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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	539	Press
B.P. No.		Mis.→
Dated	2 - 3	CE 74
		195

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
2nd March 1874.*

Read the following papers:—

No. 40. Proceedings of the Madras Government in the Financial Department,
dated 18th October 1873, No. 1,522.

No. 41. From Captain J. L. L. MORANT, R.E., District Engineer, Neilgherries, to Colonel G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Ootacamund, 19th September 1873, No. 173.

BEFORE completely replying to Public Works Department G. O., No. 101, of the 13th instant, giving cover to Financial G. O., No. 1,221, of 28th August last, I have the honour respectfully to request that I may be informed what roads in the station of Ootacamund the Government desire to be coated with granite stone. I ask this to enable me to prepare the required estimate with some certainty of its meeting the wishes of Government. At present I do not at all know what to include in, or what to exclude from, the estimate.

2. I beg at the same time to be allowed to respectfully submit my humble ideas on the subject—

In my opinion the road from the Willow Bund, running round the north of the lake to the sluice, and so on round the west end of the lake past and between "Woodstock House," "Gable Cottage," "the Cedars," "Fern Hill" to Awdry Saddle, and thence down the hill to below "Burton Cottage" and below St. Thomas' Church to the Willow Bund again, should be covered with granite, laterite being laid below the granite where there is none or very little at present.

3. Then, I consider that the road from the Willow Bund round the north side of the lake, between the bazaar and the water (called Lower Bazaar road), as far as the road near the Alexandra Hotel (as shown in the plan), be also coated with laterite and granite, its level being improved in parts, and it being well drained.

4. I also am of opinion that the road from near Loch End (not far from the sluice), past the three "Woodcock" houses of Colonel Hadfield and near the Roman Catholic Cathedral over the saddle near "Percy Cottage," along the level bit of road to the saddle near the rise to "Harrow on the Hill" and "Whitmore Cottage," should also be coated with laterite and granite and be thoroughly drained.

5. The only roads that I would expend money upon in lateriting and draining alone is, first, that piece that runs close to the south of the lake below it and "The Cedars," "Woodstock House," etc., (as shown in plan,) and the small junction road above the Willow Bund near St. Thomas' Church.

6. The road from the Willow Bund round the south-east of the lake by "Oaklands," "Moburnane," "Bombay House," the shops, "Montauban," and so on to the main road to Coonoor near "Upper Shoreham," I would leave as is.

7. I beg now to be allowed most respectfully to lay before you my reasons for these proposals.

The road marked black from A to B in the attached plan is one much used by carts coming into Ootacamund from the Coonoor Ghaut to the bazaar, and also by carts leaving Ootacamund to Goodaloor and the Wynad. It, in fact, is the connecting link between the Coonoor and Goodaloor roads, which are roads kept up out of Government funds and are in good repair; the former granited and the

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latter covered with laterite. It is also much frequented by carriages. It can never stand the heavy cart traffic which goes over it unless it be well coated with granite stone. Part of it, from the Willow Bund to the lake sluice, is now repaired out of Government funds. The other part, from the Willow Bund to the Alexandra Hotel, belongs to the Municipality, but they have already expended upon much of this part a portion of the Rupees 13,000 already supplied by Government, and their scant funds will not, I believe, permit of their refunding the money without considerable difficulty and the sacrificing of important municipal works. This portion of road moreover is, in my humble opinion, scarcely one that can be called a municipal road. Its chief traffic comes from outside the station from the Coonoor and Goodaloor roads, the tolls on which are not in the hands of the Municipality.

8. The road from the sluice round the west and south sides of the lake, past St. Thomas' Church to the Willow Bund, is now, as you are aware, being made with laterite and granite. I always understood it was to be granited, so I suppose it will be completed as begun.

9. The road from near "Loch End" to "Harrow on the Hill" and "Whitmore Cottage," marked C to D in plan, being in many parts steep and uneven, and in parts running through bad soil should, in my humble opinion, be coated with granite. Nothing could be worse than its state now in wet weather. It is very much frequented by visitors, and is almost as important a road as that from the Club to St. Stephen's Church, which it meets. It also connects the lake roads with the old church road.

10. The road between the south of the lake and "the Cedars" and "Woodstock" is only driven over occasionally by visitors, and if well laterited would do fairly well. This remark also applies to the junction near the Willow Bund.

11. The road from the Willow Bund round the south-east end of the lake to near Charing Cross is now in fair order, and, in my humble opinion, needs nothing very special being done to it at present.

12. I append a rough approximate estimate for the above proposals, amounting to Rupees 50,160.* The detailed estimate which is under preparation will certainly not exceed this amount, and I attach a detailed statement showing how the rates are arrived at.

I also enclose two copies of a plan of that part of the station showing the proposals now made, which have been approved of by the Municipal Commissioners, to whom they have been shown.

13. Trusting you will kindly excuse me for these remarks, and obtain some definite orders from the Government on this subject to enable me at an early date to reply fully and accurately to the Government Order above referred to.

No. 42. From the same Officer, dated Ootacamund, 1st December 1873, No. 222.

I HAVE the honour, in reply to your memorandum No. 422, of the 5th instant, to submit the details you require of expenditure upon the Lake road.

2. These details have not been submitted sooner as I was waiting for a reply to my letter No. 173, of the 19th September last, to your address, and as the reply

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hereto appended from the Ootacamund Municipal Commission has only reached me to-day.

3. The discrepancy alluded to in your paragraph 2 is explained in paragraph 1 of the Honorary Secretary's letter, No. 281, of to-day's date (copy attached).

4. As the President of the Municipality has declined to furnish any further details of the Lower Bazaar road expenditure, I have only to explain what I myself have expended, and what the Municipality have spent on my account.

5. I have expended Rupees 6,371, or Rupees 371 over and above the 6,000 Rupees which were placed at my disposal. Rupees 3,000 the Honorary Secretary alludes to and includes in his statement, and Rupees 3,000 were subsequently paid to me and are referred to in your last paragraph. The appended detailed statement will, I trust, explain everything very clearly. It needs however a few remarks under the following heads.

6. *Laterite.*—The cartage of laterite costs, including loading and unloading of the cart (which is done by the cartmen themselves), 6 annas 8 pies for 5 parahs for $\frac{3}{4}$ mile. This reduced to yards comes to Rupees 1-0-8 per cubic yard, the rate in the statement being Rupees 1. Laterite carted for 1 mile costs 6 annas 8 pies for $4\frac{1}{4}$ parahs. This gives per cubic yard Rupees 1-2-9, which is the rate entered in the statement. It is the practice here for the cartmen to come to the quarry not earlier than 9 A.M. They then proceed to load the cart with laterite, take it to the road, and deposit it where ordered. The carts often cannot come nearer than 50 yards to the quarry. In this way, with loading and carrying, the men are unable to make more than three trips per diem, and consume about 7 hours up to 4 P.M. The rains and heavy state of the roads, which the carts traversed of course added to the rate. A year or two ago we used to pay 7 and even 8 annas for carriage of 5 parahs of laterite for $\frac{3}{4}$ and 1 mile, whereas this year we reduced the rate to 6 annas 8 pies. The digging alone of laterite costs about 6 annas per cubic yard, as one man has to dig per diem two cart loads of 5 parahs each, and as twelve parahs make a cubic yard. The rate for digging and carting together therefore will be found reasonable enough. The number of cart-loads for which a seigniorage was paid will be found to agree with the whole quantity of laterite carted, thus:—the whole number of carts on which a seigniorage had to be paid comes to 2,965, of these one-half carried five parahs and the other $4\frac{1}{4}$; hence

$$\text{Carts } 1,482\frac{1}{2} \times 5 = 7,412\frac{1}{2} \text{ parahs.}$$

$$,, 1,482\frac{1}{2} \times 4\frac{1}{4} = 6,301 \quad ,,$$

13,714 parahs = 1,143 cubic yards, which agrees with the quantity entered in the statement.

7. *Granite.*—I observed that in my letter printed with Financial G. O., No. 1,221, of the 28th August last, 860 cubic yards of broken granite are stated to have been collected by roadside. This quantity was a misprint for 680. This latter amount I now find was incorrectly overstated, as at the time it was made all payments had not been closed, and the calculations I made were in the nature of guesses. The whole quantity of metal carted is 585 cubic yards, of which 193 have been spread at the expense of this Lake road allotment; some of the remainder (amounting to 187 cubic yards) will be spread out of the estimates aggregating

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Rupees 2,880, to which you allude in your last paragraph, and there will be a balance available for future requirements of 105 cubic yards.

8. *Granite and Laterite.*—You will doubtless notice that the cartage of granite has cost less than that of laterite. Granite was conveyed for 10 parahs for 1 Rupee for 2 miles, whereas laterite for 12 parahs for 1 Rupee for 1 mile. The reasons for this were:—(1) that the road (Pykara) by which the granite came was metalled, whereas that by which the laterite came was in a dreadful state of deep muddy ruts; (2) the granite was close to the road side, mostly on the upper bank of road, so that the carts could approach close to the metal, whereas the laterite was generally some 50 yards from where the carts could go. I may add that previous to this year hired carts used to carry 4 parahs each, but we induced them for this road to convey 4½ and 5. Further information on this point, if required, might be obtained from the Inspecting Engineer for Ports and Communications.

9. *Drains and Parapets.*—You will observe that the cost of work done as measured amounts to only 11 annas 3 pies less than the actual expenditure, which proves the accuracy of the usual district rates.

10. *Rolling.*—Two-thirds of this expenditure has been incurred on the purchase of two rollers. You will doubtless remember kindly suggesting to me the advisability of obtaining these rollers from Coimbatore and Madras. When writing to the Coimbatore District Engineer, I had no idea of the size of the roller he had, nor did he tell me anything about it. I merely asked for a road roller to be sent up at once and naturally assumed that it was one of the usual kind. It was so heavy, however, that its cost of carriage is rather excessive, and its size had to be reduced. The iron roller was procured at the Madras Workshop, and its cost has been obtained from the Superintendent. I append copies of correspondence. The numbers of bullocks actually employed in rolling have been entered in the bill. They rolled altogether about two miles of both laterite and granite.

11. *Earthwork and Turfing.*—The usual district rate for earthwork agrees with the expenditure, as also for turfing.

The Sundries, it will be allowed, are small, being less than 5 per cent. of the expenditure. The expenditure on *Convicts* is such as has been really incurred upon them and speaks for itself.

12. I also append a statement of the expenditure incurred by the Municipality, which amounts to Rupees 2,663-7-7; against this expenditure 615 cubic yards of granite (according to the Honorary Secretary's letter and statement) have been broken on the Pykara road, giving a rate per cubic yard of Rupees 4-5-3.

13. I am thus able to submit to you details of an expenditure of Rupees 9,034-5-6, of which Rupees 6,370-13-11 have been spent by myself, and Rupees 2,663-7-7 by the Municipality.

14. Of the remaining expenditure I cannot obtain any further details than those contained in the President's letter printed with Financial G. O., No. 1,522, dated 18th October last.

15. Regarding the conclusion of your memorandum under reply, I beg to be allowed to respectfully inform you that I do not see how I can send in the estimate alluded to until I receive a reply to my letter, No. 173, of the 19th September last, to your address.

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I beg to return, as requested, the G. O., Financial, No. 1,522, of the 18th October, which accompanied your memorandum under reply.

No. 43. ORDER THEREON, 2nd March 1874, No. 539.

CIVIL WORKS, No. 6.

Financial Department.

It would appear from these papers that of the sum of Rupees-13,000 allotted in G. O., No. 1,468, of 28th October 1872, and No. 1,221, of 28th August 1873, for metalling the Lake road at Ootacamund, Rupees 4,336 8-5 have been unauthorizedly appropriated by the Municipality of that town to the Lower Bazaar road, a prolongation of it through the Market Place, and a diversion of the Imperial road on the other side of the Willow Bund. With the remaining Rupees 8,663-7-7 and Rupees 371 added by the District Engineer, portions of the Lake road, aggregating 1,050 yards in length, have been re-formed and covered with six inches of laterite, and 720 more also metalled with stone, seven new stone drains being inserted. The bill for the above work is abstracted as follows, viz.:—

<i>District Engineer's Expenditure.</i>				RS.	A.	P.
1,143 Cubic yards Laterite at Rupees 2 0 8	...	...	...	2,336	0	1
402 Cubic yards granite carted, at „ 1 3 3	...	...	...	483	10	6
193 Do. do. and spread at „ 2 8 - 5	...	...	...	487	11	10
Building drains and parapet	...	...	...	393	0	0
Cost of a stone roller	...	...	...	149	8	0
Do. iron roller	...	...	...	684	2	4
Charges for watering and rolling road	...	...	...	477	12	5
Earthwork and turfing	...	...	...	543	0	0
Incidental expenses of convicts	...	...	...	510	9	9
Supervision and sundries	...	...	...	255	7	0
Total of District Engineer's expenditure	...	...	...	6,370	13	11
<i>Expended by Municipal Commissioners.</i>						
863 Cubic yards granite metal charged for	...	...	...	1,883	8	6
Purchase of land	...	...	...	204	8	0
Tools	...	...	...	373	8	3
Carriage of tools	...	...	...	17	9	4
Blasting and sundries	...	...	...	94	5	6
Total by Municipality	...	...	...	2,663	7	7
Grand Total	...	...	...	9,034	5	6

2. It appears from the letter of the President of the Municipal Commission, No. 51, of 9th October, that it had been originally intended to metal and drain 3 miles of Lake road, and 1 mile of Hadfield's road, on an estimate of about Rupees 2,500 a mile. What has actually been done has been the metalling, in a heavier manner, of only 1 mile of Lake road, at a cost of Rupees 7,000, excluding Rupees 2,000 spent on metal not laid down, and on land, rollers, and tools purchased, which will be useful for general purposes hereafter, and so utilized by the District Engineer.

3. The discrepancy between the object admittedly in view when a grant-in-aid was asked for, and that actually accomplished, is very marked, and nothing can justify the diversion of money, obtained for the special purpose of putting into order the road round the lake, to the road through the bazaar; for 1,000 yards of which Rupees 4,000 have been spent, and not properly accounted for, in addition to the Rupees 9,000 of which the details are above given. It is not understood on what grounds the President of the Municipal Commission has declined to supply an equally detailed account of the Rupees 4,209 lumped under the head of labour on the Lower Bazaar road, as has been supplied, on the Chief Engineer's requisition, for the work performed by Municipal agency towards the Lake road proper. And inasmuch as that requisition appears to have elicited the fact that 268 cubic yards of broken stone were paid for by the Municipality more than were actually broken and delivered for use, involving a loss to Government of no less than Rupees 827, it is highly desirable that the details of the Municipal accounts of expenditure on the Lower Bazaar road, charged against Government, should be professionally analyzed and reported on by the District Engineer. And it will be understood that the detailed accounts of expenditure of such grants-in-aid by Municipal agency should always be supplied on such reasonable demand as that of the Chief Engineer without necessitating a Government order to that effect.

4. It is not only the expensive manner in which this work has been done, as compared with that avowedly in view, and the unsatisfactory way in which its accounts have been brought forward, that require notice, but also the entire failure to utilize the available funds at the proper time. The President of the Municipal Commission states that the work was designedly deferred till the middle of June, to save rolling and tamping. But independently of the fact of a heavy outlay having actually been incurred on those items, it is evident that a serious oversight was made in not carting all the road material to the place where it was to be spread long before the rains set in. The destruction caused to the existing roads, by the carriage of metal over them in the monsoon, caused considerable public and private inconvenience; and is admitted in paragraph 8 of the District Engineer's letter of 1st December to have been the cause of great increase in the cost of carriage of laterite. To guard against future failures of the kind that has been now animadverted on, future grants-in-aid for the Ootacamund roads will invariably be carried out on sanctioned estimate, by Public Works agency and shown in the Public Works Accounts.

5. For what purpose, and to what amount, further grants-in-aid shall be made, it now remains to determine. That they shall include the mileage, and be at the rate laid down in the District Engineer's letter, No. 173, of 19th September, is out of the question. The road from Elk Hill cutting by Charing Cross to the church and Whitmore cottage, and that from Charing Cross by Zion Chapel and the Willow Bund to Loch End, altogether 4 miles in length, are already provided with maintenance grants varying from Rupees 110 to Rupees 247½ per mile, say, two miles at the former and two at the latter rate. These rates will be raised to a uniform rate of Rupees 440 a mile, involving an increase of Rs. 385 to Item No. 3 of Part II. of the Neilgherry Local Fund Budget, and of Rs. 600 to Item No. 5. Besides these portions of the high roads leading from Ootacamund

to the Conoor, Seegoor, and Goodalore ghauts, respectively, already maintained from Provincial Funds, and 15 miles of Cantonment roads, other than Municipal, for which a Provincial allotment of Rupees 137½ a mile is entered in the Local Fund Budget, the upper and lower roads south of the western portion of the lake, and also Hadfield's road, aggregating three miles in length shall now be considered Provincial, and provided with maintenance allowances of Rupees 440 a mile in the Provincial Budget. Of the seven miles provided under this order with maintenance allowance of Rupees 440 a mile, one may be considered as having already been put into perfect order, and a grant of Rupees 15,840, being at the rate of Rupees 2,640 a mile, shall be made in the Provincial Budget of 1874-75 (including that year's maintenance allowance) for the thorough re-formation of the remaining six miles. The District Engineer will submit for sanction formal estimates for carrying out this work under instructions which shall be given him by the Chief Engineer.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

To the District Engineer, Neilgherries.
" Inspecting Engineer for Communications.
" Financial Department.
" Officiating Controller of Public Works Accounts.

Exd. S. T. Austin.

Spare Copies

District Engineer's Office
Ootacamund 11.10.1907

No 207

From,

The District Engineer
Mysore

To,

The Honorary Secretary
Ootacamund Municipality

Sir,

I have the honor to address you with reference to a Memo No 422 of the 5th Instant (Copy attached) received from the Chief Engineer relating to G. O. Financial No 1522 of the 18th ultimo.

2. I beg you will be good enough to explain the discrepancy to which the Chief Engineer alludes in his para 2.

3. In the para 9 of the President's report which the G. O. above referred to covers, it is stated that "the Municipality made over to Captain Morant 863 Cubic yards of metal up to the end of June last". I have however only received at the utmost 600 Cubic yards, making a difference of 263 Cubic yards. This amount I have arrived at by two independent calculations, which I append. I have entered the larger amount.

4. As the Chief Engineer desires your details of expenditure in a certain form I beg to append that form for your guidance.

I am, Sir,
Yours faithfully,
J. D. Morant
District Engineer

Frederick
Captain R.E.
District Engineer.

1. By actual payments made from time to time to the Contractors.

514 Cubic yards actually paid for.

71 D: D: due to Mr Barnard

10 D: D: left scattered about on Pykeara Road

595

Say 600 Cubic yards.

Long	wide	Deep	Cubic yards	Remarks
2777'	12'	$\frac{1}{4}$	308.55	} Spread on road
540'	12'	$\frac{1}{8}$	30	
15'	12'	$\frac{1}{4}$	8.33	
10'	23'	$\frac{3\frac{3}{4}}$	31.94	
20'	28'	$\frac{1}{4}$	25.92	
31'	39 $\frac{1}{2}$	$\frac{1}{4}$	56.68	
33'	14 $\frac{1}{2}$	$1\frac{1}{2}$	26.55	
22'	16'	$1\frac{1}{2}$	19.55	
one heap of 20 Caraks			1.66	
82'	3'	$1\frac{1}{2}$	13.66	
40'	3'	$1\frac{1}{2}$	6.66	
14'	5 $\frac{1}{2}$	2	5.63	
12'	20 $\frac{1}{2}$	2	18.22	

Cubic Yards left
scattered about on } 10
Pykara Road }

Say — 575 Cub yds

Sgt J. L. Morant Capt
District Engr.

1 True Copy /
 J. H. Hornum
 District Engineer

10281

Municipal Comm^{rs} Office
Potacumund 28 November 1873

From

Honorary Secretary
Potacumund Municipal Commission

To Captain J. L. Morant R.E.
District Engineer
Vulphuriers

Sir I have the honor in replying to your letter of the 14th Instant enclosing copy of a Memo from the Chief Engineer to Government dated 5th November 1873 No 422 to state that the discrepancy alluded to therein (a difference of Rs 324.7 between figures shown in the statement appended to the President's letter & the figures given in para 9 of the same) for the amount expended by the Municipality on this road over and above the balance of the Rs 10000 grant in their hands on that date.

2 The exact expenditure debitable to you was Rs 5663.7.7 not Rs 5666.7.7 thus the balance to be accounted is Rs 4336.8.5 not Rupees 4333.8.5 and the excess expended from the Municipal Fund is Rs 321.7.--

3 I append also a statement of the moneys expended by us in breaking up metal on the Pykara road for the portion of the road under your charge showing also certain other items of expenditure the principal of which is the sum paid to Mrs Hudson for the land containing a large supply of metal near the Willow Bund.

4 The quantity of metal broken up by us

Rs 657 1/2
10
Rs 22 3/4
10
Rs 19 1/2

as gathered from the Managers account was 863 cubic yards. You only admit to have received 600 cubic yards. From the Managers explanation it appears that the actual deficiency however is 248 cubic yards. As he has failed to give satisfactory account of this deficiency he has been compelled to resign and the Commissioners are now taking steps to recover the value of the metal missing.

5. As regards the cost of breaking this metal I have the honor to state that the Commissioners value a cubic yard of broken metal on the spot at Rs 2-4- including wear and tear of tools. We demand a daily quota of 1 1/2 parabs from a man and 1 paraba from a boy their pay being respectively 4 annas & 2 1/2 as. Thus the actual wage for a cubic yard broken would average about Rs 2-6-.

6. As regards the expenditure on the Lower Bazaar Road by the Municipality the President is of opinion that any further details beyond those set forth in his letter in G.O. No 1522 dated 18th October 1873 can only be furnished in answer to a G.O. calling for them.

I have the honor to be
 Sir
 Your most obedt servant
 (Signed) H. B. Griff
 Hony Secy O.M.L.

(True copy)

Jee Morant

Capt R.
 District Engineer

Ms. No. 172-3-74.
 24. 10. 74.
 P.M. 657/173

Lower Road

Metal broken as per metal returns to Managers Account District Engineer as per his letter		The Managers has explained 15 cubic yards of the deficiency consequently the actual amount broken is 615 C. yards (Signed) H. B.	
Labour	Managers Account	metal broken as per metal returns to Managers Account	Managers Account
January 1873 Breaking metal etc	337	1890 1/2 parabs	
February do	528	6-2962	
March do	367	76 1984	
April do	346	86 1884	
May do	282	49 1527 1/2	
June do	21	139 113	
	1883	86	10361 parabs.
			863 C. yards
Paid Mr Hodgson for land	275		
Mr Stanford for drawing up Deed	19		
Hasting jumpers from Madras	110		
Cost of tools etc from P.W. Works Dept Madras	231		
Carriage of above	17		
Carriage	16		
Hammer	3		
Cothes Boring Hasting	31		
January for Hasting	33		
Repairing tools	3		
February do	17		
" measuring metal	21		
Total Rupees	9	779	101
		2663	717

(True copy)
 Jee Morant
 District Engineer

15
 H. B. Griff
 Honorary Secretary

Detailed Statement of Expenditure on Lake Road
at Otago incurred by the District Engineer Mitchell

Particulars	Rate Per amount	Totals
-------------	-----------------	--------

453 Cubic yards Limestone Carted from Furn Hill to a distance of 1 mile	1 29 cyp	530 139
456 Do Do distance 3/4 mile	1 ..	456 ..
231 Do Do digging & casting 3/4 Do	1 4 11	305 11 6
813 Cart load of Limestone Royalty paid to Mr Downing Agent Furn Hill property	1 ..	50 4 3
497 Do Do Do Do	2 ..	622 ..
1502 Do Do Do Mr D. Wood Agent to Bishop Down property	2 ..	187 12
153 Do Do Do Mr Barnard Agent to Greenway Estate	2 ..	19 ..
Paid Coolies for digging breaking and spreading Limestone		723 6 10

1143 Cubic yards Metal Cost @ 2/1/8		2336 ..
-------------------------------------	--	---------

585 Cubic yards blue Metal prepared by City Municipality on the way to Sandy Mullah about 2 miles Carting paid	1 3 3 10 cyp	703 5 3
10 Cubic yards Do Do Do	3 14 6	39 ..
Coolies paid for spreading 2200 square yards Metal	1 8 4 cyp	228 8 1
595 Work done		971 6 4
402 Cypds Carted only	1 3 3 cyp	483 10 6
193 Do Carted and spread	2 8 5	487 11 10
595 Total Work done		971 6 4

Carried Over 3307 6 5

1879 2 3 3 10
 1879 2 3 3 10
 1879 2 3 3 10

Total Work Done 454.00
Carried Over -5515132

See report. Captain No
District Engineer, N.Y.

Estimate No 50 of 1873/74 -
 Neilgherry district
 Rough Approximate Estimate of Metallurgy Lake
 Road & Sea
 Measurements
 M. F. 28: Contents
 Particulars of Work -

From Willow Bend round north of Lake
thence round west & south of Lake
past "the Cedars" Andy House
go to St Thomas Church to Q
Willow Bend again is

37 1/2

Taking $\frac{5}{16}$ of this \$20 as to allow for parts
already patented comes to

3283.

From near Lock End past Coll Woodfields
Houses to the foot of Harrow on the
Hill."

1.55

From Willow Bend by Lower Bogair
Road to "Alexandra Hotel".

6.

Total miles of road with granite over
latente

5. 138

Branch road by South Lake
below "the Cedars"

12.

Below the Cedars
Small junction road near Willow Bend

1948

Total Miles of Road with Laterite.

13.54.

Total Miles of Road with Laterite.

Abstract Estimate No 508/1873/74
 Work - Metalling with Granite and Latite and
 with Latite alone certain roads
 in the Station of Botacammul.

Contents	Particulars of Work	Rate	Amount	Total
5 Miles	Granite & Latite 8484	Rs. 4242		
1 1/2 Miles	Latite alone 5160	Rs. 7740		
				50160

Deduct
 Value of Convict Labour Rs 2500. 0. 0.
 Amount already provided Rs 13000. 0. 0.
Balance to be provided Rs 34660.

Noted
 Dist Engr's Office
 19th Sept 1873

See Memo. Capt. R. B.
 District Engineer.

Pls. P.W.D. 7 2-374
 In No 42.
 P.W. 6571/73

Memorandum regarding the Metalling
 of the Lake Road.

	Cost per cubic yard delivered on the road		
	Rs.	As.	P.
Latite	2	2	
Granite blue - blasted	5	8	
Earthwork for raising Road		11	
(the regular District rate)			

5 Parahs of Latite or one Cart load
 including seignorage, digging and
 bringing to site Cost annas 15; therefore

1 Cubic yard Costs $\frac{46656 \times 12}{20,000}$ 2 - 2 -

1 Parah of Granite broken at the
 quarry Costs 3 annas. $\frac{46656 \times 3}{1000}$
 therefore 1 Cubic yard Costs 2 - 3 -

Blasting the rock for the small
 stone Costs per cubic yard 1 - 12 -

Carriage to road Costs 110 for
 10 Parahs or per Cubic yard $\frac{46656}{1000 \times 10}$ 1 - 9 -

Total Rs - 5 - 8 -

1. Laterite is spread 16 ft wide and 6 inches thick therefore in 1 mile there are

$$\frac{1760}{1} \times \frac{16}{3} \times \frac{1}{2 \times 6} =$$

$$= \frac{14080}{9}$$

$$= 1564 \text{ Cubic yards.}$$

2. Granite is spread 10 ft wide & 3 inches thick therefore in 1 mile there are

$$\frac{1760}{1} \times \frac{10}{3} \times \frac{1}{4 \times 3} =$$

$$= \frac{14400}{9}$$

$$= 1489 \text{ Cubic yards.}$$

3. The Earthwork it is impossible to give exactly, but we will suppose that it is on an average required to be spread 20 ft wide & 6 inches thick. This gives us the number of Cubic yards in one mile.

$$\frac{1760}{1} \times \frac{20}{3} \times \frac{1}{2 \times 3} =$$

$$= \frac{17600}{9} = 1956 \text{ Cubic yards}$$

We therefore obtain the Cost per mile of the road
(1) Bavelled & levelled with earth. (2) Laterite.
(3) Granite. (4) rolled. (5) ~~Laterite~~. (5) Drained
and (6) Catch drained thus:—

1. 1956 Cubic yards earth work at 4 annas per Cubic yard — 489 —

2. 1564 Cubic yards of Laterite brought to road side at 2/2/ per yarden, — 3323. 8 —

Spreading the above at 10/0/6 per 2 square yard — 300 —

3. 1489 Cubic yards of the granite brought to site at 5/8/ per yard. — 2689. 8 —

Spreading the above at 1 anna per square yard — 370 —

4. Rolling both Laterite & granite the latter twice. 200 Pairs of bullocks at 1/4/ per Pair — 250 —

5. 5 Drains including parapet walls &c at Rs 110 per drain — 550 —

6. Catch Drains 860 Cubic yards — 108 —

8080 —

Contingencies & Superintendence 1404 —

Total Cost per mile Rs. 8484 —

Ostacumund
19th September 1873.

J. E. Morant
District Engineer

Printed 1857
 No. 514
 539

539 Public Works Dept
 Proceedings of the Madras Govt
 Under date the 1st Jan 1874

Pro: of the Madras Govt } Read the following
 Financial Dept } (H. E. Esq. 1522 of 18th Dec 1873)
 From the District Engineer }
 Neilgherries } (222 of 1st Dec 1873)

Financial Dept.

See

It would appear from these papers that the sum of Rupees 13000 allotted in G.O. No 468 of 28th Oct 1872, and No 122 of 28th August 1873, for metaling the Lake Road at Ootacamund Rs 4336.8.5 have been unauthorizedly appropriated by the Municipality of that Town to the Silver Bazar Road

Recd 7 March 1874
 In N. 42
 P.W. 5571/73

Road, a prolongation of it
through the Market Place
and a diversion of the Im-
perial road on the other
side of the Willow Bund.

With the remaining Rs. 8663.7.1
and Rupees 37 added by
the District Engineer, por-

tions of the Lake Road
aggregating ¹⁰⁵⁰ ~~1000~~ yards
in length have been
reformed and covered with

6 inches of Laterite, and
720 more also metalled

with Stone, 7 new Stone
drains, being inserted.

The Bill for the above
work is abstracted as
follows viz.

District Engineer's Expenditure.

1143 Cubic Yards Laterite at Rs. 2.0.8	Rs. 2336-0-1
402 Cubic Yards Granite	
casted, ~~at~~ at Rs. 1.3.3	483.10.6
193 S. S. & Spread at Rs. 2.8.5	487.11.10
Building drains and	
parapet	393.0.0
Cost of a Stone Roller	199.8.0
S. Iron	684.2.4
Charges for watering and	
rolling Road	477.12.5
Earthwork and turfing	543.0.0
Incidental Expenses of Convicts	510.9.9
Supervision & Sundries	255.7.0

Total of District Engineer's Expenditure Rs. 6370.13.11

Expended by Municipal Commissioners.

863 C. Yards Granite Metalled charged for	Rs. 1883.8.6
Purchase of Land	294.8.0
Tools	373.8.3
Carriage of Tools	17.9.4
Blasting & Sundries	94.5.6

Total by Municipality Rs. 2663.7.7

Grand Total Rupees 9034.5.6

Jh

2. It appears from
the letter of the President
of the Municipal Com-
mission No 57 of 9th
October that it had
been originally intended
to metat and drain
3 miles of Lake Road
and 1 mile of Hadfield's
Road, on an estimate
of about Rupees 2500
a mile. What has
actually been done has
been the metalling, in
a heavier manner, of
only 1 mile of Lake
Road, at a cost of
Rupees 7000, excluding
Rupees

31 11
Rupees 2000 spent on
metat not laid down,
and on land, rollers,
and tools purchased,
which will be useful
for general purposes
hereafter, and so uti-
lized by the District
Engineers.

3 The discrepancy
between the objects ad-
mittedly in view when
a grant in aid was
asked for, and that
actually accomplished,
is very ^{marked} glaring, and
nothing can justify
the diversion of money
obtained

obtained for the special
purpose of putting into
order ~~the~~ roads
round the Lake; to the
traffic road through the
Bazar; for 1000 yards
of which Rupees 4000
have been spent, and
not properly accounted
for, in addition to
the Rs 9000 of which
the details are above
given. It is not under-
stood on what grounds
the President of the
Municipal Commission
has declined to supply
an equally detailed
account

33 12
account of the Rs 4209
lumped under the
head of Labour on the
Lower Bazar Road,
as has been supplied,
on the Chief Engineer's
requisition, for the
work performed by
Municipal Agency
towards the Lake Road
proper - And inas-
-much as that requi-
-sition appears to
have elicited the fact
that 268 Cubic yards
of broken stone were
paid for by the
Municipality more
than

How were actually broken
and delivered for use,
involving a loss to
Government of no less
than Rupees 827, it
is highly desirable
that the details of the
Municipal Accounts
of expenditure on the
Lower Bazar Road,
charged against Govern-
ment, should be pro-
-fessionally analyzed
and reported on by the
District Engineer. And
it will be understood
that the detailed accounts
of expenditure of such
grants

35 13
grants in aid by
Municipal Agency
should always be sup-
plied on such reason-
able demand as that
of the Chief Engineer
without necessitating
a Government Order
to that effect.
It is not only
the expensive manner
in which this work
has been done, as com-
pared with that
avowedly in view,
and the unsatisfactory
way in which its
accounts

accounts have been brought forward, that require notice, but also the ~~other~~ ^{fact} failure to utilize the available funds at the proper time.

The President of the Municipal Commission states that the work was designedly deferred till the middle of June, to save rolling and tamping. But independently of the fact of a heavy outlay having actually been incurred on those items, it is evident that a ^{serious} ~~gross~~ oversight

37 14 1
oversight was made, in not carting all the Road material to the place where it was to be spread, long before the rains set in. The destruction caused to the existing roads, by the carriage of material over them in the monsoon, caused considerable public and private inconvenience; and is admitted in paragraph 8 of the District Engineer's letter of 1st December to have been the cause of

of great increase in the
cost of Carriage of Latexite.

To guard against future
failures of the kind that
has been now animad-
verted on, future grants
in aid for the Octacumund
Roads will invariably
be carried out on sanction-
ed Estimate, by Public
Works Agency, and shown
in the Public Works
Accounts.

5. For what purpose,
and to what amount,
further grants in aid
shall be made, it now
remains to determine. That
they shall include the
mileage

mileage, and be at the

rate, laid down in the
District Engineers letter
No 173 of 19th September,
is out of the question - X

All that can be granted
is a special annual
maintenance allowance

at the rate of Rupees 440

for the 4 mile

Circular drive round

the Lake West of the

Willow Pond, for the

1 mile of Lower Road

on the South Bank

of the Lake under

the Cedars, and for

the 1 Mile of Haufel's

Road, making a total

of

Vide Map

4 mile Circular Drive
shown in Black

1 mile lower Road
shown in Pink

1 mile of Haufel's
Road - in Black

For obtaining the

estimate for the

annual allowance

for the 5 mile

drive round the

Lake, to be given

at the rate of

Rs. 440 per mile

making a total

of Rs. 1,760

per annum

for the 4 mile

I think so.

of Rspees 2640 per annum
which shall be entered
in the Provincial Budgets.
The District Engineer
is at liberty to lay out
as much of that
sum, as a grant for
the current year, as
the fund will permit
of his utilizing in the
preparation of such
material as it will afford -
And with next year
he will commence
systematically to utilize
the annual grant in
such manner as shall
best obviate any portion
of the roads concerned
over

+ Continuation of Road Estimate

The Road from Elk Hill (cont.)
to the Ferry by Channing, leading to the
Church and Whitmore lot.
Stage, and that from Chapel
road to the Willow Branch &
Lock End. The road already
altogether 4 miles in
length, one already
graded with maintenance
distance points of view vary.
During spring \$710 to \$247½ per
mile, say 2 miles at the
former road 2 at the latter
rate. These rates will
be increased to uniform
rate of \$1,440 per mile,
involving an increase
of \$385 to the estimate.
Part II of the highway
local Grand Bridge of
\$660 to item \$55 to be
added. These portions of
the High Road leading
from Otakamindia to the
Copper, Silver, and Iron
mines, should be
included. Principal road

and 15 miles of Cantonment Roads, the Municipal, for which a Provincial allotment of Rs. 13 1/2 lakhs is allocated in the Local District Budget. The Upper and Lower Roads South of the Western portion of the Lake, and also the fields Road, aggregating 3 miles in length, shall now be considered as Provincial and provided with maintenance allowance of Rs. 440 lakhs in the Provincial Budget. Of the seven miles provided with maintenance allowance of Rs. 440 lakhs, one may be considered as having already been provided to perfect order and being at the rate of Rs. 2640 lakhs in the Provincial Budget of 1874-75 (including that for maintenance allowance) for the thorough repair of the remaining six miles. The District Engineer will submit for sanction

43
formal estimates for carrying out this work under the instructions which shall be given by the Chief Engineer.
G.M.N.

The following is a list of
 the names of the persons
 who have been
 elected to the
 office of
 the
 Board of
 Health
 for the
 year 1891

ever falling into such
 a state as has charac-
 terized them for the
 last two seasons.
 C.M.W.

I would take care as I arrived
 the road from the Elk Hole cutting
 by Iron Chapel - St. Thomas
 Church - Sunday 40. for the
 City - Lock End - Work
 Creek Hall - White as Cattle
 St. Stephens Church & Church
 Cross - for your hands
 to give it to the people
 Now is the a public event here
 the same all over - All
 the people would have to
 the Municipality of

10.5-247

Received from
J. A. B.

539

2-2-74

The W. L. Hughes
"S. Hughes for Post & Co."
"Frank Hughes"
"Off. Controller"

Despatched c 6/3/74.

40 @ 43.

07-17-87

Please let me see
plan in map of 1874
with the work marked
J. A. B.