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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W.D. DEPARTMENT

G.O. No. / B.P. No:	2373-w.	Press. / Mis.

Dated 12-10-1885 198 .

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following letter from Colonel ROSS THOMPSON, R.E., Officiating Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 24th September 1885, No. 384 E.W. :—

I have the honor to report that I have lately inspected the Calicut-Vayitri road and ghât, and have gone through the estimates with Mr. Cormac, Vayitri sub-divisional officer. A sum of Rs. 40,727 has been sanctioned in G.O., No. 1527 W., dated 1st July 1885, for purchasing land and houses and constructing quarters for the executive staff of the Vayitri sub-division; but I do not think it is necessary to spend so much money in this way, and I foresee that every rupee that can be saved will be required to meet expenditure on the ghât upon items which have, I think, been under-estimated for. For instance, the amount of blasting to be done is greater than provided for, and a sufficient margin has not been allowed for the construction and repair of parapets along dangerous portions of the ghât.

2. I have just seen a type of house which would suit admirably for the executive staff and for inspection huts. The house I refer to was constructed by Mr. Tomlinson, a coffee-planter at Chundale, near Vayitri, in the year 1878. It is perfectly sound and good now, and I would not desire a better temporary residence for myself. With the exception of renewal of thatch, it has not required repair since it was constructed.

3. It is wind and rain proof and does not *retain* the damp as brick, mud and stone houses do in the Wynaad.

4. As a proof of the dryness of the house (although situated in the midst of jungle), Mr. Tomlinson showed me several handsomely-bound books which have been in the house since 1878, and these books had no traces of damp or mould about them.

5. The house is simply a sawn timber frame, with double bamboo mat walls and partitions, and cadjan and grass roof; doors and windows glazed in squared wooden frames.

6. Two rooms, each 14 feet square, with two bath-rooms; verandahs 6 feet wide in front and rear and a porch in front; stables for two horses and three rooms for servants, viz., watchman, servants and cook; also one latrine.

7. A house and outhouses of this description can be constructed in six weeks for about Rs. 700.

8. Mr. Cormac, the sub-divisional officer, now lives at "Coolaquee," the bungalow which it was proposed to buy and repair for him. He only pays Rs. 30 per mensem for it and is perfectly satisfied with the arrangement.

9. The office for the sub-divisional officer is now rented for Rs. 20 per mensem and can be kept on at the same rate. Nothing further is required.

10. Cooly lines are not wanted as the contractors provide their own.

11. The clerks, draughtsmen and lascars have already found quarters for themselves and require nothing further. The contractors will take care of their own people; so we require no hospital buildings nor medical aid beyond what is already available in the Vayitri dispensary.

12. I have the honor to submit an estimate of Rs. 8,904 for the temporary buildings which I have recommended.

ORDER—dated 12th October 1885, No. 2373 W., Public Works.

The Government approve the proposals of the Superintending Engineer, IV Circle, and sanction the revised estimate, amounting to Rs. 8,904, in lieu of the estimate of Rs. 40,727, sanctioned in G.O., No. 1527 W., dated 1st July 1885, for housing the working staff on the Calicut-Vayitri road.

2. The total sanction for improvements to the section of road between Calicut and Vayitri will now stand at Rs. 3,19,788.

3. This sanction has been registered as Provincial No. 148 W. of 1885-86, and classified as Communications, Original Works.

4. If necessary, a revised estimate should be submitted to cover the anticipated excesses on other items.

(True Extract.)

Lieut.-Col., R.E.,
Offg. Under Secy. to Govt., P.W.D.

To the Superintending Engineer, IV Circle, with estimate.
" Examiner, Public Works Accounts.
" Financial Department.

Exd. J. Henricus.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1885} Madras

PUBLIC WORKS.

Dated October, 12th.

Read. *Encl.*

G.O., 12th Oct. 1885, No. 2373 W.

OCTOBER.

Housing working staff on the Calicut-Vayitri road

Revised estimate for —, sanctioned.

GOVERNMENT OF MADRAS.

-3-

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 29th September 1884, No. 448 E. W.

With reference to G.O., No. 524 W., of 26th February 1884, I have the honor to submit, herewith, the estimate for improving the Calicut-Vayitri road.

1. Appendix No. 1.
2. „ „ 2.
3. List of plans 55 and estimates 28 sent in a box.
4. Report 1.
5. One original letter, No. 300, of 5th September 1884, from Mr. Todd.

2. The report prepared by Mr. A. B. Todd, Assistant Engineer, is so clear, complete and concise that I need only observe that the estimates include, first, the improvements to the road amounting to Rs. 2,80,708; secondly, buildings required for the establishment for which two proposals are made, one amounting to Rs. 94,689 and the other to Rs. 66,329. The difference between the two proposals is that the first provides for the purchase of land and construction of nearly all new buildings, while the second provides for the purchase of certain properties with the buildings on them and for improving the buildings.

The estimate further provides for repairs to the road while the improvements are in progress. This sum of Rs. 33,300, which is exclusive of establishment and tools and plant, would be met from Local Funds.

Lastly, the estimate provides for establishment and tools and plant at 25 per cent. and $2\frac{1}{2}$ per cent., respectively, on the cost of works.

3. As regards the alternative proposals in connection with buildings, I have to recommend that the second and less costly plan of purchasing and improving Hinde and Company's and the Coola Quee properties should be adopted.

4. In that case the estimates to be sanctioned would be for—

	Rs.
Works	2,80,708
Establishment	70,177
Tools and plant	7,018
Total for Works ...	3,57,903
Buildings	66,329
Establishment	16,582
Tools and plant	1,658
Total for Buildings ...	84,569
Repairs	33,300
Establishment	8,325
Tools and plant	833
Total for Repairs ...	42,458
Grand Total ...	4,84,930

5. I should also point out that the estimates for buildings include only accommodation for the Executive Engineer and his establishment employed in estimating and

carrying out the improvement of all the Wynaad roads, and do not therefore appertain specially to the Calicut-Vayitri road.

As regards repairs the Local Fund Department should provide funds not only for the work of repairs, but also for establishment and tools and plant required in connection with the repairs. It would be very inconvenient to have two departments at work on any one road at the same time.

6. It will also be observed from paragraph 13 of the report that two of the estimates of bridges are considered to require alteration, and the plans and estimates of these will have to be revised, but this will not make "any great difference in the cost; if any thing the cost will be less." As the estimate has been so long under preparation I have thought it best not to delay it on account of this revision.

ENCLOSURE.

Estimate framed by A. B. TODD, Esq., Assistant Engineer, of the probable cost of improving the Calicut-Vayitri Road *viâ* Támrachéri Ghât.

References.

G.O., No. 2821 W., dated 14th November 1881.
G.O., No. 1416 W., „ 6th June 1882.
No. 311 E., dated 27th August 1883.
No. 395 E., „ 26th September 1883.
G.O., No. 524 W., dated 26th February 1884.

Report.

1. With his No. 43 of the 31st January 1884 the Superintending Engineer, IV Circle, submitted a preliminary report from Mr. Nordmann, the late Executive Engineer on special duty, Wynaad, in which he suggested a plan of operations and brought forward the points upon which he required definite orders, to enable him to proceed with the requisite surveys and estimates for the improvement of communications in Wynaad.

2. In G.O., No. 524 W., Public Works, dated 26th February 1884, orders were passed on the points which Mr. Nordmann brought forward, and the accompanying estimate has been framed in terms of those orders.

3. In the Government Order above quoted it was laid down that the Calicut-Vayitri road through the Támrachéri ghât should first be taken in hand, that the line *viâ* Pudanellum should be adopted in preference to that *viâ* Chellye, and that an estimate should be framed of the cost of improvements as indicated.

4. *Reformation of Road.*—The improvements are included under the following heads:—

Gradients.	Surface.
Drainage.	Bridges.
Width.	

5. *Gradients.*—The longitudinal section of the road shows that in the plains portion everywhere the gradients must be reduced to 1 in 18 by cutting and filling, as it is not found practicable to improve the gradient by fresh traces.

6. On the Támrachéri ghât the gradients are more severe, but as any alteration of the gradients now would involve immense expense it has been decided to let them remain as they are. The ghât is most solidly and substantially built, and it is thought that any interference with it would not be advisable, especially as the revetments are in capital order. The cause no doubt of the unsatisfactory condition of the ghât for traffic is want of drainage.

7. *Drainage.*—In the first place the roadway itself is very much out of section, and the storm water instead of flowing away in the side drains makes its way down the roadway, scouring out deep gullies and washing out any materials that may be put in to fill them up. The hill side is exceedingly steep in most places, and in heavy storms the amount of water running off transversely to the roadway is very considerable. Special attention has therefore been paid to the provision of catch drains wherever practicable, *i.e.*, where the hill side does not consist of solid rock, with a view to turning the hill drainage and carrying it off at convenient places through the under drains. Where catch drains are not practicable the side drains will be made of greater section. To discharge the drainage of the road itself the estimate provides firstly for forming up the road with a slope from the centre to both sides of 1 in 20, secondly for clearing out side drains, thirdly for providing under drains, as per Government Order, viz., two per furlong, where the gradient does not exceed 1 in 16 and one at every 100 feet where steeper.

8. *Width.*—The width of the roadway throughout the plains portions is not less than 18 feet, but on the ghât there are two places where the width will be increased as directed to 16 feet clear width from inside of parapet to hill side.

9. *Surface.*—The proposals in paragraph 19 of the preliminary report having been approved provision has been made in this estimate for carrying them out, except that as directed in G.O., No. 524 W., of 26th February 1884, 9 inches of metal has been allowed for on the ghât and 6 inches elsewhere. The width of metalling to be 12 feet.

10. *Bridges.*—There are three large bridges on the line which are at present wooden structures and which are in an unsafe condition. These bridges were inspected by the Superintending Engineer some time back, and he fixed the waterways to be given in reconstructing the bridges. The table below shows the present and proposed waterways and the situation of the bridges:—

Mile and furlong.	Present waterway.	Number and span of proposed girders.	Total waterway proposed.
	FEET		FEET
23 8	65	2 of 40 feet	80
27 2	52	1 of 55 „	55
27 4	89	2 of 50 „	100

11. In addition to these there are nine bridges, varying in span from 10 to 21 feet, for which it is proposed to provide simple rolled iron girders.

12. In designing the bridges the points chiefly kept in view were (first) to have as little timber as possible on account of its rapid deterioration in the Wynaad climate and (2) to adopt such designs as have already been tried and have been found to answer well. The first bridge in the table is an adaptation of a bridge which it is understood has been erected over the Velpur canal in the Godávari district, Western delta, and has been found to answer satisfactorily. The only modification that has been introduced is in the roadway, which has been made of bare three inches teak planking, as recommended by the Superintending Engineer in his No. 43 of the 31st January. The cross girders have been made level across and the planking has been secured to the cross girders from below by means of coach screws passing through a quarter inch plate rivetted to the top flange of the cross girder. The planking is spaced quarter inch apart to allow of water draining off and through the floor. The abutments and pier are of stone masonry, and the girders will rest on three-fourth inch of lead in a cast-iron bed plate. This bridge was partly drawn when I arrived in the Wynaad, and through some misunderstanding of the late Executive Engineer the spans were made 43 feet, similar to the Velpur bridge, instead of the design being modified for 40 feet spans.

13. The second bridge in the table was drawn and estimated for before my arrival. The span is in excess of that laid down by the Superintending Engineer, but I have not altered the design for fear of further delaying the submission of this estimate. Fresh designs for the above bridges will, however, now be prepared. It is not thought that there will be any great difference in the cost; if any thing the cost will be less.

14. The third bridge, designed by me, is a modification of the first to suit the increased span. The data for loads have been taken from those recently adopted in the designs for the Iritti bridge in Malabar, the total distributed mixed load being taken as ·44 of a ton per foot run. A table of stresses in the braces of the girders accompanies the design, and for the strain in the top and bottom boons the formula $\frac{W\,L}{8D}$ has been used. There is a slight excess of strength in the girder, which was unavoidable, to give room for the rivetting. To summarise the cost of improvement we have—

		RS.
Reformation, &c., as per detailed estimate		2,30,647
	RS.	
SPANS.		
80	17,066	
55	10,068	
100	17,596	
1 of 10	309	
2 × 12	752	
4 of 15	1,968	
1 of 16	548	
1 of 20	780	
1 of 21	820	
	49,907	
Bridging		49,907
Total ...		2,80,554

For 39 miles of road, or approximately Rs. 7,194 per mile.

Buildings.

15. *Buildings.*—The designs for buildings accompanying the estimate were prepared in accordance with the proposals made in the preliminary report, which proposals were approved by Government—*vide* paragraph 9 of G.O., No. 524 W., dated 26th February 1884.

16. The houses are of wood with horizontal overlapping planked walls. Mangalore tiles over corrugated iron (as the Mangalore tiles alone would not keep the place watertight in time of high wind with heavy rain) are used for the roofs of the main portion of the buildings. Corrugated iron alone for the verandahs. The reason for using corrugated iron for the verandahs is that the slope is considerably flatter than that of the main roof, and tiles would be liable to leak. The flooring is of cement. Good examples of this style of house may be seen at Lakkidi and Pookote. They are very neat in appearance, keep out heat, cold, wind and rain, and last from twenty-five to thirty years.

17. The following buildings have been estimated for in terms of the approved proposals of Mr. Nordmann :—

	Rs.	A.	P.
Executive Engineer's dwelling-house with out-houses ...	20,963	0	0
Do. office and stores ...	10,947	0	0
Dwelling-houses for office establishment	12,202	0	0
One inspection bungalow at Támrachéri with out-houses ...	8,276	3	2
Three dwelling-houses for upper subordinates do. ...	24,955	5	8
One dwelling-house for hospital assistant with do. ...	8,318	7	2
Three coolies lines	590	0	0
Total ...	86,252	0	0

18. The house for the hospital assistant has been made similar to that for upper subordinates. These buildings will answer in a great measure for all the roads contemplated in the scheme for improving Wynaad communications, although for the present they are included in the estimate for the Calicut-Vayitri road.

19. *Compensation.*—The site selected by Mr. Nordmann for the establishment buildings is on the borders of the Pookote lake. The area he proposed to take up is A. 28 R. 0 P. 10, and would cost about Rs. 2,800. The land belongs partly to Messrs. Hinde and Company of Calicut and partly to Messrs. Brown and Company of Pookote. On Messrs. Hinde and Company's land are situated two buildings, the one a store, which is at present being rented as an office, and the other a bungalow known as the Bank bungalow. It is questionable whether the site in the vicinity of the lake is a healthy one, but apart from this as a question of economy I would make the following proposal.

20. Mr. Yonge is willing to sell a bungalow known as Coola Quee with five acres of land for Rs. 7,500. Coola Quee is situated on high ground and about a mile from the Munsif's Court and Calicut-Vayitri road. It would probably be advisable to have the office, stores, upper subordinate's bungalow and lines near the road, and I therefore suggest that Messrs. Hinde and Company's land only be taken up with the two buildings, and that Coola Quee be bought for the Executive Engineer's residence. The existing Bank bungalow would answer for an upper subordinate's or hospital assistant's house, and the store with slight improvements might be converted into an office.

21. In the absence of the information asked for regarding the actual amount of compensation to be paid the value of the land has been assumed at Rs. 100 per acre. The value of the buildings has been estimated at Rs. 2,000 for the store-house and Rs. 3,000 for the Bank bungalow.

22. The area to be taken up according to the first proposition being about 28 acres, and the area to be taken up according to the second proposition being about 10 acres, the cost of compensation will be respectively Rs. 7,800 and Rs. 6,000.

23. The comparative cost of the two proposals is shown below :—

			Rs.
I. Cost of buildings as per estimates			86,252
Compensation for land, 28 acres, at Rs. 100 per acre ...	2,800		
Value of Hinde and Company's buildings	5,000		
		——	7,800
Total ...			94,052

	Rs.	A.	P.
II. Cost of Coola Quee property	7,500	0	0
Improvements to bungalow for Executive Engineer's residence including repairs to out-houses and construction of new stables	5,870	0	0
Cost of Hinde and Company's land, 10 acres, at Rs. 100 per acre 1,000			
Value of buildings 5,000			
——	6,000	0	0
Improvements to store for Executive Engineer's office ...	132	0	0
Repairs to Bank bungalow...	434	0	0
Cost of remaining buildings, viz., for office establishment.	12,202	0	0
One inspection bungalow at Támrachéri with out-houses.	8,276	3	3
Two houses for upper subordinates with out-houses ...	16,636	14	6
One house for hospital assistant with out-houses	8,318	7	3
Three cooly lines	590	0	0
Total ...	65,960	0	0
Difference ...	28,092	0	0

24. The cost of the whole project for improving the Calicut-Vayitri road will then stand as follows :—

WORKS.

Original.

	Rs.
(*a*) Reformation or completion of 39 miles of road at an average rate of Rs. 7,194 per mile	2,80,554
(*b*) Buildings	86,252
(*c*) Compensation for land	7,800
Repairs.	
To roads during construction, say, for three years, according to this year's Local Fund budget, at Rs. 11,100 per annum ...	33,300
Total Works ...	4,07,906
Establishment.	
(Calculated at 25 per cent. on cost of works)	1,01,977
Tools and Plant.	
(Calculated at 2½ per cent. on cost of works)	10,197
Grand Total ...	5,20,080

or by adopting the alternative proposal for buildings—

WORKS.

Original.

	Rs.
(*a*) Reformation or completion of 39 miles of road at an average rate of Rs. 7,194 per mile	2,80,554
(*b*) Buildings (including compensation for land)	65,960
Repairs.	
To roads during construction, say, for three years, according to this year's Local Fund budget, at Rs. 11,100 per annum ...	33,300
Total Works ...	3,79,814
Establishment.	
(Calculated at 25 per cent. on cost of works)	94,954
Tools and Plant.	
(Calculated at 2½ per cent. on cost of works)	9,495
Grand Total ...	4,84,263

Specification.

As per printed copies of Madras Presidency specifications.

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 10th October 1884, No. 465 E.W.

In continuation of my letter, No. 448, of 29th ultimo, I have the honor to forward a specification which ought to have accompanied the report, plans and estimates for improving the Calicut-Vayitri road submitted with the above letter.

2. The specification shows how each portion of the work is to be done and what materials are to be used.

Note by the Chief Engineer, Public Works Department.

With his letters above quoted the Superintending Engineer, IV Circle, submits an estimate, amounting to Rs. 4,84,930, for improving the road from Calicut to Vayitri.

2. The estimate has been drawn up in general accordance with the orders passed on Mr. Nordmann's preliminary report, printed with Proceedings of Government, No. 524 W., dated 26th February 1884.

3. In paragraph 19 of that report Mr. Nordmann, in suggesting that all steep gradients above and below the ghât should be corrected to at least 1 in 18, stated that "the average gradient on the ghât itself is believed to be not steeper than this (as the line of levels will show) and need not therefore be interfered with." An inspection of the drawings now submitted, however, shows the severe character of the gradients on the Támrachéri ghât. For about 8 miles there is a continuous unbroken rise, varying from 1 in 10·68 to 1 in 18, and the average gradient throughout is found to be about 1 in 17. In the report on the estimate it is stated that the improvement of these grades "would involve immense expense," and as it is not probable that funds will be forthcoming for such a radical and costly improvement as a change of alignment (the only real remedy in the opinion of the Chief Engineer) this blot on the system of Wynaad communications must remain.

4. Provision has not apparently been made in the estimate for camping grounds, as directed in paragraph 8 of G.O., No. 524 W., dated 26th February 1884. Possibly such already exist, but if not one or two on the steep ghât should be provided. Convenient depôts for storing metal at short intervals are of importance on such a line as this, where much will depend on the necessary repairs being executed rapidly, and the cross sections appear to indicate that there are suitable sites along the road for the purpose.

5. A width of 12 feet of metalling throughout has been estimated for, as ordered in G.O., No. 524 W., dated 26th February 1884; but the Chief Engineer is of opinion that, on the 8 miles of steep and narrow ghât, the full width of road should be metalled. This would not involve much extra expense, and would be of advantage.

6. Three new large iron bridges have been estimated for, one with two spans of 40 feet each, one with one span of 55 feet, and one with two spans of 50 feet each. There are mistakes in the designs of two of these bridges, but it is stated that the plans and estimates will be revised, and that such revision will not make any great difference in the cost.

7. The first and third bridges, each with two spans, are of the double N. or Whipple-Murphy type. The second, with one span, is a kind of bow-string lattice girder. The object of proposing for this bridge a girder of a different type from the others is not apparent; and in the opinion of the Chief Engineer it would be advisable to construct all three bridges upon the same type. This point might be left to the manufacturers in England, who should be ordered to supply girders for given spans, to carry a given load, and a certain kind of roadway; or the Warren-girder, with pin connections, which offers great facility of erection, a matter of importance in such a locality, might be adopted.

8. For the smaller bridges rolled iron girders are provided with teak roadway and railings. For these structures it is considered that the wrought-iron bridges referred to in Captain Dorward's notes, printed with Proceedings of Government, No. 412 I., dated 22nd April 1884, would be suitable.

9. In connection with the buildings provided for the staff, two proposals are submitted, the first involving an outlay of Rs. 94,689 and the second Rs. 66,329. The former provides for the purchase of land, and for the construction thereon of nearly all new buildings; the latter provides for the purchase of land with existing buildings, which are to be improved. The Superintending Engineer recommends the adoption of the second alternative, and the Chief Engineer supports that recommendation, as the outlay proposed for buildings for a division which is to last but for a limited number of years is very heavy. It must be noted, however, that the buildings provided for in this estimate do not appertain solely to the Calicut-Vayitri road, but to the whole system of roads to be dealt with in the Wynaad, and to insure good and economical working it is always desirable, in such a climate, to house the staff comfortably.

10. The amount of the estimate as given by the Superintending Engineer (Rs. 4,84,930) includes charges on account of establishment and tools and plant. Those charges have been calculated at the old rates of 25 and 2½ per cent., whereas, under existing orders, the rates should be 23 and 1 per cent., respectively. As, however, the cost of the project, under new work and buildings, will fall on Provincial Funds, separate provision for establishment and for tools and plant need not be made in the estimate. The total amount to be now sanctioned by Government is Rs. 3,80,337, of which Rs. 33,300, the estimated cost of repairs, will be debitable to Local Funds, which will have to contribute, in addition, the usual charges on account of establishment and tools and plant, to admit of the work being carried out by the Public Works Department.

11. The manner in which the project has been prepared does great credit to Mr. Todd, Assistant Engineer.

ORDER—dated 12th December 1884, No. 3043 W., Public Works.

This estimate provides for improving the road from Calicut to Vayitri *viâ* Pudanellum and the Támrachéri ghât, and is drawn up in general accordance with the orders passed on Mr. Nordmann's preliminary report printed with Proceedings of Government, No. 524 W., dated 26th February 1884.

2. The importance of connecting Wynaad with the coast by a road suitable for wheeled traffic has long been pressed on the Government by the planting interest, and His Excellency the Governor in Council considers that sufficient private capital has been invested in the various industries of the district to justify the claim of the planters to improved communications. The state of the existing roads is described in paragraph 2 of the Chief Engineer's memorandum printed with Proceedings of Government, No. 1417 W., dated 6th June 1882. With one exception they are there said to be "only fair weather lines, some fairly traced, others indifferently so, and all insufficiently opened or formed, and as a rule quite unmetalled." The residents are thus isolated, not only from the coast to which the produce of their industry has to find its way for shipment, but also from the general system of roads outside Wynaad limits. The proposed reconstruction of the road from Vayitri to Calicut will, to a considerable extent, remedy the first defect, and later, as funds become available, the fair weather roads which radiate from Vayitri should similarly be improved, so as to connect the taluk with the general system of roads and railways.

3. The undermentioned estimates now submitted are sanctioned as follows, subject to the remarks contained in the Chief Engineer's note printed with these Proceedings:—

—	Amount.	Classification.	Register number.
	RS.		
(1) Improvements to road from Calicut to Vayitri.	2,80,708	Communications, Original Works.	Provincial No. 214 W. of 1884-85.
(2) Repairs to the same road	33,300	Communications, Repairs.	Local No. 45 W. of 1884-85.

4. The question of an allotment of funds for the first-named work will be considered in connection with the Provincial budget for 1885-86.

5. With regard to the repairs, the cost of which will fall on Local Funds, the Government concur with the Superintending Engineer that the work should be carried out by the Public Works Department conjointly with the proposed improvements, and it will therefore be considered in the Financial Department what sum can be placed at the disposal of the Public Works Department for the purpose, either immediately or in 1885-86. The total amount required will be—

	Rs.
For works	33,300
„ establishment	7,659
„ tools and plant	333
Total ...	41,292

6. With respect to the estimate of Rs. 66,329 for buildings, the Government agree with the Chief Engineer that, in a climate like that of Wynaad, good weather proof accommodation is essential for the working staff; but, in view of the fact that the work contemplated will probably not extend over more than ten or twelve years, they consider that that object may be secured more economically than by constructing permanent buildings such as those proposed. The scale of accommodation also appears unnecessarily large for the limited time the staff will be employed in the locality. The Superintending Engineer will therefore, without delay, submit revised proposals for housing the staff.

7. The Superintending Engineer does not give details of the staff required to carry out the work provided for in the present estimates. Mr. Nordmann in his preliminary report mentioned one Executive Engineer, two Assistant Engineers, eight upper subordinates, and two medical subordinates; but that staff was named with reference to requirements for the entire scheme of Wynaad communications. The Chief Engineer will arrange for the provision of the temporary establishment which may be applied for by the Superintending Engineer as the work progresses.

8. The Government concur in the Chief Engineer's commendation of the creditable manner in which the project has been submitted by Mr. Todd.

(True Extract.)

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

To the Superintending Engineer, IV Circle, with eighty-nine enclosures.
„ Examiner, Public Works Accounts.
„ Financial Department.
„ Consulting Engineer for Railways.
„ Honorary Secretary, Wynaad Planters' Association.

Exd. C. Howarth.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1884} Madras.

PUBLIC WORKS.

Dated December, 12th.

Recd. *Encl.*

G.O., 12th Dec. 1884, No. 3043 W.

DECEMBER.

Road from Calicut to Vayitri

Orders on letters from the Superintending Engineer submitting estimates for improvements and repairs to the — *viâ* Pudanellum and the Támrachéri ghât.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 11th May 1885, No. 188 E.W.

Funds having been provided in the budget for proceeding with the improvements of the Calicut-Vayitri road, I have the honor to request early instructions on my letter, No. 466 E.W., of 24th ultimo; and, particularly, whether the work may now be commenced as a sub-division of the West Coast division, whether an allotment will be granted for repairs, and whether I may at once employ the establishment proposed in paragraph 4 of my letter.

2. It is believed that repairs were stopped some months ago by the Local Fund Board, in anticipation of the transfer of the road to this department, and that repairs are now badly needed to keep the road open to traffic.

G.O., dated 18th May 1885, L.F. No. 180, Financial.

ORDER—dated 10th June 1885, No. $\frac{1356 W.}{4}$, Public Works.

The proceedings in the Financial Department above recorded will be communicated to the Superintending Engineer, IV Circle.

2. The sanctioned improvements to the Calicut-Vayitri road may now be commenced as a sub-division of the West Coast division. The sum of Rs. 33,300 sanctioned in G.O., No. 3043 W., dated 12th December 1884, for repairs, will be treated as part of the improvement estimate, and a separate allotment will not be needed. A grant of Rs. 50,000 has been provided for the project in the Provincial budget for 1885-86.

3. The establishment* asked for in paragraph 4 of the Superintending Engineer's letter, No. 466 E.W., dated 24th April 1885, may be appointed at once, the pay of the men being debited to the budget grant for temporary establishment. The name of the individual selected for appointment as temporary overseer should be reported to the Chief Engineer for confirmation; but if the Superintending Engineer is unable to find a man for the post, a nomination will be made by the Chief Engineer.

	Rs.	
* One overseer on	100	per mensem.
Two sub-overseers, each on	50	do.
One overseer's writer on ...	20	do.
One lascar on	9	do.

4. With advertence to paragraph 2 of the order in the Financial Department above recorded, the toll collections will be brought to account by the Examiner, Public Works Accounts, in the manner directed in paragraphs 2423 and 2425 of the Public Works Code.

(True Extract.)

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

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

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated June, 10th.

Recd. *Encl.*

G.O., 10th June 1885, No. 1356 W. / A.

JUNE.

Road from Calicut to Vayitri

Orders on proceedings in the Financial Department transferring the maintenance of the — to the Public Works Department from 1st July 1885.

AD—the following papers :—

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 9th May 1885, No. 186 E.W.

I have the honor to submit, herewith, the revised plans and estimates for the naller bridges on the Calicut-Vayitri road, and for buildings for housing the staff hile the improvement of the Wynaad roads is in progress, prepared with reference G.O., No. 3043 W., of 12th December 1884.

2. The revised estimates now submitted amount to Rs. 3,317 and Rs. 40,727, spectively, as against Rs. 5,177 and Rs. 66,329 as originally designed ; and Mr. Todd as, in his very complete and concise report, explained most clearly the way in which he reduction of cost has been effected.

3. The general result of the various modifications made since the first submission the project is as follows :—

The original estimate exclusive of establishment and tools and plant (ordered to e omitted in paragraph 10 of the note printed with the abovementioned Government rder) for the road and buildings amounted to Rs. 3,47,037 ; the revised estimate for he same amounts to Rs. 3,17,410 ; so that on the whole a saving of Rs. 29,627 has been effected.

4. As stated in my letter, No. 46 C., of 24th April 1885, the annual cost of repairs, if undertaken in conjunction with the improvements, will be Rs. 13,500 ; and assuming that the works will extend over three years, the total cost of the improvements, repairs, and buildings will be Rs. 3,57,310.

From the same officer, dated Wellington, 17th June 1885, No. 242 E.W.

In reply to your memorandum, No. 200 E., of 5th instant, I have the honor to forward, herewith, a comparative statement showing that the difference of cost for providing a 12-feet width of roadway on the smaller bridges of the Calicut-Vayitri road, instead of 8½ feet, would be Rs. 900.

2. In preparing estimates for a width of 8½ feet Mr. Todd assumed that the orders for a width of 12 feet applied only to the larger bridges. The cost of the masonry work will not be affected, as the abutments are already 14 feet wide.

ORDER—dated 1st July 1885, No. 1527 W., Public Works.

With the foregoing correspondence, the Superintending Engineer, IV Circle, submits revised estimates for the smaller bridges on the Calicut-Vayitri road, and for housing the working staff.

2. The estimate for the smaller bridges has been modified in accordance with paragraph 8 of the Chief Engineer's note recorded with proceedings of Government, No. 3043 W., dated 12th December 1884, and amounts to Rs. 3,317, as against Rs. 5,177 sanctioned in the proceedings above quoted. The present estimate provides for a width of roadway over the bridges of only 8½ feet ; but it is considered essential

...329 ; ... involved an expen...
...12th December ... with the instructions issued in G.O , No. 3043 W.,
and now provide for ... posals have been carefully revised by Mr. Todd,
... tory accommodation at a cost of Rs. 40,727.

4. The revised ... are sanctioned as follows :—

	Rs.
Smaller bridges	4,217
Buildings for working staff	40,727

5. The total sanction for improvements to the Calicut-Vayitri road will now stand as shown below :—

	Rs.
... estimate for improvements sanctioned in G.O., No. 154 W., ... 19th January 1885	2,78,544
...duct saving now made in cost of smaller bridges	960
	2,77,584
Add cost of repairs sanctioned in G.O., No. 3043 W., dated 12th December 1884, and which, under G.O., No. $\frac{1356\ W.}{A.}$, dated 10th June 1885, are to be charged to Provincial, and treated as part of the improvements	33,300
Buildings for working staff	40,727
Total ...	3,51,611

6. This sanction has been registered as Provincial, No. 74 W. of 1885-86, and classified as Communications, Original Works.

(True Extract.)

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

To the Superintending Engineer, IV Circle, with twenty-eight enclosures.
" Examiner, Public Works Accounts, with original general abstract estimate.
" Financial Department.
" Honorary Secretary, Wynaad Planters' Association, with copy of G.O , No. $\frac{1356\ W.}{A.}$, dated 10th June 1885.

Exd. E. Fernandez.
Spare Copies

PUBLIC WORKS.

Dated July, 1st.

Recd. *Encl.*

G.O., 1st July 1885, No. 1527 W.

JULY.

Bridges

Revised estimate for the smaller — on the Calicut-Vayitri road, sanctioned.

To W.

Cir 8398
Q.P. 1538

For orders.

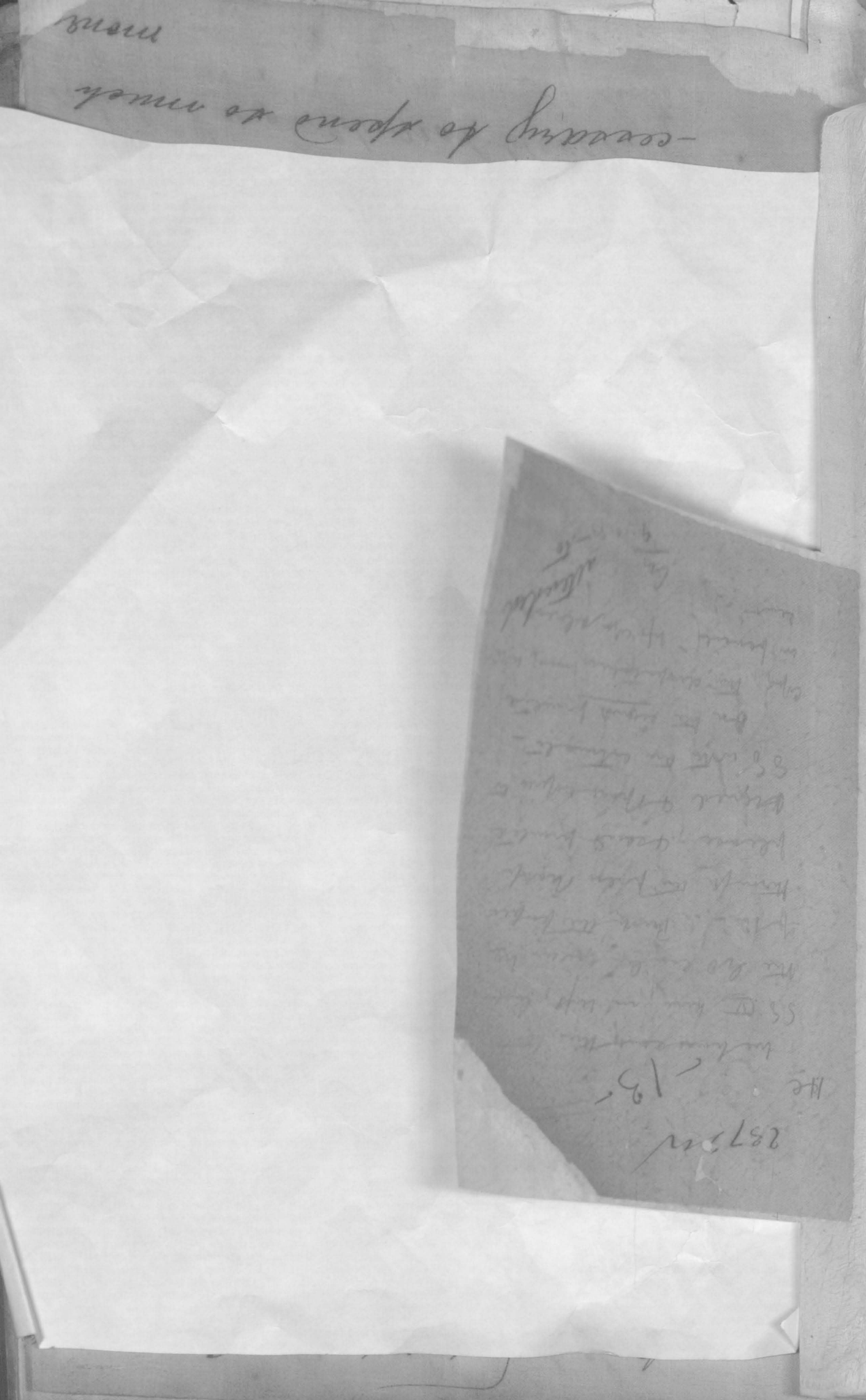
Col. Thompson's proposals will, if approved, reduce the estimate by Rs 31,823.

This saving cannot be taken as a set off against the anticipated excess outlay on bridges &c — to cover which a revised estimate will be necessary, if the excess is more than 5% over the sanctioned estimate.

Cr
1.10.85

1.10.85

to spend so much more



No. 384.
E.M.

Superintending Engr's office, S.C.
Coimbatore, 24th September 85.

From,

The Offg: Superty: Engineer,
4th Circle.

To,

The Chief Engineer,
Public Works Departt.

Sir,

Enclosure 1.
1. Estimate.

I have the honor to report that I have lately inspected the Calicut Vayitri road and Ghaut and have gone through the estimates with Mr. Cormac, Vayitri Sub Divisional officer. A sum of Rs: 40,727 has been sanctioned in G.O. No. 1527 W dated 1st July 1885, for purchasing land and houses and constructing quarters for the Executive Staff of the Vayitri Sub Division, but I do not think it is necessary to spend so much

more

money in this way, and I foresee that every rupee that can be saved will be required to meet expenditure on the Ghaut upon items which have. I think been under estimated for. For instance. The amount of blasting to be done is greater than provided for and a suffi-cient margin has not been allowed for the construction and repair of parapets along danger-ous portions of the Ghaut.

2. I have just seen a type of house which would suit admirably for the Executive staff and for Inspection Huts. The house I refer to was con-structed by Mr. Tomlinson, a Coffee planter at Chundale near Vayitri in the year 1878. It is perfectly sound and good now, and I would not desire a

better

better temporary residence for myself, with the exception of renewal of thatch, it has not required repair since it was constructed.

15

3. It is wind and rain proof and does not retain the damp as brick, mud, and stone houses do in the Wynaad.

4. As a proof of the dryness of the house (although situated in the midst of jungle), Mr. Tomlinson showed me several handsomely bound books which have been in the house since 1878 and these books had no traces of damp or mould about them.

5 The house is simply a sawn timber frames with double bamboo mat walls and partitions and Cadjan and grass roof. Doors and windows

glazed

glazed in Squared wooden frames.

6. Two rooms each 14 feet Square with two bath rooms. Verandahs six feet wide in front and rear and a porch in front. Stables for two horses and three rooms for servants Viz. Watchman, Servants and cook, also one latrine.

7. A house and outhouses of this description can be constructed in six weeks for about Rupees 700.—

8. Mr. Formae the Sub Divisional officer now lives at "Coalquer", the bungalow which it was proposed to buy and repair for him. He only pays Rupees 30 per mensem for it and is perfectly satisfied with the arrangement. The office for the Sub

9 Divisional

Sub Divisional officer is now rented for Rupees 20 per mensem and can be kept on at the same rate. Nothing further is required.

10 Godly lines are not wanted as the Contractors provide their own.

11 The Clerks Draughtsmen and Lascars have already found quarters for themselves and require nothing further. The Contractors will take care of their own people so we require no Hospital Buildings, nor medical aid beyond what is already available in the Vajitri Dispensary.

12 I have the honor to submit an estimate* for the temporary buildings

*of Rs 8904

which I have recommended,

I have the honor to be,
Sir,
Your most obt Servt

Wm Thompson Colonel, R.E.
Offg: Supg Engr: 4th Circle.

17

G.C. No 1356 W. 10-6-85
" " 1527 W. 1-7-85

P.W.C No 8398

(7)

From

The Offg. Supdg. Engineer
Fourth Circle

Dated 24th } September/85
Desp'd 25th }

Rec'd 26.

No 384
E.M.

Enclosure One.

Calicut Vayitri Road.

Reports upon the inspection of —— and submits an estimate amounting to Rs 8,904 for the temporary buildings required for working staff during the improvement of the ——

Vide G.O. No 26

B.H.
28/9/85

O.S. 153/9
10.30.9.85 R 12-10-85

B & R
civil works

PUBLIC WORKS DEPARTMENT.

No 2373 W

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 12th October/85

READ the following

Letter from the S.E. IV Circle (No. No 384/E.M. dt Septr 24. 1885)

The Government approve the proposals of the Supdg Engineer IV Circle, and sanction the revised estimate amounting to Rs 8,904, in lieu of the estimate of Rs 40,727, sanctioned in G.O. No 1527 W dt 1st July 1885, for housing the working staff on the Calicut-Vayitri road.

2. The total sanction for improvements to the

section of road between
Cabinet and Vaigtri will
not stand at Rs 3,19,788.

3 This sanction has been
registered as Provincial
No. 148 W of 1885/86, and
classified as Communications
Original Works.

4. If necessary, a
revised estimate should
hereafter be submitted
to cover the anticipated
Excesses on other items.

2.10.85

Cir
Ch. 153/9. Cir 153/9.

The Hon'ble Chief Secretary

97

B/H
12/10/85

IV
12/10

S.E. IV Circle
with estimate.
Ex. P.W. Accounts.
Financial Sept. Secy 21/10

4 P.M.

8350

Govt. of 1885 Madras.

PUBLIC WORKS.

Dated August. 13/10/85.

Read Rec'd

G.O. 12 Feb 1886. No. 2334

Retaining walls
&c. in the Calicut-
Vayittri Road
=
Revised Estimate —
Sanctioned.

60/
1X