(1) பக்கங்களின் எண்ணிக்கை 86

(2) புதுக்கித் திருப்பிய நாள் 19-5-89

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

PWD துறை

அரசாணை எண்.
மு. கோப்புத் தாள் எண். 1492

அச்சகம்
பலவகை

நாள் : 6-1-1889 198 .

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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 *viâ* 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 ¾ 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 Gúdalúr. 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, Nílgiri 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-Gúdalúr 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 Nílgiris.

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-Gúdalúr 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 ½ 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 Gúdalúr 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

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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.

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

COIMBATORE,
27th October 1888.

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-Gúdalúr 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., 2½ 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 2½ to 2 per cent.

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

	RS.
(1) Increase in rates (*vide* 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 (*vide* 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 (*vide* 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 (*vide* 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 Nílgiri 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, Nílgiri 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-Gúdalúr 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 1885, 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-Gúdalúr road, with explanations of differences. It will be seen that in every item except blasting the rates tendered for the Vayitri-Gúdalúr 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. 3958 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 ¾ 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.

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(*c*) Out of the 13¾ miles of the existing road, 2¾ miles in the aggregate are steeper than 1 in 18, and of this 1¼ 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 Wynaad, 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, *viâ* 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 Gúdalúr 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	MILES.	FT.		FEET.
1	5·3,459	8·1,719	2	3,960	2·3,540	420
2	30·2,497	31·948	0	4,514	0·3,731	783
3	34·470	34·3,676	0	3,383	0·3,206	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 1½ 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 23¾, 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 Wynaad 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 Gúdalúr, and taken surveys and sections of the three new traces I propose, and have had a plan prepared on a large

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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 Gúdalúr and Coonoor ghâts 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 Gúdalúr ghâts 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:—

(*a*) Mr. Todd's designs are antiquated and have been lately superseded by the standard designs lately received from the India office.
(*b*) Exchange has greatly fallen.
(*c*) 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-Gúdalúr 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 Gúdalúr, 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 Gúdalúr 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	10½
Cherambádi rest-house built last year by the Nílgiri District Board from Provincial funds	24½
Gúdalúr	47¼

It will thus be seen that there is a big gap between Cherambádi and Gúdalúr, 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 Gúdalúr. 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

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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 ¼ 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*) A small sum per acre to be paid as compensation for the transfer of the land to Government.
(*b*) 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:—

(*a*) Payments as above.
(*b*) Payments for coffee and other trees to be now removed in widening the road to 18 feet.
(*c*) 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 (= ¼ chain in width) may have to be paid for throughout at Rs. 200 per acre, which amounts to Rs. 18,900 for 47¼ 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-Gúdalúr 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 Gúdalúr 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 cooly 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 Wynaad 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 Wynaad 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-Gúdalúr 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-Gúdalúr 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-Gúdalúr 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, Nílgiri 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 reten-
tion 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:—

	RS.
(1) Increase in rates for roadwork	66,118
(2) Increase in cost of iron bridges	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 Devála and Pundalur districts for the retention of the old trace
between mango tree and Sepáthi 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 Nílgiri 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.

G.O., No. 2412 W., dated 15th October 1885.
" " 311 W., " 26th January 1888.
" " 2079 W., " 10th July 1888.

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

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

1492

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.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint 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 Wynaad.
" Honorary Secretary, Wynaad Planters' Association.

Exd. J. Henricus.
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.

24

1492

18

SECRETARY TO GOVERNMENT, P. W. DEPARTMENT, MADRAS.
15 OCT 88

The Glenrock Company, Limited,
Pundalur. S. E. Wynaad.

13 October 1888

To
The Chief Engineer
Depart^t^ of Public Works
Madras

Sir

I have the honour to forward a petition from the inhabitants of the Devala & Pundalur districts which I trust will have your immediate attention

Any assistance we ~~can~~ from our local knowledge give you is at your service.

I have the honour to be
Sir
Your obedient servant
C A Paterson

9 6

P. W. Dept.
To be returned with reply.

SUPG. ENGINEER'S OFFICE
No. 1013
20 OCT. 88
P. W. D.
FOURTH CIRCLE

No. 3953 C d/18th Octr. 1888

Referred to the Suptg. Engineer IV Circle for remarks.

Colonel R. E.
Chief Engineer P. W. D.

17.10.88

SUPG. ENGINEER'S OFFICE
-3 MAY. 89
P. W. D.
FOURTH CIRCLE

Referred

SECRETARY TO GOVERNMENT
5 OCT 88
P. W. DEPARTMENT, MADRAS

1492

Pundalur
S. E. Wynaad
October 1888

To

The Chief Engineer
Department of Public works
Madras

Sir,

We the undersigned proprietors and inhabitants of the Devala 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 Seepetty Bridge via Needle rock gap to the Mango Tree is carried out and beg that after enquiring personally into the case you will submit this petition to Government.

We would point out that the saving in distance is so slightly in favor of the new trace, about 3/4 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, & 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 Metapolliam to Gudalur. 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 Devala and Pundalur which contain the greater portion of the rate payers in this part of S. E. Wynaad. If the proposed trace is taken, the present road from Seepetty 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 Devala and Pundalur

If the new trace be adopted the four miles from Seeputty to Nadghani junction would still have to be kept up in first class order, if not, it would practically close the Carcoor ghaut as one of the outlets for our crops, while if it where 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 Seeputty Nadghani road is maintained with the new road. The chief difficulty is perhaps what is known as the Balcarra ghaut 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

We have the honor to be
Sir
Your most obedient Servants

A. Pennick Manager New South East Wynaad Estates Co. Ld
C. A. Paterson. Gen: Manager Glenrock Co Ld
& Resident Agent Indian Consolidated Gold Co Ld.
Adol Wright [illegible]
J. L. Shaw "Shawfield" &c

SUPD. ENGINEER'S OFFICE
20 OCT 88
P.W.D.
FOURTH CIRCLE

SUPD. ENGINEER'S OFFICE
-5 MAY 89
P.W.D.
FOURTH CIRCLE

EXECUTIVE ENGINEER'S OFFICE
13 NOV 1888
P.W.D.
NILGIRIS

1492

A. J. Wright Kerin

Y. Bowars. Manager Indian Gold Mining Co. Ltd.

Arthur D. Adams. Manager Perseverance G. M. Coy Ld.

Alfred W. Smith chaplain S. E. Wynaad. Hamelade – Devala.

James Williams Genl Manager Devala Moyar Gold Mining Co Ltd

A. Baron owner of Kanadi Estate.

J. Chas Large Glenrock Estate

Edw. W. Lagan

P. Subboo Pattar
Pleader

[illegible]

[illegible]

[illegible]

Ramasawmy [illegible]

[illegible]

Narainasawmy Naidoo

Ellias Sait

SUPDG. ENGINEER'S OFFICE
No. 10134
20 OCT. 88
P.W.D.
FOURTH CIRCLE

Enclo: 1.

SUPDG. ENGINEER'S OFFICE
-3 MAY. 89
P.W.D.
FOURTH CIRCLE

13 NOV

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P. W. D.
NILGIRI DIVISION OFFICE,
STATION Pandalur
24 October 1888.

No. 2867

N.B.—Please quote the number and date of this letter in future communication on the subject.

FROM
W. B. de Winton Esqr.
~~The~~ EXECUTIVE ENGINEER,
NILGIRI DIVISION,
OOTACAMUND,

TO
THE SUPERINTENDING ENGINEER,
FOURTH CIRCLE,
COIMBATORE.

Enclosures.
1 Comparative statement

SIR,

I have the honor to enclose a Comparative statement shewing the result of my Call for tenders for "Improvements to Vayitri-Gudalur Road", and to recommend that the tender of Messrs. Mitchell Mackenzie and Co. be accepted although it exceeds the sanctioned Estimate by Rs 37,683, for the following reasons:—

(1) A Scrutiny of Mr. Todd's Estimate shews 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 road side 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% of

10

of metal spread and consolidated for 12 annas, the local rate being Rs1/ 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 revisions will be necessary in this case.

(2) Messrs Mitchell and Mackenzie are just completing the Contract for the Calicut-Vayitri road, and both from informations 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

1482

5-P

(3) I am most strongly opposed to accepting the tender of Ebrahim Sait & Co, because they have absolutely no knowledge of road work; they have tendered in a haphazard 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.

Para 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 ½ mile allowed in the comparative statement will prove insufficient to get good gneiss metal at all points

24 11

of the road, and I am very much opposed to the use of white quartz which is the only metal generally available on the road side, because experience has proved it to be about the worst possible metal for road work. 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 Bridge work 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 ex 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

and which will effect a material saving both on the bridge work and earth work 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 years 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.

I have the honor to be
Sir
Your most obed^t Servant
12
Executive Engineer N. D.

P.T.O.

1482

No. 489
EW

7 P

Submitted to the Chief Engineer P. W. 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, MackKenzie & Co in preference to the tender from Ebrahim Sait & 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. 3953C dated 18th instant.

J. W. Martin
Superintending Engineer,
IV Circle

Coimbatore
27th October 1888

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From

The Executive Engineer,
Nilgiri Division,

SUPDG. ENGINEER'S OFFICE
7230/88
26 OCT. 88
P.W.D.
FOURTH CIRCLE

To

The Superintending Engineer,
Fourth Circle,

Dated 24°
Despatched 25 } October 1888.
Received

No. 2867

Enclosures. 1

Subject.

Improvements to Vayitri-Gudalur Road — Forwards a comparative statement of tenders received for — and recommends the work being given to Messrs. Mitchell Mackenzie & Co

1492

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No. 3953C d/ 18-10-88 + file.

Memo

With refce to his endorsement No. 489 d/ 27. x. 88 on letter from the Ex. Engr. Nilgiri Divn., No. 2867 d/ 24.10.88 the S.E. IV C is requested to submit a comparative statement showing Messrs. Mitchell and Mackenzie's rates for the construction of the Calicut-Vayitri Road and the rates tendered by them for the improvement to the Vayitri-Gudalur Road.

2. Considering the large amount of the sanctioned estimate, the Chief Engineer is of opinion that before entering into a contract for the execution of the work more definite information should be afforded in regard to the amount of the revised estimate and the causes of excess.

3. The Ex. Engineer merely states that the revised estimate "is not likely to exceed the sanctioned estimate by more than ten per cent."

4. A reply to reference No. 3953 C d/ 18-10-88 is awaited.

S.E. IV Circle

S.E. IV. C.

3.11.88

3/11/88

1540 / 5

From

The Supg. Engineer, Fourth circle

Dated 27th October/88

20 OCT 88

No. 489 / E.W.

Enclo 1

Improvements to Vayitri Gudalur Road

Submitting for orders a comparative statement of tenders received for — & recommending that the work be given to Messrs Mitchell & Mackenzie

With memo

No. 204 / E.W.

1492

8 P

Supg. Engrs. office, 4th Circle
Coimbatore, 11th May 1889.

From

Lt. Col. A. C. Smith R.E.
Supg. Engineer, 4th Circle.

x As per book post

To,

The Chief Engineer,
P.W. Department.

Enclo: 48
12 Plans
27 Estimates
1 General abstract
1 Comparative statement
1 List of Tunnels bridges &c.
1 Index Map
1 Petition from the inhabitants of the Wynaad & Gudalur Distts. bearing C.E.'s Endst. No. 3953C of 18 October/88
2 Tenders with 1 comparative statements.
1 Ex. Engrs. letter No. 289 of 30/4/89

x herein

Sir,

References No. 88 W of 10th January/88
" 3953C of 18th October/88
" 4318C of 6th Novr/88.

I have the honor to submit for sanction a revised estimate amounting to Rs 5,50000 for improvements to the Vayitri Gudalur road. I much regret the delay in replying to your 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 re-measurements

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

	Rs.
(1) Increase in rates vide paras 17 + 18 of the Executive Engr'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 + the low exchange para 19	78,716
(5) Cutting side drains + forming side berms vide remarks in the Comparative Statement	2,263
(6) Mile + furlong stones para 24	2,296
(7) Demarcating stones " 23	5,640
(8) Cooly lines para 25	5,950
(9) Blasting " 26	5,000
(10) Compensation for land " 22	18,250
(11) Rest house " 21	3,003
(12) Contingencies	1,027
(13) Superintendence	18,837
	221,697

6

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

	Rs.
(1) Approach to the Sholadi bridge vide remarks in the Comparative statement	6,786
(2) Kanambatta bridge reduced from 2 spans of 20 ft. into one span of 50 feet para 9	1,078
(3) Certain bridges now abandoned para 19	45,779
(4) Maintenance of the road vide remarks in the Comparative Statement	41,400
(5) Unforeseen Contingencies	3,854
	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

matter,

view to current years grant viz, Rs. 100,000 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.

I have the honor to be,
Sir
Your Most Obt Servt

A L Smith Lt Col R.E.
Supg. Engineer 4th Circle

S.G.

S.E. IV. C. 3.11.00 3/11

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Memo No. 4318 C d/ 6.11.88
" " 3953 C d/ 18.10.88
S.O. Aus 2079 W d/ 10-7.88
" " " 311 W d/ 26-1.88.
" " " 88 W d/ 10.1.88.
" " " 2412 W d/ 15.10.85
" " " 2373 W d/ 12.10.85
Memo No. 3082 d/ 15.7.85
S.O. Aus 3109 W d/ 18.12.84.
" " " 1417 W d/ 6.6.82
" " " 1010 W d/ 4-6.88

PWC No. 4434

From
The Supg. Engineer,
4th Circle.

(7)

Dated 11
Rd 14 } May 1889

No. 204/E.N

Encls: 48 x

Road from Vayitri to Gudalur
Submitting for sanction a revised estimate amounting to Rs 550,000 for improvements to the —

CW 15/5/89 J

0/28/5

Enclosure 11 pp

No. 289

Nilgiri Division office
Ootacamund 30th April 1889.

From
W. B. de Winton Esq.
Executive Engineer
Nilgiri Division

To
The Superintending Engr.
IVth Circle.
Coimbatore.

x Enclosures 32

1	Estimate Rs	2240	✓
2	Do	2375	✓
3	Do	188175	✓
4	Do	59375	✓
5	Do	24685	✓
6	Do	5965	✓
7	Do	10,070	✓
8	Do	13797	with plan ✓
9	Do	7990	✓
10th	Do	2800	✓
11th	Do	5670	with plan ✓
12th	Do	4040	with plan ✓
13	Do	2160	✓
14	Do	4250	with plan ✓
15	Do	2312	with plan
16	Do	2430	with plan
17	Do	1510	with plan ✓
18	Do	1822	with plan
19	Do	1580	✓
20	Do	7290	with plan ✓
21	Do	2045	with plan
22	Do	40890	✓
23	Do	3295	with plan and report ✓
24	Do	5950	✓
25	Do	15900	✓
26	Do	2410	✓
27	Do	5920	✓
28	Do	538400	
29	Comparative state		✓
30 } 31 }	Statements		
32	Plan.		
33	Petition } Stations. } Tender } x		

x will follow.

Sir

With reference to your Memo No. 501/N.J of 20th October 1888 and your endorsement No. 530/N.J of 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,

9 10 X

matter, but Para 2 of the Chief Engineer's Memo No 4,318 C d/ 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 & revision, &, as the information & 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 & the causes of its large excess over the original estimate sanctioned in G.O. No 2442W d/ 15 October 1885 &c. I will speak here only of Messrs Mitchell and Mackenzie's rates, & of the new trace

trace from mango tree to Sebathy 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 difference. 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 & 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 Sebathy Bridge, proposed by Mr Todd & sanctioned by Govt. and so

H 2d

strongly objected to by local planters & mine-owners in the petition bearing Chief Engineer's endorsement No 3953.C of 18th Octr 188. I may as well at once say that I fully agree with the local objections to that trace.

Lenworth returned

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

For The trace was proposed by Coll (now General) Sankey C.B. because it seemed more direct, because it avoided the steep Balcarres ghaut, now traversed by the existing road, and because the gradients of the existing road are frequently heavy.

The

The answers to these points are:—

(a) The saving in distance is only 3/4 of a mile, the length 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 ghaut presents no such difficulties as the Coonoor ghaut and its steepest part can be avoided by a new trace.

(c) Out of the 13 3/4 miles of the existing road 2 3/4 miles, in the aggregate, are steeper than 1 in 15, and of this 1 1/4 miles are steeper than 1 in 15, whereas the new trace is no where except in 2 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 trace 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 2 principal villages in this portion of the Wynaad, namely Devala & Pandalur, round which are clustered all the mining & most of the planting interests of the District.

(3) It benefits nobody

except

except the through traffic and this only to a small extent.

(4) Its adoption would necessitate the upkeep by Local Funds of 4 miles of road between Sepathy Bridge and Nadgani, which is the route to the coast, via the Karkur ghaut, for Ouchterlony Valley Coffee, & 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 shew 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 Govt. which was, I

22 ~~23~~

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 Sebatti Bridge.

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

	Mileage		Length of existing road	Length of trace	Saving
	From	To	m. feet		Feet
1	5.3459	8.1717	2-3960	2.3540	420
2	30.2477	31.948	0-4514	0.3731	783
3	34.470	34.3676	0.3383	0.3206	177

7 In trace No. 1 I propose making a detour to the right to avoid 2 steep hills, and 2 very bad swamps, which now annually absorb all the maintenance grant of this

portion

1492 15-8P

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, & probably deep fascine or brush wood foundation to prevent the subsidence which now goes on. The new trace presents no difficulties of any kind, crosses the Kunambutta 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 1¼ miles of Coffee and Cinchona, but this compensation will not amount to more than Rs 3000, which

23

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 1765 is steeper than 1 in 15. It entails a heavy bank to start with & 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 ghaut and save a rise and fall of 70 feet. It will have an average grade of 1 in 30, & a maximum of 1 in 23¾, whereas 3000 feet of the existing road are steeper than 1 in 18 of which 2474 are

It will [illegible] cutting but [illegible] land.

[illegible] endeavoured to [illegible] trace in the 33rd [illegible] of Rosedale to avoid [illegible] zig zag and 1078 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 Wynaad Estates Company Gold Mine, which would mean that all quartz would have to be shot across the road. But I hope to overcome the 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, as prepared by Mr. Todd, shewing his trace from Mango tree to Sebastian Bridge and the trace No. 1 I now propose, but it is on too 24 xd

small a scale to be otherwise than misleading except in shewing 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 & sections of the 3 new traces I propose and have had a plan prepared on a large scale shewing 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 proposed traces are forwarded herewith.

Will follow

Not recd. yet

[illegible] 24/5

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 $\overset{R}{1}$ – $\overset{a}{8}$ – $\overset{p}{0}$ a cubic yard on road side 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 & human beings, & with the first monsoon it grinds up into powder & slush. I consider that it would be a gross misuse of Govt. 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 Gudalur and Coonoor Ghauts, of excellent quality, abundant in some miles of the road but very scarce or non existent in

many others. The cost of this broken & stacked on road side is Rs 2-8-- per Cyd 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 & I earnestly trust that this may be sanctioned for I am convinced, from my experience on the Coonoor & Gudalur ghauts where I pay Rs 13 for the same metal, that a sound & 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

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.

(a) Mr Todd's designs are antiquated and have been lately superseded by the standard designs lately received from the India Office.

(b) Exchange has greatly fallen

(c) 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-Gudalur Road are similar:

but the amount of revision necessary may be gathered from the fact that Mr Todd's estimate for the Karunthe bridge (3 spans of 40 feet) is Rs 14,330, whereas mine amount to Rs 24,685.

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

It must be remembered that the rainfall on this road varies from 300 inches at Vayitri to 100 at Gudalur, 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 Gudalur at a cost of Rs 2808 and one is building at Meppadi & will cost Rs 4,628. The mileage of the existing Rest Houses will

will therefore be:—

	Miles
Vayitri Public Bungalow	0
Meppadi Rest House	10½
Cherambadi — do — built last year by the Nilgiri Dist. Bd. from Provincial Funds	24½
Gudalur	47¼

It will thus be seen that there is a big gap between Cherambadi & Gudalur & 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 road side at 36 miles, or almost exactly half way between Cherambadi & Gudalur. I calculate that the cost of purchasing & putting it into repair will amount to Rs 3295 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 Nadgani Junction, a distance of 40 miles, the road has never been more than a planters road originally constructed by planters and never formally acquired by Govt. 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, Govt. should acquire the sole right to it and its margin. The ordinary width reserved for a road

road is one Gunter's chain on either side of the centre line, & that width may be reserved in this instance where the road passes through Govt. 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 1/4 Gunter's chain on either side of the centre line, or 1/2 a chain (33 feet) altogether, and to pay compensation for it in the following manner.

(a) A small sum per acre to be paid as compensation for the transfer of the land to Govt.

(b) The trees now planted on the strip of land to be occupied to be the property of Govt. but the present owners to enjoy the

2d 19

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 Govt. 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:-

(a) Payments as above.

(b) Payments for Coffee & other trees to be now removed in widening the road to 18 feet.

(c) 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 (¼ chain in width) may have to be paid for

throughout

throughout at Rs 200 per acre, which amounts to R 18,900 for 47¼ miles, & 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 & 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 & on the Ooty Gudalur Road.

25 I have thought it necessary to provide lines for Coolies employed in maintaining the road. From Meppadi to Cherambadi a distance of 15 miles & from Devala to Gudalur 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, & coolies have to walk long distances to their work, these portions of the road will certainly be neglected. I therefore propose to build cooly lines in the centre of each of the above lengths, each capable of holding 26 coolies. The buildings will be of a permanent nature, because the road is intended to be permanent & will cost Rs 1 12 - per Sq. ft.

26 I have provided Rs 5,000 for departmental blasting where necessary, and Rs ~~5,770~~ 3722 for unforeseen contingencies: also the usual percentage for Petty Supervision & Contingencies, of which however only a very small portion will be utilized, if as I propose, the work is done by contract.

27

27 I have already given out the execution of earthwork & the collection of road metal on those portions of the road about whose alignment there is no dispute, on piecework 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 Wynaad 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 moments notice or

~~27~~ 30

refusing to return on any terms. The terror with which life in the Wynaad inspires the coast Coolie, is unintelligable 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 esti: :mate ample margin for accidents, delays, heavy monsoons, fever &ca 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.

I have the honor to be
Sir
Your most obdt. Servt.

Exe: Engineer, Nilgiri Dn

No.

SUPDG ENGINEER'S OFFICE
No. 2276
-2 MAY. 89
P.W.D.
FOURTH CIRCLE

From

The Ex: Engineer

Nilgiri Dn.

To

The Superintending Engineer

IV Circle

Coimbatore

No 289

Dated
Despatched } 30th April 89
Received

Subject

Improvements to Vayitri Gudalur Road &c.

Submits revised Estimates for —

23P

1492

C/

Note by the Chief Engr. P.W.D.

In G.O. 2412 W of 15th October 1885 an estimate of Rs 4,10,000 was sanctioned for improvements to the Vayitri Gudalur 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. 311 W of 26th Jany 1888

G.O. 2079 W of 10th July 1888

2. In October 1888 the Supdg Engineer IV Circle submitted two tenders for improvements to the Vayitri Gudalur Road to the Chief Engineer and recommended that the tender of Messrs [illegible] & Mackenzie should be accepted but before entering into any contract the Chief Engineer considered it desirable to

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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 Supdg: 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 Ex: 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 Mungatree to Sepathi which was approved in G.O. 3109 W of 18 Decr. 1884

1482

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and the retention of the old trace throughout - with the exception of the three small deviations described in paras 9 to 15 of the Ex: Engineer's report.

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

(1). Increase in rates for road work Rs 66,118

(2). Increase in cost of iron bridges - Rs 78,718

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 road work entered in the estimate are reasonable when compared with those for work actually carried out on the Calicut - Vayitri road. The increase in

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~~34~~

in the cost of the iron bridges was unavoidable so far as the iron work 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 Devala & Pandalur districts for the retention of the old trace between Mangoe tree and Sopathe 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 Supty 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 & Co. forwarded by the

Supty Engineer with his endorsement No. 489 C.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.

M.C.R.
28.5.89

C.W.
31.5.89

1492

(7) C.O.S. 120/5

Public Works Department.

11,93 W

Current No. 4436
Letter No. 2064 W
Dated 16th May 1889
From the Dy. Engr. II Circle

Sanction [illegible] attached

NOTE OF REMARKS.

The revised Est under review amounting to Rs 5,50,000 for improvements to the Vaigai Anicut and is submitted for sanction in supersession of the Est: (for Rs 4,10,000) sanctioned in G.O. No 2412 W d/15th Octr: 1885–

Subsequently another Est amounting to Rs 4,22,751 was sanctioned for the work in G.O. No 311 W d/26th Jany: 1888, after which a supplemental Est for Rs 4,470 was sanctioned in G.O. No 2079 W d/10th July/88 and then, mistake, another

Est: for Rs+1000 ~~made~~ sanctioned in G.O. No 88 W d/10th Jany/88 for providing additional support to the Kanwothi bridge –

3 The aggregate amount sanctioned for this work is therefore Rs+ 4,28,221, and the revised estimate exceeds this amount by Rs 1,21,779 and not Rs 1,22,800 as stated, the difference being Rs 1,021 –

4 In the G.O. sanctioning Rs 1000 for strengthening the Kanwothi bridge it is stated that the sanction provides only for temporary arrangements and that the bridge should be renewed, the present Est. provides for the renewal of the bridge at a cost of Rs 25,390 –

+ This amount probably be included in the Est: for Rs 4,22,751 sanctioned in [illegible].O. No 311 W d/26th Jany/88 –

+ If the amount for strengthening the Kanwothi bridge viz Rs 1000 is omitted, the aggregate amount of Ests sanctioned would be Rs 4,27,221 or Rs 21 more than the amount specified in para 2 of SE's letter, and the excess would be Rs 1,$\overset{2}{21}$,779 –

550,000
427,221
1,22779

5 The excesses are shown to be due to the following items

	Rs
(1) Increase in rates	66,118
(2) Increase in number of tunnels from 202 to 330 —	12,516
(3) Lengthening existing tunnel –	2,081
(4) Substituting expensive standard designs of iron girder bridges –	78,716
(5) Cutting side drains and forming side berms —	2,263
(6) Mile & furlong stones —	2,26[illegible]
(7) Demarcating stones	5,660
(8) Cooly lines —	5,952
(9) Blasting —	5,000
(10) Compensation for land —	18,260
(11) Rest House —	3,003
(12) Contingencies –	1,027
(13) Superintendence	18,837
Total Rs	2,21,697

6 Against the above Excesses the following Savings are shown.

		Rs
(1)	Approach to the Sholadi bridge	6,786
(2)	Kanambatta bridge altered from 2 spans of 20 to 1 span of 50 feet	1,078
(3)	Certain bridges abandoned	45,779
(4)	Maintenance of road	41,400
(5)	Unforeseen Contingencies	3,854
	Total Savings Rs	98,897

Net excess
(2,21,697 − 98,897) = Rs 1,22,800

7 The comparative Statement shows an Excess of Rs 1,027 under "Contingencies", and a saving of Rs 3,854 under "Unforeseen Contingencies". The distinction between Contingencies and Unforeseen Contingencies is not quite apparent.

8 The present proposals are to adhere to the line of the old and to abandon the new trace as shown on the sketch map.

7 The following deviations however are proposed between 5 miles 3459 ft and 8 miles 1719 ft, between 31 miles 2497 ft and 31 miles 4485 ft, and between 34 miles 470 feet and 34 miles 3676 feet showing a total saving in length of 1380 feet.

8 It is explained that the diversion between 5 and 8 miles is proposed with a view to avoid two steep hills and two bad swamps which annually absorb all the

maintenance grant of this portion of the road without visible effect, and that the new trace crosses the Kumuntalla river at a much more suitable spot for a bridge. The only drawback to the diversion is that it passes through 1¼ miles of Coffee & Cinchona plantation for which compensation will have to be made to the amount of not more than Rs 3,000 — vide para 9 of E.E.'s Report —

The deviation between 30 & 31 miles is proposed in order to avoid the descent to the Caroline bridge, and the steep ascent of the first portion of the Mango Tree Hill. The new trace will have a uniform grade of 1 in 18 and will av

2,580 ft of present steeper than that grade of which 1765' is steeper than 1 in 15 — vide para 10 of E.E.'s Report —

The deviation between 34 miles 470 ft and 34 miles 3676 ft is proposed with a view to avoid the summit of the Balcarres Ghat and save a rise and fall of 70 feet — The average grade in this case will be 1 in 30, and a maximum of 1 in 23¾ whereas 3003 feet of the existing road are steeper than 1 in 18 of which 2,474 feet are steeper than 1 in 15 — vide para 11 of E.E.'s Report —

The sections of these deviations referred to in para 15 of E.E.'s Report have not as yet been received —

6 A comparative Statement showing the difference between Messrs Whitehall & Mackenzie's rates for the Calicut-Vayitri road and those rates quoted in the Est: under review for the Vayitri-Gundalur road is submitted in compliance with this Office memo No 4315 C dated 6/11/86—

The rates quoted in the present Est: are lower than the rates allowed in the Est: for the Calicut-Vayitri road, but it will be observed that the rate for Collecting & Stacking metal in the Est: for the Calicut-Vayitri road appears to be uniform throughout whereas the rates allowed for metal in the present Est

1492

varies from 8-4-- to 13-12-- making an average rate of Rs 11-1-7 per 100 cft—

Early Sanction to the revised Est: is requested with a view to the utilization of the Current year's grant of Rs 1,00,000—

22/6/87.

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For orders whether Messrs Mitchell & Mackenzie's tender shall be accepted, as recommended by the E.E. & S.E.

Ch
30/10/54

The difference between the two tenders is very great Rs 74,052 but the S.E. and E.E. both consider that the lower tender will eventually prove the most expensive to Govt.
Messrs Mitchell Mackenzie & Co have the contract for the [illegible] Road, and I should like to see no competition between them & others on that work, & there are [illegible] by them.

31.10.54

Dw
W
WD
TO
41
~~42~~

The grant for this work this year is R 45,000 the Estimate being R 4,22,751. It is not likely with a reduction of 4 lakhs in the Provincial grant that we should be able to give a larger grant if any for the work and therefore it does not seem good to give out a large contract now for the work.

Both the C.E. & S.E. treat the subject with regard to the estimate in a very rough way and as pointed out there sh^d be some information given with regard to the rates paid on the [illegible] Vizagapatam road for R 411.965

I am not aware that any substantial sanction except for Bridges was required in this portion.

S.E. sh^d be called on to report regarding this as we cannot accept the general assertion that the rates are insufficient and that the details exceed with the 10 per cent

Enclosures 1–47 in a letter from the Supg. Engr. 4 Circle No. $\frac{204}{E.W.}$ of 11/5/89

12 Plans
27 Estimates
1 General Abstract
1 Comparative statement
1 List of Tunnels &c.
1 Index Map
1 Petition
2 Tenders with
1 Comparative statement

A. M.

No. 1492 W

Bwl & Roads
Civil Works

1492

PUBLIC WORKS DEPARTMENT,

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 6 June

A

READ the following

Print with ends / From the Glenrock Company Ld. Pandalur S. E. Wynaad . . . . . dated 13th October 1888.

Print / From the Superintending Engineer IV Circle . . . No. 459 E.W. dated 27 October 1888.

Print with ends / From the Superintending Engineer IV Circle . . . No. 204 E.W. dated 11 May 1889.

Print / Note by the Chief Engineer P.W. Department dated 31st May 1889.

26 P

W
2 June

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*

* G.O. No. 2412 W dated 15 Octo/85
" " 311 W " 26 Jany/88.
" " 2079 W " 10 July/88.

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

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3.

Ans:

(7).

3. The sanction accorded in para 1 of these Proceedings, has been reg=istered as Provincial No. 17 W of 1889-90 and classified as Communic=ations, Original Works.

WWB
28.5.89

[illegible]
31.5.89

Cont P
4/6/89

To
The Deputy Engineer IV Circle
with 4 [illegible]
" Examiner P. W. Accounts
with the general abstract
Estimate.
" Chief Engineer P. W. Dept
with 4 [illegible]
" Local & Municipal Dept
" The General Manager
of Assam [illegible] Co.
[illegible]
" Hony Secy [illegible]
Planters' Association

DWK
28/5/89

1692

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25/10/06
14.1208
13-9-06

Govt. of (1888) Madra
PUBLIC WORK

Dated

Recd

Encls

G.O. 6th June 1889 No. 14

Improvements to the
road between Vayit
& Gudalur

tioning a revi
estimate amountin
to Rs 5,50,000 for
and approving the
formation of a Sub-
division in the Nilgi
Division for the effi-
cient execution of the
road.

120/8

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