

- (1) பக்கங்களின் எண்ணிக்கை 22
 (2) புதுக்கித் திருப்பிய நாள் 1.90.
 (3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம் *bus*

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

P.W.D துறை

3

அரசாணை எண். மு. கோப்புத் தாள் எண்.	3505	அச்சகம் பலவகை
நாள் :	9-12-1889	198

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

11 Sheets

ஆவண. கா-1-18,006-15-6-87.

Jan

3505
9TH DECEMBER 1889, No. 3505 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

Military Works.
Account.

READ—the following paper:—

From Major-General E. H. H. COLLEN, C.I.E., Secretary to the Government of India, Military Department, to the Secretary to the Government of Madras, Public Works Department, dated Simla, 8th November 1889, No. 2340 M.W. (Accounts).

I am directed to acknowledge the receipt of your letters noted in the margin, forwarding a statement of sanitary works proposed to be carried out in the lines of Native troops under the Madras Command.

No. 2605 W., dated 20th Sept. 1889.
" 2764 W., " 2nd Oct. "

2. In reply, I am to state, for the information of the Governor in Council, that the provision of these sanitary improvements is not possible, having regard to the similar demands which might be made for the whole of India. If, however, the Government of Madras will indicate the most pressing wants in the order of urgency, an endeavour will be made to provide for some of them.

3. As regards to provision of masonry or concrete surface drains for certain lines, I am to say that, in view of the great expense involved, the principle of laying down these drains cannot be agreed to. I am to ask that each case may be specially reported on if this decision is not accepted.

ORDER—dated 9th December 1889, No. 3505 W., Public Works.

Communicated to the Military Department, with reference to Proceedings, No. 6019, and endorsement No. 6480, dated 2nd and 23rd September 1889, respectively.

2. The Quartermaster-General will be requested, under the orders of His Excellency the Commander in-Chief, to take the necessary action with reference to paras. 2 and 3 of the letter from the Government of India.

(True Extract.)

Captain, R.E.,
Under-Secy. to Govt., P.W.D.

To Superintending Engineers.
" the Military Department.

Exd. W. H. French.
Spare Copies

MILITARY WORKS.
ACCOUNT.

Govt. of {1889} Madras.

PUBLIC WORKS.

Dated December, 9th.

Recd.

Encl.

G.O., 9th Dec. 1889, No. 3505 W.

DECEMBER.

Sanitary Works

Letter from the Government of India, stating that it is not possible to carry out the proposed — to lines of Native troops under the Madras Command, but that it will endeavour to meet any urgent ones.

HEADING.

Accounts

No. 2340 M.W.

GOVERNMENT OF INDIA.

MILITARY DEPARTMENT.

Simla, the 8th November 1889

To

THE SECRETARY TO THE GOVERNMENT OF MADRAS,

Public Works Department.

SIR,

N: 2605 W
dated 20th September
1889.

N: 2764 W dated
2nd October 1889

the receipt of your letter noted in the margin, forwarding a statement of sanitary works proposed to be carried out in the lines of Native troops under the Madras Command.

2 In reply, I am to state, for the information of the Governor-in-Council, that the provision of these sanitary improvements is not possible, having regard to the similar demands which might be made for the whole of India. If, however, the Government of Madras will indicate the most pressing wants in the order of urgency, an endeavour will be made to provide for some of them.

P.W. No. 10888

3 As regards the provision of masonry
or concrete surface drains for certain
lines, I am to say that, in view
of the great expense involved, the principle
of laying down these drains cannot be
agreed to. I am to ask that each
case may be specially reported in if
this decision is not accepted.

I am,

Sir,

Recd: 15. 11. 89

Your most obedient servant

G. Grant

Major R.E.
for Secretary to the Govt. of India

1889.

P. W. DEPARTMENT.

Current No. 10888

From The Secretary to the Govt
of India
Military Dept

ENCLOS.—

No. 2340 M. W.

Dated 8th November 1889.

Received 15. 11. 89

SUBJECT.

Sanitary Improvements to Lines of
Native Troops under the Madras
Command.

Stating that certain —
are not possible —

DISPOSAL.

No.

Dated

Accompaniment to Proceedings, No. 2604 W., dated 20th September 1889.

SCHEDULE of sanitary works proposed to be carried out in the Madras Command with a view to the better sanitation of the lines now occupied in India by the Native troops of the Madras Army (accompaniment to letter No. 2266-B., of 12th August 1889, from Quartermaster-General, Madras Army, to the Secretary to Government, Madras, Military Department).

District.	Station.	Lines.	Item.	Recommendations.	Approximate cost.	Remarks.
Bangalore..	Bangalore.	1st Pioneer lines.	1	Provision of wells and drains in 1st Pioneer lines (already paid for).	Rs. A. P. 2,637 6 4	These items are provided for from the allotment of Rs. 20,000 made by the Government of India for the year 1889-90.
Do. ..	Do. ..	Do. ..	2	Approximate estimate of completion of drainage, Pioneer lines.	6,450 0 0	
Do. ..	Do. ..	Do. ..	3	Public latrines ..	945 0 0	
Do. ..	Do. ..	Do. ..	4	Improvement water-supply.	2,000 0 0	
Belgaum ..	Bellary ..	Madras Infantry lines.	5	Sinking a new well ..	1,000 0 0	
Secunderabad.	Secunderabad.	Native troops lines.	6	Sub-soil drainage of lines..	3,300 0 0	
Bangalore..	Bangalore.	East hutting lines.	7	New standard plan latrines.	2,000 0 0	
Southern ..	Trichinopoly.	Native lines ..	8	Standard plan latrines ..	1,000 0 0	
Secunderabad.	Secunderabad.	All lines ..	9	Completion of sub-soil drainage (item No. 6) say.	1,000 0 0	
Do. ..	Do. ..	Do. ..	10	Masonry or concrete surface drains to all lines.	50,000 0 0	Approximate estimate is Rs. 4,116.
Do. ..	Do. ..	Do. ..	11	Latrine accommodation (public) Bowenpillay, Begumpet and Tarbund lines, one latrine each.	1,800 0 0	
Belgaum ..	Bellary ..	North and South Infantry lines.	12	Masonry or concrete drains, at Rs. 10,000 for each set of lines.	20,000 0 0	Negatived by Government of India--see P.G., No. 1226, dated 21st February 1888.
Do. ..	Do. ..	Do. ..	13	Latrines (two), one in each set of lines, at Rs. 800 each.	1,600 0 0	
Do. ..	Belgaum..	Right and Left flank lines.	14	Masonry surface drains ..	23,000 0 0	
Do. ..	Mangalore.	Madras Infantry lines.	15	Masonry surface drains ..	11,710 0 0	
Do. ..	Do. ..	Do. ..	16	Additional latrine accommodation.	600 0 0	
Do. ..	Do. ..	Do. ..	17	Improvement to two wells.	300 0 0	
Southern ..	Trichinopoly.	Madras Infantry (Pioneer) lines.	18	Removal of a chuckler's parcherry reported as very insanitary.	2,000 0 0	
Do. ..	Do. ..	Madras Infantry (17th) lines.	19	Masonry surface drainage of lines.	8,000 0 0	
Madras ..	St. Thomas' Mount.	Madras Infantry lines (detachment).	20	Straightening, &c., of drains.	250 0 0	
Do. ..	Sāmalkôt..	Do. ..	21	Improvements to wells ..	100 0 0	
Do. ..	Do. ..	Do. ..	22	Enlargement of latrine or construction of a new one.	300 0 0	Two latrines on re-occupation of lines by a Madras Infantry half battalion.
Do. ..	Pallavaram.	Do. ..	23		1,600 0 0	
Do. ..	Rāyapuram.	Madras Infantry lines.	24	Improvements to drainage.	415 0 0	
Total ..					1,42,057 6 4	

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

Military Works.
Account.

READ—the following paper:—

G.O., dated 2nd September 1889, No. 6019, Military.

From the Quartermaster-General, to the Secretary to Government, Military Department, dated Ootacamund, 12th August 1889, No. 2266-B. (Native Lines—Hutting).

Adverting to para. 4 of my letter,* No. 2881-B., dated 31st August 1888, on the subject of a revision of the present system

* Printed in Proceedings of Government, Military Department, dated 19th November 1888, No. 7724.

of hutting in the Madras Presidency, I have been desired by the Commander-in-Chief to state, for the information of Government, that the proceedings of the

committees assembled to report on the measures necessary to put each set of lines in a proper sanitary state, have been received and considered, and I am now to submit a schedule of the works proposed to be gradually carried out with this object in view, and of their approximate cost amounting to Rs. 1,42,057-6-4.

2. With reference to para. 4 of O.G., dated 1st May 1889, No. 1159 W., Public Works, forwarded with your No. 3699, dated 6th ultimo, it will be observed that provision for the first eight items, specified in this schedule, has been made in the current year's Public Works budget, and

† No. 2079-B., dated 25th July 1889.

on this subject a separate communication† has been made to you. His Excellency

trusts that it may be found possible, in future years, to allot money for the gradual execution of the remaining works, all of which, it is considered, are most necessary in the interests of sanitation of the lines of Native troops.

3. Items 10, 12, 14, 15 and 19 are for the provision of masonry or concrete surface drains in certain lines for the speedy removal of sulliage and storm-water, and the preservation of the sites of huts and barracks from damp and fouling by their absorption into the ground. In Military Department letter, dated 30th January 1888,

No. 186 M.W., forwarded to this office with Madras Government, Military Department, No. 1226, dated 21st February

G.O., No. 433 W., dated 7th February 1888. 1888, the Government of India decided that, without special and urgent reasons, it could not entertain a proposal to construct masonry drains in the lines of Native troops. I am, however, to submit that the construction of these surface drains, which have been strongly recommended by the sanitary committees above alluded to, has also been urged by the Army Sanitary Commission (see extract from reports annexed). Without such drains it is manifestly impossible to keep house-sites free from damp during the heavy rainy season of many parts of the south of India, or from foulness owing to the absorption of waste water, &c. Sir Charles Arbuthnot hopes, therefore, that the Government of India will be pleased to consider that sufficiently special and urgent reasons have been advanced to warrant the inclusion of these drains in the schedule.

ENCLOSURES.

EXTRACTS from reports of the Army Sanitary Commission on the subject of surface drainage, Native Infantry lines.

8. It is satisfactory to learn from the station reports that, with occasional exceptions, great pains are bestowed by the authorities on the sanitary condition of the lines. Generally the conservancy arrangements appear to be good, the surface is kept clean, the surface drains in good order. But at many stations great improvements in the construction of surface drains appear to be required.

P.G., No. 3635, dated 9th November 1874.

10. The want of a simple, inexpensive and efficient surface drainage is complained of at not a few stations.

15. There are many other matters bearing on the sanitary condition of Native troops which are suggested by the facts in the report; but the cardinal improvements, besides improved accommodation, are drainage and better water-supply.

REMARKS of the Secretary of State for India on above.

2. Much of the sickness from which the Native troops suffer is attributed in these reports to the damp sub-soil in the lines, and although I observe, with satisfaction, that, as a rule, great pains are said to be bestowed by the authorities on the sanitary condition of the Native lines, it is evident that, in many cases, sufficient attention is not paid to this point.

17. These defects, it will be seen, are of precisely the same nature as those to which attention has frequently been called by the Commission on other papers; they include the influence of low, damp, or wet locality of lines, want of drainage for drying the sub-soil, the surface drainage such as it is, directly leading to sub-soil impurity by sewage in filtration; bad arrangement of lines; badly constructed, damp huts, made of bad material; defects in water-supply, and defective conservancy arrangements.

P.G., No. 5950, dated 20th November 1876.

3. It is impossible to peruse these statistical data without seeing how large an influence local disease causes, productive of malaria and dampness, together with climatic agencies, such as rainfall and variable temperature, exert on the efficiency of the Native Army in Madras and its outlying stations, and it is not surprising to find how large a space of the sanitary notes on particular stations is devoted to them.

P.G., No. 5445, dated 28th September 1877.

4. The drainage defects are due to three causes:—

- First.*—The position of lines in localities which scarcely admit of efficient drainage on account of lowness of ground, water-logged sub-soil consequent on this topographical defect and damp rising in the floors and walls of the men's huts.
- Second.*—Want of sub-soil drainage where the ground might be drained, leading to similar results.
- Third.*—Defective attempts at surface drainage by cuttings in the ground, by which not only surface water but the sewage of huts is conveyed directly into the sub-soil, thus increasing the evils which surface work of this kind is intended to remedy.

12. There are facts sufficient in the preceding abstracts to show that there is a large amount of drainage work required at most of the stations.

Not much has been gained in the way of experience in this matter and the principles long since laid down by the Army Sanitary Commission on the subject may still be taken as a guide. These may be summarised as follow:—

- (1) Station drainage for removal of rainfall must be effected over the surface.
- (2) Mere surface cuts, except on steep inclines only, afford a more certain means of water logging the sub-soil.
- (3) Efficient surface drainage requires that the rainfall and all other liquids received by the drains, shall be kept out of the sub-soil, and passed to the out-fall as rapidly as possible.

- (4) Box-drains or V-shaped drains for such purposes, although greatly superior to mere cuts, are useful only so far as they are impervious and easily cleansed; and broad, shallow, impervious saucer-sectioned drains are the best for meeting the conditions of drainage described in the present report.

Order—dated 2nd September 1889, No. 6019, Military.

The approximate estimates of the cost of carrying out the improvements considered necessary for securing the better sanitation of Native lines in this Presidency are approved.

2. The necessary funds for estimates Nos. 1 to 5, 7 and 8, have already been provided, and the Supreme Government has been addressed in regard to the allotment of funds for estimate No. 6.

G.O., No. 1159-1160 W., dated 1st May 1889.

" " 2155-2156 W., " 10th Aug. "

3. With reference to para. 4 of Proceedings No. 683 M.W., dated 29th March 1889, the Government of India will be requested by the Public Works Department to make a liberal grant for expenditure on sanitary improvements to Native lines during 1890-91, and in view of the opinions expressed by the sanitary committees recently assembled, the Army Sanitary Commission and His Excellency Sir Charles Arbuthnot, approval will, with reference to Government of India No. 186 M.W., dated 30th January 1888, be sought for the proposed expenditure on the masonry and concrete surface drains recommended for certain Native lines.

G.O., No. 1159 W., dated 1st May 1889.

4. Adverting to para. 2 of G.O., No. 2155 W., dated 10th August 1889, His Excellency the Commander-in-Chief will be asked how it is proposed to utilise the available balance of Rs. 617, and in what order His Excellency wishes funds allotted to estimates 9 to 24 entered in the schedule.

(True Extract.)

(Signed) A. KENNEY-HERBERT, Brigdr.-Genl.,
Secretary to Government.

ORDER—dated 20th September 1889, No. 2604 W., Public Works.

With his letter read in the Proceedings of Government, Military Department, above recorded, the Quartermaster-General submits a schedule of sanitary works proposed to be carried out in the lines of Native troops under the Madras Command, the approximate cost of which is estimated at Rs. 1,42,057.

2. In G.O., No. 2155 W., dated 10th August 1889, funds have been provided for items 1 to 5, 7 and 8 of the schedule, and the Government of India has been addressed in regard to provision of funds for item No. 6.

3. As the works indicated by items 9 to 11 and 14 appertain to stations outside the civil limits of the Madras Presidency, viz., Secunderabad and Belgaum, the Government of India will be requested to grant special allotments to the local Administrations concerned to admit of the works being carried out.

4. The rest of the items enumerated in the schedule, aggregating Rs. 46,875, are connected with the sanitation of Native lines situated within the Madras Presidency and a special allotment of funds for the same is necessary. The Government of India will therefore be requested to make a liberal grant for expenditure on these works during 1890-91.

5. Items 10, 12, 14, 15 and 19 of the schedule provide for masonry or concrete surface drains for certain Native lines, but the Government of India having remarked, in para. 2 of its letter No. 186 M.W., dated 30th January 1888, printed with G.O., No. 433 W., dated 7th February 1888, that it could not, without special and urgent

reasons, entertain a proposal to construct masonry drains in the lines of Native troops, that Government will now be requested to approve the expenditure proposed on these items in consideration of the opinions expressed by the sanitary committees recently assembled, the Army Sanitary Commission, and His Excellency the Commander-in-Chief.

6. The receipt of the information called for in para. 4 of the Proceedings of Government, Military Department, will be awaited.

7. The Superintending Engineers concerned will lose no time in the preparation and submission of plans and estimates for items 12, 13 and 15 to 24 of the schedule.

(Here enter No. 2605 W., dated 20th September 1889.)

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.

To Superintending Engineers.
„ the Examiner, Public Works Accounts.
„ the Military Department.

Exd. P. L. Pereira.
Spare Copies

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6

MILITARY WORKS.
ACCOUNT.

Gobt. of {1889} Madras.
PUBLIC WORKS.

Dated September, 20th.

Read.

Encl.

G.O., 20th Sept. 1889, No. 2604 W.

SEPTEMBER.

Sanitary Works

Passing orders on schedule of — proposed to be carried out in the lines of Native troops under the Madras Command.

2ND OCTOBER 1889, No. 2763 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Military Works.

READ—the following paper:—

From Brigadier-General M. PROTHEROE, C.B., C.S.I., Quartermaster-General, to the Secretary to Government, Military Department, dated Ootacamund, 9th September 1889, No. 2546 B.

With reference to O.G., No. 6019, dated 2nd instant, I am desired to state that proposals for the utilization of the reserve of Rs. 617 will be submitted later on in the current official year after it has been ascertained from districts whether money is required to supplement the grants already sanctioned in Proceedings of Government, * No. 5797, dated 26th ultimo, or for allotment to any additional sanitary work.

* Proceedings of Government (Public Works Department), No. 2155 W., dated 10th August 1889.

2. I am also to forward a list showing the order in which it is proposed that funds should be allotted to the remaining works required to complete the sanitary improvements to lines of native troops in this command.

ENCLOSURE.

STATEMENT showing the order in which it is proposed to allot funds for the following works connected with proposals for the better sanitation of lines of Native troops of the Madras Army.

Order of urgency.	District.	Station.	Lines.	Works.	Approximate cost.	Remarks.
I	Secunderabad.	Secunderabad.	All lines	Completion of sub-soil drainage.	Rs. 1,000	Public Works Department, Government of India.
II				Latrine accommodation (public) Bowenpilly, Begumpet and Tarbunde lines, one latrine each.	1,800	
III				Masonry or concrete surface drains to all lines.	50,000	
I	Belgaum	Bellary	North and South Infantry lines.	Latrines (2), one in each set of lines, at Rs. 800 each.	1,600	
II	Do.	Mangalore	Madras Infantry lines.	Additional latrine accommodation.	600	
III	Southern	Trichinopoly.	Madras Infantry (Pioneer) lines.	Removal of a chucklers' par-cherry reported as very insanitary.	2,000	
IV	Madras	Samalkot	Madras Infantry lines (Detachment).	Enlargement of latrine or construction of a new one.	300	
V	Do.	Pallavaram	Do.	Two latrines on reoccupation of lines by a Madras Infantry half battalion.	1,600	
VI	Do.	Rayapuram	Madras Infantry lines.	Improvements to drainage	415	
VII	Southern	Trichinopoly.	Madras Infantry (17th) lines.	Masonry surface drainage of lines.	8,000	

8

Statement showing the order in which it is proposed to allot funds, &c.—*cont.*

Order of urgency.	District.	Station.	Lines.	Works.	Approximate cost.	Remarks.
VIII	Belgaum	Bellary	North and South Infantry lines.	Masonry or concrete drains at Rs. 10,000 for each set of lines.	Rs. 20,000	
IX	Do.	Belgaum	Right and left flank lines.	Masonry surface drains	23,000	
X	Do.	Mangalore	Madras Infantry lines.	Do. do.	11,710	Negated by Government of India (see Proceedings of Government, No. 1226, dated 21st February 1883).
XI	Madras	Saint Thomas Mount.	Madras Infantry lines (Detachment).	Straightening, &c., of drains.	250	
XII	Do.	Samalkot	Do.	Improvements to wells	100	
XIII	Belgaum	Mangalore	Madras Infantry lines.	Do. to 2 wells	300	

OOTACAMUND,
9th September 1889.(Signed) M. PROTHEROE, Brigdr.-Genl.,
Quartermaster-General.

No. 6480, Military.

Transferred to the Public Works Department, with reference to Proceedings of Government (Military), No. 6019, dated 2nd September 1889.

FORT ST. GEORGE,
23rd September 1889.(Signed) H. R. SHELLEY, Colonel,
for Secretary to Government.

ORDER—dated 2nd October 1889, No. 2763 W., Public Works.

Communicated to Superintending Engineers concerned for information.

2. The preparation of plans and estimates for items 12, 13 and 15 to 24 of the schedule circulated with G.O., No. 2604 W., dated 20th September 1889, should be undertaken in the order given in the statement annexed to the letter from the Quartermaster-General above recorded.

3. Ordered that a copy of these Proceedings be forwarded to the Government of India, Military Department, for the information of the administrations concerned with reference to items 9 to 11 and 14 of the schedule forwarded with letter No. 2605 W., dated 20th September 1889.

(Here enter No. 2764 W., dated 2nd October 1889.)

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.

To the Superintending Engineer, I Circle.

"	"	"	III	"
"	"	"	IV	"
"	"	"	V	"
"	"	"	VI	"
"	"	"		"

Military Department.

ENDORSEMENT—dated 2nd October 1889, No. 2764 W., Public Works.

Forwarded.

(By Order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.Exd. J. Moses.
Spare Copies

BUILDINGS AND ROADS.
MILITARY WORKS.

Govt. of {1889} Madras.
PUBLIC WORKS.

Dated October, 2nd.

Recd.

Encl.

G.O., 2nd Oct. 1889, Nos. 2763,
: 2764 W.

OCTOBER.

Sanitary Works

Forwarding copy of Proceedings on letter from the Quartermaster-General stating that proposals for the utilization of the reserve will be made later in the year, and forwarding a list of — showing the order in which it is proposed to allot funds.

10. 3505 W
No. 3505
PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

9th Decr 1889
READ the following

Letter from the Govt
of India, Military Dept. No 2340 M.W.D. 18th Nov 1889.

2 P
Communicated
to the military Dept
with reference to the
Proceedings No 6819
and endorsement No.
6480 dated 2nd & 23rd
September 1889 respectively.
2. The Quarter Master
General will be requested
under the order of H.E.
the Commander-in-Chief
to take the necessary
action with reference
to paras 2 and 3 of the
letter from the Govt of
India.

To
Supt Engineering
the Military Dept.

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*For the Secy. of the State
for the purpose of planting*

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MS. 6. xii. 89
R. 9-12-89*

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[Redacted]

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10888.

Govt. of Madras.

PUBLIC WORKS.

Date

Recd.

Encl.

G.O. 9th Dec. 1887 No. 3505W.

Sanitary Works.

Letter from the Govt. of
India stating that
it is not possible
to carry out the
proposed — to limit
of native troops
under the Madras
Command — but
that it will endeavor
to meet any urgent
ones.

190
12

200 10/12/87