

- (1) பக்கங்களின் எண்ணிக்கை 40
 (2) புதுக்கித் திருப்பிய நாள் 13. 9. 89
 (3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம் 607

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

P.W.O துறை

அரசாணை எண். 1919-20-21 அச்சகம்
 மு. கோப்புத் தாள் எண். பலவகை

நாள் :

16. 7. 1890

190

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

ச.கி

வண் கர-1-18,006-15-6-87.

16TH JULY 1890, No. 1919 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following papers:—

From Major D. McNEIL CAMPBELL, R.E., Superintending Engineer, IV Circle, to the General Superintendent, Public Works Stores, dated Coimbatore, 20th June 1890, No. 190 M.

I have the honor to forward a special indent, in triplicate, for the iron bridges required for the Vayitri-Gúdalúr road sanctioned in G.O., No. 1492 W. of 6th June 1889.

2. The required iron works are of the same description as given in the printed specifications circulated with the type drawings of roadway bridges, Indian Public Works Department. Hence documents required by para. 7, appendix G. of the Public Works Code are unnecessary.

No. 448 S.

Submitted to the Superintending Engineer, V Circle, with reference to his endorsement No. 1232 of 14th June 1890.

MADRAS,
25th June 1890.

(Signed) S. C. CLARKE, Lt.-Col., R.E.,
General Supt., Public Works Stores.

From Colonel W. H. BURTON, R.E., Superintending Engineer, V Circle, to the Chief Engineer, Public Works Department (through the Examiner of Public Works Accounts), dated Chepák, 27th June 1890, No. 1478.

With reference to your memo. No. 130 D., dated 13th May 1890, I have the honor to forward an indent, in triplicate, on the Director-General of Stores in England for iron bridges for the Vayitri-Gúdalúr road in the West Coast division which were sanctioned in G.O., No. 1492 W. of 6th June 1889, and also a letter in original from the Superintending Engineer, IV Circle, No. 190, dated 20th June 1890.

Office note from the Examiner, Public Works Accounts, dated Madras, 2nd July 1890, No. 3884/153.

The accompanying letter from the Superintending Engineer, V Circle, to the Chief Engineer, Public Works Department, No. 1478, dated 27th June 1890, with an indent (No. 4 of 1890-91) for English stores for transmission to the Secretary of State, is forwarded for necessary action.

2. I certify that funds to meet the estimated outlay in England in connection with this indent during the year 1890-91 have been provided by the Local Government to the extent of £ 2,322-18-10 in the estimate of the Public Works Department for that year.

ORDER—dated 16th July 1890, No 1919 W., Public Works.

(Here enter No. 1920 W., dated 16th July 1890.)

(True Extract.)

Major, R.E.,
Ag. Under-Secy. to Govt., P.W.D.

To the Superintending Engineer, V Circle.
 " " " " IV "
 " Examiner, Public Works Accounts.

Exd. J. Moses.
Spare Copies

GENERAL.
ACCOUNT.

Govt. of {1890} Madras.

PUBLIC WORKS.

Dated July, 16th.

Recd.

Encl.

G.O., 16th July 1890, No. 1919 W.

JULY.

Iron Bridges

Ordered that the special indent for — required for the Vayitri-Gúdalúr road, be forwarded to the Home Government for compliance.

16TH JULY 1890, No. 1920 W., PUBLIC WORKS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

LETTER—from

LIEUT.-COLONEL R. R. E. DRAKE-BROCKMAN, R.E.,
*Acting Joint Secretary to the Government of Madras,
Public Works Department,*

To

THE DIRECTOR-GENERAL OF STORES,
INDIA OFFICE,
LONDON.

SIR,

I have the honor to forward herewith, for favor of early compliance, a special indent, in duplicate, for certain iron bridges urgently required for the Vayitri-Gúdalúr road.

2. The usual certificate in regard to funds will be found embodied in the accompanying Proceedings.

I have the honor to be,
Sir,
Your most obedient servant,

Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.

OOTACAMUND,
16th July 1890.

Exd. J. Moses.
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GENERAL.
ACCOUNT.

Govt. of {1890} Madras.

PUBLIC WORKS.

Dated July, 16th.

Recd.

Encl.

16th July 1890, No. 1920 W.

JULY.

Iron Bridges

Forwarding for early compliance special
indent for — required for the Vayitri-
Gúdalúr road.

16TH JULY 1890, No. 1920 W., PUBLIC WORKS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

LETTER—from

LIEUT.-COLONEL R. R. E. DRAKE-BROCKMAN, R.E.,
*Acting Joint Secretary to the Government of Madras,
Public Works Department,*

To

THE DIRECTOR-GENERAL OF STORES,
INDIA OFFICE,
LONDON.

SIR,

I have the honor to forward herewith, for favor of early compliance, a special
indent, in duplicate, for certain iron bridges urgently required for the Vayitri-Gúdalúr
road.

2. The usual certificate in regard to funds will be found embodied in the
accompanying Proceedings.

I have the honor to be,
Sir,

Your most obedient servant,

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.

OOTACAMUND,
16th July 1890.

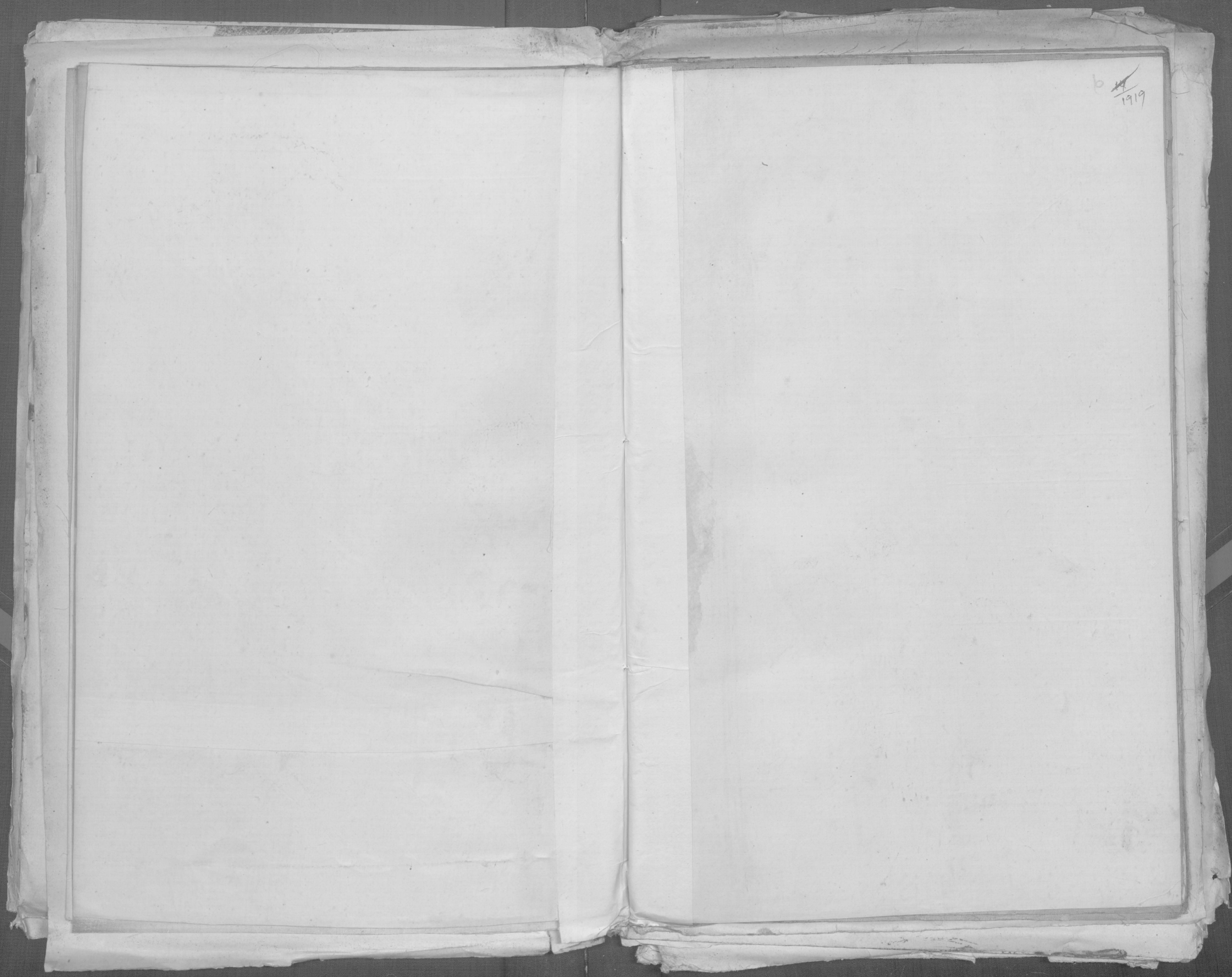
ENDORSEMENT—dated 16th July 1890, No. 1921 W., Public Works.

Copy of the above, with copy of the indent, forwarded to the Government of India
for information.

(By Order.)

Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.

Exd. J. Moses.
Spare Copies



b
1919

GENERAL.
ACCOUNT.

Govt. of {1890} Madras.
PUBLIC WORKS.

Dated July, 16th.

Recd.

Encl.

16th July 1890, Nos. 1920 W.,
1921 W.

JULY.

Iron Bridges

Forwarding copy of special indent for —
required for the Vayitri-Gúdálúr road.

18TH DECEMBER 1884, No. 3109 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads
Civil Works.

READ—the following letter from Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 4th December 1884, No. 530 E.W.:—

I have the honor to forward, herewith, for your information, a preliminary report on the line of road from Vayitri to Gúdálúr by the Assistant Engineer on special duty, Wynaad roads.

2. With the report I send the map which accompanied General Sankey's memorandum, No. 43, of 23rd January 1882,*

* Printed with G.O., No. 1416 W., of 6th June 1882. also a tracing I have had made in my office to illustrate more clearly the various proposals.

3. I shall be obliged by your returning me the map at your convenience.

ENCLOSURE.

From A. B. TODD, Esq., Assistant Engineer, Special Wynaad Division, to the Superintending Engineer, IV Circle, dated 3rd November 1884, No. 354 V.

Vayitri-Gúdálúr Road.

I have the honor to report that I have completed the survey of the existing line from Vayitri to Gúdálúr, and that the field work is now being plotted in my office.

One map forwarded by book post.

2. I have myself gone carefully along the whole line, and have gathered, I believe, the opinions of the planters chiefly concerned, and have consulted those whose lengthened experience of the Wynaad renders their information most valuable.

3. I will first briefly describe the line which is now used and which is maintained from Local Funds.

4. The first three miles of the road from Vayitri is common to the three main lines of communication which converge on the Tāmrachéri ghāt, viz., the Manantoddy road *via* Pannamaram, the Sultan's Battery road to the Mysore frontier, and the Gúdálúr or Nilgiri road. These three miles are metalled but are badly in need of thorough repair, the surface being very uneven and the drainage defective.

5. The rise from the Kannuth river is steep, but unavoidable, as the ground falls away on both sides; the remainder of the road to Chundale is easy.

6. From Chundale to the Kunambutta river the road is in fair order, but beyond this up to Maypardi, with the exception of about a mile or so near Kotapardi, it is very rough. Although metal has been spread it has not been consolidated, and it has either got regularly ploughed up by the traffic into ridges, or else the mud has forced itself through the metal and made the road almost impassable for wheel traffic.

7. On this portion of the road, as also along the whole line, I think the trace, as pointed out by General Sankey in his memorandum of the 23rd January 1882, could be considerably improved.

8. From Maypardi for about nine miles the road is in somewhat better order, chiefly owing to the nature of the soil, but also partly to the road having been barrelled and formed up for a good portion of the distance.

9. From this point to Cherambádi the road is in fair order, but it sadly requires draining, and there are several alterations in the trace which might be made with advantage.

10. From Cherambádi to the Mango Tree hill the road first falls and then rises for over three miles up the so-called Parcherri hill. The gradient is not steep, and with proper drainage and metalling a good road might be made of it.

11. From this point, however (marked on the Revenue Survey map, Caroline, Adeline and Yellaman), the alignment is bad. The road first falls into a deep valley, then rises again, and then falls again to Pandalur, and thence, after an exceedingly steep ascent, it runs along at an easy gradient to the edge of the ghâts near Balcarres, and thence falls *via* Sheardale to Devála.

12. The ground in this section from Balcarres to Sheardale is exceedingly steep, transversely. The road had slipped away in two or three places when I passed along it, and it was which would be absolutely necessary to render the line safe, would be very expensive, as the revetments would doubtless be from 30 to 50 feet in height, and perhaps even more.

13. The alignment of this portion of the road courts difficulties, as pointed out by General Sankey, by running so near the edge of the ghâts; and in any project for establishing a permanent and safe line of communication it should be avoided.

14. From Devála to Nadgani the road had been metalled with quartz and is in good trafficable order.

15. From Nadgani to Gúdálúr the line is metalled and in fair order, but the tunnels are in many places blocked up and the drainage is defective.

16. There are only three large rivers crossed along the whole line (if we exclude the Kannuth, which is common to the two other main lines), viz., the Kunambutta, the Sholadi river and the Sipathi river. The road, in fact, runs along the water-shed and is remarkable for the absence of cross drainage.

17. The mileing of the road is very confusing, there being no less than three different systems.

From Vayitri to the Sholadi river the mile-stones are numbered from Vayitri, the distance being 22½ miles.

Beyond the Sholadi river the mile-stones are numbered from Nadgani, the distance being 18 miles. From Nadgani to Gúdálúr the mile-stones are numbered from Kakaruhulla; the mile-stone at Nadgani junction with the Karkur ghât being No. 22 and that at Gúdálúr No. 14, the length of this section would be eight miles. The total distance from Vayitri to Gúdálúr by the present road would therefore appear to be 48½ miles.

18. I will now proceed to describe the alternatives that present themselves for the improvement of the through line from Vayitri to Gúdálúr.

19. As far as Mupenad, I do not think that any alteration of the general direction of the existing trace is possible, with the exception perhaps of short lengths here and there.

20. From Mupenad onwards there are three considerable obstacles, the Barjari rock, the Parcherri hill, and the Needle Rock ridge.

21. It was doubtless to avoid the two first obstacles that General Sankey suggested the line from Mupenad to Nellugalam and thence to the Needle Rock. This line is shown in green lines on the map which he sent with his memorandum of the 23rd of January 1882.

22. The Needle Rock ridge runs from Nellakóta north-east to south-west, and it has two well-marked low saddles, viz., the Dingley Dell saddle and the Hospital gap. Of these the Dingley Dell saddle is the lower and is the one which General Sankey proposed to cross. The present road, instead of crossing either of these saddles, passes round the end of the ridge and, as already explained, runs dangerously near the edge of the ghâts.

23. The old district road used to cross the Needle Rock ridge at the Hospital gap, but the ascent from the Pandalur valley was so steep that it was abandoned for the present road through Pandalur, Balcarres and Sheardale.

24. There are four alternative routes between Mupenad and Gúdálúr.

25. The first is that suggested by General Sankey, and is marked green on the accompanying map.

Leaving the existing line at a saddle near the 19th mile-post from Vayitri, the trace runs through tolerably easy ground up to a branch of the Sholadi river. Thence, there is a succession of grass hills and swamps till the Nellugalam Sultan's Battery track is reached. To wind in and out of the hills to avoid the swamps would make the trace a very circuitous one, whereas if embankments were boldly thrown across the swamps, I fear that, with the weather which I experienced, it would take a very long time before the embankments would settle down suffi-

ciently to admit of monsoon traffic. The Nellugalam Sultan's Battery track is in fact nothing but a track running up and down hill and would require entirely fresh tracing. The track crosses the Dingley Dell saddle and a fresh trace would have to be made from the Dingley Dell saddle, either to the Sipathi river or through Bolingbroke, to meet the Nadgani-Gúdálúr road near Hughe's tank, some 2½ to 3 miles west of the Sipathi river. The whole line from Mupenad to Hughe's tank would have to be traced and a completely new road would have to be made for a distance of about 20 miles.

26. I would point out that this line would run a considerable distance from the numerous estates between Mupenad and Gúdálúr, and I doubt whether it would be so direct as would at first sight appear owing to the many swamps to be negotiated.

27. The second alternative is that suggested by Mr. J. Ryan.

Following the present road to the Mangoe Tree hill, the trace would continue along the old district road for about 4 miles from the junction of the old road and that now used, to Cherry's bridge. Thence by a new trace up to the Dingley Dell saddle to meet the existing Nellakóta road and from Nellakóta direct to Gúdálúr by a well traced but unfinished road.

28. This alternative gives easy gradients but at the expense of directness, and although in my opinion not the best line on account of its circuitousness, it deserves consideration.

29. The third alternative, and I think the best one, is to follow the old district road to Cherry's bridge, thence by a new trace to Dingley Dell saddle, and thence either to the Sipathi or Hughe's tank as in General Sankey's proposal.

30. This line would be a compromise between General Sankey's alternative, which runs right away from the estates, and the existing line which runs right through them. The trace would nowhere be at any great distance from the plantations, and if those interested wished it, they could always make short lengths of estate roads, as feeders, to join the main line.

31. The fourth alternative is to improve the present district road by retracing short lengths, to improve gradients, to thoroughly drain the road, to metal it, to construct iron bridges across the three main rivers, and to construct revetments, where the trace runs out on the precipitous edge of the ghâts.

32. Subjoined are rough estimates of the relative cost of the four alternatives. The data for cost are based on General Sankey's memorandum of the 23rd January 1882. Even if the rates are high, as pointed out by the Wynad Planters' Association in their letter of the 10th of August 1883—and for my part I am doubtful if they are so—they, at all events, give a very fair idea of the relative cost of the proposals I have above described for the improvements to the Vayitri-Gúdálúr road—

	RS.
I. Vayitri to Mupenad, 20 miles, at Rs. 6,500	1,30,000
Mupenad <i>via</i> Nellugalam to Dingley Dell, 16 miles, at Rs. 9,000	1,44,000
Dingley Dell to Hughe's tank, 4 miles, at Rs. 9,000	36,000
Hughe's tank to Gúdálúr, 6 miles, at Rs. 6,000	36,000
Total, 46 miles	3,46,000
II. Vayitri to Cherry's bridge, 34 miles, at Rs. 6,500	2,21,000
Cherry's bridge to Dingley Dell, 2 miles, at Rs. 9,000	18,000
Dingley Dell to Hughe's tank, 4 miles, at Rs. 9,000	36,000
Hughe's tank to Gúdálúr, 6 miles, at Rs. 6,000	36,000
Total, 46 miles	3,11,000
III. Vayitri to Cherry's bridge, 34 miles, at Rs. 6,500	2,21,000
Cherry's bridge to Dingley Dell, 2 miles, at Rs. 9,000	18,000
Dingley Dell to Nellakóta and Gúdálúr, 14 miles at Rs. 6,500	71,000
Total, 50 miles	3,10,000
IV. Vayitri to Nadgani, 40½ miles, at Rs. 6,500	2,63,500
Nadgani to Gúdálúr, 8 miles, at Rs. 6,000	48,000
Total, 48½ miles	3,11,500

33. I hope that I have succeeded in explaining the merits of the various projects sufficiently to enable you to fix on the one you consider the best, and I shall feel obliged by your instructing me as to which I shall proceed to survey and estimate for in detail.

ORDER—dated 18th December 1884, No. 3109 W., Public Works.

With this letter the Superintending Engineer, IV Circle, submits a preliminary report from Mr. A. B. Todd, Assistant Engineer, on the line of road from Vayitri to Gúdalúr.

2. Of the four alternative routes suggested for consideration, the Government are in favor of the line recommended by Mr. Todd, in paragraph 29 of his report, as the third alternative. That route will therefore be surveyed and estimated for in detail.

3. Mr. Todd will be instructed to ascertain and report whether it would be possible, by a slight detour, as shown on the map by the letters CD, to avoid the present steep descent into the Sholadi valley.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, IV Circle.
" Financial Department.
" Honorary Secretary, Wynaad Planters' Association.

Exd. W. H. French.
Spare Copies

9 1919

1920/90

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1884) Madras.
PUBLIC WORKS.

Dated December, 18th.

Recd.

Encl.

G.O., 18th Dec. 1884, No. 3109 W.

DECEMBER.

Road from Vayitri to Gudalur

Orders on preliminary report from Mr.
Assistant Engineer Todd on the line of —.

6TH JUNE 1889, No. 1492 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers :—

From C. A. PATERSON, Esq., General Manager, Glenrock Company (Limited),
to the Chief Engineer, Public Works Department, dated Pundalur, South-
east Wynaad, 13th October 1888.

I have the honor to forward a petition from the inhabitants of the Devála and
Pundalur districts, which I trust will have your immediate attention. Any assistance
we can from our local knowledge give you is at your service.

ENCLOSURE.

From the Manager, New South-east Wynaad Estates Company (Limited) and others,
inhabitants of Devála and Pundalur districts, to the Chief Engineer, Public Works
Department, dated Pundalur, — October 1888.

We the undersigned proprietors and inhabitants of the Devála and Pundalur districts wish
to bring to your notice the serious loss and inconvenience we will suffer if the scheme for the
proposed new road from Sepathi bridge *via* Needle rock gap to the mango tree is carried
out, and beg that, after inquiring personally into the case, you will submit this petition to
Government.

2. We would point out that the saving in distance is so slightly in favor of the new trace,
about $\frac{1}{4}$ mile, that this distance could easily be saved by a careful revision of the old road.
Again in the new trace seven miles of entirely new road would have to be cut, and at least two
costly bridges would have to be built. The amount required for this, if spent on the existing
road, would make it as good as that from Mettupálaiyam to Gúdálur. We would further point
out that the proposed road does not benefit a single estate or large village, but would leave
out the large and thriving districts of Devála and Pundalur which contain the greater portion
of the rate-payers in this part of South-east Wynaad. If the proposed trace is taken, the
present road from Sepathi to Pundalur would become a second-class district road and would
not be kept in condition to carry a very heavy grain traffic and other requirements of the
numerous estates, and especially would not be suited for the carriage of the heavy machinery
required by the various gold mines which *all* lie in this district. It would also leave out the two
prosperous villages of Devalá and Pundalur.

3. If the new trace be adopted, the four miles from Sepathi to Nadghani junction would
still have to be kept up in first-class order; if not, it would practically close the Karkúr ghát as
one of the outlets for our crops, while if it were kept up it would increase by four miles the length
of road to be maintained. On the other hand, if the old road be maintained, these four miles
would form part of it and make a total of 14 miles as against 18 miles if Sepathi-Nadghani road
is maintained with the new road. The chief difficulty is perhaps what is known as the Balcarres
ghát, and this has been removed by a new trace which shows that a shorter road can be made at
a gradient of about 1 in 40. Other steep parts could doubtless be improved.

From W. B. deWINTON, Esq., Executive Engineer, Nilgiri Division, to the
Superintending Engineer, IV Circle, dated Pundalur, 24th October 1888,
No. 2867.

I have the honor to enclose a comparative statement showing the result of my
call for tenders for "improvements to Vayitri-Gúdálur road," and to recommend

that the tender of Messrs. Mitchell, Mackenzie and Co. be accepted, although it exceeds the sanctioned estimate by Rs. 37,628, for the following reasons:—

- (1) A scrutiny of Mr. Todd's estimate shows that he based his rates for the collection of metal on the assumption that he could get a cubic yard of metal broken and stacked by the roadside for Rs. 1-8-0, which is as impossible in the Wynaad as it is on the Nilgiris.

He also assumed that he could get 100 cubic feet of metal spread and consolidated for 12 annas, the local rate being Rs. 4 or Re. 1 per cubic yard.

He based his estimate, I am informed, for the Calicut-Vayitri road on the same erroneous data, with the result that that estimate had to be completely revised, and the same revision will be necessary in this case.

- (2) Messrs. Mitchell and Mackenzie are just completing the contract for the Calicut-Vayitri road, and both from information received from the officer in charge of that work and from personal observation I can certify that they have executed that work in a thoroughly satisfactory and conscientious manner. It would, I think, be a very great misfortune and mistake if the experience gained thereon, and the skilled labor and mechanical appliances now at their, and only at their, disposal should not be utilized on the improvements to the Vayitri-Gudalur road.

- (3) I am most strongly opposed to accepting the tender of Ebrahim Sait and Co. because they have absolutely no knowledge of roadwork; they have tendered in a hap-hazard way in the hope of obtaining the contract at rates for which it is quite impossible for them to execute the work in a satisfactory manner, and I am convinced that the results of accepting their tender would be bad work, continued difficulties, the annulment of the contract and eventual loss to Government.

2. For the above reasons I strongly recommend that Messrs. Mitchell and Mackenzie's tender be accepted. I will at once proceed to revise the estimate to bring it into harmony with local rates, and in so doing I will provide for carting metal an average distance of one mile, for I believe that the average distance of $\frac{1}{2}$ mile allowed in the comparative statement will prove insufficient to get good gneiss metal at all points of the road, and I am very much opposed to the use of white quartz, which is the only metal generally available on the roadside, because experience has proved it to be about the worst possible metal for roadwork. It makes a sharp, gritty, painful road for horses and cattle when new, and soon grinds up into powder and slush under the weight of traffic. I therefore propose to use none of it if I can possibly help it.

3. I have left the bridgework of the road to form the subject of a separate contract, because I intend to recommend very shortly that the new trace sanctioned by Government from Sepathi bridge to mango tree shall be abandoned in favor of the existing road, a change which is demanded by all the planters in the district, and which will effect a material saving both on the bridgework and earthwork of the sanctioned estimate, and will somewhat increase the estimate for metal.

4. I should like to have been able to submit the revised estimate for the whole road before commencing work thereon, but it will take some time to prepare, as I wish to investigate several new traces; the improvements to the road are urgently needed, and the year's grant has to be spent; so I propose proceeding at once with that portion of the road between Gudalur and Sepathi bridge, about which there is no question, and trust that Government will sanction this arrangement. The revised estimate will be ready, I hope, before the end of the calendar year. It is not likely to exceed the sanctioned estimate by more than 10 per cent.

No. 489-E.W.

Submitted to the Chief Engineer, Public Works Department, for favor of orders.

2. For the reasons given by the Executive Engineer, I agree with him that it is advisable to accept the tender of Messrs. Mitchell, Mackenzie and Co. in preference

to the tender from Ebrahim Sait and Co., although the amount of the latter is Rs. 36,454 less than the amount of sanctioned estimate.

3. With regard to the proposal to change sanctioned new trace, referred to in para. 3 of the Executive Engineer's letter, this is the matter alluded to in the Chief Engineer's endorsement No. 3953 C., dated 18th instant.

COIMBATORE,
27th October 1888.

(Signed) J. W. MARTIN,
Superintending Engineer, IV Circle.

From Lieut.-Colonel A. C. SMITH, R.E., Superintending Engineer, IV Circle,
to the Chief Engineer, Public Works Department, dated Coimbatore, 11th
May 1889, No. 204-E.W.

[References—No. 88 W. of 19th January 1888, No. 3953 C. of 18th October 1888,
and No. 4318 C. of 6th November 1888.]

I have the honor to submit for sanction a revised estimate, amounting to Rs. 5,50,000, for improvements to the Vayitri-Gudalur road. I much regret the delay in replying to the above references; but, considering the immense amount of work (and the thorough way in which it has been done by the Executive Engineer) entailed by the complete revision of the estimate and the remeasurements, &c., along the line, the delay was unavoidable.

2. The revision has been necessitated by excesses arising from the (1) adoption of the existing line with a few small diversions; (2) omissions; and (3) insufficient provisions both in work and rate in the original estimate Rs. 4,27,200 sanctioned in G.O., No. 2412 W., dated 15th October 1885.

3. The causes of excesses over the original estimate are fully explained in the comparative statement and the letter accompanying the revised estimate. I have myself gone carefully over the whole line with the Executive Engineer and fully concur in everything he states in his exhaustive letter, and I strongly recommend the adoption of the old line (with slight diversions and reductions of steep gradients); in addition to the Executive Engineer's reasons for so doing, I would call to mind that, were the new line adopted, the District Board would have to keep up the old line throughout from Sepathi to mango tree and not only to Nadghani, otherwise the important villages of Pundalur (Post office) and Devála (Post and Telegraph office) would be quite cut off from the world, and moreover the planters for whose benefit the road is principally proposed would have to make new feeders from their estates to the new line.

4. The only item in the revised estimate which I consider require notice is the insufficient provision for superintendence, viz., $2\frac{1}{2}$ per cent. Considering the special circumstances of the work in a particularly unhealthy locality, I have increased the provision to 6 per cent. as in the case of Calicut-Vayitri road. The provision for contingencies has been reduced from $2\frac{1}{2}$ to 2 per cent.

5. The excesses over the sanctioned estimate are as follows:—

	rs.
(1) Increase in rates (<i>vide</i> paras. 17 and 18 of the Executive Engineer's letter) *	66,118
(2) Increase in number of tunnels from 302 to 330 (para. 20)	12,516
(3) Lengthening existing tunnels (para. 20)	2,081
(4) Substituting expensive standard designs of iron girder bridges and the low exchange (para. 19)	78,716
(5) Cutting side drains and forming side berms (<i>vide</i> remarks in the comparative statement)	2,263
(6) Mile and furlong stones (para. 24)	2,296
(7) Demarcating stones (para. 23)	5,640
(8) Cooly lines (para. 25)	5,950
(9) Blasting (para. 26)	5,000
(10) Compensation for land (para. 22)	18,250
(11) Rest-house (para. 21)	3,003
(12) Contingencies	1,027
(13) Superintendence	18,837
Total	2,21,697

6. Against the above excesses the following savings will be effected:—

	RS.
(1) Approach to the Sholadi bridge (<i>vide</i> remarks in the comparative statement)	6,786
(2) Kanambatta bridge reduced from two spans of 20 feet into one span of 50 feet (para. 9)	1,078
(3) Certain bridges now abandoned (para. 19)	45,779
(4) Maintenance of the road (<i>vide</i> remarks in the comparative statement)	41,400
(5) Unforeseen contingencies	3,854
Total ...	98,897

Net excess (2,21,697—98,897) = ... 1,22,800

7. For the efficient execution of the work, I would strongly recommend that this portion of the road may be formed into a sub-division and attached to the Nilgiri division.

8. Early sanction to the revised estimate under reference is solicited in view to current year's grant, viz., Rs. 1,00,000, being laid out to the best advantage.

9. I strongly recommend that the work be given to Messrs. Mitchell and Mackenzie as the work done by them on the Calicut-Vayitri road is most thorough in every respect.

ENCLOSURE.

From W. B. DEWINTON, Esq., Executive Engineer, Nilgiri Division, to the Superintending Engineer, IV Circle, dated Ootacamund, 30th April 1889, No. 289.

With reference to your memorandum No. 501-N.I., dated 20th October 1888, and your endorsement No. 530-N.I., dated 12th November 1888, I have the honor to submit the information and report therein called for, together with the revised estimate for the improvements to the Vayitri-Gudalur road.

2. I regret that there has been so much delay in the matter, but para. 2 of the Chief Engineer's memorandum No. 4318 C., dated 6th November, called for more definite information regarding the amount of the revised estimate than it was possible for me to give without careful examination and revision, so, as the information and report called for were intimately connected with the revised estimate, I thought it better to keep them until the latter was ready.

3. The accompanying comparative statement deals fully with the revised estimate and the causes of its large excess over the original estimate, sanctioned in G.O., No. 2412 W., dated 15th October 1888, so I will speak here only of Messrs. Mitchell and Mackenzie's rates and of the new trace from mango tree to Sepathi bridge.

4. With regard to the former, the annexed statement compares the rates accepted for the Calicut-Vayitri road and those now tendered for the Vayitri-Gudalur road, with explanations of differences. It will be seen that in every item except blasting the rates tendered for the Vayitri-Gudalur road are lower than those accepted for the Calicut-Vayitri road, and I think that Messrs. Mitchell and Mackenzie's rates are very fair and reasonable, and strongly recommend that their tender should be accepted.

5. With reference to the new trace from mango tree to Sepathi bridge, proposed by Mr. Todd and sanctioned by Government, and so strongly objected to by local planters and mine-owners in the petition bearing Chief Engineer's endorsement No. 3953 C., dated 18th October 1888 (herewith returned), I may as well at once say that I fully agree with the local objections to that trace.

6. The arguments for and against it may be briefly stated as follows:—

For.—The trace was proposed by Colonel (now General) Sankey, C.B., because it seemed more direct, because it avoided the steep Balcarres ghát now traversed by the existing road, and because the gradients of the existing road are frequently heavy. The answers to these points are—

(a) The saving in distance is only $\frac{1}{2}$ of a mile, the lengths of the new trace being (according to Mr. Todd's sections for I have not measured it) 13 miles and of the existing road 13 miles 4,433 feet, which latter can be reduced by at least 1,000 feet by new traces.

(b) The Balcarres ghát presents no such difficulties as the Coonoor ghát, and its steepest part can be avoided by a new trace.

(c) Out of the 13 $\frac{1}{2}$ miles of the existing road, 2 $\frac{1}{2}$ miles in the aggregate are steeper than 1 in 18, and of this 1 $\frac{1}{2}$ miles are steeper than 1 in 15, whereas the new trace is nowhere except in two short lengths steeper than 1 in 18. But 80 per cent. of the grades above 1 in 15 and 44 per cent. of those above 1 in 18 in the existing road can be eliminated by the new traces which I am going to propose and which will be found detailed further on.

Against.—(1) The saving in distance is much less than was anticipated, because of the numerous windings the new trace is obliged to make to keep its grade.

(2) It leaves out in the cold the two principal villages in this portion of the Wynad, viz., Devála and Pundalur, round which are clustered all the mining and most of the planting interests of the district.

(3) It benefits nobody except the through traffic and this only to a small extent.

(4) Its adoption would necessitate the upkeep by Local Funds of four miles of road between Sepathi bridge and Nadghani, which is the route to the coast, *via* the Karkúr ghát, for Ouchterlony valley coffee and Mysore cereals; whereas the conversion of that length into an imperial road would be a great boon to both those industries.

7. I trust that the above arguments will show that it is better to adhere to the existing road and improve it than to divert traffic from the principal centres of industry, and will lead to a reconsideration of the former decision of Government which was, I believe, based on incomplete data.

8. I will now give my proposals in detail.

Mr. Todd proposed to adhere to the existing road from Vayitri to Gudalur throughout, with the exception of the trace above discussed from mango tree to Sepathi bridge.

I propose to adhere to the existing road throughout, with the exception of the following lengths:—

No.	MILEAGE.		Length of existing road.	Length of trace.	Saving.
	From	To			
1	5-3,459	8-1,719	MILES. 2	2-3,540	FT. 420
2	30-2,497	31-948	0	4,514	783
3	34-470	34-3,676	0	3,383	177

9. In trace No. 1 I propose making a detour to the right to avoid two steep hills and two very bad swamps which now annually absorb all the maintenance grant of this portion of the road without visible effect. It would be impossible either to make or maintain an efficient road over these swamps except at great expense, because it would require an extensive system of drainage, and probably deep fascine or brushwood foundations to prevent the subsidence which now goes on. The new trace presents no difficulties of any kind, crosses the Kunambatta river at a much more suitable spot for a bridge than the existing one, has a gentle grade, saves 420 feet in distance, and will be only expensive in compensation for land, because it passes through 1 $\frac{1}{2}$ miles of coffee and cinchona; but this compensation will not amount to more than Rs. 3,000, which sum is a trifle compared with the cost of maintaining the road over the swamps.

10. Trace No. 2 is intended to avoid the descent to the Caroline bridge and the steep ascent of the first portion of the mango tree hill. It will have a uniform grade of 1 in 18 and will avoid 2,588 feet of road steeper than that grade of which 1,765 is steeper than 1 in 15. It entails a heavy bank to start with and considerable cutting, but it will be a great improvement to the road. It will cost nothing in compensation for land.

11. Trace No. 3 will avoid the summit of the Balcarres ghát and save a rise and fall of 70 feet. It will have an average grade of 1 in 30 and a maximum of 1 in 23 $\frac{1}{2}$, whereas 3,003 feet of the existing road are steeper than 1 in 18, of which 2,474 are steeper than 1 in 15. It will entail considerable cutting, but no compensation for land.

12. I have also endeavoured to form a new trace in the 33rd mile coming out of Pundalur to avoid a bad zig-zag and 1,098 feet of road steeper than 1 in 18, but have been hitherto prevented by the necessity of carrying the road between the main shaft and the mill of the South-east Wynad Estates Company's gold mine, which would mean that all quartz would have to be shot across the road. But I hope to overcome this difficulty in carrying out the work, and it will in any case cost no more than the existing line.

13. A sketch-map is annexed prepared by Mr. Todd showing his trace from mango tree to Sepathi bridge and the trace No. 1 I now propose, but it is on too small a scale to be otherwise than misleading except in showing the general direction of the roads, and I have not been able to prepare a more accurate one.

14. I have myself chained the whole length of the road from Vayitri to Gudalur, and taken surveys and sections of the three new traces I propose, and have had a plan prepared on a large

scale showing the relative positions of Mr. Todd's trace and the existing road with their respective gradients, but it is too large to forward with this report unless absolutely required.

15. The sections of my three proposed traces are forwarded herewith.

16. The excess of the revised over the original estimate is much greater than I expected, and is fully explained in the comparative statement. The causes of it may be briefly summarised here as follows.

17. *The provision of much too low a rate for metal.*—Mr. Todd seems to have taken Rs. 1-8-0 a cubic yard on roadside as the basis of his estimate, but this is the local rate for white quartz, which is the worst conceivable metal for an efficient road. When first laid it makes a hard, gritty, painful road for horses, cattle and human beings, and with the first monsoon it grinds up into powder and slush. I consider that it would be a gross misuse of Government money to put a cubic foot of it on the road. The only other available metal is blue gneiss or granite, such as is obtainable on the Gúdálúr and Coonoor gháts of excellent quality, abundant in some miles of the road, but very scarce or non-existent in many others. The cost of this broken and stacked on roadside is Rs. 2-8-0 per cubic yard, and I calculate that the average distance it will have to be carried will be more than a mile. I have therefore entered a rate of Rs. 12 for it in the estimate, and I earnestly trust that this may be sanctioned, for I am convinced, from my experience on the Coonoor and Gúdálúr gháts where I pay Rs. 13 for the same metal, that a sound and durable road cannot be made with white quartz, and can be made with granite, and that it is far sounder economy in the long run to use the latter. There is no alternative between the two.

18. *The provision of much too low a rate for consolidation*, the most important item in road construction, after the quality of the metal. It will be seen that my estimate for this is not excessive, if the rate I have provided is compared with the rate given on the Calicut-Vayitri road.

19. The necessity for a complete revision of the girder bridges for the following reasons:—

- Mr. Todd's designs are antiquated and have been lately superseded by the standard designs lately received from the India office.
- Exchange has greatly fallen.
- Price of iron has risen.

I have not been able to go into the details of Mr. Todd's estimates for girders because none are given. He merely refers to those used on the Calicut-Vayitri road, and says that those he intends to use on the Vayitri-Gúdálúr road are similar; but the amount of revision necessary may be gathered from the fact that Mr. Todd's estimate for the Kannuth bridge (3 spans of 40 feet) is Rs. 14,330, whereas mine amounts to Rs. 24,685.

20. I have, after a careful examination of the old road, had to increase both the size and the number of Mr. Todd's culvert.

It must be remembered that the rainfall on this road varies from 300 inches at Vayitri to 100 at Gúdálúr, and that it is sound economy to allow frequent passages for drainage.

21. Mr. Todd provided for two rest-houses at a total cost of Rs. 7,728. One has been built at Gúdálúr at a cost of Rs. 2,808 and one is building at Meppadi and will cost Rs. 4,628. The mileage of the existing rest-houses will therefore be—

	MILES.
Vayitri public bungalow	...
Meppadi rest-house	...
Cherambádi rest-house built last year by the Nilgiri District Board	10½
from Provincial funds	24½
Gúdálúr	47½

It will thus be seen that there is a big gap between Cherambádi and Gúdálúr, and this I propose to fill up by purchasing from the Indian Consolidated Gold Mining Company the Sheardale bungalow, which is situated very conveniently on the roadside at 36 miles, or almost exactly half-way between Cherambádi and Gúdálúr. I calculate that the cost of purchasing and putting it into repair will amount to Rs. 3,295, and I think it is well worth the money, because in a country with such a heavy monsoon it is very necessary that shelter should be obtainable at intervals not greater than 12 miles.

22. Mr. Todd provides only Rs. 650 for land compensation, because he thinks "that planters will not charge compensation in all cases." But from Vayitri to Nadghani junction, a distance of 40 miles, the road has never been more than a planters' road, originally constructed by planters and never formerly acquired by Government. It is often only 10 to 12 feet wide, and widening it to 18 feet necessitates frequent encroachment on private land and occasional removal of coffee trees.

Moreover, I consider that, in making the road an imperial one, Government should acquire the sole right to it and its margin. The ordinary width reserved for a road is one Gunter's chain on either side of the centre line, and that width may be reserved in this instance where the road passes through Government waste. But to do so in cultivated land would entail a large

amount of compensation, because coffee and cinchona grow up to the present margin of the road. I propose, therefore, in cultivated land to take up ½ Gunter's chain on either side of the centre line or half a chain (33 feet) altogether, and to pay compensation for it in the following manner:—

- A small sum per acre to be paid as compensation for the transfer of the land to Government.
- The trees now planted on the strip of land to be occupied to be the property of Government, but the present owners to enjoy the usufruct thereof, and to be paid a certain rate, to be now agreed upon, per tree, in the event, if ever, of that tree being removed by Government for purposes of road improvement or maintenance. I have reason to believe that estate owners are willing to agree to these terms.

The compensation that has to be provided for is therefore as follows:—

- Payments as above.
- Payments for coffee and other trees to be now removed in widening the road to 18 feet.
- Compensation for the land to be occupied in cutting the new trace No. 1, referred to in para. 9, which I estimate at Rs. 3,000. I calculate that an average of 2 acres per mile (= ½ chain in width) may have to be paid for throughout at Rs. 200 per acre, which amounts to Rs. 18,900 for 47½ miles, and I provide this amount to ensure making ample provision and obviate all need for further revision.

23. I have provided for the cost of demarcating the above strip of land I propose to occupy at 28 stones per mile.

24. Mile and furlong stones were omitted in Mr. Todd's estimate and are now provided of the same pattern as those erected on the Calicut-Vayitri road and on the Ooty-Gúdálúr road.

25. I have thought it necessary to provide lines for coolies employed in maintaining the road. From Meppadi to Cherambádi a distance of 15 miles and from Devála to Gúdálúr a distance of 10 miles there is no shelter of any kind for man or beast, and if these lengths are left unprovided with shelter, and coolies have to walk long distances to their work, these portions of the road will certainly be neglected. I therefore propose to build coolie lines in the centre of each of the above lengths, each capable of holding 36 coolies. The buildings will be of a permanent nature, because the road is intended to be permanent and will cost Rs. 1-12-0 per square foot.

26. I have provided Rs. 5,000 for departmental blasting where necessary and Rs. 3,722 for unforeseen contingencies; also the usual percentage for petty supervision and contingencies, of which however only a very small portion will be utilized if, as I propose, the work is done by contract.

27. I have already given out the execution of earthwork and the collection of road metal on those portions of the road about whose alignment there is no dispute on piece-work to enable me to spend my grant for 1888-89.

28. In conclusion, I beg respectfully to state that although the revised estimate amounts to a large sum, I believe that it includes nothing not absolutely necessary to the construction of a sound and lasting road. It must be remembered that the conditions of labor in the Wynad differ materially from those in any other district in the Presidency. The resident labor consists of unskilled jungle tribes few in number and the imported labor is very apt to be scared by fever, &c., and to leave their work at a moment's notice refusing to return on any terms. The terror with which life in the Wynad inspires the coast coolies is unintelligible to those who have not seen it. Therefore to attract labor it is necessary to offer higher rates of pay than are accepted nearer the coast, and in framing an estimate ample margin for accidents, delays, heavy monsoons, fever, &c., must be provided. I believe I have provided this margin in the estimate now submitted, and I believe that, if sanctioned, any further revision, such as has repeatedly occurred, I understand, on the Calicut-Vayitri road estimate, will be unnecessary.

Note by the Chief Engineer, Public Works Department.

In G.O., No. 2412 W., of 15th October 1885, an estimate of Rs. 4,10,000 was sanctioned for improvements to the Vayitri-Gúdálúr road, and this amount has since been increased to Rs. 4,27,221 as explained in the papers printed with the following orders, viz.:—

G.O., No. 311 W., of 26th January 1888.
G.O., No. 2079 W., of 10th July 1888.

2. In October 1888 the Superintending Engineer, IV Circle, submitted two tenders for "improvements to the Vayitri-Gúdálúr road" to the Chief Engineer and

recommended that the tender of Messrs. Mitchell and Mackenzie should be accepted, but before entering into any contract the Chief Engineer considered it desirable that the rates paid to the contractors (Messrs. Mitchell and Mackenzie) on the Calicut-Vayitri road should be compared with those proposed for the Vayitri-Gudalur road.

3. The Superintending Engineer, IV Circle, has now forwarded a statement giving this information and also a revised estimate of Rs. 5,50,000 with a very clear and full report on the subject by the Executive Engineer, Nilgiri division.

4. The following are the main points that require consideration in the revised estimate:—

- (a) The excess of Rs. 1,22,779 (Rs. 5,50,000 — Rs. 4,27,221).
- (b) The rejection of Mr. Todd's trace from mango tree to Sepathi which was approved in G.O., No. 3109 W., of 18th December 1884, and the retention of the old trace throughout with the exception of the three small deviations described in paras. 7 to 15 of the Executive Engineer's report.

5. With regard to (a), the excess is due mainly to the following:—

(1) Increase in rates for roadwork	...	...	...	...	...	RS.
(2) Increase in cost of iron bridges	...	...	...	...	...	66,118
						78,716

Mr. deWinton has gone most carefully into the question of rates, and after considering his report and the comparative statement referred to in para. 3 of this note, the Chief Engineer considers that the revised rates for roadwork entered in the estimate are reasonable when compared with those for work actually carried out on the Calicut-Vayitri road. The increase in the cost of the iron bridges was unavoidable so far as the ironwork was concerned, for when the original estimate was framed no information was available regarding the cost of iron bridges according to the type designs then under preparation at the India office; but probably in future it will be possible on other roads to substitute designs which will be more economical; the rise in the price of iron and the fall in exchange since 1885 have also much to do with the increase on the cost of these iron bridges, which however should, with proper attention, last for many years without requiring repairs.

With reference to (b), the arguments brought forward by the planters and other residents of the Deyala and Pundalur districts for the retention of the old trace between mango tree and Sepathi are strongly supported by Mr. deWinton, and in the opinion of the Chief Engineer the line proposed by Mr. deWinton for the entire length of the road should be adopted.

6. The proposal of the Superintending Engineer to attach the road during construction to the Nilgiri division will be accepted by the Chief Engineer, and, with reference to the execution of the work, the tender of Messrs. Mitchell, Mackenzie and Co. forwarded by the Superintending Engineer with his endorsement No. 489-E.W. of 27th October 1888 will be approved, if the revised estimate be sanctioned by Government.

7. It is observed that an allotment of Rs. 1,00,000 has been made for the work in the budget for the current year, and with these remarks the revised estimate of Rs. 5,50,000 is forwarded to Government for sanction.

ORDER—dated 6th June 1889, No. 1492 W., Public Works.

The revised estimate, amounting to Rs. 5,50,000, for improvements to the road between Vayitri and Gudalur is sanctioned in supersession of the estimates sanctioned in the Proceedings noted in the margin.

2. The formation of a sub-division in the Nilgiri division for the efficient execution of the road is approved.

G.O., No. 2412 W., dated 15th October 1885.

" " 311 W., " 26th January 1888.

" " 2079 W., " 10th July 1888.

3. The sanction accorded in para. 1 of these Proceedings has been registered as Provincial No. 17 W. of 1889-90 and classified as Communications, Original Works.

(True Extract.)

Captain, R.E.,
Under-Secy. to Govt., P.W.D.

To the Superintending Engineer, IV Circle, with forty-four enclosures.
" Examiner, Public Works Accounts, with the general abstract estimate.
" Chief Engineer, Public Works Department, with four enclosures.
" Local and Municipal Department.
" General Manager, Glenrock Company (Limited), Pundalur, South-east Wynad.
" Honorary Secretary, Wynaad Planters' Association.

Exd. J. Henrious.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1889} Madras.

PUBLIC WORKS.

Dated June, 6th.

Recd.

Encl.

G.O., 6th June 1889, No. 1492 W.

JUNE.

Improvements to the Road
between Vayitri and Gudalur

Sanctioning a revised estimate, amounting to Rs. 5,50,000, for —, and approving the formation of a sub-division in the Nilgiri division for the efficient execution of the road.

No 190
M

Supg Engineer's office, 4 Circle,
Coimbatore, 20th June 1890.

From,

Major D. McNeil Campbell, R.E.,
Supg. Engineer, 4 Circle,

To,

The General Superintendent,
Public Works Stores,
Madras.

Sir,

Encl 3

I have the honor to forward
a special Indent in Triplicate for the
Iron Bridges required for the Vayitri-
Gudalur Road sanctioned in G.O.,
No 1492 W of 6th June 1889.

2. The required iron works are of
the same description as given in the
printed specifications circulated
with the Type Drawings of Roadway
bridges, Indian Public Works Depart-
ment. Hence documents required
by para 7 appendix C of the Public
Works Code are unnecessary.

I have &c

M. Campbell Major R.E.,
Supg. Engineer, 4 Circle

1919

From
The Supg. Engrs
4 file

PW 6289/90

Dated 20 June 1890

Received 22

No 190
M

Encls. 3

Iron bridges required
for the Vayitri Gudalur
Road

Forwarding a special
indent for the

No 448d

Submitted to the
Superintending Engineer
5th file with reference
to his endorsement
No. 1232 of 14 June 90.

By order Lt. Col. R. E.
General Supd. P. W. Stores

Madras
22nd June 90

SUPERINTENDING ENGINEER'S OFFICE,

V Circle, Madras,

Chopak, 27 June 1890.

No. 1478.

From

Col. D. H. Burston R.E.

SUPERINTENDING ENGINEER, V CIRCLE,

To

THE Chief Engineer
Thro' the Examiner of
P. W. Accts.

SIR,

Enclosures.

at my

With reference to your
Memorandum No. 130 D dated
13 May 1890. I have the honor
to forward an indent
in triplicate to the Director
of General of Stores in
England for iron Bridges
for the Vayitri Gudalur
road in the West Coast
Division which were sanc-
tioned in G.O. No. 1472 of
6 June 1889 and also
a letter in original
from

From the Superintending Engineer
Fourth Circle No 190 dated
20 June 1890.

I have the honor to be

This

Yours Obedient Servant

B. Burton

for R.E.

Superint. Engineer

5 Circle

PW C No 6289

of which will be for
sent to the...

for compliance

at 7-7-90

for...

to be...
office

I have the honor to
forward to you the
of early compliance
a general interest in
duplicate for...

340 Day 24. VI. 90

with file

No. 1919 of 16 July 1890
JH 10/7/90 Genl
The indent will be for-
warded to the Home Govt
for Compliance.

To S.E. V Circle, 20/7
H. 24920 of 16 July 1890

To The Director General of Stores
India Office
London.

Sir
I have the honor to
forward herewith for
favor of early compliance
a special indent in
duplicate for certain iron
bridges required for the
Vayitri-Gudalur road.

2. The usual Certificate
in regard to funds will
be found embodied in
the accompanying pro²
sec. Lett.

16/7/90 I have to
No. 1921 of 16 July 1890
Endorsement

Copy of the above
with Copy of the indent
forwarded to the Govt
of India for infor-
mation.

5073 16/7/90
3-7-90

2 P
1890.

EXAMINER, P. W. ACCOUNTS.

Madras, 2nd July 1890.

OFFICE NOTE No. 153

To E. W.

THE accompanying letter from the Superin-
tending Engineer, 5th Circle, to the Chief
Engineer, P. W. Department, No. 1478, dated
27th June 1890, with an indent
(No. 4 of 1890-91 189) for
English Stores for transmission to the Secretary
of State, is forwarded for necessary action.

2 I certify that funds to meet the estimated
outlay in England in connection with this Indent
during the year 1890-91, have been provided
by the Local Government to the extent of
£ 2322-18-10. in the estimate of the
P. W. Department for that year.

W. C.

(Encs)

W. Thacker
Enclosures.

1919

From

THE SUPERINTENDING ENGINEER,

V CIRCLE,

To

THE

*P10 Encl
6289/90*

Dated

Recd.

}

189

ENCLOSURES

No.

28
1919

6289.

11-12-08
13-9-16

Govt. of Madras.

PUBLIC WORKS.

Dated

Recd.

Encl.

G.O. 16th July 1890 No. 1919. 20. 21. 22

From Bridges

Ordered that the ^{special} indent
for — be repd for the
Kanjivaram Road
be paid to the Home for
for compliance.

From Bridges

For for only compliance
special indent for from
Bridges repd for the Kanjivaram
Road.

From Bridges

For for compliance
indent for — repd for the
Kanjivaram Road.

70	70
6	6
<u>20</u>	<u>20</u>
2	2

<u>30</u>
2
20 collections