead, N. C. | 10 | 1,000 | Jerome, A. G. | 20 | 2,000
Bonner, G. T. & Co. | 20 | 2,000 | Jerome, L. W. | 20 | 2,000
Butler, E. | 20 | $2,000 | Jones, David | 20 | $2,000
Barnes, M. | 10 | 1,000 | Kowalski, C. | 20 | 2,000
Blood, H. | 10 | 1,000 | Keckham, Morris | 20 | 2,000
Barney, D. N. | 20 | 2,000 | Kountze, Augustus | 5 | 500
Blaichard, R. M. | 50 | 5,000 | Lombard, H. J. | 20 | 2,000
Butterfield, John | 20 | 2,000 | Low, A. A. | 20 | 2,000
Blair, John J | 20 | 2,000 | Lambard, C. A. | 30 | 3,000
Campbell, George W | 20 | 2,000 | McComb, H. S. | 10 | 1,000
Clark, Edward | 20 | 2,000 | Merriman & Bell | 20 | 2,000
Clark, J. S. | 20 | 2,000 | McCready, F. H. | 20 | 2,000
Crane, H. C. | 50 | 5,000 | McCAndrews & Wann | 20 | 2,000
Cooper & Hewitt | 50 | 5,000 | Maxwell, John D. | 19 | 1,000
Chittenden, S. B | 20 | 2,000 | McPherson, William M. | 5 | 500
Cerning, Erastus | 10 | 1,000 | McCormick, John | 1 | 100
Campbell, Allen | 20 | 2,000 | Meggath, James G. | 1 | 100
Carver, B. F. | 5 | 500 | Nye, E. | 10 | 1,000
Dix, J. A. | 20 | 2,000 | Ogden, William B. | 20 | 2,000
Duncan, Sherman & Co | 20 | 2,000 | Opdyke, George | 20 | 2,000
Dehon, Clark & Bridges | 20 | 2,000 | Pratt, G. W. | 20 | 2,000
Dunham, E. W. | 20 | 2,000 | Price, J. M. | 20 | 2,000
Davis, George T. M | 20 | 2,000 | Prayn, J. V. L. | 20 | 2,000
Dunham, James L. | 20 | 2,000 | Poor, Henry V | 10 | 1,000
Durant, Thomas C. | 20 | 2,000 | Pomeroy, S. C. | 5 | 500
Durant, Wm. F. | 50 | 5,000 | Quintard, G. M. | 20 | 2,000
Dows, D. | 20 | 2,000 | Rosekrans, E. H. | 20 | 2,000
Durant, W. W. | 10 | 1,000 | Rainsford, G. S. | 10 | 1,000
Dodge, William E. | 50 | 5,000 | Richards, L. S. | 20 | 2,000
DeRongé & Dyott | 20 | 2,000 | Richards, T. P. | 20 | 2,000
Gibson, E. T. H | 20 | 2,000 | Richmond, Dean | 20 | 2,000
Grinnell, M. H. | 20 | 2,000 | Russell, C. H. | 20 | 2,000
Gibson, C. D. | 10 | 1,000 | Rickley, John | 1 | 100
Gray, S. M. | 10 | 1,000 | Roberts, M. O. | 20 | 2,000
Griswold, George | 10 | 1,000 | Scott, Thomas A. | 20 | 2,000
Gould, Charles | 10 | 1,000 | Scranton, J. H. | 50 | 5,000
Gardner, Rason | 20 | 2,000 | Stebbens, H. J. & Sons | 20 | 2,000

It having been made to appear to the president and secretary of the board of commissioners of the Union Pacific Railroad Company that at least 2,000 shares had, in good faith, been subscribed to the capital stock of said company, and that ten per centum thereon had been paid into the treasury of said company by the following parties, to wit:
List of Share-holders—Continued.

<table>
<thead>
<tr>
<th>Names of parties subscribing.</th>
<th>No. of shares subscribed by each.</th>
<th>Amount paid into the treasury of company.</th>
<th>Names of parties subscribing.</th>
<th>No. of shares subscribed by each.</th>
<th>Amount paid into the treasury of company.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweesy, William J.</td>
<td>1</td>
<td>$100</td>
<td>Taylor, Moses.</td>
<td>20</td>
<td>$2,000</td>
</tr>
<tr>
<td>Tuttle, Charles.</td>
<td>20</td>
<td>2,000</td>
<td>Thompson, G. A.</td>
<td>5</td>
<td>500</td>
</tr>
<tr>
<td>Thompson, J. Edgar.</td>
<td>30</td>
<td>3,000</td>
<td>Van Shaick &amp; Massett.</td>
<td>20</td>
<td>2,000</td>
</tr>
<tr>
<td>Tuttle, J. T.</td>
<td>20</td>
<td>2,000</td>
<td>Winslow, Lanier &amp; Co.</td>
<td>20</td>
<td>2,000</td>
</tr>
<tr>
<td>Train, George F.</td>
<td>20</td>
<td>2,000</td>
<td>Wright, J. B.</td>
<td>20</td>
<td>2,000</td>
</tr>
<tr>
<td>Tracy, J. F.</td>
<td>20</td>
<td>2,000</td>
<td>Williams &amp; Guion.</td>
<td>5</td>
<td>500</td>
</tr>
<tr>
<td>Travers, W. R.</td>
<td>20</td>
<td>2,000</td>
<td>Watkinson, Robert.</td>
<td>10</td>
<td>1,000</td>
</tr>
<tr>
<td>Train, William D.</td>
<td>20</td>
<td>2,000</td>
<td>Williams, John M. S.</td>
<td>20</td>
<td>2,000</td>
</tr>
<tr>
<td>Tilden, William.</td>
<td>10</td>
<td>1,000</td>
<td>Weed, Thurlow.</td>
<td>10</td>
<td>1,000</td>
</tr>
<tr>
<td>Thayer, Nathaniel.</td>
<td>20</td>
<td>2,000</td>
<td>Williams, N. L.</td>
<td>20</td>
<td>2,000</td>
</tr>
<tr>
<td>Tiffany &amp; Co.</td>
<td>10</td>
<td>1,000</td>
<td>Winston, F. S.</td>
<td>5</td>
<td>500</td>
</tr>
<tr>
<td>Tilden, S. J.</td>
<td>20</td>
<td>2,000</td>
<td>Young, Brigham.</td>
<td>5</td>
<td>500</td>
</tr>
</tbody>
</table>

And the said president and secretary of said company, agreeably to the provisions of the act incorporating said company, and the duties imposed upon them in said act, appointed the 29th day of October, 1863, at noon, and the office of said company, 54 William street, in the city of New York, as the time and place for the first meeting of the subscribers to the stock of said company, and gave notice thereof in at least one newspaper in each State in which subscription books had been opened, at least thirty days previous to the day of meeting, of which notice (with the exception of the notices published in the States of Oregon and California) the following is a copy, to wit:

Notice.—Union Pacific Railroad Company.

Two thousand shares of the capital stock of the Union Pacific Railroad Company having been subscribed, and ten per cent. thereof paid to the treasurer of said company, a meeting of the subscribers to the stock of said company, for the election of directors thereof, for the adoption of by-laws, and for the transaction of such other business as may come before the meeting, will be held at the office of said company, 54 William street, in the city of New York, on the 29th day of October next, at noon.

WM. B. OGDEN, President.
HENRY V. POOR, Secretary.

NEW YORK, September 25, 1863.

Meeting of the subscribers to the capital stock of the Union Pacific Railroad Company, for choice of directors.

Pursuant to the appointment by the president and secretary of the Union Pacific Railroad Company, of the time and place of the first meeting of the subscribers to the stock of said company, such subscribers met at the office of the company, 54 William street, in the city of New York, at noon, and organized by the choice of Hon. George Opdyke, one of their number, as chairman, and Henry V. Poor, one of their number, as secretary.

Mr. Pruyn offered the following resolutions, which were adopted:

Resolved, That in pursuance to the authority conferred by the charter in this
respective, the stockholders now attending this meeting, either in person or by proxy, do proceed to elect thirty directors of this company.

Resolved, That the board of directors shall have power to fill all vacancies which may occur in their number, by death, resignation, or otherwise.

Resolved, That, until otherwise ordered, the affairs, property, and business of the company, except so far as the same are exclusively vested in the stockholders by the charter, shall in all respects be conducted, managed, and controlled by the board of directors as they shall deem most expedient for the interests of the company.

Mr. Cass offered the following resolutions, which were adopted:

Resolved, That the inspectors named in the act of incorporation open the polls for the election of a board of directors at this office, at quarter past two p.m. this day, and keep the same open one hour, and until all stockholders present and offering to vote shall have voted.

Resolved, That the inspectors of the election, so soon as the votes are counted, notify each member elected to meet at the office of the company, in the city of New York, at noon to-morrow, for the purpose of organizing the board of directors, and the transaction of business, and that the inspectors, at the same time, make and deliver a certificate, under their hands, of the names of the directors elected at the meeting.

Resolved, That a committee of five be appointed by the chairman to prepare a system of by-laws, rules, and regulations, for the needful and proper regulation of the stock, property, estate, and effects of the company, and of all matters whatsoever which may appertain to the concerns of the company, not inconsistent with the act of incorporation, and report the same to an adjourned meeting of the stockholders, to be held for that purpose in the city of New York to-morrow, p.m.

Messrs. Ogden, Rosekrans, Cook, Pruyn, and Durant were appointed committee on by-laws.

The stockholders then voted to take a recess till one-quarter past two o'clock p.m.

The subscribers to the capital stock of the Union Pacific Railroad Company reassembled, according to adjournment, at half past two p.m.

Mr. Cass offered the following resolution, which was adopted:

Resolved, That the directors this day elected shall hold their office for such period only as may be fixed by the by-laws hereafter to be adopted.

The stockholders then proceeded to balloit for directors of the company. The tellers reported that the whole number of shares entitled to vote, as shown by the poll list, was 2,177, and the whole number of votes taken 2,007; and annexed a statement showing the persons voted for and the number of votes which each received, to wit:

<table>
<thead>
<tr>
<th>Name</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wm. B. Ogden</td>
<td>2,007</td>
</tr>
<tr>
<td>George Opdyke</td>
<td>1,937</td>
</tr>
<tr>
<td>John A. Dix</td>
<td>2,007</td>
</tr>
<tr>
<td>Nathaniel Thayer</td>
<td>2,007</td>
</tr>
<tr>
<td>C. S. Bushnell</td>
<td>1,937</td>
</tr>
<tr>
<td>Thomas C. Durant</td>
<td>1,937</td>
</tr>
<tr>
<td>J. V. L. Pruyn</td>
<td>2,007</td>
</tr>
<tr>
<td>E. W. Dunham</td>
<td>1,977</td>
</tr>
<tr>
<td>Pickering Clark</td>
<td>1,556</td>
</tr>
<tr>
<td>C. A. Lambard</td>
<td>2,007</td>
</tr>
<tr>
<td>E. T. H. Gibson</td>
<td>1,937</td>
</tr>
<tr>
<td>Joseph H. Scranton</td>
<td>2,007</td>
</tr>
<tr>
<td>Charles Tuttle</td>
<td>1,556</td>
</tr>
<tr>
<td>A. G. Jerome</td>
<td>1,556</td>
</tr>
<tr>
<td>Abiel A. Low</td>
<td>2,007</td>
</tr>
<tr>
<td>George T. M. Davis</td>
<td>1,937</td>
</tr>
<tr>
<td>Ebenezer Cook</td>
<td>1,937</td>
</tr>
<tr>
<td>J. Edgar Thomson</td>
<td>2,007</td>
</tr>
<tr>
<td>August Belmont</td>
<td>1,626</td>
</tr>
<tr>
<td>J. P. Tracy</td>
<td>1,556</td>
</tr>
<tr>
<td>L. C. Clark</td>
<td>1,556</td>
</tr>
<tr>
<td>John E. Henry</td>
<td>1,556</td>
</tr>
<tr>
<td>Henry V. Poor</td>
<td>1,556</td>
</tr>
<tr>
<td>E. H. Rosekrans</td>
<td>1,556</td>
</tr>
<tr>
<td>H. S. McComb</td>
<td>2,007</td>
</tr>
<tr>
<td>Augustus Kountze</td>
<td>1,937</td>
</tr>
</tbody>
</table>

New York, October 29, 1863.
Whereupon the following persons were declared elected directors of the company, to wit:


Glen Falls, New York—E. H. Rosekrans.


Boston, Massachusetts—Nathaniel Thayer, C. A. Lambard.


Davenport, Iowa—Ebenezer Cook, John E. Henry.

Wilmington, Delaware—H. S. McComb.

Omaha, Nebraska—Augustus Kountze.

Belvidere, New Jersey—John J. Blair.

Atchison, Kansas—S. C. Pomeroy.

The committee on by-laws submitted, through Mr. Cook, a series of articles, which were amended and adopted as follows:

BY-LAWS ADOPTED OCTOBER 30, 1863.

ARTICLE I.

Meeting of stockholders.

The annual meeting of the stockholders shall be held on the first Monday in October in each year, at the office of the company in the city of New York. Notice of the time of each meeting, signed by the president and secretary, shall each year be published in two daily newspapers in the city of New York, and also in newspapers published in each of the following named cities, to wit: Boston, Philadelphia, Chicago, Pittsburg, St. Louis, and Washington, at least thirty days previous to the time designated for each meeting. Special meetings may be held at any time by order of the board of directors, and shall be whenever stockholders owning one-fourth part of the capital stock shall, in writing, make an application therefor to the president, stating the object of such special meeting. Notice of such special meetings shall be published in the same manner as heretofore directed; and in addition such notices shall state the object of such meetings; and the business of all special meetings shall be confined to the objects stated in such notices. At all meetings stockholders may vote by person or by proxy, and shall be entitled to one vote for each share of stock standing in their respective names.
ARTICLE II.

Election of directors.

The directors elected at the first election shall hold their office until the annual meeting on the first Monday in October, 1866, and until their successors are duly elected and qualified; and the directors thereafter elected by the stockholders shall hold their office for three years, and until their successors are duly elected and qualified. All elections of directors shall be by ballot. Prior to each election, the board of directors shall appoint a committee of three of their own number, who shall preside at and be inspectors of said elections, shall be the judges of the qualifications of voters, shall prescribe rules and regulations for voting, and shall make a certificate of the result of the elections, which certificate shall be entered in full upon the minutes of the proceedings of the board of directors. Should any vacancy occur in the board of directors, by death, resignation, or otherwise, the board of directors shall have power to fill the vacancy for the balance of the time.

ARTICLE III.

Officers of the company.

In addition to a president, vice-president, secretary, and treasurer, as provided for by the charter, there shall be also an executive committee, consisting of six members of the board, to be elected by ballot by the board of directors, and the president, who shall be chairman of said committee. In the absence of the president, the vice-president shall be a member of said committee and preside at the meeting. The president and vice-president shall hold their respective offices during the continuance of the term of the board of directors which elects them. All other officers shall hold their office during the pleasure of the board of directors.

ARTICLE IV.

Board of directors.

The board of directors at their first meeting after every triennial election shall elect by ballot, from their own number, a president and vice-president, and may also elect a secretary and treasurer, or may continue the then incumbents in office by resolution.

The board of directors shall have the whole charge and management of the property and effects of the company, and they may delegate power to the executive committee to do any and all acts which the board is authorized to do, except such acts as by law, or these by-laws, must be done by the board itself. The board shall have power, in the absence of the president and vice-president, to appoint a chairman pro tempore, and during the prolonged absence of the president or other officer, to appoint substitutes pro tempore. A majority of all the members is necessary to a quorum, but less than a quorum may adjourn from time to time. The board of directors may prescribe the duties and power of the secretary, treasurer, engineer, and all subordinate officers and agents, fix the salaries of all officers of the company, make all needful rules and regulations not inconsistent with the charter, for the transfer of the stock of the company, issuing of certificates of stock, keeping the records and accounts of the company, the management and disposition in particular of the stock, property, estate, and effects of the company, and the construction and operating of the railroad and telegraph of the company.
At each annual meeting of stockholders the board of directors shall cause to be presented to said meeting a general statement of the affairs of the company. The board of directors shall have power to delegate authority to do and perform specific acts, not inconsistent with the charter, to special committees to be appointed by the board or presiding officer, at the option of the board.

**Article V.**

**President and vice-president.**

The president shall preside at all meetings of the board of directors, when present; shall have a general care, supervision, and direction of the affairs of the company and employees, under the direction of the board of directors, and shall have such other powers and perform such other duties as the board of directors may from time to time confer or prescribe. The vice-president, in the absence of the president, shall preside at the meeting of the board, and may also do and perform any other act which the president might do were he present; and he shall have such other powers and perform such other duties as may be conferred upon him, or be prescribed by the board of directors from time to time.

**Article VI.**

**Executive committee.**

The executive committee shall have and exercise, by a majority of its members, all the powers and authority which, from time to time, may be delegated to said committee by the board of directors. A record of all the proceedings shall be kept in a book for that purpose by the secretary, and certified by him, which shall be read at the next ensuing meeting of the board of directors.

The secretary of the company shall call meetings of this committee on the requisition of any one of its members.

**Article VII.**

**Auditing of accounts.**

At each annual meeting of the stockholders an auditing committee shall be appointed in such a manner as may be decided, to examine and audit the accounts of the preceding year.

**Article VIII.**

**Amendments of by-laws.**

These by-laws may be altered or amended at any annual meeting of the stockholders, or at any special meeting, when notice of such amendment or amendments shall have been given.

Mr. Cass offered the following resolution, which was adopted:

Resolved, That the seal of the commissioners be the seal of the company until changed by the board of directors, which they are hereby authorized to do at any time.

The meeting then adjourned sine die.

H. Ex. Doc. 253—2
The directors of the Union Pacific Railroad Company met this day at the
office of the company, 54 William street.

The following directors were present, viz: Messrs. Thomas C. Durant, Pick-
ering Clark, E. T. H. Gibson, A. G. Jerome, Charles Tuttle, Henry V. Poor,
E. H. Rosekrans, William B. Ogden, C. A. Lambard, Cornelius S. Bushnell,
Joseph H. Scranton, E. Cook, John E. Henry, H. S. McComb, Augustus
Kountze, John J. Blair, and Springer Harbaugh and T. J. Carter, governmen
directors.

The board then organized by the choice of Major General John A. Dix as
president, Thomas C. Durant as vice-president, John J. Cisco as treasurer, and
Henry V. Poor as secretary.

Mr. Cook, of Iowa, offered a series of resolutions, which were severally read
and adopted, to wit:

Resolved, That the executive committee shall possess and exercise, by a
majority of all its members, all the powers and duties of the board of directors
at all times when the board shall not be in session, except such powers as by
the charter or by-laws of the company must be exercised by the board itself.

Resolved, That the president, or, in his absence, the vice-president, shall
have power to call meetings of the board at any time, and shall do so whenever
five of the directors, in writing, shall request it. Notice of the meeting shall
be given by the secretary to each director.

Resolved, That a committee of seven be appointed, to be called the Commit-
tee on Finance, to devise plans for the raising of money to prosecute the work;
the committee to report to, and their acts to be subject to the board of directors,
if in session; or otherwise, to the executive committee.

Resolved, That a committee of seven be appointed to prepare a memorial to
Congress for amendments of the charter, and that such committee report such
memorial to the executive committee for their approval.

Resolved, That no money in the hands of the treasurer shall be paid out by
him, except upon the order of the board of directors or executive committee, or
under such rules and regulations as may be made by the board or executive
committee.

On motion of Mr. Ogden, of Illinois, the following form of certificate was
adopted:

No.  Shares.

UNION PACIFIC RAILROAD COMPANY.

Shares $1,000 each.

UNITED STATES OF AMERICA:

Be it known that ————, of ————, ————, entitled to —— shares
of the capital stock of the Union Pacific Railroad Company, on which has been
paid one hundred dollars on each share; which shares are transferable on the
books of the company, at its office in the city of New York, or at such transfer
agency as the company may hereafter establish, at the pleasure of the holder in
person, or by attorney, on the surrender of this certificate, and payments of all instalments then due.

Witness the signature of the secretary and treasurer.

--- ---, Treasurer.

--- ---, Secretary.

NEW YORK, ---, 186

The following directors were elected to constitute the standing committee, to wit:

Executive Committee.—The president, General Dix, chairman; Messrs. Durant, Jerome, Opyke, Bushnell, Dunham, Davis.

Finance Committee.—Messrs. Lanier, Gibson, Blair, Tuttle, Durant, Thomson, Lambard.

Committee to memorialize Congress.—Messrs. Ogden, Poor, Rosekrans, Blair, McComb, Lambard, Scranton.

Mr. Ogden, from a committee appointed to report a plan of action for the future operations of the company, offered the following resolutions, which were adopted:

Resolved, That no further call shall be made upon existing stockholders without the consent of a majority of the whole number of the executive committee; and further, that calls, when made, shall not exceed ten percent at any one call, and at least thirty days’ notice shall be given by publication in some one or more of the leading newspapers in New York city, and a notice mailed to each subscriber whose residence is known, before such calls shall become due and payable, and that calls shall not be made oftener than once in four months.

Resolved, That in all contracts for materials and construction that may be made prior to the obtaining the desired legislation of Congress amending the company’s charter, a clause shall invariably be inserted reserving the power to this board, its executive committee, or any officer of the company duly authorized to terminate such contract at any time when they shall think proper, without claims for damage on the part of the contractors for any material not delivered, or work not actually done.

Resolved, That the treasurer be authorized, with the approval of the chairman of the executive committee, to place the funds of the company in some safe depository, so as to be accumulative, and at all times applicable to meet the periodic demands on the treasury for the purposes of the company.

Resolved, That the executive committee be instructed to cause a full examination, by eminent engineers, of the country between the Missouri river and the one hundredth degree of longitude, and the mountain regions between the eastern base of the Rocky mountains and the State of California, with a view to secure the best and most practicable route for the great national highway.

Resolved, That so soon as the eastern terminus of this company’s railway be legally fixed by the President of the United States, at the western boundary of the State of Iowa, the company will proceed at once to grade the track for the Union Pacific Railroad Company, from the Missouri to the valley of the Platte river, the present fall and winter, with a view to preparing it for track-laying in the early spring, and that an ample corps of engineers shall be vigorously set to work at once to make all necessary surveys, with a view to an early and definite location of the entire line of the road from the Missouri river.

Resolved further, That the executive committee be, and are hereby, authorized to take the necessary steps to procure material, in accordance with instructions of this board, for the construction of the first one hundred miles of this company’s road.

Mr. Carter offered the following resolution, which was adopted:

Resolved, That the board of directors shall hold regular meetings, at their office in New York, on the first Wednesday of January, April, June and October, when
the officers and committees shall respectively report their acts and proceedings for consideration and approval; and that the secretary be instructed to forward each director with a copy of this resolution, personally or by mail, the same to be due notice to each director of all such meetings.

Brigham Young, of Utah, was elected director, in place of Nathaniel Thayer, resigned.

Mr. Durant laid before the meeting the following communication, which was read and ordered on file:

NEW YORK, October 30, 1863.

GENTLEMEN: I beg to congratulate you upon the harmonious organization of your company, and to place at your disposal information relative to the character of the country through which your road is to pass, the result of explorations made by competent engineers, at private expense, and at various times during the past ten years. Much of this information is necessarily of a negative character, but is not the less important, nearly eighteen months having been spent in the mountain passes in its acquisition.

I beg also to inform you that in August last, becoming convinced that the subscriptions to the stock of your company would not reach the amount required by law for election of directors in time to get together a competent and efficient corps of engineers before the season was too far advanced, I gave instructions to P. A. Dey, esq., to proceed at once to organize parties for immediate service, and on the 19th of September sent them into the field to survey four lines from the western borders of the State of Iowa to some common point in the Platte valley, for the purpose of ascertaining facts in regard to location, a copy of which orders is herewith submitted, marked Nos. 1 and 2.

Subsequently, fearing it would be impossible to accomplish much this season, if more time was lost, and that there would be a delay of six months, at least, if nothing was done until after the company was organized, and in view of the importance of a more definite knowledge of some of the difficulties to be surmounted in building a road through the mountains, at an elevation which has, as yet, only been ascertained by means of barometrical observations, I determined, if within the range of possibility, to run a level, and obtain a profile of two or more of the passes this fall. I accordingly instructed Mr. Dey to despatch a party of engineers to the valley of Lodge Pole creek, where the same leaves the mountains at the foot of the Black Hills, there to commence surveying a line through Cheyenne Pass into the Laramie plains; thence near the base of the Medicine Bow mountains to Bridger’s Pass, through Bridger’s Pass to the plains beyond, striking Bitter Creek valley, this being all that a single party of engineers could reasonably be expected to accomplish, even under the most favorable circumstances. I also instructed Mr. Dey to make arrangements to put another party in the field, commencing near Utah lake, running up the valley of the Timpanagos river, through the Wasatch mountains, eastward, to meet in Bitter Creek valley the party last named, suggesting that he might be able to make the arrangement with Governor Brigham Young, the details of which will be seen in paper herewith submitted, marked instructions No. 3 and No. 4. And I would here state that in reply to my telegram to Governor Young, asking if he could furnish a party to make survey, I paying the expense, I received immediate answer: “I will furnish a party and engineers, if you wish, and pay the expenses.” You will perceive there is now in the field four parties of engineers from whom we may expect to receive very full reports. The four lines first named should be completed in two weeks if the weather is favorable.

The line through Cheyenne and Bridger’s passes will not occupy a long time if the party meet with no serious obstacles or interruption from the Indians. It is here that the information derived from the examinations made by General G. M. Dodge, and those made last year by Mr. Dey, who was sent out by the com-
mittee appointed by your board of commissioners, proves of great value, as the present party will avail themselves of the examinations of those gentlemen, and run the lines first which they found most practicable. In order to save time they have gone by stage, and have arranged for transportation to be furnished them from some of the stations of the stage company.

I applied to the President for an order on the commander of the post at the mouth of the Cache à Poudre, or at the fort near Medicine Bow mountains, for military escort, provisions, &c., to be used, if found necessary, for the safety of the party, but was unable to obtain the same on the ground that there was no authority for the government to aid in making the surveys. Nothing daunted, the party in charge of B. B. Brayton, esq., determined to lose no time, and have pushed on without delay, trusting to their own resources, not only for protection, but for provisions or transportation, in case they lose what they take with them by Indians, snows, or other casualties. I have no fears, however, for their safety, as I learn by telegraph from parties residing west of Julesburg that provisions can be had at that point, and the mountaineers employed as guides are well versed in all the wiles of the Indians.

Another and very important matter for your consideration is the investigation of the coal-fields and iron ores which the engineers report to exist to a vast extent in the vicinity of Medicine Bow mountains and the Black Hills.

Believing this to have an important bearing on the location of the road, I have despatched Professor J. T. Hodge, an experienced geologist, to make an examination as to the extent and character of said coal-fields, iron ore, limestone, &c., and their proximity to each other, and the line of road being surveyed, a copy of whose instructions are herewith submitted, No. 5.

All of the above-named parties understand that they are employed by individuals, and not by the Union Pacific Railroad Company.

I would recommend that your company continue their services for the present.

The accompanying map of the Missouri river, showing depth of water, sand, &c., for a great distance, is placed at your disposal.

Very respectfully,

To the BOARD OF DIRECTORS
of the Union Pacific Railroad Company.

The following are the instructions referred to in Mr. Durant's communication:

No. 1.

NEW YORK, September 19, 1863.

DEAR SIR: You are hereby directed to proceed to the Missouri river and examine four routes to the North Bend of the Platte.

The first, starting at or near the mouth of the Platte and following up the valley.

The second, from Bellevue, following up the west branch of Pappillion creek, and reaching the Platte by the most practicable route, uniting with the first.

The third, starting from Omaha City and running as near west as practicable.

The fourth, from some point at or near the mouth of the Boyer river.

These four routes to make a common point, or reach some township or section line running north and south, common to all.

The surveys to particularly mark the character of streams crossed, and the material, such as timber, gravel and stone that may be serviceable for construction.

You will call upon John E. Henry, esq., Davenport, for funds necessary for the above.

Yours, &c.,

P. A. DEY, Esq., Engineer.

THOS. C. DURANT.

No. 2.

NEW YORK, October 2, 1863.

DEAR SIR: Referring to instructions of September 19, marked No. 1, you will proceed to examine and run a line upon any route between the points designated, provided you are of
the opinion that any such route may exist that will be more feasible than those designated, the object being to ascertain the best possible line.

Yours, &c.,

THOS. C. DURANT.

P. A. DEY, Esq., Engineer.

No. 3.

NEW YORK, October 2, 1863,

SIR: You will proceed at once to despatch a party to run a line, and get profile of the same, commencing at a point in the valley of the Lodge Pole creek, near the base of the Black Hills, through Cheyenne Pass, to the Laramie plains. If they have time, run across the plains by the most practicable route, and through Bridger’s Pass into the valley of Green river. If time is short, skip Laramie plains, and commence where streams rise to Bridger’s Pass, and thence to the plains beyond.

The heavy work through these passes, and the grade about which there is any doubt, must first claim your attention; then the entire line through Wasatch mountains on one or two of the most practicable routes. To accomplish the latter you had better make arrangements, by telegraph, with Governor Brigham Young, to send a party to run a line from some point, to be designated by yourself, up the valley of the Timpanogos, or any other desirable route, to meet with the first named in Bitter Creek or Green River valley.

If it is late in the season run only the line through the mountains. Governor Young, undoubtedly, has good engineers, and can probably run the line in less time and at less cost than we could do. Ask him to do so with as much economy as he can; but have it done at once, if it can be this fall. Let teams go very light from Omaha, and if provisions can be obtained from Julesburg get them there. Perhaps you can procure teams there for the time you want them. This you can ascertain by telegraph. Afterwards you can get your supplies from Denver City via Cherokee trail, or stage road; or if necessary, and you are near Fort Halchek, let teams go to that post, obtaining an order to do so from Colonel Chivington, commander of district, headquarters Denver City. I would suggest that you hire mule teams, and not purchase teams, unless compelled by being unable to hire except at very high prices; also that your party consist of one chief assistant, one compassman, one leveler, one rodman, two flagmen, three chainmen, one cook, three teamsters, one with horses, two or three packmules, a mule team to procure supplies, &c., or less, if it can be done to advantage. Of the necessary outfit, however, you are the best judge. My idea is, to be encumbered as little as possible. Government rations and hard work must be the rule. If you have a party of suitable men in Nebraska, send them, and find more men to fill their places. If you can get teams and supplies at Julesburg, you can send on the men by stage at once.

It will be well for the party to be provided with revolvers, if they have them; and if you want muskets, you can probably get the governor of Nebraska to furnish them.

Yours, &c.,

THOS. C. DURANT.

P. A. DEY, Esq., Engineer.

No. 4.

NEW YORK, October 3, 1863.

SIR: Referring to yesterday’s instructions, marked No. 3, I have learned that you may be able to procure supplies of George Ackley, or Ackley & Gillett, near Julesburg. You can communicate with them by telegraph from Ackley, or Ackley & Gillett, nearest Julesburg. You can communicate with them by telegraph from Omaha. The stage fare, I understand, is §50 to Julesburg, and no certainty of always getting a stage. You may therefore conclude to send your party by teams from Omaha. If, however, that cannot be done in time to make the surveys this fall, then send by stage. Snow will not prevent a profile being obtained, and you must send men who are not frightened at its appearance. If you are hard pressed, both passes can be surveyed in a very short time, and we can form an estimate of what will be required.

If you are not at work with two parties in Nebraska put on your men without delay, or send me word and I will send men to you.

Yours, &c.,

THOS. C. DURANT.

P. A. DEY, Esq., Engineer.

No. 5.

NEW YORK, October 14, 1863.

SIR: You will please proceed to one of the proposed routes of the Pacific railroad, west of Omaha, and join the engineering party in charge of B. B. Brayton, esq., engaged in surveying said line from Lodge Pole creek, near the Black Hills, through Cheyenne Pass, and along the foot of Medicine Bow mountains.
The object to which you will particularly direct your attention is the resources of the country in the vicinity of the Black Hills and Medicine Bow mountains, for the manufacture of iron, making explorations of beds of iron ore, coal, limestone, sandstone suitable for building furnaces, &c., as near as these may be found to the line of railroad.

Upon this work you will be occupied as long as the season will admit of your doing so to advantage; and on your return you will present me a full report of your explorations, including also notices of any other minerals of interest or importance that you may discover.

Your compensation for this service will be $500 per month and your travelling expenses.

Yours truly,

THOS. C. DURANT.

JAMES T. HODGE, Esq.

The board then adjourned.

Proceedings of the company subsequent to the election of directors.

The executive committee of the company, upon which the management of its affairs devolved when the board of directors was not in session, in obedience to the resolutions of the board embodying a plan for future operations, immediately assumed the acts and instructions of Mr. Durant, already recited; and as soon as the surveys of the country intermediate between the Missouri and the north bend of the Platte river were completed, placed before the President of the United States the results of the same, as well as of the surveys made for the purpose of ascertaining the most favorable point for crossing the Missouri river, for the purpose of obtaining his decision fixing the eastern terminus of the road. This decision, rendered on the 17th of November last, established the eastern initial point of the road within the township within which is the city of Omaha, the capital of the Territory of Nebraska.

As soon as practicable thereafter, on the 2d day of December last, the company made a formal commencement of the work of construction by breaking ground on the line of the road near Omaha. The ceremonies on the occasion were appropriate to the magnitude and grandeur of an enterprise which is to work an era in the commercial and political history of the country, and were participated in by the governor of the Territory of Nebraska, the mayors of the cities of Omaha and Council Bluff, and by the great mass of the citizens of the surrounding country.

Addresses were made by the Hon. A. Saunders, governor of the Territory; Mr. Kennedy, mayor of Omaha; Mr. Palmer, mayor of Council Bluff; and by Messrs. Train, Morrell, Larimer, and Poppleton. The occasion was observed at Omaha as a general holiday. Among the letters and sentiments read from distinguished persons, whose official duties prevented them from being present, were the following:

EXECUTIVE MANSION, Washington, December 2, 1863.

GENERAL: I have not been permitted until to-day to present to the President your communication of the 23d of November. He directs me to express his deep regret that his illness will prevent him from giving expression to the profound interest he feels in the progress of a work so vast and beneficial as that which you are about to inaugurate.

I have the honor to be your obedient servant,

JOHN HAY,
Assistant Private Secretary.

Major General DIX,
Committee of Arrangements, &c.

DEPARTMENT OF STATE,
Washington, November 25, 1863.

MY DEAR SIR: Your kind note inviting me to attend the ceremony of breaking ground for the Union Pacific railroad in Nebraska has just been received. For the first time, as I know, since the foundation of the government, the foreign relations of the country exact the
attention of this department so constantly that its head is often obliged to forego customary


good offices and courtesies towards the loyal citizens who are engaged in developing the


resources of the country and establishing its domestic interests. For this reason I can reply
to your invitation only very hastily and very briefly. Of course I cannot go to Nebraska,
and, therefore, I must decline. With your brave help, and that of your armed compatriots
on sea and land, I hope we shall soon put down this wretched and wicked insurrection
against the Union. With the help of our capitalists and our free and loyal laboring men,
the Union Pacific railroad can, and I hope will, be extended to the Pacific ocean. When this
shall have been done disunion will be rendered forever afterwards impossible. There will be
no fulcrum for the lever of treason to rest upon.

Faithfully yours,

WILLIAM H. SEWARD.

Major General JOHN A. DIX,
President of the Union Pacific Railroad Company.

TREASURY DEPARTMENT, November 25, 1863.

MY DEAR SIR: Your kind invitation to write something that may be read at the breaking
ground of the Union Pacific railroad, in Nebraska, found me in the midst of engage­
ments so exacting that it has been impossible to write anything worth the reading. I could
not, however, omit writing altogether, for that would imply an indifference to the work,
which no American feels.

It is among my most pleasing recollections of service, as a senator from Ohio, that the first
practical measure looking to the construction of a Pacific railroad which received the sanc­
tion of Congress was moved by me. That measure was an amendment to the army appro­
priation bill, placing at the disposal of the Secretary of War $150,000, to be expended in
surveys and explorations of routes for the road. It was adopted by the Senate in February,
1853, and subsequently concurred in by the House. Its results are embodied in 11 volumes,
known as the Pacific Railroad Reports, printed by order of Congress.

It is another pleasing recollection that I had the honor, in March, 1850, of presenting and
commodating to the Senate the memorial of Dr. Pulte, an intelligent physician of Cincinnati,
praying that measures might be taken for the connection of New York with London, by
extending the existing lines of telegraph to the Pacific, by way of the coast and Behring's
strait, through Northern Asia to St. Petersburg, and then forming connections with the lines
to the cities of Western Europe.

This great work has since been completed to the Pacific by the indomitable energy of Hiram
Sibley, a private citizen of New York, aided by the simple promise of employment and com­
pensation by the government. On the other side of the Pacific, the Russian telegraph line
from St. Petersburg, constructed by the Imperial government, approaches, if it has not
already reached, the Pacific: and American enterprise is earnestly enlisted in the task, now
certain to be accomplished, of completing the wonderful work which the Cincinnati physician
suggested more than 13 years ago.

Steam runs more slowly than lightning. The progress of the railroad has been necessarily
slower than that of the telegraph. When the surveys and explorations for a route had been
partially reported, the subject of the railroad was again brought before Congress, and I
again had some connection with it—now, however, of a less pleasant, though still signifi­

Solicitors for the progress of the route, I submitted a resolution, in January, 1854, instruct­
ing the Committee on Roads and Canals to inquire into and report upon the construction of
a railroad from some point on the northern lines of the western States to some point on the
eastern line of California. On the motion of Mr. Gwin, the reference to the Committee on
Roads and Canals was stricken out, and the whole subject referred to a select committee of
nine senators, from which committee I was excluded, because I then held about the same rela­
tions to the democratic party on the subject of slavery as the war democrats now hold on
the question of the rebellion.

Mr. Gwin's committee reported a bill, which, after much discussion and sundry amend­
ments, passed the Senate in 1855; but, failing to receive the sanction of the House, did not
become a law. Nothing further of importance was done in relation to the Pacific railroad for
the next seven years.

The attention of the country was absorbed by other questions, and it remained for the 37th
Congress to give a grand proof of the stability of the republic and the worth of democratic
republican institutions by taking up this great measure in the midst of our terrible civil war and
framing it into a law. The 37th Congress will be forever memorable in history as the
author of many acts of legislation of transcendant importance and far-reaching consequences.
Among these great acts, the Pacific railroad bill will remain as one of the most illustrious
monuments of the wisdom and courage of its members. I shall not attempt any discussion of its importance to our industry, our commerce, or our
Union. I have elsewhere said something on these themes, but now the road is its own most
eloquent advocate. I rejoice in the belief that, under your charge and that of the other eminent citizens associated with you, it will go steadily forward to completion, and vindicate, by perfect success, the most sanguine predictions and hopes of its advocates and supporters.

Very truly, yours,

S. P. CHASE.

General JOHN A. DIX,
President Union Pacific Railroad Company.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., December 2, 1863.

SIR: The energy which has characterized the Union Pacific Railway Company since its organization affords great satisfaction to the government, a cause of congratulation to the people, and a guarantee that the work will be prosecuted to completion long anterior to the time prescribed by Congress. The country has a double assurance of this in the fact that the stockholders of the company are gentlemen possessed of the means and the will to consummate their undertaking, and that it would be accomplished if they were prompted solely by the hope of gain; for certainly, no one can consider the immense commerce of the route without being convinced that it will pay remunerating dividends upon their investments. I gladly believe that it is not the prospect of gain alone that has prompted the stockholders in their undertaking, but that they have been induced to engage in it by considerations of patriotism and philanthropy.

We are encouraged to hope and believe that this desolating war will soon be over, and the authority of the government restored throughout the land. We shall then have liberated from the bearing of arms, in both sections of the country, near a million of men, thousands upon thousands of whom, for various reasons, will seek new homes and new adventures in the vast fields of gold and other precious metals already found, and still being discovered, in such astonishing richness, throughout all the mountain ranges of California, Oregon, and the Western territories. What, then, can be of greater importance to the government than the construction of this artificial way, by which all the elements of civilization can be readily and rapidly transmitted to those regions; the power of the government manifested, and, if need be, its authority preserved? And to what more grateful purposes can the patriotic and philanthropic devote his energy and his means than in opening the road for those noble men, who have dared and perilled all in the preservation of their country? Consider the thousands of happy families who shall, along the line of this road, find garden homes upon the public domain, which otherwise would have remained a barren waste; the pecuniary advantage and comfort to be realized by those who shall work in the mines; and all this in addition to the great object, hitherto only considered, of uniting the Atlantic and Pacific oceans, to afford a new line of commerce between them; and I am sure yourself and associates will feel a pride and joy in your undertaking far transcending any considerations of profit, and be only too happy that you have been engaged in an enterprise which has for its object such beneficial results, and with renewed zeal will vigorously prosecute the work “in summer heat and winter cold,” to its completion.

This enterprise, second only in importance to the suppression of the rebellion, and more necessary in consequence of it, will not pass unnoticed in history, and bright will be the page which shall record the names of those who had the courage and the patriotism to undertake it. Your note to me of the 23d ultimo conveys the intelligence that it is designed to “break ground on the Union Pacific railroad in Nebraska” to-day. I tender to you my congratulations upon the commencement of this great work.

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

J. P. Usher,
Secretary of the Interior.

NEW YORK, December 1, 1863.

The inauguration of the Union Pacific railroad, the great enterprise of the western hemisphere, whether considered in reference to its economical importance or its influence as a bond of union, is to be pushed on to completion with all the rapidity which a command of means will permit; and I congratulate those who are to be present at breaking ground on the early commencement of the work.

JOHN A. DIX,
President Union Pacific Railroad.

P. A. DEY and ————,
Committee of Arrangements, Omaha.
New York, December 1, 1863.

To the Committee of Arrangements for breaking ground on Union Pacific railroad, Omaha, Nebraska:

The honor of inaugurating the greatest enterprise of the age is this day yours. The company has by no means been idle since its organization. The engineers, in charge of P. A. Dey, esq., have run five lines from the western border of the State of Iowa to a common point in the Platte valley, and have made a thorough examination of the intervening country, and the vicinity of Omaha has been selected as the starting point of this great national road. To save time, a corps of engineers, under B. B. Brayton, esq., were sent to the Rocky mountains before the organization of the present company was fully completed, and are now engaged in surveying routes through Cheyenne and Bridger’s Pass. Governor Brigham Young has, with great promptness, sent out a party of engineers, who are now engaged in running a line through the Wasatch mountains. From both, full reports are expected within a short time. A thorough examination of the country in the vicinity of Denver City, and westerly therefrom, is to be made by competent engineers at the earliest practicable time. Professor J. T. Hodge, an able geologist, of great experience, is now making explorations among the extensive coal fields and beds of iron in the vicinity of the Black Hills and Medicine Pond mountains, and the country between them and Denver, with a view to the erection of furnaces and rolling-mills for the manufacture of rails. The reports thus far are highly favorable. With the aid of the general government, and the assistance of our patriotic people, the work is to be pushed forward with energy and vigor, and the day we celebrate its final completion to the Pacific ocean is, I trust, nearer at hand than our most sanguine friends anticipate.

Thos. C. Durant,
Vice-President Union Pacific Railroad Company.

St. Nicholas Hotel, New York,
November 28, 1863.

Sir: Yours of the 27th instant is just received. Since I first entered public life I have regarded the enterprise of building a railroad from the Missouri river to the Pacific as of the utmost national importance. While in Congress, whenever opportunity offered I urged its necessity, and it is with peculiar pleasure that I am permitted to believe that the building of the road, so long delayed, is about to become a practical verity. I have always believed that in creating the Platte valley, with its hundreds of miles of unusually favorable grade, Providence had unmistakably designated the proper line for the road. The Pacific railroad, with its branches—the northern connecting with other roads at Sioux City, in aid of the commerce of the extreme north; the central branch probably running west from Omaha and Council Bluffs, “cities on either side of the Missouri river, planted in the very portal of most direct entrance to the Platte valley,” connecting with the roads through central Iowa; and the southern following the course of the Red river and the Republican, connecting with the roads through Missouri and south, all uniting at the 100th meridian, thence forming the main trunk to the Pacific—will open a new era in the commerce of the world. obviating the delays and difficulties of a long sea voyage, as well as that of the overland route, and, connecting the commercial interests of the Pacific people with the Atlantic seaboard by means both speedy and certain, it will constitute a community of interest, at once insuring the greatest degree of prosperity, and affording the surest safeguard against a tendency to separation, apt to be engendered by isolation and non-intercourse. I regard it as one of the greatest enterprises of the age. Its iron length, stretched through the fertile valley of the Platte, will cause the latter soon to teem with population, extending through the rich territories beyond, to the Pacific, and they will soon become a cordon of free and prosperous States. When completed it will be an enduring monument of the enterprise and patriotism of our common country, firmly uniting the two extremes of the nation, and rendering them indissoluble for all time to come.

I am, sir, respectfully, yours,

Richard Yates.

Major General John A. Dix,
President Union Pacific Railroad Company.

Mayor’s Office, December 1, 1863.

Sirs: Oblige me by transmitting to those charged with breaking ground for the Union Pacific railroad the following sentiment:

“May this, the greatest work ever projected, in any age or country, form a lasting bond of political and commercial union between the Atlantic and Pacific States.”

Very respectfully, your obedient servant,

George Opdyke, Mayor.

Gen. John A. Dix, President.
California acknowledges with joy the greeting of her sister Nebraska, and will prove her fraternal regard by her efforts to excel her sister in the rapidity with which, carrying the iron bonds of union, she seeks a sisterly embrace. Mountain and desert shall soon be overcome.

Leland Stanford, Governor of California.

Sacramento, December 2, 1863.

Let the heart of the honest be united to aid the great national improvement.

Brigham Young.

Salt Lake City, December 2, 1863.

Com. of Arrangements.

Denver sends greeting to Omaha. Colorado freely pledges her mountains of gold in aid of the great enterprise.

Amos Steek, Mayor of Denver.

Denver, December 2, 1863.

In addition to the surveys and explorations made, the results of which will be found in the appendix, the executive committee have had constantly in view the importance of collecting, on the ground, the material for constructing at least 100 miles of the road, which now, for the want of railway communications, can only be delivered during the annual stage of high-water in the spring. The committee, consequently, have concluded the purchase of 4,000 tons of American rails, a portion of which are already on the way to the field of operations. The balance will speedily follow. The committee have also contracted for a large number of locomotive engines, cars and railroad spikes, and are taking active measures to procure the necessary quantity of ties, a matter of great difficulty and labor in a country so destitute of timber as that traversed by the proposed road. A large number of wood-cutters have been employed, and are on the ground for this purpose.

The committee are sparing no pains to carry out, to their full requirement, the resolutions of the directors in reference to the progress of the work, and to justify the general wish and expectation of the country in reference to the vigorous and faithful prosecution of this great enterprise.

At the opening of Congress, the executive committee, in behalf of the company, applied to that body for modifications of, and amendments to, its charter, all of which it is believed to be for the interest of the government to grant, while some of them are absolutely indispensable to the progress of the work of construction. Among the amendments which may be regarded as indispensable, is the right to take and condemn lands, for the road-beds, stations, &c., &c., and a grant of aid. The advanced price of labor and material of all kinds is so great that $24,000 per mile would not be of so great a value to the company as $16,000 would have been at the time of passing the act of incorporation. The amendments asked are now being urged upon the attention of Congress, and no doubt is entertained of the disposition of that body to encourage, by every reasonable measure, the rapid progress of this great work.

By order of the executive committee:

Henry V. Poor, Secretary.
APPENDIX.

Copy of acceptance by the company of the act of incorporation.

UNION PACIFIC RAILROAD COMPANY,
Secretary's Office, 54 William St.,
NEW YORK, June 23, 1863.

SIR: The undersigned, president and secretary of the Union Pacific Railroad Company, in obedience to a resolution of the board of commissioners of the Union Pacific Railroad and Telegraph Company, passed at the meeting of the same held at Chicago, Illinois, on the 2d day of September, 1862, and by virtue of the authority vested in us by said board, have the honor, in behalf of the same, by signifying, under the seal thereof, the full acceptance, by the Union Pacific Railroad Company, of the provisions of the act of Congress, passed on the 1st day of July, 1862, entitled "An act to aid in the construction of a railroad and telegraph line from the Missouri river to the Pacific ocean, and to secure the government the use of the same for postal, military, and other purposes," and we respectfully request that this assent of said company to the provisions of said act may be seasonably filed, as provided in the same, in the Department of the Interior.

W. B. OGDEN,
President of the Union Pacific R. R. Co.
HENRY V. POOR,
Secretary of the Union Pacific R. R. Co.

Hon. J. P. USHER,
Secretary of the Interior, &c., Washington, D. C.

DEPARTMENT OF THE INTERIOR, June 27, 1863.

SIR: I acknowledge the receipt of your letter of the 25th instant, enclosing the acceptance of the provisions of the act of July 1, 1862, by the Union Pacific Railroad Company, of which you are the Secretary, and have to inform you that said assent of the company has been placed on file in this department.

Very respectfully, your obedient servant,

J. P. USHER, Secretary.

By order of the Executive Committee.

APPENDIX No. 1.

Preliminary report of engineer.

DEAR SIR: In accordance with the instructions in your letter of September 6, 1862, directing me to examine, with reference to their practicability for a railroad route, the passes between the one hundredth and the one hundred and twelfth parallels of longitude, and to gather such information as I could of the productions, mineral and vegetable, of the extended region between the Missouri river and the Great Basin, I left Omaha City and followed the usual line of travel up the north side of the Platte as far as Fort Kearney.

A rolling prairie of some eighteen miles in width, cut up by the Pappillion
creek and its branches, separates the valleys of the Missouri and the Platte, but can be crossed without much difficulty.

The Elkhorn river, a considerable stream, well timbered with hard wood, flows near the bluffs of the Platte; and, from its crossing to Kearney the valley resembles, in soil and general appearance, the Terre Coupée prairie, Indiana; being generally level, and along the road well settled and cultivated. For the entire distance, one hundred and fifty miles, you are not out of sight of a corn-field, and the portion along Wood river (which runs in the valley for at least forty miles) is very handsome, being a table about fifteen feet higher than the part of the valley nearer the river.

At points, the Platte is about the centre of the valley, but generally runs nearer the south bluffs; its width varies from one half mile to a mile, and it is full of islands, Grand island, the largest, being sixty miles long. Cottonwood grows on most of the islands, although at many points I noticed cedar.

Maple, Rawhide, Shell, and Prairie creeks, Loup Fork and Wood rivers, run parallel, and some of them for long distances in the valley; on the heads of all these streams there is considerable hard wood timber, probably enough, with what could be obtained from the islands in the river, to furnish the ties that would be required along them.

Loup Fork is the only stream that would involve a large cost in bridging; a waterway of about 1,000 feet in length being there required, with piers thoroughly protected by ice-breakers. The balance of this distance would be comparatively free from bridges and culverts, as the road could be so located that the drainage would be either into the Platte or some of the streams running parallel in the valley. I observed this in particular along Shell creek, which could be bridged with a forty-foot span.

Crossing the eight channels of the Platte river to Kearney, the contrast with the cultivated lands on the Wood river table is very marked. The character of the soil seems to indicate that the valley above this point will never be cultivated to any great extent, except, perhaps, on the low lands near the river. How far the arable lands on the north side extended west I had no means of determining, although I occasionally saw a corn-field there and on the islands, but none on the south, except at Cottonwood Springs, the travel being almost entirely on the south side.

From Fort Kearney to Julesburgh, at the mouth of Lodge Pole creek, a distance of nearly 200 miles, the valley is very wide; that part below the mouth of the north Platte, for a distance of 40 miles or more, being not less than 20 miles, the river running nearer the south side. As far as Cottonwood, there is cedar on the islands in the river, and on the bluffs, and at that point there is a large grove, said to be more than a mile in width, and five or six in length; here the timber seems to end, and up to Fremont's Orchard, nearly 200 miles, there is nothing but a few bushes along the river.

From Kearney to Julesburgh there is little difference in the two sides of the river for a railroad route; the grading required on either would generally be an embankment high enough for drainage.

From Julesburgh west I partially examined three routes—the first, following the valley of Lodge Pole creek, crossing the Black Hills through the Cheyenne Pass into the Laramie plains; the second, following up the Platte to the mouth of the Cache a Poudre, and near that stream to the summit; thence northwesterly until it unites with the first near the right-hand fork of the Laramie river; the third, following the South Platte to Denver, thence up Clear creek and crossing the snowy range at the Berthude Pass.

Lodge Pole creek enters the Platte from the northwest, although its general course from the Black Hills, a distance of 150 miles, is nearly due east; it flows through a broad valley, rising more rapidly than that of the Platte, desitute of timber, except near the base of the mountains, and making a very direct route;
the summit of the pass is a narrow divide between the heads of this stream and valley running nearly west into the Laramie plains. I could not ascertain the ascent, but think a grade of sixty feet per mile would cross this summit with a rock cut not to exceed a half mile in length. The topography of the pass is peculiar, and the summit very much lower than the range of the hills.

A very direct line can be laid from this pass to the North Platte, crossing several mountain streams, and skirting the base of the Medicine Bow mountains, which, with the Black Hills, are covered with pine to their summits. The supply of timber from this region will be sufficient for the wants of a railroad for a great length of time, and would furnish all that would be required for construction to Salt Lake Valley.

The Laramie plains are gravelly and somewhat undulating, but offer no serious obstacles to building a road. Like the Upper Platte, near Denver, they are covered with grass, which, though thin, furnishes abundant pasturage, and cattle and horses live during the winter without any other food. On a branch of the Platte, near Medicine Bow, is a range of hills of iron ore, said to be very pure; the tests made by a gentleman, who had devoted much time to mining in England, showing a high percentage; it is, also, found in great abundance in the Black Hills, being part of the igneous rocks. Coal is also reported as being found in abundance near the mouth of Sage creek, and along the base of the Medicine Bow mountains.

These plains are very beautiful, crossed as they are by bold mountain streams of clear, cold water, dotted with small lakes, and surrounded with mountains of great elevation, covered with timber to near their summits; their elevation is nearly 7,000 feet, the atmosphere is remarkably clear, and sky generally free from clouds; they extend to the Platte river.

West of this the character of the country changes immediately; the soil becomes clay, and there is little vegetation, except sage brush and greasewood, to Green river. A railroad line would ascend for a distance of 20 miles to Bridger's Pass, which, from the elevation furnished by Lieutenant Bryan, I think might be reached by a grade of 70 feet per mile, the ascent being regular, as also the descent to the west. It is a valley with clay bottom, varying in width from 1,000 to 2,500 feet, with the mountains rising to a great elevation on either side. An earth or clay cut would be necessary here.

There was about 3 feet of snow in the centre of the pass last winter, but it drifted very deep on the north side, at the base of the mountain. Descending to the west, you reach the valley of Mud creek, a branch of the Elkhorn river, and the bituminous coal-fields, which you cross, and continue in to Green river, a distance of 150 miles. In the valley of Bitter creek it is particularly abundant, an out-crop showing at almost every point; it is more than probable that coal-oil may be found in the oolite formation here. The coal resembles the Erie Pennsylvania, burns with a flame nearly white, leaving no clinker; I could detect no sulphur in breathing the smoke.

Between Muddy and Bitter creeks is a wide plain with no rise of any importance, and a railroad line can be run down the valley of the latter with easy grades and little, sharp curvature. Near the point where it empties into Green river, the bluffs, or sandstone buttes, rise about 300 feet.

Green river, which was so low that we forded it, is a rapid stream, 250 feet wide, with a narrow valley; coal and borax seemed very abundant, and I was told that iron, lead, and many other minerals, have been found along it.

From this to Bear river the route should be in a southwesterly direction, leaving Fort Bridger some 20 miles to the north and approaching the base of the Uinta mountains, and, though heavier than most of the routes east of it, there are no great difficulties to be encountered.

From Bear river to the north of the Timpanagows will be the most expensive portion of the entire route; you must ascend a branch of the former stream
make a heavy crossing into the Weber, follow it down to Kansas prairie, and then, crossing over to the Timpanagos, descend through the Round prairie and the canons of the river to Salt Lake Valley. The Timpanagos runs for 10 miles between vertical walls of rock, and there are points where the road must be cut in the sides as well as several crossings of the river, which, in flood, is a large stream; it breaks through the W ahsatch mountains, and, with the exception of the Weber, furnishes the only passable access for a railroad to the valley from the east; from its mouth the route would continue northwesterly around the foot of Lake Utah, and thence west to Camp Floyd, or north, down the river Jordan to Great Salt Lake City; neither route would be difficult to build.

The second route that I examined follows up the Platte, which is of the same character as the valley below, to the mouth of the Cache à Poudre. From the point where the stream breaks through the mountains there is a rapid ascent for 60 miles, to the ridge that separates it from the Laramie plains; this opening is through sandstone and hornblende rocks, but a favorable line can be laid up it, although the ascent is greater than through the Cheyenne Pass, from the fact that Lodge Pole creek rises more rapidly to the base of the mountains than the Platte, the summit elevation rising more rapidly to the base of the mountains than the Platte, the summit elevation varying little in either.

This sixty miles would require heavier grades and more curvature than the line through the Cheyenne Pass, and cost probably twice as much per mile. The descent into the Laramie plains is comparatively light, and it would unite the first route near the right-hand fork of the Laramie river, increasing the distance sixty or seventy miles.

The third route follows on favorable ground, and crosses the Platte at Denver, running thence nearly west to the base of the mountains; thence through the cañon of Clear creek, and up the valley to Hoope's creek, which rises in the Berthude Pass.

Mr. Case's survey of this route from Denver shows a heavy and expensive line up this valley, the road bed being cut in the mountain-side at a considerable elevation for a number of miles; it ascends with a grade of 110 feet per mile, and crosses the snowy range with a tunnel three and one-half miles in length, and descends into Middle Park in a similar manner.

This pass is between 3,000 and 4,000 feet higher than either of the others, and the rock cutting would be through either granite or hornblende. I did not go west of the pass, but from Mr. Berthude, the engineer who made the wagon road survey, and from whom the pass derives its name, learned that this is the lowest depression in the range; that the line west, as far west as Timpanagos river, where the line at Strawberry valley unites with the one I have indicated, presents no great difficulties, and could probably be built as cheap as the north line. He represents this region as producing grass in abundance, and thinks that at some points cereals may be successfully cultivated. Coal is found on Green river and its branches, similar to that on the north line.

I did not examine a route up the north Platte and through the South Pass; but the distance in this event would be increased sixty miles, which would counterbalance the 400 feet less elevation of summit.

Taking the first route I have indicated, and upon the supposition that the main line starts on the 100th parallel of longitude in the Platte valley, a road can be built from Omaha to the Great Salt Lake valley, near the foot of Lake Utah, with a distance not to exceed 960 miles.

There are but four points on the entire route that probably ever will furnish any great amount of local business. They are: the Rocky mountain gold region, of which Denver is now the business centre; the Medicine Bow and Platte river iron region; the Green river coal-fields, and the Salt Lake valley. This route would meet the requirements of the last three, but not fully those of the first, as they are now developed.
My own conviction, however, is, that the range of the gold-bearing quartz is as extended as the snowy range itself, and that the few discoveries in the vicinity of South Park, and along Clear and Boulder creeks and their branches, are but precursors of developments in the mountain chain that separates the three parks, that will, in a very few years, yield a greater amount of treasure than is now furnished by California; and that important points may grow up north as well as south of the present centre. I talked with no miner who did not believe it as extended as I have described it.

A gentleman who accompanied me on the trip, and had devoted much time to prospecting and mining in California, told me, as we passed the different streams from Denver to the crossing of the North Platte, that in the St. Vrain's, the Thompson's, the Cache à Poudre, the Laramie, and Medicine Bow, and their branches—streams issuing north and east from the range—he saw indications of gold in the quartz brought down quite as marked as in those on which they are now successfully mining. West of the Platte all indications disappeared.

This line would be, at the nearest point, 100 miles from Denver. At Julesburg, or the mouth of Lodge Pole creek, the distance given from Denver, by the stage company's table of distance, is 150 miles.

The serious objection to this route is, that it fails to meet the wants of the Denver gold region. To any one who has watched the mighty trains that are constantly thronging this road, and remembers that this is almost a purely mining population, where every article of consumption is transported from the Missouri river, the conviction cannot be resisted that the road should be built there, if it can be done at a reasonable additional cost.

Careful surveys and estimates, accompanied by schedules of the tonnage, would determine its practicability.

The route up the Cache à Poudre would, at the nearest point, be probably within 50 miles of Denver.

The route through the Berthude Pass would meet the wants of business, but the practical difficulties are serious. In the sixty miles from Denver to the centre of the tunnel, Mr. Case makes, on his grade, a rise of 4,820 feet, or 80 feet per mile; a large portion of the rise, however, must be made in the last 20 miles. The tunnel itself is three and one-half miles in length, and from 1,000 to 1,400 feet below the summit of the pass, with no probability of finding one lower.

The tunnel would, probably, be through granite, and most of the excavation from Golden City, the base of the mountains, to the boiling spring in the Middle Park, a distance of about 100 miles, would be granite or hornblende.

The elevation of the Berthude Pass above the level of the sea is 11,410 feet; of the summit of Mr. Case's tunnel, 10,050 feet; of Denver, 5,302 feet; and of Pike's Peak, 14,250 feet.

I presume it will never be seriously urged that the Middle Park, or any other section 6,000 or 7,000 feet above the level of the sea, can ever become to any great extent a successful agricultural country. The elevation of the plains north and south of the Uinta mountains is doubtless about the same.

I have only incidentally alluded to the tonnage of the plains, thinking that you could obtain more explicit information from other sources, but believe that even now, taking the California, the Salmon river, the Salt lake, and the Denver travel and traffic from the various points of leaving the Missouri river, it would nearly equal in amount that of either of the roads west from Chicago. At any rate, by the time a road was built to the base of the mountains it would have a business that would pay well.

The population of Utah, claimed to be about 75,000, located nearly central on the road, active and industrious, their energies guided by a sagacious and far-seeing head whose power is almost absolute, will aid materially in the successful prosecution of this enterprise. They have already turned the mountain streams from their
channels, and by irrigation changed a desert into farms, gardens, and orchards. They are producing, and will be able to export besides, fruits and cereals, wool, cotton, silk, paper, leather, iron, lead, copper, and salt, and are now introducing machinery for their manufactures. The conviction seems general that they are destined to become a self-dependent people, and need a railroad mainly to carry off their surplus productions and bring back their emigration.

I can only add, to complete this report, what I have endeavored to show throughout, that I am satisfied the cost of the road will be less and its business far greater than its most sanguine friends anticipate.

All of which is respectfully submitted.

PETER A. DEY.

To the CHAIRMAN of Committee Union Pacific Railroad Company.

APPENDIX No. 1 A.

To the President and Board of Directors of the Union Pacific Railroad Company:

GENTLEMEN: Since coming to this place early in October, I have made the following surveys from the Missouri river, between the mouths of the Platte and Boyer rivers:

The north line, as indicated on the map that accompanies this, passes over nearly the same ground as the survey made by the "Cedar Rapids and Missouri River Railroad Company," except on the west, where, instead of following the valley of Bell creek to the Elkhorn, their line runs north and crosses another summit, deviating from the direction to the north bend of the Platte, and evidently increasing distance and grades, without any equivalent.

The second line starts from the north line of the congressional township in which the city of Omaha is located, and running through Florence passes up Mill creek over the broken ground, into the East and Main Pappillion creeks, and thence northerly, making a summit between one of the branches of this stream and Walnut creek, which it follows to the Elkhorn.

The work on this line is so heavy that it does not favorably compare with either of the other surveys.

The third line starts from a point on the Missouri bottom near Omaha, and running at first northerly it curves and crosses the first ridge back of the State House, thence running down the valley of Saddle creek to near its mouth, crosses the dividing ridge between the Pappillion creeks, and unites with the fourth near Paddock's grove.

The fourth line starts from the south end of the city of Omaha, and running up the valley of a small stream reaches the valley of the Pappillion creeks near their junction, then follows the main stream to Paddock's grove, and running thence westerly over the high prairie, cuts the ridge at Elkhorn at a very low depression, and reaches the valley of the Platte, with a distance of 21 miles.

The fifth line starts from Bellevue, runs up the main and west Pappillion valleys, and unites with the fourth about five miles from where it crosses the ridge into the Platte valley.

The sixth line follows the valley of the Platte from its mouth to a common point of junction of all the lines near Frémont.

The Platte Valley line increases the distance 18 miles, and though favorable with the exception of increased bridging, I have thought best to leave it, the Florence line, and the north line from Omaha out of the comparison.

The line from Bellevue, though between five and six miles longer than either of the northern ones, has lighter grades, and presents less difficulties of construction than either of the others, making in the main a uniform ascent from the
Missouri to the summit on the Elkhorn. For cheapness of construction and operating, this is, without any question, the most desirable line.

The south line from Omaha has some heavy grades, but these are so near the terminus that they would not affect it as seriously as if it were otherwise, while in course of construction per mile it is second only to the Bellevue line, having less bridging than the others, and running in the vicinity of stone that can be used for bridge abutments and culverts.

The north line, although starting eight miles west of the Omaha line, and nearly east of the point of junction, diverges so much from direction that it is nearly as long, while the heavy work consists of cuts and embankments (as will be seen by reference to the profile) so long that it cannot be pushed rapidly. On this I have laid, as a maximum grade, 64 feet per mile; a lower grade would proportionately increase this difficulty. Assuming the south line from Omaha as the location, the truss bridging required for the first hundred miles would be: Little Pappillion, one span of 100 feet; main Pappillion, one span of 150 feet; Elkhorn river, one span of 150 feet; Shell creek, one span of 80 feet; Loup Fork river, seven spans of 150 feet. Or a total length of truss bridging of 1,530 feet, probably less than can be found anywhere on roads crossing the drainage of any country. In some of these bridges there will be trestle at the ends; for this I propose using timber that can be obtained here.

A portion of the ties necessary for the building of the road can be obtained along the line, but no great number that are reliable. There is a belt of timber on the Blackbird Hills, on the Omaha Indian reservation on the Missouri, which would be accessible if the right to cut timber on Indian reserves could be obtained. Further up the Missouri, at Frankfort and St. James, there is a small amount of cedar, from which a few thousand ties may be procured; and further up, in Dakota, west of the Big Sioux, there is a large body of cottonwood timber, in which there is a considerable amount of oak, coffee-nut, black walnut, and other timber suitable for ties, but insufficient in amount for the purposes required.

The cottonwood timber (which abounds along the river from this point north, and is in considerable quantity along the Platte for three hundred miles west) holds a spike nearly as well as oak, would be valuable and easily obtained, and answer the purpose, could some process be adopted to prevent its rapid decay.

These ties could be delivered on the bank of the river, at this point, for from thirty to forty cents; other ties, without much probability of procuring a supply, would cost from seventy-five to eighty cents. I have not been in a position to learn what process would answer best or be the cheapest for preserving this timber.

This is a matter that should receive immediate attention, as the winter months are more favorable for getting out ties than any other. The following communication was handed me several days since:

BELLEVUE, NEBRASKA, December 21, 1863.

DEAR SIR: I am authorized to pledge to the Union Pacific Railroad Company, through you, in your report to the company, one mile of rock landing; 2,500 city lots in the city of Bellevue; 2,500 acres of land adjoining said city, provided the eastern terminus of the Pacific railroad is located at this place.

Very respectfully, your obedient servant,

DAVID LEACH,
Mayor of Bellevue.

The successors of the Florence Land Company propose, in person, to present the claims of their point, and urge, as does Bellevue, the fact that there is rock in the bluffs and bottom of the river at those points.

The citizens of Omaha offer, on the condition that the station buildings are erected within one and one-quarter mile of Farnum street in this city, to furnish
the company the ground between the table on which the town is located and the river, a mile and one-half in length, and containing about five hundred acres, a portion of which is, however, below extreme high water; to deed to the company six thousand acres of land in Douglas county, and five hundred acres within two miles of the city.

These propositions are for your consideration. Mr. Brayton, the engineer who made the surveys through the passes, on the forty-first parallel of latitude, has just returned, and finds a cheap line through the Cheyenne Pass, with grades of one hundred feet to the mile; through Bridger Pass, with grades, for only a short distance, of seventy-five feet to the mile, the remainder being much lighter. I have directed him to return copies of his profiles to the New York office. On both these lines he is satisfied that, by more extended surveys, the grades may be reduced.

The energy and perseverance with which he has conducted these examinations, in a region where, for a portion of the time, he has been out of the reach of aid, and against the advice of men most familiar with the mountains, in a season, thus far, of unusual severity, entitle him to your confidence. Professor Hodge, the geologist who accompanied him, found his efforts mainly baffled by the amount of snow on the ground; still he has developed the fact that coal fields of almost boundless extent, and of a quality well adapted to the use of locomotives, lie on both sides of the Black Hills; and that iron, to a certain extent, is found in the vicinity. He will report to you fully. I would urge the importance of continuing his examinations during the coming season, and extending them to Salt Lake.

The passes surveyed by Mr. Brayton cover the only points in which I anticipate much difficulty, until in the vicinity of Salt Lake. I have received no report from the engineers surveying up the valley of the Timpanagos river, sent out by Governor Brigham Young.

I have prepared a general railroad law for the Territory of Nebraska, which, should it pass, will, I think, furnish all the legislation required for the construction and operation of the road.

The estimates and profiles that accompany this, with the maps, will furnish, I trust, all the information that you at present require. It is important that the first twenty miles be put under contract at once, as most of this grading may be done in the winter.

All of which is respectfully submitted.

PETER A. DEY,

Engineer in Charge of Surveys.

OMAHA, December 25, 1863.

Sir: In your letter of the 14th instant, I find some inquiries with regard to ties which require an immediate answer. In the first place there are not men enough in this country that can be hired at any price to get out the ties you need as fast as they will be required; and secondly, there is hardly enough oak and other suitable timber between Omaha and Fort Randall to supply what you need.

There is, however, along the line of road from this place to Fort Kearney, some oak, walnut, coffee-nut, red elm, and other woods suitable for ties; and on the river, within one hundred miles; cottonwood can be had in quantity amply sufficient to supply the road for a long distance. This wood will hold a spike nearly as well as oak, but it remains yet to be determined whether it can, by any comparatively cheap process, be rendered durable.

Considerable cedar is said to be growing on the Running Water, a tributary of the Missouri, commencing about one hundred and fifty miles above Sioux
City, and extending up from two to three hundred miles; but, as timber cannot be floated down this stream, I do not think it feasible or practicable to get ties from that source.

Nearly all the cedar posts in use here have been brought from Cottonwood Springs by freight trains returning from Denver.

Cottonwood ties can be delivered here, piled on the river bank, for from thirty to forty cents, and hard wood for from seventy-five to eighty cents at the present rates for labor; but the quantity you require cannot be got out by men living here. In the last conversation I had with you, before leaving New York, this subject was discussed, and I understood that your intentions at that time were to have some other person attend to it. For this reason I have not heretofore communicated with you respecting it.

Yours, respectfully,

PETER A. DEY.

C. DUHANT, Esq.,
Vice-President Union Pacific Railroad.

OMAHA, January 27, 1864.

Sir: I send you by express to-day two profiles. The first is from the north line of Omaha township, through Florence, and across the dividing ridge near the head of Little Pappillion to its intersection with the northern route in section 34, township 18 north, range 11 east.

The other extends from Paddock's Grove or section 27, township 15, range 12 east, up the Pappillion creek to the intersection line in section 8, township 17, range 11 east.

The ground back of Florence is so high and broken that I send you the profile merely to show you the comparative elevation. This line starts from the same base as the Omaha line, has been run with care, and I think cannot be materially improved. It is of course out of the comparison.

The line up the Pappillion from Paddock's Grove is very favorable in grade and profile, the only objection being the amount of bridging required in crossing the stream eight times. Three of these crossings could be avoided by throwing the line into the hills at a sacrifice of profile. The most expensive portion of the Omaha line is between Paddock's Grove and Omaha.

The comparative distances are as follows:
Located line from Omaha to Fremont, direct, 37.31 miles.
Located line by Pappillion valley and North route, 44.24 miles.
Located line, Florence and Northern line, 40.52 miles.

I have just received telegraph from Brigham Young, advising me that he has forwarded notes of survey up Timpanagos cañon. What shall I do with them?

Respectfully yours,

PETER A. DEY.

T. C. DURANT, Esq.,
Vice-President Union Pacific Railroad.

OMAHA, January 28, 1864.

Sir: I sent you yesterday by express the profiles from the north line of this township, by way of Florence, to the intersection of the northern route; and also profile of line up the Pappillion from Paddock's Grove to the intersection. Shall send to-day the line along the river up to De Soto. The Florence and the De Soto lines are impracticable; the former from the elevation of the coun-

try at the back of it, and the depth of the valleys which it is necessary to cross; the latter from the fact that for a distance of two or three miles the river washes an almost perpendicular bluff, nearly 100 feet high, where a road-bed could only be sustained by a heavy retaining wall, the material for constructing which could not be readily obtained.

The Pappillion Valley route, as the profile shows, is quite feasible; and with the exception of the increased amount of bridging, will compare favorably with the other line.

The unusual severity of the weather has materially retarded the progress of the surveys, for, much as I regretted the delay, it was impossible for me to keep men in the field.

Respectfully, yours,

T. C. Durant, Esq.,
Vice President, Union Pacific Railroad.

APPENDIX No. 1 B.

REPORT OF B. B. BRAYTON, CIVIL ENGINEER.

To the President and Directors of the Union Pacific Railroad Company:

Sirs: I send you herewith the profiles of Cheyenne and Bridger's Passes.

The survey of the Cheyenne Pass was commenced at the summit at the lowest point in the vicinity of the place selected for starting the survey; assumed elevation, 7,400 feet. It will be seen by the profile that the ridge, which is very narrow, being only 3,800 feet through it at grade line, requires a tunnel of 2,500 feet, with open cuts at each end 700 and 600 feet. The levels were run west to the head of a ravine at station 24, from which point west the line can follow along the west face of the mountain, which is very regular and will enable us to get a fair line by following north along the mountains until the grade descends to the Laramie plains. It will be observed that from station O, east, the mountains fall off rapidly to station 16. At this station I undertook to run nearly to a grade descending two feet, for 100 or 105 feet 6 inches to the mile. A much lighter grade would have kept my line too high; a much heavier would descend faster than the stream. The heavy cut from station 47 to 60 can be avoided in part by throwing the line down toward the creek. From station 7 to 100 ground near grade may be had to the north line by crossing the ravine at station 96, considerably higher. From station 96 east the line encounters no serious obstacles to station 650. In this vicinity the south branch of the Lodge Pole creek will have to be crossed. It here passes through a deep gorge, the hills or mountains rising very high on either side. The earth or debris of the mountains appears to have slipped down at some time and dammed up the stream, and the water has forced a narrow passage through. The line east of station 680 follows alongside of mountain to opposite Camp Wallach, terminating on high table land about 75 feet above surface of ground at foot of mountain, 102 feet above surface of water at the bank of the creek, and 105 feet above surface of water in the creek. The stream falls from the mouth of a gorge to Camp Wallach at the rate of 80 feet per mile. I think there will be no difficulty in starting grade down the valley and finding suitable ground to attain such an elevation on side of mountain as will enable us to reach the summit with a grade of 105 feet per mile. It may, however, be at the sacrifice of the line. I have no doubt a good line can be had at grades as shown in the profile. The cuts will in all cases, except from station 670 to 676, be a rock. From a point of rocks some 200 feet above the general plane of the pass, I with
a field-glass observed a route to the south of the one I examined, which would enable us to reach the summit by a grade apparently easier. The line would leave the plains on the east side of the mountains from one to three miles south of Camp Wallach and reach the summit east of the Willow Spring station, 15 miles southeast of the station on Big Laramie. From this summit west the grade will probably not exceed 50 feet per mile. The line would be over good ground and the distance would not be increased. You will, doubtless, inquire why I did not explore this route. I would have done so but for the lateness of the season and being short of provisions, with no way of procuring any unless I sent to Denver or Fort Halleck, either place requiring from 10 to 20 days to make the trip. There was also great danger of being snowed in; as it was, it took about two hours to shovel through the drifts in getting out of the Cheyenne Pass. I had still the Bridger's Pass to examine, which was 140 miles west, and seven days' travel in summer and at least 10 at the time we made it. The day after we left the Cheyenne Pass a storm set in, which, for fierceness, intensity, and duration, I never saw equalled. It lasted 10 days and interrupted all our operations for that time. One of my men froze his feet in attempting to reach Fort Halleck. Numbers of persons were badly frost-bitten, and many cattle perished on the plains. Professor Hodge urged me strongly to abandon the survey at Bridger. I said to him that I was sent to make it, and I intended doing so before I returned. While at Fort Halleck I procured a six-mule team, wagon, and driver, and 30 days' rations for my party. As soon as the storm ceased I started for the pass, making the distance, 75 miles, in two and a half days. The roads, with the exception of some drifts of snow in Battlesnake Pass, four miles west of Fort Halleck, were in good condition. Friday, December 3, I pitched my tent near the serving station of the Overland Stage Company. During the day I sent a party of men to the mountain for wood. A limited supply of poplar was found. On Saturday I commenced my survey, but on account of the sage-bush and snow in this pass I was compelled to run my levels in the road. This, however, enabled me to determine the general character of the pass. Whenever the road came near the valley of the stream I took notes of its elevation, and you will find in profile a dotted line showing the general slope of the valley. The lines down the valley will be good, with easy curves. The material appears to be the debris of the sand rock; all the rock in this pass is soft sandstone, similar in character to the sand rock at Peru and La Salle, on the Chicago and Rock Island railroad. I ran no further west than is shown on the profile. I had determined to work on Sunday, the 6th, if the weather permitted, deeming it a matter of necessity, but a snow-storm set in on Saturday night and lasted all day Sunday. On Monday it blew a gale; but after getting up a load of wood I started, determined to do all I could, as it was impossible to tell how long we should be compelled to stay if we waited for fair weather; made two and a half miles and returned to camp. Tuesday broke up camp and sent both teams east to Pine Grove station for fear of being blockaded in the pass. The roads were badly drifted on the east side of the ridges. I continued my survey, and at 2 p.m. had reached the point on the east side of the summit where profile ends. The descent of the valley from this point west is so easy, and the valley so comparatively smooth, that further surveys were not required.

The route from the foot of the Black Hills to Bridger's Pass will be generally over very favorable ground, with easy grades, good lines and light work. I do not believe the report in regard to the deep snows said to fall in these mountains. The country is entirely too dry to have much. What does fall must come either from the east or from the west. If from the east, all will be precipitated before reaching the mountains; if from the west, the California Coast range will cause the clouds to part with their moisture there. What little snow does fall is blown by the never-ceasing wind, blowing almost always from
the west, into drifts on the east side of the ridges and into ravines. The face
of the country, except where there is sage-bush to catch and hold it, is generally
quite bare in two or three days after a snow-storm. It only remains where it is
sheltered from the winds by timber, mountain ridges, or sage-bush. In two
days after the severe storm at Fort Halleck it had all disappeared. I have no
doubt there will be as little interruption from snow in the Cheyenne and Bridg­
er's Passes as in New York or Iowa.

Very respectfully, your obedient servant.

B. B. BRAYTON.

IN CHEYENNE PASS.

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### SUMMARY OF ESTIMATES—CHEYENNE PASS.

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### SUMMARY OF ESTIMATES—BRIDGER'S PASS.

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UNION PACIFIC RAILROAD.

APPENDIX No. 1 C.

GREAT SALT LAKE CITY,
January 26, 1864.

Sir: Immediately upon receipt of the first telegraphic messages from yourself and Mr. Durant, I directed my son Joseph A. Young to proceed as speedily as possible in organizing a party to carry out your wishes in regard to Timpanagos cañon, &c. The party was organized and in the field at the earliest practicable date. Four brief telegrams from Omaha, October 15, was my only guide in instructing them, until the arrival of your letter, dated October 15, which came to hand only a short time before rough weather drove the party from the line. From that letter I could infer that perhaps a more minute survey was desired; but even had the letter arrived at the first intimation I had upon the subject I am not aware that they could have done more or better, owing to the lateness of the season, unless, indeed, they had restricted their operations to a very short section of the route. For particulars as to their labors, I respectfully refer you to Mr. Young's report to me, and his tables of grades and distances, herewith enclosed. In connection permit me to suggest whether it will not be well, previous to surveying and estimating for either the Timpanagos or Weber Lower cañon line in detail, to first make a comparatively speedy and inexpensive survey of both those lines, to approximately and cheaply determine the difference of distance, level, &c., between Weber Lower cañon and Bear River and Timpanagos cañon and Bear river, as our present information is not sufficient to enable us to determine which is really the best of the routes, all things in connection therewith considered.

Regretting that circumstances prevented an earlier forwarding of the enclosed report, and hoping it may prove of some benefit until the weather permits of further operations,

I remain, very respectfully,

PETER A. DEY, Esq.,
Omaha, Nebraska Territory.

GREAT SALT LAKE CITY,
January 26, 1864.

Sir: I have this day mailed to Mr. Dey, at Omaha, the report of the survey of Timpanagos cañon and that line as far as Weber river, as the weather would permit.

The survey was begun as soon as practicable, and was diligently prosecuted until rough weather drove the party from the field. I regret that circumstances have prevented forwarding the report at an earlier date, but trust it may be in time and of a nature to prove of some benefit in the great work. If consistent I shall be pleased to have you inform me, at your earliest convenience, as to how many and what places you propose to begin work upon next season, and a brief synopsis of the proposed mode of conducting the work. You are, doubtless, advised of the extensive coal beds on Bitter creek and Weber river. On Bitter creek indications of iron ore have been noticed, and of late very flattering experiments have been made upon the iron ore found on Weber. Early in the spring I am in hopes to be able to learn definitely the quality of the Weber iron ore, and the probable extent of the ore beds. Holding myself in readiness to aid so far as I may be able in completing a work of such magnitude and usefulness as is the Pacific railroad,

I remain, very respectfully,

BRIGHAM YOUNG.

T. C. DURANT, Esq., New York City, N. Y.
Sir: In accordance with instructions from you "to make a preliminary survey of the Timpanagos route as far up as Kamas prairie, to ascertain whether the grades would be practicable for the Pacific railroad," I proceeded on the 23d of October to organize a party, as follows: Mr. J. W. Fox, assistant; an instrument carrier, two targetmen, two chainmen, an axeman, two teamsters, a cook, one four and one two-mule team for transportation, and three saddle animals for reconnoitering, with rations and forage for twenty-five days. The instruments used were a railroad level, a common field compass, and Gunter's chain.

On the morning of the 26th I started the party for the field of operations, distant forty-seven miles, and on the evening of the 28th Mr. Fox and myself joined them at Provo City. On the morning of the 29th we commenced field operations, taking as our initial point the northwest corner of President square, Provo City, 60 feet above level of water in Utah lake.

From this point we proceeded with a level and chain line direct to the mouth of Timpanagos canyon; thence up the Timpanagos river to Kamas prairie, where we arrived on the 6th of November. From the initial point to this place we found there would be no serious obstructions to encounter, if we except some very short curves near the mouth of the canyon, several broken ledges of mountain limestone, which in a few instances are precipitous to the river, and a deep cut through the Kamas bench to get to the Timpanagos bottom, all of which are shown by the field notes.

Upon our arrival at Kamas, while awaiting further instructions, we learned from Mr. Rhoads and other hunters well acquainted with the country near the head waters of the Weber and Timpanagos, that the latter river headwaters within fifteen miles east of Kamas prairie, runs in a southeasterly direction along the west side of the main range of Uinta mountains, and then doubling back a distance of some eighty miles, takes a westerly course by the south side of Kamas prairie, and that the divide between the Timpanagos and the head waters of Bear river is very high, there being no practicable pass from one to the other after leaving Kamas. We also learned that there was a low pass to Bear river, some twenty-five miles from Kamas up the Weber in a northeasterly direction, which would bring it on the most direct route, and that represented to be practicable for a railroad.

Your letter, and also a copy of a letter of instructions from Mr. Dey, of Omaha, permitting us to use our own discretion in regard to the route from Kamas prairie, having been duly received through the messengers to whom they were intrusted, it was considered expedient, from the evidence before us, to continue our survey by way of the Weber route. Accordingly on the 9th of November we resumed field operations, crossing Kamas to the Weber river, and thence up the Weber some four miles, where we encountered a very severe snow storm, which rendered it impossible to continue field operations this fall.

Among those best acquainted with the mountains, opinions are about equally balanced as to the practicability of two routes from Great Salt Lake City to the mouth of Bitter creek, on Green river.

Route 1.—From Great Salt Lake City to the mouth of Timpanagos canyon, up the Timpanagos and across Kamas prairie, and up the Weber to a point where the divide between Weber and Bear rivers may be either tunnelled or crossed by the aid of stationary engines; thence by easy grade to Bear river; thence through a depression in the dividing ridge between the waters of the Colorado and the Great Basin, keeping a line about twelve miles south of Fort Bridger, across high level country to Black's Fork and Green river.

Route 2.—From Great Salt Lake City, via Farmington and Kaysville, to the mouth of Weber canyon; up the Weber to the mouth of Chalk creek; up
Chalk creek, crossing divides between Chalk and Yellow creeks and Yellow creek and Bear river, to Bear river; thence up Sulphur creek to a depression in the rim of the Great Basin, across a very low divide to the head of and down the Muddy to Black's Fork, leaving Fort Bridger twelve miles to the south, and down Black's Fork to Green river.

The two routes are accessible to each other on the Weber, within twenty-two miles; on Bear river, probably sixteen miles, and on the rim of the Basin, within from three to eight miles. The grading, bridging, excavation, embankment and curvature in these routes would be about equal.

On route No. 1 we cross the range of mountains between Weber and Bear rivers on a single divide; on No. 2 in two much lower divides. The first is colder and more snowy than the second, owing to its proximity to the Uinta range of mountains. On No. 1 the line would be near large bodies of timber on the head waters of Weber and Bear rivers, which would be required in construction on either route. On No. 2, on Chalk creek, are extensive deposits of a light, bituminous coal, suitable for railroad purposes.

According to the above facts, collected from those best acquainted with the country, it would seem that the advantages and obstructions are so nearly balanced that the selection of routes will entirely depend on gradients and distance. We would, therefore, recommend that, as early as practicable in the spring, a line of levels be run on the respective routes before making any elaborate estimates.

Owing to the lateness of the season, the smallness of our party, and liability to be driven back by storms, and presuming that, in accordance with the above data, distance and gradients, would be the principal considerations in determining the route for the Great Pacific railroad, we made alignment, gradients, and distance the principal objects of our reconnaissance, designating, however, in their proper place in the field notes, all such points and ledges of rock, creeks, dry washes, long high slopes and depressions as were likely, in the least, to prove obstacles to construction.

It will be proper, in this connection, to add that the courses indicated are corrected magnetic readings, and only general; also, that the gradients have more particular reference to the fall of the streams.

We started on our return on the morning of November 11, and arrived in this city by way of Silver creek and Parley's park on the evening of the 12th.

Enclosed please find a table showing grades and distance between salient points, also a table showing grade of level line, with corrections, showing fall of Timpanogos and Weber, and number of stations per mile; field notes of expedition, and the accounts of the party, including time and wages of men, rations, forage, teams, saddle animals; in short the entire expense of the expedition, except leaving blank the pay of Mr. Fox and myself.

All of which are respectfully, submitted.

Very respectfully yours,

JOS. A. YOUNG.

President Brigham Young.
Table showing the rise or fall in each mile of the line from Provo City to a point on Weber river, together with the corresponding fall of water in Timpanagos and Weber rivers.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 4</td>
<td>180,000</td>
<td>180,000</td>
<td>On Provo bottom.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>57,271</td>
<td>57,271</td>
<td>Below mouth of Kamyos.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>57,271</td>
<td>57,271</td>
<td>Entered Wall's ranch.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>57,271</td>
<td>57,271</td>
<td>Entered Provo valley.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>57,271</td>
<td>57,271</td>
<td>Weber river and canyon.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>57,271</td>
<td>57,271</td>
<td>Leave Timpanagos.</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>57,271</td>
<td>57,271</td>
<td>Kamas prairie.</td>
<td></td>
</tr>
</tbody>
</table>

Table showing the distance, difference in elevation, and the average grade per mile between some of the principal points on the preceding line.

<table>
<thead>
<tr>
<th>From—</th>
<th>To—</th>
<th>Distance in miles</th>
<th>Difference of elevation</th>
<th>Grade per mile.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provo.</td>
<td>Mouth of canon.</td>
<td>5.417</td>
<td>264.407</td>
<td>48.81</td>
</tr>
<tr>
<td>Mouth of canon.</td>
<td>Entrance Wall's Ranch valley.</td>
<td>13.331</td>
<td>496.308</td>
<td>37.53</td>
</tr>
<tr>
<td>Entrance Wall's Ranch valley.</td>
<td>Provo valley.</td>
<td>2.320</td>
<td>53.438</td>
<td>23.73</td>
</tr>
<tr>
<td>Provo valley.</td>
<td>End of Provo valley.</td>
<td>2.320</td>
<td>53.438</td>
<td>23.73</td>
</tr>
<tr>
<td>End of Provo valley.</td>
<td>Kamas Prairie.</td>
<td>8.262</td>
<td>259.724</td>
<td>47.66</td>
</tr>
<tr>
<td>Kamas Prairie.</td>
<td>Joe Pack's corral, K. P.</td>
<td>2.412</td>
<td>95.346</td>
<td>43.45</td>
</tr>
<tr>
<td>Joe Pack's corral, K. P.</td>
<td>Mouth of Weber canyon.</td>
<td>5.737</td>
<td>107.854</td>
<td>18.71</td>
</tr>
<tr>
<td>Mouth of Weber canyon.</td>
<td>End of line.</td>
<td>3.567</td>
<td>293.283</td>
<td>72.13</td>
</tr>
</tbody>
</table>

50.996 | 2,285.396 | 44.81 |
REPORT OF PROFESSOR JAMES T. HODGE, GEOLOGIST.

To the President and Board of Directors of the Union Pacific Railroad Company:

GENTLEMEN: In accordance with your instructions of October 15, 1863, I proceeded forthwith to the Rocky mountains for the purpose of investigating the capabilities of the region near the surveys for the Union Pacific railroad for making iron and producing mineral fuel.

By the overland stage line I reached the base of the Black Hills at Laporte on the 1st of November, to find the country covered with snow, rendering geological explorations altogether impracticable. Here I was detained a week, waiting for the surveying party I was to join, which was fitting out at Denver. On the eighth I had crossed the Black Hills, and in Laramie plains I first had an opportunity of investigating the mineral character of the country. In the prairie hills, three miles south 30° east by compass from the stage station called Big Laramie, (from the name of the river on the banks of which it stands,) I discovered a lean iron ore intermixed with veins of calc-spar, outcropping in flat bands almost black in color and in considerable quantity. Similar ore is again met with, covering the surface of the prairie on a direct line toward the stage station. It is a hematite at the surface, probably from atmospheric oxidation of a carbonate of the character of the clay iron-stone, such as is found in the coal measures. The geological formations in the vicinity are shales of olive, bluish, and brown colors, associated with slaty calcareous strata which contain sharks' teeth and other fossils that refer the group to the cretaceous period. Plates of selenite are abundant, scattered on the surface of the shales. Over the plains nearer the mountains to the east are occasionally met outcappings of a reddish sandstone and a very close-grained compact limestone of light shades, flesh, straw, pink, blue, red, and some nearly white. This limestone would answer well for a flux in smelting iron ores. Coal is reported to be found near the forks of the Laramie in these plains, and is probably of similar character to the same mineral worked near Denver, (to be afterwards noticed,) which also is associated with iron ores and limestones. Though the iron ores I discovered appear too lean to be valuable, they afford a clew as to the geological relations of the ores of this region and the localities where they are most likely to be met with.

Approaching the Cheyenne Pass from the west, small rolled pieces of hematite are found, both in the wagon road and also on the side of a prairie hill a quarter of a mile north from it, which hill is capped by ragged ledges of red limestone in horizontal strata. The pieces of ore are smooth and hard and the quality is excellent; but there is no certainty of quantity sufficient for working. Further explorations, however, may lead to more important discoveries. Should such be made, iron works might be established near the mountains on one of the branches of Laramie river. Several tributaries to it of clear water, never failing, run through the valley; seldom, however, with sufficient fall to afford water power. The limestones may be depended upon for flux, and fuel will be afforded either by the beds of mineral coal or by the pines of the mountains. The region, however, is generally deficient in good timber; none is seen on the prairies, and the growth upon the mountains is scattered and for the most part thin. It consists almost exclusively of pines, balsam fir, and quaking aspen. Of these the first will make suitable charcoal for smelting iron ores. Until recently such fuel alone supplied the blast furnaces on the shores of the Chesapeake, at Baltimore, and its vicinity. In the mountains further south, I afterward found spruce trees accompanying the pines.
The Medicine Bow mountains, on the west side of Laramie plains, appear to contain a heavier forest growth than the Black Hills, and should iron ore be found on that side of the plains it might prove a better region for the manufacture of iron than the eastern side. I proceeded as far west as Fort Halleck, on a branch of the Medicine Bow creek, and at the northeast base of Medicine Bow mountains, and sought to ascertain the locality of iron ore on this creek reported by Mr. Engelmann, who accompanied the expedition. Mr. Duval, who is still in government employment at Fort Halleck, was entirely ignorant of any such discovery. I learned, however, of the occurrence of coal beds, said to be of large size, in the prairie hills six miles northeast from Fort Halleck, and made several ineffectual attempts to find them. The east side of the hill, where they were discovered, I found covered deep with snow, and though I remained eleven days at Fort Halleck in hope of a favorable time for exploration, it was for nearly the whole period almost impracticable for one to cross the prairies and dangerous to leave the stage road. The wind every day blew with extraordinary fury, sweeping the snow forward and piling it in deep drifts in the canons and gulches, and on the lee or east side of the hills. For days together a man could with difficulty stand up against it, and the driving snow often prevented his seeing one hundred yards in any direction. During this time the thermometer ranged from zero to 10° below. It was the first day of December when I reluctantly left this portion of the Rocky mountains, in despair of making in it any useful geological observations at so advanced and inclement a season.

Before going to Fort Halleck, I accompanied the surveying party of Mr. B. B. Brayton through the Black Hills, on the Cheyenne Pass, leading from Lodge Pole creek to Salt lake; and it is for the sake of completing my account of the plains west of the Black Hills, before proceeding to that of the mountain district and the plains to the east of it, that I have introduced above my remarks upon the country about Fort Halleck.

At the Cheyenne Pass the Black Hill range, extending due north and south, presents a very uniform slope on its western side, but little interrupted by canons, such as are of frequent occurrence in other portions of the Rocky mountains. This slope nearly to the summit is that of the limestone strata, which uplifted from their horizontal positions in the plains, here form the outermost layers of the range. In a gorge near the base of the mountain they are exposed to the thickness of full twenty feet, which is probably but a small portion of the real thickness of the formation. The rock is in broad, flat blocks, admirably suited for building-stones, and much of it, though never crystalline, appeared as if it might make a substantial marble of fair quality, but not of bright colors. I could discover no fossils in it. Beneath this rock, exposed in precipitous ledges along the gorges, and curving up from under it at the summit, is a red silicious sandstone resembling the Devonian red sandstone of the Alleghanies. It covers the surface of the hills lying north of the pass, spreading out over broad areas in nearly horizontal strata. These towards the east abut in bold cliffs, and next beyond them in this direction appear the granitic and porphyritic rocks which make up the central portion of the range. The only distinct fossils I could find in the sandstone were small encrenites. Neither this formation nor the limestone is likely to afford any useful minerals, though the latter may possibly prove a repository in occasional localities of hematite. Professor James Hall, of Albany, to whom I have submitted specimens of both the limestone and sandstone, refers the group to the carboniferous formation of the age of the true coal measures. The rocks which compose the mass of the Black Hills are red granites, red sienites, and red porphyritic sienites. They form not only the high ragged peaks and groups of rough hills that lie to the north and south of the pass, but the smoother surface and prairie-like hills of the pass itself are also underlaid by the same formation. A peculiar feature it everywhere exhibits is a decided tendency to disintegrate and crumble into
coarse, angular fragments. The surface is very generally covered with these, which make a poor soil enough, but the very best of roads. The wagon road through the pass, though unimproved by any labor upon it, is for the most part unsurpassed in smoothness and durability by any macadamized road. This tendency to disintegrate is also the cause of the numerous peaks and monument-shaped masses of all sizes standing on the steep mountain slopes and summits, and also scattered over the smoother and level portions of the mountains.

Some of these appear, like the boulders of northern latitudes, perched upon ledges from which they could be easily tipped off; others resemble icy masses along a frozen coast as they melt away on the approach of spring. In some instances, when the disintegration has gone on most rapidly at the base of tower-like masses, huge blocks have parted from the main body to which they belonged and have fallen down, exposing a fractured and nearly smooth face, sometimes of several hundred square feet area.

In general, the outline produced by the disintegration is rounded like that of rolled boulders. I could find in these formations no metallic veins, nor any features that would lead me to look for iron ores in the central part of the range. No mica nor talcose slates accompany the granites, and the only variation in the rocks is as they become more or less sienitic or porphyritic in their composition.

Numerous quartz veins, however, are seen toward the eastern side of the pass crossing the road in a northerly and southerly direction, and projecting above the surface, which in their vicinity is covered with loose pieces of this mineral. These veins resemble the gold-bearing quartz veins of the southern States, but are unlike those of the Colorado mining district.

The granites also of that part of the Rocky Mountain range are very different from those of the Black Hills, being of light colors and gneissoid in structure.

On passing out from the central range toward the plains on the east side, one everywhere meets facing the mountains a range of high, precipitous cliffs of red sandstone, the lower layers often conglomerate. These rocks present a thickness of full 500 feet, and as the lowest strata are not exposed, the formation may be much thicker than this.

It is evidently a repetition of the same sandstone group that caps the summit on the west side, and passes under the limestone that forms the western slope. This rock, too, lies in the same relative position to the sandstone on the east side, capping the cliffs in some instances, and also forming a parallel outer range of hills, the strata still dipping east. All along the east side of the Black Hills, as far as I observed them, and further south where these hills are lost in the main Rocky Mountain range, this group of marginal cliffs is traced, and everywhere they present a striking feature in the topography, all the more marked by the bright red color of the sandstone.

Their forms at the Cheyenne Pass, and again at Boulder creek, Colorado, are represented in the accompanying sections and sketch, and their range is designated in the ground plan or map. The hills appear to have once formed a continuous unbroken line, the western summit presenting a bold escarpment, the base of which is covered by the debris fallen from above.

This constitutes the gentler slope seen in the section at the western foot of the hills. The eastern slope is that of the strata, and the surface on this side is frequently in chief part that of the rock itself, scantily overgrown with sage bushes, cactus, and grass that have taken root in the crevices. Behind the first range, with an intervening valley, sometimes nearly a mile wide, but much less further south where the dip of the strata is very steep, is a second range of precisely similar form, and near the Cherokee Pass, where the stage road crosses the mountains, I have observed a succession of four or five such ranges, the outermost one dying away in reduced dimensions in the prairie to the east. Their covering of snow prevented my studying the structure.
At the entrance to the mountains at Clear creek, Colorado, there is seen extending several miles north and south, outside of this range of hills, another group of basaltic formation.

The hills composing it are all remarkable for their peculiar tabular form, being perfectly flat on the summit, which is bounded on all sides by vertical walls, apparently a hundred feet high, of rudely columnar green-stone or hornblende rock. The summits are sometimes several hundred acres in area, and at others (as on one of most striking appearance just east of Golden Gate City), the extent does not seem to be more than three or four acres. In this, however, one may be deceived by the great height of the hill, which is probably full seven hundred feet above its base. These are the only hills of this formation I saw in the Rocky mountains. Their position is represented in the map, and their form among the sections accompanying it. The soil near their base is quite fertile, and is often cultivated for some distance up their very steep slopes.

This group, as also the more extended range of sandstone hills behind them, traced north and south, are seen to be interrupted at intervals of half a mile to a mile and a half by gaps, all of which are worn down to about the same level, which may be 300 to 500 feet below the summits. The mountain streams find their outlet through these gaps, and all the roads into the mountains pass up by the same openings.

The rounding away of the ends of the hills in the gaps toward the east, the direction of the dip, keeps exposed the strata, which in the face of the escarpment further west occupy a much higher position, and to an observer facing the escarpment the impression is conveyed that in each hill the strata at its northern end dip north and at the southern end dip south. In the middle of the face they appear to be horizontal, the basset edges only being in view.

The peculiar form of these hills is obviously due to powerful denudation directed from the central range eastward. On the shorter western slope of the Black Hills the effects of the same action in the opposite direction are less strikingly exhibited in the abutment of the same sandstone formation, which, as already noticed, is seen on that side near the summit of the range. Other evidences of extensive movements over the surface from the main Rocky mountain ranges eastward, will be presented in describing the formations examined further south.

The lower members of the limestone formation at the east entrance of the Cheyenne Pass are remarkably intermixed with various forms of silex, as flint, jasper, carnelian, and chalcedony, which sometimes present a rude agate structure. The flints are of many different colors; the jasper is in fine blocks of clear red. The sides of some of the hills are covered in places with fragments of these minerals, the flints and limestone often attached together.

The operations of the party I accompanied being limited to the pass, I had no opportunity of extending my observations into the plains on the east side of the Black Hills. I had already become satisfied that it is in the plains, and not in the mountains, that the minerals I was in quest of are to be found, and after abandoning further explorations west of the mountains I proceeded to the region south of Laporte to investigate the character of the beds of coal and iron ore there opened and worked. The range of the formations, I had learned, would carry these beds northward near the Black Hills, and a knowledge of their properties, which could be obtained in a comparatively settled country, though still covered with snow, would be useful in directing further explorations in the wild districts about the Cheyenne Pass to one provided with the necessary facilities for conducting them in a more propitious season.

It was after leaving the pass that I learned from Mr. Duvall, at Fort Halleck, of the occurrence of iron ore in large quantity on the branches of the Chugwater, about twenty miles north from Camp Wallach, which is an old deserted camp at the east entrance of the Cheyenne Pass. His description of the ore as heavy
and massive, with no appearance of a vein or "lead," would apply very well to the localities I afterward examined on South Boulder and Rock creeks, Colorado, and I imagine the ores of the two districts are of the same character. I was afterward directed by two other old explorers of these regions to the same locality, as the only one where they had observed any iron ores, and another pointed out the same district as containing coal also. It therefore appears to be the most promising spot for subsequent explorations north of the stage route.*

At several other localities in the plains there are reports of coal being found. Somewhere on Lodge Pole creek it is actually worked, to a small extent, for supplying in the winter the stage stations near the mouth of this stream. There is also a bed in the plains about seven miles north from the stage road, between Laporte and Latham. This I endeavored to find, but there was no road to it and the country was covered with snow. A number of these localities are designated upon the map on both sides the Black Hills, as also north of the range on a small branch of the north fork of the Platte, known as Trading-house creek. They indicate satisfactorily the great extent of the area over which beds of coal may be sought with good prospect of finding it. It has been supposed that a bed of it might be found in the black shales exposed along the road eight miles south from Laporte, but the few imperfect fossils I found here discourage this expectation, as they are referred by Professor Hall to the tertiary formation. It is only in the vicinity of Denver, which affords a market for this fuel, that beds of it are worked to any extent. On Coal creek and on South Boulder creek, both about 22 miles north from this town, a number of beds are opened on the former creek, about 14 miles east from the base of the mountains, and on the latter within three miles of it. On Coal creek the outcrop of the coal is at the base of a high hill or ridge, rising back toward the east, and washed at its foot by the creek, which seems to have excavated its bed for some distance in the soft materials of the coal and of the fire-clay beds that underlie and overlie it. One of the openings commences at the base of this ridge in a heavy body of blue fire-clay, which forms the roof of the coal; and penetrating this, passes into the coal bed itself, which presents a thickness of five feet ten inches pure coal, with no mixture of slate. The tunnel has been carried in over one hundred feet, and for this distance the strata are seen to incline at a gentle dip not exceeding 2° or 3° toward the north. The coal is of a brilliant jet black, and is easily mined in large lumps, which appear to be firm and sound. I am informed, however, that after exposure a few weeks to the air, the lumps crumble to fine coal, and for this reason no large stock of it is kept in the coal-yards at Denver. Should the coal not be found to improve in this respect when mined to greater depths, or in other beds not yet opened, there may be difficulties in applying it to the smelting of iron ore, from the small particles clogging the furnace; it may also work to disadvantage in locomotives by siftting through the grate bars. The coal seems to contain but little bitumen, burning with little smoke, no unpleasant odor, and a yellow flame. It does not melt or coke, and, however high the draught, produces no clinker. The ashes of most of the beds are usually white and bulky. A blacksmith, who uses it, informed me that he can obtain a welding heat with it in a forge, but with difficulty. Sulphur is observed in it in small quantity in the form of exceedingly thin disks of iron pyrites disseminated through the seams. Particles of mineral rosin are much more abundant, scattered through the coal, the pieces being of the size of pinheads. Several other beds of coal have been discovered in the same vicinity; and one of these, a few rods to the southeast from the point already described,

*On referring to the report of Captain Stansbury since the above was written I find on the closing page the following remarks respecting the locality: "In the bed of the Chugwater, and on the sides of the adjacent hills, were found immense numbers of rounded black nodules of magnetic iron ore, which seemed of unusual richness."
is worked to some extent. This coal bed appears to be an upper one, but though so near the other it has an entirely different dip, which is about 18° east. It is in two positions, the upper being seven feet thickness of coal, separated from the lower, which is 4½ feet thick by a stratum of dark blue fire-clay 18 inches thick. The fire-clay appears to be of excellent quality for the manufacture of fire-brick. The mine is worked by following the coal-bed down the slope, and the coal is drawn up on cars by a capstan. No trouble is experienced from water, though the opening already extends about 100 feet under the hill. The other bed also is dry. I found the workmen attempting to coke the coal of the second bed described, which they thought possessed a better coking quality than that of the other bed. The coke, though very inferior, and obtained only in small pieces, was purchased by the blacksmiths around in preference to the raw coal. A strong fuel, such as good coke, is of great value in this region, as is shown by the fact of its transportation all the way from Kansas to the machine shops at Central City, in the Colorado gold region, where more than 100 tons of it have already been consumed, at a cost of $160 per ton.

The strata accompanying the coal-beds differ in some respects, so far as I could see them, from the strata of the true coal formation. There was the same variety of fire-clay, but the beds of it under the coal contained none of the stigmatirial everywhere else found in this position. I saw no stems and leaves of ferns, but in the fire-clay, over the coal, I obtained imperfect fragments of blackened deciduous leaves. Clay-iron stone in nodules and layers occurs in the fire-clay. I was told of two layers, together 18 inches thick in depth of fire-clay. I saw no beds of black shale, nor are any of limestone found in this formation; a few feet above the upper coal-bed is a crumbly stand stone of a light gray color. On the extension of this ridge, 2½ miles further north, I examined some ledges which projected through the snow, the position of which I judge is over the coal, and not very far from it. These are thin bedded sandstones of yellowish color, and other layers more compact of bluish shade. The latter contained fossil shells, the substance of which is sometimes well preserved. They are recognized by Professor Hall as belonging to the genera cardium, cucullea, maetra, nucula, tellina, and ammonite; thus designating the formation to be as old as the cretaceous period. The deciduous leaves in the fire-clay determine the coal, or rather lignite beds, as belonging to the same formation.

The other coal district is in the hills along South Boulder creek, only 2½ miles from the base of the Rocky mountains. Several beds have been opened, and two of them are worked for the supply of the Denver market. This locality also affords an abundance of iron ores, and has been selected for the establishment of the first blast furnace erected in the Territory. This is nearly completed, and will probably go into operation in March. The principal coal-bed is opened a few rods southeast from the furnace, and has been worked 100 feet down a slope of about 10° from the horizontal toward the east. The bed is 12 feet thick, almost uniform in quality, with no intermixture of slate, and presents a beautiful appearance in the brilliant lustre of the coal. A little sulphur (pyrites) may here be detected in the seams. It was from this bed that the first specimen analyzed by Dr. Torrey, whose report accompanies this, was obtained. A second bed is opened about half a mile from the furnace towards Denver. Though further from the mountains, this bed is nearly vertical; it is about 7 feet thick, and has been worked to the depth of 50 feet, the coal being raised by means of a horse-whim.

A third bed, 3 to 4 feet thick, just opened on the north side of the next hill, east from the first-named coal-bed, is found to be nearly horizontal at its outcrop. This promises to afford coal of a firmer quality than is obtained from the beds heretofore worked.

Other beds are known in this vicinity; and both here and at Coal creek some
of them, I was informed, are consumed by fire, caused, it is supposed, by spontaneous combustion, produced by oxidation of the pyrites in the coal.

The fire-clay beds contain the clay iron-stone, as on Coal creek, but no attempts have been made to ascertain its quantity or quality, and I could not anywhere see it in place. The dependence of the furnace is upon irregular deposits of a shelly hematite, locally known as “top-hill ore,” found scattered over the summits, ends, and slopes of many of the ridges which border South Boulder creek and Rock creek. These deposits extend to a depth of only one to three feet, and as they evidently do not form a part of the strata in the hills, it is impossible to make any estimate of the quantity of ore they will afford.

One can judge only from seeing numbers of acres thus covered that supplies may be obtained for one or more blast furnaces for several years; but extended observations would be necessary before positively asserting that large works could be supported from this source. The ore is found in pieces of all sizes, up to masses of half a ton weight, and large quantities of it are so fine that it would have to be collected for the furnace by screening.

There is scarcely any intermixture of foreign stony materials in these deposits. The quality of the ore is generally pretty good, though the larger masses are not so fine grained and pure as the smaller ore. I should judge that an average of three tons would be required to make a ton of iron. The ore is in excellent condition for the blast furnace, its long exposure at the surface having prepared it for smelting almost as thoroughly as if it had been roasted. Its unusual mode of occurrence, unconnected with the strata in the hills, was for some time a source of perplexity; and it seemed necessary to explain it correctly in order to judge better of the probability of the ore being found in large quantities in other places on the range of these formations. On examining the country up to the base of the mountains, I discovered what I believe is the true explanation. At the distance of two and a half miles from the mines, the marginal ridge, already noticed, rises suddenly with a very steep face and dip of its strata, as represented in the section. The surface at its foot is covered with large, rounded boulders from the granite rocks of the mountains. Some, also, are of the red sandstones and conglomerates of the outer ridge. They decrease in size and numbers towards the east, indicating the movement in that direction of vast bodies of water or ice. These, together with the evidences of denudation I had observed further north—evidently not referable to the diluvial or drift formation—appeared to me as more strongly-marked evidences of glacial action than I had ever before seen. The extension of this over the hills near the furnace must have excavated the soft beds, of which they are in great part composed, and the light, clayey materials of the strata containing the iron ores being swept away by currents of water, these, by their weight, were left behind, and are now found spread over the surface of the hills. By long exposure they have been oxidized and converted from the clay iron-stone, or “blue-core ore,” as it is here called, into the shelly hematite. Such a derivation of the ore, if correct, must itself make the quantity in any locality always uncertain. Found as it is, it is collected and delivered at the furnace at a cost of $3 per ton, making about $9 to the ton of iron.

Most of the materials required for constructing and supplying blast furnaces are found in great abundance at this locality. Sandstone of superior quality for building is quarried from extensive ledges that outcrop on the summit of a ridge within a few rods of the furnace. Blocks of it of uniform thickness are obtained of any desired size. It presents a fine appearance when cut, as seen in the small furnace, which is built of stone thus prepared. The fire-clay beds afford material for fire brick with which the furnace is lined, and stones, supposed to be sufficiently refractory, found near by, are used for the hearth and boshes of the furnace. An excellent limestone, both for mortar and flux, is found in a little ridge close at the foot of the marginal sandstone hill, along the
edge of the mountain, the position and form of which are indicated in the section. In the quarries just opened into this rock I was so fortunate as to find a few well-marked fossil shells, which will probably determine the age of this formation, as well as of what I believe to be the same limestone before described as occurring on both sides of the Black hills. Good clay for common brick is abundant throughout this region. It is largely worked about Denver, where bricks are sold for $8 to $10 per thousand. On Rock Creek, a few miles from the furnace, at the crossing of the road to Denver, an establishment has been in operation for the manufacture of coarse articles of pottery. It is, however, now abandoned. The fuel with which it is intended to supply the furnace is charcoal, made from the pines of the mountains. The owners of the works, requiring only a moderate supply of good iron for their foundry and machine-shop at Central City, are not disposed to try experiments at once with the mineral coal so near at hand. They estimate the cost of charcoal at the furnace at 10 cents per bushel. The wood is cut by contract at $1 per cord, which is about 3 cents to the bushel of coal. The coaling will cost 3 to 4 cents per bushel, and the hauling the remainder. A difficulty is experienced in making charcoal in this region from the want of good turf for covering the pits. The light soil of the prairies or gravel of the mountains soon falls through among the wood when this is fired. The furnace, owned by Messrs. Langford, Lee & Marshall, is a very small stack, of daily capacity of only 4 or 5 tons of pig iron. It is 20 feet square at base, 22 feet high, and 7 feet diameter at the boshes. The hearth is 5 feet high and 18 inches diameter. It is intended to work the furnace with cold blast, and the consumption of charcoal will probably be from 250 to 300 bushels to the ton of iron. The cost of fuel in this case will be from $25 to $30, while that of ore, as above stated, may be rated at $9. The cost of the limestone for flux will probably not exceed 50 cents, and the remaining items of labor, repairs, &c., may be estimated at about $7. The total cost will probably be about $45 per ton of pig metal. In large establishments the expenses would be less, especially if the raw mineral coal could be substituted wholly or in part for the charcoal. The quantity of fuel, too, would be diminished by the use of the hot blast. The prairie country bordering the mountain toward the east, which presents the same geological and topographical features through Colorado to the north fork of the Platte river, will no doubt be found to afford, throughout this extent, similar resources for the support of a population dependent upon agricultural and manufacturing pursuits. Though deficient in forests, the lack of wood will be compensated by the abundant supplies of mineral coal, the existence of which has already been detected, even to the southern portions of Colorado. In that region there are also found springs of petroleum, and the manufacture of kerosene oil is already carried on to small extent, near Cañon City, for the supply of the Denver market.

The agricultural resources of the prairies are somewhat limited by the extreme dryness of the climate. Rain seldom falls, and were it not for the never-failing supplies of water in the numerous streams running from the snowy central range of the Rocky mountains, the country would be an uninhabitable desert. Yet the soil is in great part fertile, warm and mellow, and abounds in gypsum and salts of soda, which appear upon the surface in the form of a white incrustation resembling frost. This is particularly abundant around the edges of dried-up ponds. The alkaline salts affect the waters of many of the wells, rendering them nauseous to the taste and unwholesome, and mixing with the dust of the roads, this is said to be in the summer season very injurious to the eyes of travellers. It is remarkable, that notwithstanding the want of rain, no great trouble is experienced over the plains for the want of water at the ranches and stations along the roads. I crossed the Platte river at Fort Kearney in October, over its dry sandy bed, and yet the wells along the valley contained abundant water, and in general they were not twenty feet deep, their bottoms
not reaching to the level of the stream. It is difficult to explain from whence these supplies are derived. The dryness of the soil renders irrigation necessary for its successful cultivation, and this is already practiced to a considerable extent in Colorado after the system of the Mexicans, which consists in the excavation of acequias or ditches, often several miles in length, by which the water of the streams taken out at an upper level is carried at this elevation past the farming lands, over which it is let out as occasion requires by tapping the acequias at any desired points. The cultivation is thus limited to lands lying below the level of the acequias; and such lands are met with of considerable extent along most of the streams, spreading out to great width, even before these have fairly emerged from the mountains. Very productive and extensive farms thus situated are seen running up among the basaltic hills on Clear creek, and similar improvements extend all along this stream to its mouth below Denver. The streams north of it, so far as and including the Cache à Poudre, afford the same advantages for cultivation of the soil, and along most of them the lands are occupied in continuous lines of farms. In the newness of the country, which has been occupied only two or three years, the crops are limited to a few of the most necessary articles. Flour being supplied to the Territory from the States and New Mexico, the cultivation of wheat is not so important as of the more bulky articles, which will not pay for transportation from such distances. Some wheat, however, is raised, and the crop is a successful one. But attention is chiefly directed to procuring the large supplies of hay, corn, oats, and vegetables, required by the numerous gold-mining population in the mountains. The hay being made from the wild prairie grass, its supply is limited only by the amount of labor employed in cutting and stacking it; still, owing to an overstock of it the previous year, the quantity put up in 1863 has proved too small for the demands of the country, increased as they are by the extraordinary accumulations of snow, which, covering the plains, cut off the herds of cattle and horses, with which the country is abundantly stocked, from their accustomed support by grazing during the winter. This, together with the obstructed condition of the roads, caused the price of hay in December last to rise to $105 per ton at the gold mines. Corn, which is a good crop, and may be raised to any extent along the streams, was worth at the same time nine or ten cents per pound. Potatoes are produced in abundance, as also onions, cabbages, and many other vegetables; but in this unpropitious season the prices of all these range very high. Onions are raised with scarcely any of the labor attending their cultivation in the States, yet they were from ten to twelve cents a pound. They grow so luxuriantly that a single one often weighs more than a pound. Such prices cannot be sustained in a favorable season, and particularly when the country is supplied with a more numerous agricultural population.

It is an important question, whether the cultivation of these prairies is always to be limited to those portions capable of being irrigated only by the system now in use. The mountains, it appears, are abundantly provided with water, derived chiefly from the melting of the snows in the great Central Range. A large part of this, without doubt, penetrates under the stratified rocks, which on both sides dip away from the mountains. These waters probably flow in underground channels far from the mountains, and if tapped by artesian wells sunk down to them, they might reasonably be expected to rise to the surface in never-failing springs. The stratification of the country is certainly remarkably encouraging to such an enterprise; and another inducement to its prosecution would be the discovery of the mineral beds, whatever they may be, beneath the surface. This would be a certain and most economical method of determining the existence or non-existence of beds of coal in localities where it might be especially desirable to obtain this fuel. Artesian wells must at some time be exceedingly useful at Laramie plains, which are not so well watered as the country east of the mountains. These plains, hitherto entirely uncultivated,
54 UNION PACIFIC RAILROAD.

afford in places good pasturage, and a considerable amount of prairie-grass hay for the use of the overland stage line and of emigrants.

I left Colorado on the 19th of December, and being delayed several days in my journey through Iowa by the extreme severity of the winter season, arrived in New York on the 9th of January.

Very respectfully, I am yours,

JAMES T. HODGE.

NEW YORK, January 22, 1864.

NEW YORK, February 13, 1864.

DEAR SIR: I have carefully examined and analyzed the samples of coal that you brought from the Rocky mountains and placed in my hands. The specimens, according to the labels attached to them, are from two localities, viz: Coal creek and Boulder creek.

Those from the former place were taken, as you state, from a bed more than ten feet in thickness. The mineral has nearly the hardness of ordinary anthracite, but is much more brittle. The fragments are often cuboidal or rhomboidal, and in some of them a little amber was detected. The lustre is bright and shining. The coal does not stain the fingers. The powder is black when viewed in a heap, but when a thin film of it is spread upon a white surface it has a slight tint of brown—specific gravity, 1.29. When heated in a glass tube, the temperature of which is gradually raised to 400° or 500° F., it gives off water, the last portions of which contain a little empyreumatic oil or tar. At a dull red heat it takes fire, burning with a bright yellow and smoking flame, emitting an odor between that of heated bituminous coal and that of imperfectly burning wood. Some of the fragments gave out a slight odor of sulphur, which was traced to minute scales and spangles of iron pyrites scattered here and there among the lumps. Compared, however, with most bituminous coals, this mineral fuel is remarkably free from sulphur. When submitted to analysis, it yielded the following results:

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water in a state of combination, or probably its elements</td>
<td>20.00</td>
</tr>
<tr>
<td>Volatile matter, expelled at a red heat in the form of inflammable gases and vapors</td>
<td>19.30</td>
</tr>
<tr>
<td>Fixed carbon</td>
<td>58.70</td>
</tr>
<tr>
<td>Ash, consisting chiefly of oxide of iron, alumina, and a little silica</td>
<td>2.00</td>
</tr>
</tbody>
</table>

The ash is mostly reddish, but sometimes light gray. Another specimen contained only 16 per cent. of water.

The coal from Boulder creek, which occurs in a bed four feet thick, and in another ten feet, has a general resemblance to that from the other locality. It is, however, more dense, having a specific gravity of 1.4, and is less brittle, and the fracture is not so glossy. It contains also flakes of mineral charcoal scattered through the mass, and the proportions of its constituents differ considerably from those of the Coal Creek bed, it being a stronger fuel. It contains a little sulphur, like the other. The composition is as follows, viz:

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water in a state of combination, or its elements</td>
<td>12.00</td>
</tr>
<tr>
<td>Volatile matter expelled at a red heat in the form of inflammable gases and vapors</td>
<td>26.00</td>
</tr>
<tr>
<td>Fixed carbon</td>
<td>59.20</td>
</tr>
<tr>
<td>Ash, of a reddish color, or sometimes gray</td>
<td>2.80</td>
</tr>
</tbody>
</table>

100.00
From the characters and analyses of the specimens here described, it will be seen that the Rocky Mountain coal belongs to the class of lignites, and that it is not technically a bituminous coal, neither cannel nor an anthracite. Still, in common parlance, it will be regarded as coal. The geological character of the rocks in which the mineral is found will, I suppose, be given by yourself and Professor Hall. In calorific power the Rocky Mountain coal may be placed between dry wood and bituminous coal, and therefore it is a most valuable fuel, especially where bituminous coal and anthracite are not likely ever to be found, and firewood is difficult to procure. I see no reason why it may not be used for the melting of iron and other ores. For locomotives it could be employed to advantage, with some modification of the fireplace. The ash is so small in quantity, and so light, that most of it would be carried off by the blast of the furnace. From my own trials I find that the coal burns freely in a small stove, making a hot and clear fire, and leaving no clinkers. The specimens that I have examined show a tendency to break up and crumble after they have been soaked with water and allowed to dry, so that it would be well to preserve the coal as much as possible from being wet by rain. The lumps that you brought home from your journey show no disposition to crumble in a dry place.

In conclusion, I remark that the discovery of such extensive beds of a good mineral fuel is of the highest importance to the section of country in which they occur.

The iron is limonite, commonly known by the name of brown hematite or brown iron ore. It is a compact variety, and is certainly derived from carbonate of iron, some of which, in an unaltered state, is evident in one of the specimens. The carbonate will probably be found in larger proportion as the beds are worked further in beyond the reach of atmospheric influence. There is reason to believe that the iron obtained from this ore will be of good quality.

Yours respectfully,

JOHN TORREY

J. T. HUDDLE, Esq.,

APPENDIX No. 3.

REPORT OF F. M. CASE, CIVIL ENGINEER.

COLORADO TERRITORY, Denver, August 15, 1862.

Sir: In submitting to you this report of my late instrumental reconnaissance of the Berthoud Pass and its eastern approach, with the view of its being by you laid before the board of corporators of the Pacific railroad, I am aware that the facts which will be of real interest to practical railroad men are very meagre; yet, as many misrepresentations have been made upon mere opinion, the few facts I have gleaned may be of interest to the board of corporators, of which you are a member.

I have had a connected line of levels run from the Platte river (at the upper bridge in Denver) to the summit of the pass, and two and three-fourth miles down Moses creek, on the Pacific slope.

From one mile below Empire City, a transit line has been run over the pass; levels have been run up Clear creek a mile and a half above the mouth of Hoopes creek, opposite the pass, and also from Empire City to the low pass between Bard creek and the south fork of Clear creek. Between this low pass and Georgetown, one and three-fourth miles south, the relative elevations have been ascertained by barometric observations by Dr. Parry, a gentleman who is spending the summer near the range, making scientific explorations.
I submit herewith a map of the route from about one and a fourth mile below Empire City, westward, embracing the pass, giving a very fair representation of the topography of the country in the vicinity of the pass, with the relative elevations at certain points as ascertained by the levels. Upon this map I have drawn a proposed location of a railroad line, which, in my opinion, will be near the most practicable route for the real location. The length of the tunnel I make three and a half miles. I have made this length by supposing an up grade of fifty feet to the mile, running westward in the tunnel from the entrance for two miles, and thence running a down grade of ten feet to the mile to the exit.

An up grade in the tunnel of 100 feet to the mile for the first two miles, instead of 50, would shorten the tunnel about one-fourth of a mile. The grade, as you will notice, is less than 116 feet to the mile from the forks below Empire City to the tunnel, but the equation for curvature on the line I have drawn would probably bring the grade up to this maximum.

This range of mountains, on its eastern slope, being subject to a very considerably less fall of rain during the year than the Alleghanies or New England mountains, are much less disintegrated, and are fitly called "Rocky mountains." The mountains on either side of the valley of Clear creek are "rugged," with frequent points of rocks projecting into the valley. For this reason I have drawn the lines so as to get down into the valley with the grade as soon as possible. Yet, let me say here, that the granite of these mountains is of a very different quality from the eastern granite. It is very much softer, and, in cuts near the surface, could be removed without blasting. Experience in mining for gold has shown that the granite 200 feet below the surface is also of a much softer quality than the eastern granite.

I might say in this connection that there would be a possibility of striking rich gold lodes in the construction of the tunnel, for it is in the "gold belt," there being lodes on each side of the pass; yet I should not like to undertake the construction of the tunnel with the understanding that I should take this "possibility" in part pay.

Of the western approach to the pass I will hazard no opinion as to gradients or courses. The western slope of the range seems to be covered with a much deeper soil, as it is covered with a much denser foliage, which is doubtless owing to the arrest and precipitation of the spring and summer rains by the snow of the range, the prevailing winds being northwesterly. This fact, in case of having to keep the mountain sides to get down to the valley of the Grand river, would render the cost of construction much less than upon the eastern slope.

I have made considerable inquiry as to the winter snows in the neighborhood of the pass, and find that at Empire City they have wintered cattle every winter without hay. From all the statements of settlers, on the experience of three winters, I am of the opinion that the winter snows would form no serious obstacle to the running of railroad trains from the tunnel eastward. About three-fourths of a mile from the pass, on the western slope, we passed a camp where a family were snow-bound, last winter, for some weeks, and, judging from the height of the stumps of trees cut by them while they were there, should think the snow must have been 5 or 6 feet deep. This depth, from all the information I can glean, would be a fair average for about 15 or 20 miles west of the range in the vicinity of the pass. The prevailing winds being from the northwest, the snow piles in immense drifts on the southeastern slopes of the range. These slopes, in the vicinity of the pass, being very precipitous near the summit, arrest the snows before they reach the valley of Clear creek. This fact may account for the light fall of snow near Empire City.

In this connection, let me call your attention to another fact, resulting from our peculiar climate. The streams, in the mountains, are not subject to the sudden rise and fall of eastern streams. Fed, as they are, by the melting snows
and regular diurnal rains, they rise gradually until they reach their maximum height, usually about the middle of July, and then as gradually recede. This known fact might materially lessen the expense of construction of a railroad up the valley of Clear creek, in keeping the grade nearer the surface of the water, and in not having to guard against the sudden rise of the stream.

I also submit a sketch of the valley of Clear creek, from Empire City to near its junction with the Platte, which, I think, is approximately correct, showing the general course of the creek, and the relative position of the different points at which elevations were taken. I have copied part of this sketch from my official maps, part from a survey of the first 10 miles of the cañon of Clear creek, above Golden City, made by Mr. F. J. Ebert, of this place, and the balance from a map of Mr. E. L. Bertheud, of Golden City.

The following table will show very nearly the distances between the points at which I have ascertained the elevations above the Platte and Denver, along the proposed route from Denver, westward to the pass:

<table>
<thead>
<tr>
<th>Places</th>
<th>Distance, Miles</th>
<th>Elevation, Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platte river at Denver</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Divide between Denver and Golden City</td>
<td>7.5</td>
<td>544</td>
</tr>
<tr>
<td>Golden City</td>
<td>5.0</td>
<td>500</td>
</tr>
<tr>
<td>Ten miles up the cañon</td>
<td>10.0</td>
<td>1,580</td>
</tr>
<tr>
<td>Where Idaho road enters valley of Clear creek</td>
<td>6.8</td>
<td>2,019</td>
</tr>
<tr>
<td>Idaho</td>
<td>5.2</td>
<td>2,395</td>
</tr>
<tr>
<td>Forks of Clear creek below Empire City</td>
<td>7.3</td>
<td>3,117</td>
</tr>
<tr>
<td>Georgetown</td>
<td>4.0</td>
<td>3,519</td>
</tr>
<tr>
<td>Entrance of tunnel</td>
<td>12.0</td>
<td>4,820</td>
</tr>
<tr>
<td><strong>Total distance from Denver</strong></td>
<td><strong>57.8</strong></td>
<td></td>
</tr>
</tbody>
</table>

In entering the cañon of Clear creek, either from Denver or the mouth of Clear creek, the road can go into the cañon from one to five hundred feet above the water of the creek, if a better line can be found at such elevation.

Of the cost of construction of a railroad from Golden City to the entrance of the tunnel, I cannot, of course, make an estimate upon this reconnaissance, but should say the expense would not be greater than the average of eastern mountain roads for the same distance.

In making this reconnaissance, I am under obligations to Mr. John Pierce, of Denver, a railroad engineer of many years' experience, for his volunteer services on the survey. Mr. F. W. Beebe, of Idaho, another very good engineer, and former acquaintance of mine in Ohio, ran the levels from Empire City over the pass. Mr. W. L. Campbell, of Empire City, formerly an engineer on the Clinton Line railroad, in Ohio, ran the transit line over the pass.

Hoping these few facts may be of service to you and the board of corporators of the Pacific railroad, I am, very truly, your obedient servant,

FRANCIS M. CASE,

Hon. JOHN EVANS,
Surveyor General of Colorado and Utah.

Governor of Colorado Territory.
STANDING COMMITTEES.


Committee to memorialize Congress.—William B. Ogden, chairman; H. V. Poor, E. H. Rosekrans, J. J. Blair, H. S. McComb, C. A. Lambard, J. H. Scranton.

The stockholders of the Union Pacific Railroad Company:

The proceedings of the incorporators and commissioners appointed by the charter of the company for its organization, and of the officers of the company in procuring subscriptions, the election of directors by the subscribers to its capital stock, the action of the directors after their election, the measures adopted by the executive committee for commencing the work of construction, and for pushing it on with all possible despatch, have been printed for your information, together with the reports of the engineers in regard to their examination of the different routes for the purpose of selecting the one most eligible.

The information presented on all these points will show you that no time has been lost, and no exertion spared, to respond to the wishes of Congress and the country that this great national enterprise should be commenced and prosecuted with all practicable vigor.

The eastern termination of the road having been fixed by the President of the United States in the township of which the city of Omaha is a part, directions were given to break ground on the 2d of December last. These directions were carried into execution, and the commencement of the work was inaugurated with appropriate ceremonies.

The directors of the company have followed up these preliminary measures by contracting for rails, ties, locomotives and cars, and have commenced in earnest the work of grading. The expenditures for these objects within this and the ensuing two months, including the work already done, will not fall short of $800,000.

Five corps of engineers have been organized, one of which is employed in the construction of the road, and four others are ordered to the mountains to complete the preliminary surveys.

Your careful scrutiny of the recorded proceedings of the company is earnestly invited, not only that you may be satisfied as to the strict conformity to the requirements of the act of Congress providing for its incorporation, but with the zeal and determination with which the directors have entered upon the work of construction.

New York, April 2, 1864.

John A. Dix, President.
Annual report of the Union Pacific Railroad Company to the Secretary of the Treasury, made in pursuance of section 20 of an act of Congress entitled "An act to aid in the construction of a railroad and telegraph line from the Missouri river to the Pacific ocean, and to secure to the government the use of the same for postal, military, and other purposes," approved July 1, 1862.

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Annual report of the Union Pacific Railroad Company, &c.—Continued.

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Directors.—George Opdyke, New York; John A. Dix, New York; Thomas C. Durant, New York; Corn's S. Bushnell, New Haven; Brigham Young, Salt Lake City; C. H. McCormick, Chicago; John F. Tracy, Chicago; Ebenezer Cook, Davenport; John J. Cisco, New York; Enoch H. Rosekrans, Glenn's Falls; H. S. McComb, Wilmington, Delaware; Pickering Clark, New York; Charles Tuttle, New York; C. A. Lambard, Boston; John E. Henry, Davenport.


The total amount of stock subscribed to January 1, 1866, was 28,570 shares, on which there has been paid from 10 to 20 per cent., amounting to four hundred thousand nine hundred and fifty dollars, (say $400,950.)

SURVEYS.

1st. The line from station 150 west of Omaha to station 900 was changed from the location as filed and approved by the President of the United States, in order to reduce the maximum grades from 80 to 30 feet per mile.

2d. A located line was run from the end of the first 100 miles over the second 100 miles to the vicinity of Fort Kearney.

3d. Experimental lines were run in both directions, obliquely across the divide between the valley of the Platte river and the valley of the Republican river, east of the 100th meridian of longitude.

4th. An experimental line was run from the west end of the second 100 miles up the valleys of the Main Platte, South Platte, and Cache-la-Poudre rivers to La Porte.

5th. The line of 1864, from La Porte up the valley of the Cache-la-Poudre to Antelope Pass, was resurveyed.

6th. An experimental line was run from Camp Walbach, in the valley of Lodge Pole creek, along the divide between the Lodge Pole and Crow creeks, to an intersection with the Cache-la-Poudre line on Laramie plains.

7th. The line of 1864, around the sand-hills on the south side of Weber river, was resurveyed and thrown further up on the northwestern slope of the Wasatch mountains.

8th. The line of 1864 was also revised at the head of Echo creek.

9th. An experimental line was run from station 7,461, of the survey of 1864, in the valley of Black's Fork, thence up the valleys of Harris's Fork, the Sandy and Pacific creeks, to the South Pass, and thence down a small stream to the valley of the Sweet Water.

10th. An experimental line was also run from station 8,201, of the survey of
1864, in the valley of Black’s Fork; thence down that valley and over the divide between Black’s Fork and Green river; thence down the valley of Green river to the mouth of Bitter creek, and an intersection with the surveys of 1864.

11th. An experimental line was also run from Great Salt Lake City westerly across the Cedar mountains, the Desert and the Humboldt mountains, to the valley of the Humboldt river, a distance of 208 8-10 miles.

This also embraces an instrumental examination of several routes (between fixed points on the main line) across the Cedar and Humboldt mountains.

There has been no passenger or freight traffic on the road; consequently there were no receipts from either.

The total cost of the surveys to date was $205,012 12. Statement of the expense of said road and its fixtures, $4,811,266 83. Statement of indebtedness: total amount, $4,308,537 32; consisting of—due for construction, $2,984,835 80; due for loans and bills payable, $1,323,701 52.

JOHN A. DIX,
President Union Pacific Railroad Company.

NEW YORK, January 1, 1866.

STATE OF NEW YORK, City and County of New York, ss:

John A. Dix, president of the Union Pacific Railroad Company, being duly sworn, deposes and saith, that the foregoing statements in the annual report of the said railroad company, so far as he knows of his own knowledge, are true, and so far as his information is derived from the books and employes of the company, he believes to be true.

JOHN A. DIX,
President Union Pacific Railroad Company.

Sworn and subscribed before me, this 22d day of June, 1866. Witness my hand and notarial seal.

JETUR GARDINER, [SEAL.]
Notary Public.

Annual report of the Union Pacific Railroad Company to the Secretary of the Treasury, made in pursuance of section 20 of an act of Congress entitled “An act to aid in the construction of a railroad and telegraph line from the Missouri river to the Pacific ocean, and to secure to the government the use of the same for postal, military, and other purposes,” approved July 1, 1862.

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<td>Lanier, J. F. D., New York</td>
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<tr>
<td>Lombard, H. J., Philadelphia, Penn</td>
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<tr>
<td>Low, A. A., New York</td>
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<td>Lambard, G. A., Boston, Mass</td>
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<td>McCobb, H. S., Wilmington, Del</td>
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<td>Merriman &amp; Bell, New York</td>
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<td>McCready, F. H., New York</td>
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<td>McAndrews &amp; Wann, New York</td>
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<td>Maxwell, John D., New York</td>
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<td>McPherson, Wm. M., St. Louis, Mo</td>
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<tr>
<td>McCormick, John, Omaha, Neb. T</td>
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<tr>
<td>Meggith, James G.</td>
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<td>Nye, E., Brooklyn, New York</td>
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<td>Ogden, William B., Chicago, Ill</td>
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<td>Odpyke, George, New York</td>
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<tr>
<td>Pratt, G. W., New York</td>
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<td>Price, J. M., New York</td>
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<tr>
<td>Pruyn, J. V. L., Albany, N. Y</td>
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<tr>
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<td>Richards, S. S., New York</td>
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<td>Rickley, John, Omaha, Neb. T</td>
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<td>Roberts, M. O., New York</td>
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<td>Scott, Thomas A., Philadelphia</td>
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<td>Scranton, J. H., Scranton, Penn</td>
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<td>Swesser, William J., Omaha, Neb. T</td>
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<td>Tuttle, Charles, New York</td>
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<td>Thompson, J. Edgar, Philadelphia</td>
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<td>Train, George F., New York</td>
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<td>Tracy, J. F., Chicago, Illinois</td>
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<td>Traver, W. R., New York</td>
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<tr>
<td>Train, Willie D., New York</td>
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<td>Tilden, William, New York</td>
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<td>Thayer, Nathaniel, Boston</td>
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<td>Tiffany &amp; Co., New York</td>
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<td>Tilden, S. J., New York</td>
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<td>Taylor, Moses, New York</td>
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<td>Van Schick &amp; Massett, New York</td>
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<td>Winslow, Lanier &amp; Co., New York</td>
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<td>Wright, J. B., New York</td>
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<td>Williams &amp; Guion, New York</td>
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<td>Williams, John M. S., New York</td>
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<td>Weed, Thurlow, Alban, New York</td>
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<td>Williams, N. S., Iowa</td>
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<td>Winston, F. S., New York</td>
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<tr>
<td>Young, Brigham, Salt Lake City, U.</td>
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</tr>
</tbody>
</table>

### Directors

- George Odyke, New York; John A. Dix, New York; Thomas C. Durant, New York; William B. Ogden, Chicago, Illinois; Corns S. Bushnell, New Haven, Connecticut; Brigham Young, Great Salt Lake City, Utah; John J. Blair, Belvidere, New Jersey; S. C. Pomeroy, Atchison, Kansas; J. F. D. Lanier, New York; George T. M. Davis, New York; J. F. Tracy, Chicago, Illinois; H. V. Poor, New York; E. Cook, Davenport, Iowa; Ang's Kountze, Omaha, Nebraska; August Belmont, New York; E. W. Dunham, New York; E. T. H. Gibson, New York; E. H. Rosekrans, Glen's Falls, New York; Luther C. Clark, New York; H. S. McComb, Wilmington, Delaware; Jos. H. Scranton,


Officers.—General John A. Dix, president; Thomas C. Durant, vice-president; John J. Cisco, treasurer; Henry V. Poor, secretary.

The whole amount of stock subscribed is two thousand one hundred and seventy-seven shares, (2,177) of one thousand dollars each, ($1,000,) upon which has been paid ten (10) per cent., amounting to two hundred and seventeen thousand seven hundred dollars, ($217,700.)

Up to the present time the company have caused to be surveyed six different lines from the Missouri river between the mouths of the Platte and Boyer rivers to a common point of junction near Fremont, in Nebraska, described by the engineer in charge as follows:

The north line, as indicated on the map that accompanies this, passes over nearly the same ground as the survey made by the Cedar Rapids and Missouri River Railroad Company, except on the west, where, instead of following the valley of Bell Creek to the Elkhorn, their line runs north, and crosses another summit, deviating from the direction to the north bend of the Platte, and evidently increasing distance and grades without any equivalent.

The second line starts from the north line of the congressional township in which the city of Omaha is located, and, running through Florence, passes up Mill creek, over the broken ground, into the East and Main Pappillion creeks, and thence northerly, making a summit between one of the branches of this stream and Walnut creek, which it follows to the Elkhorn. The work on this line is so heavy that it does not favorably compare with either of the other surveys.

The third line starts from a point on the Missouri bottom, near Omaha, and, running at first northerly, it curves and crosses the first ridge back of the State-house; thence running down the valley of Saddle creek to near its mouth, crosses the dividing ridge between the Pappillion creeks, and unites with the fourth near Paddock's Grove.

The fourth line starts from the south end of the city of Omaha, and, running up the valley of a small stream, reaches the valley of the Pappillion creeks, near their junction; then follows the main stream to Paddock's Grove, and running thence westerly over the high prairie, cuts the ridge at the Elkhorn, at a very low depression, and reaches the valley of the Platte, with a distance of 21 miles.

The fifth line starts from Bellevue, runs up the main and West Pappillion valleys, and unites with the fourth about five miles from where it crosses the ridge into the Platte valley.

The sixth line follows the valley of the Platte from its mouth to a common point of junction of all the lines near Fremont.

The company have fixed upon what is described above as the "fourth line" for the construction of the road.

The company have also caused to be surveyed a route in the mountains through the Cheyenne and Bridger's passes, by B. B. Brayton, esq., for the particulars of which you are referred to his report, appendix No. 1 B, in the "Report of the organization and proceedings of the Union Pacific Railroad Company," herewith submitted and made part of this report.

The company have also had a preliminary survey made by Joseph A. Young, esq., civil engineer, from Great Salt Lake City, eastward, the particulars of which appear in the letters of Governor Brigham Young and the report of the engineer, (see appendix No. 1 C,) of the reports heretofore referred to.

No line has been fixed upon for the construction of the road except the one from Omaha described in Mr. Dey's report as the "fourth line."

The cost of the survey, up to January 1, 1864, cannot be correctly stated, because much of the expenditures were for outfits which are common to the surveys of the last and present years. The estimate is about $10,000.

No part of the road of this company being completed, of course there have been no receipts from either passengers or freight, and the same reason renders an answer as to "a statement of the expenses of said road and its fixtures," unnecessary.
The company owe no debts at this date. It has made contracts for iron and other materials for construction, locomotive engines, cars, &c., to be paid when the articles are delivered.

JOHN A. DIX, President.

NEW YORK, January, 1864.

OFFICE OF THE UNION PACIFIC RAILROAD COMPANY.

SIR: In accordance with the provisions of section 20 of the act of Congress approved July 1, 1862, I have the honor to submit in behalf of the Union Pacific Railroad Company the following annual report, extending from January 1, 1866, to December 31, 1866, inclusive.

First. The names of the stockholders, and their places of residence so far as the same can be ascertained, are as follows:

Sidney Dillon, New York; C. S. Chapman, Boston; William P. Gliddon, Boston; John Duff, Boston; Oliver Ames, Boston; J. M. S. Williams, Boston; Frederick Nickerson, Massachusetts; R. G. Hazard, Rhode Island; Charles A. Lambard, Massachusetts; Oakes Ames, Massachusetts; James W. Grimes, Iowa; Paul Pohl, jr., Pennsylvania; Elisha Atkin, Massachusetts; William H. Macy, New York; Rowland Hazard, Rhode Island; Isaac P. Hazard, Rhode Island; Samuel Hooper & Co., Massachusetts; Joseph Nicherson, Massachusetts; G. Griswold Gray, New York; J. H. Baker, Massachusetts; Thomas Nickerson, Massachusetts; E. A. Meyer, Pennsylvania; J. B. Alley, Massachusetts; W. D. Forbes, Massachusetts; E. W. Gilmore, Massachusetts; H. S. McComb, Delaware; George Opdyke, New York; Oliver W. Barnes, Pennsylvania; H. Winthrop Gray, New York; Cyrus H. McCormick, Illinois; L. Eugene French, New York; H. I. Gilbert, Massachusetts; Horatio Gilbert, Massachusetts; Charles M. Hall, Pennsylvania; Josiah Bardwell, Massachusetts; Benjamin E. Bates, Massachusetts; C. S. Bushnell, Connecticut; Ben. Hallday, New York; John A. Dix, New York; Charles Tuttle, New York; John F. Tracey, Illinois; John J. Cisco, New York; Pickering Clark, New York; William F. Durant, Iowa; John L. King, Massachusetts; B. D. Stewart, Pennsylvania; George Francis Train, New York; Williams & Guion, Massachusetts; J. H. Scranton, Pennsylvania; David Jones, New York; C. C. Waite, Illinois; H. C. Crane, New York; Thomas C. Durant, New York.

Second. The names and residences of the directors and all other officers of the company are as follows:

Oliver Ames, president pro tem.; John A. Dix, president; Thomas C. Durant, vice-president; John J. Cisco, treasurer; Charles Tuttle, secretary.

DIRECTORS.


GOVERNMENT DIRECTORS.

Springer Harbaugh, Pittsburgh, Pennsylvania; T. J. Carter, New York; George Ashman, Springfield, Massachusetts; George T. Sherman, Cleveland, Ohio; J. L. Williams, Fort Wayne, Indiana.

Third. The amount of stock subscribed is six million seven hundred and fourteen thousand dollars, ($6,714,000,) and the amount thereof actually paid in
is five million three hundred and nineteen thousand two hundred and eighty dollars, ($5,319,280.)

Fourth. A description of the lines of road surveyed, of the lines thereof fixed upon for the construction of the road, and the cost of such surveys, is as follows:

Surveys have been made up the valley of Lodge Pole creek, Lone Tree creek, Crow creek, Pawnee creek, Cut Bluff creek, at the head of the great Platte valley, and over the Black Hill range of the Rocky mountains to the Laramie river in the Laramie plains. Also, up the Laramie river canyon, and west of Denver City, up the valley of Clear creek and its tributaries, across Bethoud's pass to the valley of Moses creek; also over summit of the head of Boulder creek, all which surveys have resulted in the adoption by the company of a located line for the construction of the road following up the Platte valley to the mouth of Lodge Pole creek; thence up the valley of Lodge Pole creek and across the divide between Lodge Pole and Crow creek to the eastern base of the Rocky mountains; thence across Crow creek and following the divide between Crow creek and Lone Tree creek to the summit of the Black Hill range of the Rocky mountains at Evans pass; thence obliquely down the westerly slope of the Black Hill range to the Laramie plains and the crossing of the Laramie river, which western point of final location is — miles west of the initial point on the west bank of the Missouri river at Omaha.

Instrumental surveys have also been made from the westerly end of the surveys of 1865 to an intersection with the Central Pacific railroad of California at the east line of the State of California, which, with the surveys previously made, forms an unbroken line of instrumental surveys across the continent.

The cost of the foregoing surveys has been $150,000.

The extent of line surveyed upon the different routes has been 2,318 miles, in addition to which marches and reconnaissances, incidental thereto, have been made equal to 3,756 miles.

Fifth and Sixth. The road has been operated by the contractors, and therefore nothing has been received for freight or passengers.

Seventh. A statement of the expense of the road and its fixtures is as follows:

The entire cost for 305 miles of the road, including equipment, is $16,522,742.81.

Eighth. A statement of the various kinds of indebtedness of the company is as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States government</td>
<td>$4,320,000</td>
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<tr>
<td>Bills payable and loans</td>
<td>3,770,998.43</td>
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<tr>
<td>Total</td>
<td>8,090,998.43</td>
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</table>

OLIVER AMES,
President pro tempore of Union Pacific Railroad.

STATE OF NEW YORK, City and County of New York:
Oliver Ames, President pro tempore of the Union Pacific Railroad Company, being duly sworn, deposeth and saith, that the foregoing statements in the annual report of the said railroad company, so far as he knows of his own knowledge, are true, and so far as his information is derived from the books and employes of the company, he believes to be true.

OLIVER AMES,
President pro tempore of Union Pacific Railroad Company.

Subscribed and sworn to before me, this 28th day of June, 1867.

T. B. WAKEMAN,
Notary Public New York City and County.

H. Ex. Doc. 253—5
Sacramento, California, June 1, 1863.

I have the honor to submit herewith the annual report of the Central Pacific Railroad Company of California, in accordance with section 20 of an act of Congress entitled "An act to aid in the construction of a railroad and telegraph line from the Missouri river to the Pacific ocean, and to secure to the government the use of the same for postal, military, and other purposes," approved July 1, 1862.

Present Condition of the Road.

Of the first section of 20 miles, the grading of which is contracted for, there are 14 miles already graded, and the balance will be finished and in running order during the month of November of the present year.

Proposals for the grading, bridging, and masonry of an additional 30 miles are advertised, and the work will progress rapidly as soon as the several bids are received.

The iron for 70 miles of the road has been purchased, and a portion of it is already on its way to California. The necessary rolling stock has also been purchased for the equipment of the said 70 miles of road. A long and very expensive bridge across the American river near Sacramento is being rapidly built, and will be completed with the grading of the first 20 miles of the road.

The last legislature of this State passed an act donating $10,000 per mile to the first 50 miles of road completed from Sacramento, and also several acts authorizing the counties of San Francisco, Sacramento, and Placer to submit to the vote of the people of those counties the question of making county subscriptions to the stock of the Central Pacific Railroad Company of California. The question has been submitted to the people of those counties, and carried by large majorities in favor of subscribing stock to the road, as follows:

San Francisco county ........................................... $600,000
Sacramento county ............................................. 300,000
Placer county .................................................. 250,000

Total ......................................................... 1,150,000

Report.

1st. The names and residence of the stockholders of the Central Pacific Railroad Company of California will be found in schedule A, accompanying this report.

2d. The names and residence of the directors and other officers of the company will be found in schedule B.

3d. The amount of stock subscribed is $711,500; the amount actually paid in is $210,930.

4th. A description of the lines surveyed will be found in schedule C, furnished by the chief engineer of the road. Cost of surveys, $33,888 64.

5th. Amount received from passengers, nothing.

6th. Amount received for freight, nothing.

7th. Expenses of road, nothing.
8th. Indebtedness of the company:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds issued for purchase of iron and materials</td>
<td>$400,000.00</td>
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<tr>
<td>Due C. Crocker &amp; Co. on account of contract for construction</td>
<td>57,249.54</td>
</tr>
</tbody>
</table>

Total indebtedness of the company: 457,249.54

LELAND STANFORD,

President Central Pacific R. R. Co. of California.

Hon. SALMON P. CHASE,

Secretary of the Treasury, Washington, D. C.

Sworn to and subscribed before me this 2d day of June, 1863.

[SEAL]

WM. G. ENGLISH,

Notary Public, Sacramento County, California.

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Schedule A.

WASHINGTON, April 3, 1865.

SIR: Herewith I have the honor to submit for your consideration the third annual report of the Central Pacific Railroad Company of California, and three several reports of the chief engineer, in accordance with the provisions of section 20 of the act entitled "An act to aid in the construction of a railroad and telegraph line from the Missouri river to the Pacific ocean, and to secure to the government the use of the same for postal, military, and other purposes," approved July 1, 1862.

My address is Room 161, Willards' Hotel.

With great respect, &c., your obedient servant,

C. P. HUNTINGTON,
V. P. and Attorney in fact.

Hon. HUGH McCULLOCH,
Secretary of the Treasury.
First. The following are the names of the stockholders of said company and their places of residence, so far as the same can be ascertained, to wit:


Second. The following are the names of the directors and other officers of the company, and their places of residence:

Directors.—Leland Stanford, Mark Hopkins, C. P. Huntington, E. B. Crocker, Sacramento City, California; D. W. Strong, Dutch Flat, California; A. P. Stanford, San Francisco, California; L. A. Booth, Sacramento City, California; Charles Marsh, Nevada City, California; E. H. Miller, jr., Sacramento, City California.

President.—Leland Stanford, Sacramento City, California.

Vice-President.—C. P. Huntington, Sacramento City, California.

Treasurer.—Mark Hopkins, Sacramento City, California.

Secretary.—E. H. Miller, jr., Sacramento City, California.

Acting Chief Engineer.—Samuel S. Montague, Sacramento City, California.

Attorney.—E. B. Crocker, Sacramento city, California.

Third. The amount of the capital stock of said company subscribed is $1,387,600. The amount thereof actually paid in is $1,600,552.05, of which there has been paid, in cash, $510,552.05; in the bonds of the county of Sacramento $300,000, and in the bonds of the county of Placer $250,000.

Fourth. The following is a description of the lines of road surveyed for said company, to wit: A line commencing on the east bank of the Sacramento river, at the foot of K street, in the city of Sacramento, thence through the city
of Sacramento to the American river, at a point known as “Muldrow’s old ferry, thence across the American river and the bottom land thereof to the high land on the north side of said river, thence in a direct line to the town of Lincoln; also a line from a point where the first line touches said high lands, north of the American river, in a direct line to a point on the California Central railroad, known as Pleasant Grove; also another line from said point on said high lands, in a direct line to a point on the California Central railroad, known as Leet’s Ranch; also another line from said point on said high lands to a point on said California Central railroad, known as Gridler’s Ranch; also a line from said last-named point on the California Central railroad up Miner’s Ravine, by the Mountaineer House, Newcastle Gap and Auburn, to Clipper Gap; also a line from said last-named point on the California Central railroad, by way of Secret Ravine, to Newcastle Gap; also a line from said point on California Central railroad, by the way of Antelope Ravine, to Newcastle Gap; also a line from Lincoln, by way of Doty’s Ravine and Dry Creek, to Clipper Gap; also a line from a point where said last-named line crosses Doty’s creek, up said creek, by way of Millertown, to a point on said last-named line near Neilburg; also a line from Clipper Gap, upon and following the ridge of land between Bear river and the north fork of the American river, by way of Illinoistown, Secrettown, Cold Springs and Dutch Flat, to the valley of the South Yuba, up the valley of the South Yuba to the summit of the Sierra Nevada mountains, at a pass known as the Donner Lake Pass; thence down the eastern slope of said mountains to the Truckee river; thence down the Truckee river to a point known as the Big Bend of the Truckee; thence in an easterly direction towards Salt Lake, a distance of five miles.

And the following is a description of the lines thereof fixed upon by said company for the construction of that portion of said railroad lying east of the city of Sacramento, to wit: commencing on the bank of the Sacramento river, at the foot of K street, in the city of Sacramento; thence to the eastern line of said city, near the termination of B street; thence to said point known as Muldrow’s old ferry; thence crossing said American river to the high lands north of the same; thence in a nearly direct line to a point on the California Central railroad near Gridler’s House; thence up the ridge of land between Antelope and Secret Ravines to a point known as Newcastle Gap; thence up Dutch Ravine to a point near the Bloomer Ranch, thence across said ravine and across the heads of Baltimore Ravine to Auburn Ravine, above the town of Auburn; thence up the ridge of land on the west side of the north fork of the American river, and between that river and Bear river, by way of or near to Neilburg; Clipper Gap, Illinoistown, Secrettown, Dutch Flat, to the valley of the South Yuba river; thence up said valley, through Summit valley, to the summit of the Sierra Nevada mountains, at the pass known as Donner Lake Pass; thence down the eastern slope of said mountains, south of Donner lake, to the Truckee river; thence down the valley of the Truckee river, through the Truckee meadows, to the Big Bend of the Truckee.

And the cost of such surveys has amounted to the sum of $59,466 81.

Fifth. No amount has yet been received for passengers on said railroad.

Sixth. No amount has yet been received for freight on said road.

Seventh. The following is a statement of expense paid and incurred by said company on account of said road and its fixtures, to wit:

For right of way and real estate ............................................. $2,269 47
Engineering ........................................................................ 59,456 81
Incidental expenses, interest, discount on bonds and currency, taxes, salaries, &c ...................................................... 130,659 03
Construction account .......................................................... 997,626 83
Iron and superstructure ....................................................... 340,166 23
Engines and cars ............................................ $117,543 30
Buildings, tools and materials, office fixtures and furniture, &c. ... 12,395 34

Total .......................................................... 1,660,118 01

Eighth. The following is a statement of the indebtedness of said company, with the various kinds thereof, to wit:

In bonds of the company issued ........................................ $785,000 00
Bills payable, (notes of the company) .................................. 280,000 00
To contractors for percentages retained ................................. 65,821 61
Personal accounts ................................................................ 6,706 13

Total ......................................................................... 1,137,527 74

STATE OF CALIFORNIA, County of Sacramento:

I, Leland Stanford, president of the Central Pacific Railroad Company of California, do hereby solemnly swear that the foregoing annual report is a correct statement of the affairs and condition of said company as therein set forth.

LELAND STANFORD,
President C. P. R. R. Company of California.

Sworn to and subscribed before me, a notary public, in and for said county, this tenth day of March, 1864, as witness my hand and official seal.

JNO. G. ________,
Notary Public, Sacramento, California.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., Feb. 11, 1868.

SIR: In compliance with the request of C. P. Huntington, esq., vice president of the Central Pacific Railroad Company, of California, I have the honor to transmit herewith a report of that company for the year 1866, which was filed in this department on the 13th December last.

Very respectfully, your obedient servant,

Hon. H. McCulloch,
Secretary of the Treasury.

Annual report of the Central Pacific Railroad Company of California, to the Secretary of the Treasury of the United States, for the year ending December 31, 1866.

FIRST.

Stockholders.—Sarah E. Avery, Melissa Avery, Jacob Arnold, Henry Ames, Sacramento, California; J. J. Ayres, William J. Adams, San Francisco, California; O. D. Bates, L. A. Booth, Sacramento, California; E. J. Brickell, B. Brickell, Illinoistown, California; Bradley & Trim, Dutch Flat, California; T. E. Beans, Nevada, California; James Bithell, William C. Burnham, B.

SECOND.

The names and residences of the directors and all officers of the company are as follows:

Directors.—Leland Stanford, Sacramento, California; C. P. Huntington, New York, New York; E. B. Crocker, Mark Hopkins, E. H. Miller, Jr., Sacramento, California; Charles Marsh, Nevada, California; A. P. Stanford, San Francisco, California.

President.—Leland Stanford, Sacramento, California.

Vice President.—C. P. Huntington, New York, New York.

Secretary.—E. H. Miller, Jr., Sacramento, California.

Treasurer.—Mark Hopkins, Sacramento, California.

Acting Chief Engineer.—S. S. Montague, Sacramento, California.

Attorney and General Agent.—E. B. Crocker, Sacramento, California.

THIRD.

The amount of stock subscribed is $8,580,600, and the amount thereof actually paid in is $8,504,210.

FOURTH.

For a description of the lines of road surveyed by this company, and the lines thereof fixed upon for the construction of the road to January 1, 1866, we would respectfully refer to the former annual reports of the company made to the Secretary of the Treasury. We would refer in addition thereto, as a part of this report, to the report of the chief engineer of the company, to wit:
UNION PACIFIC RAILROAD.

ENGINEER'S OFFICE CENTRAL PACIFIC RAILROAD OF CALIFORNIA,
Sacramento, February 8, 1867.

Accompanying this please find a condensed description of routes explored and surveyed for the Central Pacific Railroad Company in 1866.

First. Surveys in California.—Resurvey and final location of line from Owl Gap (51 miles from Sac) to eastern boundary of State of California, 57 miles.

Second. Surveys in Nevada and Utah.—Preliminary survey from State line to Big Bend of Truckee, 49 miles, and final location survey from State line eastward, 34 miles.

Third. Lines of explorations for railroad routes between the Big Bend of the Truckee river and the Wasatch mountains, by Mr. Ives:


2. A line deflecting to the east from the above at Ragtown Pass, thence across the Humboldt and Carson desert to Stillwater, thence via Mount Wells Pass (of Carson Sink mountains) to centre of Fairview valley, on former line, 57 miles.

3. A line deflecting southeast from first line at west base of Carson Sink mountains, thence through Sand Springs Pass, and connecting with the first line in Fairview valley, 18 miles.

4. A line deflecting to the east from first line at Junction House in Edwards's Creek valley, thence via Edwards's Creek Pass, Smith's creek, and Emigrant Pass, (of the Shoshone mountains,) to Jacobsville, 48 miles.

5. A line deflecting to the southeast from the first at White Rock, thence via East Gate and O'Donnell Pass, thence northeast through Smith Valley to Emigrant Pass, on the fourth line, 56 miles.

6. A line bearing southeast from the O'Donnell Pass to the town of Ione, thence through the Ione Pass (Shoshone mountains) to Reese river, thence down Reese River valley to Jacobsville, 66 miles.

From Jacobsville continuing first line via Telegraph Pass, (of Tonjabe mountains,) Turner's creek, Cape Horn, Stage Pass, (Smoky Valley mountains,) Grubb's Wells, Swallow cañon, (of Piñon mountains,) Diamond valley, Railroad cañon, north end of Diamond mountains, Huntington creek, branch of South Fork of Humboldt river and Hastings's Pass, to Fort Ruby, in south end of Ruby or Franklin valley, 136 miles.

2. Deflecting to the east from first line at Swallow cañon, thence across south end of Diamond valley, through Simpson's Pass of Diamond mountains, to Gillson's valley, 20 miles.

3. A line deflecting northeast from first at Simpson's Park via Grass Valley road to Leake Pass, thence around north end of Park mountains to Cape Horn, on first line, 25 miles.

4. Deflecting to the north from Grubb's Wells, over Low Pass to west side of Roberts's Creek mountains, down Front creek into Garden valley, thence southwest through Low Pass into Grass valley, through Grass valley and Summit Springs Pass, to Telegraph Pass, on first line, 100 miles.

5. Deflecting to the northwest from Summit Springs, on last line, across the Toiyabe mountains, via Silver Creek Pass to Reese river, thence down Reese river to its passage through the Shoshone mountains, thence northeast via Carico lake, McMaster's Gap at north end of the Toiyabe mountains, through south end of Crescent valley and Cortes Pass into north end of Grass valley, thence through Low Pass on fourth line into Garden valley, through Garden valley to Piñon mountains, thence south along west base of Piñon mountains up Cedar creek, through pass between the Piñon and Roberts's Creek mountains, to Swallow cañon, on first line, 144 miles.

6. Deflecting to the northwest from first line at Railroad cañon, following Lieutenant Beckwith's trail of 1854 across the north end of Diamond valley,
and through the lowest pass in the Piñoñ mountains to Garden valley, 20 miles.

7. Deflecting to the east from first line in Diamond valley, thence through the Chokup Pass of the Diamond mountains to Huntington creek, on first line, 15 miles.

Continuing first line from Fort Ruby, easterly, along and near the overland stage route, across Ruby mountains, Butte mountains, and through the Eagan mountains, by Eagan cañon and Schell Creek mountains, via Schell Creek Pass, thence round the south end of the Antelope mountains and through Antelope valley, Deep creek valley, and Miyabe Pass of the Ibenpah mountains, to Redding Springs, west margin of the Desert., 130 miles.

2. Passing southerly from Fort Ruby, between the Ruby and East Humboldt mountains, into Cedar valley, thence southwest across East Humboldt mountains to Gillson's valley, thence around the south end of the latter mountains to Simpson's trail, thence following said trail, easterly, across a low range of mountains, and south end of Long valley to the Butter mountains, thence northwesterly along said mountains to the Stage Road line, thence round the north end of the Butte mountains into Butte valley, 102 miles.

3. Deflecting south from Eagan cañon along west base of Eagan mountains, over a cross range south of Butte valley to Simpson's trail again, thence on said trail to Hercules Gate, at south end of Eagan mountains, through said Gate into Steptoe valley, thence northerly up said valley to Schell creek, on first line, 76 miles.

4. Deflecting to the north from the first line in Antelope valley to Kinsley mines, on Lieutenant Beckwith's trail of 1854, thence northwest along said trail, passing low ranges around the north end of Antelope and Schell Creek mountains, through north end of Steptoe valley, and around the north end of the Eagan mountains to east point of Ruby or Franklin valley, 70 miles.

5. From the east end of Ruby valley easterly through the Goshute Passage to the west margin of the desert at north end of the Ibenpah mountains, 54 miles.

Thence southerly up the valley of Deep creek to Deep creek station on first line, 25 miles.

Continuing first line from Redding Springs easterly across the desert via north end of Granite mountains to Three Butte of Cedar mountains, across Skull valley and through Johnson's Pass of Onaqui mountains, Rush valley, Camp Floyd, to north end of Utah lake, thence via valley of Jordan river to Salt Lake City, 140 miles.

2. Deflecting from first line on east side of desert, thence via south end of Cedar mountains, Point Lookout, Pass of Onaqui mountains, to east side of Rush valley on first line, 46 miles.

From Great Salt Lake City westerly around the south end of Great Salt lake, north end of Cedar mountains, across the desert via Pilot Peak, Middle Pass of Twno mountains, across Goshute desert, Peoquot mountains, Clover valley, north end of Ruby valley, and through Humboldt Pass of East Humboldt mountains to Humboldt river, 240 miles.

2. A line deflecting from the above at north end of Onaqui mountains; thence across Skull valley and through Hastings (Road) Pass of the Cedar mountains, connecting with the above line on east margin of desert, 35 miles.

From west end of Goshute Passage, Ruby valley, northerly through Clover valley to Humboldt Wells, 54 miles.

From Humboldt Wells northeast into Thousand Spring valley; down this valley to its northeast end; thence southeast down the narrow valley of Hot Spring creek between the Twno and Goose Creek mountains to Sink of the Creek, south end of Goose Creek mountains, 78 miles.

From west end of Thousand Spring valley southeast into the Goshute desert, 56 miles.
A line from Humboldt Wells easterly across first range of mountains, east by a low pass; thence via north end of Pequot mountains, north pass of Tuno mountains, passing between the Goose Creek and Ombe mountains, skirting north margin of the desert to Red Down Pass, around the north end of Great Salt lake, and through the south pass of the Promontory mountains, skirting the mud plains around the head of Bear River bay to Brigham City; thence along the west base of the Wasatch mountains to Weber river, and up Weber river to the head of the Lower cañon, 221 miles.

2. Deflecting from last line at southeast point of Raft River mountains, thence northeast through valley along the southeast base of said mountains to Pilot Springs, on the old emigrant road; thence southeast, crossing low range of mountains to Spring Bay valley, through Middle Pass of Promontory mountains, connecting with above line at Blue creek, 106 miles.

3. Deflecting to the north from main line at Spring Bay, via North Pass of Promontory mountains; thence on emigrant road to Blue springs down the valley of Blue creek on first line, 43 miles.

From Weber river to Salt Lake City, 35 miles.

Fourth.—Explorations and surveys for railroad routes between Big Bend of Truckee river and Salt Lake valley, by Mr. Epler:

1. Main line from Big Bend of Truckee southeasterly through Ragtown Pass; thence northeasterly across the Humboldt desert south of Humboldt and Carson Sink lake to Sommers' Pass, in the Carson Sink range; thence from said pass around the north end of the Humboldt salt deposit to Boundary Butte Pass through the Augusta range; thence from said pass across Lone Hill valley to mouth of Reese River cañon; thence up said river through its passage through the Shoshone range to Termant's ranch; thence northeasterly across a low summit into Carico valley; thence through said valley via Carico lake to McMaster's Gap; thence through said gap, and in a northeast direction, via Cortez Mines, through Crescent valley to a summit near the Humboldt river; thence to the Humboldt river, 10 miles above Gravelly ford.

Total distance from Big Bend of Truckee to the above point, 205 miles.

2. A reconnaissance through Shoshone Pass from a point at the north end of the Humboldt salt deposit through Shoshone Pass, in the Augusta range, into Edward's Creek valley; thence across the north end of said valley into Lone Hill valley; thence northeasterly through said valley intersecting the main line in the narrow passage connecting Lone Hill valley with Lower Reese River valley, distance 52 miles.

3. Reconnaissance around north side of Boundary Butte. From the same point of deflection, namely, a point at the north end of the Humboldt salt deposit, passing through a difficult and rocky cañon near to and north of Boundary Butte into Lone Hill valley; thence easterly across said valley to the same point of connection as line No. 2; distance 32 miles.

From the point of intersection of main line with Humboldt river, line passes down river to Skull ranch, located on south side of river, 36 miles below terminus of main line; thence southerly along west base of the Shoshone mountains and on east side of Lower Reese River Valley to mouth of Reese River cañon; distance from Skull ranch to mouth of said cañon, 53 miles.

From mouth of cañon westerly along main line to a point at the north end of the Humboldt salt deposit; thence up Big Cottonwood cañon, through Hickman's Pass to the west base of the Carson Sink range; thence northerly along base of said mountains to McKinney's Pass; thence continues northerly along base of mountains to Beckwith's Pass, distance from point of divergence from main line to Beckwith's Pass via Hickman's Pass, 40 miles.

From Beckwith's Pass, southwesterly across Buena Vista valley, via Deep Well station and pass, through a depression in the West Humboldt range to Humboldt lake, thence around south end of lake to the Big Bend of the
UNION PACIFIC RAILROAD.

Truckee, via the Hot Springs; distance from Beckwith’s Pass via Deep Well station and Humboldt lake, 110 miles.

Reconnoissances to the north of Hot Springs and between Pyramid lake and Humboldt river:

From Big Bend of Truckee across Truckee desert to the Hot Springs; thence north up Truckee desert across a low divide into Indian Spring valley; thence northeasterly across said valley to the summit of the divide between Indian Spring and Humboldt River valleys; thence in the same direction to a point on the river northwesterly from Star Peak; distance from the Big Bend of the Truckee to the above point on the Humboldt river, 98 miles.

Thence westerly along the line of reconnaissance across Indian Spring valley and a mountain range lying to the west of Indian Spring valley to a point on Truckee river, five miles above its confluence with Pyramid lake; thence up said river to the Big Bend. Distance from Indian Spring valley, via point on river five miles above its mouth, to Big Bend, 45 miles.

Second main line from Big Bend of Truckee, through McKinney’s Pass, to Skull Ranch.—From the Big Bend southeasterly through Ragtown Pass; thence northeasterly across Humboldt and Carson Sink Desert via. Deep Well Station to McKinney’s Pass; thence through said pass into Pleasant valley; thence through a cañon at lower end of valley into Salt valley; thence across north end of said valley around the point of mountain, seven miles northwest from Boundary Butte; thence northerly over Dacey’s divide; thence northeasterly via extreme south point of Copper mountain across Lower Reese River valley to Skull Ranch. Total distance from Big Bend, 187 miles.

Reconnaissance to the east towards Salt lake, from Gravelly Ford due east over range of mountains into Front Creek valley and lower part of Garden valley; thence northeast across mountains to Humboldt river, at mouth of Maggie creek. Distance from Gravelly Ford, 24 miles.

Thence up the river to mouth of the South Fork of the Humboldt; thence up said South Fork to the base of the East Humboldt range; thence northeasterly along west base of said range to Humboldt Wells. Distance from mouth of South Fork via its source to Humboldt Wells, 75 miles.

Thence into lower part of Thousand Springs valley, along the emigrant road; thence via Goose creek, City of Rocks, Head of Raft river, and along old emigrant road to Bear river, near its confluence with Great Salt lake. Distance from lower part of Thousand Springs valley to Bear river, 164 miles.

From Goose creek, 12 miles to summit of mountain on south side of valley; down Goose creek 10 miles from point where emigrant road leaves it going east.

From Summit valley north five miles to divide on Idaho road between Valley and Snake River plains, south in Summit valley and across mountains to the southwest into an arm of the Great desert, 15 miles.

Fifth.—Preliminary survey of a railroad line by Mr. Back, from the Big Bend of the Truckee river, via Say’s Station, Truckee Desert, Desert Gate, Sink Humboldt, north side of Humboldt lake, and thence following the valley of the Humboldt river to Humboldt Wells. Distance from Big Bend of Truckee, 322 miles.

From Humboldt Wells southeasterly via Clover valley to Goshute Desert, at eastern base of Peoquop mountains, 45 miles.

From Humboldt Wells northeasterly to Thousand Spring Valley, 25 miles.

The route adopted for the location of Central Pacific railroad is via line referred to above and also in report for the year 1865—following the valley of the Truckee river from the point where the line first reaches it (near Donner lake) to the Big Bend.

Thence via Truckee Desert, Humboldt Sink, and lake and valley of Humboldt river to the Wells, (near the source of the stream;) thence in an easterly direction on line, surveyed by Mr. Ives, via north end of Peoquop mountains,
north pass of Toano mountains, passage between Goose creek and Ombe moun-
tains, skirting northern margin of the Great Desert, to north end of Great Salt
lake; thence through the South Pass of the Promontory mountains, skirting
Mud Plains north of Bear River bay to Brigham City; thence along the west
base of the Wasatch mountains to Weber river, and up said stream to mouth
of Weber cañon. Distance from eastern boundary of State of California to
Weber cañon, 588 miles.

SAMUEL S. MONTAGUE,
Chief Engineer Central Pacific Railroad of California.

The cost of the surveys made by this company up to December 31, 1866,
is $191,120 75.

FIFTH.

The amount received from passengers on the road during the year is
$252,908 71.

SIXTH.

The amount received for freight on the road during the year, is $577,728 33.

SEVENTH.

The expenses of operating the road for the year are $407,707 95.

EIGHTH.

The indebtedness of the company is as follows:

In bonds of the company ................................... $3,506,000 00
In notes .................................................. 798,000 00
In personal accounts ...................................... 1,444,288 73
In bonds, (United States government) ..................... 3,962,000 00

Total .................................................... 9,710,288 73

STATE OF CALIFORNIA, County of Sacramento:

Leland Stanford, being duly sworn, says, that he is the president of the Cen-
tral Pacific Railroad Company of California, and that the foregoing report is
true and correct.

LELAND STANFORD.

Subscribed and sworn to before me this 5th day of March, 1867.
SAMUEL CROSS,
Notary Public, Sacramento, California.

CENTRAL PACIFIC RAILROAD OF CALIFORNIA.

Report of the chief engineer upon the surveys for the Central Pacific railroad.

ENGINEER'S OFFICE,
Sacramento, June 1, 1863.

GENTLEMEN: I herewith submit a general report upon the surveys made
under my supervision for the Central Pacific railroad of California.

GENERAL REMARKS CONCERNING LOCATION AND DESCRIPTION OF RIDGE, OR
DIVIDE, ON WHICH THE ROUTE PASSES.

This divide is the strip of land lying between the American river and its
north fork, (on the south,) and Bear river and the South Yuba, (on the north.)
The Bear river unites with the Feather river (a tributary of the Sacramento) about 30 miles north of the city of Sacramento.

The direction of divide is northeasterly and northwesterly. Its width opposite Sacramento is about 30 miles.

The ravine of Bear river, from Johnson's Ranch to English Bridge, a distance of about 15 miles, pursues nearly an easterly course, while the course of the ravine of American river from Folsom is nearly north, to a point within about eight miles (southeasterly) from English Bridge. Here the American river branches, and the ravine of its north fork, as well as that of Bear river, pursue a northeasterly course, but gradually approach each other to a point about four miles above Illinoistown, called Long ravine, where the two rivers are less than three miles apart. At this point occurs the greatest depression on the ridge, and the greatest difficulties in location were found. From Long ravine the ravines of these rivers diverge somewhat, but are scarcely further than six miles apart at any point, the ravine of North Fork and its tributaries and branches continuing up the summit. Numerous branches and ravines extend northerly from the North Fork, rendering a location on that side extremely difficult, if indeed practicable, our line at Long ravine being about 1,200 feet above the bed of North Fork. The ravine of Bear river extends up about 14 miles above Dutch flat, widening out near the source of Bear river into a beautiful valley, called Bear valley, about two miles long and one mile wide. Diminished in size to a small creek, Bear river passes through this valley, and a mile above is lost among the benches to the right.

The ridge between Bear valley and North Fork of American is about 800 feet high. Here occurs a singular freak of nature. The South Yuba, augmented by numerous large branches along its course, is seen emerging from impassable rocky canons, and, sweeping down through the head of Bear valley, it turns suddenly to the north and pierces the ridge or divide lying north of Bear valley, forcing its way out to the northward between rocky walls, surmounted by peaks from 2,000 to 3,000 feet high.

There is little doubt that at some former period the waters of South Yuba flowed through Bear valley and down the ravine of Bear river; and, indeed, it would be no difficult matter to turn the whole volume of South Yuba into Bear river at the present time.

The South Yuba Canal Company, who supply the Nevada divide with water for mining purposes, take their water from the South Yuba, at the head of Bear valley, bringing it down through Bear valley, by the side of Bear river, with a grade of about 10 feet per mile, being at points as near as 200 feet to Bear river and not over 15 or 20 feet above it. Thus it will be seen that the cañon of Bear river becomes and is the same as that of the South Yuba, which latter river now takes its place, the divide or ridge being now bounded by North Fork of American on the south and South Yuba on the north.

The ravine or valley of South Yuba continues on to the summit of Sierra Nevada, and in Summit valley, within two miles of Summit, the river is a larger stream than is Bear river in Bear valley.

A barometrical examination of this route indicated that the top of ridge or divide could be reached at Clipper gap, near the head of Dry creek, 484 miles from Sacramento. From this point to Reservoir gap (about 1½ mile above Dutch flat and 25 miles from Clipper gap) it was found that the line must be carried on the top of ridge. The line of top or crest of ridge being far from uniform, of course the lowest points or gaps in ridge become commanding points, and it was found necessary to carry the line from gap to gap, passing around the intervening hills upon their side slopes.

It was also found, upon reaching New England gap, (near the New England mills, about six miles from Clipper gap,) that to Long ravine, a distance of eight miles, the ridge was nearly level, the elevation of a grade at Long ravine being
only about 100 feet higher than at New England gap. Also, that the ridge rose rapidly from Long ravine eastward to the next gap, called Secret Ravine gap.

It was also found that from Reservoir gap (1 1/2 mile above Dutch flat) the ridge rose too rapidly for our maximum grade, and that, for the next 20 miles, to the bottom or valley of Yuba, the line must be carried on the main slope of Bear and Yuba rivers. It was thought, however, that the line could be carried up Cañon creek (a tributary of North Fork, with tolerable smooth side slopes) to Dutchman's gap, about eight miles above, and there cutting through the gaps, brought out on to Bear river side hill.

Subsequent examination proved this to be impracticable, Cañon creek rising too rapidly for our grades. We were therefore compelled to carry the line immediately on to Bear river side hill, and were fortunate enough to be able to avail ourselves of the side hill of Little Bear river for that purpose.

Being on the top of the hill at Reservoir gap, we were enabled to cross Little Bear river near its head, and to use its side hill for an approach to Main Bear river.

The barometrical elevations also indicated that the Yuba could be reached about 20 miles above Dutch flat, at the head of its cañons, and the line carried up along its smooth, uniform bottoms for some distance; then, by taking to its south side hill. Summit valley and summit reached with maximum grades.

The South Yuba, from this point, (20 miles above Dutch flat,) called Yuba bottom, extends to the summit, a distance of 16 miles, most of the way through a valley, in some places 500 or 600 feet wide.

The old Truckee emigrant trail follows down through the valley a portion of this distance, generally over a smooth, natural road. Were the fall of this river evenly distributed, it would afford a uniform grade of a little less than 100 feet per mile to the summit.

Rising, however, from Yuba bottom, (say half a mile at a grade of 50 feet per mile,) the river cañons for a half mile at a steeper grade; thence, for four miles, its grade is about 60 feet per mile, either cañons rising about 250 feet in a mile at a point called Slippery Rock cañon.

The river then rises gently for about three miles, and again rapidly for three miles to Summit valley. Through Summit valley, a distance of 2 1/4 miles, its grade is scarcely 25 feet per mile, then rises rapidly again to the summit.

Inasmuch as the indications of altitude of the aneroid barometer proved lower than those of the true level, after continuing our line for six miles along the Yuba bottom, we were obliged to retrace our steps and commence again near Yuba bottom, running up on south side hill of Yuba, with maximum grade, into Summit valley, in order to attain a sufficient elevation to reach the summit.

Summit valley is a beautiful valley, near the source of the Yuba, about 2 1/4 miles long and three-quarters of a mile wide, yielding excellent pasturage for cattle, hundreds of which are there driven each summer. From the summit, looking easterly, you appear standing upon a nearly perpendicular rocky wall of 1,000 feet in height. Immediately below is seen a valley from one to two miles wide, extending up from the Truckee river to nearly beneath your feet.

Donner lake, about 3 1/2 miles long by one mile in width, occupies the upper portion of this valley, and its outlet is seen pursuing its course down to a junction with the Truckee. Two long ranges or spars are seen on either side, parallel with and enclosing the lake, reaching from the summit to Truckee river. Immediately beyond the river is seen the second summit of Sierra Nevada, while still further in the distance the Washoe mountains are plainly visible.

Passing the summit, our line is carried down upon the side hill of the range on the south side of Donner lake, descending with the maximum grade for about 11 miles. The distance, in a direct line from summit to Truckee river, does not exceed eight miles, but we fortunately encountered two long ravines,
with smooth side slopes, which, with the sinuositites of side hill, gave about three additional miles of distance, enabling us to reach the Truckee with maximum descending grades.

PARTICULAR DESCRIPTION OF LINE.

Commencing at the foot of K street, in the city and county of Sacramento, where it intersects the water front of the Sacramento river, the line passes northerly and west of the city water-works building, through what is known as Slater's addition, for about 1,500 feet; thence, curving to the east, it strikes the main north levee, at the intersection of Sixth with E street; thence it follows the line of north levee for about three miles to a point near the old Muldrow house; thence, curving to the left, it passes across the space of low land lying between the levee and American river, about half a mile in width, upon trestle-bents, averaging about 15 feet in height, and crosses the American river with two 190-feet spans of Howe's truss-bridge; thence running straight over about 1,000 feet of low land upon trestle-bents, the line curves to the right into a direction of north 24° 30' east, magnetic, and pursues its course in a straight line to a point about 16 miles from Sacramento, across the Rancho del Paso, passing about one-half mile easterly from the Arcade house, crossing the northe line of said Rancho about one-half mile westerly from its northeast corner, and striking near the southwest corner of section 21, township 10 north, range 6 east, and crossing a corner of sections 16 and 15, to a point on the aforesaid section 15, distant about 16 miles from the foot of K street in the city of Sacramento, at which point the line enters the county of Placer.

Thence turning gently to the left and reversing to the right again, it crosses Dry creek with four 55-feet spans of bridge and passes about 300 feet westerly of Dudley's house; thence curving gently to the left it follows about two miles along the foot of a light ridge, in a direction parallel with Dry creek and Secret ravine, to the California Central railroad, at a point known as Griders, in section 2, township 10 north, range 6 east.

Thence running northerly for about one mile, the line curves to the right and crosses Antelope creek with a 50-feet span, about 500 feet from its intersection with Secret ravine, and attaining the top-of divide or ridge between Antelope and Secret ravine, it follows the same, passing through sections 35, 36, 25 and 24 of township 11 north, range 6 east, and sections 19, 18, 17, 8, 9, and 4 of township 11 north, range 7 east, to what is known as the Big reservoir, at the head of Red ravine—a point distant about 26 miles from Sacramento, and at which point commences the maximum grade of 105 feet per mile.

Thence pursuing a general northeasterly course, it continues along the top of said ridge or divide, crossing the main Antelope road at the flume upon what is known as Antelope divide, passing through sections, 34, 27, and 26 of township 12 north, range 7 east; thence curving sharply to the right and reversing to left in about half a mile further, it reaches the summit of divide between Dutch ravine and Secret ravine, at a point known as the Caperton flume, distant about three miles southeast from Gold Hill, in Placer county, and about four miles northwesterly from Auburn station, the terminus of the Sacramento, Placer and Nevada railroad; thence running a little north of east, the line follows up said divide, crossing the main Auburn and Sacramento road, to what is known as Newcastle gap on, said ridge, between Dutch ravine and Secret ravine, crossing said gap with an embankment 62 feet high, and passing through sections 26, 23 and 24 of township 12 north, range 7 east, and section 19, township 12 north, range 8 east; said point being distant 31 miles from the city of Sacramento.

Thence pursuing a general course of nearly due east, the line follows the south side hill of Dutch ravine for about two miles, through sections 19, 20 and 21 of township 12 north, range 8 east; thence curving to the left the line crosses
Dutch ravine, near its head, about one-fourth mile below the Bloomer Ranch house, and crosses the divide between Dutch ravine and Baltimore ravine, passing along and near the Bear river ditch to the main Hago river road, between Auburn and Sacramento, being at said point distant about one-half mile south of the town of Auburn, on section 15, township 12 north, range 7 east; distant 34½ miles from Sacramento.

Thence curving to the left into a general northerly direction, the line follows near the top of divide between the American river and Auburn ravine, and near to the Bear river ditch, passing about one-fourth mile west of the Junction house, and through sections 15, 10, 3 and 2 of township 12 north, range 7 east, and sections 34 and 35 of township 13 north, range 7 east, to the head of Rock creek, at which point the line reaches the summit of divide between Dry creek and the American river; distant about 39 miles from Sacramento.

Thence pursuing a northeasterly course along the top of said ridge or divide, passing about one-eighth mile south of Lovell's house and near the Cataract mill, crossing through sections 35 and 25 of township 13 north, range 8 east, and sections 19, 17 and 8 of township 13 north, range 9 east, the line reaches Clipper gap, in section 11, at a point distant about 44 miles from Sacramento.

Here, instead of following the top of ridge further, it rising too rapidly for our grades, we curve to the right, and run up the north side hill of Clipper ravine, (a tributary of north fork of the American,) crossing several short steep side ravines to Wild Cat summit.

Passing through Wild Cat summit, (about one-fourth a mile south of Widow Hawe's house,) we pass around Hawe's Hill, and curving to the left, cross the main road, and pass up a smooth ravine to the top of the ridge, at a point called Applegate summit. A short distance further on, the line passes through Evergreen gap, crossing the divide again at Baney's gap, from which point it curves round on side hill (on north fork side) to Star house gap, near the Star house. Here the line crosses Star house gap, (and the travelled road,) about 50 feet high, passing up very nearly on top of divide, to the head of Applegate ravine, which runs into Bear river, this point being called New England gap; distant about 50 miles from Sacramento.

From New England gap the line passes out upon north side hill of North fork. Crossing the travelled or stage road, it runs along above the same, and about 500 feet above New England mills, through peach orchard of Murphy, through Manzanita and Chaparral gaps and over Sugarloaf summit to Lower Illinoistown gap, at the point where upper stage road crosses the gap, (about one and one-fourth mile below Illinoistown.) Crossing this gap, about 30 feet high, the line continues on about half a mile further, over a broken country, to a point called Bear river gap, where it turns abruptly to the left, with maximum curve, and crosses the ridge with a tunnel of 500 feet in length, emerging on the south side hill of Bear river, along which it pursues its course to Storm's gap and Long Ravine gap, leaving Illinoistown about one mile to the right.

Here was found the greatest difficulty in location, Long ravine gap being an unusually low depression, the ridge beyond rising quite rapidly to attain its average elevation.

Here the line crosses the gap, about 70 feet high, and curving to the right, follows the side hill of Rice's ravine, leading to north fork for about one mile, encountering a succession of short, steep, abrupt side ravines, to Cape Horn, which is a bold rocky bluff, nearly perpendicular, and 1,200 feet high, above the north fork of American. Passing round the face of this bluff, about 200 feet below the table above, we strike the side hill of Robber's ravine, which runs parallel to Rice's ravine, and continues up along the side hill of same for about one and a half miles, crossing Oak summit and passing about three-quarters south of Madden's toll-house, through Trail summit. From this point the line follows along the face of side-hill above North Fork, striking Secret ravine.
along which it runs for about one mile, when turning to the left, it passes up a tributary side ravine to its head, the line striking a point about 200 feet south of stage road, one mile south of Secrettown. Running thence alongside of road nearly a mile, it crosses the same, and passing between Everard's house and barn, at Secrettown, it reaches the head of Secret ravine, or Secrettown gap, crossing it with trestling about 50 feet in height.

Turning to the left the line now passes north of Cold Spring mountain, (on Bear river side,) and for two miles encounters a succession of steep side ravines, where some of the heaviest work of the line will be found. Two tunnels will be necessary on this piece of line, each about 600 feet in length. Leaving the side hill again, the line strikes a long and nearly level bench, about two miles in length, extending up nearly to Dutch Flat.

This bench is the well-known Gravel ridge which extends along the slopes of the Sierras at about this elevation, and on which are situated the mines, worked by the hydraulic mining process. Extending up this ridge to within about one mile of Dutch Flat the line again takes to side hill to left, running near to Strong's cabin, Brickell's steam saw mill, Dutch Flat steam saw mill, to the Dutch Flat Water Company's large reservoir, (about one and a half miles above Dutch Flat.)

The town of Dutch Flat lies on Bear river side hill, about half way down to Bear river, the line passing about half a mile in the rear and about 300 feet higher than the town. At this last named reservoir, which is upon the top of ridge called Reservoir Gap, we leave the crest of ridge for the last time, it rising too rapidly to be available for a railroad line at our maximum grades. Turning to the left the line now runs, at nearly a level grade, about one and a half mile further to Little Bear river, which stream it crosses just above the saw mill, near Widow Homer's Ranch. Pursuing its course down the north side hill of Little Bear river, it departs at Ellmore hill, passing round the same, and enters upon the side hill of Bear river.

The river gorge at this point is about 1,500 feet deep, our line being about 500 feet below the top of ridge, and from 1,000 to 1,200 feet above the river. Its side hill is steep, rocky, and marked by many abrupt indentations and corresponding salient points. The line was carried round most of these points, but, upon a final location, it will probably be found advisable to run through the sharp points with short tunnels, the longest of which will be 1,350 feet, none of them, however, requiring shafting.

The line passes up this side hill of Bear river, (the grade line being nearly parallel with the crest or top of the ridge and from 500 to 700 feet below the same,) crossing through Zerr's Ranch, (about 600 feet north of his buildings,) striking the lower end of Bear valley, about 200 feet high, on its south side hill. Continuing on for two miles it leaves the head of Bear valley at an elevation of about 350 feet on side hill above the same, crossing the head of Bear river, (which is here but a small creek,) following it up to its source, which is a marshy lake, about one and a half mile above Bear valley.

It will be observed on the profile, that from Zerr's Ranch to head of Bear river, a grade line is indicated running about 100 feet higher on the side hill. In locating the line as run, the intention was to cross Bear river and continue on the side hill of the main gorge to Yuba river, (near head of South Yuba Water Company's canal,) keeping up on main side hill of South Yuba to Yuba Bottom; but, upon examination, this proved to be impracticable, the Yuba above Bear valley running in deep rocky canions, with perpendicular rocky walls of granite, too rugged in their character to admit of the location of a line over them. It therefore became necessary to carry the line onto a bench above and south of Yuba river, and nearly at the base of the main ridge, a line from Zerr's Ranch to this point being practicable at our maximum grade, the only change necessary being to make the location a little higher on side hill.
Our present line passes about 100 feet to the left of Jew David's cabin. On the location as changed it will pass a short distance in rear of same. Continuing on, the line pursues the general course of Yuba river, about six miles further, to the point where the old Truckee emigrant trail leaves Yuba Bottom to ascend on the main ridge to the south, (which point is 19 miles above Dutch Flat by trail, and about 22½ miles by our line,) called Yuba Bottom. This point is at the head of the lower cañon and falls between Yuba Bottom and Bear valley.

In subsequent location it will be necessary to run the line between these two points (viz: head of Bear river to Yuba Bottom) a little lower down on side hill, as indicated on profile, for the following reasons: Fearing that the elevation of Yuba Bottom might prove too high, the line was run from head of Bear river, at our maximum grade, in order to gain as much elevation as possible. But on reaching Yuba Bottom it was found that this gave more elevation than was necessary, therefore the last half mile was run down onto Yuba Bottom. The last elevations show that a grade of 80 feet per mile can be obtained from the head of Bear river to Yuba Bottom.

From this point (Yuba Bottom) the line follows the river for about one mile, passing through a short cañon and emerging at very near the level of water surface in river, (called Hall's cañon.) From this point the line was first run for about six miles up the river valley, taking to side hill at the two upper cañons, the line being carried up to the upper ford at head of Wilson's cut-off; but finding that the summit could not be reached without increasing grade on the remaining distance, our parties proceeded to the summit, from which a line was run down on side hill of Yuba, at maximum grade, striking into the valley line at head of first small cañon, (about one mile above Yuba Bottom,) called Hall's cañon.

The location, therefore, is carried from Hall's cañon, on south side hill of Yuba, at maximum grades, into lower end of Summit valley, (about three and a half miles below summit of Sierras,) crossing the old Truckee emigrant trail, near Kidd's Reservoir, about half way up to the top of the ridge, the line striking the lower end of Summit valley about the level of Yuba river; running thence straight across Summit valley, about two miles, at a grade of about 25 feet per mile, to a point on the south side of Summit valley, near Cook's old cabin, the line takes to side hill on the right, and in one and a half mile reaches the summit of Sierras with a cutting of about 50 feet. By commencing the last named ascent a little further back in Summit valley, the summit can be reached with maximum grades without any excavation. The elevation of surface of Summit is 7,027 feet above top of levee at Sacramento.

**DESCENT ON EASTERN SIDE OF SIERRA NEVADA.**

Pursuing its course from the summit easterly, the line commences its descent with maximum grade, and passing to the right is carried for next two miles over a steep rocky side hill, on which will be found quite heavy rock-cutting; thence turning abruptly to the right it enters upon side hill of Strong's ravine, and, running up the same about one mile, crosses over and is carried down over a smooth side hill to a point 600 feet higher than the southwest corner of Donner lake; thence pursuing its course along the side hill for about three miles, it encounters Coldstream ravine and runs up the same a little over a mile.

Crossing Coldstream the line follows along down its south side hill to within about a quarter of a mile of the main Truckee, where turning to the left it crosses the valley of Donner creek, accomplishing the descent in about 1¼ miles of downward maximum grade; thence the line was carried about five miles down the valley of Truckee river, and the survey terminated at a point 128 miles from Sacramento.

The object of this survey being to accomplish the crossing of the Sierras with a railroad line, it was considered unnecessary at this time to extend the
survey any further down the Truckee river; barometrical elevations were taken from our line up the Truckee river to Lake Bigler, and also down the same to the lower end of the Truckee meadows, showing its average fall to be only about 35 feet per mile.

I also carried a series of observations down Steamboat valley to Steamboat springs; thence across the Washoe mountains (via Virginia, Flowery, and six-mile cañon) to the Carson river; thence down the same to Fort Churchill—a profile of which is shown on the small general profile of grades. A continuation of our line down the Truckee to Big Bend follows the same, from the terminus of survey, 18 miles, to Neil’s ranch or Henness road; thence seven miles to Stout’s crossing of Truckee; thence through the Truckee meadow and across head of Steamboat valley eight miles to Stone’s crossing, or western base of Washoe mountains; thence 23 miles through Washoe mountains to Big Bend of Truckee or edge of Humboldt desert, making the total distance about 183 miles.

No obstacle exists, and a line with light grades, over exceedingly smooth surface, can be carried from Stout’s crossing of Truckee up Steamboat valley to its head; thence through Washoe valley into Eagle valley, which opens into Carson valley; thence down the Carson river to Fort Churchill or edge of desert, making, however, a longer line than that down Truckee.

DESCRIPTION OF LINES SURVEYED FOR CENTRAL PACIFIC RAILROAD OF CALIFORNIA.

Barometrical reconnaissances have been made upon five different routes across the Sierra Nevada mountains, as follows:

1st. A route via Folsom, Greenwood, Georgetown.
2d. A route via Auburn, Illinoistown, Dutch Flat, and Donner pass.
3d. A route via Nevada and Henness pass.
4th. A route via Downieville and Yuba gap.
5th. A route via Oroville, Bidwell’s bar, Middle Feather river, and Beckwourth pass.

1.—Route via Georgetown.

Commencing at the terminus of the Sacramento Valley railroad at Folsom, the distances were taken by odometer and elevations by aneroid barometer, to a point 78 miles from Sacramento; thence aneroid observations were extended to the summit of the Sierra Nevadas, near the head of the Middle Fork of the American river, following the ridge between South Fork of American river and its northern tributaries and the Middle Fork of American. The barometrical observations indicating that a grade of 150 feet per mile would be necessary in order to overcome the summit upon that route.

Commencing at Folsom, the lines of observation were as follows:
Sacramento Valley railroad depot, Spruance’s, Shaw’s bridge across South fork of American river, Negro Hill, Berry’s, Atchinson’s, Young’s, Cooper’s ravine, Bailey’s, Knickerbocker ranch, Harris ranch, Penobsquit House, Greenwood, Halfway House, Georgetown, (54 miles from Sacramento,) Clipper mill, Castle Hill, top of hill, foot of hill, creek, top of hill, Work’s ranch, Cabin Richardson’s, Volcano mill, top of hill, emigrant road, top of hill, log shanty, Ballard’s, Pilot creek, ice-house, Stockton’s upper store, head of Pilot Creek ditch, top of ridge, leave emigrant road 78 miles from Sacramento, leave wagons, point on ridge, ditto, ditto, descend to bottom of Middle fork of American river, foot of hill, point on river, ditto, leave river and ascend to top of ridge, camp, summit of Sierras, distant 97 miles from Sacramento.
2. — Route via Auburn, Illinoistown, and Dutch Flat.

The located line of road following this route, and more particularly described herein; a further description of the barometrical reconnaissance is deemed unnecessary.

3. — Route via Nevada and Henness Pass.

Commencing at Folsom, the observations were taken at the following points: Sacramento Valley Railroad Depot Rocks, Spring's Franklin house, Mountaineer house, Dutch ravine, Auburn forks, Illinoistown road, Dry creek, Foster's English bridge, Globe ranch, Wolf creek, Boston ravine, Grass valley, Nevada, Turner's mill, Blue tent, South Yuba, Bell's ranch, Lake City, Junction house, Devil's back-bone, Humbug road, Snow tent, Cherry Hill, Magenta flume, Eureka forks, top of Divide, Bowman's ranch, Canon creek, Eureka ditch, Canon creek summit, Jackson's, Donnieville road, old emigrant road, Henness Pass, Peber's lake, Truckee falls, Maple's, Tule Lake house, Hunter's ranch, — valley, Dog valley, Neil's ranch, State line—143 miles.

This line was found impracticable on account of the crossing of the South Yuba, and objectionable from the absolute necessity of making a long detour either to the north or south in order to get from the Henness Pass to the plateau of Truckee river to avoid Dog mountain at a moderately descending grade, and consequently high elevation, through the snow region.

4. — Route via Camptonville, Donnieville, North Yuba, and Sierra valley.

Commencing at the terminus of the California Central railroad at Lincoln, the lines of observations were as follows: Lincoln, Kennebec bar, Long bar, Timbutcoo, Smartsville, Empire ranch, Deer creek, Keystone house, Ankiny's, Pleasant Valley house, Bridgeport, South Yuba, French canal, Birdsville, Sweetland's, San Juan, Freeman's crossing, Middle Yuba, Camptonville, Slighville house, top of ridge, Mountain house, Goodyear bar, North Yuba, Donnieville, Mooney's, Charcoal Flat, Sierra City, Howard's, Yuba Gap, Hale's, Sierra valley. From this point the railroad line would extend northeasterly through Sierra valley, passing out through Beckworth's Pass, and connect with the line of observations taken upon the Middle Feather route; but in order to ascertain the height of Divide between Sierra valley and Little Truckee or Maple's creek, and the elevations of Dog Mountain route, the observations were extended on this line, continuing as follows: Arm's store, summit of Divide, Forks, Henness road, Triplett's, Sardine valley, Junction, Truckee emigrant road, Perkins's, Dog valley, top of Dog hill, Neil's, Stout's, Junction, Fuller's road—145 miles.

The objection to this route was found in the rugged nature of the country through which it passes, the expensive crossings of Deer creek, south fork of Yuba, middle fork of Yuba, and numerous deep ravines of their tributaries, and the necessity, as in the Henness route, of making a detour north through Sierra valley and Beckworth's Pass in order to reach the valley of Truckee river.

5. — Route via Oroville, Bidwell's bar, Middle Feather, and Beckworth Pass.

Commencing at Oroville, the lines of observations were taken as follows: Oroville, North Fork, Bidwell's bar, south fork of Feather, Union bar, Kanakee bar, Bald Rock canyon, Indian crossing, American bar, Long Rifle, south branch of Middle Feather, Millsop bar, Rinehart's bar, Marble cone No.
UNION PACIFIC RAILROAD.

1, Marble cone No. 2, China wing-dam, Hartman's bar, Delap's wing-dam, Pyramid Peak, Scrubly Jacks, Rich's point, Battle bar, Onion Valley creek, China bar, Last Chance ravine, Railroad ravine, Goss Point, Webb's bar, Colly's, Minerva bar, Washington bar, Rick's bar, Winter's creek, Sailor's bar, Nelson's Point. From Nelson's Point, at bed of Middle Feather river, 80 miles from Oroville, for the next 17 miles, the river rising at one uniform grade without obstruction, the lines of observations were carried to the north across the Divide between Middle Feather and Spring Valley creek, a tributary of the north fork of Feather, as follows: Nelson's Point, Flume, top of Divide, foot of Divide, Spring Garden ranch, Bear-trap, Musenhausener's, top of hill, Cunningham's house, Jackson's, top of hill, foot of hill, Middle Feather river, 97 miles from Oroville, at which point the lines of observations again touch the bed of the river, and are continued on as follows: Lower ford, upper ford, Penman's; leave river at a point distant 100 miles from Oroville. For next ten miles the observations were taken upon a line to north of river, as follows: Leave river top of Anthony's hill, Anthony's house, Poplar creek, point of river 112 miles from Oroville; thence via river as follows: Point at river, north branch Middle Feather, Beckworth's house, foot of Sierra valley, Battle cabin, in Sierra valley; Bingham's ranch, Marsh's summit house, Beckworth Pass, 131 1/2 miles from Oroville; thence the line turns to the south and follows down through Long valley and Pea-vine valley to Truckee river at Fuller's crossing, as follows: Beckworth's Pass, foot of Pass, Long Valley road and ranch, Pond ranch, Antelope springs, Alkali summit, Alkali lake, Pea-vine summit, Pea-vine hotel, Pea-vine valley, Truckee summit, Junction, Stone's road, Fuller's crossing of the Truckee river, 160 miles from Oroville and 238 miles from Sacramento.

The advantages of this route consist in its low grades and a lower altitude of summit than upon the other routes, but it also presents disadvantages which render it next to impossible for us to avail ourselves of its advantages in this respect. It is 80 miles farther from Sacramento to Fuller's crossing of Truckee by this route than by our present location. The Bald Rock canon, about 20 miles above Bidwell's bar, is a rocky gorge in the Feather river rising with smooth grain to sides almost perpendicular, being 3,000 feet high upon the north side and about 2,500 feet upon the south side, the length of canon being about one and a half miles. In order to avail ourselves of the lower grades it is necessary to run near the river or at an elevation sufficiently high to be above high water. This renders necessary the crossing of all the ravines, tributaries, many of which run in gorges of great depth near their mouths, and also involves the necessity of curving up into them and running down again in order to procure a suitable crossing. From Nelson's Point to and through Bald Rock canon, about 50 miles, the river runs in a gorge varying from 2,000 to 2,600 feet in height, at a very steep slope, which, near the river where our line runs, in many places is perpendicular and generally rocky. The course of the river between these points is extremely tortuous and winding, the spurs of the mountain on either side putting out sharply and running by each other so as to lock across each other like the fingers of two hands thrust together. This involves the necessity of many tunnels. I estimated the number of tunnels upon this 50 miles at 28.

The work of construction would, therefore, be vastly expensive and slow. In view of our relations with the United States government and the Union Pacific Railroad Company, who are to build about 1,700 miles of road in the interior, and who cannot commence until we reach the State line; in view of the increased cost of the line on this route, and the increased cost to government of appropriation for 80 miles of additional road to the same point; in view of the additional time necessary to construct the additional length of 80 miles, and the
physical impossibility of constructing the division from Bald Rock canyon to Nelson's Point in one year, the time required by Pacific railroad bill, this route is reluctantly placed among the list of those denominated unavailable for Pacific railroad purposes in the present position of railroad affairs.

A barometrical reconnaissance was also extended from the end of instrumental survey on Truckee river down the same to Stout's crossing on the Truckee river, up Steamboat valley, and by the present travelled road across the Washoe mountains via Virginia City, down Six-mile canyon and Flowery district to the Carson river, and down the same to Fort Churchill, as follows:

Terminus of survey, Neil's supposed State line; Stout's crossing, Truckee meadows, Truckee City, Steamboat springs, foot of Washoe mountains, Toll road, top of hill, junction with Henne's Pass, Virginia City, Gould and Curry Hill, foot of Six-mile canyon, Carson river, Reed's, Fort Churchill. Returning: Fort Churchill, Virginia City, Gold Hill, Devil's Gate, Silver City, American Flat, top of Washoe mountains, foot of Washoe mountains, Washoe lake, Washoe City, Galena, Stout's.

A barometrical reconnaissance was also made from Donner lake via the old Truckee emigrant trail to the Henness road at Sardine valley, 16 miles.

A barometrical reconnaissance was also made and observations taken from Donner lake up the Truckee river to Lake Bigler, 13 miles.

A barometrical reconnaissance was also made from the head of Donner lake via Castle Peak to the line of our location at the foot of Summit valley, eight miles.

A further reconnaissance was made from the terminus of our instrumental survey up Twin Valley creek into Twin valley, and across by Castle Peak into lower end of Summit valley, 15 miles.

DESCRIPTION OF OTHER SURVEYS.

Clipper Gap, upon the top of ridge between the American river and Dry creek, about 44 miles from Sacramento, being a point common to all the proposed lines from Sacramento, upon the Dutch Flat route, several lines have been surveyed and located for the purpose of determining the best, which are denominated as follows:

1. Route via Auburn station.
3. Antelope Ravine route.
5. Dry Crest route.

The first, second, third, and fourth above enumerated lines have a common point at or near Auburn, the fifth at Clipper Gap.

1. Route via Auburn station.

This line pursues the direction already indicated from Sacramento to Dry creek, about 16 miles; thence, curving southersly, it follows up the divide between Miners' ravine and Strap ravine; thence via Miners' ravine it strikes the Sacramento, Placer, and Nevada railroad, at Wildwood, and continues upon the south side of same to Auburn station; from this point to Bloomer divide, near Auburn, two lines have been run and located—one upon an 80 feet grade to Newcastle Gap, and thence a 90 feet grade to Bloomer divide; the other upon an 105 feet grade from Auburn station to Bloomer divide. Preliminary and location lines have been run upon both routes. A line was also run and located from Dry creek via Grider's and Miners' ravine to Wildwood, but abandoned.
2. — Secret Ravine route.

A line has been run upon this route from Grider's to Auburn, but it was found impossible to attain the required elevation without using a higher grade than the maximum allowed by the Pacific railroad bill.

3. — Antelope Ravine route.

This route has been fully described in the particular description of line; it saves 3½ miles in distance over the Auburn Station line, and about 7½ miles over the Dry Creek line.


A line was run from McBowen's ranch on Dry Creek line, near Gold Hill, via Doty's ravine, Doty's Flat, Ophir, and Millertown, to Auburn, but it was found that it would be necessary to attain a higher elevation than the town of Auburn, which would require a grade higher than our maximum, and this line was therefore abandoned.

5. — Dry Creek route.

This line follows the present line of road to Grider's, thence runs near the present line of California Central railroad to Lincoln; thence via Gold Hill and Virginia, thence via McBowen's ranch, Sailor's ravine, Moore's Bar summit, Ledergrist summit, Tayler's ravine, it reaches the south side hill of Dry creek; thence following the same, it encounters and runs up Deadman's ravine; thence crossing and running down the same, it continues up Dry creek via Page's, Redwine's, Hawe's store, Cook's, Watson's, Neilsburgh, Gassway's and Predmore's; to Clipper Gap.

Three lines of location contingent upon this line were run from Sacramento across to the line of the California Central railroad:

A line, striking at Leets;
E line, striking at Pleasant Grove;
B line, striking at Lincoln.

This line being 7½ miles longer, and requiring the maximum grades with increased curvature, was finally abandoned. Experimental and location lines were run upon all the Dry Creek lines.

Accompanying will be found a table of grades from Sacramento to the Truckee river.

Respectfully submitted:  

THOMAS D. JUDAH,
Chief Engineer Central Pacific Railroad, California.

The President and Board of Directors  
of the Central Pacific Railroad of California.
Table of grades, Central Pacific railroad of California, from San Francisco to Truckee river.

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**SUMMARY OF GRADES.**

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* Summit.

**Office Sioux City and Pacific Railroad Company,**

**Sioux City, Iowa, November 16, 1866.**

**Dear Sir:** At the time of making my annual report to your department, relative to the affairs of the Sioux City and Pacific Railroad Company, on the 26th of June last, I was unable to give you the results of surveys and examinations then in progress, but promised so soon as the same were completed to forward an additional report.

I now have the honor to submit herewith a copy of my instructions to the chief engineer of the company, and his report of the results of this season's
operations in the field, and I also submit the following statements relative to the present condition of the enterprise.

The company deemed it unadvisable to enter upon the work of construction until these surveys and examinations were so fully completed that there could be no possible doubt but that the most direct and practicable route from Sioux City to a connection with the Union Pacific railroad had been discovered. By some slight changes the line filed in your department has been materially improved, and the company has now become fully satisfied that that line, substantially running from Sioux City down the valley of the Missouri, crossing that river in the western part of Harrison county, Iowa, and thence to a connection with the Union Pacific railroad near Frémont, in Nebraska, 46 1/2 miles west of Omaha, is the true one to build the road upon, for the reasons that it is the shortest and most practicable, can be built with lower grades and for the least expense, can be operated and maintained with the most economy, runs through a country comparatively well supplied with timber for the construction of the road, and a country susceptible of the highest state of cultivation, and already somewhat settled; and, furthermore, when constructed it will give the most direct and feasible connection for the various roads projected through northern Iowa and southern Minnesota, to reach the Union Pacific railroad.

This line is one hundred (100) miles in length, and that portion east of the Missouri river is remarkable for its low grades and long tangents, there being but three or four slight curves in a distance of sixty-three (63) miles, and the most desirable and natural channel for the commerce of those sections of country seeking an outlet towards the Pacific.

Having thus become fully satisfied as to the route, the company at once proceeded to perfect the location, obtain the right of way and put the grading under contract.

The right of way from Sioux City to the crossing of the Missouri river has been fully secured, the most of it having been guaranteed by responsible citizens living along the line, without cost to the company.

Fortunately for the rapid prosecution of the work on this line, a very large force of contractors, men and teams, have recently finished or are now finishing the construction of the Cedar Rapids and Missouri River railroad to Omaha. This large force, organized at great expense by that company, having been largely gathered in Illinois, Wisconsin, Michigan and Canada, being now in the immediate vicinity of this company’s work, created a most favorable opportunity for putting the grading under contract. The grading of the northern sixty-eight (68) miles has accordingly been contracted for with responsible parties at favorable and satisfactory figures, and a considerable force is already on the work, and this force will be increased as rapidly as the work above alluded to shall be completed, and the weather will permit, and sufficiently to insure the completion of the grading on the sixty-eight (68) miles by middle or last of next summer.

Had the company failed to avail itself promptly of these circumstances, and this large number of men had scattered and returned to their former homes, it would have been almost impossible, except at enormous expense, to collect a force and place it on the work early enough next spring to complete any considerable portion of the road next summer.

Arrangements have already been made for over one hundred thousand (100,000) ties for the road, and a considerable number have been delivered and a large force of men and mills are now employed on this part of the work.

The company has also arranged to construct about six (6) miles of road which will connect its line very advantageously with the Cedar Rapids and Missouri River railroad at the point where the latter reaches the Missouri valley from the east, to which point that road will be completed in a few days. This connection will be very valuable to this company, as well as to the government and
to the people along the line, and will secure a short and direct route to Chicago, whereby to transport the iron and other materials for the construction of the road. It will also give this company a short and immediate connection with the Union Pacific railroad, via Council Bluffs and Omaha.

Good and reliable subscriptions to the capital stock of the company have recently been obtained to the amount of two millions (2,000,000) dollars, and it is the plan and purpose of the company to prosecute the entire work with vigor and success.

All of which is respectfully submitted. Please acknowledge the receipt to me at Blair's Town, New Jersey.

JOHN J. BLAIR,
President Sioux City and Pacific Railroad.

Hon. Hugh McCulloch,
Secretary of the Treasury.

PRESIDENT'S OFFICE, SIOUX CITY AND PACIFIC R. R. CO.,
Blair's Town, N. J., April 21, 1866.

DEAR SIR: You are requested to organize, at the earliest practicable period, say by the 10th of May next, a corps of engineers, with such assistants, teams, tents and outfits, as you may deem necessary, and proceed to Sioux City, in the State of Iowa, and examine all the practicable routes that you can find for a railroad connecting that city with the Union Pacific railroad in Nebraska.

If you fail to find any line which is more desirable than that obtained by the surveys made in 1864 and 1865, and which was adopted by this company, you will then examine particularly and re-survey that line, and make all the improvements in it that may be possible.

I would call your especial attention to the country in Nebraska opposite Sioux City, and bordering along the Missouri river, and request a careful examination of all streams or inlets passing the bluffs, so that you may determine definitely whether a practicable route can be obtained to get from the Missouri valley through the bluffs and out on to the high lands beyond.

You will observe that a little below Sioux City, on the west side of the river, the Omaha Indian reservation commences, and extends thence some 20 miles down the river, and from 30 to 40 miles westward. This reservation includes the so-called “Blackbird Hills,” where the country is very high and broken. Information obtained from reliable sources goes to show that it is impossible to get a practicable railroad route across any part of the reservation, in a westerly or southerly direction.

If, however, one can be found, you can perhaps conciliate the Indians, and through the government agent obtain permission to make the surveys through their lands.

You will bear in mind that it is to the interest of this company to find a line through Nebraska Territory, crossing as near Sioux City as possible, as the company is entitled to land along its line, and vacant lands are abundant in the Territory, while along your former line, east of the Missouri river, scarcely any are to be found.

You will also remember that the act of Congress directs the company to adopt “the most direct and practicable route,” and this must be done strictly, and honestly.

The intention of this branch of the Union Pacific road is to give the roads leading across Iowa and Minnesota a connection with the main line in the Platte valley. These roads, when constructed, will all be feeders to the great main line, in which the government and the people both have so great an interest.
You will be diligent in making your surveys and examinations, as the company intends putting the road under contract the present season.

It is confidently believed that the Cedar Rapids and Missouri River railroad will be completed across the State of Iowa, to a point opposite Omaha, by April of next year, which will give this company greatly increased facilities for the construction of its road.

I would suggest that you communicate with W. W. Walker, chief engineer of the Cedar Rapids and Missouri River railroad, who will doubtless be able to give you much valuable information, as, in the year 1863, he not only made several surveys and explorations for a railroad route through all the valleys running into the Missouri from the west, between the Indian reservations and Omaha, but also, as I understood from him, he either surveyed or explored the country from the Missouri river near Decatur to Columbus and the mouth of the Loup Fork, in the Platte valley.

In the summer of 1863, I examined, with a party of engineers, a proposed route from Decatur, across the territory, to the Platte river, at the mouth of Loup Fork. The country we found high, rolling and broken in every direction. Leaving the Missouri, we followed up the valley of Elm creek a short distance, and thence our course lay nearly at right angles over a continuous succession of high ridges and deep valleys. Among the streams that we crossed, I recollect the names of Bell creek, Logan creek, Cunning creek, Elkhorn river, several branches of Pebble creek, several of Maple creek, and also of Shell creek. Owing to the number of the valleys and summits to be crossed, the line was deemed impracticable for a railroad.

However, your surveys and examinations in that part of the Territory will depend upon your finding a practical route through some opening in the bluffs by which to get out from the Missouri valley, since if that cannot be done, any time spent west of that would be wasted.

I will doubtless see you during the summer, in the Territory, before you complete the surveys.

Please keep me fully advised of your progress, communicating with me either at the office of the Cedar Rapids and Missouri River Railroad Company, at Cedar Rapids, Iowa, or at Blair's Town, N. J.

J. J. Blair,
President S. C. & P. R. R. Co.

J. E. Ainsworth Esq.,
Chief Engineer S. C. & P. R. R. Co.

Engineer's Office, Sioux City and Pacific R. R. Co.,
Dubuque, Iowa, November 1, 1866.

Sir: In conformity with your letter of instructions to me, under date of 21st April, 1866, I at once organized a corps of engineers with the necessary outfit, and proceeded to Sioux City, where I crossed the Missouri river into Nebraska and commenced my work.

I deemed it best to commence at this point, for the reason that bluffs bordering the Missouri rise in many places from 150 to 300 feet, and in some places on the Nebraska side they are perpendicular and washed at the base by the Missouri river.

The only route for a railroad from Sioux City southwesterly is to be found by following up some of the valleys and ravines, cutting through these bluffs and leading to the high lands beyond. Therefore it was necessary to determine the point of leaving the Missouri valley the first thing, as it would be useless to begin a survey on the Platte river, or at any point of connection with the
Union Pacific railroad, until the descent into the Missouri valley was fixed upon.

From opposite Sioux City I proceeded down the river, making examinations of all the streams and ravines leading back into the bluffs as far down as the Omaha Indian reservation, but found none that were practicable for a railroad line. At several points along the Indian reservation the Missouri river washes against perpendicular bluffs, making it impracticable for a road to pass down the river on that side. Below the reservation and near Decatur I examined the valley of Elm creek with care, but found the stream too short to enable us to reach the high prairie without very heavy work, numerous short curves, and very high grades.

I also examined the country west with a view to extending this line if found practicable, but the character and number of the valleys and divides convinced me that it was useless to spend more time in that direction.

Continuing the examinations down the river, I found near De Soto the valley of Fish creek, and further down that of Mill creek, through the former of which the line of 1865 was run.

I spent considerable time on a line up Mill creek, and also in resurveying the line of 1865 up Fish creek, and in surveying new lines over the various summits between the head of Fish creek and the Platte valley.

By some slight changes in the survey of 1865, I succeeded in making very material savings of both labor and grades.

As the result of these surveys, I am fully confirmed in the opinion that the route from Sioux City down the east side of the Missouri to a crossing near De Soto, thence via Fish creek to the Platte valley, and a connection with the Union Pacific railroad at Fremont, is the shortest, most direct and practicable, and in all respects the most desirable route for your company's road.

The distance from the crossing of the Missouri river to a point on the Union Pacific railroad 46½ miles west of Omaha, near Fremont, is 29 miles. From Sioux City to the crossing of the Missouri is 71 miles, making the whole distance 100 miles.

For about 60 miles on the east side of the river the level bottom lands are from 8 to 21 miles wide, and next to the river they are well timbered, and altogether they are among the finest farming lands in the west.

The line is entirely above high water; has but three or four curves in a distance of 63 miles, with grades most of the way varying from two to eight feet per mile.

The point of crossing the Missouri river is a good one for that river for a ferry or a bridge.

The Cedar Rapids and Missouri River railroad, at a point nearly east of the crossing of the Missouri, comes within six miles of this line, and it is already nearly completed to that point. By constructing that six miles your road would secure a direct connection with Chicago, as well as with the Union Pacific railroad at Omaha.

The construction of your line will give a western outlet via the Union Pacific railroad for the contemplated line from St Paul to Sioux City, and thereby to all the projected lines running west from the Mississippi, crossing the said St. Paul and Sioux City road; also the McGregor Western, the Dubuque and Sioux City, and the Cedar Rapids and Missouri railroads, in Iowa.

Thus all central and northern Iowa, as well as Minnesota and Wisconsin, will be furnished with a most direct and feasible connection with the Union Pacific railroad. From the south and southeast the Council Bluffs and St. Joseph, the Burlington and Missouri River, and the Chicago, Rock Island, and Pacific railroads will also be supplied with a valuable connection with Sioux City and the Upper Missouri valley.

Your road would thus become, considering its length, one of the most import
ant in the country, both to the various projected railroads of Iowa and Minnesota, and to the government and to the people.

I have not yet had time since returning from the survey to work up the field-notes and make a full estimate of the cost of construction.

I hand you herewith a map showing the slight changes which I would suggest in the line as proposed and adopted in 1865.

Respectfully submitted.

J. E. AINSWORTH,
Chief Engineer.

JOHN J. BLAIR, Esq.,
President S. C. and P. R. R. Co.

After full examination of the country, I entirely concur in the conclusions of the foregoing report.

W. W. WALKER,
Consulting Engineer.

OFFICE OF THE WESTERN PACIFIC RAILROAD Co.,
San Francisco, California, February 11, 1867.

SIR: I beg to transmit to you herewith, for filing in your department, a verified report of the president of the Western Pacific Railroad Company, as required by section 20 of the Pacific railroad act, of July 1, 1862.

I have the honor to be sir, your most obedient servant,

CHARLES W. SANGER.
Hon. HUGH McCULLOCH,
Secretary of the Treasury, Washington, D. C.

OFFICE OF THE WESTERN PACIFIC RAILROAD Co.,
San Francisco, California, February 11, 1867.

The undersigned, the president of the Western Pacific Railroad Company, in conformity to the requirements of section 20 of an act of the Congress of the United States of America entitled “An act to aid in the construction of a railroad and telegraph line from the Missouri river to the Pacific ocean, and to secure to the government the use of the same for postal, military, and other purposes,” approved July 1, 1862, hereby makes the following report of the condition of said company, as shown by their books on the thirty-first day of December, 1866, to wit:

First.—The names of the stockholders and their places of residence are:
John Center, San Francisco, California; M. J. Dooly, Stockton, California; Charles U. Fox, San Francisco, California; S. O. Houghton, San José, California; Benjamin F. Mann, San José, California; Charles McLaughlin, San Francisco, California; Mrs. Kate D. McLaughlin, San Francisco, California; John A. Martin, San Francisco, California; Patterson, Wallace & Stow, trustees, San Francisco, California; Charles W. Sanger, San Francisco, California; Santa Clara county, California; Hugh S. Slicer, San Francisco, California.

Second.—The names and residences of the directors, and all other officers of the company:

DIRECTORS.

Charles N. Fox, San Francisco, California; John Center, San Francisco, California; Charles W. Sanger, San Francisco, California; B. F. Mann, San
JOE, California; S. O. Houghton, San JOE, California; M. J. Dooly, Stockton, California; one vacancy.

OFFICERS.

Charles N. Fox, president, San Francisco; S. O. Houghton, vice president, San José; Charles W. Sanger, secretary and land agent, San Francisco; B. F. Mann, treasurer and general superintendent, San José; M. L. Stangroom, chief engineer, San Francisco.

Third.—The stock subscriptions amount to 18,811 shares, of $100 each; on which $881,100 have been paid. Three hundred shares of stock previously subscribed were sold at public auction, in accordance with law, for delinquent assessments, on the 24th day of December, 1866, when the same were bid in by the company and retired for the benefit of the company.

Fourth.—The line of road as surveyed and fixed upon commences at the city of San José, in the county of Santa Clara, and runs through said county, and the counties of Alameda, San Joaquin, and Sacramento, to the city of Sacramento, all in the State of California.

The cost of survey is included in construction contract.

Fifth and Sixth.—Nothing received from passengers or from freights; construction of road not completed.

Seventh.—The expense of the road and its fixtures to December 31, 1866, amounted to $939,800.

Eighth.—The indebtedness of the company is as follows: Due under construction and equipment contract on estimates allowed, $3,647,20. The road is mortgaged for $1,600,000, to secure the payment of 1,600 bonds, of $1,000 each, to be used as the necessities of the company may require.

Respectfully submitted:

CHARLES N. FOX,
President W. P. R. R. Co.

HON. SECRETARY OF THE TREASURY
of the United States of America.

STATE OF CALIFORNIA,
City and County of San Francisco, ss:

On this 11th day of February, A. D. 1867, personally appeared before me, the undersigned, a notary public in and for said city and county, the above-named Charles N. Fox, who being by me first duly sworn, upon his oath does say, that the matters and things set forth in the above and foregoing report, by him made and signed, are true as he verily believes.

CHARLES N. FOX.

Subscribed and sworn to before me this 11th day of February, A. D. 1867.

[SEAL.]

J. W. MCKENZIE, Notary Public.