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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

G.O. No.	7	Press
B.P. No.		Mis. ✓
Dated	1-4-1874	196-.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
25th March 1874.*

No. 695.

Read the following papers :—

From Colonel J. BEAN, R.E., District Engineer, Coimbatore, to Colonel G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Coimbatore, 20th February 1874, No. 104.

I HAVE the honour to request that a further sum of Rupees 1,500 from Provincial Funds may be granted, if available, for the Poonachy Ghaut, Annamallay Hills, for expenditure in February and March.

2. The Assistant Engineer Mr. Johnston did not apply for any extra funds for this work in his demand statement lately received, but he has now asked for the above amount.

REFERRED, for early report, to the Inspecting Engineer for Communications.
FORT ST. GEORGE, (Signed) G. W. WALKER, Colonel, R.E.,
24th February 1874. Secretary to Government.

No. 696. From Lieutenant-Colonel W. T. F. FAREWELL, Inspecting Engineer for Ports and Communications, to Colonel G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Chepauk, 26th February 1874, No. 680-60.

WITH reference to G.O. No. 1,534, dated 10th. June 1873, passing orders regarding the construction of a new ghaut to the Poonachy saddle on the Annamallay Hills in the Coimbatore District, I have the honour to report

- 1 Sketch, marked A.
- 1 Memorandum of expenditure.
- 1 Statement of work done.

that on receipt of the order in question, through the District Engineer of Coimbatore, I issued written instructions regarding the mode in which the work was to be conducted, and called upon the District Engineers of Coimbatore and the Neilgherries to supply the subordinate superintendence required. I myself was on duty on the Western Coast, and could not possibly proceed to attend to the ghaut work until the beginning of August, about which time Mr. Assistant Engineer Johnston and his subordinates, Manuel Pillay and Manikavasagam Pillay, whose services could not be spared before, joined me; so I found nothing done on my arrival.

2. *Old trace known as Mr. Lowry's Ghaut.*—The question of the correct line the ghaut should take, viz., on the north-west face of the Poonachy Hills having already been discussed and decided on by the late Superintending Engineer of the division, I have only to note that from what I saw of the ground I quite concur with him as to the greater difficulties encountered on the south-eastern face of the Poonachy ridge, and that even supposing a trace could be run down that side, the foot of the ghaut would necessarily be thrown much too far out of the way, while the cost of any other line from the correct foot of the ghaut round the spur of the Poonachy Hill, etc., would, from the difficult and precipitous nature of the ground it must run through, be so great as to render such quite prohibitory.

3. In company with Mr. Johnston and his subordinates, on the 9th of August 1873 and several succeeding days, I reconnoitred the valley to the north-west of, and immediately below, the Poonachy saddle. I took careful aneroid observations

of the almost inaccessible track by which the Poonachy saddle has been usually reached, which I found in some places to be one in two, one in three, and, for nearly two miles, between one in four and five, and commenced trial traces from the Poonachy saddle in two directions to the left and right of the valley it had been determined the approach to the hills should run up.

4. As directed I saw that good tracing instruments were supplied, and thoroughly instructed the Assistant Engineer in the mode of using them, etc., etc.

5. The Assistant Engineer having a large range to attend to could only spare but a short time for the ghaut work, while one of the subordinates, Manikavasagam Pillay, soon succumbed to fever, and was, for most of the time I was on the work, physically incapable of doing more than occasionally looking after the coolies who cut and cleared the jungle; thus under my direction the whole of the tracing work had to be done by Overseer Manuel Pillay, and right well did he do it.

6. Having decided on the line for the permanent trace, I visited the work frequently myself until the trace was completed. I tested all the gradients, fixed the positions of all returns or zigzags, etc., etc., including the time occupied in reconnoitring, pegging, trial lines, etc., etc.; the work from first to last exactly took one month to accomplish, at the end of which time I directed Overseer Manuel Pillay to rejoin his Range Officer at Ootacamund. Before leaving myself, I had about two hundred yards of the trace correctly opened out to the proper levels, width, etc.; finally, in company with Mr. Assistant Engineer Johnston, I walked over the whole of the line to the foot, and gave him personal instructions regarding how the whole work was to be carried out.

7. *Features of the north-west face of the Poonachy Ridge.*—Generally the hill side on the north-west of the Poonachy Hill is rocky and precipitous in the extreme, and the little narrow valley selected for the ghaut is the only point by which the saddle can be approached. The width of the upper portion of the new ghaut valley is from 500 to 1,500 feet, bounded right and left by sheet rock or precipices; its own face is very rocky and very steep; thus it is impossible to work down it with anything like a good gradient, except by zigzagging, and for the first $2\frac{1}{2}$ miles, as will be seen on the enclosed survey of the ghaut marked A, no less than twelve turns are absolutely necessary, while two more are required to reach the foot.

8. *Gradient.*—Except for about 300 feet laid out at $3^{\circ} 35'$ the gradient used throughout the trace is $3^{\circ} 30'$, or nearly one in seventeen; all rivers, even the smallest drainages, are crossed at a dead level, while at the end of each zigzag, to allow of easy turns, a space $18' \times 24'$ has been laid out level.

9. *Height and Length.*—The aneroid levels give the height of the Poonachy saddle above the foot of ghaut to be about 1,700 feet; the total length of the new trace, including all level crossings, is six miles one furlong nearly; the level portions, as above described, cumulatively equal about half a mile.

10. *Rivers.*—There are but two streams of any importance crossed by the line. These are between $60'$ and $70'$ wide; all the other drainages can be crossed by ordinary stone road dams.

11. *Blasting.*—There is a great deal of blasting required. I should think at least for two miles rock to a width and depth of about $4' \times 3'$ or more will have to be removed to render the line passable for horses and bullocks.

12. *Character of soil.*—The soil is hard and will stand almost perpendicular when cut out.

13. *Labour, etc.*—The locality in which the ghaut is situated is, for at least eight months in the year, very unhealthy, and therefore it is impossible for labourers to hut themselves in its vicinity; the labourers employed therefore have to walk at least five miles to and from their work, and though labourers are not scarce, they demand high wages, 6 Annas a day being the daily hire paid to coolies; the distance is too great to admit of women and boys or girls being employed; thus the work is necessarily an expensive one.

14. *Delay in reporting.*—I have been unable to report earlier on this work for want of a survey of the ghaut line, as also that of the new line from the foot of the ghaut to the village of Annamallay, required to illustrate my report; these surveys only reached me late in January, when I had arranged to visit the work again, which, in company with Mr. Assistant Engineer Johnston, I have just done and am, therefore, able to give its present condition.

15. In G. O., No. 1,534, of 10th June 1873, a sum of Rupees 6,000, as per margin, were placed at the disposal of the District Engineer for the work; but on my late visit I roughly estimated that it would cost double this sum to open the line as a bridle-path for horse

Provincial funds	...	...	...	Rs. 3,000
Local contributions	...	...	...	3,000
				<u>6,000</u>

and bullock traffic. The District Engineer promises the early submission of the estimate, and in the meantime forwards the enclosed memoranda of expenditure and work done up to the 31st January 1874.

16. With the exception of a length of 200 yards, all the earthwork has been completed, i.e., cut to a width of 3 feet out of the solid to the correct levels, and this has been well done, including tracing, pegging, clearing jungle, etc.; the work has cost a little over 2 Annas per yard run. Mr. Assistant Engineer Johnston reported that, of the roughly estimated 3,600 cubic yards of revetment wanted, 590 had been built at 12 Annas per yard; and that, of 4,700 running yards of blasting required, 1,230 cubic yards of rock had been removed, to effect which 620 lbs. of gun-powder have been expended, thus taking the rock (gneiss) to weigh about 150 lbs. to the cubic foot; each pound of powder has removed about $3\frac{1}{2}$ tons, which is fair work. This powder, including carriage, Arsenal charges, etc., has cost Annas 13-6 per pound, which is much too high a price; a contractor at Poonachy, however, produced some specimens of Native manufactured powder, which, on trial, I found to be excellent for blasting purposes; this he is ready to supply at 5 or 6 Annas per pound, and thus, I hope, the charge for blasting and boring will be kept within 1 Rupee 8 Annas per cubic yard.

17. The charge of Rupees 757-6-3 for tools and Rupees 36-10-6 for their carriage appears to me to have been erroneously made, since all tools should be charged to "Tools and Plant." The charge of Rupees 36 for two ponies for the Sappers employed on the ghaut in superintending, boring, and blasting was incurred at my recommendation, in order that the men might thus be enabled to live as far away as possible from the foot of the ghaut, which, as already noted, is a most unhealthy locality.

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25th March 1874.*

18. I was much pleased to find that generally the ghaut was being fairly worked out; beyond a little injudicious scattering of labour and one piece of revetment badly laid out, I had no occasion to find fault with it; already the ascent to the Poonachy saddle by the portion cleared is a great relief to the passenger, and I hope that by the end of March the line from where the ninth return intersects, the old foot-path will be open for passenger traffic.

19. The survey of the road from the foot of the Annamallay Ghaut to the village of Annamallay I found, on lately examining the line, to be incorrect. I went carefully over the ground with Mr. Assistant Engineer Johnston and his Overseers; the line is a good one, and only crosses one river of any importance which, I believe, can be cheaply spanned by a timber bridge of three 30 feet bays with two land bays of 20 feet each. The line is being re-surveyed and estimated for, and in due course the estimate, etc., will be submitted to the Local Fund Board for disposal.

Particulars of Expenditure on Poonachy Ghaut Road up to 31st January 1874.

	RS.	A.	P.
Tracing and clearing bushes, etc.	285	1	6
Sappers' huts	24	6	0
Tools	757	6	3
Clearing blasted rock, and levelling bridle-path... ..	1,302	4	0
2,412 Running yards of bridle-path, at 1 Anna per Rg. yard...	150	12	0
3,630 Do. do. do. at 1½ Annas do. ...	340	5	0
440 Do. do. do. at 2 Annas do. ...	55	0	0
250 Yards of rough-stone revetment, at 12 Annas do. ...	187	8	0
3,704 Running feet, rock, bored	1,018	3	0
Blasting powder, including carriage	559	5	0
Two ponies for Sappers	36	0	0
Sundries, such as carriage of tools	36	10	6
Fuzes	149	5	6
Total...	4,902	2	9

CAMP AT POONACHY,
11th February 1874.

(Signed) J. C. JOHNSTON,
Assistant Engineer.

Poonachy Ghaut—Statement showing Progress of Work up to end of January 1874.

EARTHWORK.			ROCK BLASTING.			REVTMENT.		
Running yards.		Total of Estimate.	Running yards.		Total of Estimate.	Running yards.		Total of Estimate.
Work done.	Remaining.		Work done.	Remaining.		Work done.	Remaining.	
RS. 7,040	RS. 200	RS. 7,240	RS. 1,230	RS. 3,464	RS. 4,694	RS. 590	RS. 2,957	RS. 3,547

COIMBATORE,
5th February 1874.

(Signed) J. C. JOHNSTON,
Assistant Engineer.

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No. 697. From Lieutenant-Colonel W. T. F. FAREWELL, Inspecting Engineer for Ports and Communications, to Colonel G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Chepauk, 26th February 1874, No. 688-62.

With reference to paragraph 15 of my report on the Poonachy new trace to the Annamallay Hills, I have the honour to recommend that the amount of One letter No. 104, dated 20th February 1874, from the District Engineer, Coimbatore. (viz., Rupees 1,500) applied for by the District Engineer of the Coimbatore District in his letter, No. 104, dated 20th instant, referred to me with your endorsement of 24th idem, be placed at his disposal for expenditure during the current official year, as it would be a great pity to allow the labourers now employed on the ghaut to be discharged pending further allotment of funds in 1874-75. The District Engineer has been called upon to submit the estimate for the work immediately.

No. 698. ORDER THEREON, 25th March 1874, No. 848.

CIVIL WORKS, No. 74.

His Excellency the Governor in Council receives with satisfaction the assurance which this report conveys

that a commencement has been made of opening up the access to the Annamallay range of hills on correct principles, and desires to convey to Lieutenant-Colonel Farewell his appreciation of the laborious care and skill with which he has laid out the trace of the pass in person and instructed the subordinates as to its execution.

2. The work so far is but a commencement; and it seems probable that, from the nature of the ground to be traversed and the unhealthy climate to be encountered, the opening of the Poonachy Ghaut as a cart road will be very expensive for its length and height. But once completed, the access to a considerable field of planting operations to valuable Government forests, and eventually to a plateau of equal height and value as a sanitarium to that of Ootacamund will be comparatively easy and cheap to carry out.

3. Of the additional sum of Rupees 6,000 reported by the Inspecting Engineer to be required to complete the opening of the new trace as a bridle-path for horses and cattle, which allows for a width of 12 feet at all zigzags and revetments, Rupees 1,500 stated by the District Engineer as required for expenditure within the current official year is provided by transfer from the new Pottinghy

Item No. 112.

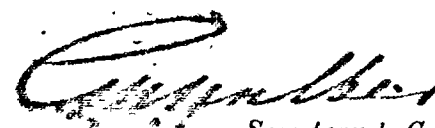
Ghaut in Vizagapatam. What more is wanted next year will be allotted on receipt of some estimate of the same, for preparation of which there are ample data available. It is unaccountable that the necessity for some such voucher for an additional demand of the kind should not have occurred to the District Engineer. He will expedite also the submission of an estimate for opening out the ghaut to 12 feet in the clear, and of a survey and estimate for a road from its foot to the village of Annamallay. It is hoped that the Local Fund Board will be in a position to allot funds for the latter.

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4. It is understood that the Collector is taking preliminary steps to dispose of estates on the Annamallays which have lapsed to Government by failure of the owners to pay the purchase money and assessment. Their extent is said to be 1,200 acres; and he will be instructed in the Revenue Department to defer further action in the matter till sufficient progress shall have been made with the ghaut and road works to raise the value of the land for coffee planting to a fairly remunerative price.

(True Extract.)

 Colonel, R.E.,
Secretary to Government.

To the District Engineer, Coimbatore.

- „ Inspecting Engineer for Ports and Communications.
- „ Financial Department.
- „ Revenue „ ✓
- „ Officiating Controller of Public Works Accounts.

Exd. E. C. Shunker.

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PUBLIC WORKS.

No 1061

89!

To
THE DISTRICT ENGINEER, COIMBATORE.
&c. &c. &c.

Dated March 25th.

Recd. *31* Encl.

G. O., 25th March 1874, No. 843.

MARCH.

Nos. 695-698.

14 To the Secy of Rev Secy of 9 April 74.

Poonachy Ghaut, Coimbatore District.
Passing orders on the report regarding the construction of a new ghat to the Poonachy saddle on the Annamallay Hills in the Coimbatore District.

Forwarded to the Secy of Rev. who will issue the necessary instructions 1 April 74