(1) [illegible]

(2) Date of [illegible]

(3) Initials of the Indenter

MADRAS RECORD OFFICE.

Government of Madras.

DEPARTMENT.

G.O. No.

Dated

Press Mark

Shelf

Not to be folded or roughly handled

No. 1. Read the following letter from the Acting Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 25th November 1870, No. 459:—

With reference to the Order of Government, No. 2,294, dated 22nd September 1870, I have the honour to submit amended abstract estimates for the Neilgherry branch line in two districts—the first for a length of 12 miles 40 chains, amounting to Rupees 9,32,566, and the second for a length of 12 miles 68 chains, to Rupees 9,98,510, making the total distance 25 miles 28 chains, and the aggregate estimated cost Rupees 19,31,076.

With Agent's letter, No. 580, dated 13th October 1870.
Do. No. 651, dated 16th November 1870.

2. The total length of the line in the original estimates was 28 miles 43 chains, and the estimated cost Rupees 23,79,042, the saving in distance now effected being 3 miles 15 chains, and in cost Rupees 4,47,966.

3. As directed by the Government of India the line, as now estimated for, stops at Mettapolliem.

4. It will be observed from the Acting Chief Engineer's letter enclosed, that it is not considered advisable to modify the direction of the latter part of the line, as the ground beyond the present position of the station has a steep slope down to the Bhowany; and also because the site selected is elevated and healthy, and has the advantage of being near the rest-house for troops, as well as the hotel.

No. 535, dated 10th October 1870, to Agent.

5. With regard to the large extent of waterway allowed for both drainage and irrigation purposes, to which the Government of India draw attention, the Acting Chief Engineer explains that the 37 irrigation pipes are intended to provide for the passage of water from wells for the irrigation of the lands which the Railway traverses, and that cast-iron pipes have been preferred to masonry culverts on the score of economy and their better adaptation to the circumstances of well irrigation.

6. The total width of 1,166 feet of waterway proposed for eight bridges is only 247 feet in excess of the provision made for the same drainage on the high road, and, looking to the serious damage which might result to the Railway from insufficient outlet for large floods, I think the excess may be admitted.

7. Besides, taking into consideration the dimensions of the bridges on the high road, it is stated that the estimated waterway was decided after carfule inquiries among the resident landowners as to the heights of extraordinary floods, and that the catchment basins of all considerable streams were also surveyed roughly. The term "vonkah" is applied to the larger waterways.

8 Regarding the formation width of 16 feet, which the Government of India consider to be sufficient, the Acting Chief Engineer writes:—

"I beg to call attention to the nature of the ballast which experience has "proved most suitable for the bowl-sleeper road in use on the Madras Railway. "This is either coarse sand, where procurable, or morumboo (Teloogoo for disin- "tegrated granite or gneiss) in the absence of sand. This material assumes a slope "of not less than 2 to 1. Again, we find that a width of 3 feet of ballast outside

"the rail is desirable as tending to the stability of the road; and, thirdly, the "ballast cannot certainly be less than 2 feet deep. These conditions determine "a formation width of 20 feet."

"If it be determined to reduce formation width to 16 feet, the width of ballast "outside rail would be only 1 foot, and this I am prepared to assert would be "insufficient to the stability of the road. Whether a width of 2 feet would be "insufficient I am not so certain. In this case formation width would be 18 feet."

"I should not myself recommend any reduction in the amount of ballast, but, "pending further instructions on this head from the Government of India, will "defer the commencement of the earthworks."

9. With the exception of the reduction from 1 Anna 6 Pies to 1 Anna 2 Pies of the rate for the carriage of permanent-way (under an arrangement which came into operation subsequently to the submission of the estimate for the Neilgherry branch) the rates of the original estimates have not been altered. The charge for painting includes scraping and two coats of paint, and is the rate paid in Madras; that for lifting, Mr. Going explains, is not much, if at all, in excess of what the work can be really done for.

10. As regards the width of formation, the perfection of the line on the pot-sleepers in use depends on the quality and sufficiency of the ballast. Mr. Anderson, the Chief Engineer, lately returned from England, agrees with Mr. Going that there should be a width of 3 feet of ballast outside the rail; and I am of the same opinion myself, especially after noticing lately the effect of continued heavy rain on the North-West Line. The formation width on the Madras Railway lines is no where less than 20 feet; and though a slight reduction might be effected, I would recommend, for the consideration of the Government, that it is not desirable to detract from the stability of the road, but that the sanction of the Government of India should be asked for the amended estimates as now submitted.

From the Agent and Manager of the Madras Railway Company, to the Acting Consulting Engineer for Railways, dated Madras, 13th October 1870, No. 580.

I HAVE the honour to inform you that immediately upon receipt of G. O., No. 2,294, dated the 22nd ultimo, I placed myself in communication with the Acting Chief Engineer in reference to the remarks passed by His Excellency the Governor-General in Council upon the estimates for the construction of the Neilgherry Branch Line, and

No. 535, 10th October 1870.

I now beg to enclose you a copy of Mr. Going's report to me upon the subject.

2. It will be observed from that report that the question of waterway was most carefully considered when the estimates were being prepared, and that advantage was taken of the guide afforded by the waterway of the high road which runs nearly parallel with the proposed line of Railway, the information being shown on the plans which accompanied the estimates.

3. I trust that the explanation thus afforded will be considered satisfactory, as well as that in reference to the remarks upon the width of embankments and the rates charged in the estimates for iron-work, carriage, etc., etc., and that the Government of India will not consider it necessary to reduce the estimates under these heads.

4. An amended abstract estimate is in course of preparation, but I think it better to send forward these observations at once, in order that the views of His Excellency the Governor-General in Council may be obtained as to the waterway, width of formation, etc., etc.; as, until these points are determined it will not be possible to complete the estimate, or even to take advantage of the provisional sanction of Rupees 2,00,000 further than for the purpose of collecting materials.

Proceedings of the Madras Government Public Works Department, 4th January 1871.

From the Agent and Manager of the Madras Railway Company, to the Acting Consulting Engineer for Railways, dated Madras, 16th November 1870, No 651.

IN accordance with the request contained in your letter No. 601, of the 26th ultimo, I have the honour to submit herewith amended abstract estimates for the Neilgherry branch as far as Mettapolliem, the waterway being left as hitherto proposed.

2. The Acting Chief Engineer, as stated in paragraph 12 of his letter,* No. 535, dated the 10th ultimo, does not recommend any reduction in the ballast. The formation width of 20 feet is therefore still estimated for, and I conclude we must await the decision of the Government of India on this point.

* Copy forwarded to you with my No. 580 of the 13th ultimo.

From the Acting Chief Engineer, to the Agent and Manager of the Madras Railway Company, dated Madras, 10th October 1870, No. 535.

IN accordance with the requirements of Government Order, No. 2,294, of 22nd September, I have the pleasure to give the following explanation of the amount of waterway allowed for drainage and irrigation purposes on the proposed branch line to foot of the Neilgherry Hills.

2. With regard to the 37 irrigation pipes. These are intended (as will be readily understood by a reference to the plans and sections furnished by this office) to provide for the passage of water from wells for the irrigation of the lands which the projected line traverses. Cast-iron pipes have been estimated for in preference to masonry culverts, as being far more economical in cost, and particularly adapted to the circumstances of well irrigation, where the level of the channel is constant.

3. I observe that it is stated in paragraph 3 of letter No. 1,437-R., from the Deputy Secretary to the Government of India, Public Works Department, (Railway,) on which the order under reply is passed, that "of the total waterway proposed 1,166 feet indicated for bridges in eight places over "Vonkah," do not appear to be required for the natural drainage of the country," and it is then added, "as the proposed Railway is to be carried nearly parallel to the high road, the waterway given on that road, if properly bridged, should afford a guide to the bridging on the Railway."

4. As care has been taken to note on the plans furnished by this office the exact amount of waterway given on the high road referred to, I am disappointed to find that this information has escaped the notice of the Government of India, and that we are not credited with employing so obvious a guide in determining on the waterway necessary for the Railway.

5. The eight bridges represented by a total width of waterway of 1,166 feet on the Railway will, on reference to the plan, be found to provide for a natural drainage, which on the road is represented by a total width of waterway of 919 feet.

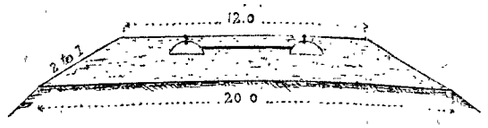
6. The discretion of giving an excess of waterway in favour of the Railway will be readily admitted when it is considered that the damage to be dreaded from an insufficient outlet for extraordinary floods would, in the case of the Railway, be very much greater than in the case of the road.

7. I may, however, observe that, in deciding on the amounts of waterways, those given on the high road were used only as an auxiliary guide. The evidence of the resident landowners as to the highest known floods was taken, and rough surveys of the catchment basins of all considerable streams were made. This was necessary owing to the incomplete state of the Ordnance Map of this part of the Coimbatore District, as well as in consequence of evidence having been adduced to prove that some of the high road bridges had been washed away during former monsoons owing to insufficient waterway.

8. The information thus arrived at led to the adoption of a larger amount of waterway in most instances than was allowed for in the bridges of the high road. In the instance, however, of the most important of these eight bridges referred to, namely, that at 19 miles 3 chains, it will be seen that we have estimated for four openings of 64 feet clear, giving a total of 256 feet. The aggregate waterway of bridges carrying the high road over the main tributaries of this stream is 258 feet.

9. The term "Vonkah" has been used to distinguish the large waterways from the minor ones, which latter have been termed "Nullahs."

10. With regard to the opinion expressed by the Government of India, that a formation width of 16 feet for the embankments would be ample, I beg to call attention to the nature of the ballast which experience has proved most suitable for the bowl-sleeper road in use on the Madras Railway. This is either coarse sand, where procurable, or morumboo (Teloogoo for disintegrated granite or gneiss) in the absence of sand. This material assumes a slope of not less than 2 to 1. Again, we find that a width of 3 feet of ballast outside the rail is desirable as tending to the stability of the road; and, thirdly, the ballast cannot certainly be less than 2 feet deep. These conditions determine a formation width of 20 feet, as is explained by the following sketch, thus ;—



11. If it be determined to reduce formation width to 16 feet, the width of ballast outside rail would be only 1 foot, and this I am prepared to assert would be insufficient to the stability of the road. Whether a width of 2 feet would be insufficient, I am not so certain. In this case formation width would be 18 feet.

12. I should not myself recommend any reduction in the amount of ballast, but, pending further instructions on this head from the Government of India, will defer the commencement of the earthworks.

13. I have the pleasure to afford the following information in respect of the rates which are stated to be high.

The charge for painting, which includes scraping and two coats of paint, is precisely that which we pay for that work in Madras, namely, Rupees 2 per square of 10 feet × 10 feet.

The charge for carriage is based on a rate of 1½ Annas per ton per mile. This had been our uniform rate in preparing all estimates until recently, when it was decided, in correspondence with the Consulting Engineer for Railways in this Presidency, that an exception should be made in the case of estimates containing large quantities of materials chargeable at low traffic rates, such as rails, which it was agreed should be charged at the actual traffic rates for this class of material.

In all other cases the rate of 1½ Annas was considered perfectly reasonable, as being only sufficient to cover actual charges including loading and unloading. The estimate for the Neilgherry branch was submitted previous to this arrangement. It consequently happens that the carriage of permanent way is charged at the rate of 1 Anna and 6 Pies per ton per mile instead of 1 Anna and 2 Pies. With this exception the charge for carriage is strictly based on traffic rates.

With regard to "lifting," by which I presume is intended "rolling and fixing," I have to explain that the prices set down in the estimate are not much, if at all, in excess of what the work can be done for.

It is only in the case of bridges of 50 feet openings and upwards that any sum on account of "rolling and fixing" has been entered in the estimate.

Former experience has taught us in the case of the Pennair bridge, consisting of twenty-four openings of 64 feet clear, and under circumstances where natural causes and skilful mechanical appliances combined to secure perhaps the greatest degree of economy attainable, that the setting up, rivetting, rolling, lowering and fixing such girders cannot be done much under Rupees 400 for each opening. The estimate in question provides for Rupees 500 in the case of openings of 64 feet clear span, and Rupees 400 in the case of those of 50 feet clear span. It must be borne in mind that the cost per span for small works, such as those estimated for on the Neilgherry branch,

must necessarily be greater than for large works, like the Pennair. Under this explanation I trust it will not be considered that the estimated price for "lifting" is excessive.

The rate for iron-work per ton landed in Madras varies considerably. The figures shown in the estimate for Neilgherry branch, namely, 330-15-9, are based on the cost of former consignments of girders, making due allowance for rivetting and setting up, charges which are not specially estimated for in the case of girders less than 50 feet in length. I find that a consignment of girders landed last January cost Rupees 260-0-11 per ton delivered at Madras. There are no data before me to show how much ought to be added on to this sum to cover cost of rivetting and setting of the minor girders, but it would probably not be very far short of what would make up the amount to 330-15-9.

14. In paragraph 4 of the Order of Madras Government under reply, it is suggested that the stoppage of the Railway short of the Bhowany may render it advisable to modify the direction of the latter part of the line to suit the change of circumstances.

I am not acquainted with the country myself, but have referred to Mr. West, the officer who made the survey, and in whose judgment I have great confidence. He replies :—

"I am of opinion that the site of Mettapolliem station cannot well be altered from the position which has already been fixed on the plan.

"In the first place the ground beyond the present position of the station down to the Bhowany falls at the rate of about 1 in 66.

"Secondly, the present site is elevated, and therefore healthy; whereas any position nearer the river would be extremely feverish, as the villagers there have told me.

"Lastly, the site chosen by me is adjacent to the rest-house for troops, as well as the hotel, and this I think is of considerable advantage."

15. The observations of the Government of India in reference to the importance of economy in the designs for stations on the Neilgherry branch are fully appreciated, and shall have my best attention.

16. I beg in conclusion to bring to your notice that, pending a decision of the question which has been raised as to the amount of waterway proposed and the width of embankments, I am precluded from taking advantage of the provisional sanction of Rupees 2,00,000 further than for the purpose of collecting materials.

No. 2. ORDER THEREON, 4th January 1871, No. 1.

RAILWAY, No. 1.

ORDERED that the amended abstract estimates received with this letter be forwarded for the sanction of the Government of India :—

(Here enter No. 2, dated 4th January 1871.)

(True Extract.)

Colonel, R.E.,

Secretary to Government.

To the Acting Consulting Engineer for Railways.

Exd. S. T. Augustin.

Gobt. of {1871} Madras.

PUBLIC WORKS.

To

THE ACTING CONSULTING ENGINEER

FOR RAILWAYS.

Dated January 4th.

Recd.

Encl.

G. O., 4th January 1871, No. 1.

JANUARY

Nos. 1-2

Neilgherry Branch.—Passing orders on the letter from the Consulting Engineer for Railways submitting amended estimates for the Neilgherry branch of the Madras Railway.

2 Copies
Lt Smyth to
Mr Morgan
27/2/71

My accn No 2 Vols

The Govt of India
orig in Three Letters
No 178 R dy 25 Jany
1871 — & 6467 dy the
15 Feb 71 — That they
Relate to Estimates
of the Neilgherry
Branch consd

CONSULTING ENGINEER'S OFFICE.

Railway Department.

No. 457.

From Captain H. P. Prendergast R.E.
Off: Consulting Engineer for Railways,

To Colonel C. A. Orr R.E.
Secretary to Government,
Public Works Department,
Fort Saint George.

SIR,

With reference to the order of Government No. 2294, dated 22d September 1870, I have the honour to submit amended abstract estimate for the Nellgherry branch line in 2 Sections, the first for a length of 12 miles 40 chains amounting to Rs. 9,32,566 and the second for a length of 12 miles 68 chains to Rs. 9,98,510, making

With agents letter
No. 5807/13 Rail/70.
" 6516/16 ditto/70.

making the total distance 25 Miles 28 chains and the aggregate estimated cost Rs: 19,81,076.

2. The total length of the line in the original estimates was 28 miles 48 chains, and the estimated cost Rs: 21,79,042: the saving in distance now effected being 3 miles 16 chains, and in cost Rs. 4,47,966.

3. As directed by the Government of India the lines as now estimated for slopes at Mettapallium.

4. It will be observed from the Acting Chief Engineers letter

No. 585. of 10th Oct/70, to Govt.

letter enclosed that it is not considered advisable to modify the direction of the latter part of the line as the ground beyond the present position of the station has a steep slope down to the Bhowany, and also because the site selected is elevated and healthy and has the advantage of being near the Rest house for Sloops as well as the Hotel.

5. With regard to the large extent of waterway allowed for both drainage and irrigation purposes to which the Government of India draw attention, the Acting

Acting Chief Engineer explains that the 37 irrigation pipes are intended to provide for the passage of water from wells for the irrigation of lands which the Railway traverses; and that cast iron pipes have been preferred to Masonry culverts on the score of economy and their better adaptation to the circumstances of well irrigation.

6. The total width of 1166 feet of waterway proposed for eight bridges, is only 249 feet in excess of the provision made for the same drainage on the high road, and looking to the serious damage

damage which might result to the Railway from insufficient outlet for large floods, I think the excess may be admitted.

7. Besides taking into consideration the dimensions of the bridges on the high road, it is stated that the estimated waterway was decided after careful inquiries among the resident land owners as to the heights of extraordinary floods, and that the catchment basins of all considerable streams were also surveyed roughly. The term "Vonkab" is applied to the larger

larger waterway p.....

8. Regarding the formation width of 16 feet which the Government of India consider to be sufficient, the Acting Chief Engineer writes:-

"I beg to call attention to the nature of the Ballast which experience has proved most suitable for the Bank-sleeper Road in use on the Madras Railway. This is either coarse sand, where procurable, or Moorumboo (Velooroo for disintegrated granite or gneiss) in the absence of sand. This material assumes a slope of not less than 2 to 1. Again we find that a width of 3 feet of Ballast outside the Rail is desirable as lending to the stability of the road; and thirdly the Ballast cannot certainly be less than 2 feet deep. These conditions determine a formation width of 20 feet."

"If it be determined to reduce formation width to 16 feet, the width of Ballast outside Rail would be only 1 foot, and this I am prepared to assert would be insufficient to the stability of the road. Whether a width of 2 feet would be insufficient I am not so certain.

In

"In this case formation width
"would be 12 feet."

"I should not myself
"recommend any reduction in the
"amount of Ballast, but pending
"further instructions on this head
"from the Government of India,
"will defer the commencement
"of the earthworks."

With the exception of the reduction from 1 anna 6 pice to 1 anna 2 pice of the rate for the carriage of permanent way (under an arrangement which came into operation subsequently to the submission of the estimates for the

the Neilgherry branch) the rates of the original estimates have not been altered. The charge for painting includes scraping and two coats of paint, and is the rate paid in Madras; that for lifting Mr Goring explains, is not much, if at all, in excess of what the work can be really done for.

10 As regards the width of formation, the description of the line or the pot sleepers in use, depends on the quality and sufficiency of

of the ballast. Mr Anderson the Chief Engineer, lately returned from England, agrees with Mr Going, that there should be a width of 3 feet of ballast outside the Rail; and I am of the same opinion myself, especially after noticing lately the effect of continued heavy rain on the North-West Line. The formation width on the Madras Railway Lines is no where less than 20 feet; and though a slight reduction might be effected, I would recommend

Madras
Dated 26th November
Despatched 1st December
1870

of the Government, that it is not desirable to detract from the stability of the road: but that the sanction of the Government of India should be asked for the amended estimates as now submitted.

I have the honour to be
Sir
Your most Obedt Servt
Chas Sim[illegible] Capt RE
Offg Chief Engr & Secy to Govt

No. 680.

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE.

Madras, 13th October 1870.

From

Robert B. Elwin Esqre.
Agent and Manager. M. R. Co.

To

Captain H. L. Prendergast R.E.,
&c. &c. Consulting Engineer for Railways.

SIR,

I have the honor to inform you that immediately upon receipt of your D.O. No. 2294 dated the 22nd ultimo I placed myself in communication with the Acting Chief Engineer in reference to the remarks passed by His Excellency the Governor General in Council upon the Estimates for the construction of the Nellyhenny Branch Line, and I now beg to enclose you a copy of Mr. Young's Report to me upon the subject.

It will be observed from that Report

2.

that the question of waterway was most carefully considered when the Estimates were being prepared, and that advantage was taken of the guide afforded by the waterway of the High road which runs nearly parallel with the proposed line of Railway, the information being shewn on the plans which accompanied the Estimates.

I trust that the explanation

3.

thus afforded will be considered satisfactory as well as that in reference to the

P. No. 525 - 10th Oct 1870.

Dated 25th October 1870.
Received 28th
No. 4577
Forwarded with reference to the Government letter noted in the margin.
Submitted to Council.
Secy. to Govt. P.W.D.
Nov 1st 1870.

To
The Secretary to Government,
P. W. Department,
Fort St. George.

From
The Consulting Engineer
for Railways,

No. 4800
Railway Department.
Nov 4th 1870.

remarks upon the width of embankments and the rates charged in the Estimates for river-works Coverages xxx xxx and that the Government of India will not consider it necessary to reduce the Estimates under these heads.

4. An amended abstract Estimate is in course of preparation but I think it better to send forward these observations at once, in order that the views of His Excellency the Governor General in Council may be obtained as to the waterway, width of formation xxx xxx as until these points are determined it will not be possible to complete the Estimate or even to take advantage of the provisional sanction of Rs. 200.000 further than for the purpose of collecting materials.

I have the honor to be,
Sir,
Your most obedient Servt.

Agent & Manager.

S 70. 27.

No. 651.

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE.

Madras, 16th June 1870.

From

R. B. Elwin Esqre
Agent and Manager. of the M & R Rlo

To

Captain H. C. Prendergast R E
acting Consulting Engineer for Railways.

Sir,

In accordance with the request contained in your letter etc 601 of the 26th ultimo I have the honor to submit herewith amended Abstract Estimates for the Veilgherry Branch as far as Mettapolliem, the waterway being left as hitherto proposed.

2. The acting Chief Engineer, as stated in paragraph 12 of his letter etc 535 dated the 10th ultimo, does not recommend any reduction in the ballast. The formation width of 20 feet is therefore still estimated for, and I conclude we must await the decision of the Government of India on this point.

I have the honor to be
Sir
your most obedient Servant

(signature illegible)

x Copy forwarded to you with my etc 580 of the 13th ultimo.

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer
for Railways.

Dated 13th October 1870.
Recd. 14"

No. 770.

Acknowledging Reply of the Chief Engineer dated 10th ultimo No. 535 and requesting further particulars as to the alignment of the Bridge at the 5th mile and the Retaining Wall at the 6th mile Veilgherry Branch.

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

for Railways.

Dated 16th November 1870.

Recd. 17th "

P.W. 4807/No. 657.

Submitting as requested
amended abstract
Estimates for the Railway
Branch as far as
Pettapollium the intermediate
being left as hitherto
proposed.

on the Railway.

4. ... ...

11. If it be determined to reduce formation width to 16 feet, the width of Rollers outside Rails would be only 1 foot and this I am prepared to assert would be quite insufficient to the stability of the road. Whether a width of 2 feet would be insufficient I cannot so declare. In this case formation width would be 18 feet.

12. I should not myself recommend any reduction in the amount of Ballast sheet pending further instructions in the head from the Government of India will defer the commencement of the Darjeeling box.

13. I have the pleasure to afford the following information in respect of the rates which are stated to be high.

The charge for painting which includes scraping and 2 coats of paint is precisely that which we pay for that work in timbers, viz. Rs 2/- per square of 10 feet x 10 feet.

The charge for carriage is based on a rate of 1½ annas per ton per mile. This had been uniformly adopted recently when it was decided in correspondence with the Consulting Engineer for Railways in this Presidency that an exception should be made in the case of Estimates containing large quantities of materials chargeable at low traffic rates, such as Rails, which it was agreed it should be charged at the actual traffic rates for this class of material.

In all other cases the rate of 1½ annas was considered perfectly reasonable as being only sufficient to cover actual charges including loading and unloading. The Estimates for the Steel bridges required by the Railway Branch was submitted previous to this arrangement. It consequently happens that the carriage of Permanent way is charged at the rate of 1 anna and 6 pies per ton per mile instead of 1 anna and 2 pies. With this exception the charge for carriage is strictly based on the approved rate.

With regard to "Lifting" by which I presume is included "Rolling and Fixing" I have to explain that the figures set down in this Estimate are as much, if not all, made up of the work done for "Lifting" in the case of Bridges of 50 feet openings and upwards that any error on account of "Rolling and Fixing" has been entered in the Estimate for the Steel bridges, Branch, must necessarily be greater than for large iron bridges. Under this explanation I beg to submit that it will not be considered that the estimated price for "Lifting" is excessive.

The rates for Excavation to form the sides of the Madras railway considerably: The Estimate however in the Estimate for soil being Rs. 330.15.9 are based on the cost of excavation in Cuttings for Sidings making allowance for inclining and widening Channels which are not specially estimated for in the case of Sidings less than 30 feet in length.

I find that in Excavation of Sidings for the last January cost Rs 260 or 11 per cent above the Estimate. There are no data before me to show how much ought to be added on to this minute to cover cost of inclining and widening of the interior Sidings, but it would probably not be very far short of a number which would make up the amount to 330.15.9

11 ... In pursuance of the Order of the Government under reply it is suggested that the stoppage of the Railway share of the Bhowany Junction Railway in consequence of the abolition of the Cutter part of the line towards Bhowany ... cannot be dispensed with the Contractor whose name is referred to in the 8th Clause of his Agreement and in whose favor Orders were issued on 28th ult.

"I am of opinion that the site of the Interpolation Station cannot well be altered upon the position which has already been fixed upon by the Engineers.

"In the first place the ground beyond the proposed position of the Station towards the Bhowany falls at the rate of about 1 in 66.

Secondly, the present site is elevated and therefore healthy - whereas any position nearer the river would be extremely feverish, as the village there have told me.

"Lastly. The site chosen by me is adjacent to the Road for troops - as well as the Hotel and this I think is of considerable advantage."

15. The observations of the Government of India in reference to the superiority of economy in the designs for stations on the Soil of Bengal Branches are fully appreciated and shall hereafter be attention

16. Beg in conclusion to bring to your notice that pending a decision of the question which has been raised as to the amount of necessary preparation and the mode of remuneration, I am precluded from taking advantage of the provisional sanctions of Rs. 2,00,000 further than for the purpose of collecting materials.

I have faithfully
&c J. H. Fenn
Acting Chief Engineer.

True Copy

for Secretary & Manager.

Compared with

P.W.D. 11

No 11 P.W.D. 32

Proceedings of the Madras Govt
Under date the 4th Jan 71
Read the following

From

The Consg Engineer
for Railways } (14. E. Lea 4 57 9 25 Kooty)

Ordered that the
annexed abstract cate-
-gories received with
this letter be forwarded
for the information of the
Government of India

No 2 Nov

The Secy: to the Govt
of India

Sir,

With reference to your
letter of the 17 August 1870
No 1437 R. I am directed
to forward the accompa-
-nying letter from the
Acting

To
The Acting Consg Engineer
for Railways
Ootacamund
the 7/11/71

Acting Chief Engineer

giving cover to amended
abstract estimates of Rs
2,32,566 and Rs 7,98,510
respectively, for the two
districts into which the
proposed Nellgherry branch
of the Madras Railway
is now formed.

It will be observed
that the length of the
line terminating at Metta-
pollium is less than that
formerly estimated for by
3 miles 15 chains, and that
a reduction of Rs 47,966
has consequently been
effected in the probable
cost of the work.

The waterway allowed
is not much in excess of
the provision for the
same drainage on the
high road, and looking to
the importance of securing
a line of Railway against
all contingencies, it is
not more than is con-
sidered a safe area of
outlet for the exceptionally
high floods which may
at one time or another
be expected to occur.
The term "Vankah" is a
local designation applied
to the larger drainages,
while the smaller are
commonly styled "Nullahs".

In inviting attention
to the objections of the
Company's officers to
any reduction being
made in the width
to be allowed for the
formation

formation level of the roadway. I am to explain that, as the outer rim of the peal sleepers which are used on the Madras Railway, projects one foot beyond the outer edge of the rails, a formation level of 20 feet where 2 feet thickness of ballast is necessary, with slopes of two to one, allows a width of little more than 2 feet of ballast outside the pots one foot on either side. Thus in the opinion of the Company's officers, as well of the Govt Engineer is not more than is necessary for the stability of the road, and as the Madras Govt entirely concur, I am to recommend that no change may be required.

With these explanations I am to request that early sanction may be communicated to the amended estimates, as now submitted, to admit of the provisional sanction of Rs 2,00,000 accorded in the letter under reply being advantageously employed in the commencement of the earthworks.

With the exception of the rate for the carriage of permanent way materials no alteration has been made

made in this part of the estimates the amounts entered being represented as the lowest possible at which the works can be carried out.

The importance of economy in the designs for stations appears to be understood & will be attended to.

GMP

Despd 19/1/71 with 25 Copies of Genl & Two Estimates
+ 2 Estimates received with L 810 467-
15 Feby/71

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Further Pro. 4/4 2/15-2-71

No 1482

Govt. of {1870} Madras.

PUBLIC WORKS.

To The Ag Consulting Engr
for Railways

Dated

Read. R.S.

G. O. No. 1482 Dated 15th Nov. 70

No. 172

Submitting Amended Estimates

Forwarding for early sanction
amended estimates for the
Salem Branch of the Madras
Railway