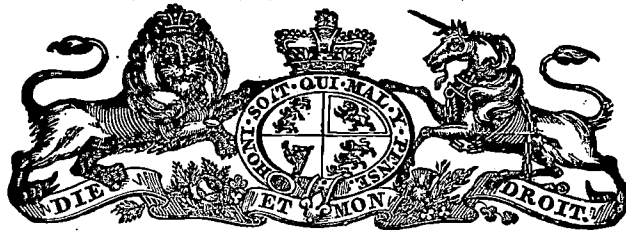


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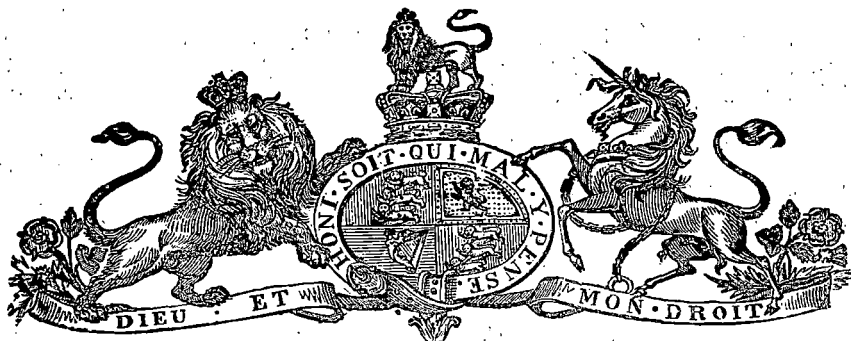
T A S M A N I A.

HOUSE OF ASSEMBLY.

MAIN LINE RAILWAY:

ADDITIONAL CORRESPONDENCE.

Laid upon the Table by the Attorney-General, and ordered by the House to be printed, September 23, 1873.



*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, 27th June, 1873.*

SIR,

I HAVE the honor to enclose you a plan and section of the Main Line Railway from $6\frac{1}{2}$ to 9 miles, measuring from the terminus at Hobart Town, on which distance there are two level crossings of the Main Road, one at $6\frac{1}{2}$ miles, and the other at $8\frac{1}{2}$ miles, and also a diversion of the Main Road at $7\frac{1}{2}$ miles. I have not given cross sections of the Main Road at these places, because the Railway will cross the road with but a very slight, if any alteration in the height of the surface, and the road would therefore be unaffected by the Railway.

The deviation proposed will rather shorten and improve the Main Road, which will be maintained at its present width beyond the alteration.

These works are necessary in the construction of the Railway, and therefore I have to request that under the 9th clause of "The Main Line of Railway Act," 33 Vict. No 1, you will obtain the consent of your Government to the road crossings and diversion shown upon the plan.

I have, &c.,

(Signed) CHARLES H. GRANT, *Engineer.*

The Hon. the Colonial Secretary.

FORWARDED for the consideration and opinion of the Hon. the Minister of Lands and Works.

JAMES R. SCOTT.
27 June, '73.

HAVING personally inspected the sites of the two level crossings, and the diversion of the Main Road, herein referred to, I beg to state that I see no objection to the "crossings," provided the requirement of the section quoted is complied with.

With reference to the diversion of the Main Road at $7\frac{1}{2}$ miles from Hobart Town, whilst I agree with the statement that the deviation will be a shorter and improved route, I cannot admit the right of the Railway Company to increase the height of the road above the original line.

CHARLES MEREDITH,
Minister of Lands and Works.
5th July, 1873.

Colonial Secretary's Office, 11th July, 1873.

SIR,

I HAVE the honor to acknowledge the receipt of your letter of the 27th ultimo, enclosing a plan and section of the Main Line of Railway, from $6\frac{1}{2}$ to 9 miles measuring from the terminus at Hobart Town, and requesting the assent of the Government under the 9th section of "The Main Line of Railway Act," 33 Vict. No. 1, to certain level crossings of the Main Road, and also to a diversion of the same road at $7\frac{1}{2}$ miles.

Having forwarded your letter for the consideration of the Hon. the Minister of Lands and Works, that officer has returned it with the following endorsement:—

"Having personally inspected the sites of the two level crossings, and the diversion of the Main Road herein referred to, I beg to state that I see no objection to the "crossings," provided the requirement of the section quoted is complied with.

"With reference to the diversion of the Main Road at $7\frac{3}{4}$ miles from Hobart Town, whilst I agree with the statement that the deviation will be a shorter and improved route, I cannot admit the right of the Railway Company to increase the height of the road above the original line."

I have, &c.,

(Signed) JAMES R. SCOTT.

C. H. GRANT, Esq., Chief Engineer
Main Line Railway Company.

*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, 14th July, 1873.*

SIR,

I HAVE the honor to acknowledge and thank you for your letter of the 11th instant, in which permission is granted for the Main Line Railway Company, Limited, to make crossings of the Main Road at $6\frac{3}{4}$ miles and 9 miles distance, measuring from the terminus at Hobart Town, and also to make a slight diversion of this road at 8 miles.

As regards the remark of the Hon. the Minister of Lands and Works, I have the pleasure to inform you that the deviation is so marked out that there will be but a very slight difference between the altered level and that it now bears, while the gradient will be much improved.

I have, &c.,

(Signed)

CHARLES H. GRANT, Engineer.

The Hon. the Colonial Secretary.

MAIN LINE RAILWAY.

Monthly Report No. 2.

27th June, 1873.

SIR,

I HAVE the honor to forward my Second Monthly Report of the progress and particulars of the works on the Main Line Railway.

Excavations and Embankments.—Men are at work in three cuttings in land adjoining the Launceston and Western Railway; then again from Evandale to the South Esk River at Clarendon, a distance of 4 miles, the line is graded ready for the ballast—this is all light surface work; nothing is then done between Clarendon and Snake Banks, where the clearing is done for two miles ready for commencing the excavations and embankments; from the end of this to Cleveland, about five miles, the cuttings are all in progress, about three-fourths done,—beyond this to Campbell Town the line is being marked out but no ground broken.

From about one mile south of Campbell Town to three miles south of Ross, nearly 10 miles, the line is graded, except half a mile at Ross, running nearly all the way on the surface; the cuttings and embankments rarely exceeding 12 to 18 inches deep, except about $1\frac{1}{2}$ miles at Ross, where there is a cutting six feet deep through bluestone rock seven chains long nearly finished, one short cutting at Turkey Creek, average seven chains long and five feet deep through freestone, and a short freestone cutting through the Cemetery and about half a mile from side ditch; the remainder is merely surface forming. There is then no ground broken till arriving at the Flat Top Tunnel. Ground is broken south of Jerusalem, and for the next eight miles a large number of men are employed; all the cuttings and embankments are in active progress and quite one-half done, some of the cuttings through bluestone, some through freestone, and some through clay, varying from two to 23 feet deep. This is the heaviest work along the line.

There is then no ground broken till south of Bridgewater Causeway; on the Causeway a little filling and a temporary roadway is laid down. Opposite Stump's farm a cutting and embankment is in active progress at both ends, the line here keeping close to the road. A quarter of a mile further on a deep cutting is at work going to bank southwards across the hollow. Opposite Mr. Brent's house a small cutting and bank is at work. A little further on a 15 feet cutting is in progress. Opposite the *Travellers' Rest* a cutting is at work and five chains of bank made.

At the Seven-mile Hill, Glenorchy, a cutting and bank are in progress for the purpose of diverging the Main road so that the Railway can pass to the west of the road.

South of T. Y. Lowes' residence a small cutting is in progress and four chains of bank made.

In front of the *Berridale Inn* a short cutting is begun at both ends and going to shallow bank northwards, the men just commencing the south end of this cutting where the Railway will cross the Main Road. Near O'Brien's Bridge a small cutting at work at both ends to bank. At the Race-course a freestone cutting is in active work running to bank northward, there is then a short piece of work formed. A small cutting near the mill at work to bank southwards.

At the north of the Risdon Road a cutting at work to a heavy embankment southwards to meet the Viaduct; from here the road is formed and graded to near the fence of the Horticultural Gardens; from this to the Hobart Town terminus the cuttings and banks are nearly formed.

The side ditches are cut along on one or both sides, as required, where the road is graded or in progress.

The line from the Flat Top Tunnel to where the cuttings are at work is all cleared of timber and scrub.

Culverts.—There are three unfinished culverts near the junction of the Launceston and Western Railway and one south of Evandale, in brick or stone, in progress.

From Snake Banks to Cleveland there are three wooden culverts.

In the neighbourhood of Ross there are nine culverts built of stone—2 ft. 3 in. \times 1 ft. 6 in.; these culverts are very good, but I doubt if sufficiently large.

On the section south of Jerusalem there are—

16 Wooden Culverts	18 in. \times 12 in.
1 Ditto	3 ft. \times 3 in.
3 Stone ditto	18 in. \times 12 in.
1 Ditto	18 in. \times 18 in.
1 Ditto	3 ft. 0 in. \times 2 ft. 0 in.
1 Ditto	3 ft. 6 in. \times 3 ft. 0 in.
1 Ditto	3 ft. 10 in. \times 2 ft. 4 in.
1 Cattle Arch	4 ft. 6 in. \times 3 ft. 0 in.
1 Ditto	6 ft. 6 in. \times 7 ft. 0 in.

On the Section from Bridgewater there are—

10 Stone Culverts	18 in. \times 12 in.
1 Double ditto	30 in. \times 24 in.
1 Single (wood top)	5 feet wide
1 Ditto (open top)	5 feet wide.

The stone culverts generally, except those in the Domain, are well built of good freestone.

Fencing.—There is no fencing done at the north end of the line. About five miles south of Jerusalem there is about a half a mile of very inferior chock-and-log fence, the spars are mere saplings, some not more than four or five inches in diameter. The post and four-rail fence from O'Brien's Bridge to the Horticultural Gardens fence is nearly all fixed, it is a very light fence, some of the rails not more than one inch thick and the posts 5 \times 3.

Bridge at Bridgewater.—Men have commenced work here. Twenty piles have been driven on the north side and 11 on the south side; three pile engines are at work, two punts, and a steam engine.

Bridge at Clarendon.—The men have just commenced pile-driving.

Viaduct, Risdon Road.—Seven masonry piers have been built to the height to receive the timber framing. Some of the timber is framed ready for fixing.

Cattle-guards.—One cattle-guard in the Domain and one at Ross have been built of freestone; the one in the Domain has the timber framing on the top to receive the rails.

Flat Top Tunnel.—The works are here progressing, though slowly; the cuttings at the two ends are at work. Shaft No. 1 is down to the level 53, a heading north and south driven 67 feet; Shaft No. 2—124 feet deep, not down yet; Shaft No. 3—127 feet deep, not down yet; Shaft No. 4—46 feet deep down to formation, and 61 feet of heading driven.

The headings are about four feet wide and five feet high, they are being pushed through for air to men at work.

I have to call your attention to the close proximity of the line to the Main Road near Stump's farm, about a mile south of the Bridgewater Causeway. The Contractors have cut away the foot of the slope of the Main Road, here made from sidling hill, the earth cast over to form the full width of the road has formed a natural slope of $1\frac{1}{2}$ to 1, this slope the Contractors have cut away to 1 to 1, the top edge being close to the fence; the slopes now being at too great an angle will be liable to slip from the top and bring down the fence and damage the coach road.

The grades on the line generally easy so far as made, except the part south of Jerusalem, where there are some very heavy ones—1 in 40—I was informed for very long distances both up and down. About this section and the Government Gardens there are some very sharp curves quite up to the Company's limit, and without much, if any extra cost, some might have been avoided.

You will see in the list of culverts that at Epping Forest there are three and on the Jerusalem section 17 wooden culverts,—these are objectionable especially where stone can be got. Freestone is abundant in the cuttings on the Jerusalem section; at Epping Forest stone is rather scarce, but bluestone can be got at no great distance.

The bottom is slabbed, the sides are built of squared timber, and for a wood culvert the covering is bad, being round saplings and limbs of trees six to nine inches diameter. These I know from my own experience decay in three or four years, let down the bank, and stop the drainage. Most of the culverts were covered before I saw them,—one culvert I saw had a good covering of full grown timber.

At Bridgewater the piles are far too small, being 40 feet long and only $12\frac{1}{2}$ to 16 inches diameter at the large end; one long one I saw on the south side of the bridge did not appear more than nine inches diameter at the lower end.

I am deficient of the sections of the line of Railway, so that I could more particularly indicate the spots the work is proceeding, and the probable quantity of work done, and enable me to verify the gradients and curves, also the plans of the bridges to calculate the strength of the various structures.

It would be advisable, in case of dispute, to send to England and have a copy of the requirements of the Board of Trade forwarded.

JOHN R. FRITH, *Inspecting Engineer.*

The Minister of Lands and Works.

FORWARDED to the Hon. the Colonial Secretary.

CHARLES MEREDITH, *Minister of Lands and Works.*
1st July, 1873.

FORWARDED for Mr. Grant's perusal.

JAMES R. SCOTT.
8th July, 1873.

*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, 15th July, 1873.*

SIR,

I HAVE the honor to acknowledge the receipt from you of Mr. Frith's Report for the month of June on the Works of the Main Line Railway, and am greatly obliged for the opportunity of perusing it.

There would appear to be no sufficient reason for my troubling you with any observations on the descriptive portions of this Report, although I must ask you to consider that I by no means concur in the statements as to the light character of the work; and, as regards the fencing, that done is so unusually good that we cannot get anyone to continue it; and it is the best Railway fence I have ever known to be erected.

Having carefully examined the cutting near Stump's, that Mr. Frith objects to, I do not doubt that the slope will stand thoroughly well, and would have required it to be trimmed off easier on the top, but for the soil being so matted with roots that there is no possibility of its slipping. Should there be the slightest indication of damage to the Main Road, I will have it widened on the opposite side, so that its present width would be safely maintained.

I am happy to state that, up to the present time, there is no curve in the whole Line of so sharp a radius as 4 chains, and no grade is steeper than 1 in 40,—which are the limits in the Contract.

The coverings to the wood culverts, that Mr. Frith mentions, were not according to my drawings, and were altered directly I saw them. The reason I allow wood culverts in shallow banks is on account of the impossibility of carting stone in the winter; and to omit them would greatly delay and imperil the work. They are, however, made most unusually strong, while their failure would occasion little inconvenience.

I am not aware that a pile of less diameter than 14 inches, where cut off, and therefore very much larger when first pitched, is now in the Bridgewater Bridge; and think that 18 inches would be a very fair average diameter for their butt ends. Their enormous weight and length makes them extremely difficult, and very costly to manage. I have no knowledge that such heavy pile driving as at Bridgewater was ever before essayed.

Mr. Frith's Report is herewith returned.

I have, &c.,

(Signed)

CHARLES H. GRANT, *Engineer.*

The Hon. J. R. Scott, Colonial Secretary.

FORWARDED for the perusal of the Honorable the Minister of Lands and Works.

B. TRAVERS SOLLY.
16 July, 1873.

To be returned.

PERUSED and returned.

CHARLES MEREDITH.
17. 7. 73.

Lands and Works Office, Hobart Town, 7th July, 1873.

SIR,

I HAVE the honor to request that you will cause the necessary instructions to be given that in all "crossings" of the Main Line of Railway over the Main Road the gates shall be parallel with the line of road, as shown by the enclosed Plan.

I have, &c.,

(Signed)

CHARLES MEREDITH,

Minister of Lands and Works and Director-General of Roads.

The Hon. the Colonial Secretary.

Colonial Secretary's Office, 11th July, 1873.

SIR,

I HAVE the honor to forward herewith copy of a letter which I have received from the Hon. the Minister of Lands and Works respecting the position of the gates at all level crossings of the Railway over the Main Road; and I shall feel obliged by your giving the necessary instructions to meet the views of the Honorable Mr. Meredith.

I have, &c.,

(Signed)

JAMES R. SCOTT.

C. H. GRANT, *Esq., Engineer, Main Line Railway Company.*

*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, 14th July, 1873.*

SIR,

I HAVE the honor to acknowledge your letter of the 11th instant, with which you enclosed copy of a communication from the Hon. the Minister of Lands and Works, desiring that the gates on the Main Road Railway crossings should be made to open parallel with the line of the road, as shown in the diagram which accompanied the letter.

I will take care that these instructions are complied with, should it be decided to use gates at these road crossings; but I trust that the Company will be allowed to use cattle guards in place of such gates, on account of the far greater convenience they afford both to the public and the Railway.

Two sets of these cattle guards have been completed in the Domain for the inspection of the Government, and the Honorable Members of the Houses of Parliament, and I shall be happy to show and explain them whenever the Government can spare time for an inspection.

I have, &c.,
(Signed) CHARLES H. GRANT, *Engineer.*

The Hon. the Colonial Secretary.

FORWARDED for the information of the Hon. the Minister of Lands and Works. To be returned.

JAMES R. SCOTT.
15th July, 1873.

READ.

CHAS. MEREDITH.
16. 7. '73.

WILL be prepared to view cattle guards on Monday next, or any other day on which Parliament is not sitting.

CHAS. MEREDITH.
24th July, 1873.

WOULD 3 o'clock on Monday afternoon suit Mr. Grant?

B. TRAVERS SOLLY.
25 July, '73.

Master Gunner's Office, 28th July, 1873.

SIR,

I HAVE to report for your information that I have this day received into the Domain Magazine 53 packages of L. G. B. Powder in good order and condition, and certify that no iron nails, screws, &c., are in any of the packages thus received.

I may state that I had a difficulty in landing this powder on account of the impassable state of the road leading to the main road. The original road has been stopped up by the Railway people, and no other road made to replace the old road. Some steps ought to be taken to make a road. A large quantity of powder will be landed and used by the Railway Company during the next 12 months. His Excellency the Governor, in passing this way while the powder was being carted to the Magazine, remarked that a road ought to be made.

I have, &c.,
(Signed) JAMES CHISHOLM,
Master Gunner, and Sergt. in charge of Magazine.

The Hon. the Colonial Secretary.

Colonial Secretary's Office, 30th July, 1873.

SIR,

My attention has been called to the state of the road from the Powder Jetty to the Domain Road.

The original road has been stopped up by the Railway, and, as yet, no sufficient steps have, it appears, been taken to facilitate the removal of gunpowder from the Jetty to the Magazine.

Requesting your early attention to this matter,

I have, &c.,
(Signed) JAMES R. SCOTT.

C. H. GRANT, *Esq., Engineer, Main Line Railway Company.*

*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, August 11, 1873.*

SIR,

I HAVE the honor to acknowledge the receipt of a letter from your predecessor in office, dated the 30th ultimo, which arrived during my absence in the North, and could not therefore be attended to at the time.

Instructions were long since given to the Contractors to provide a crossing of the Railway for the road to the Powder Jetty, and to amend the old road so as to make it usable and convenient for the public traffic from the Jetty to the Powder Magazine. This road is, I find, almost complete, and I will take care that the public interests are well preserved in the matter.

I have, &c.,

(Signed) CHARLES H. GRANT, *Engineer.*

The Hon. T. D. CHAPMAN, Colonial Secretary.

Colonial Secretary's Office, 23rd August, 1873.

SIR,

My attention has been called to an alteration now being made in the line of fence along the Main Line of Railway in the Domain, between Mr. M'Gregor's Ship-yard and the Governor's Domain; and I shall feel obliged by your informing me under what circumstances, and under what powers, the provisions of the lease of the land required for the Railway have been departed from, by including more than 20 feet from the centre of the Railway.

I have, &c.,

(Signed) THOS. D. CHAPMAN.

C. H. GRANT, *Esq., Engineer, Main Line Railway.*

*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, 1st September, 1873.*

SIR,

I HAVE the honor to acknowledge your letter of the 23rd ultimo, respecting an alteration made in the line of fence along the Main Line of Railway in the Domain, between Mr. M'Gregor's Ship-yard and the Governor's Domain, and requesting to know under what powers the provisions of the lease of the land required for the Railway have been departed from, by including more than twenty feet from the centre line of Railway.

In reply I have to state, that previously to receiving your letter I had noticed the alteration in the fence that you mention, and had enquired of the Contractors whether a special authority had been obtained from the Government for such a proceeding, without which I stated it could not be allowed; but the absence of the Managing Partner prevented my having a reply until this day.

He now informs me that he considers the Main Line of Railway Act gave the power to take what ballast was absolutely necessary for the construction of the railway from any where it might be found, and that the difficulty of procuring suitable ballast is so very great that there is no other convenient place to take it from; but on my representing that this was certainly a most undesirable part to use for such a purpose, he has undertaken to restore the fence to its original position.

I ought to remind you, to prevent any misunderstanding, that the lease allows an addition to the side width of twenty feet for the slopes of cuttings or embankments.

I have, &c.,

The Hon. the Colonial Secretary.

(Signed) CHARLES H. GRANT, *Engineer.*

Colonial Secretary's Office, 25th August, 1873.

SIR,

REFERRING to previous correspondence upon the subject of the route of the Main Line of Railway, printed in Parliamentary Paper No. 25 of this Session, and specially to your letter to my predecessor of the 8th January, I am induced to again call your attention to the proposed departure from the line marked out by the late Mr. Wylie, as shown on the chart submitted by that gentleman to the Members of the Executive Government, and approved by them previous to the Contract for the construction of the Main Line Railway by the Tasmanian Main Line Railway Company being signed by the Governor, by and with the advice of the Executive Council, on the 15th August, 1871; and as it is represented that the route by way of Jerusalem will be about 15 miles longer than the route proposed by the late Mr. Wylie, and further that the route you now propose will not afford as much accommodation to the inhabitants of the settled Districts of the Colony as the Railway would do if it passed through the centres of population, I have the honor to request that you will be good enough to inform me, for the information of the Governor, the reasons, in detail, that have induced you to construct the Railway by way of Jerusalem instead of by way of Constitution and Spring Hills, as agreed to by the Executive Government and the late Mr. Wylie.

I have, &c.,

CHARLES H. GRANT, *Esq., Engineer, Main
Line Railway Company.*

(Signed) THOS. D. CHAPMAN.

*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, 27th August, 1873.*

SIR,

I HAVE the honor to acknowledge your letter of the 25th instant, in which, for the reasons therein stated, you desire that I would inform you for the information of the Governor the reasons in detail that have induced me to construct the Main Line Railway by way of Jerusalem instead of by way of Constitution and Spring Hills, as agreed to by the Executive Government and the late Mr. Wylie.

I shall have much pleasure in complying with your request, but as you wish the reasons given in detail I cannot write the letter off-hand ; it shall however be sent as soon as possible.

The papers and information in my possession do not afford any grounds whatever on which I could assume that a route had been agreed upon between the Executive Government and Mr. Wylie, or that the Company were even in the very slightest degree plighted to any particular route. The first clause in the Schedule to the Contract is the only direction or stipulation referring to this matter that I can find, and I was positively assured before leaving England both by the Company and the Contractors that the question of route was entirely open ; and that the known physical difficulties of Constitution and Spring Hills would in all probability prevent a direct line being followed.

As, however, the route known as Mr. Wylie's was obviously the shortest and most easily constructed through the country, had it been practicable, I need not assure you that the final adoption of another was not made until the whole matter had received a most careful and anxious consideration.

I have, &c.,

(Signed) CHARLES H. GRANT, *Engineer.*

The Hon. the Colonial Secretary.

*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, 28th August, 1873.*

SIR,

IN compliance with the request contained in your letter of the 25th instant, I have now the honor to acquaint you officially with the reasons that induced me to carry the Main Line of Railway by the way of the Tea Tree and Jerusalem, instead of taking what is apparently the more natural and easy course *via* Constitution and Spring Hills.

You are aware that the Contractors arrived in this country before myself, and they immediately went actively to work in examining the whole country between the Coal and Jordan Rivers. While thus engaged, every route that appeared in any degree feasible was carefully explored, and no opportunity was lost of obtaining all such local information as might prove useful in its final determination.

It was apparent on simply walking over the ground that the central route could not be carried through the Serpentine Valley, between Melton Mowbray and Lovely Banks, in the position supposed to be indicated by the late Mr. Wylie, without exposing the Railway when constructed to the most serious risk of obstruction to traffic and danger to life from the high perpendicular, and in some cases overhanging, cliffs on either side of this deep and narrow gorge, which is so very tortuous that the construction of a Railway through it could only be effected by intersecting the numerous spurs with tunnels through hard rock. In other parts the course must be along the bed of a mountain torrent, and require exceedingly strong and heavy works to secure them from being carried away by floods.

The difficulties of this route are so very formidable that I am informed it was, after a careful examination by the Main Road Engineers, abandoned as being quite impracticable for a common road, although its adoption would have much economized distance and avoided the steep gradients of the Lovely Banks Hill.

Every other available pass was then tried with a view of overcoming this difficulty, but without success ; for although there is a bare possibility of obtaining a Line *via* the Quoin Creek and Hollow Tree Bottom with very heavy works and a slight excess of our maximum grade, the large deviation from a proper direction would so much increase the length of the line as to preclude this route from further consideration.

On traversing the slopes of Constitution and Spring Hills it also became questionable whether these obstacles could be surmounted with the limitation of grade named in the Contract ; and accordingly a careful instrumental survey was made from Bridgewater to Jericho, on the exact line it was understood that Mr. Wylie wished to obtain.

The particulars of this survey I have now the honor to give you from the plans, first premising that I cannot quote exact figures, because the distances and levels are necessarily from the survey lines, and would be unfavourably affected when the curves were set out.

Starting from near the road bridge at Brighton (Pontville), where the crossing of the Jordan River would involve a very lofty bridge and heavy works, a tunnel of 20 chains in length must be made through Brighton Hill, from whence the line would be continued through Bagdad Plains to the foot of Constitution Hill, then rising *via* the Stony Hut Pass with a very severe ascent, would lead on to about $4\frac{1}{2}$ continuous miles of our maximum gradient, on the summit of which would be a tunnel at least a mile and 47 chains long. The Line would then descend on the 1 in 40 grade to the Green Ponds Rivulet, about 2 miles from Green Ponds. Several attempts to reach this village have most signally failed, and proved that it would only be possible to get into this Township by returning backwards to it, and thus lengthening the Line by several miles. Proceeding thence the Line enters the pass of the Quoin Rivulet, and runs up it to the junction of the Serpentine Valley Creek,—the gorge of which has been before described; at the head of this ravine the line would debouch on the Main Road (but not in the manner stated to be proposed by Mr. Wylie, which would involve a curved tunnel one mile long in the hill side), and follow its general route to Spring Hill, keeping however in the bottom of the valley and passing through two tunnels, one near the *London Inn* being 28 chains long, and that at the summit at least 45 chains in length. These tunnels would be within one mile of each other, and both on the maximum grade of 1 in 40, which here starting from previous severe rising gradients continues without a break for upwards of five miles, and then falls in the same manner to Jericho.

It will be seen that on this line a length of at least two miles and three quarters of tunnelling would be requisite, which must unquestionably be driven through the very hardest description of bluestone rock, and thus involve a very large expenditure of time and money.

Independently of every other consideration, I am of opinion that either such a rise as that at Constitution Hill, of $4\frac{1}{2}$ miles of 1 in 40 grade, with a tunnel 1 mile 47 chains long thereon at its summit; or that at Spring Hill of more than 5 miles of the same continuous grade, with nearly a mile of tunnel thereon, and with no opportunity in either case to "make steam" before commencing to climb them, would be entirely fatal to any practicable line of the ordinary construction; and I cannot suppose it was intended that the very special and costly expedients, both in construction and maintenance, recently adopted for climbing mountains should be unnecessarily used in this country.

Every possible effort was made to overcome these difficulties by deviations on either side, but without result; and, therefore, I have no hesitation in stating that the route herein reported on should, on account of its engineering difficulties, be considered impracticable if any other route can be selected. Were it absolutely necessary to construct the line on this section, and its enormous cost left entirely out of consideration, the expense of working and maintaining it would utterly preclude its being kept open by the Company on the traffic now likely to offer; and if operated by the Government would entail a ruinous expense to the country for many years to come.

In the endeavour to obtain the most favorable line the valley of the Jordan has been thoroughly explored and found quite impracticable on the upper portion, besides which the greatly increased length of the line, caused by following a tortuous river bottom, militates strongly against this route, and no variations therefrom would much improve it.

The only remaining course for the Railway is, then, the Coal River or Jerusalem route, which, if by no means an easy one, is incomparably superior to the others.

Although in its comparative length intermediate between the Main Road and Jordan routes, it possesses the advantage of having only one summit to ascend, as against both Constitution and Spring Hills. The summit level of Constitution Hill is 1207 feet, and of Spring Hill 1688 feet above high water, and the gradient summits 1005 feet and 1480 feet respectively.

The highest point of the Flat Topped Hill, where the line passes through it, is 1546 feet, and the gradient summit 1380 feet. Again, in place of the $9\frac{1}{4}$ miles of continuous ascending maximum gradients (1 in 40) by the Main Road route, with $2\frac{1}{2}$ miles of tunnel thereon, there are on the Jerusalem route but $3\frac{1}{4}$ continuous miles of gradients varying from 1 in 40 to 1 in $45\frac{1}{2}$, with 47 chains of tunnel thereon, which has the incidental advantage of passing through a very favorable freestone.

Having regard to the engineering features of the rival routes there cannot be a question as to which should be adopted for a trunk line, in locating which it would be impolitic to have too much regard to local considerations; for I need hardly suggest that if the communication between the only two important centres of population in the Colony, or the market and port of Hobart Town and rich-producing country of the north, were rendered too costly to maintain and inefficient in working, the whole Country would sustain serious loss.

While regretting that the physical difficulties of the country on the Main Road route prevents the line being carried three miles nearer the Bothwell District than is found practicable, it must be remembered that it would in any case be many miles from that village, which would, therefore, only derive a slight advantage from it. On the other hand the highly important Districts of Richmond and the East Coast will be immediately and greatly benefited by the present line, and many thousands of acres of very rich land lying along it will be at once brought into profitable cultivation.

As regards the village of Oatlands, which is entirely dependent for its existence on traffic derived from the country east of it, there is the less cause to regret the position of the line, because it will either pass through, or be several miles nearer to the producing districts, and will, therefore, have a larger and more direct beneficial interest thereon.

The adopted line, leaving what is called Wylie's route near Brighton, joins it again at the mouth of the St. Peter's Pass, and the variation extends over a distance of about 42 miles, or for one-third of the total length; during the remainder of its course northerly it passes through the villages of Antill Ponds, Tunbridge, Ross, Campbell Town, and Evandale, being closely adjacent to the Main Road as far as Snake Banks, as it also is from Hobart Town to Brighton.

I hope shortly to have the pleasure of furnishing the Government with complete Plans and Sections of the adopted line, since they will be convenient for any future reference.

I have, &c.,

(Signed) CHARLES H. GRANT, *Engineer*.

The Hon. the Colonial Secretary.

Launceston, 7th. August, 1873.

MAIN LINE RAILWAY.

REPORT No. 3.

SIR,

I HAVE the honor to report, for your information, the progress of the works on the Main Line Railway, as follows:—

Excavating.

The excavations from the junction of the Launceston and North-western Railway to Evandale, 2 miles, are all in active operation. From this to Clarendon, 5 miles, the road is graded,—spaces being left for the culverts when the weather permits them being put in. There is then no earth-work done till south of Snake Banks, the works then to one mile south of Cleveland are all alive; the timber cleared and all the cuttings alive filling to bank. 2 miles of this is finished ready for the ballast.

Excavations again commence at the south bank of the Elizabeth River at Campbell Town, and are nearly finished to Mona Vale, a distance of about 11 miles: the works then through Tunbridge and Antill Ponds are in active operation, men being spread all along the Line.

There is no work going on between the Half-way House and 5 miles south of Jerusalem; the excavating then is nearly done for 8 miles; then on to the banks of the Jordan men are spread along, forming and ditching. From the banks of the Jordan to Bridgewater no men at work.

From Bridgewater to Hobart Town the whole of the Cuttings are in progress,—many of them finished and graded.

Some of the slopes are trimmed off, but very few.

Ballast.

Some 30 chains of ballast is done near Hobart Town, and a little at Ross; some at Ross inferior, which I shall have to speak of at a future time.

Fencing.

About half a mile of fencing is done at Evandale and 5 miles south of Jerusalem; a $\frac{3}{4}$ mile of fencing one side; about 6 miles of fencing is done north of Hobart Town on both sides.

Culverts.

There are 4 double stone culverts; 38 single ditto; 2 cattle arches, stone; 2 open bridges, ditto; 3 small culverts, ditto; 1 open culvert, ditto; 1 small culvert, wood; 18 wood culverts; 4 ditto large ditto; 3 ditto, 6 feet ditto, ditto; 2 cattle-guards: total culverts and cattle arches—78.

Side Ditches.

There are about 40 miles of ditches cut in various places of an average depth of one foot.

Bridges.

The Bridge at Clarendon is in progress; 26 piles driven, and the men at work.

TASMANIAN MAIN LINE RAILWAY

SECTION

SHewing MAIN ROAD DIVERSION AT 7 MILE HILL

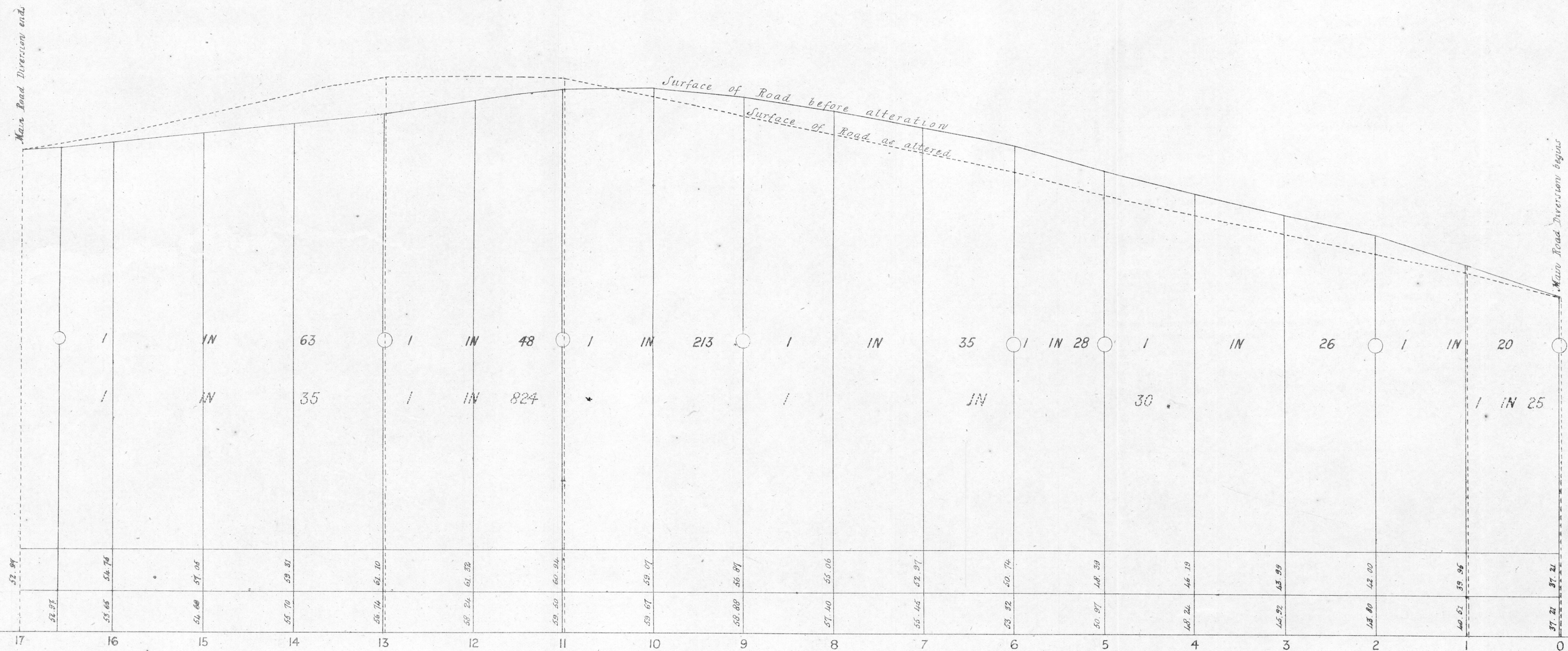
Horizontal Scale - One chain to an inch

Vertical Scale - Ten Feet to an inch

New Road shown thus -----

Old " " "-----

New Road 37 links longer than old road.



Bridgewater.

The Bridge here is getting on, 103 piles being driven. While I was on the work a pile was being driven then 100 feet into the ground, 26 feet of water, and going at the rate of three quarters of an inch at a blow, with a fall of 15 feet from a 17 cwt. monkey. As well as I could see, the pile was about 21 inches in diameter at the large end; there are two hand and one steam pile-driving machines at work.

Flat Top Tunnel.

No. 1 Shaft.—Down at 53 feet deep; 25 feet heading on each side of the shaft driven.

No. 2 Shaft.—151 feet down.

No. 3 Shaft.—131 feet down, 143 feet heading driven.

No. 4 Shaft.—46 feet down; 234 feet heading driven.

The sides of the steep sidling south of the Tunnel is being stepped for the bank coming over it.

I beg to call your attention to the raising the road deviation at the 7-mile Hill from Hobart Town nearly 4 feet above the present road: this should not be allowed, it is an encroachment, and making the road worse than it was before,—increasing the length of the south incline, and sharpening the northern incline. As to the powers in this matter, I beg to refer you to Act 33 Vict. No. 1, 1869, section 10,—“An Act to authorise the Governor in Council to contract for the Construction of a Main Line of Railway through Tasmania upon certain Terms.”

I have also to remind you of the fact that the Company are proceeding to put in Cattle-guards at the crossings in place of gates, contrary to the provisions of the above Act, section 13.

I have, &c.,

(Signed)

JOHN R. FRITH,

Inspecting Engineer Main Line Railway.

The Director of Public Works.

FORWARDED to the Colonial Secretary.

WM. MOORE.

1 Sept. 1873.

FORWARDED for Mr. Grant's perusal.

THOS. D. CHAPMAN.

26 Sept. 1873.

*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, 15th October, 1873.*

SIR,

I HAVE the honor to acknowledge the receipt of a Report from Mr. J. R. Frith on the works of the Main Line Railway, dated the 7th August, and which is endorsed as forwarded to me on the 26th ultimo, at which time I was absent engaged in examining the Line, and have but lately returned.

So much work has been done on the Line since Mr. Frith went over it prior to making his Report, that his account does not in the least represent the present state of progress, and his measurements, unless taken long before the date of his Report, are very much less than my own.

In the minor matters I must request you not to consider me as endorsing his statements and figures because I do not correct them, since it does not appear to be worth while to trouble you with a mass of technical detail.

Mr. Frith makes a statement about the Main Road deviation at the Seven-mile Hill, which he complains has raised the road nearly four feet above the original and made it worse than before, increasing the length of the south incline, and sharpening the northern incline.

To correct his misapprehensions as to the damage done the road, I herewith send a correct section of both the new and old road, plotted from levels accurately taken on the crown of each, which shows that the extreme difference in the summit levels of the two roads is now but 19 inches, and when the new metalling crushes down under the traffic the difference in level will be almost inappreciable.

An inspection of this section will also show the great improvement we have made in the long gradient of the new road of the south end, which is now uniformly 1 in 30, against much steeper gradients on the former road. The northern gradient is but short, and has been very little affected.

It can scarcely be questioned that in consequence of the large outlay here made the hill is much easier to traverse than before, and therefore that the road is improved rather than damaged, while it is now well fenced on each side.

I have, &c.,

(Signed)

CHARLES H. GRANT, *Engineer.*

The Hon. the Colonial Secretary.

Colonial Secretary's Office, 30th August, 1873.

SIR,

IN reply to the questions put by a Deputation, of which you were Chairman, to the Members of the Government on the 19th instant, with reference to the proposed route of the Main Line Railway, I have now the honor to inform you that I have placed myself in communication with the Engineer of the Company, and have ascertained from him the reasons which have induced the Company to proceed with the construction of the Line *via* Jerusalem, instead of by the route proposed by the late Mr. Wylie.

After a careful consideration of the reasons adduced by Mr. Grant on behalf of the action of the Company, and bearing in mind the present position of the Government with reference to the contracting Company, I have now the honor to inform you that the Government do not deem it expedient at this period "to appoint a competent Engineer to ascertain whether the Line of Railway marked out by the late Mr. Wylie is a practicable one."

At the stage of construction at which the undertaking has now arrived, the Government are of opinion that the appointment suggested would have no practical utility.

I have, &c.,

(Signed) THOS. D. CHAPMAN.

THOMAS GORRINGE, *Esq.*, Warden, Green Ponds.

*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, 4th September, 1873.*

SIR,

I HAVE the honor to forward herewith a plan and section of the Main Line Railway where it crosses the Main Road at the following places :—

- 1st. Bridgewater Bridge, near the Toll-Gate.
- 2nd. Ditto, Dromedary Road.
- 3rd. Ditto, 13th Mile-stone.
- 4th. Ditto, 14th Mile-stone.
- 5th. Antill Ponds, at the *Halfway House*.
- 6th. Ditto, from Mr. Headlam's to Mr. Barwick's land.
- 7th. Tunbridge, at south end of village.
- 8th. Ditto, near Blackman River Bridge.
- 9th. Willis' Corners, north of hotel.
- 10th. Snake Banks, near *Eagle's Return*.

Also crossings of Bye Roads ; viz —

- 11th. Fingal Road at Willis' Corners.
- 12th. Nile Road, north of Evandale.

The position of the Railway approaching the Bridgewater Causeway, and on that embankment, is also shown on the plan.

I have not given any cross sections of the roads at the crossings, because they are intersected on or about their present levels, and therefore but very slight alterations will be necessary in the height of the existing surface.

In making these crossings I will take care that the convenient public use of the road is duly preserved.

These works being necessary for the proper construction of the Railway, I have the honor to request that you will obtain the approval of your Government thereto, in accordance with the provisions of "The Main Line of Railway Act," 33 Vict. No. 1, Section 9.

I have, &c.,

(Signed) CHARLES H. GRANT, *Engineer*.

The Hon. the Colonial Secretary.

Colonial Secretary's Office, 18th September, 1873.

SIR,

I HAVE the honor to acknowledge the receipt of your letter of the 4th instant, requesting the authority of the Governor in Council, under the provisions of the 9th Section of the 33rd Vict. No. 1, to construct the Main Line of Railway across the Main Line of Road at the under-mentioned points :—

- 1st. Bridgewater Bridge, near the Toll-Gate.
- 2nd. Near the Dromedary Road.
- 3rd. Near the 13th Mile-stone.
- 4th. Near the 14th Mile-stone.
- 5th. Antill Ponds, at the *Halfway House*.
- 6th. Near Mr. Headlam's to Mr. Barwick's land.
- 7th. Tunbridge, at south end of village.
- 8th. Near Blackman's River Bridge.
- 9th. Willis' Corners, north of hotel.
- 10th. Snake Banks, near *Eagle's Return*.

Also to cross the following Cross Roads :—

- 1st Fingal Road at Willis' Corners, and
- 2nd. Nile Road, north of Evandale.

I have now to inform you in reply, that the Governor in Council accords to the Main Line Railway Company the requisite permission, provided the approaches to the Railway on both sides are made good, and provision made for the protection of life and property by the erection of Gates, &c. to the satisfaction of the Governor.

The Governor in Council also sanctions the laying of the necessary rails for the Railway along the embankment known as the Bridgewater Bridge Causeway ; provided that, for the safety of the public, the Company cause to be erected such Gates and Fencing as the Governor may from time to time direct on and along the said Causeway.

I have, &c.,

(Signed) THOS. D. CHAPMAN.

C. H. GRANT, *Esq.*, *Engineer Main Line Railway.*

*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, 19th September, 1873.*

SIR,

I HAVE the honor to acknowledge your letter of the 18th instant, in which you express the sanction of the Government to various crossings by the Main Line of Railway of the Main Road at the places therein mentioned.

As regards the conditions of such approval, I have to assure you that they shall be duly fulfilled, and also that the Company will at all times be happy to attend to any instructions you may deem it necessary to give.

I have, &c.,

(Signed) CHARLES H. GRANT, *Engineer.*

The Hon. the Colonial Secretary.

MEMORANDUM.

Colonial Secretary's Office, 10th September, 1873.

THE great importance which attaches to the construction of the Railway Bridge over the Derwent at Bridgewater induces the Colonial Secretary to request that the Honorable the Minister of Lands and Works will instruct Mr. Frith to furnish a special Report, upon the occasion of his next inspection of the works on the Line, upon the piles and other material used by the Contractors in connection with that work.

The Colonial Secretary has been given to understand that some of the piles are totally unsuited to meet the requirements of such a structure ; and as upon the character of the timber, and the sufficiency of its dimensions, the durability and safety of the Bridge must mainly depend, it is imperative upon the Government to ascertain, as far as practicable, that every precaution is taken to ensure the due fulfilment of the Contract in these particulars.

(Signed) THOS. D. CHAPMAN.

The Hon. the Minister of Lands and Works.

Launceston, 26th September, 1873.

MAIN LINE RAILWAY INSPECTION.

REPORT No. 4.

SIR,

I HAVE the honor to report, for your information, the progress of the Works on the Main Line Railway, as follows:—

Excavating.

The excavating and embankments from the junction of the Launceston and Western Railway to Clarendon are about finished grading, and ready for ballasting. From this to the road crossing at Snake Banks a few men are at work. From the crossing at Snake Banks to Willis's Corners the whole of the Line is nearly all graded. From the Corners several cuttings are in progress for the next two miles. There is then nothing done till arriving at the Elizabeth River, where a cutting on the north side and a bank on the south side are in progress. For the next half-mile nothing is done. The grading is then done as far as the Macquarie River. From thence to Mona Vale the Line generally is in full work. From the Lagoon towards Tunbridge, for two miles, the road is graded. From the end of this to Tunbridge men are at work. The cuttings and embankments are about three-parts done to the Bridge. From this the Line is graded to Antill Ponds. From thence to about a mile east of the main road towards York Plains the work is progressing,—a large number of men being at work. There is then nothing done till you get to the Flat-top Tunnel, where the cutting at the north end is actively at work. At the south end of the tunnel the cuttings and banks for $\frac{3}{4}$ of a mile are in active progress. There is then nothing done till the cutting at the south of Jerusalem, from whence for the next five miles the cuttings and banks all along are at work: some finished, some at work. The next 12 miles the cuttings and banks are all finished except three cuttings: these are left for ballast. From the end of this to the banks of the Jordan the works are in active progress,—a large number of men being at work. There is nothing then done for half a mile over the bridge at Bridgewater, where the works again commence; and no active progress to the Risdon Road. From thence into Hobart Town the grading is finished.

Ditches.

Ditches are cut where required along one or both sides of the Line, where the cuttings are done or the embankments made.

Culverts.

During the course of the month since my last report there have been 48 stone culverts, various sizes, from 5 feet by 4 feet to 18 inches by 12 inches. 15 culverts formed of wood from 36 inches by 16 inches to 18 inches by 12 inches. 2 beam culverts 10 feet wide, and one 3-arched bridge stone pier began, and 4 glazed earthenware pipe drains.

Flat Top Tunnel.

All the shafts are down to the level at No. 4; there are 379 feet run. of heading driven, and 105 feet run. of top opened out down to the springing.

No. 3 Shaft.—Commenced to open out the top.

No. 2.—30 feet of heading opened out.

No. 1.—462 feet of heading down; 50 yards of top opened out down to the springing.

Bridges.—Clarendon.

60 piles are driven; 15 cap cills on 24 corbels; 120 feet run. of single beams on 60 feet of double beams; some walings and braces fixed; 100 feet of side beams.

Bridgewater Bridge.

About 120 piles are driven; some few of the corbels and beams are in place; very little has been done at this during the last month.

Fencing.

About 1 mile of fencing both sides is done about Evandale. At about Snake Banks and the Forest 20 chains of single fence and 32 chains of fence both sides, chock and log. 5 miles south of Jerusalem 60 chains chock and log fencing, 14 chains posts in for wire fencing, and 25 chains of post and rail fence; there is then no more till getting to T. Y. Lowes' land, where a post and rail fence commences and continues to the end of the works.

Ballast.

About half a mile of ballast in various places is done ready for the road.

I beg particularly to call your attention to the following remarks on the Works :—

Earthworks.

At several of the embankments made from side ditches the slopes of the banks are too steep, in some cases from $\frac{1}{2}$ to $\frac{3}{4}$ to 1; a very narrow benching is left, and the side ditches made for the purpose of getting materials for the banks are cut down perpendicularly. The benching left between the foot of the embankment slope will be barely enough to allow the slopes to fall to their angle of rest, which they will do with the action of the weather and the jar of the trains passing over the embankment; the width of the bank at the top will be so reduced as not to leave sufficient base for the ballast. This will be the case even if the sides of the open ditch stand as now left, which is very improbable.

The banks alluded to are chiefly about Ross and Tunbridge.

Cattle-guards.

A cattle-guard is put in the Domain at Hobart Town, one at Ross, and men are excavating for one near the banks of the Jordan.

These cattle-guards are in contravention of the Contract and Act of Parliament, which provides for gates at all crossings.

Fencing.

The fencing all along the line is very inferior. Amongst the post and four-rail fence I measured some posts as small as $4 \times 2\frac{1}{4}$ inches at the top end, and many of the rails an inch and under in thickness.

The chock and log fences where put up are very light, the greater part of the logs from $3\frac{1}{2}$ to 4 inches in diameter; indeed, so light it looks as if the wind would blow it down.

The sawn timber fence in the Domain is also very light and inappropriate for the place; the posts are only 4×3 . This fence especially should have been a substantial one, and somewhat more ornamental.

Clarendon Bridge.

The workmanship in this bridge is of very fair character; but the timber is inferior in many respects. The piles are much too small, being only from 15 to 17 inches diameter at the large end: there are 2 or 3 piles 18 inches diameter, and I think these are the largest. These piles should not in any case have been less than 16 inches at the small end. The size now in is altogether too small for the work they will have to do; and no allowance made for decay at the surface of the ground.

The beams are of inferior quality, and are cut out of two small trees. The timber squared 14×14 : the heart in and out of trees only sufficiently large to square the size. The hearts in some cases are very soft and spongy.

River Jordan Bridge.

The piles for this bridge are being delivered: about 30 are on the ground; they are about 40 feet long, the largest measuring 19 inches at the butt, and most of them about 14 inches diameter; the small ends are from 9 to 12 inches diameter: the timber itself, gum and stringy bark, is sound and good, but too young,—not more than saplings, and, unquestionably, too small for the work they will have to do.

Bridgewater Bridge.

The piles for this bridge are generally good sound timber, but in many cases too young, although grown on a dry hill side; some of them 65 feet long,—only 10 inches diameter at the small end, and $15\frac{1}{2}$ to 18 inches at the large end. Some of the piles have had to be scarfed, the ground being very soft, the piles going 30, 40, and 50 feet down,—the scarfs of most of the piles being above the ground and in the water, the water being from 20 to 27 feet deep; and in some instances there are two scarfs between the top of the pile and the bottom of the water: this is very objectionable, the piles being so small—like whip sticks; and these scarfs being beyond the reach of any means of tying them or bracing them together anywhere in the 27 feet of water, there will always be a weakness in that part, however stiff the upper part of the works may be made with ties and braces. The proposed top to the bridge, according to the plan, is sufficiently strong to carry anything that can be put upon it, and makes the whole thing top-heavy.

The piling of this bridge will not pass examination at the completion of the work to enable the Company to receive a certificate under the regulations of the Board of Trade in England, which will be required by the terms of their contract.

Risdon Road Bridge.

The workmanship in this structure is very good, the upper part sufficiently strong; but I should advise that a horizontal tie be fixed from end to end of the bridge along the sides of the two centre rows of standards at the foot of the spurs: this will more equally distribute the weight of the trains passing over the different arches at such a great height.

The same objection as noticed in the other bridges as to the size of trees,—the squared timber cut out of the trees being only large enough to square the size with the heart in the centre, and the heart not always quite sound.

Encroachments on the Main Road.

I have before reported the encroachments on the Main Road near "Stump's" farm: the slopes of the road are being cut away too close to the road; the new fencing is also being fixed— some places a foot, other places more (say three or four feet more) on the road, and enclosing the telegraph posts. There was no necessity at all for this, there being plenty of room between the slope and the water to carry the Railway without at all encroaching on the road.

The Contractors are commencing to form the Railway bank from the south end of the Causeway southward, and I think by what is doing they intend encroaching on the roadway. I would advise, before the Company are allowed to touch the road, that proper arrangements be made so as to leave the road its proper width to the present table drain, that a space of nine feet beyond the table drain to the fence for a footway, and that proper drainage into the river, be secured.

I have before reported on the diversion of the road at the Seven-mile Hill, that the southern incline is made too long, raising the road at the apex of the hill three or four feet above the level of the old road, and sharpening the decline at the north end more than the old road.

The metal put on the new work is too large, some of the stones are four or five inches long and flat: it is impossible they will ever properly bind together: none of these stones should have been larger than would pass in any direction through a two-inch ring: these stones are broken by a steam stone-breaker.

I am, Sir,

Your obedient Servant,

JOHN R. FRITH, *Inspecting Engineer,*
Main Line Railway.

The Director of Public Works.

FORWARDED to the Honorable the Colonial Secretary.

WM. MOORE.
11. 10. 73.

Lands and Works Office, 10th October, 1873.

SIR,

I BEG to bring under your notice that the Railway Contractors have commenced forming line between the *York Inn*, Bridgewater, and Causeway; and from the position of the pegs, and the retaining wall now being built, an encroachment will be made on the Main Road.

I would recommend that the Contractors be informed that a path 9 feet wide, in addition to the full extent of the road, will be required on the east side of the Main Road so as to allow for horses swerving, which may be looked for when the trains are running.

A drain will also be required with outlets for water.

An encroachment has also been made at forced roadway (between Mr. Stump's farm and Mr. Page's stables, formerly known as the *Old Fox Inn*, near Bridgewater), by the foot of slope having been cut into for materials for forming embankment, to save distance and expense in procuring same. The slope in some places is not more than 1 to 1 instead of $1\frac{1}{2}$ to 1, as required.

I beg to suggest that the Contractors be called upon to make good all doubtful parts to the required slope of $1\frac{1}{2}$ to 1.

A post and rail fence erected along the Main Road at this spot has an unsightly appearance and requires straightening, and regulated by inserting a few longer posts.

Diversion near Seventh Milestone.

This alteration would have made an improvement (as the grade on the whole is easier) had the north side or top of hill been cut into two feet more and not kept up above the level of old roadway, which causes a rise in the north approach, instead of being level as before.

I would suggest that the Contractors be requested to break over the metal now spread on the road, as it is far too large. At present a coating of the metal and rubbish taken from the old roadway is being laid over the stone, which should first have been broken to pass through a two-inch ring.

I am, Sir,

Your obedient Servant,

W. H. CHEVERTON, *Overseer of Works,*
in charge of Main Road.

To the Director of Public Works.

I BEG to forward to the Honorable the Colonial Secretary this Report of the Overseer of Works, Mr. Cheverton, which confirms the statements made in that of the Inspecting Engineer, M.L.R. (sent herewith), and desire to draw particular attention to the matter herein referred to; and would recommend that the Chief Engineer M.L.R. Co. be communicated with, in order that immediate steps may be taken to carry out the suggestions made, and prevent any further encroachments on the Main Road.

WM. MOORE.
11. 10. 73.

Colonial Secretary's Office, 15th October, 1873.

SIR,

I HAVE the honor to forward, herewith, Mr. Frith's 4th Report upon the Works on the Main Line Railway.

I desire to call your attention to Mr. Frith's remarks on the earthworks, cattle guards, fencing, the several bridges referred to—especially the Bridgewater Bridge—and the encroachment on the Main Road; also to Mr. Cheverton's letter, dated the 10th instant, to the Director of Public Works, upon this latter subject.

I shall be glad to receive any observations you may desire to make upon the several matters referred to with as little delay as possible, in order that the Government may be in a position to consider the different points brought under their notice.

I have, &c.,

(Signed) THOS. D. CHAPMAN.

C. H. GRANT, Esq., *Engineer-in-Chief,*
Main Line Railway Company.

*Tasmanian Main Line Railway Company, Limited, Engineer's Office,
Hobart Town, Tasmania, 17th October, 1873.*

SIR,

I HAVE the honor to acknowledge your letter of the 15th instant, forwarding Mr. Frith's 4th Report on the Works of the Main Line Railway, and calling my attention to the several matters therein contained; also to Mr. Cheverton's letter, dated the 10th instant, to the Director of Public Works, respecting certain encroachments upon the Main Road.

You desire to receive any observations I may have to make upon these documents as quickly as possible; but I have very little to say in reply.

Upon each previous occasion that I have commented on Mr. Frith's Reports it has been necessary to observe that his statements of the progress of the work, on his given dates, are not exactly correct; and, in his last Report, his measurements and figures can only refer to the state of the work in the preceding month.

It is with much regret that I profess my utter inability to reply to the strictures passed on my works by any one who classes piles from 14 to 19 inches in diameter as "not more than saplings," and other piles 15½ to 18 in diameter, and 65 feet long, as "whip-sticks."

In English practice the largest piles very rarely exceed 13 inches square, and are mostly of soft wood. My specification requires a minimum of 16 inches diameter, and strong hard timber; and none others have been used: while the timber throughout the Line is of the very best quality it is possible to obtain, and is never used until it has been most carefully inspected.

The other remarks are too unpractical and extreme to be of any use to me; and I can only renew the assurance before given, that my best skill and endeavours will always be used to protect the interests of the Company, according to the strict terms of the Contract with the Government, who I can hardly consider to be desirous of undertaking the Engineering responsibilities of the Contract.

In regard to cattle guards, I have to remind you that last Session the Government introduced into Parliament a Bill, one Clause of which permitted the Company to use cattle guards in place of gates. After some discussion, and when it appeared that the construction and mode of action of these contrivances was not understood by the Members of the House of Assembly, the Hon. the Premier postponed the consideration of this Clause till the next Session, and stated that he would have them tried meanwhile on the Launceston and Western Railway.

Not hearing that this had been done, and with the knowledge of the Government, I had some sample cattle guards put in near Hobart Town, but find they are still misunderstood, and despair of the public advantages they offer being appreciated until some gates have been erected across the Main Road.

From the remarks made it would be inferred that the Company or the Contractors have some advantage to gain by adopting the system of cattle guards; but the Company have a remote interest therein, since the extra cost involved in attending to the gates must be considered as fully provided for by the Government guarantee alone; and, as regards the Contractors, the cost of each pair of cattle guards, with corresponding arrangements, is at least ten times that of gates.

Knowing by long practical experience the infinitely greater public convenience that these cattle guards offer where level crossings are necessary, and their immunity from risk of any kind, I have the more earnestly endeavoured to get them adopted; but if the Government prefer that the gates should be erected, their desire shall be most willingly fulfilled; and therefore I beg to leave the matter entirely in your hands, only requesting that it shall receive an early consideration.

Should you desire any further explanations on this subject I shall be happy to furnish them, and will, if you please, have a pair of gates erected, in order that the Members of the Government may make their own comparison.

Mr. Cheverton's suggestions in regard to widening the Main Road near Bridgewater, and other matters, are doubtless worthy of consideration; and if you desire I shall be happy to meet him on the ground, and then determine to what extent his wishes can be reasonably complied with.

It should in fairness be remembered that the Main Line of Railway Act, following all previous railway legislation in England and the Colonies, gives the Company full power to alter roads and streets; and that the use of the Bridgewater causeway and approaches for the Railway has always been understood since the time of the Government survey, such having been shown on their plans; and further, that the Main Line of Railway Royal Commission, on whose report this contract was partly based, did not hesitate to recommend that the whole Main Road as far as Oatlands should be to some extent appropriated for the Railway.

The allusion to the railway slopes in Mr. Cheverton's report was doubtless inadvertently made.

The remarks of Messrs. Frith and Cheverton on the Main Road diversion at the Seven-mile Hill have been previously replied to.

I have no fear whatever but that the metalling will bind exceedingly well, and make a very satisfactory road: should it not do so the Contractors must execute all the necessary works to secure that a good travelling surface can be maintained.

In this large and costly diversion I cannot but think there is very little of which any reasonable man could complain.

I have, &c.,
(Signed) CHARLES H. GRANT, *Engineer.*

The Hon. the Colonial Secretary.