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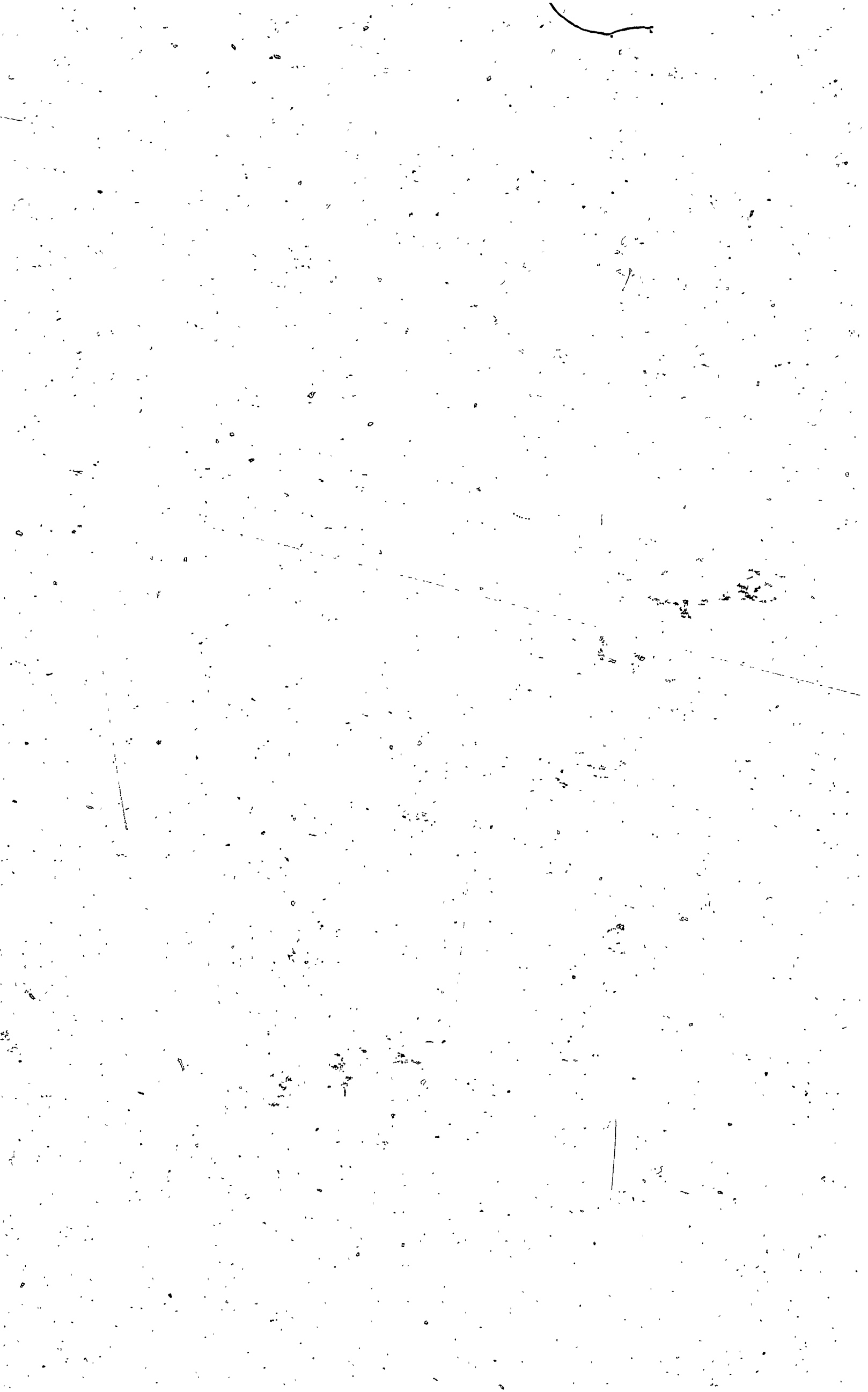
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REPORT

OF THE

BOARD OF WORKS,

MONTREAL, DECEMBER, 1844.

Laid before the LEGISLATIVE ASSEMBLY, February, 1845, and ordered
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REPORT

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BOARD OF WORKS,

MONTREAL, DECEMBER, 1844.

SIR,

I have the honor hereby to discharge the duty imposed upon me by law, of furnishing for the information of His Excellency the Governor General, and the other Branches of the Legislature, a Report, upon the state of the various Public Works in the Province, which have been carried on under this Department, during the past year; In it, I have endeavoured to embody such general and detailed information respecting them severally, as will, I trust, afford a correct view of the present state of the Works, as well as of the progress, made since the date of the last Report I had the honor to furnish.

No new works having been ordered by the Parliament during the last Session, the duties of this Department have, from that period to the present, been very much confined to those involved in the superintendence of the Works previously sanctioned by the Legislature, to the checking of the Returns and measurements, arranging the payments, &c., and in reporting from day to day, for the information of His Excellency the Governor General in Council, upon the various matters, sent in reference, to this Office.

In addition however, to these its ordinary duties, this Department was called upon to prepare suitable Buildings for the reception of the several Branches of the Legislature, for the accommodation of His Excellency the Governor General, and for the various Public Departments; the whole of which was rendered necessary by the transfer of the Seat of Government to this City.

The destruction of the Court-House of this District by an Incendiary, also imposed upon this Department the preparation of a Building for the holding of the several Courts, and for the accommodation of the Officers connected therewith.

All these extraordinary expenses I have endeavoured to restrict as much as possible, and the several amounts expended, will be given hereafter under the respective heads.

In my former Report, from its being the first submitted after a commencement had been made with the extensive Works, provided for by the Act 4 and 5 Victoria, chap. 28, it was incumbent on me to enter upon, and explain a variety of points of a general nature, connected with them and their proposed management, to all of which it is obvious that on the present occasion, it is unnecessary for me to allude; but I feel it my duty to notice a few of those upon which no decision has as yet been come to, and upon

which, in my judgment, it is most desirable that some early Legislative enactment should take place.

Notwithstanding the many and unusual precautions which have been adopted, with the sanction of His Excellency the Governor General in Council, with a view to prevent and quell the spirit of riot and outrage, which had been evinced upon several of the Works where large bodies of labourers had congregated, it is well known and much to be lamented, that such precautions have not been effectual.

From an early period, I apprehended that nothing but the presence of a Military Party in the vicinity of each of the large Works, would be sufficient to keep the peace. The fact of its being known that a Military Party was on the spot to aid the Civil Power, would, I conceive, in itself be a guarantee for quiet and order.

The exertions of the Reverends Messrs. Falvy and McDonagh, and (since the commencement of the Works below Prescott) of the Reverend Mr. Clarke, and of Capt. Wetherall, with the Police under his command, have been unremitting and have no doubt tended to prevent the more frequent occurrence of outrage; but the determined and lawless spirit which unfortunately exists so extensively among the labourers, has too often set at naught the moral control of the former, and put at defiance the power at the disposal of the latter.

Experience has satisfied me of the correctness of the causes I assigned for the existence of this turbulent spirit, and which I enumerated in my former Report, as follows: "That the Riots have arisen simply from the fact of a great number of labourers having congregated at particular points, amongst many of whom, previous to their being so assembled, bitter national or sectional feuds had existed. The number of men also who flocked over from the United States, on being thrown out of employment by the general suspension of the Public Works there, added considerably to the evil; more especially as from their previous habits, and irregular modes of life, (wandering from one work to another) they were little accustomed to legal restraint, and had but slight respect for the laws; and finally the circumstance of crowds having remained at the Works over and above the number which could be with any advantage, employed thereon, tended much to a disposition for riot." I would now add an additional one, namely, the fact of a great quantity of fire arms being in the possession of the men; and I feel persuaded that until a registry of arms is made necessary by law, and rigorously enforced on the line

Failure of precautions taken to preserve the peace on the line of the works.

Necessity for a military party when a large body of men are congregated.

The moral influence of certain Roman Catholic Clergymen and the power of the police under Capt. Wetherall inefficual.

Causes assigned in former report for this spirit of riot correct.

Additional cause now assigned, being the quantity of fire arms in the possession of the labourers.

Necessity for a registry of arms Act.

Report required by the Act.

Describes the state of the work and the progress made since last Report.

Ordinary duties of the Department since last Report.

Preparation of buildings for public purposes necessary from the transfer of the Seat of Government to Montreal.

Montreal District Court House destroyed by an incendiary.

The old Jail building prepared for the holding of the Courts.

And for its being strictly enforced on the line of the extensive works.

Necessity for revising the rates of tolls on the Public Works generally.

And for general legal authority to exact them.

Steps taken to ascertain the probable present average travel on the roads and bridges.

The tolls should be let annually.

Lessees to give security and to pay their rent quarterly to the Receiver General.

Enactments required for the safe use of the works.

The Act authorizing the levying of tolls to fix the maximum leaving with the Executive Government the power of modifying them and of making bye-laws from time to time.

Acts now in force do not assimilate and require alteration.

of Public Works, with powers also confided to the proper authorities to search for and take up arms, when considered necessary, the Public Peace will continue to be jeopardized in the vicinity of extensive Works.

Another important point, of a general character, to which I feel it necessary to refer, is the necessity of providing by Legislative Enactment, for the establishment of a proportionately uniform Schedule of Tolls upon the Roads and Bridges generally, which have been constructed at the cost of the Province. Most of these Works are now in use, and I have no doubt will be productive of considerable revenue. The Toll Houses are erected, and it only remains to fix by law the Schedules, upon which those Tolls shall be collected, and the authority by which they shall be exacted. Upon some of them Tolls are now being levied; but the matter is very deserving of consideration, in order that a comprehensive provincial system, applicable to all cases may be adopted.

To afford data for the fixing of the Rates, the Officers superintending the several Works, have, by my direction, taken steps during the past season to ascertain the probable present average of the travel over them, the result of which is shewn in the Appendix hereunto. A.

I am of opinion that the Rates being fixed, the several Gates, whether on Roads or Bridges should be annually put up to public competition, the lessees being required to give undeniable security, and to pay their rent quarterly into the Receiver General's Office, or such local agent as he may appoint. For present and proposed Rates of Toll on the various Public Works, see Appendix letter B., 1, 2, 3, 4, &c.

For the safety and proper protection of those Works, it appears to me to be necessary, among other enactments, that the proprietor of each vehicle should be bound, under a penalty, to have his name and address legibly painted on the sides thereof.

As circumstances may, from time to time arise, rendering alterations in the rates advisable, it would seem that the Act should only name the maximum of the Rates to be levied, leaving to the Executive Government the fixing of the Tolls under it, and the adoption of such By-laws for the management of the Works generally as may be found necessary.

With regard to the use of those Public Works, by section 2 of 4 and 5 Victoria, chapter 28, the powers of all Directors or Commissioners appointed by or under the authority of any of the Laws then in force for authorizing the construction or carrying on of any of the said Works, were superseded and transferred to the Board of Works.

The 4 and 5 Victoria, chapter 28, enacts, "That the Board of Works may make such regulations for the use of any Public Work of any kind, vested in the Board or under its control, as shall not be inconsistent with the law, or with the purposes of such Work, but such Regulations shall impose no fine, unless the power of imposing such fine shall be given to the Board of Works by some law relating to such Work."

By the seventeenth section of the same Act it is further enacted, that "All Public Works which are not or shall not hereafter be specially vested in other persons, bodies or officers, shall be and are hereby vested in the said Board of Works, and placed under its superintendence, management and control, excepting always, that the Tolls, Revenue or Income

derived from any Public Work, shall be and continue to be received and accounted for by the persons appointed or to be appointed for that purpose; but the amount of such Tolls, and the expenses of collecting them, and all such other information as the Board may require from time to time shall be reported and furnished to it by such persons on the requisition of the Secretary or Chairman."

The powers which it would appear were intended to be vested in the Board by the twelfth section of the 4th and 5th Victoria, chapter 28, above quoted, for the making of regulations for the careful and proper use of the said Works, are inoperative, as there is no penalty attached to the disregard of such regulations; and the provision of the seventeenth section of the same Act places the Board of Works in this anomalous position, that although by the Acts just quoted, all former Commissioners ceased, and their powers generally were transferred to the Board of Works; yet, as in the cases of the Welland and Lachine Canals, the collection of the Tolls was vested in the former respective Commissioners, but in the transfer of their powers to the Board of Works, that portion of them authorizing the receiving of Tolls was specially excepted; the entire management of these works is now under the Board of Works; still, for the legal receipt of Tolls, the form of keeping up a distinct Lachine Canal Board of Commissioners, and a distinct Welland Canal Board of Commissioners is necessary.

From the foregoing, independent of several other cogent reasons, it will be seen that a general revision of the Board of Works Act should take place, and if the Legislature should decide on placing the maintenance of all these Works upon it, provision should be made accordingly without loss of time.

Of those Roads which have been planked or gravelled, a portion has been effected under the provisions of the Acts 3 William 4, chapter 37, and 7 William 4, chapters 78, 79, 80, 81, 82, and the remainder under those of 4 and 5 Victoria, chapter 28; by the former, the Receiver General of the Province was authorized to raise by way of loan, the amounts voted for the respective districts, the interest on which was to be secured by the Tolls on the Roads, and not paid or chargeable against the general Revenue of the Province; but on the passing of the Union Act this authority ceased, and each of the Roads so commenced was left and has since remained in an unfinished state. In most instances, the unfinished portions were about the centre of the roads, consequently the benefits derivable from the parts that were made, and from the expenditure which had taken place, were very much restricted, and the Revenues much short of what they would have been; had the several roads been finished throughout. This was particularly the case with the Yonge Street Road, the Napanee Road, the Hamilton and Brantford Road, the Dundas and Waterloo Road, and the Johnstown District Road.

That portion of the Road from Hamilton to London comprehended in and appropriated for by 4 and 5 Victoria, chapter 28, is now completed. It was undertaken and recognized by the Legislature as being part of the Main Provincial Highway, and the several Bridges required over the various large rivers (the different branches of the Saint Maurice, the Batiscan, the Sainte Anne de la Perade and the Bayonne,) crossing the portion of this highway between Quebec and Montreal have been built. In several instances, the portions previously completed by the Districts, form parts of this same highway. See Appendix, letter G. It appears to me necessary therefore, prior to any general system of maintenance being fixed up-

Rules for the proper use of the works inoperative, there being no power to impose fines.

Board of Works Act requires revision.

Necessity for the adoption of a general system of maintenance for the public works.

A portion of the macadamized roads made under former Commissioners.

With monies borrowed, the interest secured by the tolls of the roads, and by assessment on the respective districts.

Those roads left unfinished. Thereby their utility and the revenue from them very much circumscribed.

Main Province road, portion of it between Hamilton and London.

St. Maurice bridge, Batiscan bridge, Ste. Anne la Perade bridge, Bayonne bridge, completed.

Necessary that the Legislature should do

side in what roads are to be assumed as Provincial roads.

Toll gates should at once be established on such generally.

Outline if general system for the maintenance of macadamized or gravelled roads.

Dépôts of materials.

Their number and capacity to be governed by circumstances.

Dépôts to be numbered and a registry of them to be kept.

Dépôts to be filled by contract.

Spreading of the metal to be done under working Overseers or by contract.

Contracts may be made for keeping the road in repair.

Periodical general inspection of the roads.

The officers to furnish reports and estimates.

Additional powers required to procure materials for the works.

Much expense in obtaining materials at present, even from land worthless for farming purposes.

System for the maintenance of the plank roads suggested.

on, that the Parliament should define what roads are to be assumed as "Provincial Roads," and should they embrace portions constructed by the districts, I presume the districts would be relieved from their charge, and Toll Gates generally established, the proceeds of which would be paid in directly to the Receiver General, and the expense of maintaining such main roads charged upon the general Revenue of the Province.

The system of maintenance I would consider most effectual upon the macadamized or gravelled Roads would be to have regular dépôts for materials at convenient distances, established along the lines of the Roads; the number and capacity of the dépôts to be governed by the quantity of materials required for the annual maintenance of the Roads. The dépôt on each Road should be regularly numbered and measured and a registry kept thereof; whereby much facility would be afforded in the subsequent superintendence. The filling of these dépôts to be let out by public advertisement from time to time as required, but care of course should be taken to regulate the periods for requiring the furnishing of the materials with regard to their cheap carriage, &c. The distribution of the metal upon the Roads, may either be under the direction of working overseers, or by small contracts, and in some cases when the Road is put into an effective state, it will be found advantageous to let out the keeping of it in repair in portions of, say, from 3 to 5 miles, the materials to be used being those laid up in the dépôts. It is important in my judgment, that for the purposes of repair, the material should be furnished by parties distinct from those subsequently to spread it. A periodical general inspection to be made of all the Roads by officers of the department under whose charge they may be placed, who will give the necessary instructions to the respective working overseers or contractors, as the case may be, and will report in full upon the state of the Roads, &c., and furnish estimates for any General Repair, building or repair of Bridges, &c., that he may consider necessary.

In the present state of the country, before property becomes more improved and subdivided, it is very desirable, in my opinion, that some provision should be made by Law, authorizing the obtaining from the adjoining lands, the materials required for the keeping in repair of these works. It does not appear to me unreasonable that from all wild lands, it should be lawful, under proper restrictions, to take all such stone or gravel as is required for such public purposes without any payment; and when it is necessary to procure those materials from improved land, I conceive the only compensation to be made should be for the damage done to the surface, at the rate per acre for which the land would be taken for farming purposes. The procurement of these materials in many cases from crags and other equally unprofitable portions of farms, has been attended with very heavy expense, although prior to their being required, the proprietors would have been happy to have got rid of them in any way. Such powers should not of course extend to the obtaining of stone or gravel from quarries or gravel pits actually opened and worked, and the property of individuals. In such cases, the value of the material should be arbitrated upon or agreed for.

The maintenance of the Plank Roads for the first few years will consist chiefly in attending strictly to their drainage, and in making good such parts where from subsidence in the formation under the plank, or other causes, the planks spring, or do not lie solid; where from attrition or decay, partial repair may be necessary, it can be effected, either under an overseer, or by letting out the repair of the Road, in lengths of from 5 to 10 miles.

Besides these Roads which have been gravelled or macadamized out of the Revenues of the Province and for which a system of maintenance has been suggested in the foregoing, there is another class of Roads, to which, in my opinion, that system would not be applicable. I refer particularly to the Gosford Road, which opens a direct communication between the Eastern Townships and Quebec; to the Port Sarnia Road, which is an extension of the main Province Line from London to the foot of Lake Huron, and which, from the distance saved by it will no doubt in a little time become the thoroughfare of a considerable portion of the Western travel, and finally the London and Chatham and Amherstburg Road being a direct continuation of the main Provincial Highway from London by Chatham, (where the travelling by it meets the steamboats) to Sandwich, opposite Detroit; thus forming a continuous High-post-road from the Western extremity of the Province to Quebec.

The Roads I have just enumerated are, or will be shortly completed, so far as relates to drainage, formation and grading; but the surface is formed of the natural soil which on most of the Lines being of a rich vegetable nature will take a considerable time to consolidate, during which they will require constant attention, otherwise they will become impassable. It is generally considered that the imposition of tolls on Roads so incomplete would not be just; their maintenance therefore must be otherwise provided for. In many cases, they pass through a great extent of wild or unoccupied land, and their maintenance cannot be imposed on the scanty population adjoining. The Legislature must therefore in its wisdom determine on a system for their maintenance.

The maintenance of the Bridges I conceive should be directly by the Department, and from their being closely attended to, and due care taken of them, their duration will be found far to exceed that of the Bridges generally heretofore constructed.

The system of maintenance for the Harbours, should, in my opinion, be the same as that suggested for the Bridges.

The maintenance of the works of the Canals will, I trust, from the very permanent and durable nature of their construction, be attended with but little expense. A steady practical Overseer upon each, reporting weekly to the department under whose charge the Works may be placed, and with sufficient experience to meet any emergency or accident that may occur, will, with the periodical inspection of the Officers of the Department, in my judgment, be sufficient. In connection with this part of the subject, I think it necessary to state, that a general system of proper Registration and Measurement of Vessels appears to me highly desirable and necessary for the prevention of fraud. How far such regulations could be made to bear on all Vessels, whether foreign or provincial, passing through our Canals, is for the Law Officers of the Crown to say.

The foregoing are my views generally upon the "maintenance" of the Provincial Roads, Bridges, Harbours and Canals.

With respect to the maintenance of another very important class of Works, the Light-Houses, Buoys, &c., from Montreal to Lake Huron, I am persuaded it would be very much for the benefit of the Province and tend much to economy were a suitable Steam Vessel provided; by means of which the supplies of every description could be served out annually to the various Light-Houses, and the cost of the necessary annual repairs, whether of the Buildings or of the Lamps, &c.,

Maintenance of Bridges.

Maintenance of Harbours.

Maintenance of Canals.

A general registration and measurement of Vessels much required.

Maintenance of Light-houses, Buoys, &c., from Montreal to Lake Huron.

To have a tender Vessel, by means of which the supplies would be

served out cheaply, repairs effected, &c.

would be effected at a very reduced expense, compared with the past. At present, when Lamps get out of repair, which, from their very imperfect construction, constantly occurs, they are laid by for the remainder of the season, and the efficiency of the light of course proportionately lessened, or, if sent to be repaired, the cost of forwarding them and having them returned is as much as the value of new Lamps. These, and other matters of detail, will be more fully treated of under the head of Light-Houses. As such a Vessel would be required for these purposes during but a small portion of the Spring and Fall of each year, her services could, I conceive, be very profitably made available during the greater part of the season towards the prevention of the extensive system of smuggling now admitted to exist, as well as for other public purposes.

WELLAND CANAL.

The various portions of this most important work have been advanced with unexampled rapidity during the past year.

The exertions of Mr. Power, the principal Engineer, and of Messrs. Thomas Keefer, Page, Pritchard and Slater, his Assistants, have been as untiring as they were laborious; and I regret that the health of, I believe, every one on the establishment has been affected, consequently, to a greater or less degree at different periods during the season.

In their joint efforts to gain a point of most vital importance, that of having the Works throughout in such a state of forwardness before the close of the season, as would ensure the opening of the entire of the Canal to the Trade next spring upon the enlarged scale, they have been most effectually aided by the indefatigable and praiseworthy exertions of the Contractors; to the co-operation of these gentlemen, cordially given, although in several instances under very great discouragements, it is entirely owing that the great point just mentioned has been accomplished, the value of which will be at once evident, when it is considered, that from returns carefully collected, the gross amount of sailing craft tonnage on the Lakes above the Welland Canal may be taken at about 26,400 Tons, of which very little over 7,000 Tons have ever been able to navigate the Canal, but on the opening of it in spring next, owing to the large dimensions of the new Locks, all the sailing Vessels, with three or four exceptions, can pass freely through; and three large Steam Propellers, already built, whose aggregate tonnage amounts to upwards of 1900 tons, can commence their regular trips as Freight and Passenger Vessels, for which they were constructed, in anticipation of the completion of the Works.

The advantages and great increase of the Revenue to be safely calculated therefrom, especially in the early spring navigation before the Buffalo route is open, are apparent.

Besides the discouragement, (namely, inadequacy of price and certain and increasing loss,) to which I have alluded, and in consideration of which I consider the Contractors in several instances are the more entitled to credit and praise for the energy with which they have prosecuted, and the highly satisfactory and workmanlike manner in which they have put their work out of hands; I feel bound to add, that they have had throughout to contend with unprecedented difficulties.

Immediately after entering into their Contracts, the Tariff was imposed by the Legislature, which, by affecting the price of Provisions, especially in that sec-

Praiseworthy exertions of the Contractors under great discouragement.

Great advantages of enlarged dimensions of the Canal and of their being available on the opening of the Canal in spring next.

Difficulties encountered by the Contractors.

tion of the Province, was a source of much and unanticipated loss to them. Being in the House of Assembly at the time, I contended for their being exempted from its operation, as was, I believe, the case with those having contracts under the Commissariat, but the House decided otherwise. The sudden and great rise in the rate of wages, which upon this work took place, thirty per cent at least more than on the others, was a source of great loss to those Contractors, whose prices, even at the ordinary wages, were not adequate; the consequence is, that several of them, besides losing all the Capital of which they were masters on commencing the work, have been compelled to borrow largely from the Banks and elsewhere, and will be utterly ruined unless their cases meet with the favourable consideration of the Legislature, to which I am respectfully of opinion they have very strong and substantial claims.

The Tariff.

Great rise of wages on the Welland Canal.

Contractors' losses.

I am greatly averse to the making of after allowances to Contractors beyond their contract price, upon any plea of unexpected difficulties, increase of wages &c., such a course, in my judgment, tends to drive out of competition honorable Contractors, whose intention was to execute the work for the amount of their Tender. At the same time, cases may occur, and this is one, in which claims for compensation may be made and in justice acceded to, without infringing upon those principles. After the Contractors had made arrangements suitable for insuring the completion of the amount of work they had engaged for within the term of their respective contracts, a very large increase was made thereto; it having been decided, with the consent of His Excellency the Governor General in Council upon the memorials and representations of several persons extensively engaged in the forwarding Trade, to add considerably to the dimensions of the Locks, every inducement was therefore, held out to urge the Contractors to complete the works upon the increased size within the same time as they had contracted to finish them on the original scale, this they have done; but not without loss to themselves.

Objections to making "after allowances."

But in some cases justifiable.

Great increase of work beyond amount of original contract.

Increased work performed within the time originally stipulated.

The benefits the Province derives therefrom are: First, the having altogether got rid of the necessity of repairing and keeping up 27 of the old Locks, which would have been attended with the expenditure of many thousands of pounds—in fact, such is their dilapidated state, that the possibility of their being maintained at all for another season, at any expense, was very doubtful; Secondly, the increased Revenue, which will be had next year, not only from the spring business, but from that of the whole season, in consequence of the Canal being thrown open to the Lake vessels generally.

Benefits to the Province therefrom.

Expense and risk of maintaining old Locks got rid of.

Increased revenue from the work at once obtained.

As the amount which will be saved in repairs would about clear from debt the Contractors referred to, and as by this debt such considerable public benefit has been obtained, I trust His Excellency the Governor General and the Legislature will be disposed to grant the required relief.

Contractors claims entitled to favorable consideration.

The Steamboat entrance Lock at Broad Creek, which is at once an entrance Lock to the Welland and Grand River navigation, being now completed, and the Feeder to the Canal enlarged and deepened, the trade for the next year will be from Lake Ontario to the junction and thence by the Feeder to Lake Erie, entering the Lake by the Broad Creek Lock. This arrangement is made in order that the portion of the Canal from the junction to Lake Erie at Port Colborne may be emptied, and the several works of the deepening and enlarging of that portion, building the guard-lock, &c., affected without interruption to the trade.

Broad Creek entrance.

Port Colborne entrance will be closed for the next season, to permit of its being enlarged.

New works available in spring next.

Old Lock at Allenburg to be altered for temporary purposes.

Proposition to make this Lock a Steam-boat Lock.

Advantages proposed thereby.

Steam Excavator.

The Deep Cut.

Lake Erie made the summit level of the Canal.

Local as well as general advantages therefrom.

Upon the completion and hanging of the gates, the new works of masonry, available next spring will be the Broad Creek Lock, and twenty-three Locks between St. Catharines and Thorold; to open the line to the full seized vessels, the Lock at Allenburg and the Aqueduct over the Chippewa not being built, it is necessary to alter the old Lock at Allenburg and to repair the present wooden Aqueduct. All the masonry unfinished, can be completed next year; the cause of delay in building the Lock at Allenburg has been a desire to afford an opportunity for an appeal to the Legislature, by many persons who are anxious that that Lock should be a steamboat Lock. Among many other advantages they anticipate from it, would be that steamboats from either Lake could approach to within about five miles of each other, and that a short line of rail-road being laid for that distance, the rapid transit of passengers and a certain class of merchandize would be greatly facilitated; the extra cost of the enlarged Lock would be about £5000.

The progress made in the earth-work last winter and subsequently has been very satisfactory, and the steam excavator in operation in the deep cut is admirably adapted to its work. This portion of the Canal now presents a very workmanlike appearance; it is opened to its full breadth, the slopes increased and neatly dressed off, and the obtaining of the depth through it, suited to the Lake Erie level, is by means of the excavator proceeding steadily and without any apprehension of slides occurring.

The vast importance of making Lake Erie the summit and supply, needs no comment; independent of the advantages to the Canal, others affecting the interests of the adjoining country are now occupying public attention in that quarter; among which is prominent the construction of a water course to the Town of Niagara for hydraulic purposes.

The benefits derivable from such a command of water as might be taken, without injury to the Canal (say of a body equivalent to work ten run of stones) would be very great, especially as from the level, at which it would be brought to the Town, it might be made use of, probably, three times over.

The amount of Revenue from this work has continued to increase annually, but no just estimate of the great increase that may reasonably be expected, can be made until the advantages of the Canal, complete in all its parts, are experienced. This, I trust, I may be able to announce in the next annual Report.

The gross quantity of work done may be stated at—

Masonry.....	110,000 cubic yards.
Rock excavation.....	70,000 do.
Earthwork.....	1,300,000 do.
Oak timber.....	20,400 cubic feet.
Pine timber.....	534,000 do.
Plank.....	1,436,000 superficial feet.

From the daily growing importance of the trade through this Canal and of Port Colborne, it appears to me highly desirable that the establishments there connected with the collection of Tolls and of Customs, should be put upon a more efficient footing. It is not necessary, however, that I should enter into the subject more fully, as it will, no doubt, be comprehended in the general arrangement (so much required) for the collection and revising the scale of Duties, &c., now under the consideration of the Finance Department.

There is another point connected with this work, which seems to me extremely deserving of attention,

I mean the defining distinctly of the rights and privileges of the several Lessees of Hydraulic Power along the line of the Canal.

As the Country from which the supply was derived when the surplus water was disposed of, became cleared, and as the trade on the Canal improved, the amount of surplus would have been daily diminishing, but it will now by the adoption of Lake Erie as the summit level, be steady and limited only by the rate of its passing down being regulated, so as to present no obstacle to the trade.

The amounts and description of property passed through this Canal during the year, may be seen on reference to the Appendix (Letter D).

ST. LAWRENCE NAVIGATION.

The portions of the River Saint Lawrence from Lake Ontario downwards to Montreal, that most required improvements, and for which appropriations have been made, are—

- The Galoppes Rapids.
- Point Iroquois do.
- Rapide Plat do.
- Farrens Point do.
- The Long Sault do.
- The Coteau do.
- The Cedars do.
- The Cascades do.

And the enlargement of the Lachine Canal, by means of which the Lachine rapids are avoided.

The works upon each of the foregoing are now in progress, and may be expected to be completed next year.

THE GALOPPES RAPIDS.

These Rapids are situate at about six miles below Prescott. The current in the River is very strong, varying from six to ten miles per hour. The first class steam passage vessels can overcome these Rapids, as well as those at Point Iroquois, Rapid Plat and Farrens Point in the natural state of the River, but to enable the trade vessels generally to ascend the Galoppes, improvements are in progress, which consist of one Guard Lock, one Lock with a lift of between seven and eight feet, and a lateral cut two miles in length. The works are all under contract and satisfactory progress generally has been made during the season, impeded however by the turbulent and riotous spirit of the laborers, which has unfortunately been the case upon all the other Canals also.

The gross amount of work done on the Galoppes section may be stated at about—

312,500 cubic yards of earthwork.	
17,300 do. of stones in protecting embankments.	Work done.
103,000 cubic feet of timber in work.	
34,000 do. do. delivered.	
81,500 superficial feet of plank,	
exclusive of a large quantity of other materials prepared for the Locks.	

POINT IROQUOIS.

These Rapids occur at about twelve miles below Point Iroquois, to enable the trade vessels to ascend them, the works in progress are those of a Lock and lateral cut, the lift of the former about six feet, and the length of the latter about three miles. The progress made

has not been to the extent it should have been, but the entire can be completed next year. The quantity of rock to be excavated is greater than the trial pits indicated. The gross amount of work done on this section may be stated as about—

Work done. 153,000 cubic yards of earthwork.
 300 do. rock excavation.
 1,700 do. do. in protection of foot of embankments.
 24,300 cubic feet of timber.
 45,000 superficial feet of plank,
 exclusive of considerable preparation in other materials for the Lock.

THE RAPIDE PLAT.

Rapide Plat. These obstructions to the ascent of trade vessels are about nineteen miles below Prescott. The improvements here consist of one guard Lock, one lift Lock of about eleven and a half feet rise, and a lateral cut of about four miles in length. The progress may be stated at about—

Works in progress.
 Work done. 365,600 cubic yards of earthwork.
 12,100 do. of stones in protection of embankment.
 159,000 cubic feet of timber do. do.
 63,000 do. do. delivered.
 12,000 superficial feet of plank,
 and considerable preparation made in other materials generally.

FARRENS POINT RAPIDS

Farrens Point. Are about thirty-three miles below Prescott. The improvements here consist of one Lock of four feet lift, and a lateral cut of about one mile in length. They have progressed very satisfactorily, and the amount of work done may be stated at—

Works in progress.
 Work done. 133,000 cubic yards of earthwork.
 1,867 do. stones in protecting banks.
 168,000 cubic feet of timber in work.
 12,000 do. do. delivered.
 82,000 superficial feet of plank,
 and very extensive preparation in other materials for the work is made.

LONG SAULT RAPIDS.

Long Sault. To avoid these serious, indeed they may more properly be styled insurmountable obstacles to the trade, the Cornwall Canal was commenced and to a great extent constructed under the Commissioners appointed previous to the establishment of the Board of Works. Under the control of the latter it has been completed.

Cornwall Canal.
 In my last Report, I stated the extent to which expenditure upon the repairs, and strengthening of the embankments had been necessary in order to insure the uninterrupted use of the Canal. I am glad to be able to state that the season has passed over without any stoppage in the navigation having taken place, and I trust with due attention, and a continued, but very much reduced outlay in strengthening a few parts of the banks which require it, that no further breaches will occur. In the very low water, some obstruction was experienced at the head of the Canal from a part of the old Coffin Dam which was not sufficiently removed, this will be attended to, so that no inconvenience shall again be caused by it.

The consideration and audit of various claims for land damages on the line of this Canal has occupied the attention of the late Commissioners, with whom

this settlement was left by the Act, and those gentlemen having forwarded a schedule of the several claims (very much curtailed by them) to the Provincial Secretary a considerable time since, it is very desirable that no further delay should take place in making provision for their liquidation. Outstanding claims.
Their settlement desirable.

The completion of the works of this Canal, upon its control being vested in this department was estimated at £57,670 currency. These works together with some amendments to them found to be indispensable, but not anticipated were accomplished for £57,110, but after the Canal was filled and in use for a little time, the breaches which took place, and the indications of giving way which presented themselves in many parts of the old banks, the causes of which, in my judgment, I enumerated in my last Report, rendered further expenditure unavoidable. Cost of completion of the works.
Further expenditure.

This expenditure amounting to £9,925 16 4 was taken from the special appropriation for the Saint Lawrence navigation, but must next year be repaid, when the funds for the payment of the land and sundry contingent expenses generally, are required.

BEAUHARNOIS CANAL.

The object of this Canal is to open a communication from Lake Saint Francis to lake Saint Louis, avoiding all the Rapids of the Coteau, the Cedars and the Cascades, which occur in the portion of the Saint Lawrence between those Lakes. Beauharnois Canal.

The various works have progressed most satisfactorily, and with unexampled rapidity, and but for the loss of time, consequent upon the riots which occurred during the season, but little if any work would now remain undone. As it is however, the Canal is in a very forward state, and may be expected with confidence to be opened to the trade by the latter end of June next, upon which the mail and passage boats, can ply regularly between Lake Ontario and Lachine. The works of this Canal comprehend— Rapid progress of the works.
Would have been now completed but for the Riots.

- 13 Sections of earthwork.
 - 9 Locks.
 - 10 Culverts.
 - 9 Turning Bridges.
 - 2 Entrances with Piers, &c.,
- exclusive of minor details.

Of the thirteen sections of earthwork, nine are completed, and the other four very nearly so. The masonry of six Locks is perfected, and that of the others, may be said to be nearly so, inasmuch as the materials are on the spot and six weeks will be sufficient to finish them in. Eight of the principal Culverts are finished, and very little of the masonry of the two others remains to be done. The Gates and machinery of four of the Locks are in their places, and those for the others are in readiness to be put together and hung. Three of the Bridges are framed and ready to be placed in their berths, the others are so far advanced as to insure their early completion. Work done.

LAKE ST. FRANCIS ENTRANCE.

Since my last Report, considerable progress has been made in the dredging of the points of the shoal, which by their projections made the natural deep-water channel a circuitous one. Entrance to the Beauharnois Canal from Lake St. Francis now direct and deep.

The channel is now of a breadth and depth proportioned to the canal, and suited to the wants of the Trade. It can hereafter be widened to any extent that may be considered necessary; it is marked Can be widened to any extent.

out distinctly by piers sunk on each side of it. The gap which the waters had made through the neck of land at Grosse Point, has been effectually stopped, and a pier constructed at that point, which besides being required for the site of the Light-house, will be found very convenient for taking in wood at, and for other purposes generally. The removal of the portions of the shoal, necessary to give a straight channel, has now proved undeniably the incorrectness of those who stated in evidence before the Committee of the House of Assembly, that being formed of connected Rock or Quarry, it could not be removed. Since the channel has been deepened, the objection to it by those disposed to cavil, is chiefly that the current there is too strong, and will prove inconvenient. The answer to which is, that the current is not within two miles an hour equal to that of several parts of the same navigation above, and where no improvements have ever been contemplated, or considered requisite; and there is every facility at moderate cost, to stop the channel altogether below the entrance, by which the current would be almost destroyed, and a convenient and capacious basin, created at the mouth of the canal. In the present state of the navigation and Trade generally, such improvement is not called for.

Pier for Light-house at Grosse Point.

No connected Rock in the Channel, the Shoal being holders embedded in clay.

Current near the entrance, not within 2 miles an hour of that of several other parts of the navigation and can be checked altogether.

Entrance to the Canal from Lake St. Louis, an excellent one.

Open a fortnight after the River was closed on the north side.

Work done.	Earthwork.....	1,500,000	Cubic Yards.
	Rock.....	48,000	do.
	Masonry.....	53,000	do.
	Stone in Piers, &c....	39,000	
	Timber.....	198,000	Cubic Feet.
	Oak Plank.....	126,000	Superficial Feet.
	Pine do	500,000	do.

The new channel through the Cedars not likely to be of the value stated from the shallowness of the other Rapids above and below them.

The Saint George, drawing six feet water, piloted by Mr. H. Roebuck, strikes heavily in the Rapids.

The entrance to the Canal from Lake St. Louis is fully formed, but requires some dressing off to complete it. One presenting more advantages and facilities of ingress and egress could not be had; fifteen Barges with valuable cargoes left it yesterday (11th Decr.) in tow of a Steamboat, whilst the ice at the proposed entrance to the canal on the north side of the river has been fixed and strong for the last fourteen days. The gross quantity of work done on the Canal may be stated at:—

During the last Session of Parliament, "a new Channel" was discovered through the Cedars Rapids with a considerable depth of water. The subject was mentioned in the House, and it was stated almost with certainty and generally believed, that no obstruction therefore existed to the passage of vessels drawing from 8 to 9 feet of water down all the rapids to Montreal. However, I am informed by Mr. Mills, on the authority of Mr. Bethune, the proprietor of the Steamboat St. George, that early in September last (since which time the river has continued to fall) in endeavouring to pass that Boat drawing six feet of water, and under the immediate guidance of Mr. H. Roebuck, the Pilot, she struck so heavily in several parts of the Coteau and Cascades Rapids, as to make it necessary to run her into the entrance of the Beauharnois Canal, to prevent her from sinking, from which after having received the necessary temporary repairs, she was sent to Quebec for a general overhauling.

THE LACHINE CANAL.

Lachine Canal.

Progress satisfactory except at Lachine end.

The several Works of the enlargement of this Canal are all under contract, and are progressing satisfactorily with the exception of those at the Lachine end, where there has been much injudicious management on the part of the Contractors. From the arrangements likely to be immediately entered into, however, with the securities, I am in hopes that by proper management and great exertion, that portion of the work may still be forced on so as not to present any obsta-

cle to the general opening of the Canal in the spring of 1846.

So intimately connected are these new works of enlargement with those of the original Canal, that no little pains and foresight have been necessary to prevent much annoyance to the trade during their progress, that some inconvenience should be experienced it was impossible to avoid. Every exertion however, has been made to lessen it, and to meet the wishes and convenience of the Forwarders as much as possible, and I have reason to believe that our endeavours are duly appreciated.

Much trouble in preventing works of enlargement from causing interruption to the trade.

During the present winter, a great portion of the old banks will be removed, the Canal throughout widened and deepened, and a very extensive delivery of materials for the several works of masonry will take place, and as the Lock Pits generally are excavated, I see no reason to apprehend that the entire of the masonry will not be completed next autumn. The floors and foundations of three of the Locks are laid.

Work to be done this winter.

A change has been authorized by His Excellency the Governor General in Council, upon the representation of the Board of Trade of Montreal and the mercantile interest generally (in which I fully concurred) of a very important nature, and from which benefits will be obtained much more than commensurate with the additional expense caused by the change. The alterations alluded to, are the laying the foundations and cills of the last Lock at the Montreal terminus and the deepening of the lower Basin, so as to admit of the largest class of Atlantic Vessels, which frequent the Port, to enter and load or discharge in the Basin. The Basin will also afford safe wintering, of which this Port is now entirely devoid. These great advantages will be obtained by an extra expenditure of about £16,000; whereas, were preparations not now made to effect them, not only would four times that sum be required to accomplish them at any subsequent period, but the Trade of the Country would have to be deprived of the use of the Canal for at least one year.

Basin and Locks at the Montreal end, laid at such a level as will render them available to the Atlantic Vessels.

Winterage will also be obtained.

The foundations and cills of the second Lock are also to be laid at a similar relative depth, so that when the increase of trade requires it, the entire of the Upper Basin, as well as the Graving Docks and Slips to be connected therewith can also be made available to the same class of Vessels. It would be highly desirable that authority be given for the construction of one of these Docks and one Slip.

Upper Basin can be deepened hereafter.

The portions of land which the increase of trade and enlargement of the Canal, made it necessary to take from the several adjoining proprietors along the line, as well as some additional ground, the property of the Seminary, in the immediate vicinity of the Montreal bassins, have been acquired on reasonable terms. Upon the completion of the works, several parts of the property so obtained, can be sold or leased for purposes connected with the Canal, the value of which, added to that of the hydraulic power which can be created, and will be disposable without injury to the navigation, may in my judgment be safely estimated at £100,000 and fairly set off against the cost of the work. The quantity of work done, may be stated at about—

The land necessary for the enlargement of the Canal, &c., obtained on reasonable terms.

Very considerable hydraulic power will be obtained at the Montreal end, and with the lots which can be disposed of will produce a very large amount.

733,476	cubic yards of Earthwork,
49,311	do. Rock Excavation,
3,606	do. Masonry,
8,50	cubic feet of oak timber in work,
224,992	do. Pine do.
159,958	superficial feet of plank,
108,118	cubic feet of timber delivered,

Work done.

besides extensive preparations for the masonry. For the receipts &c., on this canal this year, see appendix letter E.

LAKE ST. PETER.

Lake St. Peter. The progress made during the last season towards the effecting of a direct channel through this lake, with an increased depth of water has been highly satisfactory, and far greater than was expected. The operations of next year, I feel confident will set at rest the vexed question as to the possibility of effecting this improvement. Being fully aware of the doubts which were entertained respecting it, and looking upon it to be one of those works, the success of which can be satisfactorily determined only by experiment, I took the precaution long before the work was commenced of sending a full statement of my views upon the subject, formed after having given it the deepest consideration, in my power to Capt. Bayfield, whose science and intimate knowledge of the lake, with its shoals, channels, currents, &c., justly entitle his opinion to be received with the greatest confidence and respect. I am happy to have it in my power to state, that that officer, duly impressed, with the great magnitude, importance and difficulty of the work, and without advancing any opinion for or against the practicability of the undertaking further than "that there is quite sufficient ground of hope to justify the interesting experiment," fully agrees with me as to the course that should be taken. He was pleased to say, "I agree so nearly with the views which you have communicated to me in your letter, that there remains little more to do than to express my concurrence therein." I was also desirous of obtaining the opinions of Capt. Douglas, of the Unicorn, which are thus recorded by himself. "I was with the Gulnare and under the command of Capt. Bayfield, R. N., when the survey of the lake was in progress and subsequently in command of a steamer (the Canada) for nine years, and was always of opinion that the present contemplated cut (the direct one) was the only one that would give a satisfactory result, and I have now no hesitation in recording my unchanged sentiments on that subject." The interest taken by Capt. Bayfield in the undertaking, led him to communicate with Capt. Beaufort, the Government hydrographer, on the subject, by which the benefit of that gentleman's opinion has also been obtained. Capt. Beaufort states that while reading Capt. Bayfield's letter, "a civil Engineer of considerable eminence, J. M. Rendel Esq.," entered, and that they discussed the affair "with all the earnestness due to an operation, so generous and praiseworthy in the conception, and so big with future advantages in its issue,"—the result of their deliberation he states to be, that the straight channel should be adopted, the shoal at the head of it dredged, and the channel generally deepened by the use of Rakes, and that by means of "Groins", formed of Piles, interlaced with large Brush, with the excavated stuff deposited around them, the waters of the several "alien channels", should be turned into the direct course, as much as possible. Among other practical and pertinent observations, Capt. Beaufort states that the "Rake has been tried with very happy effects," as well in the forming as in the successful preservation of channels.

In proportion as I had to contend with pre-conceived Ideas and Mis-statements, was I gratified at finding my opinion supported by such high authority as the foregoing, and as it is necessary that the plan of operations adopted should be fully stated, I take the liberty of here giving two or three extracts from a communication I lately had the honor to make to Capt. Bayfield on the subject, which explain at large the principles on which the selection of the channel and the course of proceedings were governed.

Progress very satisfactory.

Doubts entertained respecting the success of this work.

Precaution taken to have the opinion of Captain Bayfield, prior to the work being commenced.

That officer approves of the course adopted.

Captain Douglas also concurs in the course adopted.

The course adopted meets with the approval of Captain Beaufort, R. N. also of J. M. Rendel, Esq. C. E.

"For my part I was perfectly satisfied after much thought, that whatever is to be accomplished, must be in the straight channel and that the obtaining of a moderately increased depth of water, and of a direct course instead of the present very crooked one, were advantages certain to be derived from, and sufficient to justify the experiment. I have not been so presumptuous as to predict to what an extent, an increase of depth can be obtained, and I have taken good care that the outfit (which constitutes three-fourths of the expenditure up to the present time) is such as to be applicable to the improvement of the several portions of the upper Navigation, and of the Harbours on the Lakes which so much require it. From the very nature and magnitude of the Work, practical Men would be cautious and slow in coming to a decision, but in such cases, where, as I conceive, experiment in conjunction with theory and science must be resorted to, before any final and satisfactory conclusion can be arrived at, were they deterred from having recourse to it by unfavorable predictions, always plentiful on such occasions and as often emanating from very ill-informed sources, many of our noblest existing Works would never have had being." Again—"I have ever been an Advocate for following and acting in concert with "Dame Nature," especially in water operations, it was not therefore without a great deal of consideration that I took the direct south channel. I need scarcely repeat to you the reasons for so doing the power of diverting such a Mass of Water down it, its being capable of being made perfectly straight, the risk of collision being thereby much lessened, the only obstructions in it being at the head where we can bring the force of the St. Lawrence directly to bear on them—the great facility of our working in it, compared with the present circuitous channel used by the Trade, in which our Vessels, leading chains, mooring cables, buoys, anchors, attendant lighters, and tenders would be constantly in the way of and getting foul of the Vessels passing at all hours."

"The result of our operations this year are so satisfactory, and so far beyond what I had calculated on, that I do not hesitate to express to you my conviction that success is certain and will be speedy. I send herewith a section shewing the state of the work at the commencement and termination of the past season. It is formed from soundings taken most carefully by Captain Vaughan, our Superintendent of the work, in conjunction with Captain Raeside, the Harbour Master and Chief Officer of the Trinity Board of this city. Of the experience and capability of both these gentlemen, you are, I believe, fully aware. The soundings were taken on the 19th of the present month, on a calm day, and with a pole marked into feet and inches."

"Our machinery, at the commencement of the season was deficient in several respects, so much so, that from the many unavoidable interruptions, I consider we in reality worked not much more than half the season; yet the results, I am sure you will consider far greater than you could have calculated upon. By taking the most moderate measurement of the quantity of stuff which has disappeared, and comparing it with that which the united loads of the number of barges discharged daily during the season, (and of which a regular log was kept,) would give, it is certain that the quantity carried off by the current is equal at least to that absolutely lifted. The current has obviously and seriously been increased; on commencing, a man could scull across the channel easily with one hand, it now requires stiff pulling to get across it without drifting much. The original buoys we put down to mark our local, and which

Principal expenditure heretofore in outfit applicable generally to others much required on the upper navigation.

Advantages from adopting the direct channel.

Result of this year's operations very satisfactory.

Much loss of time from necessary repairs and defect in machinery.

The quantity of stuff carried off by the current aided by the rake equal at least to that raised.

Current through the new cut much increased.

The principle of Dams or Groins adopted, similar to that recommended by Capt. Beaufort and Mr. Rendel.

"floated well up, are now kept under water from the strength of the current. Not only had the dams and groins, suggested in Captain Beaufort's letter, and referred to in that I had the pleasure of receiving previously from you, been decided upon, but the mode of their construction. I had directed that the piles should be cut away at low water or a foot under it, so that the river on the "break up" would float the ice over them, and I had instructed Captain Vaughan to have "wattled in" among these piles, trees with their branches. The stuff excavated has also been deposited according to Captain Beaufort's ideas, namely, in stopping up the mouths of the alien channels; the result of which, the greatly increased current in the direct channel fully shews, and to the effects of a rake which I have had briskly at work, I attribute very much the disappearance of so great a mass of stuff beyond that actually taken up. So far as I can form an opinion, the nature of the stuff is of a fortunate consistency, sufficiently tenacious not to threaten silting up, and yet capable of being raked up and carried off by the current.

Anticipated benefits from the ice being grounded over and on each side of the channel, thereby producing "undercutting."

"You are aware that the ice on the great surface of the lake becomes grounded on the shoals. I expect much to be effected by this operation also, as the passage of a large portion of the waters of this vast river, instead of being diverted as heretofore into several small and crooked channels, will take place down the new straight one, and I calculate therefore, that considerable undercutting will take place. This I have observed invariably occurs in the second class rivers of this Province, wherever the bottom is not rock. The main groin, to throw the united volume directly down the new channel, we cannot complete until the channel is available to the trade.

When channel is obtained, a pier to be at each end with lights.

"When the channel is created, my idea is to construct at each end an isolated substantial Pier, with a Light-house on each; these, together with the straightness of its course will enable it to be used at all times, and I have no doubt the constant passage of the steam vessels will much aid the stream in the keeping clear and deepening of the channel.

Outfit.

"Our outfit consists of two Steam Dredges, with two engines, and one chain of buckets to each, working in the centre of the boats, also two steam-tug vessels; one of these is employed constantly at the towing of the scows, in which the other also assists, but when not so employed she works the rake. I am inclined to believe that we may be compelled to get a third, for if the Dredges work as well next season, as they did towards the conclusion of the past one, the services of the two tug-boats would be required at the scows. We have but one rake, but I will have another made this winter, there being many days during the season, when from the roughness of the Lake, the Dredges cannot work, but the Rakes could be used to great advantage; the discharging scows, fuel and attendant Lighters, compose the remainder of our squadron.

Why it is confidently calculated on that the channel will keep clear when once opened.

"That this channel when once opened throughout and with the greatly increased volume of water passing through it, will keep open, I have no doubt. The trees and other debris now annually brought down by the Yamaska and Saint Francis Rivers, are not carried out far comparatively into the Lake, but are deposited parallel with the south shore, and that the effects of these rivers will not be to obstruct or silt up the channel, I am of opinion is evident from the fact that they have not for the last thirty years, to which period my information extends, affected it in any sensible manner, although it has for that time laboured under the disadvantage of being stopped at

"the upstream end, and had therefore no "scour" through it."

I trust I will be excused for the length of these extracts from my communication to Captain Bayfield, but public attention being much drawn to this work, I felt it to be incumbent on me fully to explain all the details connected with it; this I could not do more simply than in the foregoing.

The whole amount of the appropriation for this work is £65,000, the sum expended £32,776 9 3, of which £27,291 has been the cost of the outfit of every description, applicable to any other work, leaving but £5,534 actually chargeable to this work. This balance will be sufficient to provide fuel, meet repairs, and maintain the full establishment at work for two years more, long before the expiration of which, satisfactory evidence will be afforded of what can be done.

I beg leave to draw attention to the chart of the Lake and section of the channel, which will be found in the appendix, (letters F. and G.)

RIVER RICHELIEU.

The works of the Lock and Dam near Saint Ours, River Richelieu for the improvement of this river, thence to the entrance to the Chambly Canal are all let, and are by the terms of the contract to be completed by the close of next season. From the respectability and experience of the Contractors, full confidence may be entertained that no exertion will be spared on their part to insure the accomplishment of this desirable object. The work done may be stated at

- 4,552 cubic yards of earthwork,
- 6,904 do feet of oak delivered,
- 1,778 do do pine timber delivered,
- 114,639 superficial feet of pine plank in work,
- 27,530 do do pine do.
- 476 cubic yards of stone prepared.
- 15,483 do feet of hemlock delivered.

RIVER OTTAWA.

The works connected with this River, for which an appropriation was made, were of two classes; one, the various Bridges over the several Branches of the Ottawa near Bytown; with the causeways &c., connected therewith; the other, the construction of slides on the Ottawa and on the Madawaska, one of its principal tributaries.

Works of two classes. First, the several Bridges near Bytown. Second, the construction of Slides.

The former are all fully completed, and in use.

They consist of

- One Bridge 150 ft. in length, in spans of 24 ft. each. Bridges completed.
- Do. 159 do. one span of 111 feet.
- Do. 76 do. in one span.
- One wire suspension Bridge, 242 feet between the points of suspension, length of chains 487 feet each.
- One Arch of Masonry 44 feet span.
- do. do. 37 do.
- do. do. 55 do.

The entire of the foregoing with the causeways, toll-houses &c., are now open to the public. In the Appendix (Letter B.) will be found a schedule of Tolls to be levied at this Bridge, which I had the honor to submit for the consideration of the Executive Government some time back; and in bringing the subject before it, I recommended that the system of collection at this

Mode of collection of Tolls at the Bridges suggested for the first year.

A mechanic to be the Collector capable also of attending to the Bridge.

Bridge should for one year be an exception to that proposed for the Bridges generally. From the peculiar nature of the work, I conceive, it will require for the first year the careful and daily attention of a skilful mechanic, to observe the effects of the climate on it, and to regulate the tension of the main and suspension chains &c., accordingly. I propose therefore, that a trust-worthy person of that class, should be appointed collector for the first year, after which the Tolls may be put up to competition, as in the case of all the other Bridges.

The suspension Bridge being the first of its description undertaken in the Province, necessarily engaged during the past season a good deal of the attention of this Department, especially of Mr. Keefer, the Engineer to the Board, to whom the details of the work generally were entrusted. That they could not have been in safer hands, the judgment, science and mechanical skill, evinced in every part of the work fully prove; and in justice to that Gentleman I cannot allow this opportunity to pass without thus publicly expressing my acknowledgments of his valuable services and cordial co-operation, in this, as well as in all the other important works, which have been or are being carried on under this Department: I entertain no doubt, but that his career will be alike creditable to the Province of which he is a native, and to the Upper Canada College, of which he was a distinguished pupil.

The slides partly available last season.

Altho' imperfect, the waters having risen before they could be completed.

The works of the second class embraced within the appropriation for the Ottawa, namely, the slides, were, prior to the running of the timber last spring, so near completion, as to be partially available to the trade, although imperfect at the time in many respects. The height of water in them was not properly regulated, and the floods had risen before the aprons at the foot of the slides could be constructed. Some reefs of rock also in the beds of the rivers were not removed, owing to all of which much inconvenience was experienced in running the cribs. I attach no blame, however to Mr. Nagle, the Superintendent, who deserves, I conceive, on the contrary, every credit for the rapidity and the manner in which these very important works were constructed under more than ordinary difficulties. Whatever imperfections have been discovered in the slides will be rectified, and the removal of the several shoals, jutting rocks, &c., and other unfinished work will be effected, so that the full benefit of these works may be had next spring.

Will be fully ready for the Trade next season.

Many circumstances tended to render their construction more expensive than was contemplated. The difficulty of procuring a sufficiency of labourers, owing to the remoteness and isolated position of the works, the expense of forwarding the supplies of provisions, as well as of materials, tools, powder, &c.; the extraordinary hardness of the rock after getting down a little into it, and the great number of reefs and detached rocks, which, although not calculated for, upon the waters being very low, it was necessary to remove.

These works will produce an ample Revenue.

And their construction has encouraged individual enterprise.

Highly desirable that the control of the Ottawa throughout should be in the hands of the Government.

The same observations apply to the works on the Madawaska, but upon the whole the strictest economy, consistent with the substantial and permanent construction of the works, has been observed, and a much greater extent of indispensable improvement in the channel of the River in many parts effected than was provided for. Independent of the great facilities which will be afforded to the trade by these works, there is no doubt whatever of the outlay being amply remunerative, and the construction of those on the Madawaska has already encouraged Messrs. Egan, Gilmour, and other spirited individuals, to undertake improvements to a considerable extent on the upper parts of that River. I am still of opinion, as stated in my former Report, that the entire control of the Ottawa should be in the

hands of Government. If it were the case, I conceive additional facilities could be afforded to the trade, and its interests advanced, at the same time that the Revenue of the Province could be much increased therefrom: the purchasing of (and some amendment to) the slide at the Portage du Fort and of the residue of the term of the late G. Buchanan's slide at the Chats, and the construction of a good slide in the timber channel at Bytown, would effectually secure this great object.

The rates and Tolls could be thereby apportioned, and the Lumber Interests advanced. Slides at the Portage du Fort and at the Chats to be obtained.

At present lumberers, in running their timber down, must, in some cases, pass it through the public slides, and in others, through the slides, the property of individuals; the Government therefore have not the power of reducing, equalizing or proportioning the rates of slidage, which could be done, did the opportunity exist of running the timber through by means of slides under their control; and the expenditure on the public slides materially tends to increase the Revenue from those belonging to individuals, whilst from the position of the latter, no such advantage is reciprocated. For proposed rates of Tolls on slides, see Appendix (Letter B.)

An excellent portage road has been made at the Calumet Falls in conjunction with the slides there, and also at the Deux-Joachim; an improvement of a similar nature between the Chaudière and the Chats Lake is also very much required, and would be easy of execution. The portage, there, is at present very inconvenient; a dam should be thrown across one of the branches of the Mississippi which would render it navigable for a considerable distance down, and thus shorten the Portage road to the Lake, near Fitzroy Harbour, considerably. Were this road then made moderately good, and a small wharf constructed at each end, it would much facilitate and of course cheapen the forwarding of the supplies. The same object would still further be secured were the present very bad Portage road from the suspension bridge to the Lake at Aylmer also improved. The traffic on this road is very great, and a moderate toll on it would amply cover the cost of its improvement and maintenance and pay the interest on the outlay.

Calumet Portage Road. Deux-Joachim Improvement of the portage between the Chaudière and Chats Lakes very much required. The improvement of the portage from the Chat Lake near Aylmer to the Union Bridge very much required, and if effected would amply pay.

As immediately connected with the subject of the improvements of these Portage roads with the view to cheapen the transport of the supplies required in the lumber trade, is that of opening a new and direct communication between Lake Ontario and the extensive Timber Districts on the Madawaska, Pittowawa, &c., respecting the utility and the proper line for which so much difference of opinion exists. In addition to the above-mentioned object, as I understand it, this communication is proposed for the opening, and tending to the settlement of large tracts of lands situated North and North West of Kingston, between it and the Lake des Allumettes.

The Country immediately in the rear of Kingston, although broken and very much intersected by several Lakes and barren ridges, is reported to contain various patches of good land, and after some 30 or 35 miles, it is said to be well suited for settlement, thence to the Allumettes; I can only speak from my own knowledge of the Northern section, a large portion of which is fine hard-wood land.

The ridge of unproductive Country back of Kingston appears to me to divide (as to supply) the whole timber Country South of the Allumettes into two, but not equal parts; the Eastern being much the greater, and for which the Brockville and Prescott Country, Perth, the Towns on the Rideau and Bytown are, in my opinion, the natural depôts and sources of supply, especially Bytown, which from its position and water communication must ever be the principal channel,

through which will pass the great mass of the supplies needed along the whole line of the Ottawa and its tributaries; but as the lumbering on some of the branches of the Madawaska is extending a good deal Westward, a communication connecting the productive Country North of the Bay of Quinté with it (the Western section) would, I believe, be of advantage in several respects.

Such a line should, in my opinion, start either from the head or foot of Des Allumettes, as may on examination be found most advisable; and at the Southern end it may, when surveyed, be found expedient to run one branch through Madoc, Huntingdon, or some of these Townships to the Bay of Quinté, and another through Sheffield, &c., to the head of the Camden road, which intersects the Kingston and Napanea road about 14 miles West of Kingston.

The foregoing I do not state with confidence, not being at all acquainted with the Country to be explored, especially along the Southern portion.

Upon applications from several Members of the Legislative Assembly from the Ottawa section of the Province, during the last Session of Parliament, an examination of the road on the North side of the Ottawa, from Hull down to Grenville, was ordered, and also a similar examination of the road from L'Original to Bytown, on the South side. The Report of Mr. Walton, the officer who was sent on this service, is given in the Appendix (Letters H. and I.)

Surveys of the Roads on the North and South sides of the Ottawa below Bytown.

Applications have been made also to the Executive Government by Messrs. Pemberton Brothers, and other interested parties, for a Crown Land Survey of the Gatineau timber District, "with a view towards the defining of the limits to be granted with sufficient accuracy to prevent disputes and thereby to put an end to the monopoly which has existed in that section for a long term of years," and setting forth "the immense advantage, both to the Revenue and to the Commercial interests of the Province, that would arise from improving the River by the erection of slides, similar to those lately made on the Madawaska, Grand Calumet, &c."

Applications for the sliding of the Gatineau River.

It is a question deserving the consideration of the Legislature, whether it might not be advantageous to "slide" the principal obstructions on those lumbering Rivers, when the result of such surveys should satisfactorily establish the fact of there being a sufficient quantity of marketable timber, within a reasonable distance, to insure the outlay upon such works being repaid within a moderate time, with interest thereon, by the imposition of light Tolls on the timber descending. Such expenditure should be strictly confined to those obstructions, which are of too serious a nature to permit their removal being undertaken by individuals. On all the Rivers improvements of a similar description, but of lesser cost and extent, must be effected by the conjoint exertions of those interested in getting down the lumber cheaply to Market.

BURLINGTON BAY CANAL.

Burlington Bay Canal.

In the Appendix (Letter K.) will be found a plan of this Canal, shewing the progress which has been made with the new Works, and also their position contrasted with that of the old Work. On referring to this plan it will be seen that almost the entire of the north-east and north-west new Piers are sunk, the slip for the Ferry constructed, and considerable progress made in the dredging and removal of the old north-east and north-west Piers, a work of very great difficulty, especially as from the narrowness of the old Channel, the constant passing of the Steam and other Vessels

very much interrupted the operation of the Dredges, which it was repeatedly necessary, in the midst of the work, to unmoor and move out of the way. A glance at the Plan will shew the impossibility of this Work proceeding without some inconvenience being felt by the Trade, but no exertions have been spared to lessen these inconveniences, as much as possible.

Several times, since the commencement of the work, Impediments shoals have been created in the channel, from sand and shingle being washed into it through the breaches in the old Piers; these impediments have been removed as often as they occurred.

Considerable progress has been made with the outer and exposed parts of the south-east Pier, and the piles in the old work, projecting into the channel, have been extracted; the formation of the remainder of the south Pier is comparatively light work, and will proceed rapidly, as there will be but little trouble in preparing the foundation for it. Two Dredge Vessels are on the spot, and from the extensive preparation of materials of every description, I consider the work to be in a very satisfactory state, and I see no reason to doubt its being fully available to the Trade, within the time stated in the Contract, namely, 1st May, 1845, although some dredging and other work may then still be required.

Description of the progress made. No reason to doubt the works being completed by 1st. May 1845.

The quantity of work done up to the 1st December may be stated at—

17,350	lined feet	Framed.	Timber in	superstructure,
144,274	do	do	sunk in	Cribs,
45,009	do	do	not sunk,	
171,933	do	do	delivered but not	
		framed,		
4,518	Cords of	Stones in	Piers and	Cribs,
1,118	do	delivered but	not placed,	
120	Tons of	Wrought Iron	used in the	work,
76	do	do	delivered,	
10,010	Cubic yards	of Excavation	for North	Pier,
38,635	do	of Dredging,		
46	Cribs	taken up,		
391	Piles	taken up,		
130	Piles	driven,		
49	Squares	of Planking.		

Quantity of work performed.

The Revenue from the Port of Hamilton, to which this Canal is the entrance, has been steadily increasing for the last five years. The Tolls received at the Burlington Bay Canal—

In 1842 were.....	£1720	11	10	Increase of the Revenue of Hamilton.
In 1843	1986	9	4	
1844 (Estimated at).....	2600	0	0	
The Customs at the Port were,				
In 1842.....	7044	8	8	
" 1843.....	12190	6	9	
" 1844.....	16342	3	3	

When the Canal is completed the Port and Harbour of Hamilton will be second to none on Lake Ontario, and the extensive and highly productive country of which it is the natural outlet, its excellent position as regards the trade and communication with the portion of the Province west of it, the main lines of improved Roads leading from it, and the construction of the Dover Road, by which a new and extensive section of country is now for the first time opened to it, must naturally tend to the prosperity and rapid increase of the Town of Hamilton, and of course to a corresponding increase of the Revenue from this work.

IMPROVEMENTS OF THE RIVER TRENT, AND OF THE INLAND WATERS OF THE NEWCASTLE DISTRICT.

The works under this head, as originally contemplated and authorized by the Acts 3d Will. IV. cap. 32, 6 Will. IV. cap. 35, and 7 Will. IV. cap. 53.

River Trent and Newcastle District Improvements.

embraced generally the improvement of the River Trent throughout, from the Bay of Quinté on Lake Ontario to Rice Lake; and the improvement of the several Rivers and Lakes continuously, thence by Lake Simcoe and the River Severn to Glóster Bay, a portion of Lake Huron.

Grounds on which the works were undertaken.

These improvements were recommended and undertaken by the Legislature of the then Province of Upper Canada, chiefly upon two grounds: First, that they would effect a facile and uninterrupted line of inland navigation from Lake Ontario to Lakes Huron and Michigan. That it would become the channel for the trade of the "Great West." That it would be very much shorter than that of the River and Lakes of the St. Lawrence. That it would not be liable to interruption in time of war, and, as stated, was absolutely necessary for the opening and settlement of the various Townships bordering on it. Secondly, to encourage and afford facilities to the extensive trade in staves and lumber, reasonably to be anticipated from the large and well timbered tracts, which would be opened to the market by the removal of the obstructions in the river.

Report on these works furnished by order of Lord Sydenham.

Prior to my appointment to the office I have the honor to hold, and previous to the establishment of the Board of Works, I was requested by Lord Sydenham to furnish him with my views generally upon the several public works of the Province whether in progress or projected. Upon the general report which I accordingly furnished, were based the memoranda, which that nobleman subsequently laid before the House of Assembly, and upon them was founded the Act making provision for the construction of certain works therein enumerated.

Memoranda, on which the appropriation was based.

In that report I felt it my duty to express an unfavorable opinion generally, upon the contemplated works of the Newcastle District, as then laid before the public. I stated in substance, nearly, as follows: Even assuming the navigation to have the depth of water proposed, namely, 5 feet (but this I felt persuaded would not be) the class of vessels navigating it would not be suited to the large western Lakes Huron and Michigan; that consequently transshipment would be necessary at its entrance on Glóster Bay. That the navigation would be much impeded by the floods, currents, &c., in the river, through which it was carried, and would also be seriously obstructed by the ice forming earlier and continuing later in the several small inland lakes, through which it passed, than was the case in the more southern waters of the St. Lawrence. That from the great amount of lockage (upwards of 820 feet) see Appendix (Letter U.) and its very circuitous course, it could never in my opinion become the channel of the "Trade of the Great West." That this being the case, the local wants of the country did not make necessary nor demand the immense outlay which the undertaking would require, estimated at about £620,000, but to which I stated £300,000 should be added. This addition I have since ascertained would not be sufficient.

Opinion expressed in original report.

Class of Navigation recommended.

Finally, I suggested that a very much reduced class of improvement might be undertaken, to meet the wants of that section of country, which from its great extent and capabilities for production and improvement, is highly deserving of attention. The works suggested were, the formation of some good cross roads, leading from the Ports on Lake Ontario into the back township; The construction of some slides to facilitate the running down of timber, and for which memorials had been previously presented to His Excellency the Governor General, and the completion of some detached locks and dams, commenced under the Commissioners, and which were then in different stages of forwardness. The cost of such works to amount to about £50,000.

These suggestions it would appear were approved of and acted on by the House of Assembly, as the appropriation Act provided for them; under the authority of which these works have since been carried on.

Suggestions contained in my original report, approved of by the Legislature.

The lock and dam at Scugog have been completed, by which a navigation of sixty miles in length, from Cameron and Bobcaggau Falls to Rice Lake, is effected, and a road thence to Lake Ontario at Windsor Harbour is being constructed, nineteen miles in length.

Lock and Dam at Scugog.

Although this lock and dam have been finished since the last summer, it has not been considered advisable to lower the water to the level at which it is permanently to be kept, until the cold weather has fully set in.

Lowering of the water of Purdy's Dam to its permanent level postponed.

So far back as the year 1834 great dissatisfaction and excitement existed in the neighbourhood of this lake in consequence of the level to which it was raised by a dam at the outlet of it by Mr. Purdy, to whom were granted by the Government certain rights connected therewith. In 1835 Mr. Baird, Civil Engineer, made, by order of the then Lieut. Governor Sir John Colborne, a very minute and laborious examination and report upon the subject (see No. 13 in Appendix to Journals of the House of Assembly, vol. 1. 1836.) The substance of his Report was that in its natural state, the lake might more properly be called a marsh, through a great portion of which a canoe could with difficulty be paddled, and that the Miasma from it was very destructive. That the level to which the waters were raised by Mr. Purdy's dam, was serviceable, so far as the limits of the original marsh, to the health of the adjoining country, but from its height, by flooding into a great number of small creeks, and over a vast quantity of land, low but previously dry, that it was a nuisance of a most serious character. That the total removal of the dam, however, would not only destroy the navigation, but by again reducing the lake to a state of marsh, would render the country most unhealthy. That this extreme height of Mr. Purdy's dam, (13 to 14 feet) was wholly unnecessary, whether for the purposes of milling or for the improvement of the navigation. He recommended therefore, that the lock and dam should be built below Purdy's dam, which caused the mischief, and that the latter should then be removed. He fixed upon the level of the new dam to be between six and seven feet below that of the old one, and on this principle accordingly the works have been constructed, and the old dam will now be removed.

Action which has been taken with respect to Purdy's Dam.

The lock and dam at Whitlas's Rapids, as well as those at Crook's Rapids, have been completed; by means of them a navigation of about 50 miles in length (embracing Rice Lake) from Peterborough, the District Town to near Heely's Falls, is created, and by it in conjunction with an excellent road from Rice Lake to Port Hope, 9½ miles in length, the several townships bordering on Rice Lake and the Otonabee River are opened to Lake Ontario.

Lock and Dam at Whitlas's. Lock and Dam at Crook's Rapids. Navigation gained by these works.

On the completion of this navigation a Steam-boat was built and placed on it, by which, no doubt the inhabitants of the adjoining country will be much accommodated.

The lock and dam at Chisholm's Rapids, the most of which had been built under the former Commissioners, have also been finished; by them the river is rendered navigable for vessels drawing four feet water from the widow Harris's to Percy's Landing, a distance of about 20 miles, but at present there is no appearance of any vessel being placed upon it.

Lock and Dam at Chisholm's. Distance rendered navigable by these works.

I have considered it necessary to go into the foregoing general repetition upon the works connected

with the partial navigation of this District, as being proceeded with, being aware that much dissatisfaction was felt and still exists throughout that section of the Province at the suspension of the works of the general navigation; and many, especially of those who advocate the necessity for the uninterrupted navigation, are averse to the proceeding with the works of the Slides, and represent them as not likely to pay the interest upon the outlay. Upon me, individually, is thrown by them, very generally, the odium of having stopped the works, but it will be seen, by what I have above stated, that I merely gave my opinion thereon when required to do so, and that in fact by the Legislature was their suspension determined.

Cause of the suspension of the works as originally contemplated.

The works connected with this navigation, which are completed, are detached and scattered over the whole distance between the Bay of Quinté and the Town of Peterborough, a length by water of about ninety-five miles, and immediately bordered by fourteen Townships, at the back of which there are six or eight more that may also be said to be intimately interested in the navigation.

Obstructions presented between the Bay of Quinté and Peterboro.

The portion of these ninety-five miles rendered navigable by the works, is about seventy miles. There being two stretches of the River remaining unimproved, one of about nine miles and the other fourteen miles in length, the navigation is not continuous, nor is it connected with Lake Ontario, and of course so long as it remains in this state, it can never be of very great importance to the surrounding District. If the removal of these two interruptions to a continuous navigation from Peterboro' to Lake Ontario could be effected at any moderate cost, it would be deserving the consideration of the Legislature whether its accomplishment might not be desirable.

Estimated cost, according to the original plans and estimates, for the removal of these obstructions.

A new route proposed, a survey of which is recommended.

According to the original plan and estimate, the construction of thirty-five Locks and other works involving a gross expenditure of about £211,250 would be required to remove these obstructions; but as many of the advocates for these improvements assert that these plans were not maturely and sufficiently considered, and that cheaper, safer and more advisable routes might in some cases be taken, instead of following in the bed of the River, as intended, it is for the Legislature to determine whether in order to set the question fully at rest, it might not be well to order a Survey, &c., under the direction of this Department of the two portions referred to. Such a course would I believe be satisfactory to the inhabitants of the large district of country, bordering on those waters.

Sundry additional work rendered necessary and executed.

Sundry extra work, such as building of Bridges, &c. was unavoidable in this section. The dams having thrown up the water so as to render the parts of the River, formerly fordable, no longer so, and much additions to the works done by the Commissioners was indispensable to secure and make them permanent.

Claims against the late Commissioners.

A good deal of pains has been taken to collect and examine into the various claims against the Commissioners for damages, &c.: Some of them have been paid by order of the Executive Government, and the amounts of others still pending are in some instances ascertained and agreed on, others not so. In the Appendix will be found a Schedule (Letter L.) of those claims which have been settled, also a Schedule (Letter M.) shewing the claims unsettled, also, a Schedule (Letter N.) shewing the quantity of Lumber run down the Trent as near as could be ascertained by our Overseer, an extract from whose Report is also given in the Appendix (Letter O.)

In addition to the foregoing works which may be termed the navigation of the Newcastle District, other

works have been executed or are in progress, and may be divided into two classes, one, those connected with the improvement of the River, so far as the running of Lumber is concerned; the other, the construction of Bridges and of Roads leading directly from Ports on Lake Ontario, to the heads of the navigation formed by the works already described.

In the first class may be included the Slides and Slides. Dams which have been or are being constructed at Helly's Falls, the Middle Falls, Ranney's Falls, Chisholm's Rapids, Widow Harris' Rapids, Prison Island Rapids, and the removal of some detached rocks in the river.

In the second class are included the Rice Lake and Scugog Roads.

Rice Lake, and Lake Scugog Roads. Rice Lake Road.

The general formation of the Road from Rice Lake to the town limits of Port Hope is completed, and about half the road is gravelled; the finishing of it must now lie over until spring. This road having been undertaken as a portage road connecting the navigation of Rice Lake and part of the River Otonabee with Lake Ontario, it appears to me desirable that it should be carried down to the harbour. A mail stage is now established on this road, which runs in connection with the steamboat on Rice Lake.

Branch from the Rice Lake Road to Cobourg.

The survey of the branch from this road to Cobourg, in which the inhabitants of that town and its vicinity take so warm an interest, has been a long time made, and on the application of the parties referred to, an Order in Council was issued authorizing the Board of Works to make the Branch, provided there should be a surplus remaining of the estimate to cover the cost of it. I was led to believe at the time that there would have been funds, and expressed myself so, more than once; but although much pressed to commence it, I did not consider myself authorized to do so, until it should be ascertained *beyond all doubt* that the means would be forth coming. This, I am sorry to say is not the case, as from unavoidable and unforeseen expenses upon the internal works, no sum was left applicable to it.

Cause of the non-construction of the branch road.

The Engineer to the Board, upon his last general inspection thus reports on this subject:—

"I am decidedly of opinion that this road is not required and will not pay. It would moreover seem to draw away in part the travel from the Port Hope Road, and throw upon the public the onus of supporting two rival roads with the funds to be derived from only one of them. It would be a much better undertaking for the Province to macadamize the road between Cobourg and Port Hope, and the former would derive just as much benefit as from the Branch Road. In fact Cobourg, Port Hope and the public at large would be gainers by it."

Engineer's opinion of the contemplated branch road.

Scugog Road.

The Scugog Road about nineteen miles in length, when completed will form a facile Portage Road from Windsor Harbour on Lake Ontario to the head of the Scugog navigation sixty miles long, extending through the Townships of Reach, Cartwright, Manvers, Mariposa, Ops, Fenelon, Verulam, &c., and when subsequently extended northerly to the Bridge across the narrows of Lake Simcoe, it will form a very direct and facile outlet for the produce of a very extensive and highly improvable section of country.

Description of the works on the Scugog Road.

The works of this Road consist of the proper draining, forming and grading of it throughout, and the planking of some detached parts where the nature of the soil renders it necessary. The grading of all the section is much advanced, and a large portion of the

plank delivered on those parts where it is required. For more detailed information respecting this Road, as well as upon all the works of the Newcastle District generally, the last Report of Mr. Lyons, the Officer in charge, is inserted in the Appendix (Letter P.)

Additional works required.

The following is a statement of the works which appear to be much required in this section, and which is submitted for the consideration of the Legislature.

A Bridge at Crooks' Rapids is indispensable.

Since the waters have been raised by the Dams, the parts of the River on the line of the Roads in some cases, where formerly fordable, are now not so and require Bridges. A new Bridge at Crooks' Rapids is also indispensable to keep up the connection of the country; the site of the old one should be abandoned and the new Bridge placed at the Lock.

A boom at Whitlas is necessary.

At Whitlas, a Boom is necessary for the safety of Vessels using the Lock.

A slide at Burleigh Chute is required.

A Slide is much required at Burleigh Chute, above Peterborough. (See Overseer's Report in Appendix Letter O.)

A Bridge and slide at Buckhorn are wanted.

At Buckhorn Dam the Bridge originally contemplated, and for which preparations were made, is much required, as well as a slide in the Dam.

The Lock at Bobcaygeon requires to be reconstructed, and a Bridge is wanted.

The Lock at Bobcaygeon, upon which much money was expended under the former Commissioners, was very badly built, and is now in such a state as would require to be wholly rebuilt. - By this Lock a navigation of sixty miles is opened through Chamong, Buckhorn, Pigeon and Sturgeon Lakes, connecting with the Scugog navigation. A Bridge is also much required at Bobcaygeon, and finally the River below the Scugog Lake requires an expenditure in removing the fallen timber.

Cost of the additional works required.

The foregoing, together with the extension of the Rice Lake Road down to the Harbour, would require an expenditure of about £12,000.

LIGHT-HOUSES, HARBOURS AND ROADS LEADING THERETO.

Light Houses, Harbours &c.

Under this head are embraced a variety of works, for a long time loudly called for and in importance, second to none in the Province, whether as regards the benefits to be derived from their construction by the agricultural and commercial interests generally, or their necessity for the safety and protection of life and property.

Much will be accomplished by the expenditure of the appropriation set apart for this class of works, but much, equally indispensable, will also remain to be done.

Lake Erie.

Upon Lake Erie, except in a few cases, nature offers but very little encouragement or assistance towards the construction of the Harbours necessary for the Trade of the Country; they are confined to the Rondeau, Long Point and Port Maitland.

Lake Ontario.

Lake Ontario is much more favoured in this respect, having her Burlington Bay, Toronto Bay, Presqu'isle, Kingston Bay, and the beautiful and extensive Bay of Quinté, the entire coast of which presents the greatest facilities for the construction, at a trifling expense, of such Wharves or shipping places as may be called for.

Harbours on Lake Erie.

Upon Lake Erie the works completed or in progress, consist of—

The Rondeau Harbour.

The Rondeau.—At about sixty-five miles below the head of the Lake, a Cape projects, enclosing within it a natural Basin of about 6000 acres in extent;

with a depth of water of from ten to eleven feet. The communication between this Basin and the Lake is across a sandbank of about forty yards in breadth, and not more than a few feet over the level of the water. This communication varies in breadth and depth a good deal from time to time, according as the wind prevails, which, when blowing heavily, carries with it the shingle along the shore, and frequently all but stops up the entrance to the Basin; sometimes the waters effect other gaps across the Bank, and in fact a constant alteration in this Bank and Channel is occurring. The object of the proposed works is,—First, to secure the Beach from any further breaches being made across it;—Secondly, to open the Channel, and confine it by a Pier on each side of it;—Thirdly, to construct Groins along the shore to catch the shingle, and prevent it from forming a bar across the Channel, and finally to construct a small landing Wharf at the termination of the Road now being made, to connect this Harbour with the settled country in the rear of it. This Harbour will be about seven miles from the main Road through the Province, and fourteen miles from Chatham the County Town, which is the centre of a very fertile and productive country, the produce of which, at present, during the season of navigation, is shipped at Chatham, and after descending the navigation of the River Thames (frequently interrupted,) then through the intricacies of Lake St. Clair and down the Detroit River to Lake Erie; when it arrives opposite the Rondeau Harbour, and has been transported a distance of about one hundred and fifty miles, it is within fourteen miles of the place at which it was shipped!

Advantages of the Rondeau Harbour.

The violent storm with which this Lake was visited in October last, operated a good deal upon the Beach, and has shewn the necessity of securing it more extensively and of running the Piers further out than was originally proposed. The cost of the works will therefore exceed the sum originally estimated. When fully completed, it will be a Harbour of great importance, not only for the trade of that section of the country, but also as an Asylum, it being the only place that can be run for in very hard weather, between Pelée Island and Long Point, distant from the former about fifty miles and from the latter one hundred. The sudden manner in which dangerous squalls on this Lake arise, is proverbial.

Cost of the works will exceed the estimate.

The next work in rotation is Port Stanley Harbour, where a great deal has been done, which was available to the trade during the past season.

Port Stanley Harbour.

As the old works of this Harbour, which is about midway up Lake Erie, with a very extensive, old settled back country, were in ruin and unavailable, and the little shipment that took place was consequently obliged to be made by means of small boats, going to the Vessels lying out in the Lake, at great risk; it is not to be wondered at that the Trade was almost annihilated.—Ship-owners would not charter their Vessels to it, and the Passenger Trade, on the Canada side, was given up. The re-construction, therefore, of this Harbour, was of vital importance to that whole section of country, and the beneficial results of it are already apparent. (See Engineer's Report and accompanying Documents, Appendix Letter Q.) The Piers must, however, be carried further out.

Importance of the reconstruction of this Harbour.

This Harbour is formed in the same manner that most of the other artificial Harbours on the Lakes generally are, unfortunately, but of necessity obliged to be constructed. Its position is at the mouth of a Creek, discharging into the Lake where the shore is not indented, and no shelter is afforded from any wind except that off land. The coast of the Lake above and below it, for a great distance, is a high clay bank, annually washing with the waters, which, of course, when agitated, carry

Description of the formation of Port Stanley and other Harbours generally.

with them in the direction of the prevailing wind much shingle and deposit. In their natural state the mouths of such Creeks are obstructed by Bars, varying in height and position almost weekly. Sometimes they are wholly stopped across, and remain so until a freshet in the stream forces a channel through the impediments. The course universally adopted is to construct a Pier on each side, and in the natural direction of the course of the Creek, the breadth between the Piers being proportioned (or should be so as much as possible) to the capacity of the stream, and its power to keep the space between the Piers scoured out. When these Piers are extended to a certain depth into the Lake the mouth is found, by experience hitherto, not to choke or be filled up; but the shingle makes rapidly on the windward side of the Piers, and of course it must *eventually* reach the entrance.

This description is applicable to almost every artificial Harbour on the Lakes. In reality they do not deserve the name of Harbours, being much more truly but landing Wharves. Still their construction is of necessity resorted to, to meet the present wants of the country, the finances of which do not yet admit of the great expenditure, which the formation of Harbours, properly so called, and within reasonable distances of each other, would require.

Report of the commanding Naval Officer on the ports of Lake Erie.

In a report upon the Harbours of Lake Erie, the Commanding Naval Officer in Canada, in the year 1841, stated—

“Very little need be said as to the necessity of forming Ports on this great extent of coast, exposed as it is to the boisterous sea, which rises with every breeze of wind that blows either up or down, or towards the shore of the Lake.” Again—

Rondeau Harbour.

“The Rondeau is by nature formed for one of the best Harbours on Lake Erie, and situated at that part where a good Harbour is much required.”

Of the Grand River or Port Maitland, he states—

Port Maitland.

“Very much has been said of the Grand River as a Harbour, and no doubt it will make the finest and most capacious on Lake Erie, except the Rondeau. The Rondeau and Grand River once made good Harbours, together with the excellent anchorages about Long Point, Lake Erie will then be, for all general purposes of navigation, what it should be. The other Ports are equally necessary for the shipment and landing of Cargoes, grown or consumed in the country they are contiguous to.” And finally, he reports—

“That in the then state of the Harbours, he was obliged to withdraw *Her Majesty's Steam Vessels* down the River Niagara near to the Falls, a place *by no means secure, and certainly not a proper rendezvous*, in the event of the prospect of a rupture with the United States.”

A moiety of the cost of these Harbours should be borne by the Nation at large.

Under these circumstances, it would appear but reasonable that as the works now in progress are, by the Commodore commanding, admitted to be indispensable to enable *Her Majesty's Vessels* to keep the Lakes, at least a moiety of the expenditure should be borne by the Nation at large; otherwise their extent must be confined to the wants of the Trade, and will not be suitable for the reception of Vessels required for the protection of the Province.

PORT BURWELL HARBOUR.

Port Burwell.

The position of this Harbour is similar nearly in all respects to that of Port Stanley, but the works of it, in their present state are much more useless and unavail-

able than those of Port Stanley were, prior to the commencement of the new works. There a large part of the old work was adopted in the reconstruction of the Harbour, and during the operations served as shelter; but at Port Burwell the entrance is blocked up, the old piers are so placed as not to be available, and in fact all that has hitherto been expended is so much lost.

The Engineer to the Board, in reporting lately on this place, states—

“Port Burwell is the most exposed part on the lake, for it has to withstand the South-west winds for a sweep of 180 miles. The state of the works erected here by the Port Burwell Harbour Company, bears ample testimony to the forces in operation. I would not therefore recommend expending a farthing upon this harbour, unless the sum appropriated is sufficient to construct the work in the most substantial manner, and a less sum than £20,000 would not, in my opinion, be adequate to it.”

Report of the Engineer on Port Burwell Harbour.

Of the amount appropriated for Harbours generally on the lakes, the expenditure of a moderate sum on this Harbour was proposed; the work to be undertaken when the Dredge and Piling vessels in use elsewhere, could be sent to it, but the more intimate acquaintance with the expense and difficulties to be encountered in forming these Harbours, acquired in carrying on the works at Port Stanley, rendered the proceeding with those at Port Burwell imprudent and unadvisable, as Mr. Keefer justly states, until funds fully adequate for the undertaking are provided.

Reason for the work of this Harbour not having been undertaken.

The establishment of a Harbour here most unquestionably would be of very great importance to the section of country adjoining it, which is well settled, improved and productive, and the amendment of the road leading to it would proportionably confer a boon on that part of the country.

The means made applicable to this class of works being very restricted, it has been endeavoured to expend them in such a manner as would divide the Canada coast of Lake Erie into as near as might be, equal sections, giving a harbour to each. This is very nearly the case, as reference to the map will shew. From Fort Erie, at the east end of the Lake, to Port Maitland, being the mouth of the Grand River, is a distance of between 40 and 50 miles; from thence to Port Dover, and the other shipping places under the shelter of Long Point, about the same distance; thence to Port Stanley, about 40 miles; thence to the Rondeau, about 45 miles; thence to Point Pelée, 45 miles; thence to the west end of the Lake, at Amherstburg, about 40 miles. The District of which Port Burwell would be the outlet, if the Harbour were constructed, lying between Port Stanley and Port Rowan, or Turkey Point, distant from each other as previously stated, about 40 miles, will, for the present, send its produce to one or other of these places, except the small portion of it, which in very fine weather will, under all disadvantages, be shipped off Port Burwell. Woodstock, the county town, and situated in the northern part of the District, is about the same distance from the head of the Grand River navigation at Brantford, as it is from Lake Erie at Port Burwell.

Division of the Lake Erie Coast.

The works of Port Dover Harbour, at the Head of Port Dover Road, are under contract, and I trust will progress satisfactorily. Under this head, Mr. Keefer reports—

Port Dover Harbour.

“There appears no change of consequence in the old works, or in the depth of water between the piers. The shelter afforded this harbour by Long Point, gives it a great advantage over many of these

" harbours in this respect. Whenever properly completed therefore, it may be expected to remain secure in any weather."

The works of the other harbours in progress on this Lake, are those of Port Maitland and Port Colborne, both of which are terminations of the Welland Canal, and are in a great measure connected with that work.

Improvement effected at the entrance of the Chippawa River. At the entrance of the Chippawa River a trifling improvement has been made at the request of the proprietors of the steamer touching there.

HARBOURS ON LAKE ONTARIO.

Lake Ontario. The works completed or in progress on this Lake, are, Port Dalhousie, being the termination of the Welland Canal. Its works are connected with those of that Canal; when completed and carried out to the outer bar, which is not a shifting one, and can be deepened, it will be easy of access, will have an upper floating basin of five hundred acres in extent, with from twelve to sixteen feet water, and will be in every respect a suitable terminus to this noble work.

BURLINGTON BAY CANAL.

Burlington Bay Canal. Des Jardins Canal. This work has already been reported upon. Besides being the entrance to the Port of Hamilton, it is also similarly situated to that of Dundas; and, the object of referring to it here, is, to draw attention to the state of the Des Jardins Canal, from the head of Burlington Bay to Dundas. The attention of Parliament has frequently been drawn to the very inefficient state of this work, upon which a good deal of public money was formerly expended; and the commercial and manufacturing interests of that town and neighbourhood, have repeatedly memorialized the Executive Government, setting forth the disadvantages they laboured under in consequence, and praying that its improvement, which they state to be facile and inexpensive, might be effected. On the other hand, many are of opinion, that from the nature of the marsh through which it passes, the Canal cannot be rendered permanently navigable, unless at great expense. My personal knowledge of the locality and details, is not such as to enable me to form an opinion upon it. The imports and exports to and from Dundas (see Appendix Letter R.) would no doubt be materially increased, if the navigation were improved, and even in their present state, they appear to me, sufficiently important, to recommend to the consideration of Government, the propriety of my being authorized to have a survey, report and estimate made of it, under this Department.

A survey recommended. Ports between Hamilton and Toronto. Between Burlington Bay and Toronto are four or five small pier harbours of the nature already described; in two of which, Oakville and the Credit, the Government is more immediately interested in consequence of public money being invested in them. They require no particular observation, except that the usefulness of the latter Port and the revenue from it, are very much lessened from the want of a proper road from Cooksville, &c. to the Harbour; the cost of which would be about £3,000. Some necessary repairs have been done at the Oakville Pier.

Credit Harbour. Oakville Pier. Toronto Bay. At the inlet to the Toronto Bay, the sand is evidently making much, and I am of opinion, that at no remote period some work must be encountered to fix and preserve such an entrance as the rapidly increasing trade of that important city will require. Some trifling repairs have been made at the Queen's wharf, near the extremity of which are a few stones in the channel that should be removed.

The next work is at Windsor Harbour where a Windsor Harbour very extensive Breakwater has been constructed, and two Piers built. Within this Breakwater is enclosed a capacious Basin of about 120 acres in extent, and into which two considerable streams discharge. The Piers are on each side of the natural entrance, and the Breakwater by preventing the stream from spreading over the whole extent of beach, as formerly, and by confining it within the Piers, has created a current that will be very serviceable in keeping the entrance clear. No indication whatever to deposit in the channel, is evinced, although the beach is making rapidly in front of the Breakwater. When the Piers are run out about 200 feet further, and some dredging done, this will be found to be an excellent Harbour for steam and sailing craft. It is not considered advisable to dredge much until the Piers appear to have settled well down.

When speaking of the Harbours of Lake Erie, the description which I gave, and the observations I made upon the artificial Harbours created by Piers on a straight coast, with much shingle in motion along it, apply strongly to the Harbours of Port Hope and Port Hope. Cobourg, but especially to the latter.

At this Harbour (Cobourg) a great deal of expenditure has taken place, not provided for by the Appropriation Act, but authorized by the Executive, as indispensable, to prevent the utter demolition of the work which had been previously executed, and towards which a considerable loan of public money had been made, and, as being also absolutely necessary to keep up the communication of the country. The payment of the interest, upon, and the re-payment of the money thus advanced have been made a first charge upon the revenue of the Port, and is thereby well secured.

The work has been done in a substantial and permanent manner, and has withstood the very violent storms of the past season, without injury. From a letter received from Mr. Bethune (the extensive steamboat proprietor) I quote the following:—

" At Cobourg, if the Harbour was once dredged out, and the small stream turned to the West of the West Pier, I have no doubt it would be one of the best upon the Lake (with Capt. Sutherland's Piers) and that it would not fill up; so far there appears as much water as when the Piers were finished."

The Piers alluded to were proposed by Capt. Sutherland to be constructed outside of, but unconnected with the present Piers; but I am very dubious that their construction would prove beneficial as that gentleman supposes.

PRESQU'ISLE HARBOUR.

Nothing has been done here, but a very moderate outlay is required, and would be productive of great benefits; part to be expended in the construction of a landing wharf near Brighton, the remainder in a manner that will be denoted hereafter under the head of Light-houses.

For general navigation purposes, the great want on the Canada side of Lake Ontario, between Long Point (or Point Peter) and Toronto Harbour, a distance of 126 miles, is that there is no Harbour of Refuge, into which a vessel can with safety run, in a gale of wind. This coast is to the Canada Trade a lee shore for much the greater portion of the season. The Harbours of Port Hope and Cobourg, however useful they may be as shipping places, are only such, and hold out no inducement to a vessel making for them with the wind blowing heavily in any quarter between the South-east

round by South, to the South-west, and but little safety to vessels, lying in them with the wind blowing hard from the Southward. In this respect, from the extent of the inner basin at Windsor, the Harbour there, when completed, will be much superior.

Gull Island reef.

Between the Ports of Cobourg and Port Hope, a distance of about seven miles, the reef called Gull Island is situated, on which a light-house is erected. It is about a mile and a half from the shore, distant from the former four miles, and from Port Hope about three miles. This reef is of great extent, with but very little water on it, not exceeding two or three feet for a considerable length. It is crescent shaped, with its horns towards the shore, between which and the reef, there is, as I am informed, good water and anchorage. If this description is a true one, the construction of a Breakwater on it would be simple and attended with but little expense; and if effected would create a valuable Harbour of Refuge about midway up the Lake, and would serve as an outer harbour, or safe offing for the Ports of Cobourg and Port Hope.

A breakwater recommended.

Roads leading to Harbours.

ROADS LEADING TO HARBOURS.

Rondeau Road.

Of the Roads leading to Harbours, the works of that leading to the Rondeau are in progress, and will be completed next season.

Port Stanley Road.

The Road leading to Port Stanley is finished, and for the Revenue to be expected from it, see the superintending Engineer's Report, (Appendix Letter A.)

Port Dover Road.

The Road from Port Dover to Hamilton is nearly completed, but this will be treated of under a distinct head.

Rice Lake and Lake Scugog Roads.

The progress made with the Road from Windsor Harbour, as well as with that from Port Hope, forming a communication between Lake Ontario and the internal navigation, has already been described.

Light-Houses &c.

LIGHT-HOUSES, BUOYS, &c.—LAKE ERIE.

Under this head is stated what has been done, and also is recapitulated a number of further details of the same nature, which are indispensable for the safe navigation of the Lakes, and for many of which repeated petitions have been presented by Mariners and other parties connected with the shipping interests. Upon this subject Capt. Sandom reported in 1841—

Capt. Sandom's report on the Light-Houses on Lake Erie.

"I deem it a duty to bring to His Excellency's notice, that a general dissatisfaction pervades all the maritime classes who navigate the Lakes, as well as those interested in the shipping interest of the Country, in consequence of being forced to pay a special Tax for Lights, when there are none where they are most required, and those which do exist are so badly kept up as to be worse than useless, tending from their imperfect state to lead the Mariner into danger rather than to preserve him from it. I allude particularly to the Light upon Point Pelée Island, and could not help drawing the comparison between the British and American shores. On the latter, I found good Lights and Beacons at all parts, and excellent Ports, well lighted, without any Tax being imposed upon the navigation, while the British navigator pays a Tax expressly for that which he has not."

Much has been effected during the short time which has elapsed since the control of these works has been placed on the Board of Works.

On Lake Erie, a Light-house has been built at Long Point, shewing a first class Light; the importance of a Light in this position, is as great as that of any other in the Province.

Long Point Light-House.

A floating Light, upon a suitable substantial Vessel, has been placed off Turkey Point for the benefit of the navigation of "the cut" near it.

Floating Light off Turkey Point.

The Light at Port Stanley has been improved, but until the Harbour is completed, it cannot be placed on a permanent footing.

Light at Port Stanley.

The Works now required are,—On Lake Huron, a Light-House at Goderich. On Lake St. Clair, a Light-house on the River Sydenham, and a leading Light at the mouth of the Thames. On Lake Erie, are required a House for the Keeper of the Light at Pelée Island. A good and well moored Buoy at the extremity of Point au Pelée shoal; this would be of great importance, and, from the distance to which this shoal runs out, it is absolutely necessary that the Light on Point Pelée Island should be of such a description as to be perfectly distinguishable from any other. A Buoy at the extremity of the shoal, which runs about a mile East of Long Point Light-house, would be of great service to vessels making for the anchorage of Spithead, with a heavy sea down the Lake, and at the anchorage of Spithead, three Buoys are much required to define it.

Light-Houses required on Lakes Huron, St. Clair, and Erie.

A buoy recommended for the extremity of Pt. Pelée shoal, and of that at Long Point.

A first class Light on Mohawk Island is now indispensable, from its proximity to Port Maitland at the mouth of the Grand River, which, next spring, will be the outlet to the whole trade up the Welland Canal. It would also be of infinite advantage to vessels plying between Port Colborne, Port Maitland, &c., and Port Dover, or any of the Ports on that part of the Lake, as it may be said to lie in their direct course, and a very long and dangerous reef extends from the Island, upon which a vast deal of property has been lost. Such a Light, with the Pier Light at Port Maitland, would add greatly to the safety of navigating that part of the Lake. The Light at Mohawk Island should be a revolving one; the lesser annual consumption of oil, &c. in revolving Lights, compensates for the greater first cost, which may be set down at between £80 and £100. A Beacon on this shoal also would be desirable.

A first class Light required at Mohawk Island.

The Light to be a revolving one.

When Port Colborne is completed, the Light there must be much improved.

On Lake Ontario.—The Light at Point Peter (or Long Point) has been converted into a revolving one, to distinguish it from those at the Ducks and Presqu'isle.

Light at Point Peter changed into a revolving one.

The chief details required on this Lake are, a Keeper's House for the person in charge of the Light at Toronto Harbour.

Works required at the Light-Houses on Lake Ontario.

Some expenditure upon the Gull Island Light-house, to render it more habitable for the Keeper.

Gull Island Light-House.

A House and second class Light upon the Scotchbonnet Island, near Nicholson Island, there is a shoal running to a long distance, to the South of it, upon which the breakers shew themselves in heavy weather; the establishment of this Light would add much to the safety of the navigation of that part of the Lake. It should be colored.

A Light-House required upon Scotchbonnet Island.

At Presqu'isle, a small colored Light on the end of Salt Point is very much required to enable vessels to take that Harbour in dark nights; and a Buoy on the North East end of the Bar outside, together with a

A small coloured Light required at Salt Point.

small landing wharf within the Harbour, are absolutely necessary.

2 buoys recommended at Snake Island, and a small colored Light on the Kingston shoal.

The placing of a couple of Buoys at Snake Island and the establishing of a small colored Light on the shoal in front of the Market buildings, would be of great advantage to the vessels entering the Harbour of Kingston.

When the Canals of the St. Lawrence are completed, sundry improvements will be required in the lighting and buoying of the River, between Kingston and Lake St. Francis.

Lancaster Light.

On Lake St. Francis a Light-house has been built by the Board of Works, for the guidance of the Packets touching at Lancaster with the Mails, at the entrance to the Gut, or channel leading to that Port.

A Light required near Crabbe Island.

The establishment of a Light near Crabbe Island, and the mooring of five or six Buoys, so placed as to indicate the shoals, as well as the bend in the direct deep channel down this Lake, should be authorised so as to be ready by the opening of the Beauharnois Canal. It is possible that the point which creates the Bar alluded to may be easily dredged off, but this Light would still be required.

Although the short turn in this Channel, has been perfectly known for many years to almost every Mariner on the Lake, no necessity whatever existed hitherto for dredging off the point which causes the bend, inasmuch as over it, in its natural state, the water was more than sufficient for every boat loaded to the depth to which they were confined by having to take the Rapids down; but as on the completion of the Beauharnois Canal a larger class of craft will no doubt be adopted, the necessity for these improvements is now urgent.

A Light required on the pier at Grosse Point.

On the Pier at Grosse Point, a Light must be erected, which, with the Light at Lancaster Channel, that proposed at or near Crabbe Island and the Pier Light at the head of the Beauharnois Canal, will, together with the Buoys, make the navigation of this Lake certain and safe.

Lake St. Louis.

Lake St. Louis.—On this Lake, between the head of the Lachine Canal and the termination of the Beauharnois Canal, besides a Pier Light at each, a good light on the Point of Isle Perrault is required. If, in addition to these, a Channel is obtained across the Bar off Isle St. Bernard, (Nun's Island,) and marked with a coloured Light, either on a Vessel or Caisson, as may be found most expedient, and some Buoys laid down, this part of the navigation will be rendered comparatively certain and safe at all times. To render the portion of it at St. Ann's equally so, all that is necessary is the work reported about twelve months back, and for which, prior to the prorogation of Parliament, an appropriation was about to be asked. The work consisted of the erection of a small light on a part of the point nearly opposite Point de la Baie Dolphy, from which, by excavating a Channel across the Shoal at Point de Brussy, the course would be up to the Lock on the Isle Perrault side, thus avoiding all the rocks and intricacy of the Channel on the north side. The removal of the projecting Rocks in the Channel above the Lock, to which I had the honour of drawing the attention of the Executive long since, is also very much required.

Superintendence &c. of Light-Houses.

Before I leave the subject of Lights, I think it necessary again to draw His Excellency's notice to the mode suggested in an early part of this Report, for the supply, superintendence and repairs of the Light-Houses, Buoys, &c.

Until the present year, in which their control has been transferred to this Department, the manner of supplying Oil was this,—A Merchant being agreed with as to price, permission was given him to import it free of the heavy duty which is imposed on Oil. The Oil was delivered at the Light-Houses by him; no efficient check, nor indeed any, was had as to the exact amount so delivered. In most of the Houses the Oil was kept in the barrels, and much loss incurred thereby. The Oil this year was furnished to the Board of Works by contract, delivered at Kingston; a Vessel was chartered and given in charge to Capt. McIntyre for the purpose of his serving out the supplies, and at the same time making a general inspection of every thing connected with the Lights, and effecting as much improvement or reform as possible. Having provided new tin Butts of uniform size, gauged and marked so that the several keepers could, at a glance, ascertain the stock on hand, Capt. McIntyre found, immediately on discharging some of the barrels, that the quantity in each was far short of what it was rated at; finally it was ascertained that there was a deficiency of two hundred and fifty-six gallons. In other instances, where Tin Butts had been formerly provided, it was found they also did not contain the quantity supposed. In one instance, a vessel rated at one hundred and twenty-five gallons was found to hold but eighty-three. On board the Vessel were Mechanics, by whom a great deal of the necessary repairs was effected, promptly and cheaply; and after the supplies were all served, it was found that, independent of the saving in repairs, a saving was effected by the course taken of upwards of £500.

Method adopted by the Board of Works.

Saving effected this year.

The Lamps and Reflectors formerly were of a very bad description, and no two Houses being supplied with Lamps, Reflectors, Glasses, &c. &c., of the same pattern, a vast deal of trouble and loss is incurred. Very many of these Lamps are now past use and undeserving of repair, and upwards of seventy new ones are required; I would therefore take occasion respectfully to recommend strongly, that authority be given to provide the necessary Lamps, a list of which, as well as of other matters, is given in the Appendix (Letter S.) That these Lamps should be of the best kind; that they, as well as all the fittings, reflectors, glasses, heaters, wicks, &c., should be of the same patterns and description, and that a few Lamps and Reflectors, (say a dozen) extra, should be provided, so as to be ready, in case of accidents, at all times.

Authority to provide lamps asked for.

No outfit, however perfect, nor system of arrangement, however well conceived, will be available, if the Keepers do not do their duty faithfully and strictly. To ensure this so great desideratum, (when the amount of life and property depending on it is considered,) I would strongly recommend that in future Light-House Keepers should be appointed exclusively from the naval class, who are more fully aware of the necessity for the strictest possible attention; it should also be perfectly understood that any neglect on their part, when detected, would be visited with immediate dismissal. No main Light-House should, I conceive, be permitted to be kept by Deputy. In the case of that at Point Pelée Island, of which Capt. Sandom complains, and with which, to the present day, the greatest dissatisfaction is felt, a reasonable sum is allowed by Parliament as salary for a Keeper; this person lives not on the Island, but on the main land, several miles away, and the duty is done (most inefficiently) by a man hired at a small sum, having a farm on the Island, about three miles from the Light-House. It was lately reported to me by the Captains of three Vessels, that having been obliged, by stress of weather, to run for this Island, they made it with great difficulty, owing to the miserable state of the light, with which they were so much struck that they went on shore and forced their way into the

Light-House keepers to be appointed from naval men exclusively—No deputy should be allowed.

Point Pelée Light-House Keeper instanced.

Light-House, when they found some of the Lamps out, and those that were burning filthy and untrimmed, and it was evident that after being lighted the evening before the House was shut up and no further care taken of it.

Loss consequent on neglect of Keepers.

Neglect of this kind, besides the calamities of which it might be the cause, is attended with very great expense; the Burners and Reflectors being very speedily destroyed.

A great deal has been done by Capt. McIntyre, during his tour of Inspection, in the repair of the Lamps, in arranging them better, improving their ventilation, refitting of Lightning Rods, &c., and a number of other details not necessary to enumerate here.

General repairs required.

The whole of the Lanterns require to be painted inside and outside; Wood-work generally also to be painted; all this should be done every year; the stone Towers would require pointing; but in the Appendix (Letter S.) will be found a statement and approximating estimate of the works of this nature required next season.

Roads and Bridges.

ROADS AND BRIDGES.

I will first proceed to shew what has been done upon the line of the main provincial highway throughout from Sandwich to Sarnia, its termination on the western frontier of the Province, to Quebec a distance of about 800 miles: showing also as I proceed seriatim, from west to east, the principal bridges which have been built on it, and the bridges or other works which are most required, so that the determination of the Legislature may be expressed thereon.

SARNIA AND LONDON ROAD.

Sarnia Road.

The works of this road contemplated and provided for by the appropriation Act are completed, the road being well cleared, drained, graded, and bridged. About seven miles of this road being through a light unfixed sand, are very heavy and much complained of. Petitions have been forwarded to the Executive Government for the planking of this road, and for that of this portion particularly; they represent that the intercourse with the Town and Harbour is such that a moderate toll upon the road would pay for its maintenance and interest on the outlay which would be about £2,500. At the other termination also, from the Town of London to where it crosses the main Goderich road, a distance of four miles, on which a large bridge is built over the Thames, no tolls can, in the present state of the road, be collected either on it or the bridge, but if these four miles were planked or gravelled, a moderate toll could be laid on which would certainly and amply pay for the maintenance of the bridge and road, and the interest on the outlay thereon.

Planking of certain parts prayed for.

Advantage to be derived from planking 4 miles from London.

SANDWICH AND CHATHAM ROAD.

Sandwich and Chatham Road.

This road terminates the main provincial road at the Town of Sandwich, the Capital of the District, and on the frontier opposite to Detroit.

At about 12 miles from Sandwich, a branch of 16 miles in length leads to the Town and Barracks of Amherstburg.

Will be completed next year.

The works of this road with its branch are all under contract and are progressing satisfactorily and will be completed early next year. It passes almost entirely over the table land of that part of the country, which prior to the commencement of the necessary drainage for the road, was so flat and wet that the lands in the

line of it, although good and taken up, lay waste; their drainage being beyond the means of the individuals, who are now, however, rapidly settling upon and improving their lots.

This termination of the main road would be complete if the road from Sandwich to Amherstburg were improved, and bridged, the cost of which would not be much.

Improvement in the Road from Sandwich to Amherstburg required.

CHATHAM AND LONDON ROAD.

The works of this road may be said to be completed, so far as was contemplated by the Act of Appropriation; it is well cleared, drained, graded and bridged throughout. As in the case of the Sarnia road, numerous petitions have been presented, urging the planking of it, necessary, as they state, from the deep and rich nature of the soil through which it principally passes, and without which it is said the road will in a very little time, be impassable. I have already, elsewhere, represented the necessity for the Legislature's determining from what funds the foregoing roads, (upon which, in their present state, I presume, tolls cannot be collected) are to be maintained.

Chatham and London Road.

Planking prayed for.

A bridge, 650 feet in length, in the line of this road over the Thames, at Delaware, is completed in a manner very creditable to the Overseer and to the Contractor. For proposed tolls on this bridge see Appendix (Letter B.) The bridge at Chatham is in a very decayed state, and part of it is carried away. Surveys have been made of the adjoining portions of the river, to ascertain whether, when a new bridge comes to be built, it should be upon the old site or elsewhere; but the information as yet received is not sufficiently full to enable me to venture an opinion with confidence as to whether the site should be changed or not. The cost of a substantial bridge here with a draw-arch would be about £2,000.

Bridge over Thames at Delaware.

Chatham Bridge.

BRANTFORD TO LONDON.

The works of this road are completed, several bridges built, the toll-houses erected and nothing but the fixing of the rates and the authority to exact them by the Legislature is necessary to the collection of the tolls. The probable present average rate of travel and of the probable revenue is shewn in Appendix (Letter A.) This road is 57½ miles long, 38 miles of which are planked and 19 macadamized; the former is blinded by about an inch of fine sand, the latter by the screenings from the gravel pits. A good deal of material is deposited along this portion for its repair.

Brantford Road.

BRANTFORD AND HAMILTON ROAD.

The entire line of this road, with the exception of about ten miles at the end has long since been completed by Commissioners under the authority of the Act.

Brantford and Hamilton Road.

This road is of vast importance not only to that section through which it passes, but also to the whole of the Province, to the westward of it. Its value, and the revenue from it, are however, seriously diminished, in consequence of the part left unimproved.

This part, called the Grand River Swamp, is probably the very worst portion of road in the Province. The improvements, when decided on, would be partly over the old road and partly a deviation from it. The survey has been made by the staff employed on the London roads, and the estimate, amounts to £10,000.

Cost of the improvement of the Grand River Swamp Road.

The following is a statement of the receipts on this road for the last two years—

1843.....	£1,460	1 9
1844.....	£1,749	12 4

HAMILTON TO TORONTO.

Road from Hamilton to Toronto.

On this part nothing has been done by the Board of Works, but a portion of it, about 16 miles, were macadamized under Commissioners by the Act 3 Will. 4, chapter 37, and upon it, tolls are now being levied, of which the following is a schedule of the amounts collected—

In 1842.....	£1,458 17 10
“ 1843.....	1,961 14 6
“ 1844.....	2,144 11 7

Repairs required on the unimproved portion.

Between Hamilton and the termination of the portion just described, the road crosses some extremely bad and dangerous ravines, which much require amendment, but no authority has been given for the making of any survey or estimate.

TORONTO TO KINGSTON.

Toronto to Kingston.

The only improvements which have taken place on this part of the road are those undertaken by Commissioners under the Act 3 Will. 4, chapter 37.

From Toronto, for about 18 miles, the road has been in part planked, and in part gravelled. Some bridges have been built, and some hills lowered. The tolls levied were in

1842.....	£1,918 15 5
1843.....	1,624 16 0
1844.....	1,486 19 3

Kingston and Napanee Road.

Again, at the other extremity, under Commissioners similarly authorised, the road between Napanee and Kingston, has been macadamized. The tolls levied on this road, were in—

1842.....	£1,529 19 7
1843.....	1,707 3 10
1844.....	1,453 13 4

Rouge Hill.

Among the improvements required between Toronto and Kingston, the foremost is that of the “Rouge Hill,” which may be fairly said to present an absolute barrier to the communication of that section of country. Passengers by the mail are frequently obliged to walk, up and down it, to their knees in mud, and it is at very considerable risk (especially in frosty weather) that the empty stage can be got past it. The estimate for the necessary improvement of it, and of the bad places in its vicinity is £6,500.

Cost of improvement.

Bridge over the Moira at Belleville and over Salmon River at Shannonville.

At Belleville, the bridge over the Moira on this line, is in an impassable state. Some time back by order in Council, I had a plan and estimate prepared; the estimate amounts to £1,500. East of Belleville also at Shannonville a bridge is required over the Salmon river.

Kingston to Montreal.

KINGSTON TO MONTREAL.

Cascades Road completed.

The parts of this portion of the road which are improved are from the line between the former Provinces of Upper and Lower Canada to the Cascades Landing, the greater part of which, in the state of the navigation of the Saint Lawrence hitherto, was a portage road of considerable importance. The works of its drainage, forming and grading and the planking of that portion between the Coteau and the Cascades, are completed, and it only remains for the Legislature to fix and authorize the levying of tolls upon it. At the

Montreal end, about 9 miles have been macadamized under the Commissioners appointed by an order of the Special Council.

The part most deserving of improvement is that between the Cascades and Saint Anns. Near to the former is a deep ravine, with a precipitous hill on each side of it; and the Bridge over it is in a very decayed and dangerous state. A few pounds have lately been expended in propping it up for the present, but it is entirely beyond repair, and cannot be considered safe after the winter. The portion of the road over the upper end of Isle Perrault is also very deserving of attention. It is the direct road between Canada East and West, on the close of the navigation and prior to the opening of it. It is in a very rough unformed state, and a very moderate sum would render it what it should be, as well as improve the Pass over the Ravine above alluded to.

Improvement required between Cascades and Saint Anns.

Road over the upper end of Isle Perrault requires repairs.

MONTREAL TO QUEBEC.

Montreal to Quebec.

At the Montreal end, the Road has been partly macadamized and partly planked to near the Bout-de-l'Isle, by Commissioners acting under the authority of the order of the Special Council just quoted.

The large and expensive Bridges over the Bayonne River, over the three branches of the Saint Maurice, over the Batiscan, and over the Sainte Anne de la Perade, are completed. What remains to be done, and is most deserving of notice, is,

Bridge over the Bayonne River.

The building of the three Bridges at the Bout-de-l'Isle, two of them over branches of the Ottawa, and the other over l'Assomption River. The reason why these Bridges have not been built is explained in my last report. The cost of constructing them upon the principle of their being carried by stone piers and abutments, and of having the main-bridge over the raft channel, (of 300 feet span,) a chain arch will be about £24,277 0 0, of which £9,777 0 0 is already provided and available, requiring, therefore, an additional sum of but £14,500 to effect the improvement.

Bout-de-l'Isle Bridges.

The Bridge at Jacques Cartier is also in a very dangerous state, and a new one is loudly called for, which should be built at about 300 yards more down stream than the present one, in order to avoid the precipitous and sliding hills which form the approach to it.

Bridge over Jacques Cartier.

The very steep approach to the Cap Rouge Bridge from Quebec, is also deserving of attention.

Cap Rouge Bridge.

The various works still required on this main line of Road, and which are enumerated in the foregoing, are not submitted with the expectation, that the Legislature would in the present state of the Finances of the Province, undertake the outlay consequent upon their general construction, but with the view of their selecting (if so disposed) those which may, in their estimation, be most necessary; and also with the desire of having them considered in connection with the very many projects, which will, no doubt, be brought under its notice during the present session.

Having thus concluded my Report upon the works of the Main Provincial Road from Quebec to Detroit, I shall now proceed to report upon the Main North Road from Toronto to Lake Huron, at Penetanguishene, connected with which in the appropriation, is the Coldwater Portage Road and Narrows Bridge. The two latter works have been finished. The former has been necessarily allowed to lie over for the decision of the Legislature, as the course proposed by the late Ministry to be taken with it, involved a necessity

Main North Road from Toronto to Lake Huron.

for a change in the appropriation. The proposition to be submitted by them to the House for the completion of this highway, was to finish, from the part completed by the Commissioners to the Holland Landing, (in a manner corresponding with that of the remainder of this line to Toronto;) and from the landing to Barrie and Penetanguishene, to effect all that is absolutely necessary in drainage and formation, and the lowering of some hills. This was considered a better course than to leave the northern portion of the Yonge-street Road undone, and could be effected together with some improvements much required in the Holland River, to enable the steam-vessels to get up to the town plot; and also some dredging required at and above the Narrows Bridge, by an addition to the appropriation of but £6,500.

PORT DOVER ROAD.

The large bridge on the Grand River, at Caledonia, on the line of this road, is finished: the main frame of it has been cased in, capped, and white-washed, which will add considerably to the durability of the Bridge.

This road, although nearly finished, and quite available from Port Dover to the top of the mountain, the limits of the town of Hamilton; must, nevertheless, be considered as very imperfect. The descent of the mountain, in its present state, is such, as to form an insurmountable barrier to the traffic which would otherwise be established on this road, and of course must affect most injuriously the revenue to be derived from it; in fact until it is extended to the shipping place on Burlington Bay, the object for which it was undertaken, namely to be a direct Portage Road, from Lake to Lake, will not be accomplished. I wish, however, to be understood to mean only the making of the Road, from the top of the mountain to the town proper, and from it to the Landing, not including the streets. The sum necessary to complete the Road and build Toll-houses, is.....£ 6,500 0 0
The total amount expended has been. 36,731 5 10
Over expended..... 3,397 9 2

Out of this, the cost of the Caledonia Bridge, £3000, should be deducted, it not being included in the Dover Road originally.

From the foregoing statement it appears that the appropriation has fallen short of completing the road from Port Dover to the Town limits of Hamilton, by the sum of £3,397 9 2, notwithstanding that the strictest economy has been observed throughout; the superintendence having cost but a fraction over two per cent. I feel it due to myself and my department to mention here, that this appropriation was not based on any estimate furnished from this office; but in so stating, however, I do not mean to say that there will not be a few cases in which our estimates will fall short. Those cases will be confined to the smaller appropriations, and the over expenditure in these will be satisfactorily accounted for hereafter, and I have every confidence that the gross amount of the cost of all the works estimated for, under the several heads, will be covered by the aggregate amount of the appropriation made for them. I feel certain, moreover, when the extent and magnitude of the works are borne in mind, and the difficulties taken into consideration, which had, from the very beginning, to be encountered, owing to the riots and the delay consequent thereon, it will be admitted that the duties involved in their management and direction, have been well and truly discharged.

The effects of the construction of this road upon the improvement of the country, are already very apparent,

and are thus described by Mr. Shaw, the Superintendent:—

“The Burlington Bay Canal being the only outlet from Burlington Bay to Lake Ontario, it necessarily follows that all the Roads leading to Hamilton, contribute more or less directly to its support; and in this respect the Dover Road will not be wanting, if we may judge from the rapid change in the features of the country, since its commencement. Prior to it, two small fields in the midst of the forest, half-way between Dover and Caledonia, a distance of 24 miles, were the only clearances that existed. The woods are now beginning to disappear, large fields are, in several places, fenced in, and crops of wheat are making their appearance in the heart of, what was twelve months ago, a trackless wilderness.”

Advantages of the Road.

For the probable amount of traffic on this Road, see Appendix, (Letter A.)

PORT STANLEY ROAD.

Upon this Road the Engineer reports,—“It is completed, and the inhabitants are deriving a great benefit from it, Toll free. When the Tolls are levied the Road will pay well and renew itself from the income when it is worn out. The blinding with sand answers admirably and makes this a most delightful Road. Some slides have taken place, and partial settlements in the newly formed embankments, which will be rectified before the close of the season. The Toll-houses are all built, and every thing is ready for the levying of Tolls.”

Port Stanley Road.

It may be well that I should here allude to a proposed work in this section of Country, which has several times been brought under the notice of Government. I mean the improvement of Otter Creek so as to render it navigable for Barges. The surveys and Reports which I have seen, describing the nature of this Creek and the facilities or otherwise of making it navigable, are so indefinite and so wholly unsatisfactory as to levels, &c., that I cannot presume to give any opinion in detail upon it; but I very much doubt that in dry seasons it would be found sufficient to supply any class of navigation. I passed across the bed of this Creek in the summer of 1843, and there was not then a single drop of water going down it: at all events, until sufficient means are furnished to construct the Harbour at Port Burwell, the consideration of the improvement of “the Otter” must be premature.

Otter Creek.

DUNNVILLE BRIDGE.

The duration of this Bridge, as reported by the Engineer, cannot be reckoned on for more than two years from this date; the stringers and all the principal framing of the Bridge being decayed, almost to the heart.

Dunville Bridge.

THE KENNEBEC ROAD.

Many portions of this important High-road from Quebec to the State of Maine, &c., are in a very bad, almost impassable state. The part of it through the United States Territory has undergone much repair and is now in good order, which renders the repair of the Canada section the more necessary. The erection of a Bridge over the Etchemin is also highly desirable, whether as regards the convenience of those travelling by the Road on the South side of the St. Lawrence, or by the Gosford Road; or for the extension of the Kennebec Road, directly down to the Ferry, at New-Liverpool.

Kennebec Road.

Bridge required over the Etchemin.

Proposition for charge of the appropriation.

Port Dover Road.

Caledonia Bridge.

Estimate exceeded.

THE GOSFORD ROAD.

Gosford Road.

This Road is now fully opened and becoming daily a line of increased travel and importance; but unless some system for its maintenance and repair is devised, it will soon become impassable in several parts.

Although no other works immediately connected with the Eastern Townships, but those of the road I have just spoken of, have been authorised by the Legislature and constructed under this Department, the public attention which has lately been drawn to this section of Country, makes it necessary that I should refer to some of the projects which have, from time to time, been brought forward with a view of facilitating the intercourse with it, opening the communications through it, and thereby giving an impetus to its improvement and the development of its productive capabilities and resources.

Projects of improvement connected with Eastern Townships.

Among these projects may be mentioned generally, the building of some Bridges over its principal Rivers, the St. Francis, &c.; the improvement of the River Yamaska, with a view towards making it navigable; the construction of a Canal from Missisquoi Bay across to the River Richelieu, below the Isle-aux-Noix; the extension of the Planked Road from Chambly *via* St. Mary's, St. Cesaire, to Granby; the planking of the Road from near Stanbury upper mills, where the Road from St. Armand East intersects the Stanstead stage Road, on the nearest and most favorable course to Jones' Bridge on the Richelieu.

The works proposed mostly of a local nature.

From the nature of the navigations proposed, however useful they might be in their *immediate* vicinity, I cannot consider them as works likely to affect advantageously the interests of the Townships *generally* to any great extent; nor do I believe that the Revenue from them would be proportionate to their cost. The proposed improvement of the Road from Jones' Bridge on the Richelieu, mentioned above, would, I conceive, answer all the proposed purposes of the Missisquoi Canal, and would afford generally more advantages to that (the South-western) section of the Townships; still the benefits to be derived from it would be, comparatively, but very local.

Railway thro' the Eastern Townships to the Frontier.

It appears to me the greatest boon that could be conferred on the Townships, and from which the greatest amount of general Provincial good could be derived, would be the opening by railway of a main-highway from Montreal, the capital of the Province, as much through the centre of the Townships as its proper direction and the formation of the Country will allow, to the American frontier, there to fall in with such line of railway as may be adopted through to Boston.

Until the practicability of some such a work, its precise line, cost, &c., are ascertained, and the disposition of the Legislature, as to how far it would further this main work, is declared, I would not recommend the expending of money upon the several smaller and local works; for if the main trunk should be decided on, the nature and direction of all the minor works should be regulated by it.

THE KEMPT AND GASPÉ ROAD.

Kempt and Gaspé Road.

The works on these Roads, for which the appropriation of £16,666 12s. 2d., currency, was made, have been all completed in a manner very satisfactory to this Board, and creditable to Mr. Russell, the Superintendent, who has displayed much judgment and skill in their management throughout.

I cannot better give a statement of what has been done on these Roads, and what is still required to meet

the wants of that section of the Country than by transcribing Mr. Russell's last Report of the 23rd November ultimo, in which are also contained some suggestions for the maintenance of the Road, very deserving of attention.

"The works on which the appropriation of £15,000, sterling, has been expended, are—

Division of the work embraced in the appropriation.

"First.—The improvement of the Kempt Road 97½ miles in length, commencing at Point au Snellez near Metis, on the South shore of the St. Lawrence, 204 miles below Quebec, and terminating at Cross Point on the Restigouche.

Kempt Road.

"Second.—The opening and making of the Grand Nouvelle Road along the Restigouche, from the Kempt Road to Grand Nouvelle on the Baie des Chaleurs, 29½ miles.

Grand Nouvelle Road.

"Third.—Detached small works on the Baie des Chaleurs Road, between Grand Nouvelle and Port Daniel, viz., the making 1½ miles of Road at Cascadia and 1¼ miles at Bonaventure. The building of Little Port Daniel Bridge; the rebuilding of McNeil's Bridge and the repairing of East Nouvelle Bridge.

Works on the Bay of Chaleurs Road.

"Fourth.—The making of a Road from Port Daniel to Grand River, 28½ miles in length.

Road from Port Daniel to Grand River.

"Fifth.—The building of three Bridges between Grand River and Percé.

Bridges between Grand River and Percé.

"The Kempt Road was formerly, with great difficulty, passable in the driest weather with carts very lightly loaded, for twenty-four miles at the north end. Eight miles of it also at the south end was passable for a cart; the remainder of it could be travelled on horseback, excepting twelve and a quarter miles where there was *no Road*, and a foot Passenger only could travel.

Kempt Road.

"Though the money available for this Road was less than the half of what was calculated to complete it, by carefully distributing it in larger proportions on the worst places which are now the most perfect, and opening eighteen miles of new Road, it has been rendered *thoroughly passable* for wheel Carriages, and all the Rivers bridged in the most substantial manner.

"Of the Bridges built, that over the River Matapedia is two hundred and three feet long and twenty-one feet high; the one on the River Camsascal is two hundred feet long and nineteen feet high; one on the River St. Pierre one hundred and thirty feet long and thirteen feet high; one on the River Assametquagan two hundred and seventy-four feet long and fourteen and a half high; and there is another, one hundred and fifteen feet long and nineteen feet high; besides which, there are thirty-four lower Bridges of from sixty to two hundred feet long.

Bridges.

"Though this has been made much better than was contemplated for the means, still there are many parts of it where improvement would be highly advantageous, in forming it more thoroughly, and in making some alterations in the site to reduce ascents. To make this Road thoroughly good, of its present scale of dimensions, a further expenditure of £1224 6s. would be required. And also, as the sum of £750 was spent on the Road work of this line, more than was contemplated in the reduced estimate, for my guidance, the building of a Bridge over the River Metis (a) was necessarily omitted, which will pro-

To Expenditure required to make the road thoroughly good.

(a.) Should a Road to Matanne be opened, this Bridge will be doubly useful, as it is essential to both Roads.

“ bably require a further sum of £450; the total to complete this Road would be £1674 6s.

“ The total expenditure out of the appropriation of £15,000 for this Road is £5514 18s. 0½d.

Grants of land recommended to settlers.

“ As there are seventy-eight miles of this Road between the settlements where there are only two inhabitants, not only should the utmost encouragement be given to induce the settlement of it by giving Land in free Grants of Fifty Acres, (as is elsewhere done on other Roads where it is very much less required,) but it will be advisable to give £20 a year to induce some one to reside near the Assametquagan, Bridge, and as much for a settler near the Matapedia. Without this being done, there will be loss of life occasionally, should travelling increase much on this Road in winter, and the sum of £400 at least will be required every eight or ten years to remove the Bushes and wind-falls, if it be not done by settlers. Another urgent reason for such measures being immediately adopted, is, that this line, which is now thoroughly open to Halifax, (and is six miles shorter than the other mail route by Fredericton and St. John's,) is now and always will be the only safe route for the passage of Troops during war with the United States; but unless it be settled and kept beaten in winter, it will not be serviceable when required.

Road from Indian Mission to Grand Nouvelle.

“ The Road from the Indian Mission to Grand Nouvelle is twenty-nine and a quarter miles long. The opening of it has connected the Road along the Baie des Chaleurs with the Kempt Road. Previously there was no Road along the Canada side for the Mail or Travellers to Quebec; it was necessary to cross over into New Brunswick, and to re-cross again into Canada, which was not practicable at certain seasons, without difficulty and danger.

“ This Road, which had to be made for twenty-eight miles, twenty-two and a half of which was through standing wood, has been thoroughly completed. It is crowned twenty-two feet in width, and substantial Bridges have been built over the Rivers and smaller Streams.

Bridges.

“ Besides the Bridge over the River Grand Nouvelle, two hundred and eighty-two feet long and eighteen feet high, and that on the River Scamenac one hundred and thirty feet long and thirteen feet high; there is one of one hundred and sixty feet long and eleven feet high; another of one hundred and sixty feet long and eight feet high; and thirteen others from sixty to one hundred feet in length.

Expenditure.

“ The total expenditure for this Road is £3893 17s. 6½d., besides the sum of £10 given to assist in opening a Road from it to Dalhousie Ferry.

“ This Road admits of very rapid travelling; since it has been opened, the distance from New Richmond to Cross Point, fifty-seven miles, has been occasionally performed with the same Horse and Carriage in one day.

Cost per mile.

“ The rate of cost per mile (including local supervision) of this Road, without including the cost of the larger Bridges or of the surveying of the Line, is £105 13s. 11½d. Including the larger Bridges, Surveys and all Charges, it is £138 14s. 2½d., though Provisions and Labour are fifty per cent. higher here than in any other parts of the Province generally. Of this Road four miles more had to be made than was provided for in the original estimate, which, at an average cost of £109 13s. a mile, (being in

woods,) gives additional work to the value of £436 5s.

“ The detached works performed between Nouvelle Works between Nouvelle and Port Daniel, are the making of 1½ miles of Road near Cascapedia, chiefly through Indian Lands, Daniel, cost £84 17s.

“ The making of 1½ miles of Road near Bonaventure, which was impassable, cost £117 10s. 6d.

“ The building of a Bridge over the Little Port Daniel River, one hundred and sixty feet long and eighteen feet high, cost £127 1s. 6d.

“ The repairing of East Nouvelle Bridge, three hundred and fifty-two feet long and twenty-four feet high, £39 1s.

“ The rebuilding of McNeil's Bridge, one hundred and fifty feet long and thirty feet high, cost £64 4s. The total being £452 19s. 7d. or £13 7s. 5d. under the estimate, though the repair of the East Nouvelle Bridge was not provided for in it; and a more substantial and costly Bridge was built at Little Port Daniel than was provided for, making additional work to the value of £133 1s. 6d.

“ The next work in succession is the Road from Port Daniel to Grand River, twenty-eight and a half miles in length. Road from Port Daniel to Grand River.

“ This Road connects the Counties of Gaspé and Bonaventure. Before it was opened, the County of Gaspé with a population of 6,000 souls had no Road to any other inhabited Country. Effects of the improvement.

“ The ground over which this Road passes presents every obstacle and source of expense in a very great degree, much of it being very rocky, swampy and uneven. It has been made as good a Road as can be without being macadamized, owing partly to the hard materials of which it is made. The width of crowning is twenty-two feet, and the Bridges are all built in the neatest and most substantial manner. The principal are—

“ The Little Pabos Bridge	400 ft. long & 14½ ft. high	Bridges.
“ Days Brook	234 “	13½ “
“ L'Ance or Canard	124 “	13½ “
“ L'Ance or Chaloupe	102 “	12½ “
“ Fahres Brook	132 “	9 “
“ Outlet	112 “	7½ “

“ with six others from sixty to one hundred and ten feet in length.

“ Of the 28½ miles of this road 19 were made through standing wood, and although the ground was so very difficult, the cost for road work, including small bridges, and the cost of local supervision, (omitting cost of survey) is £124 5 11 a mile; or, including the large bridges and survey (with fruitless explorations in the interior for a better line) the cost per mile is £176 2 9. The total cost of this road, including the local supervision of bridges near it, is £5079 19 0½. Cost per mile.

“ The works between Grand River and Percé, are— Works between Grand River and Percé.

“ The building of a very substantial bridge at Broche a meuson 183 feet long and 18 high, and the making of road at each end to the extent of 36 chains, with heavy side cutting and rock excavation 7 feet deep, cost £186 1 6. This stream was formerly a great obstacle, being fordable only at low water.

Bridge over Little River.

" The building of a bridge over Little River, which was also a great obstacle ; the passage in high floods being often dangerous and impracticable and the ice not to be depended upon in winter. The bridge is 113 feet long and 13½ feet high, and there was a quarter of a mile of road made to give access to it, the cost is £109 3 0.

Bridge over l'Ance-à-Beaufils.

" The building of a bridge over l'Ance-à-Beaufils stream 514 feet long and 14 in greatest height from the bottom, £169 10.

Total cost.

" The total cost of these works is £464 11 9, making a total expenditure on these several works of £15,416 5 11½.

" To which add—

" Value of iron work on hand for Metis bridge. 37 3 0

" Expenses of explorations for Gaspé Bassin and Matanne road..... 49 0 9

" Legal expenses, &c... 10 3 5

96 7 2

£15,512 13 1½

" Add also—

" Amount of my salary charged for surperintendence from 1st May 1842 to 31st May 1844 730 11 0

" Less, part of it covered by discount received from merchants on supplies furnished at my risk..... 206 2 11

524 8 1

£16,037 1 2½

" Add other charges—

" Postage on remittances of money from Quebec. 78 3 6½

" Do of Letters and Accounts..... 50 13 10

" Printing..... 38 16 0

" Stationery 22 14 7½

" Office rent..... 21 0 0

" Expenses of auctions.. 34 19 7

" Travelling expenses from 1st May 1842 to 1st November 1844..... 332 6 8

599 16 5

" Less, proceeds of camp equipage sold..... 5 18 0

593 18 5

" Total charge against the appropriation on account of expenditure by me..... £16,630 19 7½

Explanation of charges.

" Several of the charges above are large owing to circumstances peculiar to the service ; postage on

money, explains itself ; printing and stationery is a large item owing to the work having been taken in upwards of 300 small contracts ; the consumption of fuel and candles was increased by the necessity of working much during the night in a cold building ; my travelling charges were also great, owing to the works occupying an extent of 250 miles in a country where travelling and all other things are expensive.

" The result of the foregoing expenditure is that by the opening through and improvements of the Kempt road 97¾ miles in length and the making of 60 miles of new road along the Baie des Chaleurs, in separate places, the communication is open in summer for carriages from Quebec by the Kempt Road to Halifax and also to Percé ; though some parts of the Kempt Road from being hilly and uneven do not admit of so rapid travelling as on more level ground, and sections more perfectly made ; and there are some parts of the previously existing roads in the settlements that require improvements, viz, 4 miles of rough road near Percé, and an unmade piece near Port Daniel, and some parts at Black Cape.

Advantages of the improvement.

Repairs still required.

" There are also some decayed bridges on the Baie des Chaleurs road ; the most dangerous are, the bridge above Grand Cascapedia, which, with a repair of £30 would last seven years, and the bridge over Caplin River which would cost £69 to renew it. It will soon obstruct the communication, being too large for the inhabitants to build.

Certain Bridges requiring repairs.

" The obstacles between Quebec and Percé are, in the order of succession, as follows—

Obstacles between Quebec and Percé.

" The River Rimouski, which would require a bridge of 645 feet in length ; probable cost £1422 18 1. It is fordable at low water.

" The River Metis requiring a bridge of 360 feet in length ; probable cost £450.

" The River Grand Cascapedia a Ferry of 2040 feet ; it is not fordable at low water : a bridge a little above the Ferry would cost about £1800.

" The River Little Cascapedia, a Ferry of 2100 feet ; fordable at one third tide : a bridge on it would cost £1700, on loaded trestles.

" The River Grand Bonaventure, a Ferry of 2400 feet ; fordable above at low tide : a bridge above the Ford would cost £1500.

" The Great Port Daniel River, a Ferry of 200 feet ; fordable outward at low tide : a bridge within the mouth 500 feet in length, would cost £700, or less, if on trestles.

" The River Grand Pabos, a Ferry of 736 feet, deep with a strong current out and in, not fordable.

" Grand River 330 feet wide at village not fordable, would require a bridge 440 feet long ; cost £550, on loaded trestles, with a grillage under, fixed with piles to the bottom.

" The objects, to which a further expenditure might be advantageously devoted, are, in the order of their importance, or eligibility on account of expense, compared with their utility, as follows—

Objects recommended for further expenditure.

" 1. The making of a road from Percé to Gaspé Bassin and Indian Cone, cost on smallest scale 52¾ miles..... £5649 14 7

" 2. The construction of a road from Metis to Matanne 22½ miles.....	2611	2	9
" 3. Do. of a road from Little River Restigouche, to the mouth of the Matapedia by the Flat lands—half of it to be made, 6½ miles.....	631	10	9
" 4. The building of a bridge over the River Metis.....	450	0	0
" 5. Do. River Rimouski.....	1448	10	1
" 6. Repair of Kenmore bridge.....	30	0	0
" 7. Rebuilding Caplin bridge.....	69	0	0
" 8. Building a bridge on Great Bonaventure.....	1376	8	2
" 9. Port Daniel do	700	0	0
" 10. Bridge over Grand River.....	550	0	0
" 11. Repair of road near Percé.....	362	13	10
" 12. Building a bridge over Little Cascapedia.....	1700	0	0
" 13. Do. Great Cascapedia.....	1800	0	0

" The first items are very important compared with the last.

" Trusting that the foregoing list of work will be considered merely as a comparison and not as a presumptuous suggestion,

" I remain &c.,

(Signed) " A. J. RUSSELL.
" Superintendent."

In a subsequent Report, Mr. Russell, in speaking of the Rimouski and Bonaventure Bridges, states that both would be of inferior utility to the Roads classed before them in the above Schedule, and even less so in proportion to their cost, than a Bridge over the Metis, which could be built at one-third of the expense of either.

Metis Bridge.

From the foregoing, it will be seen that the extension of the Gaspé Road from Percé Point to Gaspé Basin, where the chief settlement of the District is, would be of great importance.

METIS ROAD.

Metis Road.

By this denomination is meant a Road from the mouth of the River Metis (which is at the beginning of the Kempt Road,) along the South shore of the Saint Lawrence to the River Matanne, a distance of twenty-nine and a quarter miles, a survey and examination of which have been made by direction of the Executive.

From Metis to where the settlement called Little Metis joins the Township of McNider, (seven and a half miles) a Road has already been made; to make a Road thence to the River Matanne, twenty-one and a half miles, with the necessary Bridges, &c. would cost £2666 2 9, with the exception of a small portion between the River Tartigouche and the Little Blanche,

the land is good and granted. From the Matanne settlement, in which is a population of about five hundred souls, there is no Road; and beyond the Matanne settlement are some new Townships with excellent Roads.

CROSSE ISLE.

I know of no work in the Province more required than the construction of a substantial Pier at which emigrant vessels can, on their arrival at the Quarantine Station, lie alongside. Crosse Isle.

The majority of the immigrants who are usually obliged to be landed here, are the old and infirm, or helpless females, or young children; and owing to the exposed and rocky nature of the shore, and there being no convenience whatever for landing, they are sometimes landed at the risk of life, but are always subject to be drenched when the Sea is at all rough. A substantial Pier, capable of withstanding the run of the ice and the effects of storms, built in a depth to allow the vessels to lie alongside at low water, having a convenient mode of landing at any time of the tide, and in connection with the shore, which could be withdrawn during the winter, I estimate would cost £2750 Inconvenience felt for want of a proper pier. Cost of constructing a pier.

CHAMBLY CANAL.

The trade through this Canal for the past year has been but very little; a Schedule thereof is given in the Appendix (Letter T). Chamby Canal.

This is attributed by those connected with the trade, first, to some of the rates being too high; and secondly, and chiefly, to the defective state of the navigation below the Canal, now in course of being improved by the works at Saint Ours. Causes assigned for smallness of the trade.

Prior to the rates being fixed on, the Board of Trade of Quebec were consulted on the subject, and the tariff furnished by them, was adopted, except in a few items, which were fixed at lower rates, than those suggested by them. The tariff however should be revised when the subject of tolls upon public works generally is taken into consideration. Tariff of tolls.

To remove some deposits and cover the cost of sundry small repairs, prior to the opening of the navigation, the sum of about £250 will be required. Letter-V. (see Appendix) is a Schedule of the outstanding claims against this work. Cost of repairs, &c., required.

GRAND RIVER NAVIGATION.

This navigation is so intimately connected with the Welland Canal, that it may fairly be considered as forming part of it. The Bridge over the Grand River at Cayuga, about sixteen miles above Dunnville, (the head of the present Feeder to the Welland Canal) is considered the line of division between the Welland Canal and the Grand River navigation. On this portion of the River a certain expenditure has been incurred, in connection with the works of the Welland Canal, in forming a tow-path, in deepening sundry parts, and in excavating sundry projecting points which impeded the navigation. Grand river navigation.

From Cayuga to Brantford, (44 miles,) the works have been undertaken by a chartered company, under the title of the "Grand River Navigation Company."

The total stock originally subscribed for, amounts to £47,412 0 0, of which £38,256 belong to the Six Nations Indians. Stock originally subscribed for.

Up to the period of Mr. Barrett's Inspection, the sum expended was.....	£49,139	0	0
By Mr. Barrett's Report, to finish the portion in progress near Brantford, would require.....	13,568	9	0
To pay damages connected with this part of the work.....	3,546	0	0
Amount required by Mr. Barrett's estimate to remove sundry shoals and effect certain improvements, so as to insure 3' 6" navigable depth of water—to rebuild lock at Indiana, and for other works indispensable to put the navigation in an efficient state..	13,948	13	0
	<u>£80,202</u>	<u>2</u>	<u>0</u>

As the attention of the Executive has of late been repeatedly drawn to this work, with the view of recommending to the Legislature the taking of it up, as a Provincial one, I think it advisable to give Mr. Barrett's detailed Report on it. See Appendix (Letter W.)

From this Report it will be seen in what an inefficient manner these works have been constructed, and the very defective state the navigation is now in; one of the Locks requiring to be rebuilt immediately; the walls of several of the others already overhanging, &c. &c.

Mr. Barrett's estimate for the Brantford portion of the work, including damages is.....	£24,013	0	0
Mr. Jackson's original estimate for this work, (including damages) was.	20,424	1	4
After an expenditure of.....	6,899	0	0
The estimate for its completion was.	12,626	0	0
Add damages awarded.....	3,546	0	0
	<u>£23,071</u>	<u>0</u>	<u>0</u>

PUBLIC BUILDINGS.

Arrangements have lately been made under the sanction of His Excellency the Governor General in Council, by which the charge and maintenance of the several Legislative and other Buildings at Quebec, (not including the Gaol and Court House) are assumed by the Mayor and Corporation of that City; and all the cost of assessments, insurance, annual repairs, &c., is to be borne by them. The Buildings of course to be resumed by the Government at any time they may be required for public purposes.

The same arrangement has also been made with the Corporation of Toronto, and will, in both cases, be productive of much economy. Heretofore the Province has had to pay the cost of the several contractors; of fuel for the airing of the Buildings, and of their insurance, assessments, &c.

With respect to another class of Public Buildings, the Gaols and Court Houses, it is much to be regretted that generally their plans do not afford the requisites which such Buildings should possess, particularly the Gaols, and especially those of the Eastern part of the Province.

Their construction also, has been so very imperfect, that large sums annually are unavoidably expended in repairs; and it is not possible, at any expenditure, to amend some of the present Buildings, so that they shall afford the power of classification, ventilation, &c. &c., which the interests of society and due regard to the health of the prisoners imperatively require.

I have the honor to be,

Sir,

Your most obedient Servant,

HAMILTON H. KILLALY,
President Board of Works.

To the Honorable
the Provincial Secretary.

S T A T E M E N T

SHewing the Monies expended upon each of the Public Works, since the date of the Accounts which accompanied the Report presented to for the last Session of the Legislature, up to the termination of the half year ending on the first day of July, 1844; shewing also, the total amounts expended upon each Work up to that period.

WORKS.	Expended up to 1st September, 1843.			Expended from 1st September, 1843, to 1st July, 1844.			Total Expenditure from the com- mencement of the Work up to the 1st July, 1844.		
	£	s.	d.	£	s.	d.	£	s.	d.
Welland Canal.....	129562	12	0	109433	2	10	238995	14	10
<i>St. Lawrence Canals, viz:</i>									
Prescott to Dickenson's Landing.....	243	4	0	13247	15	4	13490	19	4
Cornwall (to the time of opening the Canal in June, 1843) ...	57110	4	2	..	..	..	57110	4	2
Cornwall (to repair Breaks in the Banks since the above period).....	5102	18	9	4822	17	7	9925	16	4
Beauharnois.....	68856	13	0	93425	6	5	162281	19	5
Lachine.....	16109	12	11	29300	18	3	45410	11	2
Expenditure on Dredge, Outfit, &c. applicable to the forego- ing in common.....	1134	7	0	3323	9	3	4462	16	3
Lake St. Peter.....	18503	14	2	14289	15	1	32893	19	3
Burlington Bay Canal.....	4124	8	10	14415	2	4	19539	11	2
Hamilton and Dover Road.....	14014	8	2	16030	8	3	30044	16	5
<i>Newcastle District, viz:</i>									
Seugog Lock and Dam.....	3206	9	0	3138	19	1	6645	8	1
Whitlas Lock and Dam.....	5897	3	7	204	4	4	6101	7	11
Crooks Lock and Dam.....	4970	17	9	2878	11	9	7819	9	6
Heely's Falls.....	792	2	11	7399	2	2	8191	5	1
Middle Falls.....	..	..	..	219	2	8	219	2	8
Ranney's Falls.....	..	..	..	223	6	8	228	6	8
Chisholm's Rapids.....	3608	16	2	3990	17	10	7599	14	0
Harris' Rapids.....	121	5	0	1470	4	6	1591	9	6
Removing sundry Impediments in the River.....	170	17	6	14	19	6	185	17	0
Port Hope and Rice Lake Road.....	805	1	7	634	14	9	1439	16	4
Bobcaygean, Buckhorn and Crooks Rapids.....	..	..	..	12	0	0	12	0	0
Applicable to the foregoing Works generally.....	2534	3	1	4139	18	1	6674	1	2
<i>Harbours and Light Houses and Roads leading thereto.</i>									
Windsor Harbor.....	5057	4	2	10298	11	1	15355	18	3
Cobourg Harbor.....	9716	16	10	664	9	5	10381	6	3
Port Dover.....	367	7	0	2754	3	4	3121	10	4
Long Point Light House and Light Ship.....	1317	17	1	845	11	4	2163	8	5
Burwell Harbor and Road.....	136	10	0	..	..	..	136	10	0
Seugog Road.....	..	..	..	1202	6	3	1202	6	3
Port Stanley.....	12351	14	4	3890	16	6	16242	10	10
Rondeau Harbor, Road and Light House.....	..	..	..	60	4	2	60	4	2
Port Stanley Road.....	12329	2	1	12055	11	4	24385	13	5
Expenditure on outfit, &c., applicable to the foregoing in com- mon.....	176	16	7	2151	17	0	2328	13	7
River Ottawa.....	6867	0	11	28736	12	7	35603	13	6
Bay of Chaleurs Road.....	9889	4	0	5837	12	11	15726	16	11
Gosford Road.....	9814	11	1	986	19	9	10801	10	10
Main North Toronto Road.....	179	1	3	507	18	1	686	19	4
Bridges between Montreal and Quebec.....	13900	0	0	6960	19	11	20860	19	11
Cascades Road.....	6056	1	4	7231	18	2	13287	19	6
London and Sarnia Road.....	11855	10	5	7981	15	6	19837	5	11
London and Brantford Road.....	12550	13	10	23632	4	7	36182	18	5
London and Chatham, Sandwich and Amherstburgh Road.....	3376	6	9	9412	13	4	12789	0	1
River Richelieu.....	50	0	9	42	3	3	92	4	0

Certified to be a true Abstract of the Accounts of the Board of Works.

THOMAS A. BEGLY,

Sec. Board Works.

HAMILTON H. KILLALY,

President Board Works.

APPENDIX

TO

R E P O R T .

LIST OF DOCUMENTS

CONTAINED IN THE

APPENDIX TO THE FOREGOING REPORT.

- Letter A.**—Schedule shewing the probable present amount of Travel on certain Roads.
- “ **B.**—Schedule shewing the present, and the proposed Rates of Tolls on Public Works.
- “ **C.**—Schedule shewing the several portions of Roads made under former Commissioners, and now proposed to be assumed by the Government, as forming part of the main Provincial Road.
- “ **D.**—Schedule shewing the amount and description of property passed through the Welland Canal, in the years 1843 and 1844.
- “ **E.**—Schedule shewing the receipts on the Lachine Canal, 1844.
- “ **F.**—Chart of Lake Saint Peter.
- “ **G.**—Section of the direct Channel through Lake Saint Peter.
- “ **H.**—Report of Mr. Walton on the Road from Hull to Grenville.
- “ **I.**—Report of Mr. Walton on the Road from Bytown to L'Original.
- “ **K.**—Plan of the Burlington Bay Canal, shewing the position of the old and new Works.
- “ **L.**—Schedule of claims against the late Commissioners for the improvement of the River Trent.
- “ **M.**—Schedule of claims against the late Commissioners for the improvement of the River Trent and inland waters of the Newcastle District, unsettled.
- “ **N.**—Schedule of the Lumber run down the River Trent 1844, with an estimate of that which will pass in 1845.
- “ **O.**—Extract from Report of Mr. Wilson, Overseer of the Works of the Trent, &c.
- “ **P.**—Report of Mr. Lyons, the Superintendent of the Works of the Trent and Newcastle District.
- “ **Q.**—Report of Mr. Gzowski on Port Stanley, &c.
- “ **R.**—Schedule of the Imports and Exports of the Port of Dundas 1843 and 1844.
- “ **S.**—General Schedule of Works and materials enumerated in the accompanying Report as being required.
- “ **T.**—Schedule shewing the amount and description of Property passed through the Chambly Canal, 1844.
- “ **U.**—Schedule shewing the Lockage Levels, &c. on the Route from Three-Rivers to Lake Huron, by the River Saint Lawrence, contrasted with those between the same points, by the Ottawa, Rideau Canal, Trent, Lake Simcoe, and River Severn.
- “ **V.**—Schedule of outstanding claims on the Chambly Canal.
- “ **W.**—Report of Mr. Barrett on the Grand River Navigation.
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APPENDIX LETTER A.

No. 1.

SIR,

In accordance with your instructions of 6th January, to report on the Amount of Revenue which may reasonably be calculated upon, and the cost of maintaining the different improvements placed under my charge, I beg leave most respectfully to make the following Report:—

I have employed persons to keep correctly the extent of Travel passing and repassing the places where I would recommend the erection of Gates, and required them to make their return under oath, so as to be sure of their accuracy.

It was out of my power to have persons on all the different Roads, and at each place where a Gate should be erected; but to be sure not to over estimate the revenue of a Gate to be erected at a point where there was no check kept of the travel, I placed the persons at points where the travel is less, and call the value (in my estimate) of the Gate the same as the one at which we have a data for calculating.

In making the calculations for the amount of revenue on each Road, I adopted the following plan:—

First, I assumed certain rates of Tolls at each Gate, which will be found annexed to the Schedule of Travel on each Road.

Second, I allowed that a team should only pay once in the same day.

Third, That there should be no Tolls charged on Sundays.

I then added the different descriptions of travel, each kind by itself, and by dividing it by the number of days during which it was kept, I obtain the average

per diem; then I allow that one half of the travel returns the same day (on which point I am satisfied that I am over instead of under what is actually the case,) and taking the remaining half of each kind of travel, I multiply it by the different rates of Tolls proposed to be charged at each Gate, and that amount by 313 days, which gives me the probable revenue of each Gate for the year.

In another Schedule I have made an abstract of the revenue on each work under my charge distinctly, with the cost of the road, the amount that I think will be necessary for maintaining that Road (per mile, and entire) in good repair, and lastly *the per cent that the revenue will bring upon the cost of the Road.*

In another Schedule I have placed the value of Tolls I would respectfully recommend to be charged at each Gate, on the different Roads and Bridges, and my views as to cost of collection, &c. &c.

On the Revenue of Roads, that are now in progress, I am not prepared to report satisfactorily: they are the Chatham and Rond 'Eau Road; Chatham, Maidstone Cross and Amherstburg Road; and the Maidstone Cross and Sandwich Road.

The Rond 'Eau Road however, I have no hesitation in saying will pay well, as it will be in my opinion the only channel for export in that section of the country.

On the revenue of the Port Stanley Harbour, I cannot report as to the exact amount, but judging from the report of the Collector, Mr. Smith, it will amount to a large sum during the next year.

Attached to the Schedule Nos. 2 & 3 are some remarks and recommendations which are most respectfully submitted by,

Sir,

Your very obedient Servant,

(Signed)

C. S. GZOWSKI,

Engineer.

THOS. A. BEGLY, Esq.,
Secretary Board of Works,
Kingston.

ROAD OFFICE LONDON,
18th March, 1844.

SHewing the Average Travel—Also, the probable Revenue therefrom, the Rates being the same of Six.

Statement of Travel passing calculated as stated in the Report Letter A. No. 1. shewing the kind of Travel, average of Year, Rate of Tolls, value of each kind of Travel per Year, and value of each Gate.

DATE.	At Delaware.				Description of Travel.	Average No. of each kind of paying Teams per diem.	Average No. of paying Teams per year.	Rate of Tolls proposed to be charged.	Value of each kind of Travel per year.			REMARKS.
	4 Horse Wagons.	2 Horse Wagons.	1 Horse Wagons.	Horsemen.					£	s.	d.		£	s.	d.
January 29	2	16	5	2	4 Horses...	1½	469	9	17	11	9	
" 30	2	34	18	6	2 Horses...	12½	3756	6	94	17	6	
" 31	2	31	16	4	1 Horse....	5½	1565	4	26	1	8	
February 1	3	30	9	6	Horsemen..	4½	1512	2	12	12	0	
" 2	1	21	12	20	Cattle, &c..	2½	896	½	1	16	11	152 19 10 From the data.
" 3	2	23	11	18	4 Horses...	1½	469	9	17	11	9	
" 5	4	16	13	6	2 Horses...	13½	4147	6	103	13	6	
" 6	2	36	13	6	1 Horse....	2½	896	4	14	15	4	
" 7	1	26	7	6	Horsemen..	3	939	2	7	16	6	
" 8	1	31	12	2	Cattle, &c..	2½	834	½	1	14	9	145 11 10 Estimated same as Wardsville.
" 9	1	20	6	2	4 Horses...	1½	469	9	17	11	9	
" 10	2	32	18	18	2 Horses...	13½	4147	6	103	13	6	
" 12	4	20	24	1	1 Horse....	2½	896	4	14	15	4	
" 13	2	21	16	1	Horsemen..	3	939	2	7	10	6	
" 14	3	17	6	1	Cattle, &c..	2½	834	½	1	14	9	145 11 10 From the data.
" 15	1	10	8	2	4 Horses...	1½	469	9	17	11	9	
" 16	1	26	14	2	2 Horses...	13½	4147	6	103	13	6	
" 17	1	35	10	1	1 Horse....	2½	896	4	14	15	4	
" 19	3	40	8	3	Horsemen..	3	939	2	7	16	6	
" 20	4	31	9	2	Cattle, &c..	2½	834	½	1	14	9	145 11 10 Estimated same as Wardsville.
" 21	2	14	..	1	4 Horses...	1½	352	9	13	4	0	
" 22	2	23	..	1	2 Horses...	29½	9311	6	232	15	6	
" 23	3	9	1	1	1 Horse....	8½	2777	4	46	5	8	
" 24	..	5	2	1	Horsemen..	3½	1173	2	9	15	6	
Total Travel.	49	579	238	24	Cattle, &c..	4½	1278	½	2	13	3	304 13 11 From the data.
No. of each kind of paying Travel per Diem...	24½	289½	119	11	..	..	..	..	..	..	..	210 0 0
..	1½	12½	5½	11	..	..	..	..	..	..	..	1104 9 3

ROAD OFFICE, LONDON,
18th March, 1841.

(Signed)

C. S. GZOWSKI,
Engineer.

APPENDIX LETTER A. No. 2,

SHewing the Average Travel on the London and Chatham Road, as calculated from Returns thereof, kept from the 29th January to 24th February, 1844,—Also, the probable Revenue therefrom, the Rates being the same as those on the London and Brentford Road, but the Gates to be Ten Miles asunder instead of Six.

Statement of Travel passing and repassing on the London and Chatham Road, from 29th January to 24th February, 1844.															RATE OF TOLLS RECOMMENDED.										Value of each Gate, calculated as stated in the Report Letter A. No. 1. shewing the kind of Travel, average of each per Diem. per Year, Rate of Tolls, value of each kind of Travel per Year, and value of each Gate.												
DATE.	At Delaware.					At Wardsville.					At Louisville.					Exceeding 4 Horses, &c.	4 Horses, &c.	2 Horses, &c.	1 Horse, &c.	Saddle Horses.	2 Oxen and Cart.	Each extra Yoke Oxen.	2 Horse Cart.	1 Horse Cart.	Horses.	Coy. Ox or Colt without shoes.	Each Sheep or Pig.	Gates where to be placed.	Description of Travel.	Average No. of each kind of paying Teams per diem.	Average No. of paying Teams per year.	Rate of Tolls proposed to be charged.	Value of each kind of Travel per year.			REMARKS.	
	4 Horse Wagons.	2 Horse Wagons.	1 Horse Wagons.	Horsemen.	Cattle, &c.	4 Horse Wagons.	2 Horse Wagons.	1 Horse Wagons.	Horsemen.	Cattle, &c.	4 Horse Wagons.	2 Horse Wagons.	1 Horse Wagons.	Horsemen.	Cattle, &c.																		d.	s.	d.		d.
January 29	2	16	5	22	1	2	28	5	3	13	5	65	26	8	8	1	9	6	4	2	4	2	6	4	1	1	1	At Delaware Bridge.	4 Horses...	13	469	9	17	11	9	152 19 10	From the data.
" 30	2	34	18	6	26	4	42	9	8	4	3	50	24	7	7												2 Horses...	12	3756	6	94	17	6				
" 31	2	31	16	4	2	4	34	7	8	...	2	60	9	6	7													1 Horse...	5	1565	4	26	1	8			
February 1	3	30	9	6	3	5	24	6	8	...	3	58	12	8	8													Horsemen...	4	1512	2	12	12	0			
" 2	1	21	12	20	1	5	45	5	5	2	2	55	23	5	6													Cattle, &c...	2	886	1/2	1	16	11			
" 3	2	23	11	15	1	21	10	7	6	...	3	91	14	6	6	9	6	4	2	4	2	6	4	1	1	1	Near Millers in Ekfrid	4 Horses...	13	469	9	17	11	9	145 11 10	Estimated same as Wardsville.	
" 5	4	16	13	6	...	2	29	8	21	...	2	89	14	2	5												2 Horses...	13	4147	6	103	13	6				
" 6	2	35	13	8	...	2	30	6	7	4	2	79	24	3	6												1 Horse...	2	886	4	14	15	4				
" 7	1	26	7	9	1	4	35	7	4	17	2	73	32	5	5												Horsemen...	3	939	2	7	16	6				
" 8	1	31	12	5	2	4	20	3	6	2	2	57	21	11	11												Cattle, &c...	2	834	1/2	1	14	9				
" 9	1	20	6	2	16	2	37	11	9	...	2	60	24	1	1	1	9	6	4	2	4	2	6	4	1	1	At Wardsville.....	4 Horses...	13	469	9	17	11	9	145 11 10	From the data.	
" 10	2	32	18	13	2	2	40	12	2	...	2	60	33	6	8												2 Horses...	13	4147	6	103	13	6				
" 12	4	20	24	7	1	2	31	6	3	...	2	55	18	7	7												1 Horse...	2	886	4	14	15	4				
" 13	2	21	16	10	57	2	34	5	5	...	2	48	14	4	4												Horsemen...	3	939	2	7	10	6				
" 14	3	17	6	8	2	2	20	2	3	9	2	49	16	14	14												Cattle, &c...	2	834	1/2	1	14	9				
" 15	1	19	8	20	3	2	13	6	1	59	2	55	15	9	9	9	6	4	2	4	2	6	4	1	1	At Froeman's Inn....	4 Horses...	13	469	9	17	11	9	145 11 10	From the data.		
" 16	1	26	14	9	...	2	16	1	4	2	2	60	15	9	10												2 Horses...	13	4147	6	103	13	6				
" 17	1	35	10	5	11	2	28	9	5	3	2	50	20	5	7												1 Horse...	2	886	4	14	15	4				
" 19	3	40	8	6	5	3	44	8	4	...	2	64	23	7	7												Horsemen...	3	939	2	7	16	6				
" 20	4	34	9	8	2	2	22	3	8	...	2	67	13	15	15												Cattle, &c...	2	834	1/2	1	14	9				
" 21	2	14	...	11	...	4	14	3	9	4	2	42	9	6	6	1	9	6	4	2	4	2	6	4	1	1	Near Louisville.....	4 Horses...	13	352	9	13	4	0	145 11 10	Estimated same as Wardsville.	
" 22	2	23	...	11	1	3	14	2	9	...	2	63	18	12	12												2 Horses...	29	9311	6	232	15	6				
" 23	3	9	1	10	...	6	11	2	1	...	2	40	4	19	19												1 Horse...	8	2777	4	46	5	8				
" 24	...	5	2	12	...	4	6	...	8	...	2	21	5	8	8												Horsemen...	3	1173	2	9	15	6				
Total Travel.	49	579	238	232	137	75	638	136	146	125	54	1411	426	183	197																			304 13 11			From the data.
No. of each kind of paying Travel per Diem...	24 1/2	289 1/2	119	116	68 1/2	37 1/2	319	68	73	62 1/2	27	705 1/2	213	91 1/2	98 1/2												Chatham Bridge.....								210 0 0		
	1 1/2	12 1/2	5 1/2	4 1/2	2 1/2	1 1/2	13 1/2	2 1/2	3	2 1/2	1 1/2	29 1/2	6 1/2	3 1/2	4 1/2												Total amount of Tolls that will be received during one year on the London and Chatham Road.....								1104 9 3		

ROAD OFFICE, LONDON,
18th March, 1844.

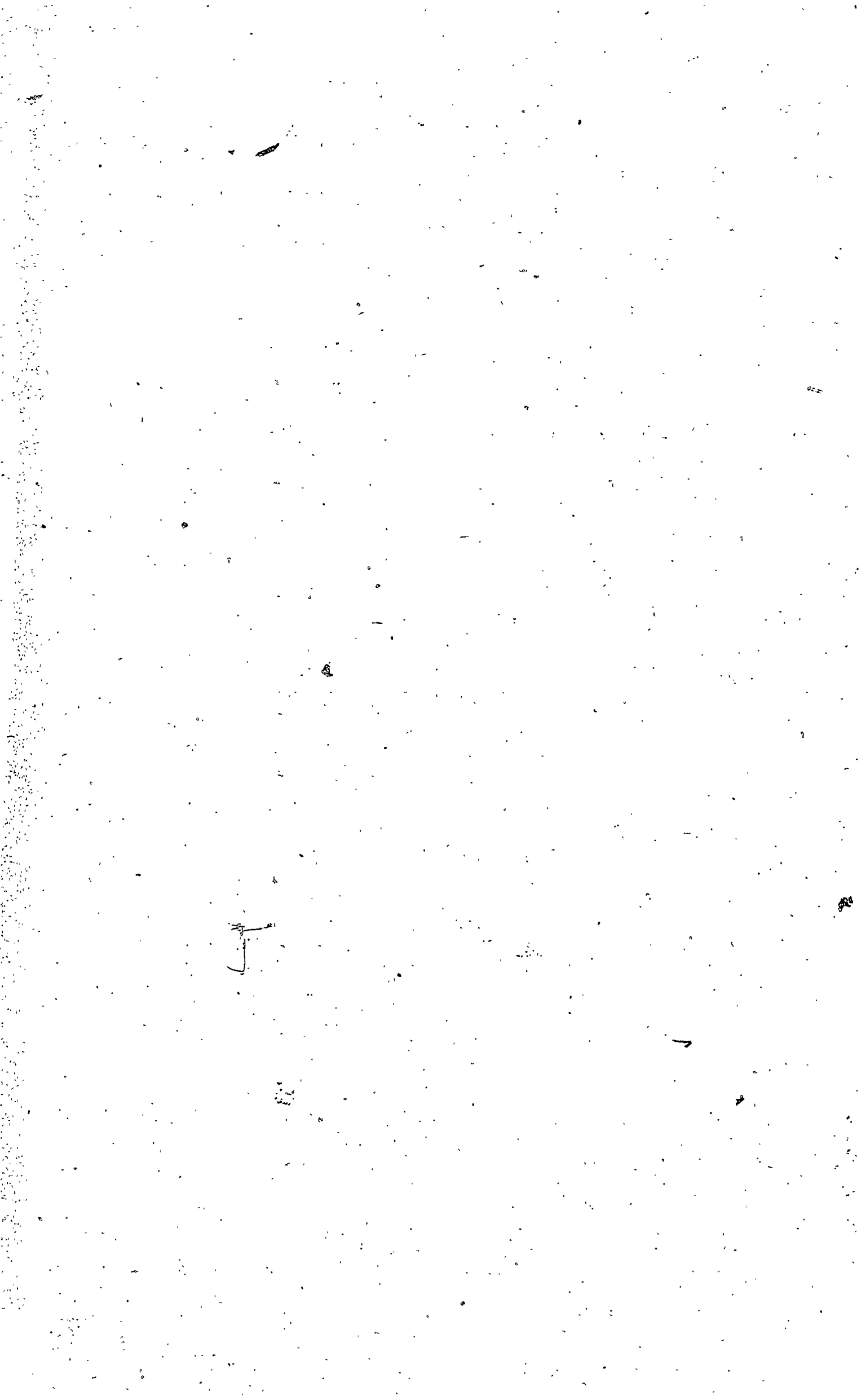
(Signed) C. S. GZOWSKI,
Engineer.

Stated 24th February, 1844.—Also, the probable Revenue therefrom, the rates being the same as miles asunder instead of 6.

RECOMMENDED.						Value of each Gate, calculated as stated in the Report Letter A. No. 1, shewing the kind of Travel, average of each per diem, per year, rate of Tolls, value of each kind of travel per year, and value of each Gate.							
Date	2 Horse Cart.	1 Horse Cart.	Horses.	Cow, Ox or Colt without shoes.	Each Sheep or Pig.	Gates where to be placed.	Description of Travel.	Average No. of each kind of Paying Teams per diem.	Average No. of Paying Teams per year.	Rate of Tolls proposed to be charged.	Value of each kind of Travel per year.	Value of each Gate per year.	REMARKS.
184	d.	d.	d.	d.	d.					d.	£ s. d.	£ s. d.	
January	6	4	1	½	¼	At Gaine's Inn, 5th Concession, London.	4 Horses...	50	50	9	1 17 0	641 18 6	On the data.
"							2 " ...	68½	21362	6	534 1 0		
"							1 " ...	14½	4655	4	77 11 8		
"							Horsemen...	10½	3286	2	27 7 8		
"	6	4	1	½	¼	At the Town Line between Lobo and London.	Cattle, &c..	4½	256	½	0 10 8	93 15 7	Estimated as at Adelaide.
"							4 Horses...	1½	34	9	1 5 6		
"							2 " ...	8½	2699	6	67 9 6		
"							1 " ...	3½	1064	4	17 14 8		
"	6	4	1	½	¼	At the Town Line between Adelaide and Lobo.	Horsemen...	2½	860	2	7 3 4	82 8 1½	Estimated the same as Warwick near Kingston's Mills.
"							4 Horses...	3½	18	9	0 13 6		
"							2 " ...	8	2504	6	62 12 0		
"							1 " ...	2½	886	4	14 15 4		
"	6	4	1	½	¼	At Adelaide.....	Horsemen...	1½	469	2	3 18 2	93 15 7	On the data.
"							4 Horses...	1½	31	9	1 5 6		
"							2 " ...	8½	2699	6	67 9 6		
"							1 " ...	3½	1064	4	17 14 8		
"	6	4	1	½	¼	At Warwick near Kingston's Mills.	Horsemen...	2½	860	2	7 3 4	82 8 1½	On the data.
"							4 Horses...	3½	18	9	0 13 6		
"							2 " ...	8	2504	6	62 12 0		
"							1 " ...	2½	886	4	14 15 4		
"	6	4	1	½	¼	At Sarnia.....	Horsemen...	1½	469	2	3 18 2	93 15 7	Estimated as at Adelaide.
"							4 Horses...	1½	34	9	1 5 6		
"							2 " ...	8½	2699	6	67 9 6		
"							1 " ...	3½	1064	4	17 14 8		
"	6	4	1	½	¼	Total amount of Tolls that will be received, during one year, on the London and Port Sarnia Road.	Horsemen...	2½	860	2	7 3 4	1087 11 6	
"							Cattle, &c..	½	62	½	0 2 7		
"							4 Horses...	1½	34	9	1 5 6		
"							2 " ...	8½	2699	6	67 9 6		
Total Doq payg Aver per													

ROAD OFFICE, LONDON,
18th March, 1844.

(Signed) C. S. GZOWSKI,
Engineer.



APPENDIX LETTER A,

No. 6,

Being an Abstract of Letter A. 2, 3, 4 and 5, shewing the cost of each Road and of certain Bridges, cost of Repairs for 1845, and the probable amount of revenue from each.

Name of Road, &c.	Cost of completion.	Amount per mile required to keep it in good repair for one year.	Total amount of repairs on the entire Road for one year.	Gross amount of Revenue collected on the Road for one year.	The percentage that the Revenue, without deducting repairs, will bring on the original cost of the Work.	Remarks.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
London and Port Stanley Road.	27894 17 7	7 10 0	191 5 0	2337 6 1	8.37 p. cent.	
London and Brantford Road...	47339 19 4	38½ miles at 7 10 0 19 miles at 25 0 0	763 15 0	3041 2 3	6.40 do.	38½ miles planked, 19 miles macadamized Road.
London and Chatham Road...	15769 18 0	7 10 0	450 0 0	1104 18 37	do.	
London and Port Sarnia Road.	16484 4 0	5 0 0	302 10 0	1087 11 6	6.59 do.	
Brantford Bridge.....	1426 0 0	None during the coming year.		250 0 0	17.13 do.	
Paris Bridge.....	1200 0 0	None during the coming year.		140 0 0	11.66 do.	
Chatham Bridge.....	1450 0 0	150 0 0	150 0 0	210 0 0	14.48 do.	Allowed for repairs after constructed £225 0 0.

LONDON AND PORT STANLEY ROAD.

In estimating the repairs of this Road, I merely estimated the labour of keeping the drainage of the Road perfect, and superintendence; the plank when properly laid will not require any repairs during the first year.

LONDON AND BRANTFORD ROAD.

In estimating the repairs of this Road, I allowed that the repairs of the macadamized portion of it during the first year will be equal to one man to two miles constantly employed, the remaining sum will be used in obtaining additional materials for filling up ruts, and superintendence. The Tolls of the Brantford Bridge are included in the receipts of Tolls on the Road.

LONDON AND CHATHAM ROAD.

In estimating the repairs of this Road, I added a sufficient sum per mile for the filling up and repairing the embankments which will be necessary the first year. The Tolls collected at the Chatham Bridge are included in the receipts of Tolls on the Road.

LONDON AND PORT SARNIA ROAD.

The Tolls on this Road will increase materially, after it is completed; the repairs of the Road will be very slight during the first year.

BRANTFORD BRIDGE.

I could not ascertain the exact amount expended in repairs on the Brantford Bridge, there being no regular account kept of it.

PARIS BRIDGE.

I could not ascertain the exact amount expended in repairs on this Bridge, no account being kept of them.

CHATHAM BRIDGE

Will require £150 0 0 of repairs this year, which will put it in good condition for two or three years; the amount allowed for repairs since it was constructed is £225 0 0.

THE LONDON BRIDGE.

I included the Tolls that will be received for crossing the Bridge in the Tolls for the Sarnia Road, but the gate must be erected at the proof line of London; if not, there will be but a trifling Toll collected; as I fear that the people would avoid it by continuing on the proof line to London.

THE DELAWARE BRIDGE.

I included the Tolls that will be received for crossing this Bridge in the Tolls for the Chatham Road. The Toll for the Bridge alone will bear the following proportion:—

The cost of the Bridge was £1,701 14 10, amount of Tolls received £153 8 10, equal to $9\frac{1}{10}$ on the original cost of the Bridge.

(Signed)

C. S. GZOWSKI,
Engineer.

ROAD OFFICE LONDON,
18th. March, 1844.

APPENDIX LETTER A,

No. 7,

Shewing the average Travel on that part of the Dover and Hamilton Road between the Grand River and Hamilton, as calculated from returns thereof kept for the month of March, 1844. Also, the probable Revenue to be derived therefrom, the Rates being the same as those on the Hamilton and Brantford Road, and collected on the same principles.

The average Travel along the end of the Road towards Hamilton is 126 teams of 2 horses, and 12 saddle horses per day, but it is presumed that this average would only hold good during six months of the year, and that it should be reduced one-third to get a fair average for the other six months. It is also supposed that the whole of these teams would only pass through one gate, two-thirds through the second gate and one-third through the third gate, and that upon Sundays the travel should go free. According to this data the estimated Revenue that may be derived from the part of the Road between Hamilton and Caledonia, will be as follows :—

126 teams of two horses passing the first gate at 6d. each for one year, deducting					
	Sundays, 313 days,.....				£985 19 0
84 teams	do.	do.	do., second gate, 313 days at 6d.....		657 6 0
42 do.	do.	do.	do. third gate, 313 days at 6d.....		328 13 0
12 saddle horses passing through the first gate, 313 days at 2d.....					31 6 0
8 do.	do.	do.	second gate, 313 days at 2d.....		20 17 4
4 do.	do.	do.	third gate, 313 days at 2d.....		10 8 8
					£2034 10 0
	Probable amount of annual Revenue on this part of the Road.....				£2034 10 0

It is proper to remark that this estimate is made from the travel before the Road South of Grand River was completed—Upon the full opening of the Road, this estimate will be materially increased.

APPENDIX LETTER B.

SCHEDULE No. 1, of Public Works, on which Tolls have been levied by Legal Authority, shewing the present Established Rates.

CANALS.

1st. WELLAND CANAL.—RATES OF TOLL, Established on the Welland Canal, by the President and Directors, under the authority of the Provincial Act, 4 George IV, Chapter 17.

DESCRIPTION OF PROPERTY.	Through the whole route.		Mouth of Grand River to Dunnville.		From Dunnville to Port Robinson, and rice <i>versa</i> .		From Thorold to Saint Catharines, and rice <i>versa</i> .		From Saint Catharines to Port Dalhousie, and rice <i>versa</i> .		From Port Robinson to Port Colborne, and rice <i>versa</i> .	
	26 Miles.		4 M. 60 Ch.		26½ Miles.		4 M. 50 Ch.		5 M. 18 Ch.		12 Miles.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
FLOUR.....	0	5	0	2	0	2½	0	1	0	0	0	1½
PORK.....	0	7	0	3	0	3½	0	2	0	0	0	2½
ASHES.....	1	0	0	4	0	6	0	2½	0	0	0	4
WHISKEY.....	0	0	0	4	0	6	0	2½	0	0	0	4
LARD and BUTTER.....	0	7½	0	3	0	3½	0	2	0	0	0	2½
SALT.....	0	2	0	0	0	1	0	0½	0	0	0	3½
BEER and CIDER.....	0	9	0	3	0	4	0	2	0	0	0	3
DRIED FRUIT and NUTS.....	0	6	0	2	0	3	0	1½	0	0	0	2
PITCH.....	0	4	0	1	0	2	0	1	0	0	0	1½
HAMS and BACON.....	0	7½	0	3	0	3½	0	2	0	0	0	2½
OIL.....	0	6	0	2	0	3	0	1½	0	0	0	2
BEES' WAX.....	0	9	0	4	0	3½	0	2	0	0	0	2½
FISH.....	0	4	0	0	0	3	0	1½	0	0	0	2
FISH, Dried.....	0	7½	0	3	0	3½	0	2	0	0	0	2½
CRACKERS.....	0	4	0	0	0	2	0	1	0	0	0	1½
WHEAT.....	0	7½	0	3	0	3½	0	2	0	0	0	2½
OATS.....	0	4	0	0	0	2	0	1	0	0	0	1½
CORN, BARLEY and RYE.....	0	11	0	0	0	3	0	0	0	0	0	2
POTATOES.....	0	11	0	0	0	3	0	0	0	0	0	2
COALS.....	0	11	0	0	0	3	0	0	0	0	0	2
IRON, Pig.....	2	6	1	0	1	3	0	10	0	0	0	0
IRON CASTINGS, up.....	2	6	1	0	1	3	0	10	0	0	0	0
IRON CASTINGS, down.....	5	0	1	3	2	6	1	8	1	1	2	1
LEAD, Pig.....	3	9	1	0	1	10½	1	0	1	0	1	3
LEAD, Manufactured.....	3	9	1	0	1	10½	1	0	1	0	1	3
GRINDSTONES.....	5	0	1	3	2	6	1	8	1	1	2	0
	2	6	1	0	1	3	0	10	0	0	0	0

LETTER B.—Schedule No. 1, of Public Works.—[CONTINUED.]

DESCRIPTION OF PROPERTY.	Through the whole Route.		Mouth of Grand River to Dumnyville, and vice versa.		From Dumnyville to Port Robinson, and vice versa.		From Thorold to Saint Catharines, and vice versa.		From Saint Catharines to Port Dalhousie, and vice versa.		From Port Robinson to Port Colborne, and vice versa.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
PLASTER, Ground.	2	6	1	0	1	3	0	10	0	10	1	0
FURNITURE and BAGGAGE	3	9	1	3	1	10	1	0	1	10	1	3
LARD and BUTTER	5	0	1	3	2	6	1	8	1	8	2	0
TOBACCO, Leaf.	0	4	0	1	0	2	0	1	0	1	0	1
PIPE STAVES	0	6	0	2	0	2	0	1	0	1	0	1
WEST INDIA STAVES.	20	0	0	0	0	3	0	14	0	14	0	2
SAW LOGS	7	6	1	3	10	0	10	14	5	0	7	6
SQUARE TIMBER, twelve inches diameter, and upwards.	0	4	0	1	0	0	10	14	1	10	2	6
FLATTED TIMBER	25	0	5	0	0	2	2	10	1	2	0	3
SMALL ROUND BUILDING TIMBER.	20	0	3	9	12	6	7	6	17	6	8	9
SHINGLES	12	6	2	6	10	0	5	0	5	0	7	6
BARRELS, Empty	0	6	0	2	6	3	3	9	3	9	5	0
BOARDS, 4-1 inch.	0	2	0	0	0	3	0	14	0	14	0	2
MERCHANDIZE.	3	9	1	0	0	1	0	0	0	0	0	0
FIRKINS, SMALL CASKS, PACKAGES, &c.	5	0	1	3	1	10	1	8	1	8	3	9
PASSENGERS	0	2	0	0	2	6	1	8	1	8	0	1
OYSTERS	0	6	0	2	0	3	0	1	0	1	0	1
VINEGAR	1	0	0	0	0	3	1	8	0	1	0	1
CHEESE	1	0	0	4	0	6	1	2	0	2	0	1
PLUGHS	0	3	0	1	0	14	0	1	0	1	0	1
PUMPS	0	6	0	2	0	3	0	3	0	3	0	4
HIDES	0	9	0	3	0	4	0	2	0	2	0	2
SKINS; DEER, SHEEP, &c.	0	3	0	1	0	14	0	1	0	1	0	3
HORNS	0	3	0	1	0	14	0	1	0	1	0	1
HAY	0	3	0	1	0	14	0	1	0	1	0	1
BRAN	2	6	1	0	1	3	0	10	0	10	1	0
BRICKS	2	6	1	0	1	3	0	10	0	10	1	0
FIRE-WOOD	2	6	1	0	1	3	0	10	0	10	1	0
CEDAR POSTS	0	7	0	2	0	3	0	2	0	2	0	2
TAN-BARK	2	6	1	0	1	3	0	10	0	10	1	0
STONE	1	6	0	6	0	9	0	6	0	6	0	7
WOOL	1	3	0	5	0	7	0	4	0	4	0	6
STONE-WARE	5	0	1	3	2	6	1	8	1	8	3	9
FLAX-SEED	5	0	1	3	2	6	1	8	1	8	3	9
VESSELS, under Forty Tons each.	0	6	0	2	0	3	0	2	0	2	0	2
VESSELS, from Forty Tons to Fifty Tons.	10	0	5	0	0	0	0	0	0	0	0	0
VESSELS, from Fifty Tons and upwards.	15	0	15	0	0	0	0	0	0	0	0	0
BOATS for Passengers	5	0	5	0	0	0	0	0	0	0	0	0
SCOWS, BOATS, &c., for Freight.	2	6	2	6	1	3	0	1	1	3	0	1

APPENDIX LETTER B.

SCHEDULE No. 2.

CANALS.

2ND BURLINGTON BAY CANAL.

RATES OF TOLL at the Burlington Bay Canal, fixed by Commissioners under the Authority of Provincial Acts 9 Geo. IV. Chap. 12, and 11 Geo. IV. Chap. 12, by order of 25th February, 1836.

DESCRIPTION OF ARTICLES.	QUANTITY.	RATES.
STEAMBOATS, Weekly.....		£ s. d. 0 10 0
STEAMBOATS, Semi-Weekly.....		0 5 0
STEAMBOATS, Daily.....		0 2 6
SAILING CRAFT, under 10 Tons.....		Free.
SAILING CRAFT, 10 Tons and under 50.....		0 5 0
SAILING CRAFT, 50 Tons and Upwards.....		0 10 0
WHEAT.....	per Bushel.	0 0 0 $\frac{1}{2}$
FLOUR.....	" Barrel.	0 0 2
WHISKEY.....	" "	0 0 6.
PORK.....	" "	0 0 6
ASHES.....	" "	0 1 0
SALT.....	" "	0 0 3 $\frac{1}{2}$
BUTTER.....	" "	0 0 9
BUTTER.....	" Keg,	0 0 4 $\frac{1}{2}$
LARD.....	" "	0 0 4 $\frac{1}{2}$
LARD.....	" Barrel,	0 0 9
BEER.....	" "	0 0 6
BEE'S WAX.....	" "	0 0 9
PLASTER OF PARIS.....	" "	0 0 6
CIDER.....	" "	0 0 3
OIL.....	" "	0 0 9
LUMBER.....	" M. Feet,	0 0 10
SQUARE TIMBER.....	" " "	0 2 6
SHINGLES.....	" M.	0 0 3
PLOUGHS.....	" Each,	0 0 6
POTATOES.....	" Bushel,	0 0 1 $\frac{1}{2}$
APPLES.....	" "	0 0 0 $\frac{1}{2}$
STONE.....	" Tons,	0 0 3
PEAS and OATS.....	" Bushel,	0 0 0 $\frac{1}{2}$
MERCHANDISE.....	" Cwt.,	0 0 3
WEST INDIA STAVES.....	" 1,200 ps.,	0 2 6
PIPE STAVES.....	" 1,000 "	0 10 0
<i>Per Minute of the Board of Works, 11th August, 1813, and Published in Official Gazette, No. 102, September 2nd, 1813, the following additional Rates are established:—</i>		
PIG IRON.....	per Cwt.,	0 0 1
COAL.....	" "	0 0 1

APPENDIX LETTER B.—SCHEDULE No. 5.—CANALS.

5th CHAMBLY CANAL.

RATES OF TOLL established on the Chamblly Canal by the Governor in Council.

DESCRIPTION OF PROPERTY.	QUANTITY.	RATES.
Flour, Crackers, Onions, Seeds,	per Barrel, -	£ s. d. 0 0 2
Beef, Pork, Cider, Whiskey, Vinegar, Oil, Wine, Beer, Pickled Fish, Pitch, Tar, Varnish,	" "	0 0 3
Turpentine, Oysters, dried Fruit, Nuts,	" "	0 0 4
Ashes, Plaster,	" Cwt,	0 0 1½
Lard, Tallow, Butter, Bees-wax, Rice, Cheese, Hams, Bacon, Hides dry, Hides green,	" Ton,	0 0 6
Horns, dried Fish, Tobacco,	" Bushel,	0 0 0½
Salt, Coals, Plaster, Iron in any form, Earths, Whiting, Chalk, Paint, Lead in any form,	" Ton,	0 1 6
Sand, Stone, Brick, Grind Stones,	" "	0 1 6
Wheat, Indian Corn, Barley, Rye, Oats, Seeds of all kinds, Beans, Vegetables of all kinds,	" Each,	0 0 6
Bran, Wool, Stone Ware,	" "	0 0 2
Sleighs, Carts, Wagons, House Furniture, Ploughs and all instruments of Husbandry,	" 40 Feet	0 1 6
Hardware and Cutlery,	" 100 Bundles,	0 1 0
Horses, Oxen, Steers, Cows, Hogs,	" M. Feet,	0 1 6
Sheep, Goats, Calves, Pigs,	" "	0 3 0
Dry Goods, Crates, Bales, &c. or other Merchandize not enumerated,	" 40 Feet,	0 0 2
Hay,	" "	0 0 4
Boards, Planks, Slabs, Scantling, reduced to Board measure 1 inch thick,	" Log,	0 0 2
Do. do. do. do. do. in Raft,	" "	0 0 4
Square Timber,	" Cord,	0 0 6
Do. do. in Raft,	" M. Lineal Feet	0 5 0
Saw Logs 14 inches in diameter and under,	" "	0 10 0
Do. do. do. and upwards,	" M.	0 12 6
Cord Wood or Tanners' Bark,	" "	0 3 9
Cedar Beams, Posts, Floats,	Each,	0 7 6
Do. do. do. in Raft,	" "	0 12 6
Pipe Staves,	" "	0 15 0
Do. West India,	" "	1 0 0
Boats under 20 tons,		
Do. do. 50 do.		
Do. do. 80 do.		
Do. 80 tons and upwards.		

NOTE.—A fraction of a ton is taken according to the number of quarters therein, and a fraction of a quarter of a ton is deemed a whole quarter. The rates on Timber, Boards, Plank and Scantling in Rafts are calculated in proportion to the quantity in feet; but no quantity under 25 feet pays for less than 25 feet.

APPENDIX LETTER B.—SCHEDULE No. 6.—HARBOURS.

1ST PORT STANLEY OR KETTLE CREEK.

RATES OF TOLL Established by Commissioners under the Provincial Act 8 Geo. IV. cap. 18.

DESCRIPTION OF PROPERTY.	QUANTITY.	RATES.
Pot and Pearl Ashes,	per Barrel,	£ s. d. 0 1 0
Salt, Pork Whiskey or Oil,	Do.	0 0 7½
Flour,	Do.	0 0 6
Do.	" Cwt,	0 0 3
Sugar,*	" "	0 0 5
Hollow Ware,*	" "	0 0 7½
Lard and Butter,	" Keg.	0 0 5
Boards and Lumber,	" M. Feet Board measure,	1 1 3
Boats under 12 tons.	" Ton,	0 2 6
Do. 12 tons and upwards,	" 60 lbs.	0 0 2½
Wheat,	" "	0 0 2
All other Grain,	" "	0 0 1
Merchandize and Baggage,*	" Barrel bulk,	0 0 7½
Pails,	" Dozen,	0 0 7½
Mill Stones,	" Ton,	0 4 2
Earthen-Ware,	" "	0 7 6
Double Wagons,	Each,	0 3 1½
Single, do.	" "	0 2 6
Horses,	" "	0 2 6
Horned Cattle,	" "	0 1 3
Sheep,	" "	0 0 6
Sleighs,	" "	0 2 6
Ploughs,	" "	0 0 7½
Shingles,	Per 1000,	0 0 6

* Those articles are charged the same as Merchandize, and Emigrants Luggage has usually been exempted. On Coals and Plaster 2s. 6d. per ton in place of the usual rate of 4s. 2d., and on Building Stones 2s. 6d. per Co. d is levied.

APPENDIX LETTER B.

SCHEDULE No. 7.

2ND TORONTO HARBOUR.

RATES OF TOLL fixed by the Governor in Council, under authority of Provincial Act 3rd. Will. IV. Cap. 31.

DESCRIPTION OF PROPERTY.	QUANTITY.	RATES.
MERCHANDIZE, per Ton, Weight or Measurement, per Bill of Lading,		£ s. d.
FLOUR,	per Barrel,	0 1 3
OYSTERS in Shell,	" "	0 0 2
CIDER,	" "	0 0 2
APPLES and other Fresh Fruit,	" "	0 0 2
LIME and GYPSUM,	" "	0 0 2
POTATOES and other Vegetables,	" "	0 0 2
PORK,	" "	0 0 3
ASHES,	" "	0 0 3
SALT,	" "	0 0 3
WHISKEY,	" "	0 0 3
SHEEP and PIGS,	Each,	0 0 2
HORSES and HORNED CATTLE,	" "	0 0 6
WOOD,	" Cord,	0 0 4
STONE,	" Toise,	0 0 10
LUMBER,	" 1000 Feet Board measure,	0 1 0

LETTER B.

SCHEDULE No. 8.

PRESENT AND PROPOSED RATES OF TOLL ON THE FOLLOWING
SLIDES.

SITUATION OF SLIDE.	For every Crib of Timber, Staves, Saw Logs or sawed Lumber, passing down the Slide.	REMARKS.
<i>IN THE NEWCASTLE DISTRICT.</i>		
AT CROOK'S RAPIDS,	4	
" HEELY'S FALLS,	4	
" MIDDLE FALLS,	4	
" RANNEY'S FALLS,	4	
" CHISHOLM'S RAPIDS,	4	
<i>ON THE OTTAWA RIVER.</i>		
AT THE DEUX-JOACHIMS,	5	Established by Authority of the Governor in Council, April, 26th 1844.
CALUMET AND MOUNTAIN SLIDES, passing from the head of the Calumet to the foot of the Mountain Slides,	5	
<i>ON THE MADAWASKA.</i>		
HIGH FALLS' SLIDES,	40	

APPENDIX LETTER B.—SCHEDULE No. 9.—PUBLIC ROADS.

RATES OF TOLL Established by Commissioners or Trustees under the authority of the several Acts of the Provincial Legislature herein named upon the following Roads.

ROADS.	Length Planked or Macadamized.	Number of Toll Bars.	Average distance between Toll Bars.	Act of Authority for Establishing Tolls.	RATE OF TOLL AT EACH TOLL BAR, UPON												
					Every Four Wheeled Carriage or Wagon or Sleigh, drawn by { First Gate 6d. Second do } 8 Third do } 1s. 0d. 1 3 0 7½	Do. do. do. by 4 do. do. do.	Do. do. do. by 2 do. do. do.	Do. do. do. by 1 do. do. do.	Every extra Horse.	The same drawn by 2 Oxen.	Every extra Yoke Oxen.	Every 2 Wheeled Carriage or Cart drawn by 2 Horses.	Do. do. do. by 1 do. do.	Every Saddle or other Horse.	Every Cow or Colt, without shoes.	Every Sheep or Pig.	Sleighs.	Carriages with 3 or more Horses.
DUNDAS & WATERLOO.....	17½	3	5½	7 Will IV. Chap. 79.	0 4	0 3	0 2	0 2	0 1	0 3	0 2	0 2	0 2	0 1	0 0½	0 0½	s. d.
GWILIMBURY ROAD & BRIDGE.....	4	1	4	" " " 28.	0 6	0 4	0 3	0 3	0 1	0 4	0 2	0 2	0 2	0 1	0 0½	0 0½	s. d.
HAMILTON & BRANTFORD.....	134	3	4½	" " " 78.	0 9	0 6	0 4	0 4	0 2	0 6	0 4	0 2	0 2	0 1	0 0½	0 0½	s. d.
* KINGSTON & NAPANEE.....	244	5	5	" " " 81.	1 3	0 7½	0 6	0 6	0 2	0 7½	0 4	0 2	0 2	0 1	0 0½	0 0½	s. d.
BRUCKVILLE & ST. FRANCIS.....	5½	1	5½	" " " 80.	0 7½	0 7½	0 4	0 4	0 1	0 7½	0 2	0 2	0 2	0 1	0 0½	0 0½	s. d.
QUEENSTON & GRIMSBY.....	4	2	5½	" " " 82.	0 9	0 6	0 4	0 4	0 1	0 7½	0 2	0 2	0 2	0 1	0 0½	0 0½	s. d.
WEST YORK.....	16	3	5½	" " " 37.	0 9	0 6	0 4	0 4	0 1	0 7½	0 2	0 2	0 2	0 1	0 0½	0 0½	s. d.
EAST YORK.....	18	4	4½	Ord. of Special Council.	1 0	1 0	0 6	0 6	0 1	0 7½	0 2	0 2	0 2	0 1	0 0½	0 0½	s. d.
** NORTH YORK.....	15	4	3½		0 9	0 6	0 4	0 4	0 1	0 7½	0 2	0 2	0 2	0 1	0 0½	0 0½	s. d.
LACHINE to MONTREAL.....	7	2	7		0 9	0 6	0 4	0 4	0 1	0 7½	0 2	0 2	0 2	0 1	0 0½	0 0½	s. d.
MONTREAL to BOUT DE LISLE.....	14	2	6		0 9	0 6	0 4	0 4	0 1	0 7½	0 2	0 2	0 2	0 1	0 0½	0 0½	s. d.

* NOTE.—On the Kingston and Napanee Road, the Tolls for a Carriage drawn by three or more horses, are at each Gate 1s. 3d. if the tire is less than four inches wide, —If four inches wide, 6d.—If six inches, 3d.—If nine inches, Free. Carriages drawn by two horses with tire under four inches wide, 7½d.—Tire four inches, 4d.—If six inches, 2d.—If nine inches wide, Free.

** On the North York Road, Teams passing through the whole number of Gates to Toronto, are allowed to return the next day through all the Gates at half price. On Gate No. 1, in addition to the above Rates, every vehicle with two wheels, and weighing together with its load more than—

25 cwt.,	25 Per cent. in addition to the above.
30 "	50 "
35 "	75 "
40 "	100 "
Every additional cwt. over 40 lb.	25 Per cent. in addition to the above.

With two wheels.

40 cwt.,	25 Per cent. in addition to the above.
45 "	50 "
50 "	75 "
55 "	100 "
Every additional cwt. over 55 cwt. 1d.	25 Per cent. in addition to the above.

With four wheels.

APPENDIX LETTER B.

SCHEDULE No. 10.—PUBLIC BRIDGES.

RATES OF TOLL Established by Commissioners, under the authority of the several Acts of the Provincial Legislature herein named, upon the following Bridges:—

BRIDGES.	Act of Authority for the collection of Tolls.	RATES OF TOLL.												
		Every 2 Horse Wagon.	Every 1 Horse Wagon.	Every Saddle Horse.	Spring Carriage, with 2 Horses.	Spring Carriage with 1 Horse.	Cattle.	Every 3 Sheep.	Wagon with more than 4 Horses.	Wagon with 4 Horses.	2 Oxen, with Cart or Wagon.	Each Extra Yoke of Oxen.	2 Horse Cart.	1 Horse Cart or Caleche.	Foot Passengers.
CHATHAM BRIDGE.....	7 Will. IV, Cap. 83.....	3½	2½	1½	7½	5	1	1	3	No commutation.	d.	d.	d.	d.
DUNNVILLE ".....	4 " " " 43.....	2½	2	2	6	4	1	1	5	0 0 10 3	0	0	2	1
PARIS ".....	4 " " " 44.....	3½	2½	1½	7½	5	1	1	3	No commutation.	d.	d.	d.	d.
BRANTFORD ".....	3 " " " 30.....	3½	2½	1½	7½	5	1	1	3	No commutation.	d.	d.	d.	d.
RIVER TRENT ".....	3 " " " 33.....									team at 12s 6d per annum.				
CHAUDIERE " (C.E.).....		0	0	2	0	0	2	1	2	0 1 0 4	4	6	4	2
ST. MAURICE ".....	2 " " " 10&11.....	0	0	2	0	0	2	1	2	0 1 0 6	4	6	4	2
ST. ANNE de la PERADE.....	6 " " " 41.....	6	0	1½	0	0	1	2	0	0 0 0 4	2	4	3	1
CAP ROUGE.....	4 Vict. (Ord.) " 21.....	0	0	0	0	0	0	0	0	0 0 0 0	0	0	0	0

LETTER B.—SCHEDULE No. 11.

PUBLIC WORKS, Completed or in Progress, on which no Tolls are Levied, or can be Levied for want of Legal Authority.

CANALS,

IN THE NEWCASTLE DISTRICT.

- SCUGOG LAKE.
- WHITLA'S LOCK.
- CROOK'S LOCK.
- CHISHOLM'S LOCK.

ST. LAWRENCE CANALS.

- THE GALLOPS 1 Lift Lock and 1 Guard Lock.. 2 miles.
- POINT IROQUOIS 1 Lift Lock..... 2½ miles-14 ch's.
- RAPIDE PLAT..... 1 Lift Lock and 1 Guard Lock.. 4 miles.
- FARREN'S POINT..... 1 Lift Lock..... ¾ mile.
- CORNWALL CANAL... 6 Lift Locks and 1 Guard Lock 11½ miles.
- BEAUHARNOIS CANALS 8 Lift Locks and 1 Guard Lock 11½ miles.
- SAINT OURS' LOCK. ...River Richelieu.

SLIDES,

IN THE NEWCASTLE DISTRICT,

RIVER TRENT.

- AT CROOKS' RAPIDS.
- HEELYS' FALLS.
- MIDDLE FALLS.
- RANNY'S FALLS.
- CHISHOLM'S RAPIDS.

HARBOURS.

- RONDEAU.
- PORT DOVER.
- PORT BURWELL.
- PORT MAITLAND.
- PORT COLBORNE.
- WINDSOR HARBOUR.

ROADS.

- LONDON and PORT STANLEY..... Plank Road.
- LONDON and CHATHAM..... 7 Miles Planked.
- LONDON and BRANTFORD..... Planked and Macadamized.
- HAMILTON and PORT DOVER..... Planked and Macadamized.
- RICE LAKE and PORT HOPE..... Gravelled.
- WINDSOR and SCUGOG..... Partly Planked.
- CASCADES ROAD..... Planked.

BRIDGES.

- DELAWARE BRIDGE.
- LONDON BRIDGE.
- CALEDONIA BRIDGE.
- NARROWS, LAKE SIMCOE.
- BATISCAN BRIDGE.
- UNION SUSPENSION BRIDGE.

APPENDIX LETTER B,

SCHEDULE No. 12, SHEWING THE PRESENT AND PROPOSED RATES OF TOLL ON PUBLIC WORKS.

CANALS AND HARBOURS.

Main table with columns for 'WELLAND CANAL', 'ST. LAWRENCE CANALS', 'CHAMBLEY CANAL', 'BURLINGTON BAY CANAL', and 'HARBOURS'. It lists various goods and services with their respective toll rates.

THIS PRESENT RATES TO BE TAKEN OFF WHEN THE AMOUNT OF EXPENDITURE IS PAID UP.

Note.—In lieu of the rates of 50 mds of the above Schedule as relates to the Saint Lawrence Canals, it may be found to be more for the interests of the Province to collect a TONNAGE DUTY on the Boats up only. Such a system it is believed would tend to increase the Trade, and simplify...

LONDON and PORT STANLEY.....Plank Road.
 LONDON and CHATHAM.....7 Miles Planked.
 LONDON and BRANTFORD.....Planked and Macadamized.
 HAMILTON and PORT DOVER.....Planked and Macadamized.
 RICE LAKE and PORT HOPE.....Gravelled.
 WINDSOR and SCUGOG.....Partly Planked.
 CASCADES ROAD.....Planked.

DELAWARE BRIDGE.
 LONDON BRIDGE.
 CALEDONIA BRIDGE.
 NARROWS, LAKE SIMCÔE.
 BATISCAN BRIDGE.
 UNION SUSPENSION BRIDGE.

APPENDIX LETTER B.

SCHEDULE No. 13.

PUBLIC ROADS.

RATES of TOLL suggested for the following Roads, some of which are still under the direction of Commissioners, who have established Tolls thereon, and the rest are those completed under the direction of the Board of Works, but upon which no Tolls have as yet been levied for want of

NAME OF ROAD.	Length of Road in Miles, Planked or Macadamized.	Number of Toll-bars to each Road.	Average distance between Toll-bars.	RATES OF TOLL SUGGESTED, FOR												COST OF ROAD.	Net Annual Revenue calculated to be derived from each Work.	ACT OF AUTHORITY FOR ESTABLISHING TOLLS.	RE
				Every Wagon, Calèche or Cart, with 4 Horses.	Ditto, with 2 Horses.	Ditto, with 1 Horse.	Each Extra Horse.	2 Oxen, and Cart or Wagon.	Each Extra Yoke of Oxen.	Each Saddle Horse and Rider.	2 Horse Cart or Calèche.	1 Horse Cart or Calèche.	Every Ox, Cow, Ass, Colt without Shoes, or other quadruped, not enumerated.	Every Sheep, Pig or Goat.					
1st.—ROADS CONSTRUCTED UNDER THE DIRECTION OF THE BOARD OF WORKS.																			
LONDON and PORT STANLEY—all Planked	25½	5	5	0 9 3 9	0 6 2 6	0 4 1 8	0 1 0 5	0 4 1 8	0 2 0 10	0 2 0 10	0 6 2 6	0 4 1 8	0 0½ 0 2½	0 6½ 0 1½	23936 3 2	2337 0 0	None.	The calculated amount of revenue derivable at each the travel kept on each portion of each Road by the resident Engineer, under whose direct for each Gate, is what it would produce if let be assumed at the sum set down in the column Each trip going and returning, if done on the same d No Tolls to be charged on Sundays, except upon the No Tolls to be charged on Funerals. Tolls to be paid at every Gate. The Tolls on the Brantford and Caledonia Bridges Bridge and the next Gate. Sleighs are to be paid on Bridges above named.	
LONDON and BRANTFORD—38½ miles Planked, 19 miles Macadamized	57½	9	6½	0 9 6 9	0 6 4 6	0 4 3 0	0 1 0 9	0 4 3 0	0 2 1 6	0 2 1 6	0 6 4 6	0 4 3 0	0 0½ 0 4½	0 0½ 0 2½	48313 8 0	2707 0 0	None.		
HAMILTON and PORT DOVER—34 miles Planked, 3 miles Macadamized	14 23	2 37	6 4	0 9 0 9	0 6 0 6	0 4 0 4	0 1 0 1	0 4 0 4	0 2 0 2	0 2 0 2	0 6 0 6	0 4 0 4	0 0½ 0 0½	0 0½ 0 0½	43231 5 10	3000 0 0	None.		
WINDSOR and SCUGOG—Portions to be Planked and the rest merely Graded	19	3	6½	0 9 2 3	0 6 1 6	0 4 1 0	0 1 0 3	2 4 1 0	0 2 0 6	0 2 0 6	0 6 1 6	0 4 1 0	0 0½ 0 2½	0 0½ 0 1½	7700 0 0	656 0 0	None.		
RICE LAKE and PORT HOPE—all Gravelled	9½	3	3½	0 9 2 3	0 6 1 6	0 4 1 0	0 1 0 3	0 4 1 0	0 2 0 6	0 2 0 6	0 6 1 6	0 4 1 0	0 0½ 0 1½	0 0½ 0 0½	7400 0 0	519 0 0	None.		
CASCADES ROAD—all Planked	14½	4	3½	1 0 4 0	0 6 2 0	0 4 1 4	0 1 0 4	0 4 1 4	0 2 0 8	0 2 0 8	0 6 2 0	0 4 1 4	0 0½ 0 2½	0 0½ 0 1½	16000 0 0	1500 0 0	None.		
2nd.—ROADS CONSTRUCTED UNDER THE DIRECTION OF LOCAL COMMISSIONERS, AND PROPOSED TO BE ASSUMED.																			
BRANTFORD and HAMILTON	13½	3	4½	0 9 0 9	0 6 0 6	0 4 0 4	0 2 0 2	0 4 0 4	0 2 0 2	0 2 0 2	0 6 0 6	0 4 0 4	0 1 0 1	0 0½ 0 0½			Rates of Toll fixed by Trustees. 7 William IV, Chapter 78.		
WEST YORK ROAD TRUST	16																3rd William IV, Chapter 37.		
EAST YORK Do.	18	4	4½														" " " "		
KINGSTON and NAPANEE	24½	5	5	1 3 1 3	0 7½ 0 7½	0 6 0 6	0 1 0 1	0 7½ 0 7½	0 2 0 2	0 2 0 2	0 7½ 0 7½	0 6 0 6	0 1 0 1	0 0½ 0 0½			7 William IV, Chapter 81.		
LACHINE to MONTREAL	7	2	7																
MONTREAL to BOUT DE LISLE	14	1																	
YONGE STREET ROAD TRUST	15	4	3½	0 9 0 9	0 6 0 6	0 4 0 4	0 1 0 1	0 4 0 4	0 2 0 2	0 2 0 2	0 6 0 6	0 4 0 4	0 1 0 1	0 0½ 0 0½			7 William IV, Chapter 80.		
WEST GWILLIMSBURY ROAD and BRIDGE	4	1	4	0 6 0 6	0 4 0 4	0 3 0 3	0 1 0 1				0 2 0 2			0 1 0 1	0 0½ 0 0½		6th William IV, Chapter 28.		

APPENDIX LETTER B.

SCHEDULE No. 13.

PUBLIC ROADS.

RATES of TOLL suggested for the following Roads, some of which are still under the direction of Commissioners, who have established Tolls thereon, and the rest are those completed under the direction of the Board of Works, but upon which no Tolls have as yet been levied for want of legal authority.

NAME OF ROAD.	Length of Road in Miles, Planked or Macadamized.	Number of Toll-bars to each Road.	Average distance between Toll-bars.	RATES OF TOLL SUGGESTED, FOR												COST OF ROAD.	Net Annual Revenue calculated to be derived from each Work.	ACT OF AUTHORITY FOR ESTABLISHING TOLLS.	REMARKS.
				Every Wagon, Caleche, or Cart with 4 Horses.	Ditto, with 2 Horses.	Ditto, with 1 Horse.	Each Extra Horse.	2 Oxen, and Cart or Wagon.	Each Extra Yoke of Oxen.	Each Saddle Horse and Rider.	2 Horse Cart or Caleche.	1 Horse Cart or Caleche.	Every Ox, Cow, Ass, Colt, with out Shoes, or other quadruped not enumerated.	Every Sheep, Pig or Goat.					
1st.—ROADS CONSTRUCTED UNDER THE DIRECTION OF THE BOARD OF WORKS.																			
LONDON and PORT STANLEY—all Planked	25½	5	5	0 9 3 9	0 6 2 6	0 4 1 8	0 1 0 5	0 4 1 8	0 2 0 10	0 2 0 10	0 6 2 6	0 4 1 8	0 0½ 0 2½	0 0½ 0 1½	2336 3 2	2337 0 0	None.	The calculated amount of revenue derivable at each Gate, has been obtained upon these three Roads from a register of the travel kept on each portion of each Road for a certain length of time, and the average has been reduced so low by the resident Engineer, under whose directions the registers were kept, that he considers the amount assumed for each Gate, is what it would produce if let by auction, and that the total amount for each Road may fairly be assumed at the sum set down in the column of net revenue. Each trip going and returning, if done on the same day is subject to but one toll. No Tolls to be charged on Sundays, except upon the Public Stage, and upon Carts or Wagons carrying merchandise. No Tolls to be charged on Funerals. Tolls to be paid at every Gate. The Tolls on the Brantford and Caledonia Bridges are supposed to be included in the Tolls on the Road between each Bridge and the next Gate. Sleighs are to pass Free on all these Roads, subject however to pay Tolls at the two Bridges above named.	
LONDON and BRANTFORD—38½ miles Planked, 19 miles Macadamized	57½	9	6½	0 9 6 9	0 6 4 6	0 4 3 0	0 1 0 9	0 4 3 0	0 2 1 6	0 2 1 6	0 6 4 6	0 4 3 0	0 0½ 0 4½	0 0½ 0 2½	4513 8 0	2707 0 0	None.		
HAMILTON and PORT DOVER—34 miles Planked, 3 miles Macadamized	14 23	37 4	6 6	0 9 0 9	0 6 0 6	0 4 0 4	0 1 0 1	0 4 0 4	0 2 0 2	0 2 0 2	0 6 0 6	0 4 0 4	0 0½ 0 0½	0 0½ 0 0½	4321 5 10	3000 0 0	None.		
WINDSOR and SCUGOG—Portions to be Planked and the rest merely Graded	19	3	6½	0 9 2 3	0 6 1 6	0 4 1 0	0 1 0 3	0 4 1 0	0 2 0 6	0 2 0 6	0 6 1 6	0 4 1 0	0 0½ 0 2½	0 0½ 0 1½	7700 0 0	656 0 0	None.		
RICE LAKE and PORT HOPE—all Gravelled	9½	3	3½	0 9 2 3	0 6 1 6	0 4 1 0	0 1 0 3	0 4 1 0	0 2 0 6	0 2 0 6	0 6 1 6	0 4 1 0	0 0½ 0 1½	0 0½ 0 0½	7400 0 0	519 0 0	None.		
CASCADES ROAD—all Planked	14½	4	3½	1 0 4 0	0 6 2 0	0 4 1 4	0 1 0 4	0 4 1 4	0 2 0 8	0 2 0 8	0 6 2 0	0 4 1 4	0 0½ 0 2½	0 0½ 0 1½	16000 0 0	1500 0 0	None.		
2nd.—ROADS CONSTRUCTED UNDER THE DIRECTION OF LOCAL COMMISSIONERS, AND PROPOSED TO BE ASSUMED.																			
BRANTFORD and HAMILTON—Present Rates	13½	3	4½	0 9 0 9	0 6 0 6	0 4 0 4	0 2 0 2	0 4 0 4	0 2 0 2	0 2 0 2	0 6 0 6	0 4 0 4	0 1 0 1	0 0½ 0 0½			Rates of Toll fixed by Trustees. 7 William IV, Chapter 78.		
WEST YORK ROAD TRUST	16																3rd William IV, Chapter 37.		
EAST YORK Do.	18	4	4½														" " " "		
KINGSTON and NAPANEE—Present Rates	24½	5	5	1 3 1 3	0 7½ 0 7½	0 6 0 6	0 1 0 1	0 7½ 0 7½	0 2 0 2	0 2 0 2	0 7½ 0 7½	0 6 0 6	0 1 0 1	0 0½ 0 0½			7 William IV, Chapter 61.		
LACHINE to MONTREAL	7	2	7																
MONTREAL to BOUT DE LISLE	14	1																	
YONGE STREET ROAD TRUST—Present Rates	15	4	3½	0 9 0 9	0 6 0 6	0 4 0 4	0 1 0 1	0 4 0 4	0 2 0 2	0 2 0 2	0 6 0 6	0 4 0 4	0 1 0 1	0 0½ 0 0½			7 William IV, Chapter 80.		
WEST GWILLMSBURY ROAD and BRIDGE—Present Rates	4	1	4	0 6 0 6	0 4 0 4	0 3 0 3	0 1 0 1			0 2 0 2			0 1 0 1	0 0½ 0 0½			6th William IV, Chapter 28.		

APPENDIX LETTER B.

SCHEDULE No. 15.

RATES OF TOLL suggested for the single detached Locks in the Newcastle District, and at St. Ann's and St. Ours.

CANALS. DESCRIPTION OF PROPERTY, &c.	NEWCASTLE DISTRICT.				St. Ann's Lock.		Saint Ours Lock.
	Seugog Lock.	Whitlas' Lock.	Crook's Lock.	Chisholm's Lock.	Proposed Rates.	Present Rates.	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
STEAMBOATS, if not carrying Cargo.	5 0	5 0	5 0	5 0	10 0	10 0	10 0
STEAMBOATS, with Cargo.....	10 0	10 0	10 0	10 0	20 0	20 0	20 0
BOATS or BARGES under 20 tons...	3 4	3 4	3 4	3 4	6 8	6 8	6 8
Ditto, " 20 to 40 "	5 0	5 0	5 0	5 0	10 0	10 0	10 0
Ditto, " 40 to 60 "	7 6	7 6	7 6	7 6	15 0	15 0	15 0
Ditto, " 60 to 80 "	10 0	10 0	10 0	10 0	20 0	20 0	20 0
Ditto, " 80 to 100 " ...	12 6	12 6	12 6	12 6	25 3	25 3	25 3
Ditto, upwards of 100 tons.	15 0	15 0	15 0	15 0	31 6	31 6	31 6
BOATS or BARGES, empty, or laden only with Salt or Sea Coal, to pay one-half the above Rates.							
LUMBER, FIREWOOD, &c., &c.							
TIMBER of all descriptions, Saw Logs, all kinds of Sawed Lumber, Deals, Planks, Scantlings, Boards, &c. in Cribb, per Lock full, or les- ser quantity	5 0	5 0	5 0	5 0	7 6	7 0	7 6
STANDARD and West India Staves } and Headings, per Crib..... }	3 9	3 9	3 9	3 9	5 0	5 0	5 0
Do. Do. in Boats or } Barges, Standard per M..... }	1 0	1 0	1 0	1 0	1 6	1 6	1 6
Do. Do. Do. West } India, per M..... }	0 4	0 4	0 4	0 4	0 6	0 6	0 6
Do. Do. Do. Headings.	0 1	0 1	0 1	0 1	0 1½	0 1½	0 1½
DEALS, Planks, Boards, Scantlings, } Ditto, per M. feet, inch measure.... }	0 3	0 3	0 3	0 3	0 6	0 1	0 6
SHINGLES, per M.....	0 0½	0 0½	0 0½	0 0½	0 1	.....	0 1
CORDWOOD, per Boat or Raft.....	3 9	3 9	3 9	3 9	6 8	6 8	6 8
TAN BARK, per Cord.....	0 1½	0 1½	0 1½	0 1½	0 2	0 2	0 2
POST and Rails for Fencing, do.....	0 1½	0 1½	0 1½	0 1½	0 2	each 1	0 2

APPENDIX LETTER C.

SCHEDULE shewing the several portions of Roads made under former Commissioners, and now proposed to be assumed by the Government, as forming part of the Main Provincial High Road:—

HAMILTON and BRANTFORD,
WEST YORK,
EAST YORK,
NAPANEE to KINGSTON,
LACHINE to MONTREAL,
MONTREAL to BOUT DE LISLE,
MAIN NORTH TORONTO ROAD to LAKE HURON.

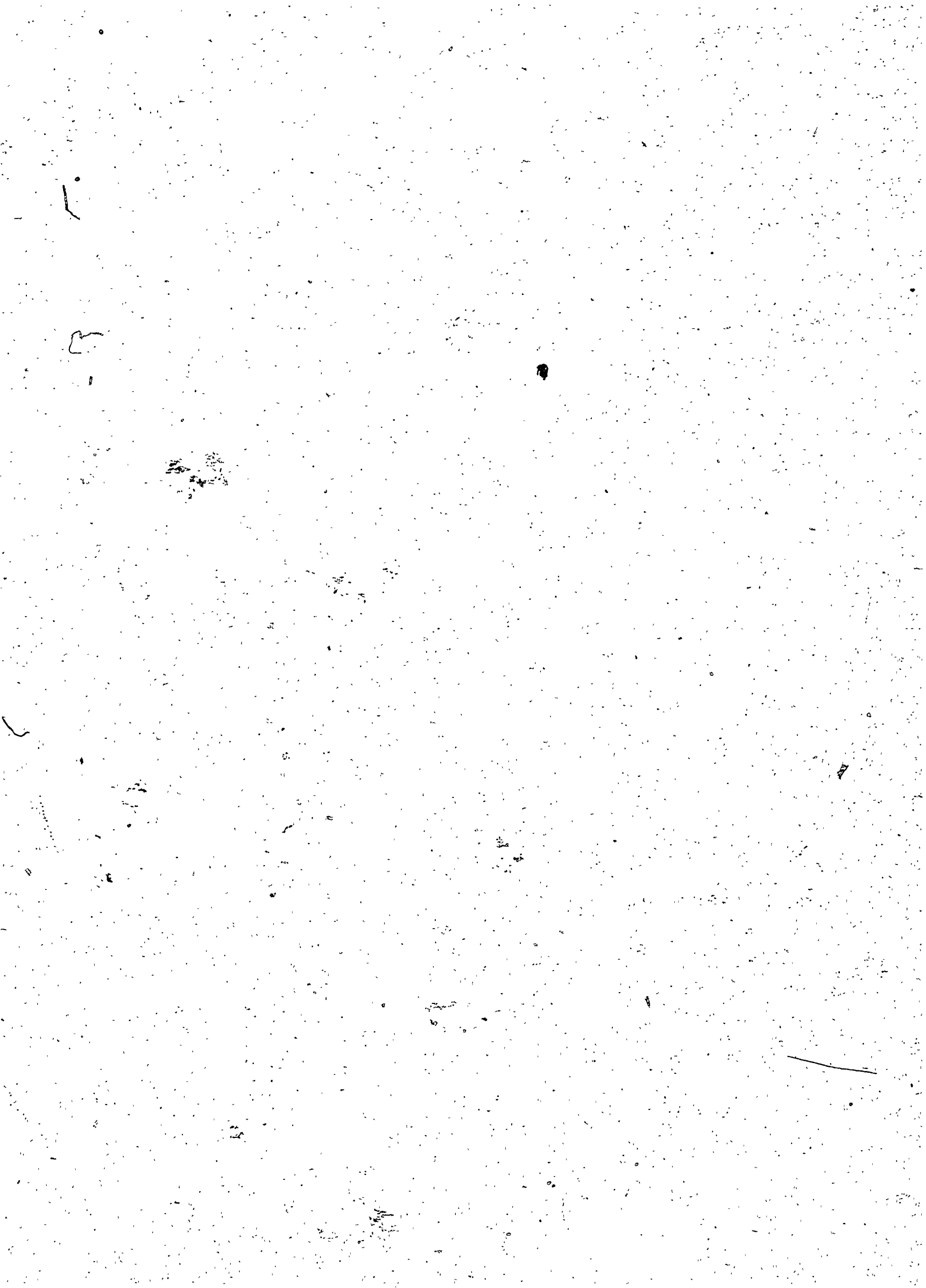
APPENDIX LETTER D.

No. 1.

COMPARATIVE STATEMENT of the Principal Articles of Property passed through the Welland Canal, from the opening of the navigation to the 30th November, for the years 1841, 1842, 1843 and 1844.—

ARTICLES.		1841.	1842.	1843.	1844.
Beef and Pork,	Barrels.	30116	87394	19382½	41976½
Flour,	"	213183	247602	171450	305208½
Ashes,	"	263	441	991	3112
Beer and Cider,	"	81	234	134	50
Salt,	"	156139	152533	145971	209008
Do.,	Bags.				4204
Whiskey,	Barrels.	1950	3142	1875½	931
Plaster,	"	113	310	129	2068½
Fruit and Nuts,	"	246	459	265	470
Butter and Lard,	"	174	1259	1133	4639½
Seeds,	"	1127	609	581	1429½
Tallow,	"	23		209½	1132
Water Lime,	"	25	316	230	1662
Pitch and Tar,	"			282	75
Fish,	"	132	838	1227	1758½
Oatmeal,	"	75		156	132
Bees' Wax,	"				36
Oil,	"		2	16½	96
Saw Logs,	Number.	11300	9885	12026	10411
Boards,	Feet.	3580911	4199590	2231143	7493574
Square Timber,	Cubic feet.	1155086	267242	342414	490523
Half flatted "	"			1300	13922
Round "	"	28556	7231	8360	20879
Staves, Pipe,	Number.	1373436	1253405	649403	630602
Do., West India,	"	1402725	1128506	183960	1197916
Do., double flour barrel,	"	277277	260700	9656	130500
Shingles,	"	414500	217000	61100	330400
Wheat,	Bushels.	1579966	1891390	1172850	2122592
Corn,	"	70474	151164	92186	75328
Barley,	"	1304	20		930
Rye,	"	467	1764		142
Oats,	"	3619	12240	13031	5653
Potatoes,	"	486	1050	8818	7311
Butter and Lard,	Kégs.	967	1917	1692	4669
Merchandize,	Tons.	4031	3539	4392	11318 16 cwt
Coal,	"	1422	2301	1819	1689 7 "
Castings,	"	91	213	228 12 cwt.	211 6 "
Iron,	"	78	237	495	1748 10 "
Tobacco,	"	369	277	97 5 "	140 7 "
Grindstones,	"	237	220	99 10 "	151 14 "
Plaster,	"	369	935	422 10 "	1491 10 "
Hides,	"	9	16	66 5 "	101 15 "
Bacon and Hams,	"	59	41	164 14 "	307 — "
Bran and Shorts,	"	45	392	29	231 11 "
Water Lime,	"				441 7 "
Stone,	Cords.	126	311	1106	738½
Firewood,	"	31	402	1876½	3251½
Passengers,	Number.	358	1929	120	3261½
Small Packages,	"	103	496	315	459
Pumps,	"	20	112	117	102
Schooners,	"	2056	2226	1543	2121
Steamboats and Propellers,	"		34	24	484
Scows,	"	1063	1430	824	1671
Rafts,	"	133	78		118
Tonnage,	Tons.	277144	304983	224408	327570
Amount Collected,		£20210 19 9	£23946 19 6	£16135 7 8½	£25573 3 10½

APPENDIX
LETTER F.



APPENDIX
LETTER F.

CHART OF
LAKE ST. PETER

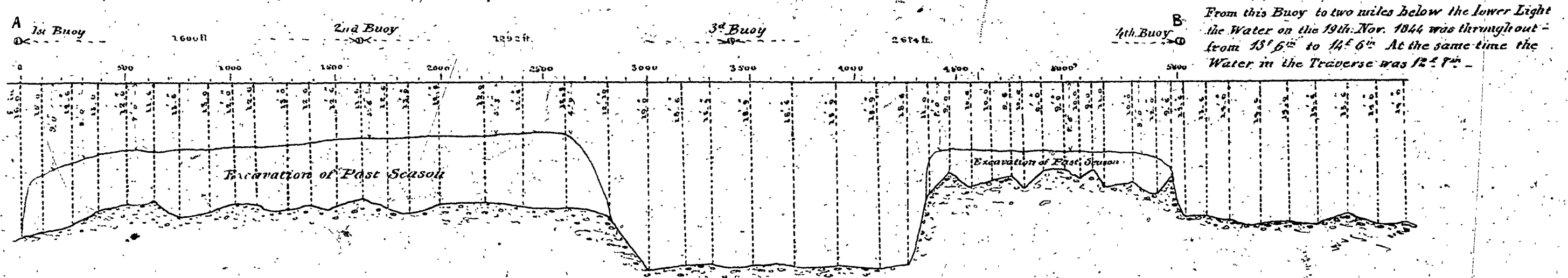


NOTE THE SOUNDINGS ARE FROM CAP BAYFIELD'S CHART
THE DOTTED LINE IS THE DIRECTION OF THE CHANNEL
NOW BEING DREGGED, THUS
THE SCORED FIGURES AT THE HEAD OF THIS CHANNEL
GIVE THE INCREASED DEPTH OF WATER THAT HAS BEEN
OBTAINED BY THE OPERATIONS OF THE PAST SEASON
THE SCORED FIGURES ALONG THE LINE OF THE
CHANNEL SHOW THE LOWEST WATER FOUND THIS
SEASON BY CAP. VAUGHAN AND RAESIDE; AT WHICH
TIME ON THE FLATS AT THE LOWER LIGHT
THERE WERE BUT 12 F. 7 I.
THE GROINS AND DAMS ARE SHOWN IN RED

APPENDIX
LETTER - G.

PROFILE OF THE CENTRE LINE OF THE CHANNEL NOW BEING DREDGED THROUGH LAKE ST. PETER

taken and verified by CAPTAINS RAESIDE and VAUGHAN 19th. November 1844



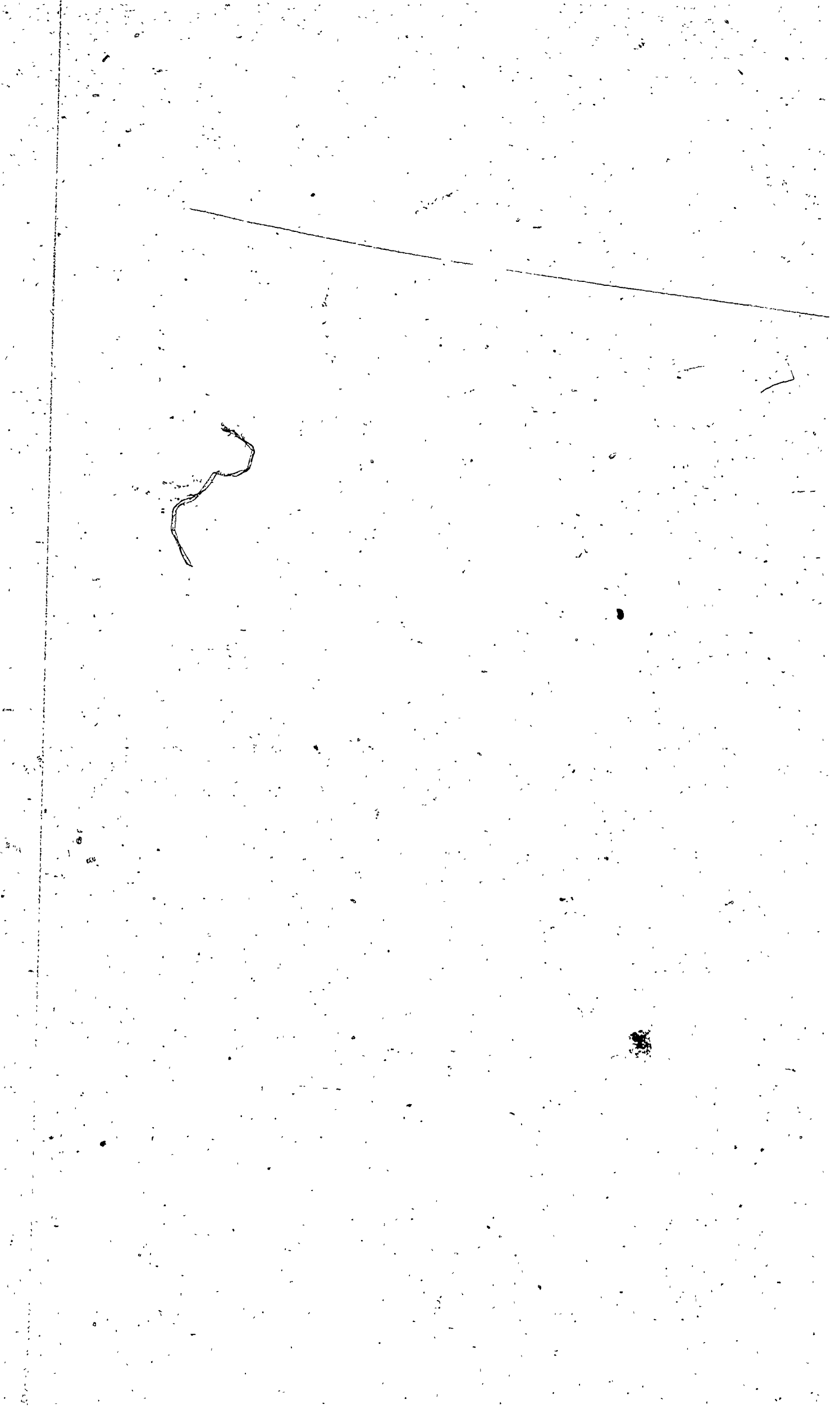
From this Buoy to two miles below the Lower Light
the Water on the 19th. Nov. 1844 was throughout -
from 13' 6" to 14' 6" At the same time the
Water in the Traverse was 12' 9" -

UPPER OR ST FRANCIS BANK

about 2900 in length
On this Bank on each side of the Channel dredged
the water varies from 5 to 6 feet.

LOWER BANK

About 1300 feet in length



APPENDIX H.—SCHEDULE 1.

NEW BRIDGES required on the line of the Front Road, on the North side of the Ottawa River between Hull and Grenville.

No. as designated in report.	Name of Stream.	Width of Water.	Width between Banks.	Depth in Centre.	Depth at Side.	Rise of Flood.	Height of Banks.	REMARKS.
3	Across a Marsh.....	100	..	..	..	..	..
5	Gatineau River.....	680	740	18	E. 15	15	E. 25	In Templeton, west of the Gatineau, requires 15 feet, height of truss.
6	Wabacha Creek.....	30	100	2	W. 4	10	W. 12	In Templeton, 400 feet E. side, 15 feet depth, remainder sand bar 4 feet deep, sluggish, sand bottom, building stone one mile distant by water.
8	Lievre River.....	150	450	10	6	8	E. 30	In Templeton, requires 2 trusses of 20 and 2 of 12 feet in height.
9, 10 & 11	Across Ravines.....	Creeks.	..	..	..	..	W. 20	In Buckingham, Stoney Rapids requires 1 span of 150 and 1 of 60 feet, the rest may be in 20 feet trusses, rock bottom, building stone on west bank.
12 & 13	Do. Do.....	160	..	15	6	10	..	In Lechaber, 3 Bridges of 60 feet long, require each 2 trusses of 20 feet in height.
14	Petite Nation River.....	190	300	8	8	6	E. 30	In Seigneurie of Petite Nation, 2 Bridges same as last.
18	River Rouge (Rapids).....	880	920	10	6	10	E. 25	Do. Do. bold shore, high banks, rapid stream, soft bottom.
18	Do. Do. on line of Road.....	..	..	..	..	..	W. 12	In Grenville, west bank high and bold, stoney rapids, rock foundation, requires 1 span of 180 and 1 of 60 feet, rest may be trussed 20 feet high, stone at L'Original 2 miles by water.
								An Island, in centre 300 feet across, 8 feet above water, rapid stream, foundation on boulders, stone at L'Original 2 miles by water.

SCHEDULE 2.

DESCRIPTION OF THE BRIDGES now standing on the line of the Front Road on the North side of the Ottawa River which require repairs, and the repairs necessary to put them in good condition.

No. as designated in report.	Name of Stream.	Length of Roadway.	Width of Roadway.	Number of Trusses.	REMARKS AND DESCRIPTION OF REPAIRS NECESSARY.
1	Mill Creek.....	450	20	18	In Hull, requires new centre truss 30 feet in height, new floor plank and 200 feet additional bridging, at east end trusses will be 10 feet in height.
2	Found Creek.....	300	20	12	In Templeton, 4 new trusses 30 feet in height, 120 feet new strings, and entire new flooring.
4	Ravine.....	200	20	..	In Templeton, new flooring required.
7	Upper Blanche.....	200	20	..	All the above Bridges are west of the Gatineau River.
15	Salmon River.....	270	20	8	In Templeton, 4 new caps, entire new strings, and flooring plank.
16	Creek and Ravine.....	150	20	4	In Seigneurie of Petite Nation, to be entirely rebuilt, 4 trusses of 30 and 4 of 15 feet in height.
17	Do. Do.....	150	20	4	In Grenville, to be entirely rebuilt, 2 trusses of 30 and 2 of 15 feet in height.
					Do. same as last.

The Bridges now standing consist of Bents or Trusses of timber placed about 30 feet apart which support the strings or floor timbers, upon these the floor planks are laid.

THOMAS A. BEGLY, Esq.,
Secretary, Board of Works.

(Signed) D. S. WALTON.

APPENDIX LETTER I.

BYTOWN, 19TH DECEMBER, 1844.

SIR,

In compliance with your instructions of the 18th November, I have travelled the Road from L'Original to Bytown, and have the honor to Report:—

That the only line of Road now opened from L'Original to Bytown, is by way of Caledonia Springs to Hattfield, on the south Nation River in the Township of Plantagenet, thence by what is called the Front Road to Bytown. This is an ordinary winter sleigh road, is cleared about 30 feet wide not grubbed, is ditched on one side in wet land and has bridges erected over the creeks and ravines, some of which are in good order. This Road passes through the front and most settled parts of the country. I have also travelled on the proposed line of centre-Road for 10 miles next east of Green's Creek (in Gloucester) and from observation of this portion and the best information I can obtain of the remainder including that contained in the Report of the District Surveyor, who run the line, I am satisfied that a great extent of swamp and wet pine land must be traversed, the expense of which in my opinion condemns this route.

It is also about the same distance from Hattfield to Bytown by this as by the line of front road selected and hereafter described, and its route is from Hattfield through the centre of Plantagenet, Clarence and Cumberland uniting with the front Road at Green's Creek in Gloucester 6 miles east of Bytown.

The proposed rear route by way of Bear Brook I have deemed too circuitous to admit of its consideration in this instance.

I would recommend the following route to be selected for the completion of a Road from L'Original to Bytown, viz: from L'Original to Hattfield on the South Nation River in Plantagenet, following the present line of Road via Caledonia Springs, distance about 18 miles, 11 of which are excellent and 7 require repairs, "thence westerly" I am informed that a more direct and cheaper line of Road than the front may be run to intersect the front Road at Fox's Creek, lessening the distance between those points some 2 miles, and avoiding some ravines which intersect the front Road.

I would respectfully suggest a survey of this alteration to ascertain its practicability.

The estimate is made upon the present line of front Road between those points.

From Fox's Creek to Bytown I recommend for selection the line of front Road with a few alterations necessary to straighten it and to cross ravines at more favourable points.

Hereto is annexed an approximate estimate of the cost of completing a "good ordinary Canadian Road," between L'Original and Bytown, based upon the following general description of Road, viz: to chop and clear 66 feet wide, to form a road-way of 20 feet wide having a crown of one foot. To cross lay in swamp with 1 foot of brush and cover with an average depth of 1 foot of earth, and to grub the width of the road-way.

An approximated Estimate of the cost of completing a Road from L'Original to Bytown.

	£	s.	d.	£	s.	d.
L'ORIGINAL TO HATTFIELD,—18 Miles.						
11 mile good Road requires nothing,						
$\frac{1}{4}$ mile Swamp, cross laying, &c. at £100,	100	0	0			
$6\frac{1}{2}$ miles to be repaired in various places, £30,	195	0	0			
HATTFIELD TO GIFFORDS, IN CLARENCE—13 Miles.						
13 miles wet Land, light clearing, grubbing and ditching, £120,	1560	0	0			
GIFFORDS TO BECKWITH'S CREEK IN CUMBERLAND—11 Miles.						
1 miles Swamp cross laying, &c.	200	0	0			
2 miles wet Pine, £150,	300	0	0			
4 do dry hard wood, £100,	400	0	0			
4 do cleared Lands, £80,	320	0	0			
BECKWITH'S CREEK TO GREEN'S CREEK IN GLOCESTER—13 Miles.						
$6\frac{1}{2}$ miles dry hardwood, £100,	650	0	0			
2 do cleared Land, £80,	160	0	0			
4 do wet Pine, £150,	600	0	0			
$\frac{1}{4}$ do Swamp, £250,	125	0	0			
GREEN'S CREEK TO BYTOWN—6 Miles.						
$\frac{1}{4}$ mile wet Pine Land, £150,	75	0	0			
$2\frac{1}{2}$ miles cleared Land, £80,	200	0	0			
3 do good Road,						4885 0 0
COST OF BRIDGES ACROSS THE NATION RIVER AT HATTFIELD— 400 Feet long, centre space.						
70 feet, 2 dry Stone Piers, rest on Bents,	500	0	0			
2 Bridges over Ravines in Clarence of 150 ft. £75,	150	0	0			
2 do do Cumberland and Gloucester, of 150 ft. £75,	150	0	0			
2 do do of 100 feet. £50,	100	0	0			900 0 0
Aggregate Cost,						£5785 0 0

The distance from L'Original to Bytown by this route is about 61 miles.

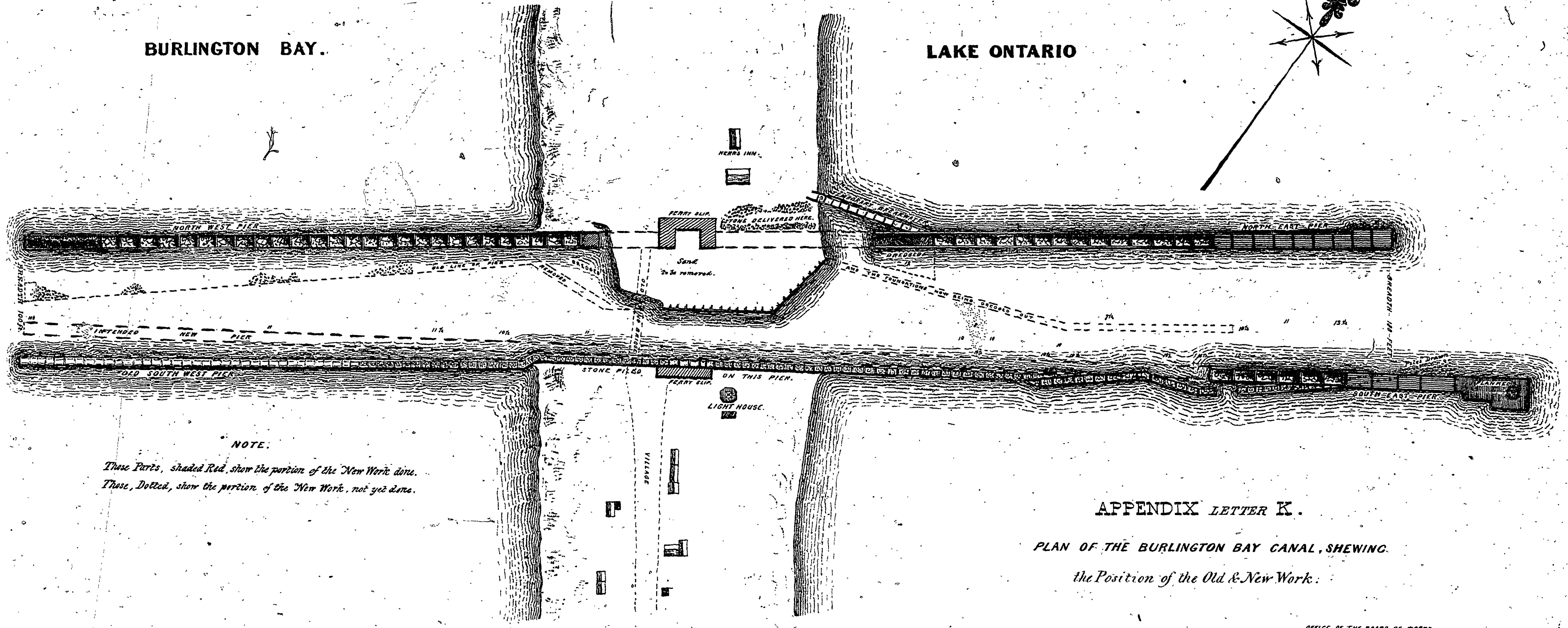
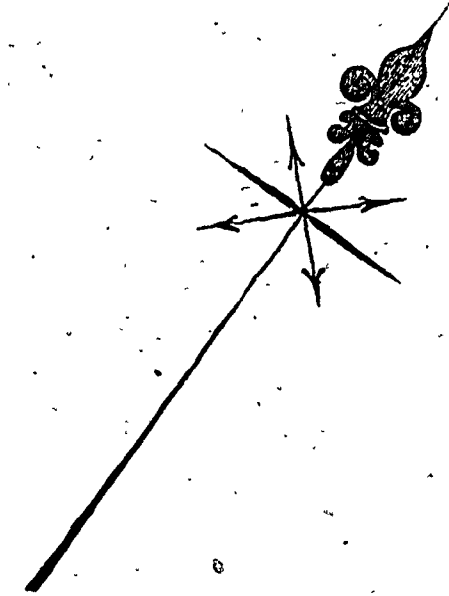
(Signed,)

D. S. WALTON.

THOMAS A. BEGLY, Esq.,
Secretary Board of Works.

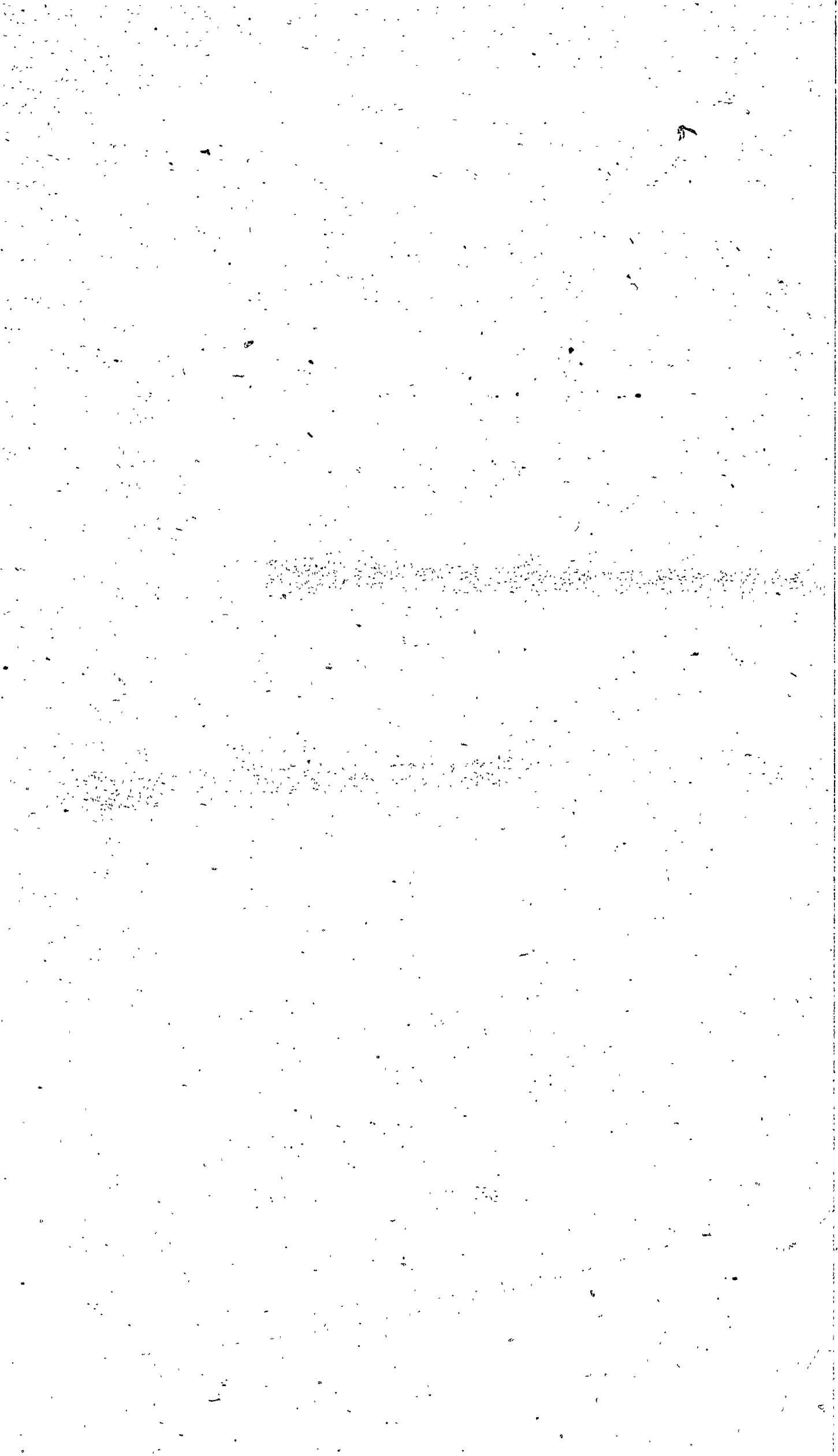
BURLINGTON BAY.

LAKE ONTARIO



NOTE:
These Parts, shaded Red, show the portion of the New Work done.
These, Dotted, show the portion of the New Work, not yet done.

APPENDIX LETTER K.
PLAN OF THE BURLINGTON BAY CANAL, SHEWING
the Position of the Old & New Work.



APPENDIX LETTER L.

SCHEDULE of claims against the late Commissioners for the improvement of the River Trent and the Inland Waters of the Newcastle District, paid by the Board of Works under authority of the Executive Government.

	Amount claimed by the parties.			Amount as valued by the Engineer.			£ s. d.		
	£	s.	d.	£	s.	d.	£	s.	d.
First —Claims of Laborers and Mechanics, to whom due bills had been granted by order of the late Commissioners—also of sundry persons for materials delivered on the works.									
Sundry due bills granted to Laborers and Mechanics, -	..	..	..	356	12	6	608 11 0		
J. R. Benson, -	..	..	..	83	16	2			
James Braley, -	..	..	..	46	9	4			
McGregor & Case, -	..	..	..	121	13	6			
Secondly —Claims for balances due Contractors, &c. for work done and services performed.									
Hales & Campbell, -	125	18	7	113	5	6	1154 12 10		
George Hall, -	1730	0	0	584	4	0			
N. H. Baird, -	203	7	0	104	1	2			
Charles Green, -	92	10	0	92	10	0			
J. R. Benson, -	105	0	0	50	0	0			
W. Hartwell, -	322	17	6	189	13	0			
Sundry small accounts, -	..	..	..	20	19	0			
Thirdly —Claims for damage caused by the overflowing of Lands and injury done to mill properties.									
J. Purdy, -	..	..	..	400	0	0	1157 5 0		
Dr. Gilchrist, -	2073	14	6	681	15	6			
Le Viscount and others, -	..	..	..	75	10	0			
F. Hall, investigating claims, -	..	..	..	..	..	..	284 10 8		
							£	3205	0 0

APPENDIX LETTER M.

SCHEDULE of claims against the late Commissioners for the improvement of the River Trent and the Inland Waters of the Newcastle District, part of which the Board of Works have been authorised to pay by order of the Executive Government, and the remainder valued by the same authority, but the payment of which as not yet been authorised.

	Amount claimed by the parties.			Amount as valued by the Engineer.			£ s. d.		
	£	s.	d.	£	s.	d.	£	s.	d.
First —Claims of Laborers, &c. to whom due bills have been granted by order of the late Commissioners, the payment of which has been authorised, but not yet called for by the parties.									
Sundry due bills granted for labor, &c, -	..	..	..	73	6	4	81 2 3		
Sundry small accounts, -	..	..	..	7	15	11			
Secondly —Claims for damage caused by overflowing of Lands and injury to mill property, the payment of which has been authorised.									
W. Cottingham has not yet agreed to accept -	1096	10	0	501	3	4*	549 3 6		
M. S. Casson (title in dispute) -	..	..	..	45	0	0			
Thirdly —Claims for damages caused by the overflowing of Lands and injury to mill and other property, valued under the sanction of the Executive Government, but not yet authorised to be paid.									
W. Cottingham, -	1096	10	0	679	0	0*	3023 9 2		
J. Gilchrist, -	2016	19	3	1481	19	2			
J. Sullivan and others, -	52	10	0	52	10	0			
W. Hunter, -	52	10	0	52	10	0			
J. Owen, -	..	..	..	37	10	0			
Simcon Fraser, -	22	10	0	13	5	0			
W. Torashlar, -	500	0	0	152	0	0			
Amos Thrashlar, -	250	0	0	140	0	0			
R. Hoan, -	350	0	0	45	5	0			
C. Hoan, -	250	0	0	20	0	0			
P. Couch, -	..	..	..	16	0	0			
H. Hoan, -	350	0	0	111	0	0			
W. Northop, -	500	0	0	30	0	0			
J. Gansay, -	250	0	0	76	0	0			
C. J. Baldwin, -	..	..	..	37	10	0			
E. Hoan, -	400	0	0	49	0	0			
<i>Carried forward</i>								£	3653	14 9

The former sum is included in the latter.

APPENDIX LETTER M.

SCHEDULE of claims against the late Commissioners for the improvement of the River Trent, &c.—(Continued.)

	Amount claimed by the parties.		Amount as valued by the Engineer.		£ s. d.	
	£	s. d.	£	s. d.	£	s. d.
<i>Brought forward</i>.....	..	..	..	..	3653	14 9
<i>Fourthly</i> —Claims of the late Commissioners for monies expended by them over and above the amount received, referred to the Inspector General by order in Council, for investigation; (it appearing that the sum of £1260 3 5½ has been paid to Sidey & Co. by the Commissioners over and above the amount of work done by them.)	270	9 2	107	6 5	107	6 5
<i>Fifthly</i> —Claims made by sundry persons, who, in the opinion of the Engineer, have not sustained damage, or to whom none appeared to have been done.						
Hon. Z. Burnham,	25	0 0				
D. Sidey & Co. who it appears have been already overpaid £1260 3s. 6d.	1501	19 6				
Thomas Fortye,						
<i>Sixthly</i> —Claims lately made by sundry persons into which no investigation has as yet been made.						
G. S. Boulton for drowned Lands, Forsyth, Richardson & Co., for damage to mill privilege—(no mill is yet erected.)						
Amount as valued by the Engineer,	..	..	..	..	£ 3761	1 2

APPENDIX LETTER N,

SHEWING the Quantity of Lumber run down the Trent during the Three past Seasons, &c.

1842.— 800,000 feet of Pine Lumber.
1843.—1,000,000 do. do.
40,000 Staves.

1844.—1,500,000 feet Pine Lumber	}	down the Slide
300 Masts.....		at
140,000 Staves.....		Heeley's Falls.
*1845.—6,000,000 feet Pine Timber.		

* This amount is calculated from the quantity of Timber which can be prepared, by the number of men now in the Woods.

APPENDIX LETTER O.

REPORT of Mr. Thomas Wilson, Overseer of the Works of the River Trent and Newcastle District.

PETERBORO, 25TH NOVEMBER, 1844.

SIR,

There is every prospect that between six and seven million feet of Timber will run through the Slides, on the River Trent, in the Spring of 1845, as at this time there are above eight hundred men in the woods getting out Timber, between Middle Falls and Peterboro'; these men are divided into gangs of five in each gang, which will make 160 gangs; one gang will make 2000 feet per week, they have been in the woods since October and will work until the middle of April, say 24 weeks,—2000 x 24=48,000,—160 x 48,000=7,680,000 feet,

which amount probably will not all be got out of the woods, say 6,000,000 will be got out and run down the Slides. The Lumber Merchants have been in the habit of letting their Timber to contractors to take from Heely's Falls to Percy Boom, at from one pound fifteen shillings to Two pounds per Thousand feet, which, with other expenses in buying floats and traverses for rerafting at the mouth of the Trent, will amount to Five pounds per Thousand feet. I would not hesitate to say that every thousand feet of Timber costs five pounds in taking from Heely's Falls to the Bay of Quinté, and rafting to run down to market. The

Slides when completed will prevent such an expense; for the Timber can then be rafted at the place where it is drawn into the water, and instead of the lumbermen buying their floats, &c., at the Percy Boom, at the mouth of the Trent, their own men can cut them at a time when they would not be earning the quarter of their wages, that is just when the frost is breaking up, when they cannot draw large Timber, nor yet raft that which is drawn on account of the ice.

With respect to the charges for the passage of Timber through the Slides, if it formerly cost five pounds per thousand, I think that one pound ten shillings per thousand would be sufficiently low to secure the merchant a saving of half the amount it formerly cost him per thousand at the lowest estimate. Providing then that 6,000,000 of feet is run through the Slides next Spring at one pound ten shillings per thousand, the Tolls would amount to £9000. I think the Tolls should not be less than 7s. 6d. per thousand at Heely's, Middle Falls and Ranney's, at Crooks, 3s. 9d.; if the Otonabee River were made so that Timber could be got down, it would draw a great many more speculators into the trade, and the traffic would yearly increase. As the Timber convenient to Rice Lake and the Trent is getting scarce, and in the townships North of Peterboro' there is an abundance of White Pine and White Oak, I think sufficient to supply the English market for thirty years, the Timber is of the very best description. There is also a large amount of Red Pine.

I have heard that some merchants are intending to make staves in the Township of Ops, and take them out by the way of the Plank Road to Windsor Harbour; that Road would be too expensive, as they then would have to be shipped; but providing the Slides were made on the Otonabee River, which, I think, is indispensably necessary, they could then raft in Scugog Lake and run down to Quebec.

There is no trade whatever on the Trent excepting Lumber at present; but if it were practicable for the Steamboat to run to Heely Falls, (the only obstruction being Asphoddel Bridge,) it would then draw a trade from the adjoining Townships; to take this part of the navigation prospectively, it must be the way of transport for the production of the adjoining Townships, and when once in operation will cause the Lands between Heely and Crooks to be settled upon, and instead of the new settler burning the wood and thinking the ashes of no value, he will at once see that he has an easy communication with the front and that any amount of Potash could be easily got to market, it will be an inducement for him to make a trial, and if an industrious and persevering man, he will not be disappointed in his expectations, but will receive, if a

THOMAS A. BEGLY, Esq.,
Secretary Board of Works.

good article, sufficient as to pay him for his labour in clearing his land, and if one enterprising individual starts in a new settlement where every settler is clearing lands, it will cause his neighbours, if not to make Potash, to save their ashes and sell to the Potash maker, which would have an abundance of ashes as the timber in these Townships is well adapted for making that article.

Crook's Rapids and Heely's Falls would be Ports of Entry for grain and other produce, and as Heely's is only nine miles from the Marmora iron works, why not make a road connecting the two places and transport the manufactured article by the way of Cobourg. It is a pity that these works are not in operation, as I am informed by a smith I have on the works, and who has wrought up some of the Marmora iron, that it is equal if not superior to Sweeds iron.

The merchandize that has passed through the Lock at Peterboro' this season amounts to 326 tons and 480 passengers—the two years previous there were from three to five thousand bushels of wheat taken down the River; there were from forty to fifty thousand bushels received in Peterboro' and taken by sleighs to Cobourg and Port Hope mills—it is now anticipated by the merchants of Peterboro' that they will receive from one hundred and fifty to two hundred thousand bushels yearly in Peterboro' which will be manufactured into flour, as there are two extensive mills building, one of which is expected to commence grinding in February next; this quantity of wheat will make from thirty to fifty thousand barrels of flour, which must be transported by the River Otonabee and Rice Lake, as it would be summer before the article could be manufactured. This traffic must inevitably increase yearly as the merchants in Peterboro' will be enabled to give within two pence per bushel of the merchants in Cobourg and Port Hope.

With respect to the management of the works when completed, I would suggest to have a general Superintendent, and in the spring of the year, during the time of running timber, engage an assistant at each Slide; these assistants should mark the timber with the number of the Slide it first passes through, so that the Collector at the lower Slide could collect the whole of the Tolls for the whole of the Slides at one place.

If Slides were constructed on the Otonabee, it would open a communication with the inland waters, which, to look at prospectively, would open a trade from the back Country, which, I think, cannot be estimated, for it would certainly be the cause of inducing persons to settle on the lands, and must yearly increase the number of the inhabitants.

I remain, &c., &c.,
THOMAS WILSON,
Overseer Trent Locks.

APPENDIX LETTER P.

COBOURG, 25TH NOVEMBER, 1844.

SIR,

In reply to your letter of the 9th instant, I beg to submit the following notes:—the necessity of making out the estimates and returns already sent, and the travel I have had in the performance of that duty, leaves me far less time than I could have wished to make the enquiries necessary to enable me to lay before you a fuller and more copious report.

I shall consider the Newcastle and Colborne Districts as one, as they are naturally united by the great chain of water communication, their interests are the same, and the increase in their trade and productions are in a great measure dependant on each other.

The great object of all improvements should be to facilitate the operations of commerce and agriculture—to afford an outlet for the productions of the rear town-

ships, and by that means induce to its speedy settlement.

For many years the inhabitants of the rear townships of the District have been, during several months in the year, completely shut up; egress was next to an impossibility, and the consequence was, they had little or no inducement to industry beyond what was absolutely required for their sustenance or to liquidate the few debts contracted in the purchase of necessaries. The judicious opening of roads and other means of communication will speedily obviate this difficulty.

The works already in operation in this District will, as appears by an inspection of the map very naturally tend to this most desirable end.

The improvement of the River Trent will open a readier and safer passage for the transport of Lumber, the great staple article of trade on the banks of the River, and which must for several years continue to be so.

The erection of the Lock and Dam at Bobcaygean and Lindsay will open the North-western section of the District, completing the navigation of the Scugog to its western extremity, and thence to Lake Ontario by means of the Windsor and Scugog Road, 19 miles in length.

The completion of the Dam at Crooks' and Whitlas' has rendered perfectly safe the navigation of the Rice Lake and the River Otonabee, hitherto so dangerous and fatal to every attempt to establish a system of water transport, and will also, with the completion of the Bridges at Crooks', allow a Steamboat navigation from the head of the Rice Lake to the centre of the Township of Seymour.

This great convenience will for many years be quite sufficient for the transport of all the produce and merchandize of the townships bordering on this river, and will complete the main artery of the District running in a diagonal direction from South East to North West.

The completion of the Slides at Buckhorn and Burley Chute will finish the water communication as far as regards Lumber, and will open up a tract of Country not surpassed on this continent, affording almost inexhaustible forests of White Oak and Pine.

A great obstacle to the agricultural improvement of the Northern Townships was the want of some route by which the Lumber could be got to the market, the consumption on the spot being very limited, the settler confined his operations of clearing as much as possible, —such a route being now opened, the land will be speedily cleared and a rapid increase will soon demand greater facilities for the transport of grain and merchandize.

Such a line is now in progress, and the only difficulty is in the want of a proper Lock at Bobcaygean by which the boat navigation from Mud Lake to the head of the Scugog Lake would be completed, and without which, the Dam and Lock already completed at Lindsay will be perfectly useless: this, as I before observed, would open up the entire of the North Western section affording a ready transport for grain, merchandize, sawed lumber and staves.

The extension of the Scugog Road to the Narrows of Lake Simcoe, thus connecting in a direct line, Lake Ontario with Lake Huron, would open the finest section of Country imaginable, materially shorten the distance from the far West by an easy and practicable route, not so desirable however as that of the Newcastle waters, did the circumstances of the Country afford any prospect of the direct line of water communication

from Lake Simcoe by the Talbot River to the Bay of Quinté being adopted.

The great expense of the latter however seems an insuperable barrier to its completion at least for many years, and the former would meet every reasonable want of the Country, and greatly increase the Revenue.

The improvement of the Scugog will naturally force the attention of the inhabitants of the Townships to the North and West of that River, to the improvement of the township roads and the finding a direct line from Cameron's Lake to the nearest point on the Scugog for the transport of light merchandize.

The next subject which presents itself is the improvement of the middle section.

The improvement of the navigation of the Rice Lake has already greatly increased the trade, and the gravel road from the head of the Lake to Port Hope will, on its completion, afford sufficient access to the front from those Townships of which Peterboro' is the natural depôt.

The great advantage conferred upon this fine section of the Province by the works already completed, is now generally admitted; indeed it cannot be denied, nor would it be fair to urge as an objection against them, even if they failed for the first few years to produce a positive revenue, the defect in revenue would be more than compensated, as regards the Province, by the greater facility, speed and safety of transportation, thereby making the articles conveyed less costly, the circulation of capital more rapid and a certain proportion of men and animals will be disposable for other useful branches of industry, and above all opening the finest tracts of Country to a market, which, without the aid of the works referred to would be inaccessible.

I have found more difficulty in ascertaining the traffic of the several harbours than I at first anticipated.

The owners of some of the small harbours are unwilling to make known the actual amount of business, as they are generally in the habit of making exaggerated newspaper statements annually to serve their own interests.

It is however certain that a large and steady increase is going on—

BEGINNING AT WINDSOR HABBOUR.

STATEMENT OF EXPORTS.

	1842.	1843.	1844.	
Flour, . . . Barrel.	6345	12362		
Pork "	697	826		
Ashes, "	264	461		
Oatmeal, "	123	111		
Lard, "	47	120		
Grass Seeds, " "	90	749		
Flax Seed, " "	9			
Whiskey, "	68	44		
Beer, "	..	14		
Wheat . . . Bushels,	7222	18768		
Oats, "	4526	6657		
Pease "	748	591		
Do. "	100			
Oats, "	697			On Wharf.
Lumber, . . . Feet.	101000	233500		"
Do. "		80000		On Bench.
Sundries, packages.	93	87		
Butter, . . . Firkins.	8			
Hams, "	..	24		
Bran, "		920		
Potatoes, Bushels.		120		

Value of the Exports as above for 1843.

£15,246 0 0 of which $\frac{2}{3}$ is from Windsor Harbour, and $\frac{1}{3}$ from Oshawa.

The Exports from Windsor this year are about the same as the last, and perhaps a trifle more from Oshawa, occasioned by the Proprietors and the Captains of the Mail Line of Steam Boats preferring to touch at Harbours not under the control of the Board. Great objections are urged against the design and general arrangement of Burlington Bay, Windsor and Cobourg Harbours, and as far as I have been able to learn solely because they are intended to accommodate and shelter every other description of Vessel as well the Steam Boats; frequently a Steam Boat passes Cobourg without touching, and in the same state of the weather touch at Port Hope, Bond Head and Darlington where a single Pier only projects into the Lake.

Statement of Imports into WINDSOR HARBOUR.

Duty on Imports from United States—

For Year 1842.....	£300 0 0
“ “ 1843.....	332 18 1
To 20th Novr. 1844.....	753 9 5

The Year ends 5th January, 1845.

PORT DARLINGTON.

STATEMENT OF EXPORTS.

	1842.	1843.	1844.
Lumber, . . Feet.	149000	112000	254000
Flour, . . Barrels.	6566	5688	6927
Oatmeal	33	6	203
Whiskey,	240	117	102
Pork,	281	29	16
Corn Meal	27	..	12
Pot Ashes,	104	..	11
Ashes,	275	198	143
Pease,	59	16	..
Beef,	5	..	..
Lard,	2	..	..
Butter,	40	6	21
Oats, . . Bushels.	1263	..	..
Potatoes,	285	..	102
Barley,	807	..	..
Shingles, Bundles.	22	20	..
Wheat, Bushels.	..	1566	2300

Statement of the value of Imports into PORT DARLINGTON and BOND HEAD HARBOUR.

	1841.		1842.		1843.		1844.	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.
Port Darlington.....	162	2 3½	154	13 1	217	15 4¾	487	5 4¾
Bond Head Harbour.....	39	8 ..	61	9 ¾	65	8 5½	52	7 0½
Total.....£	201	10 3½	216	21 ¾	283	3 10	539	12 5

Statement of Exports from BOND HEAD HARBOUR.

	1841.	1842.	1843.	1844.
Wheat, Bushels.	3467	4088	6420	24000
Flour, . . Barrels.	162	232	1502	2063
Oats, . . Bushels.	..	540	20	950
Pork, . . Barrels.	63	117	44	28
Beef,	17	..	..	..
Pot Ash,	37	40	70	30
Pearl Ash,	21	39	52	41
Whiskey,	121	182	90	82
Lumber, M Feet.	47	56	63	70
Shingles, . . M.	172	106	..	..
Pine Timber, Feet.	..	..	800	..
Shingle Bolts, Cords.	..	24	..	..
Butter, . . . Kegs.	14	20	..	10
Lard,	6	6	..	6
Potatoes, Bushels.	..	..	..	290
Staves, . . . M	..	16	..	..
Oxen,	15	..	..	4
Cheese, . . . Ewt.	..	13	20	..

PORT HOPE HARBOUR.

Statement of the Value of Imports into PORT HOPE from the United States, up to the 20th November, 1844, £900

I have no way of ascertaining the increase from Year to Year, which is considerable, but by reference to the Appendix to the House of Assembly which I cannot procure, neither can I furnish the amount of Exports, as the Harbour Master refuses to make it known, apprehensive that the Proprietors would raise the rent upon him.

He admits that the increase is very great, and gives as proof that for the last year and the present he paid, £600 per year, and for the coming year he is to pay \$175, which a Salary of £250 or £300 per year, must be added for the actual amount of Toll.

COBOURG HARBOUR.

Duties for Quarter ending 5th April, 1843..	£ 0 4 11
“ “ “ 5th July, “ ..	220 9 2
“ “ “ 5th October, “ ..	479 12 5
“ “ “ 5th January, 1844..	656 13 7
	£1359 0 1

Tolls Acct. Quarter ending 5th January, 1843..	£ 319 14 0
“ “ “ 5th October, “ ..	320 10 1
“ “ “ 5th January, 1844	304 14 2
	£944 18 3

Duties, Quarter ending 5th April, 1844.....	£ 12 0 5
“ “ “ 5th July, “ ..	561 1 5
“ “ “ 5th October, “ ..	729 14 7
Estimated duty to 5th January, 1845.....	700 0 0
	£2002 16 5

Tolls Acct. Quarter ending 5th April, 1844	£ 30 1 3
“ “ “ 5th July, “ ..	474 6 1
“ “ “ 5th October, “ ..	296 14 5
Estimate to 5th January, 1845	500 0 0
	£1301 1 9

VALUE OF EXPORTS.

There is not sufficient time to ascertain the correct value, but a very great increase has taken place.

Besides the trade of the several Harbours already enumerated, a large amount of Imports is received at each from Montreal, Toronto, &c., of which I can give no account, nor is there any way of obtaining it,

unless by calling upon the several Importing Merchants throughout the District.

The foregoing is all the information that I can with any confidence impart, and I regret that it is not as detailed and comprehensive as I could have wished, but I have made the most of the time allowed me.

There are two other Harbours in this section which I have not visited, viz: the Mouth of the Trent, and Grafton, where a considerable business has taken place—during the Winter I will have an opportunity of ascertaining the probable amount of Lumber, Staves, &c., that will go down the Trent which will enable me to make out a Schedule of Tolls to be chargeable in the Spring, which I will forward as soon as possible.

It would be desirable to build the Toll Houses and Gates during the Winter both on the Port Hope and Windsor Roads as both can be opened to the Public very early next spring.

The Revenue of the District will be considerably increased when the proposed Works in the North Western Sections are completed.

On the whole it may safely be stated, that no Section of the Province has been more essentially benefited by its Public Works than this, nor is there any other District that can take precedence in advancement to Wealth and Prosperity.

The probable amount of Traffic on the Otonabee River and the River Trent I insert in pencil, as I am not prepared to fill it up with any degree of accuracy.

Some positive statement may be expected from the Overseer of the Slides on the Trent as far as regards that River.

As I before observed, this subject will receive my immediate attention.

With reference to the best method of collecting the Tolls and Superintending the Works connected with the Navigation, the following appears to me to be the cheapest and the best.

The Lock Keepers at Whitlas and Crooks should be allowed to collect the Tolls at those Stations. A Collector should be permanently located at Chisholm's Rapids, whose duty would be two-fold, capable of collecting all the Tolls at that place and receiving from the Lock Keepers the amount collected by them up to certain periods, and to make proper returns of the whole to the Board.

He should also be capable of Superintending the repairs of the Works and attending to their general management.

The whole of the Lumber will be run down in less than six weeks, it would only be necessary in each year to employ about ten men for three or four days at the rise of the Water to remove the Stop Logs, and at the end of the Season to replace them. One man would then be sufficient at each Slide who would give a ticket to each raft to enable the Collector at Chisholm's to receive the proper Toll.

On this plan the expense will be—

Collector at Chisholm's, Salary per annum,.....	£150 0 0
264 men during the season, at 4s. per day	52 16 0
2 Lock Keepers, at £30 per annum...	60 0 0
	<hr/>
	£262 16 0

The Toll Houses on the Roads should in all cases be rented, or sold yearly by auction to the highest bidder.

Prospectus of the Revenue for the Windsor Harbour and Lake Scugog Road.

There should be three Toll Gates; one at Perry's Corner (toll 9d per load); one at the rear of the 7th Concession of Whitby, and one at the rear of the 4th Concession of Reach where the Road turns to the head of Scugog Lake (toll at each 7½d) allowing the Teams to return without additional charge.

By this arrangement a Team passing from Scugog Lake to Windsor Harbour and back would have to pay 2s. which rate could not be considered burthensome and very probably will be sufficient in the course of eight years to cover the interest, and the expense of the Toll Houses, together with the annual repairs, and the cost of relaying the planks at the end of that period.

£7700 cost of construction at 6 per cent.....	£462 0 0
Expense of keeping 3 Toll Houses at £50 each	150 0 0
	<hr/>
	£612 0 0

Estimate of Traffic all through.

	£	s.	d.	£	s.	d.
1000 Loads of Wheat and Flour equal to 50,000 Bushels, at 2s.....	100	0	0			
500 do. of Pot and Pearl Ashes, equal to 2000 to 3000 do, at 2s.	50	0	0			
600 do. Pork and sundry Grain, at 2s.....	60	0	0			
1250 do. Staves, &c. for foreign market, at 2s.....	125	0	0			
750 do. Pine and other Lumber for the United States and other markets, at 2s.....	75	0	0			
750 do. Casual Teams both ways with Salt, Merchandize and other Luggage and Carriages, &c. &c. at 2s.....	75	0	0			
				<hr/>	485	0 0

Estimate from Scugog to Winchester and other Mills, &c., &c., so as only to pass 2 Gates.

500 Loads of Wheat, at 1s. 3d.....	31	5	0			
750 do. Pork and sundry Grain, Carriages, Luggage, &c. at 1s. 3d.	46	17	0			
				<hr/>	78	2 6

Estimate of Traffic from Winchester and other Mills and Villages, and parts of the Country, so as to pass one Gate only.

1500 Loads of Wheat and Flour, at 9d.	56	5	0			
300 do. Pot and Pearl Ashes, at 9d.	11	5	0			
1000 do. Pork and sundry Grain, at 9d.....	37	10	0			
3000 do. Pine and other Lumber at 9d.....	112	10	0			
1000 do. Wood at 9d.....	37	10	0			
1500 Casual Teams both ways with Salt, Merchandize, other Luggage, Carriages, &c. at 9d.....	56	5	0			
				<hr/>	311	5 0
					<hr/>	£874 7 6

RECAPITULATION.

Estimate of Revenue.....	£874 7 6
Interest on the cost of construction, &c. &c....	612 0 0
	<hr/>
Surplus.....	£262 7 6

The foregoing Estimate is intended as an average for the first four years after the Road is completed, but after this time an increase of at least 25 per cent for the next succeeding four years may be expected, particularly if the road be extended to the Narrows. It would not be necessary to make the road at present in a permanent manner, but merely to expend four or five thousand pounds in opening it out.

Certain parts might have Toll Gates for keeping those parts in repair; the remainder of the road might be repaired in the usual way.

Prospectus of the Revenue for the Rice Lake and Lake Ontario Road.

This Road will also require three Toll Gates, one near Rice Lake, one at Bleicher's Tavern and one at the junction of the road leading to Brown's Mills.

	£	s.	d.
£7,400 cost of construction, at 6 per cent.....	444	0	0
Annual expenses of 3 Toll Gates, at £50 each...	150	0	0
Annual repairs.....	30	0	0
	<u>624</u>	0	0

Estimate of Traffic all through.

2000 loads of Wheat and Flour, at 2s.....	200	0	0
250 do. Pot and Pearl Ashes, at 2s.....	25	0	0
200 do. Pork, at 2s.....	20	0	0
1500 do. sundry Grain and Produce, at 2s.....	150	0	0
750 do. Lumber (2000 feet), at 2s.....	75	0	0
1600 do. Merchandize in return, at 2s.....	160	0	0
1000 do. Pleasure Carriages each way, at 2s..	62	10	0
	<u>692</u>	10	0

RECAPITULATION.

Estimate of Revenue.....	692	10	0
Interest on the cost of construction, &c. &c.....	624	0	0
	<u>Surplus.....</u>	£ 68	10 0

There are articles upon which toll may be collected, such as Whiskey, Beer, &c. &c., but not to any great extent,—a Toll of 2s. per load is not unreasonable.

This road will be for years to come with very trifling repairs, getting better.

The business will be steadily increasing, and I have no doubt but it will eventually pay interest so as to reduce the capital.

I put the toll to Bleicher's, where the travel will be divided between Port Hope and Cobourg, the same as to the limits of Port Hope, the distance between those points being very trifling.

Prospectus of the Revenue for the River Trent.

The revenue of the River Trent will be greatly augmented and will continue to increase when the Slides on the Otonabee River between Peterboro' and Buckhorn Lake are completed, as they will open up the finest Lumber tract of country in the Province. White and Red Pine, and White Oak being in the greatest abundance, the latter in the neighbourhood of the Trent is becoming very scarce.

Prospectus of Revenue on the Otonabee River.

The Dam and Lock at Crook's being in some measure necessary for the improvement of the Trent, I put it in connexion with the Slides on that River, and I regard in the following statement, the navigation of the Otonabee and Rice Lake as having been made complete by the expenditure at Whitlas' Rapids.

	£	s.	d.
£6,100 cost of construction at 6 per cent.....	366	0	0
Lock House, Keeper's Salary.....	30	0	0
Repairs (trifling) say per year.....	10	0	0
	<u>406</u>	0	0

Estimate of Traffic on the Otonabee River.

24,000 Barrels of Wheat and Flour.....	
2,400 Do. Pork.....	
1,500 Tons sundry Grain and Produce.....	
600 Do. Merchandise, &c., in return.....	
800 Barrels Salt.....	

(Signed,)

JAMES LYONS,
Superintending Engineer.

THOMAS A. BEGLY, Esq.
Secretary Board of Works.

APPENDIX LETTER Q.

EXTRACT from the Report of Mr. Gzowski, on Port Stanley Harbour, with Statements of Vessels entering and clearing during the years 1842, 1843 and 1844.

“ Port Stanley must be one of the principal places
“ for discharging goods for the consumption of the
“ country, and loading with produce for exportation.

“ The present state of that Harbour cannot in my
“ opinion answer the purpose for which it will soon
“ be required, the narrow space between the Piers,
“ which must of necessity exist, obliges all the ship-
“ ping to anchor above them in the stream, which in
“ its widest part is but 160 feet from edge to edge of
“ water, and when a dozen of vessels are within it,
“ not another one of merely ordinary length can turn;
“ the Steamer referred to, “ The Kent,” is of such a
“ length that she will not be able to go out of that
“ Harbour in any other way but by backing, which
“ during rough weather, will hardly be practicable
“ with safety to the boat.

“ Another matter which will greatly interfere with
“ the trade entering and going out of that Port, is the
“ existence of a Bar within the Piers, and which in
“ my opinion can never be got rid of, until the works
“ are carried out beyond the line of deposite, formed
“ by the shingle, and wash of the shores which are
“ daily receding, and built upon firm clay bottom.

“ Having taken all these matters into consideration,
“ I beg leave most respectfully to suggest to the Board
“ the necessity of having the present Piers at Port
“ Stanley carried out to a sufficient depth of water,
“ which in my opinion will have the desired effect,
“ and for detailed information, and estimated expense
“ of which, I beg leave to refer them to my Report on
“ that subject dated the 2d May, 1844.

“ I beg leave also to recommend the making of a
“ basin by excavating the projecting low bank of the
“ stream to the required depth, and protecting the side
“ of the cut with piles in such a manner as to form a
“ wharf, and a landing and mooring place for vessels;
“ the estimated expense of which will not exceed
“ £2000.

“ When the recommended improvements are added
“ to the present works at Port Stanley, it will be a
“ Harbour capable of containing and accommodating a
“ large quantity of shipping, and as safe, and easy of
“ access, as any that can be constructed, dependent
“ on, and formed by an inland stream.”

APPENDIX LETTER Q.—(Continued.)

STATEMENT Shewing the number of Vessels entered and Cleared at the Harbour of Port Stanley during the years 1842, 1843 and 1844, their Tonnage and description of Freight.

DATE.	Description of Vessel.	Vessels entered		Description of Cargo.	REMARKS.	DATE.	Description of Vessel.	Vessels Cleared.		Description of Cargo.	REMARKS.
		No of Vessels	Tonnage					No of Vessels	Tonnage		
1843	Schooners..... Steamboats..... Propellers..... Total 1842.....	27 19 2	..... ..... .....	Merchandise, " "	No information more detailed could be obtained.	PORT STANLEY.	TANLEY.				
1843 to 30th June, 1st July, to 6th December,	Steamboats..... Schooners..... Sloops..... Scows..... Propellers.....	45 93 1 3 1	..... ..... ..... ..... .....	General Merchandise, 5003 Barls. American } Salt, Liverpool... } 5830 " Government Stores } 270 " Furniture..... } 96 " Fresh Fruit..... } 66 " Cider..... } 25 " Lumber..... } 207104 feet Double and Single } Wagons..... } 7 Horses..... } 8 Sheep..... } 127 Pork..... } 19 Mill Stones..... } 3 6-20 tons Plaster..... } 35 " Pig Iron..... } 30 " Coals..... } 40½ "		1843 1st July, to 6th December,	Schooners.....	8	Wheat..... 2884 bushels. Flour..... 1188 barls. Beef..... 85 " Pork..... 39 " Butter..... 23 kegs. Lard..... 1½ barls. Ashes..... 4 " Estimated value—£5927 17s. 2d.		
1844 6th April, to 2d November,	Schooners..... Steamboats..... Propellers..... Sloops..... Scows..... Boats under 12 Tons	86 51 5 4 1 1	..... ..... ..... ..... ..... .....	General Merchandise, 7363 Barls. American. } Salt, Liverpool... } 5576 " Government Stores } 218 " Furniture..... } 197 " Fruit..... } 180 " Cider..... } 5 " Lumber..... } 6883 feet Pork..... } 32 barls. Double and Single } Wagons..... } 6 Horned Cattle..... } 2 Sheep..... } 13 Horses..... } 7 Mill Stones..... } 7 12-20 tons. Coals and Plaster... } 90 Ploughs..... } 13 Shingles..... } 8000 Grain (not Wheat). } 420 bushels. Potatoes..... } 46 "		1844 6th April, to 2d November,	Schooners.....	20	Wheat..... 18281 bushels. Flour..... 4319 barls. Pork..... 443 " Beef..... 200 " Ashes..... 111 " Do..... 56 kegs. Lard..... 14 barls. Do..... 12 kegs. Butter..... 10 " Furniture..... 38 barls. Skins..... 148 " Single Wagon..... 1 " Horse..... 1 " Grass Seed..... 52 bushels. Kegs..... 116 " Walnut Lumber... 63273 feet.	Estimated value of Exports £11619 7 5	

Amount of Harbour Tolls collected at Port Stanley from 6th April to 2d November, 1844—£900.

APPENDIX LETTER R.

Imports and Exports by the Desjardins Canal each year, from the first opening thereof, on 16th August, 1837, to the close of the Navigation on the 23d day of November, 1844; also the trips of Schooners, Steamboats, Durham Boats, and Scows.

		1837	1838	1839	1840	1841	1842	1843	1844
FLOUR	Barrels,	2446	18311	21686	41336	53934	44482	46737	64026
WHISKEY	do	542	682	1245	1849	926	1233	1031	757
PORK	do	25	47	344	506	1773	1142	40	638
ASHES	do	5	42	33	105	92	75	108	115
SALT	do	1335	3876	1968	3501	4177	4239	3846	5271
MERCHANDIZE	Cwts.	6581	5631	7406	5230	6261½	10759	6434½	13083
STAVES, Punchcon.....	{ Standard measure. }	236170	349547	847779	391544	311278	449560	199250	199817
Do Pipe	do	----	1212	5216	75124	39879	78328	59571	1610
BUTTER	Barrels	----	----	----	----	13	3	----	1
Do	Firkins	----	----	27	231	211	869	220	111
WHEAT	Bushels	57	2116	150	12509	1836	5444	4734	8
BARLEY	do	----	330	----	1651	----	----	----	----
OATS	do	195	----	----	879	----	----	----	----
CORN	do	----	----	----	----	----	----	----	2716
PEAS	do	----	----	----	140	55	762	----	----
Do	Barrels	----	----	----	252	----	26	----	3
BISCUIT	do	----	35	----	265	79	90	125	43
OAT-MEAL	do	----	24	----	155	436	136	56	----
POT BARLEY	do	----	20	----	28	84	78	158	----
GRASS SEED	Tierces	----	----	----	----	50	95	118½	156
COALS	Tons	36	----	----	25	40	150½	140	255½
PIG IRON	do	----	----	----	----	53	145½	296	331½
LARD	Barrels	----	----	----	8	11	5	----	8
TALLOW	do	----	6	----	----	93	8	----	8
OIL	do	3	33	5	----	18	5	----	----
PLASTER	do	----	8	50	6	----	25	----	2
ROSIN	do	----	----	----	----	12	----	----	25
BEER	do	21	8	----	----	----	----	----	----
CIDER	do	9	----	----	----	----	----	----	----
HOPS	Cwts.	51	----	----	----	5	----	6½	----
BEEF	Tierces	----	----	----	----	----	37	----	----
LUMBER	Feet	----	----	----	----	----	----	10000	----
SQUARE TIMBER	do	----	----	----	----	----	----	2750	----
SHINGLES	Pieces	----	----	----	----	----	----	49000	----
SCHOONERS	Trips	12	57	16	11	----	----	----	25
STEAMBOATS	do	79	72	----	----	----	----	----	4
DURHAM BOATS & SCOWS	do	----	142	461	617	524	481	392	421

(Signed,)

JOHN DICKEY,

Secretary, D. C. C.

DESJARDINS CANAL OFFICE,

Dundas, 31st December, 1844.

APPENDIX LETTER S.

General Schedule of Works and Materials enumerated in the accompanying Report as being required and which come under the denomination of "Provincial Works."

ROADS AND BRIDGES.	£	s.	d.
1.—For the maintenance of the Sarnia Road for 1845.....	302	0	0
2.—Maintenance of the Sandwich, Amherstburg and London Road for 1845.....	450	0	0
3.—Improving Road from Sandwich to Amherstburg.....	2000	0	0
4.—Building Chatham Bridge.....	2000	0	0
5.—Grand River Swamp Road complete.....	10000	0	0
6.—Two Ravines between Hamilton and the Credit.....	8000	0	0
7.—Rouge Hills, Bridge and another very bad hill in the same vicinity.....	6500	0	0
8.—Belleville Bridge.....	1500	0	0
9.—Improving Road from Cascades to St. Anns.....	1200	0	0
10.—Bout de L'Île Bridge.....	14500	0	0
11.—Jacques Cartier Hills and Bridge.....	3000	0	0
12.—To finish the Yonge Street Road to the Holland Landing and to improve the Roads thence to Barrie and Penetanguishine, and to perform some work of dredging in the Holland River and at the Narrows, in addition to the previous appropriation.....	6000	0	0
13.—Completion of Port Dover Road and erection of Toll Houses.....	6500	0	0
14.—Improvement of the Kennebec Road.....	5000	0	0
15.—Building of Etchemin Bridge.....	2400	0	0
16.—Maintenance of Gosford Road.....	450	0	0
17.—Extension of Gaspé Road to Gaspé Basin.....	5649	1	9
18.—Do. do. do. from Little River Restigouche to mouth of Matapedia.....	631	10	9
19.—Building of Metis and Rimouski Bridges.....	1892	10	0
20.—Repair of Kenmore Bridge.....	30	0	0
21.—Building Caplon, Great Bonaventure and Port Daniel Bridges.....	2145	0	0
22.—Building Grand River, Little Cascapedia and Great Cascapedia Bridges.....	4050	0	0
23.—Repair of Road in Percé.....	362	10	0
24.—Metis and Matanne Road.....	2666	2	9
25.—Improving the Navigation of the South Branch of the Mississippi River and forming a Portage Road thence to the Chaudiere Lake, including a Dam across the said River.....	2500	0	0
26.—Improving the Portage Road from Bytown to Aylmer.....	6500	0	0
27.—Road to the Credit Harbor.....	2500	0	0
CANALS, NAVIGATIONS, &c. &c.			
<i>Welland Canal.</i>			
1.—To increase Lock at Allanburg.....	5000	0	0
<i>Lachine Canal.</i>			
2.—Graving Docks and Slips.....	10000	0	0
3.—Construction of Flumes through Bridges and Locks, preparatory to the leasing of Water Power.....	5000	0	0
<i>Chambly Canal.</i>			
4.—Repairs required before the opening of the navigation.....	250	0	0
<i>Ottawa.</i>			
5.—To obtain possession of the Slides at the Portage du Fort and the Chats—to reconstruct the same, and to effect extensive improvements at each—to build a Slide at Bytown—complete the Portage Roads and open a Road through from Bytown to the Village of Moffatt at the foot of the Desallumettes Lake.....	15110	0	0
<i>Trent and Inland Waters.</i>			
6.—Works enumerated in Report.....	12000	0	0
<i>Harbors, &c.</i>			
7.—Wharf at the Rondeau.....	500	0	0
8.—Extension of Piers, &c. there.....	5000	0	0
9.—Do. do. at Port Stanley and Dredging.....	6500	0	0
10.—Port Burwell.....	20000	0	0
11.—Extension of Piers at Windsor and Dredging.....	4600	0	0
12.—Dredging at Cobourg Harbor.....	500	0	0
13.—Presque'île Wharf.....	250	0	0
14.—Grosse Isle Wharf, Landing, Stairs, &c.....	2750	0	0
LIGHT HOUSES, BUOYS, &c.			
<i>Lake Huron.</i>			
15.—First Class Light and House at Goderich.....	500	0	0
<i>Lake Erie.</i>			
16.—Raising Light House at Point Pelée and building Keepers House, and a Buoy off the Point.....	250	0	0
17.—Four Buoys off Long Point.....	200	0	0

* NOTE.—Items 1 & 2 must either be specially provided for or they may be paid out of the proceeds of the Tolls generally of the Main Provincial Road, of which they form part.

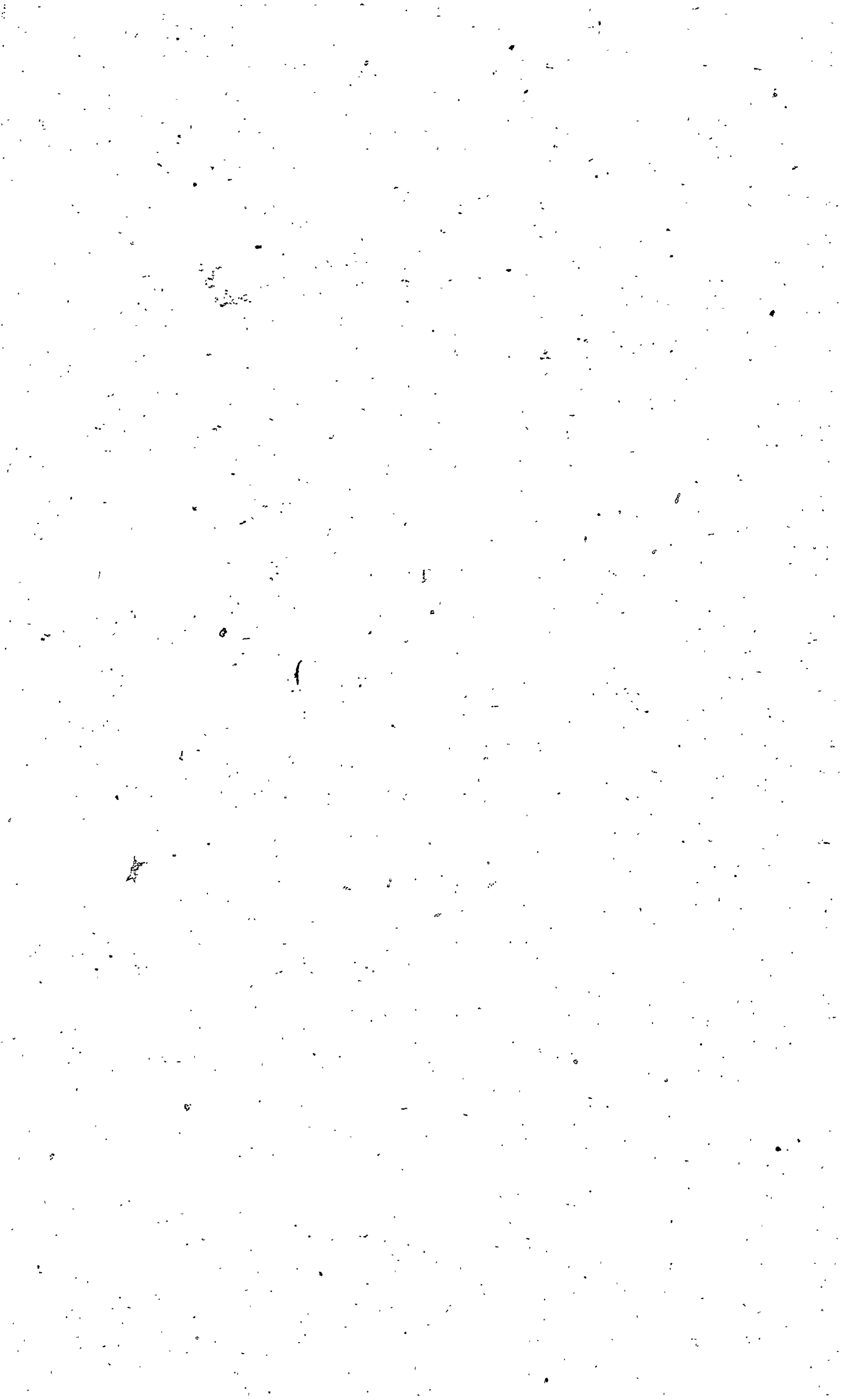
APPENDIX LETTER S.—(Continued.)

	£	s.	d.
18.—Revolving Light, Light House, Keeper's House and Beacon at Mohawk Island.....	1250	0	0
19.—Light at Port Maitland.....	200	0	0
<i>Lake Ontario.</i>			
20.—Light-Keeper's House at Toronto.....	100	0	0
21.—Do. do. do. Gull Island.....	150	0	0
22.—A Colored Light on end of Salt Point at Presqu'île and Buoy.....	300	0	0
23.—A Colored Light in Kingston Harbor and two Buoys at Snake Island.....	400	0	0
<i>Lake St. Francis.</i>			
24.—Light on Cable Island and six Buoys on Shoals.....	500	0	0
25.—Dredging Point in direct Channel.....	500	0	0
26.—Light on Grosse Point.....	250	0	0
<i>Lake St. Louis.</i>			
27.—Light at end of Beauharnois Canal.....	250	0	0
28.—Light House and Keeper's House at Point of Ile Perrault.....	500	0	0
29.—Light off Nuns Island and 6 Buoys on Shoals.....	1000	0	0
30.—Small Light, Three Buoys and Dredging at and near St. Anns.....	300	0	0
31.—Light at head of Lachine Canal.....	250	0	0
<i>Sundries.</i>			
32.—Seven Dozen Lamps, Reflectors, Glasses, Heaters, &c. &c.....	1000	0	0
33.—Tender Vessel with Forge, for the repairing of Lamps, &c., to deliver the supplies and to serve as a Revenue Cutter when not so employed.....	5000	0	0
<i>Surveys.</i>			
1.—Kingston and Ottawa Road.....	400	0	0
2.—Des Jardins Canal.....	50	0	0
3.—Portions of River Trent.....	400	0	0

APPENDIX LETTER T.

Statement of Traffic on the Chambly Canal at Chambly from the 15th April to 22d November, 1844.

		UPWARDS.				DOWNWARDS.
PLANKS.....	Feet	88875				291222
BRICKS.....	M.	—				6
CROCKERY.....	Crates	2				
Do.....	Barrels	9				
PLASTER of PARIS.....	do	16				
FISH.....	do	6				
IRON TRACES.....	Casks	1				
BEER.....	do	12				
Do.....	Kegs	20				
BAR IRON.....	Tons	T.	C.	Qr.	In.	
PIG IRON.....	do	198	19	2	18	
IRON WIRE.....	do	25	0	0	0	
SALT.....	do	0	5	3	0	
COKE.....	do	765	0	0	0	
SOAP.....	do	10	0	0	0	
TOBACCO.....	Cwt.	31				
LEATHER.....	do	1				
SHEET IRON.....	do	5				
TIN.....	Boxes	15				
CANDLES.....	do	6				
GLASS.....	do	3				
GLASS.....	do	2				
SPADES and SHOVELS.....	Dozen	5½				
STOVES.....	No.	7				
COAL.....	Chaldrons	28				
POTATOES.....	Minots	30				
OATS.....	do	982				
FLAX SEED.....	do	4984				
SUGAR.....	Hbds.	1				
Do.....	Barrels	1				
BOATS and SCOWS.....	No.	116				14
Amount Collected.....		£110 17s. 8½d.				£26 5 3½—Total £137 3s.



APPENDIX LETTER V.

SCHEDULE of Claims made by sundry Persons against the Commissioners of the Chambly Canal, distinguishing those which have been allowed and disallowed by the Commissioners.

1.—ALLOWED CLAIMS.					
	£	s. d.		£	s. d.
Adam Armstrong.....	20	16 0	David Beauvais.....	3	0 0
Joseph Courtemanche.....	21	15 0	George Ingleden.....	8	10 0
Joseph Bressitte.....	13	0 0	Paul Kauntz (Arbitrator).....	1	0 0
Joseph Malhiot.....	8	0 9	— Ward do.....	0	10 0
Louis Duprees.....	3	16 9	Joseph Beauvais.....	1	0 0
Reine Paquin.....	18	6 0	Louis Boucher.....	7	10 0
Toussaint Minard.....	5	0 0	John B. Gabourseault.....	7	10 0
Marcelle Lamoureux.....	43	8 0	Jacques Arnault.....	7	10 0
Joseph Benoit.....	20	0 0	Joseph Arnault.....	7	10 0
Antoine Duprees.....	6	4 9	Charles D. Day.....	31	3 10
Joseph Patmande.....	17	12 9	James McHugo.....	5	0 0
Francis Bissette.....	20	6 9	Messrs. Lander & Co.....	300	0 0
Francis Duprees Montpelier.....	50	0 0	Charles Atherton.....	30	12 6
Louis Papineau.....	27	16 0			
Michael Benoit.....	5	0 0		£763	9 1
Charles Benoit.....	1	0 0			
L. D. Montpelier.....	1	0 0			
Isidore Charland.....	8	10 0			
F. Vaughan.....	15	0 0			
J. McCutcheon.....	6	10 0			
John Glen.....	10	0 0			
John Robison.....	17	10 0			
Joseph Harris.....	11	0 0			
Francis Dubuc.....	1	0 0			

11.—CLAIMS DISALLOWED.		
	£	s. d.
Messrs. Lander & Co.....	682	8 11
M. Ryan.....	134	15 0
James McHugo.....	6	0 0
Total.....	£823	3 11

(Signed,)

ALFRED GOUGH,

Secretary to the Commissioners.

APPENDIX LETTER W.

REPORT OF MR. A. BARRET, C. E. ON THE GRAND RIVER NAVIGATION.

SIR,

Agreeably to the instructions contained in your letter dated at Kingston, 7th October, 1843, I have made an examination of the Grand River Navigation, commencing at Cayuga, and extending to Brantford Bridge, and respectfully beg leave to submit the following report :

The Grand River is rendered navigable by means of a succession of dams and locks at the several rapids, from Indiana to Oneida, a distance of nine miles. Within this limit there are five dams and as many locks, overcoming an ascent in the river of forty-three feet, with occasionally a short cut independent of the river.

At Bunnell's Landing, near the foot of the next rapid, there are three locks, placed within a short distance of each other at the foot of an independent canal which extends to Brantford or to the head of the navigation at present contemplated. The length of this cut is three miles, and the whole ascent gained by the locks is thirty-three feet. The distance from Cayuga to Brantford Bridge is forty-four miles, making the entire distance from Dunville to Brantford sixty miles, and entire lockage seventy-six feet. The length of independent canal, including the Brantford portion, is five and a quarter miles. The track path is generally very imperfect. Occasionally the natural bank is good and requires but little labour, while other portions require to be benched in or otherwise improved. An

artificial bank has been formed, parts of which require to be increased in height and width.

The channel is in many places circuitous, and at so great a distance from the shore as greatly to incommode and increase the expense of towing. To improve this will require a large quantity of earth to be dredged or excavated. The approaches to the locks generally require improvement. Some of the mills and machinery erected near the locks and dams, discharge the water in such a manner as to obstruct the navigation and render future repairs and improvements difficult. The manner of conducting water to the mills is, in some instances objectionable, and requires for the safety of the work immediate correction. The locks are composite, being built of stone and timber, with the faces of the walls planked. The stone is of a perishable character, which will yield to the action of frost, and must gradually decay.

From some cause the walls of most of the locks overhang, and will require considerable repair. The lock at Indiana is in so bad a condition that it will probably have to be soon rebuilt. The dams are built of timber, including the abutments and gravelled in front; they generally require repairs, especially the abutments and embankments at the ends, and to render them more secure, stone should be packed on the lower side within the crib or blockwork, which forms the rise of the dams, in order to prevent settling, and to render them permanent. At this time there is so large

a body of water passing over the dams as to render it impossible to give the work a close inspection, or to ascertain to the full extent what may be necessary for their safety.

Below Indiana, instead of building an additional dam and lock to overcome "Blair's Rapids," it is recommended to maintain the level of the Dunville Dam the same as it was in 1841 and 1842, or at highest water mark, and to excavate and dredge the shoals to Indiana.

To improve the navigation from dam number five, or at the foot of the long level to Bunnell's Landing, it is strongly recommended to raise the dam twelve or fifteen inches. This will give an ample depth of water throughout with the exception of a few bars along the shore, that must be dredged. The line of traction will then be brought more nearly in the line of the channel, and render the making of a towing path less expensive.

The various improvements and repairs recommended, including that part connected with Brantford remaining yet to be done, will cost £30,063 3 1.

GENERAL ABSTRACT.

Cost of Repairs and Improvements from Cayuga Bridge to Bunnell's Landing.....	£12,948	14	0
To complete the Work at Brantford Cut	17,114	9	1
<hr/>			
Total Sum required to complete the work in a manner becoming a Public Work	£30,063	3	1
Amount of available funds as per table number two, hereunto annexed..	3,408	16	10
<hr/>			
Leaving a Balance to be provided for of.....	£26,654	6	2

Having given a general outline, I shall add the details of the survey commencing at Cayuga Bridge:—

The Swing-bridge connected with the Cayuga Bridge is so far destroyed, as to require to be rebuilt immediately; the pier on which the toe of the bridge rests, should be removed ten feet further into the stream, and built with triangular ends, similar to the piers of the Caledonia Bridge. This will give a space of forty-one feet instead of thirty-one feet, the width of the present opening. In consequence of the channel being so contracted, the steamboat has sustained serious injury this season.

The channel, from Cayuga Bridge to Latham's Creek, at the foot of "Blair's Rapids," has a good depth of water, at a distance from the shore sufficiently convenient for towing, (no place having less depth than three feet nine inches, and this but for a short distance.) The water is now two inches above extreme low-water mark, so that at all times there will be three feet seven inches to Latham's Creek. Above this point there are several shoals hereafter described.

The water-level at Dunville Dam is ten inches lower than it was last season. By maintaining the latter level sufficient water would be afforded to cancel the fall from lock number one, at Indiana, to Latham's Creek, which being nine inches upon the present surface, would obviate the necessity for a dam or lock at "Blair's Rapids" as also greatly improve the channel

for towing from Dunville to Cayuga. Should the lower level be maintained, it will be necessary to excavate ten inches for a great part of this distance.

The maintenance of the higher level will occasion much difficulty at Dunville, the embankments, flumes, and the dam itself will be less secure, and will consequently require strengthening before it can be done with propriety. A considerable expense is necessary to secure the dam against leakage from the increased pressure. Drift timber and ice will pass over the dam less freely, and on account of the increased height from which they plunge upon the apron below, the work will be subject to greater injury. Since the enlargement of the feeder to the Welland Canal, from Dunville to the junction, the water passes down so freely as to render the higher level unnecessary for the Welland Canal supply of water and injurious, giving too strong a current, and thus rendering the upward towing more expensive and inconvenient.

The claims for land flooded from Dunville to Cayuga, are, I believe, all adjusted for the higher level. If it is not so, an inspection will shew that there is but a slight difference, whichever level be adopted. I should by no means recommend the erection of a dam or lock at Blair's Rapids; for in addition to the cost and maintenance, there will be heavy claims for valuable lands flooded by the rise of water, and although the centre channel will be much better, considerable excavation will still be necessary between this rapid and Indiana, to give a channel near enough to shore for convenient towing; therefore the estimates for dredging, &c., &c., will be based upon the higher level being maintained at Dunville.

The first obstruction above Cayuga is this rocky shoal near Latham's Creek, 640 feet long. It will require to be excavated 50 feet wide by 10 inches in depth, which will secure a channel of 4 feet at the lowest stage of the water, (4 feet is considered as the least admissible depth in the rock). The material is a thinly stratified rock and may readily be taken out in the winter season while the water is drawn off at Dunville. Above the rocky shoal for $\frac{1}{2}$ of a mile there is a good towing channel with from 4 to 7 feet of water. Eight or ten chains below the head of an island, there is a bar of clay and gravel 200 feet long, which will require to be dredged 1 foot deep and 30 feet wide; the present channel being at so great a distance from the track path as to render the towing very difficult. This is also the case with all the shoals from this to Indiana. The prevailing winds are across the stream, and generally so strong as to drive boats ashore on the path side. This can only be obviated by bringing the line of draft more in the direction of the channel. At 5 chains below the point of the island, there is another bar 100 feet in length, to be dredged 30 feet wide by 1 foot deep. Near the foot of the island there is a bend towards shore and shallow water through which a channel must be dredged 200 feet long by 60 feet wide and 1 foot deep. The bar is composed of a shelly rock of similiar properties as that dredged out a little further in the channel by Mr. Jackson the Engineer to the Grand River Navigation Company. The rock should be deposited so as to form a tow path near the channel. For a distance of 30 chains opposite the island, dredging will be necessary 60 feet wide by 6 inches deep, above this as far up as the foot of the Lock at Indiana, there are a number of points and small shoals that should be removed. For the greater part of the distance to the Lock, a channel has been dredged, through which the steamboat passes, but is so crooked and so far removed from the path as to render the towing very inconvenient.

At the foot of Lock No. 1, are several erections owned by D. Thompson, Esquire, M.P.P., consisting of a flouring mill with three runs of stone, a distillery and other buildings, arranged so close to the channel as to prevent the erection of a path except by securing a narrow bridge or wharf 8 feet wide to the foundation of these buildings: the entire length of the bridge would be 300 feet. This plan is very objectionable, as the inner sides of the bridge would be nearly on a line with the face of the lock, so that boats would experience much inconvenience in passing in and out of the lock, particularly when boats are lying at the wharf. The water issuing from the tail races of these mills is causing obstructions to the navigation. He has however improved it to some extent.

GENERAL DESCRIPTION OF GRAND RIVER LOCKS.

The foundations of the locks are composed of timber laid upon a hard clay, or rocky bottom, planked with 3 inch plank with a lining of 2 inch pine plank. The top surface of the lower mitre sills is upon a level with the floor of the locks, with a depression—the thickness of the mitre sill and length of the recess in which the gate swings. Although there is a saving of excavation in the foundation by adopting this plan, still the increased liability of the gates being obstructed by deposit of stone, gravel and other materials in the horizontal recess, presents a strong objection to the plan. The upper mitre sill rests upon a breast work of timber raised 5 feet above the floor of the lock. These locks are composite, built of rubble masonry and timber, the walls are from 6 to 6½ feet thick at the base, and 5 feet at the top with counterforts extending 4 to 5 feet to the rear of the main walls. The material used for the masonry is an inferior class of limestone, belonging to the gypseus shales, occasionally affording a bond of hard stone, but generally inferior and yielding to the action of the frost. The face of the walls is protected by planking spiked to timbers, except at the wings above the water which ought also to be similarly protected, as the stones are rapidly disintegrating. The planking is a great protection, but the walls must gradually yield as far as the frost penetrates.

Ranges of timber at intervals of from 4 to 5 feet are masoned into the face of the walls longitudinally, secured by ties of timber through the walls dovetailed into the face. The weight of masonry above the ties secures them in their position. The plank upon the face of the walls are put on in two divisions, the line of separation being just under the water of the lower level, so that the upper range which is more liable to decay, may be removed, leaving that below undisturbed. The coping is composed of pine timber, well framed together.

The Lock gates are of the ordinary kind with slight variations. The balance beams are tenoned into the toe posts instead of the posts into the beams, and for the want of an iron rod connecting the beams with the top bar and other necessary irons, the tenons of several have given way. The valve gates are of a simple and cheap construction and have answered a very good purpose. A circular hole is cut through the plank of each gate 18 to 24 inches in diameter, a plank gate of similar shape and few inches larger is secured to a firm flat lever, with a fulcrum 4 to 5 feet above the valve. The filling and emptying the locks would be greatly facilitated if the dimensions or number of the valves were increased. A different plan of gates would be better if the valves were enlarged.

The walls of many of the locks have pressed in at the top by the force of frost or other causes, so as to

form a curve inwards, in some cases of 8 inches in the centre, and other portions of the locks overhang. This is the case with the locks at Indiana, York and Seneca.

There is no certainty in the durability of lock walls, that have commenced to yield, for while the pressure of the embankment against the walls is increased, and the expansive power of the frost is as great as ever, the ability of the walls to resist is continually lessened. The walls being formed of rubble masonry, the bearing of the face is not so perfect as if formed of dressed stone with good bonds and beds. A slight failure in the bond or the crushing of the face stones must cause them to fall when they overhang. The original locks at Lockport upon the Erie Canal were constructed with a cut stone face and rubble backing, but the connecting bond between the face and backing was imperfect. The first sign of failure was manifested in the same manner as on the Grand River Locks, by the inward curving and overhanging of the walls, causing an increased pressure upon the lower stone of the face, not direct, but thrusting forward, which caused the whole side of a lock to fall at once. The means used to retain the walls in their true position was to place beams across the locks during the suspension of navigation, to resist the pressure of the frost, and to pass iron rods through the walls to connect them. All these means however were insufficient, and several of the walls had to be relaid from the foundation in order to continue the navigation until the new system of locks could be completed. This was the case with many other locks upon the Erie Canal. The same results may not follow upon the Grand River Locks, but the evidence strongly favours the opinion that they may be anticipated, unless some check is given to counteract them. The walls of these locks are not sufficiently broad, especially the Indiana lock, with a lift of 15 feet, being only 6½ feet at the base.

Lock No. 1 at Indiana, 15 feet lift.

The Walls of this Lock are much displaced and appear to be in very insecure state. A part of the East Wall overhangs from 8 to 10 inches, another part thrust in at the base 12 or 15 inches. This Wall never had a level base, being raised upon the sloping face of a bed of Gypsum. The lock tender mentioned he observed a sinking in the Embankment, at the rear of the Lock opposite this place, three years ago. It is evident that a current of water has passed down behind the wall, and escaped to the tail of the Lock, or under the foundation. The floor of the Lock appeared level, which indicates that the water must have found its way out at some other point than under the foundation. There is a Race leading to the Mills below the Lock, passing immediately along the wall and embankment, which must have had an agency in disturbing the walls, and there will be little safety to the wall, should it be repaired, until a close plank flume is introduced to convey the water past the Lock, and a good earth bank placed between the wall of the Lock and the flume.

The interior Bond of this Lock must be broken, but it may stand for a few years; Yet I consider this Navigation of too great value to be put in jeopardy by this failing structure. Upon the opposite or west side of the Lock the recess wall overhangs 6 inches, but the entire wall has a better appearance than the opposite side. Should the plan of rebuilding the Lock upon its present site be adopted, it would be advisable to procure the necessary materials during the coming Winter, that rebuilding may commence early the following spring, and Navigation be subjected to as like delay as possible. The new Lock may be located west of the

present one and not interfere with the Navigation. This is decidedly the best plan as it will obviate the difficulties in the approaches, and can be built in the summer; it will also be in a much better position. If built upon the plan of the Brantford Locks, the entire work including excavation, embankment and approaches can be completed for £4579. This sum will be sufficient for either plan, except damages, if any, to Thomson's Saw-Mill, which, it is believed, may be avoided. This Saw Mill is situated immediately above the head of the Lock on the west side of the cut, having 2 saws and designed for other Machinery. There is a large Basin above the Lock, otherwise, this together with the flouring mill on the opposite side, (all of which draw water from the cut) would seriously affect the approach to the Lock; as it is, the effect is bad, producing a strong current in the canal above. No more machinery should be allowed upon the channel, unless it is enlarged.

The independent cut extending from the head of Lock No. 1, to Dam No 1, is 3,300 yards long. The Embankment along this Canal half a mile above the Lock, is exposed to the strong current of the River, which sweeps with force against the outside of the slope. Piles have been driven for a short distance as a protection, but they do not prove sufficient, and it will be necessary to pitch the banks with stone. It will probably take 200 yards, and unless this be done soon, a breach may be apprehended. At the head of the cut, two abutments are placed, one in each bank, 39 feet a part with checks for the reception of timber 12 inches broad. This answers very well in preventing the floods of the River, from overflowing the embankments below and allowing the water to be drawn out of the cut. On the east side of the cut, there is a broad belt of land so completely covered with water as to render its neighbourhood unhealthy. It is contemplated by Mr. Jackson to place a Culvert 3 by 3 feet under the Canal, to drain off the surface water, which will increase the value of the land. The timber is provided and the ditches partly cut. It will cost to complete the Culvert and raise the necessary Berm Banks, £200.

At the head of the cut, and above the Guard is a point of land projecting so far into the stream, as seriously to obstruct the Navigation. This should be cut off and will require the removal of 828 Cubic yards of earth, which may be made use of in securing the flume leading to Atkins' Mill, also behind the east Abutment of Dam, No. 1, the remainder may be placed so as to improve the towing path.

Grand River Dams.

These Dams are built of Logs and timber laid alternately across and lengthwise of the stream; the upper ends of those laid with the stream being pitched, so as to give the necessary inclination to the upper side. This block work near the top is covered with hewn timbers, laid close together and securely trenailed to the beams below, which are at such distances a part, as to give a uniform and substantial bearing to the floor. The floor timbers are of unequal lengths, suited to the various depths of the channel, so as to present a uniform surface having an inclination of from 30 to 40 degrees. Above this a breast of one or two timbers is carried up to the height of the Dam, with Ties dovetailed into them, and secured to a timber below. The whole front is loaded with stone, clay and gravel. The lower aprons to the Dams are formed by first placing cribs of timber filled with stone at suitable distances apart and lengthwise with the River, upon which are placed bed timbers with a heavy cover of plank.

The abutments are formed with a breast and wings of timber tied together with timbers dovetailed into the sides; the front of the upper side is sheet-piled, and the whole is filled with stone and gravel. On account of the heavy body of water passing over the dams it is now impossible to give them a close inspection or determine what is necessary to render them permanent. Generally the abutments and aprons require Repairs, and to make the Dams permanent, the cribs formed by the Block-work should be filled and closely packed with stone. This would require from 600 to 800 cubic yards of stone to each Dam and the abutments rebuilt with stone. These Items are not included in the accompanying Estimate, as apparently it is not absolutely necessary at present, but will be in a few years, as the constant pressure upon the Block-work must cause it to yield. It may on inspection, be found advisable to fill in stone between the cribs of the lower apron, but this cannot be ascertained until the season of low water returns. Dam No. 1 is in two sections, separated by a large Island. The east is 184 feet long; the east abutment of this is apparently firm; that on the west side requires a body of brush and stone to be placed against its base and several courses of timber taken from the top replaced, and filled with stone and gravel. This should be done, or the whole abutment taken down and rebuilt on a foundation some feet lower than the present. As the lower corner of the abutment next the water has settled 2 or 3 feet, in consequence of having been undermined, the former plan may answer for several years and will cost £20. Upon the east side there is a plaster mill belonging to Mr. Atkins; the water passes through a plank flume connected with the abutment. This flume is very insecure and should be repaired and an embankment placed behind it, or it will occasion a breach at the time of the spring floods.

The top of the Dam should be raised in the centre one foot by receiving a timber on the top and planking the front. Ten pounds will effect this repair. The west section of the dam is 185 feet long, the east of which is in a very precarious condition. Mr. Jackson is now engaged in making Repairs. The lower wing of this abutment overhangs, from which it is evident it has been undermined by the plunge of the water over the Dam. It was suggested to the Engineer that in the repairs connected with this wing, timbers should be extended from the new Wharf and firmly connected with it, and some thirty yards of stone and brush placed outside of this to prevent future undermining. The whole abutment will have to be taken up in a few years and entirely rebuilt. The repairs above suggested will cost £12 10s. The west abutment appears secure, but Donaldson's Saw Mill is connected with it in such a manner as to render it difficult to ascertain its true condition.

From the east abutment of this Dam, the company are now engaged in extending an embankment along the west side of the Island to the head. The entire length is 633 yards. The Island is a recent deposit composed of vegetable matter, clay and sand, which yields readily to the action of the water. A trench has been cut a few feet from the water's edge and filled with stone and gravel to the height of 5 or 6 feet above the water with the design of forming a clay bank in front. I proposed to Mr. Jackson to cut a trench in the rear of the gravel bank 2 or 3 feet deep and to fill it with clay well packed, and to raise a clay bank above it, leaving the stone and gravel in front to resist the action of the floods and prevent the operations of the Musk Rats.

To complete the remaining portion of the embankment including the trench will require 2,893 cubic

yards of excavation. A part of this embankment is through a deep channel, narrow on the top with steep banks. At this place, a breach occurred last spring, which was repaired by a heavy embankment. A waste weir has since been built here 30 feet wide, founded upon a body of stone; the sides are formed with cribs 15 feet long by 10 feet wide filled with stone. At the breast of the weir there is a fall of three feet on a plank apron, from which the water passes over large stones promiscuously thrown in, but the discharge of the water is so near the face of the bank that there is danger of its undermining the whole work. Mr. Jackson proposes to place a crib across the current some 25 feet below and to extend the apron to it, and thus conduct the water past the face of the embankment. The waste weir has settled unequally since its erection; one of the upper corners is 12 or 18 inches lower than the front. To complete the apron as proposed with some other repairs necessary to the security of the work will cost £45.

The channel from the head of cut No. 1 to the first point below Lock No. 2 at York, is good around the point near York. There is a shoal in extent about 150 feet requiring to be dredged one foot. The material is shelly rock and gravel. The channel should be dredged 42 feet wide, the number of yards to be taken out is 284. Between this point and the Lock the channel is at too great a distance from the track path or shore for towing. The mills and slabs piled in front of them below the Lock increase this difficulty. There is also a strong current created by the water discharged from the tailraces of several mills, which operate against Boats approaching the Lock. A Bridge from the tail of the Lock 300 feet long and a towing path constructed from the necessary excavation and adjoining earth, would greatly improve that part of the navigation and is probably the best plan under the existing state of things to obviate the difficulties. The cost will be found in the estimate. This is to be placed so near the channel as to render the towing good. These strong currents from the mills, some of which are directly across the channel are constantly forming bars. It is unfortunate for the navigation that mills have been allowed in these situations, but since the evil exists, some measure should be taken to change the direction of the currents. The saw dust, slabs and bark from these mills and others situated near the Locks are conveyed by the current and deposited so as to form bars which must be removed by dredging. I saw large quantities which had been removed from the channel principally composed of slabs, bark and sawdust. Sufficient care is not observed in securing the slabs, as quantities are constantly left to float down the river and obstruct the navigation. Mr. Jackson mentioned this evil, as one which he had endeavoured to prevent as far as possible. J. Davis has a saw mill placed close to the tail of the Lock No. 2. The water to carry his machinery and that of other mills below is taken from the cut at the head of the Lock in an open race along the east side of the Lock. The water in passing sweeps the entire length of the wall and its embankment. A heavy breach has occurred between the Lock and the mill which was repaired with posts, beams and rafters covered with plank and filled in front with brush and gravel. This is merely a temporary repair and the safety and permanency of the work require heavy and immediate additions. The earth and gravel may be obtained from the cut above, to be afterward described. A wall should be extended from the end of the Lock-wing to the mill and the space between it and the present timbers filled with earth; as it forms part of the Lock embankment, it will require 500 cubic yards of gravel and 15 cubic yards of stone. The only safe way to conduct the water to the mills is by a tight plank

flume with a good set of bulk head gates placed at the upper end and given in charge to the Lock tender, that he may have full control of the water at all times. The present bulk head gates to the mills are much out of order and not sufficient to check the water in the time of freshets. The owners of the property should be required to rebuild them.

At Lock No. 2 there is a leak near the centre. The Lock-tender mentioned that there was a constant current passing out at the rear of the west wall into the river; this has undermined the embankment and caused it to fall in. It is probable that the water passes under the Lock wall from Davis' race on the opposite side and has probably forced a passage under the foundation. An excavation should be made at the point where the embankment has fallen in, to discover if possible the source of the leak. About 200 yards should be excavated and the hole filled up with puddle, this will cost £15 10 0. The walls of this Lock overhang badly, particularly the east one, curving in about 9 inches in the centre. This should be taken up for 6 feet in depth and relaid. This might be delayed 2 or 3 years, but it must yearly become worse, and it may be the best economy to do it at once, and the water in the race separated from the embankment.

On west side of the Lock is a saw mill belonging to Mr. Davis, connected with the abutment of the Dam. The water for this mill is drawn directly from the Dam. Over the apron the abutment of this Dam is entirely covered with lumber, and cannot be examined thoroughly. It appears to be insecure; this lumber should be removed to allow room for examination and repair. Water is drawn from the cut to supply 2 saw mills, one grist do., and one circular saw upon the towpath side, and one saw mill upon the west side. From lock No. 2 to No. 3, (or Synes Lock) there is a very good depth of water with the exception of some small points or side bars; one at a mile above the Lock, requires 3 to 5 inches dredging for a short distance, and the point of an Island near the Lock on the west side of the channel should be cut off, some dredging is also required immediately below the tail of the Lock.

Lock No. 3 has 9 feet lift and is 2 miles distant from No. 2. The Walls of this Lock are in very good condition; immediately above the Lock and 200 feet from it there is a Saw Mill owned by Mr. Synes. There are also several flumes placed there by the company preparatory to the sale of the water power and the erection of Mills. Last year a heavy breach occurred in the cut above the Lock, so near to these structures as greatly to disturb them. The Saw Mill is partly undermined and has settled. All the flumes (including the one leading to the Mills) should be removed; that one may be replaced if properly secured and provided with Bulk-head Gates. The space occupied by the others should be filled with water tight earth, well puddled. The present bank is narrow, and should be strengthened. The cost, independent of that of the work which should be done by the mill owners, will be £50.

Cut No. 3 extends $\frac{3}{4}$ of a mile from the head of the Lock to Dam No. 3 at the head of the cut. There is a stop gate or guard similar to the one at cut No. 1. This is in good order and answers a very good purpose for a cheap erection.

There is a tract of Land upon the east side of the River, partially flooded, principally belonging to Mr. Charles Bain, who states that he has received no compensation for the Damages. This may very easily be drained by cutting a ditch along the side of the towing

path and the material deposited upon it. This is not included in the estimate.

The towing path may be so enlarged as to admit the public travel upon it. At present the road passes in a very circuitous course over a steep bluff and descends on to the towing path $1\frac{1}{2}$ miles above the Lock. It would be far better that the road should continue on the plain of the path. The health of the place would also be much improved by draining the land.

At the head of cut No. 3 on the east abutment of the dam, there is a Saw Mill owned by Peter McKerechar, who has placed his lumber at the head of the cut. Adjoining the abutment, on the west end of the dam, there is a saw mill owned by Mr. Raymond, which appears to be as well situated for safety as any upon the river, it being 60 feet from the abutment, and the race entirely separated from the works, together with the foundation in a secure condition. There is a sufficient depth of water from this Dam to near Lock 4 at Seneca, a distance of $1\frac{1}{2}$ miles.—About 225 feet below, and directly in the centre line of the lock is an Island formed from the gravel, dredged from the channel outside. This is wharfed on one side, and preparations are making for erecting a warehouse upon it. But the navigation requires that it should be entirely removed. To remove this and clear the channel, will require 350 cubic yards of excavation and dredging.

Upon the east side of Lock No. 4, Mr. Turner has a flouring mill with 4 run of stones. Mr. Jas. Little has a carding machine, and Mr. Moore a turning lathe upon the same side. On the west side of the lock and upon the east end of the Dam, Mr. Turner has a Saw Mill, placed in front of the Dam, (the flume having been built with the Dam) and upon the apron, Mr. Little has a Saw Mill upon the west end similarly situated. Slabs are piled on the River side of these Mills, so as to obstruct the proper discharge over the Dam, as also lumber upon the abutments and embankments, preventing the possibility of inspection. If the whole could be cleaned and the embankments examined, raised and strengthened, there would be less objection to it. Both abutments should be raised two timbers and filled with stone and gravel; this will cost £20. Mr. Jackson is extending an embankment from the Saw Mill, on the west side to the main land, with a flume placed in the centre for the purpose of discharging water from a low piece of land above, after the freshets have subsided. The embankment like the one at the Dam below, is placed upon very low ground, and will have to sustain a heavy head of water, it is formed of light loam, is narrow on the top, with slopes $1\frac{1}{2}$ to 1 or less.

I am unable to judge of the ditch or mucking and clearing under the bank generally, but from what could be seen, I am of opinion that those who are forming the bank, have taken advantage of Mr. Jackson's necessary absence, and that it is not well done. Near the Mill the embankment was placed upon slabs, but Mr. Jackson gave orders for their removal. I think it would be advisable to have a trench cut in front within the slope, so as to unite the natural earth with the embankment, and to place upon the face of the bank 1000 cubic yards of gravel in addition to what is contemplated. As the other portion is so nearly completed, the material can be obtained from a cut opposite, and the price, allowed in the estimate, will cover the expense of transportation. Mr. Little has a Rail Road for conveying lumber from his Mill along the bank of the River. This lumber and perhaps the Rail Road should be removed before the spring floods, and a quantity of gravel and clay put on to prevent the water from breaking over; this will require 400 cubic yards.

The balance beams, quoin posts, and coping of Lock No 4, are much decayed, and require repairs or renewal. The stones in the wings are much broken by frost, and are removing the planking from the chamber walls. The stone gave evidence of the same influence; but the mortar appears sound and healthy (common caustic lime having been used.)

It may be well when the planking is renewed to cover the surface and bed, the planking in the mortar. This may protect the walls for many years. The walls overhang. This may be checked here by cutting a trench to the rear of the wall 3 feet deep, and filling it with small boulder stone, to check the expansive force of the frost, this will be advisable at all the Locks.

The approach to the cut above Lock No. 4, is difficult, and when the water is high, dangerous, in consequence of a point of land, jutting out into the channel. This should be cut off and part of the materials can be so deposited as to strengthen the embankment upon the opposite side. The lower approach to Lock No. 5 or Oneida, should be improved by cutting off a bend in the bank, and deepening a shoal, so as to straighten the channel. All the material from the cut can be profitably employed in improving the towing path between it and Caledonia bridge, and in repairing the bank at the east abutment of the Dam.

At Lock No. 5, there are three Saw Mills, the one on the east side is owned by R. McKinnon, one upon the west side by James Little, and the other by W. Moore. Little and McKinnon's Mills are situated on the River side of the abutments of the Dam, and the flumes occupy parts of the apron. Moore's is supplied by a race leading around the abutments. The embankments and abutments on both sides are covered. The lumber should be removed from the east side, and 400 cubic yards of gravel placed upon the bank before spring. This may be procured from the cut below the Lock.

The triangular pier which separates the water passing over the Dam, from that which supplies the channel should be extended 30 feet, and the upper end placed 10 feet, further into the stream. This is necessary for the protection and improvement of the entrance. This is the last Lock now built and completes the ascent of the Barefoot Rapids.

From lock number five to within about 10 miles of the present head of the navigation at Bunnell's Landing, there is sufficient depth of water, with the exception of an occasional side bar, but in the last ten miles there are several bars crossing the entire stream. A channel has been dredged through them, but it is difficult to be kept clear, it being so great a distance from the track path as to render the towing exceedingly inconvenient. At some places it is over 100 feet from the path. It will be expensive to perfect a channel at a reasonable distance from the shore (a necessary outlay for a good navigation) unless the plan of raising the level 12 or 15 inches be adopted. This appears to be decidedly the best plan, as there will then be but a few points and bars to be cut off, to secure a channel close along shore for tow-boats, and furnish a very superior steamboat navigation for 30 miles. This will also lessen the expense of forming a path. My estimate is for the higher level. To secure the level proposed, dam number five, (which is now low, and is much better built than the others) may be raised by securing a timber upon the top, and laying a covering of plank from this to another timber placed upon the upper apron. This dam is 876 feet in length.

The track path from Oneida to Bunnell's Landing is exceedingly rough, following the natural inequalities of the bank, with the brush and stumps, but partially cleared. There are some portions where a good path can be forced with but little labour, along the natural surface.

At Forbes' Creek, one mile above Oneida, an embankment will be necessary, as the channel is far from the shore, which is low; this bank should be extended 220 yards, and should be 6 feet high; the materials can be procured at a place convenient.

There is a place at a small island near the village of Tuscarora, where the channel and towing are bad. A bank should be formed nearer the river, and a channel dredged.

About 80 yards below this, the track passes over a high undulating bluff, by reducing which to its proper level, sufficient material can be furnished to make the embankment. This should extend 176 yards, and be raised 40 feet high, so as to be out of the reach of freshets. At the mouth of Springer's Creek there is a strip of land, covered with stumps, between the track path and channel, which increases the difficulty of towing. A channel cut $3\frac{1}{2}$ feet deep, 30 feet wide and 200 feet long, would obviate this.

Immediately below Nightingale's the towing is obstructed by a quantity of flood wood, embedded in the mud, and extending into the channel. Half a mile above Nightingale's there are boulders of rock in the channel, that, in low-water, interfere with the navigation, but the proposed higher level will surmount this obstacle. There is a bar a mile below Birch's Landing, which should be dredged 55 yards in length, 1-foot deep by 30 feet in width. Above Birch's Landing for a distance of a quarter of a mile, the bank being 20 or 30 feet higher than the surface of the water, the slope of the bank is so long that the tow-horses are forced to travel upon the face of the slope. The material is clay, and in wet weather so exceedingly slippery, that it is with trouble the animals can travel upon it. Should this portion of the track be benched in it will not stand, the materials being so inclined to slide, since the protection of roots and trees has been taken away. The only plan is to build a slope-wall, and fill in behind it with brush and gravel. The wall should be not less than 3 feet thick and 6 feet high.

For three or four miles in-length the high bluff shore is rapidly wasting from the action of the water. This, in a few years, must be pitched with stone.

At the first bend of the river below Bunnell's Landing a very serious difficulty occurs in maintaining the track. This will require great expense to remedy, the floods of the river having undermined the bank so much that it is continually falling in, and wasting away the bank. The continual washing of the river will render any path that can be constructed insecure, unless protected by a slope wall. There is one mile of this in the state described, which should be walled at once. A new path should be cleared this winter, and the wall laid during the next summer. It should be 15 feet measured on the top, by $1\frac{1}{2}$ feet thick. It is also advisable to level the inequalities of the ground for 5 miles.

To render this navigation a good one, and such as would come under the head of a fair public work, will require grubbing, clearing and levelling, also some repairs on the bridges for the remaining 25 miles of the tow-path between Oneida and Bunnell's Landing.

The present navigation terminates at Bunnell's Landing. It is proposed to make the ascent to the table-land leading to the village of Brantford by three locks, each of 11 feet lift; the work is now in progress.

It is proposed to build these locks 30 feet longer than those below, and the same width, which will make them $146\frac{1}{2}$ feet by 32 feet in the clear. This will place the length and breadth in much better proportion, and will cheapen the cost of transportation, as the increased length of the boat will add but little to the cost of towing, the principal resistance being at the bow and stern of the boat. The tonnage may also be increased, and at the same time the boat draw less water. I therefore highly approve of this increased length, or even $33\frac{1}{2}$ feet which would make them equal in length to the new locks upon the Welland Canal. The locks below may readily be made of the same length, by removing the lower wings, lengthening the walls, and forming new recesses for the gates and mitre sills.

The point selected for leaving the river is probably the best that could have been chosen.

The Locks are separated by reaches 234 feet long, which is as much as can be gained without materially increasing the expense, as the rise is so abrupt to the level of the plain. The foundation of the first Lock is a soft blue clay, sufficiently firm however from appearances to receive a timber and plank foundation, those of the other two are in a heavy gravel and firm clay.

The Locks are to be composite similar to those below. The thickness of the walls to be $6\frac{1}{2}$ feet at the base and 5 feet on the top. This width is not sufficient for this kind of wall, and is probably one reason why the locks below have failed. It would be advisable to increase the width at the base of the walls of the lower Lock to 10 feet, and 8 or 9 feet may be sufficient for the others. It would also be better to secure the face timbers of the wall above the lower level with iron rods passing through the timber and secured to an anchor firmly masoned into the interior of the wall, and made fast upon the outside of the timbers by a nut and screw. The face timbers may then be replaced more readily. The plan of using timber ties is objectionable as they are more liable to decay, and the difficulty of repairing is increased, and the repairs must be less perfect than upon the plan of using anchors.

It would be advisable also to give the chamber walls a batter of one inch in twelve; this would place the bearing much more favorable upon the base. The present design is to build them perpendicular, similar to those below.

Contracts have been entered into by responsible men and good mechanics to complete the locks for £1866 13s. 4d. each upon the plan proposed—2000 cubic yards of stone will be required for each Lock.

It is contemplated to open a quarry 6 or 8 miles down the river and $1\frac{1}{2}$ miles back. I visited that quarry with one of the partners; there seems to be stone there which will answer, but they must be well assorted. The stripping will be considerable and the waste heavy, the quarrying of these stones must cost at least six shillings per yard, the hauling to the river 1s. 6d. the delivery by boats to the river 2s. 6d. and the cost of laying in the Locks including lime and sand 5s. making the entire cost 15s. per cubic yard.

The want of good quarries is much felt upon the river. I regret not having had time to make some examination into the quality of stone at the different quarries. I visited one below Birch's Landing which I have already mentioned. There are red and white sand-stone in the neighborhood of Indiana, which are far superior to those used in the present Locks. There is a quarry of superior lime-stone in Rainham, three miles from Gifford's Landing on the Grand River. I have examined these stones and can recommend them for soundness and durability; they are of the same quality as those obtained at Gravelly Bay for the entrance lock at Broad Creek.

Independent Cut at Brantford.

From the head of the Locks at Bunnell's Bay to Brantford the line of the canal passes alternately through reservoirs or low broad morasses and deep cuttings, much of the material is a light soil resting upon a bed of coarse clear gravel which forms the under Stratum of the Brantford Flats, through which the river has cut a channel. At a short distance above the Locks there is a reservoir embracing 25 to 30 acres, the surface of which is several feet below the bottom of Canal. The embankment which forms one side of the reservoir, is based upon a morass of black vegetable deposited, resting upon coarse clear gravel of great depth. This was determined by several borings; the auger passing through the mould by slight pressure, to the coarse gravel beneath. I was informed that this embankment was placed without the base having been mucked, or a ditch being cut through the mould. I am unable to say how deep the earth has settled into the muck; or, whether, if it reaches the gravel, the bank will be water-tight; if not (which is most probable) the river being nearer and some 14 feet lower than the water in the canal it will be liable to give way.

A puddle wall will require to be added, sunk sufficiently deep to prevent leakage. There may be no failure in this bank, but it is advisable to test it as early as possible.

I suggested to Mr. Jackson the propriety of placing a dam across the Canal near the site for the Locks which are being built, and of letting in the water for the purpose of testing the banks. This can readily be done, and it will be profitable to the other parts of the work, especially in places where there is a fine running sand at the base of the slope. The banks have commenced falling in at several places, and the water remaining in through the winter season will serve as a great protection. The embankment referred to above continues for half a mile through the marsh, the slope $1\frac{1}{2}$ to 1 foot. There is danger that when the water is in, the surf will cut through the bank; to prevent this, I propose to place at the water level, three timbers in height against a thin lining of gravel; this will cost £307 10 0.

The banks through the cutting are entirely too steep, but the Engineer has wisely left a berm of six feet at the natural surface in front of the spoil bank, which may at any time be added to the slope, giving it relief.

The entire section from the locks to Brantford, was let in one contract to John Hunter; the contract being a hard one, he was permitted to leave the work before it was completed, and a final settlement was made with him. There are a great number of stumps, boulders, bars and pieces of excavation still to be removed, and some parts of the embankment to be raised.

There has been paid on this contract, (see table number two, hereunto annexed).....	£6,899 19 8
It will cost to complete the work...	314 0 0
	£7,213 19 8

The canal through the cut is generally 36 feet wide in bottom; and some portions, around sharp curves, are wider.

There is a section at the head of the cut that has not been put under contract, extending to the point where the dam across the river is to be built. This, together with the Brantford cut, and sundry other work connected with this indispensable cut, will cost £3299 5 0.

Embraced in the above sum are,

- 3 Waste Weirs connected with the locks, to conduct the water from one level to another.
- 1 Flume near the lock for the purpose of drawing the water from the canal.
- 1 Flume near Brantford.
- 2 Recess Pools upon the berm side, with ditches leading to them to take off the water which there accumulates.
- 3 Pivot Bridges.
- 1 Guard Gate at the head of the canal.
- 1 Dam across the Grand River.

Also, the protection at the bank of the river of a point above Brantford Bridge, where in high water the current finds a passage 30 to 40 rods beyond the bridge, and flows under the bridge upon the road built by the Board of Works; otherwise when the new dam is raised, as proposed, an independent channel will be formed.

There appears to have been a decrease in the Tolls for the past year, caused by the falling off in the article of lumber, but it is not an evidence against the growing trade; wheat, flour, and other articles having increased over former years. There is more contingency in the lumber trade than in any other source from which revenue may be anticipated; the amount may at times be more or less depending simply upon the demand. The aggregate demand must be increasing, and if it cannot be obtained along the shores of the river as at present at a moderate price, the demand will always pay the additional cost of transportation. The lavish manner in which the lumber of the country has been wasted only tends to increase the difficulty of obtaining it, which must be supplied from such sections as can more readily furnish it.

The Grand River supplies large quantities of valuable timber which will, for a long time, afford a liberal revenue, but as the products of the forest decline, it may reasonably be anticipated, from the rich and productive soil embraced in the section through which the navigation passes, and so extensively accommodates, that agricultural products will supply its place in articles less bulky, but paying a much higher toll. If the navigation be made as perfect as the benefits, which may be reasonably anticipated from it, will warrant, the cost of transportation will be reduced, and more encouragement given to the trade.

Mr. Jackson, in his letter of the 1st November, 1843, mentions, that notwithstanding the heavy reduction of the rate of tolls made this year, the aggregate tolls will considerably exceed that of last season. I also beg to suggest the propriety of providing flumes

at each of the dams, sufficiently capacious for drawing down the water at its low stage in the winter. Shoals and other obstructions may then be removed at little expense, instead of the costly plan of dredging now adopted. This would afford facilities for the examination and repair of the dams, the inspection into the condition of mill-flumes, abutments, and other necessary repairs.

In submitting this Report, I beg leave to state, that the examination of the river has not been as complete as it would have been, had there been a map or chart giving the different points with the distances along the river. Such a map has never been prepared. There was a plan made by Marshall Lewis, at the early projection of the work, merely designed to give a general outline of the river, but not sufficiently correct nor containing the necessary details to be of service. If time had allowed, I should have prepared a map from

actual survey. This, I have supposed, was not expected, and I have only given sketches at the several locks, shewing the relative position of dam-locks and such erections as are immediately connected with the work. The examination has been as close as the season of the year would admit of, and it is hoped that it will be satisfactory.

Mr. Jackson, the engineer, was with me most of the time, and kindly rendered all the assistance in his power. He has furnished me with some details from the office at Brantford, and a map of the Brantford cut, which are forwarded.

I have the honor to be,
Sir,
Your obedient servant,

(Signed,) ALFRED BARRETT.

TABLE No. 1,
REFERRED TO IN THE ABOVE REPORT.

ABSTRACT OF THE BRANTFORD CUT.

	£	s.	d.	£	s.	d.
3 Locks,	7884	0	0			
Excavation and other Work connected with and upon the Lock Section,	1764	14	1	9648	14	1
Wharfing the Banks at Brantford Cut,				307	10	0
To complete John Hunter's Contract,				314	0	0
Do. that portion at Brantford not contracted, for				497	15	0
Three Waste Weirs omitted, in the expense on Lock contract,				600	0	0
Two Flumes to discharge Water from the Canal,				500	0	0
Recess Pools on Berm Bank,				100	0	0
Three Pivot Bridges,				375	0	0
Guard Gate at the head of Canal,				326	10	0
Grand River Dam at Brantford,				800	0	0
Securing the River Bank above the Dam,				100	0	0
Damage to Mills at Brantford,				3546	0	0
Remaining to be paid,				17114	9	1
Add the amount paid to John Hunter,				6899	19	8
Total cost of Brantford Cut,				24014	8	9

TABLE No. 2,
REFERRED TO IN THE ABOVE REPORT.

STATEMENT of the Grand River Navigation Company, exhibiting the state of their affairs to 1st July, 1843, and the amount still required to complete the said Navigation to the Town of Brantford.

	£	s.	d.	£	s.	d.
Cr.						
To Six Nation Indians balance at the debit of their Account for Stock unpaid,	1912	16	3			
To Individual Stockholders balance at their debit,	535	7	3			
To Sundry Persons, balances at their debit for Water Rents and Rents, and Sales of Land,	1685	12	7			
To Treasurer, balance in his hands to be accounted for,	1518	0	4½			
Amount of Assets,				5651	16	5½
				Carried over		

TABLE No. 2.—(Continued.)

	£	s.	d.	£	s.	d.
<i>Brought over,</i>	---	---	---	5651	16	5½
To Expended on Bills of Work done under Contract, and under the Superintendence of the Company's Engineer,	36887	5	5			
To Expended on Roads and Bridges under Superintendence of the Engineer,	681	12	1½			
To Expended on Towing Path,	1961	8	5			
To do. Dredging,	1671	15	9	41202	1	8½
To do. in Lands and Damages,	2437	18	8½			
To do. Interest and Discounts,	1012	1	3			
To do. Salaries and Expenses of Officers,	3186	10	1			
To do. Contingencies,	1301	4	3	7937	14	3½
To Paid Stockholders a dividend (declared in November, 1839,) of 2½ on the Capital Stock then paid in,	---	---	---	781	7	9½
				55573	0	3

Dr.

	£	s.	d.	£	s.	d.
By Six Nations Indians, balance at the credit of their account in company, being the amount of their Capital.						
Stock 6121 Shares,	38256	5	0			
By Individual Stockholders, balances at the credit of their Stock account in company, being the amount of their Capital Stock 1465 Shares,	9156	5	0	47412	10	0
Stock Account,						
By Toll Account,	2612	10	10½			
By Water Rents Account,	2433	7	9½			
By Rents and Sales of Land, &c.,	871	12	0½	5917	10	8½
By Provincial Government on account of Loan, under Loan Act 7th William IV.	---	---	---	500	0	0
By Balance due to Samuel Street, Esq., being balance of a Judgment against the Company purchased by him,	985	12	3½			
By Balance on Bills payable,	222	2	7½			
By do. due the Gore Bank being amount overdrawn,	37	2	11			
By Balance due to A. Helmer and others for work done,	498	1	8½	1742	19	6½
				£	55573	0 3

ABSTRACT OF THE FOREGOING.—Cr.

	£	s.	d.	£	s.	d.
To Balance due by the Six Nation Indians,	1912	16	3			
To Balance due by Individual Stockholders,	535	7	3			
To do. do. Sundry Persons for Rents, &c.,	1685	12	7			
To do. in Treasurer's hands to be accounted for,	1518	0	4½	5651	16	5½
				5651	16	5½
To Amount brought down,	---	---	---	£	3408	16 10½

ABSTRACT OF THE FOREGOING.—Dr.

	£	s.	d.	£	s.	d.
By Amount due Provincial Government for Loan,	500	0	0			
By do. Samuel Street balance of Judgment,	985	12	3½			
By do. on Bills Payable,	222	2	7½			
By do. Gore Bank,	37	2	11			
By do. A. Helmer and others for work done,	498	1	8½	2242	19	6½
By Total Amount,				3408	16	10½
By Balance to Account,	---	---	---	5651	16	5½
By Engineers Estimate herewith of the sum required to complete the Navigation,	---	---	---	13536	10	7½

THE TENTH or final Estimate of Work at the Brantford Canal, done by John Hunter, Contractor.

From Stations.....					£ s. d.
	3 to 10	20332	Embankment.		
	10 " 12	7073	Do.		
	12 " 26	96824	Do.		
	26 " 32½	18214	Do.		
	32½ " 36	20573	Do.		
	36 " 41	17286	Do.		
	41 " 45	22351	Do.		
	45 " 52	22326	Excavation.		
		224984	Cubic Yards at 6d.....		5624 12 0
Station	3 to 10	616	Yards Muck Ditch at	s. d.	£ s. d.
	23 " 36	254	0 9		23 2
	36 " 44	704	Do. do.	1 3	16 10
	44 " 45	68	Do. do.	0 9	26 18
	45 " 50	440	Do. do.	1 3	5 10
			Do. do.	0 9	16 10
					68 0 0
			Extra Work in Race and Culverts, 2243 Yards at 9d.....		84 2 2
			Excavation in Cove Basin, 10095 " 7½.....		267 7 6
			Allowance for Levelling, Roads, &c.....		250 0 0
			Do. 224,984 Yards Excavation at 5s. 8d.....		585 17 11
			Total.....	£	6839 19 8

ESTIMATE OF WORK, and Materials required to complete the Grand River Navigation from what is called Bunnell's Landing to the Town of Brantford.

UNDER CONTRACT.		£ s. d.	£ s. d.
3 Locks, 11 feet lift, will cost each, £2000,	- - - - -	6000 0 0	
Excavating of Lock-Pits above Water 29,777 c. yards at 7½d.,	- - - - -	930 10 7½	
Do. do. below do. 3,508 do. 1s. 3d.	- - - - -	219 5 0	7149 15 7½
NOT UNDER CONTRACT.			
Reconstructing the Dam at Brantford, -	- - - - -	390 0 0	
Guard Gates at the head of Cut, -	- - - - -	326 10 0	
Excavation head of Cut 15,928 c. yards, at 7½d.	- - - - -	497 15 0	
Do. to complete Basins, -	- - - - -	265 0 0	
3 Pivot Bridges at £125 each, -	- - - - -	375 0 0	
Chopping and clearing Stumps in Basin,	- - - - -	14 0 0	
Excavation in several places to complete,	- - - - -	35 0 0	
Culvert for Mill at Station No 52,	- - - - -	27 10 0	1930 15 0
LANDS AND DAMAGES.			9080 10 7½
Award in favour of the Misses McDougall for Mill Property,	- - - - -	2750 0 0	
Estimated damages to the Mill property of John A. Wilkins, Esq.,	- - - - -	796 0 0	3546 0 0
Estimate of Work required below the Brantford Cut and in operation by order of the Board.			
3 Lock Tenders Houses at £40 each,	- - - - -	120 0 0	
Excavation in the River near Brantford by Dredging,	- - - - -	196 0 0	
New Culverts and Bridges on Towing Path,	- - - - -	73 10 0	
Draining and Clearing overflowed land under Contract,	- - - - -	65 0 0	
Culvert at Dam No. 1,	- - - - -	54 10 0	
Raising Embankments at sundry places,	- - - - -	317 0 0	
Work at Roads and Bridges,	- - - - -	37 15 0	
Two New Waste Weirs,	- - - - -	46 5 0	910 0 0
			13536 10 7½
Sum required,	- - - - -	.. .. .

O. G. R. NAVIGATION Co.

Brantford, 1st November, 1843.

The Works under Contract are to be completed on the 1st day of August next.

(Signed)

JOHN JACKSON,

Engineer, G. R. N. C.

ANNUAL COST OF MANAGEMENT,

1842.

	£	s.	d.	£	s.	d.
John Jackson, Engineer, Agent and Collector, Salary £250 per Annum, &c.	250	0	0	275	0	0
John Cameron, Secretary and Book-Keeper, -	125	0	0	125	0	0
LOCK TENDERS.						
Wm. Kerrott, Lock No. 1. Lock Tender & Assistant Collector 8 Months at £7 10s.	60	0	0			
Wm. Fearman, do. 2. do. 7 Months only at..... 3 15	26	5	0			
John Williams, do. 3. do. and Works for the Company, 7 Months at..... 5 10	38	10	0			
John Dalton, do. 4. do. 7 do. 5 10	38	10	0			
James Martin, do. 5. do. 7 do. 5 10	38	10	0			
James Bell, do. 4. And Assistant Collector, 7 Months at..... 2 10	17	10	0			
Office Rent per Annum, - - - - -				219	5	0
				25	0	0
EXPENSES OF THE DIRECTORS.						
Messrs. Jarvis and Gayne,	51	6	10 $\frac{1}{2}$			
George S. Tiffany, Esq.,	26	4	0			
James Wilkes,	25	10	0			
John Donaldson,	12	0	0			
				114	0	10 $\frac{1}{2}$
Total, - - - - -				758	5	10 $\frac{1}{2}$

SCHEDULE of Lands belonging to the Grand River Navigation Company.

From whom purchased.	Where Situated.	Quantity of Acres.
Government	Indian Village	66 $\frac{1}{16}$
Do.	West Branch Dam No. 1	20 $\frac{1}{16}$
Alexander A. Vanevery	East Branch Dam No. 1, including part of Island East Branch Dam, No. 1	29 $\frac{1}{16}$
William Weir	East Branch Dam No. 1	4
Joseph Young	Do. do. do.	3
Government	Dam No. 2, at York	6
Do.	Do. do. West side	4 $\frac{1}{16}$
James Davis	Do. do. York	2
Government	Do. 3, West side	62 $\frac{1}{16}$
Honorable Abm. Nelles	Do. do. East side	17
Government	Do. 4, both sides	135 $\frac{1}{16}$
Do.	Do. 5, do.	36 $\frac{1}{16}$
Do.	Towing Path from Cayuga Township to Dam No. 1	36
		424 $\frac{1}{16}$

LANDS SOLD BY THE COMPANY.

TO WHOM SOLD.	Where Situated.	No. of Lots.	Price.	Amount paid.	Amount due.
John Jackson 13 Acres at £10 per acre.....	Seneca	..	£ 25	£ 325 0 0	£ 325 0 0
Jacob Turner.....	do.	2	25	50 0 0	
James Greenby.....	do.	1	25	25 0 0	
James Little.....	do.	4	25	77 10 0	23 10 0
James Little, Park Lot No. 8, 5 Acres £12 10s. per acre, $\frac{1}{2}$ down, the remainder in 3 Annual Instalments.....	do.	..	....	15 12 6	46 7 6
Christopher Young.....	do.	1	25	25 0 0	
Sir A. N. McNab.....	do.	13	....	14 10 0	
John Jackson.....	do.	2	15	12 0 0	18 0 0
M. McPherson.....	do.	1	15	1 10 0	13 10 0
Do.	do.	1	10	1 0 0	9 0 0
Alexander McKenzie.....	do.	1	15	1 10 0	13 10 0
Do.	do.	1	10	1 0 0	9 0 0
David McMicken.....	do.	..	15	1 10 0	13 15 0
Carried forward.....			£	356 2 6	145 12 6

LANDS SOLD BY THE COMPANY.—Continued.

TO WHOM SOLD.	Where Situated.	No. of Lots.	Prices.	Amount Paid.	Amount Due.
<i>Brought forward</i>				£ 356 2 6	£ 145 12 6
Samuel P. Bryant.....	Seneca	1	15	1 10 0	13 15 0
George Mason.....	do.	1	10	1 0 0	9 0 0
John L. Morden.....	do.	1	10	1 0 0	9 0 0
Joseph Green.....	do.	1	15	1 10 0	13 15 0
John Thornton.....	do.	1	15	1 10 0	13 15 0
Do.....	do.	1	10	1 0 0	9 0 0
M. McPherson.....	do.	1	15	1 10 0	13 15 0
John Jackson.....	do.	1	10	4 0 0	6 0 0
Gustavus Bingham.....	do.	1	25	25 0 0	.. .. .
Jacob Turner 8 Acres, Park Lot No 1, at £6 5s. per Acre.....	do.	.....	.....	.. .. .	50 0 0
James Little, Company, Interest in Nedge Lot.....	do.	.....	.....	.. .. .	18 15 0
				394 2 6	302 7 6
William Stewart.....	Indiana	1	15	7 0 9½	7 19 2½
Richard McGirvon.....	do.	.....	25	6 10 0	43 10 0
Philip Murray £3 and £62 10s.....	do.	.....	.....	65 10 0	.. .. .
Richard Brown.....	.....	.....	15	1 10 0	13 10 0
John Burns.....	.....	.....	25	2 10 0	22 10 0
William Bengo.....	.....	.....	15	1 10 0	13 15 0
Obad Lee.....	.....	.....	15	1 10 0	13 15 0
Samuel Bengo.....	.....	.....	25	2 10 0	22 10 0
Charles Hannah.....	York	.....	.....	25 0 0	.. .. .
John Donakison.....	McHaleys	.....	.....	40 0 0	.. .. .
R. McKinnon.....	Oncida	.....	.....	45 0 0	.. .. .
				592 13 3½	440 6 8½

List of Hydraulic Privileges granted by the Company to Mill Owners and others.

Name of Mill Owners.	Where Situated.	No. of Runs of Stones.	No. of Saws.	Shingle Machine.	Turning Lathes.	Carding Mills.
David Thompson, Esq.....	Indiana,	3	2	.....	.....	.....
Hugh Sharp.....	do.	.....	.....	.....	1	.....
John Lester.....	do.	.....	1	.....	.....	.....
John Donaldson.....	Dam No. 1,	1	1	.....	.....	.....
Fiak and Atkins.....	do.	1	.....	.....	.....	.....
James Davis.....	York,	1	3	2	.....	.....
H. Schoville.....	Dam No. 3,	.....	1	.....	.....	.....
P. McKerchar.....	do.	.....	1	.....	.....	.....
James Farish & Co.....	do.	1	.....	.....	.....	.....
James Huggin.....	do.	.....	1	.....	.....	.....
Jacob Turner.....	Seneca,	4	1	.....	.....	.....
James Little.....	do.	.....	2	.....	.....	1
R. McKinnon.....	Oncida,	.....	2	.....	.....	.....
James Little.....	do.	2	1	.....	.....	.....
Jacob Turner.....	do.	.....	1	.....	.....	.....
E. W. Moore & Co.....	Seneca,	1	.....	.....	.....	.....
		14	17	2	1	1

Run of Stones each per Annum.....	£ 12 10
Mill Saws each do.	20 0
Shingle Machines each do.	6 5
Turning Lathes do.	2 10
Carding Mill do.	6 5
Fulling Mill do.	6 5

There is a number of applications to the Board for Hydraulic Privileges, for various purposes, on the Brantford Cut, which cannot be granted until the same is completed.

BOARD OF WORKS OFFICE,

3RD FEBRUARY, 1845.

SUPPLEMENTARY REPORT, Describing more in detail the Works which have been done upon the Ottawa and Madawaska Rivers, towards the facilitating the getting up of Supplies and the running of the Lumber, with other information connected therewith.

The works done may be enumerated as follows:—

River Madawaska.

Slides and Dams constructed at the High Falls and Ragged Chute, a Station House, Store House and Office, built for the accommodation of the Slide Master.

A Portage Road constructed at the High Falls, and improvement of the Road round Calobogie Lake for lumber purposes.

Blasting and removing two Reefs and portions of two Islands, and other obstructions in Barrets Chute.

Blasting and removing the Waba Rock and Shoal, with sundry Reefs and Rocks in the Calobogie Rapids.

Blasting and removing sundry Boulders and Reefs in the Little Rapids, (2 miles below Calobogie.)

Excavating and removing Johnson's Rock and Point, and blasting scattered Rocks, and sundry other obstructions in Long Rapids in McNab Township.

Excavating and removing sundry Rocks in Landon's Rapids and Fidler's Elbow, and removing the Hogs back, and part of the Lower Island in Landon's Chute, (3 miles from the mouth.)

River Ottawa.

Slide and Dam constructed at the Mountain.

Excavating and removing a Point at the foot of the Current, below the Slide.

A Station House, Store House and Office, built for the accommodation of the Slide Master.

Dams and Slides constructed at the Calumet.

A Stone Station House, Store House and Office, for the accommodation of the Slide Master, and a double walled (stone and wood) Magazine for storage of Powder.

Road from Portage du Fort to Calumet improved, cross-layed and bridged where necessary.

A Return and Portage Road completed from foot to head of Calumet, mostly over rocky knolls, and along rocky side Hills. A Ferry Scow built to ply at foot of Calumet, so as to establish a forwarding line from Portage du Fort to head of Calumet.

Considerable quantity of rock removed from the Lower Chute and Rapids, below the Slides in the Calumet.

Slide and Dams constructed at the Joachims, 145 miles above Bytown.

A suitable Station House and Out Offices for Slide Master, together with a House for storage of Lumber supplies.

Excavation at foot of Upper Rapids to facilitate and secure the entrance of Cribs into the Basin at the head of the Slide.

Sundry Rocks and other obstructions, and the Rock Island at the foot of the Chute in the Rocher Capitaine Rapids, 22 miles above the Joachims, removed.

Independent of the great facilities obtained by the foregoing works, to the getting down of the Lumber early in the season, and the risk of those fatal accidents which unfortunately have hitherto annually occurred being very much lessened, the saving in the transport of supplies, which is effected by them generally, may be comprehended from the single case of the cost of transport heretofore at the Portage du Fort, which is shewn by the following extract from a letter on that subject:—

“ Previous to making the improvement, goods and supplies for the Trade were landed from the Steam Boat at Portage du Fort and stored there, until the Canoes, with orders for them, arrived from above. The articles were then carted over the Portage du Fort, one mile at a cost of six pence per cwt., and were canoed thence to Miller's Bay. From Miller's Bay they were carted to the Dargee Bay, three miles at six pence per cwt., they were again canoed to the foot of the Calumet, (less than a mile,) and were thence carted in part and partly carried by men to the head of the Calumet, at the rate of 7½d. per cwt.

“ Canoes are manned at an average in the proportion of one man to every four cwt. of lading, and a Canoe coming down for a load almost invariably took three days from the time of landing at the head of the Calumet, until it was again loaded and ready to leave there on the way upward. Each Canoe-man with finding, costs his employer at least 5s. per diem, therefore Canoes-men forwarding made a cost of 3s. 9d. per cwt., and allowing the damage to the Bark Canoe, which is always subject to much injury from loading and unloading, not to exceed 3d. per cwt., the whole cost of cartage, &c., is 5s. 7½d. per cwt.; Whereas in consequence of the improvements effected last year, supplies, &c., were forwarded over the same portion of the River Ottawa, namely, from Portage du Fort to the head of the Calumet at 1s. 6d. per cwt. being a saving of 4s. 1½d. per cwt.; and in this charge of 1s. 6d. per cwt. is included an allowance for a month's storage at the Calumet, when required.

“ The difference in transport is therefore 4s. 1½d. per cwt., and as the quantity of Pork, Flour, Goods, &c., forwarded during the past season, amounted nearly to 364 Tons, the saving to the Lumber Trade at this point in the matter of forwarding alone, amounts to £1501 10 0.”

The following statement, which I am of opinion may safely be relied on, shews the quantity of Timber which will probably pass through the respective Slides of the Ottawa and Madawaska, during the approaching Spring, and the Revenue which will be produced therefrom; distinguishing that arising from the Slides in the hands of Government, from that received on the Slides of individuals.

	FEET.	CRIBS.		GOVERNMENT SLIDES.	PRIVATE SLIDES.
			£ s. d.	£ s. D.	£ s. D.
MADAWASKA.					
Ragged Chute and High Falls Sides, Red Pine.....	1099000	1221	at 7s. 6d. 457 17 6		
Do. do. White Pine.....	354000	295	" " 100 12 6		
				568 10 0	
<i>Note</i> —It is intended to reduce the charges from 10s to 7s.6d. which will free them thro' the whole of the Improvements from the Ragged Chute to the Chats Lake.					
OTTAWA—JOACHIM SLIDES.					
Red Pine.....	720000	800	at 5s. 200 10 0		
White Pine.....	82000	69	" 16 5 0		
				216 5 0	
CALUMET AND MOUNTAIN SLIDES.					
Red Pine.....	3500000	3889	at 5s. 972 5 0		
White Pine.....	3700000	3083	" 770 15 0		
Oak and Elm.....	40000	57	" 14 15 0		
				£1757 5 0	
<i>Say one third would pass on South side of Island.</i>					
				1171 10 0	585 15 0
PORTAGE DU FORT.					
Red Pine.....	3500000	3889	at 2s. 6d. 486 2 6		
White Pine.....	3798000	3165	" 395 12 6		
Oak and Elm.....	40000	57	" 7 2 6		
				£888 17 6	
					888 17 6
CHATS SLIDE.					
Red Pine.....	5000000	5600	at 5s. 1400 0 0		
White Pine.....	5600000	4700	" 1175 0 0		
Oak and Elm.....	114000	150	" 37 10 0		
					2612 10 0
CHAUDIÈRE SLIDE.					
Red Pine.....	5000000	5600	at 5s. 1400 0 0		
White Pine.....	8000000	6700	" 1675 0 0		
Oak and Elm.....	160000	200	" 50 0 0		
					3125 0 0
				£ 1956 5 0	7212 2 6

From the foregoing it is seen that the gross Revenue of this year for Slidage on the Ottawa and Madawaska will be £9168 7s. 6d. of which the Province receives but £1956 5s.

The license of occupation of the Portage du Fort Slide and of that of the Chats has, I am informed, expired, and the Government are authorised to take possession, but the works in both cases are in a very bad state. Were those two slides now assumed by the Government and repaired, and a Slide constructed in the proper Channel at Bytown, there is no doubt of the Revenue to be paid into the Receiver General, being upwards of £7000 this year; the cost of their repair, &c., is shewn in the following Schedule, in which is described certain works which I conceive would be highly productive of advantages to the Lumber Trade, tend much to the settlement of the Country, and to the increasing of the Revenue of the Province.

SCHEDULE shewing in detail, the works connected with the Ottawa which are recommended and embraced in the Item of £15,110 under the head of Ottawa (Appendix Letter S.)

Obtaining and improving the slide at the Portage du Fort and the Entrance thereto..... £ 650 0 0

Obtaining and reconstructing the Slide at the Chats, improving the approach thereto..... 2,500 0 0

To build a Slide at the Chaudière at Bytown, including the improvement of the Upper or Little Chaudière, and to remove the rocks and Crabbe Island below, do., and to construct a good mooring Boom in the Lumber Basin..... 3,800 0 0

(The total cost of these three Items would be repaid by one year's receipt, as shewn above.)

To complete the Portage Road from the Portage du Fort to the Calumet, including the building of a good Bridge across the Dargee, and to remove the obstructions in the channel from the Snows to the Portage du Fort..... £1,500 0 0

To complete the Portage Road at the Joachim..... 120 0 0

To construct a Government Boom at the head of the Calobogie Lake on the Madawaska, within which the Lumber would be cribbed and counted 200 0 0

To make some improvement in the channel at the Islettes and to improve the carrying place at the Kilbute..... 200 0 0

To open throughout a good Road from Bytown, passing Dixon's Mills, Patterson's Mills, Anderson's Bridge, 2nd Chute on the Boncher, Olmstead's Mills, west side of the Muskrat Lake to Snake Rapids, and thence crossing the Muskrat River to Sydenham Mills, including the Bridges over the Boncher, Snake, and Muskrat Rivers..... 6,140 0 0

£15,110 0 0

The immense importance of these improvements will be at once seen by any person acquainted with the Lumber Trade and with the extensive tract of Country in which they are situated.

Following them, and of great importance also, is the opening of a Road from M'Question's at the foot of Deep River, passing at the back of Fort William, crossing at or near the Kilbute, thence down the Allumettes Island, crossing at the Pauquettes Rapids, thence near the northern and settled portion of Westmeath to the Little Muskrat on the Rocher Fondue or such other part as might be found more desirable, thence across

the Calumet Island, over the Bridge proposed to be erected at the Dargos and thence on the north side of the Ottawa by the road partially opened and which should be completed through the Townships of Litchfield, Clarendon, Bristol, Onslow, Eardly to Aylmer. The entire of which could be effected for the sum of £6,500; and such an expenditure, I am of opinion, would be, far more generally valuable than the expenditure on the Bytown, and Aylmer Road.

Before closing this supplementary report, I would take leave respectfully to urge in the strongest manner upon the attention of His Excellency, the difficulties under which the great mass of the settlers labor who have fixed themselves (many of them for ten years) upon the south bank of the Deep River, upon the lands bordering the Allumettes and Coulange Lakes, the Allumettes and Calumet Islands, and also the numerous settlers upon the tract of Country between the Boncher and Madawaska.

The Improvements of these persons being very considerable, and conflicts of a most serious character, with respect to boundaries frequently occurring, it is extremely desirable that these several tracts should be surveyed and divided, as soon as possible.

Respectfully submitted,

HAMILTON H. KILLALY.

President Board of Works.

BOARD OF WORKS,

MONTREAL, 5th FEBRUARY, 1845.

SIR,

I have the honour to acknowledge the receipt of the several very numerous signed Petitions to His Excellency the Governor General, from the Inhabitants of the Gore and Wellington Districts, setting forth the claims of those Districts to the opening and completion throughout of a Main Road from Dundas, on Lake Ontario, to Owen's Sound, on Lake Huron, which have been transmitted to me for report.

The principal grounds which, in my opinion, are stated, and on which the favourable consideration of the Executive is claimed for the construction of this Road, are,—

First—That it would form a short and direct communication between the two Lakes, and would pass through a large section of the Province, not enjoying the benefit of water communication, which most of the other parts of the country possess.

Secondly—That no other line in the Province traverses a greater extent of available and fertile Crown Land (stated to be five millions of acres) than it does, the settlement of which has been hitherto prevented by the all but impossibility of getting into or out of it.

Thirdly—That a number of industrious and enterprising persons have, within the last two or three years, settled on this tract, on the faith of the promise of Government to open this Road, which promise was held out to them and expressed in the printed notice and re-

gulations issued from the Crown Land Office in 1840, under which the settlement was originated.

The Maps and Documents accompanying the Petitions are elaborate and satisfactory,—from a careful examination of which, I am induced to believe the following may be relied on as a true statement of what is required, and of the expenditure which will be necessary to effect it:—

From Dundas, through West Flamboro, (about 12 miles,) the line would be through a fine Pine Wood,—thence through Puslinch to Guelph, about 12 miles, it would pass over an undulating and dry country, the excavation being suitable for the top dressing of the Road. From Guelph, through the Townships of Guelph and Nichol, to beyond the Village of Arthur, (about 16 miles,) the line traverses a tract of deep rich soil; to this point the Road is opened, but requires considerable improvement; from it to Arthur, (about 7 miles,) thro' part of the Township of Nichol and through Peel, the line is unopened, and passes through a deep and very heavy timbered tract of flat land,—from Arthur, through the Township of Arthur and part of Egremont, (about 18 miles,) the Road has been partially opened by the Government, but is in a very bad state, as to drainage and formation; some Bridges also require immediate repairs,—thence through the remainder of the Township of Egremont, through Glenelg and most of Holland (about 29 miles,) it is unopened, the soil being heavy and rich, and the tract heavily timbered—the remainder of the line to Owen's Sound, (about 13 miles) traverses

the fine land of the Townships of Holland, Sullivan, Derby and Sydenham—it is well opened and requires but little expenditure.

In several of the Townships of rich land enumerated in the foregoing, many settlers fixed themselves as already stated, under the inducement of the promise of the Government to open the road throughout—they are now suffering extremely from the total want of any road, and the difficulty in getting to Mill, &c.

The cost of draining, opening and grading and bridging the line throughout, would be £10,340; but should the Legislature decide on the completion of the road, in order to create a legitimate fund for its proper maintenance, &c., it would be very desirable to plank or gravel the portion of it between Dundas and Guelph, so that Gates and Tolls might be established thereon—if such were the case, I have every reason to believe that the Tolls would pay the interest on the additional outlay, and leave a surplus, applicable to the maintenance of the remainder of the line.

The foregoing report, you will perceive, is founded on and confined to the prayer of the Petitioners—but, in the opinion of the Board of Works, that portion of it alone, which relates to the clearing out and forming of a road through the unopened parts of the line, in a cheap but efficient manner, especially as to drainage, and such as is suited to meet the wants of a young settlement, is deserving the favorable consideration of the Executive, the cost of which would be above £3,500 Currency.

I have the honor to be,

Sir,

Your very obedient Servant,

(Signed) H. H. KILLALY.

The Hon.

D. DALY,

Provincial Secretary,

BOARD OF WORKS,

MONTREAL, 9TH FEBRUARY, 1845.

SIR,

I beg leave to acknowledge the receipt of the following Petitions to His Excellency the Governor General, sent to me in reference, namely:—

The Petition of the Rev. C. L. Gagnon and certain French Canadian Proprietors of the Township of Arthabaska, Warwick, Chester and part of Halifax.

The Petition of the Rev. C. E. Belanger and others, French Canadian Proprietors of the Township of Stanfold.

The Petition of the Rev. C. E. Belanger and others, French Canadian Proprietors of the County of Megantic.

The Petition of Charles Palmer and others, of the Township of Blandford.

The Petitions being all for the same object, viz:—The opening of the Townships, to which they refer, by the construction of a Main Road through them, I take leave to report on them together.

From the information I have received, it appears that settlement is daily creeping into these Townships, chiefly from the French Parishes south of the St. Lawrence, but the settlers are laboring under very great disabilities in consequence of the total want of Roads to the River St. Lawrence, or eastward to fall in with the Gosford Road, communicating with Quebec and westward with the markets at Melbourne &c.

The Roads prayed for do not, of course, come under the denomination of "Main Provincial Highways," but I am of opinion that they are fully as much entitled to the favorable consideration of Government and the Legislature, as those in any other sections of the country, the construction of which is advocated upon the

ground of their being necessary to the opening, settlement and improvement of the country.

It appears to me that a very large section of the north-eastern portion of "The Townships," comprising the Townships of Shipton, Kingsey, Warwick, Tingwick, Bulstrode, Arthabaska, Chester, Maddington, Blandford, Stanfold, Somerset and Halifax are deeply interested in, and would be proportionably benefited by the opening of these Roads, the line of which should be as follows, or as nearly so as the natural features of the country will permit. It should start from the Gosford Road near the junction of Inverness and Halifax, and run up that line to the "Grande Ligne," between Arthabaska and Chester, thence down this "Grande Ligne," until it crosses the branch of the Nicolet River in Kingsey, from which point a moderate expenditure would improve two branches, one to Melbourne, the other to Drummondville.

From the "Grande Ligne" near the east corner of Arthabaska, a branch should run to the St. Lawrence in Gentilly, passing across the townships of Stanfold and Blandford:

Such a line, with the various branches which no doubt the settlers themselves would in general quickly make to it, would completely open and relieve the settlers of that fine tract of country. The probable cost of the entire, I conceive, might be assumed at £7500, to be expended in two years.

I have the honor to be,

Sir,

Your very obedient servant,

(Signed,) HAMILTON H. KILLALY.

The Hon.

D. DALY,

Provincial Secretary.

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