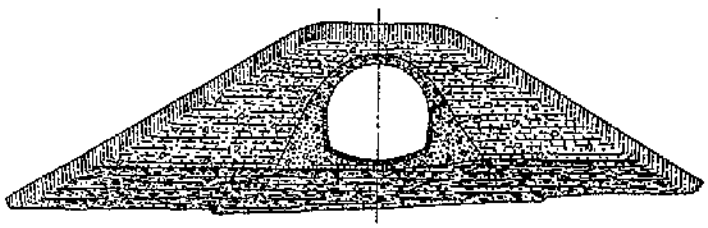
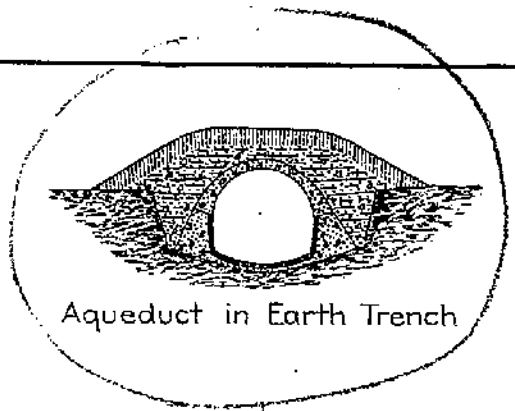
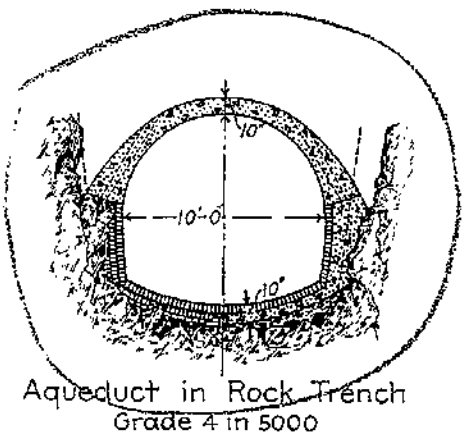


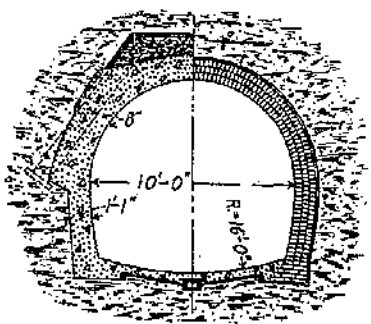
Aqueduct on Embankment



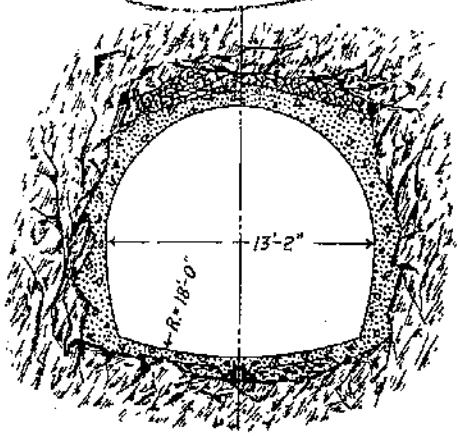
Aqueduct in Earth Trench



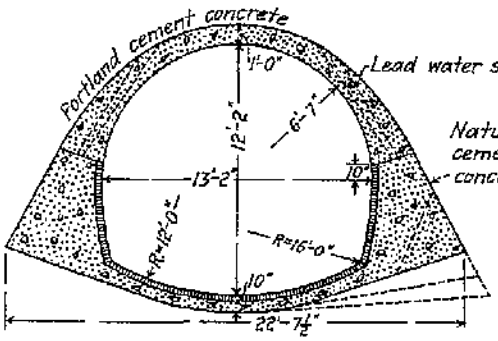
Aqueduct in Rock Trench
Grade 4 in 5000



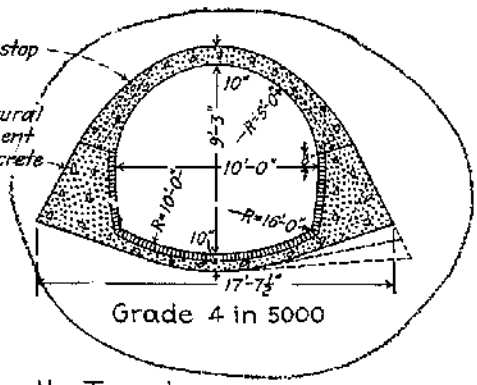
Tunnel in Compact Earth
Alternative Linings
Grade 4 in 5000



Tunnel in Rock
Concrete Lining
Grade 1 in 5000



Grade 1 in 5000



Grade 4 in 5000

Aqueduct in Earth Trench

WESTON AQUEDUCT

TYPICAL CROSS SECTIONS

DECEMBER, 1901.

TELEGRAPHIC ADDRESS: "DOCKYARD, LIVERPOOL."
TELEPHONE NOS. 1880 & 1881 ROYAL

Mersey Dock Estate,
Engineer's Office, Dock Yard,
Liverpool.

17th April, 1907.

My dear Sir,

I have much pleasure in introducing to you by this note Mr. Robert Brodie, Member of the Institution of Civil Engineers, who is about to proceed to Canada, partly for pleasure and partly with a view to acquire information on engineering matters there.

I have known Mr. Brodie for many years, he having been occupied as Engineer's Agent for the contracting firm of L. P. Nott, who have carried out large works for my Board, including the construction of the Canada Branch Dock No: 3 complete with sheds, and Tranmere River Wall and dock entrances, the contract amounts for which approximated closely to half a million of money. At Tranmere, in addition to the work for my Board, his firm carried out simultaneously a large amount of work for the Tranmere Bay Development Company, the whole comprising an important scheme of reclamation and dock development. The whole of their work has been done to my entire satisfaction, and free from friction.

Any information you can afford Mr. Brodie, or any facilities you can give him to acquaint himself with men and things on your side of the water, would be greatly esteemed by me.

Yours faithfully,

Anthony G. Lyster.

Engineer-in-Chief.

John Kennedy, Esq:
Chief Engineer,
Harbour Commissioners,
MONTREAL.

for Lysle introducing R. Brodie

17th April, 1907.

My dear Sir,

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Yours faithfully,

[signature]

Engineer-in-Chief.

John Kennedy, Esq.,
Chief Engineer,
Harbour Commissioners,
MONTREAL.

John Kennedy, M. Inst. C. E.
M. AM. SOC. C. E., M. CAN. SOC. C.E.
Civil Engineer.

HARBOR BUILDING,
57 COMMON STREET.

Montreal, Que., September 10th, 1907.

Geo. Janin, Esq.,
Superintendent, Water Works,
Montreal, Que.

Dear Sir,

At the request of Mr. W. H. Hayden, Montreal Agent for the firm of L. P. Nott, of London and Bristol, England, I send you herewith a letter from Mr. A. G. Lyster, Engineer in Chief of the Mersey Docks, Liverpool, dated April 17th, introducing Mr. R. Brodie, Engineer - Agent - for the firm L. P. Nott, commenting very favorably on the standing of the firm as Contractors.

Mr. Lyster, as you are no doubt aware, is not only an Engineer of the highest standing, but one who writes very carefully and upon whose statement regarding the firm of L. P. Nott may be taken with the greatest confidence.

Kindly return the letter after you have finished with it.

Yours faithfully,

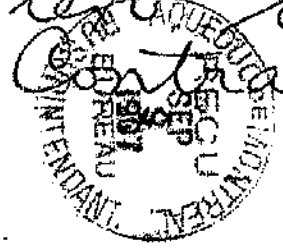
John Kennedy

The Anglo-American Telegraph Company,
LIMITED
MONTREAL STATION

Sept 9 1907

MEMORANDUM TO President Montreal
Water Works. Co

Our 9 Z from Manchester
this am please read the
2nd test word Contractor instead
of "Contractors"



Yours truly
D H Waycott
mgl

TELEGRAPHIC ADDRESS:
TWENTY-MANCHESTER.

All Letters
to be addressed to
"THE MANAGERS."

Williams Deacon's Bank Limited,
(FORMERLY MANCHESTER & SALFORD BANK)
Manchester,

9th September 1907.

The President,

Montreal Water Works,

Montreal.

Dear Sir,

With reference to the contract for which we understand Mr. L. P. Nott has tendered, we have very great pleasure in stating that Mr. Nott is a most respectable gentleman who has been known to us for a number of years. He has undertaken large contracts in this country, and we consider him perfectly trustworthy for the carrying out of the one for which you have invited tenders amounting to £150,000 at present and £500,000 in all.

I am, Dear Sir,

Yours faithfully,

Sub-Manager.

We confirm our telegram of this morning to the following effect:-

"Nott, Contractor, large experience, right financially contract one hundred fifty thousand."

A CET ENDROIT SE TROUVAIT

UN TABLEAU COMPARATIF DES

SOUMISSIONS

VOIR : 119-06-04-01

VM47/4,41

GRAND FORMAT #78

(2 pages)

re Mrs John Parker.

Land leased from 1st May 1893 for ten years expires 1st May 1903 - Was not renewed. - Rate 5% per annum & all taxes -

All buildings erected to remain property of the City.

Land may be taken at any time if required. but 3 months notice to be given if not urgent.

Oct 6/03 - Supt reported that lease had expired, & it was Resolved - To lay the matter on the table. Nothing done since

6/Sept/07 J Ward -

Boston Transit Commission,

15 Beacon Street,

Boston, September 7, 1907.

Geo. Fairing, Esq.,
Superintendent,
Montreal Water Works Department,
City Hall, Montreal.

Dear Sir:

In answer to your letter of September 6th -- Experience with Patrick McGovern, Contractor.

Mr. Patrick McGovern of 6 Beacon Street, Boston, has been well known to me for ten years or so and he has done about one million dollars work of work for this Commission. I have found him prompt, energetic, skillful, and a good man to get along with. He has never appeared to be lacking in capital for the work that he has undertaken for us. He has at present a contract with us and we have always been glad to have him bid on our work. His work with this Commission has been principally constructi ng contract sections of the Subway.

Yours truly,

H. A. Carson

Chf. Engr.

AB

Criminelles

FREDERIC P. STEARNS
CONSULTING ENGINEER
ASHBURTON PLACE . BOSTON

September 7, 1907.

Mr. George Janin,

Superintendent Montreal Water Works,

Montreal, Canada.

Dear Sir:

In reply to your inquiry of the 6th instant will say that Mr. Patrick McGovern has built for the Metropolitan Water & Sewerage Board a section of aqueduct a little larger than the one you refer to, and of the form shown on accompanying sections with a blue pencil line around them. The section which he built was 4150 feet in length and the amount of the contract was $61,000. The contract was dated May 6, 1901, and he proceeded so expeditiously that the work was far advanced toward completion the same year. The next year he resumed work in the spring and completed the work in August, about a year earlier than the time required by the contract. The work was very satisfactory indeed.

I think this was the largest contract he had had up to that time, but since 1901 he has had many contracts in Boston, particularly on the Subway construction, and I have been told that he has done the work very efficiently and has made large profits, so that his financial condition should now be such that he could carry out a work of the size which you mention. When with us his bills were always paid and he made no unreasonable claims in connection with the settlement of his contract.

Respectfully yours,

Frederic P. Stearns

Consulting Engineer, formerly Chief Engineer,
Metropolitan Water & Sewerage Board.

City of Boston,

Engineering Department,

50 City Hall.

Subject Mr.P.Mc Govern Contractor
L. B. 30 pg. 152
No. 12065

September 9,1907.

Mr.George Janin,.

Superintendent Montreal Water Works Dept.

Montreal,Canada.

Dear Sir:-

Mr.Patrick Mc Govern has executed under my direction several contracts for concrete,paving and timber work and his work has been satisfactory.

Yours truly,

William Jackson

City Engineer.

New England Water Works Association.

OFFICE OF THE EDITOR.

14 Beacon Street,

BOSTON, MASS., September 7, 1907.

Geo.Janin, Esq., Supt. of Water Works,

Montreal, Canada.

My dear Mr.Janin:

I have just received your letter of September 6th and am very glad to be able to inform you that Patrick McGovern, contractor of this city, is considered by the engineers of the Boston Transit Commission,(for whom he has been doing a large amount of very heavy work on the Washington Street Tunnel and subway,) as a thoroughly satisfactory contractor.

Their principal assistant engineer informs me that they have no difficulty in having work properly done in accordance with the contracts, and that he has always been very reasonable on matters of extra work, etc. In fact, that he is "all right".

I have never had any personal relations with this concern, but have always understood that to be their reputation. I took the precaution, however, of telephoning to the Transit Commission to verify my impressions.

Trusting that this information may be of service to you, I remain, with sincere personal regards,

Very truly yours,

Charles W. Sherman

CWS-S

SIR A. M. RENDEL, K.C.I.E.
F. E. ROBERTSON, C.I.E.
CIVIL ENGINEERS.

TELEGRAPHIC ADDRESS,
"SUKKUR, LONDON."

TELEPHONE NUMBER,
POST OFFICE "VICTORIA 65".

8 Great George Street.
Westminster. S.W.

9th. September 1907.

Sir,

I beg to confirm a telegram which I have sent to you today at the request of Mr. Louis Nott, Contractor, of Caxton Buildings, Westminster.

Mr. Nott constructed a Dock under my superintendence at Llanelly in South Wales a few years ago, and I was especially pleased with him and his staff throughout the Contract. The work was well done at low prices, and a settlement was effected on the completion of the work without serious difficulty.

I am

Yours obediently,

A. M. Rendel

The telegram was as follows:-

"My experience (of) Louis Nott most favourable. Should give him any work with perfect confidence on all points. Rendel, London."

The President,
Water Board,
Montreal. Canada.

THE ALL BRITISH CABLE ROUTE.

Form No. 2.

The Anglo-American Telegraph Company, Ltd.

ESTABLISHED 1866.

FOUR DIRECT CABLE ROUTES

BETWEEN

THE DOMINION OF CANADA AND EUROPE.

CABLEGRAM RECEIVED AT No. 52 ST. FRANCOIS XAVIER STREET, MONTREAL Sept 10 1907

PLACE FROM	No. MESSAGE	No. OF WORDS	RECEIVED BY	TIME RECEIVED
London	20	22		8.41 A.M.

To President Water Board
Montreal

My Experience Louis Nott Most favorable
should give him any work with perfect
confidence On all points reader London

NO ENQUIRY RESPECTING THIS MESSAGE CAN BE ATTENDED TO WITHOUT THE PRODUCTION OF THIS PAPER.

PLEASE FILE YOUR CABLEGRAMS AT THIS OFFICE.

Ring up Bell Telephones Main 1027 or Main 1028 for a Messenger.

NO BRANCH OFFICES.

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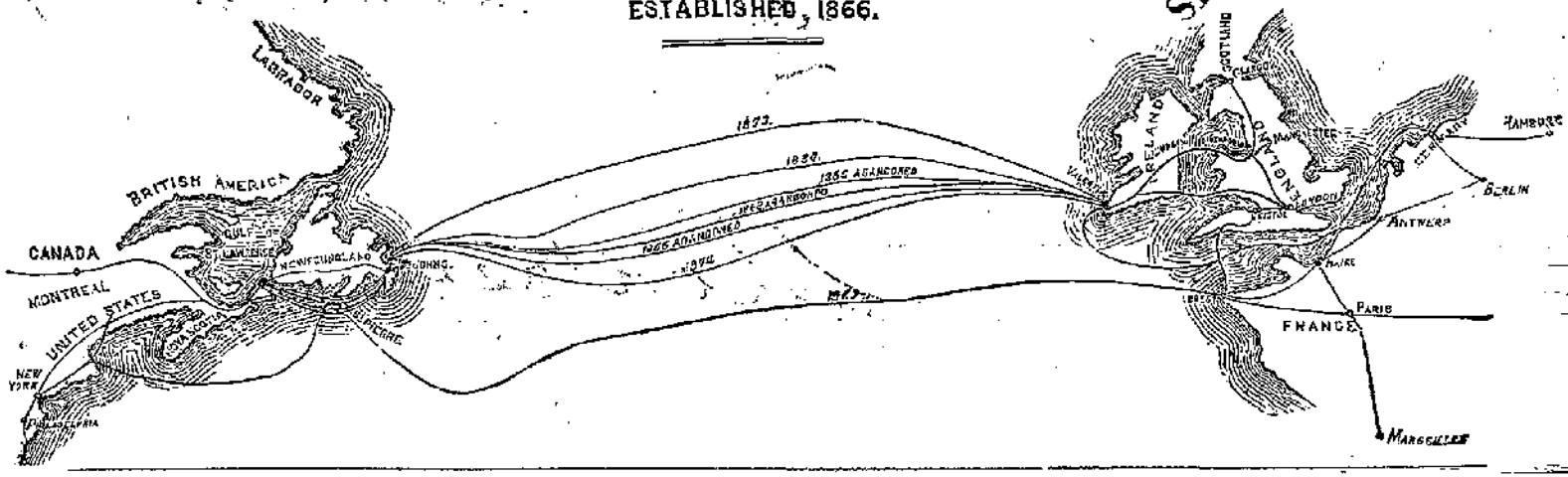

OFFICES IN EUROPE:

LONDON, 23 Throgmorton Street
" 109 Fenchurch Street
" 2 Northumberland Ave., Charing Cross
" 46 Mark Lane
" Hays Wharf, Tooley Street
LIVERPOOL, A 1 The Exchange
GLASGOW, 29 Gordon Street
BRISTOL, Backhall Chambers, Baldwin Street

MANCHESTER, 7 Royal Exchange
BRADFORD, 10 Forster Square
NEWCASTLE-ON-TYNE 1 Side
EDINBURGH, 106 George Street
LEITH, Exchange Buildings
DUNDEE, 1 Panmure Street
PARIS (Agency), 12 Rue de Caumartin
HAVRE, 118 Boulevard Strasbourg

OFFICE IN MONTREAL: Corner of St. Sacrament and St. Francois-Xavier Streets.

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THE DOMINION OF CANADA AND EUROPE.

CABLEGRAM RECEIVED AT No. 52 ST. FRANCOIS XAVIER STREET, MONTREAL, Sept.9-07 190

Place From	No. Message	No. of Words	Received By	Time Received
9 Z A Manchester 19-				M.

To President, Montreal Water Works,

MONTREAL-

Nott contractoro large experience right financially contract

one hundred fifty thousand.

Williams. Deacons Bank.

730Am

"via "Anglo-American" Cables

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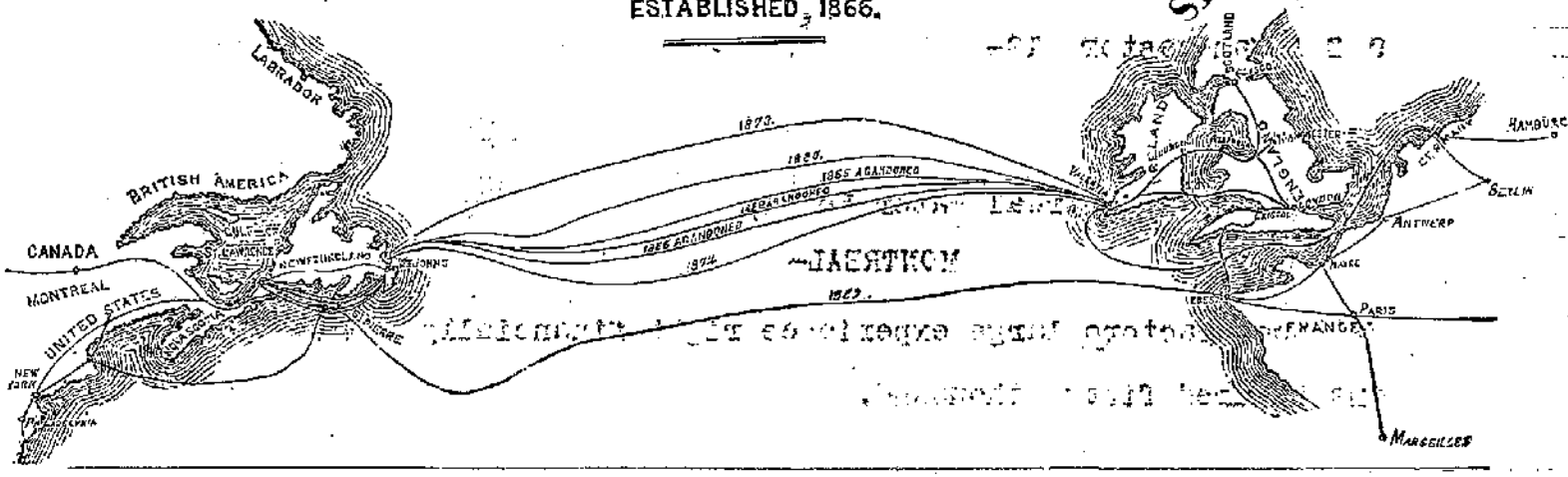

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CABLEGRAM RECEIVED AT No. 52 ST. FRANCOIS XAVIER STREET, MONTREAL, Sept. 9-07 190

*Place From	No. Message	No. of Words	Received By	Time Received
Liverpool	353	17	N	9 29 M.

To President Montreal Waterworks
Montreal

Thoroughly recommend nott reliable satisfactory Contractor Lyster Engineerinchief mersey docks harbour board Liverpool

Reply via "Anglo-American" Cables

PLEASE FILE YOUR CABLEGRAMS AT THIS OFFICE.

☞ *Ring up Bell Telephones Main 1027 or Main 1028 for a Messenger.*

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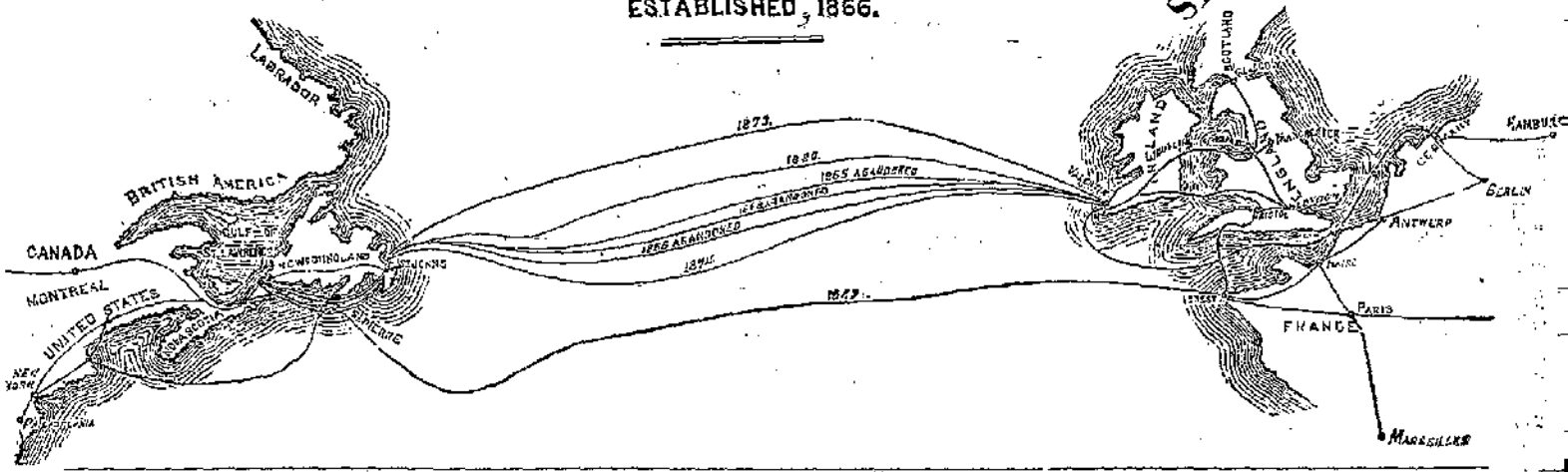

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HAVRE, 118 Boulevard Strasbourg

OFFICE IN MONTREAL: Corner of St. Sacrament and St. Francois-Xavier Streets.

Water Works Department

Tender for the work to be done in the construction of a reinforced concrete conduit alongside the Aqueduct.

TO THE WATER COMMITTEE
OF THE CITY OF MONTREAL

GENTLEMEN :—

I ..... the undersigned .....
residing in Boston Mass U.S.A.
having carefully read and considered the specifications terms and conditions, and having carefully examined the plans profiles and sections, and after having visited the locality and investigated the class of material to be encountered in the trench excavations,
I do hereby offer to construct the reinforced concrete lateral conduit therein specified and described, and to complete the said conduit in first class order according to the general intent of the specifications plans and profiles, and to the entire satisfaction of the Superintendent of Water Works and the Water Committee, for the following prices :

1. For the conduit proper including ordinary excavation, concrete construction, metal for reinforcing, molds, under drains, refilling, drainage, manholes, connections, etc.
Per lineal foot, Twenty one and 25/100 dollars ($21.25)

2. For solid rock excavation in trenches,
Per cubic yard, Two dollars ($2.—)

3. For excavation of loose rock or boulders of one cubic foot or over,
Per cubic yard, Seventy five cents ($0.75)

4. For piling and flooring where required under foundation as specified,
Per lineal foot, Five and 60/100 dollars ($5.60)

Name Patrick McGovern

Locality 6 Beacon St. Boston Mass. U.S.A.

Date Sept 6/07

Index qui accompagne
Patrick McGovern
12 Sept. 1907

Water Works Department

Tender for the work to be done in the construction of a reinforced concrete conduit alongside the Aqueduct.

TO THE WATER COMMITTEE
OF THE CITY OF MONTREAL

GENTLEMEN:—

I the undersigned Louis Philip Nott residing in Montreal having carefully read and considered the specifications terms and conditions, and having carefully examined the plans profiles and sections, and after having visited the locality and investigated the class of material to be encountered in the trench excavations, I do hereby offer to construct the reinforced concrete lateral conduit therein specified and described, and to complete the said conduit in first class order according to the general intent of the specifications plans and profiles, and to the entire satisfaction of the Superintendent of Water Works and the Water Committee, for the following prices:

1. For the conduit proper including ordinary excavation, concrete construction, metal for reinforcing, molds, under drains, refilling, drainage, manholes, connections, etc.
Per lineal foot, Twenty four Dollars ie. ($24.00)

2. For solid rock excavation in trenches,
Per cubic yard, One Dollar, Ten Cents ie ($1.10)

3. For excavation of loose rock or boulders of one cubic foot or over,
Per cubic yard, Nil.

4. For piling and flooring where required under foundation as specified, i.e.
Per lineal foot, Twenty four Dollars, Fifty Cents ($24.50)

Name Louis P. Nott per Wm. H. Haydon.

Locality 43 Bank of Ottawa Building

Date 6th September 1907 Montreal.

Rendue par Commis
Louis P. Watt.
Sept 13/07

Département de l'Aqueduc

Soumission pour les travaux à faire dans la construction d'une conduite latérale en beton armé à l'aqueduc.

AU COMITÉ DE L'EAU
DE LA CITÉ DE MONTRÉAL

MESSIEURS:—

Nous soussignés

Ste CANADIENNE D'ENTREPRISES Gnles. Ltée. résidant à Montréal, Canada

ayant lu attentivement et considéré les devis termes et conditions, et ayant examiné avec soin les plans, profils et sections, et après examen sur les lieux du parcours, nous étant rendu compte des matériaux qui peuvent être rencontrés dans les excavations des tranchées, nous offrons par les présentes de construire la dite conduite en béton armé, telle que spécifiée et décrite, et de compléter la dite conduite dans toutes les règles de l'art, selon l'intention générale des devis plans et profils, et à l'entière satisfaction du Surintendant de l'Aqueduc et du Comité de l'eau pour les prix suivants:

1. Pour la conduite proprement dite, y compris l'excavation ordinaire, construction du béton, armature, moules, drains sous la base, remblai, drainage, regards de visite, raccordements etc.

Par pied courant, Vingt cinq piastres ($25.00)

2. Pour l'excavation du roc solide dans les tranchées,

Par verge cube, Une piastre Quatre-vingt cinq cents ($1.85)

3. Pour l'excavation des pierres ou cailloux de dimensions d'un pied cube ou audessus,

Par verge cube, Quatre vingt cents.

4. Pour pilotis et plancher sous la fondation, où il sera nécessaire de les employer, tel que spécifié,

Par pied courant, Onze piastres.

Nom Ste CANADIENNE D'ENTREPRISES Gnles. Ltée.
par Beaudry Leman Directeur Général.

Adresse 3 Beaver Hall Square, Montréal.

Date Le 6 septembre 1907.

Vendeurs à la Canadienne
Ste Canadienne
d'Entreprises Générales Ltée

17 Sept 1907

Water Works Department

Tender for the work to be done in the construction of a reinforced concrete conduit alongside the Aqueduct.

TO THE WATER COMMITTEE
OF THE CITY OF MONTREAL

GENTLEMEN:—

.....the undersigned.....

.....residing in.....

having carefully read and considered the specifications terms and conditions, and having carefully examined the plans profiles and sections, and after having visited the locality and investigated the class of material to be encountered in the trench excavations,.....

.....do hereby offer to construct the reinforced concrete lateral conduit therein specified and described, and to complete the said conduit in first class order according to the general intent of the specifications plans and profiles, and to the entire satisfaction of the Superintendent of Water Works and the Water Committee, for the following prices:

1. For the conduit proper including ordinary excavation, concrete construction, metal for reinforcing, molds, under drains, refilling, drainage, manholes, connections, etc.

Per lineal foot,.....

2. For solid rock excavation in trenches,

Per cubic yard,.....

3. For excavation of loose rock or boulders of one cubic foot or over,

Per cubic yard,.....

4. For piling and flooring where required under foundation as specified,

Per lineal foot,.....

Name.....

Locality.....

Date.....

SPECIFICATION

OF THE WORK TO BE DONE

IN THE

Construction of a Lateral Conduct at the Aqueduct

MONTREAL WATER WORKS, UNDER BY-LAW No. 366.

General Description of the Work.

1. The works will consist is the construction in reinforced concrete of a conduit alongside of the present aqueduct, the works include the necessary excavations in earth and in rock, the supplying of the materials, the labor, the tools, and all the accessories as hereinbelow described and indicated on the plans, profiles and sections, annexed to the present specifications.

Excavations.

2. The Contractor shall make all the necessary excavations for the construction of the said conduit, according to the lines and levels given to him by the Superintendent of Water Works, for this purpose he shall have to clear the land where necessary and remove all the wood and branches resulting from this clearing.

He shall have to take all necessary measures to protect the sides of the trenches against land slides and protect the banks of the aqueduct, especially in those parts where the conduit passes close to the said aqueduct.

Shoring.

3. With this object he shall have to provide all the necessary shoring, and in all cases where required by the Superintendent of Water Works, the timber shoring shall be left and buried in the trench, for which no extra price will be allowed.

Unwatering the Trenches and Ditches.

4. The Contractor shall have to provide for and bear all the expense of pumping out, or otherwise removing from his trenches, all rain water or water coming from springs, drainage ditches, or infiltrations from the aqueduct. The Contractor during all the duration of the works, shall also have to maintain in good order the drainage ditches which skirt the North West banks of the Aqueduct, and traverse it through the siphon culverts at the places indicated on the plan and profile. He shall have to provide for this unwatering and drainage in such manner as will cause no damage to the abutting properties. In on case shall the water so pumped or diverted be allowed to drain into the aqueduct.

Near station 125, there exists a cross ditch which traverses the aqueduct through a siphon culvert; in case the level of the bottom of this ditch cannot be altered, the Contractor shall have to bear the expense of a siphon culvert underneath the conduit, or such modification in the construction of the conduit, as the Superintendent of Water Works may direct to assure the drainage of this ditch.

Price for Rock & Boulder.

5. As the price per lineal foot of conduit is to include the excavation in all nature of soil except solid rock, and boulders of one cubic foot or over in volume, the tenderers shall mention and specify the additional price per cubic yard :

1o. Price for solid rock, by which is understood to include only all massive rock, of more than one cubic yard in volume.

2. Price for loose rock, or boulders of one cubic foot or over in volume.

The trench excavation in solid rock shall not exceed the dimensions as shown in fig. (1) In any case the additional price for excavation in rock shall only be paid the Contractor within the limits and dimensions shown on the said section.

No boulders of less size than designated above, or soft desintergrated rock which may be removed with a pick, will be measured or allowed as rock.

Rock Stripped for Measurement.

6. Wherever rock is encountered in excavating the trench, it shall be stripped of earth in sections not less than fifty feet, in order that the Superintendent of Water Works may measure or cross-section the same; rock, excavated or blasted out before such measurement is made, will not be estimated or allowed for.

How Rock to be Measured.

7. When the earth overlying the rock shall have been removed, cross-sections shall be taken over the surface of the rock before excavation. All the rock shall be measured in the solid, and nothing marked on the plans, or shown by the test-pits, or information obtained from any source whatever, shall be held in any way to affect the Contractor's obligation, or entitle him to extra remuneration above and beyond the price he shall have made for rock excavation.

Back Filling of Trenches.

8. The trench shall be carefully filled in and the work backed up in a proper manner as it proceeds. When the back filling of the trench is made with earth it shall be rammed in layers of one foot deep in the whole excavation, and the refilling shall be carried on in regular courses as directed from time to time by the Superintendent of Water Works.

In rock.

9. In the parts in rock excavation the stone taken out of the trench may be used for the back filling of the trench; but up to one foot above the crown of the conduit no stones greater than 3 inches in diameter shall be used in the back filling.

Surplus of filling.

10. Any surplus material from the trench after back filling shall be spread out in a regular manner over the line of the conduit, in such a way as to leave always at least four feet of filling over the crown of the conduit; for this reason, or for any other, the Superintendent of Water Works may if required demand the removal of any surplus excavated material along the line to any point designated, within a limit of one mile.

Drainage under conduit

11. For this drain an excavated trench shall be made under the conduit to receive the tile pipes and broken stone according to the different dimensions indicated below.

1o. From station (0) to station 65 the drain shall be made according to fig. (2), that is a french drain 4' x 2' of broken stone or boulders not larger than 6" dia., covering seven porous tile pipes 4" dia. each, laid with open joints in two rows, 4 below and 3 above.

2o. From station 65 to station 124 the drain shall be made according to fig. (3), that is a french drain of 3' x 2' of broken stone or boulders not larger than 6" dia., covering five porous tile pipes of 4" dia. each, laid with open joints in two rows, 3 below and 2 above.

3o. From station 124 to station 200, the drain shall be made according to figure 4, same style of french drain 2'6" x 2" with three porous tile pipes.

4o. From station 200 to the upper end of conduit the drain shall be made according to figure 5, same style of french drain 2' x 2' with two porous tile pipes.

Construction of the conduit.

12. The conduit will have over the whole length indicated on the plan and profile the following inside dimensions: Figure (6), the form of the crown and sides shall be the arc of a circle 4'6" radius, with flattened invert of 18' radius. It will be 9' wide and have a height of 7'8½". The total length will be about 27,300 feet. The thickness of the concrete shall be 8" at the crown of the arch, 12" at the springing point of the arch and 8" thick on the lower side of the invert.

The conduit shall be made of reinforced concrete as described below.

How built in rock section.

13. Wherever the width or the depth of rock excavation taken out shall exceed the form of the conduit below the middle line of the conduit, such hollow or excess of excavation shall be filled in, according to figure No. 7, with lean concrete as specified in art. 19, and the reinforcing steel metal shall be used, only in the crown or upper portion of the conduit and it shall extend to one foot below the level of the rock of the conduit as shown in figure No. 7.

In firm soil.

14. Wherever the firmess of the sub-soil shall permit of the cutting out of the excavation of the invert of the conduit to the exact shape of the conduit, the reinforcing steel metal shall only be employed in the crown of the conduit and for one foot below the middle line as in figure No. 8. The lower side of the trench thus carefully cut out may serve as the outside mold of the conduit to receive the concrete.

In soft soil.

15. In every case where the want of firmness in the sub-soil will not permit of carefully cutting out the lower side and invert of the conduit, as explained above, the construction of the conduit shall be carried out as shown in figure (9). In these cases the reinforcing steel metal shall be used in its contruction completely around the circumference of the conduit.

Use of piles.

16. In sub soils of a soft nature composed of quick sand or soft clay, upon the order of the Superintendent of Water Works, the contractor shall be required to furnish and drive pine piles to carry a foundation flooring of pine planks as shown in figure (10).

These piles of sufficient lenght to be driven to bed rock or very firm soil, will consist of four piles to each bent spaced 3'10" centres and each bent spaced 4' between centres. Each bent shall be capped by 10" by 12" pine caps securely spiked, and the whole floored with 3" hemlock timber.

Molds.

17. There shall be furnished by the contractor in the construction, a timber mold following strictly the shape and outline of the conduit as shown on the plan and section. The face of the mold against the sides and the crown shall be close jointed and smooth, so as to hold the liquid concrete and prevent it adhering. The interior mold shall be sufficiently braced to withstand not only all the pressure during the construction, but also all inside depression or incurvature in the shape of the conduit, even to the fraction of an inch. In any case, these molds in their construction, shall be subject to the approval of the Superintendent of Water Works.

These molds shall not be removed until the concrete has sufficiently set, to the satisfaction of the Superintendent of Water Works.

Expanded metal for reinforcing.

18. The reinforcing material of the conduit shall consist of expanded steel, No. 6 with 6" mesh ; or of other reinforcing metal which shall be known to have an equal degree of resistance. In the case of tenderers wishing to substitute a different material than No. 6 expanded steel with 6" mesh, they will have to clearly specify the nature and weight of the reinforcing material they propose to make use of. The reinforcing metal shall be set at about 3" from the interior surface of the conduit, and each sheet of metal shall be lapped over the adjoining one, to the width of one mesh to form a continuity of joints, but only in the crown of the conduit shall the adjoining sheets of metal be attached together with wire.

Concrete.

19. For the invert and the lower portion of the conduit, the concrete shall be made as follows :—

One part of cement ; two parts of sand and five parts of clean hard broken stone small enough to go through a 1½" inch ring and no larger.

For the crown or upper part of the conduit, the concrete shall be made in the same proportion, but the stone shall be small enough to go through a ¾" of an inch ring and no larger.

For all filling in of hollows under the invert and sides as designated in Art. 13, the concrete shall be made of one part of cement, three parts of sand and eight parts of stone of no greater size than will pass through a 3" ring.

CEMENT

Quality and fineness.

20. Contractor shall only use the best quality of strongly burnt artificial Portland cement. Before using it on the work, he shall submit to the Superintendent of Water Works for his approval, the name of the brand and maker of the cement. The cement shall be of such a degree of fineness than not less than 90 % shall pass through a sieve of 10,000 meshes to the square inch and the whole through a sieve of 2500 meshes to the square inch.

Specific gravity.

21. The specific gravity shall be at least 3.09 and shall not exceed 3.25 for fresh cement.

Tensile strength.

22. Briquettes of cement, both neat and mixed with standard quartz sand, gauged to a proper stiffiness and placed in molds to be immersed 24 hours after confection, shall, at the end of 7 days, have an average tensile strength of :—

For neat cement, 400 lbs. per square inch.

For one part of cement to three parts of sand, 125 lbs. per square inch.

And at the end of 28 days :

For neat cement, 500 lbs per square inch.

For one part of cement and three parts of sand, 200 lbs per square inch.

Soundness.

23. The cement shall be constant in its volume. A pat of neat cement thoroughly worked, made on a glass plate, kept in a damp atmosphere for 24 hours, will be placed in vapor in a tank, in which the water is treated to a temperature of 130 degrees Fah. After remaining in the vapor 6 hours, it shall be immersed in the hot water and allowed to remain there for 18 hours. After removal from the water, it shall not show any twisting or cracking on the edges, and if separated from the glass, should break with a sharp crisp ring. Should the cement fail to give satisfaction to the Superintendent of Waters Works in this test, he may reject it, even though it may come up to the specification, in tensile strength, specific gravity of fineness.

Chemical analyses.

24. Chemical analyses of the cement must be furnished by the contractors, should they be required by the Superintendent of Water Works, and he may also, during the progress of the work, have the cement analysed to ascertain its purity, and if found to contain more than 2% of sulphuric acid or 3% of magnesia, it will be rejected.

The fees of these tests will be paid by the contractor, to be deducted from any moneys owing him by the City.

Taking of samples.

25. No cement shall be received on the works before a sample of each consignment shall have been submitted to the 7 day test, after which the cement is to be kept dry and in the same condition as when it was delivered, until it is all used up in the work.

The samples for testing shall be taken by the Supernitendent of Water Works from the contractor's store rooms.

Sand.

26. The sand shall be sharp river sand perfectly free from all foreign or earthy matter and fine enough to pass through a No. 20 sieve, but coarse enough to remain on a No. 30 sieve. The sand in any case will have to be approved of by the Superintendent of Water Works.

Mixing of concrete.

27. If the concrete is to be hand mixed, the materials in their proper proportions as specified in article 19 shall be mixed on solid and close jointed timber platforms to protect the concrete from foreign substances. The cement and sand shall first be thoroughly mixed in a dry state in the proportion specified. The stone, after being thoroughly drenched with water, shall then be deposited on this mixture. Clean water shall then be added and the mass thoroughly mixed and turned over until each stone is covered with mortar.

The quantity of water shall be prescribed by the Superintendent of Water Works, but must be sufficient in any case to produce a rather wet concrete when deposited in the mold. The mixing must be done as rapidly as possible and the batch deposited on the work without delay. In no case shall concrete be used which has begun to set.

Cement mixing machines.

28. Mechanical cement mixers of a model approved of by the Superintendent of Water Works may be made use of. The materials forming the concrete shall be placed in the mixer in a dry state in the volume specified and thoroughly mixed, after which clean water shall be added and the mixing continued until the wet mixture is thorough and the mass uniform; otherwise the method in the hand mixing above described, is to be followed.

How concrete is to be used.

29. The concrete made as described in the preceding article shall be deposited in the molds in layers of not more than 6" thickness and suitably rammed until all voids are filled. To guard against longitudinal seams in the circumference of the conduit, each day's work in the concrete shall always be arranged so as to complete a full circular section of the conduit, upper and lower half being closely carried on at one time and the edges left rough and uneven, so that the next day's work may make a perfect circular bond as solid and watertight as possible. When work is stopped, either before or after completion, the surface of the concrete recently placed shall be wet down and covered in some manner acceptable to the Superintendent of Water Works, to protect it from the weather and from rapid drying out through evaporation.

Plastering the interior of the conduit.

30. The entire surfaces of the conduit shall be left as smooth as a plastered wall. With this object, as soon as the molds are taken down, all the interstices or rough surfaces of the conduit walls shall be carefully smoothed over with mortar, made of 1 of cement to 1 of sand. If, after the taking down of the said molds, any protuberances show themselves at the joints of the molds, the contractor shall be required to pick away these protuberances over a sufficient area, according to the prescription of the Superintendent of Water Works, in order to assure the complete and durable adherence of the plastering.

Connection of the conduit with the Aqueduct

31. Between stations 228 to 230 as shown on the plan and profile, a branch connection shall be built between the said conduit and the aqueduct. This branch connection of about 30 feet in length, will have the same sectional dimensions as the main conduit, and in its construction, the contractor will be governed by all the clauses of this specification which covers the said conduit; a sluice valve furnished by the Water Department shall be placed

by the contractor on the said connection. The contruction of that part of the connection between the sluice valve and the aqueduct does not form part of the contract and shall be carried out by the Water Department. The contractor shall finish the extremity of the connection he is to make, by suitable puddle wall of clay at least 6 feet wide all around to make his trench perfectly watertight to enable the Water Department, later on, to complete the connection to the aqueduct.

Connection with conduit for future crossing of the aqueduct.

32. At station 12 above the settling basin, near the wheel house, a branch connection with the conduit shall be built by the contractor. This branch connection of about 25 feet in length shall have the same sectional dimensions as the conduit itself, and its construction shall be governed by all the clauses of the specification covering the construction of the said conduit; a sluice valve furnished by the Water Department shall be placed by the contractor at the end of said connection.

Venturi Meter.

33. The Water Department reserves the right to place a venturi Meter on the line of the conduit. For this purpose, the contractor, without any extra charge on an order of the Superintendent of Water Works, shall modify the lines and form of the conduit as per figure 11, on a distance of about 75 feet, and place in the conduit the necessary fittings for the working of the Meter. The metal fittings of the Venturi Meter shall be furnished by the Water Department.

Manholes.

34. Manholes shall be built up in reinforced concrete like the conduit, at about every 5,000 feet distance along the conduit. There shall be five such manholes, 4 feet inside diameter with concrete wall 6" thick. As indicated in fig. 12 they shall be cylindrical in shape, except at the junction with the crown of the conduit, where they will take a special shape indicated in the fig. 12. The reinforcing metal where connected to that of the conduit shall have to be made with great care to equally distribute the pressure. They will be built up to the level 44.0. Iron bars for the ladder shall be furnished and put in position in the interior of the manhole shaft. The manhole covers will be furnished and laid later by the Water Department.

Watching and protection of the aqueduct.

35. The contractor shall have to provide for watchmen on the works and he shall be responsible for all damages or accidents that may occur during the progress of the work. He shall also be held to protect, maintain and replace, if need be, the fences, gates, bridges and roads on the banks of the aqueduct where the works are being carried out. He shall also take all necessary precautions to prevent the polution of the waters of the aqueduct by his workmen or employees. He shall have to provide suitable closets or privies for the workmen to conform with the sanitary laws and meet with the approval of the Superintendent of the Water Works, who for this object shall have full authority to efficiently protect, from a hygienic point of view, the shores of the aqueduct.

Levels and lines to be adhered to by contractor.

36. Levels and lines will be given by the Superintendent of Water Works at all change of gradient and alignment, and the contractor will be required to construct each part of the conduit absolutely true in gradient and alignment between such points given.

Extras.

37. It will be necessary for the contractor to obtain a written order from the Superintendent of Water Works before proceeding with any work that may be charged as an extra, and absolutely no claim for such will be considered without the contractor producing such written order and on which the price shall be stated. All claims must be forwarded in writing to the Superintendent of Water Works within fourteen (14) days after the completion of the work. It is distinctly understood that no extras will be allowed for running sand, or hardpan, the price for excavation to be absolutely fixed as described in the bank form to be filled up.

Contractor must send his claims to the Superintendent.

Measurement

38. The measurement of the work done will be made along the centre line of the conduit.

Payments.

39. Estimates of the work done will be made once a month by the Superintendent of Water Works, and the contractor shall be paid monthly upon a warrant signed by the Water Committee. A percentage of 15% will be retained as security until the final acceptance of the work by the Water Committee on the certificate of the Superintendent of Water Works. This acceptance of the works shall take place within three months after the completion of the entire work ; up to which time the contractor shall be bound to uphold the work in every way.

Time allowed for completion of the work.

Penalty if not completed.

40. The whole work that may be ordered to be done, to be completed in a workmanlike manner and according to the true meaning and intent of this specification ; and to the satisfaction of the Superintendent of Water Works and Water Committee 12 months after the contract is signed, and for any work remaining to be done after that date, new tenders may be called, for and the original contractor shall be responsible for any excess in price between his or their contract and the new one.

Workmen.

41. The contractor shall be required to employ competent workmen, and whenever the

Superintendent of Water Works shall inform him in writing that in his opinion, any man on the work is unfit to perform his task, the contractor must discharge the same from the work and not employ him again on it.

Work not progressing satisfactorily.

42. Should the work not progress to the satisfaction of the Superintendent of Water Works and in such manner as will rersonably assure the completion of the work in the 12 months delay called for in art. 20, the said Superintendent shall have the power, on giving 48 hours notice in writing to the Contractor, either to employ other parties, purchase materials, etc, to push on the works to his satisfoction, or to take the work from the Contractor and do it himself, the expense of which shall be charged to the Contractor.

Contractor to remove inferior material.

43. Should any materials brought upon the ground, which, in the judgment of the Superintendent of Water Works, shall be of bad or inferior quality, such materials shall not be used upon the works, but shall at one be conveyed away off the ground by the contractor. Should the contractor refuse or neglect to remove any such materials above stated, the Superintendent of Water Works shall have the power, upon giving 24 hours notice in writing to the contractor, to remove such material to such place or places and in such manner as he shall think fit, and whatever expenses are incurred thereby, shall be defrayed by the contractor out of any sum or sum due or to become due to him under this or any other contract with the City of Montreal.

Bad workmanship to be altered, etc., at expense of contractor.

44. That should the contractor, or any of his agents, foremen or wokmen execute any unsound, unskilful or imperfect work, they or some of then shall immediately, upon their or his attendion being called thereto by the Superintendent of Water Works, alter, amend, pull down or remove such work and shall for thwith rectify or reconstruct the same as the expense of the contractor.

Superintendent empowered to alter, etc., bad work.

45. That in case the contractor or any of his agents, foremen, or workmen should refuse or neglect to alter, amend, pull down, rectify or reconstruct any unsound, unskilful or imperfect work, then ordered to do so by the Superintendent of Water Works, then such officer shall be at liberty, and is hereby empowered to employ any other workmen, materials and appliance in lieu of the same; and whatever expenses are incurred thereby shall be defrayed out of any money due or to become due to the contractor upon this or any other contract with the City of Montreal or otherwise to be recovered.

Contractor to place a foreman in all work.

46. The contractor shall, at his own cost, place a foreman on each portion of the work to give the necessary directions to the workmen and to see that they execute their work in a sound and proper manner.

Contract to be signed.

47. The contractor to sign the contract within ten days of notification to him by the Superintendent of Water Works that his tender has been ratified by the City Council.

Notarial fees.

48. The contractor to pay the Corporation notaries their charge for making the contract and a copy of it, which copy will remain on record in the Superintendent of Water Works office.

Superintendent's opinion to be final.

49. All the work to be done to the satisfaction of the Superintendent of Water Works, whose decision on any disputed points as to the true meaning and intent of this specification, shall be final.

Tender to be on blank form.

50. No tender will be entertained, if not on a blank form obtained from the office of the Superintendent of Water Works and accompanied by a certificate of deposit from the City Treasurer for fifty thousand dollars, which sum will be forfeited if the parties tendering decline to accept the contract which may be awarded to them at the price stated in their tender.

This amount being held as a guarantee against all defects, breaks or damages that may ensue in consequence of defective wokrmanship. It may also serve to indemnify the City of Montreal against any or all claims for royalty, duty, damages, fees, legal or other expenses, to which the said City may be subjected on account of any patented appliances or devices which may be entitled to a patent which shall be used by him, (the said Contractor). This amount shall also be held as guarantee for the proper execution of the work, set forth in articles 40 and 42, and to indemnify any other party who may be called upon to take up the unfinished work, after the 12 months delay.

This amount bearing interest at 5% per annum shall be with-held until the final acceptance of the work as specified above.

Where and when received.

Sealed tenders addressed to the City Clerk will be received by him until 12 o'clock noon at his Office, on the sixth day of September, 1907.

Said tenders will be opened by the City Clerk in the presence of the interested parties in the Water Committee room, at the first meeting of said Committee following the reception if said tenders.

INTERPRETATION OF TERMS.

Contractor. In every case in the contract and specification the word "Contractor" shall mean firm, executors, heirs and assigns.

Superintendent of Water Works. Whenever the words "Superintendent of Water Works" occur in this specification, it shall be taken to mean the Superintendent of Water Works of Montreal or his properly accredited representative.

GEO. JANIN.

Superintendent and Chief Engineer.

OFFICE OF SUPERINTENDENT OF WATER WORKS, CITY-HALL.

Montreal 26th July 1907.

Water Works Department

Tender for the work to be done in the construction of a reinforced concrete conduit alongside the Aqueduct.

TO THE WATER COMMITTEE
OF THE CITY OF MONTREAL

GENTLEMEN :—

I the undersigned Treffle Bastien residing in the City of Montreal having carefully read and considered the specifications terms and conditions, and having carefully examined the plans profiles and sections, and after having visited the locality and investigated the class of material to be encountered in the trench excavations, do hereby offer to construct the reinforced concrete lateral conduit therein specified and described, and to complete the said conduit in first class order according to the general intent of the specifications plans and profiles, and to the entire satisfaction of the Superintendent of Water Works and the Water Committee, for the following prices :

1. For the conduit proper including ordinary excavation, concrete construction, metal for reinforcing, molds, under drains, refilling, drainage, manholes, connections, etc.
Per lineal foot, thirty two dollars and ninety seven cents ($32.97/100)

2. For solid rock excavation in trenches,
Per cubic yard, One dollar and ninety nine cents ($1.99/100)

3. For excavation of loose rock or boulders of one cubic foot or over,
Per cubic yard, One dollar ($1.00/100)

4. For piling and flooring where required under foundation as specified,
Per lineal foot, fourteen dollars and twenty one cents ($14.21/100)

Name Treffle Bastien

Locality Montreal, 334 Sherbrooke St East.

Date 6th Sept. 1907

Tender for Conduit
Treffle Bastien.
Sept 17/07

A CET ENDROIT SE TROUVAIT

UN TABLEAU COMPARATIF DES

SOUMISSIONS

VOIR : 119-06-04-01

VM47/4,41

GRAND FORMAT #79

RESOLU :

ATTENDU que le bail qui a été passé le 1er mai 1893 pour une période de dix ans, entre la Cité de Montréal et le nommé John Parker, afin de lui donner le droit de pâturage sur les terres tenantières à l'aqueduc, est maintenant expiré depuis le 1er mai 1903, et que le terrain en question est absolument nécessaire à la Cité pour permettre les travaux d'agrandissement de l'aqueduc aux fins de nivellement, arpentage et remplissage du dit aqueduc;-

Qu'AVIS soit donné à l'occupant de laisser les lieux dans le délai de trois mois après le présent avis.

ET RESOLU DE PLUS :

De notifier le dit occupant d'avoir dès maintenant à laisser libre accès au Surintendant de l'Aqueduc et à ses employés pour toutes les fins nécessaires, tel que ci-dessus.

approuvé
L. Archambault
avocat de la cité

707

RE Bail en date du 1er mai 1893, entre la Cité de Montréal et un nommé John Parker.-

.....

13 Sept 1907

3 months notice given.

Handed Sept copy of Resolution 13/9/07

Montréal, 19 Sept., 1907.

Geo. Janin Ecr.,
Surintendant,
Aqueduc de Montréal,
Cité,

Cher Monsieur:-

Ayant appris que la position qu'occupait Mr. Donval sera vacante, je fais appel à votre générosité en vous demandant de me placer à cette charge si elle devient vacante.

Avec l'assurance que vous donnerez à ma demande votre bienveillante attention,

Je suis respectueusement
soumis,
Léon Lagacé
fils de
Chs Lagacé
Contremaître

11 rue Roy.

709

Wm. le Lazare

For position

as Clerk at W.H.

24 Sept 1907

September 11th, 1907.

To His Honor, H. A. Ekers,

the Mayor of Montreal,

Dear Sir:

We are sending you as our Mr. Fitz Gerald promised, some newspaper editorials, news items and other data pertaining to Mr. Titus and his method of securing water from artesian wells. The perusal of these newspapers (all of them reputable journals) will convince you that Mr. Titus knows his business. If he didn't he couldn't receive the endorsement and financial support which his testimonials show he has been receiving for many years.

Mr. Titus is at present installing three ten million gallon plants for the City of New York, which contract was approved by the Board of Estimate. Naturally his time is pretty well occupied and it would be difficult for him to leave the city at the present time. Mr. Fitz Gerald, however, having promised to make you a proposition for a new or an additional supply to your present water system, we have the honor to submit the following:

#2

Mr. Titus will go to Montreal within a month and make a thorough and conscientious examination of the conditions existing there and if he finds them favorable, we offer to supply the city of Montreal with water of guaranteed quantity and quality for an upset figure of not more then $70. per million gallons, the plant in its entirety to become the property of the city after a term of years mutually agreed upon, we to take our pay for water in monthly installments.

An acceptance of this proposition would mean a source of revenue to the City of Montreal as they could continue to sell the water to their consumers at a very handsome profit. Another advantage for the municipality would be that they take no risk whatever, as they make no payments until the water of guaranteed quantity and quality should be delivered.

The only proviso we would make would be that in case the municipality should fail to accept our proposition we are to receive the sum of $1500. for making the examination.

Very truly yours,

Titus - Riggaw & Co

780

Titus-Fitzgerald Co
offering to sell water
to the City from artesian
wells.

Presented to Council 24 Sept 1904

Presenté au Conseil

Referred to Water Committee

Renvoyé à

RAILROADS, TRAMWAYS, ROADS,
WATER WORKS, SEWERS,
PAVING, ETC.

POWER PLANTS
OF ALL KINDS

ARCHITECTURE,
ARBITRATIONS, EXPERTISES,
EXPROPRIATIONS

BELL TELEPHONE: UPTOWN 2816

J. EMILE VANIER

Civil and Hydraulic Engineer, Architect and Land Surveyor

B.A.S.—A.M.C. Soc. C.E.—M. Soc. C.E. of France
M. Soc. Architects of the P. of Q.

OFFICES: No. 5 Beaver Hall Square

Montreal, le 20 Septembre 1907

à Son Honneur le Maire
de la Cité de Montréal -

Cher Monsieur,

Je n'avais nullement l'intention d'intervenir dans la discussion actuelle au sujet du tunnel de béton armé que l'on projette de construire le long du Canal d'amenée de l'aqueduc de Montréal, le temps à ma disposition étant trop restreint. Mais après avoir lu les rapports des séances de votre Conseil et ce que la presse en a dit, je je ne puis laisser sans réponse certains avancés qui ont été faits.

Ce n'est pas, cher Monsieur, tant comme Ingénieur ayant vécu et pratiqué ma profession à Montréal durant 30 ans et ayant eu en mains les travaux municipaux de la banlieue, c'est plutôt à titre de citoyen de notre prospère Cité et de propriétaire que je prends la liberté de vous adresser cette lettre publique, n'ayant en vue en ceci que le bien être de mes concitoyens et l'amélioration du plus important des services municipaux, l'aqueduc.

Il a été avancé à l'Hotel de Ville, cher Monsieur, et répandu par notre presse que le rapport KEEFER -VANIER de 1894 sur l'approvisionnement d'eau de la Cité de Montréal, recommandait la construction

de la conduite en béton armé que l'on projette dans le moment.

Je dois dire immédiatement, cher Monsieur, que tel n'est pas le cas, et qu'il n'a été mentionné dans ce rapport quoi que ce soit qui y ressemble même un tant soit peu.

Pourquoi, cher Monsieur, ne pas publier ce rapport et ainsi en donner connaissance aux contribuables de Montréal. Ce document n'a jamais été reproduit ni dans les rapports annuels du département de l'aqueduc où ailleurs, depuis qu'il a été soumis au Conseil de Ville en Mars 1894.

Ce rapport parlerait alors par lui-même.

Il est vrai, cher Monsieur, que dans le rapport en question recommandation a été faite d'agrandir le canal d'amenée de l'aqueduc afin d'augmenter son pouvoir hydraulique et diminuer ainsi le coût du pompage de l'eau, mais cette recommandation était sujette à une condition très importante, celle, que la Cité aurait à approvisionner toute la banlieue, car en 1894, c'est-à-dire il y a 13 ans, la compagnie d'aqueduc, " THE MONTREAL WATER & POWER COMPANY", n'avait encore ses projets que sur le papier ou âpeuprès.

Si vous consultez, cher Monsieur, le rapport KEEFER-VANIER précité, au titre " POUVOIR HYDRAULIQUE ", vous verrez que l'agrandissement recommandé du Canal de l'aqueduc devait être comme suit, savoir:

" La profondeur augmentée de 6 pieds, la largeur au fond, portée de 20 pieds à 78 pieds, et la longueur au haut de 40 pieds à 180 pieds"

Ce qui, cher Monsieur, aurait donné une section liquide, en plus, de 15 fois plus garnde que celle de la consuite en béton projetée aujourd'hui. Mais comme je l'ai dit, cher Monsieur, l'agrandissement recommandé ne devait être fait que dans le cas de non réalisation des projets de la " THE MONTREAL WATER & POWER Co."

D'ailleurs voici ce que dit le rapport," Si l'annexion doit amener l'acquisition, par la Cité de Montréal, de l'aqueduc de la Compagnie en question, la politique future de la Cité dépendra du fait que cela sera arrivé avant ou après le parachèvement des travaux de cette Compagnie. Si ces travaux sont menés à bonne fin, et que la Comapgnie approvisionne les quartiers suburbains pour une période indéterminée, il n'y aura plus à s'occuper d'agrandir l'aqueduc de Montréal."

Ceci est assez clair, cher Monsieur, et vous en conviendrez facilement.

Maintenant, cher Monsieur, qu'est-ce que cette Compagnie d'eau a fait depuis 1894. Les Citoyens de Montréal, je parle de ceux du Montréal de 1892, ou du Montréal compris dans les 12 quartiers originaux qui formaient alors notre Ville avant l'annexion du Quartier St. DENIS, car dans l'étude du développement de l'aqueduc de Montréal, il

ne peut être question que de ce territoire ainsi limité à approvisionner, les citoyens de ce Montréal dis-je ne sont peutêtre pas au courant du développement qu'a pris cette Compagnie.

Laissez, cher Monsieur, à moi qui ai été l'Ingénieur de la plupart des Municipalités constituant la banlieue de Montréal, et qui ai et suis encore en rapport constant, par emploi, avec la Compagnie en question et ses Ingénieurs, vous dire ce que je sais de l'état d'avancement actuel de la Compagnie d'aqueduc en question, approvisionnant dans le moment une population d'environ 180000 habitants.

Cette Compagnie a construit un système de distribution d'eau complet dans les onze Villes qui entourent Montréal et n'en sont séparées que par une ligne intangible, et ce à partir de Verdun à l'ouest jusqu'à Maisonneuve à l'est, le tout formant un demi cercle ininterrompu fermé aux deux bouts par le fleuve St.Laurent. Dans ce demi cercle se trouvent compris les quartiers de St.Henri, Ste.Cunégonde et St.Denis.

Et la population de cette banlieue, cher Monsieur, sera au moins égale à celle de Montréal dans 5 ans.

Cette Compagnie complête en ce moment la mise en place d'un tuyau d'aqueduc principal de refoulement à partir de ses pompes au fleuve à aller à Westmount et ce tuyau est plus grand qu'aucun de ceux de l'aqueduc de Montréal, ce tuyau devant en outre être continué incessamment jusqu'à la Côte-des-Neiges à un réservoir de 40 millions de

gallons.

Cette Compagnie fait aussi actuellement l'agrandissement de son poste des pompes d'aqueduc, au fleuve. Elle y a déjà des pompes de 20 millions de gallons en opération, et avant le 1er. décembre prochain elle y aura installé une pompe additionnelle de 15 millions de gallons, des plus modernes, et avant le 1er. Mai 1908 une deuxième pompe aussi de 15 millions de gallons y aura encore été installée de manière à donner en tout des machines dont la capacité sera de 50 millions de gallons par 24 heures ou de 10 à 15 millions, supérieure à celle de Montréal -

Ainsi, cher Monsieur, cette Compagnie qui doit donner l'approvisionnement d'eau au " GREATER MONTREAL" durant encore 40 ans au moins d'après ses privilèges, aura le printemps prochain un système de machines des plus modernes et partant des plus économiques.

Le service à haut niveau de cette Compagnie a une capacité de 4 à 5 fois celui correspondant de la Cité de Montréal, et ses réservoirs sont plus élevés. Enfin cette Compagnie avec son réservoir de la Côte-des-Neiges, aura en 1908, plus de réserve qu'en a Montréal.

Je n'ai, cher Monsieur, aucun intérêt personnel dans la Compagnie en question, je ne fais que donner des informations basées sur des faits exacts que je connais bien, et tout ceci pour en arriver à

dire que Montréal n'a aucun besoin d'agrandir sa prise d'eau actuelle, à moins que ce ne soit pour approvisionner le surplus de population qui viendra ultérieurement habiter les parties encore vacantes des Quartiers St.Jean Baptiste, Hochelaga et St.Gabriel - Ce qui est bien peu relativement vous en conviendrez avec moi.

Maintenant, cher Monsieur, quel est le but de la Cité de Montréal de vouloir dépenser 2 millions de dollars dans l'agrandissement du Canal de l'aqueduc et dans la mise en place de ce tuyau de béton qui ne nous amènera nullement d'autre eau que celle que nous buvons actuellement et qui n'améliorera pas non plus le service des incendies.

Comme Citoyen de Montréal, je désire enrégistrer ma protestation contre cette inutile et inopportune dépense d'argent.

Pourquoi, cher Monsieur, ne pas nous donner au lieu de cela de l'eau filtrée? Nous pourrions avoir ainsi de l'eau pure en toute saison, du Canal d'amenée actuel; des filtres d'une capacité de 85 millions de gallons par 24 heures couteraient au maximum $500,000. cela serait suffisant pour les besoins actuels et des additions graduelles pourraient être faites dans l'avenir.

Pourquoi aussi ne pas agrandir les réservoirs de haut et de bas niveaux de manière à avoir là la réserve voulue de 4 à 6 jours au

au lieu de 1 jour qu'ils donnent aujourd'hui. Ces agrandissements seraient forcément faits dans le parc Mont-Royal où la Ville n'aurait pas à exproprier et un manque d'eau aussi extraordinaire que celui de l'hiver dernier ne se renouvellerait plus.

Ensuite, cher Monsieur, il faudrait voir à compléter le tuyautage dans nos rues, fermer les brèches importantes, et cela particulièrement en vue du service des incendies et de la diminution des taux d'assurance.

Je ne sache pas, cher Monsieur, que les recommandations du rapport KEEFER-VANIER de 1894 au sujet du perfectionnement à apporter à la distribution des tuyaux aient été exécutées soit en tout ou même en partie.

Les ouvrages que je viens de mentionner sont certainement ceux que demandent instamment tous les citoyens de Montréal. Ce sont les plus pressants et dans mon humble opinion il me semble que ce serait là le commencement et la fin d'une réorganisation complète de notre système d'aqueduc.

Ayons donc ces améliorations que je viens de détailler et que nos 2 millions de dollars nous procureraient en peu de temps, et quant à la conduite de béton armé, je n'en vois aucunement la nécessité ni pour le présent ni pour plus tard.

Qu'on l'abandonne donc.

Enfin, cher Monsieur, plusieurs des raisons qui militaient en 1894 en faveur de l'agrandissement du Canal de l'aqueduc n'existent plus. La Ville n'a pas à faire l'approvisionnement de la banlieue et d'un autre côté les améliorations apportées aux machines à pomper depuis cette époque sont telles que la dépense à faire pour pomper une même quantité d'eau à la vapeur et par moteur hydraulique serait à mon avis moins grande dans le 1er. cas que dans le second, en face de l'agrandissement à faire des 5 milles de Canal de l'aqueduc de Montréal.

J'ai l'honneur d'être, cher Monsieur,

Votre très obéissant serviteur,

J. Emile Vanier

RAILROADS, TRAMWAYS, ROADS,
WATER WORKS, SEWERS,
PAVING, ETC.

POWER PLANTS
OF ALL KINDS

ARCHITECTURE,
ARBITRATIONS, EXPERTISES,
EXPROPRIATIONS

BELL TELEPHONE: UPTOWN 2816

J. EMILE VANIER

Civil and Hydraulic Engineer, Architect and Land Surveyor

B.A.S.—A.M.C. Soc. C.E.—M. Soc. C.E. of France
M. Soc. Architects of the P. of Q.

OFFICES: No. 5 Beaver Hall Square

Montreal, September 20th 1907

To his Worship, The Mayor
of the City of Montreal -

Dear Sir,

It was not my intention to intervene in the actual discussion of the WATER WORKS CONDUIT project, the time at my disposal for so doing being too limited - But after having read what has been said in the Council and in the press lately on this subject, I cannot leave certain assertions unanswered - It is not, dear Sir, so much as an engineer having lived and practised in Montreal for over 30 years, and having had charge of the Municipal development of its suburban towns, it is more as a citizen of our prosperous City and as a property holder that I take the liberty of writing you this open letter, having exclusively in view the welfare of my fellow citizens and the betterment of the most important of our municipal utilities.

It has been advanced at the City Hall, dear Sir, and spread by the press of Montreal that the KEEFER-VANIER report of 1894 on the system of water supply in Montreal recommended the execution of the CONDUIT PROJECT now before the Council. I will say at once that such is not the case and that nothing approaching this kind of work has even ever been mentioned in it.

Why not, dear Sir, have this report published and put before the Citizens, for, the same has never been embodied either in the annual reports of the Water Department or elsewhere since it was presented to the Council in March 1894 - The report would then speak for itself.

It is true, dear Sir, that in the report in question a recommendation was made that the inland cut be enlarged so as to augment the water power and thus cheapen the cost of pumping water for all purposes but, this recommendation was subject to a very important condition, that is that the City was to have the whole of the suburban population to supply, for in 1894 or 18 years ago, whatever the Montreal Water & Power Co.'s projects were, these were only on paper.

If you refer, dear Sir, to the KEEFER-VANIER report above cited under the heading "WATER POWER", you will see that the enlargement recommended was as follows, viz: " the depth of the canal to be increased 6 feet, the width at the bottom to be widened from 20 feet to 78 feet and the widening at top to be carried from 40 feet as now to 130 feet"

Giving an enlargement in the water way of over 15 times what the now armoured concrete pipe or conduit would give.

But as I said, dear Sir, this recommended enlargement was to be

executed only incase the MONTREAL WATER & POWER Co.'S plans would not marerialize, for the KEEFER -VANIER report further on says, " If annexation (of outside Municipalities) be followed by the acquisition of the Company's (The MONTREAL WATER & POWER Co.) works by the City, the future policy of the latter will depend upon weather this occurs before, or after, the carrying out of the Co.'s plans. If these plans are successfully carried out they will by providing for all the new territories, postpone for an indefinite period the consideration of the completion of the enlarged aqueduct."

This is plain enough, dear Sir, and you will no doubt acknowledge it.

Now, dear Sir, what has the MONTREAL WATER & POWER Co. done since 1894? The Citizens of Montreal, I mean those of the Montreal of 1892 or Montreal comprised in the 12 original wards that existed then and before the annexation of St.Denis Ward, for this old Montreal is the only one that we have to consider on all questions of water supply by the City, our citizens as I said are not aware of the development that has taken the Co. in question -

Let me, dear Sir, as the Engineer of most of the suburban Cities & Towns of Montreal, and who has but and still has constant dealings

with this water Company, say what we know of its actual standing as a water purveyor to the 130000 inhabitants of larger Montreal.

This Company has covered the streets of the 11 suburban Municipalities surrounding Montreal, from Verdun on the west to Maisonneuve on the east, a complete and unbroken half circle bounded at each end by the River St.Lawrence - and including such wards of Montreal as St.DENIS, St. HENRY & St.CUNEGONDE, and whose population will surely be equal to that of the 12 original wards of Montreal, before 5 years will elapse-

The Company is now completing the laying of a larger force main than Montreal has, and this from its pumping station on the River, to Westmount, the same to be Continued incessantly and to be pushed as far as Côte-des-Neiges to the site of a 40 million gallon reservoir.

The Company is also actually enlarging its low ~~same~~ level pumping station so as to install this fall, before december, a new 15 million gallon turbine pump of english make and of the latest type, and this in addition to the other pumps of 20 million gallons capacity that are actually installed and in operation -

In addition to this, a second 15 million gallons pump similar to the above is also to be installed at the works of the same Company early next spring - So this Company who has to supply all greater Montreal for the next 40 years at least, under franchises, will

have by next spring pumps of the most modern types of the capacity of 50 million gallons per 24 hours or about 10 to 15 million gallons a day superior to that of Montreal.

The upper level service of this Company has also actually a reservoir capacity of 4 to 5 times that of the City and at a higher level, and with the Côte des Neiges reserve will have in 1908 a system of water supply that will be in some way superior to the actual Montreal system.

I have, dear Sir, no personal interest in this Water Company, I am not extolling anything. I am only giving information based on facts and this to say that Montreal need not look for any enlargement of its actual system of water supply unless it is to provide for the increase of population that will be the outcome of the building of the remaining vacant land in St.Jean Baptiste, Hochelaga and St.Gabriel wards -

Then, dearcSir, what is the object of the City in spending 2 millions of dollars enlarging the Montreal intake Canal, and in building the projected concrete pipe along the inland cut and deliver to us the very same water that we are drinking now and adding nothing at all to our fire protection.

As a citizen of Montreal, I protest against this useless and

and inopportune expenditure of money - Why not give us filtration which would afford a pure supply of water from actual works. A 50 million gallon filtration plant would certainly not cost more than $750,000.

Also enlarge your low and upper level reservoirs so as to have a proper reserve of water for domestic and fire purposes - These enlargements of actual reservoirs could be made on City property, in the Mount Royal Park where no land has to be expropriated - Then the unheard of state of things of last winter would not occur again.

The reservoirs should contain at least on 4 to 6 days supply instead of one.

Then see, dear Sir, that the pipe distribution so as to insure a complete fire protection in Montreal be completed.

I am not aware, dear Sir, that the recommendations made in the KEEFER- VANIER report of 1894 as to new water mains, filling of important gaps so as to insure efficient fire protection has never been followed in toto or ~~in portion~~ even partially.

These are in my humble opinion, dear Sir, the immediate and most pressing wants of the Citizens of Montreal as to a water supply for all purposes -

Ler us have it in the shortest time possible and the 2 million dollars should be able to do it or very nearly -

As to the cement pipe, I am fully convinced that it is of no necessity whatever and this question should be shelved.

Moreover, dear Sir, some of the reasons that made Messrs. KEEFER & VANIER recommend the enlargement of the inland cut in 1894 have since that date been changed, due to improvements that have been made to pumps, and certainly the City could, by purchasing steam turbines and turbine pumps to pump its water by steam at a cheaper cost than by water power secured through the enlargement of the inland cut -

I remain, dear Sir,

Your obedient servant,

J. Emile Vanier

710

J. Emile Vanier.
lettre re. Caudaire
Noté

24/9/07

Montréal le 3 octobre, 1906.

A M. le Président et M.M. les Membres

de la Commission de l'aqueduc.

Messieurs,-

J'ai l'honneur de vous informer que la nouvelle pompe electrique centrifuge à haute pression installée à la Station du Haut Niveau par la Cie. John McDougall Caledonian Iron Works, a été éprouvée suivant les clauses du contrat, les 13 et 14 septembre écoulé.

Cette épreuve a été conduite et surveillée pendant les 24 heures prescrites, alternativement par mon assistant ou moi, et par le professeur L.A.Herdt de l'Université McGill pour le compte de la Cité et; d'autre part, par M. Chs. Lester, I.C. pour le compte de la Compagnie McDougall; les ingénieurs electriciens de la Cie. Allis Chalmers Bullock constructeurs du moteur assistaient officieusement.

Cette épreuve devait porter, conformément à la clause 9 du contrat sur la capacité de la dite pompe qui devait être de 5 millions de gallons impériaux pompés par 24 heures; cette condition a été amplement remplie, le total de gallons pompés ayant été de 5,470,000 . La dite clause spécifiait aussi que l'épreuve devrait démontrer que la température du moteur travaillant à pleine charge ne devrait pas dépasser 40° C au dessus de la température du local. La dite épreuve a demontré que cette température n'a jamais dépassé 30° C.

Suivant la clause 10, le travail normal de la pompe et du moteur devait ne causer aucun bruit ou vibration notable. Durant l'épreuve aussi bien que pendant les essais précédents, cette condition a été parfaitement remplie.

La clause 11 spécifiait que la pompe devait atteindre un rendement pas moindre que 65 %. L'épreuve a demontré qu'en marche normale, c'est-à-dire avec un debit de 5 millions de gallons imp. par 24 heures, ce rendement était atteint et que durant la periode où il a été pompé 5 millions 3/4, un rendement de 67% a été atteint.

Ces différents chiffres apparaissent dans le rapport ci-joint du professeur L.A.Herdt contresigné par le representant de la Cie. John McDougall Caledonian Iron Works.

En résumé l'épreuve nous a conduit à la conclusion que la pompe remplissait toutes les conditions requises pour être reçue par le Surintendant et acceptée par le Comité, et que conformément à la demande faite par la dite Compagnie John McDougall Caledonian Iron Works par lettre ci-jointe en date du 17 septembre, le premier paiement de 25% c'est-à-dire de $3,547.00 prevu par la clause 15 du cahier des charges pouvait être fait à la dite Compagnie.

Respectueusement soumis,

Geo. Janin

Surintendant de l'aqueduc.

Montreal Oct 2nd 1906.

To the Chairman & members

of the Water Committee.

Gentlemen,-

I have the honor to inform you that the new High lift Centrifuagal electric pump installed at the High level Pumping station, by the John McDougall Cal. Iron Wks Co. has been tested in accordance with the specifications of their contract, on the 13 and 14th September instant.

This test was carried out and supervised during the prescribed 24 hours, alternately, by my assistant and myself, and by Prof. L.A.Herdt of McGill University, for the City, and Mr. Chs. Lester, C.E. for the John McDougall Cal. Iron Wks Co., the electrical engineers of the Allis Chalmers Bullock Co., builders of the motor, were also present for their Company.

The test was to be made in conformity with clause 9 of the contract, on the capacity of the said pump, which was to be 5 million imp. gallons per 24 hours, against 110 lbs. pressure; this condition was amply fulfilled, the total number of gallons pumped being 5,470,000. The said clause also specified that the test should show that the temperature of the motor working under full load for at least twelve hours, should not be more than 40° C. above the temperature of the room. The results on this test showed that the temperature never rose beyond 30° C. above the temperature of the room.

In accordance with clause 10, the ordinary working of the pump and motor, was not to cause any notable noise or vibration. During the test, as also during the trials preceeding the test, this condition was perfectly fulfilled.

Clause 11, specified that the pump was to attain an overall efficiency of not less than 65%. The test showed that during normal working, that is to say, with a discharge of 5 million imp. gallons per 24 hours, this efficiency was attained, and during the period when 5 - 3/4 million gallons were being pumped, an efficiency as high as 67% was attained.

These different figures appear in the annexed report of Prof. L.A.Herdt, countersigned by the representative of the John McDougall Cal. Iron Wks Company.

In a word, the results of the 24 hours test lead us to the conclusion that the pump has fulfilled all the conditions required by the superintendent for its acceptance by the Committee, and that agreeably to the demand made by the John McDougall Caledonian Iron Works Company in its letter of the 17th September, the first payment of 25%, that is to say, $ 3,547.00 may be made to the said Company, as provided by clause 15 of the specifications.

Respectfully submitted,

Superintendent M W W.

OFFICES: CORNER WILLIAM AND SEIGNEURS STS., CABLE ADDRESS: "CALEDONIAN." WORKS: ST. GABRIEL LOCKS.
CODE: WESTERN UNION.

The John McDougall Caledonian Iron Works Co., Limited.

IN REPLY TO YOURS OF,

SUBJECT.

Montreal, CANADA Sept. 17th, 1906. JCR/BM.

DICTATED BY:

The Corporation of Montreal,

George Janin, Esq.,

Montreal Water Works,

Montreal, P.Q.

Dear Sirs:-

Re our contract for turbine pump for High Level Pumping Station. We understand the test on this pump has been quite satisfactory and consequently we take the liberty of writing to ask if you would be good enough to ask your Committee to pay us 25% of the contract price, which amounts to $3,547.00.

Thanking you in anticipation,

We remain,

Yours very truly,

L.A. Herdt, Ma.E.-E.E.
Electrical Engineer.

Montreal, September 18th 1906

Geo. Janin Esq,

Superintendent, Montreal Water Works

MONTREAL.

Dear Sir:

Please find enclosed my Report on the Test of the TURBINE PUMP, (Electric motor driven), at the High Level Pumping Station, McTavish Street.

Very truly Yours

L. A. Herdt

L.A.Herdt, M.A.E.E.E.
Electrical Engineer.

TEST on a

TURBINE PUMP, driven by INDUCTION MOTOR No, 886

High Level, (Mc Tavish Street) Pumping Station

MONTREAL WATER WORKS, MONTREAL.-

DURATION OF TEST.

The test was a twenty four (24) hour test, it began on Thursday the 13th of Sept. at 7.50 p.m. and ended on Friday the 14th at 7.50 p.m., Readings were taken every 30 minutes for the first six hours after which readings were taken every hour.

OBJECT OF TEST.

The test was carried out to determine

1st: The discharging capacity of the pump per 24 Hrs.
2nd: The electric power required
3rd: The overall efficiency.
4th: The rise of temperature of the electric motor under full load continuous run of 12 hours.
5th: The smoothness of running of the machinery.

APPARATUS USED:

Calibrated ammeters, voltmeters and wattmeters were used to determine the electric power, the amount of water pumped was measured by a Venturi meter, the head of water by means of a standard guage and the temperature of the motor by thermometers.

RESULTS OBTAINED.

The discharging capacity of the pump was guaranteed to be five millions imperial gallons per 24 hours pumped against a pressure of 110 pounds per square inch.

West T.P. 2,

The water pumped during the first twelve (12) hours amounted to 2,725,000 gallons against an average pressure of 107.2 pounds per square inch, during the second twelve hours 2,745,000 gallons against an average pressure of 106.3 pounds, or a total of 5,470,000 gallons for the 24 hours.
The average Electric Horse Power consumed during the test for the first twelve hours was 421 H.P., and 421.3 H.P. for the second twelve hours.

The maximum power used was 438.5 H.P. the pump was then pumping at the rate of 4080 gals per minute, that is over 5.8 million gallons per 24 hours.

The overall efficiency of the pump is as follows

When pumping 3500 gals per min 65 per cent average
" " 3700 " " " 66.5 per cent "
" " 4000 " " " 67.9 per cent "
The pump was guaranteed to show an overall efficiency of n not less than 65.0 per cent.

The rise of temperature of the electric motor above that of the surrounding air did not exceed (30°) thirty degrees centigrade, this comes well within the specifications as a rise of 40° was allowed at full load.

The pump ran very well during the test and showed to be running with very little vibration and noise.

MONTREAL SEPTEMBER 18TH, 1906

on behalf of Superintendent M.W.W. L. A. Herdt

All the readings taken during the test are shown on the blue print attached.

For John McDougall C.E. Wks & Ld Montreal

Charles Leete

Time	Volts	Amps per line	K.V.A.	Kilowatts	Elect. H.P.	Power Factor	Revs per min	Frequency	Meter Reading in 1000 gals	Gals per 24 Hrs. Chart	Gals per H.P.	Gal. per Min	Lbs. Pressure	Feet Head	H.P.	Efficiency	Temp °C Air	Copper	Iron	Limit
750	2200	86	327.3	310	415	93	624	63.2	16845	—	—	—	110	253.4	—	—				
820	2220	86	330.4	312	418	93.2	620	63.8	16940	5.0	210 000	3500	110	253.4	269.5	64.5	26	35	35	32
850	2300	83	330.2	304	408	91.8	624	63	17055	4.9	210000	3500	110	253.4	269.5	66	269	36	37	34
920	2100	82	306.2	294	415	91.2	622	63	17160	5.1	210000	3500	110.5	254.	269.5	65	27.2	38	50.5	39
950	2180	84	316.6	308.8	414	92	62_	63	17264	5.1	205000	3466	101.5	247	260.	62.8	26.5	37.5	48	40
1020	2200	86	327.3	312.	418	93.2	620	63	17375	5.4	222000	3700	105	244.	271.	66.7	25	38.5	55	42
1050	2200	86	327.3	315	422	92.4	624	63.2	17495	5.3	220000	3666	106	244.	271.5	64.5	24.8	38	53.5	40
1120	2200	86	327.3	313.6	420	92.0	620	63.1	17615	5.3	225000	3750	107	246.0	274.2	65.2	25	38	56	43
1250	2200	86	327.3	312	418	93.2	620	63.	17	5.3	225000	3750	107	246.6	280.	67.	24	38	55	42
120	2200	87	338.7	316	423.5	93.	620	63.	17	5.3	225000	3750	106	244.	276.	65.3	24	37	55	41
220	2120	87	326.5	314	425.7	93.4	616	63.1	17	5.5	200	3750	107	246.6	280.	65.7	25.5	38.5	55	41
320	2120	89	326.5	324	434.	92.	624	63.1	18460	3.5	150 000	2166	107	246.6	—	—	24	37	56	41
420	2120	90	330	316	425.5	93.6	620	63.1	18690	5.5	200 000	3633	107.5	247	283.4	68	25.2	38	56	41.5
520	2120	92	337.5	330	432.1	94.6	624	63	18920	5.8	230 000	3833	107	246.	279.5	68.5	26	39	56.5	41.5
620	2100	92	334.2	325.2	436.4	94.2	624	63	19160	5.75	230 000	4000	107	247	281.	69.4	26	40	57	41
720	2160	90	336.3	320	429	94.4	624	63.2	19040	5.9	230 000	4666	105.5	252	286		25.8	39	57	40
820	2140	90	334.0	319.2	429	95.3	616	63	19680	5.25	240 000	41000	105.5	248	284.	67.3			55	41
920	2120	93	340.8	324.8	435.1	95.3	620	63.2	19920	5.6	240 000	4000	103.5	238	271.6	67.3	24.1	38	55	40.5
1020	2060	92	327.5	320.8		97.	615	63.2	20159	5.4	240 000	5923	106	244	295.	68.5	24.5		55.5	
1120	2120	90	330.	326.6		97.	619	63.	20400	5.4	241 000	4016	102	236	275.	66.	24.5	38.	54	40.5
1220	2060	92	345.8	327.2	438.5	94.4	614	62.8	20645	5.8	245 000	4083	103	244	301.5	68.5	—		56	41
120	2140	90	334.	322	418	92.2	620	63.4	20880	5.5	235 000	3916	104	243	288	67	25.5	38	54	
220	2140	84	311.	314.4	422	93.3	616	63.5	21105	5.4	225 000	3750	1045	243	283	65.9	26.2	38.	56	41
320	2100	84	314	312	418	93.2	616	63.	21325	5.35	220 000	3666	104.5	253	290	67	26	38	55	41.5
420	2200	84	320	312	418	93.2	620	63.	21590	5.25	265 000	4416	106.5	246	—	—	25.	36.5	55.5	41.5
520	2120	84	316	312	418	95.2	617	63.2	21810	5	200 000	3333	104	249	297	66.3	23.5	36.5	54	40.5
620	2200	84	320	312	420	—	620	63.2	21990	4.7	180 000	3000	104	252	229		24.5	35.5	53.	41
720	2200	82	312	298	400	95.6	620	63.	22210	5.1	210 000	3500	104	250	277	66.7	23.2	35.1	52	40
750	2200	84	320	304	408	95.0	620	63.	22315	5.25	210 000	3500		253	272					

A. Herdt, M.A.E. E.E.
Electrical Engineer.

Montreal, Sept. 28, 1906.

Geo, Janin, Esq.

Supt. Waterworks,

City.

Dear Sir:-

In accordance to your request, I beg to state that the electrical instruments used in the test of the turbine pump at the High Level Pumping Station, McTavish St., were correct reading instruments. The wattmeters were calibrated by me shortly before the test, the voltmeter was a standard instrument, and there being three ammeters in service reading very nearly alike, there cannot be any question as to their proper reading. Mr. Walker, of the Montreal Light, Heat and Power Co. verbally agreed to take the reading of these instruments as correct. You will please note that in my report to you dated Sept. 18, under the heading "Appliances used" it was stated that calibrated instruments had been used.

Very truly yours,

A. Herdt

71

Supt's repair re.
Electric Turbine
Pump.

3 Oct/07

Montreal 23 Sept 1907

Geo Janin Ecr I. C.
Surintendant
Dpt de l'Agriculture

Monsieur

Pardonnez-moi s'il vous plaît de vous avoir dérangé cette après-midi. Je vous envoie ci-inclus une application adressée à Mr le Président du comité, que vous pourrez lire et si quelque chose ne vous sied pas, dans la composition

veuillez être assez bon de m'en prévenir. et si tout y est à votre goût veuillez s'il vous plait la remettre à M. St Doid.

J'espère que vous m'accordiez comme toujours d'ailleurs. votre bienveillant aide et votre sympathie et que vous aurez un mot heureux pour moi au comité.

Veuillez me croire
Monsieur James
Votre très humble serviteur
René Delisle
49 rue Lacasse
Quartier St Henri

Montreal 23 Septembre 1907

Messieurs Le Président et les Membres
Commission de l'Eau de la
Cité de Montréal

Messieurs

Connaissant tous
les devoirs de la position de
commis à la Maison des pompes
ayant été employé comme tel
durant sept ans, je vous
prie humblement d'accepter
mes services à cette position.

Monsieurs

Dans votre surintendant pourra

vous dire que toujours j'ai été un employé soumis et que j'ai toujours rempli mes devoirs à votre entière satisfaction.

Mes états de services, tant que les trente années que feu mon père a passées à votre service, m'attireront j'ose l'espérer votre sympathie et vous accorderez à mon humble requête votre plus favorable considération.

J'ai l'honneur d'être
Messieurs
Votre très humble serviteur
René Delisle.

708

R. Delisle

Jos Parthiau

au Clerk [illegible]

24 Sept 1907.

Pleas Ethier. 32 ou 33 ans.
Victor Boisvert 2.86
Laguachetiere est

Montreal September 25th, 1907

To the Chairman and Members
Water Committee
City of Montreal

Gentlemen:

I respectfully beg to apply for the position of Clerk at the Wheel House.

I am thoroughly conversant with all the duties attached to the position, Mr Jamin, the efficient superintendant of your department

and upon whose conduct have been for three years can tell you that I have always filled my position faithfully and to the satisfaction of my superiors.

Hoping the above as well as the thirty years spent by my late father in faithful services to your department will entitle me to your sympathy and that you will please give my application your most esteemed and favorable consideration

I have the honor to be
Gentlemen
Your most obedient servant
René Déziele
Fg Lacasse P.
St Henry Ward.

Montréal 8 Octobre 1907

Messieurs

Comme il y a beaucoup de travaux cette année dans le Département de L'Aqueduc j'ai pensé que vous auriez besoin de mes services, comme inspecteur ou contremaître

J'ai déjà rempli la charge dans le département pendant quinze ans et donné pleine satisfaction à tous mes chefs Je peut vous montrer mes références de mes anciens chefs tels que le défunt Mr L Lesage, Mr A Davis & Mr W C Connell

J'espère messieurs que vous prendrez mon application en considération en me donnant mon ancienne position

Je suis Messieurs Votre dévoué serviteur
Godfroi Clavel
287 Cadieux

Godf. Clavel. 713
application for position
8 Oct/07

City Hall

Montreal Oct 7th 1907. 19

To the Chairman and Members

of the Water Committee.

Gentlemen,-

In reply to a resolution of your Committee passed on th 4th inst., in regard to steam coal required by this department, I beg to say that we will require to finish the year about 6,000 tons of coal @ $4.25 per ton, making $25,500.00 , and to acquire the full quantity of 15,000 tons arranged for at the beginning of the season, we will require $7,900.00 more for the 1850 tons remaining on account of the 15,000 tons arranged for as stated above, making the total appropriation required $33,400.00, I consider it my duty to inform you that if we do not buy the coal arranged for we will be exposed to pay much dearer for the coal after the 1st of January next.

Yours truly,

Geo. Janing

Superintendent W W.

Oct 7th 1907.

To the Chairman and Members

of the Water Committee.

Gentlemen,-

In reply to a resolution of your Committee passed on th 4th inst., in regard to steam coal required by this department, I beg to say that we will require to finish the year about 6,000 tons of coal @ $4.25 per ton, making $25,500.00, and to acquire the full quantity of 11,000 tons arranged for at the beginning of the season, we will require $7,900.00 more for the 1850 tons remaining on account of the 15,000 tons arranged for as stated above, making the total appropriation required $[illegible],400.00. I consider it my duty to inform you that if we do not buy the coal arranged for we will be exposed to pay much dearer for the coal after the 1st of January ...

Yours truly,

Superintendent W W.

15000 Tons
7150
7850 Tons

Bot
Used
To Dec 6000
Bal 1850

8000

Coal a/c. 7 Oct 1907

Coal required to finish the year
also appropriation required.

86 days @ 65 tons per day = 5590 tons
Less coal on hand — 2750.
2,840. @ $4.25 = 12,070.

Outstanding a/c's
J. O. Labrecque Geo. $ 277
L. Cohen Sons $ 4.667. 8.939.

appropriation overrun $ 235.
Down 4 Months $ 850. 3400. 3635
$ 24.644

J. A.

Low Level Pumping Station
Montreal Oct 7th 1907

George Janin Esq,
Supt. M.W.W.

Dear Sir:-

I hereby certify the approximated quantity of coal at this station, up to date to be.

2750 Tons of 2000 lbs

Respectfully Submitted
W.W. Hamilton
Acting Chief Eng.

Water Pumped by Steam 1906-1907

	1906-	1907-	Plus pumped in 1907
Jan.	644.376.437	836.747.140	192.370.763
Feb.	681.796.598	766.238.528	84.441.930
Mar.	756.330.561	796.785.815	60.455.254
Apl.	690.199.675 782.432	643.582.907	
May	554.368.113	657.364.298	102.996.185
June	640.085.719	722.082.216	131.996.497
July	727.358.601	796.865.746	69.407.145
			631.667.774
Less pumped in month of April 1906 -			47.199.525
			584.468.249

Coal required about 3 lbs per Million gals pumped. Price 4.25 per ton = 7,433.

Form 1226 A.

EXTRACT

from the minutes of a meeting of the Finance Committee

Held on 4th October 1907. *190*

In answer to a demand of money made by t the Water Committee to purchase coal, it was,

RESOLVED: - - - To ask the Committee to say what quantity of coal is required by their Department to finish the year.

(Certified)

L. O. David

City Clerk.

Water Dept.

AQUEDUC DE MONTREAL
REÇU
OCT 7
1907
BUREAU DU SURINTENDANT

Form W. 515 S.

GEO. JENIN,
Ing. en chef et Surint.

T. W. LESAGE, L. C.,
Asst. Surint.

Signed

Bureau du Surintendant de l'Aqueduc,
Hôtel de Ville,
Montréal, 7 Oct 1907

Coal required to finish the year.

86 days @ 65 tons per day = 5590 tons
@ 4.25 per ton = $23.500.

J.D.

Statement of coal required during the year.

	1,500
	1,200

Oct 1907
4th.

Montréal 8-10-1907

A Messieurs Les Echevins
de la Cie d'aqueduc
de la Ville de ? à Montréal

Messieurs

Pour le cas où vous auriez l'intention de faire diriger spécialement les travaux de la conduite d'amenée d'eau que vous avez adjugé à Cie Mac Govern, j'ai l'avantage de solliciter cet emploi en qualité de Spécialiste en béton de ciment armé.

Quant à mes capacités je me crois bon l'épreuve, disposez de moi, et les références à vos disposition.

Dans l'espoir d'être favorisé d'une réponse favorable je suis en attendant vos Conditions

J. L. Goffette

J. L. Goffette
St Denis 365.

P. 3303 Est

J. L. Goffette. 7114
Application for a position —
8 Oct/07

table.

Form 1226 A.

EXTRACT

from the minutes of a meeting of the Water Committee

Held on October 29th 1907. *190*

Submitted and read a petition from Henri Legault, William Bourget, Nap. Tramblay, men employed at the Low Level Pumping Station, asking to be paid at the rate of 17 1/2¢ per hour as per resolution of the City Council, and asking that the said rate be paid from Jan. 1st. 1907.

After some discussion it was

RESOLVED.- To refer the petition to the City Controller for a report as to whether the Committee has the right to pay these men the above rate from the 1st. january 1907.

Certified,

Secretary.

Montréal 28 Octobre 1907

Nous soussignés travailleurs de la cité de Montréal du département de l'aqueduc demandons a la commission les raisons pourquoi après une resolution passé et adopté par le conseil de ville de Montreal en septembre 1906 accordant dix sept centins et demi 17½ de l'heure nous soussignés et une centaine de nos confrères avons reçu depuis le 1er janvier 1907 17 cts de l'heure que nous soumettons humblement a la dite commission que nous avons droit a la même augmentations que tous les employés de la cité et nous demandons si nous avons ce droit que la commissions veuille bien faire droit a notre demande et nous faire remise des dix centins par jour soit un total de quarante deux centins par semaine et

que la dite augmentation des salaires soit continuée afin que nous ayons aussi justice.

En faveur, Monsieur le président et messieurs les membres de la commission de l'aqueduc, que vous voudrez bien accorder à notre demande

nous avons l'honneur d'être vos humbles serviteurs

après quoi nous avons signé

Henri Legault
William Bourget
Napoléon Tramblay

City Hall

Montreal 13 October 1897

To the Chairman

and Members of the Water Committee.

re Petition of men at Low Level asking 17½ ¢ per hour since 1st January last.

Gentlemen .-

This petition mentions a resolution of Council fixing the price to be paid to laborers; I have failed to find such resolution.

In the preparation of the last annual Budget, however, the stated price of 1.75 per day was generally recognized for day laborers.

A lump sum having been voted to your Committee for Low Level pumping station, I am of opinion that it is within your jurisdiction to pay your men on the basis of 1.75 per day, and that from 1st Jan. last if you have sufficient money.

Yours truly.

J. Bruneau

C.C. & A.

718.

Mr Pelletier &c.

Firemen's pay at Whell House,

30/11/07

Table

CÂBLE: CRÉMUCA-MONTRÉAL. TÉLÉPHONE:-MAIN 3894.

Crédit Municipal Canadien

222 RUE SAINT JACQUES,

B. DE P. No. 1135.

Montréal, Sept. 20th 1907

J. B. Clearihue, Esq.,

President of the Water Committee,

Montréal.

Dear Sir,

We are the owners of the Notre-Dame de Grâces and St-Pierre-aux-Liens water works. Several industries are supplied with water from the Lachine Canal. This is also the case in the City of Montreal and in other territories where the Montreal Water & Power Company owns franchises. Our contention is that the Government of Canada has not the right to supply water within territories where corporations have built water works or granted exclusive monopolies for the supply of water.

The City of Montreal, the Montreal Water & Power Company and ourselves are losing large sums of money every year through the supply of water from the Lachine Canal in our respective territories.

We have instructed our legal adviser, Mr. Beaudin, to take up the case and report upon the legal aspect of the question. We have asked the Montreal Water & Power Company to instruct their own adviser to the same effect,

and we now beg to apply to your Committee for instructions to the City Lawyers to take up the question.

Mr. Beaudin, the legal advisers of the City and of the Montreal Water [illegible] and give us the best available opinion on the subject.

Trusting that this proposition will meet with the favorable consideration of your Committee, we have the honour to be, dear Sir,

Yours obedient servants.

Louis N. Tâché

Credit Municipal Canadien.

re. water line
taking Jeannotte
Lachine Canal

26/11/07

Montréal, 16 Décembre 1907,

Monsieur le Président, Messieurs les Membres

de la Commission de l'Aqueduc de Montréal,

Messieurs,

J'ai eu l'honneur de vous écrire il y a trois semaines et il y a une dizaine de jours encore vous offrant mes services pour la construction de la grande conduite en beton, Avant de m'engager a' un autre travail qui m'est offert présentément, je désire savoir si mes services pour cette construction de beton, dans laquelle j'ai déjà acquis de l'expérience, peuvent vous être utiles, c'est pourquoi je suis anxieux de connaitre, Messieurs, votre reponse.

Votre tout dévoué,

P. A. Masson.

P, A. Masson,

15, rue Saint-Marc,

Rép. 20/12/07

Mr. P.A. Marois
Gaz plastiques
19/12/07

table.

Montréal, 28 Novembre, 1907.

Monsieur le Président et

Messrs les Membres de la Commission de l'Aqueduc.

Messieurs,

J'ai eu l'honneur de vous adresser une lettre vous offrant mes services. Ne sachant pas si vous avez reçu cette communication et si vous avez besoin de moi, je viens solliciter de vous, Messieurs, une réponse, vu que le gouvernement pour le compte duquel j'ai été employé déjà comme ingénieur dans la construction des quais de Maisonneuve, me fait une offre nouvelle.

Il va sans dire que je serais particulièrement heureux d'obtenir la situation que j'ai sollicitée de vous.

Respectueusement,

Votre tout dévoué,

R. A. Masson.

P. A. Masson.
15 rue Saint-Marc.
Montréal.

P. A. Marrau.
for position as
Engineer.

6/10/07

09779

Montréal, 18 Novembre, 1907.

A M. le Président

Et à Messieurs les Membres

de la Commission de l'Aqueduc,

Montréal.

Messieurs,

Ayant eu oui dire que vous aviez besoin d'Ingénieurs pour surveiller la construction de votre nouvelle conduite de l'aqueduc, je me permets de venir vous offrir mes services. Comme je n'ai pas l'honneur d'être connu de vous, Messieurs, permettez-moi de venir vous donner quelques notes sur mes états de services.

Après avoir été diplomé à l'Ecole Polytechnique de Montréal, je suis allé étudier environ deux ans à Paris, à l'Ecole des Ponts et Chaussées. Comme travail pratique, j'ai été attaché pendant deux saisons à la surveillance de la construction des quais en Béton, de Maisonneuve, j'ai pris de l'expérience dans l la construction des aqueducs et je suis actuellement en charge de la conduite des travaux de l'aqueduc de Montmorency, près de Québec.

Je suis citoyen de Montréal; et je puis vous donner encore toutes les garanties et tous les renseignements que vous pourriez désirer sur moi; et ce, à votre satisfaction, je crois.

J'ai l'honneur d'être,

Messieurs,

Votre dévoué Serviteur,

P. L. Masson.

Adresse à Montréal,
15 rue St. Marc
Ou à Quebec
40 rue Desjardins.

P.A. Martineau
Lettre [illegible] emplacement au conduit

21/11/07

Labb.

GREENSHIELDS WESTERN LIMITED.
WINNIPEG.

GREENSHIELDS & CO. LIMITED.
VANCOUVER.

Greenshields Limited,
Dry Goods Wholesale.

L:

VICTORIA SQUARE AND CRAIG ST.,

CABLE ADDRESS
"GRENSHIELD"

Montreal, November 11th 190 7

Dear Mr Mayor,-

Referring to our conversation over the telephone this morning, and your proposal to read to the City Council my letter to you and your reply, I accept your offer, even though as you stated you are opposed to the purchase of the pump as suggested in my letter.

Referring to what you say about the five million gallon pump not being a unit of utility as a spare pump, allow me to say that though the smallest of the steam pumps is eight million, only one of the hydraulic pumps is five million, and the other three are less.

There is room for this pump to be placed in the hydraulic building, so that a new building is not necessary, and the pump could be ready for use before February.

The hydraulic pumps are no use in a severe Winter when the ice lowers the water in the aqueduct. It is then very necessary to have plenty of spare pumping power.

In common with all other citizens I feel very anxious about the water supply for the next two Winters, until the Aqueduct is enlarged, both for household use and protection against fire. Surely it is not asking a great deal from the City Council, to request them to spend ten thousand dollars on this five million gallon pump, and also to go to the expense of installing it. This would

GREENSHIELDS WESTERN LIMITED.
WINNIPEG.

Greenshields Limited,
Dry Goods Wholesale.

VICTORIA SQUARE AND CRAIG ST.

GREENSHIELDS & CO. LIMITED.
VANCOUVER.

CABLE ADDRESS
"GRENSHIELD"

Montreal, 190

give to the citizens the feeling of security that everything that could be done just now has been done.

This matter affects the whole of the Citizens, in all parts of the City, and to secure their comfort and security, the City Council might reasonably incur this expenditure even if in your opinion the expense were not absolutely necessary. I feel very strongly that it would be a wise investment on the part of the City, and I feel sure a large majority of the Citizens would agree with me if the situation were placed before them.

Certainly if during the next two Winters there is a shortage in the supply of water, and there is none in many of the homes of the Citizens, they will have good cause of complaint against the City Council if it neglects to avail itself of a five million gallon pump that it can purchase, which might alleviate, though not completely remove, the general distress. Even a little water is better than none.

I thank you for your kind attention to this correspondence and I will be much obliged to you if you will read this letter and the two letters enclosed with it, to the City Council at its meeting this afternoon.

I am,

Very truly yours,

E B Greenshields

His Worship,

H.A.Ekers, Esq.,

Mayor of Montreal.

COPY.

10th October 1907

Dear Mr Mayor,-

I thank you for your two favours of 1st and 2nd October. I think the opinion of the average Citizen is that the Water Committee and the City Council are deservedly to be held responsible for at least three things,-

1. For a long term of years no vigorous steps have been taken until this year to increase the supply of water, not to mention the inauguration of a high pressure system or filtration plant.

2. During the two years that they have been waiting for the Worthington Pump, they have not taken the trouble to find out if they have enough boiler capacity, and they now find that they have not.

3. They have not insisted on having duplicate mains so that if a break occurs in one main, other mains could be used.

4. They have never thought it necessary to have one actually spare pump, not intended for use unless an accident happened to one of the other pumps, nor would they order an electric pump for some petty reason of economy in working it. Now if they had ordered one extra pump of twelve million gallons capacity in addition to the Worthington Pump, and had it run by electricity, they would have secured two things. 1st. a spare pump always ready for use in an emergency, and 2nd. spare electric power always available if anything happened to any of the boilers. An electric pump would give security for pumping and for power

CHAMBRE 36, BATISSE "GUARDIAN"
160, RUE ST-JACQUES
MONTREAL

TEL. BELL MAIN 5260

BAULNE, BERTRAND & GAGNON

INGENIEURS CIVILS

FONDATIONS, PROJETS, DÉTAILS, SPÉCIFICATIONS ET ESTIMÉS POUR TOUS GENRES DE CONSTRUCTIONS MÉTALLIQUES, CONSTRUCTION ET INSTALLATION D'USINES, AQUEDUCS, POUVOIRS D'EAU, EGOUTS, TRAVAUX MUNICIPAUX, ARPENTAGE, INSPECTION

MONTREAL, 28 Octobre 1907. 190

Conseil de Ville de Montréal
Montréal, Que.

Messieurs:-

Nous avons le plaisir de vous transmettre la soumission de la Weber Steel Concrete Chimney Co., pour la construction d'une cheminée pour le nouveau pouvoir de l'aqueduc da la Pointe St Charles. Vous trouverez ci-inclus leur cheque accepté au montant de quatre cents dollars ($400)

Les cheminées "Weber" sont répendus dans le monde entier. Nous ne sommes pas loin de la vérité en affirmant que la Weber Steel concrete Chimney Co., construit autant de cheminées que trois des plus grosses compagnies du monde entier réunies ensemble.

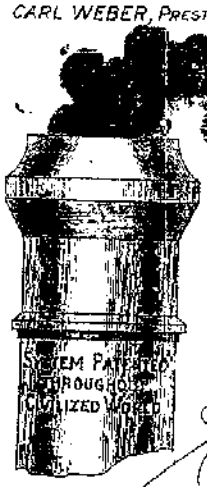
Nous sommes heureux de vous référer à la London Electric Co., de London, Ont. pour laquelle la Compagnie que nous représentons a construit une cheminée en plein coeur de l'hiver; d'ailleurs en prenant connaissance de leur soumission vous constaterez que l'ouvrage est garanti pour 5 ans, et si diligence est faite, sera certainement terminé avant les fraids rigoureux.

Espérant que vous donnerez à cette soumission une sérieuse considération, nous demeurons,

Vos tout dévoués,

Baulne, Bertrand & Gagnon.

CARL WEBER, PRES. RICHARD A. STEEN, V. PRES. W. F. KAEHLER, TREAS. C. P. WOODWORTH, SECY.



Weber Steel-Concrete Chimney Co.

CABLE ADDRESSES:
CHIMNEY, CHICAGO
WEBCHIMCO, LONDON
CODES:
WESTERN UNION AND LIEBERS.

SALES OFFICES
NEW YORK, 507 SINGER BLDG.
PHILADELPHIA, 1632 LAND TITLE BLDG.
ST. LOUIS, 407 CHEMICAL BLDG.
SAN FRANCISCO, 63 FIRST ST.
ATLANTA, 528 PRUDENTIAL BLDG.
HOUSTON, TEX., COMMERCIAL BANK BLDG.
TORONTO, CAN., 116 HOME LIFE BLDG.

GENERAL OFFICES:
929-934 MARQUETTE BUILDING

FOREIGN OFFICES
LONDON, ENGLAND.
PARIS, FRANCE.
HALLE, A.S. GERMANY

CHICAGO, U.S.A. Oct., 25, 1907.

The City of Montreal,

Montreal, Que. Can.

Gentlemen:-

Proposal for chimney to be built for the Lower Lever Pumping Station, Point St. Charles.

We hand you herewith proposal for a chimney to be built at your Pumping Station, chimney to be 125' high 7' in diameter together with certified check for $400.00 and a drawing of a similar sized chimney which we are now building for the Intercononial Railway Company of Canada at Halifax.

If the contract for chimney is awarded within the next fifteen (15) days there will be no trouble whatever to complete before the severe weather sets in. We have built chimneys in your country in the winter time and the only objection to doing so is the additional expense incurred by heating materials and using salamanders etc. to keep the chimney warm causing the concrete to set. A number of years ago we built a chimney at St. Johns, Que., for the Singer Sewing Machine Co., and it is possible that some of the members of your Board have seen this chimney which is an excellent piece of work.

Hoping that you will give our proposal your careful and favorable consideration, we are,

Very truly yours,

EMA

WEBER STEEL CONCRETE CHIMNEY CO.

Secretary.

Enc.

IF NOT CALLED FOR IN FIVE DAYS RETURN TO
WEBER STEEL-CONCRETE CHIMNEY CO.
CHICAGO, U. S. A.

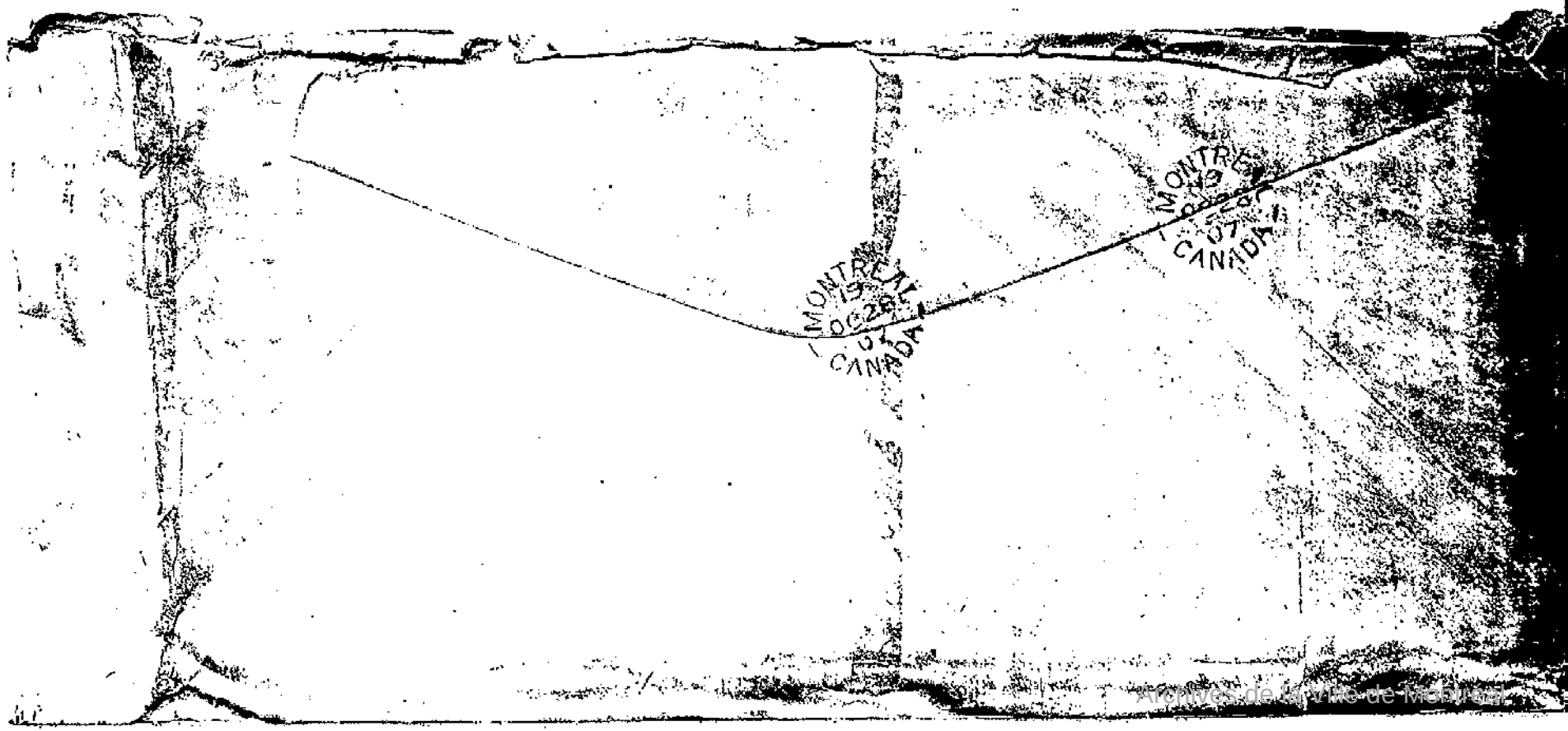
44

The City of Montreal,

Montreal,

Que. Canada.

Proposal for chimney to be built for the
Lower Level Pumping Station, Point St. Charles.



A CET ENDROIT SE TROUVAIT

UN PLAN DE CHEMINÉE

VOIR : 089-01-01

VM47/4,41

genno FORMAT #80

and in the event of anything happening to any of the pumps or any of the boilers. There would be no complication in having one pump run by electricity and the others by steam. It seems that the Water Committee has some prejudice about using electricity. In this [illegible] they are far behind the times. Even if it costs money to have a spare pump, and more money to run it by electricity than by steam, why should a wealthy City like Montreal not go to this comparatively small expense, when the object to be gained is so important, and the City is making such a large revenue out of the Water works system? An up to date management would have long ago given to the City an electric pump in addition to all the pumps actually required, so that we should always have ready for use a spare pump and spare power.

In reference to what you say about the pump that is now in the City, I have made inquiry from very competent authority, and I am informed, and I believe, as it seems only reasonable, that a pump of five million gallons capacity while not so useful as one of twelve million gallons, would still be a very important factor in case of one of the pumps breaking down or the water wheels not being able to run in the winter. This pump can be put into working order in three months, and so would be ready for use in January, and would be on hand during the most trying part of the winter. I cannot agree with you when you say an electric pump would complicate the present system. There could be no complication that I can see. The Electrical pump would not interfere with the steam power pumps, but would be quit

separate in every way. I fear that it is the old story that the water Committee are determined not to have an electric pump at the wheel house in any circumstances. You have an opportunity now to ask the Council to buy this pump, whether the Water Committee support you in the matter or not, and in my opinion if you cannot carry the Water Committee with you, you should bring it yourself before the Council before you can be relieved of responsibility. The purchase of this pump, and its setting up ready for use in three months would give a feeling of security to the Citizens, which they have a right to ask for from the City Council. There seems no doubt that in a water famine, caused by the breaking down of some of the pumps, while perhaps the water wheels were not able to work, the water supplied by this five million gallon pump, would be of the greatest use in at all events alleviating the situation. Of course a pump of greater capacity would be better, but we cannot get one in three months. We can get this pump and it should in any case be bought and set up ready for use, on the chance of its being required.

I still trust that you will take this matter up at once, and not be dissuaded from carrying the purchase through. The price of the pump is I understand Ten thousand dollars. This amount and the cost of setting it up, and the sum to be paid for the right to have electric power, no matter what this last sum may be, are all as nothing compared to the importance of having this year and the next all the pumping capacity and all the power we can obtain, until the conduit and the changes to the aqueduct are completed. I cannot

understand how any one of any committee can hesitate to act in this matter for a moment, and also to at once commence at all events to lay all the new mains that could possibly be required, and get them completed as soon as they were able. In any case here in the City is a good pump of five million gallons capacity, already tested by the City Council, which can be bought for a moderate sum, and be installed ready for use in January. Let the Mayor, the Water Committee, and the City Council show by purchasing this pump that they are at least doing all they can, even if the pump is not as powerful as they would like it to be, to make the Citizens feel more at their ease in connection with the supply of water for this Winter and next year.

I am,

Very truly yours,

(Sgd.) E.B.Greenshields

His Worship,

H.A.Ekers Esq.,

Mayor of Montreal,

City Hall,

Montreal

COPY.

Montreal October 15th, 190[illegible]

E.B.Greenshields Esq.,

Montreal

Dear Mr Greenshields,-

I have read carefully your letter of the 10th inst., and I may say that we have enough boiler capacity, even without the addition of the two new boilers, all we need is more draught and a stack will be installed within a week which will double the capacity of our present boilers and with this improvement meet all requirements.

The water committee have made requests to the Finance Committee to obtain money to lay new mains and I have every reason to believe that the funds required will be voted.

As stated in my last letter, since the installation of the new pump, we have now a spare pump which is always ready for use in case of emergency.

With regard to the purchase of an electric pump, the engineers of the Water Department, as stated in my previous letter, declare that it is not advisable to do so, and after making inquiries I cannot but concur in their opinion.

Under the circumstances I regret to be unable to bring the matter before the City Council and recommend an expense which in my opinion would be useless.

Thanking you for your letter,
I remain,
Dear Mr Greenshields,
Yours very truly,
(Sgd) H.A.Ekers,
Mayor

City Hall

Montreal Sept 2nd 1907. 19

To His Worship Mayor Ekers,

City Hall, City.

Dear Mr. Mayor,-

In reply to the letter of Mr. E.B.Greenshields that you did the honor to communicate to me for my advice, I hasten to let you know that I cannot recommend the purchase of the McDougall pump which is still in position at the High Level pumping station, in view of the fact that a pump of a capacity of only 5 milion gallons would not be a unit of real utility as a duplicate or spare pump, seeing that the smallest of our steam pumps at the low level station is of 8 million gallons; furthermore, the pump in question is ofrated by electricity, whilst our other pumps are worked by steam, which would complicate the service of the said station, and would make the intermittent working of this pump less practical from all points of view. For the present nevertheless, as soon as the new 12 million gallon pump will have reached its normal running capacity, and also with the new boilers, which we are about adding to our plant, the situation will be in no way defective; however let it be well understood that I do not mean to say that the addition of a new pump would not be a practical measure whilst awaiting the results of the widening of the aqueduct, but it would need be a unit of 12 milion gallons and not 5 millions as the pump Mr. Greenshields proposes to us to buy.

Yours obedient servant,

Geo. Janin

Superintendent W. W.

Archives de la Ville de Montréal

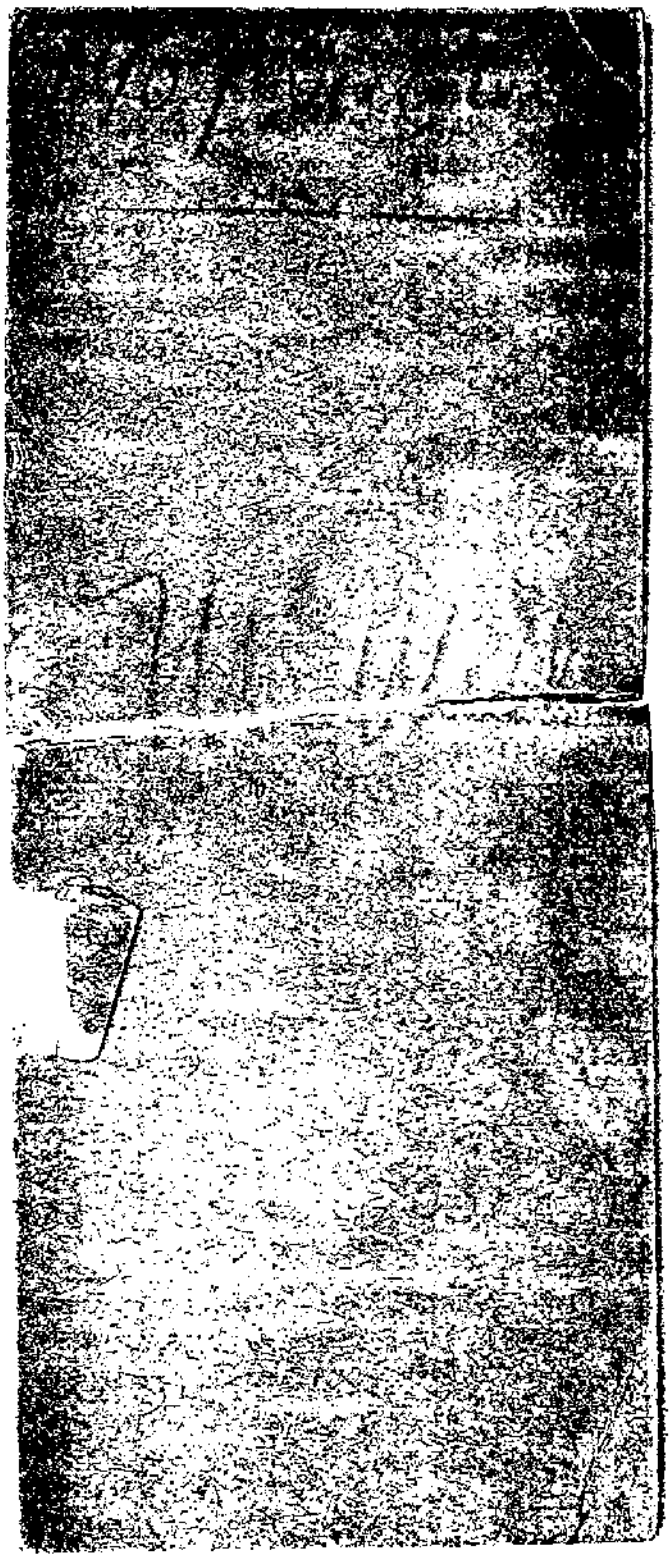
E. B. Greenshields urging the necessity of purchasing the Macdougall Electric pump.

Presented to Council 11 Jan 1907
Presenté au Conseil

Referred to Water
Renvoyé a

Moved by Alderman
Proposé par l'Echevin } .....

Seconded by Alderman
Appuyé par l'Echevin } .....



Weber Steel-Concrete Chimney Co.

CHICAGO, U. S. A.

NEW YORK, CINCINNATI, SAN FRANCISCO, DENVER, HOUSTON, ATLANTA,
TORONTO, CANADA, LONDON, ENGLAND, PARIS, FRANCE, HALLE A. S. GERMANY.

Specification and Proposal

REC. NO. 1694

Chicago, Illinois, Oct., 25, 1907.

To City of Montreal,

Montreal,

Que. Can.

We hereby propose, to furnish all the material and labor necessary for the construction of One (1) CHIMNEY of the dimensions given below, according to the "WEBER SYSTEM" of Steel-Concrete Construction to be erected for

City of Montreal.

at Point St. Charles.

DIMENSIONS:

	FEET	INCHES
Total height of Chimney from base of foundation	132	0
" " " " above grade	125	0
Depth of foundation below grade	7	0
Width of square part of foundation	18	0
Height of " " "	3	6
Inside diameter of Chimney	7	0
Largest outside diameter	9	4
Height of double part	45	0
Height of single part	80	0
Thickness of outer shell of double part	—	6
Width of air space between shells	—	4
Thickness of inner shell of double part	—	4
Thickness of single shell	—	5

FOUNDATION---The steel-concrete foundation. to the depth given above, is **included** in our price. The excavation, however, is to be done by you; also any necessary preparation of the ground, such as pile-driving, etc., if needed.

If circumstances require, you have to keep the foundation pit free of water, during the time of constructing the part below grade, and also to protect the earth walls against caving in.

MATERIAL AND WORK---All work will be done in first-class, workmanlike manner, under the continuous superintendence of an experienced foreman. The concrete will be mixed by hand on suitable platform, or by machine, and be well tamped into the molds and around the steel bars to secure the best possible connection of the materials.

The concrete for the **Foundation** will be a mixture of one part Portland Cement to three parts of clean and sharp sand and five parts of crushed stone or gravel.

The concrete for the **Chimney** will be mixed in proportion of one part Portland Cement to three parts of clean and sharp sand, **without gravel or macadam.**

All Portland Cement will be a Standard Brand, fulfilling the specifications of the American Society of Civil Engineers.

The steel-reinforcement of the **Foundation** consists of two cross layers of steel bars (diagonal, and parallel).

The steel-reinforcement of the **Chimney** consists of vertical bars and horizontal rings

The vertical bars are of sufficient strength to take up all the tensile stresses caused by wind pressure. They partly reach down into the foundation, where they are bent to spread out over the base, thereby forming a perfect anchorage for the chimney. Wherever these bars connect lengthwise, connection will be made by overlapping the ends not less than 24 inches.

The rings are to take up all the shearing stresses caused by wind pressure and temperature stresses. They are made of round steel and are placed 18 inches apart, Additional rings will be put into the head and offset. These rings will be properly bent to the required circle, and the ends will overlap at least 12 inches.

At the top of the inner shell, an expansion joint will be provided in order to allow for free expansion of same.

DELIVERY AND TIME.—Material and tools will be delivered F. O. B. to nearest Railroad or Waterway Station. Unloading and Cartage to be done by you on arrival.

Material will be shipped in_____days from receipt of order to ship, and about _____working days are required for the erection of the chimney.

WATER AND SPACE.—Supply of water for proper prosecution of the work to be furnished by you within 50 feet from the chimney; the water to be clean, and free from mud, sulphur, etc.

At least one side of the chimney shall be left free for us, for mixing of concrete and hoisting of materials until chimney is completed. You to provide for ample dry storage room for one car load of cement, and sufficient space for properly storing of other materials and tools needed for the construction of the chimney.

ATTACHMENTS.—The Chimney will be provided with proper opening for breeching connection, and a heavy cast iron cleanout door 18x30 inches.

PRICES AND TERMS.—The sum of $ 3400.00 (Three Thousand four hundred _____ Dollars), for each Chimney to be paid by you as follows: One-third on shipment of the steel, one-third when chimney has been erected to one-half the total height, and the balance on completion of each chimney.

Payments to be made free of exchange on Chicago or New York.

GUARANTEE.—The Chimney is guaranteed to be capable of withstanding a wind-pressure of fifty pounds per square foot (which is equal to about one hundred miles velocity of wind per hour), and to withstand the influence of the atmosphere, the chimney gases and temperature not exceeding 1500 degrees F.

For a period of **FIVE YEARS** we will repair free of charge any defect from such causes or from defective material or workmanship.

FINAL.—This proposal is for prompt acceptance. The delivery, erection and completion promised are contingent upon strikes, accidents or other causes of delay beyond our control.

There are no understandings or agreements not specified in this written contract.

WEBER STEEL-CONCRETE CHIMNEY CO.

By _____
Secretary.

ACCEPTANCE

Chicago, Illinois, _____ 190____

To WEBER STEEL-CONCRETE CHIMNEY CO.
CHICAGO

Your proposal as above specified is hereby accepted at the price and upon the terms and conditions named therein.

_____

_____

The excavation will be completed by (Date) _____

The shipping address for your material and tools to be: _____

_____

_____ Ship via: _____ R. R.

(Signature) _____

_____

WEBER CHIMNEYS

represent the highest type of modern **"Chimney Construction."** They are light, practically indestructible, and the entire structure is one solid piece from base of foundation to top.

WEBER CHIMNEYS

are built on fully approved engineering methods. They are absolutely air-tight, have a uniform inside diameter and smooth inside walls, and are therefore of highest working capacity. They occupy less space than a brick or self-supporting steel chimney.

A WEBER CHIMNEY

is an ornament for every plant. The light color of this chimney in connection with the elegant and graceful outlines of the same, produce an artistic effect, which cannot be obtained by a brick or steel chimney.

WEBER CHIMNEYS

and the method of their construction, etc., are fully covered by patents in all civilized countries. Purchasers are cautioned against infringements and imitations.

RECORD NO. 1694

WEBER STEEL-CONCRETE CHIMNEY COMPANY

CHICAGO, U. S. A.

ORIGINAL

Specification and Proposal

TO

City of Montreal,

Montreal,

Que. Can.

FOR CHIMNEY TO BE BUILT FOR:

City of Montreal,

AT Point St. Charles.

DIMENSIONS:

TOTAL HEIGHT 125'

INSIDE DIAMETER 7''

DATE OF SUBMISSION Oct., 25, '07.

DATE OF ACCEPTANCE _____