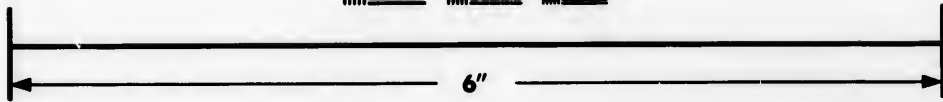
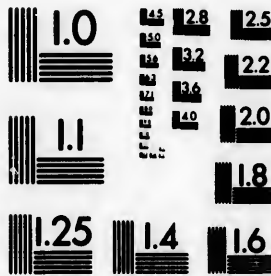


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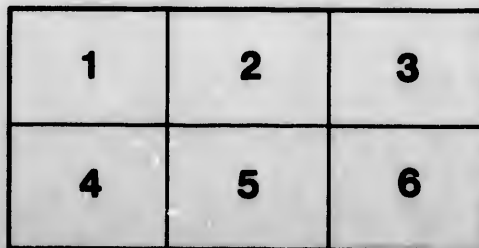
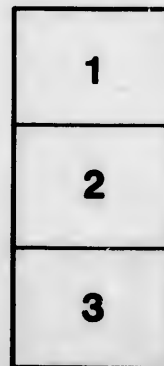
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**NORTH SHORE RAILWAY.**

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**REVIEW OF  
ENGINEERING EXPENSES  
PAST, PRESENT AND PROSPECTIVE**

**BY THE**

**CHIEF ENGINEER**

**FEBRUARY 2d, 1875.**

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## INTRODUCTION.

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The following Statements, Extracts from Reports, Letters and Memoranda, heretofore addressed by the Chief Engineer, either to the Railway Company, or the Contractor, have been collected and arranged in their present form for the purpose of enabling the Board of Directors, as well as any other parties who may feel interested, to form an intelligent opinion upon the subject.

These papers, however, should properly be regarded as "supplemental" to the "views of the Engineer in Chief respecting his powers, duties and responsibilities," as presented to the President and Directors, under date of July 16th, 1874; and which were subsequently printed in pamphlet form.

S. SEYMOUR,  
Engineer in Chief,  
North Shore Railway.

Quebec, February 2nd, 1875.



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## NORTH SHORE RAILWAY.

### Statement of Engineering Expenses upon the Main Line, up to December 1st, 1874.

In 1871, the entire line was surveyed by four field parties, for the purpose of obtaining County subscriptions.

The total expenses of the Company up to the date of the contract, April 5th 1872, were \$42,534.28 of which \$19,303.28 were on account of Engineering, being 45 per cent of total expenditure up to that date.

In 1872, the entire line was re-surveyed by four field parties, for the purpose of obtaining the best Engineering route.

The total expenditures up to December 31st, 1872, were \$95,324.92, of which \$66,855.71 were for Engineering, being 70 per cent of the total expenditure up to that date.

In 1873 a portion of the line, between Three Rivers and Montreal, was re-located by one field-party, for the purpose of improving the line near St. Bartholomi Church; and changing the crossing of the Ottawa Branch at Bout de L'Isle.

The total expenditures up to December 31st 1873, were \$158,239.85, of which \$91,257.71 were for Engineering, being 58 per cent of the total expenditure.

In 1874 the entire line has been re-located by three field parties, for the purpose of re-setting the stakes, preparatory to construc-

tion, and procuring the right of way; and also to make *some* improvements in the line, which have been found practicable and expedient.

An organization has also been kept up for the purpose of supervising construction, between the Cities of Quebec and Three Rivers.

The total expenditures up to December 1st, 1874, were \$454,576 04, of which \$129,699.35 were for Engineering; being 28½ per cent of the total expenditure.

The amount expended from January 1st 1874, to December 1st 1874, was \$296,336.19 of which \$38,411.64 was for Engineering, being 13 per cent of the expenditure.

Of the amount expended in 1874 for Engineering, \$17,000.00 was for re-locating the line; and \$21,411.64 was for purposes of construction.

The amount expended on account of construction proper, up to December 1st, 1874, was \$236,406.94, of which \$21,411.64 was for Engineering, being 9 per cent of the expenditure.

The total cash value of constructing the Main Line, as per schedule, is \$4,066,666.67, of which \$255,513 is for Engineering, being 6¼ per cent of the total expenditure.

#### RECAPITULATION.

	Total.	Engineering.	per cent.
Expended up to April 5th, 1872...	\$42,534.28	\$19,303.28	45
“ “ Dec. 31st, 1872...	95,324.92	66,855.71	70
“ “ Dec. 31st, 1873...	158,239.85	91,257.71	58
“ “ Dec. 1st, 1874...	454,576.04	129,699.35	28½
“ from Jan. 1st to Dec. 1st, 1874	296,336.19	38,411.64	13
“ on construction to Dec. 1st, 1874 .....	236,406.94	21,411.64	9
Total Schedule cost .....	4,066,666.67	255,513.00	6¼

## EXPLANATORY REMARKS.

To persons who are not familiar with accounts of this kind, the foregoing Statement will appear somewhat novel, particularly when considered with reference to the variable nature of the ratios existing between the amounts of total expenditures, and those of Engineering, during the different stages of progress or advancement of the line towards completion. But when it is considered that all the necessary surveys must be made for the final location of the road, before the construction account can be commenced and carried on to any considerable extent, the reason for the increase in this ratio of expenditure up to that particular point of time, will become quite apparent. And it will also become equally apparent, that, when the work of construction is commenced in earnest, and prosecuted with vigor, this ratio will diminish quite as rapidly, until it reaches its minimum, at the final completion of the road.

An examination of the foregoing tabular recapitulation of the result thus far upon this road, affords a striking illustration of this principle.

It will be seen that the percentage had reached its maximum (70) when the location of the line had been substantially completed at the close of 1872. That it had been reduced to 58 at the close of 1873, when the present Contractor assumed the work. That it had been reduced to 28½ by the expenditure on account of construction during the past working season, up to Dec. 1st 1874. That it was reduced to 13 upon the total expenditure made by the present Contractor during the past year up to 1st December, which included the Company's expenses, right of way, re-location of line, supervision of work, contingencies, &c. That it was still further reduced to 9, upon the actual expenditure on account of construction up to Dec. 1st, 1874. And that, if the road is completed, according to the terms of the contract, it is quite sure to reach its minimum of 6½ per cent, at the close of the contract.

Another equally arbitrary, and self evident principle will also be found to govern all expenditures of this nature, which is, that they are increased in the ratio of any delays that may occur in the progress and final completion of the work.

As an example of the effect of this principle upon this road up to the present time, it is proper to mention, that the entire expenditure, amounting to \$42,534.28, previous to April 5th, 1872,

(the date of the contract) was practically thrown away. Also that the entire expenditure made in 1873, amounting to \$62,914.93, was of no practical use whatever in advancing the work, making a total of \$105,449.21, of which \$43,705.28, was chargeable to Engineering, which has practically been lost to the Company, and consequently to the Contractor. And yet, it is quite apparent, that the circumstances, as they existed at the time, fully justified these expenditures; and also, that if they had not been made, the road could not have reached even its present state of advancement; and perhaps it would have remained in substantially the same state of non-entity that it occupied previous to 1871.

Another example of the effect of this principle, will be found in the experience of 1874.

When the present Contractor assumed the work, in January 1874, he gave notice that he should commence operations vigorously in the Spring, upon a scale that would secure the completion of the road from the City of Quebec to Three Rivers, before the close of 1875.

To carry out this programme would involve the Expenditure of about \$750,000 in actual construction, during each of the two working seasons, 1874 and 1875; but as the expenditure on that account has been only about one third of that sum during the past working season; and as the Engineering organization in charge of construction, was necessarily quite adequate to the supervision of the required expenditure of \$750,000, it will be seen that, if that amount had been expended by the Contractor during the past working season, the percentage of Engineering chargeable to construction, would have been 3 instead of 9 per cent, up to the 1st December 1874; and proportionately less upon the entire expenditure up to that date.

The preliminary expenses of the Company, as well as the expenses of location, having now been closed substantially, the conclusion seems to be quite clear, that the Contractor has only to push forward the work to completion, within the shortest time practicable, in order to reduce the ratio of Engineering expenses to their lowest possible limit.

S. SEYMOUR,  
Chief Engineer.

Quebec, December 31, 1874.

Extract from a letter addressed by the Chief Engineer to the  
Secretary, under date of January 13th, 1875.

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"The re-location of the Montreal Division, during last summer, was necessary; and was approved of by the Contractor, for the purpose of improving the line, reducing the cost of the work, and enabling us to perfect the land plans, preparatory to procuring the right of way.

The work done by the locating parties during the past season has resulted in a material improvement in the line, and in a saving to the Contractor in the cost of construction, amounting to several thousand dollars over and above the cost of surveys.

The object of taking further soundings, through the ice, in "certain rivers" during the present winter, is to ascertain the precise form of the bottom of the river at the points selected for the foundations, as recently approved by the Government; and also to test the accuracy of former bills of materials, so that no delay may be caused in the prosecution of the work, such as is now complained of by the Contractor at the Batiscan.

The Contractor institutes a most extraordinary comparison between the cost of Engineering upon this Road, and the Montreal Northern Colonization Road.

Without suspecting that I would so soon be called upon to reply to a statement of this kind from the Contractor, I had prepared, at the close of the last month, and year, a "Statement of Engineering Expenses upon the Main Line, up to December 1st, 1874," intending to transmit it to the President, for the information of the Board of Directors, at its next monthly meeting.

I now beg leave to append this Statement hereto, as a perfect answer to all the charges contained in the Contractors' statement, with reference to the extravagant cost of Engineering upon this Road.

In doing this, however, I must claim that the present Contractor is precluded by the "Statute of limitations" from going farther back in the comparison, than the date at which he so quietly secured the contract from the Chicago Contracting Company, by paying them a large bonus, over and above all their expenditures.

I feel justified in pleading this Statute, in the present case, for the following obvious reasons :

*First.*—He was a Director of the Company during the years when most, if not all, of this large expenditure, now referred to by him, occurred ; and must therefore bear his portion of the responsibility in connection with it.

*Second.*—He purchased the contract with a full knowledge of the amount of these past expenditures ; and has therefore no right to complain of them.

*Third.*—At the time of purchasing the contract, he was in possession of a "Schedule," prepared by the Chief Engineer, showing the probable cost of the different items of expenditure, including Engineering expenses ; and he has therefore no right to complain of these expenditures, unless he can show that they will exceed the amount estimated in the "Schedule."

*Fourth.*—Soon after his purchase of the contract, he informed the present Chief Engineer, that he was perfectly satisfied with his administration of the office, and desired that he would remain in charge of the work.

After bringing the Contractor down, in his comparison, to the date of his assumption of the contract ; and demonstrating that the cost of the locating parties during the past season, amounting, as shown by the annexed statement, to \$17,000, is much more than compensated by the saving to him in the cost of the work. I am fully prepared to institute a comparison between the Engineering expenses, per mile under construction, of this, and any other road that he may name.

The annexed statement shows, that the cost of Engineering, chargeable to construction, during the past year, up to 1st December, including the salary of the Chief Engineer and his office staff, has been only \$21,411.64 or 9 per cent on the amount (\$236,406.94) expended on construction proper ; and that these expenses would have been no greater, if the Contractor had expended three times as much on construction, during the same time, as he should have done, if he intended to redeem his promise of completing the road from Quebec to Three Rivers during the present year."

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Extracts from a Statement submitted by the Chief Engineer to  
the Chairman of the Executive Committee, under date of  
December 1st, 1874.

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It is also important to mention that the present Contractor, when he purchased the contract from the Chicago Contracting Company, evidently supposed that he was also purchasing the full control of the Engineering Department, if not of the Railway Company itself.

In pursuance of this idea, nearly if not all of his sub-contracts provide, that the work is to conform to the directions of his own Engineers, instead of those of the Railway Company; and the work and material are in some cases provided to be of a very different character from those specified in his contract with the Railway Company.

It is also very well known, that Mr. R. H. McGreevy has repeatedly told his Sub-Contractors and foremen, not to pay any attention to the directions of my Assistants; but to do the work as he directed; otherwise he would not be responsible for the payment of their estimates.

The result of this has been that the Sub-Contractor has endeavored, in the first instance, to slight his work as much as possible; and when he found that this kind of work would not be accepted; and that his prices would not cover the expenses of such work as was required by the Chief Engineer, and his Staff; he has, as a general rule, abandoned it in an unfinished state.

A further result of this idea of the principal Contractor has been, that he has absolutely refused to pay the members of the Engineering Staff, the rates that are allowed for similar services upon other Canadian Railways now in progress; and has never yielded his right, not only to dictate the appointments; but to control the salaries and incidental expenses of all members of the Staff. In consequence of this mistaken economy, I have already lost the services of one of my most valuable Assistants; and several of the others will undoubtedly leave, before the resumption of work next season.

I have, as before stated, felt it to be my duty to resist this construction of the contract, by every justifiable means at my



command; and in doing so I have, as a matter of course, incurred the ill-will of the Contractor, and of every one connected with his Department; while, I am sorry to say, the Board of Directors, instead of coming promptly to the rescue, have seen fit to postpone decisive action from month to month, upon the Contractor's yielding a reluctant consent to pay the monthly pay-rolls of the Staff, at these reduced rates; until finally, on the 26th ultimo, I received an official notice from the Secretary, informing me, by order of the President: "that it is the opinion of the Board that the Engineer in Chief possesses all the necessary powers for the control of the Engineering Department, and that he is held personally responsible for the due administration of his office.

While the result of this state of things has been most unpleasant to myself personally, it has also undoubtedly had the effect to impress upon the minds of the Resident and Assistant Engineers, that I had not acted in good faith towards them; and also that their services and responsibilities were not duly appreciated, either by the Railway Company, or by the Contractor.

"These Engineers were all employed with the distinct understanding, as expressed in the Regulations, that their rates of pay would be made to conform to the rates adopted upon other first class Railways in Canada; but the Contractor has, as before stated, absolutely refused to pay those rates; although he has very well known that the Engineering force employed upon the line under construction, has always been much smaller, comparatively speaking, than upon any other similarly situated work in Canada. As an evidence of this, I will state for the information of the Board, that upon the Northern Colonization Railway, the monthly expenses of the field staff are \$27.15 per mile; while upon this road, when fully organized, they will be only \$21.87½ per month per mile."

"As an evidence that the Contractor still persists in his right to control the Engineering Department; and also that the President of the Railway Company, notwithstanding the above notice, still recognizes that right, I beg leave to append hereto, for the information of the Committee and the Board of Directors, a correspondence which has recently taken place between the Contractor, the Secretary by order of President, and myself, with reference to an entire disbandment of the Staff, on and after the 1st of December instant."

"Having, however, at this late day, received the above official notice, which I am bound to assume, reflects the views of the Board of Directors; and having, as will be seen from the correspondence above referred to, terminated all appointments in the Staff, after the close of the present year; I now, for the first time, feel that I shall have the full support of the Board of Directors, in making such a reorganization of the Staff, after that date, as the then condition of the work, and all the circumstances of the case may seem to justify; and for which I shall then, if permitted to do so, be fully prepared to meet and assume all the responsibilities."

Correspondence referred to in the foregoing Extract.

SECRETARY TO THE CHIEF ENGINEER.

OFFICE OF THE NORTH SHORE RAILWAY COMPANY.

Quebec. 24th November, 1874.

GENERAL S. SEYMOUR,

Chief Engineer,  
North Shore Railway.

SIR,

I have been instructed to transmit you herewith, the copy of a letter addressed to-day by the North Shore Railway Contractor, to the President of the Company, and to request you will please report without delay on its contents.

I have the honor to be,

Sir,

Your most obedient servant,

(Signed), A. H. VERRET,

Secretary.

## CONTRACTOR TO THE PRESIDENT.

Quebec, 24th November, 1874.

Col. WM. RHODES,

President N. S. R. Co.

DEAR SIR,

As the working season on the line of Railway has terminated, and I am desirous to be relieved of all unnecessary expense, I wish you to see that all the Engineering Staff are notified that after 1st prox. their services will be dispensed with, and thereby save a considerable outlay. The only exception I would make to this notification would be, one Resident Engineer from Three Rivers to Quebec, one draughtsman at Quebec. If by any means they are kept on after the 1st prox., I hope I will not be called on for the payment of their salaries.

I remain yours,

Very truly,

(Signed), ROBT. H. MCGREEVY,  
For the Contractor.

CHIEF ENGINEER TO THE SECRETARY.

NORTH SHORE RAILWAY.

OFFICE OF THE ENGINEER IN CHIEF,

Quebec, November 25th, 1874.

DEAR SIR,

I have to acknowledge the receipt of your favor of the 24th inst., enclosing a communication of the same date, addressed by the Contractor to the President of the Company, in which the President is requested as follows: "to see that all the Engine-

ring Staff are notified that after 1st Proximo, their services will be dispensed with, and thereby save a considerable outlay. The only exception I would make to this notification would be one Resident Engineer from Three Rivers to Quebec, one draughtsman at Quebec, &c."

I am also requested to report without delay upon the contents of the Contractors letter.

The only report which I can consistently make upon the contents of this letter, at the present time, is that I consider it entirely out of place for the Contractor to address such a letter to the President; and further, that if this were not the case, it is entirely impracticable to comply with its requirements at the present time.

I will state, however for the information of the President, that under the Regulations of the Engineer Department, a copy of which is on file, both in your office, and in that of the Contractor, the services of any member of the Staff may be dispensed with upon his being given one months notice.

Notice was accordingly given at the close of last month, by which the field Staff, between Quebec and Three Rivers, will be materially reduced at the close of the present month.

Upon being informed by the President, who for some time past seems to have become the chosen medium of the Contractor for communicating with the Engineer Department, that the letter of the Contractor is to be regarded as sufficient notice of an entire suspension of all work upon, or in connection with the line between Quebec and Three Rivers, during any considerable length of time; and that he does not intend to procure the right of way, nor to commence the work of construction west of Three Rivers, during the early part of the season of 1875; and also that he will not require any monthly or progress estimates during the coming Winter, I will at once give the requisite notice to the remaining members of the Engineering Staff, so as to be prepared, at the close of the coming month, and the present year, to reduce the Staff to the lowest limits to which the interests of the Railway Company, and the then circumstances of the case will reasonably admit.

In this connection, I beg leave to state further, that having received official notice from you, under instructions from the President, "that it is the opinion of the Board that the Engineer in Chief possesses all the necessary powers for the control of

the Engineering Department ; and that he is held personally responsible for the due administration of his office," I shall in the future, as I have in the past, consider it to be quite as such in the line of my duty, to meet the just expectations of the Board of Directors, as well as of the Contractor, with reference to the most economical organization of the Staff of which the circumstances will admit, during the different stages of the work in progress, as it is to use my best endeavors to see that the Road is constructed by the Contractor in accordance with the true spirit and meaning of the contract ; and also, that I feel quite prepared to meet all the responsibilities connected with both branches of my duty, to the full satisfaction of the Board of Directors ; provided always, that I am left free to use my own disinterested judgment and discretion with reference to all matters connected with the " due administration of my office," for which I am to be held " personally responsible."

I have the honor to remain,

Mr. Secretary,

Your Obt. Servant,

(Signed), S. SEYMOUR,  
Engineer in Chief.

A. H. VERRÉT, Esq.,

Secretary North Shore Railway Co.,

Quebec.

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CHIEF ENGINEER TO THE SECRETARY.

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NORTH SHORE RAILWAY.

OFFICE OF THE ENGINEER IN CHIEF,

Quebec, November 27th, 1874.

DEAR SIR,

Referring to my letter to you of the 25th instant, respecting the reduction of the Engineering Staff, to which no response has as yet been received from the President ; and finding that the

monthly notice of discharge required by the Regulations, must be forwarded to the Resident Engineers to-day, in order to render it fully effective on the 31st December next; I beg to inform you that I have this day forwarded to Messrs. Lindsay & Hamlin, Resident Engineers, each a communication, of which the enclosed is a copy.

A similar notice was sent to Mr. Chandler, Resident Engineer at Montreal, several days since.

Hoping that the course which I have taken in this matter, will meet with the approval of the President and the Contractor,

I have the honor to remain,

Mr. Secretary,

Yours very truly,

(Signed), S. SEYMOUR,

Engineer in Chief

A. H. VERRIET, Esq.,

Secretary North Shore Railway Co.,

Quebec.

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CHIEF ENGINEER TO THE RESIDENT ENGINEERS.

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NORTH SHORE RAILWAY.

OFFICE OF THE ENGINEER IN CHIEF,

Quebec, November 27th, 1874.

DEAR SIR,

I becomes my duty to inform you, that it has pleased the President of the Railway Company to instruct the Secretary, to transmit to the Chief Engineer, a copy of a letter, addressed on the 24th instant, by the North Shore Railway Contractor, to the President of the Company, from which the following is an extract :

"I wish you to see that all the Engineering Staff are notified that after 1st prox, their services will be dispensed with."

Feeling an earnest desire to meet the just expectations of the Railway Company, and of the Contractor, by reducing the expenses of the Staff to its lowest practicable limits during the coming winter months, it becomes my further duty to give you notice, as required by the Regulations, that after the close of the month of December next, your services, under your present appointment, will terminate; and I will thank you to extend this notice in proper form, to every person connected with the Staff upon the Residency under your charge.

In giving the above notice at the present time, however, I reserve the right to retain in the service of the Company, after the close of December, such members of the present Staff, as the then condition of the work, and the circumstances of the case may seem to require.

In view of the present partial suspension of work upon the line, on account of the inclemency of the weather; and of the probability that much of the work will remain in a state of suspense during the next four or five months; and also in view of the fact, that the estimate for the present month, may be the last one that you may be called upon to make, of the work done and of materials delivered, and ready for delivery upon your Residency; it becomes my further duty to call your particular attention to the importance of having every item composing this estimate, measured and computed with the greatest precision and accuracy; also, that the quantities returned by you of work done, materials delivered, &c., should embrace only such as come fully up to the requirements of the contract and specifications; and also, that the estimate of materials delivered and ready for delivery, should embrace only such as have actually been paid for by, and are now in possession of the principal Contractor, or his authorized agents, to such an extent, that upon being included in the monthly or progress estimates prepared in this office, and paid by the Railway Company, they will be quite sure of being eventually placed in the work for which they were designed.

In cases of doubt in relation to any of the foregoing points, you will please enter the questionable items in your supplemental estimate, with full explanatory remarks; so that the question

may be decided here, before the next progress estimate is certified by the Chief Engineer, and laid before the Board of Directors.

Yours very truly,

(Signed), S. SEYMOUR,  
Engineer in Chief.

To JOHN LINDSAY & L. B. HAMLIN,  
Resident Engineers,  
North Shore Railway.

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CHIEF ENGINEER TO THE CONTRACTOR.

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NORTH SHORE RAILWAY.

OFFICE OF THE ENGINEER IN CHIEF,  
Quebec, January 7th, 1875.

DEAR SIR,

I am informed by Mr. Chandler, Resident Engineer at Montreal, that you have refused to pay one of his party for services rendered in the early part of December last, on his leaving the service of the Company; and also that his (Chandler's) petty cash account, for the month of November last, still remains unpaid.

Will you please inform me whether the above is to be regarded as a notice on your part, that the pay-rolls and accounts of the Engineer Department for the month of December, are not to be paid by you in the usual manner,

And oblige,

Yours very truly,

(Signed), S. SEYMOUR,  
Chief Engineer.

HON. THOS. MCGREEVY,  
Contractor N. S. R.,  
Quebec.



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CONTRACTORS OFFICE,

Quebec, 8th January, 1875.

GEN. SEYMOUR,

Chief Engineer N. S. R. R. Co.

DEAR SIR,

I beg to acknowledge receipt of your letter of yesterday's date, and would state in reply that the information you have received from Mr. Chandler is quite correct. I have adopted this course from two communications I have addressed to the Railway Company, dated respectively 24th and 30th November, upon the subject of the Engineering Staff, copies of which, I am informed by the Secretary of the Company, have been transmitted to you.

I also intend to take the same course with reference to such of the Engineering Staff who are not included in my letters of the above dates.

Referring to Mr. Chandler's petty cash account for the month of November, I beg to say that its not having been paid is an oversight, which will be remedied in due course.

Permit me in conclusion to respectfully request that for the future that you will address the pay-rolls and other expenses of the Engineering Department to the Railway Company.

I am,

Yours, &c., &c.,

(Signed), THOS. McGREEVY.

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**Memorandum by the Chief Engineer, respecting the employment of Engineers upon the line, during the winter months.**

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The Contractor demands that the Staff shall be reduced to one Resident-Engineer between Quebec and Three Rivers; and one Draughtsman in the Quebec Office.

This would leave the work to be done, and materials to be prepared and delivered upon the line, during the winter months, practically without any Engineering Supervision ; and when the work is resumed in the Spring there would be no one in readiness to take charge and carry out the plans of construction that have already been commenced, unless the present members of the Staff should elect to remain during the winter, for that purpose, without pay. Should they not do so, it is very uncertain whether a competent and efficient Staff can be collected together in the Spring ; and even if this can be done, a long time will be required to render new men, however competent they may be, sufficiently familiar with the details of the line and the field notes, to enable them to perform their duties intelligently.

If the present Staff be entirely disbanded, and new men brought upon the line, upon a general resumption of the work next Spring, the result will inevitably be, that these new men will assume that everything has been done wrong ; and that their principal duty will be to correct previous mistakes ; and make the work conform to their own peculiar ideas, thus putting the Contractor to a very large and unnecessary expense.

If the Contractor intends to improve the present Winter in doing such work, and preparing such materials as may be done to advantage, with a view to an early resumption of the work next Spring, upon a scale that shall secure the completion of the road to Three Rivers next year ; and the entire road within the time specified in his contract, it is quite indispensable that a sufficient number of the present Staff shall be retained who are entirely familiar, not only with what has already been done, but also with what is to be done upon all parts of the line ; so that there may be no confusion nor delay in an active resumption of the work ; otherwise there will necessarily be endless delays and confusion in everything connected with the work ; and also in the estimates of work done and to be done ; for all which the Chief Engineer will be blamed by the Contractor, and held responsible by the Railway Company.

S. SEYMOUR,  
Chief Engineer.

Quebec, December 26th, 1874.

QUEBEC, JAN. 19th, 1875.

MR. SECRETARY.

Referring to the "Memorandum of Engineering force required on and after January 1st, 1875," which I had the honor to place in your hands on the 26th December last, I beg to submit the following additional information and suggestions upon that subject.

The following Staff has been usefully and necessarily employed thus far, during the present month, and will be continued until the end of the month.

## IN THE GENERAL OFFICE.

1 General Assistant.....	\$175
1 Secretary and Accountant .....	125
1 Assistant Draughtsman .....	75
1 Guardian and Messenger. ....	15
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Total per month .....	\$390

## ENGINEERING STAFF ON THE LINE.

*1st Residency (40 miles).*

1 Resident Engineer .....	\$175
2 Assistant Engineers, each \$110.....	220
1 Inspector .....	75
2 Rodmen, each \$50 .....	100
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Total per month.....	\$570

*2nd Residency (40 miles).*

1 Resident Engineer .....	\$175
2 Assistant Engineers, each \$110 .....	220
1 Transit and Draughtsman .....	100
1 Rodman .....	50
1 Axeman .....	30
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Total per month.....	\$575

MONTREAL DIVISION (80 miles).

1 Resident Engineer... ..	\$175
1 Provincial Land Surveyor .....	130
1 Transit and Draughtsman.....	100
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Total per month.....	\$405

In addition to the above, I have authorized the Resident Engineers to employ such extra Chain and Axemen as might be necessary, in taking advantage of the ice, to re-survey and sound several of the River crossings. This may amount to \$100 during the present month.

RECAPITULATION.

General Office .....	\$390.00
1st Residency .....	570.00
2nd Residency .....	575.00
Montreal Division .....	405.00
Extra help, say .....	100.00
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Total for the month of January .....	\$2,040.00

With reference to the month of February, I would say, that under ordinary circumstances, and if the work is to be presented during the present Winter and the next season, with anything like the vigor that is required to complete it within the time specified in the contract, there should be no diminution of the present force, at least during the coming month.

I have regarded it as very important that the surveys should be completed, during the present Winter, and by the present Staff, between Palais Harbor and the freight terminus of the road at Deep Water in the St. Lawrence, with a view to deciding upon a proper location of the line, and the plan of construction; also with reference to obtaining the right of way, and adapting to this line our plans of Station buildings, Shops, &c., at the Palais Junction with the Main Line.

It is also important that careful surveys and soundings be taken while the ice is in the streams, at all the River Crossings (except the St. Annes) where the foundations of the masonry are composed of piles and crib-work filled with stone, so that the

precise position of each pier may be determined hereafter by reference to certain fixed points upon the shore; and also, that the nature and form of the river bottom may be accurately determined at the precise points where the piers are to be located.

The plans of our bridges, over all the navigable streams, have, during the past season, been approved by the General Government at Ottawa, except that over the Branch of the Ottawa River below Montreal, which is still in abeyance.

As soon as the Government decides upon this plan, in which I am informed some changes will be required, in order to satisfy the Lumber interest, it will be quite necessary to make the same surveys and soundings there, that are required at the other crossings.

The Staff upon the Montreal Division is now usefully employed, in completing the maps, profiles, land plans, &c., connected with the re-location of the line between Three Rivers, and Montreal, during the past season; and as soon as these are completed, the services of the Provincial Land Surveyor may be dispensed with; and the Resident Engineer can make the necessary surveys and soundings at the Ottawa, also at l'Assomption River, where a similar foundation is contemplated.

From the above it will be seen that there is much useful and important work now in progress, and yet to be done upon the line, before the present field Staff can, with propriety, either be materially reduced, or entirely disbanded; and also that this work necessarily involves the preparation and revision of plans in the General Office, which will also keep that portion of the Staff in constant employment for some time to come.

I will remark, with reference to the retention of a portion of the Staff upon unfinished work, during the Winter months, that I consider it very important to retain the Resident Engineer, under whose supervision the work has thus far been executed: and also either the Assistant Engineer, or the Rodman, who has staked out the work, taken all the measurements, and made himself entirely familiar with all the reference stakes, grade heights, bench marks, foundation levels, &c., &c., connected with both the location and construction of the line, upon his particular subdivision.

I have therefore been guided by this principle in making pre-

vions reductions in the Staff, as well as in suggesting the force that should be retained in the future.

I have the honor to remain,

Mr. Secretary,

Your Obt. Servt.,

S. SEYMOUR,

Chief Engineer.

A. H. VERRET, Esq.,

Secretary N. S. R.

Quebec.

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Extract from a letter addressed by the Chief Engineer to the Secretary, under date of December 28th, 1874, in reply to certain allegations made by the Contractor.

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"The Contractor evidently travels considerably out of his way to indulge in his favorite and stereotyped fling at the administration of the Engineering Department, by saying: "It would be very gratifying to me, and save a large sum of money, if the Chief Engineer would look after the necessary expense of his Staff, &c." Which remark, or its substance, he has repeated so often that he seems almost to believe in its truth himself; and to think that in the minds of the President and Directors, to whom it is addressed, it should cover a multitude of sins, both of omission and of commission, on his part. But I do not quite see how in the present instance, the statement, even if admitted to be true, can be made to shield him from a delinquency which he claims to be entirely disconnected from the administration of that particular Department.

I must, however, most respectfully deny the allegation, and defy the allegator to furnish a particle of proof in substantiation of this charge. He knows very well that he has a perfect remedy under his contract for any injustice that may be done him by

the Chief Engineer; and that he has only to appeal to the Board of Directors, in order to obtain full redress and protection.

But the fact, that the Contractor has never asked the Directors to interfere, either with the organization of the Staff, or with the salaries allowed to them, and the additional fact, that he has constantly endeavored to break down and demoralize the Staff, either by refusing to pay a just equivalent for their services; or, as has been, and is still the case, by refusing to pay them at all, for the sole and openly avowed reason that the appointments were not in all cases made or approved by himself, afford abundant evidence, to my own mind, that it is not to "save a large amount of money" in the expenses of the Staff, that his efforts are directed; but that he is determined to break down the present Engineering organization and to re-construct upon its ruins, one over which he can exercise supreme control, and thus save to himself more than one hundred times the total cost of the present organization, in the character of work and materials required in the construction and equipment of the Road.

Feeling, as I do, a sincere desire to have this vexed question settled permanently, and in a manner that shall be entirely just and equitable to all parties, I beg leave to submit the following proposition for the consideration of the Board of Directors and the Contractor.

Let three competent and disinterested Civil Engineers be selected, one by the Railway Company, one by the Contractor, and one by the Chief Engineer, who shall decide:

*First.*—As to whom, or to what parties, under the contract, have a right to the full control of the Engineering Department, both as to its organization, appointments, salaries, and duties to be performed.

*Second.*—As to whether the expenses of the Staff in charge of construction, during the past year, have been greater than were absolutely necessary for the proper care and execution of the work.

*Third.*—As to whether these expenses of the Staff have been relatively greater or less than is usual or customary upon other similarly situated first class roads in the country; and if so, the per centage or amount of excess or deficiency in these expenses.

I will at the same time, if allowed by the Company, enter into an agreement with the Contractor to the following effect:

1st. If it shall be decided that the control of the Engineer Department belongs to the Chief Engineer, subject only to instructions from the Railway Company, the Contractor must refrain from any interference with it whatever. And if it shall be decided that the control belongs to the Contractor, the Chief Engineer must refrain from any interference with it whatever.

2d. If it shall be decided that the expenses of the Staff in charge of construction, during the past year, have been greater than was necessary for the proper care and execution of the work; or that they have been relatively greater than is usual or customary upon other similarly situated first class roads in the country, the Chief Engineer shall pay over, or secure to the Contractor, such excess.

3rd. If it shall be decided that the above expenses have been less than were necessary, or customary upon other roads, the Contractor shall make good the deficiency to such members of the Staff as have produced this result, either by reason of the extra services which they have performed, or the inadequate rates of compensation which they have received.

If the Contractor will not agree to the above proposition; or to one in some other form which may be suggested, as affording an equally equitable solution of the difficulty, I think that the Board of Directors must conclude that my theory of the case as above stated, is correct; and that the Contractor is really waging an indirect warfare against the vital principles of the contract, instead of against any real or supposed abuse and extravagance in the administration of the Engineer Department. And also, that his frequent, and sometimes quite offensive allusions to these extravagancies, are only a cover to the more direct and formidable attack upon the entire theory of the present Engineering Organization, which he contemplates making at an early day."

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Extract from a letter addressed by the Chief Engineer to the Contractor, dated October 5th, 1874.

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"I feel compelled to state, that the administration of your contract thus far, seems to have been directed, almost entirely to an effort to destroy the efficiency of the Engineering Department, by insisting upon the right to appoint and control the different members of the Staff, in direct violation of the intent and spirit of the contract."

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CHIEF ENGINEER TO THE SECRETARY.

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Quebec, February 2d, 1875.

2½ P. M.

MY DEAR SIR,

I have to acknowledge the receipt, this moment, from you, of a copy of a letter dated January 30th, 1875, directed by Hon. Thos. McGreevy, to the President and Directors of the North Shore Railway Co., in which they are informed that Mr. McGreevy's foreman, Mr. Hamel, "has been ready for some time past to proceed with the work," of putting in the foundations at the St. Maurice River. And that he "is unable to do so owing to the work not having been set out by the Engineer in charge, or proper plans and instructions having been furnished by that Officer."

I beg to inform you, in connection with this subject, that I have given special directions that no more work shall be "set out" for Mr. McGreevy; or "plans and instructions furnished" to him by any member of this Department, until he has paid the "expenses connected with Engineering" as provided for in his contract.

Whenever this is done, and some substantial guarantee given, that the Engineers and Inspectors required to superintend the work, will be paid promptly in future, I shall be most happy,

upon proper application being made to me by the Contractor, to see that his work is "set out," and that the necessary instructions are given for its proper execution.

Yours very truly,

S. SEYMOUR,

Chief Engineer.

A. H. VERRET, Esq.,

Secretary.



