P.W.C. No. 11972

No. 3722 W d/26. X 1. 88

B

Commd: with reference to para 3 of the fore-going order to all Supty: Engrs: in their respective charges, the necessary instructions being issued to officers under their orders.

2. With reference to para 2, Supty: Engrs. concerned will report the names of officers of the Dept. nominated by them to serve on the Committees that will be convened at the stations named by the Govt. in para 4 of his No. 2881-B. d/31st Augt/88.

Govt. of {1888} Madras.

MILITARY.

To THE QUARTER MASTER GENERAL,
&c., &c., &c.

Dated November,

Issued

Recd. 21.11.88 *Encl.*

G.O., 19 November 1888, No. 1724

SECRETARY TO GOVERNMENT
21 NOV.
P.W. DEPARTMENT, MADRAS.

NOVEMBER.

Nos.

G.O. 3722 W d/26. X 1. 88

Military Buildings—Native Lines.

Hutting.—Orders passed on a report on the subject of a revision of the present system of — in the Madras Presidency.

22.11.88

23/11/88

2 Colies to Coly

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Withorder

GOVERNMENT OF MADRAS.

MILITARY DEPARTMENT.

Military Buildings—Native Lines.

Read the following papers:—

No. . *From Colonel A. C. TOKER, Deputy Secretary to the Government of India, Military Department, to Brigdr.-Genl. A. KENNEY-HERBERT, Secretary to the Government of Madras, Military Department; dated Simla, the 28th April* 1888, *No.* 1099-*C.*

Native Lines.

With reference to the correspondence ending with your letter No. 5497, dated the 8th September 1887, regarding the building of improved Native Infantry lines in the Madras Presidency, I am desired to forward, for the information of the Governor in Council, the accompanying communication from the Government of Bombay, proposing a revision of the present system of hutting in that Presidency, and to request that the Government of India may now be furnished, under His Excellency's orders, with a report showing the measures necessary for putting the Native Infantry lines of the Madras Army in a proper sanitary state. I am to request that proposals may be formulated on the basis of the proposal made by the Quarter Master General, Bombay Army, in the printed memorandum attached to the correspondence forwarded herewith.

No. 4315, dated the 24th November 1887, and annexures (return requested.)

2. In framing these proposals, there are two points which, I am to suggest, should be specially considered. Under the existing system of hutting in the Madras Presidency, the huts are the property of the men except in the case of lines recently built. It appears to the Government of India very desirable that this system should, if possible, be altered, the huts becoming the property of the State and the regiments receiving an allowance for maintaining them as in the Bengal and Bombay Presidencies.

3. The other point for consideration is the number of families residing in the lines. I am to urge, for His Excellency's consideration, the necessity for reduction in this direction. The proportion now allowed in the Bombay Army seems suitable and might be followed.

4. A copy of a letter * addressed to the Bombay Government is attached for your information and for guidance in formulating your proposals.

* No. 1097, dated 28th April 1888.

Proceedings of the Government of Bombay, in the Military Department; dated Bombay Castle, 24th November 1887, No. 4315.

Letter from the Quarter Master General, dated 16th August 1887, No. 2-19—3158.

Referring to Government Resolution No. 1902, dated 19th May last, requesting, under the orders of the Government of India, that the proposal to build lines for a company and-a-half of Native Infantry at New Jhansi may be reconsidered in view to a reduction of the estimates,

submits a printed memorandum drawn up under the orders of the Commander-in-Chief showing:—

(1) that the present state of the question of building lines for Native troops is unsatisfactory;
(2) that the provisions of the Hutting Regulations of 1864 could not, from the date of their issue, be carried out in their integrity;
(3) that large sums in excess of the hutting money have been disbursed in the building of lines; and
(4) that the prices of building material vary according to stations.

In view to remedying the above difficulties, the Quarter Master General proposes—

(1) to place hutting under the Public Works Department;
(2) to grant building allowances according to estimates framed by that department, and
(3) as a control on the budget, to fix the yearly grant for hutting at very little beyond what has been budgeted for during the past year, and to allow the Commander-in-Chief, in consultation with the Superintending Engineers of Circles, to sanction the disbursements.

Submits certain remarks, and adds that the absence of regiments in Burma has relieved the pressure of accommodation *pro tem.*, but that on their return to quarters it will be imperative to erect new lines at New Jhansi, and that should the Government of India be disinclined to sanction this, the only way of arranging for accommodation will be to resume Belgaum within the Bombay Command, a measure which the Commander-in-Chief would like to see carried out, as it is a station with which the Bombay Army has been long connected.

Report by the Controller of Military Accounts, No. 905, dated 5th September 1887.

Draws attention to the decisions of the Government of India contained in the resolutions quoted in the margin objecting to the provision of accommodation for Native troops being vested in the Public Works Department.

No. 3798, dated 27th July 1880.
„ 6587 „ 22nd Dec. 1881.
„ 1902 „ 19th May 1887.

Memorandum to the Public Works Department, No. 1143-C.M.A., dated 17th September 1887.

Memorandum by the Public Works Department, No. A-1127, dated 7th October 1887.

Retransferred to the Military Department with the following remarks:—

Until it is known to what extent the Government of India are prepared to modify existing rules, it is thought that no useful practical opinion can be given in this department.

2. That as the construction of the lines is still to rest with the men, the budget provision for the outlay must continue to be made in the Military budget (see this Department No. 1766-A, dated 11th December 1886).

3. It seems obvious that it must be to the advantage of the State that the lines for Native troops should be constructed in the most thorough manner that funds will admit of, and this end can best be attained, it is thought, by inviting the assistance of the department which makes this subject its study.

4. Assuming the lines are built by the men and that no interference with them in the execution of the work is contemplated, the services of the Public Works officers might, it is thought, be of great benefit in advising and instructing, if necessary, as to the mode of construction and in respect to the selection of materials and their economical application.

5. To the want of knowledge and care in selecting and applying materials may, it is believed, be attributed the premature decay of many of the lines in this Presidency.

Resolution.—A copy of the Quarter Master General's letter, with printed memorandum attached, to be forwarded to the Government of India with reference to Officiating Secretary Lieutenant-Colonel Collen's letter No. 967-C, dated 27th April last (Native Lines).

2. The revision of the system of hutting, as proposed in paras. 72 and 73 of the printed memorandum, is opposed both by the Controller of Military Accounts and by the Public Works Department on the ground that budget provision for the erection of lines must be made in the Military Department, and that the expenditure cannot therefore be directed and controlled by the Public Works Department, as such an arrangement would be contrary to

recognized principles of finance control and calculated to give rise to much trouble and correspondence. The Government of India will, however, be asked to sanction an annual budget provision of Rs. 50,000 being made for line building in the Military Department as suggested by the Quarter Master General (*vide* para. 69 of the printed memorandum) and to permit expenditure up to this amount being incurred under the orders of the local Government, new lines being built under the advice and instruction of officers of the Public Works Department as suggested in paras. 4 and 5 of Public Works Department memorandum No. 1127-A, dated 7th October 1887.

3. With reference to para. 5 of the Government of India's letter quoted above, that Government should be informed that, on the return to India of one or more of the Bombay regiments now employed in Burma (not including the 27th Beluchies), this Government will be quite prepared to re-occupy Belgaum, and that if this arrangement is sanctioned, it would provide for the immediate want of accommodation, but it is very desirable that early orders should be issued upon the general question of line building, showing how the work is to be carried out in future and how the expenditure is to be met.

(Signed) B. H. POTTINGER, Brigdr.-Genl.,
Secretary to Government.

No. 4315.

Submitted, with a copy of the papers, to the Government of India with reference to the foregoing resolution.

(Signed) B. H. POTTINGER, Brigdr.-Genl.,
Secretary to Government.

MEMORANDUM relating to the Construction and Repairs of Native Infantry lines in the Bombay Presidency.

The subject of the construction and repairs of lines of the Native Army is one demanding immediate consideration. For the past five and twenty years correspondence about it has been kept up with Government without any satisfactory solution being come to, and it is therefore most desirable that this should be attained if possible.

2. I purpose now giving a short *résumé* of what has been done in the past, and showing what rules to guide Commanding Officers have been issued from time to time up to the latest date and their results.

3. During the first years of our occupation of India, the troops were so constantly on the move that they may be said to have lived in tents or in the open. During the rains the men constructed for themselves rough shelter in camp order, for which money was disbursed by the Quarter Master General's department on bills preferred by Commanding Officers. The earliest record I can trace of a direct disbursement by Government is in a General Order, dated 17th February 1795, which states that "taking into consideration the great inconvenience and distress hitherto experienced by the Native troops serving on the Malabar Coast in consequence of their cantonments not having been covered in proper time previous to the rains, sanctions an allowance of Rs. 3 to each native officer and Re. 1 to each non-commissioned officer and sepoy to provide themselves with cadjans, &c."

4. Later on in the same year, the Government of Bombay, pending the erection of proper barracks *at the public expense* in Bombay, allowed Re. 1 monthly to the native officers and 8 annas to non-commissioned officers and sepoys to shelter themselves on the esplanade.

5. It was not till the close of the Pindaree War that the locations of troops became more fixed and that better shelter was ordered to be provided. Corps were warned by General Order in October 1819 that they were to exchange huts without sale or purchase, and Commanding Officers were enjoined to see that the huts were left in the same state in which the corps had occupied them. Committees of Survey were ordered to see that proper care had been taken of the lines, and that some regularity had been observed in laying them out.

6. Three years later, these orders, under date 31st October 1822, were reiterated, and it was ruled that—

(1) Places of arms, store-rooms and hospitals were to be the only buildings to be erected by the Public Works Department for the accommodation of Native corps.
(2) That an allowance of Rs. 24 for a Subadar, 12 for a Jemadar, 4 for a Havildar, 3 for a Naigue, and 2 for a Private was to be granted on every change of quarters, the men building the huts themselves.

7. These huts were mere mud hovels, the height of the walls being rarely more than four feet, with a light thatched roof. Wood was cheap and plentiful in those days, sufficient grass could be obtained for a few annas, and the huts could be constructed in fifteen days or a month

at most. It is almost needless to say that sanitation was not thought of and that the lines were built in a very irregular fashion. From the combustible nature of the roofs, fires were of constant occurrence, often involving the destruction of a good deal of Government property, and in the year 1833 the attention of Commanding Officers was called to this. The Commander-in-Chief on the 25th March of that year directed that the streets of lines should be made as wide as the ground would permit, and that propositions for erecting huts and selecting sites were to be laid before Government through the Quarter Master General's department after due consultation with the Engineer's department.

8. From the year 1839 till 1849, the troops were in constant movement owing to the wars in Afghanistan, in Sind and in the Punjab, Bombay regiments either taking part in them or extending towards Bengal to take the place of Bengal troops. On return to quarters the lines were in many cases so deteriorated as to require reconstruction. By Government General Orders of 7th March and 19th December 1851, the orders regarding surveys were remodelled and general rules published for the preservation of cleanliness in regimental lines.

9. When, however, reconstruction was attempted, it was found that the prices of materials had much increased, and on this being represented to Government, the hutting allowances were revised, and for reconstruction double hutting money was sanctioned. The lines were, however, under the orders of the Commander-in-Chief, in future to be tiled (*vide* General Order No. 601 of 22nd October 1852). It was soon found that when tiling had to be provided, the increased allowances were totally insufficient. The improvement in consequence of the inadequacy of Rs. 4 to meet the provisions of the order was only carried out in two or three instances. for it became at once apparent that consequent on the introduction of railways into this country and the impetus given to trade generally about that time, it cost at least three, and in most cases four, times the increased allowance to follow the plan laid down. In the case of the 27th Native Infantry, who built one set of lines at Kolapore, the men were cut Rs. 8 from their pay, and this was doubtless one of the chief causes which led them to break out into open mutiny a few months after.

10. During the years 1857, 1858 and 1859, the whole of the Bombay Native Army may be said to have been in the field. The regiments were either marched northwards with the Rajpootana and Central India forces, or were spread out in the Satpoora hills along the confines of the Nizam's dominions and the Southern Mahratta country to maintain order. When quiet once more reigned throughout the land, it was found that from such causes as lines being burnt down, being ruined by non-occupation, or by location of troops being changed, the troops were almost houseless. From a mass of reports it is gathered that at Augur, Indore, Neemuch, Nusseerabad and Mhow the huts had been burnt. The lines at Ahmedabad, Poona, Baroda, Belgaum, Mehidpore, Ahmednuggur, Surat, Bhooj and Sholapur were reported to be almost uninhabitable. At Aurungabad, Kulladghee and other places there were no lines.

11. As a temporary expedient the Public Works Department ran up grass huts, some of which, as at Aurungabad and at Malligaum, were accidentally burnt; while at other places, owing to the fragile nature of the materials, they soon perished and had to be replaced. It became urgently necessary to remedy the defects and supply the want of house accommodation. Representations were made to Government, who called on the Chief Engineer for a report. Colonel Scott, under date 27th February 1860, replied in the following terms :—

"The minimum cost to a sepoy of providing himself with a new hut may, I think, be taken at Rs. 13. For this sum he may, *in stations where materials are cheap*, provide himself with a room, 10 feet square, of sun-burnt bricks, *with a thatched roof* and a mat verandah in front. He might keep such a building in repair at a very moderate cost. In framing this opinion, I have been guided mainly by information furnished me by the Officer Commanding Sappers and Miners at Poona, who reports that without any assistance from the artificers of the corps, the men provided themselves in 1835-37 with huts of the accompanying plan and section at a cost of Rs. 12-8-0 each.

"If pendals for Native troops be constructed and maintained by Government, it is necessary that they should be of substantial construction, and this was provided for in the estimates from which the rate of Rs. 100 per man was deduced in the late Major-General Waddington's report in the Public Works Department No. 6049-A of 23rd November 1857."

12. Government in minuting on the above (Government Resolution No. 363 of 1860), recorded that the actual cost to the State, from a return sent in by the Chief Engineer, was from Rs. 8-9-10 to Rs. 130-7 5 per man, the minimum cost having been at Belgaum, the cheapest place probably in the Presidency, and on that occasion the sepoys helped to make the bricks and to construct the huts.

13. On a more recent occasion at Belgaum, the cost to the sepoys for the tiles alone was 6 rupees per man, the other work cost Rs. 8 additional, exclusive of all the wood which they carted from the Government forests.

14. This resolution was sent to the Commander-in-Chief with orders for the Quarter Master General to make any observations he might wish to offer.

15. The Quarter Master General replied that he believed Rs. 15 per man should be the minimum allowed, and the Government of India was asked in letter No. 2713 of 2nd August 1860 to sanction this amount, as also a repair allowance of Rs. 4 per private soldier on occasion of each permanent change.

16. Up to May 1861 no decision was received, and the Government of Bombay then addressed the following letter No. 1368 of 9th May 1861 :—

"Referring to your telegram of the 20th March, which states that the question about hutting money is under consideration and to former correspondence on the subject, the Governor in Council desires me to request the favor of early decision by the Government of India.

"2. The Governor in Council is, in the meantime, compelled to dispose of many cases which may tend to establish embarrassing precedents.

"3. Some time since the Governor in Council sanctioned Rs. 15 per man for lines for the 12th N. I. at Nusseerabad, the existing lines being in such a condition that they were represented as not worth repair, having been nearly destroyed whilst the regiment was in the field.

"4. It is however reported that Rs. 35 per hut was the lowest rate at which any contract for the construction of the new lines could be obtained. The regiment was consequently unable to avail itself of the grant of Rs. 15, and the Commander-in-Chief has strongly recommended, as necessary to prevent severe suffering, that the old lines should be patched up for another year at the cost of the State of Rs. 1,578.

"5. This the Governor in Council has thought it right to sanction. But he represents the circumstances in order that the want of suitable and definite regulations may be understood. He begs that he may be informed of what has been of late the practice in the Bengal Presidency in order that he may, if possible, avoid unnecessary deviation therefrom."

17. The answer to this was as follows :—

"Measures are under consideration by which the difficulties which have been so frequently brought to notice may be at once partially met and pending a consideration of the whole question, which is one of no ordinary difficulty.

"Meanwhile I am instructed to forward copies of two statements furnished by the Quarter Master General of the Madras Army to the Military Finance Department in 1859, which the Government of Fort St. George have been requested to complete up to date. These statements show very clearly the sums which have been expended in various ways on account of the huts of the Native troops in the Madras Presidency since July 1852."

18. Similar statements were called for from the Bombay Presidency, but no reply was given to the question put by the Government of Bombay of "what had been of late the practice in the Bengal Presidency."

19. Later on in August 1861, Major-General Birch futher wrote that—

"The subject is still under consideration, and as it is intimately connected with the pay of the Native troops, an immediate decision cannot be given.

"In the meanwhile, however, His Excellency the Governor-General in Council is most desirous of meeting, as far as possible, the urgent solicitations of the Bombay Government, and the Madras hutting rules appearing to be in many respects far more advantageous to the men than those either of Bengal or Bombay, His Excellency in Council is pleased to authorise their adoption by the Bombay Government should they desire it until such time as the matter can be finally settled. If there be no objection on the part of the Bombay Government, these rules might be temporarily adopted. If they are objected to, an explanation of the cause of objection is requested."

20. It appears that about this time difficulty was experienced in hutting Native troops at out-stations in Bengal, and the Quarter Master General in India inquired of the Quarter Master General, Bombay, what decision had been arrived at on the subject by the Bombay Government.

21. I will now give the replies of Lieutenant-General Sir R. (then Colonel) Phayre, Quarter Master General, Bombay Army, to the letters from the Government of India and the Quarter Master General, India. Regarding the proposal to assimilate the hutting rules of the Bombay Presidency to those obtaining in Madras, he remarks—

"In reports already submitted to Government, it has been explained how inadequate the successive hutting allowances of Rs. 2 and 4 per man were to erect new tiled huts costing on an average Rs. 15 each.

"The Madras system, which it is now proposed to introduce temporarily into Bombay is, in some respects, the same in principle, though different in its operation, from the one we found impracticable a few years since.

1st.—"Like the latter it gives a sepoy Rs. 2 for building a hut that its rules tell us may cost Rs. 18, 16 or 9 according to the style of construction, *but how he is to do this on Rs.* 2 is not explained.

2ndly.—"It makes him the proprietor of his hut, guaranteeing to him its value either from the relieving regiment or from Government, as circumstances may dictate. In this it differs from our system, Government being the sole proprietor of our lines though built mainly by sepoy money and sepoy labor.

3rdly.—"It is based on the principle that the Madras sepoy is not only able to maintain himself respectably, pay his regimental stoppages, clothe and feed himself, and most likely a large family as well out of his pay, but at the same time it assumes that he has enough over to build an expensive hut more than twice as large as a Bombay one on Government allowance of one-ninth, seventh or fourth its cost.

"Up to ten or twelve years ago, when grass and wood could be had for the cutting, and the most wretched kind of grass hovel was allowed when, moreover, troops moved less than they have since done, the Bombay Army did all this on certainly less advantageous terms than the Madras sepoy, inasmuch as he was not allowed to sell his hut; still under the circumstances just stated it was possible and it was done. Since then, however, the steady and rapid rise in the prices of all the necessaries of life throughout this Presidency, great improvements in the organization and quartering of the army entailing expense to the sepoy, constant moves and other causes have rendered it utterly impossible for him to continue the system, and the result was an appeal to Government, the justice of which, after due consideration, was fully acknowledged and responded to.

* * * * *

"As Sir R. Birch observes, the whole subject is intimately connected with the pay of the Native troops, and I would respectfully add their conditions and circumstances also in different parts of the empire, for it is clear that if an uniform scale of pay and certain allowances, such as the hutting one, is to be established for the regular Native Infantry of all India, the necessaries of life which I have specified must be secured to all on approximately equal terms, otherwise it will be utterly impossible for those quartered in districts where dearness and scarcity are the ordinary rules to live, not to say on an equality with the rest of the army, but to live at all without incurring debt accompanied by all the evils that it involves, and I feel sure I shall not be accused of exaggerating when I include the whole of the Bombay Presidency in this category as compared with both Bengal and Madras.

* * * * *

"I would respectfully urge then that the primary and really practical questions at issue are not whether the Bengal or the Madras or the Bombay hutting system, as represented by certain rules, are the best, but how will the several ranks of the Native army in each presidency be provided with good tiled huts of equal dimensions, on as nearly equal terms, in regard to cost, as possible."

22. To the Quarter Master General in India, Sir R. Phayre wrote:—

"That the whole circumstances of the case having been investigated, old and experienced Commanding Officers of the Native Army were required to state what would be the average cost of good tiled huts erected as far as possible by sepoy labor under regimental superintendence. At the same time the Public Works Department was required to report for what sum they could erect good permanent pendals for the native soldier. As the result of the first inquiry, it was established that for about Rs. 15 per man huts of the dimensions and style of construction shown in plan A could be built at out-stations generally, provided the men worked at them gratis as they always do at their own huts. The result of the second inquiry was that the Public Works Department could not undertake to erect pendals of a properly permanent style of construction under Rs. 70 per man or thereabouts. In the end Government have sanctioned Rs 15 per man * *

* * * * *

"It has been shown in the correspondence handed over to the Finance Department that a man can build a very good hut in either Madras or Bengal for half, or perhaps less than half, what he can in this Presidency. The disparity of the market rates of food in the three presidencies, where the pay is equal, is neutralized in a great degree by the rules that allow a rate of compensation to be drawn in this Presidency when the articles composing a sepoy's ration exceed a certain price, so I would respectfully submit that this subject of hutting involves a parallel question, obliging us if we adopt a fixed rate of hutting allowance for the three presidencies to neutralize the known disparity of their rates of labor and materials by compensation for high prices as in the case of food."

23. I have quoted largely from Sir R. Phayre's report because the arguments apply *pari passu* to the conditions in which the sepoy is placed now-a-days. In fact they have become intensified year by year since 1861. Without any exaggeration, and with due regard to the extra indulgences granted by Government from time to time, his condition has been gradually becoming worse. As regards line building, the enormous extension of public works, the opening of railways over the country and the rises in the prices of the necessaries of life have re-acted on the prices of labor, and especially of building materials, and made the construction of huts

on the regulated allowances an impossibility even in the cheapest stations of the Bombay Presidency. The difficulties of Commanding Officers have been increased also by other causes to which I will advert further on.

24. I will now give a *résumé* of the results of building lines under the Regulations of 1861, allowing Rs. 15 per man.

25. The standard plan was to be for—

Commissioned officers	35′ 0″ × 35′ 0″
Non-commissioned officers	28′ 11″ × 17′ 2″
Privates (married)	11′ 6″ × 17′ 2″
,, (single)	10′ 6″ × 17′ 2″
Space for entire lines	798′ 0″ × 790′ 0″

Foundations and plinth at least 1½ feet high to be of mud and stone.

Walls of unburnt brick, plastered with mud and white-washed.

Roofs of jungle-wood with hip rafters of teak or aine, battens of bamboo, single tiled, doors of jungle-wood.

The use of public cattle will be given, if practicable, for conveyance of materials and supply of water.

(*N.B.*—A great number of public cattle was available at most stations for a year or two following immediately the mutinies).

The men, aided by some sappers, were to construct the lines themselves.

26. The General Order further stated that: "If it shall happen that owing to high prices it is impossible for the work to be executed on the above conditions, by means of the stated allowance, a report will be obtained from the Executive Engineer of the district, who will be informed of the aid which can be given by public carriage and of the rates at which the regiment can procure materials. On these data he will estimate the cost of constructing the lines, excluding all labor which can be performed by the men. An extra allowance will be sanctioned on the basis of the Engineer's report."

27. The repair allowances were to be in future—

	RS.
Subadars	24
Jemadars	12
Havildars	4
Other ranks	3

28. One of the first set of lines built under these rules was the block called the Right Flank lines in Poona. Building was commenced in February 1863 and completed in April 1864 at a nominal cost of Rs. 12,321. I say nominal, because I happen to know that they cost Rs. 600 more, obtained by excess wood cut in the Government forests and sold by public auction. The wood was procured at Khandala free of cost and railed into Poona at low rates. Government carriage was liberally supplied, and other aid freely given. Owing to pressure put on the Commanding Officer to complete the lines within a year and within the regulated allowance, the lines were not so well built as many others which cost more. Green wood was used for the roofs, and a considerable expenditure was incurred in after years in repairs and re-roofing.

29. They had scarcely been finished when the Forest Officers complained of the loss Government was incurring by allowing young trees to be cut for rafters, and owing to reductions in cattle establishments, Government carriage ceased to be obtained. The price of tiles also rose considerably in 1864.

30. The consequence of the withdrawal of the free aids was soon apparent when the centre lines came to be constructed in 1867—69. Owing to wood having to be bought and carriage hired, the cost of constructing them rose to Rs. 49,239.

31. Appended is a statement showing what lines were built between the years 1861 and 1876, time taken in building and the cost in excess of regulation.

32. It will be observed from this that in nearly every case the Government allowance was found to be insufficient, and that this was exceeded by three times in one case, twice in several others. Twenty years have passed since then, and the experience gained is that where good material was put in at first, as in the case of the Sappers and Miners at Kirkee, the Centre and Left Flank lines at Poona, they have stood well, and all repairs can be carried out by the repair allowances. Not so in the case of the Right Flank lines at Poona, of those at Mhow, at Bhuj and at Deesa, for the three last require to be rebuilt, and the first has cost a large sum for repairs. This shows plainly that on the score of economy, it is advisable to put good timber in the roofs.

33. Another factor in the question came to the front during the course of building lines, which is best described by quoting an extract from a minute by Sir R. Temple.

"This system was given a fair trial, and no less than seventeen regiments were engaged in whole or in part from time to time in constructing their own lines. It was then found that the advantages were outweighed by disadvantages which experience had recently taught.

"In the first place the lines took from 3 to 4 years to build, and the builders being inexperienced, the lines were, as a rule, costly; drill had to be almost entirely neglected; inefficiency was the result, and the health of the men was said to suffer from the severe labor entailed on account of guard duties having to be carried out in addition to building. Besides this, it was soon proved that the men suffered in pocket; extra labor, more severe than ordinary military routine, required them to be better fed, and the rough work caused considerable wear and tear to clothes; extra food was estimated to have cost a man Rs. 1-8-0 a month and extra clothing about As. 4, a total of Rs. 1-12-0 a month, or Rs. 60 in the three years spent in line building.

"To enter into the matter more fully, this question presents itself: Do the men learn a trade by building their own lines? Some few do possibly. But a large majority must of necessity be employed as mere laborers, as hewers of wood and drawers of water, while some few are engaged in mixing material, mud, clay and the like.

"I am not, however, disposed to admit that the work entailed in line building is detrimental to the health of the troops * * * * but the main point still remains. It has been proved, without doubt, that regiments so employed must fall off in their drill, and consequently inefficiency as a military body. Now that arms of precision have been introduced requiring new drill and attention to musketry, regiments engaged in non-military duties, such as line building, must fall below the average in shooting. A fact regretted by the officers and also the men, who are naturally proud of their arms and their regiments, especially now that the musketry returns are officially published, and great competition consequently exists between regiments to gain an honorable position on the list.

"Again, regiments engaged in line building being struck off duty, other regiments quartered with them suffer a considerable increase of work, especially in garrison guards, orderlies' duties, &c.

"On the whole the disadvantages, it seems to me, outweigh the advantages.

"The alternative system proposed is that 'pendals' or native cottages of approved pattern be built by the Public Works Department, the only objection to this plan being the expense. Pendals have already been built by the Public Works Department in nine instances for Native Infantry of the Bombay Army, exclusive of Aden.

"In calculating expense, it has been very properly pointed out that the total expenditure in lines built by regiments has been by no means shown in the returns—the pay of the men employed for months together excused from military duty, the free labor of field column carriage, and the wear and tear of animals so employed has not been taken into consideration, nor has the heavy expense the men are put to for extra clothing and food.

"Again, lines built by regiments, good in their way, are frequently constructed of inferior timber and under the most favorable circumstances could not be expected to come up to the standard of the lines built by the Public Works Department, where none but excellent materials could be used. Permanent pendals constructed by the Public Works Department would last much longer than lines built by the troops.

"Taking into consideration, therefore, the greater durability of pendals built by the Public Works Department, the saving in wear and tear of equipment of animals of the field column carriage, the saving of expense to the men, and, above all, the efficiency of the regiments if not employed in line building, I think decidedly that in future it will be preferable that pendals of an approved pattern and of suitable dimensions should be constructed by the Public Works Department, from time to time, as the lines in present use become worn out. I concur in the suggestions that the lines be built without partitions; that the regiments occupying them should allot the space available; and that the men should themselves put up partitions of some inexpensive material, for which purpose they should be allowed to draw a portion of the hutting money (say $\frac{1}{3}$) when taking over the lines. Under these arrangements permanent quarters of a superior description will eventually be furnished and the efficiency of the regiment be maintained.

"The Chief Engineer should be called upon to furnish at once a return showing the cost of building permanent pendals at each station occupied by Native troops of the Bombay Army. The buildings should be of good lasting material."

34. This estimate on being furnished showed that, if the lines were built by the Public Works Department, an enormous expenditure of over 25 lakhs would have to be incurred, and the Government of India, to whom the papers were sent, replied that financial pressure rendered it impossible to adopt the proposed change of system for hutting Native troops (Government Resolution No. 3798 of 27th July 1880.)

35. Again referred to later on in that year, Deputy Secretary Colonel Lees wrote that "pending a decision on the general question of the construction by the Public Works Department of huts for Native troops, the present case (state of the lines at Mhow) will be best dealt with under existing regulations."

36. A further representation (Government Resolution No. 4574 of 6th September 1881) was made, and Secretary, Colonel Chesney, replied—

"1. That there are weighty objections, on grounds of expediency and policy, as well as on financial considerations, to the duty of building and repairing sepoys' lines being entrusted to the Public Works Department.

"2. That the ability to hut himself is one of the most important qualifications in a native soldier, and therefore that everything connected with the housing of Native troops should be executed by the men themselves.

"3. That the standard of lines was fixed on too expensive a scale, beyond the requirements of the men and what they are accustomed to at their own homes.

"4. And finally suggested that a committee should be assembled composed of one Commanding Officer from Bombay, one from Bengal, with an officer of the Public Works Department, Bombay, to examine into the plans, the mode of construction, the cost of an average set of lines in each presidency, and to ascertain why a system which has answered for so many years in the Bengal Presidency should not be attended by as satisfactory results in Bombay"

37. The Government of Bombay and the Commander-in-Chief gladly acceded to the proposal, and the committee was constituted as follows:—

President:

Colonel GREIG, Royal Engineers.

Members:

Lieutenant-Colonel COPLAND, 19th Punjab Infantry.
Major GRIFFTH, 16th Bombay Infantry.

38. The committee submitted an exhaustive report, and after reviewing what had been done in past years, after full inquiry, made the following recommendations:—

"In considering the question how a hutting system can be applied to Bombay troops which shall furnish dwellings of an economical kind, suited, but not more than suited, to the wants and habits of the sepoy and the requirements of health, and based on the principle of the construction of the lines by the sepoys themselves with a grant-in-aid from the State, the arrangements now in force in Bengal and Bombay may be noted.

"The following accommodation is provided—

Bengal Standard Plan for lines erected by the State.

	Sq. ft.	Mean height.	Cubic ft.	Width of verandah.
Single men	62½	14	875	8
Married men	120	14	1,680	8
Approved Lines at Cawnpore.				
Single men	50	95	475	4
Married men	(Measurements not given).			
Bombay Standard Plan.				
Single men	90	12½	1,125	4
Married men	100	12½	1,250	4
Revised Bombay Standard Plan as erected by 8th N.I., Poona.				
Single men	50	12½	625	4
Married men	100	12½	1,250	4

"In Bengal the custom has been to place the single men in pendal; in Bombay the single men have been allowed a separate room, 9′ × 10′, a custom of very old standing; and in the revised standard plan two men have been placed in a room 10′ × 10′. The married men in Bengal as in Bombay have been allowed a separate room of nearly the same size in both presidencies.

"The committee propose that the extent of accommodation allowed should be as follows:—

	S.F.	M.H.	C.S.	V.
Single men in pendals	60	12½	750	4
Married men in separate quarters	100	12½	1,250	4

"The non-commissioned officers to have the same space as before in separate quarters, 10′ × 12′, but the Bengal system to be adopted in the officers' quarters, which have been reduced in size and two officers placed under one roof.

"The following comparison is made between the Bombay standard plan and the committee's proposed plan for lines:—

	Bombay standard plan.	Proposed plan.
Single men's pendals	80,360	48,160
Married men's quarters	73,080	73,080
Native officers	19,600	16,380
Cook rooms	...	9,520
	173,040	147,140

showing a saving of 25,900 square feet of floor space in the committee's proposals.

"The proposed arrangements are the most economical which the committee can suggest, taking into account the wants and habits of the Bombay sepoy and the requirements of health. A complete change is made in the single men's lines, who, instead of being allowed separate rooms as hitherto, will be placed in pendals of the Bengal pattern in the style of those built at Cawnpore. The accommodation for married men cannot be changed, and is about the same in both presidencies. The reason why more space is required in Bombay than in Bengal is found in the larger number of married men per regiment. In Bengal only 48 married men are accommodated in the lines per regiment, but in Bombay the number of separate married quarters, including non-commissioned officers, has been 384, reduced in the plan proposed by the committee to 336. The number of different castes in a Bombay regiment has rendered an increased amount of cooking accommodation desirable. The sanitary condition of the proposed lines has been assisted by continuous ridge ventilation, and permanent bathing places are suggested for the married men's quarters.

"The cost of the lines will not be the same at all stations owing to the variable prices of materials, but before constructing new lines, plans and estimates should be prepared by the Executive Engineer, based on the principle laid down by the Government of India of "the construction of the lines by the sepoys themselves with a grant-in-aid from the State." The estimate should therefore show the cost of materials which must be purchased, and the expenses attendant on the employment of sepoy labor has to be defrayed by the State, and its amounts should be substituted for the present allowance. This arrangement answered well in the case of the lines built by the 8th Regiment Native Infantry at Poona, which were constructed on this principle for the Executive Engineer's estimate of Rs. 31,000 by the men of the regiment.

"These lines, the last built under the rules of 1864, were completed in 1877, having been 2 $\frac{9}{12}$ years in building. Sepoy labor was fully utilized in their construction. The standard plan was reduced by 128 huts, two unmarried sepoys being placed in one hut, an arrangement reported to cause no inconvenience, and which reduces the number of separate quarters from 704 to 506. Each quarter is 10′ × 10′, and accommodation is provided for 400 married and 334 single men, or for a total of 734 men, exclusive of commissioned officers provided with separate quarters. Before the lines were sanctioned, an estimate of the cost of materials required was obtained from the Executive Engneer, Poona and Kirkee.

"The following is an abstract per block:—

	RS.
Stone quarrying	149·87
Roof with jungle rafters	758·16
Doors	46·
Posts and plates	53 70
Plant and tools	100·76
	1,108·49
Total of estimate	30,912·48

"The work of constructing the lines was done by the regiment, the materials being supplied by contract according to specification furnished by the Executive Engineer. The actual cost of the lines was the same as the estimate, or Rs. 31,000. The Committee of Inspection, of which the Executive Engineer was a member, reported very favorably of the construction of the lines by the regiment, and the costs of repairs since executed (up to 1882) has only reached Rs. 294. The wood actually used in the roof is teak with bamboo battens, and the lines promise to be durable and inexpensive to maintain.

"*N.B.*—The Officer Commanding the regiment had been for many years employed in the Public Works Department.

"To ensure, as far as practicable, the proper construction of the lines for the estimate, the Executive Engineer of the station should be required to assist the Commandant of the regiment, and his advice should be taken in all matters connected with the construction and purchase of materials.

"In the construction of the lines, their durability should be considered, so as to avoid a constant recurring expense for repairs and the withdrawal of the regiment from their duties to effect those repairs."

39. It will be observed from the above extracts that the committee took a plain common-sense view of the question. They recognized—

(1) That the rules framed in 1864 could not from the first be carried out with the sum allowed for hutting.

(2) They recommended for adoption a plan which, while keeping in view economy to the State, would enable men to be hutted with due regard to the wants and habits of sepoys and the requirements of health.

40. The committee did not submit any estimate of the cost, but on this being called for, it was found that in Poona a new set of lines could not be built under Rs. 35,656.

41. The proceedings were forwarded to the Government of India in May 1882, and in November of that year Secretary, Colonel Chesney, replied in letter No. 678-C. of 21st November 1882, to the following effect:—

(1) That the committee had lost sight of the instructions conveyed in Military Department letter No. 1329-C of 13th December 1881.

(2) That they virtually suggested no change in the existing system.

(3) That although the committee recommended curtailing the space allowed by existing regulation, the Government of India considered the new scheme to provide more than was required, and that a superficial space of 50 feet and a cubic space of 500 feet would be ample.

(4) That the centre wall should be reduced in height, that 12 feet was considered sufficient with side walls 7 feet high.

(5) That Native officers should only be allowed two rooms 12′ × 10′, one room 8′ × 10′ with a cook-room, bath-room, and privy.

(6) Lastly, that the cost of the lines could be reduced by some limitation on the number of families.

"If the plan of the lines," continued Colonel Chesney, "were recast as above suggested, or to such an extent as may be practicable with reference to the climate of Bombay or the habits of the men, it might be found that the lines could be built at many stations from the allowance now sanctioned and, what is a very important object to keep in view, by the agency of the men themselves, though at some particular stations it may be necessary to increase the rate of hutting money.

"Not only would the reduction in the amount and style of accommodation conduce to economy in the initial cost of the lines, but the buildings would be more within the capabilities of the men, and therefore they would be better built, and the necessary repairs would be less and more easy of execution.

"I am accordingly to ask that the Government of Bombay may reconsider the subject in the light of the foregoing remarks and cause the Government of India to be furnished with reports showing the cost of providing lines constructed on a hutting system similar, as far as possible, to that obtaining in Bengal and on the reduced scale now suggested. The estimates should be prepared so as to show the cost of the lines (*a*) at stations where materials are expensive and (*b*) at stations where timber, tiles, &c., are obtainable at an average rate.

"I am to forward for information a copy of a letter from the Officer Commanding 45th Bengal Native Infantry regarding the constructing by the men of his regiment of their lines at Jhelam."

42. Colonel Armstrong's letter shows that the lines were built by his regiment at a total cost of Rs. 8,800. They consist of barracks 156 feet long, with exterior walls 9 feet high, and pillars running down the centre of 11 feet high, the roofs having a slope of 2 feet in 11.

"In building these lines," says Colonel Armstrong, "I have had many advantages. Jhelam has a large depôt for timber; the beams and other wood-work were perhaps obtainable at a cheaper rate than at other stations. Colonel Owen, 19th Bengal Lancers, very kindly allowed my men to take long grass from his Cavalry bêla and Veterinary Surgeon Plomley placed transport carriage at my disposal.

"The lines are the largest and best Native Infantry barracks I have ever seen, the only paid labor employed throughout was five bricklayers per company. Everything else—digging the foundations, making the bricks, carrying the timber from the river bank, cutting and bringing in the grass, &c., was performed by the men of the regiment. They were employed in fatigue parties daily, even during the extreme heat of May and June."

43. Great credit is undoubtedly due to Colonel Armstrong for the energetic manner in which these lines were built. At the same time it must be borne in mind that whereas 16 blocks were sufficient to cover his men, on the Bombay side, owing to the presence of families with the regiment and the increased superficial and cubical space allowed, 32 would be required. Moreover the style of building and flat mud roofs would not suit the climate of most of the Bombay stations. Situated as most of them are on the plateau above the ghâts, and subject to heavy storms of rain, tiled roofs with a good slope are a necessity. These two factors, together with the high prices of materials, account for the high cost of Native lines in this presidency.

44. It is not an exaggeration to say that at Poona a set of lines for the present strength of regiments cannot be built by the men under less than five or six times what the Jhelam lines cost.

45. In view to carrying out the suggestions of the Government of India, another committee was assembled at Poona to inquire into the question. They began by considering the question of building barracks for single men in lieu of each man having a hut to himself, and whether if this were carried out it would furnish any elements of discontent or grounds for a grievance, real or supposed. The committee reported on this in the following terms:—

"The result of such inquiries has been a unanimity of opinion to the contrary as regards the Native soldier himself and a readiness to vouch for his adapting himself to circumstances as cheerfully in quarters as in the field, and most certainly so as regards the substitution of barracks for single men in lieu of the present system of separate quarters for each man.

"With reference, however, to the question of married quarters, one change deprecated more or less by all consulted is the restriction of accommodation to one room and the consequent loss of verandah space, which, besides affording a bathing place, gave additional privacy and comfort to their quarters which were much appreciated.

"As regards the bathing places, they suggest that it would be a great convenience if shelter for the women by means of a dry rubble stone wall of from 4 to 6 feet high, as should hereafter be determined, the interior being open to sun, air and inspection, so that neither damp nor any other evil could be apprehended."

46. The committee then taking into consideration the climate and soil of this part of India recommended that the standard plan, with modifications, should be adhered to in the Bombay Presidency.

"In this barrack," they remarked, "the superficial area allotted to each single man is 62½ square feet, and in the married quarters each man is allowed 120 square feet. By reducing the width of a barrack to 16 feet, the committee think the superficial space of $8 \times 6\frac{1}{2} = 52$ square feet will suffice for a single man, and by making the blocks of married quarters 16 feet wide and allowing each man 8 square feet in length, the superficial area of 128 square feet is provided. By having a uniform width of 16 feet this possibility of converting married quarters into single blocks if the number of single men in a regiment increase in the future has been provided for. Cross walls only would have to be removed and trusses substituted."

47. The committee considered that taking 48 men to be married out of a company of 92, and allowing 10 per cent. to be absent, the cost of a set of lines for a regiment would be Rs. 26,188. They took no account of tools and plant, supposed Government carriage to be available, and the men of the regiment to provide all labor. For contingencies they simply recommended a grant of Rs. 2,500.

48. The committee lastly remarked that they could not give the estimates A and B called for by Secretary Colonel Chesney. They stated that their calculations had been made according to prices then ruling in Poona, and that they could frame no reliable estimates for other stations, as prices were so fluctuating and tending to a higher level throughout the Presidency. The proceedings of the committee were submitted to Government with the following recommendations :—

(1) That lines for a Native Infantry regiment should in future be built to accommodate 16 Native officers, 367 single rank and file, 367 married.
(2) That each single man should be allowed 52, each married man 128, square feet superficial area, but the blocks for the latter to be convertible into open pendals for single men.
(3) That in lieu of verandahs, the married quarters should be provided with small enclosures with walls 4 to 6 feet high.
(4) That the Officer Commanding a regiment ordered to build lines should be furnished with detailed plans and estimates showing the quantities of every description of material needed, and be required to build the lines for the amount of the cost of the materials calculated at the nerrick rate, *plus* a margin for contingencies, including cost of water-supply, tools, plant, &c., repairs to the same, which would have to be decided by local considerations and which must also provide for hired carriage at stations where Government transport is not available.
(5) That forms of accounts giving sub-heads of expenditure be authorized to check the accounts and to be a record of expenditure useful in future line building cases.

49. The proceedings were forwarded on to the Government of India by the Bombay Government under Government Resolution No. 3889 of 4th August 1883, with a recommendation that the proposals be accepted, provided the annual allotment of hutting money in the Bombay Military budget estimate for each year is not exceeded.

50. The order of the Government of India, as recorded in Government Resolution No. 6167 of 24th December 1883, were that in view to arriving at a final decision on the proposals put forward, the Government of Bombay were to arrange for the construction of two sets of lines in accordance with the plan and specifications accepted by the Government of Bombay, one at a station where materials are expensive, and the other where timber, tiles, &c., are obtainable at a cheap rate, and to cause the Government of India to be furnished with a report of the expense incurred at each place.

51. The reduction of the cost of the lines by limiting prospectively the number of families permitted to reside in them was at the same time suggested for consideration of the Government of Bombay.

52. In March 1884, the Quarter Master General, under the orders of the Commander-in-Chief, reported to Government that it was proposed to arrange for the construction of two sets

of Native Infantry lines, one set at Satara and one at Deesa; also to reduce accommodation to the following scale :—

80 married non-commissioned officers.
251 do. rank and file.
502 single do.

53. His Excellency the Governor in Council approved of the proposals in Government Resolution No. 1089 of 10th March 1884.

54. Satara, where the lines were in a very bad state, was selected as the station where it was considered the cost would not exceed the estimate of Rs. 27,000. Forty miles beyond are Government forests where timber could be procured at a cheap rate. Against this, however, was to be put the cost of carriage over the ghâts which was expensive, and the commencement of work on the railway line between Poona and the Southern Mahratta country made prices of all building materials rise considerably. Colonel Drummond, Commanding 22nd Regiment, Native Infantry, took great care in preparing the estimate and reported that the total cost would amount to Rs. 39,098. In explanation he stated as follows :—

"The local rates appear to be very high in nearly every instance, the consequence being that the various estimates framed by the committee in Poona are necessarily greatly exceeded. A large proportion of the articles required are not procurable in the town of Satara, and will have to be brought in from the surrounding districts, the cost of carriage therefore appears as a large item in the estimate. Water-supply is meagre and may have to be brought from the river, some three miles off, in the hot weather **. The prices for wood, including the carriage thereof, as supplied by the Forest Department, are very heavy, but I am of opinion that an arrangement can be effected for purchasing it at a cheaper rate. The procuring of earth for tiles and bricks presents some difficulties, but I hope these may be overcome when once the work is taken fairly in hand. Wire rope and telegraph wire not being procurable in Satara will also become expensive by the addition of carriage expense. The above few remarks which I have ventured to put forward show how prominent an item the cost of carriage must necessarily be. However" continues Colonel Drummond, "I feel confident that under any circumstances the whole cost of the construction of the lines will be very much less than that now shown in the estimate."

55. I have quoted thus largely from Colonel Drummond's letter to show that a distasteful task, for there is no disguising the fact that line building is great drudgery for both officers and men, would be undertaken with good will, energy, and a determination to do the best and as economically as possible.

56. During the monsoon months of 1884, the only work that could be undertaken was the collection of materials, and the men were also employed in quarrying stone for the plinths. So soon as the weather cleared, the building of foundations commenced and parties were detached to cut wood in the Government forests. Unfortunately no Government carriage was available and carts had therefore to be hired. By July 1885 building had progressed sufficiently for a reliable estimate to be framed of the probable cost of the lines.

	RS.	A.	P.
No. 1 married block cost	870	10	11
„ 2 „ „	755	2	3
„ 3 „ „	735	6	0
„ 1 single men's „	577	8	3
„ 2 „ „	394	7	7
„ 1 native officers' block cost	221	9	11
„ 2 „ „	205	7	4
„ 3 „ „	196	6	11
Giving an average—			
Married men's blocks cost	787	1	1
Single „ „	485	15	11
Native officers' „	207	13	5

Up to date (16th June 1887) the extent of work finished is—
11 married men's blocks leaving 5 to be built.
13 single „ „ 3 „
11 native officers' „ „ 5 „
and the total work, allowing a margin for contingencies, will cost Rs. 25,000 in round numbers.

57. Work has this year been a good deal hindered by company training and rifle practice, which were suspended last year.

58. *Deesa Lines.*—A preliminary estimate for these was prepared by the Officer Commanding 19th Regiment, Native Infantry, which showed that the cost of a set of lines at Deesa would be Rs. 76,399, of which sum Rs. 35,792 were for wood alone. The estimate was so enormous that the Superintending Engineer, Rajputana, was asked to prepare one based on the recommendations of the committee assembled in Poona and to limit the expenditure to Rs. 27,000 if possible.

I. Colonel Steele, Royal Engineers, kindly interested himself in the matter, and found that it was necessary to modify the original design, thereby reducing considerably the cost—

(1) He reduced the depth of foundation and the height of the plinth.

(2) To support the roof and lesson the expenditure on wood, he introduced pillars built at intervals of 9′ 8″, supporting two strong teakwood principal rafters.

II. The total estimate for material was Rs. 36,032, and as it was evident that a less sum would not suffice, sanction was accorded to the commencement of the work. Ground was broken on 12th May 1885, and on 1st August of that year Colonel Watts, who had lately succeeded to the command of the 19th Native Infantry, and an energetic officer, reported as follows :—

"The purchase of timber, I am given to understand, can be effected under the estimated cost, but the price of dry bamboo will exceed that estimated for. I am, however, tolerably confident that, notwithstanding the greater expense caused by the purchase of wood and bamboo, it will be found that on the whole estimate we shall be able to effect a considerable saving."

III. This anticipation will, however, be scarcely realized because for good engineering reasons certain modifications have had to be carried out, such as making the plinths and centre pillars of burnt brick, heightening and arching the doorways, and putting good teakwood into the cook-houses.

IV. The men of the 19th Regiment worked with good will and perseverance up to 20th November 1886, when work was struck, as the regiment was moving to Quetta.

V. On that date the following was reported to be the work done :—

8 single men's quarters } completed
1 married ,, ,, }
1 ,, ,, ,, ,, except tiling.
2 native officers' quarters ,,
6 foundations laid for single men's quarters.
1 ,, ,, ,, married ,, ,,

VI. The cost of this was as follows :—

	RS.	A.	P.
Actually expended	17,184	0	3
Value of materials handed over to the relieving regiment ...	10,393	0	0
Actual cost ...	6,791	0	3

These figures can, however, only be considered as approximate, and a later estimate (July 1887) shows the cost as follows :—

	RS.
Block, single men's quarters	700
,, married ,, ,, ...	1,200
Native officers' quarters	300

VII. So the total will come for a regiment to Rs. 36,200. Work was at a standstill during December, January and part of February, when it was recommenced by the 20th Native Infantry. This regiment having returned from Quetta in a very debilitated state of health, the work has not progressed so rapidly as when the 19th Native Infantry had it in hand.

59. *Sappers and Miners.*—Owing to the establishment of Sappers being considerably increased, it became necessary this year to supplement the hut accommodation. Ten blocks for single and married men were estimated for, and owing to the high prices of materials in Poona, it was found that Rs. 15,000 were required for these. Sanction was conveyed in Government Resolution No. 4733 of 19th November 1886, and Rs. 5,000 were provided in the budget of 1886-87, and Rs. 10,000 in that of 1887-88. Work was commenced in December 1886, and up to date seven pandals have been completed, the cost being—

	RS.
For one pandal, work being entirely provided by the regiment ...	1,494
Cost actually to the sappers	1,814

The latter sum is what the Officer Commanding the Sappers has paid. Owing to one company only being present at head-quarters, many of whom were employed instructing a body of 300 recruits, the services of a contractor were called in to supplement regimental labor. The excess over the sanctioned estimate is being paid by the men who contribute to a Sapper Line Fund. It will be observed that the cost of building lines in Poona is very heavy.

60. *Mhow.*—Quarters for a Native Infantry Regiment are being built at this station. Owing to one of the two regiments ordinarily stationed there having proceeded to Burma, much progress has not been made, and it is not possible to estimate what the cost will be.

61. Leaving aside the experience gained in building the lines at Satara, Deesa and Poona, we have had sufficient in previous years to show that the provisions of the hutting rules of 1864 cannot be carried out. From the date of their issue, the sanctioned allowances have been proved to be totally insufficient.

62. What rules should then take their place, care being taken not to throw a heavy burthen on the Military budget ?

In examining this question it will be well to bear in mind ;

(1) That it is in the end economical to Government to have well-built lines.

(2) That well built means not solely good walls, but more especially good roofs.

(3) That good roofs involve considerable expenditure in providing good timber.

(4) It may be accepted from experience that a set of well-built lines will last 25 years, at the end of which time the roofs must be replaced at two-thirds of the initial cost.

(5) That the cost varies with the stations.

(6) That the plan now recognized as the standard one satisfies the exigencies of health and accommodation.

63. If we further premise that four regiments will form the quota furnished by the Bombay Army for the garrisons of the Quetta District, seventeen sets of lines are required, viz., Ahmednugger 1, Ahmedabad 1, Poona 3, New Jhansee 2 (1 for Sappers and 1 for Regiment, Native Infantry), Mhow and Indore 2, Malegaon 1, Rajkote 1, Bhuj 1, Nusseerabad 1, Deesa 1, Satara 1, Neemuch 1, Baroda and Surat 1. (The other regiments at Kurrachee, Hyderabad, Jacobabad, Bombay and Aden are provided with Public Works quarters).

64. The budget provision for hutting allowances between the years 1874 and 1884 amounted to Rs. 4,97,000, whereas the expenditure was only Rs. 2,97,000. The reason of this is easily ascertained. It arose from so many regiments during the past nine years having been employed on foreign service, and to the restrictions by the Control Department which prevented new lines being built until lately. The consequences have been very damaging to the lines, as, owing to many remaining unoccupied, periodical repairs could not be carried out by the regiments, and nothing was done by the Public Works Department. Deterioration rapidly ensued, and now a considerable expenditure is the result.

65. We have further to bear in mind that the increased strength of regiments necessitates additional accommodation if sanitary rules and the prevention of over-crowding are to be kept in view.

66. Let us now see whether it be not possible to provide all this within the budget provision of past years.

67. The total provision between 1874 and 1884 was Rs. 4,97,000, or say Rs. 49,700 per annum. I will presume that in consideration of the extra strength of the army, Rs. 50,000 per annum will in future be accepted by the Government of India. The amount available in 25 years for hutting and repairs will amount to Rs. 12,50,000. Allowing reliefs to be carried out after every three years at a station, and that Rs. 3,000 are granted to a regiment for repairs, the cost of these in 25 years would be $\frac{17 \times 3,000 \times 25}{3}$ or say, to make it round numbers $6 \times 3,000 \times 25 =$ Rs. 4,50,000.

68. Deducting this amount from 12½ lakhs leaves Rs. 800,000 for new lines.

69. Taking the cost of lines to be—

	RS.
Satara	25,000
Deesa	36,000
Poona	44,000
Total ...	1,05,000, or an average of Rs. 35,000.

The amount available for new lines is per annum Rs. 50,000 — 18,000 = Rs. 32,000.

70. This sum would allow the seventeen regiments to be rehutted in a proper manner in 18½ years. It is thus seen that there would, even with a budget provision such as has been passed in by-gone years, remain a balance during the remaining 6½ years.

71. This might be devoted to extra grants for repairs, the present allowances being in many cases inadequate to the requirements. Some might also be devoted to assisting the Cavalry, whose lines are in a very bad state at present.

72. To carry out this system, it would be necessary to revise the present rules and to treat hutting as a public works matter. The existing general rules under which Native troops are called upon to hut themselves would not be disturbed. The proposed change is simply to transfer the budget from the control to the Public Works Department.

73. Budget provision having been made, proposals for new huts would be considered by the Commander-in-Chief in communication with Superintending Engineers of Circles. An estimate of the cost of materials having been prepared by Commanding Officers and Executive Engineers, an allotment would be made according to the necessities of the case, and an end would be put to the friction with the Control Department, whose hands are at present tied down by the hutting rules of 1864.

74. It is almost needless to say that the Commander-in-Chief would be careful to see that proper economy is observed. The past budget provision, as I have shown, is ample for the purpose, provided it be properly applied, and savings would be effected year by year as lines are improved.

75. After an attentive examination of the question, I can find no better plan than this for putting the hutting of Native troops on a proper footing. It will prevent extraordinary calls on the military budget, allow of suitable accommodation being provided and at the same time keep up among the Native troops of the Bombay Army that knowledge of hutting themselves so useful on field service.

POONA,
15th August 1887.

(Signed) F. ADAM, Brigdr.-Genl.,
Quarter Master General, Bombay Army.

Statement showing the stations at which lines for Native Troops have been built.

Stations.	Lines by whom built.	When built.	Amount allowed under hutting rules of 1864.	Total cost.	Excess over Government allowance.	Remarks.
		YEARS.	RS.	RS.	RS.	
Kirkee	Sappers and Miners.	1872—76 ...	6,000	25,045	19,045	Excellent lines (will last for 50 years), new portion being built for increased establishment.
Belgaum	1st N.I. ...	1867—70 ...	12,000	15,402	3,402	Handed over to Madras.
Do.	6th N.I. ...	1864—66 ...	12,000	12,000	...	
Surat	2nd N.I. ...	1866-67 ...	6,000	21,629	15,629	Will require new roofs in a year or two.
Malegaon	3rd N.I. ...	1864—66 ...	5,540	5,540	...	Require considerable repairs.
Do.	P.W.D. ...	...	.....	Unknown.	...	This portion of the lines consists of old European barracks converted into Native lines.
Mhow	6th N.I. ...	1864-65 ...	9,000	13,011	4,011	In very bad order; are now being rebuilt.
Do.	15th N.I. ...	1864—67 ...	9,000	9,000	...	These lines have been pulled down, being past repair.
Rajkot	18th N.I. ...	1868—73 ...	12,000	18,681	6,681	In good order.
Poona (Left Flank lines) ...	8th N.I. ...	1874—77 ...	12,000	31,000	19,000	A sum of Rs. 11,908 has lately had to be expended in thoroughly re-roofing these lines.
Do. (Right Flank lines) ...	10th N.I. ...	1863-64 ...	12,000	12,600	600	In good order.
Do. (Centre lines)	24th N.I. ...	1867—69 ...	12,030	49,239	37,209	Handed over to Madras.
Dharwar	12th N.I. ...	1873—75 ...	12,000	26,227	13,227	These lines were built in 1856; are in bad order and have required special grants, amounting to Rs. 13,828, to keep them in order.
Ahmedabad	2nd N.I. ...	1856 ...	11,000	11,000	...	In fair order.
Ahmednagar	16th N.I. ...	1866—71 ...	12,060	30,467	18,407	Were repaired in 1882-83 at a cost of Rs. 15,999.
Nusseerabad	17th N.I. ...	1862—64 ...	10,950	14,880	3,930	In very bad order.
Bhuj	1st N.I. ...	1860 ...	.....	8,820	...	In very bad order, roofs falling in, new lines being built.
Deesa	12th N.I. ...	1856 ...	.....	4,500	...	
				with the aid of materials of old huts.		
Baroda	8th N.I. ...	1855 ...	.....	9,522	...	In fair order.
Neemuch	... ...	1858 ...	.....	Unknown.	...	Only lines for 4 companies remaining; in bad order.
Bombay Marine lines	P.W.D. ...	1830 ...	.....	71,867 approximate.	...	Rs. 45,585 has been estimated for additional accommodation. Outlay in 1886 Rs. 8,000. Work in progress, 1887-88, Rs. 12,200.
Do. (Boree Bunder lines) ...	Do. ...	1823—36—40.	.....	Right Flank, 10 pendals; unknown. Cost of Left Flank shown to be about Rs. 6,5000	...	Government sanctioned in 1881 a sum of Rs. 3,165 as compensation for removal of Bunniahs' huts, and in 1881 a sum of Rs. 17,045 for the improvement of the lines.
Kurrachee	Do. ...	1844	.....	Unknown.	...	Originally built for European troops.
Hyderabad	Do. ...	1844	.....	46,584	...	
Jacobabad	Do. ...	1881—84 ...	.....	1,56,110	...	The pendals of the late Mountain Battery Train, valued at Rs. 3,602, are also occupied by the Infantry Regiment.
Aden	Do. ...	Crater Position 1886. Isthmus Position 1864-65.	.....	1,56,097 51,400	...	.....
Indore	Do. ...	1867-68 ...	.....	Unknown.	...	Have been ordered to be treated in future as ordinary lines; in bad order.

No. 905 OF 1887.

REPORT.

It is proposed in the Quarter Master General's present letter to place hutting under the Public Works Department and to grant building allowances according to estimates framed by officers of that department; also that, as a control on the budget, the yearly grant for hutting should be fixed at very little beyond what has been budgeted for during the past years, and that the disbursements should be sanctioned by the Commander-in-Chief in consultation with Superintending Engineers of Circles.

2. With regard to these proposals, I solicit a reference to the 1st paragraph of this office report No. 1228, dated 14th October 1886, to which I have nothing to add.

3. As Government are aware, the Government of India have repeatedly objected * to the provision of accommodation for Native troops being vested in the Public Works Department. It is, therefore, a question for their consideration whether it is expedient to refer the present proposal to that authority, whose sanction to the change of system involved is necessary.

* G.R. No. 3798, dated 27th July 1880.
" " 6587, " 22nd Dec. 1881.
" " 1902, " 19th May 1887.

4. Referring to the 64th paragraph of the printed memorandum attached to the Quarter Master General's letter, I attach a detailed list of the budget grants under the head "hutting money" for the Native army from 1874-75 to 1885-86, showing also the actual expenditure incurred on that account. These details appear to show how necessary it is that line building and repairs should be governed by some established rules, and that proposals for expenditure under this head should undergo a careful scrutiny.

POONA,
5th September 1887.

(Signed) H. COWPER, Lieut.-Col.,
Offg. Controller of Military Accounts.

Hutting Money, Native Army.

Years.	Sanctioned budget allotment.	Total actuals.
	RS.	RS.
1874-75	50,000	27,368
1875-76	51,000	23,079
1876-77	50,000	41,422
1877-78	35,000	37,938
1878-79	40,000	21,322
1879-80	50,000	33,979
1880-81	45,000	10,102
1881-82	45,000	44,940
1882-83	45,000	30,468
1883-84	86,000	22,307
Total of years taken by the Quarter Master General	4,97,000	2,92,925
1884-85	98,184	24,023
1885-86	1,00,000	61,385

From Brigadier-General F. ADAM, Quarter Master General, Bombay Army, to the Secretary to Government, Military Department, Bombay; dated Poona, 16th August 1887, No. 2-19—3158.

Government in their resolution in the Military Department No. 1902 of 19th May 1887 directed, with reference to an application made to them for sanction to the building by the Public Works Department of some Native Infantry lines at New Jhansi, that the proposal should be reconsidered in view to a reduction of the estimates as desired by the Government of India.

2. The correspondence which passed on this subject was but a continuance of many letters addressed of late years to Government, showing the unsatisfactory state of the question of building Native Infantry lines.

3. The Quarter Master General was directed thereon to draw up a memorandum showing what had been done in past years and suggest some remedial measures whereby it would be possible to house Native troops in a proper manner without throwing a heavy burden on the Military budget.

4. This has now been done, and I am desired to forward, for the consideration of Government, a memorandum showing what has been done in past years and what it is proposed should now be done.

5. A perusal of this shows plainly that the provisions of the Hutting Regulations of 1864 could not, from the very date of their issue, be carried out in their integrity; that large sums in excess of the hutting money have had to be disbursed in the aggregate; and that the prices of building materials vary according to the stations. The remedy proposed is to accept the above as facts which cannot be gainsaid: to place hutting under the Public Works and to grant building allowances according to estimates framed by officers of that department.

6. As a control on the budget, it is suggested that the yearly grant for hutting should be fixed at very little beyond what has been budgeted for during the past years, and that the disbursements should be sanctioned by the Commander-in-Chief in consultation with Superintending Engineers of Circles.

7. I am to say that the Provincial Commander-in-Chief recommends the adoption of this plan. It will safeguard sufficiently the interests of the State, do away with the anomaly of hutting being dealt with as at present by two distinct State departments, and remove the friction which at present exists owing to the hands of the Control Department being tied by the Regulations of 1864.

8. I am further to point out that it is very advisable that some orders on this subject should soon be passed. When four regiments were reduced in 1882, a corresponding reduction in accommodation had to be made at certain stations. On the other hand, the other regiments were augmented without anything being done to give extra quarters, and a certain amount of overcrowding was the result. Moreover this pressure was greatly increased when Dharwar and Belgaum were handed over to Madras without measures being taken to increase accommodation elsewhere as pointed out in this office letter No. 2-6—3060 of the 9th August 1887, to your address, and as stipulated for by Lieutenant-General Sir A. Hardinge when recommending the concentration of the Bombay Army. The absence of regiments in Burma has relieved the pressure *pro tem.*, but on their return to quarters, it will be imperative to erect new lines at New Jhansee. Should the Government of India be disinclined to sanction this, the only way of arranging for accommodation will be to resume Belgaum within the Bombay Command, a measure which the Provincial Commander-in-Chief would like to see carried out, as it is a station with which the Bombay Army has been long connected.

From Colonel A. C. TOKER, Deputy Secretary to the Government of India, Military Department, to the Secretary to the Government of Bombay, Military Department; dated Simla, the 28th April 1888, No. 1097-C.

I am desired to acknowledge the receipt of your letter No. 4315, dated the 24th November 1887, submitting a printed memorandum drawn up by the Quarter Master General, Bombay, under the orders of the Commander-in-Chief representing the present unsatisfactory state of the question of building lines for Native troops.

2. In view to remedying the difficulties described in the memorandum, it is proposed—
(1) to place hutting under the Public Works Department;
(2) to grant building allowances according to estimates framed by that department; and
(3) to fix a yearly grant for hutting, and to allow the Commander-in-Chief, in consultation with the Superintending Engineers of Circles, to sanction the disbursements.

3. In submitting these proposals it is pointed out that both the Controller of Military Accounts, Bombay, and the Public Works Department, Bombay, are opposed to the proposed revision of the system of hutting by transferring the budget to the Public Works Department, and sanction is solicited to an annual budget provision of Rs. 50,000 being made for line building in the Military Department.

4. In reply, I am to say that the Government of India, while approving generally of the principles on which the proposals of the Quarter Master General, Bombay, are based, concur with the Government of Bombay in thinking that the proposed grant should be made from the Military Department and not from the Military Works Department, and that the accounts in connection with the expenditure thereof should be audited by the Military Accounts Department. The officers of the Public Works Department should only be called on to give their advice and assistance in carrying out projected works.

Ahmednagar	1
Ahmedabad	1
Poona	3
New jhansi	2
Mhow and Indore	2
Malegaon	1
Rajkot	1
Bhuj	1
Nusseerabad	1
Deesa	1
Satara	1
Neemuch	1
Baroda and Surat	1

5. Before, however, passing any definite orders on the subject, the Government of India would be glad to be furnished with further explanation regarding the number of lines required in the Bombay Presidency. In para. 63 of the printed memorandum by the Quarter Master General, it is stated that 17 sets of lines are required as marginally cited. I am to inquire whether these 17 sets are required in addition to the new lines at Deesa, Satara and Poona, which, it is understood, have been recently completed.

No. . *From Brigadier-General M. PROTHEROE*, C.B., C.S.I., *Quarter Master General, Madras Army, to Brigadier-General A. KENNEY-HERBERT, Secretary to Government, Military Department; dated Ootacamund, 31st August* 1888, *No.* 2881-*B.*

I have been desired, by His Excellency the Commander-in-Chief, to acknowledge the receipt of your reference order No. 3112, dated 9th May 1888, forwarding for report a letter * No. 1099-C, dated 28th April last, from the Military Department of the Government of India (with enclosures) on the subject of a revision of the present system of hutting in the Madras Presidency.

* Herewith returned.

2. From the papers transmitted with your memorandum under acknowledgment, it appears that information is required as to the measures necessary for putting the Native Infantry Lines of the Madras Army in a proper sanitary state and in regard to hutting. The propositions on which His Excellency the Commander-in-Chief is asked to base his proposals are—

(1) That the provision of huts for the Madras Army should remain under the Military Accounts Department, the accounts in connection with expenditure thereon being audited in that department, the officers of the Public Works Department being called on to give their advice and assistance in carrying out projected works.

(2) That a yearly grant for hutting should be fixed, the Commander-in-Chief being authorised to sanction disbursements therefrom.

(3) That the huts should become the property of the State, the regiments receiving an allowance for maintaining them in repair.

(4) That the number of families residing in the lines should be reduced. The proportion now allowed in the Bombay Army seems suitable and might be followed.

3. With a view to placing Government in possession of particulars regarding the various hutting systems from time to time in force in the Madras Presidency and the results thereof, I have the honor to enclose copy of a note on the subject prepared from the records in this office.

4. In the opinion of His Excellency the Commander-in-Chief the measures necessary to put the Cavalry and Infantry Lines in this Presidency in a proper sanitary state are—

(1) The subsoil and surface drainage of the ground on which the lines of each regiment stand.

(2) The provision, where necessary, of a good water-supply (by means of wells or otherwise) and of adequate public latrine accommodation.

(3) The construction of huts with due regard to ventilation and sanitation as at present understood.

The works necessary under (1) and (2) to be executed under skilled supervision at the expense of the State.

Government has already * recognised the necessity for the employment of the Public Works Department in the construction of masonry drains in lines occupied by troops, and Sir Frederick Roberts in his minute on hutting, para. 81, which has practically been accepted by the Government of India, † assumes that Government will bear the expense of drainage, latrines, wells, &c. The Commander-in-Chief considers that, for the proper sanitation of the lines occupied by Native troops (which was urged by the Secretary of State in 1874),‡ no expensive system of drainage, &c., is requisite, subsoil drainage, where necessary and feasible, can be carried out as indicated in Parke's Hygiene at the cost of very little skilled labor, surface drains § would be constructed by the men under proper direction, and public latrines can be put up of corrugated iron, which can be removed whenever necessary at small expense to fresh sites (para. 82 of Sir Frederick Roberts' Minute).

* Proceedings of Government, No. 3475, dated 27th October 1871.

† Proceedings of Madras Government, No. 720, dated 3rd February 1883.

‡ See Proceedings of Madras Government, No. 3635, dated 9th November 1874.

§ Proceedings of Madras Government, No. 3475, dated 27th October 1871.

Much might gradually be done at comparatively little cost in these respects. There are no data at present available in this office from which the probable expenditure to be incurred can be calculated; but in order to avoid delay and make a beginning, His Excellency would suggest that a sum of Rs. 20,000 be provided in the Public Works budget estimates for 1889-90 for works of the above nature; meanwhile, Sir Charles Arbuthnot proposes to appoint a Committee at each station where there are lines for Native troops to consider and record the measures necessary to put each set of lines in a proper sanitary state on the principles indicated above, and to furnish an approximate estimate of the cost of such measures. When this information has been received, the amount to be expended annually on line sanitation works until the completion of the drainage, &c., of existing lines can be calculated, and a further representation on the subject made to Government. The drainage, &c., of all new sites for lines should be paid for out of this grant. In some cases actual money outlay in the execution of the above sanitary works might be avoided by the employment of prison labor thereon when available, but the work should be executed under the supervision of Public Works Department officers. To assist with their experience and advice, His Excellency would propose that the services of Public Works officers might be placed at his disposal for employment as members of the above Committees which will be assembled at the stations marginally noted. A medical officer will be appointed a member of each Committee.

Madras.	Trichinopoly.
Pallávaram.	Cannanore.
St. Thomas' Mount.	Quilon.
Vizianagrum.	Trichore.
Samalkot.	Bellary.
Berhampore.	Mangalore.
Bangalore.	

N.B.—In the cases of stations under the Madras Command outside the civil limits of the Madras Presidency, General Officers concerned will be requested to apply to local Governments for the services of Public Works officers.

5. In regard to the hutting of the Native Army, the Government of India has approved generally of the principle that the men are to build their own huts assisted by grants-in-aid from the military and not from the Military Works Department of the State, the Officers of the Public Works Department being only called on to give their advice and assistance in carrying out projected works. I am to say that such advice and assistance in the selection and purchase of material would be most useful to Commanding Officers of Native Regiments engaged in line building.

The grant for hutting during the next few years might tentatively be fixed at Rs. 80,000 made up as follows :—

	Rs.
New lines and purchase of old ones	60,000
Repair allowances	20,000
Total ...	80,000

According to the Madras Military budget estimates, the following has been the actual net money expenditure on hutting for the 8 years ending 31st March 1887 :—

	Rs.
1879-80	90,001
1880-81	47,534
1881-82	92,619
1882-83	1,36,910
1883-84	52,534
1884-85 Recoveries exceeded expenditure.	
1885-86	1,64,290
1886-87	1,31,476
Total ...	7,15,364
Less excess recoveries in 1884-85 ...	28,390
	6,86,974
Average for past 8 years ...	85,871

The allotment proposed for new lines would admit of two sets being built annually on the scale proposed by Sir Frederick Roberts and possibly of the purchase of an old set ; that for repairs is calculated on the annual expenditure on the Bombay scale for one Regiment of Cavalry and eight of Infantry, *i.e.*, on the assumption that hutting repair allowance will be drawn about once in four years by each Native Cavalry and Infantry Regiment in the Madras Army, exclusive of those serving in Burma. His Excellency's proposals thus amount to a total present annual expenditure of Rs. 1,00,000 * on the hutting of the Native Army in Madras, a sum which, though in excess of the average expenditure for the eight years ending on 31st March 1887 is considerably less than the actual expenditure in the two last years of that period, and which provides, in addition, for the gradual sanitation on previously considered plans of these lines.

	Rs.
* Drainage and sanitary work (P.W.D.)	20,000
Construction of new lines and purchase of old ones	60,000
Repair allowances	20,000
Total ...	100,000

6. The lines which are now the property of the men should, the Commander-in-Chief considers, be purchased by the State whenever a corps now occupying them may vacate them, the huts thereafter to remain the property of the State, repair allowances on the Bombay scale being drawn for them by the incoming corps and expended in keeping them in repair as provided in Bombay Barrack Regulations.

7. With reference to the proposed reduction of the number of families now living in the lines of a Madras Regiment, I have been desired to represent that in his Minute reprinted in Proceedings of Government, No. 720, dated 3rd February 1883, Sir Frederick Roberts, at that time Commander-in-Chief, Madras Army, suggested that all the Native Officers and Non-commissioned Officers and half the sepoys should be allowed to have their families living in the lines with them, the remaining sepoys being required to live *en garcon* in barracks. After some correspondence, with the concurrence of the Secretary of State, S.G.O. No. 77 of 1884 was published, the orders contained in which now regulate the number of families in the lines. From a return, dated 14th June last, prepared in the Adjutant-General's Office, it appears that the average number of relatives now

living in the lines of a Cavalry Regiment is 519, whilst that in the lines of an Infantry Regiment is 1,089. The accompanying statement shows that at present there is an average of about 226 men per regiment living *en garcon*. From para. 52 of the memorandum by the Quarter Master General, Bombay Army, it would appear that in 1884 accommodation was to be provided in two sets of Native Lines in the Bombay Presidency for—

80 Married Non-commissioned Officers.
251 Married rank and file.
502 Single do.

In reply to an inquiry from this office the Quarter Master General, Bombay, states that in the Bombay Presidency married accommodation is now provided for all Native Officers and Non-commissioned Officers and for one-third of the remainder of the men of a regiment, *i.e.*, for about 245 men.

Before making his final recommendations on this head, His Excellency desires to have the opinion of Commandants of Native Corps on the working of S.G.O. of 1884, and as to the probable effect of still further limiting the number of families in the lines, and on receipt of these a further communication will be made to you ; but this question might, Sir Charles Arbuthnot thinks, be considered and dealt with apart from those of the sanitation and hutting above discussed, because it is presumed that any orders having for their object the further reduction of these families would have only prospective effect, and, as in 1884, those who at present have their families with them, or who have enlisted on the understanding that they may bring their families into the lines after three years' service would not be interfered with, the process therefore of further reduction would be a very gradual one, and it would not be necessary to introduce any changes in the construction of the lines at present.

8. To sum up, the proposals of the Commander-in-Chief are—

(1) To allot Rs. 20,000 in 1889-90 in the local Public Works budgets for drainage and sanitation works on existing and new lines occupied by Madras troops, and, on completion of the inquiry proposed to be made in para. 4 of this letter, to allot an annual sum for this purpose until the work be completed.

(2) To provide Rs. 80,000 annually in the military budget for expenditure in the construction by the men of new lines, the purchase of old ones, and in repair allowances.

(3) To purchase the lines, now the property of the men, whenever the corps now in occupation may vacate them, the huts thereafter to remain the property of the State, repair allowances being drawn for them by the incoming corps and expended in keeping them in repair.

(4) To separate the question of a further reduction of the families in the lines from the above and to dispose of it hereafter when certain information now called for shall have been received and considered.

NOTE prepared in Quarter Master General's office on existing system of hutting Madras Regiments of Cavalry and Infantry.

In Madras there are at present four systems of hutting Native Troops, viz.:—
(1) The original system the rules of which are practically still in force.
(2) The State landlord system.
(3) The grant-in-aid system.
(4) The system introduced by Sir Frederick Roberts when Commander-in-Chief of the Madras Army.

(1) The original system prescribed by Madras Army Regulations, Paras. 2276, 2329 and partly * transcribed in Army Regulations, India, Vol. I, Part II, Paras. 274, 307 inclusive and under which most of the existing lines in this Presidency have been built.

This system, which was in force in 1813, and the rules regarding which were revised and republished in 1848 and 1861 (see G.O.G. No. 68, dated 28th March 1848, and Proceedings, Madras Government, No. 4206, dated 19th November 1861) briefly stated, is that hutting money is granted to regiments on every final change of station and to newly-entertained men at the following rates :—

* *N.B.*—When Army Regulations, India, were compiled it was proposed to include such of the hutting rules as were excluded from Vol. I, Part II, in Vol. II, Discipline; but it was subsequently decided that such rules should be republished in the Madras Barrack Regulations. No such code, however, has been issued, and consequently though all the hutting rules in Madras Army Regulations are practically still in force in this Presidency, those of them which were not republished in Army Regulations, India, Vol. I, Part II, do not now appear in any existing code, Madras Army Regulations being obsolete since the publication of Army Regulations, India. When the Madras Barrack Department is transferred to the Public Works Department as in Bengal and Bombay, and the present question of hutting money is finally disposed of on the lines laid down for Bengal and Bombay, it is presumed that one code of Barrack Regulations including hutting money for Native troops will be published for all India and added to Army Regulations, India.

	RS.
Subadars	24
Jemadars	12
Havildars	4
Naigues	3
Privates	2

The area to be occupied by the huts to be built, including their court-yards, is fixed by regulations as follows :—

Subadars	30′ × 40′
Jemadars	30′ × 30′
Havildar Major	30′ × 30′
Havildars and others	30′ × 20′
Trumpeters	30′ × 16′
Farriers	30′ × 16′
Drummers and others	30′ × 16′
Privates	30′ × 13′

The height of the centre walls of these huts to be 13 feet, and that of the side walls 8 feet.

On arrival at a station where no huts exist, the men build or arrange for the erection of their huts on the above scales, the lines being laid out according to regulation (Madras Army Regulations, Para. 2294), and the huts on completion become the property of the men.

Practically the hutting money allowance (Madras Army Regulations, 2276) has never been sufficient for the construction of new lines for Native Regiments, and it was always found necessary to obtain in addition an advance from Government for the purpose such advances were made under the provisions of Madras Army Regulations, Para. 2329, the amount being subsequently recovered from the men under regimental arrangements to the extent laid down in the scale prescribed in Madras Army Regulations, Para. 2305.

On the departure of a regiment from a station their huts are valued by a Committee, the maximum valuation allowed being fixed as follows :—

—	Tiled house.	Flat-roofed house.	Thatched house.
	RS.	RS.	RS.
Subadar Major	106	89	55
Subadar	94	78	45
Jemadar	62	54	31
Havildar Major, Havildars, &c.	34	31	17
Naigue, &c.	23	21	12
Private	18	15	9

(The total maximum valuation as above for a Regiment of Native Infantry amounts to Rs. 17,255 for lines containing tiled houses, Rs. 14,609 for flat-roofed houses, and Rs. 8,640 for thatched houses.)

The total amount of such valuation is drawn from Government before the departure of the regiment from its old station and distributed to the men, the price of the huts being recovered from the relieving regiment by such instalments as may be decided by Commanding Officers and paid to Government.

Should there be any interval of time previous to the arrival of the relieving regiment, a new committee of valuation may be assembled by the General Officer Commanding the Division or District, and the new occupants in such case are only required to pay the price of the huts according to the new valuation, the loss of the difference of value as fixed by the first and second committees being borne by Government. Under these rules, lines for 3 Regiments of Cavalry and 14½ Regiments of Infantry have been built and are now in occupation at the following stations in this command :—

Station.	Sets of Cavalry Lines.	Sets of Infantry Lines.
Vizianagrum		1
Berhampore		½ For Wing.
Cuttack		½ Do.
Bangalore		1
Cannanore		½ For Wing.
Quilon and Trichoor		1
Bellary	1	2
Secunderabad	1	4
Kamptee	1	1
Sitabuldi		½ For Wing.
Hoshungabad		½ Do.
Raipur		½ Do.
Sambulpur		½ Do.
Mangalore		1
	3	14½

Whenever such lines or any part of them are abandoned, the owners are compensated by Government, and should any huts in existing lines fall out of repair through being unoccupied, the material is sold by auction and the amount realized credited to Government. With reference to Army Regulations, India, Vol. I, Part II, Para. 286, the amount received for hutting is usually distributed amongst the men, who expend it wholly or partly in marching expenses (See Madras Army Regulations, Paras. 2291 and 2322) according to returns received from 9 regiments of Madras Infantry occupying huts built under above regulations, the average monthly stoppages made from each rank, until the value of their houses as estimated by valuation committees shall have been recovered, is as follows :—

	RS.	A.	P.
Subadars	6	9	1
Jemadars	4	0	2
Havildars	2	4	5
Naigues	1	9	6
Drummers	1	9	9
Privates	1	1	4

From a return prepared in this office in 1878 the average prices paid by troops for huts under this system and the average cost of their repairs annually to each rank were as follow :—

—	Tiled huts.		Flat-roofed huts.	
	Price.*	Cost of annual repairs.	Price.*	Cost of annual repairs.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Subadars	94 14 0	12 5 0	68 2 0	9 15 6
Jemadars	62 5 9	8 4 7	43 4 0	7 2 9
Havildars	34 2 9	5 4 9	28 4 0	3 1 2
Naigues	23 7 0	4 0 4	19 0 0	2 2 8
Drummers	23 9 4	4 2 0	19 0 0	3 1 0
Privates	17 9 8	2 3 7	13 0 0	1 8 1
Puckally	18 6 0	3 1 3	13 0 0	1 8 1

* This does not represent the average original *cost* of these huts which was probably greater than the above, Government in each case of the building of new lines being called on to pay the difference, if any, between the actual cost of the huts and the maximum valuation allowed under Madras Army Regulations, Para. 2305.

In 1871 the Government of India ruled in regard to the drainage of the lines of Native troops, that where masonry drains are not needed the necessary surface drainage of the lines of Native troops should, under proper direction, be constructed by the troops occupying the lines, but that where masonry drains are required they should be constructed by the Government in the Public Works Department at the cost of the State (See Proceedings of Madras Government, dated 27th October 1871, No. 3475).

In 1874 the Secretary of State for India called attention to the remarks by the Army Sanitary Commission on the Medical and Sanitary Report on the Native Army of Madras for the year 1871, which prescribed improved accommodation, subsoil drainage, and better water-supply as the cardinal improvements necessary in sepoy lines (See Proceedings of Madras Government, dated 9th November 1874, No. 3635). Much correspondence ensued, but up to date no final decision in regard to these sanitary measures has been arrived at, though the following experimental systems, described below, have since been introduced and the last of them is still under trial :—

(2) This may be called the "State landlord" system and a full account of it is given in Proceedings of Madras Government, dated 26th July 1879, No. 4050.

Under this system a set of lines was constructed partly under Engineer superintendence at Perambore, Madras, in 1852, at a total cost of Rs. 1,32,076 as follows :—

	RS.
Platforms	10,000
Lines	98,419
Drainage	23,657
Total ...	1,32,076

And these lines are now rented to their occupants at the following rates :—

	RS.	A.	P.
Subadars	1	8	0
Jemadars	0	12	0
Havildars	0	6	0
Naigues and Buglers	0	5	0
Bugle-Major	0	6	0
Privates and other ranks	0	4	0

No rent was apparently charged for these lines for the first ten years of their existence, but since December 1866 rent has been paid as follows :—

	RS.	A.	P.
From December 1866 to December 1876	24,883	5	3
„ „ 1876 to 31st March 1888	21,498	0	10
	46,381	6	1

Whilst the expenditure on repairs during the same period has been —

	RS.	A.	P.
From December 1866 to December 1876	22,904	1	9
„ „ 1876 to 31st March 1888	52,169	13	7
	75,073	15	4

The expenditure on the repairs of these lines therefore during the period from 1866 to 1888 has considerably exceeded the amount recovered on account of rent.

The annual cost to Government of lodging a Native Infantry Regiment in the lines at Perambore during the past 32 years may be estimated up to date at Rs. 10,307, calculated as follows :—

	RS.
Original cost of lines built in 1856	1,32,076
Add interest at 4 per cent. on original outlay for 32 years ...	1,69,057
Add actual cost of repairs for 32 years	75,074
	3,76,207
Less actual recoveries on account of rent between 1856 and 1888	46,381
	329,826
Balance net cost to Government since 1856	= 32

Rs. 10,307 annual cost.

(3) The third system may be called the "grant-in-aid" system. It was introduced in 1867, and is also described in Proceedings of Madras Government, No. 4050, dated 26th July 1876. An estimate of the cost of the lines is prepared and a grant to that extent made by Government. The money is paid in instalments to the Officer Commanding the Regiment for the purchase of material, &c.; the sepoys build the lines with the assistance of skilled labor. On completion a certain small amount is recovered from the sepoys, and the lines made over

to them as their property to be sold to the relieving regiment at a cost not exceeding that paid by themselves. The Ráyapuram lines at Madras were built on this system. Their cost, * exclusive of drainage and roads, was Rs. 46,727-13-11, of which Rs. 14,674 were subsequently recovered from the regiment, the net cost to Government of these lines, therefore, was Rs. 32,053-13-11.

* The total cost of these lines to Government inclusive of drainage and roads was Rs. 82,277-13-11.

On this system also the lines called the West Hutting lines at Bangalore were built. Their total cost (see Proceedings of Madras Government, dated 15th September 1881, No. 4971) was Rs. 100,894-10-7 including drainage.

In 1883, in reply to a reference from the Madras Government, the Government of India directed that as these lines had been built by the State, they should not be handed over to regiments, but continue to be maintained by Government (Proceedings of Madras Government, No. 6640, dated 8th December 1883); they are accordingly now rented to the troops occupying them at the same rates as charged for the Perambore lines.

So far as can be traced by the records of this office, the other lines built under this system were at Trichinopoly, in 1881, by the 21st Madras Infantry, when the State paid Rs. 31,500 for the lines and recovered from the regiment about Rs. 14,000; at Mangalore, in 1881, by the 33rd Madras Infantry, when the State paid Rs. 16,000 for a wing to complete existing lines and recovered about Rs. 7,254; at Cannanore, in 1881, by 34th Madras Infantry, when Rs. 10,820 were advanced for the lines of a wing to complete existing lines, of which at most Rs. 7,254 were repaid.

The dimensions of the huts built under systems (2) and (3) were not prescribed in Madras Army Regulations, Para. 2294, which only specifies the area to be occupied by the hut and its court-yard.

(4) The fourth system is that which, with the approval of Government, was tentatively introduced by Sir Frederick Roberts when Commander-in-Chief of the Madras Army. Under this system which is fully described in Proceedings of Madras Government No. 730, dated 3rd February 1883, the sepoy is required to construct and keep in repair his own lines, receiving such assistance in money as will enable him to provide suitable accommodatian for himself and family. The following scale has been fixed, the cost of each hut being divided into two sums, one portion being a gift from the State to be considered as full hutting allowance, the other to be an advance recoverable from the troops by monthly instalments :—

	Full hutting allowance.		Advance recoverable from soldier.		Cost of hut.	Cost per regiment.
Subadar	48	+	90	=	138	1,104
Jemadar	32	+	60	=	92	736
Havildar	20	+	32	=	52	2,132
Naigue and Drummer ...	16	+	20	=	36	2,016
Sepoy	12	+	16	=	28	20,160
						26,148

Half full hutting allowance to be paid on each change of station, provided the troops have kept the lines they have been occupying in proper repair.

The houses in the lines under this system were to be built of the following dimensions :—

All native officers, each $45' \times 17'{\cdot}5 = 787'{\cdot}5$.

Non-commissioned officers and drummers each $20'{\cdot}5 \times 17'{\cdot}5 = 358'{\cdot}75$.

Privates, married, each $11'{\cdot}5 \times 17'{\cdot}5 = 201'{\cdot}25$.

Do. single, each $6'{\cdot}5 \times 17'{\cdot}5 = 113'{\cdot}75$.†

† Subsequently reduced to 110 square feet inclusive of verandah (*vide* Proceedings of Madras Government, No. 2215, dated 24th April 1885).

Court-yards about 12' wide to be allowed to each family quarter. Government in addition to the above to meet other expenses for drainage, latrines, wells, &c. Married quarters to be provided for all the Native officers and non-commissioned officers and three-fourths of the men, the remaining 180 sepoys to occupy barracks (Proceedings of Madras Government, dated 29th March 1883, No. 1882).

Under this system Rs. 26,300 were allotted ‡ for the construction of new regimental lines for a battalion of Native Infantry at Trichinopoly.

‡ *Vide* Proceedings of Madras Government, No. 2648, dated 9th May 1883, and No. 597 of 2nd February 1885.

These lines were commenced by the 30th Madras Infantry soon after receipt of the above orders of Government and were completed by the same regiment on the 3rd October 1885, their actual cost being Rs. 25,481 (exclusive of cost of five wells and five latrines Rs. 1,660).

They afford accommodation for 16 Native Officers, 608 married non-commissioned officers and men, 192 single non-commissioned officers and men, and 34 drummers and musicians, and include 4 cook-houses for the single men's quarters. As the 30th Regiment, Madras Infantry, left Trichinopoly soon after the completion of these lines (on the 20th April 1886), no deductions were made from the sepoys of this regiment, who, however, received no hutting money on leaving Trichinopoly. The question of the terms under which these lines are to be occupied by the succeeding regiment (the 17th Madras Infantry) is now under reference to Government.

At Bangalore, under the authority conveyed in Proceedings of Madras Government, dated 11th August 1884, No. 3870, a set of lines for a Native Infantry Regiment was commenced on the 15th November 1884 by the 14th Regiment, Madras Infantry, but the work was not completed when that regiment left Bangalore for Burma on the 4th March 1887. On return of the 1st Pioneers from Upper Burma that regiment was posted to Bangalore, and took over these incomplete lines on the 24th June 1887. Rs. 18,484-10-1 have been expended on these lines up to the 31st July 1888, and the Commandant, 1st Pioneers, calculates that they will not be completed at present rate of progress till the end of the current year at earliest.

The records of this office show that during the 7 years* ending 31st March 1888, the actual expenditure on hutting money to regiments on change of station† (heads I and IV, Para. 275, Army Regulations, India, Vol. I, Part II), at the rates authorised (Para. 274, Army Regulations, India, Vol. I, Part II) has been as follows:—

* Accurate information is not obtainable for a longer period.

† The amounts expended under heads II and V could not be ascertained without undue delay.

1881-82	13,065
1882-83	5,891
1883-84	16,319
1884-85	12,216
1885-86	23,045
1886-87	27,576
1887-88	7,986
Total ...	106,098
Annual average ...	15,157

The loss sustained by Government during the same period on account of deterioration of huts and their consequent revaluation at reduced rates on delivery to new occupants was as noted hereunder—

	RS.
1881-82	1,501
1882-83	223
1883-84	10,351
1884-85	3,583
1885-86	2,520
1886-87	4,784
1887-88	629
Total ...	23,591
Annual average ...	3,370

The accompanying table shows, as far as the records of this office admit of it, the Native Cavalry and Infantry lines now existing in the Madras Presidency, the year of their erection, the system under which they were built, and the amount of advance sanctioned by Government for their construction.

OOTACAMUND,
31*st August* 1888.

(Signed) M. PROTHEROE, Brigdr.-Genl.,
Quarter Master General.

Return showing number of men in Madras Regiments on 1st May 1888 who do not support their relatives in the lines.

Corps.	Number of men of 3 years' service and under on the 1st May 1888, who are not allowed to support relatives in the lines.	Number of single men over 3 years on 1st May 1888, who do not support relatives in the lines.	Total.
Native Cavalry.			
1st Madras Lancers	152	79	231
2nd do. do.	164	40	204
3rd Light Cavalry	224	36	260
4th do. do.	140	16	156
Queen's Own Sappers and Miners ...	283	12	295
Native Infantry.			
1st Madras Pioneers	181	37	218
2nd do. Infantry	191	137	328
3rd Light do.	145	33	178
4th Madras Pioneers	257	55	312
5th do. Infantry	81	119	200
6th do. do.	155	122	277
7th do. do.	70	124	194
8th do. do.	145	103	248
9th do. do.	125	63	188
10th do. do.	214	77	291
11th do. do.	141	56	197
12th do. do.	134	61	195
13th do. do.	161	83	244
14th do. do.	121	149	270
15th do. do.	177	66	243
16th do. do.	57	26	83
17th do. do.	148	85	233
19th do. do.	256	34	290
20th do. do.	146	69	215
21st do. do.	223	32	255
22nd do. do.	98	42	140
23rd Light do.	188	71	259
24th Madras do.	113	71	184
25th do. do.	183	100	283
26th do. do.	133	67	200
27th do. do.	209	117	326
28th do. do.	29	131	160
29th do. do.	25	64	89
30th do. do.	67	113	180
31st Light do.	197	92	289
32nd Madras do.	... *	... *	... *
33rd do. do.	116	109	225
Total ...	...	...	8,140
Average ...	...	...	226

* Return not received.

OOTACAMUND,
31*st August* 1888.

(Signed) M. PROTHEROE, Brigdr.-Genl.,
Quarter Master General.

Statement showing existing lines, probable date of their erection, system under which they were built and their cost in cases in which they were provided at the expense of the State or with the aid of a grant from the State.

Station.	Probable year of construction.	Huts. Description, i.e., tiled, flat-roofed or thatched.	Huts. Accommodation (for a Regiment, Wing, &c.).	System under which built (I, II, III, IV).	Amount of advance or assignment made by Government.	To whom now belonging.	Remarks.
1	2	3	4	5	6	7	8
					Rs.		
Perambore	1852	Tiled	Regiment	II	132,076 *	Government.	
Rávapuram	1867	Do.	Do.	III	82,277	9th M.I.	
St. Thomas' Mount	Not known	Do.	1 Company	I	...	Government...	These lines were purchased by Government on disbandment of the Golundauze in 1864.
Pallávaram	1861	Do.	200 Men	I	...	Do.	Native Infantry Depôt lines purchased by Government on removal of 23rd Light Infantry in 1862.
Berhampore	Not known	Do.	Wing	I	...	5th M.I.	
Vizianagrum	Do.	Do.	7 Companies.	I	...	28th M.I.	
Samalkot	1882	Do.	1 Company	II	6,360	Government.	
Cuttack	Not known	Tiled and thatched.	Wing	I	...	5th M.I.	
Bangalore — East Hutting lines.	Do.	Tiled	Regiment	I	...	25th M.I.	
Bangalore — West " "	1872	Do.	Do.	III	100,894	Government...	These lines were built under the Grant-in-aid system, but were subsequently taken over by Government under construction.
Bangalore — South " "	1884	Do.	Do.	IV	26,300 *	Do.	* The amount shown as cost is that of the estimate.
Trichinopoly. North lines	1881	Do.	Do.	III	31,500	4th Pioneers.	
Trichinopoly. South "	1883	Do.	Do.	IV	27,141 †	Government...	† Includes Rs. 1,660 for latrines and wells.
Cannanore	1865	Do.	Do.	I ‡	...	11th M.I.	‡ Bachelors' blocks for 84 men were built in 1885 under the Grant-in-aid system at a cost of Rs. 2,516, of which the regiment repaid Rs. 1,344.
Quilon	Not known	Thatched	6 Companies.	I	...	22nd M.I.	
Trichoor	1869	Tiled	1¾ Companies.	I	...	Do.	
Bellary — Cavalry lines	Not known	Do.	Regiment	I	...	4th L.C.	
Bellary — North "	Do.	Do.	Do.	I	...	14th M.I.	
Bellary — South "	Do.	Do.	Do. §	I	...	Government...	§ These lines have been unoccupied for some time, and 268 huts have had to be removed.
Secunderabad. Bowenpilly	Do.	Do.	Do.	I	...	3rd L.C.	
Secunderabad. Begumpett	1871	Do.	Do.	I	...	19th M.I.	
Secunderabad. Marudipilly	Not known	Do.	Do.	I	...	2nd do.	
Secunderabad. Tarbund	Do.	Do.	Do.	I	...	21st do.	
Secunderabad. Chikulgudiem	Do.	Do.	Do.	I	...	26th do.	
Kamptee — Cavalry lines	1863	Do.	Do.	I	...	2nd Lancers.	
Kamptee — Aujini "	Not known	Do.	Wing	I	...	20th M.I.	
Kamptee — Yerkara "	Do.	Do.	Do.	I	...	Do.	
Sitabuldi	1865	Do.	Do.	I	...	23rd L.I.	
Raipur	Not known	Do.	Do.	I	...	24th M.I.	
Sambalpur	1869	Do.	Do.	I	...	Do.	
Hoshangabad	1867	Do.	Do.	I	...	23rd L.I.	
Belgaum — Right flank lines	1867	Do.	Regiment	Bombay Hutting Regulation.	15,402	Government.	
Belgaum — Left " "	1864	Do.	Do.	Bombay Hutting Regulation.	12,000	Government.	
Mangalore	Wing, 1865 Do. 1881	Do.	Do.	I ‖	...	31st L.I.	‖ Huts for 35 married men and 3 bachelors' blocks for 84 men were added to these lines in 1887 under the Grant-in-aid system at a cost of Rs. 2,865, of which Government recovered Rs. 1,965.

OOTACAMUND,
31*st August* 1888.

(Signed) M. PROTHEROE, Brigdr.-Genl.,
Quarter Master General.

No. . *With report from Controller of Military Accounts*; 19*th Oct.* 1888, *B.*

ORDER THEREON, 29 November 1888, No. 7724.

Ordered that the Government of India be addressed.

2. The Public Works Department will be asked to make the services of an officer available, if possible, at each of the stations named in para. 4 of the Quarter Master General's letter for employment as members of the Committees to be assembled under the orders of His Excellency the Commander-in-Chief to consider and record the measures necessary for putting the lines of the Native regiments at those places in a proper sanitary state.

3. With reference to para. 5 of the Quarter Master General's letter, the Government in the Military Department trust that Officers of the Public Works Department may be instructed to give their advice and assistance in the selection and purchase of materials whenever the men of Native Regiments are engaged in building their lines.

4. The sanction of the Government of India will be sought to the provision in the Public Works Budget for 1889-90 of a sum of Rs. 20,000 for drainage and sanitary works in connection with Native lines.

5. The proposals of His Excellency the Commander-in-Chief in regard to the reduction of the number of families allowed to live in Native Regimental lines are awaited.

No. . *To the Secretary to the Government of India, Military Department*; *dated 29 November* 1888, No. 7725.

(True Extract.)

Brigdr.-Genl.,
Secretary to Government.

To the Quarter Master General.
" Controller of Military Accounts.
" Public Works Department.

Exd. E. C. Shunker.

No. 3722 W d/26.X1.88

B

Commd: with reference to para 3 of the fore-going order to all Supty: Engrs: in view to the necessary instructions being issued to officers under their orders.

2. with reference to para 2, Supty: Engrs: concerned will report the names of officers of the Dept: nominated by them to serve on the Committees that will be convened at the stations named by the Dr Mr Genl: in para 4 of his No 2881-B. d/ 31st Augt/88.

Accts
22.11.88

Dr
23/11/88

S.E's ✓
Ex: Dr. accts: ✓
Supty: Engrs: ✓

Gobt. of {1888} Madras.

MILITARY.

To THE QUARTER MASTER GENERAL,
&c., &c., &c.

Dated November,

Issued

Recd. 21.11.88 *Encl.*

G.O., 19 November 1888, No. 7724

SECRETARY TO GOVERNMENT
21 NOV.
P.W. DEPARTMENT, MADRAS.

NOVEMBER.

Nos.

G.O. 3722 W d/ 26.X1.88

Military Buildings—Native Lines.

Hutting.—Orders passed on a report on the subject of a revision of the present system of — in the Madras Presidency.

2 Copies to Supty

with order

DW
11

No 3722 W d/26/11/88

Secd

Is it necessary to send this Order to the II Circle, & to the S.E. Periyar Project?

BP
27/11/88

H.C

Please send to II Circle for recording his Advice but not to Periyar

JB

Kuzhakkd
88
27/11/88