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MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 1086 Press Mis.

397-398

Dated 15-4- 1864.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 15th April 1864.

No. 397. Read the following Proceedings of the Madras Government in the Military Department:—

Approving of the construction of a Reservoir in the Cantonment of Cannanore, Malabar District, for increasing the supply of water, and requesting to be furnished with certain information in connection with the same. } (Here enter 8th April 1864, No. 1,183.)

No. 398. ORDER THEREON, 15th April 1864, No. 1,086.

1. Communicated to the Superintending Engineer, 7th Division, for information and guidance.

2. The Government resolves to sanction a grant of Rupees 400 from the Reserve for the proposed excavations, and a supplemental Estimate of funds will be forwarded to the Accountant General in view to the amount being at once placed at the disposal of the Executive Engineer.

3. It has been ascertained that two sets of boring instruments have been supplied for use in the 7th Division, and these might be advantageously used by Captain Wrtue in deciding on the site or sites for the tanks. Colonel Walker's particular attention is drawn to the orders of the Military Department for the employment of the Troops on the excavation of the reservoirs, and the most expedient arrangement would seem to be, to pay them the full estimated cost, the laterite excavated being appropriated to Government purposes.

4. Colonel Walker will furnish the information required in paragraph 2 of the Proceedings of the Military Department.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To the Superintending Engineer, 7th Division, with copy of G. O. 1st April 1864, No. 1,082.
„ Controller and Auditor of Public Works Accounts.
„ Accountant General.
„ Military Department.

Exd. S. T. Augustin.

MILITARY DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following papers:—

From the Acting Collector of Malabar, Calicut, 24th February 1864, *No.* 16; *to the Secretary to Government, Revenue Department, Fort Saint George.*

Proceedings and Order, dated 20th Jany. 1864, *No.* 121, *Revenue Department.*

With reference to the Orders of Government noted in the margin, I have the honor to submit the accompanying Plan of the Cannanore Cantonment.

2. It belongs to the Brigade Major's Office, and Mr. Garstin, the Acting Sub-Collector, who has sent it to me, states that it is the only correct copy extant in the District.

3. He has, it will be observed, marked* in red the three Gardens under notice, and has drawn a blue line to show where their limits run.

* *Nos.* 1, 2 *and* 3.

4. The areas of the Gardens as given by Mr. Garstin are:—

	N to S	E to W	
No. 1 about	125	× 30	Yards.
„ 2 „	85	× 46	
„ 3 „	45	× 46	

5. The Gardens lie immediately to the eastward of the spot marked S on the Plan.

They all contain excellent stone and are within a mile of the Barracks; while the place from which the stone is now brought is between 2 and 3 miles distant, and outside the Cantonment altogether. The cost of the stone is thereby doubled.

6. Before quarrying in the Cantonment was stopped by the Brigadier Commanding Malabar and Canara, the Executive Engineer, Mr. Bayley, had excavated a large quantity of stones, for the Military Buildings now in progress, from a Garden adjoining No. 1 and marked No. 4 on the Plan.

7. I request that the Plan may be returned when no longer required.

From the Officer Commanding Malabar and Canara, Cannanore, 21st December 1863, *No.* 373; *to the Acting Sub-Collector of Malabar.*

I have now the honor, after considering and personally investigating the subject, to say, in reply to your letter, No. $\frac{363}{1863}$ of the 4th instant, that I find the whole interior of this Military station is undergoing a fast spreading system of excavations by quarrying; upon the tendency whereof to form an ubiquitous and prolific source of miasmatous exhalations, and direct cause of epidemic (more or less of which latter almost annually occurs in the more thickly inhabited Native portions of all stations probably from analogous sources), I have caused a Medical Committee to assemble and report—Copy of Reports herewith—It is certain that on obtaining permission to quarry on any one spot, to a stated extent, evasive advantage of it is taken, to continue the process unlimitedly—that agreements to fill up the pits cannot be, and are not, at all carried out; and that, the *universal supply* of building materials by these means, having become, and daily becoming more, an extending trade, affording proceeds already four times what they were but a few years ago—the highly mischievous process threatens to make the place one network of quarry pits; wherein refuse is thrown; which the population make cloacæ—and which the six months, monsoon here fills with water—to convert the mass into matter which the sun of the succeeding hot months forms into a local atmosphere. This being the case, I have prohibited all quarrying *within* the Cantonment, as the only effectual mode of putting a stop to what else may soon constitute a frightful evil in the station.

Inexhaustible supplies of Laterite can be quarried in all directions outside the Cantonment a little way—without the above serious consequences; probably a trifle more expensively; but which consideration, I have no idea the Government will put in competition, in the Department of Public Works, with the above sanitary ills.

Proceedings of a Medical Committee assembled by order of Brigadier General Babington, Commanding Malabar and Canara, to examine and report upon the open quarries, and excavations in various parts of the Cantonment, and whether they are likely to affect the health of the Troops and Inhabitants and if objectionable in a Sanitary point of view.

CANNANORE, 21*st December* 1863.

PRESIDENT.

Surgeon Major J. B. STEVENS, Acting Garrison Surgeon.

MEMBERS.

1st Class Assistant Surgeon DICKINSON, 40th Regiment Native Infantry.

Assistant Surgeon TYRRELL, Her Majesty's 102nd Regiment.

The Committee having assembled and examined the quarries and excavations in various parts of the Cantonment, are of opinion that they are very objectionable in consequence of their being made the receptacle for all the rubbish of the surrounding houses; vegetable and animal matter, dead dogs and cats, &c., &c., are there thrown, and they are also made public privies of; during the monsoon all this animal and vegetable matter becomes saturated, and in various stages of decomposition, exhaling obnoxious vapours, which must be prejudicial to the health of the troops and inhabitants. We, therefore, recommend that measures be taken to have the present quarries and excavations in the Cantonment *filled up*, and also prevent their further extension.

From the Acting Sub-Collector, 29th December 1863, *No.* $\frac{379}{1863}$; *to the Brigadier General Commanding Malabar and Canara.*

Referring to your letter, No. 373 of the 21st instant, which reached me this day, I have the honor to inform you, that the question of getting ground in the Cantonment for quarrying not being one that admitted of delay, and being under the impression, from conversation held with you privately on the matter, that you would have no objection to the ground behind the Fusiliers' Mess-house being taken up for that purpose, I after waiting a fortnight or more without hearing from you, sent in an application to the Collector to have the ground by Government for public purposes under Act VI of 1857, which application has gone on to Government.

I would venture to suggest that the Cantonment Magistrate and Police Authorities might *Actually* prevent such spots being turned into receptacles for filth and causes of disease.

Proceedings of the Madras Government, Revenue Department.

Read the following letter from the Acting Sub-Collector in charge, Calicut, 9th January 1864, *No.* 3; *to the Secretary to Government, Revenue Department, Fort Saint George*

1. Great difficulty exists in the way of obtaining stones for Military buildings at Cannanore. The Sub-Engineer at that station has at last discovered a piece of land (within the Cantonment) adapted for a quarry.

		Acres.	*Ans.*	16*ths*
1.	*Velluvakandi Paramba*.....	0	8	0
2.	*do. do.*	0	4	13
3.	*Mitalemaneaden Kandi Paramba*.....	0	14	15
		1	11	12

The land belongs to Government and consists of three small Gardens measuring in the aggregate Acre 1, Annas 11, and Sixteenths 12.

A Mopla named Ponmanichende Agatha Cheria Kunhamod.

2. The tenant in possession declines to give up the land and brings forward a claim of jenm right, which is however false.

3. He has been called upon to adduce proof of his alleged title.

4. The Brigadier-General Commanding Malabar and Canara objects to the ground being taken up for quarrying. Copies of the correspondence between him and the Sub-Collector's Office are herewith forwarded.

5. Mr. Ballard not considering that the General's objections were valid, and thinking that it was very desirable to have the land at once taken up under Act VI of 1857, left orders to have an application to Government drafted. Acting up to what I know to be Mr. Ballard's views on the matter, I forward the present application, leaving it to Government to decide whether the ground shall be taken up or not.

6. All that will have to be done, in the event of the land being ordered to be appropriated under the Act, will be to pay the present tenant the value of the land,* in addition to compensation for improvements now existing on it, which have been valued at Rupees 89-5-7.

* *Should he be able to prove that the land is his private jenm.*

ORDER THEREON, 20th January 1864, No. 121.

The correspondence does not enable Government to form any opinion on the question at issue. A copy of the Plan of the Cantonment should be submitted, showing the position of the existing and proposed quarries.

(True Extract.)

(Signed) J. D. SIM,
Secretary to Government.

Transferred to the Military Department with Government Order, dated 20th January last, No. 121, and Map of the Cantonment.

(Signed) J. D. SIM,
Secretary to Government.

8th March 1864.

Referred to the Commander-in-Chief, (Quarter Master General's Department.)

10th March 1864.

From the Quarter Master General, Fort Saint George, 11th March 1864, *No.* 2970; *to the Secretary to Government, Military Department.*

In reply to the reference made by Government on the 10th instant, relating to the intention of quarrying in the Cantonment of Cannanore for Stone, His Excellency the Commander-in-Chief desires me to say that he quite coincides with the Officer Commanding the station and with the Committee in the great inexpediency of doing so. The material should be procured from some spot outside the limits.

Memorandum from the Quarter Master General, Fort Saint George, 11th March 1864, *No.* 2996; *to the Secretary to Government, Military Department.*

The Quarter Master General has the honor to request the Secretary to Government will return the accompanying Plan of the Cantonment of Cannanore when done with by Government, to him. It was obtained, it is stated, from the Brigade Office at Cannanore, but though the last ordered by this Department, and correct so far as it represented the limits at that time, requires amendment according to late changes, and it has therefore not been signed by the Collector, the Officer Commanding the station, and the Quarter Master General as it should be. It was returned to Cannanore several months ago, to be there amended and it has not yet been attended to. It belongs to the Head Quarter Office and will be lithographed when amended.

ORDER, No. 1082, *1st April* 1864.

Before passing final orders on the subject of the foregoing papers, the Governor in Council wishes to be informed whether suitable stone for building purposes cannot be obtained in the vicinity of the Fort of Cannanore, and, if so, whether any and what objections exist to its being quarried there.

(True Extract.)

Deputy Secretary to Government.

To the Revenue Department,
" Quarter Master General, with Plan.

Exd. G. Rodrigues.

Note by His Excellency the President

I think the scheme a good one. Captain Verner should decide upon the site or sites by boring. I think it would be a good plan to let a Agement contract for the execution of one - that is the Government would give the full estimated cost for sinking the Tank and would take the Laterite for its own purpose. this will save all trouble about superintendencies.

Signed W.S.

Note by the Honorable T. Byerley

Boring instruments were sent out to this Country many years ago and it was then intended to prosecute boring operations to a considerable extent. I should like to know what became of them. Ask in P.W. Dept.

Signed T.B.

MILITARY DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following papers :—

Memorandum from the Quarter Master General, Fort Saint George, 30th March 1864, *No.* 3481 ; *to the Secretary to Government, Public Works Department.*

Forwarded to Government for early orders. His Excellency the Commander-in-Chief desires strongly to support this proposition. The Sappers and Native Infantry can both be employed in the construction of the Reservoir.

From the Officer Commanding Malabar and Canara, Cannanore, 17th March 1864, *No.* 98 ; *to the Quarter Master General, Fort Saint George.*

I have the honor to forward for submission to His Excellency the Commander-in-Chief, an original letter of the 15th instant, from the Executive Engineer of Malabar.

No. 561.

2. I beg most urgently to recommend that the required sanction may be accorded, and if so, that instructions be sent to at once commence the work on the site near the Lines of the 18th Regiment.

3. Reckoning from this date there are barely two working months before the monsoon.

4. As Officer Commanding the 18th Regiment Native Infantry, I am aware that the men would gladly avail themselves (particularly in these times of scarcity and dearness of food) of the permission to work for hire as permitted in Proceedings of Government, No. 4702, of 20th December 1861.

5. The present most insufficient supply of water causes the greatest inconvenience.

6. In the best Well in the Lines of the 18th Regiment, the water is sixty feet from the surface, when reached, it is so shallow some six or eight inches, that the small leaf buckets used for drawing the water can be only partially filled. To fill a chatty of ordinary size the bucket has to be lowered and raised from eight to ten times.

7. The Well alluded to (like all others in the 18th Lines) is completely drained by the middle of the day.

8. The water obtained is so muddy as hardly to be fit for use and the supply bad as it is, is barely sufficient for cooking and drinking.

9. The success of this experiment would conduce much to health and cleanliness and also enable the Latrine system to be carrried out.

10. Should the Reservoir afford the intended supply of Water it is possible that the cost of its construction might be recovered on the first occasion of a fire in the Native Lines, as the Fire Engine (now utterly useless,) might be brought into play and by its use a large sum saved which, would otherwise be paid away in Compensation* for losses by fire.

* *No Compensation allowed as a matter of course by Government.*

(Signed) F. H. Scott.

From the Executive Engineer Malabar, Cannanore, 15th March 1864, *No.* 561 ; *to the Brigade Major Malabar and Canara, Cannanore.*

At the request of the Brigadier Commanding, I have the honor to forward my views on the subject of the Cantonment Wells.

There have been long and loud complaints of the insufficiency of the supply of water obtained from thence, although a good deal of a labour has been expended in deepening and clearing them out.

The supply of water to a large population from a few Wells is, unless, under very exceptional circumstances, always a mistake, here it is particularly so, for the Wells are generally very deep, and much time is required to draw from them even a very small supply; but, worse still, the presence of a substance which resembles decomposed felspar, and which when moistened is easily

converted into a stiff paste, impervious to water, causes the springs to become quickly choked up, when the supply of water at once ceases, and the Well is utterly useless, until men have been sent down to clean away the accumulation, and again tap the spring, a process which is of necessity very slow.

I would therefore recommend that the excavation of one or more tanks of suitable dimensions be at once commenced in favorable localities.

I would commence with an excavation of not less at top than 20 yards square, and excavate until water be reached. The bottom dimensions should not be less than 10 yards square. Allowing a slope of I in 1, this dimension would be attained at a depth of 5 yards, but as the nature of a considerable depth of soil will probably be such as to render a considerably smaller slope sufficient, it may, I think, be safely assumed that we may go down 8 yards and still have the tank 10 yards square at bottom. Even should the excavation have to be carried lower, it will be an easy matter to enlarge the tank; as I consider that the area at bottom should not be less than 100 yards (10 × 10).

One of my reasons for insisting on a large area is the much greaterlikelihood of striking on springs, or on a good spring, and the lessening the liability to pass over springs: for it is easily conceivable that, in a Well of small diameter, a fine spring may be close at hand, and that, on account of the excavation failing to tap it, its water is allowed to pass through other channels, and may even run to waste.

Of course without experimental boring it cannot be laid down as certain that springs will be met with, but it must be apparent to any one that the probability is much greater in the case of a tank, than in that of a small Well.

Now as to the cost, it is my belief that the cost of making an excavation such as I propose will not exceed the cost of sinking a Well, while a satisfactory result in the former case is very much more probable, and if that result be satisfactory, the quantity of water supplied by the tank will be many times that afforded by the well.

At the site examined this morning, it seems probable that the first two yards of excavation will be in tolerably easy soil. I will assume that the difficulty of excavation increases in the next two yards, and that at this depth laterite is reached, when excavation would be positively remunerative. The estimate then will stand somewhat as former.

1st and 2nd yard..... ....Cub. yards	724 @ 4 As. =	Rs.	181	0	0
3rd yard..... .... „	256 @ 6 „ =	„	96	0	0
4th yard..... .... „	196 @ 8 „ =	„	98	0	0
	Total..		375	0	0

The whole cost then will be under 400 Rupees, very little in excess of the cost of sinking a deep Well. I think I may fairly assume that at the bottom of the 4th yard, laterite will be reached. So soon as this is attained, the excavation will become remunerative to the extent of about 4 Annas per cubic yard of laterite, so that when a depth of 6 yards has been excavated, the above sum will be reduced by about 60 Rupees, making the total cost 315 Rupees.

The dimensions I have mentioned, I regard as the minimum that should be employed; but if they be increased, all the better, and the more likelihood is there of success.

A Reservoir of area 100 yards and depth one yard will contain roughly 17,000 gallons of water and 4,000 Gallons or less than one quarter of this will give two gallons per diem to each member of a population of 2,000 souls.

This drain will only lower the water 9 inches, which it is very fair to assume will be regained during the night.

I think then I have shewn that water for 2,000 souls may be provided at a cost not exceeding that of sinking a single Well, and that by a means open to none of the objections I consider inseparable from Wells.

So obvious to me does this seem that I cannot conceive why the plan has not been carried out long ere this.

I would, in conclusion, most strongly recommend that the experiment be at once made in the low ground close to one end of the 18th Lines, where an excavation has been already commenced, and I would further recommend that as many hands as are obtainable be employed on it.

Referred to the Military Department.

(Signed) C. A. ORR, Colonel, R. E.,
Secretary to Government, P. W. D.

31*st March* 1864.

ORDER, No. 1183, 8*th April* 1864.

Approved for immediate execution—the regulated working pay being issued to the Troops employed on the work.

2. It will be reported for the information of Government whether the work now sanctioned will afford any supply of stone suitable for building purposes for the Engineer's Department, with reference to the order passed on this subject on the Quarter Master General's letter, No. 2970, dated 11th March 1864.

Proceedings of Government, No. 1082, *dated* 1*st April* 1864.

(True Extract.)

Deputy Secretary to Government.

To the Public Works Department, with copy of Notes and Pro. of Govt., No. 1082 of 1864. *With 20 sheets Copies.*
„ Quarter Master General.

No. 397. 395

Coll Walker will furnish the information required in Para 2 of the Mr. of the Military Department.

Chlepauth
15th April/64

To The Supg Engr. 4th Dn with ref. to copy of G.O. 18th April/64 No 1082 and request of Accountt General

Dated 19th April

D/V. 15 Gl. 4 Dn 1160
Corr. of Govt Engr April
No 1617
Mr: M. Ov
in the Military
Dept 1160
Dated 15 April
Rec'd 16
No 1183.

No. 1086. 15th April

Approving of the construction of a Reservoir at the Cantonment of Tamaune, Chittabar each, for increasing the supply of waters; and requesting to be furnished with certain information in connection with the same

Wth an Order

No. 1086

Communicated to the Superintending Engineer 4th Dn for information and guidance.

The Government resolves to sanction a grant of Rs. 400 from the Reserve for the proposed excavations, and a supplemental Estimate of funds will be forwarded to the Accountant General in view to the amount being at once placed at the disposal of the Executive Engineer.

It has been ascertained that 2 sets of boring instruments have been supplied for use in the 4th Dn and these might be advantageously used by Captain Verlie in deciding on the site or sites for the Tanks. Coll Walkers particular attention is drawn to the orders of the Military Department for the employment of the Troops on the excavation of the Reservoirs, & the most expedient arrangement would seem to be, to pay them the full estimated cost, the laterite excavated being appropriated to Government purposes.