

RETURN

To an Order of the House for copies of the following papers, &c.:—Specifications for construction of the Ashcroft Bridge; contract for constructing said bridge; correspondence between the Government, or any member thereof, and the following parties, viz.: the Bridge Company, or anyone on its behalf; the Provincial Superintendent of construction, or any other person, in relation to the construction or condition of said bridge.

JNO. ROBSON,

Provincial Secretary.

*Provincial Secretary's Office,
14th March, 1887.*

Mr. J. McMullen to the Surveyor-General.

SAN FRANCISCO, Cal., October 24th, 1885.

DEAR SIR,—Mr. Sypolt delivers you this letter on his way to commence Barnes' Bridge.

Will you acquaint Mr. Stevenson of our understanding that the concrete blocks will be used instead of piling? I have again been conferring with our man Mr. Snodgrass, who built the Savona Bridge, and who particularly examined the foundation at site of Barnes' Bridge, and I am more than ever convinced that piling will not make a proper job. The boulders are so close together, and embedded in such a firm strata of cement clay, that piles could not be properly driven; and if we did drive piles, it would only break this firm strata and cause it to scour out. But as we are agreed on this matter, I want you to simply acquaint Mr. Stevenson of our conclusion and leave the rest with us, and we will be responsible that it will make a good job.

I have instructed Mr. Sypolt very particularly to make a good job of this concrete foundation.

Will you further instruct Mr. Stevenson to report to you when the lumber, iron, and cement are delivered, as we desire you to give us a payment at that time, which payment we leave with you to make as liberal as possible, as you know the material and freight are the principal things, and the only additional cost will be the labour. We trust, considering this, you will allow us fully 50 %.

I suppose you have by this time ascertained what freight will be. I want you to wire or write to Mr. Haney, or whoever has charge of railroad, that freight will be paid on delivery of material.

Parties shipping lumber wire us that railroad wants freight prepaid. As the Government is interested in this freight we don't want to prepay it; we want to know, first, that it is right, consequently we want you to wire Mr. Haney, or whoever runs the road, that freight will be paid on delivery of material at bridge site.

Mr. Sypolt will send you the bills, and then you may pay them at the rate already agreed upon between you and the railroad, and deduct it from our first payment and remit it direct to them.

We particularly want you to assure them that the Government will pay freight on delivery of material, as we don't want delivery of material delayed on account of freight not being prepaid.

Your prompt and energetic action in this matter will be of great service to us.

If you will recommend Mr. Stevenson to give Mr. Sypolt a little of his own way and not stand on technicalities, we assure you we will do all and more than we contracted to do, and will do anything necessary to make a complete, substantial and perfect job.

Kind regards of yours respectfully,

(Signed) J. McMULLEN.

The Surveyor-General to Mr. A. Stevenson.

VICTORIA, B.C., 11th Nov., 1885.

SIR,—I have the honour to enclose herewith a copy of the specifications for the construction of the Thompson River Bridge at "Barnes" or Ashcroft Station. The bridge is to be erected at the site selected by you and myself last autumn.

Of course, a few yards up or down the river from the precise spot staked out by us is of no consequence, provided an improvement in the site for the position of the piers can be thus obtained.

From the nature of the bottom of the river I am of opinion that concrete foundation will be preferable to piles.

The contractors' copy of the plans and details will be open to your inspection at any time.

Mr. A. W. Sypolt is the contractors' foreman in charge of the work, and will, I am sure, pay every attention to your suggestions while you are superintending the work

I am, &c.,

(Signed) W. S. GORE,
Surveyor General.

Mr. A. Stevenson to the Surveyor-General.

LYTTON, B.C., Nov. 19th, 1885.

SIR,—I have the honour to inform you that I have just returned from Ashcroft Station. Mr. Sypolt has started work and is progressing favourably with the framing. There was seven car-loads more timber arrived the night after I wired you the amount of material on hand; there is about twenty-five thousand feet of timber to come yet. The timber is A 1—the best lot of bridge timber I ever saw. The water is too high to work to advantage at the piers at present, but by the time the framing is done and the shore ends, he may be able to go on with the piers.

I have, &c.,

(Signed) A. STEVENSON,
Road Superintendent.

Mr. A. Stevenson to the Surveyor-General.

ASHCROFT, B.C., 25th Nov., 1885.

SIR,—I have the honour to inform you that Mr. Sypolt and I have located the piers to-day, and find that the water is about 3 feet deep at pier No. 2, 2 feet deep at pier No. 3, and 6 feet deep at pier No. 4. The cylinders are all the same length—25 feet each. Cylinders are about 4 feet too short for pier No. 4. It is going to be very difficult to excavate bottom for pier No. 4; the only way it can be done is to cofferdam, and, in all probability, a steam pump will be required. Mr. Sypolt says it would be equally as good and cheaper to raise a space of about 20 feet by 35 feet with rock where the pier will stand to the level required for the block of concrete, then make a block of concrete 8x24, two feet thick, for the piers to rest on, then rip-rap, as required by specification. Cylinders are all right for piers Nos. 2 and 3.

It is a hole where this pier stands; the water is shallower 50 feet below or 50 feet above. We cannot make any improvement by moving bridge site; we would have same trouble on north side.

Please wire your opinion of this, or say if cylinders are to be lengthened and excavation made, as required by specifications.

I have, &c.,

(Signed) A. STEVENSON,
Road Superintendent

[TELEGRAM.]

30th November, 1885.

A. Stevenson, Ashcroft:

Fill in hole at pier four with rock, as suggested by Sypolt.

(Signed) W. S. GORE.

NOTE—This pier has not settled or moved since erection.

1st March, 1887.

W. S. GORE, *Surveyor-General.*

[TELEGRAMS.]

ASHCROFT, B.C., Dec. 13th, 1885.

To W. S. Gore:

Two and a half feet of water at pier No. 3; cylinders just long enough to sit on bottom. I think it better not to excavate for concrete block, but instead set cylinders on bottom and build concrete around cylinder; less liable to wash if river bed is not disturbed. Answer.

(Signed) A. W. SYPOLT.

14th December, 1885.

A. W. Sypolt, Ashcroft:

Set cylinders in pier No. three as you think best, at risk of Bridge Co., who will be held responsible for any changes made.

(Signed) W. S. GORE.

Mr. A. Stevenson to the Surveyor-General.

ASHCROFT, B.C., Dec. 23rd, 1885.

SIR,—I have the honour to inform you that Mr. Sypolt is progressing quite satisfactorily with the bridge. I have not had any trouble with him; he don't show any disposition to slight any part of the work. The two eighty-foot spans are completed, and one 200-foot span will be completed on Saturday. The framing is all done, and I think, if all goes well, the bridge will be completed in about four weeks.

I have, &c.,

(Signed) A. STEVENSON.

Mr. A. Stevenson to the Surveyor-General.

LYTTON, B.C., 30th Jan., 1886.

SIR,—I respectfully request to make a few remarks with reference to the foundation of Pier No. 3. Of course, I saw your telegram to Mr. Sypolt, telling him to set cylinders as he thought best, at the Company's risk. Piers Nos. 2 and 3 are set on bottom; no excavation or concrete block. This may be perfectly safe; Mr. Sypolt appears very confident that it is. I do not like to back my opinion against the opinion of a man that has had much more experience than I have; but really I cannot help thinking that the river bottom should have been excavated and the concrete block under cylinders, as stated in specification. I would certainly recommend that you hold the Company responsible for the bridge till after high water. The river bottom is rough, it may not wash any round piers; but I think it would be well to take this precaution. You know the current is very strong, and if there is the least wash it will undermine the piers. The bridge will be completed in about a week from this date.

I have, &c.,

(Signed) A. STEVENSON.

[TELEGRAMS.]

ASHCROFT, B.C., 3rd Feb., 1886.

To W. S. Gore, Victoria.

Bridge will be completed about Monday, the eighth.

(Signed) A. STEVENSON.

ASHCROFT, B.C., Feb. 6th, 1886.

To W. S. Gore, Victoria.

Bridge is completed.

(Signed) A. STEVENSON.

Mr. A. Stevenson to the Surveyor-General.

ASHCROFT, B.C., Feb. 6th, 1886.

SIR,—I have the honour to inform you that Mr. Sypolt has completed the bridge at Ashcroft. Unfortunately when the two last cylinders were being filled the weather turned intensely cold; the concrete froze solid before it had time to set. I do not know how much damage the frost may have done to this pier, but when the weight came on it the castings settled in the concrete about three inches. I believe the frost is all out of the cylinders now, and if it don't settle any more it will not be noticeable in the appearance of the bridge.

The timber and iron is the full specified size; the workmanship the very best. The timber is, without any exception, the best I have ever seen in this part of the country.

The total length of the bridge is 634 feet. I cut the last span down to 24 feet and set the abutment thus far out to help to make the turn.

I have, &c.,

(Signed) A. STEVENSON.

[TELEGRAM.]

SAN FRANCISCO, 26th Feb., 1886.

To Honourable William Smithe, Victoria:

Wire us fully why Government don't pay for Barnes' Bridge, as per contract. If there is any hitch about freight or completion of bridge we want to know it. Matter must be adjusted; answer paid.

(Signed) J. McMULLEN.

The Surveyor-General to Mr. J. McMullen.

VICTORIA, B.C., Feb. 26th, 1886.

RE ASHCROFT BRIDGE.

SIR,— * * * * *

Concerning the payment of the balance of the contract price, the Honourable the Chief Commissioner of Lands and Works desires me to inform you that he does not feel warranted in making any further payment before the expiration of the six months from the date of the completion of the work, during which time you have agreed to maintain, uphold, and guarantee the stability of the work, or, at any rate, until after the spring high water has subsided.

This decision has been arrived at after carefully considering the matter, and is based upon the facts: 1st That you have departed from your agreement, in so far as it relates to the manner in which the foundations for the piers were to be constructed. 2nd. That you allowed concrete to remain in the cylinders forming one of the piers after it had been frozen (at a very low temperature) before setting, in consequence of which the filling of the cylinders has settled in a manner which may be prejudicial to the stability of the pier.

In all other respects the Superintendent speaks in high terms of the material and workmanship.

I have, &c.,

(Signed) W. S. GORE,
Surveyor-General.

[TELEGRAMS.]

SAN FRANCISCO, 5th March, 1886.

To Hon. Wm. Smithe, Chief Commissioner of Lands and Works:

Communication received and noted. In reference to rebate on freight we will have to submit, although it is due to the Government that this rapacious railroad is overpaid, and we have no redress from the decision of Government. Relative to not paying for the bridge, we most emphatically and firmly appeal, as it is arbitrary, unjust, and wholly untenable in equity or in law, and directly contrary to the letter and spirit of our contract. Government cannot appropriate and use our property without paying for it. We have no objection to guaranteeing the bridge for six months or ten years. You can draw up a new

bond, guaranteeing the bridge for six months, and our bondsmen will execute it, as was done in the case of the Savona Ferry Bridge, where Government took same ground, and after looking into the equity of the thing receded from their position. As to our departure from the plan or foundation, it was due wholly to the fact that Government furnished us profile showing the foundation entirely out of water, a condition of things that don't exist, rendering contemplated foundation impracticable to construct, and the change produced a better job, and was made with the approval of the Government. As to your claim of the settlement of the concrete in one of the cylinders, there is absolutely nothing in it. It is a customary and usual thing for the bridge-seat to settle the concrete filling of piers. In pier mentioned it settled in a slight degree greater than in the other piers. Bridge is in possession and use of the Government; our contract obligates us to maintain it for six months. We will renew this obligation in any form Government desires; but money is now overdue and payable, and Government must keep its obligation with us.

(Signed) J. McMULLEN,
For San Francisco Bridge Co.

J. McMullen,
10 California Street, San Francisco:

VICTORIA, 18th March, 1886.

Government will accept satisfactory guarantee for maintenance of bridge and pay balance.
(Signed) WM. SMITHE.

The Surveyor-General to Mr. J. McMullen.

VICTORIA, B. C., 26th March, 1886.

SIR,—By direction of the Honourable Chief Commissioner of Lands and Works, I beg to enclose herewith a bond, or guarantee, for the maintenance of the Ashcroft Bridge. Your bondsmen in this city have executed the document, which now requires your signature. Please return the bond to me, duly signed and attested. Upon its receipt, the balance due on your contract will be paid to the Manager of the Bank of British Columbia, in compliance with your request.

I remain, &c.,
(Signed) W. S. GORE,
Surveyor-General.

Mr. J. McMullen to the Surveyor-General.

SAN FRANCISCO, Cal., March 30th, 1886.

DEAR SIR,—Your favour of 26th inst., with contents, received and noted. Enclosed we herewith return the bond, duly signed and attested.

Please get Government to act promptly in the payment of the money to Mr. Ward. We beg to assure you and your associates that you may sleep soundly, that the piers of the Ashcroft Bridge will be there when your grandchildren are all dead. We enclose you a photograph of the bridge, and we wish to extend our personal thanks to yourself and the Government for their uniform courtesy and kindness to us, and we trust you will not fail to give us timely notice when there is anything in our line at your disposal. Please return to us the drawings, &c., of the Thompson River and Victoria Bridges, which are the property of the San Francisco Bridge Co.

With personal warm regards, &c.,
(Signed) J. McMULLEN.

The Surveyor-General to Mr. J. McMullen.

VICTORIA, B. C., 7th April, 1886.

DEAR SIR,—The guarantee bond enclosed with your letter of the 30th ultimo has been duly received, and the balance due on account of the construction of Ashcroft Bridge—\$7,653.10—has been paid to your credit at the Bank of British Columbia.

The plans, &c., &c., of this and the Point Ellice Bridge are on files of record in this office, and, consequently, cannot be returned to you. I may, however, assure you that in no event will other contractors have access to them for any purpose.

Many thanks for the photo. of the bridge which you were kind enough to send me.

Yours very truly,

(Signed)

W. S. GORE,

Surveyor-General.

[TELEGRAMS.]

ASHCROFT, June 10th, 1886.

To W. S. Gore :

Up stream cylinder, centre pier, Ashcroft Bridge, settled nine inches. Bridge lurched up stream. Can you suggest anything that might be done?

(Signed) A. STEVENSON.

J. McMullen,

42 Market Street, San Francisco :

VICTORIA, 11th June, 1886.

Stevenson reports up stream cylinder, centre pier, Ashcroft Bridge, settled nine inches ; bridge lurched up stream ; very high water anticipated. Government hold you responsible for all damage to bridge. Your bondsmen here notified.

(Signed) W. S. GORE.

VICTORIA, 11th June, 1886.

Arthur Stevenson, Ashcroft :

Government hold contractor responsible for any damage to bridge. I have notified him what you have reported.

(Signed) W. S. GORE.

The Surveyor-General to Mr. E. B. Marvin.

VICTORIA, B. C., June 11th, 1886.

SIR,—I beg to notify you, as one of the sureties of Mr. J. McMullen, contractor, that the Government Road Superintendent has reported that one of the cylinders of the centre pier of Ashcroft Bridge has settled nine inches, and that the bridge has taken a lurch. The Government hold you, as such surety, responsible for any damage which the bridge may sustain during the anticipated high water, or from any other cause.

The other surety, Louis Redon, and the principal, J. McMullen, have been similarly notified.

I have, &c.,

(Signed)

W. S. GORE,

Surveyor-General.

[TELEGRAMS.]

PORTLAND, Or., June 12th, 1886.

To W. S. Gore, Victoria :

Have wired Evans and Barnes to do anything possible at our expense to secure bridge. You please wire Stevenson similar instructions. I think bridge will withstand flood. Wire me here what you know.

(Signed) J. McMULLEN.

SPENCE'S BRIDGE, June 14th, 1886.

To W. S. Gore, Victoria :

No change in bridge ; water falling.

(Signed) A. STEVENSON.

Mr. A. Stevenson to the Surveyor-General.

LYTTON, B. C., June 27th, 1886.

SIR,—I have the honour to inform you that there is no change in the Ashcroft Bridge since I telegraphed you that it had settled nine inches.

The up stream cylinder settled, and, consequently, the other cylinder is drawn out of plumb; so the pier is out of plumb considerable, making quite an elbow in the bridge. It don't interfere with the travel. I think high water is over, so I do not think there is any more danger for the present. I have no hesitation in saying that this pier will not stand an extreme high water.

From the 1st to the 8th of June the weather was very warm, and the water came up rapidly to within $4\frac{1}{2}$ feet of the extreme high water; then the weather changed, and became unusually chilly. This checked the water, and it began to fall just about the time the pier began to settle. The sudden change in the weather saved the bridge.

I have, etc.,

(Signed) A. STEVENSON,
Road Superintendent.

The Surveyor-General to Mr. J. McMullen.

VICTORIA, B. C., 3rd July, 1886.

SIR,—By direction of the Hon. Chief Commissioner of Lands and Works, I enclose herewith, for your information, a copy of a letter from Superintendent Stevenson, respecting the condition of Ashcroft Bridge. The Minister also directs me to inform you that the Government look to you to repair all damages which the bridge has sustained, and to restore the structure to its proper position, and further to take efficient measures to prevent further settlement of the cylinders, and to secure them against any possible damage which may occur through high water in the future. Awaiting your reply,

I am, &c.,

(Signed) W. S. GORE,
Surveyor-General.

Mr. J. McMullen to the Surveyor-General.

SAN FRANCISCO, CAL., July 26th, 1886.

SIR,—Your esteemed favour of 3rd inst. is at hand and noted. It would have received earlier reply but for my absence from the city.

As soon as our foreman at Vancouver is at liberty we intend to have him go to Ashcroft and put the trusses or superstructure back to their original position. This will be done by raising the pedestals of the trusses off the top of pier as much as the cylinder has settled, and filling in between the pedestals and the top of the cylinder with concrete or masonry.

It is no injury or detriment to the bridge that this pier stands out of plumb, neither do we think that ever any further settlement will take place; but we would strongly recommend to the Government that they should rip-rap not only this pier, but all the other iron piers of the bridge, by putting a mattress of brush around the pier and then weighting the same down with large quantity of rock. This would effectually prevent the scouring out of the bottom around the piers at high water. It is not an unusual thing to have to do this around newly constructed piers, especially when they stand in a rapid stream, as in this case.

I will be in Victoria this summer and shall see the Government relative to this matter.

Respectfully yours,

(Signed) J. McMULLEN.

Mr. A. Stevenson to the Surveyor-General.

ASHCROFT, B.C., Oct. 21st, 1886.

SIR,—I have the honour to suggest that you will come up and see the Ashcroft Bridge before making any final arrangement with the Bridge Company as to what is to be done with it. The water, although not low enough to work to advantage, is very low for this time of the year, as low as it was on the first of January last year. If you come up, please let me know when you are coming so I can be here to meet you.

I have, &c.,
(Signed) A. STEVENSON.

The Surveyor-General to Mr. J. McMullen.

VICTORIA, B.C., 25th October, 1886.

SIR,—The Government are constantly in receipt of reports as to the dangerous condition of Ashcroft Bridge, in consequence of which I am directed to communicate with you as to the urgency of your taking steps to effect repairs with as little delay as possible. Stevenson reports to me that the water in the river is as low now as it was on the 1st January last, a most unusual thing at this time of the year. He wishes me to make an inspection of the bridge, but I would prefer to wait until you can go with me. I believe you should examine the bridge yourself for the purpose of thoroughly satisfying yourself and the Government as to the measures necessary to adopt in order to restore the structure to its proper position, and to guard against the probability of further damage in future. I must, therefore, ask you to make it your business to come up here at an early date.

I am, &c.,
(Signed) W. S. GORE,
Surveyor-General.

The Surveyor-General to Mr. A. Stevenson.

VICTORIA, B.C., October 26th, 1886.

SIR,—In reply to your letter of the 21st inst., I beg to say that I expect Mr. McMullen here for the purpose of inspecting the bridge at Ashcroft, and I will endeavour to accompany him on his visit to that place.

I have, &c.,
(Signed) W. S. GORE,
Surveyor-General.

Mr. J. McMullen to the Surveyor-General.

SAN FRANCISCO, CAL., Nov. 10th, 1886.

Your letter of October 25th is at hand and contents noted. I have deferred taking any action in the matter of the Ashcroft Bridge until I could send our superintendent, Mr. Sypolt, there to make the repairs. He will be available about the end of this month, at which time I shall send him there, and, if possible, I shall accompany him. However, that will make no difference, as he is entirely competent to determine and execute what is necessary to be done. I hope you will be able to go with him to the bridge.

Yours, &c.,
(Signed) J. McMULLEN.

[TELEGRAM.]

ASHCROFT, Dec. 13th, 1886.

To W. S. Gore, Victoria:

Sypolt is levelling bridge on piers ; says that is all he will do.
(Signed) A. STEVENSON.

[TELEGRAM.]

SPENCE'S BRIDGE, Dec. 16th, 1886.

To W. S. Gore, Victoria.

Sypolt has levelled bridge on piers and left.

(Signed) A. STEVENSON.

The Surveyor-General to Mr. J. McMullen.

VICTORIA, B.C., Dec. 14th, 1886.

RE ASHCROFT BRIDGE.

SIR,—I beg to advise you that Mr. Sypolt, representing the San Francisco Bridge Company, has been informed by the Honourable the Chief Commissioner of Lands and Works that the Government hold the Bridge Company bound, under their guarantee bond, to do the following work for the purpose of making good damage sustained by the bridge during the period covered by the bond, owing to defective construction and failure to prepare a concrete foundation for the piers, as required by their agreement, viz:

1st. To raise the superstructure over the defective pier to its proper position, and to place a cut stone or concrete block on the top of the low cylinder.

2nd. To build a crib with cut-water round the defective pier of squared timbers not less than six inches thick, dovetailed, drift-bolted, and cross-tied together, as directed. To excavate the bottom of river channel and make a level foundation with concrete for the bottom timbers of the crib. To load the crib with stone, as may be directed.

3rd. To take out and remove the filling in those cylinders in which the concrete did not properly set and replace it with fresh concrete.

4th. To replace any timbers carried away by high water, and to remedy any other defect which may be required.

In the event of Bridge Company refusing or neglecting to do this work forthwith, the Government will be constrained to cause the same to be done and charge the cost thereof against the sureties, the bond having already accrued.

I have, &c.,

(Signed) W. S. GORE,
Surveyor-General.

NOTE.—Letters worded similarly to the above were sent to A. Stevenson, Louis Redon, and E. B. Marvin.

(Signed) W. S. GORE,
*Surveyor-General.**The San Francisco Bridge Company to the Surveyor-General.*

SAN FRANCISCO, CAL., Dec. 24th, 1886.

DEAR SIR,—We beg to acknowledge receipt of your esteemed favour of 14th instant, in response to which we respectfully submit the following:

Firstly—We recognize the fact that under our contract with your Government for the construction of the Ashcroft Bridge, and the guarantee bond given in connection therewith to maintain the structure for a period of six months after its completion in a perfect condition. We are in duty bound to make the repairs and additions for the safety of the bridge, as demanded and enumerated by you in your favour of the 14th inst., before our bondsmen can be released from their obligation.

Secondly—We are perfectly willing that such proposed work should be done forthwith at our expense, except where already performed or otherwise arranged by our Mr. Sypolt with the Hon. Chief Commissioner of Lands and Works.

And for separate answer to your demands embodied in your favour, we beg to submit the following:

To demand No. 1—"To raise the superstructure over the defective pier to its proper position and to place a cut stone or concrete block on the top of the low cylinder."

This has been already done by our Mr. Sypolt during his recent stay there, to the entire satisfaction of your agent, Mr. Stevenson. The bridge, for its entire length, is now perfectly plumb and true, and all the tension members and laterals properly screwed up and adjusted.

To demand No. 2—"To build a crib, with cut-water round the defective pier, of squared timbers not less than six inches thick, dove-tailed, drift-bolted, and cross-tied together, as directed. To excavate the bottom of river channel, and make a level foundation with concrete for the bottom timbers of the crib. To load the crib with stone, as may be directed."

We beg to enclose plan for this crib, in accordance with your directions for same to our Mr. Sypolt, and would request that Mr. Stevenson, with whom Mr. Sypolt has talked the matter over, be permitted to put in said crib at our cost and expense.

Demand No. 3—"To take out and remove the filling in those cylinders in which the concrete did not properly set, and replace with fresh concrete."

We understand from Mr. Sypolt that the Hon. Chief Commissioner of Lands and Works has waived this upon presentation of the fact that the concrete in question has not settled, that he has removed all the loose concrete to a depth of 18 inches in the cylinders and renewed the same with new cement mortar.

Demand No. 4—"To replace any timber carried away by high water, and to remedy any other defect which may be required."

The only timbers carried away was the lower part of the Webb planking of the centre pier, around which the crib protection is now to be built. As this Webb planking would interfere with the construction of the crib, Mr. Sypolt abstained from replacing same.

As a further evidence of our good faith in this matter, we beg to enclose herewith a certified check for the sum of \$500 and payable to your order, as a deposit for the cost and expense of putting in said crib. If it should exceed said sum the Government may draw on us for the balance, and if it should be less you will kindly remit us the difference when the work is finished.

Trusting that this may be entirely satisfactory to the Government,

We remain, &c.,

SAN FRANCISCO BRIDGE COMPANY,
By M. J. Mertens, V.P.

The Surveyor-General to Mr. M. J. Mertens.

VICTORIA, B. C., 6th January, 1887.

SIR,—I have the honour to acknowledge the receipt of your communication of the 24th ultimo, upon the subject of making good damage sustained by Ashcroft Bridge, and enclosing a cheque for \$500, as a deposit towards defraying the cost of this work, and in reply beg to thank you for the prompt action taken in the matter.

Mr. Stevenson will be instructed to proceed with the work immediately.

I have, &c.,

(Signed) W. S. GORE,
Surveyor-General.

The Surveyor-General to Mr. A. Stevenson.

VICTORIA, B. C., January 6th, 1887.

RE ASHCROFT BRIDGE.

SIR,—The San Francisco Bridge Company have agreed to the demands of the Government, as set forth in a letter dated 14th ultimo, addressed to their Mr. McMullen, from this Department, and of the same purport as the letter of even date sent to you.

They claim, however, that demands Nos. 1 and 3 (in the letter referred to) have been carried out by Mr. Sypolt.

They have deposited their cheque for \$500, in payment of the cost of putting a crib and breakwater round the defective pier, and signify their willingness to supplement that sum if necessary, and request that you may be permitted to do the work.

The Honourable Chief Commissioner of Lands and Works has authorized me to instruct you to take all necessary steps towards the construction of the crib and breakwater referred to, in accordance with the plan enclosed herewith. You will check the bill of materials to verify its accuracy, and make the most economic arrangement you can for procuring the lumber.

Advise me how much cement you will require for making a concrete foundation for the bottom crib logs, and I will have it shipped to Ashcroft. I will also, if you desire it, have the iron drift bolts sent up.

You will be good enough to keep an accurate account of all expense incurred in this work, taking ordinary receipts for all payments made, in addition to the usual vouchers, which will be charged against the vote for Trunk Road; and send the receipts to me for transmission to the Bridge Company.

I have, &c.,
(Signed) W. S. GORE,
Surveyor-General.

[TELEGRAMS.]

SAN FRANCISCO, January 11th, 1887.

To *W. S. Gore, Surveyor-General*:

I have just returned, and have examined that plan agreed upon by you and Sypolt for the protection of Ashcroft Bridge pier. I do not approve of it; think I can suggest much more efficient plan. My plan and full particulars go to you by first mail. Please defer ordering timber or doing anything till you receive them.

(Signed) J. McMULLEN.

VICTORIA, B. C., January 12th, 1887.

A. Stevenson, Lytton:

Do not order material for Ashcroft Bridge until further advised. Bridge Company are sending different plan. Answer.

(Signed) W. S. GORE.

LYTTON, B. C., January 12th, 1887.

W. S. Gore, Victoria:

All right. Have not ordered anything yet.

(Signed) A. STEVENSON.

Mr. J. McMullen to the Surveyor-General.

SAN FRANCISCO, Cal., Jan. 13th, 1887.

MY DEAR MR. GORE,—I have just got home, after having been away six weeks, and have seen the plan of the crib that you and Mr. Sypolt agreed upon as a protection for the Ashcroft Bridge pier. I don't think it is a proper or judicious thing to put there. On the contrary, I think that the pier would be more likely to scour out and settle with the crib there than without it, as the crib would increase the size and length of the pier very considerably, and correspondingly increase the action of the water on the ground around the pier, by creating eddies and currents that did not exist before. The only thing that is desired here is to protect the ground around the pier, as it has been found that is not sufficiently hard to resist the scouring action of the water. Considerable experience has taught me that the best and most effectual protection can be afforded by covering the bed of the river for some distance with a mattress of brush, weighted down with loose rock thrown in promiscuously. The trouble with the crib is that it don't protect enough of the bottom. At the sides of the pier it is only a foot wider than the pier, and if there is any eddy there it is sure to cut under the crib and the pier. The pier itself don't need any protection; it is abundantly strong. It is only the ground that the pier stands on that wants to be secured.

We are quite sure that this is the most effectual way that can be done in the premises. We enclose you plan that gives idea the way this should be done.

The rocks should be from 50 to 200 lbs. weight, and there should be from 80 to 100 tons, or loads.

The brush mattresses may be made of limbs of trees, or entire small trees, or brush, and should be held apart and in position by 3x4 scantling wired on to them, and weighted with

rock and sunk. There will be no difficulty in doing it, because the water is shallow. The rock may be hauled on to the bridge, and the floor taken up and the rock dropped down.

This is, in my judgment, the only proper thing to do. However, I desire it distinctly understood that whether you adopt this or the other plan, our company and bondsmen are released from any further responsibility.

Yours respectfully,
(Signed) J. McMULLEN.

The Surveyor-General to Mr. A. Stevenson.

VICTORIA, B.C., 20th Jan., 1887.

SIR,—Enclosed I send you a copy of a letter and plan from the San Francisco Bridge Company, on the subject of protecting the centre pier of Ashcroft Bridge. I have to request that you will report as to which of the two proposed methods of protection—that is, the first by a crib and breakwater, and the second by means of brush mattresses, now proposed by Mr. McMullen—you consider the best. Your knowledge of those rapid rivers will enable you to judge which of the two plans you prefer.

A report from you at the earliest possible date will oblige.

I am, &c.,
(Signed) W. S. GORE,
Surveyor-General.

NOTE.—Mr. Stevenson did not report on the above matter in writing. He came to Victoria, and the merits of both plans were discussed and compared. The first plan was adopted, and the work is now under way.

2nd March, 1887.

(Signed) W. S. GORE,
Surveyor-General.

SPECIFICATIONS

FOR A PRATT TRUSS COMBINATION IRON BRIDGE TO BE BUILT OVER THOMPSON RIVER, NEAR BARNES' STATION, B. C.

General Description.—Bridge consists of 2 spans of 200 feet each, 2 spans of 80 feet each, and 2 spans of 50 feet each, covering an extreme length of 661 feet 8 inches, with abutments. The 200-foot spans are to be built upon the general plan known as the Pratt Truss Combination Bridge.

The 80-foot spans are to be built upon the general plan known as the Improved Howe Truss Bridge. The 50-foot spans are to be built upon the general plan known as the Improved Straining Beam Truss. The special dimensions in general and in detail are shown on accompanying strainsheets. All main members in tension in 200-foot spans are constructed of iron, and wood is only used when in compression or under a bending strain.

Capacity of Bridge.—The Bridge is to sustain a moving load of 800lbs. per lineal foot, besides its own weight, and the combined strains hereby produced shall in no part of the bridge tax the material to more than one-fourth of its ultimate resistance.

Quality of Material.—All iron used in main members shall be tough, fibrous, American rolled iron, of an average ultimate resistance of 56,000 lbs. per square inch, and showing a fibrous texture. All cast-iron used shall be of best quality grey iron, free of cinder, sand, blow-holes or other imperfections.

Timbers shall all be of good quality, sound Douglas fir, free from loose knots, shakes or other imperfections.

All material in general shall be of the best quality for its purpose.

Workmanship and Construction.—The chord-bars shall be dieforged, weldless eye-bars, and the holes for pins shall be bored truly, with no more play than $1/32$ of an inch, and all members for the same panel must be of the same length within $1/64$ of an inch.

The beam hangers are square yokes bent around pin to a perfect fit.

The pins are all turned truly to gauge and so to fit pin-holes in chord-bars with no more than $1/32$ of an inch play. Sizes and dimensions of all iron to be as per attached strain diagrams.

The castings are to be of style shown on general diagram, and of sufficient strength to resist any pressure that might come upon them, and designed so as to avoid initial strains from cooling.

Whenever a casting rests upon a pin the casting is to be cast over a chill to perfectly fit around a pin, and where a pin passes through a casting, this casting must be machine-bored to fit around pin.

The timber-work to be of size shown on diagram and framed in the most accurate and workmanlike manner to insure full and true bearings at each abutting surface and to present a neat appearance. The road planking to be laid diagonally, spiked firmly to each joist with 6-inch spikes. A hub plank is to extend full length of bridge on each side and secured to posts or braces, and a felloe plank extends on each side of road-way the full length of bridge. All work covered by the plans, diagrams and specifications, or either of them, shall be completed by the contractor without extra charge by or allowance to him.

General Description of Location.—The bridge crosses the Thompson River at Barnes' Station, at such a point as the Surveyor-General shall direct.

The grade of the bridge shall be six feet above extreme high water mark of 1876.

The profile of river-bed below low water is unknown, but is believed to be very deep and current known to be rapid. Contractors must satisfy themselves, as the Government does not vouch for the correctness of this profile below low water line.

Foundation and Piers.—The foundation for piers Nos. 2, 3, and 4, shall be rubble concrete, or if the bottom on close examination should not be found satisfactory, shall be piles. The decision as to the mode of foundation for each pier shall rest with the Surveyor-General, and Contractor shall have no claim for "extras" if one or the other procedure, or both, are required by the Surveyor-General. If rubble concrete foundation is adopted, it will consist of a block 8 feet square and 2 feet in thickness under each cylinder and will be constructed as follows:

Excavate the river-bottom to a depth of about 4 feet, and 8 feet square, under each pier, and in the space thus created bed firmly the rubble concrete block of the dimensions stated above. The stone used in the construction of the same will be the best available, and the mortar used will be composed of 4 parts clean sharp river sand and 1 part best English Portland cement, well grouted and solidly filling all interstices.

Where pile foundation is adopted, the piles will be best Douglas fir, 12 by 12 inches. Timbers or round piles not less than 13 inches diameter, exclusive of bark, to be driven to a firm and stable foundation with a hammer weighing not less than 2,000 lbs., and the piles to be shod, if necessary, with heavy wrought-iron shoes. Before being driven the piles to be properly banded. After the piles are driven to the satisfaction of the Superintendent in charge, and in the manner as shown on plan No. 5, they shall be cut off below low water and sub-capped with 12 by 12-inch timbers, drift-bolted to piles with $7/8$ by 22-inch drift-bolts. The sub-caps shall then be cross-capped with a solid platform of 6 by 8-inch best Douglas fir timbers, each timber to be drift-bolted to each bearing with $5/8$ -inch head and point drift-bolts 16 inches long.

Iron Piers.—Piers Nos. 2, 3, and 4 are iron cylinder piers, resting directly either on the rubble concrete block above specified, or the pile foundation constructed as per plan No. 5, as the case may require. Each pier consists of 2 iron cylinders, made as hereinafter specified, spaced 17 feet from centre to centre of cylinders, filled with concrete, as hereinafter specified, and connected with a wall of timber and iron rods, as will more particularly appear in the following:

The cylinders for each pier are constructed as follows: Sheets of $1/4$ -inch boiler iron shall be bent to a true circle, lapping $2\frac{1}{2}$ inches and rivetted at longitudinal seam with $5/8$ -inch boiler rivets spaced 6 inches apart. Sections thus made are again jointed together by being lapped $2\frac{1}{2}$ inches over one another and rivetted together with $5/8$ -inch boiler rivets, with a pitch of 6 inches, till enough sections have been rivetted together to form the full length of a cylinder. The diameter of cylinder piers varies and shall be as follows: For piers Nos. 2 and 4, about 4 feet. For pier No. 3, about 5 feet. All the cylinders of piers are filled with concrete made in the following manner: Broken rock or coarse gravel boulders are filled into the cylinders in layers of about 18 inches in thickness, the interstices of which will be thoroughly permeated with thin cement mortar composed of 4 parts of clean sharp river sand and 1 part of best English Portland cement well grouted. This operation to be repeated until the cylinders are filled within 3 feet of the top, at which part of cylinder cement mortar exclusively, and mixed in the proportions as already specified, shall be filled in.

Bracing Walls.—The two cylinders forming each pier are connected by a bracing-wall, constructed as shown on pier plan No. 5, and of the following dimensions: Three wrought-iron rods pass straight across through both cylinders of pier, and are secured at both ends with wrought-iron washers and nuts of standard size. These rods are of 1-inch round iron with upset ends,

and carry on the inner side, between the two cylinders, cast-iron angle blocks on which the cross-braces abutt, in the manner as shown on plan. These cross-braces are of 10 by 10-inch timbers, and are dowelled at intersection with $\frac{3}{4}$ -inch dowel-bolts, 20 inches long. Between these braces, at either end and in centre, are cut in 4 by 10-inch uprights, flushed with the braces, to which uprights and braces are spiked on both sides a layer of 2-inch planking from one cylinder to the other, all as shown on plan. The ends of the planks abutting to cylinders to be covered with a strip of 1 by 4-inch best Douglas fir, nailed thereto with 30d. nails.

Wooden Piers and Abutments.—Piers Nos. 1 and 5, and abutments, shall be constructed of wooden bents, in the general manner as shown on plan No. 6, with the understanding, however, that pier No. 1, and abutments at either end of bridge, will be single bents, and pier No. 5 double bents. The double bent pier will be bolted together on top and bottom with $\frac{3}{4}$ -inch screw-bolts, in the manner as shown on plan No. 6. All bent piers and abutments shall be constructed by bedding to a firm and solid bottom 12 by 12-inch sills, into which the 12 by 12-inch posts are gained 1 inch, and dowel-bolted thereto with 1 by 6-inch dowel-bolts. The 12 by 12-inch caps are gained on to posts and drift-bolted thereto with 1-inch drift-bolts, 22 inches long. The bents will then be planked diagonally with 2-inch planking, firmly spiked to each bearing with 2 6-inch cut spikes.

Rip-rap.—All piers, both iron and wooden, shall be properly rip-rapped with rock and boulders, as per plan.

The iron cylinders, after being set in place, are to receive one good coat of refined coal tar, to prevent corrosion.

On top of the cement mortar in the iron cylinder piers will be placed $\frac{1}{4}$ -inch wrought iron plates, of the form and dimensions shown on plan, to which will be screw-bolted the bed plate of the truss, with $\frac{3}{4}$ by 6-inch screw-bolts firmly bedded in the cement mortar.

Superstructure.—The two 200-foot spans are iron combination bridges, having their bottom chord and tension diagonals of wrought iron, and their top chords and vertical posts and end posts of wood. Their style and detail of construction is shown on plan No. 2, and their general dimensions, and also sizes of all parts, are given on the strainsheet for the 200-foot spans.

Each vertical pair of posts shall be connected together with two iron sway-rods reaching across bridge at bottom, and two sway-braces crossing each other at top, and being at intersections connected with $\frac{5}{8}$ -inch screw-bolts. At ends complete sway-brace frames shall be provided, as shown on plans, and two sway-rods $\frac{7}{8}$ inch in diameter, reaching across whole width of bridge. To effectually stiffen vertical posts of the 200-foot spans, longitudinal lace rods of $\frac{5}{8}$ -inch of iron reach from post to post, provided with nuts and washers, as shown on plan for 200-foot spans.

All pins shall be of steel and machine turned, and shall be provided with wrought-iron screw nuts.

Expansion and Contraction.—To provide for the expansion and contraction of bridge, caused by variations of temperature, the end shoes of the 200-foot span shall be machine planed on their lower face, and slide on grooved cast-iron bed-plates, machine planed on top. Said bed-plates to be no less than 3 inches in depth, and having said grooves to correspond to projection on bottom shoes to prevent any motion in a direction at right angles to bridge.

Chord Covering.—To prevent water from lodging on top chord, or in top chord joints of 200-foot spans, the top chords for their full length shall be covered with sheets of No. 26 galvanized iron, laid continually and lapping 6 inches over each other at joints; said sheets to be well nailed to top chords on their top with galvanized iron nails. The parts of sheets projecting over top shall be bent down to an angle of about 45 degrees, so as to form a roof or shed, and to throw the water off the chords.

Flooring of Bridge.—To prevent joists from warping, there shall, in the centre of each panel, be spiked with 6-inch wrought spikes to each line of joists a 2 by 8-inch plank, projecting on either side so as to receive a 4 by 4-inch rail post, to afford additional support to the hub plank. These rail posts shall be bolted to the outside line of joists with two screw-bolts. The outside line of joists shall butt against one another, and be drift-bolted with $\frac{5}{8}$ -inch drift-bolts to needle-beams. The inside lines of joists shall pass one another on needle-beams, each having full bearing on same.

Bolts and Rods.—All screw-bolts and rods shall be provided with standard square nuts and wrought washers at each end.

Screw ends.—All screw threads shall be United States standard thread, and all screw

ends at main truss members, viz., counter rods and end suspenders and hangers, shall be enlarged by upsetting so that area of section through root of thread is at least equal to full section of rod.

Joints.—All joints shall be painted with white lead before being put together. The design in the trusses is, that nowhere in any main part of the trusses wood presses against wood, but instead, wood always presses against iron. To avoid this wood butting against wood in the top lateral braces, there shall at each intersection be interposed a sheet of No. 26 galvanized iron, 6 by 8 inches in size.

Painting.—All iron, both wrought and cast, shall, before leaving shops, receive two good coats of approved metallic paint, except machine bored or planed surfaces, which shall receive instead one good coat of white lead and tallow.

The superstructure for the 80-foot Howe truss spans and the 50-foot straining beam truss spans is that of ordinary Howe truss and straining beam truss bridges, and their construction is shown on the respective plans, and the sizes of the different members marked on the respective strain-sheets.

General Conditions.—All work embodied under these plans (Nos. 1, 2, 3, 4, 5, and 6) and these specifications shall be done in strict accordance with these plans and specifications. Anything shown on these plans and not mentioned in these specifications, and, *vice versa*, anything mentioned in these specifications and not shown on these plans, shall be deemed incorporated in both. The contractor shall afford the inspector appointed by the Government every possible facility to inspect any and all materials on the ground or in the shops, and all workmanship to be subject to his approval, and the entire work to be completed in strict conformity with the letter and spirit of these plans and specifications.

PROVINCE OF BRITISH COLUMBIA.

CONTRACT.

PUBLIC WORKS.

This agreement made the twenty-eighth day of August, A. D. 1885, between the Hon. Wm. Smithe, of Victoria, B. C., Chief Commissioner of Lands and Works, of the first part, and John McMullen, of San Francisco, Cal., U. S., of the second part.

Witnesseth, that the party of the second part, for the consideration hereinafter named, hereby covenant and agree, for himself, his heirs, executors, administrators, and assigns, with the party of the first part, that he, the said party of the second part, his executors or administrators, will find all plant, labour, and materials necessary to erect, build, make, repair, carry on, and complete a Pratt Truss Combination Bridge over the Thompson River, at Barnes' Station. And will do and finish the said work in the manner set forth in the plans and specifications hereunto annexed, and in accordance therewith, to the entire satisfaction and approval (to be expressed in writing) of the party of the first part, on or before the thirty-first day of December, A. D. 1885, and in this respect time shall be the essence of the Contract.

Provided that the Contractor shall not assign or sub-let the whole or any portion of the works without the written authority or sanction of the Chief Commissioner of Lands and Works. No certificate will be granted for any works executed by other parties than those who have received sanction in writing from the Chief Commissioner of Lands and Works, nor will they be taken into account as work executed under this contract.

Provided also that in the event of death of the Contractor, or in case the Contractor shall fail in the due performance of any part of his undertaking, or shall become bankrupt or insolvent, suspend payment, compound with his creditors, assign this contract or any benefit thereof, without such consent aforesaid, or if the same shall become vested in any other person, or shall carry on his business under inspection on behalf of his creditors, shall commit any act of bankruptcy, shall not in the opinion of the Chief Commissioner of Lands and Works exercise such diligence or make such due progress as would enable the works to be efficiently completed at the time and in the manner aforesaid, the Chief Commissioner of Lands and Works shall have power, without any legal or other notice to the Contractor, forthwith to

suspend all further payments, and by himself, his agents, servants, or workmen to enter upon and take full possession of the said permanent and temporary works, completed or in progress, plant, tools, materials, erections, and things, and use or sell the same as his absolute property in trust for Her Majesty; and further the Chief Commissioner of Lands and Works shall have the power to carry on the execution of the works on behalf of the Government of British Columbia, or by their servants, or re-let the same, or advertise for tenders for completion, or employ other Contractors upon any terms he may deem fit, without the Contractor, his creditors, trustees, heirs, executors, or assigns having any authority, power or right to control or interfere, and the Chief Commissioner of Lands and Works shall retain all moneys due to the Contractor at the time of death, or bankruptcy, or otherwise as aforesaid, for the purposes of the completion of this contract, and the Contractor or his representatives shall be entitled to receive any balance which may be due to him or them, after deducting the sums paid by the Government, and amounts due to the Government for damages, or for the purchase of any requisite plant, repairs and other expenses which may, in the opinion of the Chief Commissioner of Lands and Works, be necessary to be incurred, without power of appeal to any arbitrator.

All cases of dispute between any of the parties concerned, the rate of progress, the quality of materials, the mode of measurement, the construction to be put upon any part of the plans and specifications or upon any point relating to the work, are to be referred to the Chief Commissioner of Lands and Works, whose decision is to be final and binding on all parties.

That all materials for the said work may be inspected and approved of before being used, either by the Chief Commissioner of Lands and Works, or such person as he may appoint; and any materials disapproved of shall not be used in the work, and if not removed by the party of the second part, when directed by the Chief Commissioner of Lands and Works, or person in charge, then the rejected materials shall be removed by the Chief Commissioner of Lands and Works, or person in charge, to such place as he may deem proper, at the cost and charge and at the risk of the party of the second part; but it is distinctly understood and agreed, that the inspection and approval of materials shall not in anywise subject the Chief Commissioner of Lands and Works to pay for the said materials, or any portion thereof, unless employed or used in the said works, nor prevent the rejection, afterwards, of any portion thereof, which may turn out unsound or unfit to be used in the work; nor shall such inspection be considered as any waiver of objection to the work on the account of the unsoundness or imperfection of the materials used.

The party of the second part agrees to take upon himself the entire risk of, and be answerable for all accidents and damages of any kind which may occur during the performance of the contract, whether arising from fire, storms, or otherwise. In case of damage to the works, he hereby agrees to repair and make good the same as soon as possible, at his own cost and charge; and in respect of any other kind of accident or damage, he will forthwith reimburse and compensate the injured parties, as the case may require, for all expenses, losses and injuries they may have sustained in consequence of such accident or damage.

With regard to the drawings, it is to be understood, that wherever the dimensions are marked on the drawings or described in the specification, such dimensions are to be worked from, and considered correct, although not exactly corresponding with the admeasurements by scale, which are to be referred to only when the dimensions are not so marked or described on the drawings. Drawings to larger scales, and those showing particular parts of the work, are to be taken as more correct than those to smaller scales. It is to be understood, that the party of the second part agrees to execute the several parts of the work in strict compliance with the working or detail drawings, which may from time to time be furnished; provided always, that they are not at variance with the true intent and meaning of the original drawings.

That if any change or alteration, either in position or details of any part of the work, shall be required by the said Chief Commissioner of Lands and Works during the progress thereof, the party of the second part is hereby bound to make such alteration or change; and if such alteration or change shall entail extra expense on the said party of the second part, either in labour or materials, the same shall be allowed to the said party of the second part, or, should it be saving to the said party of the second part in either labour or materials, the same shall be deducted from the amount of this contract; in either case the amount is to be determined by the estimate made by the Chief Commissioner of Lands and Works. But no such change or alteration, whatever may be the extent or quality thereof, or at whatever time

the same may be required to be made pending the said contract, shall in anywise have the effect of suspending, superseding, annulling, or rescinding this contract, which shall continue to subsist, notwithstanding any such change or alteration; and every such change or alteration shall be performed and made by the said party of the second part, under and subject to the conditions, stipulations, and covenants herein expressed, as if such change or alteration had been expressed or specified in the terms of this contract; and should the said party of the second part be required by the Chief Commissioner of Lands and Works to do any work or furnish any materials for which there is not any price specified in this contract, the same shall be paid for at the estimated prices of the Chief Commissioner of Lands and Works; but no change or alteration as aforesaid whatever, and no extra work whatever, shall be done without the written authority of the Chief Commissioner of Lands and Works, given prior to the execution of such work, nor will any allowance or payment whatever be made for the same in case it should be done without such authority.

That the party of the second part shall not in any way dispose of, sub-let, or re-let any portion of the work embraced in this contract, except the procuring of materials. The party of the second part is to maintain, uphold, and guarantee the stability of the works, and keep them in perfect repair and condition for six months after the completion of the contract; and if during this term any defects shall appear, they are forthwith to be made good by the party of the second part at his own cost and charge, to the satisfaction of the Chief Commissioner of Lands and Works, so that the works may be delivered up in a perfect condition at the end of the above-named period; the true intent and meaning of the specifications and contract being, that the whole of the works are to be satisfactorily and completely finished, and to be perfect in all their parts.

Should any difference of opinion arise as to the construction to be put upon any part of the specifications or plans, the same shall be determined by the Chief Commissioner of Lands and Works alone, and such determination shall be final and conclusive, and binding upon the parties to this contract and every of them.

That any notice or any other paper connected with these presents which may be required or desired on behalf of the Chief Commissioner of Lands and Works to be served on the party of the second part, may be addressed to the party of the second part at his or their domicile or usual place of business, or at the place where the work hereby contracted for is to be carried on, and left at the Post Office, and any paper so addressed and left at the Post Office shall, to all intents and purposes, be considered legally served.

That should the party of the second part not complete the work herein contracted for at the period agreed upon as above mentioned, the said party of the second part shall be liable for, and shall cause to be paid to the party of the first part, all salaries or wages which shall become due to the person or persons superintending the work, on behalf of the said Chief Commissioner of Lands and Works from the above-named period for completion, until the same shall actually be completed and received; and the same may be deducted from any moneys in his hands due to the Contractor.

That, should the amount now voted for this service by the Legislature, be at any time expended previous to the completion of the work now contracted for, the said party of the second part, may or not, as may be seen fit, on receiving a notice in writing from the said party of the first part to the above effect, stop the work; but, in any case, the party of the second part shall not be entitled to any further payment for work done, after the service of the notice above referred to, until the necessary funds shall have been voted by the Legislature; nor shall the said party of the second part have any claim for compensation or damages for the said suspension of payment.

In this agreement, the words "the party of the second part" shall include and comprehend (where the context admits of it) the heirs, executors, and administrators of the party of the second part respectively, where not inconsistent with this agreement.

And the party of the first part, covenants and agrees with the party of the second part, his executors, administrators, and assigns, that he will pay to the party of the second part the sum of (\$18,987) eighteen thousand nine hundred and eighty-seven dollars, in the manner following; that is to say, seventy-five per cent. of the value of the work done, at such time or times, and in such sum or sums, as the Chief Commissioner of Lands and Works may, in his discretion, think fit, and the balance on the satisfactory completion of the entire work.

In witness whereof the parties hereto have hereunto set their hands and seals, the day and year above written.

Signed, sealed, and delivered by Wm. Smithe, per W. S. Gore, in the presence of	(Signed) B. H. JOHN.	}	(Signed)	Wm. SMITHE, per W. S. Gore.	[L.S.]
Signed, sealed, and delivered by J. McMullen, in the presence of	(Signed) W. S. GORE.	}	(Signed)	J. McMULLEN.	[L.S.]

Total cost, \$17,653.10.

MEMORANDUM OF AGREEMENT made this 28th day of August, 1885, between the Honourable Chief Commissioner of Lands and Works, of the first part, and John McMullen, of the second part.

Whereas the party of the second part has entered into a contract, dated 28th August, 1885, with the party of the first part to erect a combination Pratt Truss Bridge across the Thompson River, at Barnes' Station. And whereas the price agreed to be paid by the party of the first part to the party of the second part is based upon the price of freight paid upon the materials to be used in the construction of said bridge at the rate of \$15 per thousand feet for timber and \$64 per ton for iron and cement, upon the understanding that the party of the first part shall receive the benefit of any reduction in the rate of freight which may be made.

Therefore, the party of the second part hereby agrees for himself, his heirs, executors, and assigns, to furnish the party of the first part with authentic certificates of the total amount of the said materials used in the construction of said bridge, and of the rate of freight charges paid thereon. And further agrees to a reduction in the consideration mentioned in the said contract equal to the reduction in freight, if any, which may be made.

Signed by J. McMullen in the presence of	(Signed) W. S. GORE, <i>Surveyor-General</i> .	}	(Signed)	J. McMULLEN.	[L.S.]
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BOND.

Know all men by these presents that we, J. McMullen, Louis Redon and E. B. Marvin, are jointly and severally held, and jointly bound unto our Sovereign Lady the Queen in the sum of ten thousand dollars, to be paid to our said Lady the Queen, Her Heirs and Successors, to which payment well and truly to be made, we do hereby jointly bind ourselves, our heirs, executors, administrators, and assigns, and each of us do hereby severally bind himself, his heirs, executors, administrators, and assigns, jointly by these presents. As witness our hands and seals this 28th day of August, A. D. one thousand eight hundred and eighty-five.

Whereas J. McMullen hath entered into an agreement with Wm. Smithe, Chief Commissioner of Lands and Works, and acting for the Government of British Columbia, to construct a Pratt Truss Combination Bridge over the Thompson River, at Barnes' Station, in accordance with such Agreement and Specification thereunto annexed.

Now the condition of the above written Bond is such, that if the above bounden J. McMullen shall well and faithfully perform and fulfil all and every of the terms, conditions, stipulations, and requirements in such Agreement and Specification contained, and every part thereof respectively, then the above written Bond shall be void and of no effect, but otherwise shall remain in full force and virtue.

Signed and sealed by J. McMullen, in the presence of	(Signed) W. S. GORE.	}	(Signed)	J. McMULLEN.	[L.S.]
Signed and sealed by Louis Redon, in the presence of	(Signed) J. McMULLEN.	}	(Signed)	LOUIS REDON.	[L.S.]
Signed and sealed by E. B. Marvin, in the presence of	(Signed) J. McMULLEN.	}	(Signed)	E. B. MARVIN.	[L.S.]

GUARANTEE BOND.

KNOW all men by these presents that we, John McMullen, of San Francisco (principal), and Louis Redon, of Victoria, hotel-keeper, and E. B. Marvin, of the same place, ship chandler (sureties), are jointly and severally held and firmly bound unto Her Majesty Queen Victoria, her heirs and successors, in the sum of ten thousand dollars, for which payment well and truly to be made we bind ourselves and each of us, our heirs, executors, and administrators, by these presents, sealed with our seals and dated the 26th day of March, A. D. 1886.

Whereas by an agreement dated the 28th day of August, 1885, the said John McMullen agreed with the Chief Commissioner of Lands and Works of British Columbia to construct a bridge across the Thompson River at Barnes' Station, in British Columbia, and to maintain the same for six months: And whereas the said John McMullen claims to have performed his said contract and has received in respect of the contract the sum of ten thousand dollars, and also claims that the sum of \$7,653.10 is due to him for the balance due under the said contract: And whereas the said Chief Commissioner is unwilling to pay the said last-mentioned sum without having security for the maintenance and reconstruction of the said bridge, as hereinafter mentioned, and which security the above named obligors have agreed to give, in consideration of the payment to the said John McMullen of such last mentioned sum.

Now the condition of the above written bond or obligation is such that if for the period of six months from the 6th day of February, 1886, the said bridge shall remain and be in the like condition it was on such day (fire excepted), or if the said John McMullen shall, during such period of six months, repair and make good all defects in the bridge which during such period may occur or arise, then the above written bond or obligation shall be void, otherwise shall remain in full force and effect.

Signed, sealed, and delivered by John McMullen
in the presence of

(Signed)	W. N. KEMPSTON,	}	(Signed)	JOHN McMULLEN.	[L.S.]
,,	M. J. MERTENS.				

Signed, sealed, and delivered by Louis Redon and
E. B. Marvin in the presence of

(Signed)	W. S. GORE,	}	(Signed)	LOUIS REDON,	[L.S.]
	<i>Surveyor-General.</i>			,,	E. B. MARVIN