

EVIDENCE
CONCERNING
PROJECTED RAILWAYS

ACROSS THE
SIERRA NEVADA MOUNTAINS,
FROM
PACIFIC TIDE WATERS IN CALIFORNIA,

AND THE
RESOURCES, PROMISES AND ACTION OF COMPANIES
ORGANIZED TO CONSTRUCT THE SAME;—

TOGETHER WITH
STATEMENTS CONCERNING PRESENT AND PROSPECTIVE
RAILROAD ENTERPRISES IN THE
STATE OF NEVADA,

PROCURED BY THE
COMMITTEE ON RAIL ROADS
OF THE FIRST NEVADA LEGISLATURE.

PRINTED BY ORDER OF SENATE.

CARSON CITY:
JOHN CHURCH, STATE PRINTER.
1865.

TESTIMONY

OF

F. A. BEE.

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SWORN BY CHAIRMAN OF THE SENATE COMMITTEE.

Chairman—Where do you reside?

Answer—In Placerville.

Question—What is your occupation?

A.—I have been in the telegraph building for some time past, and latterly I have been engaged in constructing railroads.

Q.—Have you any information in regard to railroad matters, in connection with the operations of companies that are, or have been actually constructing railroads from navigable tide water in the State of California, to or toward the Sierra Nevada Mountains, and on any proposed route from California navigable waters to this State?

A.—I think I have.

Q.—Please state?

A.—There is the Freeport branch of the Sacramento Valley Railroad, of which I have information from the President of the company in regard to its construction; the purposes for which it was constructed. The Freeport was built for two purposes, as I understand from the President of the company, Mr. Bragg. First, to get below the sand bars that are continually forming in the Sacramento River. Second, to get rid of opposition or persecution from the interests in Sacramento City that appeared to be strongly obnoxious to the Sacramento Valley Railroad. That road is constructed. It is in good running order. It connects, at a distance of six or seven miles from Sacramento City with the Sacramento Valley Railroad. Near the town of Folsom, a little below the town, a little west, the Placerville and Sacramento Railroad intersects the Sacramento Valley Railroad. That road, the Placerville road, is constructed and in good running order to Latrobe, a distance of fifteen miles from Folsom. There is probably six miles of the road graded from Latrobe, east. The iron required (twenty-one hundred tons), is mostly in Latrobe and Freeport—all the iron required for the Placerville road. The schooners were unloading it two weeks ago, while I was there. The iron was purchased in England and shipped from England. It was purchased by D. N. Barney, of New York, who is a leading railroad man in the Eastern States, and interested deeply in the construction of a railroad to the western boundary of this State, and to this point, to Carson. He acted as agent of the company in purchasing the iron. The other requisite material for the construction of this road is mostly on the ground.

Q.—Of what road? State distinctly.

A.—The Latrobe and Placerville road. The grading will be completed to Shingle Springs, nine miles from Placerville, by the middle of next summer, or the middle of next June. That reaches a point, at Shingle Springs, nine miles distant from Placerville.

Q.—How far is Latrobe from Placerville?

A.—It is eighteen miles from Latrobe to Placerville.

Q.—How many tons of iron is required for the laying of a mile of railway?

A.—The iron purchased for this road lays at the rate of one hundred (100) tons to the mile.

Q.—And there are twenty-one hundred tons of iron on hand owned by the Placerville and Sacramento Railroad?

A.—Yes, sir.

Q.—Sufficient to lay twenty-one (21) miles?

A.—Yes, sir.

Q.—What is the character of the work necessary to be executed between Shingle Springs and Placerville, as to grading?

A.—Between Shingle Springs and Placerville there is but one heavy cut. The grading from Shingle Springs on, is, a great portion of it, what railroad engineers call "side hill cut." I know of no obstacle in the way, between Shingle Springs and Placerville, preventive of the speedy completion of this portion of the work.

Q.—What is the grade of the located road (if you know), from Latrobe to Placerville, or about the average grade?

A.—I am not sure as to that. I think it is in the neighborhood of forty (40) feet to the mile.

Q.—At what time is it contemplated that this road will reach Placerville?

A.—In conversation with the Chief Engineer and other officers of the company respecting this work, they assured me it was their intention and expectation to have it completed, at the very latest, by the first of January next; and that opinion was given on the ground that a part of the material was on the way here, and they could not be certain as to the particular day or month on which it would arrive. That is to say, I understood that there had been a neglect to ship, or reship, a large amount of "chairs" which had been purchased for the road. The iron was fully and promptly shipped; but not a sufficient amount of "chairs." One of the contractors informed me that he thought the grading could be finished by the first of August.

Mr. Bishop—The grading could be finished by that time?

A.—Yes, sir. The "grading" constitutes the work. The rail can be laid on the graded road at the rate of a mile a day. They laid the rail nearly at that rate from Folsom to Latrobe. That is the usual rule of rate of laying, as calculated by railroad contractors.

Q.—What is your information, if any, and what are, or have been, your means and modes of obtaining such information, in regard to the intended construction of a railroad over the Sierra Nevadas, from the terminus of the Sacramento and Placerville Railroad? I refer to the "San Francisco and Washoe Railroad Company," so called.

A.—My information in regard to the designs of that corporation is information which I obtained directly from those interested in the construction of the road. I will, if desired, give you that information. I may be wrong in some particulars; but as to the general outline of what they propose to do I am posted.

Mr. Bishop—Give us the “general outline,” then.

A.—Well, Colonel Lewis, once Surveyor General of the State of California, informed me that parties were in this State (that was in October last), representing a large amount of available English capital, seeking investment in railroad enterprises here. He said that they had a company surveying from Stockton to Deer Creek. The Latrobe road crosses Deer Creek a little northwest of Latrobe, a mile or two; that they had already organized a company and had authorized the survey of the route from Placerville to the eastern base of the mountains; that competent parties in Europe had sent their business agents here, two of them, to procure these surveys, correct and accurate surveys, showing the feasibility or impracticability of the route. I saw, myself, one of the parties of engineers surveying the route this side of Placerville. Mr. Kidder and Mr. Bishop were of the party.

Mr. Bishop—When was this that you saw the surveyors?

A.—It was in the month of October or November, I don't remember which.

Q.—Have those parties, to your knowledge, made any regular report of the survey they were then engaged upon?

A.—The Chief Engineer informed me that he had, and sent me a copy of the survey as reported. He also stated to me that the survey and report were highly satisfactory to the parties who had come out here for the purpose of obtaining it. He said that they had returned to Liverpool, England, for the purpose of laying the facts thus demonstrated before the capitalists whom they represented. Mr. Latham, who was the business agent of these gentlemen I know, returned to England with them. That was what I was told by Mr. Lewis. I was in San Francisco when they sailed. Since their arrival in New York I have some information from them. Whether it would be of any value to the Committee, or not, I do not know. It is gleaned from a private telegraphic dispatch which the parties did not wish, certainly, to make wholly public.

Mr. Bishop—We would like to hear anything that would throw light on the intentions of the company.

A.—I should have stated at the proper time: In conversation with Mr. Bishop, the Chief Engineer of the Sacramento and Placerville road, he stated to me that his orders were from the parties to obtain a correct and minute survey of the route from Placerville to the eastern base of the mountains, or to the Nevada State line. He said that he was instructed to survey as practicable a line as possible over the summit of the Sierra Nevadas, and also to report upon the practicability of a tunnel route through the summit. Since the survey was ended, Mr. Bishop has told me that he has complied with these orders and made a most complete survey, so much so that contracts could be let and contractors go right to work immediately, with the specifications from the survey before them.

Mr. Bishop—Well, what was the information conveyed in the telegraphic dispatch to which you have alluded?

A.—It is information which I have obtained since I came over here from Placerville. It is substantially to this effect: That the means to construct the San Francisco and Washoe Railroad had been secured, and secured in New York. “Secured in the East,” the dispatch was worded.

Q.—What is your opinion now, as a business man, and familiar with these railroad routes, and the parties in California interested in them; what is your opinion and judgment in regard to the intentions of the

originators of the company for building this line across the mountains. And what is your opinion in regard to their responsibility? Do you believe that the managers of this project are acting in good faith, and that they have, or can command, the means adequate to the undertaking?

A.—From the information which I have obtained in reference to these parties and their designs, I have no doubt of the good faith of the intentions, and the entire responsibility and financial competency of the parties proposing to build this road. I have no doubt whatever in regard to these subjects, and I can give the committee the grounds upon which I base that opinion. It is this: Parties have come out here from England, brought special agents representing large capital with them, and have spent a number of thousands in making the trip and procuring this survey. They obtained at great expense, but without hesitation at cost on their part, the best engineering talent on the coast. I saw, as I stated, their surveying work, when actually being performed. They have not seemed to spare any expense in securing quickly a perfect survey. The organization which now exists, known as the San Francisco and Washoe Railroad Company, was formed at the instance of these parties who design building the road, and who wished to comply at once with the statutes of California authorizing and granting special privileges to railroad corporations. They accordingly filed their papers, maps, etc., in the office of Secretary of State, in Sacramento, California.

Q.—Do you know, of your own knowledge, that these parties of whom you have spoken, believed to represent large foreign capital and enterprise, had intimate business consultations and associations, while here, with prominent business men of California—so generally acknowledged to be?

A.—I know that they were obtaining information during their stay here in reference to the trade and travel between California and this State, and the probable expense of railroad construction, with a view to construct a railroad over the mountains if the survey proved satisfactory; and in seeking this information, they associated with leading business men and capitalists of California.

Mr. Slingerland—Has a survey actually been made by these parties, or for them, to the California and Nevada State line?

A.—Most assuredly.

Q.—To what extent has the entire survey been made?

A.—There is a thorough and minute survey to Placerville from Freeport; of course, partly constructed upon. I presume you have all been in Lake Valley? Well, the survey has been very minute to where the preliminary surveys diverge in that valley. One survey is by Hope Valley, and another contemplates a road down to this valley through Walton Pass. This was a survey made by Mr. Bishop in one thousand eight hundred and sixty-two. The stakes were driven somewhere under this mountain near where the Walton Pass comes in. But there is a working survey made to the point where this starts, in Lake Valley.

Mr. Bishop—As I understand you, there is a working survey from Placerville to Lake Valley?

A.—Yes, sir; a thorough one.

Q.—So that contracts could be made and contractors could go to work without any additional surveying?

A.—Yes, sir.

Q.—The survey is so complete as to show the amount of work actually required to be done, and just where it is to be done?

A.—Yes, sir. Then there was another survey made in one thousand

eight hundred and sixty-two from a point called the State Line, by Mr. Day, down into this valley and to within two or three miles of this city.

Mr. James—You say that these parties representing foreign capital in this proposed enterprise made some investigation in regard to the amount of goods transported across the mountains?

A.—Yes, sir.

Q.—Do you know anything about the results of that investigation?

A.—Only from hearsay. I understood that they were highly gratified with the results of that investigation.

Q.—Did you not see some account of the amount of freight gathered from their examination?

A.—Yes, sir, I did. But I could not now state the exact amount. I recollect I saw the statement myself. I recollect that the figures were taken by a Mr. Swan, who is a toll keeper on the main traveled road. Each wagon that passed within such a period was stopped, and the amount of freight and freight money ascertained.

Mr. Bishop—That was done for the purpose of finding out what the profits of the road would be when completed?

A.—Yes, sir.

Q.—So as to arrive at some conclusion as to what the earnings would be?

A.—Yes, sir; I spent some two months on the same inquiry in one thousand eight hundred and sixty-three.

Mr. Haskell—How much would it amount to in a year?

A.—I cannot state the exact amount. It was over eight millions of dollars.

Mr. Bishop—It amounted to sufficient to “gratify” the parties who required the examination?

A.—Yes, sir. There was over eight millions of dollars on this one road.

Q.—That is, for one year?

A.—Yes, sir; there had to be an estimate of the winter trade, aside. As you probably know, the greater part of the business is done within eight months. There were seven thousand wagons engaged in the trade, counting large and small—counting from a fruit wagon to an eight mule team.

Q.—In regard to this survey that has been recently made from Placerville to the State line,—does that survey start directly and literally from the western terminus of the Sacramento and Placerville Road? It has been reported that the former is six or seven hundred feet higher than the Sacramento and Placerville Railroad terminus at Placerville.

A.—That is the “initial point.”

Q.—Is there, in point of fact, a direct and absolute connection between the two, so that the cars may run directly on?

A.—Yes, sir. The stakes for the Latrobe road are stuck on the north slope of what is called “Hangtown Hill.” The commencement of the survey of the Placerville and Washoe Road is within rifle shot of the stakes driven two years or eighteen months ago by the Latrobe Company.

Q.—On the same level?

A.—On the same level; right across the ravine. The first stake is driven on a lot of my own, and I can look right across the ravine and see the other stakes.

Mr. James—Then, the road coming to Placerville from Latrobe can continue right on by the surveyed route to our State line?

A.—Yes, sir, certainly.

Q.—So that the cars coming upon the Latrobe and Placerville Road would run straight on the track made under this last survey by Mr. Bishop, from Placerville to the State line? That is, it would be a continuous rail connection?

A.—Yes, sir.

Mr. Slingerland—You say that the terminus of the Latrobe survey is on one side of the creek or ravine, and the commencement of the Placerville and Washoe survey is on the other side?

A.—Yes, sir.

Q.—What manner of connection would there have to be in order to bring the two roads together, across the creek or ravine?

A.—The Placerville and Sacramento Railroad terminates on the side of the hill, a little to the west and up from the point on the creek where the termini of the other is located. In order to make the depots, and storehouses, and freight houses, at that place, they will have to build a bridge across the creek which lies between the two surveys. The track of the Latrobe Railroad would cross this bridge that would have to be made, over to where the Washoe Railroad stakes are stuck. This would be coming up the ravine, and from the creek, which pitches down in this manner, (describing by posturing his hands.) You understand that the stakes of the San Francisco and Washoe Railroad are stuck right across the creek, up this ravine, near the residence of Mr. Kirk. As the stakes appear, placed at these points, I do not think that there is (6) six feet rise between them.

Q.—You could cross precisely upon the same level?

A.—Yes, sir.

Q.—No difficulty whatever in making the connection?

A.—No, sir, none whatever. I do not think that it is over twenty-five (25) feet high across there. The same route was located at the same place some years ago by William J. Lewis—one of the best engineers on the coast, probably.

Q.—Has there been any work done upon the road east of Placerville?

A.—No, sir; only the survey.

Q.—What is the estimated time for the completion of the railroad, as the route is surveyed, from Placerville to the State line?

A.—I could not answer that. All I know in connection with that is what I have learned from parties intimate with those capitalists or capital agents. They informed me that the policy of those capitalists was to build the road in the speediest possible manner consistent with thoroughness, inasmuch as they were convinced the road would bring them adequate and large returns.

Q.—You are familiar with the work already done on the railroads from the Sacramento towards the Sierra Nevada, and you are familiar with the general features of the route over the mountains which it is proposed this road shall travel?

A.—Yes, sir, very familiar.

Q.—Perhaps, then, you are competent to draw conclusions in your own judgment as to how long it would require to build this road over this route. In your opinion, how long would it take to build the road on this route from Placerville to the Nevada State line?

A.—If I had the requisite capital, and the management of affairs myself, I think I could construct it—as, indeed, I think they will construct it—within a period of five years. That is, by the Summit route, as Mr. Bishop has surveyed it, to the State line in Lake Valley.

Mr. Bishop—What is the distance from Placerville to the State line, taking the line of survey?

A.—The road distance from Placerville to the State line, is sixty-eight miles. I think that the surveyed railroad route is some ninety odd miles. But I am not positive in my recollection about that. Of course Mr. Bishop's report will tell you precisely, I believe that from Placerville to the station known as "Friday's," it is sixty-seven miles by the stage traveled road.

Q.—Then that would be allowing some thirty miles for necessary curves in the grading of the railroad?

A.—Yes, sir; I should judge so. But I do not know positively. They lost some three or four miles of distance in the vicinity of Placerville, between Weaver Creek and the South Fork of the American.

Q.—From your experience and knowledge, do you think the estimates made by the surveying engineer, as to the probable cost of the road, are correct? Do you think that the road can be built for that amount of money?

A.—Really, sir, my own experience in such matters has not been sufficient to enable me to form a competent judgment in the premises. I do know, however, that the engineer who made that survey is one of the most cautious of men in all his business and professional calculations. In fact, I do know that the Sacramento and Placerville road is being built, so far, for something like two hundred and fifty thousand (250,000) dollars under his estimate, previously made of the cost of the road. I understand, also, that there has been a saving in addition, of some forty thousand dollars, between Latrobe and Shingle Springs, on that section of the road which is now in process of construction. That is, forty thousand dollars (\$40,000) less than was Mr. Bishop's original and reported estimate of the cost of portions of the work, now completed, on that section. If you will permit me, I will venture to say, that I think it is a very easy matter, on this route, to get at pretty accurate estimates of the necessary expense, because there has been more excavation work executed by the toll road builders, close along this route—one third more (if you will allow me to judge) than there would be required to grade a railroad from Placerville to this point. A railroad bed is, as you will remember, only eight feet in width. Where it runs along the side of a hill there will be a difference, according to the slope. A toll road is from sixteen to eighteen feet in width. I think that those of the Committee who have passed over the route will bear me out in saying, that there is more excavation up the Johnson Pass, and on the Swan road—more rock excavation—than would be necessary to execute for a railroad. The width of the excavation for the toll roads more than balances, I think, the longer route necessary for a railroad gradation. You will also bear in mind, in this connection, that in cutting into the side of a hill for a bed, your labor in excavating increases in large ratio the greater the width required. To illustrate: You may make a bed eight feet in width, at a cost in labor and consequent expenditure in money no larger than would be required in addition in order to widen that same bed of eight feet to one of ten. That is to say, the first eight feet of side hill excavation may actually cost no more than will two additional feet of widening. This is the case in greater or less proportion on every side hill route.

Q.—By these excavations for toll road purposes, their cost and the rapidity of their execution, we can arrive with considerable certainty

and accuracy at the cost of the work necessary for grading a railroad bed on this route?

A.—I should judge so; clearly, I think the data are very competent.

Q.—Do you know anything about the proposed route for a railroad over the Sierra Nevada, adopted by the Central Pacific Railroad Company?

A.—I know nothing with reference to it of my own knowledge. The information which I heard there, at Washington, in regard to that route, was such as I gained from the Chief Engineer himself, Mr. Judah. Mr. Judah is now dead.

Q.—What was Mr. Judah's opinion as to the practicability of that route, as expressed by him in Washington?

A.—As far as he had explored, he expressed the utmost confidence in the route selected by him.

Q.—What are the chief difficulties in the way of a railroad successfully constructed and operating across the Sierra Nevada Mountains?

A.—I probably should have stated before, that Mr. Bishop informed me that the only obstacle which these parties thought there was in the way of the working of the road, was the "snow belt."

Q.—The working of what road?

A.—The San Francisco and Washoe Railroad.

Q.—Who do you mean by "these parties?"

A.—I mean the parties who procured this survey—the foreign capitalists or their agents.

Q.—Was that their apprehension before or after making the survey?

A.—Before the survey, and all the time. Mr. Bishop also stated to me that these parties were favorable to the ultimate undertaking of the tunnel. They expressed a belief that a tunnel three and three quarters miles in extent, was no obstacle of insurmountable proportions in labor and cost, after the road was once constructed, and placed in successful operation over the Summit route.

Q.—Is it the intention of that Company to first construct the road over the Summit, and afterward to commence and complete the work of running the tunnel?

A.—Afterward, if they think proper from the experience they will then have had, they propose to construct the tunnel.

Q.—But the proposition is first to build the road over the Summit, and not to wait the long work of boring the tunnel before actually getting the cars into the State of Nevada, on a continuous line of railway?

A.—Over the Summit first. Mr. Bishop mentioned to me the reasons why you cannot at once spend a good deal of money and labor on a tunnel,—not from any proportion as to length. But very few hands can be worked at once. All the men whom you can employ must be at work at one of the two ends, or in some of the air shafts. When I was East on telegraph matters, I took a tour through different parts of the United States, and passed through a number of the largest tunnels. I passed through a tunnel on the Baltimore and Ohio Railroad which, I think, is four thousand feet in length—nearly a mile. There was a road once constructed over the summit, which this cuts off. I went into the Bergen tunnel, which was then not quite completed. That is through hard, blue rock. I think that is a mile in length, or over a mile. I went through one tunnel, and over the top of it, on foot. The Bergen tunnel is now completed, and trains are running through it. It passes through the hardest rock that I ever saw in my life; and that is saying a good deal for a Californian.

Mr. Haskell—Do you know anything about the Hoosac tunnel?

A.—Only from hearsay; I came from near there.

Q.—What is your opinion in regard to the snows on this route, as to their being troublesome?

A.—I don't think that a train of cars could get over the Placerville route in the winter months, without some additional guarantee against the snow. The snow falls from ten to fifteen feet in depth, for a distance of seven miles on the main plateau on the top of the summit.

Mr. Bishop—From your observation in regard to this matter, do you think it would be possible to construct a roof over the road on the summit, so as to protect it against the snow?

A.—I submitted a plan myself to a convention of railroad men, for a roofing over the road. I first suppose that a sufficient width for the road bed is sunk down. On the side hill the cut would present an advantage of itself for the construction of a roof. But the bed could be sunk down at most any point, say eight feet. Then a roof could be constructed as I proposed, eighteen feet in height, with so sharp a slope as of itself to furnish nearly sufficient bracing power against the snows, and so steep that any considerable bodies of snow would slide off from it. It could be very readily constructed out of cedar. I think it might answer to construct it simply with a ridge-pole, without any cross bracing.

Q.—Would not the snow, if it should rise over the roof, naturally arch and become self-sustaining?

A.—That is the case all through the mountains. You frequently see that illustrated when a tree eight or ten feet high has been covered by the snow. You will find the tree standing straight up under the snow, with perhaps no snow near it within from five to ten feet. The heat of the wood melts the snow away from the body and the branches, and leaves the tree a little winter hot house of its own making. I have fallen through some of these arches, or snow-houses, a distance of ten or twelve feet. It is the same way on the old log houses that were built in the mountains. A short time after the snow has fallen and covers the house, it melts away from the roof and there is no pressure on top at all. There is an abundance of timber, of course, for the construction of such a roof, all the way along the summit.

Mr. Rigby—On the line of this road are there any high bluffs where the snow slides?

A.—There is only one place where the snow slides. That is known as the snow slope. It carried away my telegraph poles and line on that slope at one time; every one of them. The snow at that point comes down from a very high peak. When the snow starts at that point, it comes down in a tremendous avalanche. You have been to that point on the road, I suppose. The survey of this railroad route is on the opposite side of the snow flat into which this avalanche sometimes descends. This road is on the south side of the flat; across the ravine. This avoids the danger of snow to the railroad at that point of the route.

Q.—What is the fact in regard to the present or prospective help, or opposition, of toll road owners on this route toward the construction of the railroad?

A.—I can only speak from an examination of the books of the Sacramento and Placerville Railroad Company. On an examination of their stock books, I found only two toll road owners who held any stock or had rendered any aid toward the construction of that road. I have found, by talking with them, that they do not feel much of a liberal or

enterprising spirit toward the proposition of a railroad on this route. The statement that has been current in some newspapers that the toll-road men on this route constituted the main supporters and advocates of a railroad on this route, is not true. They might, perhaps, be induced—some of them—to subscribe toward the building of a railroad to Placerville; but they would not sign for any work beyond that point, on the ground that the road would soon leave them in the rear and take away their income.

Q.—Have any of the hotel keepers along this route shown any favor, or hostility of disposition, toward this proposed route?

A.—I could not say as to that. I know that many of the toll road owners are abundantly able to assist the building of the road from Placerville; but so far they have refused to take any interest in it. I don't think they have given any railroad from the Sacramento to the mountains any support, with the two exceptions I have named.

Mr. James—What is the distance of the snow belt on this summit which has just been surveyed by Mr. Bishop?

A.—Seven miles. The distance that is now traveled by sleighs over the mountains on the Pioneer or Placerville route is eleven miles. There are seven miles of deep snow on the main plateau.

Mr. Haskell—The railroad would necessarily go up on the side of the "summit," which would make it much longer on the snow belt than the stage road?

A.—Three or four miles from the summit, on which you may find ten or twelve feet of snow, it is bare ground. That is, I mean on the other or western side. I know it is bare ground in Lake Valley at times when the snow is very deep on the summit.

Mr. James—Do you think that without any Government or outside aid, without any other capital than the resources directly at the command of the Washoe and San Francisco Railroad Company, they intend and are able to build this road?

A.—I can give you a portion of the information which I have on this point, and the source from which it was derived. Mr. Louis McLane informed me that this Company did not intend to open stock books for subscriptions in the State of California, or in this State, any further than to comply with the California statute, which requires, I believe, a thousand dollars a mile subscribed, and ten per cent. paid in. The Engineer told me, that they did not intend to ask for Government aid at present. And he said that it was not their intention to ask for Government aid unless they met with some unforeseen difficulties in the way of constructing their road—difficulties which were not now visible. The Company wanted the right of way guaranteed to them. Perhaps even this right might not be given without opposition. There was no reason why they should not apply to the Government of the United States for assistance, inasmuch as the Government had assisted other roads. I know that this argument is generally used to the reverse.

Q.—You are familiar with the principal parties named in connection with this proposed road?

A.—Yes, sir.

Q.—Do you know that this company, or any of its officers, or accredited agents, proposed to urge upon Congress, or ask any one else to urge upon the Congress of the United States, any grants in behalf of their road?

A.—I do not. I have this information from their officers and agents. They say that when they shall have built and completed a section of

twenty-five miles east of Placerville, the receipts and earnings of the road will go very far toward constructing the balance of the road up to the foot of the summit. And when they shall have reached a point so high up as Strawberry, the nettings of the road will build it to completion. That is their calculation, as they see matters at present. And they wish and intend to so divert the funds. But they do intend to ask the Government for land for their protection on a right of way. I was told by Engineer Lewis, I don't know whether it is of any importance to the committee, but it may explain some matters, that these parties who proposed the construction of this road did not ask, or expect, any action to be taken by this Legislature, or any other Legislature, or by Congress, in the way of giving aid to this road until they were fully aware of the practicability of this route, and had seen and examined the printed copy of this survey. They did not wish any action taken before that was seen.

Q.—Referring to the survey that has been laid before us?

A.—Yes, sir, Mr. Bishop's. The one that was then in progress of making. I believe that the map and profile has been exhibited to this Legislature. I would like to explain one matter for the benefit of the committee. I believe that all of the committee have not been over this route. When we hear so much about mountains that are impossible to pass on this route by a railroad line, we may not be told of the natural adaptation of the country for a railroad grade. The South Fork of the American River is within two miles and a half of Placerville. This stream follows down a deep cañon from near the summit to the foot hills of the Sierra Nevada. This survey by Mr. Bishop for the San Francisco and Washoe Railroad Company reached that cañon from Placerville as soon as possible. The engineer, in making that survey, got on the upper ridge of that river cañon as soon as possible. The road then follows the course of the South Fork of the American River, which is an almost due east course, until it reaches a little below Strawberry. From there the survey is ninety-five feet to the mile, up the summit. That is the maximum grade.

Q.—How does that grade compare with the established grades of railroads in the East?

A.—I have traveled over grades in the East of one hundred and twelve and one hundred and sixteen feet to the mile. I have been over one grade of one hundred and sixteen feet to the mile extending a distance of eleven miles. I was in a long train of cars, and it was raining at the time which made the track slippery. We were drawn up by a locomotive specially constructed for hauling trains up steep grades. It had six drivers.

Q.—A grade can, then, be very successfully run which rises at the rate of one hundred and ten feet to the mile?

A.—Yes, sir, except the snows interfere with it. And that is the fact, the one only obstacle that is at all formidable in the way of a railroad to this State by this route is the snow. There is really nothing else of unusual magnitude in the way. There are no extraordinary obstacles, for a mountain road, to prevent the construction of a good road over the mountains by this route. I think it has been established by actual surveys that on this route there are no more formidable obstacles to overcome in the construction of a railroad than are encountered on the Baltimore and Ohio Railroad. I believe that that road has thirty-nine miles of very heavy grade. There are roads in the East where the grade is over two hundred feet to the mile. They are named in some of the re-

ports and comparative statistics that have been printed in reports and surveys of routes over our mountains.

Q.—Is it easier to construct a road by long-side hill excavations than to make embankments and cuts in an ordinarily undulating country?

A.—Yes, sir. The most expensive railroads, exclusive of the cost of actually tunneling, are made where there is continuous cutting or filling.

Q.—How much have the citizens of El Dorado subscribed to this road?

A.—The county of El Dorado has subscribed two hundred thousand dollars to the Placerville and Sacramento Railroad. The citizens of Placerville, in their corporate capacity, have subscribed one hundred thousand dollars. I see by the books of the company that one hundred and forty thousand dollars in stock is held by the citizens of Placerville. That makes over four hundred thousand dollars.

Q.—That is for the road west of Placerville?

A.—Yes, sir.

Q.—Is the road from Freeport, which connects with the Sacramento Valley Railroad, a part of the Placerville and Sacramento Railroad?

A.—The agreement with the Messrs. Robinson and the other officers of the Sacramento Valley Railroad was that they would build and keep in repair a railroad to the deep water of the Sacramento River. Sand bars were continually forming in front of the city of Sacramento. This was an objection to Sacramento as a terminus. There was talk of running a road from Placerville to Stockton. This would have diverted the mountain freight from Sacramento and from the Valley road. I understood that in order to secure a connection with the road to Placerville it was agreed to build this road to Freeport, and thus secure deep water wharves at all seasons of the year.

Q.—Is that Freeport road a portion of the Sacramento and Placerville road?

A.—I do not know whether it is now or not. I know, or believe, that there was a proposition to make one road, under one Company, from Placerville to Freeport. I don't know whether that plan has been consummated or not. It was not when I left.

Q.—Then does the Freeport branch belong to the Sacramento Valley Railroad Company?

A.—Yes, sir.

Q.—What is the distance by rail from Placerville to Freeport?

A.—From Freeport to Latrobe there are forty-seven (47) miles of completed road. By the railroad survey, I think it is nineteen miles from Latrobe to Placerville. It may be twenty (20.)

Q.—Do I understand that a preliminary survey has been made by way of Hope Valley?

A.—Yes, sir. A preliminary survey has been made from the State line to the north side of Carson River. A portion of it is through Hope Valley. I think it goes down what is called Desert Cañon. I saw the engineers and conversed with them while they were engaged in making the survey.

Q.—You were speaking of a road from Lake Valley to Carson Valley?

A.—Yes, sir. I understood from the Chief Engineer that they proposed to survey a route of which he has already some information, called the "Walker Route." He said that he had information to the effect that it was some thirty miles nearer to Austin by this route.

Mr. Haskell—How much of the Sacramento and Placerville Railroad has been completed?

A.—Fifteen miles; from Folsom to Latrobe.

Q.—What stock has that Company for their road?

A.—They have twenty-one hundred tons of iron on hand; a portion of it at Freeport and a portion of it at Latrobe. It is calculated that that would lay the track for the road to two or three miles of this side of Placerville.

Q.—Was there not an arrangement between the Sacramento Valley Railroad Company and the Sacramento and Placerville Company to furnish the iron for the road if the Sacramento and Placerville Company would do the grading?

A.—There was a proposition to that effect made by Mr. Robinson at a public meeting, but it was not accepted. They wanted ten per cent. and first mortgage bonds, I believe.

Q.—How many persons were present at that meeting whom you knew?

A.—Well, perhaps there were seven or eight persons.

Q.—How far do you say the iron will go?

A.—The iron that is now on hand, if no long switches are laid, will come three miles east of Placerville. This iron the Company have on hand and have paid for.

Q.—Have they any rolling stock here or on the way?

A.—No, sir. They are having locomotives and cars constructed.

Q.—Are they being constructed for the San Francisco and Washoe Railroad, or for the Sacramento and Placerville Railroad?

A.—For the Placerville and Sacramento Railroad, of course.