

# RAILWAY CONTRACTS

ENTERED INTO BETWEEN

## THE GOVERNOR OF NEW ZEALAND AND MESSRS. BROGDEN.

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- I.—AUCKLAND TO MERCER.
  - II.—NAPIER TO PAKI PAKI.
  - III.—WELLINGTON TO HUTT.
  - IV.—PICTON TO BLENHEIM.
  - V.—DUNEDIN TO CLUTHA.
  - VI.—INVERCARGILL TO MATAURA.
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PRESENTED TO BOTH HOUSES OF THE GENERAL ASSEMBLY, BY COMMAND OF  
HIS EXCELLENCY.

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WELLINGTON.

—  
1872.



## AUCKLAND AND MERCER RAILWAY.

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ARTICLES OF AGREEMENT made and entered into this tenth day of August, 1872, between the GOVERNOR of NEW ZEALAND, in the name and on behalf of Her MAJESTY the QUEEN of the one part, and ALEXANDER BROGDEN, HENRY BROGDEN, and JAMES BROGDEN, all of Queen's Square, in the City of Westminster, in England, Railway Contractors (hereinafter referred to as "the Contractors"), of the other part:

Whereas by the sixth section of "The Railways Act, 1871," it is amongst other things enacted that the Governor may, if he think fit, construct and maintain, or cause to be constructed and maintained, under the provisions of "The Immigration and Public Works Act 1870," (hereinafter referred to as "the said Act"), and "The Immigration and Public Works Act Amendment Act, 1871" (hereinafter referred to as "the said Amending Act"), certain Railways, and amongst others, a Railway from Auckland, in the Province of Auckland, to Mercer, in the said Province (which said Railway is hereinafter referred to as "the Railway herein mentioned"):

And whereas by the said Amending Act it is provided that all Contracts under any Act authorizing the construction of any Railway under the said Act or the said Amending Act, shall be entered into in the name of the Queen, her heirs and successors:

And whereas the Governor of New Zealand, on behalf of the Queen, has agreed with the Contractors for the execution and construction by them of the works described or referred to herein, and in the Specifications, Conditions, Drawings, and Plans hereto annexed or herein referred to, all of which Specifications, Conditions, Drawings, and Plans are signed by the Contractors and John Carruthers, Esquire, the Chief Engineer of the said Colony on behalf of the Colony: Now, these Presents witness that Her Majesty the Queen, for herself, her heirs and successors (all of whom are hereinafter included in the expression "the Queen"): and, so far as the covenants hereinafter contained are to be performed or observed on her or their parts respectively, doth hereby covenant with the Contractors, their executors, administrators, and assigns (all of whom are hereinafter included in the expression "the Contractors"), and the Contractors and each of them, for themselves and himself, and their respective heirs, executors, administrators and assigns, so far as such covenants hereinafter contained are to be performed or observed on their parts, do and doth hereby covenant with the Queen, her heirs and successors, in manner hereinafter appearing, that is to say—

1. That they, the Contractors, shall and will, in all respects subject to and in accordance with the said Conditions, Specifications, Drawings, and Plans, construct make, complete, and maintain, and do and perform, all the works, and supply all such plant and materials as are by the said Specifications and Conditions to be supplied by the Contractor, whether such works, plant, and materials are described or referred to in the said Conditions, Specifications, Drawings, or Plans, or are extra or in addition thereto, within the time mentioned in the said Conditions, subject, however, to the provisions contained in the said Conditions for extension of time.

2. That the Queen shall and will, free of cost to the Contractors, provide and deliver to the Contractors, at the ship's side at the Harbour of Auckland, the iron rails and fastenings required for the permanent way and the rolling stock respectively mentioned in the Specification.

3. That the Queen will pay the Contractors for the construction and execution of the said works, and the maintenance thereof, for the period of three months

## RAILWAY CONTRACTS,

from the completion of the works, and for the supply of all such plant and materials as the Contractors are to supply under the provisions of this contract as aforesaid, the sum of one hundred and sixty-eight thousand nine hundred and twenty-four pounds (exclusive of the supply of such plant and materials as by the said Specifications and Conditions it is provided the Queen or the Government of New Zealand shall supply, and subject to the provisions contained in the Conditions and Specifications for increase and decrease in case of extras or deductions, and to the provisions contained in the said Specifications or Conditions for extra payment to the Contractors by percentages on the cost of such works as, by such Specifications it is provided, the Contractors are to receive payment by way of percentage on the cost thereof).

4. The Queen shall and will make payments to the Contractors upon account of the said sums herein agreed to be paid at the rate and times, and upon the terms and conditions mentioned in the said Specifications and Conditions.

Lastly. The parties hereto shall and will each respectively perform, observe, and fulfil all and singular the conditions and stipulations expressed or contained in the said General Conditions and Specifications, and which thereby it is provided shall be performed, observed, or fulfilled by such parties respectively.

In witness whereof the Seal of the Colony has hereunto been affixed, and the said Contractors have hereunto set their hands and seals, the day and year first above written.

Sealed with the Seal of the Colony,  
and signed by the Governor, in  
the presence of  
WILLIAM FOX.  
J. D. ORMOND.

G. F. BOWEN,  
Governor.

Signed, sealed, and delivered by the  
above-named Alexander Brogden,  
Henry Brogden, and James  
Brogden, in the presence of  
WM. THOS. LOCKE TRAVERS,  
Solicitor, Wellington.  
(Seal of the Colony.)

ALEXANDER BROGDEN,  
By his Attorney, James Brogden.  
(Seal.)  
HENRY BROGDEN,  
By his Attorney, James Brogden.  
(Seal.)  
JAMES BROGDEN.  
(Seal.)

Approved in Council, August 10th, 1872.

FORSTER GORING,  
Clerk of the Executive Council.

## GENERAL CONDITIONS FOR THE AUCKLAND AND MERCER RAILWAY.

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### INTERPRETATION CLAUSE.

1. In these conditions the words "Minister for Public Works" shall mean the Minister for Public Works appointed under "The Immigration and Public Works Act, 1870," or any Minister or person for the time being authorized by the Governor to act for such Minister in respect of the special work contracted for; the word "Engineer" shall mean the Engineer for the time being who shall have principal charge of the works on behalf of the Government; and the word "Contractor" shall mean "Contractors" when two or more persons tender or contract jointly for the work; and the word "month" shall mean "calendar month."

WORKS, &c., TO BE ACCORDING TO DRAWINGS AND SPECIFICATIONS, AND TO  
THE SATISFACTION OF THE ENGINEER.

2. All the materials used are to be the best of their respective kinds, and all works of every description throughout are, subject to the provisions hereinafter contained, to be executed conformably to the several drawings and details prepared or that may be prepared for that purpose, and herein referred to, in the strictest accordance with the provisions of the specifications, and in the best, most substantial, and workmanlike manner, and to the satisfaction of the Engineer; and should any work not be so executed, it shall be immediately altered and amended at the cost of the Contractor.

### PLANS, &c.

3. A copy of the plans and drawings, with the specifications, shall be furnished to the Contractor by the Engineer, and the plans and drawings referred to in the specification, and the specification, shall be taken together to explain each other; and if, in the execution of the works, it shall be found that anything has been omitted or mis-stated either in the drawings or specification, which is necessary for the proper performance and completion of any part or parts of the works, the Contractor shall at his own cost and expense execute the same, and provide whatever may be requisite for so doing, provided the extra cost thereof shall not exceed the sum of £200 in each particular case. Any written dimensions on the drawings shall be taken in all cases in preference to measurements by the scale attached, and anything contained either in the drawings or specification shall be equally binding on the Contractor as if it were contained in both; and in case the written or figured dimensions on the drawings shall disagree with the scaling, or in case there shall be any discrepancy between the drawings and specification, or any ambiguity in them, such occurrence shall not invalidate the contract, but the same shall be rectified by the Engineer if thought requisite, and the Contractor shall not be entitled to make any claim or demand for compensation or damages on account of such discrepancy or ambiguity. If neither the drawings nor the specification contain any notice of minor parts, the intention to include which is nevertheless clearly to be inferred, and which parts are obviously necessary for the workmanlike completion and stability of the work, all such parts are to be made and executed by the Contractor without extra charge, and are to be deemed by him as included in the sum at which he contracts for the works.

### EXTRA WORKS AND ALTERATION OF WORKS.

4. The Contractor is to make and execute, in the like manner as aforesaid, and with the like materials as aforesaid, any additions, deviations, or alterations to, from, or in the works, which the Engineer may from time to time, previously

to the commencement or during the progress of the works, by an order in writing, require, at and for such prices or rates as shall be agreed upon in writing between the Contractor and the Minister for Public Works. In case of non-agreement as to price, the work shall be done by the Contractor as required by the Engineer, and the price thereof shall be settled by arbitration as hereinafter provided, and shall when so ascertained be added to and thenceforth deemed to be part of the contract price for the works to be executed under this contract; but no additions, deviations, or alterations whatever, which shall be claimed by the Contractor, will be admitted or recognized under any circumstances, or will be allowed or paid for, which shall be done or executed without, or contrary to any previous order from the Engineer in writing as aforesaid: Provided always that no addition, deviation, or alteration from the plans and specifications to be ordered by the Engineer as aforesaid shall involve an increased expenditure in connection with the works or any part thereof, unless distinctly authorized by writing under the hand of the Minister for Public Works, who, before authorizing any such deviation, shall obtain from the Engineer an estimate of the increased expenditure arising therefrom: Provided also that in all cases where such deviation, addition, or alteration as last aforesaid, from the plans and specifications, shall involve an outlay exceeding £500, the consent of the Governor in Council shall first be obtained. And in all cases it shall be the duty of the Contractor to satisfy himself that such addition, deviation, or alteration (if any) has been duly authorized in the manner required by "The Immigration and Public Works Act, 1870," and also, that to any such outlay as aforesaid, requiring the consent of the Governor in Council as aforesaid, such consent has been obtained, as required by the said Act.

#### OMISSION OF PORTIONS OF WORKS.

5. To the Minister for Public Works there is reserved the right from time to time of requiring the omission of any particular portion or portions of works described in the specification or shown on the drawings, and of deducting the value thereof from the amount of the contract, such value to be agreed upon between the Minister for Public Works and the Contractor, or in case of difference to be settled by arbitration as hereinafter provided; but the Contractor shall be entitled to be paid a sum of ten per cent. on the agreed or ascertained value of the work omitted; such sums for omissions to be paid on the completion of the contract.

#### MATERIALS, LABOUR, &c.

6. The Contractor shall provide, at his own costs and charges, all materials, labour, tools, plant, tackle, machinery, scaffolding, waggons, cordage, cartage, stores, planking, centres, coffer dams, diving bells, staging, diving dresses, and everything necessary for the proper execution and completion of the several works, and centres must not be struck without the written authority of the Engineer. The Contractor is also to provide, at his cost, for keeping all the trenches and foundations free from water, and for preventing all slips of ground into the trenches. All material and all prepared work brought upon the ground of the works for use therein is to be considered the property of the Queen, and the Contractor shall not take away any such material or work without the written authority of the Engineer, unless the same shall be required for the purposes of other works under this contract. The Contractor will be required to set out accurately, at his own expense, all the works comprised in this contract, agreeably to the drawings and specifications, and shall be held responsible for their being so set out and executed accordingly.

#### REMOVAL OF IMPROPER MATERIALS.

7. It shall be lawful for the Engineer to order the removal from the works of any materials, whether fixed or not, which may appear to him to be of an inferior or improper description, and the Contractor shall remove the same within twenty-four hours after a written notice in that behalf given to him by the Engineer; and in case of neglect or refusal to remove the same according to such notice, the Engineer shall have power to remove the same at the cost of the Contractor.

## CONTRACTOR TO BE REPRESENTED.

8. The Contractor at all times during the progress of the works, when he is not personally superintending them, must have a responsible agent or overseer stationed on them, to receive instructions from the Engineer, and to represent him for all the purposes of this contract.

## PROGRESS OF WORKS.

9. If the Contractor shall, in the opinion of the Engineer, fail to make such progress with the works as the Engineer shall deem sufficient to insure their completion within the specified time, or if the Contractor shall use or employ bad or insufficient materials, or execute any work in an imperfect manner, and shall fail or neglect to rectify any such cause of complaint for fourteen days after being thereunto required in writing by the Engineer, or if the Contractor shall, in the judgment of the Engineer, commit a wilful breach of his contract, then, and in any of such cases, it shall be lawful for the Minister for Public Works, by any instrument in writing under his hand delivered to the Contractor, or to his representative on the works, or left at the Contractor's usual or last known place of abode or business, absolutely to determine this contract, and from and after the delivery of the said instrument as aforesaid, the contract shall be absolutely determined; and in the event of such determination happening, then it shall be lawful for the said Minister, after having delivered such instrument to the Contractor as aforesaid, to take the works out of the Contractor's possession, and at the option of such Minister either to carry the works on under the Engineer or by another Contractor, and that either after advertising for Contractors or without doing so, as he shall think fit; and all the materials, implements, and plant then upon or used in connection with the works may be used in and applied for the purpose of completing the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages, together with the net proceeds realized by the sale of the then residue of such materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

CONTRACTOR NOT TO SUBLET WORKS TO PERSONS PREVIOUSLY OBJECTED TO—  
BANKRUPTCY, INSOLVENCY, OR DEATH.

13. The Contractor shall not sublet any portion of the works to any person who shall have been previously objected to by the Engineer by notice in writing to the Contractor. If the Contractor become bankrupt or insolvent, or shall make an assignment of his estate for the benefit of his creditors, or shall die before the final completion of the contract, then it shall be lawful for the Minister for Public Works, on behalf of the Queen, summarily, and of his own authority, and without any process of law for that purpose, to take possession of the works, and to take them out of the hands of the Contractor, or of his executors, or administrators, or of the assignees or trustees of his estate, and to employ persons for

the execution and completion of the same, and that either after advertising for contractors or without doing so, as he shall think fit; and all the then remaining materials, implements, and plant aforesaid may be used in and applied for the purposes of the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages aforesaid, together with the value of the remaining materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid; and in the case of bankruptcy or insolvency, then Her Majesty the Queen shall rank as a creditor to the amount of such surplus. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

#### LIABILITIES OF CONTRACTOR.

14. The exercise by the Minister for Public Works, or Engineer, of any of their respective powers shall not relieve the Contractor from any liability to which he may be subject for any breach of the contract.

#### TIME OF COMPLETION.

15. Subject as herein provided, the Contractor shall complete the whole of the works of this contract on or before the first day of September, one thousand eight hundred and seventy-five, failing which the Minister for Public Works shall be entitled to deduct from the final balance due to the Contractor a sum calculated at the rate of Three pounds per cent. per annum on all moneys which shall have been paid to the Contractor under this contract, computed from the date on which the work ought to have been completed under this contract up to the date of the completion of the work: Provided that if the Minister for Public Works shall have taken over as completed any portion of the work, the cost of that portion shall not be included in the calculation last aforesaid. But in the event of the Contractor being prevented by earthquake, tempest, flood or otherwise by the act of God or by the act of the Queen's enemies, rebellion, restraint of princes, or otherwise by anything in the nature of *vis major*, or by reason of any strike amongst the workmen engaged upon the works, or by reason of any alterations, deviations, or additions, or extra works being required, or in case of any delay in furnishing any material to be supplied to the Contractor by the Governor, the Engineer shall allow such an extension of time as he shall think adequate for such enforced delay, or for such alterations, deviations, additions, or extra work; and at the expiration of the time so allowed, the deductions or sets-off for delay shall come into operation.

#### SUSPENSION OF WORKS.

16. The Contractor, on receiving a written notice from the Engineer, shall suspend, or stop, the whole or any portion of the works as may be directed, and the Governor on behalf of the Queen shall make good to the Contractor any loss or damage he may sustain through such suspension or stoppage, to be ascertained,



in case of non-agreement between the Contractor and the Minister by arbitration, as hereinafter mentioned; and the Minister for Public Works shall in no case be bound to give the Contractor possession of the ground or work until thirty days after the signature of the contract by the Contractor; but a commensurate extension of time for completing the works will be allowed to the Contractor, such extension of time to be at the discretion of and to be decided by the Engineer.

## DAMAGES TO BE MADE GOOD, &amp;c.

17. The Contractor shall also provide for effectually securing and covering the several walls and works from the weather, as occasion may require, or as the Engineer may direct; and if any damage or loss should happen to any of the works, plant, or materials—whether from fire, theft, or weather, force of waves, or from any other cause—while the works and buildings are unfinished, or remain in possession of the Contractor, the Contractor must properly and immediately repair and make good the same at his own expense, and to the satisfaction of the Engineer; unless it can be shown that the damage arises from insufficient or imperfect designs, when the Contractor will not be held responsible, and, in case of dispute, the matter shall be settled by arbitration, as hereinafter provided.

## TRESPASS.

18. The Contractor shall not enter upon any lands outside the line of fences for the construction of the works, or for any purpose whatever in connection with this contract, without the consent of the occupier or owner, except at his own cost and risk, and shall not, without the consent of the Engineer, remove any trees or buildings within the line of the Railway fences, nor shall he open or throw down any part of a fence without making sufficient provision by temporary fences, to be erected and maintained at his cost, for keeping cattle, sheep, or other stock from straying from or into any enclosure affected thereby; and any legal process causing costs or damage to the Government for any trespass incurred by the act or negligence of the Contractor or his workmen shall be deducted from the contract price, and be taken as payment made on account of his contract.

## MAINTENANCE OF WORKS.

19. The Contractor shall be bound to keep and maintain in good and sufficient repair the whole works executed under the contract, and shall provide all labour, materials, &c., necessary for such maintenance for a period of months from and after the time when all the works under the contract have been fully completed; and the Contractor shall on the expiry of the said period of maintenance be bound to deliver up the whole works in good and sufficient condition, and to the satisfaction of the Engineer. The Contractor shall also be liable for any accident, damage, or injury whatsoever to the public or any private person which may be caused by his operations during the progress of the works, or during their maintenance. He shall also maintain all night-lights and temporary footpaths required by any Municipal or other authorities, or for the safety of the public, and shall make all necessary arrangements, by siding or otherwise, as required by the Engineer, to prevent stoppage of public traffic.

## LAND.

20. The Minister for Public Works will, free of all expense, put the Contractor in possession of all land required for the permanent works of the Railway, including land required for side-cutting, ballasting, spoil banks and road approaches, road diversions, and slips, and also from time to time, as occasion may require, but at the cost of the Contractor and so far only as the Parliamentary powers possessed by the Governor or the Minister for Public Works will extend to enable them so to do, of all such land as may be necessary for temporary purposes in connection with the works.

21. The Minister for Public Works shall, within thirty days after the signing of the contract by the Contractor, put the Contractor in possession of such parts of the land for the permanent works as may be necessary for the commencement thereof, and will from time to time, after fifteen days' notice in that behalf shall have been given by the Contractor to the Engineer, put the Contractor in possession of

all such other parts of the lands required for the permanent works as may be necessary for the immediate prosecution thereof.

DELAY IN GIVING POSSESSION OF LAND.

22. If any delay shall take place in giving to the Contractor the possession of any land required for the permanent works as aforesaid, such delay shall not be deemed to be a breach of the contract, but the Contractor shall be entitled to such reasonable extension of time for the completion of the works as shall be fixed by the Engineer, or, in case of dispute, by arbitration, as hereinafter provided.

POWER TO REQUIRE DISMISSAL OF ANY WORKMAN.

23. The Engineer may require the dismissal within twenty-four hours by the Contractor of any agent, overseer, foreman, workman, or other person employed by him on the works, for incompetency or misconduct, and any man so dismissed shall not be again employed upon the works.

TRUCK SYSTEM NOT ALLOWED.

24. The workmen, tradesmen, and labourers of every class employed on the works to which these Conditions refer, shall be paid their wages in full in money of the current coin of the Colony, and no ticket or other system of payment by provisions, liquors, or goods will on any pretence be allowed, nor shall the Contractor or any person or persons employed by him, or in any way connected with him, establish any shop for the supply of liquors, provisions, or goods, nor shall the Contractor oblige his workmen to take provisions, liquors, or goods of any kind from any person in particular. The workmen of every class shall be paid on the works if it be possible, or in some building adjoining, and in no case shall they be paid at a public-house, or other place where liquors or refreshments are sold.

PAYMENTS.

25. Payments will be made monthly, for each calendar month, as the works proceed, on the certificate in writing of the Engineer, at a rate not exceeding 90 per cent. on the value of the work actually done, as estimated by the Engineer, having due regard in such estimate to the actual value thereof, and at a rate not exceeding 50 per cent. on the value of such plant and materials on the ground as may be approved by the Engineer as fit and necessary for the work, as estimated by the Engineer, having due regard in such estimate to the actual value thereof, such certificates for work done, and materials and plant supplied, in each calendar month, to be delivered to the Contractor within fourteen days after the termination of such month, and the balance, less 5 per cent., together with the amount deposited as cash security, if any, in fourteen (14) days, or as nearly as may be, after the Engineer shall have certified under his hand that the works have been finally and satisfactorily completed, and that such balance, together with the cash security, is due to the Contractor. The said 5 per cent. will be retained for three months to insure the fulfilment of clause 19 of these Conditions, and from which sums may be deducted the costs of any repairs or defects, failing the Contractor executing the same: Provided always that no sum or sums of money shall be considered to be due or owing to the Contractor, nor shall the Contractor make any claim for or on account of any work executed or maintained by him, or for or on account of plant or materials supplied by him, unless such certificate as aforesaid shall have been given by the Engineer as aforesaid; nor shall any sum or sums of money so certified be considered to be made payable to the Contractor until the expiration of fourteen days after such certificate shall have been presented to the Minister for Public Works; nor shall any omission to pay the amount of such certificate at the time the same shall be held payable be deemed or held to be a breach of or to vitiate the contract, but in case of such omission the Contractor shall be entitled to interest on the amount certified for, at the rate of ten pounds per centum per annum, for such time as such omission shall continue.

NEGLECT TO CERTIFY.

26. In case the Engineer shall neglect or refuse to certify the amount due to the Contractor in respect of the work, or plant or materials, in manner and within

the times mentioned in the foregoing condition, and shall continue such neglect or refusal for a period of fourteen days succeeding the fourteenth day after the end of the month in which the work was done, or the plant or materials supplied, as the case may be, the Contractor shall be entitled to measure and value the same, having due regard in his estimate to the actual value thereof, and the measure and value so estimated by the Contractor shall be temporarily accepted by the Governor so far as regards the progress payment to be made to the Contractor in respect thereof under the foregoing condition, and the payment provided by that condition shall be made accordingly, with interest thereon, at the rate of Ten pounds per centum per annum, during the period of delay occasioned by the neglect or refusal of the Engineer: Provided always that in all cases in which a certificate shall, within the period or further period hereinbefore provided, as the case may be, have actually been delivered to the Contractor, such certificate shall, for the purpose of the progress payment to be made thereunder, be conclusive; and in case of any dispute between the Contractor and the Engineer as to the estimate therein made of value of work done, or plant or materials provided, as the case may be, of which dispute notice shall have been given by the Contractor to the Minister for Public Works within fourteen days after the delivery of the certificate to the Contractor, such dispute shall be referred to arbitration as hereinafter mentioned.

#### PROGRESS PAYMENTS WITHOUT PREJUDICE, &c.

27. No certificate given to the Contractor for the purpose of any progress payments shall prevent the Engineer, at any future time before the termination of the contract, from rejecting all unsound materials and improper workmanship, discovered subsequently to the giving of the last previous certificate; and notwithstanding the giving of any certificate that portions or the whole of the works have been satisfactorily performed, the Engineer may require the Contractor to remove and amend, at any future time previously to the final payment on account of the construction or maintenance of the works, any work that may be found not to be performed in accordance with the contract, and the Contractor must remove and amend, at his own cost, all such work when so required, notwithstanding any approval made or given by the Assistant Engineer or Inspector. The Minister for Public Works shall have power, on the report of the Engineer that the work approved of as aforesaid is not in accordance with the contract, to deduct from any moneys that may be due or that may become due to the Contractor the whole amount that has been paid on account of such work.

If, in the opinion of the Minister for Public Works, further inquiry is desirable or necessary before any certificate is paid, the Minister for Public Works shall have power to suspend the payment of all or any part of the amount mentioned in any such certificate for a period not exceeding one month from the date at which, in the ordinary course, the money would have been paid; and in such case, on payment of the amount payable, the Contractor shall be entitled to receive interest at the rate of ten pounds per centum per annum during such additional delay.

#### STAMPS, LICENSE FEES, &c.

28. The Contractor shall bear and pay all costs, charges, and expenses of preparing, executing, and completing this contract, and all duty stamps, licenses, Building Surveyor's fees, or other charges or fees whatsoever lawfully demanded by the Municipal or other authorities.

#### CUSTOMS AND WHARF DUTIES, &c.

29. In the event of the Contractors being compelled to pay any Customs duties or wharf dues or fees on any goods imported into New Zealand by them for the purposes of the said works, or transhipped or carried by them from any port or place in New Zealand to any other place in New Zealand, the Queen shall and will repay the same to the Contractors after one month's notice in writing by the Contractor to the Minister demanding payment thereof and giving details of such payment, and the production of vouchers or other proof of such payment.

## ARBITRATION.

30. Should any dispute arise between the Contractor and the Engineer, or between the Contractor and the Minister for Public Works or the Government, relative to the force and intent and meaning of the specifications, drawings, or conditions, or to the mode of carrying on the works, or the nature or quality of materials used or supplied to be used, or workmanship of work done, or as to the maintenance of the works, or as to the expense of additional works, or of alterations or deviations from the specifications or plans, or as to any other matter connected with the execution of the works, or with the contract, specifications, drawings or conditions, or as to any matter which by this Contract it is expressly provided is to be settled, ascertained, or determined by arbitration, such dispute shall be referred in writing to the sole determination, arbitrament, and award of the Judge of the Supreme Court assigned to that Judicial District of the Supreme Court within which the works relative to which the dispute shall have arisen, have been or are to be executed, whose award shall be final, binding, and conclusive on all parties: Provided, however, that before any such dispute, as aforesaid, shall be so referred, the Contractor shall give to the Minister for Public Works one calendar month's notice in writing of such dispute, and of the matter and cause thereof, and in such notice the Contractor's claim shall be explicitly stated; and if such claim be for pecuniary compensation, the amount thereof shall also be stated.

JOHN CARRUTHERS.  
JOHN BROGDEN AND SONS.

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SPECIFICATION OF THE MANNER OF CONSTRUCTING THE  
AUCKLAND AND MERCER RAILWAY.

## GENERAL DESCRIPTION.

## Description.

1. The line of Railway included under the title "Auckland and Mercer Railway," and to which this Specification applies, begins at a point in the Town of Newmarket, and terminates at the wharf in the Township of Mercer, on the Waikato River, as delineated on the accompanying plans and sections; the total length of the contract being forty-one miles thirty-four chains or thereby, with an addition of two miles of sidings.

## DRAWINGS.

## Drawings.

2. The drawings, including general plans and longitudinal sections, as shown on list A, accompany this Specification. These show the character of the works to be executed. Further drawings of details will be issued from time to time as may be necessary.

The general plan is drawn to a scale of three chains to an inch, and shows the course of the Railway, the centre line of which has been staked out on the ground, and is represented on the general plan by a red line.

The road and stream diversions are shown on the general plan.

The longitudinal section is drawn to a horizontal scale of three chains to the inch, and to a vertical scale of thirty feet to the inch. It represents the natural profile of the ground along the centre line of the Railway. The red line shows the level of the bottom of the ballast. On the longitudinal section are shown the positions and sizes of the culverts and bridges described in this Specification.

## ALIGNMENT OF STRUCTURES.

## Alignment.

3. In the construction of bridges, culverts, road crossings, and generally, it is to be understood that they are to intersect the line of Railway at such angle or

curve as may be necessary and approved in each case, although they may be shown on the drawings straight and at right angles; and in the interpretation of the drawings and schedules, and of this Specification, it shall be distinctly understood that all works or materials necessary to the due and workmanlike completion of every erection are to be provided, whether specially described or not.

#### CONTRACTOR TO PROVIDE LABOUR, PLANT, AND MATERIALS.

4. The Contractor is to provide all labour, tools, implements, plant, and materials, and is well and substantially to construct and complete the Railway in accordance with the plans and specifications, and to deliver the same complete, and is to maintain and keep the said Railway, and all works connected therewith, in perfect order and repair for the space of three months from the delivery of the same to the Government.

Contractor to provide labour, &c.

The said Railway shall be made in accordance with this Specification, and with the plans and sections herein referred to, or with such modifications of the plans and sections as the Engineer shall order, provided such modifications shall not increase the cost of the work.

#### FELLING, CLEARING, AND GRUBBING.

5. The whole of the timber within one chain and a half of the centre line is to be felled. Of this extent the central chain is to be cleared by removing all logs and underbrush half a chain from the centre line, and to a greater distance where the formation requires it. Throughout all cuttings and along formations on the level, all stumps and roots are to be grubbed out entirely and removed, so as to leave no loose timber whatever, and no stumps within two feet of formation level along centre or within one foot of the surface in the slopes.

Felling, &c.

The Contractor will be permitted to apply to his own use the timber which he has felled for the purpose of clearing the line.

#### FENCING.

6. Ten miles of the line are to be fenced on both sides; and wherever present fences are disturbed or interfered with, they are to be made good at the expense of the Contractor. At all crossings of roads, and other places where cattle stops are used, fences are to be completed across the line up to the cattle stops.

Fencing.

The description of fencing used shall be that described in special fencing specification, as Qualities Nos. 2 or 3, at the option of the Contractor.

#### EARTHWORKS.

7. All flax, scrub, rushes, or Maori-heads growing on the line of the Railway, shall be cut down to the full width between the outside of the slopes.

Clearing scrub, &c.

No public or private road that crosses or intersects the Railway or works thereof, shall be obstructed by excavation or otherwise, until the Contractors shall have provided such temporary roads as may be necessary for the traffic.

Roads not to be obstructed.

The cuttings are to have a base at formation level of 10 feet in rock, 11 feet in loose rock, and 13 feet elsewhere, and are to be made in accordance with plan and section attached; but should the Engineer require any of the cuttings or banks to be made with different slopes from those shown on Drawing No. 34, the difference in cost shall be added to or deducted from the contract sum. Such alteration to be ordered in writing.

Cuttings.

A drain is to be cut along the bottom of slopes of cuttings, except in rock; this drain to average 5 cubic feet per lineal yard. Catchwater drains are to be dug above the top of one slope of cuttings, at a distance of from a quarter of a chain to a chain from the top of slopes; these ditches are to average 5 cubic feet per lineal yard, and are to be true and regular to the inclinations directed; no stumps or roots to be left in them.

Drains.

The embankments must be carried forward uniformly of the proper shape, with such an addition to the heights and widths as a due allowance for the shrinking of the material requires, so as to avoid as far as practicable the necessity

Embankments.

for making subsequent additions either to the heights or widths of the embankments, to bring them to the correct levels and dimensions.

Whenever the foundation of an embankment is on sloping ground, the Contractor, if required, must at his own expense cut steps and benches under the base of the embankment.

The top of embankment at formation level is to be 10 feet wide; the slopes to be trimmed off to an inclination of one and a half horizontal to one vertical, and to be maintained full and true until the completion of the contract.

The Contractors shall, unless otherwise directed by the Engineer, take care not in any way to interfere with or divert the existing drainage areas, and shall leave such stops or stanks in the side cuttings, and take such other precautions, as the Engineer shall think necessary for that purpose.

**Punning.**

Behind and around culverts and abutments of bridges, the embankments shall be wheeled in and carefully rammed.

#### DITCHES AND DRAINS.

**Ditches and drains.**

8. When the line crosses swamps of a peaty nature, catchwater drains are to be cut on the upper side of the line obliquely across the valleys, so as to tap the surface water. These ditches shall not exceed, on an average, one and one-third cubic yard per lineal yard, and are to be made at the commencement of the work, and cleaned out from time to time as may be ordered.

#### STREAM DIVERSIONS.

**Stream diversions.**

9. All stream diversions are to be grubbed out as described for cuttings, and excavated with regular slopes and inclinations, as will be set out. The amount of earth cutting in stream diversions is not, however, to exceed 20,000 cubic yards, and the rock excavation is not to exceed 5,000 cubic yards.

#### ROAD ALTERATIONS.

**Road alterations.**

10. At the places shown on the plan and section, and wherever necessary, the present roads are to be diverted.

All such diversions and road approaches to the level crossings are to be completed in a convenient, substantial, and proper manner, with the necessary drains, water tables, and side slopes. Such approaches and road diversions are to be formed with an inclination not steeper than 1 in 30 for public roads, and 1 in 20 for private roads, except where the present inclination exceeds these rates, in which case the inclination of the new road shall not exceed that of the present road, unless, in the opinion of the Engineer, a steeper is unavoidable.

**Metalling.**

Public roads and approaches to first-class crossings are to be metalled with coarse river gravel or approved hard stone, laid on and spread as directed, so as to average 22 cubic yards per lineal chain of road. Private roads are to be metalled with coarse river gravel or broken stone of approved quality, laid on and spread as directed, so as to average 9 cubic yards per lineal chain. The whole of the metal is to be broken to pass through a two and a half inch ring.

**Clarkson's Road Bridge.**

Where Clarkson's Road requires to be diverted, a new bridge will be required for the road, similar in plan and materials to the existing bridge.

**Level crossings.**

Twenty-two first-class, five second-class, and five third-class crossings, with two cattle-stops to each crossing, as per Drawing No. 30, shall be constructed at public and private roads where directed. They shall be carefully placed as to line and level, and finished in strict conformity with the drawing and the notes thereon. Each level crossing shall be metalled for a length of 66 feet on each side of the centre line, as above specified for the roads, and tile or timber box drains shall be put in the formation ditches where necessary for the drainage of the line or road.

**Gates.**

Forty pairs of malleable iron tubular or other approved gates, 12 feet wide, hung to strong posts, and furnished with bolts and padlocks, shall be provided and hung at private crossings where directed.

**Cattle stops.**

Cattle stops, as shown in Drawing No. 30, are to be put in where directed, not exceeding forty in number, besides those at level crossings.

MATERIALS.

11. Except where otherwise specified, all the materials used under this contract shall be of the following kinds and descriptions :—

Concrete shall be composed of three parts, by measure, of broken stone, two parts of sharp sand, and one part of fresh Portland cement ; or, two parts of broken stone, two parts of gravel, and one part of sand, and one part of fresh Portland cement. The stone may consist of scoria, volcanic rock, or hard sandstone, broken to  $2\frac{1}{2}$  inch gauge. The cement shall be of approved brands, and subject to such tests as the Engineer may from time to time direct. The concrete shall be laid in 12-inch layers, and well rammed as the work progresses. Concrete.

Cement mortar shall consist of three parts, by measurement, of sharp clean sand, to one part of Portland cement. Cement mortar.

Lime mortar shall consist of two parts of sharp clean sand, to one part of lime, mixed and prepared as may be directed. Lime mortar.

Bricks shall be of the best quality of hard-burned kiln bricks, and approved by the Engineer. Brick work.

All masonry, except archwork, coping, and string courses, to be of rubble laid in cement mortar. Bond stones, 2 feet long, to be put in every square yard of both face and back of work. All spalls are to be set in mortar, and not laid dry, and afterwards grouted. Facework must have no stone containing less than one-quarter of a cubic foot. The work shall be grouted every foot in height ; archwork shall be of brick, set in cement mortar ; but where flat-bedded stone exists, approved by the Engineer, the Contractor may use it for arches, but he must in that case increase the thickness of the arches 25 per cent. beyond that shown on drawings. All wingwalls, parapets, and abutments shall be finished with a coping of brick on edge, one brick wide, set in cement. The coping is not generally shown on drawings. The whole of the masonry is to be neatly pointed. Masonry.

A layer of puddle, nine inches thick, to be put over the arches of culverts. Puddle.

All timber shall be of kauri or totara, or other timber specially approved ; it shall be heart-wood, except as shown on Drawing No. 36, and shall be straight and sound, free from shakes, large knots, and other imperfections. Timber.

The whole of the straps and bolts shall be made of B.B. crown iron, or other iron of equal quality, of the dimensions shown ; the whole to be finished and fixed in a workmanlike manner. Malleable iron.

Bolts shown or specified shall have a square head, of which the thickness shall be equal to the diameter of the bolt, and the width twice the diameter of the bolt. They are to be tapped with a good clean thread, and shall have a nut equal in size to the head of the bolt, and shall be provided with one or more washers 3 inches diameter. Bolts and nuts.

BRIDGES AND TIMBER OPENINGS.

12. Bridges, as per detail drawings, shall be erected where shown on longitudinal section. Bridges, &c.

All joints, shoulders, and sides of tenons and scarfs to be worked perfectly true, and to fit accurately, and to be covered with red lead before being put together. Tenons generally to be 5 inches long, and to be draw-bored to receive trenails of hard wood made with hollow auger or trenailing machine. All trenails to be well seasoned and kept dry, and to be one-sixteenth of an inch more in diameter than the hole bored for them, and to be covered with red lead before being driven. All capsills and mudsills to be mortised on to posts or piles. All string pieces to be accurately notched down to capsills or floor beams by notching  $\frac{3}{4}$  inch from each, to be scribed and accurately fitted. Diagonal braces, where placed inside the panel, are to be notched together as described for string pieces. Joints.

All piles are to be rung before driving with a three inch by  $\frac{3}{4}$  inch round hoop. The piles are to be shod with a substantial iron shoe weighing not less than 30 lbs., securely fixed ; the point of the pile to be cut true, and to be squared off at the end to 3 inches square, and to have true bearing against the shoe. No pile-driving is to be commenced at any bridge, opening, or other work without giving six days' notice previously to the Engineer in charge of the works. Piling.

Contractor to supply rods and gauges.

The Contractor shall provide all proper rods and gauges for setting out and testing the dimensions of bridges and timber openings that the Engineer may require.

#### CULVERTS AND DRAINS.

Timber culverts.

13. Timber culverts shall be erected where shown on longitudinal section.

The frames shall be accurately mortised, and tenoned, and pinned; the planking to be securely spiked on to the frames, the whole of the timber to be heart of totara or matai; the outer side of the planking need not be reduced to the dimensions given, but there must in every case be the full thickness specified of heart timber; the edges of the planking must fit truly for the whole thickness, and the planks must extend over at least two panels, and break joints as much as possible.

Masonry culverts.

Masonry culverts shall be erected where shown on longitudinal section. They shall be of rubble masonry, set in cement mortar, with coping of brick on edge.

Drains at culverts.

Sufficient catchwater and outfall drains are to be dug at culverts, and all stumps and roots occurring in the line of ditch to be taken out.

#### BALLASTING AND PERMANENT WAY.

Ballast.

14. The ballast is to consist of shingle, scoria, broken stones, or sand previously approved of, and is to be disposed as shown in Drawing No. 34. In all cases the embankments and cuttings are to be cleared from mud, and brought to an uniform formation level before the ballast is laid on.

Permanent way.

The permanent way is to consist of a single line of rails laid to a gauge of 3 feet 6 inches, and sidings provided and laid where directed, amounting in all to three miles of sidings.

Gauges.

The Contractor is to provide and have upon the ground at all points when the work is proceeding a sufficient supply of all such templates, tools, gauges, and other implements as are necessary and are usually required in the laying of permanent way, or as may be required by the Engineer.

Laying of permanent way.

About three thirty-seconds of an inch of space is to be left between the ends of the rails when fixed in place, or such other space as the Engineer may direct, according to the season.

Bending rails.

For the curves, the rails will require bending. This, as well as the straightening of all bent rails, must be effected by a press, or by striking with wooden hand-beetles on wooden blocks. In all cases, whether of straightening of bent rails or of bending rails to the necessary curves, the rails must be set permanently to the form required before being laid, and no temporary bending, springing, or straightening, either by dragging with a lever and hook, or by any other means of a like character, will on any account be permitted.

Laying sleepers.

Great care must be taken to lay all the sleepers square to the rails on straights, and as near as may be on curves. Where the line is straight, the rails will be level across the line; but where the line is curved, the rails will be canted, the difference of level between the two rails being such as the Engineer shall order.

When suitable material for ballast is not found immediately on the line, the sleepers may be laid on formation, being carefully tamped with dry earth. The Contractor will be permitted to run ballast and material trains over the line thus laid at a speed not exceeding ten miles an hour, but the ballasting and lifting must be proceeded with with all possible despatch.

Sleepers.

The changes of gradients shall be made by a gradual curve.

There are to be 2,050 sleepers per mile, to be spaced as directed. The following timbers to be used to the extent of not less than 75 per cent. of the whole:—Totara, jarrah, Oregon pine, kauri, or puriri. The remaining 25 per cent. may be of matai (*Podocarpus spicata*) or birch (*Fagus fusca* or *Solandri*). They shall be 7 feet long, and 7 inches by 5 inches, all of heart. They are to be flatted top and bottom, true and out of wind; but any extra width beyond 7 inches need not be removed. The rail seats are to be accurately adzed to a correct bevel.

Rails and fastenings.

The rails will weigh 40 lbs. to the yard; they will be jointed with Ibbotson's patent steel clip-joint, weighing about 12 lbs. each joint, and fastened to the sleepers by six fang-bolts to each rail, and two spikes to each sleeper, where fang-



bolts are not used. The rails and fastenings will be delivered to the Contractor at the ship's side, at Auckland, and he shall be responsible for all materials delivered to him.

#### USE OF PERMANENT WAY MATERIALS BY CONTRACTOR.

15. Permanent way materials shall not be laid down or employed, without the permission of the Engineer, within 100 yards of the face of any excavation or the end of any embankment, nor used for hauling earthwork before the ballast is laid. When the Contractor shall have complied with the above requirements, he may use the rails and other permanent way materials for the purpose of hauling earthwork or materials on parts of the line.

Use of permanent way materials by Contractor.

#### SIDINGS.

16. The Contractor shall construct at his own cost, at such points as may be indicated by the Engineer, two miles of sidings, including ten thousand cubic yards of earthwork and the necessary ballast, sleepers, and laying of permanent way, similar to that of the main line, without the points and crossings. He shall also make and construct, wherever required, such station-grounds, buildings, points, crossings, extra sidings, telegraph and other things required for station accommodation, and shall furnish the Engineer monthly with a detailed statement showing their actual cost, exclusive of all cost of management, properly supported by vouchers or as otherwise directed, and to this cost a sum equal to ten pounds per centum shall be added for Contractor's profits, and this amount shall be in addition to the contract sum.

Sidings.

#### TELEGRAPH.

17. A single wire telegraph will be constructed and paid for as for station accommodation, and the use of it allowed to the Contractor during construction of the works. During the period of maintenance the Government will transmit, free of charge, all messages sent by the Contractor on the business of the Railway.

Telegraph.

#### ROLLING STOCK.

18. The Contractors shall take delivery from the ship's side at Auckland of the articles of rolling stock enumerated below, and shall land, erect, and place the same on the line in working order, and bear all cost of the same.

#### LIST OF ROLLING STOCK.

- 3 locomotives.
- 11 carriages and brake-vans.
- 66 waggons.
- 3 weigh-bridges, landing only.

#### USE OF ROLLING STOCK.

19. The Government will furnish the Contractor with such locomotives and rolling stock as they may have on the line, the Contractor to pay the wages of the engine-drivers and stokers, who must be approved by the Engineer, and to furnish fuel, water, oil, grease, waste, &c., at his own expense. The Contractor shall also return such rolling stock as may be lent to him in as good order as when received by him—reasonable tear and wear excepted. In the event of the Government being unable to supply locomotives and rolling stock when needed by the Contractor, an extension of time will be granted for the completion of the contract; such extension of time to be fixed by the Engineer.

The under-mentioned drawings are attached to and form part of this Specification, viz. :—

1. Bridge at Ann's Creek.	19. Bridge at 33 M. 72 chs.
1A. " " Canal Creek.	20. " " 33 M. 78 chs.
2. " " Craig's Creek.	21. " " 34 M. 7 chs.
3. " " 14 M. 13 chs.	22. { " " 34 M. 39 chs., and
4. " " 18 M. 19 chs.	{ " " 39 M. 18 chs. Design suits
5. " " 18 M. 34 chs.	both Bridges.
6. " " 18 M. 37 chs.	23. " " 38 M. 3 chs.
7. " " 19 M. 15 chs.	24. " " 38 M. 43 chs.
8. " " 19 M. 27 chs.	25. { " " 39 M. 9 chs., and
9. " " 20 M. 25 chs.	{ " " 39 M. 34 chs.
10. " " 20 M. 31 chs.	26. " " Maungatawhiri Creek.
11. " " 20 M. 74 chs.	27. " " 41 M. 1 ch.
12. " " 23 M. 47 chs.	28. Wood Culverts.
13. " " 24 M. 1 ch.	29. Stone Culverts.
14. " " 26 M. 16 chs.	30. Level Crossings and Cattle Guards.
15. " " 27 M. 57 chs.	31. General Plan and Section, consisting
16. " " 30 M. 14 chs.	of 32 Sheets, numbered 1 to 32.
17. { " " 30 M. 58 chs., and	34. Cross-section of Roadway.
{ " " 31 M. 17 chs.	35. Cross-sections of Ground Surface, 27
17A. " " 32 M. 54 chs.	sheets.
18. " " 33 M. 51 chs.	

#### BRIDGE REPAIRS.

The repairs of bridges from the beginning of the contract to 4 miles 67 chains shall be paid for extra, in the manner provided for station accommodation.

JOHN CARRUTHERS.

JOHN BROGDEN AND SONS.

#### GENERAL FENCING SPECIFICATION.

THE Fencing to be used shall be of three kinds, to be known as Qualities Nos. 1, 2, and 3.

Quality No. 1.—Quality No. 1 shall consist of a sod wall, 3 feet 3 inches broad at base, 1 foot 3 inches broad at top, and 4 feet 6 inches high. It shall be carefully built in uniform layers from 8 to 10 inches thick, and bonded together. A ditch at least 2 feet 6 inches wide, and 1 foot 6 inches deep, shall be dug on each side, and carried through the wall where necessary for the drainage of the line or adjoining land. The wall is to be carried over such ditches on sound totara timber 3 inches thick.

Quality No. 2.—Quality No. 2 shall consist of post, ditch, mound, three wires, and top rail.

Quality No. 3.—Quality No. 3 shall consist of post, five wires, and top rail.

The timber used in Qualities Nos. 2 and 3 shall be totara, matai, kauri, or manuka, or other specially approved timber.

The posts to be of split timber, cut square at ends, mortised for rails, and well rammed when in their places. A straining post, 9 feet long, 6 inches in diameter, and well stayed, shall be put in at intervals of not more than 5 chains, and at each crossing of existing fences.

The top rails shall also be of split timber, scarfed at ends, neatly fitted into mortise holes cut in the posts, and securely fixed with wedges.

The wires shall consist of the best black annealed wire, of No. 5 Birmingham gauge, and shall be fastened to outside of posts with suitable staples.

The mound, in fencing Quality No. 2, shall be of tough firm sods, as specified for sod wall. It shall be 3 feet wide at base, 2 feet wide at top, and 1 foot 6 inches high.

Existing fences crossed and cut down shall be connected with the railway fences, and left in a condition at least equal to that in which they were found.

The Contractor shall provide temporary slip-rails or panels in the permanent fencing where required for the accommodation of occupiers, and will give every other facility of access to their lands across the line until the permanent crossings and roads are constructed.

JOHN CARRUTHERS.

JOHN BROGDEN AND SONS.

## NAPIER TO PAKI PAKI RAILWAY.

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ARTICLES OF AGREEMENT made and entered into this tenth day of August, 1872, between the GOVERNOR of NEW ZEALAND, in the name and on behalf of Her MAJESTY the QUEEN of the one part, and ALEXANDER BROGDEN, HENRY BROGDEN, and JAMES BROGDEN, all of Queen's Square, in the City of Westminster, in England, Railway Contractors (hereinafter referred to as "the Contractors"), of the other part:

Whereas by the sixth section of "The Railways Act, 1871," it is amongst other things enacted that the Governor may, if he think fit, construct and maintain, or cause to be constructed and maintained, under the provisions of "The Immigration and Public Works Act 1870," (hereinafter referred to as "the said Act"), and "The Immigration and Public Works Act Amendment Act, 1871" (hereinafter referred to as "the said Amending Act"), certain Railways, and amongst others, a Railway from the Port of Napier, in the Province of Hawke's Bay, to Paki Paki, in the said Province (which said Railway is hereinafter referred to as "the Railway herein mentioned"):

And whereas by the said Amending Act it is provided that all Contracts under any Act authorizing the construction of any Railway under the said Act or the said Amending Act, shall be entered into in the name of the Queen, her heirs and successors:

And whereas the Governor of New Zealand, on behalf of the Queen, has agreed with the Contractors for the execution and construction by them of the works described or referred to herein, and in the Specifications, Conditions, Drawings, and Plans hereto annexed or herein referred to, all of which Specifications, Conditions, Drawings, and Plans are signed by the Contractors and John Carruthers, Esquire, the Chief Engineer of the said Colony on behalf of the Colony: Now, these Presents witness that Her Majesty the Queen, for herself, her heirs and successors (all of whom are hereinafter included in the expression "the Queen"): and, so far as the covenants hereinafter contained are to be performed or observed on her or their parts respectively, doth hereby covenant with the Contractors, their executors, administrators, and assigns (all of whom are hereinafter included in the expression "the Contractors"), and the Contractors and each of them, for themselves and himself, and their respective heirs, executors, administrators and assigns, so far as such covenants hereinafter contained are to be performed or observed on their parts, do and doth hereby covenant with the Queen, her heirs and successors, in manner hereinafter appearing, that is to say—

1. That they, the Contractors, shall and will, in all respects subject to and in accordance with the said Conditions, Specifications, Drawings, and Plans, construct make, complete, and maintain, and do and perform, all the works, and supply all such plant and materials as are by the said Specifications and Conditions to be supplied by the Contractor, whether such works, plant, and materials are described or referred to in the said Conditions, Specifications, Drawings, or Plans, or are extra or in addition thereto, within the time mentioned in the said Conditions, subject, however, to the provisions contained in the said Conditions for extension of time.

2. That the Queen shall and will, free of cost to the Contractors, provide and deliver to the Contractors, at the ship's side at the Harbour of Auckland, the iron rails and fastenings required for the permanent way and the rolling stock respectively mentioned in the Specification.

3. That the Queen will pay the Contractors for the construction and execution of the said works, and the maintenance thereof, for the period of three months

from the completion of the works, and for the supply of all such plant and materials as the Contractors are to supply under the provisions of this contract as aforesaid, the sum of fifty-one thousand six hundred and sixty-seven pounds (exclusive of the supply of such plant and materials as by the said Specifications and Conditions it is provided the Queen or the Government of New Zealand shall supply, and subject to the provisions contained in the Conditions and Specifications for increase and decrease in case of extras or deductions, and to the provisions contained in the said Specifications or Conditions for extra payment to the Contractors by percentages on the cost of such works as, by such Specifications it is provided, the Contractors are to receive payment by way of percentage on the cost thereof).

4. The Queen shall and will make payments to the Contractors upon account of the said sums herein agreed to be paid at the rate and times, and upon the terms and conditions mentioned in the said Specifications and Conditions.

Lastly. The parties hereto shall and will each respectively perform, observe, and fulfil all and singular the conditions and stipulations expressed or contained in the said General Conditions and Specifications, and which thereby it is provided shall be performed, observed, or fulfilled by such parties respectively.

In witness whereof the Seal of the Colony has hereunto been affixed, and the said Contractors have hereunto set their hands and seals, the day and year first above written.

Sealed with the Seal of the Colony,  
and signed by the Governor, in  
the presence of  
WILLIAM FOX.  
J. D. ORMOND.

G. F. BOWEN,  
Governor.

Signed, sealed, and delivered by the  
above-named Alexander Brogden,  
Henry Brogden, and James  
Brogden, in the presence of  
WM THOS. LOCKE TRAVERS,  
Solicitor, Wellington.

ALEXANDER BROGDEN,  
By his Attorney, James Brogden.  
(Seal.)  
HENRY BROGDEN,  
By his Attorney, James Brogden.  
(Seal.)  
JAMES BROGDEN.  
(Seal.)

(Seal of the Colony.)

Approved in Council, August 10th, 1872.

FORSTER GORING,  
Clerk of the Executive Council.

## GENERAL CONDITIONS FOR THE NAPIER AND PAKI PAKI RAILWAY.

### INTERPRETATION CLAUSE.

1. In these conditions the words "Minister for Public Works" shall mean the Minister for Public Works appointed under "The Immigration and Public Works Act, 1870," or any Minister or person for the time being authorized by the Governor to act for such Minister in respect of the special work contracted for; the word "Engineer" shall mean the Engineer for the time being who shall have principal charge of the works on behalf of the Government; and the word "Contractor" shall mean "Contractors" when two or more persons tender or contract jointly for the work; and the word "month" shall mean "calendar month."

WORKS, &c., TO BE ACCORDING TO DRAWINGS AND SPECIFICATIONS, AND TO  
THE SATISFACTION OF THE ENGINEER.

2. All the materials used are to be the best of their respective kinds, and all works of every description throughout are, subject to the provisions hereinafter contained, to be executed conformably to the several drawings and details prepared or that may be prepared for that purpose, and herein referred to, in the strictest accordance with the provisions of the specifications, and in the best, most substantial, and workmanlike manner, and to the satisfaction of the Engineer; and should any work not be so executed, it shall be immediately altered and amended at the cost of the Contractor.

### PLANS, &c.

3. A copy of the plans and drawings, with the specifications, shall be furnished to the Contractor by the Engineer, and the plans and drawings referred to in the specification, and the specification, shall be taken together to explain each other; and if, in the execution of the works, it shall be found that anything has been omitted or mis-stated either in the drawings or specification, which is necessary for the proper performance and completion of any part or parts of the works, the Contractor shall at his own cost and expense execute the same, and provide whatever may be requisite for so doing, provided the extra cost thereof shall not exceed the sum of £200 in each particular case. Any written dimensions on the drawings shall be taken in all cases in preference to measurements by the scale attached, and anything contained either in the drawings or specification shall be equally binding on the Contractor as if it were contained in both; and in case the written or figured dimensions on the drawings shall disagree with the scaling, or in case there shall be any discrepancy between the drawings and specification, or any ambiguity in them, such occurrence shall not invalidate the contract, but the same shall be rectified by the Engineer if thought requisite, and the Contractor shall not be entitled to make any claim or demand for compensation or damages on account of such discrepancy or ambiguity. If neither the drawings nor the specification contain any notice of minor parts, the intention to include which is nevertheless clearly to be inferred, and which parts are obviously necessary for the workmanlike completion and stability of the work, all such parts are to be made and executed by the Contractor without extra charge, and are to be deemed by him as included in the sum at which he contracts for the works.

### EXTRA WORKS AND ALTERATION OF WORKS.

4. The Contractor is to make and execute, in the like manner as aforesaid, and with the like materials as aforesaid, any additions, deviations, or alterations to, from, or in the works, which the Engineer may from time to time, previously

to the commencement or during the progress of the works, by an order in writing, require, at and for such prices or rates as shall be agreed upon in writing between the Contractor and the Minister for Public Works. In case of non-agreement as to price, the work shall be done by the Contractor as required by the Engineer, and the price thereof shall be settled by arbitration as hereinafter provided, and shall when so ascertained be added to and thenceforth deemed to be part of the contract price for the works to be executed under this contract; but no additions, deviations, or alterations whatever, which shall be claimed by the Contractor, will be admitted or recognized under any circumstances, or will be allowed or paid for, which shall be done or executed without, or contrary to any previous order from the Engineer in writing as aforesaid: Provided always that no addition, deviation, or alteration from the plans and specifications to be ordered by the Engineer as aforesaid shall involve an increased expenditure in connection with the works or any part thereof, unless distinctly authorized by writing under the hand of the Minister for Public Works, who, before authorizing any such deviation, shall obtain from the Engineer an estimate of the increased expenditure arising therefrom: Provided also that in all cases where such deviation, addition, or alteration as last aforesaid, from the plans and specifications, shall involve an outlay exceeding £500, the consent of the Governor in Council shall first be obtained. And in all cases it shall be the duty of the Contractor to satisfy himself that such addition, deviation, or alteration (if any) has been duly authorized in the manner required by "The Immigration and Public Works Act, 1870," and also, that to any such outlay as aforesaid, requiring the consent of the Governor in Council as aforesaid, such consent has been obtained, as required by the said Act.

#### OMISSION OF PORTIONS OF WORKS.

5. To the Minister for Public Works there is reserved the right from time to time of requiring the omission of any particular portion or portions of works described in the specification or shown on the drawings, and of deducting the value thereof from the amount of the contract, such value to be agreed upon between the Minister for Public Works and the Contractor, or in case of difference to be settled by arbitration as hereinafter provided; but the Contractor shall be entitled to be paid a sum of ten per cent. on the agreed or ascertained value of the work omitted; such sums for omissions to be paid on the completion of the contract.

#### MATERIALS, LABOUR, &c.

6. The Contractor shall provide, at his own costs and charges, all materials, labour, tools, plant, tackle, machinery, scaffolding, waggons, cordage, cartage, stores, planking, centres, coffer dams, diving bells, staging, diving dresses, and everything necessary for the proper execution and completion of the several works, and centres must not be struck without the written authority of the Engineer. The Contractor is also to provide, at his cost, for keeping all the trenches and foundations free from water, and for preventing all slips of ground into the trenches. All material and all prepared work brought upon the ground of the works for use therein is to be considered the property of the Queen, and the Contractor shall not take away any such material or work without the written authority of the Engineer, unless the same shall be required for the purposes of other works under this contract. The Contractor will be required to set out accurately, at his own expense, all the works comprised in this contract, agreeably to the drawings and specifications, and shall be held responsible for their being so set out and executed accordingly.

#### REMOVAL OF IMPROPER MATERIALS.

7. It shall be lawful for the Engineer to order the removal from the works of any materials, whether fixed or not, which may appear to him to be of an inferior or improper description, and the Contractor shall remove the same within twenty-four hours after a written notice in that behalf given to him by the Engineer; and in case of neglect or refusal to remove the same according to such notice, the Engineer shall have power to remove the same at the cost of the Contractor.

## CONTRACTOR TO BE REPRESENTED.

8. The Contractor at all times during the progress of the works, when he is not personally superintending them, must have a responsible agent or overseer stationed on them, to receive instructions from the Engineer, and to represent him for all the purposes of this contract.

## PROGRESS OF WORKS.

9. If the Contractor shall, in the opinion of the Engineer, fail to make such progress with the works as the Engineer shall deem sufficient to insure their completion within the specified time, or if the Contractor shall use or employ bad or insufficient materials, or execute any work in an imperfect manner, and shall fail or neglect to rectify any such cause of complaint for fourteen days after being thereunto required in writing by the Engineer, or if the Contractor shall, in the judgment of the Engineer, commit a wilful breach of his contract, then, and in any of such cases, it shall be lawful for the Minister for Public Works, by any instrument in writing under his hand delivered to the Contractor, or to his representative on the works, or left at the Contractor's usual or last known place of abode or business, absolutely to determine this contract, and from and after the delivery of the said instrument as aforesaid, the contract shall be absolutely determined; and in the event of such determination happening, then it shall be lawful for the said Minister, after having delivered such instrument to the Contractor as aforesaid, to take the works out of the Contractor's possession, and at the option of such Minister either to carry the works on under the Engineer or by another Contractor, and that either after advertising for Contractors or without doing so, as he shall think fit; and all the materials, implements, and plant then upon or used in connection with the works may be used in and applied for the purpose of completing the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages, together with the net proceeds realized by the sale of the then residue of such materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

CONTRACTOR NOT TO SUBLET WORKS TO PERSONS PREVIOUSLY OBJECTED TO—  
BANKRUPTCY, INSOLVENCY, OR DEATH.

13. The Contractor shall not sublet any portion of the works to any person who shall have been previously objected to by the Engineer by notice in writing to the Contractor. If the Contractor become bankrupt or insolvent, or shall make an assignment of his estate for the benefit of his creditors, or shall die before the final completion of the contract, then it shall be lawful for the Minister for Public Works, on behalf of the Queen, summarily, and of his own authority, and without any process of law for that purpose, to take possession of the works, and to take them out of the hands of the Contractor, or of his executors, or administrators, or of the assignees or trustees of his estate, and to employ persons for

the execution and completion of the same, and that either after advertising for contractors or without doing so, as he shall think fit; and all the then remaining materials, implements, and plant aforesaid may be used in and applied for the purposes of the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages aforesaid, together with the value of the remaining materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid; and in the case of bankruptcy or insolvency, then Her Majesty the Queen shall rank as a creditor to the amount of such surplus. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

#### LIABILITIES OF CONTRACTOR.

14. The exercise by the Minister for Public Works, or Engineer, of any of their respective powers shall not relieve the Contractor from any liability to which he may be subject for any breach of the contract.

#### TIME OF COMPLETION.

15. Subject as herein provided, the Contractor shall complete the whole of the works of this contract on or before the first day of December, one thousand eight hundred and seventy-three, failing which the Minister for Public Works shall be entitled to deduct from the final balance due to the Contractor a sum calculated at the rate of Three pounds per cent. per annum on all moneys which shall have been paid to the Contractor under this contract, computed from the date on which the work ought to have been completed under this contract up to the date of the completion of the work: Provided that if the Minister for Public Works shall have taken over as completed any portion of the work, the cost of that portion shall not be included in the calculation last aforesaid. But in the event of the Contractor being prevented by earthquake, tempest, flood or otherwise by the act of God or by the act of the Queen's enemies, rebellion, restraint of princes, or otherwise by anything in the nature of *vis major*, or by reason of any strike amongst the workmen engaged upon the works, or by reason of any alterations, deviations, or additions, or extra works being required, or in case of any delay in furnishing any material to be supplied to the Contractor by the Governor, the Engineer shall allow such an extension of time as he shall think adequate for such enforced delay, or for such alterations, deviations, additions, or extra work; and at the expiration of the time so allowed, the deductions or sets-off for delay shall come into operation.

#### SUSPENSION OF WORKS.

16. The Contractor, on receiving a written notice from the Engineer, shall suspend, or stop, the whole or any portion of the works as may be directed, and the Governor on behalf of the Queen shall make good to the Contractor any loss or damage he may sustain through such suspension or stoppage, to be ascertained,



in case of non-agreement between the Contractor and the Minister by arbitration, as hereinafter mentioned; and the Minister for Public Works shall in no case be bound to give the Contractor possession of the ground or work until thirty days after the signature of the contract by the Contractor; but a commensurate extension of time for completing the works will be allowed to the Contractor, such extension of time to be at the discretion of and to be decided by the Engineer.

#### DAMAGES TO BE MADE GOOD, &c.

17. The Contractor shall also provide for effectually securing and covering the several walls and works from the weather, as occasion may require, or as the Engineer may direct; and if any damage or loss should happen to any of the works, plant, or materials—whether from fire, theft, or weather, force of waves, or from any other cause—while the works and buildings are unfinished, or remain in possession of the Contractor, the Contractor must properly and immediately repair and make good the same at his own expense, and to the satisfaction of the Engineer; unless it can be shown that the damage arises from insufficient or imperfect designs, when the Contractor will not be held responsible, and, in case of dispute, the matter shall be settled by arbitration, as hereinafter provided.

#### TRESPASS.

18. The Contractor shall not enter upon any lands outside the line of fences for the construction of the works, or for any purpose whatever in connection with this contract, without the consent of the occupier or owner, except at his own cost and risk, and shall not, without the consent of the Engineer, remove any trees or buildings within the line of the Railway fences, nor shall he open or throw down any part of a fence without making sufficient provision by temporary fences, to be erected and maintained at his cost, for keeping cattle, sheep, or other stock from straying from or into any enclosure affected thereby; and any legal process causing costs or damage to the Government for any trespass incurred by the act or negligence of the Contractor or his workmen shall be deducted from the contract price, and be taken as payment made on account of his contract.

#### MAINTENANCE OF WORKS.

19. The Contractor shall be bound to keep and maintain in good and sufficient repair the whole works executed under the contract, and shall provide all labour, materials, &c., necessary for such maintenance for a period of months from and after the time when all the works under the contract have been fully completed; and the Contractor shall on the expiry of the said period of maintenance be bound to deliver up the whole works in good and sufficient condition, and to the satisfaction of the Engineer. The Contractor shall also be liable for any accident, damage, or injury whatsoever to the public or any private person which may be caused by his operations during the progress of the works, or during their maintenance. He shall also maintain all night-lights and temporary footpaths required by any Municipal or other authorities, or for the safety of the public, and shall make all necessary arrangements, by siding or otherwise, as required by the Engineer, to prevent stoppage of public traffic.

#### LAND.

20. The Minister for Public Works will, free of all expense, put the Contractor in possession of all land required for the permanent works of the Railway, including land required for side-cutting, ballasting, spoil banks and road approaches, road diversions, and slips, and also from time to time, as occasion may require, but at the cost of the Contractor and so far only as the Parliamentary powers possessed by the Governor or the Minister for Public Works will extend to enable them so to do, of all such land as may be necessary for temporary purposes in connection with the works.

21. The Minister for Public Works shall, within thirty days after the signing of the contract by the Contractor, put the Contractor in possession of such parts of the land for the permanent works as may be necessary for the commencement thereof, and will from time to time, after fifteen days' notice in that behalf shall have been given by the Contractor to the Engineer, put the Contractor in possession of

all such other parts of the lands required for the permanent works as may be necessary for the immediate prosecution thereof.

DELAY IN GIVING POSSESSION OF LAND.

22. If any delay shall take place in giving to the Contractor the possession of any land required for the permanent works as aforesaid, such delay shall not be deemed to be a breach of the contract, but the Contractor shall be entitled to such reasonable extension of time for the completion of the works as shall be fixed by the Engineer, or, in case of dispute, by arbitration, as hereinafter provided.

POWER TO REQUIRE DISMISSAL OF ANY WORKMAN.

23. The Engineer may require the dismissal within twenty-four hours by the Contractor of any agent, overseer, foreman, workman, or other person employed by him on the works, for incompetency or misconduct, and any man so dismissed shall not be again employed upon the works.

TRUCK SYSTEM NOT ALLOWED.

24. The workmen, tradesmen, and labourers of every class employed on the works to which these Conditions refer, shall be paid their wages in full in money of the current coin of the Colony, and no ticket or other system of payment by provisions, liquors, or goods will on any pretence be allowed, nor shall the Contractor or any person or persons employed by him, or in any way connected with him, establish any shop for the supply of liquors, provisions, or goods, nor shall the Contractor oblige his workmen to take provisions, liquors, or goods of any kind from any person in particular. The workmen of every class shall be paid on the works if it be possible, or in some building adjoining, and in no case shall they be paid at a public-house, or other place where liquors or refreshments are sold.

PAYMENTS.

25. Payments will be made monthly, for each calendar month, as the works proceed, on the certificate in writing of the Engineer, at a rate not exceeding 90 per cent. on the value of the work actually done, as estimated by the Engineer, having due regard in such estimate to the actual value thereof, and at a rate not exceeding 50 per cent. on the value of such plant and materials on the ground as may be approved by the Engineer as fit and necessary for the work, as estimated by the Engineer, having due regard in such estimate to the actual value thereof, such certificates for work done, and materials and plant supplied, in each calendar month, to be delivered to the Contractor within fourteen days after the termination of such month, and the balance, less 5 per cent., together with the amount deposited as cash security, if any, in fourteen (14) days, or as nearly as may be, after the Engineer shall have certified under his hand that the works have been finally and satisfactorily completed, and that such balance, together with the cash security, is due to the Contractor. The said 5 per cent. will be retained for three months to insure the fulfilment of clause 19 of these Conditions, and from which sums may be deducted the costs of any repairs or defects, failing the Contractor executing the same: Provided always that no sum or sums of money shall be considered to be due or owing to the Contractor, nor shall the Contractor make any claim for or on account of any work executed or maintained by him, or for or on account of plant or materials supplied by him, unless such certificate as aforesaid shall have been given by the Engineer as aforesaid; nor shall any sum or sums of money so certified be considered to be made payable to the Contractor until the expiration of fourteen days after such certificate shall have been presented to the Minister for Public Works; nor shall any omission to pay the amount of such certificate at the time the same shall be held payable be deemed or held to be a breach of or to vitiate the contract, but in case of such omission the Contractor shall be entitled to interest on the amount certified for, at the rate of ten pounds per centum per annum, for such time as such omission shall continue.

NEGLECT TO CERTIFY.

26. In case the Engineer shall neglect or refuse to certify the amount due to the Contractor in respect of the work, or plant or materials, in manner and within

the times mentioned in the foregoing condition, and shall continue such neglect or refusal for a period of fourteen days succeeding the fourteenth day after the end of the month in which the work was done, or the plant or materials supplied, as the case may be, the Contractor shall be entitled to measure and value the same, having due regard in his estimate to the actual value thereof, and the measure and value so estimated by the Contractor shall be temporarily accepted by the Governor so far as regards the progress payment to be made to the Contractor in respect thereof under the foregoing condition, and the payment provided by that condition shall be made accordingly, with interest thereon, at the rate of Ten pounds per centum per annum, during the period of delay occasioned by the neglect or refusal of the Engineer: Provided always that in all cases in which a certificate shall, within the period or further period hereinbefore provided, as the case may be, have actually been delivered to the Contractor, such certificate shall, for the purpose of the progress payment to be made thereunder, be conclusive; and in case of any dispute between the Contractor and the Engineer as to the estimate therein made of value of work done, or plant or materials provided, as the case may be, of which dispute notice shall have been given by the Contractor to the Minister for Public Works within fourteen days after the delivery of the certificate to the Contractor, such dispute shall be referred to arbitration as hereinafter mentioned.

PROGRESS PAYMENTS WITHOUT PREJUDICE, &c.

27. No certificate given to the Contractor for the purpose of any progress payments shall prevent the Engineer, at any future time before the termination of the contract, from rejecting all unsound materials and improper workmanship, discovered subsequently to the giving of the last previous certificate; and notwithstanding the giving of any certificate that portions or the whole of the works have been satisfactorily performed, the Engineer may require the Contractor to remove and amend, at any future time previously to the final payment on account of the construction or maintenance of the works, any work that may be found not to be performed in accordance with the contract, and the Contractor must remove and amend, at his own cost, all such work when so required, notwithstanding any approval made or given by the Assistant Engineer or Inspector. The Minister for Public Works shall have power, on the report of the Engineer that the work approved of as aforesaid is not in accordance with the contract, to deduct from any moneys that may be due or that may become due to the Contractor the whole amount that has been paid on account of such work.

If, in the opinion of the Minister for Public Works, further inquiry is desirable or necessary before any certificate is paid, the Minister for Public Works shall have power to suspend the payment of all or any part of the amount mentioned in any such certificate for a period not exceeding one month from the date at which, in the ordinary course, the money would have been paid; and in such case, on payment of the amount payable, the Contractor shall be entitled to receive interest at the rate of ten pounds per centum per annum during such additional delay.

STAMPS, LICENSE FEES, &c.

28. The Contractor shall bear and pay all costs, charges, and expenses of preparing, executing, and completing this contract, and all duty stamps, licenses, Building Surveyor's fees, or other charges or fees whatsoever lawfully demanded by the Municipal or other authorities.

CUSTOMS AND WHARF DUTIES, &c.

29. In the event of the Contractors being compelled to pay any Customs duties or wharf dues or fees on any goods imported into New Zealand by them for the purposes of the said works, or transhipped or carried by them from any port or place in New Zealand to any other place in New Zealand, the Queen shall and will repay the same to the Contractors after one month's notice in writing by the Contractor to the Minister demanding payment thereof and giving details of such payment, and the production of vouchers or other proof of such payment.

## ARBITRATION.

30. Should any dispute arise between the Contractor and the Engineer, or between the Contractor and the Minister for Public Works or the Government, relative to the force and intent and meaning of the specifications, drawings, or conditions, or to the mode of carrying on the works, or the nature or quality of materials used or supplied to be used, or workmanship of work done, or as to the maintenance of the works, or as to the expense of additional works, or of alterations or deviations from the specifications or plans, or as to any other matter connected with the execution of the works, or with the contract, specifications, drawings or conditions, or as to any matter which by this Contract it is expressly provided is to be settled, ascertained, or determined by arbitration, such dispute shall be referred in writing to the sole determination, arbitrament, and award of the Judge of the Supreme Court assigned to that Judicial District of the Supreme Court within which the works relative to which the dispute shall have arisen, have been or are to be executed, whose award shall be final, binding, and conclusive on all parties: Provided, however, that before any such dispute, as aforesaid, shall be so referred, the Contractor shall give to the Minister for Public Works one calendar month's notice in writing of such dispute, and of the matter and cause thereof, and in such notice the Contractor's claim shall be explicitly stated; and if such claim be for pecuniary compensation, the amount thereof shall also be stated.

JOHN CARRUTHERS.  
JOHN BROGDEN AND SONS.

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SPECIFICATION OF THE MANNER OF CONSTRUCTING THE  
NAPIER AND PAKI PAKI RAILWAY.

## GENERAL DESCRIPTION.

Description.

1. The line of Railway included under the title "Napier and Paki Paki Railway," and to which this Specification applies, begins at the Port of Napier, and terminates at Paki Paki as delineated on the accompanying plans and sections; the total length of the contract being eighteen miles and thirteen chains or thereby, with an addition of one mile of sidings.

## DRAWINGS.

Drawings.

2. The drawings, including general plans and longitudinal sections, as shown on list A, accompany this Specification. These show the character of the works to be executed. Further drawings of details will be issued from time to time as may be necessary.

The general plan is drawn to a scale of three chains to an inch, and shows the course of the Railway, the centre line of which has been staked out on the ground, and is represented on the general plan by a red line.

The road and stream diversions are shown on the general plan.

The longitudinal section is drawn to a horizontal scale of three chains to the inch, and to a vertical scale of thirty feet to the inch. It represents the natural profile of the ground along the centre line of the Railway. The red line shows the level of the bottom of the ballast. On the longitudinal section are shown the positions and sizes of the culverts and bridges described in this Specification.

## ALIGNMENT OF STRUCTURES.

Alignment.

3. In the construction of bridges, culverts, road crossings, and generally, it is to be understood that they are to intersect the line of Railway at such angle or curve as may be necessary and approved in each case, although they may be

shown on the drawings straight and at right angles ; and in the interpretation of the drawings and schedules, and of this Specification, it shall be distinctly understood that all works or materials necessary to the due and workmanlike completion of every erection are to be provided, whether specially described or not.

CONTRACTOR TO PROVIDE LABOUR, PLANT, AND MATERIALS.

4. The Contractor is to provide all labour, tools, implements, plant, and materials, and is well and substantially to construct and complete the Railway in accordance with the plans and specifications, and to deliver the same complete, and is to maintain and keep the said Railway, and all works connected therewith, in perfect order and repair for the space of three months from the delivery of the same to the Government. Contractor to provide labour, &c.

The said Railway shall be made in accordance with this Specification, and with the plans and sections herein referred to, or with such modifications of the plans and sections as the Engineer shall order, provided such modifications shall not increase the cost of the work.

FENCING.

5. Four miles of the line are to be fenced on one side ; and wherever present fences are disturbed or interfered with, they are to be made good at the expense of the Contractor. At all crossings of roads, and other places where cattle stops are used, fences are to be completed across the line up to the cattle stops. Fencing.

The description of fencing used shall be that described in special fencing specifications, as Qualities Nos. 2 and 3.

EARTHWORKS.

6. All flax, scrub, rushes, or Maori-heads growing on the line of the Railway, shall be cut down to the full width between the outside of the slopes. Clearing scrub, &c.

No public or private road that crosses or intersects the Railway or works thereof, shall be obstructed by excavation or otherwise, until the Contractors shall have provided such temporary roads as may be necessary for the traffic. Roads not to be obstructed.

The cuttings are to have a base at formation level of 10 feet in rock, 11 feet in loose rock, and 13 feet elsewhere, and are to be made in accordance with plan and section attached ; but should the Engineer require any of the cuttings or banks to be made with different slopes from those shown on Drawing No. 9, the difference in cost shall be added to or deducted from the contract sum. Such alteration to be ordered in writing. Cuttings.

A drain is to be cut along the bottom of slopes of cuttings, except in rock ; this drain to average 5 cubic feet per lineal yard. Catchwater drains are to be dug above the top of one slope of cuttings, at a distance of from a quarter of a chain to a chain from the top of slopes ; these ditches are to average 5 cubic feet per lineal yard, and are to be true and regular to the inclinations directed ; no stumps or roots to be left in them. Drains.

The embankments must be carried forward uniformly of the proper shape, with such an addition to the heights and widths as a due allowance for the shrinking of the material requires, so as to avoid as far as practicable the necessity for making subsequent additions either to the heights or widths of the embankments, to bring them to the correct levels and dimensions. Embankments.

Whenever the foundation of an embankment is on sloping ground, the Contractor, if required, must at his own expense cut steps and benches under the base of the embankment.

The top of embankment at formation level is to be 10 feet wide ; the slopes to be trimmed off to an inclination of one and a half horizontal to one vertical, and to be maintained full and true until the completion of the contract.

The Contractors shall, unless otherwise directed by the Engineer, take care not in any way to interfere with or divert the existing drainage areas, and shall leave such stops or stanks in the side cuttings, and take such other precautions, as the Engineer shall think necessary for that purpose.

**Punning.** Behind and around culverts and abutments of bridges, the embankments shall be wheeled in and carefully rammed.

**Pitching.** Where shown on drawings or longitudinal section, the slopes of embankments shall be pitched with selected limestone one foot thick.

## DITCHES AND DRAINS.

**Ditches and drains.** 7. When the line crosses swamps of a peaty nature, catchwater drains are to be cut on the upper side of the line obliquely across the valleys, so as to tap the surface water. These ditches shall not exceed, on an average, one and one-third cubic yard per lineal yard, and are to be made at the commencement of the work, and cleaned out from time to time as may be ordered.

## ROAD ALTERATIONS.

**Road alterations.** 8. At the places shown on the plan and section, and wherever necessary, the present roads are to be diverted.

All such diversions and road approaches to the level crossings are to be completed in a convenient, substantial, and proper manner, with the necessary drains, water tables, and side slopes. Such approaches and road diversions are to be formed with an inclination not steeper than 1 in 30 for public roads, and 1 in 20 for private roads, except where the present inclination exceeds these rates, in which case the inclination of the new road shall not exceed that of the present road, unless, in the opinion of the Engineer, a steeper is unavoidable.

**Metalling.** Public roads and approaches to first-class crossings are to be metalled with coarse river gravel or approved hard stone, laid on and spread as directed, so as to average 22 cubic yards per lineal chain of road. Private roads are to be metalled with coarse river gravel or broken stone of approved quality, laid on and spread as directed, so as to average 9 cubic yards per lineal chain. The whole of the metal is to be broken to pass through a two and a half inch ring.

**Level crossings.** Four first-class, three second-class, and three third-class crossings, with two cattle-stops to each crossing, as per Drawing No. 12, shall be constructed at public and private roads where directed. They shall be carefully placed as to line and level, and finished in strict conformity with the drawing and the notes thereon. Each level crossing shall be metalled for a length of 66 feet on each side of the centre line, as above specified for the roads, and tile or timber box drains shall be put in the formation ditches where necessary for the drainage of the line or road.

**Gates.** Ten pairs of malleable iron tubular or other approved gates, 12 feet wide, hung to strong posts, and furnished with bolts and padlocks, shall be provided and hung at private crossings where directed.

**Cattle stops.** Cattle stops, as shown in Drawing No. 12, are to be put in where directed, not exceeding twenty-five in number, besides those at level crossings.

## MATERIALS.

9. Except where otherwise specified all the materials used under this Contract shall be of the following kinds and descriptions:—

**Timber.** All timber shall be of kauri, totara, jarrah, or other timber specially approved; it shall be heart-wood, except as shown on Drawing No. 14, and shall be straight and sound, free from shakes, large knots, and other imperfections.

**Malleable iron.** The whole of the straps and bolts shall be made of B.B. crown iron, or other iron of equal quality, of the dimensions shown; the whole to be finished and fixed in a workmanlike manner.

**Bolts and nuts.** Bolts shown or specified shall have a square head, of which the thickness shall be equal to the diameter of the bolt, and the width twice the diameter of the bolt. They are to be tapped with a good clean thread, and shall have a nut equal in size to the head of the bolt, and shall be provided with one or more washers 3 inches in diameter.

The piles of bridge over Iron Pot shall be of jarrah.

## BRIDGES AND TIMBER OPENINGS.

**Bridges, &c.** 10. Bridges, as per detail drawings, shall be erected where shown on longitudinal section.

All joints, shoulders, and sides of tenons and scarfs to be worked perfectly true, and to fit accurately, and to be covered with red lead before being put together. Tenons generally to be 5 inches long, and to be draw-bored to receive trenails of hard wood made with hollow auger or trenailing machine. All trenails to be well seasoned and kept dry, and to be one-sixteenth of an inch more in diameter than the hole bored for them, and to be covered with red lead before being driven. All capsills and mudsills to be mortised on to posts or piles. All string pieces to be accurately notched down to capsills or floor beams by notching  $\frac{3}{4}$  inch from each, to be scribed and accurately fitted. Diagonal braces, where placed inside the panel, are to be notched together as described for string pieces. Joints.

All piles are to be rung before driving with a three inch by  $\frac{3}{4}$  inch round hoop. The piles are to be shod with a substantial iron shoe weighing not less than 30 lbs., securely fixed; the point of the pile to be cut true, and to be squared off at the end to 3 inches square, and to have true bearing against the shoe. No pile-driving is to be commenced at any bridge, opening, or other work without giving six days' notice previously to the Engineer in charge of the works. Piling.

The Contractor shall provide all proper rods and gauges for setting out and testing the dimensions of bridges and timber openings that the Engineer may require. Contractor to supply rods and gauges.

CULVERTS AND DRAINS.

11. Timber culverts shall be erected where shown on longitudinal section. Timber culverts.

The frames shall be accurately mortised, and tenoned, and pinned; the planking to be securely spiked on to the frames, the whole of the timber to be heart of totara or matai; the outer side of the planking need not be reduced to the dimensions given, but there must in every case be the full thickness specified of heart timber; the edges of the planking must fit truly for the whole thickness, and the planks must extend over at least two panels, and break joints as much as possible.

Sufficient catchwater and outfall drains are to be dug at culverts, and all stumps and roots occurring in the line of ditch to be taken out. Drains at culverts.

BALLASTING AND PERMANENT WAY.

12. The ballast is to consist of shingle, broken stones, or sand previously approved of, and is to be disposed as shown in Drawing No. 9. In all cases the embankments and cuttings are to be cleared from mud, and brought to an uniform formation level before the ballast is laid on. Ballast.

The permanent way is to consist of a single line of rails laid to a gauge of 3 feet 6 inches, and sidings provided and laid where directed, amounting in all to one mile of sidings. Permanent way.

The Contractor is to provide and have upon the ground at all points when the work is proceeding a sufficient supply of all such templates, tools, gauges, and other implements as are necessary and are usually required in the laying of permanent way, or as may be required by the Engineer. Gauges.

About three thirty-seconds of an inch of space is to be left between the ends of the rails when fixed in place, or such other space as the Engineer may direct, according to the season. Laying of permanent way.

For the curves, the rails will require bending. This, as well as the straightening of all bent rails, must be effected by a press, or by striking with wooden hand-beetles on wooden blocks. In all cases, whether of straightening of bent rails or of bending rails to the necessary curves, the rails must be set permanently to the form required before being laid, and no temporary bending, springing, or straightening, either by dragging with a lever and hook, or by any other means of a like character, will on any account be permitted. Bending rails.

Great care must be taken to lay all the sleepers square to the rails on straights, and as near as may be on curves. Where the line is straight, the rails will be level across the line; but where the line is curved, the rails will be canted, the difference of level between the two rails being such as the Engineer shall order. Laying sleepers.

When suitable material for ballast is not found immediately on the line, the sleepers may be laid on formation, being carefully tamped with dry earth. The Contractor will be permitted to run ballast and material trains over the line thus laid at a speed not exceeding ten miles an hour, but the ballasting and lifting must be proceeded with with all possible despatch.

The changes of gradients shall be made by a gradual curve.

Sleepers.

There are to be 2,050 sleepers per mile, to be spaced as directed. The following timbers to be used to the extent of not less than 75 per cent. of the whole :—Totara, jarrah, Oregon pine, kauri, or puriri. The remaining 25 per cent. may be of matai (*Podocarpus spicata*) or birch (*Fagus fusca* or *Solandri*). They shall be 7 feet long, and 7 inches by 5 inches, all of heart. They are to be flatted top and bottom, true and out of wind; but any extra width beyond 7 inches need not be removed. The rail seats are to be accurately adzed to a correct bevel.

Rails and fastenings.

The rails will weigh 40 lbs. to the yard; they will be jointed with Ibbotson's patent steel clip-joint, weighing about 12 lbs. each joint, and fastened to the sleepers by six fang-bolts to each rail, and two spikes to each sleeper, where fang-bolts are not used. The rails and fastenings will be delivered to the Contractor at the ship's side, at Auckland, and he shall be responsible for all materials delivered to him.

#### USE OF PERMANENT WAY MATERIALS BY CONTRACTOR.

Use of permanent way materials by Contractor.

13. Permanent way materials shall not be laid down or employed, without written permission of the Engineer, within 100 yards of the face of any excavation or the end of any embankments, nor used for hauling earthwork before the ballast is laid. When the Contractor shall have complied with the above requirements, he may use the rails and other permanent way materials for the purpose of hauling earthwork or materials on parts of the line.

#### SIDINGS.

Sidings.

14. The Contractor shall construct at his own cost, at such points as may be indicated by the Engineer, one mile of sidings, including the necessary earthwork, ballast, sleepers, and laying of permanent way, similar to that of the main line, without the points and crossings. He shall also make and construct, wherever required, such station-grounds, buildings, points, crossings, extra sidings, telegraph and other things required for station accommodation, and shall furnish the Engineer monthly with a detailed statement showing their actual cost, exclusive of all cost of management, properly supported by vouchers or as otherwise directed, and to this cost a sum equal to ten pounds per centum shall be added for Contractor's profits, and this amount shall be in addition to the contract sum.

#### TELEGRAPH.

Telegraph.

15. A single wire telegraph will be constructed and paid for as for station accommodation, and the use of it allowed to the Contractor during construction of the works. During the period of maintenance the Government will transmit, free of charge, all messages sent by the Contractor on the business of the Railway.

#### ROLLING STOCK.

16. The Contractor shall take delivery from the ship's side at Auckland of the articles of rolling stock enumerated below, and shall land, erect, and place the same on the line in working order, and bear all costs of the same.

#### LIST OF ROLLING STOCK.

- 2 locomotives.
- 8 carriages and brake-vans.
- 10 waggon.

#### USE OF ROLLING STOCK.

17. The Government will furnish the Contractor with such locomotives and rolling stock as they may have on the line, the Contractor to pay the wages of the engine-drivers and stokers, who must be approved by the Engineer, and to



furnish fuel, water, oil, grease, waste, &c., at their own expense. The Contractor shall also return such rolling stock as may be lent to them in as good order as when received by them—reasonable tear and wear excepted. In the event of the Government being unable to supply locomotives and rolling stock when needed by the Contractor, an extension of time will be granted for the completion of the contract; such extension of time to be fixed by the Engineer.

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JOHN BROGDEN AND SONS.

LIST OF DRAWINGS.

- Drawing No. 1.—Bridge over Iron Pot.  
 „ No. 2.—Bridge over Waitangi Creek.  
 „ No. 3.—Bridge over Ngaruroro River, 1st crossing.  
 „ No. 4.—Bridge over Ngaruroro River, 2nd crossing.  
 „ No. 5.—Bridge over Ngaruroro River, 3rd crossing.  
 „ No. 6.—Design for Wood Culvert and Bridges at 67 chains:—1 mile 49 chains, 1 mile 74 chains, 6 miles 77 chains, 7 miles 11 chains, 7 miles 48 chains, 9 miles 10 chains, 12 miles 20 chains, 14 miles 33 chains, 14 miles 78 chains, 15 miles 10 chains, 16 miles 63 chains, and 16 miles 75 chains.  
 „ No. 7.—Sections of Rivers, Natural Scale for Drawings Nos. 1, 2, 3, 4, and 5.  
 „ No. 8.—General Design for Bridge, 40 feet span.  
 „ No. 9.—Cross Sections, Cuttings, and Embankments.  
 „ No. 12.—Level Crossings and Cattle Stops.  
 „ No. 13.—Plan and Section (14 sheets).

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JOHN BROGDEN AND SONS.

GENERAL FENCING SPECIFICATION.

THE Fencing to be used shall be of three kinds, to be known as Qualities Nos. 1, 2, and 3.

Quality No. 1.—Quality No. 1 shall consist of a sod wall, 3 feet 3 inches broad at base, 1 foot 3 inches broad at top, and 4 feet 6 inches high. It shall be carefully built in uniform layers from 8 to 10 inches thick, and bonded together. A ditch at least 2 feet 6 inches wide, and 1 foot 6 inches deep, shall be dug on each side, and carried through the wall where necessary for the drainage of the line or adjoining land. The wall is to be carried over such ditches on sound totara timber 3 inches thick.

Quality No. 2.—Quality No. 2 shall consist of post, ditch, mound, three wires, and top rail.

Quality No. 3.—Quality No. 3 shall consist of post, five wires, and top rail.

The timber used in Qualities Nos. 2 and 3 shall be totara, matai, kauri, or manuka, or other specially approved timber.

The posts to be of split timber, cut square at ends, mortised for rails, and well rammed when in their places. A straining post, 9 feet long, 6 inches in diameter, and well stayed, shall be put in at intervals of not more than 5 chains, and at each crossing of existing fences.

The top rails shall also be of split timber, scarfed at ends, neatly fitted into mortise holes cut in the posts, and securely fixed with wedges.

The wires shall consist of the best black annealed wire, of No. 5 Birmingham gauge, and shall be fastened to outside of posts with suitable staples.

The mound, in fencing Quality No. 2, shall be of tough firm sods, as specified for sod wall. It shall be 3 feet wide at base, 2 feet wide at top, and 1 foot 6 inches high.

Existing fences crossed and cut down shall be connected with the railway fences, and left in a condition at least equal to that in which they were found.

The Contractor shall provide temporary slip-rails or panels in the permanent fencing where required for the accommodation of occupiers, and will give every other facility of access to their lands across the line until the permanent crossings and roads are constructed.

JOHN CARRUTHERS.  
JOHN BROGDEN AND SONS.



## WELLINGTON CONTRACT OF THE WELLINGTON AND HUTT RAILWAY.

ARTICLES OF AGREEMENT made and entered into this tenth day of August, 1872, between the GOVERNOR of NEW ZEALAND, in the name and on behalf of Her MAJESTY the QUEEN of the one part, and ALEXANDER BROGDEN, HENRY BROGDEN, and JAMES BROGDEN, all of Queen's Square, in the City of Westminster, in England, Railway Contractors (hereinafter referred to as "the Contractors"), of the other part:

Whereas by the sixth section of "The Railways Act, 1871," it is amongst other things enacted that the Governor may, if he think fit, construct and maintain, or cause to be constructed and maintained, under the provisions of "The Immigration and Public Works Act 1870," (hereinafter referred to as "the said Act"), and "The Immigration and Public Works Act Amendment Act, 1871" (hereinafter referred to as "the said Amending Act"), certain Railways, and amongst others, a Railway from Wellington, in the Province of Wellington, to the Hutt, in the said Province (which said Railway is hereinafter referred to as "the Railway herein mentioned"):

And whereas by the said Amending Act it is provided that all Contracts under any Act authorizing the construction of any Railway under the said Act or the said Amending Act, shall be entered into in the name of the Queen, her heirs and successors:

And whereas the Governor of New Zealand, on behalf of the Queen, has agreed with the Contractors for the execution and construction by them of the works described or referred to herein, and in the Specifications, Conditions, Drawings, and Plans hereto annexed or herein referred to, all of which Specifications, Conditions, Drawings, and Plans are signed by the Contractors and John Carruthers, Esquire, the Chief Engineer of the said Colony on behalf of the Colony: Now, these Presents witness that Her Majesty the Queen, for herself, her heirs and successors (all of whom are hereinafter included in the expression "the Queen"): and, so far as the covenants hereinafter contained are to be performed or observed on her or their parts respectively, doth hereby covenant with the Contractors, their executors, administrators, and assigns (all of whom are hereinafter included in the expression "the Contractors"), and the Contractors and each of them, for themselves and himself, and their respective heirs, executors, administrators and assigns, so far as such covenants hereinafter contained are to be performed or observed on their parts, do and doth hereby covenant with the Queen, her heirs and successors, in manner hereinafter appearing, that is to say—

1. That they, the Contractors, shall and will, in all respects subject to and in accordance with the said Conditions, Specifications, Drawings, and Plans, construct make, complete, and maintain, and do and perform, all the works, and supply all such plant and materials as are by the said Specifications and Conditions to be supplied by the Contractor, whether such works, plant, and materials are described or referred to in the said Conditions, Specifications, Drawings, or Plans, or are extra or in addition thereto, within the time mentioned in the said Conditions, subject, however, to the provisions contained in the said Conditions for extension of time.

2. That the Queen shall and will, free of cost to the Contractors, provide and deliver to the Contractors, at the ship's side at the Harbour of Wellington, the iron rails and fastenings required for the permanent way and the rolling stock respectively mentioned in the Specification.

3. That the Queen will pay the Contractors for the construction and execution of the said works, and the maintenance thereof, for the period of three months

## RAILWAY CONTRACTS,

from the completion of the works, and for the supply of all such plant and materials as the Contractors are to supply under the provisions of this contract as aforesaid, the sum of twenty-nine thousand and sixteen pounds (exclusive of the supply of such plant and materials as by the said Specifications and Conditions it is provided the Queen or the Government of New Zealand shall supply, and subject to the provisions contained in the Conditions and Specifications for increase and decrease in case of extras or deductions, and to the provisions contained in the said Specifications or Conditions for extra payment to the Contractors by percentages on the cost of such works as, by such Specifications it is provided, the Contractors are to receive payment by way of percentage on the cost thereof).

4. The Queen shall and will make payments to the Contractors upon account of the said sums herein agreed to be paid at the rate and times, and upon the terms and conditions mentioned in the said Specifications and Conditions.

Lastly. The parties hereto shall and will each respectively perform, observe, and fulfil all and singular the conditions and stipulations expressed or contained in the said General Conditions and Specifications, and which thereby it is provided shall be performed, observed, or fulfilled by such parties respectively.

In witness whereof the Seal of the Colony has hereunto been affixed, and the said Contractors have hereunto set their hands and seals, the day and year first above written.

Sealed with the Seal of the Colony,  
and signed by the Governor, in  
the presence of  
WILLIAM FOX.  
J. D. ORMOND.

G. F. BOWEN,  
Governor.

Signed, sealed, and delivered by the  
above-named Alexander Brogden,  
Henry Brogden, and James  
Brogden, in the presence of  
WM THOS. LOCKE TRAVERS,  
Solicitor, Wellington.

ALEXANDER BROGDEN,  
By his Attorney, James Brogden.  
(Seal.)  
HENRY BROGDEN,  
By his Attorney, James Brogden.  
(Seal.)  
JAMES BROGDEN.  
(Seal.)

(Seal of the Colony.)

Approved in Council, August 10th, 1872.

FORSTER GORING,  
Clerk of the Executive Council.

## GENERAL CONDITIONS FOR THE WELLINGTON AND HUTT RAILWAY.

### INTERPRETATION CLAUSE.

1. In these conditions the words "Minister for Public Works" shall mean the Minister for Public Works appointed under "The Immigration and Public Works Act, 1870," or any Minister or person for the time being authorized by the Governor to act for such Minister in respect of the special work contracted for; the word "Engineer" shall mean the Engineer for the time being who shall have principal charge of the works on behalf of the Government; and the word "Contractor" shall mean "Contractors" when two or more persons tender or contract jointly for the work; and the word "month" shall mean "calendar month."

### WORKS, &c., TO BE ACCORDING TO DRAWINGS AND SPECIFICATIONS, AND TO THE SATISFACTION OF THE ENGINEER.

2. All the materials used are to be the best of their respective kinds, and all works of every description throughout are, subject to the provisions hereinafter contained, to be executed conformably to the several drawings and details prepared or that may be prepared for that purpose, and herein referred to, in the strictest accordance with the provisions of the specifications, and in the best, most substantial, and workmanlike manner, and to the satisfaction of the Engineer; and should any work not be so executed, it shall be immediately altered and amended at the cost of the Contractor.

### PLANS, &c.

3. A copy of the plans and drawings, with the specifications, shall be furnished to the Contractor by the Engineer, and the plans and drawings referred to in the specification, and the specification, shall be taken together to explain each other; and if, in the execution of the works, it shall be found that anything has been omitted or mis-stated either in the drawings or specification, which is necessary for the proper performance and completion of any part or parts of the works, the Contractor shall at his own cost and expense execute the same, and provide whatever may be requisite for so doing, provided the extra cost thereof shall not exceed the sum of £200 in each particular case. Any written dimensions on the drawings shall be taken in all cases in preference to measurements by the scale attached, and anything contained either in the drawings or specification shall be equally binding on the Contractor as if it were contained in both; and in case the written or figured dimensions on the drawings shall disagree with the scaling, or in case there shall be any discrepancy between the drawings and specification, or any ambiguity in them, such occurrence shall not invalidate the contract, but the same shall be rectified by the Engineer if thought requisite, and the Contractor shall not be entitled to make any claim or demand for compensation or damages on account of such discrepancy or ambiguity. If neither the drawings nor the specification contain any notice of minor parts, the intention to include which is nevertheless clearly to be inferred, and which parts are obviously necessary for the workmanlike completion and stability of the work, all such parts are to be made and executed by the Contractor without extra charge, and are to be deemed by him as included in the sum at which he contracts for the works.

### EXTRA WORKS AND ALTERATION OF WORKS.

4. The Contractor is to make and execute, in the like manner as aforesaid, and with the like materials as aforesaid, any additions, deviations, or alterations to, from, or in the works, which the Engineer may from time to time, previously

to the commencement or during the progress of the works, by an order in writing, require, at and for such prices or rates as shall be agreed upon in writing between the Contractor and the Minister for Public Works. In case of non-agreement as to price, the work shall be done by the Contractor as required by the Engineer, and the price thereof shall be settled by arbitration as hereinafter provided, and shall when so ascertained be added to and thenceforth deemed to be part of the contract price for the works to be executed under this contract; but no additions, deviations, or alterations whatever, which shall be claimed by the Contractor, will be admitted or recognized under any circumstances, or will be allowed or paid for, which shall be done or executed without, or contrary to any previous order from the Engineer in writing as aforesaid: Provided always that no addition, deviation, or alteration from the plans and specifications to be ordered by the Engineer as aforesaid shall involve an increased expenditure in connection with the works or any part thereof, unless distinctly authorized by writing under the hand of the Minister for Public Works, who, before authorizing any such deviation, shall obtain from the Engineer an estimate of the increased expenditure arising therefrom: Provided also that in all cases where such deviation, addition, or alteration as last aforesaid, from the plans and specifications, shall involve an outlay exceeding £500, the consent of the Governor in Council shall first be obtained. And in all cases it shall be the duty of the Contractor to satisfy himself that such addition, deviation, or alteration (if any) has been duly authorized in the manner required by "The Immigration and Public Works Act, 1870," and also, that to any such outlay as aforesaid, requiring the consent of the Governor in Council as aforesaid, such consent has been obtained, as required by the said Act.

#### OMISSION OF PORTIONS OF WORKS.

5. To the Minister for Public Works there is reserved the right from time to time of requiring the omission of any particular portion or portions of works described in the specification or shown on the drawings, and of deducting the value thereof from the amount of the contract, such value to be agreed upon between the Minister for Public Works and the Contractor, or in case of difference to be settled by arbitration as hereinafter provided; but the Contractor shall be entitled to be paid a sum of ten per cent. on the agreed or ascertained value of the work omitted; such sums for omissions to be paid on the completion of the contract.

#### MATERIALS, LABOUR, &c.

6. The Contractor shall provide, at his own costs and charges, all materials, labour, tools, plant, tackle, machinery, scaffolding, waggons, cordage, cartage, stores, planking, centres, coffer dams, diving bells, staging, diving dresses, and everything necessary for the proper execution and completion of the several works, and centres must not be struck without the written authority of the Engineer. The Contractor is also to provide, at his cost, for keeping all the trenches and foundations free from water, and for preventing all slips of ground into the trenches. All material and all prepared work brought upon the ground of the works for use therein is to be considered the property of the Queen, and the Contractor shall not take away any such material or work without the written authority of the Engineer, unless the same shall be required for the purposes of other works under this contract. The Contractor will be required to set out accurately, at his own expense, all the works comprised in this contract, agreeably to the drawings and specifications, and shall be held responsible for their being so set out and executed accordingly.

#### REMOVAL OF IMPROPER MATERIALS.

7. It shall be lawful for the Engineer to order the removal from the works of any materials, whether fixed or not, which may appear to him to be of an inferior or improper description, and the Contractor shall remove the same within twenty-four hours after a written notice in that behalf given to him by the Engineer; and in case of neglect or refusal to remove the same according to such notice, the Engineer shall have power to remove the same at the cost of the Contractor.

## CONTRACTOR TO BE REPRESENTED.

8. The Contractor at all times during the progress of the works, when he is not personally superintending them, must have a responsible agent or overseer stationed on them, to receive instructions from the Engineer, and to represent him for all the purposes of this contract.

## PROGRESS OF WORKS.

9. If the Contractor shall, in the opinion of the Engineer, fail to make such progress with the works as the Engineer shall deem sufficient to insure their completion within the specified time, or if the Contractor shall use or employ bad or insufficient materials, or execute any work in an imperfect manner, and shall fail or neglect to rectify any such cause of complaint for fourteen days after being thereunto required in writing by the Engineer, or if the Contractor shall, in the judgment of the Engineer, commit a wilful breach of his contract, then, and in any of such cases, it shall be lawful for the Minister for Public Works, by any instrument in writing under his hand delivered to the Contractor, or to his representative on the works, or left at the Contractor's usual or last known place of abode or business, absolutely to determine this contract, and from and after the delivery of the said instrument as aforesaid, the contract shall be absolutely determined; and in the event of such determination happening, then it shall be lawful for the said Minister, after having delivered such instrument to the Contractor as aforesaid, to take the works out of the Contractor's possession, and at the option of such Minister either to carry the works on under the Engineer or by another Contractor, and that either after advertising for Contractors or without doing so, as he shall think fit; and all the materials, implements, and plant then upon or used in connection with the works may be used in and applied for the purpose of completing the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages, together with the net proceeds realized by the sale of the then residue of such materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

CONTRACTOR NOT TO SUBLET WORKS TO PERSONS PREVIOUSLY OBJECTED TO—  
BANKRUPTCY, INSOLVENCY, OR DEATH.

13. The Contractor shall not sublet any portion of the works to any person who shall have been previously objected to by the Engineer by notice in writing to the Contractor. If the Contractor become bankrupt or insolvent, or shall make an assignment of his estate for the benefit of his creditors, or shall die before the final completion of the contract, then it shall be lawful for the Minister for Public Works, on behalf of the Queen, summarily, and of his own authority, and without any process of law for that purpose, to take possession of the works, and to take them out of the hands of the Contractor, or of his executors, or administrators, or of the assignees or trustees of his estate, and to employ persons for

the execution and completion of the same, and that either after advertising for contractors or without doing so, as he shall think fit; and all the then remaining materials, implements, and plant aforesaid may be used in and applied for the purposes of the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages aforesaid, together with the value of the remaining materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid; and in the case of bankruptcy or insolvency, then Her Majesty the Queen shall rank as a creditor to the amount of such surplus. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

#### LIABILITIES OF CONTRACTOR.

14. The exercise by the Minister for Public Works, or Engineer, of any of their respective powers shall not relieve the Contractor from any liability to which he may be subject for any breach of the contract.

#### TIME OF COMPLETION.

15. Subject as herein provided, the Contractor shall complete the whole of the works of this contract on or before the first day of September, one thousand eight hundred and seventy-three, failing which the Minister for Public Works shall be entitled to deduct from the final balance due to the Contractor a sum calculated at the rate of Three pounds per cent. per annum on all moneys which shall have been paid to the Contractor under this contract, computed from the date on which the work ought to have been completed under this contract up to the date of the completion of the work: Provided that if the Minister for Public Works shall have taken over as completed any portion of the work, the cost of that portion shall not be included in the calculation last aforesaid. But in the event of the Contractor being prevented by earthquake, tempest, flood or otherwise by the act of God or by the act of the Queen's enemies, rebellion, restraint of princes, or otherwise by anything in the nature of *vis major*, or by reason of any strike amongst the workmen engaged upon the works, or by reason of any alterations, deviations, or additions, or extra works being required, or in case of any delay in furnishing any material to be supplied to the Contractor by the Governor, the Engineer shall allow such an extension of time as he shall think adequate for such enforced delay, or for such alterations, deviations, additions, or extra work; and at the expiration of the time so allowed, the deductions or sets-off for delay shall come into operation.

#### SUSPENSION OF WORKS.

16. The Contractor, on receiving a written notice from the Engineer, shall suspend, or stop, the whole or any portion of the works as may be directed, and the Governor on behalf of the Queen shall make good to the Contractor any loss or damage he may sustain through such suspension or stoppage, to be ascertained,



in case of non-agreement between the Contractor and the Minister, by arbitration, as hereinafter mentioned; and the Minister for Public Works shall in no case be bound to give the Contractor possession of the ground or work until thirty days after the signature of the contract by the Contractor; but a commensurate extension of time for completing the works will be allowed to the Contractor, such extension of time to be at the discretion of and to be decided by the Engineer.

#### DAMAGES TO BE MADE GOOD, &c.

17. The Contractor shall also provide for effectually securing and covering the several walls and works from the weather, as occasion may require, or as the Engineer may direct; and if any damage or loss should happen to any of the works, plant, or materials—whether from fire, theft, or weather, force of waves, or from any other cause—while the works and buildings are unfinished or remain in possession of the Contractor, the Contractor must properly and immediately repair and make good the same at his own expense, and to the satisfaction of the Engineer; unless it can be shown that the damage arises from insufficient or imperfect designs, when the Contractor will not be held responsible, and, in case of dispute, the matter shall be settled by arbitration, as hereinafter provided.

#### TRESPASS.

18. The Contractor shall not enter upon any lands outside the line of fences for the construction of the works, or for any purpose whatever in connection with this contract, without the consent of the occupier or owner, except at his own cost and risk, and shall not, without the consent of the Engineer, remove any trees or buildings within the line of the Railway fences, nor shall he open or throw down any part of a fence without making sufficient provision, by temporary fences, to be erected and maintained at his cost, for keeping cattle, sheep, or other stock from straying from or into any enclosure affected thereby; and any legal process causing costs or damage to the Government for any trespass incurred by the act or negligence of the Contractor or his workmen, shall be deducted from the contract price, and be taken as payment made on account of his contract.

#### MAINTENANCE OF WORKS.

19. The Contractor shall be bound to keep and maintain in good and sufficient repair the whole works executed under the contract, and shall provide all labour, materials, &c., necessary for such maintenance for a period of months from and after the time when all the works under the contract have been fully completed; and the Contractor shall, on the expiry of the said period of maintenance, be bound to deliver up the whole works in good and sufficient condition, and to the satisfaction of the Engineer. The Contractor shall also be liable for any accident, damage, or injury whatsoever to the public or any private person which may be caused by his operations during the progress of the works, or during their maintenance. He shall also maintain all night-lights and temporary footpaths required by any Municipal or other authorities, or for the safety of the public, and shall make all necessary arrangements, by siding or otherwise, as required by the Engineer, to prevent stoppage of public traffic.

#### LAND.

20. The Minister for Public Works will, free of all expense, put the Contractor in possession of all land required for the permanent works of the Railway, including land required for side-cutting, ballasting, spoil banks and road approaches, road diversions, and slips, and also from time to time, as occasion may require, but at the cost of the Contractor and so far only as the Parliamentary powers possessed by the Governor or the Minister for Public Works will extend to enable them so to do, of all such land as may be necessary for temporary purposes in connection with the works.

21. The Minister for Public Works shall, within thirty days after the signing of the contract by the Contractor, put the Contractor in possession of such parts of the land for the permanent works as may be necessary for the commencement thereof, and will from time to time, after fifteen days' notice in that behalf shall

have been given by the Contractor to the Engineer, put the Contractor in possession of all such other parts of the lands required for the permanent works as may be necessary for the immediate prosecution thereof.

#### DELAY IN GIVING POSSESSION OF LAND.

22. If any delay shall take place in giving to the Contractor the possession of any land required for the permanent works as aforesaid, such delay shall not be deemed to be a breach of the contract, but the Contractor shall be entitled to such reasonable extension of time for the completion of the works as shall be fixed by the Engineer, or, in case of dispute, by arbitration, as hereinafter provided.

#### POWER TO REQUIRE DISMISSAL OF ANY WORKMAN.

23. The Engineer may require the dismissal within twenty-four hours by the Contractor of any agent, overseer, foreman, workman, or other person employed by him on the works, for incompetency or misconduct, and any man so dismissed shall not be again employed upon the works.

#### TRUCK SYSTEM NOT ALLOWED.

24. The workmen, tradesmen, and labourers of every class employed on the works to which these Conditions refer, shall be paid their wages in full in money of the current coin of the Colony, and no ticket or other system of payment by provisions, liquors, or goods will on any pretence be allowed, nor shall the Contractor or any person or persons employed by him, or in any way connected with him, establish any shop for the supply of liquors, provisions, or goods, nor shall the Contractor oblige his workmen to take provisions, liquors, or goods of any kind from any person in particular. The workmen of every class shall be paid on the works if it be possible, or in some building adjoining, and in no case shall they be paid at a public-house, or other place where liquors or refreshments are sold.

#### PAYMENTS.

25. Payments will be made monthly, for each calendar month, as the works proceed, on the certificate in writing of the Engineer, at a rate not exceeding 90 per cent. on the value of the work actually done, as estimated by the Engineer, having due regard in such estimate to the actual value thereof, and at a rate not exceeding 50 per cent. on the value of such plant and materials on the ground as may be approved by the Engineer as fit and necessary for the work, as estimated by the Engineer, having due regard in such estimate to the actual value thereof; such certificates for work done, and materials and plant supplied, in each calendar month, to be delivered to the Contractor within fourteen days after the termination of such month, and the balance, less 5 per cent., together with the amount deposited as cash security, if any, in fourteen (14) days, or as nearly as may be, after the Engineer shall have certified under his hand that the works have been finally and satisfactorily completed, and that such balance, together with the cash security, is due to the Contractor. The said 5 per cent. will be retained for three months to insure the fulfilment of clause 19 of these Conditions, and from which sums may be deducted the costs of any repairs or defects, failing the Contractor executing the same: Provided always that no sum or sums of money shall be considered to be due or owing to the Contractor, nor shall the Contractor make any claim for or on account of any work executed or maintained by him, or for or on account of plant or materials supplied by him, unless such certificate as aforesaid shall have been given by the Engineer as aforesaid; nor shall any sum or sums of money so certified be considered to be made payable to the Contractor until the expiration of fourteen days after such certificate shall have been presented to the Minister for Public Works; nor shall any omission to pay the amount of such certificate at the time the same shall be held payable be deemed or held to be a breach of or to vitiate the contract, but in case of such omission the Contractor shall be entitled to interest on the amount certified for, at the rate of ten pounds per centum per annum, for such time as such omission shall continue.

## NEGLECT TO CERTIFY.

26. In case the Engineer shall neglect or refuse to certify the amount due to the Contractor in respect of the work, or plant or materials, in manner and within the times mentioned in the foregoing condition, and shall continue such neglect or refusal for a period of fourteen days succeeding the fourteenth day after the end of the month in which the work was done, or the plant or material supplied, as the case may be, the Contractor shall be entitled to measure and value the same, having due regard in his estimate to the actual value thereof, and the measure and value so estimated by the Contractor shall be temporarily accepted by the Governor so far as regards the progress payment to be made to the Contractor in respect thereof under the foregoing condition, and the payment provided by that condition shall be made accordingly, with interest thereon, at the rate of Ten pounds per centum per annum, during the period of delay occasioned by the neglect or refusal of the Engineer: Provided always that in all cases in which a certificate shall, within the period or further period hereinbefore provided, as the case may be, have actually been delivered to the Contractor, such certificate shall, for the purpose of the progress payment to be made thereunder, be conclusive; and in case of any dispute between the Contractor and the Engineer as to the estimate therein made of value of work done, or plant or materials provided, as the case may be, of which dispute notice shall have been given by the Contractor to the Minister for Public Works within fourteen days after the delivery of the certificate to the Contractor, such dispute shall be referred to arbitration as hereinafter mentioned.

## PROGRESS PAYMENTS WITHOUT PREJUDICE, &amp;c.

27. No certificate given to the Contractor for the purpose of any progress payments shall prevent the Engineer, at any future time before the termination of the contract, from rejecting all unsound materials and improper workmanship discovered subsequently to the giving of the last previous certificate; and notwithstanding the giving of any certificate that portions or the whole of the works have been satisfactorily performed, the Engineer may require the Contractor to remove and amend, at any future time previously to the final payment on account of the construction or maintenance of the works, any work that may be found not to be performed in accordance with the contract, and the Contractor must remove and amend, at his own cost, all such work when so required, notwithstanding any approval made or given by the Assistant Engineer or Inspector. The Minister for Public Works shall have power, on the report of the Engineer that the work approved of as aforesaid is not in accordance with the contract, to deduct from any moneys that may be due or that may become due to the Contractor the whole amount that has been paid on account of such work.

If, in the opinion of the Minister for Public Works, further inquiry is desirable or necessary before any certificate is paid, the Minister for Public Works shall have power to suspend the payment of all or any part of the amount mentioned in any such certificate for a period not exceeding one month from the date at which, in the ordinary course, the money would have been paid; and in such case, on payment of the amount payable, the Contractor shall be entitled to receive interest at the rate of Ten pounds per centum per annum during such additional delay.

## STAMPS, LICENSE FEES, &amp;c.

28. The Contractor shall bear and pay all costs, charges, and expenses of preparing, executing, and completing this contract, and all duty stamps, licenses, Building Surveyor's fees, or other charges or fees whatsoever lawfully demanded by the Municipal or other authorities.

## CUSTOMS AND WHARF DUTIES, &amp;c.

29. In the event of the Contractors being compelled to pay any Customs duties or wharf dues or fees on any goods imported into New Zealand by them for the purposes of the said works, or transhipped or carried by them from any port or place in New Zealand to any other place in New Zealand, the Queen shall

and will repay the same to the Contractors after one month's notice in writing by the Contractor to the Minister demanding payment thereof and giving details of such payment, and the production of vouchers or other proof of such payment.

#### ARBITRATION.

30. Should any dispute arise between the Contractor and the Engineer, or between the Contractor and the Minister for Public Works or the Government, relative to the force and intent and meaning of the specifications, drawings, or conditions, or to the mode of carrying on the works, or the nature or quality of materials used or supplied to be used, or workmanship of work done, or as to the maintenance of the works, or as to the expense of additional works, or of alterations or deviations from the specifications or plans, or as to any other matter connected with the execution of the works, or with the contract, specifications, drawings, or conditions, or as to any matter which by this contract it is expressly provided is to be settled, ascertained, or determined by arbitration, such dispute shall be referred in writing to the sole determination, arbitrament, and award of the Judge of the Supreme Court assigned to that Judicial District of the Supreme Court within which the works relative to which the dispute shall have arisen have been or are to be executed, whose award shall be final, binding, and conclusive on all parties: Provided, however, that before any such dispute as aforesaid shall be so referred, the Contractor shall give to the Minister for Public Works one calendar month's notice in writing of such dispute, and of the matter and cause thereof, and in such notice the Contractor's claim shall be explicitly stated; and if such claim be for pecuniary compensation, the amount thereof shall also be stated.

JOHN CARRUTHERS.  
JOHN BROGDEN AND SONS.

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## SPECIFICATION OF THE MANNER OF CONSTRUCTING THE WELLINGTON CONTRACT OF THE WELLINGTON AND HUTT RAILWAY.

### GENERAL DESCRIPTION.

Description.

1. The line of Railway included under the title "Wellington Contract of the Wellington and Hutt Railway," and to which this specification applies, begins at Pipitea Point, Wellington, and terminates near the Lower Hutt Township, as delineated on the accompanying plans and sections; the total length of the contract being eight miles or thereby, with an addition of half a mile of sidings.

### DRAWINGS.

Drawings.

2. The drawings, including general plans and longitudinal sections, as shown on list A, accompany this Specification. These show the character of the works to be executed; further drawings of details will be issued from time to time as may be necessary.

The general plan is drawn to a scale of three chains to an inch, and shows the course of the Railway, the centre line of which has been staked out on the ground, and is represented on the general plan by a red line.

The road and stream diversions are shown on the general plan.

The longitudinal section is drawn to a horizontal scale of three chains to the inch, and to a vertical scale of thirty feet to the inch. It represents the natural profile of the ground along the centre line of the Railway. The red line shows the level of the bottom of the ballast. On the longitudinal section are shown the positions and sizes of the culverts and bridges described in this Specification.

### ALIGNMENT OF STRUCTURES.

Alignment.

3. In the construction of bridges, culverts, road crossings, and generally, it is to be understood that they are to intersect the line of Railway at such angle or curve as may be necessary and approved in each case, although they may be

shown on the drawings straight and at right angles; and in the interpretation of the drawings and schedules, and of this Specification, it shall be distinctly understood that all works or materials necessary to the due and workmanlike completion of every erection are to be provided, whether specially described or not.

#### CONTRACTOR TO PROVIDE LABOUR, PLANT, AND MATERIALS.

4. The Contractor is to provide all labour, tools, implements, plant, and materials, and is well and substantially to construct and complete the Railway in accordance with the plans and specifications, and to deliver the same complete, and is to maintain and keep the said Railway, and all works connected therewith, in perfect order and repair for the space of three months from the delivery of the same to the Government. Contractor to provide labour, &c., &c.

The said Railway shall be made in accordance with this Specification, and with the plans and sections herein referred to, or with such modifications of the plans and sections as the Engineer shall order, provided such modifications shall not increase the cost of the work.

#### FELLING, CLEARING, AND GRUBBING.

5. The whole of the timber within one chain and a half of the centre line is to be felled. Of this extent the central chain is to be cleared by removing all logs and underbrush half a chain from the centre line, and to a greater distance where the formation requires it. Throughout all cuttings and along formations on the level, all stumps and roots are to be grubbed out entirely and removed, so as to leave no loose timber whatever, and no stumps within two feet of formation level along centre or within one foot of the surface in the slopes. Felling, &c.

The Contractor will be permitted to apply to his own use the timber which he has felled for the purpose of clearing the line.

#### FENCING.

6. Five miles 67 chains of the line are to be fenced on one side; and wherever present fences are disturbed or interfered with, they are to be made good at the expense of the Contractor. At all crossings of roads, and other places where cattle stops are used, fences are to be completed across the line up to the cattle stops. Fencing.

The fence is to consist of posts and four rails (except at the rocky point at 4 miles 18 chains, where approved iron hurdles may be substituted, tied with iron and wedged down to holes in the rock.)

The posts are to be 6 feet 6 inches long, entirely of heart of totara, sound, and of full dimensions, and mortised to receive four rails with mortises 6 in.  $\times$  1 $\frac{3}{4}$  in.; the posts to be sunk 1 foot 9 inches in the ground, and securely rammed; the rails to be good sound rails, of totara, black birch, or rimu, to be free from winding, to be properly bevelled at the ends, and to pass completely through the posts, one above the other, so as to fill the mortises. No rail to exceed 9 feet in length. The fence is to be erected in such line as shall be approved by the Engineer, and is to be made good up to the ends of all bridges and to all slip rail posts at level crossings. The whole to be neatly finished in a workmanlike manner.

At all openings for level crossings along the above fence, two posts are to be erected for each crossing 10 feet apart; the posts to be 8 inches square, of heart of totara, to be 8 feet long, sunk 3 feet 6 inches in the ground, and securely rammed. Each post to have four mortises for slip rails 4 in.  $\times$  2 in. Those on one side to go completely through the post; those on the other side to be 4 inches deep. Four slip rails to be provided, to be finished to a length of 10 feet 8 inches, to be of black birch, 6 in.  $\times$  2 $\frac{1}{2}$  in., reduced at the ends to go freely into the mortises, and bored at one end for  $\frac{3}{4}$  in. pins of hard wood. Slip rails.

Guard balks 15 feet long  $\times$  6 in.  $\times$  4 in. shall be placed along rails of permanent way.

#### EARTHWORKS.

7. All flax, scrub, rushes, or Maori-heads growing on the line of the Railway, shall be cut down to the full width between the outside of the slopes. Clearing Scrub, &c.

Roads not to be obstructed.

No public or private road that crosses or intersects the Railway or works thereof, shall be obstructed by excavation or otherwise, until the Contractor shall have provided such temporary roads as may be necessary for the traffic.

Cuttings.

The cuttings are to have a base at formation level of 10 feet in rock, 11 feet in loose rock, and 13 feet elsewhere, and are to be made in accordance with plan and section attached; but should the Engineer require any of the cuttings or banks to be made with different slopes from those shown on Drawing No. 2, the difference in cost shall be added to or deducted from the contract sum. Such alteration to be ordered in writing.

Drains.

A drain is to be cut along the bottom of slopes of cuttings, except in rock; this drain to average 5 cubic feet per lineal yard. Catchwater drains are to be dug above the top of one slope of cuttings, at a distance of from a quarter of a chain to a chain from the top of slopes; these ditches are to average 5 cubic feet per lineal yard, and are to be true and regular to the inclinations directed; no stumps or roots to be left in them.

Embankments.

The embankments must be carried forward uniformly of the proper shape, with such an addition to the heights and widths as a due allowance for the shrinking of the material requires, so as to avoid as far as practicable the necessity for making subsequent additions either to the heights or widths of the embankments, to bring them to the correct levels and dimensions.

Whenever the foundation of an embankment is on sloping ground, the Contractor, if required, must at his own expense cut steps and benches under the base of the embankment.

The top of embankment at formation level is to be 10 feet wide; the slopes to be trimmed off to an inclination of one and a half horizontal to one vertical, and to be maintained full and true until the completion of the contract.

The Contractor shall, unless otherwise directed by the Engineer, take care not in any way to interfere with or divert the existing drainage areas, and shall leave such stops or stanks in the side cuttings, and take such other precautions, as the Engineer shall think necessary for that purpose.

Punning.

Behind and around culverts and abutments of bridges, the embankments shall be wheeled in and carefully rammed.

#### PITCHING.

Pitching.

8. Where required, the outer slope of the embankment shall be protected by a course of pitching formed of concrete blocks 2 feet square and 6 inches thick, or of approved stone 1 foot deep to the extent of 6,000 square yards, and of pitching 6 inches deep to the extent of 14,355 square yards.

Parapets.

From 4 miles 17 chains to 4 miles 34 chains, and from 4 miles 50 chains to 4 miles 74 chains, the top of the pitching is to be levelled, and a parapet 1 foot 6 inches wide erected on top to a height of 1 foot 6 inches of rubble masonry laid in cement or of cement concrete.

Breast walls.

Where specified in list of breast walls, walls to retain the outer edge of beach road are to be erected of stone laid dry, with a batter of 3 inches to a foot, or the existing walls made good; these walls are to be similar in materials, dimensions, and character to the existing walls along the road.

#### DITCHES AND DRAINS.

9. When the line crosses swamps of a peaty nature, catchwater drains are to be cut on the upper side of the line obliquely across the valleys, so as to tap the surface water. These ditches shall not exceed, on an average, one and one-third cubic yard per lineal yard, and are to be made at the commencement of the work, and cleaned out from time to time as may be ordered.

#### STREAM DIVERSIONS.

10. All stream diversions are to be grubbed out as described for cuttings, and excavated with regular slopes and inclinations, as will be set out.

#### ROAD ALTERATIONS.

Road alterations.

11. At the places shown on the plan and section, and wherever necessary, the present roads are to be diverted.

All such diversions and road approaches to the level crossings are to be completed in a convenient, substantial, and proper manner, with the necessary drains, water tables, and side slopes. Such approaches and road diversions are to be formed with an inclination not steeper than 1 in 30 for public roads, and 1 in 20 for private roads, except where the present inclination exceeds these rates, in which case the inclination of the new road shall not exceed that of the present road, unless, in the opinion of the Engineer, a steeper is unavoidable.

Public roads and approaches to first-class crossings are to be metalled with Metalling. coarse river gravel or approved hard stone, laid on and spread as directed, so as to average 38 cubic yards per lineal chain of road. Private roads are to be metalled with coarse river gravel or broken stone of approved quality, laid on and spread as directed, so as to average 15 cubic yards per lineal chain. The whole of the metal is to be broken to pass through a two and a half inch ring.

Two first-class, four second-class, and six third-class crossings, with two Level crossings. cattle-stops to each first-class crossing, as per Drawing No. 7, shall be constructed at public and private roads where directed. They shall be carefully placed as to line and level, and finished in strict conformity with the drawing and the notes thereon. Each level crossing shall be metalled for a length of 66 feet on each side of the centre line, as above specified for the roads, and tile or timber box drains shall be put in the formation ditches where necessary for the drainage of the line or road.

Cattle stops, as shown in Drawing No. 7, are to be put in where directed, not Cattle stops. exceeding thirty in number, besides those at level crossings.

#### MATERIALS.

12. Except where otherwise specified, all the materials used under this contract shall be of the following kinds and descriptions:—

All masonry, except archwork, coping, and string courses, to be of rubble Masonry. laid in cement mortar. Bond stones, 2 feet long, to be put in every square yard of both face and back of work. All spalls are to be set in mortar, and not laid dry, and afterwards grouted. Facework must have no stone containing less than one-quarter of a cubic foot. The work shall be grouted every foot in height. All wingwalls, parapets, and abutments shall be finished with a coping of brick on edge, one brick wide, set in cement. The coping is not generally shown on drawings. The whole of the masonry is to be neatly pointed.

Cement mortar shall consist of three parts, by measure, of sharp clean sand Cement. to one part of Portland cement.

Concrete shall be composed of three parts, by measure, of broken stone, two Concrete. parts of sharp sand, and one part of fresh Portland cement, or two parts of broken stone to two parts of gravel, one part of sand, and one part of fresh Portland cement. The cement shall be of approved brands, and subject to such tests as the Engineer may from time to time direct. The concrete shall be laid in 12-inch layers, and well rammed as the work progresses.

Rails, strings, and floor beams shall be of black birch, and all other timber Timber. shall be of matai or totara, or other timber specially approved; it shall be heart-wood, except as shown on Drawing No. 8, and shall be straight and sound, free from shakes, large knots, and other imperfections.

The whole of the straps and bolts shall be made of B.B. crown iron, or other Malleable iron. iron of equal quality, of the dimensions shown; the whole to be finished and fixed in a workmanlike manner.

Bolts shown or specified shall have a square head, of which the thickness Bolts and nuts. shall be equal to the diameter of the bolt, and the width twice the diameter of the bolt. They are to be tapped with a good clean thread, and shall have a nut equal in size to the head of the bolt, and shall be provided with one or more washers 3 inches in diameter.

#### BRIDGES AND TIMBER OPENINGS.

13. Bridges, as per detail drawings, shall be erected where shown on longi- Bridges. tudinal section.

All joints, shoulders, and sides of tenons and scarfs to be worked perfectly Joints.

true, and to fit accurately, and to be covered with red lead before being put together. Tenons generally to be 5 inches long, and to be draw-bored to receive trenails of hard wood made with hollow auger or trenailing machine. All trenails to be well seasoned and kept dry, and to be one-sixteenth of an inch more in diameter than the hole bored for them, and to be covered with red lead before being driven. All capsills and mudsills to be morticed on to posts or piles. All string pieces to be accurately notched down to capsills or floor beams by notching  $\frac{3}{4}$  inch from each, to be scribed and accurately fitted. Diagonal braces, where placed inside the panel, are to be notched together as described for string pieces.

**Piling.** All piles are to be rung before driving with a three inch by  $\frac{3}{4}$  inch round hoop. The piles are to be shod with a substantial iron shoe weighing not less than 30 lbs., securely fixed; the point of the pile to be cut true, and to be squared off at the end to 3 inches square, and to have true bearing against the shoe. No pile-driving is to be commenced at any bridge, opening, or other work without giving six days' notice previously to the Engineer in charge of the works.

**Contractor to supply rods and gauges.** The Contractor shall provide all proper rods and gauges for setting out and testing the dimensions of bridges and timber openings that the Engineer may require.

#### CULVERTS AND DRAINS.

**Timber culverts.** 14. Timber culverts shall be erected where shown on longitudinal section.

The frames shall be accurately mortised, and tenoned, and pinned; the planking to be securely spiked on to the frames, the whole of the timber to be heart of totara or matai; the outer side of the planking need not be reduced to the dimensions given, but there must in every case be the full thickness specified of heart timber; the edges of the planking must fit truly for the whole thickness, and the planks must extend over at least two panels, and break joints as much as possible.

**Masonry culverts.** Masonry culverts shall be erected where shown on longitudinal section. They shall be of rubble masonry, set in cement mortar, with coping of brick on edge.

**Drains and culverts.** Sufficient catchwater and out-fall drains are to be dug at culverts, and all stumps and roots occurring in the line of ditch to be taken out.

#### BALLASTING AND PERMANENT WAY.

**Ballast.** 15. The ballast is to consist of shingle, broken stones, or sand, previously approved of, and is to be disposed as shown in Drawing No. 2. In all cases the embankments and cuttings are to be cleared from mud, and brought to an uniform formation level before the ballast is laid on.

**Permanent way.** The permanent way is to consist of a single line of rails laid to a gauge of 3 feet 6 inches, and sidings provided and laid where directed, amounting in all to one half-mile of sidings.

**Gauges.** The Contractor is to provide and have upon the ground at all points when the work is proceeding a sufficient supply of all such templates, tools, gauges, and other implements as are necessary and are usually required in the laying of permanent way, or as may be required by the Engineer.

**Laying of permanent way.** About three thirty-seconds of an inch of space is to be left between the ends of the rails when fixed in place, or such other space as the Engineer may direct, according to the season.

**Bending rails.** For the curves, the rails will require bending. This, as well as the straightening of all bent rails, must be effected by a press, or by striking with wooden hand-beetles on wooden blocks. In all cases, whether of straightening of bent rails or of bending rails to the necessary curves, the rails must be set permanently to the form required before being laid, and no temporary bending, springing, or straightening, either by dragging with a lever and hook, or by any other means of a like character, will on any account be permitted.

**Laying sleepers.** Great care must be taken to lay all the sleepers square to the rails on straights, and as near as may be on curves. Where the line is straight, the rails will be level across the line; but where the line is curved, the rails will be canted, the difference of level between the two rails being such as the Engineer shall order.

When suitable material for ballast is not found immediately on the line, the



sleepers may be laid on formation, being carefully tamped with dry earth. The Contractor will be permitted to run ballast and material trains over the line thus laid at a speed not exceeding ten miles an hour, but the ballasting and lifting must be proceeded with with all possible despatch.

The changes of gradients shall be made by a gradual curve.

There are to be 2,050 sleepers per mile, to be spaced as directed. The following timbers to be used to the extent of not less than 75 per cent. of the whole:—Totara, jarrah, Oregon pine, kauri, or puriri. The remaining 25 per cent. may be of matai (*Podocarpus spicata*) or birch (*Fagus fusca* or *Solandri*). They shall be 7 feet long, and 7 inches by 5 inches, all of heart. They are to be flatted top and bottom, true and out of wind; but any extra width beyond 7 inches need not be removed. The rail seats are to be accurately adzed to a correct level.

The rails will weigh 40 lbs to the yard; they will be jointed with Ibbotson's patent steel clip-joint, weighing about 12 lbs. each joint, and fastened to the sleepers by six fang-bolts to each rail, and two spikes to each sleeper, where fang-bolts are not used. The rails and fastenings will be delivered to the Contractor at the ship's side, Wellington, and he shall be responsible for all materials delivered to him.

#### USE OF PERMANENT WAY MATERIALS BY CONTRACTOR.

16. Permanent way materials shall not be laid down or employed, without written permission of the Engineer, within 100 yards of the face of any excavation or the end of any embankments, nor used for hauling earthwork before the ballast is laid. When the Contractor shall have complied with the above requirements, he may use the rails and other permanent way materials for the purpose of hauling earthwork or materials on parts of the line.

#### SIDINGS.

17. The Contractor shall construct at his own cost, at such points as may be indicated by the Engineer, one half-mile of sidings, including the necessary earthwork, ballast, sleepers, and laying of permanent way, similar to that of the main line, without the points and crossings. He shall also make and construct, wherever required, such station-grounds, buildings, points, crossings, extra sidings, telegraph and other things required for station accommodation, and shall furnish the Engineer monthly with a detailed statement showing their actual cost, exclusive of all cost of management, properly supported by vouchers or as otherwise directed, and to this cost a sum equal to ten pounds per centum shall be added for Contractor's profits, and this amount shall be in addition to the contract sum.

#### TELEGRAPH.

18. A single wire telegraph will be constructed and paid for as for station accommodation, and the use of it allowed to the Contractor during construction of the works. During the period of maintenance the Government will transmit, free of charge, all messages sent by the Contractor on the business of the Railway.

#### ROLLING STOCK.

19. The Contractor shall take delivery from the ship's side at Wellington of the articles of rolling stock enumerated below, and shall land, erect, and place the same on the line in working order, and bear all cost of the same.

#### LIST OF ROLLING STOCK.

- 2 locomotives.
- 8 carriages and brake-vans.
- 13 waggons.

#### USE OF ROLLING STOCK.

20. The Government will furnish the Contractor with such locomotives and rolling stock as they may have on the line, the Contractor to pay the wages of the engine-drivers and stokers, who must be approved by the Engineer, and to furnish fuel, water, oil, grease, waste, &c., at his own expense. The Contractor

shall also return such rolling stock as may be lent to him in as good order as when received by him—reasonable tear and wear excepted. In the event of the Government being unable to supply locomotives and rolling stock when needed by the Contractor, an extension of time will be granted for the completion of the contract; such extension of time to be fixed by the Engineer.

JOHN CARRUTHERS.  
JOHN BROGDEN AND SONS.

## WELLINGTON AND HUTT RAILWAY.

LIST OF BREAST WALLS to be erected or made good along outer edge of Road.

Miles.	Chains.	Miles.	Chains.	Miles.	Chains.	Miles.	Chains.
	From		To		From		To
0	33·00	0	37·00	3	6·50	3	8·50
	44·50		47·50		12·00		13·50
	53·50		56·50		15·50		19·50
	60·70		68·10		28·00		31·60
	71·50		72·80		50·50		52·50
	76·20		79·40		62·70		64·00
1	28·50	1	38·60		66·50		67·50
	44·20		47·00		74·50		77·50
	50·50		53·50	4	5·80	4	7·60
	69·50		71·00		9·00		10·80
	77·00		78·50		17·40		17·90
2	4·50	2	6·50		65·40		70·00
	10·70		13·10		76·50		77·50
	16·70		17·20		78·50		79·50
	29·00		30·20	5	3·50	5	4·50
	34·50		36·80		30·50		33·50
	39·50		42·20		39·70		41·20
	50·50		52·50		46·50		47·50
	61·50		65·50		51·50		52·50
3	1·50		3·00		61·30		63·50

## WELLINGTON AND HUTT RAILWAY.

## LIST OF DRAWINGS.

- Drawing No. 1—Longitudinal plan and section, sheets 1 to 8, and cross sections, sheets 9 to 17.  
 „ 2—Cross sections, cutting and embankments, pitching and parapet.  
 „ 3—Bridge sites, Kaiwarrawarra and Koro Koro streams, 3 spans 30 feet and 2=30 feet.  
 „ 4—Bridge at Ngahauranga.  
 „ 5—Bridge openings, at 5 miles 10 chains, 6 miles 67 chains, 6 miles 69 chains, and 7 miles 69 chains.  
 „ 6—Culverts, 2 feet, 4 feet, and 6 feet.  
 „ 7—Cattle stops, level crossings, &c.

JOHN CARRUTHERS.  
JOHN BROGDEN AND SONS.

## PICTON AND BLENHEIM RAILWAY.

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ARTICLES OF AGREEMENT made and entered into this tenth day of August, 1872, between the GOVERNOR of NEW ZEALAND, in the name and on behalf of Her MAJESTY the QUEEN of the one part, and ALEXANDER BROGDEN, HENRY BROGDEN, and JAMES BROGDEN, all of Queen's Square, in the City of Westminster, in England, Railway Contractors (hereinafter referred to as "the Contractors"), of the other part :

Whereas by the sixth section of "The Railways Act, 1871," it is amongst other things enacted that the Governor may, if he think fit, construct and maintain, or cause to be constructed and maintained, under the provisions of "The Immigration and Public Works Act, 1870" (hereinafter referred to as "the said Act"), and "The Immigration and Public Works Act Amendment Act, 1871" (hereinafter referred to as "the said Amending Act"), certain Railways, and amongst others, a Railway from Picton, in the Province of Marlborough, to Northern Bank, Opawa River, in the said Province (which said Railway is hereinafter referred to as "the Railway herein mentioned") :

And whereas by the said Amending Act it is provided that all Contracts under any Act authorizing the construction of any Railway under the said Act or the said Amending Act, shall be entered into in the name of the Queen, her heirs and successors :

And whereas the Governor of New Zealand, on behalf of the Queen, has agreed with the Contractors for the execution and construction by them of the works described or referred to herein, and in the Specifications, Conditions, Drawings, and Plans hereto annexed or herein referred to, all of which Specifications, Conditions, Drawings, and Plans are signed by the Contractors and John Carruthers, Esquire, the Chief Engineer of the said Colony, on behalf of the Colony: Now, these Presents witness that Her Majesty the Queen, for herself, her heirs and successors (all of whom are hereinafter included in the expression "the Queen"), and, so far as the covenants hereinafter contained are to be performed or observed on her or their parts respectively, doth hereby covenant with the Contractors, their executors, administrators, and assigns (all of whom are hereinafter included in the expression "the Contractors"), and the Contractors and each of them, for themselves and himself, and their respective heirs, executors, administrators and assigns, so far as such covenants hereinafter contained are to be performed or observed on their parts, do and doth hereby covenant with the Queen, her heirs and successors, in manner hereinafter appearing, that is to say—

1. That they, the Contractors, shall and will, in all respects subject to and in accordance with the said Conditions, Specifications, Drawings, and Plans, construct make, complete, and maintain, and do and perform, all the works, and supply all such plant and materials as are by the said Specifications and Conditions to be supplied by the Contractor, whether such works, plant, and materials are described or referred to in the said Conditions, Specifications, Drawings, or Plans, or are extra or in addition thereto, within the time mentioned in the said Conditions, subject, however, to the provisions contained in the said Conditions for extension of time.

2. That the Queen shall and will, free of cost to the Contractors, provide and deliver to the Contractors, at the ship's side at Picton or Blenheim, at the option of the Government, the iron rails and fastenings required for the permanent way and the rolling stock respectively mentioned in the Specification.

3. That the Queen will pay the Contractors for the construction and execution of the said works, and the maintenance thereof, for the period of three months

from the completion of the works, and for the supply of all such plant and materials as the Contractors are to supply under the provisions of this contract as aforesaid, the sum of seventy-six thousand five hundred and thirty-four pounds (exclusive of the supply of such plant and materials as by the said Specifications and Conditions it is provided the Queen or the Government of New Zealand shall supply, and subject to the provisions contained in the Conditions and Specifications for increase and decrease in case of extras or deductions, and to the provisions contained in the said Specifications or Conditions for extra payment to the Contractors by percentages on the cost of such works as, by such Specifications it is provided, the Contractors are to receive payment by way of percentage on the cost thereof).

4. The Queen shall and will make payments to the Contractors upon account of the said sums herein agreed to be paid at the rate and times, and upon the terms and conditions mentioned in the said Specifications and Conditions.

5. In the event of the said works and buildings being damaged or destroyed by floods while the same are in the hands of the Contractor or unfinished, if the cost incurred by the Contractor in repairing or restoring the same exceed the sum of two thousand pounds, one moiety of such excess shall be borne by the Contractor and the other moiety shall be paid to the Contractor by the Queen, the amount thereof to be settled by arbitration in the manner in the said Conditions provided, in case the Contractors and the Engineer do not agree as to the amount (if any) to be paid to the Contractors by the Queen in respect of such damage or restoration; but if the cost incurred by the Contractors in and about such repairs and restoration do not exceed the sum of two thousand pounds, the whole of such cost shall be borne by the Contractors.

Lastly. The parties hereto shall and will each respectively perform, observe, and fulfil all and singular the conditions and stipulations expressed or contained in the said General Conditions and Specifications, and which thereby it is provided shall be performed, observed, or fulfilled by such parties respectively.

In witness whereof the Seal of the Colony has hereunto been affixed,  
and the said Contractors have hereunto set their hands and seals,  
the day and year first above written.

Sealed with the Seal of the Colony,  
and signed by the Governor, in  
the presence of  
WILLIAM FOX.  
J. D. ORMOND.

G. F. BOWEN,  
Governor.

Signed, sealed, and delivered by the  
above-named Alexander Brogden,  
Henry Brogden, and James  
Brogden, in the presence of  
WM. THOS. LOCKE TRAVERS,  
Solicitor, Wellington.

ALEXANDER BROGDEN,  
By his Attorney, James Brogden.  
(Seal.)  
HENRY BROGDEN,  
By his Attorney, James Brogden.  
(Seal.)  
JAMES BROGDEN.  
(Seal.)

(Seal of the Colony.)

Approved in Council, August 10th, 1872.

FORSTER GORING,  
Clerk of the Executive Council.

GENERAL CONDITIONS FOR THE PICTON AND BLENHEIM  
RAILWAY.

INTERPRETATION CLAUSE.

1. In these Conditions the words "Minister for Public Works" shall mean the Minister for Public Works appointed under "The Immigration and Public Works Act, 1870," or any Minister or person for the time being authorized by the Governor to act for such Minister in respect of the special work contracted for; the word "Engineer" shall mean the Engineer for the time being who shall have principal charge of the works on behalf of the Government; and the word "Contractor" shall mean "Contractors" when two or more persons tender or contract jointly for the work; and the word "month" shall mean "calendar month."

WORKS, &c., TO BE ACCORDING TO DRAWINGS AND SPECIFICATIONS, AND TO  
THE SATISFACTION OF THE ENGINEER.

2. All the materials used are to be the best of their respective kinds, and all works of every description throughout are, subject to the provisions hereinafter contained, to be executed conformably to the several drawings and details prepared or that may be prepared for that purpose, and herein referred to, in the strictest accordance with the provisions of the specifications, and in the best, most substantial, and workmanlike manner, and to the satisfaction of the Engineer; and should any work not be so executed, it shall be immediately altered and amended at the cost of the Contractor.

PLANS, &c.

3. A copy of the plans and drawings, with the specifications, shall be furnished to the Contractor by the Engineer, and the plans and drawings referred to in the specification, and the specification, shall be taken together to explain each other; and if, in the execution of the works, it shall be found that anything has been omitted or mis-stated either in the drawings or specification, which is necessary for the proper performance and completion of any part or parts of the works, the Contractor shall at his own cost and expense execute the same, and provide whatever may be requisite for so doing, provided the extra cost thereof shall not exceed the sum of £200 in each particular case. Any written dimensions on the drawings shall be taken in all cases in preference to measurements by the scale attached, and anything contained either in the drawings or specification shall be equally binding on the Contractor as if it were contained in both; and in case the written or figured dimensions on the drawings shall disagree with the scaling, or in case there shall be any discrepancy between the drawings and specification, or any ambiguity in them, such occurrence shall not invalidate the contract, but the same shall be rectified by the Engineer if thought requisite, and the Contractor shall not be entitled to make any claim or demand for compensation or damages on account of such discrepancy or ambiguity. If neither the drawings nor the specification contain any notice of minor parts, the intention to include which is nevertheless clearly to be inferred, and which parts are obviously necessary for the workmanlike completion and stability of the work, all such parts are to be made and executed by the Contractor without extra charge, and are to be deemed by him as included in the sum at which he contracts for the works.

EXTRA WORKS AND ALTERATION OF WORKS.

4. The Contractor is to make and execute, in the like manner as aforesaid, and with the like materials as aforesaid, any additions, deviations, or alterations to, from, or in the works, which the Engineer may from time to time, previously

to the commencement or during the progress of the works, by an order in writing, require, at and for such prices or rates as shall be agreed upon in writing between the Contractor and the Minister for Public Works. In case of non-agreement as to price, the work shall be done by the Contractor as required by the Engineer, and the price thereof shall be settled by arbitration as hereinafter provided, and shall when so ascertained be added to and thenceforth deemed to be part of the contract price for the works to be executed under this contract; but no additions, deviations, or alterations whatever, which shall be claimed by the Contractor, will be admitted or recognized under any circumstances, or will be allowed or paid for, which shall be done or executed without or contrary to any previous order from the Engineer in writing as aforesaid: Provided always that no addition, deviation, or alteration from the plans and specifications to be ordered by the Engineer as aforesaid shall involve an increased expenditure in connection with the works or any part thereof, unless distinctly authorized by writing under the hand of the Minister for Public Works, who, before authorizing any such deviation, shall obtain from the Engineer an estimate of the increased expenditure arising therefrom: Provided also that in all cases where such deviation, addition, or alteration as last aforesaid, from the plans and specifications, shall involve an outlay exceeding £500, the consent of the Governor in Council shall first be obtained. And in all cases it shall be the duty of the Contractor to satisfy himself that such addition, deviation, or alteration (if any) has been duly authorized in the manner required by "The Immigration and Public Works Act, 1870," and also, that to any such outlay as aforesaid, requiring the consent of the Governor in Council as aforesaid, such consent has been obtained, as required by the said Act.

#### OMISSION OF PORTIONS OF WORKS.

5. To the Minister for Public Works there is reserved the right from time to time of requiring the omission of any particular portion or portions of works described in the specification or shown on the drawings, and of deducting the value thereof from the amount of the contract, such value to be agreed upon between the Minister for Public Works and the Contractor, or in case of difference to be settled by arbitration as hereinafter provided; but the Contractor shall be entitled to be paid a sum of ten per cent. on the agreed or ascertained value of the work omitted; such sums for omissions to be paid on the completion of the contract.

#### MATERIALS, LABOUR, &c.

6. The Contractor shall provide, at his own costs and charges, all materials, labour, tools, plant, tackle, machinery, scaffolding, waggons, cordage, cartage, stores, planking, centres, coffer dams, diving bells, staging, diving dresses, and everything necessary for the proper execution and completion of the several works, and centres must not be struck without the written authority of the Engineer. The Contractor is also to provide, at his cost, for keeping all the trenches and foundations free from water, and for preventing all slips of ground into the trenches. All material and all prepared work brought upon the ground of the works for use therein is to be considered the property of the Queen, and the Contractor shall not take away any such material or work without the written authority of the Engineer, unless the same shall be required for the purposes of other works under this contract. The Contractor will be required to set out accurately, at his own expense, all the works comprised in this contract, agreeably to the drawings and specifications, and shall be held responsible for their being so set out and executed accordingly.

#### REMOVAL OF IMPROPER MATERIALS.

7. It shall be lawful for the Engineer to order the removal from the works of any materials, whether fixed or not, which may appear to him to be of an inferior or improper description, and the Contractor shall remove the same within twenty-four hours after a written notice in that behalf given to him by the Engineer; and in case of neglect or refusal to remove the same according to such notice, the Engineer shall have power to remove the same at the cost of the Contractor.

CONTRACTOR TO BE REPRESENTED.

8. The Contractor at all times during the progress of the works, when he is not personally superintending them, must have a responsible agent or overseer stationed on them, to receive instructions from the Engineer, and to represent him for all the purposes of this contract.

PROGRESS OF WORKS.

9. If the Contractor shall, in the opinion of the Engineer, fail to make such progress with the works as the Engineer shall deem sufficient to insure their completion within the specified time, or if the Contractor shall use or employ bad or insufficient materials, or execute any work in an imperfect manner, and shall fail or neglect to rectify any such cause of complaint for fourteen days after being thereunto required in writing by the Engineer, or if the Contractor shall, in the judgment of the Engineer, commit a wilful breach of his contract, then, and in any of such cases, it shall be lawful for the Minister for Public Works, by any instrument in writing under his hand delivered to the Contractor, or to his representative on the works, or left at the Contractor's usual or last known place of abode or business, absolutely to determine this contract, and from and after the delivery of the said instrument as aforesaid, the contract shall be absolutely determined; and in the event of such determination happening, then it shall be lawful for the said Minister, after having delivered such instrument to the Contractor as aforesaid, to take the works out of the Contractor's possession, and at the option of such Minister either to carry the works on under the Engineer or by another Contractor, and that either after advertising for Contractors or without doing so, as he shall think fit; and all the materials, implements, and plant then upon or used in connection with the works may be used in and applied for the purpose of completing the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages, together with the net proceeds realized by the sale of the then residue of such materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

CONTRACTOR NOT TO SUBLET WORKS TO PERSONS PREVIOUSLY OBJECTED TO—  
BANKRUPTCY, INSOLVENCY, OR DEATH.

13. The Contractor shall not sublet any portion of the works to any person who shall have been previously objected to by the Engineer by notice in writing to the Contractor. If the Contractor become bankrupt or insolvent, or shall make an assignment of his estate for the benefit of his creditors, or shall die before the final completion of the contract, then it shall be lawful for the Minister for Public Works, on behalf of the Queen, summarily, and of his own authority, and without any process of law for that purpose, to take possession of the works, and to take them out of the hands of the Contractor, or of his executors, or administrators, or of the assignees or trustees of his estate, and to employ persons for

the execution and completion of the same, and that either after advertising for contractors or without doing so, as he shall think fit; and all the then remaining materials, implements, and plant aforesaid may be used in and applied for the purposes of the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages aforesaid, together with the value of the remaining materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid; and in the case of bankruptcy or insolvency, then Her Majesty the Queen shall rank as a creditor to the amount of such surplus. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

#### LIABILITIES OF CONTRACTOR.

14. The exercise by the Minister for Public Works, or Engineer, of any of their respective powers shall not relieve the Contractor from any liability to which he may be subject for any breach of the contract.

#### TIME OF COMPLETION.

15. Subject as herein provided, the Contractor shall complete the whole of the works of this contract on or before the first day of August, one thousand eight hundred and seventy-four, failing which the Minister for Public Works shall be entitled to deduct from the final balance due to the Contractor a sum calculated at the rate of Three pounds per cent. per annum on all moneys which shall have been paid to the Contractor under this contract, computed from the date on which the work ought to have been completed under this contract up to the date of the completion of the work: Provided that if the Minister for Public Works shall have taken over as completed any portion of the work, the cost of that portion shall not be included in the calculation last aforesaid. But in the event of the Contractor being prevented by earthquake, tempest, flood or otherwise by the act of God or by the act of the Queen's enemies, rebellion, restraint of princes, or otherwise by anything in the nature of *vis major*, or by reason of any strike amongst the workmen engaged upon the works, or by reason of any alterations, deviations, or additions, or extra works being required, or in case of any delay in furnishing any material to be supplied to the Contractor by the Governor, the Engineer shall allow such an extension of time as he shall think adequate for such enforced delay, or for such alterations, deviations, additions, or extra work; and at the expiration of the time so allowed, the deductions or sets-off for delay shall come into operation.

#### SUSPENSION OF WORKS.

16. The Contractor, on receiving a written notice from the Engineer, shall suspend, or stop, the whole or any portion of the works as may be directed, and the Governor, on behalf of the Queen, shall make good to the Contractor any loss or damage he may sustain through such suspension or stoppage, to be ascertained,



in case of non-agreement between the Contractor and the Minister, by arbitration, as hereinafter mentioned; and the Minister for Public Works shall in no case be bound to give the Contractor possession of the ground or work until thirty days after the signature of the contract by the Contractor; but a commensurate extension of time for completing the works will be allowed to the Contractor, such extension of time to be at the discretion of and to be decided by the Engineer.

DAMAGES TO BE MADE GOOD, &c.

17. The Contractor shall also provide for effectually securing and covering the several walls and works from the weather, as occasion may require, or as the Engineer may direct; and if any damage or loss should happen to any of the works, plant, or materials—whether from fire, theft, or weather, force of waves, or from any other cause—while the works and buildings are unfinished or remain in possession of the Contractor, the Contractor must properly and immediately repair and make good the same at his own expense, and to the satisfaction of the Engineer; unless it can be shown that the damage arises from insufficient or imperfect designs, when the Contractor will not be held responsible, and, in case of dispute, the matter shall be settled by arbitration, as hereinafter provided.

TRESPASS.

18. The Contractor shall not enter upon any lands outside the line of fences for the construction of the works, or for any purpose whatever in connection with this contract, without the consent of the occupier or owner, except at his own cost and risk, and shall not, without the consent of the Engineer, remove any trees or buildings within the line of the Railway fences, nor shall he open or throw down any part of a fence without making sufficient provision, by temporary fences, to be erected and maintained at his cost, for keeping cattle, sheep, or other stock from straying from or into any enclosure affected thereby; and any legal process causing costs or damage to the Government for any trespass incurred by the act or negligence of the Contractor or his workmen, shall be deducted from the contract price, and be taken as payment made on account of his contract.

MAINTENANCE OF WORKS.

19. The Contractor shall be bound to keep and maintain in good and sufficient repair the whole works executed under the contract, and shall provide all labour, materials, &c., necessary for such maintenance for a period of months from and after the time when all the works under the contract have been fully completed; and the Contractor shall, on the expiry of the said period of maintenance, be bound to deliver up the whole works in good and sufficient condition, and to the satisfaction of the Engineer. The Contractor shall also be liable for any accident, damage, or injury whatsoever to the public or any private person which may be caused by his operations during the progress of the works, or during their maintenance. He shall also maintain all night-lights and temporary footpaths required by any Municipal or other authorities, or for the safety of the public, and shall make all necessary arrangements, by siding or otherwise, as required by the Engineer, to prevent stoppage of public traffic.

LAND.

20. The Minister for Public Works will, free of all expense, put the Contractor in possession of all land required for the permanent works of the Railway, including land required for side-cutting, ballasting, spoil banks and road approaches, road diversions, and slips, and also from time to time, as occasion may require, but at the cost of the Contractor and so far only as the Parliamentary powers possessed by the Governor or the Minister for Public Works will extend to enable them so to do, of all such land as may be necessary for temporary purposes in connection with the works.

21. The Minister for Public Works shall, within thirty days after the signing of the contract by the Contractor, put the Contractor in possession of such parts of the land for the permanent works as may be necessary for the commencement thereof, and will from time to time, after fifteen days' notice in that behalf shall

have been given by the Contractor to the Engineer, put the Contractor in possession of all such other parts of the lands required for the permanent works as may be necessary for the immediate prosecution thereof.

#### DELAY IN GIVING POSSESSION OF LAND.

22. If any delay shall take place in giving to the Contractor the possession of any land required for the permanent works as aforesaid, such delay shall not be deemed to be a breach of the contract, but the Contractor shall be entitled to such reasonable extension of time for the completion of the works as shall be fixed by the Engineer, or, in case of dispute, by arbitration, as hereinafter provided.

#### POWER TO REQUIRE DISMISSAL OF ANY WORKMAN.

23. The Engineer may require the dismissal within twenty-four hours by the Contractor of any agent, overseer, foreman, workman, or other person employed by him on the works, for incompetency or misconduct, and any man so dismissed shall not be again employed upon the works.

#### TRUCK SYSTEM NOT ALLOWED.

24. The workmen, tradesmen, and labourers of every class employed on the works to which these Conditions refer, shall be paid their wages in full in money of the current coin of the Colony, and no ticket or other system of payment by provisions, liquors, or goods will on any pretence be allowed, nor shall the Contractor or any person or persons employed by him, or in any way connected with him, establish any shop for the supply of liquors, provisions, or goods, nor shall the Contractor oblige his workmen to take provisions, liquors, or goods of any kind from any person in particular. The workmen of every class shall be paid on the works if it be possible, or in some building adjoining, and in no case shall they be paid at a public-house, or other place where liquors or refreshments are sold.

#### PAYMENTS.

25. Payments will be made monthly, for each calendar month, as the works proceed, on the certificate in writing of the Engineer, at a rate not exceeding 90 per cent. on the value of the work actually done, as estimated by the Engineer, having due regard in such estimate to the actual value thereof, and at a rate not exceeding 50 per cent. on the value of such plant and materials on the ground as may be approved by the Engineer as fit and necessary for the work, as estimated by the Engineer, having due regard in such estimate to the actual value thereof; such certificates for work done, and materials and plant supplied, in each calendar month, to be delivered to the Contractor within fourteen days after the termination of such month, and the balance, less 5 per cent., together with the amount deposited as cash security, if any, in fourteen (14) days, or as nearly as may be, after the Engineer shall have certified under his hand that the works have been finally and satisfactorily completed, and that such balance, together with the cash security, is due to the Contractor. The said 5 per cent. will be retained for three months to insure the fulfilment of clause 19 of these Conditions, and from which sums may be deducted the costs of any repairs or defects, failing the Contractor executing the same: Provided always that no sum or sums of money shall be considered to be due or owing to the Contractor, nor shall the Contractor make any claim for or on account of any work executed or maintained by him, or for or on account of plant or materials supplied by him, unless such certificate as aforesaid shall have been given by the Engineer as aforesaid; nor shall any sum or sums of money so certified be considered to be made payable to the Contractor until the expiration of fourteen days after such certificate shall have been presented to the Minister for Public Works; nor shall any omission to pay the amount of such certificate at the time the same shall be held payable be deemed or held to be a breach of or to vitiate the contract, but in case of such omission the Contractor shall be entitled to interest on the amount certified for, at the rate of ten pounds per centum per annum, for such time as such omission shall continue.

NEGLECT TO CERTIFY.

26. In case the Engineer shall neglect or refuse to certify the amount due to the Contractor in respect of the work, or plant or materials, in manner and within the times mentioned in the foregoing condition, and shall continue such neglect or refusal for a period of fourteen days succeeding the fourteenth day after the end of the month in which the work was done, or the plant or material supplied, as the case may be, the Contractor shall be entitled to measure and value the same, having due regard in his estimate to the actual value thereof, and the measure and value so estimated by the Contractor shall be temporarily accepted by the Governor so far as regards the progress payment to be made to the Contractor in respect thereof under the foregoing condition, and the payment provided by that condition shall be made accordingly, with interest thereon, at the rate of Ten pounds per centum per annum, during the period of delay occasioned by the neglect or refusal of the Engineer: Provided always that in all cases in which a certificate shall, within the period or further period hereinbefore provided, as the case may be, have actually been delivered to the Contractor, such certificate shall, for the purpose of the progress payment to be made thereunder, be conclusive; and in case of any dispute between the Contractor and the Engineer as to the estimate therein made of value of work done, or plant or materials provided, as the case may be, of which dispute notice shall have been given by the Contractor to the Minister for Public Works within fourteen days after the delivery of the certificate to the Contractor, such dispute shall be referred to arbitration as hereinafter mentioned.

PROGRESS PAYMENTS WITHOUT PREJUDICE, &c.

27. No certificate given to the Contractor for the purpose of any progress payments shall prevent the Engineer, at any future time before the termination of the contract, from rejecting all unsound materials and improper workmanship discovered subsequently to the giving of the last previous certificate; and notwithstanding the giving of any certificate that portions or the whole of the works have been satisfactorily performed, the Engineer may require the Contractor to remove and amend, at any future time previously to the final payment on account of the construction or maintenance of the works, any work that may be found not to be performed in accordance with the contract, and the Contractor must remove and amend, at his own cost, all such work when so required, notwithstanding any approval made or given by the Assistant Engineer or Inspector. The Minister for Public Works shall have power, on the report of the Engineer that the work approved of as aforesaid is not in accordance with the contract, to deduct from any moneys that may be due or that may become due to the Contractor the whole amount that has been paid on account of such work.

If, in the opinion of the Minister for Public Works, further inquiry is desirable or necessary before any certificate is paid, the Minister for Public Works shall have power to suspend the payment of all or any part of the amount mentioned in any such certificate for a period not exceeding one month from the date at which, in the ordinary course, the money would have been paid; and in such case, on payment of the amount payable, the Contractor shall be entitled to receive interest at the rate of Ten pounds per centum per annum during such additional delay.

STAMPS, LICENSE FEES, &c.

28. The Contractor shall bear and pay all costs, charges, and expenses of preparing, executing, and completing this contract, and all duty stamps, licenses, Building Surveyor's fees, or other charges or fees whatsoever lawfully demanded by the Municipal or other authorities.

CUSTOMS AND WHARF DUTIES, &c.

29. In the event of the Contractors being compelled to pay any Customs duties or wharf dues or fees on any goods imported into New Zealand by them for the purposes of the said works, or transhipped or carried by them from any port or place in New Zealand to any other place in New Zealand, the Queen shall

and will repay the same to the Contractors, after one month's notice in writing by the Contractor to the Minister demanding payment thereof and giving details of such payment, and the production of vouchers or other proof of such payment.

#### ARBITRATION.

30. Should any dispute arise between the Contractor and the Engineer, or between the Contractor and the Minister for Public Works or the Government, relative to the force and intent and meaning of the specifications, drawings, or conditions, or to the mode of carrying on the works, or the nature or quality of materials used or supplied to be used, or workmanship of work done, or as to the maintenance of the works, or as to the expense of additional works, or of alterations or deviations from the specifications or plans, or as to any other matter connected with the execution of the works, or with the contract, specifications, drawings, or conditions, or as to any matter which by this contract it is expressly provided is to be settled, ascertained, or determined by arbitration, such dispute shall be referred in writing to the sole determination, arbitrament, and award of the Judge of the Supreme Court assigned to that Judicial District of the Supreme Court within which the works relative to which the dispute shall have arisen have been or are to be executed, whose award shall be final, binding, and conclusive on all parties: Provided, however, that before any such dispute as aforesaid shall be so referred, the Contractor shall give to the Minister for Public Works one calendar month's notice in writing of such dispute, and of the matter and cause thereof, and in such notice the Contractor's claim shall be explicitly stated; and if such claim be for pecuniary compensation, the amount thereof shall also be stated.

JOHN CARRUTHERS.

JOHN BROGDEN AND SONS.

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## SPECIFICATION OF THE MANNER OF CONSTRUCTING THE PICTON AND BLENHEIM RAILWAY.

### GENERAL DESCRIPTION.

Description.

1. The line of Railway included under the title "Picton and Blenheim Railway," and to which this specification applies, begins at a point in the Town of Picton and terminates at a point on the Northern Bank of the Opawa River, as delineated on the accompanying plans and sections; the total length of the contract being seventeen miles ten chains or thereby, with an addition of one mile of sidings.

### DRAWINGS.

Drawings.

2. The drawings, including general plans and longitudinal sections, as shown on list A, accompany this Specification. These show the character of the works to be executed; further drawings of details will be issued from time to time as may be necessary.

The general plan is drawn to a scale of three chains to an inch, and shows the course of the Railway, the centre line of which has been staked out on the ground, and is represented on the general plan by a red line.

The road and stream diversions are shown on the general plan.

The longitudinal section is drawn to a horizontal scale of three chains to the inch, and to a vertical scale of thirty feet to the inch. It represents the natural profile of the ground along the centre line of the Railway. The red line shows the level of the bottom of the ballast. On the longitudinal section are shown the positions and sizes of the culverts and bridges described in this Specification.

### ALIGNMENT OF STRUCTURES.

Alignment.

3. In the construction of bridges, culverts, road crossings, and generally, it is to be understood that they are to intersect the line of Railway at such angle or curve as may be necessary and approved in each case, although they may be

shown on the drawings straight and at right angles ; and in the interpretation of the drawings and schedules, and of this Specification, it shall be distinctly understood that all works or materials necessary to the due and workmanlike completion of every erection are to be provided, whether specially described or not.

CONTRACTOR TO PROVIDE LABOUR, PLANT, AND MATERIALS.

4. The Contractor is to provide all labour, tools, implements, plant, and materials, and is well and substantially to construct and complete the Railway in accordance with the plans and specifications, and to deliver the same complete, and is to maintain and keep the said Railway, and all works connected therewith, in perfect order and repair for the space of three months from the delivery of the same to the Government. Contractor to provide labour, &c., &c.

The said Railway shall be made in accordance with this Specification, and with the plans and sections herein referred to, or with such modifications of the plans and sections as the Engineer shall order, provided such modifications shall not increase the cost of the work.

FELLING, CLEARING, AND GRUBBING.

5. The whole of the timber within one chain and a half of the centre line is to be felled. Of this extent the central chain is to be cleared by removing all logs and underbrush half a chain from the centre line, and to a greater distance where the formation requires it. Throughout all cuttings and along formations on the level, all stumps and roots are to be grubbed out entirely and removed, so as to leave no loose timber whatever, and no stumps within two feet of formation level along centre or within one foot of the surface in the slopes. Felling, &c.

The Contractor will be permitted to apply to his own use the timber which he has felled for the purpose of clearing the line.

FENCING.

6. Two miles of the line are to be fenced on both sides ; and wherever present fences are disturbed or interfered with, they are to be made good at the expense of the Contractor. At all crossings of roads, and other places where cattle stops are used, fences are to be completed across the line up to the cattle stops. Fencing.

The fencing is to consist of post and four rails, the posts to be 6 feet 6 inches long, entirely of heart of black birch, to be sunk eighteen inches in the ground, and securely rammed ; the rails to be split regularly from the tree, to be properly bevelled, free from winding, and to pass completely through the posts one above the other. The whole of the fencing to be of full dimensions and thoroughly substantial—eight panels to go to one chain.

EARTHWORKS.

7. All flax, scrub, rushes, or Maori-heads growing on the line of the Railway, shall be cut down to the full width between the outside of the slopes. Clearing scrub, &c.

No public or private road that crosses or intersects the Railway or works thereof, shall be obstructed by excavation or otherwise, until the Contractor shall have provided such temporary roads as may be necessary for the traffic. Roads not to be obstructed.

The cuttings are to have a base at formation level and slopes as shown on longitudinal section, and are to be made in accordance with plan and section attached ; but should the Engineer require any of the cuttings or banks to be made with different slopes or bases from those shown on longitudinal section, the difference in cost shall be added to or deducted from the contract sum. Such alteration to be ordered in writing. Cuttings.

A drain is to be cut along the bottom of slopes of cuttings, except in rock ; this drain to average 5 cubic feet per lineal yard. Catchwater drains are to be dug above the top of one slope of cuttings, at a distance of from a quarter of a chain to a chain from the top of slopes ; these ditches are to average 5 cubic feet per lineal yard, and are to be true and regular to the inclinations directed ; no stumps or roots to be left in them. Drains.

The embankments must be carried forward uniformly of the proper shape, with such an addition to the heights and widths as a due allowance for the shrink- Embankments.

ing of the material requires, so as to avoid as far as practicable the necessity for making subsequent additions either to the heights or widths of the embankments, to bring them to the correct levels and dimensions.

Whenever the foundation of an embankment is on sloping ground, the Contractor, if required, must at his own expense cut steps and benches under the base of the embankment.

The top of embankment at formation level is to be 10 feet wide; the slopes to be trimmed off to an inclination of one and a half horizontal to one vertical, and to be maintained full and true until the completion of the contract.

The Contractor shall, unless otherwise directed by the Engineer, take care not in any way to interfere with or divert the existing drainage areas, and shall leave such stops or stanks in the side cuttings, and take such other precautions, as the Engineer shall think necessary for that purpose.

Behind and around culverts and abutments of bridges, the embankments shall be wheeled in and carefully rammed.

#### RETAINING WALLS.

Retaining walls.

8. At 1 mile 58.30 chains, and at 11 miles 75.50 chains retaining walls are to be built, to consist of 3 feet thickness of good rubble stone laid in lime mortar. It is to be substantially and well built, and in a manner specially directed by the Engineer.

#### DITCHES AND DRAIN.

Ditches and drains.

9. When the line crosses swamps of a peaty nature, catchwater drains, for a length not exceeding 24 chains in all, are to be cut on the upper side of the line obliquely across the valleys, so as to tap the surface water. These ditches shall not exceed, on an average, one and one-third cubic yard per lineal yard, and are to be made at the commencement of the work, and cleaned out from time to time as may be ordered.

#### STREAM DIVERSIONS.

Stream diversions.

10. All stream diversions are to be grubbed out as described for cuttings, and excavated with regular slopes and inclinations, as will be set out.

The stream at 1 mile 75 chains is to be intercepted as high up as may be necessary, and carried past cutting No. 21 in a ditch contouring the hill. This ditch to average 6 feet wide at top, 2 feet wide at bottom, and 2 feet 6 inches deep: to have a regular moderate fall.

#### ROAD ALTERATIONS.

Road alterations.

11. At the places shown on the plan and section, and wherever necessary, the present roads are to be diverted.

All such diversions and road approaches to the level crossings are to be completed in a convenient, substantial, and proper manner, with the necessary drains, water tables, and side slopes. Such approaches and road diversions are to be formed with an inclination not steeper than 1 in 30 for public roads, and 1 in 20 for private roads, except where the present inclination exceeds those rates, in which case the inclination of the new road shall not exceed that of the present road, unless, in the opinion of the Engineer, a steeper is unavoidable.

Metalling.

Public roads and approaches to first-class crossings are to be metalled with coarse river gravel or approved hard stone, laid on and spread as directed, so as to average 22 cubic yards per lineal chain of road. Private roads are to be metalled with coarse river gravel or broken stone of approved quality, laid on and spread as directed, so as to average 9 cubic yards per lineal chain. The whole of the metal is to be broken to pass through a two and a half inch ring.

Level crossings.

Ten first-class, and nine second-class, crossings, with two cattle-stops to each crossing, as per Drawing No. 5, shall be constructed at public and private roads where directed. They shall be carefully placed as to line and level, and finished in strict conformity with the drawing and the notes thereon. Each level crossing shall be metalled for a length of 66 feet on each side of the centre line, as above specified for the roads, and tile or timber box drains shall be put in the formation ditches where necessary for the drainage of line or road.

Cattle stops, as shown in Drawing No. 5, are to be put in where directed, not Cattle stops. exceeding thirty-four in number, besides those at level crossings.

MATERIALS.

12. Except where otherwise specified, all the materials used under this contract shall be of the following kinds and descriptions :—

All masonry, except archwork, coping, and string courses, to be of rubble Masonry. laid in cement mortar. Bond stones, 2 feet long, to be put in every square yard of both face and back of work. All spalls are to be set in mortar, and not laid dry, and afterwards grouted. Facework must have no stone containing less than one-quarter of a cubic foot. The work shall be grouted every foot in height.

All timber shall be of black birch, totara, or other timber specially approved; Timber. it shall be heart-wood, except as shown on Drawing No. 9, and shall be straight and sound, free from shakes, large knots, and other imperfections.

The whole of the straps and bolts shall be made of B.B. crown iron, or other Malleable iron. iron of equal quality, of the dimensions shown; the whole to be finished and fixed in a workmanlike manner.

Bolts shown or specified shall have a square head, of which the thickness Bolts and nuts. shall be equal to the diameter of the bolt, and the width twice the diameter of the bolt. They are to be tapped with a good clean thread, and shall have a nut equal in size to the head of the bolt, and shall be provided with one or more washers 3 inches in diameter.

BRIDGES AND TIMBER OPENINGS.

13. Bridges, as per detail drawings, shall be erected where shown on longi- Bridges. tudinal section.

All joints, abutments, shoulders, and sides of tenons and scarfs to be worked Joints. perfectly true, and to fit accurately, and to be covered with red lead before being put together. Tenons generally to be 5 inches long, and to be draw-bored to receive trenails of hard wood made with hollow auger or trenailing machine. All trenails to be well seasoned and kept dry, and to be one-sixteenth of an inch more in diameter than the hole bored for them, and to be covered with red lead before being driven. All capsills and mudsills to be morticed on to posts or piles. All string pieces to be accurately notched down to capsills or floor beams by notching  $\frac{3}{4}$  inch from each, to be scribed and accurately fitted. Diagonal braces, where placed inside the panel, are to be notched together as described for string pieces.

All piles are to be rung before driving with a three inch by  $\frac{3}{4}$  inch round Piling. hoop. The piles are to be shod with a substantial iron shoe weighing not less than 30 lbs., securely fixed; the point of the pile to be cut true, and to be squared off at the end to 3 inches square, and to have true bearing against the shoe. No pile-driving is to be commenced at any bridge, opening, or other work without giving six days' notice previously to the Engineer in charge of the works.

In erecting the timber opening shown on drawings with mudsills and plankings, piling is to be substituted where, in the opinion of the Engineer, the nature of the foundation requires it.

The Contractor shall provide all proper rods and gauges for setting out and Contractor to supply rods and gauges. testing the dimensions of bridges and timber openings that the Engineer may require.

CULVERTS AND DRAINS.

14. Timber culverts shall be erected where shown on longitudinal section. Timber culverts.

The frames shall be accurately mortised, and tenoned, and pinned; the plank- ing to be securely spiked on to the frames, the whole of the timber to be heart of black birch or totara; the outer side of the planking need not be reduced to the dimensions given, but there must in every case be the full thickness specified of heart timber; the edges of the planking must fit truly for the whole thickness, and the planks must extend over at least two panels, and break joints as much as possible.

Sufficient catchwater and out-fall drains are to be dug at culverts, and all Masonry culverts. stumps and roots occurring in the line of ditch to be taken out.

## BALLASTING AND PERMANENT WAY.

- Ballast.** 15. The ballast is to consist of shingle, broken stones, or sand, previously approved of, and is to amount in quantity to 570 cubic yards per mile. In all cases the embankments and cuttings are to be cleared from mud, and brought to an uniform formation level before the ballast is laid on.
- Permanent way.** The permanent way is to consist of a single line of rails laid to a gauge of 3 feet 6 inches, and sidings provided and laid where directed, amounting in all to one mile of sidings.
- Gauges.** The Contractor is to provide and have upon the ground at all points where the work is proceeding a sufficient supply of all such templates, tools, gauges, and other implements as are necessary and are usually required in the laying of permanent way, or as may be required by the Engineer.
- Laying of permanent way.** About three thirty-seconds of an inch of space is to be left between the ends of the rails when fixed in place, or such other space as the Engineer may direct, according to the season.
- Bending rails.** For the curves, the rails will require bending. This, as well as the straightening of all bent rails, must be effected by a press, or by striking with wooden hand-beetles on wooden blocks. In all cases, whether of straightening of bent rails or of bending rails to the necessary curves, the rails must be set permanently to the form required before being laid, and no temporary bending, springing, or straightening, either by dragging with a lever and hook, or by any other means of a like character, will on any account be permitted.
- Laying sleepers.** Great care must be taken to lay all the sleepers square to the rails on straights, and as near as may be on curves. Where the line is straight, the rails will be level across the line; but where the line is curved, the rails will be canted, the difference of level between the two rails being such as the Engineer shall order.
- When suitable material for ballast is not found immediately on the line, the sleepers may be laid on formation, being carefully tamped with dry earth. The Contractor will be permitted to run ballast and material trains over the line thus laid at a speed not exceeding six miles an hour, but the ballasting and lifting must be proceeded with with all possible despatch.
- The changes of gradients shall be made by a gradual curve.
- Sleepers.** There are to be 2,050 sleepers per mile, to be spaced as directed; to be all of heart of black birch (*Fagus fusca* or *Fagus Solandri*), or totara. They shall be 7 feet long, and 7 inches by 5 inches. They are to be flattened top and bottom, true and out of wind; but any extra width beyond 7 inches need not be removed. The rail seats are to be accurately adzed to a correct level.
- Rails and fastenings.** The rails will weigh 30 lbs. to the yard; they will be jointed with Ibbotson's patent steel clip-joint, weighing about 12 lbs. each joint, and fastened to the sleepers by six fang-bolts to each rail, and two spikes to each sleeper, where fang-bolts are not used. The rails and fastenings will be delivered to the Contractor at the vessel's side, at Picton or Blenheim, and he shall be responsible for all materials delivered to him.

## USE OF PERMANENT WAY MATERIALS BY CONTRACTOR.

- Use of permanent way materials by Contractor.** 16. Permanent way materials shall not be laid down or employed, without the permission of the Engineer, within 100 yards of the face of any excavation or the end of any embankment, nor used for hauling earthwork before the ballast is laid. When the Contractor shall have complied with the above requirements, he may use the rails and other permanent way materials for the purpose of hauling earthwork or materials on parts of the line.

## SIDINGS.

- Sidings.** 17. The Contractor shall construct at his own cost, at such points as may be indicated by the Engineer, one mile of sidings, including the necessary earthwork, ballast, sleepers, and laying of permanent way, similar to that of the main line, without the points and crossings. He shall also make and construct, wherever required, such station-grounds, buildings, points, crossings, extra sidings, telegraph and other things required for station accommodation, and shall land



and erect such rolling stock as may be furnished by the Government, and shall furnish the Engineer monthly with a detailed statement showing their actual cost, exclusive of all cost of management, properly supported by vouchers or as otherwise directed, and to this cost a sum equal to ten pounds per centum shall be added for Contractor's profits, and this amount shall be in addition to the contract sum.

TELEGRAPH.

18. A single wire telegraph will be constructed and paid for as for station Telegraph accommodation, and the use of it allowed to the Contractor during the construction of the works. During the period of maintenance the Government will transmit, free of charge, all messages sent by the Contractor on the business of the Railway.

USE OF ROLLING STOCK.

19. The Government will furnish the Contractor with such locomotives and rolling stock as they may have on the line, the Contractor to pay the wages of the engine-drivers and stokers, who must be approved by the Engineer, and to furnish fuel, water, oil, grease, waste, &c., at his own expense. The Contractor shall also return such rolling stock as may be lent to him in as good order as when received by him—reasonable tear and wear excepted. In the event of the Government being unable to supply locomotives and rolling stock when needed by the Contractor, an extension of time will be granted for the completion of the contract; such extension of time to be fixed by the Engineer.

MAINTENANCE.

20. During the period of maintenance, the Contractor shall furnish not less than 1,000 cubic yards of ballast per month.

JOHN CARRUTHERS.  
JOHN BROGDEN AND SONS.

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PICTON AND BLENHEIM RAILWAY.

LIST A.

- Drawing No. 1—Waitohi Bridge.  
 „ 2—Bridge over the first crossing of the Tua Marina and Spring Creek Rivers.  
 „ 3—Tua Marina second crossing and Wairau Bridge.  
 „ 4—General Design of Trestles and Culverts.  
 „ 5—Level Crossings and Cattle Stops.  
 „ 6—Banks and Cuttings.  
 „ 8—Plans and Sections, sheets 1 to 18.

JOHN CARRUTHERS.  
JOHN BROGDEN AND SONS.

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## TAIERI CONTRACT OF THE DUNEDIN AND CLUTHA RAILWAY.

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ARTICLES OF AGREEMENT made and entered into this tenth day of August, 1872, between the GOVERNOR of NEW ZEALAND, in the name and on behalf of Her MAJESTY the QUEEN of the one part, and ALEXANDER BROGDEN, HENRY BROGDEN, and JAMES BROGDEN, all of Queen's Square, in the City of Westminster, in England, Railway Contractors (hereinafter referred to as "the Contractors"), of the other part :

Whereas by the sixth section of "The Railways Act, 1871," it is amongst other things enacted that the Governor may, if he think fit, construct and maintain, or cause to be constructed and maintained, under the provisions of "The Immigration and Public Works Act, 1870" (hereinafter referred to as "the said Act"), and "The Immigration and Public Works Act Amendment Act, 1871" (hereinafter referred to as "the said Amending Act"), certain Railways, and amongst others, a Railway from Dunedin, in the Province of Otago, to Clutha, in the said Province (which said Railway is hereinafter referred to as "the Railway herein mentioned") :

And whereas by the said Amending Act it is provided that all Contracts under any Act authorizing the construction of any Railway under the said Act or the said Amending Act, shall be entered into in the name of the Queen, her heirs and successors :

And whereas the Governor of New Zealand, on behalf of the Queen, has agreed with the Contractors for the execution and construction by them of the works described or referred to herein, and in the Specifications, Conditions, Drawings, and Plans hereto annexed or herein referred to, all of which Specifications, Conditions, Drawings, and Plans are signed by the Contractors and John Carruthers, Esquire, the Chief Engineer of the said Colony, on behalf of the Colony: Now, these Presents witness that Her Majesty the Queen, for herself, her heirs and successors (all of whom are hereinafter included in the expression "the Queen"), and, so far as the covenants hereinafter contained are to be performed or observed on her or their parts respectively, doth hereby covenant with the Contractors, their executors, administrators, and assigns (all of whom are hereinafter included in the expression "the Contractors"), and the Contractors and each of them, for themselves and himself, and their respective heirs, executors, administrators and assigns, so far as such covenants hereinafter contained are to be performed or observed on their parts, do and doth hereby covenant with the Queen, her heirs and successors, in manner hereinafter appearing, that is to say—

1. That they, the Contractors, shall and will, in all respects subject to and in accordance with the said Conditions, Specifications, Drawings, and Plans, construct make, complete, and maintain, and do and perform, all the works, and supply all such plant and materials as are by the said Specifications and Conditions to be supplied by the Contractor, whether such works, plant, and materials are described or referred to in the said Conditions, Specifications, Drawings, or Plans, or are extra or in addition thereto, within the time mentioned in the said Conditions, subject, however, to the provisions contained in the said Conditions for extension of time.

2. That the Queen shall and will, free of cost to the Contractors, provide and deliver to the Contractors, in terms of the Specification, the iron rails and fastenings required for the permanent way and the rolling stock respectively mentioned in the Specification.

3. That the Queen will pay the Contractors for the construction and execution of the said works, and the maintenance thereof, for the period of three months

from the completion of the works, and for the supply of all such plant and materials as the Contractors are to supply under the provisions of this contract as aforesaid, the sum of one hundred and forty-three thousand eight hundred and thirty-five pounds (exclusive of the supply of such plant and materials as by the said Specifications and Conditions it is provided the Queen or the Government of New Zealand shall supply, and subject to the provisions contained in the Conditions and Specifications for increase and decrease in case of extras or deductions, and to the provisions contained in the said Specifications or Conditions for extra payment to the Contractors by percentages on the cost of such works as, by such Specifications it is provided, the Contractors are to receive payment by way of percentage on the cost thereof).

4. The Queen shall and will make payments to the Contractors upon account of the said sums herein agreed to be paid at the rate and times, and upon the terms and conditions mentioned in the said Specifications and Conditions.

Lastly. The parties hereto shall and will each respectively perform, observe, and fulfil all and singular the conditions and stipulations expressed or contained in the said General Conditions and Specifications, and which thereby it is provided shall be performed, observed, or fulfilled by such parties respectively.

In witness whereof the Seal of the Colony has hereunto been affixed, and the said Contractors have hereunto set their hands and seals, the day and year first above written.

Sealed with the Seal of the Colony,  
and signed by the Governor, in  
the presence of  
WILLIAM FOX.  
J. D. ORMOND.

G. F. BOWEN,  
Governor.

Signed, sealed, and delivered by the  
above-named Alexander Brogden,  
Henry Brogden, and James  
Brogden, in the presence of  
WM. THOS. LOCKE TRAVERS,  
Solicitor, Wellington.

ALEXANDER BROGDEN,  
By his Attorney, James Brogden.  
(Seal.)

HENRY BROGDEN,  
By his Attorney, James Brogden.  
(Seal.)

JAMES BROGDEN.  
(Seal.)

(Seal of the Colony.)

Approved in Council, August 10th, 1872.

FORSTER GORING,  
Clerk of the Executive Council.

## GENERAL CONDITIONS FOR THE TAIERI CONTRACT OF THE DUNEDIN AND CLUTHA RAILWAY.

### INTERPRETATION CLAUSE.

1. In these Conditions the words "Minister for Public Works" shall mean the Minister for Public Works appointed under "The Immigration and Public Works Act, 1870," or any Minister or person for the time being authorized by the Governor to act for such Minister in respect of the special work contracted for; the word "Engineer" shall mean the Engineer for the time being who shall have principal charge of the works on behalf of the Government; and the word "Contractor" shall mean "Contractors" when two or more persons tender or contract jointly for the work; and the word "month" shall mean "calendar month."

WORKS, &c., TO BE ACCORDING TO DRAWINGS AND SPECIFICATIONS, AND TO  
THE SATISFACTION OF THE ENGINEER.

2. All the materials used are to be the best of their respective kinds, and all works of every description throughout are, subject to the provisions hereinafter contained, to be executed conformably to the several drawings and details prepared or that may be prepared for that purpose, and herein referred to, in the strictest accordance with the provisions of the specifications, and in the best, most substantial, and workmanlike manner, and to the satisfaction of the Engineer; and should any work not be so executed, it shall be immediately altered and amended at the cost of the Contractor.

### PLANS, &c.

3. A copy of the plans and drawings, with the specifications, shall be furnished to the Contractor by the Engineer, and the plans and drawings referred to in the specification, and the specification, shall be taken together to explain each other; and if, in the execution of the works, it shall be found that anything has been omitted or mis-stated either in the drawings or specification, which is necessary for the proper performance and completion of any part or parts of the works, the Contractor shall at his own cost and expense execute the same, and provide whatever may be requisite for so doing, provided the extra cost thereof shall not exceed the sum of £200 in each particular case. Any written dimensions on the drawings shall be taken in all cases in preference to measurements by the scale attached, and anything contained either in the drawings or specification shall be equally binding on the Contractor as if it were contained in both; and in case the written or figured dimensions on the drawings shall disagree with the scaling, or in case there shall be any discrepancy between the drawings and specification, or any ambiguity in them, such occurrence shall not invalidate the contract, but the same shall be rectified by the Engineer if thought requisite, and the Contractor shall not be entitled to make any claim or demand for compensation or damages on account of such discrepancy or ambiguity. If neither the drawings nor the specification contain any notice of minor parts, the intention to include which is nevertheless clearly to be inferred, and which parts are obviously necessary for the workmanlike completion and stability of the work, all such parts are to be made and executed by the Contractor without extra charge, and are to be deemed by him as included in the sum at which he contracts for the works.

### EXTRA WORKS AND ALTERATION OF WORKS.

4. The Contractor is to make and execute, in the like manner as aforesaid, and with the like materials as aforesaid, any additions, deviations, or alterations to, from, or in the works, which the Engineer may from time to time, previously

to the commencement or during the progress of the works, by an order in writing, require, at and for such prices or rates as shall be agreed upon in writing between the Contractor and the Minister for Public Works. In case of non-agreement as to price, the work shall be done by the Contractor as required by the Engineer, and the price thereof shall be settled by arbitration as hereinafter provided, and shall when so ascertained be added to and thenceforth deemed to be part of the contract price for the works to be executed under this contract; but no additions, deviations, or alterations whatever, which shall be claimed by the Contractor, will be admitted or recognized under any circumstances, or will be allowed or paid for, which shall be done or executed without or contrary to any previous order from the Engineer in writing as aforesaid: Provided always that no addition, deviation, or alteration from the plans and specifications to be ordered by the Engineer as aforesaid shall involve an increased expenditure in connection with the works or any part thereof, unless distinctly authorized by writing under the hand of the Minister for Public Works, who, before authorizing any such deviation, shall obtain from the Engineer an estimate of the increased expenditure arising therefrom: Provided also that in all cases where such deviation, addition, or alteration as last aforesaid, from the plans and specifications, shall involve an outlay exceeding £500, the consent of the Governor in Council shall first be obtained. And in all cases it shall be the duty of the Contractor to satisfy himself that such addition, deviation, or alteration (if any) has been duly authorized in the manner required by "The Immigration and Public Works Act, 1870," and also, that to any such outlay as aforesaid, requiring the consent of the Governor in Council as aforesaid, such consent has been obtained, as required by the said Act.

#### OMISSION OF PORTIONS OF WORKS.

5. To the Minister for Public Works there is reserved the right from time to time of requiring the omission of any particular portion or portions of works described in the specification or shown on the drawings, and of deducting the value thereof from the amount of the contract, such value to be agreed upon between the Minister for Public Works and the Contractor, or in case of difference to be settled by arbitration as hereinafter provided; but the Contractor shall be entitled to be paid a sum of ten per cent. on the agreed or ascertained value of the work omitted; such sums for omissions to be paid on the completion of the contract.

#### MATERIALS, LABOUR, &c.

6. The Contractor shall provide, at his own costs and charges, all materials, labour, tools, plant, tackle, machinery, scaffolding, waggons, cordage, cartage, stores, planking, centres, coffer dams, diving bells, staging, diving dresses, and everything necessary for the proper execution and completion of the several works, and centres must not be struck without the written authority of the Engineer. The Contractor is also to provide, at his cost, for keeping all the trenches and foundations free from water, and for preventing all slips of ground into the trenches. All material and all prepared work brought upon the ground of the works for use therein is to be considered the property of the Queen, and the Contractor shall not take away any such material or work without the written authority of the Engineer, unless the same shall be required for the purposes of other works under this contract. The Contractor will be required to set out accurately, at his own expense, all the works comprised in this contract, agreeably to the drawings and specifications, and shall be held responsible for their being so set out and executed accordingly.

#### REMOVAL OF IMPROPER MATERIALS.

7. It shall be lawful for the Engineer to order the removal from the works of any materials, whether fixed or not, which may appear to him to be of an inferior or improper description, and the Contractor shall remove the same within twenty-four hours after a written notice in that behalf given to him by the Engineer; and in case of neglect or refusal to remove the same according to such notice, the Engineer shall have power to remove the same at the cost of the Contractor.

## CONTRACTOR TO BE REPRESENTED.

8. The Contractor at all times during the progress of the works, when he is not personally superintending them, must have a responsible agent or overseer stationed on them, to receive instructions from the Engineer, and to represent him for all the purposes of this contract.

## PROGRESS OF WORKS.

9. If the Contractor shall, in the opinion of the Engineer, fail to make such progress with the works as the Engineer shall deem sufficient to insure their completion within the specified time, or if the Contractor shall use or employ bad or insufficient materials, or execute any work in an imperfect manner, and shall fail or neglect to rectify any such cause of complaint for fourteen days after being thereunto required in writing by the Engineer, or if the Contractor shall, in the judgment of the Engineer, commit a wilful breach of his contract, then, and in any of such cases, it shall be lawful for the Minister for Public Works, by any instrument in writing under his hand delivered to the Contractor, or to his representative on the works, or left at the Contractor's usual or last known place of abode or business, absolutely to determine this contract, and from and after the delivery of the said instrument as aforesaid, the contract shall be absolutely determined; and in the event of such determination happening, then it shall be lawful for the said Minister, after having delivered such instrument to the Contractor as aforesaid, to take the works out of the Contractor's possession, and at the option of such Minister either to carry the works on under the Engineer or by another Contractor, and that either after advertising for Contractors or without doing so, as he shall think fit; and all the materials, implements, and plant then upon or used in connection with the works may be used in and applied for the purpose of completing the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages, together with the net proceeds realized by the sale of the then residue of such materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

CONTRACTOR NOT TO SUBLET WORKS TO PERSONS PREVIOUSLY OBJECTED TO—  
BANKRUPTCY, INSOLVENCY, OR DEATH.

13. The Contractor shall not sublet any portion of the works to any person who shall have been previously objected to by the Engineer by notice in writing to the Contractor. If the Contractor become bankrupt or insolvent, or shall make an assignment of his estate for the benefit of his creditors, or shall die before the final completion of the contract, then it shall be lawful for the Minister for Public Works, on behalf of the Queen, summarily, and of his own authority, and without any process of law for that purpose, to take possession of the works, and to take them out of the hands of the Contractor, or of his executors, or administrators, or of the assignees or trustees of his estate, and to employ persons for

the execution and completion of the same, and that either after advertising for contractors or without doing so, as he shall think fit; and all the then remaining materials, implements, and plant aforesaid may be used in and applied for the purposes of the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages aforesaid, together with the value of the remaining materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid; and in the case of bankruptcy or insolvency, then Her Majesty the Queen shall rank as a creditor to the amount of such surplus. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

#### LIABILITIES OF CONTRACTOR.

14. The exercise by the Minister for Public Works, or Engineer, of any of their respective powers shall not relieve the Contractor from any liability to which he may be subject for any breach of the contract.

#### TIME OF COMPLETION.

15. Subject as herein provided, the Contractor shall complete the whole of the works of this contract on or before the first day of September, one thousand eight hundred and seventy-five, failing which the Minister for Public Works shall be entitled to deduct from the final balance due to the Contractor a sum calculated at the rate of Three pounds per cent. per annum on all moneys which shall have been paid to the Contractor under this contract, computed from the date on which the work ought to have been completed under this contract up to the date of the completion of the work: Provided that if the Minister for Public Works shall have taken over as completed any portion of the work, the cost of that portion shall not be included in the calculation last aforesaid. But in the event of the Contractor being prevented by earthquake, tempest, flood or otherwise by the act of God or by the act of the Queen's enemies, rebellion, restraint of princes, or otherwise by anything in the nature of *vis major*, or by reason of any strike amongst the workmen engaged upon the works, or by reason of any alterations, deviations, or additions, or extra works being required, or in case of any delay in furnishing any material to be supplied to the Contractor by the Governor, the Engineer shall allow such an extension of time as he shall think adequate for such enforced delay, or for such alterations, deviations, additions, or extra work; and at the expiration of the time so allowed, the deductions or sets-off for delay shall come into operation.

#### SUSPENSION OF WORKS.

16. The Contractor, on receiving a written notice from the Engineer, shall suspend, or stop, the whole or any portion of the works as may be directed, and the Governor, on behalf of the Queen, shall make good to the Contractor any loss or damage he may sustain through such suspension or stoppage, to be ascertained,



in case of non-agreement between the Contractor and the Minister, by arbitration, as hereinafter mentioned; and the Minister for Public Works shall in no case be bound to give the Contractor possession of the ground or work until thirty days after the signature of the contract by the Contractor; but a commensurate extension of time for completing the works will be allowed to the Contractor, such extension of time to be at the discretion of and to be decided by the Engineer.

## DAMAGES TO BE MADE GOOD, &amp;c.

17. The Contractor shall also provide for effectually securing and covering the several walls and works from the weather, as occasion may require, or as the Engineer may direct; and if any damage or loss should happen to any of the works, plant, or materials—whether from fire, theft, or weather, force of waves, or from any other cause—while the works and buildings are unfinished or remain in possession of the Contractor, the Contractor must properly and immediately repair and make good the same at his own expense, and to the satisfaction of the Engineer; unless it can be shown that the damage arises from insufficient or imperfect designs, when the Contractor will not be held responsible, and, in case of dispute, the matter shall be settled by arbitration, as hereinafter provided.

## TRESPASS.

18. The Contractor shall not enter upon any lands outside the line of fences for the construction of the works, or for any purpose whatever in connection with this contract, without the consent of the occupier or owner, except at his own cost and risk, and shall not, without the consent of the Engineer, remove any trees or buildings within the line of the Railway fences, nor shall he open or throw down any part of a fence without making sufficient provision, by temporary fences, to be erected and maintained at his cost, for keeping cattle, sheep, or other stock from straying from or into any enclosure affected thereby; and any legal process causing costs or damage to the Government for any trespass incurred by the act or negligence of the Contractor or his workmen, shall be deducted from the contract price, and be taken as payment made on account of his contract.

## MAINTENANCE OF WORKS.

19. The Contractor shall be bound to keep and maintain in good and sufficient repair the whole works executed under the contract, and shall provide all labour, materials, &c., necessary for such maintenance for a period of months from and after the time when all the works under the contract have been fully completed; and the Contractor shall, on the expiry of the said period of maintenance, be bound to deliver up the whole works in good and sufficient condition, and to the satisfaction of the Engineer. The Contractor shall also be liable for any accident, damage, or injury whatsoever to the public or any private person which may be caused by his operations during the progress of the works, or during their maintenance. He shall also maintain all night-lights and temporary footpaths required by any Municipal or other authorities, or for the safety of the public, and shall make all necessary arrangements, by siding or otherwise, as required by the Engineer, to prevent stoppage of public traffic.

## LAND.

20. The Minister for Public Works will, free of all expense, put the Contractor in possession of all land required for the permanent works of the Railway, including land required for side-cutting, ballasting, spoil banks and road approaches, road diversions, and slips, and also from time to time, as occasion may require, but at the cost of the Contractor, and so far only as the Parliamentary powers possessed by the Governor or the Minister for Public Works will extend to enable them so to do, of all such land as may be necessary for temporary purposes in connection with the works.

21. The Minister for Public Works shall, within thirty days after the signing of the contract by the Contractor, put the Contractor in possession of such parts of the land for the permanent works as may be necessary for the commencement thereof, and will from time to time, after fifteen days' notice in that behalf shall

have been given by the Contractor to the Engineer, put the Contractor in possession of all such other parts of the lands required for the permanent works as may be necessary for the immediate prosecution thereof.

#### DELAY IN GIVING POSSESSION OF LAND.

22. If any delay shall take place in giving to the Contractor the possession of any land required for the permanent works as aforesaid, such delay shall not be deemed to be a breach of the contract, but the Contractor shall be entitled to such reasonable extension of time for the completion of the works as shall be fixed by the Engineer, or, in case of dispute, by arbitration, as hereinafter provided.

#### POWER TO REQUIRE DISMISSAL OF ANY WORKMAN.

23. The Engineer may require the dismissal within twenty-four hours by the Contractor of any agent, overseer, foreman, workman, or other person employed by him on the works, for incompetency or misconduct, and any man so dismissed shall not be again employed upon the works.

#### TRUCK SYSTEM NOT ALLOWED.

24. The workmen, tradesmen, and labourers of every class employed on the works to which these Conditions refer, shall be paid their wages in full in money of the current coin of the Colony, and no ticket or other system of payment by provisions, liquors, or goods will on any pretence be allowed, nor shall the Contractor or any person or persons employed by him, or in any way connected with him, establish any shop for the supply of liquors, provisions, or goods, nor shall the Contractor oblige his workmen to take provisions, liquors, or goods of any kind from any person in particular. The workmen of every class shall be paid on the works if it be possible, or in some building adjoining, and in no case shall they be paid at a public-house, or other place where liquors or refreshments are sold.

#### PAYMENTS.

25. Payments will be made monthly, for each calendar month, as the works proceed, on the certificate in writing of the Engineer, at a rate not exceeding 90 per cent. on the value of the work actually done, as estimated by the Engineer, having due regard in such estimate to the actual value thereof, and at a rate not exceeding 50 per cent. on the value of such plant and materials on the ground as may be approved by the Engineer as fit and necessary for the work, as estimated by the Engineer, having due regard in such estimate to the actual value thereof; such certificates for work done, and materials and plant supplied, in each calendar month, to be delivered to the Contractor within fourteen days after the termination of such month, and the balance, less 5 per cent., together with the amount deposited as cash security, if any, in fourteen (14) days, or as nearly as may be, after the Engineer shall have certified under his hand that the works have been finally and satisfactorily completed, and that such balance, together with the cash security, is due to the Contractor. The said 5 per cent. will be retained for three months to insure the fulfilment of clause 19 of these Conditions, and from which sums may be deducted the costs of any repairs or defects, failing the Contractor executing the same: Provided always that no sum or sums of money shall be considered to be due or owing to the Contractor, nor shall the Contractor make any claim for or on account of any work executed or maintained by him, or for or on account of plant or materials supplied by him, unless such certificate as aforesaid shall have been given by the Engineer as aforesaid; nor shall any sum or sums of money so certified be considered to be made payable to the Contractor until the expiration of fourteen days after such certificate shall have been presented to the Minister for Public Works; nor shall any omission to pay the amount of such certificate at the time the same shall be held payable be deemed or held to be a breach of or to vitiate the contract, but in case of such omission the Contractor shall be entitled to interest on the amount certified for, at the rate of ten pounds per centum per annum, for such time as such omission shall continue.

## NEGLECT TO CERTIFY.

26. In case the Engineer shall neglect or refuse to certify the amount due to the Contractor in respect of the work, or plant or materials, in manner and within the times mentioned in the foregoing condition, and shall continue such neglect or refusal for a period of fourteen days succeeding the fourteenth day after the end of the month in which the work was done, or the plant or material supplied, as the case may be, the Contractor shall be entitled to measure and value the same, having due regard in his estimate to the actual value thereof, and the measure and value so estimated by the Contractor shall be temporarily accepted by the Governor so far as regards the progress payment to be made to the Contractor in respect thereof under the foregoing condition, and the payment provided by that condition shall be made accordingly, with interest thereon, at the rate of Ten pounds per centum per annum, during the period of delay occasioned by the neglect or refusal of the Engineer: Provided always that in all cases in which a certificate shall, within the period or further period hereinbefore provided, as the case may be, have actually been delivered to the Contractor, such certificate shall, for the purpose of the progress payment to be made thereunder, be conclusive; and in case of any dispute between the Contractor and the Engineer as to the estimate therein made of value of work done, or plant or materials provided, as the case may be, of which dispute notice shall have been given by the Contractor to the Minister for Public Works within fourteen days after the delivery of the certificate to the Contractor, such dispute shall be referred to arbitration as hereinafter mentioned.

## PROGRESS PAYMENTS WITHOUT PREJUDICE, &amp;c.

27. No certificate given to the Contractor for the purpose of any progress payments shall prevent the Engineer, at any future time before the termination of the contract, from rejecting all unsound materials and improper workmanship discovered subsequently to the giving of the last previous certificate; and notwithstanding the giving of any certificate that portions or the whole of the works have been satisfactorily performed, the Engineer may require the Contractor to remove and amend, at any future time previously to the final payment on account of the construction or maintenance of the works, any work that may be found not to be performed in accordance with the contract, and the Contractor must remove and amend, at his own cost, all such work when so required, notwithstanding any approval made or given by the Assistant Engineer or Inspector. The Minister for Public Works shall have power, on the report of the Engineer that the work approved of as aforesaid is not in accordance with the contract, to deduct from any moneys that may be due or that may become due to the Contractor the whole amount that has been paid on account of such work.

If, in the opinion of the Minister for Public Works, further inquiry is desirable or necessary before any certificate is paid, the Minister for Public Works shall have power to suspend the payment of all or any part of the amount mentioned in any such certificate for a period not exceeding one month from the date at which, in the ordinary course, the money would have been paid; and in such case, on payment of the amount payable, the Contractor shall be entitled to receive interest at the rate of Ten pounds per centum per annum during such additional delay.

## STAMPS, LICENSE FEES, &amp;c.

28. The Contractor shall bear and pay all costs, charges, and expenses of preparing, executing, and completing this contract, and all duty stamps, licenses, Building Surveyor's fees, or other charges or fees whatsoever lawfully demanded by the Municipal or other authorities.

## CUSTOMS AND WHARF DUTIES, &amp;c.

29. In the event of the Contractors being compelled to pay any Customs duties or wharf dues or fees on any goods imported into New Zealand by them for the purposes of the said works, or transhipped or carried by them from any port or place in New Zealand to any other place in New Zealand, the Queen shall

and will repay the same to the Contractors, after one month's notice in writing by the Contractor to the Minister demanding payment thereof and giving details of such payment, and the production of vouchers or other proof of such payment.

WORKMEN TO BE CARRIED FREE ON EXISTING LINE.

30. The Contractors are to be entitled to free passes upon the Balclutha Railway, during the whole period appointed for the construction of the works mentioned in this Contract, as ordinary passengers upon the said Railway, for all persons in their employment for the time being actually engaged in connection with the said works, and the Manager for the time being of the said Railway shall at all times, on the application of the Contractors, or their Agent upon the works, give to such persons or person as are named in any such application written free passes accordingly.

ARBITRATION.

31. Should any dispute arise between the Contractor and the Engineer, or between the Contractor and the Minister for Public Works or the Government, relative to the force and intent and meaning of the specifications, drawings, or conditions, or to the mode of carrying on the works, or the nature or quality of materials used or supplied to be used, or workmanship of work done, or as to the maintenance of the works, or as to the expense of additional works, or of alterations or deviations from the specifications or plans, or as to any other matter connected with the execution of the works, or with the contract, specifications, drawings, or conditions, or as to any matter which by this contract it is expressly provided is to be settled, ascertained, or determined by arbitration, such dispute shall be referred in writing to the sole determination, arbitrament, and award of the Judge of the Supreme Court assigned to that Judicial District of the Supreme Court within which the works relative to which the dispute shall have arisen have been or are to be executed, whose award shall be final, binding, and conclusive on all parties: Provided, however, that before any such dispute as aforesaid shall be so referred, the Contractor shall give to the Minister for Public Works one calendar month's notice in writing of such dispute, and of the matter and cause thereof, and in such notice the Contractor's claim shall be explicitly stated; and if such claim be for pecuniary compensation, the amount thereof shall also be stated.

JOHN CARRUTHERS.  
JOHN BROGDEN AND SONS.

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SPECIFICATION OF THE MANNER OF CONSTRUCTING THE TAIERI  
CONTRACT OF THE DUNEDIN AND CLUTHA RAILWAY.

GENERAL DESCRIPTION.

Description.

1. The line of Railway included under the title "Taieri Contract of the Dunedin and Clutha Railway," and to which this Specification applies, begins at a point on the eastern side of the Chain Hills, about 460 yards southward from Abbott Royal Farm House, and ends at a point in Section 3, Block XXXIX., Tokomairiro District, about 950 yards northwards from the Main South Road, as delineated on the accompanying plans and sections; the total length of the contract being thirty-four miles fifty-five chains or thereby of main line, and with an addition of two miles of sidings.

DRAWINGS.

Drawings.

2. The drawings, including general plans and longitudinal sections, as shown in list A, accompany this Specification. These show the character of the works to be executed. Further drawings of details will be issued from time to time as may be necessary.

The general plan is drawn to a scale of three chains to an inch, and shows the course of the Railway, the entire line of which has been staked out on the ground with stakes, and is represented on the general plan by a red line.

The road and stream diversions are shown on the general plan.

The longitudinal section is drawn to a horizontal scale of three chains to the inch, and to a vertical scale of fifteen feet to the inch. It represents the natural profile of the ground along the centre line of the Railway. The red line shows the level of the bottom of the ballast. On the longitudinal section are shown the positions and sizes of the culverts and bridges described in this Specification.

#### ALIGNMENT OF STRUCTURES.

3. In the construction of bridges, culverts, road crossings, and generally, it is Alignment. to be understood that they are to intersect the line of Railway at such angle or curve as may be necessary and approved in each case, although they may be shown on the drawings straight and at right angles; and in the interpretation of the drawings and schedules, and of this Specification, it shall be distinctly understood that all works or materials necessary to the due and workmanlike completion of every erection are to be provided, whether specially described or not.

#### CONTRACTOR TO PROVIDE LABOUR, PLANT, AND MATERIALS.

4. The Contractor is to provide all labour, tools, implements, plant, and materials, and is well and substantially to construct and complete the Railway in accordance with the plans and specifications, and to deliver the same complete, and is to maintain and keep the said Railway, and all works connected therewith, in perfect order and repair for the space of three months from the delivery of the same to the Government. Contractor to provide labour, &c.

The said Railway shall be made in accordance with this Specification, and with the plans and sections herein referred to, or with such modifications of the plans and sections as the Engineer shall order, provided such modifications shall not increase the cost of the work.

#### FENCING.

5. The whole of the Railway shall be securely fenced on both sides, except at those places where large ditches are cut, and on the outside of the line at the Taieri River and Waihola Lake.

The present fences on the west side of the line on the Taieri and Tokomairiro Plains may be allowed to remain, provided they are put in thorough repair and left in a condition at least equal to that of any of the fencing to be erected on the other parts of the lines.

The fencing shall be of three kinds, as shown on Drawing No. 1, and described in the special specification annexed.

The lengths of the different kinds to be provided shall be as follows:—Repairing present fencing, 500 chains; Sod fencing, 500 chains; Nos. 2 and 3, 3,080 chains.

#### EARTHWORKS.

7. All flax, scrub, rushes, or Maori-heads growing on the line of the Railway, shall be cut down to the full width between the outside of slopes. Clearing scrub, &c.

No public or private road that crosses or intersects the Railway or works thereof, shall be obstructed by excavation or otherwise, until the Contractors shall have provided such temporary roads as may be necessary for the traffic. Roads not to be obstructed.

The cuttings are to have a base at formation level of 10 feet in rock, 11 feet in loose rock, and 13 feet elsewhere, and are to be made in accordance with plan and section attached; but should the Engineer require any of the cuttings or banks to be made with different slopes from those shown on Drawing No. 1, the difference of cost shall be added to or deducted from the contract sum. Such alteration to be ordered in writing. Cuttings.

A drain is to be cut along the bottom of slopes of cuttings, except in rock; this drain to average 5 cubic feet per lineal yard. Catchwater drains are to be cut above the top of one slope of cuttings, at a distance of from a quarter of a chain to a chain from the top of slopes; these ditches are to average 5 cubic feet per lineal yard, and are to be true and regular to the inclinations directed; no stumps or roots to be left in them. Drains.

The embankments must be carried forward uniformly of the proper shape, with such an allowance to the correct heights and widths as a due allowance for the Embankments.

shrinking of the material requires, to avoid as far as practicable the necessity for making subsequent additions either to the heights or widths of the embankments, to bring them to the correct levels and dimensions.

Whenever the foundation of an embankment is on sloping ground, the Contractor, if required, must at his own expense cut steps and benches under the base of the embankment.

The top of embankment at formation level is to be 10 feet wide; the slopes to be trimmed off to an inclination of one and a half horizontal to one vertical, and be maintained full and true until the completion of the contract.

Drainage not to be interrupted.

The Contractor shall, unless otherwise directed by the Engineer, take care not in any way to interfere with or divert the existing drainage areas, and shall leave such stops or stanks in the side cuttings, and take such other precautions, as the Engineer shall think necessary for that purpose.

Punning.

Behind and around culverts and abutments and wing walls, the embankments shall be wheeled in and carefully rammed to an extent not exceeding 10,000 cubic yards.

Rock embankment.

The rock embankment at Chain Hills shall be made to the form and dimensions shown in Drawing No. 1.

Embankments through swamps.

The materials for the embankments through the Taieri swamps is to be taken out along the line in the form of large ditches. Unless otherwise directed, each of these ditches is to be of a uniform width at bottom throughout its entire length, and with gradients as will be set out. The sides of the ditches shall be battered at the rate of three-quarters to one, and shall be neatly trimmed off from top to bottom. The minimum distance from the foot of the embankment to the ditch shall be 10 feet on the east and 20 feet on the west side. The Contractor will only be allowed to take two-thirds of the materials required in the embankment from the ditch on the east side.

Planting willows.

From  $\frac{1}{2}$  miles to  $\frac{3}{8}$  a row of willow cuttings or seedlings shall be planted on the west side of the line. The plants are not to be more than five feet apart.

#### RETAINING WALLS.

Retaining walls.

7. Retaining walls (the form shown on Drawing No. 1) shall be built on the outside of the embankments from  $\frac{2}{3}$  to  $\frac{3}{8}$ ; they shall be twenty-one inches broad at the top, vertical on the inside, and battered at the rate of a quarter to one on the outside. The formation shall be taken out to a uniform plan at right angles to the face of the wall, and the first course firmly bedded on the solid.

The masonry shall consist of substantial dry rubble work, to the satisfaction of the Engineer, well packed and bonded together with bond stones three feet long, where the thickness of the wall permits, to every superficial yard of face, and where the wall exceed five feet thick of back also.

Coping.

A rough coping of the dimensions shown is to be placed on the wall. It shall be constructed of thin stones set on edge and well pinned. The coping is to be laid in mortar composed of two parts of clean sharp sand, and one part of the best Provincial lime, mixed and prepared as shall be directed. The stones used for these walls shall be schist, blue stone, or other building stone of equal quality.

Contractor may dispense with retaining wall.

The Contractor will have the option of dispensing with the retaining wall, but should he do so the outside slopes of the rock embankment shall be flattened to  $1\frac{1}{4}$  to 1, and he will be required to lengthen the culverts and drains at his own cost.

#### PITCHING.

Pitching.

8. The outer slopes of all embankments outside the water line from  $\frac{3}{8}$  to  $\frac{3}{8}$  shall be protected with pitching of blue stone, or other hard stone of equal quality, placed as shown on Drawing No. 1. The pitchers shall be at least 6 inches deep. The first row is to be laid one foot below the ground, the trench being carefully filled in and rammed when the stone work has reached the surface.

#### DITCHES AND DRAINS.

Ditches and drains.

9. Ditches for the accommodation of the various small creeks and other water-courses interfered with shall be cut in the positions shown in the general plan. They shall be at least 2 feet wide at bottom, 3 feet wide at top, and 2 feet deep,



## MATERIALS.

- Materials.** Except where otherwise specified, all the materials used under this Contract shall be of the following kinds and descriptions:—
- Concrete.** 12. Concrete shall be composed of three parts, by measure, of broken stone, two parts of sharp sand, and one part of fresh Portland cement, or two parts of broken stone, two parts of gravel, and one part of sand. The stone may consist of blue stone, schist, or hard limestone, broken to  $2\frac{1}{2}$ -inch gauge. The cement shall be of approved brands, and subject to such tests as the Engineer may from time to time direct.
- The concrete shall be laid in 12-inch layers, and well rammed as the work progresses.
- Masonry.** Except at the tunnel fronts, all the masonry on this contract shall be rubble laid in cement or lime mortar, and binded with stones 2 feet long for every superficial yard of face. The stones shall in all cases be laid on their largest bed, which must be at least one-and-a-half times greater than the side. If required by the Engineer, the work is to be levelled every 12 or 18 inches, and well grouted. The stone used shall be sound blue stone, schist, lime stone, or other building stone of equal quality.
- Cement mortar.** Cement mortar shall consist of three parts, by measurement, of sharp clean sand to one part of Portland cement.
- Lime mortar.** Lime mortar shall consist of two parts of sharp clean sand to one part of the best Kakanui Peninsula or Waihola lime, mixed and prepared as may be directed.
- Timber.** All timber in the floor beams and rails strings of bridges must be of black birch or other approved timber. Level crossings and cattle-stops must be of matai or totara, and all other timber work, when not otherwise specified, must be of totara or other timber specially approved. It shall all be heart wood, except as shown on Drawing No. 11, and shall be straight, sound, and free from knots and other imperfections.
- Brickwork.** Bricks shall be of the best quality of hard-burned kiln bricks, and approved by the Engineer.
- Malleable iron.** The whole of the straps and bolts shall be made of BB Crown iron, or other iron of equal quality, of the dimensions shown; the whole to be finished and fixed in a workmanlike manner. The plate-iron in the girders shall be of the best quality, capable of bearing, without injury, a tensile strain of twenty-two tons per square inch.
- Bolts and nuts.** Except in joints of cylinders, all bolts shown or specified shall have a square head, of which the thickness shall be equal to the diameter of the bolt, and the width twice the diameter of the bolt; they are to be tapped with a good clean thread, and shall have a nut equal in size to the head of the bolt, and shall be provided with one or more washers, 3 inches diameter.
- Cast iron.** All castings must be true and exact to shape, and free from air holes and other defects.
- Painting.** All plate and cast iron shall, before shipment, receive one coat of boiled linseed oil laid on hot, and one coat of red lead. In addition to the above, all iron work is to receive in New Zealand two coats of paint, the last to be dark grey colour.

## LEVEL CROSSINGS.

- Level crossings.** 13. Four first and twenty-five second class crossings, with two cattle stops to each crossing, as per Drawing No. 9, shall be constructed at public and private roads where directed. They shall be carefully placed as to line and levels, and finished in strict conformity with the drawing and the notes thereon.
- Metalling.** Each level crossing shall be metalled for a length of 33 feet on each side of the centre line, as above specified for the roads, and tile or timber box drains shall be put in the formation ditches where necessary for the drainage of the line or road.
- Gates.** Fifty pairs of malleable iron tubular or other approved gates, 12 feet wide, hung to strong posts, and furnished with bolts and padlocks, shall be provided and hung at private crossings where directed.



## TUNNEL.

14. A tunnel is to be excavated through the Chain Hill Range. Its lengths Tunnel. and levels are defined in Sheet 2 of the General Plan, and sections and dimensions and forms on Drawing No. 2.

The tunnel is all to be taken out to the section represented by the outside of Section. the brick lining, but the lining is only to be put in for 33 feet at each end, and 450 feet at such other places as the Engineer may consider unsafe. The excavation shall be taken out so that half of the section can be got clear on each side of the centre line; beyond this nothing is to be excavated except what is absolutely necessary for the security of the work.

Two recesses, 8 feet square and 4 feet deep, shall be made at intervals in the Recesses. side for the accommodation of workmen and tools.

A drain shall be carried down the centre of the tunnel as shown, and led to Drain. the formation ditches at end. It is to be covered with 4-inch rough blue stone or schist covers, 2 feet long, or a tile drain, 12 inches diameter, may be substituted.

The lining shall consist of 14-inch brick work set in Portland cement mortar. Lining. The longitudinal courses are to be laid perfectly straight, and parallel in every direction with the line and level of the tunnel. The sides shall be laid in English bond, and the arch turned in three rings with one key-brick the full depth of the point. All spaces between the outside of the lining and the excavation are to be filled up with stone shivers or shingle, firmly rammed in.

The tunnel fronts shall be constructed of masonry set in cement mortar. The Fronts. stone is to be of the best quality of Port Chalmers, Sawyers Bay, or blue stone, but the whole of each front must be of one material. The quoins, arch stones, and coping, shall be ashlar picked, dressed on beds, and joints, and rock faced with a chisel draft round the margin. In addition to which the quoins and arch stones are to be chamfered in front, as shown. The remainder of the front shall be substantial squared rubble work, well bonded together, levelled in regular courses not less than 9 inches thick, the beds and joints being pointed and keyed.

## BRIDGES.

15. Bridges, as per Drawings, shall be erected under this Contract, as Bridges. follows:—

1. Abbot's Creek,	near $\frac{5}{55}$	1 span of 30 feet.
2. Creek,	„ $\frac{2}{11}$	2 spans of 13 „
3. Creek,	„ $\frac{1}{10}$	2 „ 13 „
4. Taieri River,	„ $\frac{1}{10}$	4 „ 80 „
5. Waihola River,	„ $\frac{2}{11}$	5 „ 80 „
6. Coghill's Creek,	„ $\frac{2}{11}$	2 „ 13 „
7. Creek,	„ $\frac{2}{11}$	2 „ 13 „
8. Creek,	„ $\frac{2}{11}$	2 „ 13 „
9. Salmon Creek,	„ $\frac{2}{11}$	4 „ 13 „
10. Mill Level,	„ $\frac{2}{11}$	2 „ 13 „
11. Mill Level,	„ $\frac{2}{11}$	2 „ 13 „
12. North Tokomairiro River,	„ $\frac{2}{11}$	4 „ 13 „
13. South Tokomairiro River,	„ $\frac{2}{11}$	2 „ 30 „
and	6	„ 13 „

The excavations from the foundations of the Abbot's Creek Bridge shall be Excavations from foundations. carried down to the depths shown, or such additional depth as shall be necessary to insure a solid bearing for the structure; when the masonry is finished to the surface of the ground the trenches shall be filled in layers and well rammed.

The masonry shall be set in cement mortar throughout. The beds and joints Masonry. above ground are to be neatly pointed, and the tops of all walls shall receive a coat of cement plaster.

The piers of the Taieri and Waihola Bridges shall consist of cast-iron cylinders Piers of Taieri and Waihola Bridges. as shown on Drawing No. 4. The cylinders shall be cast in three segments for each ring; the metal in the cutting and tapering plates is to be  $1\frac{1}{8}$  inch thick, and in all others 1 inch thick. The flanges shall all be  $1\frac{1}{8}$  inch thick. All joints shall be turned or planed to a smooth surface, and shall be made air and water-tight before being erected.

## Bolts for cylinders.

The bolts shall have hexagon heads and nuts, and be screwed with threads on the Whitworth pitch. The bolts for bottom and tapering cylinders shall be seven-eighths of an inch diameter, and all other bolts three-quarters.

## Forty-four cylinders to be in odd lengths.

Of the ordinary cylinder, 22 rings shall be cast in seven-foot lengths, and 22 rings in five-foot lengths, to suit irregularities in the sinking of the columns.

## Moulding.

A cast-iron moulding in four segments is to be placed on the top of each column as shown, and connected thereto with  $\frac{5}{8}$  bolts with hexagon heads and nuts.

## Sinking columns.

The piers shall be sunk to the depths shown, and the Contractor may sink them by any method he considers best.

## Concrete in columns.

If the stratum is sufficiently impervious for that purpose, the columns will be pumped dry, and the concrete dropped in from the top; but if this cannot be done, the concrete shall be lowered through the water in buckets, and carefully emptied in its place. Should it be necessary to deposit the concrete in water, its strength shall be increased to 1 of cement to 4 of the other ingredients up to low water level.

## Frames.

The frames in the top of the concrete shall be made of the best heart of totara fastened together with six  $\frac{5}{8}$ -inch bolts in each, and held down by rods passing into the concrete as shown.

## Piling.

The piers of bridges Nos. 2, 3, 6, 7, 8, 9, 10, 11, 12, and 13, shall consist of timber piles driven to the depths shown on Drawing No. 6, or such other depth as may be necessary to get a solid bearing for the superstructure. All piles are to be rung before driving with a 3-inch by  $\frac{3}{4}$ -inch round hoop. The piles are to be shod with a substantial iron shoe, which will be furnished to the Contractor at Dunedin. No pile driving to be commenced at any bridge without giving six days' notice previously to the Engineer in charge of the work.

## Superstructure of bridges.

The lower chord of the girders in the Taieri and Waiholo Bridges shall be of plate iron, of the form and dimensions shown on Drawing No. 5, but the remainder of the superstructure of these bridges, and all the superstructure of Nos. 1, 2, 3, 6, 7, 8, 9, 10, 11, 12, and 13, shall be of timber, secured with iron bolts and straps, as shown on Drawings Nos. 7 and 8.

## Joints.

All joints, abutments, shoulders, and sides of tenons and scarfs to be worked perfectly true, and to fit accurately, and to be covered with red lead before being put together. Tenons generally to be 5 inches long, and to be draw-bored to receive trenails of hard wood made with hollow auger or trenailing machine. All trenails to be well seasoned and kept dry, and to be one-sixteenth inch more in diameter than the hole bored for them, and to be covered with red lead before being driven. All capsills and mudsills to be morticed on to the posts or piles. All string pieces to be accurately notched down to capsills or floor beams by notching  $\frac{3}{4}$  inch from each, to be scribed and accurately fitted.

## Contractor to supply rods and gauges.

The Contractor shall provide all proper rods and gauges for setting out and testing the dimensions of bridges that the Engineer may require.

## CULVERTS AND DRAINS.

## Sizes.

16. The culverts to be built on this portion of the Railway shall be of the sizes as shown on Drawings Nos. 1 and 2.

## Stone culverts.

The stone culverts shall be built of rubble, set in cement mortar, except between twenty-five miles and the termination, when lime mortar may be used; the stones shall be schist, blue stone, or hard limestone. Arches shall be of brick, laid in rings, except at the Chain Hill, where stone laid in beds not more than 6 inches thick may be used. All the exposed beds and joints of masonry and brickwork in culverts shall be neatly pointed with cement mortar, and the tops of walls and arches are to receive a coat of cement  $\frac{3}{4}$ -inch thick, the whole being covered with a well-wrought clay puddle.

## Pitching.

The bottom of the culvert is to be pitched with stone, of the depth shown, and of a minimum area of one-half square foot, well packed, pinned, and grouted up with cement mortar. The pitching in the 5 × 3 foot culverts being carried out six feet clear of the entrance.

## Timber culverts.

In all the timber culverts, the frames to be accurately mortised and tenoned and pinned; the planking to be securely spiked on to the frames, the

whole of the timber to be heart of totara; the outer side of the planking need not be reduced to the dimensions given, but there must in every case be the full thickness specified of heart timber; the edges of the planking must fit truly for the whole thickness, and the planks must extend over at least two panels, and break joints as much as possible.

Three hundred lineal yards, each of 12, 9, and 6-inch glazed earthenware pipes, and 300 lineal yards of 12-inch box drains, shall be provided, and laid where directed. The pipes are to be of the best manufacture, well burned, and sound throughout, and shall have socket joints threaded to receive the packing. The box drains shall be made from 1½-inch totara, firmly spiked together, and strengthened by 4-inch cross-pieces every 3 feet. The trenches are in all cases to be cast in the solid; and the drain shall be bedded and encased in well-wrought clay puddle, the joints of pipes being laid with clay. Covered drains.

Sufficient catchwater and out-fall drains are to be dug at culverts, and all stumps and roots occurring in the line of ditch to be taken out. Drains at culverts.

#### BALLASTING AND PERMANENT WAY.

17. The ballasting is to consist of shingle, broken stone, or sand, previously approved, and is to be disposed as shown on Drawing No. 1. In all cases the embankments and cuttings are to be cleared from mud, and brought to a uniform formation level before the ballast is laid on. Ballasting.

The permanent way is to consist of a single line of rails laid to a gauge of 3 feet 6 inches, and sidings provided and laid where directed, amounting in all to two miles of sidings. Permanent way.

The Contractor is to provide and have upon the ground at all points where the work is proceeding a sufficient supply of all such templates, tools, gauges, and other implements as are necessary and are usually required in the laying of permanent way, or as may be required by the Engineer. Gauges.

About three thirty-seconds of an inch of space is to be left between the ends of the rails when fixed in place, or such other space as the Engineer may direct, according to the season. Permanent way.

For the curves, the rails will require bending. This, as well as the straightening of all bent rails, must be effected by a press, and on no account by striking unless by wooden hand-beetles on wooden blocks. In all cases, whether of straightening of bent rails or of bending rails to the necessary curves, the rails must be set permanently to the form required before being laid, and no temporary bending, springing, or straightening, either by dragging with a lever and hook, or by any other means of a like character, will on any account be permitted. Bending rails.

Great care must be taken to lay all the sleepers quite square to the rails on straights, and as near as may be on curves. Where the line is straight, the rails will be level across the line; but where the line is curved, the rails will be canted, the difference of level between the two rails being such as the Engineer shall order. Laying sleepers.

When suitable material for ballast is not found immediately on the line, the sleepers may be laid on formation, being carefully tamped with dry earth. The Contractor will be permitted to run ballast and material trains over the line thus laid at a speed not exceeding ten miles an hour, but the ballasting and lifting must be proceeded with with all possible despatch.

The changes of gradients shall be made by a gradual curve.

Changes of gradients.

There are to be 2,050 sleepers per mile, to be spaced as directed. The following timbers to be used to the extent of not less than 75 per cent. of the whole:—Totara, jarrah, Oregon pine, kauri, and puriri. The remaining 25 per cent. may be of matai (*Podocarpus spicata*) or birch (*Fagus fusca*, or *Fagus Solandri*). They shall be 7 feet long, and 7 inches by 5 inches, all of heart. They are to be flatted top and bottom, true and out of wind; but any extra width beyond 7 inches need not be removed. The rail seats are to be accurately adzed to a correct level. Sleepers.

The rails will weigh 40 lbs. to the yard; they will be jointed with Ibbotson's patent steel clip-joint, weighing about 12 lbs. each joint, and fastened to the sleepers by six fang-bolts to each rail, and two spikes to each sleeper where fang- Rails and fastenings.

bolts are not used. The rails and fastenings will be delivered to the Contractor at either or both ends of the contract, at the option of the Government, and he shall be responsible for all materials delivered to him.

#### USE OF PERMANENT WAY MATERIALS BY CONTRACTOR.

Use of permanent way materials by Contractors.

18. Permanent way materials shall not be laid down or employed within 100 yards of the face of any excavation or the end of any embankments, nor used for hauling earthwork before the ballast is laid. When the Contractor shall have complied with the above requirements, he may use the rails and other permanent way materials for the purpose of hauling earthwork or materials on parts of the line.

#### SIDINGS.

Sidings.

19. The Contractor shall construct at his own cost, at such points as may be indicated by the Engineer, two mile of sidings, including 10,000 cubic yards of earthwork, and the necessary ballast, sleepers, and laying of permanent way similar to that of the main line, but without points and crossings. He shall also make and construct, wherever required, such station-grounds, buildings, points, crossings, extra sidings, telegraph and other things as may be required for station accommodation, and shall furnish the Engineer monthly a detailed statement showing their actual cost, properly supported by vouchers, or as otherwise directed, and to this cost a sum equal to ten pounds per centum shall be added for Contractor's profits, and this amount shall be in addition to the contract sum.

#### TELEGRAPH.

Telegraph.

20. A single wire telegraph will be constructed and paid for as for station accommodation, and the use of it allowed to the Contractor during construction of the works. During the period of maintenance the Government will transmit, free of charge, all messages sent by the Contractor on the business of the Railway.

#### USE OF ROLLING STOCK.

Use of rolling stock.

21. The Government will furnish the Contractors with such locomotives and rolling stock as they may have on the line, the Contractors to pay the wages of the engine-drivers and stokers, who must be approved by the Engineer, and to furnish fuel, water, oil, grease, waste, &c., at his own expense. The Contractor shall also return such rolling stock as may be lent to him in as good order as when received by him—reasonable wear and tear excepted. In the event of the Government being unable to supply locomotives and rolling stock when needed by the Contractors, an extension of time will be granted for the completion of the contract; such extension of time to be fixed by the Engineer.

JOHN CARRUTHERS.

JOHN BROGDEN AND SONS.

### DUNEDIN AND CLUTHA RAILWAY.

#### LIST A.

- Drawing No. 1—Formation, Retaining Wall, Fencing, and Small Culverts.  
 ” 2—Tunnel and Large Culverts.  
 ” 3—Bridge over Abbotsford Creek.  
 ” 4—Taieri and Waiholo Bridges (Piers).  
 ” 5—Taieri and Waiholo Bridges (Superstructure).  
 ” 6—General Sections of Sites of small Bridges.  
 ” 7—Small Bridges.  
 ” 8—Bridge over South Tokomairiro River.  
 ” 9—Level Crossings and Cattle Guards, &c.  
 ” 10—Rails and Fastenings.  
 ” 12.—Plan and Sections, sheets 1 to 35; and Cross Sections and Sections of Road Diversions, sheets 36 to 45.

JOHN CARRUTHERS.

JOHN BROGDEN AND SONS.

## GENERAL FENCING SPECIFICATION.

The fencing to be used shall be of three kinds, to be known as Qualities Nos. 1, 2, and 3.

Quality No. 1.—Quality No. 1 shall consist of a sod wall, 3 feet 3 inches broad at base, 1 foot 3 inches broad at top, and 4 feet 6 inches high. It shall be carefully built in uniform layers from 8 to 10 inches thick, and bonded together. A ditch at least 2 feet 6 inches wide, and 1 foot 6 inches deep, shall be dug on each side, and carried through the wall where necessary for the drainage of the line or adjoining land. The wall is to be carried over such ditches on sound totara timber 3 inches thick.

Quality No. 2.—Quality No. 2 shall consist of post, ditch, mound, three wires, and top rail.

Quality No. 3.—Quality No. 3 shall consist of post, five wires, and top rail.

The timber used in Qualities Nos. 2 and 3 shall be totara, matai, kauri, or manuka, or other specially approved timber.

The posts to be of split timber, cut square at ends, mortised for rails, and well rammed when in their places. A straining post, 9 feet long, 6 inches in diameter, and well stayed, shall be put in at intervals of not more than 5 chains, and at each crossing of existing fences.

The top rails shall also be of split timber, scarfed at ends, neatly fitted into mortise holes cut in the posts, and securely fixed with wedges.

The wires shall consist of the best black annealed wire of No. 5 Birmingham gauge, and shall be fastened to outside of posts with suitable staples.

The mound, in fencing Quality No. 2, shall be of tough firm sods, as specified for sod wall. It shall be 3 feet wide at base, 2 feet wide at top, and 1 foot 6 inches high.

Existing fences crossed and cut down shall be connected with the railway fences, and left in a condition at least equal to that in which they were found.

The Contractor shall provide temporary slip-rails or panels in the permanent fencing where required for the accommodation of occupiers, and will give every other facility of access to their lands across the line until the permanent crossings and roads are constructed.

JOHN CARRUTHERS.  
JOHN BROGDEN AND SONS.



## INVERCARGILL AND MATAURA RAILWAY.

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ARTICLES OF AGREEMENT made and entered into this tenth day of August, 1872, between the GOVERNOR of NEW ZEALAND, in the name and on behalf of Her MAJESTY the QUEEN of the one part, and ALEXANDER BROGDEN, HENRY BROGDEN, and JAMES BROGDEN, all of Queen's Square, in the City of Westminster, in England, Railway Contractors (hereinafter referred to as "the Contractors"), of the other part:

Whereas by the sixth section of "The Railways Act, 1871," it is amongst other things enacted that the Governor may, if he think fit, construct and maintain, or cause to be constructed and maintained, under the provisions of "The Immigration and Public Works Act, 1870" (hereinafter referred to as "the said Act"), and "The Immigration and Public Works Act Amendment Act, 1871" (hereinafter referred to as "the said Amending Act"), certain Railways, and amongst others, a Railway from Invercargill, in the Province of Otago, to Mataura, in the said Province (which said Railway is hereinafter referred to as "the Railway herein mentioned"):

And whereas by the said Amending Act it is provided that all Contracts under any Act authorizing the construction of any Railway under the said Act or the said Amending Act, shall be entered into in the name of the Queen, her heirs and successors:

And whereas the Governor of New Zealand, on behalf of the Queen, has agreed with the Contractors for the execution and construction by them of the works described or referred to herein, and in the Specifications, Conditions, Drawings, and Plans hereto annexed or herein referred to, all of which Specifications, Conditions, Drawings, and Plans are signed by the Contractors and John Carruthers, Esquire, the Chief Engineer of the said Colony, on behalf of the Colony: Now, these Presents witness that Her Majesty the Queen, for herself, her heirs and successors (all of whom are hereinafter included in the expression "the Queen"), and, so far as the covenants hereinafter contained are to be performed or observed on her or their parts respectively, doth hereby covenant with the Contractors, their executors, administrators, and assigns (all of whom are hereinafter included in the expression "the Contractors"), and the Contractors and each of them, for themselves and himself, and their respective heirs, executors, administrators and assigns, so far as such covenants hereinafter contained are to be performed or observed on their parts, do and doth hereby covenant with the Queen, her heirs and successors, in manner hereinafter appearing, that is to say—

1. That they, the Contractors, shall and will, in all respects subject to and in accordance with the said Conditions, Specifications, Drawings, and Plans, construct make, complete, and maintain, and do and perform, all the works, and supply all such plant and materials as are by the said Specifications and Conditions to be supplied by the Contractor, whether such works, plant, and materials are described or referred to in the said Conditions, Specifications, Drawings, or Plans, or are extra or in addition thereto, within the time mentioned in the said Conditions, subject, however, to the provisions contained in the said Conditions for extension of time.

2. That the Queen shall and will, free of cost to the Contractors, provide and deliver to the Contractors, at the ship's side at the Bluff, the iron rails and fastenings required for the permanent way and the rolling stock respectively mentioned in the Specification.

3. That the Queen will pay the Contractors for the construction and execution of the said works, and the maintenance thereof, for the period of three months

RAILWAY CONTRACTS,

from the completion of the works, and for the supply of all such plant and materials as the Contractors are to supply under the provisions of this contract as aforesaid, the sum of eighty-eight thousand eight hundred and thirty-two pounds (exclusive of the supply of such plant and materials as by the said Specifications and Conditions it is provided the Queen or the Government of New Zealand shall supply, and subject to the provisions contained in the Conditions and Specifications for increase and decrease in case of extras or deductions, and to the provisions contained in the said Specifications or Conditions for extra payment to the Contractors by percentages on the cost of such works as, by such Specifications it is provided, the Contractors are to receive payment by way of percentage on the cost thereof).

4. The Queen shall and will make payments to the Contractors upon account of the said sums herein agreed to be paid at the rate and times, and upon the terms and conditions mentioned in the said Specifications and Conditions.

Lastly. The parties hereto shall and will each respectively perform, observe, and fulfil all and singular the conditions and stipulations expressed or contained in the said General Conditions and Specifications, and which thereby it is provided shall be performed, observed, or fulfilled by such parties respectively.

In witness whereof the Seal of the Colony has hereunto been affixed, and the said Contractors have hereunto set their hands and seals, the day and year first above written.

Sealed with the Seal of the Colony,  
and signed by the Governor, in  
the presence of  
WILLIAM FOX.  
J. D. ORMOND.)

G. F. BOWEN,  
Governor.

Signed, sealed, and delivered by the  
above-named Alexander Brogden,  
Henry Brogden, and James  
Brogden, in the presence of  
WM. THOS. LOCKE TRAVERS,  
Solicitor, Wellington.)

ALEXANDER BROGDEN,  
By his Attorney, James Brogden. (Seal.)  
HENRY BROGDEN,  
By his Attorney, James Brogden. (Seal.)  
JAMES BROGDEN. (Seal.)

(Seal of the Colony.)

Approved in Council, August 10th, 1872.

FORSTER GORING,  
Clerk of the Executive Council.





## GENERAL CONDITIONS FOR THE INVERCARGILL AND MATAURA RAILWAY.

### INTERPRETATION CLAUSE.

1. In these Conditions the words "Minister for Public Works" shall mean the Minister for Public Works appointed under "The Immigration and Public Works Act, 1870," or any Minister or person for the time being authorized by the Governor to act for such Minister in respect of the special work contracted for; the word "Engineer" shall mean the Engineer for the time being who shall have principal charge of the works on behalf of the Government; and the word "Contractor" shall mean "Contractors" when two or more persons tender or contract jointly for the work; and the word "month" shall mean "calendar month."

### WORKS, &c., TO BE ACCORDING TO DRAWINGS AND SPECIFICATIONS, AND TO THE SATISFACTION OF THE ENGINEER.

2. All the materials used are to be the best of their respective kinds, and all works of every description throughout are, subject to the provisions hereinafter contained, to be executed conformably to the several drawings and details prepared or that may be prepared for that purpose, and herein referred to, in the strictest accordance with the provisions of the specifications, and in the best, most substantial, and workmanlike manner, and to the satisfaction of the Engineer; and should any work not be so executed, it shall be immediately altered and amended at the cost of the Contractor.

### PLANS, &c.

3. A copy of the plans and drawings, with the specifications, shall be furnished to the Contractor by the Engineer, and the plans and drawings referred to in the specification, and the specification, shall be taken together to explain each other; and if, in the execution of the works, it shall be found that anything has been omitted or mis-stated either in the drawings or specification, which is necessary for the proper performance and completion of any part or parts of the works, the Contractor shall at his own cost and expense execute the same, and provide whatever may be requisite for so doing, provided the extra cost thereof shall not exceed the sum of £200 in each particular case. Any written dimensions on the drawings shall be taken in all cases in preference to measurements by the scale attached, and anything contained either in the drawings or specification shall be equally binding on the Contractor as if it were contained in both; and in case the written or figured dimensions on the drawings shall disagree with the scaling, or in case there shall be any discrepancy between the drawings and specification, or any ambiguity in them, such occurrence shall not invalidate the contract, but the same shall be rectified by the Engineer if thought requisite, and the Contractor shall not be entitled to make any claim or demand for compensation or damages on account of such discrepancy or ambiguity. If neither the drawings nor the specification contain any notice of minor parts, the intention to include which is nevertheless clearly to be inferred, and which parts are obviously necessary for the workmanlike completion and stability of the work, all such parts are to be made and executed by the Contractor without extra charge, and are to be deemed by him as included in the sum at which he contracts for the works.

### EXTRA WORKS AND ALTERATION OF WORKS.

4. The Contractor is to make and execute, in the like manner as aforesaid, and with the like materials as aforesaid, any additions, deviations, or alterations to, from, or in the works, which the Engineer may from time to time, previously

to the commencement or during the progress of the works, by an order in writing, require, at and for such prices or rates as shall be agreed upon in writing between the Contractor and the Minister for Public Works. In case of non-agreement as to price, the work shall be done by the Contractor as required by the Engineer, and the price thereof shall be settled by arbitration as hereinafter provided, and shall when so ascertained be added to and thenceforth deemed to be part of the contract price for the works to be executed under this contract; but no additions, deviations, or alterations whatever, which shall be claimed by the Contractor, will be admitted or recognized under any circumstances, or will be allowed or paid for, which shall be done or executed without or contrary to any previous order from the Engineer in writing as aforesaid: Provided always that no addition, deviation, or alteration from the plans and specifications to be ordered by the Engineer as aforesaid shall involve an increased expenditure in connection with the works or any part thereof, unless distinctly authorized by writing under the hand of the Minister for Public Works, who, before authorizing any such deviation, shall obtain from the Engineer an estimate of the increased expenditure arising therefrom: Provided also that in all cases where such deviation, addition, or alteration as last aforesaid, from the plans and specifications, shall involve an outlay exceeding £500, the consent of the Governor in Council shall first be obtained. And in all cases it shall be the duty of the Contractor to satisfy himself that such addition, deviation, or alteration (if any) has been duly authorized in the manner required by "The Immigration and Public Works Act, 1870," and also, that to any such outlay as aforesaid, requiring the consent of the Governor in Council as aforesaid, such consent has been obtained, as required by the said Act.

#### OMISSION OF PORTIONS OF WORKS.

5. To the Minister for Public Works there is reserved the right from time to time of requiring the omission of any particular portion or portions of works described in the specification or shown on the drawings, and of deducting the value thereof from the amount of the contract, such value to be agreed upon between the Minister for Public Works and the Contractor, or in case of difference to be settled by arbitration as hereinafter provided; but the Contractor shall be entitled to be paid a sum of ten per cent. on the agreed or ascertained value of the work omitted; such sums for omissions to be paid on the completion of the contract.

#### MATERIALS, LABOUR, &c.

6. The Contractor shall provide, at his own costs and charges, all materials, labour, tools, plant, tackle, machinery, scaffolding, waggons, cordage, cartage, stores, planking, centres, coffer dams, diving bells, staging, diving dresses, and everything necessary for the proper execution and completion of the several works, and centres must not be struck without the written authority of the Engineer. The Contractor is also to provide, at his cost, for keeping all the trenches and foundations free from water, and for preventing all slips of ground into the trenches. All material and all prepared work brought upon the ground of the works for use therein is to be considered the property of the Queen, and the Contractor shall not take away any such material or work without the written authority of the Engineer, unless the same shall be required for the purposes of other works under this contract. The Contractor will be required to set out accurately, at his own expense, all the works comprised in this contract, agreeably to the drawings and specifications, and shall be held responsible for their being so set out and executed accordingly.

#### REMOVAL OF IMPROPER MATERIALS.

7. It shall be lawful for the Engineer to order the removal from the works of any materials, whether fixed or not, which may appear to him to be of an inferior or improper description, and the Contractor shall remove the same within twenty-four hours after a written notice in that behalf given to him by the Engineer; and in case of neglect or refusal to remove the same according to such notice, the Engineer shall have power to remove the same at the cost of the Contractor.

## CONTRACTOR TO BE REPRESENTED.

8. The Contractor at all times during the progress of the works, when he is not personally superintending them, must have a responsible agent or overseer stationed on them, to receive instructions from the Engineer, and to represent him for all the purposes of this contract.

## PROGRESS OF WORKS.

9. If the Contractor shall, in the opinion of the Engineer, fail to make such progress with the works as the Engineer shall deem sufficient to insure their completion within the specified time, or if the Contractor shall use or employ bad or insufficient materials, or execute any work in an imperfect manner, and shall fail or neglect to rectify any such cause of complaint for fourteen days after being thereunto required in writing by the Engineer, or if the Contractor shall, in the judgment of the Engineer, commit a wilful breach of his contract, then, and in any of such cases, it shall be lawful for the Minister for Public Works, by any instrument in writing under his hand delivered to the Contractor, or to his representative on the works, or left at the Contractor's usual or last known place of abode or business, absolutely to determine this contract, and from and after the delivery of the said instrument as aforesaid, the contract shall be absolutely determined; and in the event of such determination happening, then it shall be lawful for the said Minister, after having delivered such instrument to the Contractor as aforesaid, to take the works out of the Contractor's possession, and at the option of such Minister either to carry the works on under the Engineer or by another Contractor, and that either after advertising for Contractors or without doing so, as he shall think fit; and all the materials, implements, and plant then upon or used in connection with the works may be used in and applied for the purpose of completing the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages, together with the net proceeds realized by the sale of the then residue of such materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

CONTRACTOR NOT TO SUBLET WORKS TO PERSONS PREVIOUSLY OBJECTED TO—  
BANKRUPTCY, INSOLVENCY, OR DEATH.

13. The Contractor shall not sublet any portion of the works to any person who shall have been previously objected to by the Engineer by notice in writing to the Contractor. If the Contractor become bankrupt or insolvent, or shall make an assignment of his estate for the benefit of his creditors, or shall die before the final completion of the contract, then it shall be lawful for the Minister for Public Works, on behalf of the Queen, summarily, and of his own authority, and without any process of law for that purpose, to take possession of the works, and to take them out of the hands of the Contractor, or of his executors, or administrators, or of the assignees or trustees of his estate, and to employ persons for

the execution and completion of the same, and that either after advertising for contractors or without doing so, as he shall think fit; and all the then remaining materials, implements, and plant aforesaid may be used in and applied for the purposes of the works; and on the final completion of the works, if it should be found that the balance of the contract price remaining unpaid, if any, and the deposit money and percentages aforesaid, together with the value of the remaining materials, implements, and plant as aforesaid, after being sold in any way that may appear to be most advisable to the Minister for Public Works, is not sufficient to meet the outlay incurred in completing the works in all respects, then the Contractor, his executors or administrators, shall be bound to pay to the Minister for Public Works the surplus expenditure above such balance, and other sums as aforesaid; and in the case of bankruptcy or insolvency, then Her Majesty the Queen shall rank as a creditor to the amount of such surplus. But if, on the other hand, the works shall be completed within the contract price, then there shall be paid to the Contractor, or his executors, administrators, or assigns, such balance as may be due to him or them, including the deposit money and percentages or retention money, if any, but without any interest thereon; and the Engineer shall, within fourteen days after such balance has been ascertained to be due, grant authority to the Contractor or his representatives for the removal of all surplus material, implements, and plant belonging to him or them, and remaining on the works after their completion, if not sold as before mentioned. But it is herein expressly provided that, in the event of any materials, implements, or plant being returned to the Contractor or his representatives, or being allowed to be removed by him or them as aforesaid, Her Majesty the Queen shall not be in any way liable for any loss, diminution, wear and tear, or injury, such materials, implements, or plant may have sustained during the completion of the work.

#### LIABILITIES OF CONTRACTOR.

14. The exercise by the Minister for Public Works, or Engineer, of any of their respective powers shall not relieve the Contractor from any liability to which he may be subject for any breach of the contract.

#### TIME OF COMPLETION.

15. Subject as herein provided, the Contractor shall complete the whole of the works of this contract, except the bridge over the Mataura River, which is to be completed on the first day of November, one thousand eight hundred and seventy-four, on or before the first day of September, one thousand eight hundred and seventy-four, failing which the Minister for Public Works shall be entitled to deduct from the final balance due to the Contractor a sum calculated at the rate of Three pounds per cent. per annum on all moneys which shall have been paid to the Contractor under this contract, computed from the date on which the work ought to have been completed under this contract up to the date of the completion of the work: Provided that if the Minister for Public Works shall have taken over as completed any portion of the work, the cost of that portion shall not be included in the calculation last aforesaid. But in the event of the Contractor being prevented by earthquake, tempest, flood or otherwise by the act of God or by the act of the Queen's enemies, rebellion, restraint of princes, or otherwise by anything in the nature of *vis major*, or by reason of any strike amongst the workmen engaged upon the works, or by reason of any alterations, deviations, or additions, or extra works being required, or in case of any delay in furnishing any material to be supplied to the Contractor by the Governor, the Engineer shall allow such an extension of time as he shall think adequate for such enforced delay, or for such alterations, deviations, additions, or extra work; and at the expiration of the time so allowed, the deductions or sets-off for delay shall come into operation.

#### SUSPENSION OF WORKS.

16. The Contractor, on receiving a written notice from the Engineer, shall suspend, or stop, the whole or any portion of the works as may be directed, and the Governor, on behalf of the Queen, shall make good to the Contractor any loss or damage he may sustain through such suspension or stoppage, to be ascertained,

in case of non-agreement between the Contractor and the Minister, by arbitration, as hereinafter mentioned; and the Minister for Public Works shall in no case be bound to give the Contractor possession of the ground or work until thirty days after the signature of the contract by the Contractor; but a commensurate extension of time for completing the works will be allowed to the Contractor, such extension of time to be at the discretion of and to be decided by the Engineer.

#### DAMAGES TO BE MADE GOOD, &c.

17. The Contractor shall also provide for effectually securing and covering the several walls and works from the weather, as occasion may require, or as the Engineer may direct; and if any damage or loss should happen to any of the works, plant, or materials—whether from fire, theft, or weather, force of waves, or from any other cause—while the works and buildings are unfinished or remain in possession of the Contractor, the Contractor must properly and immediately repair and make good the same at his own expense, and to the satisfaction of the Engineer; unless it can be shown that the damage arises from insufficient or imperfect designs, when the Contractor will not be held responsible, and, in case of dispute, the matter shall be settled by arbitration, as hereinafter provided.

#### TRESPASS.

18. The Contractor shall not enter upon any lands outside the line of fences for the construction of the works, or for any purpose whatever in connection with this contract, without the consent of the occupier or owner, except at his own cost and risk, and shall not, without the consent of the Engineer, remove any trees or buildings within the line of the Railway fences, nor shall he open or throw down any part of a fence without making sufficient provision, by temporary fences, to be erected and maintained at his cost, for keeping cattle, sheep, or other stock from straying from or into any enclosure affected thereby; and any legal process causing costs or damage to the Government for any trespass incurred by the act or negligence of the Contractor or his workmen, shall be deducted from the contract price, and be taken as payment made on account of his contract.

#### MAINTENANCE OF WORKS.

19. The Contractor shall be bound to keep and maintain in good and sufficient repair the whole works executed under the contract, and shall provide all labour, materials, &c., necessary for such maintenance for a period of months from and after the time when all the works under the contract have been fully completed; and the Contractor shall, on the expiry of the said period of maintenance, be bound to deliver up the whole works in good and sufficient condition, and to the satisfaction of the Engineer. The Contractor shall also be liable for any accident, damage, or injury whatsoever to the public or any private person which may be caused by his operations during the progress of the works, or during their maintenance. He shall also maintain all night-lights and temporary footpaths required by any Municipal or other authorities, or for the safety of the public, and shall make all necessary arrangements, by siding or otherwise, as required by the Engineer, to prevent stoppage of public traffic.

#### LAND.

20. The Minister for Public Works will, free of all expense, put the Contractor in possession of all land required for the permanent works of the Railway, including land required for side-cutting, ballasting, spoil banks and road approaches, road diversions, and slips, and also from time to time, as occasion may require, but at the cost of the Contractor, and so far only as the Parliamentary powers possessed by the Governor or the Minister for Public Works will extend to enable them so to do, of all such land as may be necessary for temporary purposes in connection with the works.

21. The Minister for Public Works shall, within thirty days after the signing of the contract by the Contractor, put the Contractor in possession of such parts of the land for the permanent works as may be necessary for the commencement thereof, and will from time to time, after fifteen days' notice in that behalf shall

have been given by the Contractor to the Engineer, put the Contractor in possession of all such other parts of the lands required for the permanent works as may be necessary for the immediate prosecution thereof.

#### DELAY IN GIVING POSSESSION OF LAND.

22. If any delay shall take place in giving to the Contractor the possession of any land required for the permanent works as aforesaid, such delay shall not be deemed to be a breach of the contract, but the Contractor shall be entitled to such reasonable extension of time for the completion of the works as shall be fixed by the Engineer, or, in case of dispute, by arbitration, as hereinafter provided.

#### POWER TO REQUIRE DISMISSAL OF ANY WORKMAN.

23. The Engineer may require the dismissal within twenty-four hours by the Contractor of any agent, overseer, foreman, workman, or other person employed by him on the works, for incompetency or misconduct, and any man so dismissed shall not be again employed upon the works.

#### TRUCK SYSTEM NOT ALLOWED.

24. The workmen, tradesmen, and labourers of every class employed on the works to which these Conditions refer, shall be paid their wages in full in money of the current coin of the Colony, and no ticket or other system of payment by provisions, liquors, or goods will on any pretence be allowed, nor shall the Contractor or any person or persons employed by him, or in any way connected with him, establish any shop for the supply of liquors, provisions, or goods, nor shall the Contractor oblige his workmen to take provisions, liquors, or goods of any kind from any person in particular. The workmen of every class shall be paid on the works if it be possible, or in some building adjoining, and in no case shall they be paid at a public-house, or other place where liquors or refreshments are sold.

#### PAYMENTS.

25. Payments will be made monthly, for each calendar month, as the works proceed, on the certificate in writing of the Engineer, at a rate not exceeding 90 per cent. on the value of the work actually done, as estimated by the Engineer, having due regard in such estimate to the actual value thereof, and at a rate not exceeding 50 per cent. on the value of such plant and materials on the ground as may be approved by the Engineer as fit and necessary for the work, as estimated by the Engineer, having due regard in such estimate to the actual value thereof; such certificates for work done, and materials and plant supplied, in each calendar month, to be delivered to the Contractor within fourteen days after the termination of such month, and the balance, less 5 per cent., together with the amount deposited as cash security, if any, in fourteen (14) days, or as nearly as may be, after the Engineer shall have certified under his hand that the works have been finally and satisfactorily completed, and that such balance, together with the cash security, is due to the Contractor. The said 5 per cent. will be retained for three months to insure the fulfilment of clause 19 of these Conditions, and from which sums may be deducted the costs of any repairs or defects, failing the Contractor executing the same: Provided always that no sum or sums of money shall be considered to be due or owing to the Contractor, nor shall the Contractor make any claim for or on account of any work executed or maintained by him, or for or on account of plant or materials supplied by him, unless such certificate as aforesaid shall have been given by the Engineer as aforesaid; nor shall any sum or sums of money so certified be considered to be made payable to the Contractor until the expiration of fourteen days after such certificate shall have been presented to the Minister for Public Works; nor shall any omission to pay the amount of such certificate at the time the same shall be held payable be deemed or held to be a breach of or to vitiate the contract, but in case of such omission the Contractor shall be entitled to interest on the amount certified for, at the rate of ten pounds per centum per annum, for such time as such omission shall continue.

## NEGLECT TO CERTIFY.

26. In case the Engineer shall neglect or refuse to certify the amount due to the Contractor in respect of the work, or plant or materials, in manner and within the times mentioned in the foregoing condition, and shall continue such neglect or refusal for a period of fourteen days succeeding the fourteenth day after the end of the month in which the work was done, or the plant or materials supplied, as the case may be, the Contractor shall be entitled to measure and value the same, having due regard in his estimate to the actual value thereof, and the measure and value so estimated by the Contractor shall be temporarily accepted by the Governor so far as regards the progress payment to be made to the Contractor in respect thereof under the foregoing condition, and the payment provided by that condition shall be made accordingly, with interest thereon, at the rate of Ten pounds per centum per annum, during the period of delay occasioned by the neglect or refusal of the Engineer: Provided always that in all cases in which a certificate shall, within the period or further period hereinbefore provided, as the case may be, have actually been delivered to the Contractor, such certificate shall, for the purpose of the progress payment to be made thereunder, be conclusive; and in case of any dispute between the Contractor and the Engineer as to the estimate therein made of value of work done, or plant or materials provided, as the case may be, of which dispute notice shall have been given by the Contractor to the Minister for Public Works within fourteen days after the delivery of the certificate to the Contractor, such dispute shall be referred to arbitration as hereinafter mentioned.

## PROGRESS PAYMENTS WITHOUT PREJUDICE, &amp;c.

27. No certificate given to the Contractor for the purpose of any progress payments shall prevent the Engineer, at any future time before the termination of the contract, from rejecting all unsound materials and improper workmanship discovered subsequently to the giving of the last previous certificate; and notwithstanding the giving of any certificate that portions or the whole of the works have been satisfactorily performed, the Engineer may require the Contractor to remove and amend, at any future time previously to the final payment on account of the construction or maintenance of the works, any work that may be found not to be performed in accordance with the contract, and the Contractor must remove and amend, at his own cost, all such work when so required, notwithstanding any approval made or given by the Assistant Engineer or Inspector. The Minister for Public Works shall have power, on the report of the Engineer that the work approved of as aforesaid is not in accordance with the contract, to deduct from any moneys that may be due or that may become due to the Contractor the whole amount that has been paid on account of such work.

If, in the opinion of the Minister for Public Works, further inquiry is desirable or necessary before any certificate is paid, the Minister for Public Works shall have power to suspend the payment of all or any part of the amount mentioned in any such certificate for a period not exceeding one month from the date at which, in the ordinary course, the money would have been paid; and in such case, on payment of the amount payable, the Contractor shall be entitled to receive interest at the rate of Ten pounds per centum per annum during such additional delay.

## STAMPS, LICENSE FEES, &amp;c.

28. The Contractor shall bear and pay all costs, charges, and expenses of preparing, executing, and completing this contract, and all duty stamps, licenses, Building Surveyor's fees, or other charges or fees whatsoever lawfully demanded by the Municipal or other authorities.

## CUSTOMS AND WHARF DUTIES, &amp;c.

29. In the event of the Contractors being compelled to pay any Customs duties or wharf dues or fees on any goods imported into New Zealand by them for the purposes of the said works, or transhipped or carried by them from any port or place in New Zealand to any other place in New Zealand, the Queen shall

and will repay the same to the Contractors, after one month's notice in writing by the Contractor to the Minister demanding payment thereof and giving details of such payment, and the production of vouchers or other proof of such payment.

WORKMEN TO BE CARRIED FREE ON BLUFF AND WINTON RAILWAY.

30. The Contractors are to be entitled to free passes upon the Bluff and Winton Railway, during the whole period appointed for the construction of the works mentioned in this Contract, as ordinary passengers upon the said Railway, for all persons in their employment for the time being actually engaged in connection with the said works, and the Manager for the time being of the said Railway shall at all times, on the application of the Contractors, or their Agent upon the works, give to such persons or person as are named in any such application written free passes accordingly.

GOODS TO BE CARRIED FREE ON SAME RAILWAY.

31. The Government undertake to convey upon and along the Bluff and Winton Railway, free of charge to the Contractors, and in like manner as other goods delivered for carriage upon and along the said Railway, all materials intended to be used in the construction of the works mentioned in this Contract, or which the Contractors may, in connection with the said works, necessarily require to be carried along the said Railway, upon such goods respectively being delivered in the ordinary course at any station upon the said Railway for carriage accordingly.

ARBITRATION.

32. Should any dispute arise between the Contractor and the Engineer, or between the Contractor and the Minister for Public Works or the Government, relative to the force and intent and meaning of the specifications, drawings, or conditions, or to the mode of carrying on the works, or the nature or quality of materials used or supplied to be used, or workmanship of work done, or as to the maintenance of the works, or as to the expense of additional works, or of alterations or deviations from the specifications or plans, or as to any other matter connected with the execution of the works, or with the contract, specifications, drawings, or conditions, or as to any matter which by this contract it is expressly provided is to be settled, ascertained, or determined by arbitration, such dispute shall be referred in writing to the sole determination, arbitrament, and award of the Judge of the Supreme Court assigned to that Judicial District of the Supreme Court within which the works relative to which the dispute shall have arisen have been or are to be executed, whose award shall be final, binding, and conclusive on all parties: Provided, however, that before any such dispute as aforesaid shall be so referred, the Contractor shall give to the Minister for Public Works one calendar month's notice in writing of such dispute, and of the matter and cause thereof, and in such notice the Contractor's claim shall be explicitly stated; and if such claim be for pecuniary compensation, the amount thereof shall also be stated.

JOHN CARRUTHERS.  
JOHN BROGDEN AND SONS.

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## SPECIFICATION OF THE MANNER OF CONSTRUCTING THE INVERCARGILL AND MATAURA RAILWAY.

### GENERAL DESCRIPTION.

Description.

1. The line of Railway included under the title "Invercargill and Mataura Railway," and to which this Specification applies, begins at a point in the Town of Invercargill, and terminates at a point on the eastern bank of the Mataura River, as delineated on the accompanying plans and sections; the total length of the contract being thirty-nine miles fifty-six chains or thereby, with an addition of three miles of sidings.



## DRAWINGS.

2. The drawings, including general plans and longitudinal sections, as shown Drawings on list A, accompany this Specification. These show the character of the works to be executed. Further drawings of details will be issued from time to time as may be necessary.

The general plan is drawn to a scale of three chains to an inch, and shows the course of the Railway, the centre line of which has been staked out on the ground, and is represented on the general plan by a red line.

The road and stream diversions are shown on the general plan.

The longitudinal section is drawn to a horizontal scale of three chains to the inch, and to a vertical scale of thirty feet to the inch. It represents the natural profile of the ground along the centre line of the Railway. The red line shows the level of the bottom of the ballast. On the longitudinal section are shown the positions and sizes of the culverts and bridges described in this Specification.

## ALIGNMENT OF STRUCTURES.

3. In the construction of bridges, culverts, road crossings, and generally, it is Alignment to be understood that they are to intersect the line of Railway at such angle or curve as may be necessary and approved in each case, although they may be shown on the drawings straight and at right angles; and in the interpretation of the drawings and schedules, and of this Specification, it shall be distinctly understood that all works or materials necessary to the due and workmanlike completion of every erection are to be provided, whether specially described or not.

## CONTRACTOR TO PROVIDE LABOUR, PLANT, AND MATERIALS.

4. The Contractor is to provide all labour, tools, implements, plant, and Contractor to provide labour, &c. materials, and is well and substantially to construct and complete the Railway in accordance with the plans and specifications, and to deliver the same complete, and is to maintain and keep the said Railway, and all works connected therewith, in perfect order and repair for the space of three months from the delivery of the same to the Government.

The said Railway shall be made in accordance with this Specification, and with the plans and sections herein referred to, or with such modifications of the plans and sections as the Engineer shall order, provided such modifications shall not increase the cost of the work.

## FELLING, CLEARING, AND GRUBBING.

5. The whole of the timber within one chain and a half of the centre line is Felling, &c. to be felled. Of this extent the central chain is to be cleared by removing all logs and underbrush half a chain from the centre line, and to a greater distance where the formation requires it. Throughout all cuttings and along formations on the level, all stumps and roots are to be grubbed out entirely and removed, so as to leave no loose timber whatever, and no stumps within two feet of formation level along centre or within one foot of the surface in the slopes.

The Contractor will be permitted to apply to his own use the timber which he has felled for the purpose of clearing the line.

## FENCING.

6. Twenty miles of the line are to be fenced on one side; and wherever Fencing. present fences are disturbed or interfered with, they are to be made good at the expense of the Contractor. At all crossings of roads, and other places where cattle-stops are used, fences are to be completed across the line up to the cattle-stops.

The description of fencing used shall be that described in special fencing specification, as Qualities Nos. 1, 2, and 3. Quality No. 1 shall be used only where permitted by the Engineer. Qualities 2 and 3 may be used at the option of the Contractor.

## EARTHWORKS.

7. All flax, scrub, rushes, or Maori-heads growing on the line of the Railway, Clearing scrub, &c. shall be cut down to the full width between the outside of the slopes.

Roads not to be obstructed.

No public or private road that crosses or intersects the Railway or works thereof, shall be obstructed by excavation or otherwise, until the Contractors shall have provided such temporary roads as may be necessary for the traffic.

Cuttings.

The cuttings are to have a base at formation level of 10 feet in rock, 11 feet in loose rock, and 13 feet elsewhere, and are to be made in accordance with plan and section attached; but should the Engineer require any of the cuttings or banks to be made with different slopes from those shown on Drawing No. 9, the difference of cost shall be added to or deducted from the contract sum. Such alteration to be ordered in writing.

Drain.

A drain is to be cut along the bottom of slopes of cuttings, except in rock; this drain to average 5 cubic feet per lineal yard. Catchwater drains are to be dug above the top of one slope of cuttings, at a distance of from a quarter of a chain to a chain from the top of slopes; these ditches are to average 5 cubic feet per lineal yard, and are to be true and regular to the inclinations directed; no stumps or roots to be left in them.

Embankments.

The embankments must be carried forward uniformly of the proper shape, with such an addition to the heights and widths as a due allowance for the shrinking of the material requires, so to avoid as far as practicable the necessity for making subsequent additions either to the heights or widths of the embankments, to bring them to the correct levels and dimensions.

Whenever the foundation of an embankment is on sloping ground, the Contractor, if required, must at his own expense cut steps and benches under the base of the embankment.

The top of embankment at formation level is to be 10 feet wide; the slopes to be trimmed off to an inclination of one and a half horizontal to one vertical, and to be maintained full and true until the completion of the contract.

The Contractor shall, unless otherwise directed by the Engineer, take care not in any way to interfere with or divert the existing drainage areas, and shall leave such stops or stanks in the side cuttings, and take such other precautions, as the Engineer shall think necessary for that purpose.

Punning.

Behind and around culverts and abutments of bridges, the embankments shall be wheeled in and carefully rammed.

#### DITCHES AND DRAINS.

8. When the line crosses swamps of a peaty nature, catchwater drains are to be cut on the upper side of the line obliquely across the valleys, so as to tap the surface water. These ditches shall not exceed, on an average, one and one-third cubic yard per lineal yard, and are to be made at the commencement of the work, and cleaned out from time to time as may be ordered.

#### STREAM DIVERSIONS.

9. All stream diversions are to be grubbed out as described for cuttings, and excavated with regular slopes and inclinations, as will be set out.

#### ROAD ALTERATIONS.

Road alterations.

10. At the places shown on the plan and section, and wherever necessary, the present roads are to be diverted.

All such diversions and road approaches to the level crossings are to be completed in a convenient, substantial, and proper manner, with the necessary drains, water tables, and side slopes. Such approaches and road diversions are to be formed with an inclination not steeper than 1 in 30 for public roads, and 1 in 20 for private roads, except where the present inclination exceeds these rates, in which case the inclination of the new road shall not exceed that of the present road, unless, in the opinion of the Engineer, a steeper is unavoidable.

Metalling.

Public roads and approaches to first-class crossings are to be metalled with coarse river gravel or approved hard stone, laid on and spread as directed, so as to average twenty-two cubic yards per lineal chain of road. Private roads are to be metalled with coarse river gravel or broken stone of approved quality, laid on and spread as directed, so as to average nine cubic yards per lineal chain. The whole of the metal is to be broken to pass through a two and a half inch ring.

Four first-class, four second-class, and six third-class crossings, with two Level crossings. cattle-stops to each crossing, as per Drawing No. 8, shall be constructed at public and private roads where directed. They shall be carefully placed as to line and level, and finished in strict conformity with the drawing and the notes thereon. Each level crossing shall be metalled for a length of 66 feet on each side of the centre line, as above specified for the roads, and tile or timber box drains shall be put in the formation ditches where necessary for the drainage of the line or road.

Forty pair of malleable iron tubular or other approved gates, 12 feet wide, Gates. hung to strong posts, and furnished with bolts and padlocks, shall be provided and hung at private crossings where directed.

Cattle-stops, as shown in drawing No. 8, are to be put in where directed, not Cattle-stops. exceeding forty in number, besides those at level crossings.

#### MATERIALS.

11. Except where otherwise specified, all the materials used under this contract shall be of following kinds and descriptions:—

All masonry, except archwork, coping, and string courses, to be of rubble laid Masonry. in cement-mortar. Bond-stones, two feet long, to be put in every square yard of both face and back of work. All spalls are to be set in mortar, and not laid dry, and afterwards grouted. Facework must have no stone containing less than one-quarter of a cubic foot. The work shall be grouted every foot in height; archwork shall be of brick, set in cement-mortar; but where flat-bedded stone exists approved by the Engineer, the Contractor may use it for arches, but he must in that case increase the thickness of the arches 25 per cent. beyond that shown on drawings. All wingwalls, parapets, and abutments shall be finished with a coping of brick on edge, one brick wide, set in cement. The coping is not generally shown on drawings. The whole of the masonry is to be neatly pointed.

A layer of puddle, 9 inches thick, to be put over the arches of culverts. Puddle.

All timber shall be of matai or totara, or other timber specially approved; it Timber. shall be heart-wood, except as shown on Drawing No. 12, and shall be straight and sound, free from shakes, large knots, and other imperfections.

The whole of the straps and bolts shall be made of B.B. crown iron, or other Malleable iron. iron of equal quality, of the dimensions shown, the whole to be finished and fixed in a workmanlike manner.

Bolts shown or specified shall have a square head, of which the thickness shall Bolts and nuts. be equal to the diameter of the bolt, and the width twice the diameter of the bolt. They are to be tapped with a good clean thread, and shall have a nut equal in size to the head of the bolt, and shall be provided with one or more washers 3 inches diameter.

#### BRIDGES AND TIMBER OPENINGS.

12. Bridges, as per detail drawings, shall be erected where shown on Bridges, &c. longitudinal section.

All joints, shoulders, and sides of tenons and scarfs to be worked perfectly Joints. true, and to fit accurately, and to be covered with red lead before being put together. Tenons generally to be 5 inches long, and to be draw-bored to receive trenails of hard wood made with hollow auger or trenailing machine. All trenails to be well seasoned and kept dry, and to be one-sixteenth of an inch more in diameter than the hole bored for them, and to be covered with red lead before being driven. All capsills and mudsills to be mortised on to posts or piles. All string pieces to be accurately notched down to capsills or floor beams by notching  $\frac{3}{4}$  inch from each, to be scribed and accurately fitted. Diagonal braces, where placed inside the panel, are to be notched together as described for string pieces.

All piles are to be rung before driving with a 3 inch by  $\frac{3}{4}$  inch round Piling. hoop. The piles are to be shod with a substantial iron shoe weighing not less than 30 lbs., securely fixed; the point of the pile to be cut true, and to be squared off at the end to 3 inches square, and to have true bearing against the shoe. No pile-driving is to be commenced at any bridge, opening, or other work without giving six days' notice previously to the Engineer in charge of the works.

Contractor to supply rods and gauges.

The Contractor shall provide all proper rods and gauges for setting out and testing the dimensions of bridges and timber openings that the Engineer may require.

#### CULVERTS AND DRAINS.

Timber culverts.

13. Timber culverts shall be erected where shown on longitudinal section.

The frames shall be accurately mortised and tenoned and pinned; the planking to be securely spiked on to the frames, the whole of the timber to be heart of totara or matai; the outer side of the planking need not be reduced to the dimensions given, but there must in every case be the full thickness specified of heart timber; the edges of the planking must fit truly for the whole thickness, and the planks must extend over at least two panels, and break joints as much as possible.

Masonry culverts.

Masonry culverts shall be erected where shown on longitudinal section. They shall be of rubble masonry, set in cement mortar, with coping of brick on edge.

Drains at culverts.

Sufficient catch-water and out-fall drains are to be dug at culverts, and all stumps and roots occurring in the line of ditch to be taken out.

#### BALLASTING AND PERMANENT WAY.

Ballast.

14. The ballast is to consist of shingle, broken stones, or sand, previously approved of, and is to be disposed as shown on Drawing No. 9. In all cases the embankments and cuttings are to be cleared from mud, and brought to an uniform formation level before the ballast is laid on.

Permanent way.

The permanent way is to consist of a single line of rails laid to a gauge of 3 feet 6 inches, and sidings provided and laid where directed, amounting in all to three miles of sidings.

Gauges.

The Contractor is to provide and have upon the ground at all points when the work is proceeding a sufficient supply of all such templates, tools, gauges, and other implements as are necessary and are usually required in the laying of permanent way, or as may be required by the Engineer.

Laying of permanent way.

About three thirty-seconds of an inch of space is to be left between the ends of the rails when fixed in place, or such other space as the Engineer may direct, according to the season.

Bending rails.

For the curves, the rails will require bending. This, as well as the straightening of all bent rails, must be effected by a press, or by striking with wooden hand-beetles on wooden blocks. In all cases, whether of straightening of bent rails or of bending rails to the necessary curves, the rails must be set permanently to the form required before being laid, and no temporary bending, springing, or straightening, either by dragging with a lever and hook, or by any other means of a like character, will on any account be permitted.

Laying sleepers.

Great care must be taken to lay all the sleepers square to the rails on straights, and as near as may be on curves. Where the line is straight, the rails will be level across the line; but where the line is curved, the rails will be canted, the difference of level between the two rails being such as the Engineer shall order.

When suitable material for ballast is not found immediately on the line, the sleepers may be laid on formation, being carefully tamped with dry earth. The Contractor will be permitted to run ballast and material trains over the line thus laid at a speed not exceeding ten miles an hour, but the ballasting and lifting must be proceeded with with all possible despatch.

The changes of gradients shall be made by a gradual curve.

Sleepers.

There are to be 2,050 sleepers per mile, to be spaced as directed. The following timbers to be used to the extent of not less than 75 per cent. of the whole:—Totara, jarrah, Oregon pine, kauri, or puriri. The remaining 25 per cent. may be of matai (*Podocarpus spicata*) or birch (*Fagus fusca* or *Solandri*). They shall be 7 feet long, and 7 inches by 5 inches, all of heart. They are to be flatted top and bottom, true and out of wind; but any extra width beyond 7 inches need not be removed. The rail seats are to be accurately adzed to a correct bevel.

Rails and fastenings.

The rails will weigh 40 lbs. to the yard; they will be jointed with Ibbotson's patent steel clip-joint, weighing about 12 lbs. each joint, and fastened to the

sleepers by six fang-bolts to each rail, and two spikes to each sleeper where fang-bolts are not used. The rails and fastenings will be delivered to the Contractor at Invercargill, and he shall be responsible for all materials delivered to him.

#### USE OF PERMANENT WAY MATERIALS BY CONTRACTOR.

15. Permanent way materials shall not be laid down or employed within 100 yards of the face of any excavation or the end of any embankments, nor used for hauling earthwork before the ballast is laid. When the Contractor shall have complied with the above requirements, he may use the rails and other permanent way materials for the purpose of hauling earthwork or materials on parts of the line.

Use of permanent way materials by Contractor.

#### SIDINGS.

16. The Contractor shall construct at his own cost, at such points as may be indicated by the Engineer, three miles of sidings, including 10,000 cubic yards of earthwork, and the necessary ballast, sleepers, and laying of permanent way similar to that of the main line, without points and crossings. He shall also make and construct, wherever required, such station-grounds, buildings, points, crossings, extra sidings, telegraph and other things required for station accommodation, and shall furnish the Engineer monthly with a detailed statement showing their actual cost, exclusive of all cost of management, properly supported by vouchers, or as otherwise directed, and to this cost a sum equal to ten pounds per centum shall be added for Contractor's profits, and this amount shall be in addition to the contract sum.

Sidings.

#### TELEGRAPH.

17. A single wire telegraph will be constructed and paid for as for station accommodation, and the use of it allowed to the Contractor during construction of the works. During the period of maintenance the Government will transmit, free of charge, all messages sent by the Contractor on the business of the Railway.

Telegraph.

#### ROLLING STOCK.

18. The Contractors shall take delivery from the ship's side at the Bluff of the articles of rolling stock enumerated below, and shall land, erect, and place the same on the line in working order, and bear all cost of the same, except the carriage from the Bluff to Invercargill.

#### LIST OF ROLLING STOCK.

- 3 locomotives.
- 12 carriages and break-vans.
- 24 waggons.

#### USE OF ROLLING STOCK.

19. The Government will furnish the Contractors with such locomotives and rolling stock as they may have on the line, the Contractors to pay the wages of the engine-drivers and stokers, who must be approved by the Engineer, and to furnish fuel, water, oil, grease, waste, &c., at his own expense. The Contractors shall also return such rolling stock as may be lent to them in as good order as when received by them—reasonable tear and wear excepted. In the event of the Government being unable to supply locomotives and rolling stock when needed by the Contractors, an extension of time will be granted for the completion of the contract; such extension of time to be fixed by the Engineer.

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## THE INVERCARGILL AND MATAURA RAILWAY.

## LIST A.

Name.	Mileage.		Description.	No. of Drawings.
	Miles.	Chains.		
Puni Creek	...	16	Timber Bridge—Superstructure to be renewed	1.
" "	1	34	Timber 3 13ft. openings	2, Fig. 1.
Waihopia River	5	68.50	" 9 13ft.	3.
" "	9	7	" 5 13ft.	2, Fig. 2.
Oter Creek	25	32	" 5 13ft.	4, Fig. 1.
Creek	28	10	" 3 13ft.	4, Fig. 4.
Waimumu	31	35	" 2 30ft., and 1 19ft.	5.
Charlton Creek	36	23	" 3 13ft. openings	4, Fig. 2.
Swamp	38	15	" 4 13ft.	4, Fig. 3.
Mataura River	39	70	10 40ft. openings. Timber, superstructure, masonry, abutments, and piers	5A.
Culverts—				
20 3 feet	...	...	Timber	}
5 4 "	...	...	"	
5 6 "	...	...	"	
6 18 inches	...	...	"	
1 4 feet	...	...	Masonry	7.
Level crossings	...	...	...	8.
Cross sections of cuttings and embankment	...	...	...	9.
Plans and longitudinal sections, 32 sheets	...	...	...	11.

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## GENERAL FENCING SPECIFICATION.

The fencing to be used shall be of three kinds, to be known as Qualities Nos. 1, 2, and 3.

Quality No. 1.—Quality No. 1 shall consist of a sod wall, 3 feet 3 inches broad at base, 1 foot 3 inches broad at top, and 4 feet 6 inches high. It shall be carefully built in uniform layers from 8 to 10 inches thick, and bonded together. A ditch at least 2 feet 6 inches wide, and 1 foot 6 inches deep, shall be dug on each side, and carried through the wall where necessary for the drainage of the line or adjoining land. The wall is to be carried over such ditches on sound totara timber 3 inches thick.

Quality No. 2.—Quality No. 2 shall consist of post, ditch, mound, three wires, and top rail.

Quality No. 3.—Quality No. 3 shall consist of post, five wires, and top rail.

The timber used in Qualities Nos. 2 and 3 shall be totara, matai, kauri, or manuka, or other specially approved timber.

The posts to be of split timber, cut square at ends, mortised for rails, and well rammed when in their places. A straining post, 9 feet long, 6 inches in diameter, and well stayed, shall be put in at intervals of not more than 5 chains, and at each crossing of existing fences.

The top rails shall also be of split timber, scarfed at ends, neatly fitted into mortise holes cut in the posts, and securely fixed with wedges.

The wires shall consist of the best black annealed wire of No. 5 Birmingham gauge, and shall be fastened to outside of posts with suitable staples.

The mound, in fencing Quality No. 2, shall be of tough firm sods, as specified for sod wall. It shall be 3 feet wide at base, 2 feet wide at top, and 1 foot 6 inches high.

Existing fences crossed and cut down shall be connected with the railway fences, and left in a condition at least equal to that in which they were found.

The Contractor shall provide temporary slip-rails or panels in the permanent fencing where required for the accommodation of occupiers, and will give every other facility of access to their lands across the line until the permanent crossings and roads are constructed.

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