M.R.O. 1—77,606—8-6-37.

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MADRAS RECORD OFFICE.

Government of Madras.

Finance DEPARTMENT.

G.O. No. 780	Press / Mis.
	96-98
Dated 7-4-	18 75.

R/13

Not to be folded or roughly handled

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

7th April 1875, No. 780.

Municipal—Water-supply.

Read the following papers :—

No. 96. *From J. R. COCKERELL, Esq., President of the Municipal Commission, Coonoor, to the Acting Chief Secretary to Government, dated Ootacamund, 8th August* 1874, *No.* 51.

Paragraph 5, G.O., Financial Department, 10th December 1873, upon the report of the Coonoor Municipality for 1872-73 runs :—"The Government have recently instructed the District Engineer to report on the best means of providing Coonoor with a good supply of wholesome water and of properly draining the town, and will await the result of his investigations before passing orders on the Vice-President's application for a grant from Provincial Funds."

2. The question of water-supply to Coonoor has been under consideration for some years.

3. I have now the honor to submit an estimate, for the supply and for drainage, amounting to Rupees 11,370, together with a letter from the District Engineer to the Chief Engineer, and solicit the favorable consideration of the Government for the project.

4. There can be no doubt that the town of Coonoor would receive great benefit from the scheme, and that the Municipality have not the means to carry it out. Captain Morant's letter enters into full details, and it is needless for me to advert to them.

5. I have obtained the signatures of the parties interested to a document running thus :—"We, the undersigned inhabitants of the native town of Coonoor, agree to allow of such improvements to our houses or lands as may be necessary for the perfect carrying out of the proposed Drainage and Water Scheme for this town, and we bind ourselves not to offer any obstruction to the persons who may be engaged in carrying out the scheme."

ENCLOSURE No. 1.

From Captain J. MORANT, R.E., District Engineer of the Nilgiris, to the Chief Engineer and Secretary to Government, Public Works Department, dated Ootacamund, 11th May 1874, No. 147.

With reference to Public Works G.O., No. 2624-B, of the 27th October last, I have the honor to submit a plan, four sheets of sections, and an estimate for purifying, conserving, and distributing the existing water-supply, and for disposing of the surface drainage of a portion of the town of Coonoor.

2. The only part of the town dealt with is that enclosed on the north by the Roman-Catholic Church, on the east by the Civil Dispensary, on the south by the Market, and on the west by the Hill Cottage. This is the densest portion of the town of Coonoor, and lies in its very centre quite close to two of the chief hotels.

3. As a scheme of this kind must of necessity cost a good sum of money, it would seem advisable not to attempt at first to deal with a larger area. The most important part of the town

has been selected. After the proposed scheme has been carried out a similar treatment can be extended by degrees to the rest of the town.

4. The present distribution of the water-supply is extremely defective. The water pours down an open channel of very irregular bed, full of deep holes, dangerous both to passers-by and to adjoining buildings. It is polluted by the natives in every kind of way, and the road sweepings and refuse are washed into it by every shower of rain. During rainy weather also the water conveys a large quantity of mud, and is then as thick and dirty as it is possible to be. The distribution is moreover limited to the bazaar itself, and does not extend to the market or houses thereabouts.

5. The surface drainage of the town is not nearly so open to objection, nor does it so urgently call for a remedy. This part of the town being situated on the steep slope of a hill side, and Coonoor being subject to heavy downpours of rain and seldom receiving that steady continued drizzle which is so common in Ootacamund, the drains defective as they are receive an almost constant scour which keeps them generally comparatively clean In those streets which lie across the fall of the hill and in the backyards of the native houses the defectiveness of the drains is much more felt. Here, from faulty construction and imperfect levels, such drains as do exist are little better than a line of cesspools of hardly any use in conveying away liquid matter more or less contaminated with sewage and in themselves a source of disease. But the condition of the drainage of the town of Coonoor does not even approach to that of Ootacamund in 1868 before the improvements now existing were carried out. The Coonoor Municipal Commissioners have with limited funds done a great deal for the town in this and other respects; but the completion of a more extended and complete scheme of drainage to this and other parts of the town is much required.

6. The proposed improvements in water-supply and drainage are estimated to cost Rupees 11,370, the water-supply costing Rupees 5,766, and the drainage Rupees 5,604. The whole estimate comes to about Rupees 3 per head of inhabitants residing in the part dealt with. Rupees 12,421 have been expended on these objects in Ootacamund since 1868.

7. This is perhaps the best place to mention that I purpose using in the water-supply some iron pipes now lying at Ootacamund and Wellington charging to the work only the cost of their carriage and location. If earthenware pipes are used throughout the estimate will be some 3,000 or 4,000 rupees higher; for these pipes cannot bear a steep gradient and over such a fall as exists at Coonoor necessitate repeated masonry cisterns to break it.

8. I will now proceed to describe the proposed improvements. I purpose to purify, conserve, and distribute the water supplied to this portion of the town.

The *purification* will be effected by the whole of the supply duct being piped in from where it enters the town near the Roman-Catholic Chapel, and by the construction of sundry masonry cisterns for the entrapment and after removal of the silt brought down by the water. Provision is made by means of escapes for the safe dissipation of surplus storm water; and the requisite quantity of water being confined in pipes its minimum supply during dry weather will be *conserved*, and the waste by percolation and evaporation which now exists be avoided.

Its *distribution* is to be effected by four filtered reservoirs supplied with brass taps and placed at convenient positions in the town. These while preventing waste will enable the inhabitants to draw pure water.

9. The following description of the scheme in detail will, I trust, with the help of the outline plan be sufficiently clear:—

At A, near the Roman-Catholic Church, above the part where the channel is now polluted, the proposed scheme begins with a small silt trap or cistern. Thence it proceeds in iron pipes for a distance of ninety-four yards to B. Here is a small cistern from which runs a branch for thirty-five yards to No. 1 filtered reservoir. This reservoir will supply water to all persons living in the part near the Roman-Catholic Church, and above the main road; this may be called the upper bazaar. The water continues from B, for twenty-two yards in iron pipes, to C, where a small cistern heads a branch 238 yards long to Hill-house in four-inch earthenware pipes, allowing of water being drawn at points in this length by intervening shops and houses. The main supply continues from C, for sixty-eight yards in iron pipes, to D. Here starts a branch eighty yards long in four-inch earthenware pipes to the Civil Dispensary. From D, the main supply continues in iron pipes for thirty-one yards to E, the corner of Nunjapah Row's shop. At E is a regulating cistern dividing the water, two-thirds of which goes down in an iron pipe for twenty-nine yards to F, where is No. 2 reservoir. This reservoir will furnish pure water to the eastern half of the centre bazaar between the dispensary and the main roads. A small branch cistern carries off the water left after filling No. 2 reservoir down iron pipes for 177 yards to No. 3 reservoir near the market. This reservoir supplies the market, and all the adjoining houses of the lower bazaar.

Returning to the regulating cistern at E, the remaining one-third of the water there available proceeds in ten-inch earthenware pipes along the roadside for 176 yards to P, whence it descends

for twelve yards at right angles in iron piping to No. 4 reservoir. This, the last reservoir, supplies water to the whole of the western portion of the central bazaar. Such surplus water as may flow from Nos. 1, 3 and 4 reservoirs and from the small branches to Hill-house and the dispensary enters adjoining drains provided under the head of Drainage. The pure water reservoirs are each provided with a silt trap, from the top of which the water flows into the filter chamber formed of layers of sand, gravel, and charcoal. Through holes in the lower part of this chamber the water after percolation fills the pure water cistern from whence it is drawn by taps. Each cistern is provided with four brass taps.

10. I may here add that the ordinary quantity of water available at the cistern A, where this project begins, is 360 gallons per minute. The iron pipes can discharge at least 700 gallons per minute. The earthenware pipes cannot bear pressure, and arrangements will be made to limit the flow of water through them to one-half of their capacity. The iron pipes are laid at any gradient, but the earthenware piping cannot stand a steeper fall than 1 in 20.

11. The surface drainage of the native town is proposed to be carried off in three kinds of drains down the side streets where there is no wheeled traffic—one is to be a saucer drain of well packed dry stone, three feet wide and nine inches deep; another a saucer drain two feet wide and seven inches deep; and the third, a drain formed of well-burnt semi-circular earthenware open pipes with saddles of ten inches diameter well coated with tar and asphalte. It is proposed to reshape some of the road streets where the present useless and abominable side drains exist, and to remove them, buttressing up the houses where required and providing them with steps. The sides of these road streets will then be provided with the above described paved saucer drains. So far these proposals can be easily carried out. But in the drainage of the native houses several difficulties present themselves. The houses have been built irregularly without any regard to the adjoining structures. Some are on high, and others on low ground. Some face one way and some another. Very few are built in line. In short, they are mostly huddled together in great confusion. Moreover, the backyards of many of these dwellings actually slope *towards* the house, so that the surface drainage flows against the building itself, and in some cases enters the very doors. And these difficulties are increased by the possibility of some of the occupiers objecting to have their backyards levelled or drained at all; and one objecting householder may thus render abortive the drainage of many of the adjoining houses. Nothing effectual can be done unless the suggested improvements are *forcibly* carried out; and some arrangement on this point is absolutely necessary. I have estimated for everything needful being done, and it will prove effectual if the possible objection of tenants can be overcome. Where the levelling of backyards is likely to endanger existing structures, the underpinning or shoring them up with buttresses is estimated for. A similar method was successfully adopted in Ootacamund. The drainage of this part of the town is carried out in portions quite independent of each other. The ultimate outfall of all the drainage is the Coonoor ravine. This ravine is so very steep and so frequently subject to freshes and floods that there can be no objection to its being made the receptacle of the Coonoor surface drainage.

12. To describe the drainage in detail with the aid of the outline map, I will commence with the upper bazaar near the Roman-Catholic Church and between the main roads. South of No. 1 reservoir a main saucer drain runs parallel to the road and empties itself into a road drain which discharges into the ravine below the dispensary. Into this main drain numerous smaller saucer drains and one or two open-pipe drains discharge. North of No. 1 reservoir are two outlets through road cross-drains for disposing of the water accumulated from the few adjoinig premises. In the centre bazaar a three-feet saucer drain runs all along both sides of the centre street. It has no very great fall. Into the drain on the upper side of this street all the drainage of the adjoining houses above the street fall, being led into it chiefly in two-feet saucer drains and a few earthenware drains. One half of this main saucer drain has its outfall to the west of the town near a block of native houses; the other half passes through road under drains into the large saucer drain on the lower side of this road. This large lower drain collects the water from the lower half of this road and discharges it nearly at right angles into three-feet saucer drains which issue under the lower bazaar road into the ravine north-west of the market. Into these three-feet saucer drains other smaller saucer drains and earthenware drains are led as shown on the plan. The eastern portion of the centre bazaar near the dispensary drains into a large saucer drain fed by smaller drains. This large drain runs down due south parallel to the steep bridle-path into the ravine quite close to the market bridge. The drainage of the lower bazaar is very simple and speaks for itself.

13. It will be observed that all that herein is attempted is the disposal of the surface drainage of the town. The conservancy of the town is, I suppose, to continue upon its present system, which, I believe, is the daily removal of all excrementitious matters and solid and fluid refuse from private dwellings, and the provision of public latrines upon the dry-earth system.

14. In conclusion, I beg to state that the whole of this project has been drawn up on the same plan as has been carried out in Ootacamund with such slight modifications as the practical working of that system has indicated to be desirable.

No. 97. MEMORANDUM.

My impression with reference to the proposed Coonoor Water-supply is, that it is needlessly elaborated and expensive. Supplying so limited an area as is proposed, I think one single main line ought to suffice, with filtered reservoirs at any convenient point; and I would drop the line at once from A into the high road, run it along that road past the dispensary to D, and so by E and F, to G the market place, omitting the branches K, L, M, N, and P, Q. I think the central reservoirs at D, E and F, with any others it may be convenient to place along the line of piping, will conveniently enough supply the *drinking* water required. Water for other purposes may be run wherever required in open channels as before. Such a water main and reservoirs might, I think, be supplied by Government; the Municipality extending the scheme at their discretion either by open channels or earthenware pipes. The value of the iron piping supplied by Government should be shown in the estimate. It is probably an item of Imperial Stores to be accounted for.

2. The Drainage scheme, to cost Rupees 5,600, appears to be simple, and yet as complete as could be desired for a surface system in aid of existing means of conservancy.

(Signed) G. W. WALKER, Colonel, R.E.,
Chief Engr. and Secy. to Govt.

No. 98. ORDER THEREON, 7th April 1875, No. 780.

The Water-supply Scheme will be remitted to the Commissioners for reconsideration with reference to the Memorandum by the Chief Engineer above recorded, and as the Government are unable to sanction any grant from Provincial Funds for either the Water-supply or Drainage Schemes, an application should be submitted for a loan on the usual terms of the amount which may eventually be considered necessary for the execution of the works.

(True Extract.)

D. F. CARMICHAEL,
Chief Secretary.

To the President of the Municipal Commission, Coonoor,
with plan and estimates.

Exd. J. Wright.

Govt. of {1875} Madras

FINANCIAL.

To

THE PRESIDENT OF THE
MUNICIPAL COMMISSION,
Coonoor.

Dated April, 7th.

Issued

Recd.

Encl.

G.O., 7th April 1875, No. 780.

APRIL.
Nos. 96—98.

Coonoor Municipality. — Copy of the Chief Engineer's Memorandum on the Water-supply and Drainage Schemes of this Municipality, communicated to the Commissioner, with the intimation that the funds required for the purpose cannot be given from the Provincial Grant, but must be raised by loan.

Commissioner's Office
Ootacamund 8th August 1876

No 51

From

J. R. Cockerell Esqr
President Coonoor Municipality

To

The Chief Secretary
to Government
Ootacamund

Sir,

Para 5, Government Order Financial Department 10th December 1875, upon the Report of the Coonoor Municipality for 1874-75 runs as follows "The Government have recently instructed the District Engineer to report on the best means of providing Coonoor with a good supply of wholesome water and of properly draining the town and will await the result of his investigations before passing orders on the Vice Presidents application for a grant from Provincial Funds".

2. The question of water supply to Coonoor has been under consideration for some years.

3. I have now the honor to submit an Estimate for the supply and for drainage amounting to Rupees 11340, together with a letter from the District Engineer to the Chief Engineer and solicit the favorable consideration of

of the Government for the prospect.

4. There can be no doubt that the Town of Lonavar would receive great benefit from the scheme and that the Municipality have not means to carry it out. Captain Evans's letter enters into full details and it is needless for me to advert to them.

5. I have obtained the signatures of the parties interested to a document running thus:— "We the undersigned inhabitants of the Native town of Lonavar agree to allow of such improvements down houses or lands as may be necessary for the perfect carrying out of the proposed drainage and water scheme for this town and we bind ourselves not to offer any obstruction to the persons who may be engaged in carrying out of the scheme."

I have the honor &c
Sir
Your most obedt Servant

H. Conville
President

7. G. D

My impression with refer-
:ence to the proposed Comon
Water Supply is, that it is
needlessly elaborated and
expensive - Supplying so
limited an area as is pro-
:posed, I think one single
main line might be laid,
with filtered Reservoirs at
any convenient point - And
I would drop the line
at once from A into the Strand
Road, run it along that
road past the Dispensary to
D, and so by E & F, to G the
Market Place ; omitting
the branches K.L.M.N, & P.Q -
I think the central Reser-
:voirs at D, E, & F, with any
others it may be convenie-
:ent to place along the
line of piping, will con-
:veniently enough supply
the Drinking waters req-
:uired for other pur-
:poses may be run
wherever required in open
channels as before - Such

Received 18 Aug 1874
No. 57.
Date— 17 August 1874.
Read 18 ——
Commissioner's Office,
Ootacamund.
To
The Chief Secretary
to Government
No 1633
Enclosures. 4

SUBJECT.

Submitting Plan & Estimate
amounting to Rs 11340 for
the water supply and
drainage of the town of
Coonoor for the favorable
consideration of Government

No 58

a Water main & Reservoir might I think be supplied by Govt; the Municipality extending the scheme at their discretion either by open channels or earthenware pipes. The value of the Iron piping supplied by Govt. should be shewn in the Estimate. This probably an item of Imperial Stores to be accounted for.

The Drainage scheme, at cost £5600, appears to be simple and yet as complete as could be desired for a surface system in aid of existing means of conveyance.

Lucas

Chercco

The accompanying estimate amounting to Rs 11,370 for improving the water-supply and drainage of the town of Conoor is submitted for orders.

If the scheme is approved it must be decided whether the Municipality shall be called on to obtain a loan for the purpose, or a grant shall be made from Provincial funds.

A grant was applied for when the report for last year was submitted. In the draft order the Commissioner

* Water Supply = Rs 5766
drainage 5804
Rs 11,370

* Should the Municipality be called upon to obtain a loan, I will then apply for it.

25/3
Pagoe

were told to apply for a loan but the Govt decided to say instead

"The Govt have recently instructed the District Engineer to report on the best means of providing Cannon with a good supply of wholesome water and of properly draining the town & will await the result of his investigation before passing orders on the Vice-Presidents application for a Grant from Provincial funds"

It is therefore presumed that the Govt intend to aid from Provincial funds.

J.L. 12/8

Contains 2 pp
We have no further
253-75 Mts

(8)

Water Supply of Coonoor

Received back after departure of the Govt for Simla.

Re-circulated with Memo of Chief Engineer.

25/3/15

Cur 27/3
C 2-4
D S 4

Transcript - Water Supply 9 10

Govt Orders.

Page 75 to 780.

Read letter from Secretary of the Coonoor Municipality dt. 24-7-74 forwarding Memorandum of Chief Engr.

The water supply scheme will be remitted to the Commissioner for re-consideration with reference to the Memorandum of the Chief Engineer above recorded, and as the Govt are unable to sanction any grant from Provincial funds for either the water supply or drainage schemes they be submitted an application for a loan on the usual terms of the amount which may eventually be considered necessary for the execution of the works

Plans sketches etc sent to Engr to Govt office to be compiled & sent to Col. Strange 16/5/74

20-5-74 Chief Engr memo to

President-Municipal Commrs. Coonoor. with Plans & Estimates & Abstract 19/6-

Despd 16/6

J.T. J.S. 5/4

Dispatch

Govt. of {1877} Madras.

Jud

G. O. 7 April, 1875; No. 780

Nos. 96–8.

Lemon Hunny. Copy of the Ch. Engr's Memo on the Water Supply & Drainage Schemes of the Army, Com^d to the Fam^e, with the intimation that the funds required for the purpose cannot be drawn from the Provl Grants, but a loan must be raised

for