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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W. DEPARTMENT

G.O. No. / B.P. No.	1084, W 1085	Press. / Mis.
Dated	29-4-1886	~~198~~ .

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2

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following papers :—

Resolution of the Government of India, Military Department (Accounts—Budget), dated Fort William, 24th March 1886, No. 445 M.W.

MADRAS.

Orders on the Military Works Budget Estimate for 1886-87 *and Revised Estimate for* 1885-86.

Read—

Military Department Resolution, No. 1208 M.W., dated 27th October 1885.
Letter, No. 3093 W., dated 30th December 1885, from the Government of Madras.
Military Department telegram, No. 218 M.W., dated 18th February 1886.
Telegram, dated 19th February 1886, from Government of Madras.

Resolution—

The estimates of revenue are accepted for the sums entered in the following table :—

REVENUE.

—	Budget estimate, 1886-87.	Revised estimate, 1885-86.	Budget estimate, 1885-86.	Actuals, 1884-85.
	RS.	RS.	RS.	RS.
In Public Works Department	30,000	29,500	29,500	33,586

EXPENDITURE.

2. *Budget estimate*, 1886-87.—The estimate has been framed for the total provisional grant of Rs. 6,50,000 sanctioned in Military Department resolution, No. 1208 M.W., of the 27th October last. It is represented that the grant for minor works and repairs is insufficient to meet the requirements under these heads, and that a further grant of Rs. 1,94,000 * is necessary for this purpose. The Government of India are, however, not prepared to increase the grant already assigned, and desire that the distribution of the allotments for original works may be reconsidered with regard to the number of troops likely to be retained in Upper Burma. The amount of such reductions as may be decided upon may be applied to minor works and repairs subject to a total limit of Rs. 27,000 for minor works and Rs. 3,25,000 for repairs.

	RS.
* Repairs	78,432
Minor works	78,000
	1,56,432
Establishment and tools and plant at 24 per cent.	37,544
	1,93,976
Or in round figures ...	1,94,000

3. The details of the estimate for original works are provisionally accepted subject to the following remarks:—

i.—Class A Works.— The allotments for items 1 to 7 are passed subject to the reconsideration referred to in paragraph 2. The grant for item 9, fortified post at Agram, is also passed provisionally, pending receipt of a report as to the nature of the further work to be carried out. It was understood that the work had been completed last year.

ii.—Class B Works.—None of the works in this list appear to the Government of India to be of much urgency: they might be postponed to the extent necessary to provide for increased allotments under the head minor works and repairs.

iii.—It is noticed that provision to the extent of Rs. 40,000 is proposed for alterations to the offices of the Accountant-General and Controller of Military Accounts to make the building suitable for the accommodation of troops. This expenditure would have been necessary had another building for the accommodation of the Military Account offices been acquired. But the scheme for the location of these offices in the building known as "The Mansion" has fallen through, and with it the need for the alterations. The proposed allotment of Rs. 49,600 * for alterations to the offices in the fort is accordingly withdrawn.

* Including establishment and tools and plant charges.

iv.—Item 9 (B), Constructing a new magazine in the Wallajah berm, Rs. 20,000.—The grant is passed provisionally, pending sanction of the Government of India to the commencement of the work; but the necessity of the work must first be fully explained and the estimate duly sanctioned.

v.—Accommodation for additional troops.—A special grant of Rs. 44,000 (including establishment and tools and plant charges) is hereby sanctioned to provide for additional accommodation owing to increased strength of British troops.

4. The modifications ordered in clauses iii and v of the foregoing paragraph result in a net reduction of the provisional grant of Rs. 6,50,000 by Rs. 5,600. The final issue of the budget estimate for 1886-87 should therefore be prepared for a total expenditure of Rs. 6,44,400.

5. *Revised Estimate for* 1885-86.—The estimate is passed for the full amount of the existing grant, Rs. 4,67,000.

6. The details of the estimates of expenditure passed by the Government of India are shown in the following table:—

	Budget estimate, 1886-87.	Revised estimate, 1885-86.	Budget estimate, 1885-86.	Actuals, 1884-85.
	Rs.	Rs.	Rs.	Rs.
Original Works {In progress	91,600	2,04,600	2,29,646	2,09,361
Original Works {Not commenced	1,01,000			2,83,366
Repairs	3,25,000	1,71,300	2,94,549	
Total, Works and Repairs ...	5,18,500	3,75,900	5,24,195	4,92,727
Establishment	1,20,700	87,400	1,20,563	1,14,345
Tools and Plant	5,200	3,700	5,242	4,935
Grand Total ...	6,44,400	4,67,000	6,50,000	6,12,007
Deduct—Expenditure in England	...	...	...	250
Net Indian outlay ...	6,44,400	4,67,000	6,50,000	6,11,757

7. It is observed that the estimates for the four class A works named in the margin have been revised without reference to the Government of India. It is of course within the competency of the Government of Madras to revise estimates within authorised limits, but in the case of military works it appears desirable that the Government of India should be informed of the causes which have led to the sanction of enhanced estimates.

	Amount of Estimate. Budget, 1885-86.	Budget, 1886-87.
	Rs.	Rs.
Item 1.—Barrack for British Infantry, Malapuram ..	1,31,610	1,35,094
,, 3.—Royal Artillery barracks, St. Thomas' Mount.	1,35,050	1,46,910
,, 4.— Do. stables do. ..	20,160	21,702
,, 9.—Fortified post, Agram	34,280	38,790

8. The authority herewith given to incur expenditure within the limits of the grants shown in the table in paragraph 6 is subject to the condition of a strict observance of the rules in force with regard to the financial regularity of departmental work.

Order—

Ordered that the foregoing be communicated to the Government of Madras, for information and guidance, with the request that 45 printed copies of the budget estimate as now passed may be submitted so as to reach the Government of India not later than the 1st May 1886.

Ordered, also, that a copy be forwarded to the Accountant-General, Public Works Department, for information.

From Colonel E. FAUNCE, Officiating Quartermaster-General, to the Secretary to Government, Public Works Department, dated Ootacamund, 16th April 1886, No. 1540 A—Through the Secretary to Government, Military Department.

In reply to your letter, No. 13950, of 6th instant, forwarding copy of resolution (*a*) of the Government of India on the military works budget of this presidency for the current year, I am desired to state as follows as regards the several points on which you request information.

(*a*) No. 445 M.W., of 24th March 1886.

I. The Commander-in-Chief regrets that he finds himself unable to recommend any modification of allotments for items 1 to 7, class A works, with reference to the number of troops likely to be retained in Upper Burma, the whole of them being works of special urgency; but, if Government consider it absolutely necessary to make a reduction in the allotment for original works, His Excellency, in deference to such opinion, would, though most reluctant to do so, suggest that expenditure be deferred on items * 2 and 5 only of that list. It may be observed here that, as under present conditions there is no probability of a third regiment of Madras Infantry being located at Trichinopoly, His Excellency has recently submitted† to the Government, in the Military Department, a proposal to appropriate from the grant of Rs. 18,000 made for buildings for two regiments, Madras Infantry, at that station (item No. 6) a sum of

	Grant. Rs.
* 2. Fort St. George: Converting a racquet court into a covered gymnasium	9,890
5. Bangalore: Public buildings for a regiment of Madras Cavalry ...	14,000

† Quartermaster-General's letter, No. 1420 A, of 7th April 1886.

Rs. 9,000 towards the execution of certain repairs necessary to the Commissariat granary buildings on the beach at Madras to render them suitable as store-rooms for the accommodation of stores to be removed from the casemates in Fort St. George, which it is contemplated ‡ to hand over to the Ordnance Department. The remainder of the grant (viz., Rs. 9,000), His Excellency proposes should be spent on the erection of a magazine at Trichinopoly for the one regiment, Madras Infantry, now placed on the new site, the only outlay actually requisite in the current year for buildings for that regiment, and on the construction of stone drains urgently required for the new lines there, regarding which Government will be addressed separately. Estimates for these works have not as yet been received, but, roughly, they may be expected to cost, the former about Rs. 2,000, and the latter about Rs. 7,000.

‡ Paragraph 8 of Quartermaster-General's letter, No. 345 A, of 28th January 1886, to Secretary to Government, Military Department.

II. The further works requisite on the Agram fortified post are those below noted as already sanctioned—

(*a*) A guard-room and fire-engine shed at Rs. 1,490, sanctioned in proceedings of Government, No. 3059 W., of 18th December 1885 (Military Department No. 48 of 5th January1886).

(*b*) A latrine at Rs. 390, sanctioned in proceedings of Government, No. 250 W., of 28th January 1886 (Military Department No. 827 of 8th February 1886).

These works represent an aggregate cost of Rs. 1,880, so that the grant for this year would be reduced from Rs. 5,000 (the amount fixed when the probable maintenance of an Ordnance depôt was contemplated) to Rs. 1,880, the saving of Rs. 3,120 passing to the grant for minor works. It may be here noted that the decision not to maintain an Ordnance depôt in the fortified post does not do away with the necessity for the works above mentioned, which will still be requisite for the guard, &c., to be kept in the post for the magazines and armament.

III. His Excellency is of opinion that all the works entered in class B of the preliminary issue of the budget are of real urgency, and cannot, therefore, well be postponed, but in view of the present financial pressure, His Excellency will be prepared to relinquish this year the grant (item No. 12) for constructing a drawbridge and gate for the Vellore fort (Rs. 6,450) in order to provide for increased allotments under minor works and repairs.

IV. The necessity for a new magazine in the Wallajah berm, in Fort St. George, is as follows and has already been explained to Government, in the Military Department, in letter, No. 345 A., of 28th January 1886, from this office.

(*a*) The existing magazines in Fort St. George are not considered safe and serviceable for the accommodation of the powder, &c., required for the fort armament.

(*b*) The Ordnance Department requires more accommodation than the magazine at the Mount alone provides for powder, &c., which of necessity is maintained at Madras and near it.

V. The only new additional buildings required in connection with the augmented strength of British troops in this presidency are stables * for 66 extra horses, British Cavalry, at Bangalore, estimated to cost Rs. 6,000, at Rs. 87 (say 90) per horse. Besides these new buildings, alterations to the British Cavalry Barracks * at Bangalore to provide for the extra men to cost approximately Rs. 1,000 and alterations and additions to blocks of married quarters and to the building late in occupation by the Adjutant-General, and now occupied by the offices of the Surgeon-General, Her Majesty's Forces, &c., in Fort St. George, rendered necessary by the withdrawal of the scheme for locating the Account offices outside the fort, are imperative to provide accommodation for troops. The cost of these latter alterations, &c., cannot here be stated as estimates for them have not yet been received, nor of the improvements

* Proceedings of Government, Military Department, No. 183, of 8th January 1886.

emergently required to the old barracks at St. Thomas' Mount which are now occupied by the I/4th Brigade, Royal Artillery, and detachment, 2nd Battalion, South Wales Borderers. His Excellency would therefore suggest that, in the final issue of the budget, the grant † of Rs. 44,000 for providing additional accommodation for British troops be distributed somewhat in the following manner :—

† Paragraph 3, clause 5, Government of India resolution above quoted.

Bangalore.

	Rs.
British Cavalry Barracks and Stables	8,000
Fort St. George and St. Thomas' Mount.	
Sundry alterations and improvements as above noted	36,000
Total ...	44,000

No. 2427, Military.

Forwarded.

OOTACAMUND, 19th April 1886. (Signed) A. R. KENNEY-HERBERT, Lieut.-Col., Secretary to Government.

ORDER—dated 29th April 1886, No. 1084 W., Public Works.

The allotments for original works under classes A and B have, in communication with His Excellency the Commander-in-Chief, been revised as desired by the Government of India; and the final issue of the Imperial military works budget estimate for 1886-87 has been prepared, as shown below, for the reduced grant of Rs. 6,44,400 sanctioned by the Government of India in their resolution read at the head of these proceedings :—

		Rs.
Original works ...	In progress	58,996
	Not commenced	1,49,039
		2,08,035
Repairs		3,10,465
Establishment		1,20,700
Tools and plant		5,200
	Total ...	6,44,400

2. The provision for minor works has been increased to Rs. 27,000, the limit fixed by the Government of India; and that for repairs to the extent * of the available grant after distribution to Original Works, Establishment, and Tools and Plant.

* Rs. 3,10,465.

3. The further works to be carried out in connection with the fortified post at Agram are detailed in paragraph 2 of the Quartermaster-General's letter, No. 1540 A., dated 16th April 1886, recorded above; and in the opinion of His Excellency the Commander-in-Chief they are necessary. As the cost of these works amounts to Rs. 1,880 only, the provision made for the project in the preliminary budget has been reduced to the extent actually required.

4. The necessity for constructing a new magazine in the Wallajah berm, Fort St. George, has already been fully explained in Military Department letter, No. 1078, dated 18th February 1886; and the Government of India will now be requested to authorise the commencement of the work so soon as plans and estimates have been sanctioned. Steps should be taken for the early submission of the plans and estimates, which the Superintending Engineer, V Circle, reported would be ready in April 1886.

5. Provision to the extent fixed by the Government of India has been made for the additional buildings required in connection with the increased strength of British troops detailed in paragraph 5 of the Quartermaster-General's letter† recorded above. Estimates for the works should be submitted with the least possible delay.

† No. 1540 A., dated 16th April 1886.

6. The Government of India will be addressed with respect to the remarks in paragraph 7 of their resolution.

7. The sum of Rs. 9,000, required for the Commissariat granary buildings on the beach at Madras, will be allotted as an addition to the repair grant to the Presidency division for 1886-87 in the orders on the statement of demands on account of incomplete and minor works and repairs.

8. Provision has been made in the budget for the marginally-noted works which His Excellency the Commander-in-Chief considers urgent. The necessary estimates should be submitted without delay.

Erection of a magazine at Trichinopoly of one regiment of Madras Infantry.
Construction of stone drains required for the new lines at Trichinopoly.

9. The revised estimates for 1885-86 against "Original Works and Repairs," as shown in the preliminary issue, have been altered to Rs. 1,89,204 and Rs. 1,72,995 respectively, with reference to the transfers of funds since approved* by the Government of India, and to the transfer of Rs. 1,700 from repairs to original works, sanctioned in proceedings of the Madras Government, No. 152 W., dated 18th January 1886. In the absence of information requested in the telegrams noted in the margin, as to the cause of increase in the revised estimate as fixed by the Government of India, the amount shown in the preliminary issue has been retained.

* No. 99 W., dated 11th Jan. 1886.
" 679 W., " 13th Mar. "
" 764 W., " 22nd Mar. "

Telegram, dated 2nd April 1886.
" " 22nd " "

10. With these remarks, the final issue of the Imperial military works budget estimate for 1886-87 will be printed and circulated for the information and guidance of the officers of the department; copies, as noted in the margin, being forwarded to the Government of India.

To Simla	... ...	20
" Calcutta	... ...	25
		—
		45
		—

(Here enter No. 1085 W., dated 29th April 1886.)

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

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

Exd. E. Fernandez.
Spare Copies

4

GENERAL.
ACCOUNT.

Govt. of {1886} Madras.

PUBLIC WORKS.

Dated April, 21*st*.

Recd. *Encl.*

G.O., 29th April 1886, No. 1084 W.

APRIL.

Budget Estimate

Imperial military works — *for* 1886-87.—
Orders circulating the final issue of the —.

5

29TH APRIL 1886, No. 1085 W., PUBLIC WORKS.

PUBLIC WORKS DEPARTMENT.

General,
Account.

LETTER—from

COLONEL J. SHAW-STEWART, R.E.,
Secretary to the Government of Madras,
Public Works Department,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
MILITARY DEPARTMENT.

SIR,

With advertence to Government of India resolution, No. 445 M.W., dated 24th March 1886, I am directed to forward a copy of the proceedings of this Government, No. 1084 W., dated 29th April 1886, together with copies of the final issue of the Imperial military works budget for 1886-87, framed in accordance with the orders of the Government of India and the suggestions of His Excellency the Commander-in-Chief, Madras.

2. In reply to the remarks of the Government of India in paragraph 7 of the resolution above quoted, I am desired to submit the following observations:—

Item 1—*Barracks for British Infantry, Malapuram.*—The circumstances which led to a revised estimate being sanctioned for this work were explained in my letter, No. 1087 W., dated 1st May 1884. Since then no further revision has taken place; but, in their proceedings marginally noted, this Government sanctioned certain supplemental estimates for additional works brought forward by His Excellency the Commander-in-Chief as urgently necessary, and the total sanction was thus brought up to Rs. 1,35,094.

No. 1275 W., 2nd June 1885.
„ 1416 W., 17th „ „
„ 1652 W., 15th July „
„ 2845 W., 27th Nov. „
} Copies attached.

Item 3—*Royal Artillery Barracks, St. Thomas' Mount.*—A copy of the proceedings of this Government, No. 1274 W., dated 2nd June 1885, sanctioning a revised estimate of Rs. 1,46,910 for this work, is forwarded for information. It will be seen that the want of care in the preparation of the original estimate was duly noticed by this Government.

Item 4—*Royal Artillery Stables, St. Thomas' Mount.*—The increase in this case, bringing the total estimate to Rs. 21,702, was due to a small supplemental estimate of Rs. 1,542 being sanctioned on the recommendation of His Excellency the Commander-in-Chief (*vide* proceedings, No. 2561 W., dated 2nd November 1885, copy attached).

Item 9—*Fortified Post, Agram.*—In this case also the increase over the original estimate was caused by sanction being given to certain supplemental works brought forward by His Excellency the Commander-in-Chief as necessary (*vide* proceedings of Government marginally noted). It will be observed that since the issue of the preliminary budget, a further small estimate of Rs. 390 has been sanctioned, bringing the total estimate to Rs. 39,180, which figure has been entered in the final issue of the budget.

No. 1250 W., 29th May 1885.
„ 3059 W., 18th Dec. „
„ 250 W., 28th Jan. 1886.
} Copies attached.

3. I am to remark that, in all these cases, this Government have acted within their powers, as defined by the Public Works Code; and if the Government of India consider it necessary that reference should be made to them in every instance in which supplemental or revised estimates are sanctioned for military works within the powers of the local Government, I am to suggest that the code rules on the subject be modified accordingly.

I have the honor to be,
Sir,
Your most obedient servant,

Major, R.E.,
Under Secy. to Govt., P.W.D.

FORT ST. GEORGE,
29th April 1886.

Evd. E. Fernandez.
Spare Copies

6

GENERAL.
ACCOUNT.

Govt. of [1886] Madras.

PUBLIC WORKS.

Dated April, 29th.

Recd.

Encl.

29th April 1886, No. 1085 W.

APRIL.

Budget Estimate

Imperial military works — for 1886-87.— Copy of orders circulating the final issue of the — forwarded to the Government of India with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers :—

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 31st January 1884, No. 43.

I have the honor to forward herewith *for your information*, a *preliminary report* by the Executive *Engineer on special duty in Wynaad. I have thought it best* he should send such a report with the view of eliciting your opinion on several points in connection with the estimate for the Calicut-Vayitri road now about to be prepared and submitted.

1 Report from Mr. Nordmann.
1 Sketch map.

2. That road passes over a succession of small hills and valleys in the twenty-seven miles commencing at Calicut. Then the Támrachéri ghât begins, its foot being about 200 feet above the sea. The length of the ghât to its summit near Lakkidi is 8 miles, and the total rise in that distance is 2,400 feet or 300 feet per mile which is less than 1 in 18. There is then a slight fall to Pookote, which is situated about 37½ miles from Calicut, and 2 miles from the head of the ghât.

3. As might be expected the gradient on the ghât is not uniform throughout and there are steep bits, which the levels, Mr. Nordmann is about to have taken will show. Fortunately the revetments appear to have been very substantially built, and I did not observe any of them out of order. But the roadway, which at the narrowest parts varies from 11½ to 13 feet including the side drain, is very rough and badly needs metalling throughout.

4. The hill sides on the ghât are exceedingly steep, and the rainfall of that part particularly heavy. Consequently as the under-tunnels are few in number, the drainage often overflows the road, and sweeps away everything, leaving only the rough surface of bare rock below. For the protection of the metalled surface, I consider that on the ghât there should be not less than two slab drains to each furlong, and where the gradient is steeper than 1 in 16, there should be one at every 100 feet.

5. Where the width on the ghât is less than 13½ feet from the parapet to the hill side, it should be made that width by blasting or cutting. There is probably not a furlong altogether, in bits at different places along the ghât, where this widening is needed, so that it should not involve any great expense.

6. In the undulating country between the foot of the ghât and Calicut, there are several steep gradients which require to be corrected. But the chief improvements along the whole line are the substitution of iron bridges for the old rickety timber ones and that of broken stone well rolled for the present surface of inferior gravel.

7. With regard to the bridges which should in my opinion have a superstructure of iron with the exception of a bare floor of 3-inch planking, I consider that a width of 10½ feet, including 9-inch wheel-guards on either side, will be ample. Having now ridden over the whole line from Calicut to Manantoddy, I observe that where bridges have been made wider there is only a track in the centre used, and the side spaces are overgrown with grass. The parapets may be 2½ feet high.

8. I propose to make the road surface of broken granite 12 feet wide and 6 inches thick with a top coating of one inch of gravel. The embankments to be 18 feet wide with side slopes of 1½ to 1 ; the berms and side slopes to be turfed ; and

rough stone parapets to be provided where the embankments are more than 4 feet in height.

9. I agree generally in what Mr. Nordmann has proposed in paragraphs 16 to 34 with the following exceptions :—

(1) I think the first * thing to be done for improving the Támrachéri ghât is to increase he number of under-drains. Any money now sanctioned for metalling would be a grant-in-aid for maintaining the present imperfect ghât road, and ought to be handed over to Local Funds. I have no objection to Government assisting Local Funds by a grant-in-aid, but I consider that this has nothing to do with the special work for which Mr. Nordmann is sent to Wynaad. Owing to the want of a sufficient number of under-drains, much of the repair work now done by the Local Fund establishment is frequently swept away.

* Paragraph 16 of the report.

(2) Mr. Nordmann has proposed a depth † of metalling of 6 inches only on the ghât; I think $7\frac{1}{2}$ inches should be provided, so as to allow a thickness of 9 inches in centre and 6 inches at the sides. In regard to width, 12 feet everywhere appears to have been already ordered.

† Paragraph 20.

(3) There are few bridges on the line over 100 feet in length, so that, I think a width ‡ of roadway of $10\frac{1}{2}$ feet, as proposed above, would be ample. For bridges of 200 or more feet in length, I would have provided a sufficient width for two bandies to pass, but for the short bridges and culverts on this line, I think a greater width than $10\frac{1}{2}$ feet would only needlessly add to the cost of the improvements.

‡ Paragraph 29.

Enclosure.

From K. F. NORDMANN, Esq., Executive Engineer, on Special Duty, Wynaad, to the Superintending Engineer, IV Circle, dated Vayitri, 25th January 1884, No. 27 V.

With reference to G.O., No. 395 E., dated 26th September 1883, I have the honor to submit the following preliminary report.

2. I arrived in Wynaad on the 6th November 1883, and attended the meeting of the Planter's Association at Pookote on the 7th idem.

3. Being without establishment or instruments, I could not immediately begin the survey. But I inspected several roads, especially that from Calicut to Vayitri with the Támrachéri ghât. I consulted some of the principal planters and made myself acquainted with the orders of Government on the subject of Wynaad roads, as well as with the views of the planters and their agents on the coast.

4. Having submitted estimates of the probable cost of establishment required to aid me in my work, and having indented for the necessary surveying and drawing instruments, I advertized in the *Fort St. George Gazette*, and in two Madras newspapers for surveyors, draftsmen and office hands. The final sanction of Government for the establishment proposed was given in G.O., No. 3664 W., dated 20th December 1883, received by me on the 6th January.

5. I have taken detail notes of the state of the road from Calicut to Vayitri, and collected all available information required to form the data for the road and bridge estimates, and those for the buildings proposed to be erected for shelter of the establishments.

6. One of my office clerks arrived here on the 31st December and the head clerk only on the 11th January. The surveying and drawing instruments came up on the 1st January. No surveyor or draftsman has joined me as yet. One surveyor (Mr. Green of Bellary) was appointed, but unfortunately died suddenly before he could come up. Two surveyors and two draftsmen have now been sent for, and I hope some of them will shortly join. One draftsman has just reported his departure from Madras. I have rented a small bungalow for my office near Pookote.

7. The survey and levels of the line from Calicut to Vayitri *viâ* the Támrachéri ghât, and the estimate for putting this road into thorough order, including the reconstruction of the bridges and many of the culverts, will be first taken in hand, after which the other roads enumerated in

G.O., No. 1416 W., dated 6 June 1882, will be taken up in the order of their importance, which seems to stand as follows :—

		Miles.
I.	Calicut to Vayitri by the Támrachéri ghât	43
II.	Vayitri to Gúdalúr	43
III.	Gúdalúr to Ootacamund *viâ* Naduvatam	27
IV.	From 4 miles north-east of Vayitri *viâ* Kalputty and Sultan's Battery to the Mysore frontier	30
V.	Kalputty *viâ* Pannamaram to Manantoddy	20
	Total ...	163

The last named line I would propose to substitute for the road from Vayitri to Manantoddy *viâ* Terriote (30 miles), thereby effecting a saving of 10 miles of road; besides which the line *viâ* Kalputty to Manantoddy is an easier line, carries more traffic, has better gradients, and requires fewer bridges than that *viâ* Terriote. The Terriote road is not much used, except for the first 8 miles out of Vayitri; and it can be kept up from Local Funds as heretofore.

8. As regards shelter for the establishment, I propose to build wooden houses instead of masonry ones, the latter being more than twice as costly as wooden buildings. The style of the wooden houses proposed would be that now in vogue in South Wynaad, where many planters live in neat and substantial buildings of sawn timber which effectually keep out heat, cold, wind and rain, and last with ordinary care and small repairs from 25 to 30 years. The Local Fund bungalow at Lakkidi (built by Colonel Kennedy), the store and club buildings at Pookote, and others in the neighbourhood are of this description. I would use Mangalore tiles for the main roofs, corrugated iron for the verandahs, and cement for the flooring.

9. It is proposed to include provision for the following buildings in the estimate (to be submitted first of all) for the road from Calicut to Vayitri :—

Executive Engineer's dwelling-house at Vayitri.
Do. do. office and stores at do.
Dwellings for office establishment at do.
1 Inspection bungalow at Támrachéri.
3 Houses for upper subordinates, viz., one at Vayitri, one at Pudupady near the the foot of the ghât, and one at Pudanellum, 9 miles out of Calicut.
1 House for the Hospital Assistant.
3 Cooly lines.

I have found a suitable site near Vayitri for the buildings to be erected; this site is at present private property and will have to be acquired by Government, if my proposal is approved. I do not propose for the present to build more than 3 cooly lines in connection with the Calicut-Vayitri road, as I expect that most of the work will be done by contract, and the contractors will themselves provide temporary accommodation for their labourers.

10. I calculate, approximately, that the cost of establishment for the whole project of Wynaad roads will not exceed 25 per cent. of the expenditure on works, and that the amount of compensation for land will be within Rs. 50,000. The rough abstract estimate for the whole scheme would then stand as follows :—

Works.

Original.

	Rs.
(*a*) Reformation or completion of 163 miles of road at an average rate of Rs. 5,000 per mile	8,15,000
(*b*) Buildings	1,00,000
(*c*) Compensation for land	50,000

Repairs.

	Rs.	
To roads during construction	70,000	
To houses and offices	12,500	
		82,500
Total Works ...		10,47,500

Establishment.

(Calculated at 25 per cent. on cost of works)	2,28,750

Tools and Plant.

(Calculated at $2\frac{1}{2}$ per cent. on cost of works)	22,875
Total ...	12,99,125

Say in round numbers 13 lakhs.

11. As regards the establishment required during say 5 years, for projection, estimation and execution of the works, it will probably be found sufficient to have one Executive Engineer, with head-quarters at Vayitri, two assistants, stationed at Manantoddy and Devála, eight upper subordinates, stationed at Manantoddy, Devála, Vayitri, Sultan's Battery, Pudupady, Pudanellum, Naduvatam and Moopenád, with two medical subordinates, one at Gúdalúr and the other at Kalputty.

12. Assuming that the work begins in October next, the following provision of funds would probably have to be made:—

		RS.
1884-85	(half-year)	
1885-86	"	50,000
1886-87	"	1,50,000
1887-88	"	2,00,000
1888-89	"	3,00,000
1889-90	"	4,00,000
	"	2,00,000
	Total ...	13,00,000

13. It had been proposed to make certain deviations on that portion of the Calicut-Vayitri line which lies between Calicut and Támrachéri, on account of some of its steep gradients, and to take a new line by a circuitous route with easier gradients, viz., Challaye. But I find that all parties interested in the subject seem agreed that there is no need to make a new line provided some of the gradients of the existing road can be improved, and that the flatter gradients of the proposed deviation would not compensate for its additional length. I believe the survey and line of levels will show that the steep gradients are easily susceptible of being flattened, at no excessive cost, and that no gradients steeper than 1 in 18 need be retained on the existing road. If such turns out to be the case, I would advocate that the existing road be adhered to and no extensive deviation of the nature suggested (*viâ* Challaye) be made; although minor deviations of less than a mile in length may in two or three places have to be carried out on the present line.

14. One of the chief objections to the deviation *viâ* Challaye (besides its great length) is that it would require several large bridges, while there is not a single large bridge on the present line; this is unquestionably a great point in connection with any road in Malabar. Besides, a very small proportion of the traffic now seeks the more circuitous route *viâ* Challaye to Támrachéri, and if this new route were improved instead of the existing old one, a considerable proportion of the traffic would yet utilize the present road which would still have to be kept up from Local Funds, to accommodate the local traffic. The expediency of improving the longer new line, instead of the shorter old one, seems therefore very doubtful.

15. The most important link in the whole scheme of Wynaad roads, now under consideration, is the Támrachéri ghât, and it is of paramount necessity that this ghât should be put and kept in good order, as without it the communication with the coast is interrupted. Faulty though the original conception of the present line of ghât may have been (it not being the best trace that could have been made in the desired direction), yet, the faulty trace having been accepted and its opening out taken in hand, some twenty-two years ago, the work was thenceforward carried on vigorously and in the most thorough manner; the result being a first-class ghât road, solidly and substantially built, reflecting credit on the Engineer and calculated to last, with ordinary care and repairs for ages to come. But the work is not completed, the surface is unfinished; and this being the part that most immediately affects the traffic, the latter is put to great inconvenience and risk, especially during the rains. The ghât is scarcely ever absolutely impassable for cart traffic, but the surface is so rough, and apt to become so much cut up and positively dangerous in the monsoon, that it must necessarily be looked to before any other portion of the proposed scheme of Wynaad roads.

16. The remedy for the most glaring defects of the ghât is the metalling of it throughout with good stone-metal to a depth of not less than 6 inches, the metal being consolidated by heavy rollers of stone or iron. The sooner this work can be taken in hand, the greater will be the benefit to the planting community and to traffic in general. If the collection of metal could be begun immediately, some appreciable progress might be made before the next monsoon puts a stop to out-door work. If the work is not now begun, it will have to lie over until after the monsoon, say October next, and thus a portion of one working season will have been lost, and the completion of the whole work delayed by one season, and the traffic will have to face the dangers of the ghât during yet another monsoon. If the Government have any funds at their disposal now, which cannot be advantageously laid out on works of similar character elsewhere before the close of the official year, such funds could be most usefully employed in collecting metal for the Támrachéri ghât, and a sum of Rs. 5,000 to 6,000 could be profitably laid out in this manner between this and the 31st March. Thus a suitable beginning would have been made with the most urgent part of the whole programme, which would be highly satisfactory to the parties most interested, *i.e.*, the planters.

17. There is another important portion of the system of Wynaad main roads which seems to have been kept in the background in the late discussions on the subject; this is the Periah ghât, connecting Manantoddy and Tellicherry. The new Periah ghât was traced, and partly made twenty years ago, having been sanctioned, because it was then considered to be urgently required for the development of the resources of that part of the country, and although North Wynaad seems to have of late lost some of its former importance as a planting district, yet any scheme for Wynaad roads could hardly be called complete without providing for this link also. I would therefore suggest that the road from Manantoddy to the foot of the new Periah ghât, a distance of 28 miles be treated as part of the main system of Wynaad roads, the continuation from the foot of the ghât to Tellicherry to be taken care of by the Local Fund Board.

18. I now come to the details of some of the items to be included in the estimate for the road from Calicut to Vayitri, and partly in the other road estimates also, and I should be glad to receive orders on the subject as to whether my proposals below detailed are approved of or not, before the estimates are submitted for final sanction. Thus time may be saved in the disposal of the estimates.

19. *Gradients.*—All steep gradients above and below ghât to be corrected to at least 1 in 18, which is to be considered the maximum steepness allowable. The average gradient on the ghât itself is believed to be not steeper than this (as the line of levels will show) and need not therefore be interfered with, except on short bits of road, here and there where through faulty cutting the original trace may have been spoilt for a short distance, especially at sharp turnings. In the low country and on the plateau the required improvements to gradients can generally be easily effected, either by cuttings on the summits and embankments in the adjoining hollows, or else by new traces for short distances, in places where the original trace has not been laid out so as to take full advantage of the capabilities of the configuration of the hill sides. The estimate will provide for all necessary alterations of this nature.

20. *Metal and Gravel.*—The road to be metalled throughout to a depth of not less than 6 inches, and to a width of 13 feet. The metal to be of hard granite or gneiss, broken as uniformly as practicable into cubical pieces of a size to pass through an iron ring 1½ inches in diameter. The metal to be well consolidated by heavy rollers; the transverse section of the road to be level, *i.e.*, to slope neither inwards nor outwards, but to have a slope from the centre of the road to the sides of 4 inches. The surface of the metalled road to be covered with a blinding of one inch of good gravel well rolled.

21. Where the roads surface is very uneven, as is the case on the Támrachéri ghât at present, I propose first to remove all loose matter, such as dust, sand, and mud, until the hard and solid surface is exposed; then level the surface transversely by filling up the ruts and hollows with stone metal, then roll; then on the level surface thus obtained lay a coating of metal averaging 6 inches in thickness, and sloping from the centre to both sides at an inclination of 1 in 20, then roll; then spread one inch of good gravel over the metal, and roll again, after which add ¼ of an inch of clean sand. The surface will then be fit to carry the existing traffic, and more, at all seasons, without yielding.

22. *Catch-drain.*—A catch-drain to be cut on the upper side of the road (in hilly ground) wherever practicable, 33 feet or ½ a Gunter's chain (horizontally) from the centre of the road. This drain is to discharge itself wherever there are culverts, tunnels or under-drains; the water to fall into a shallow well or pool, there to gather and thence to flow off through the under-drain.

23. *Under-drains on the ghât.*—The existing ones are, as a rule, substantially built and answer their purpose. But there is not a sufficient number of them; hence much storm-water discharges irregularly across the road and helps to damage the surface. There should be not less than two of these drains per furlong, according to the requirements of the configuration of the hill side in each separate mile. In steep places, and at sharp turnings, they should be more frequent than along ordinary reaches of the road. They can be built of dry rough-stone abutments (the largest procurable size of stone being used), covered with stone slabs.

24. *Culverts and tunnels, above and below ghât.*—All existing timber culverts to be reconstructed with laterite or stone abutments, and rail and plank superstructure, or arches of brick or laterite. Such existing culverts, with laterite or brick abutments and arches, as are in good order, to be retained; likewise all minor bridges that are now in serviceable condition.

25. *Small bridges up to* 12 *feet span* may be built of iron rails (broad gauge, double-headed, weighing about 80 lbs. to the yard) laid across abutments of laterite and covered with well seasoned 3-inch teak planking; the planks to be laid ¼ of an inch apart. I propose to make use of iron rails wherever they can be introduced advantageously and economically.

26. *Small bridges up to* 20 *feet span* to be built with brick or laterite abutments, and brick or laterite arches, wherever either good brick or laterite is easily procurable.

27. *Wooden piles*, wooden girder-beams, and timber trusses should not be used for permanent bridges in Wynaad or Malabar; they answer very well for temporary structures and in dry districts, but not for pucka bridges in a climate and with a rainfall like those on the Western Coast and Ghâts. Stone and iron should be resorted to as much as possible.

28. *Bridges of larger spans.*—It has been found that the description of "Warren girder," put up for several bridges in Wynaad, consisting of a combination of wood and iron, has not been able to withstand the climate long. The wood, exposed to the extremes of temperature, and alternately to excessive dryness and excessive moisture, and pierced by iron bolts, &c., soon decays, and the structure becomes unstable in a comparatively short space of time. I would not therefore advise any more bridges of this description being built, but would use *iron girders only* for all larger spans, with abutments of solid stone masonry (not laterite) laid in chunam, and a roadway of well seasoned 3-inch teak planking, or else iron "buckle plates," whichever may be considered preferable.

29. *Width of roadway and parapets.*—The clear width between parapets should not be less than 12 feet. Masonry parapets should be 2½ feet high, their corners protected by guard stones.

30. *Earth embankments* should not be less than 18 feet wide at top; and where high, they should have parapet walls or railings for the greater safety of the traffic.

31. *Scales for surveys and sections.*—The surveys to be drawn on a scale of 12 inches to the mile, arranged in book form, each leaf to contain one mile. Longitudinal sections of roads to be on the same scale as the surveys; vertical scale 20 feet to the inch.

On the ghât, where the fall per mile is nearly 300 feet, the vertical scale will have to be less than in the plains, say 50 feet to the inch.

Cross sections of roads and rivers to be on a scale of 10 feet to the inch.

32. A paper containing some brief notes on the present state of the road from Calicut to Vayitiri *viâ* the Támrachéri ghât, is appended to this report.

33. It only remains to notice the proposed Wynaad railway alluded to in the papers which were sent to me in connection with my present special work. The proposal to lay a line of railway along the Támrachéri ghât involves interference with the existing road-traffic, which is undesirable. Moreover, this ghât is, owing to its zigzag and steep, rocky slopes, not as well suited for a railway as some of the longer ravines, with easier slopes leading from the plateau into the low country.

The head of one of the easiest natural ghâts, along which a railway on the metre-gauge could be economically laid down to connect the Wynaad plateau with the coast, is to be found about eight miles out of Manantoddy, on the Periah road, whence a long valley with easy slopes extends for several miles in a westerly direction through the Kóttayam taluk, which valley can be connected without difficulty with Tellicherry, the principal shipping port for the coffee trade.

Other easy natural lines are the Kuttiyádi ghât and the Kuttipuram ghât north of the former, both leading down in the direction of Tellicherry, and the Terriote ghât leading towards Badagara.

34. Supposing the railway to have been made from Mysore *viâ* Gundalpet to Gúdalúr, which is not improbable in the near future, the continuation which would best serve the interests of the whole of Wynaad would seem to be a line from Gúdalúr *viâ* Sultan's Battery and Manantoddy to Tellicherry, a distance of about 130 miles.

A railway taken from Gúdalúr down the Karkur ghât, or down the Moopanad (Tholadi) ghât, would benefit only a small portion of South-east Wynaad.

A line from Gúdalúr to Vayitri, and down by the Támrachéri ghât, or by the Terriote ghât, would benefit South-east and South Wynaad only, while the line from Gúdalúr *viâ* Sultan's Battery and Manantoddy, and down by either of the two Kuttiáydi ghâts, or in the direction of the Periah ghât to Tellicherry, although the longest of all, would benefit the whole of Wynaad equally, running, as it would, through the very centre of the district, and leading to the most important shipping place, which is at the same time near to the Military station of Cannanore.

The coast railway will probably in time be extended from Calicut to Cannanore.

APPENDIX.

Notes on the present state of the road from Calicut to Vayitri, viâ the Támrachéri Ghât.

1. The greater part of the road runs over laterite soil, is not metalled, and consists of a succession of ups and downs, as will be seen by a glance at the following notes.

2. All culverts and bridges required have been built, some require reconstruction; there are remarkably few bridges required, which compensates to some extent for the many ascents and descents.

3. The 1st mile is in fair order.

In the 2nd mile the canal is crossed. Between the 3rd and 5th furlongs of the 2nd mile is a steep gradient which might be circumvented by a new trace either to the east or west.

3rd mile 1st furlong. Another rise, but not as steep as the last. Surface fair; 3rd mile 4th furlong rise and subsequent fall.

3rd mile 6th furlong Here begins a descent which takes the road down to the 4th mile-stone.

4th mile 2nd furlong. Rise up to the 4th furlong, then descent to the 6th furlong; then a rise up to the 5th mile.

From the 5th mile-stone a gradual descent for 3½ furlongs, then a level stretch with a culvert.

5th mile 4th furlong. A bridged stream; thence rise up to 5½ furlongs; then descent down to a paddy flat, crossed by a high embankment with a minor bridge.

From 5th mile 7th furlong the road is level up to the 6th mile; here is a culvert.

From the 6th mile a gentle rise for 2 furlongs.

Culvert. The line then runs at a level to the 3rd furlong; ascent from the 3rd to 4th furlong, with a culvert. Then a fall to the 5th furlong; then level.

At 6th mile 6th furlong the surface was soft and much cut up.

From the 7th furlong a descent to paddy-fields; then a short rise up to the 7th mile; then a fall again. Here the road runs close to the bank of the river which accompanies the road on the west site along a considerable portion of its length. At 7th mile 2nd furlong a steep rise up to the 4th furlong, and an easier slope thence to the 5th furlong; then level to beyond the 6th furlong. A culvert; then a rise up to 7th mile 7th furlong; near the top of the ascent is the village of Karándur with an amshom cutcherry. From here a descent to past the 8th mile-stone; then a level stretch.

8th mile 1st furlong. Steep slope down to paddy-fields. Rise from 2nd to 4th furlong; then a fall followed by a level piece.

8½ mile. Village of Thorai Kadu, with a Public Works Department (Local Fund) shed. At the 7th furlong a slight rise; thence fall to the 9th mile near which there is a small bridge. The road ascends an easy slope for about a furlong, then leads down by an easy descent.

9th mile 2nd furlong. Road to Chettugádu branches off.

New mosque and well. A culvert. Village of Mákuta.

9th mile 3½ furlong. Level; then a paddy-field; then descent to another paddy-field; then a rise from 9th mile 6½ furlong to the 10th mile; then descent, followed by a level reach then a rise.

A steep slope down to 10th mile 3½ furlong.

10th mile 3½ furlong. Here begins an ascent which gradually becomes steeper and leads over a saddle to 10th mile 5th furlong. Then a descent followed by a level; and again descent to past the 11th mile.

Paddy-field; rise up to 11th mile 1st furlong; then a level, followed by descent. The road here runs near the bank of the river.

Across a paddy-field near Padálte village.

11th mile 3rd furlong. Police station.

11th mile 4th furlong. A well.

Road level then descent; again level to 12th mile, close to the river.

Slight rise; then fall to 1st furlong. Culvert.

Bennakátu village. Road level. 12th mile 7th furlong, steep descent to 13th mile. 13th mile 1st furlong. Rise and fall; again rise and fall to 13th mile 4th furlong. Then a level followed by a rise, and again level. Road surface soft and cut up.

13th mile 6th furlong. Close to the river.

Track to Kuruvai village.

14th mile 3rd furlong. Steep descent.

From the 15th mile-stone the road runs close to the river up to the 6th furlong. The river-bed about here is rocky in several places.

16th mile level.

16th mile 6th furlong. A great mass of gneiss rock to the west of the road.

16th mile 7th furlong.—Quartz on the east side.

17th mile level.

17th mile 3½ furlong. A small circular well built of laterite. Water close to the surface.

17th mile 6th furlong. Large well and mosque. Rise up to 17th mile 6½ furlong, wooden bridge; then down to the 18th mile. Here the jungle begins.

18th mile 3rd furlong. A steep rise then fall; then rise again. Road easy up to Támrachéri (18th mile 5th furlong).

4. From Támrachéri to the foot of the ghât (distance 27 miles 6 furlongs from Calicut) the character of the road is much the same as that described in the above notes. The distance from Támrachéri to the foot of the ghât is 9 miles; the total rise from the coast to the foot is under 200 feet. From the foot to the head of the ghât near Lakkidi, the rise is nearly 2,400 feet in 8 miles.

5. There are three larger bridges required to be reconstructed on the section of the road from Támrachéri to the foot of the ghât, viz.:—

at the 24th mile, one 70-feet span,
„ 27th mile, one 80-feet span,
„ 28th mile, one 50-feet span.

The existing bridges at these three places are unsafe.

6. The ghât itself, although far from being in good order, is fairly passable for carts in the dry weather, except that the surface is very uneven and rough, so much so that carts occasionally upset; owing to this cause, and their loads, if of a fragile nature, such as delicate machinery, instruments, furniture, glassware, &c., are apt to be seriously damaged or broken by the shaking they receive. Besides, the surface not having been properly consolidated, is by the traffic ground into fine dust to a considerable depth. As soon as the rains set in, this dust is at once converted into adhesive mud, forming deep and dangerous traps where carts are often stuck and can only be extricated with much labor. Hollows and ruts are now being gradually filled in with stone metal by the Local Fund Department; but, probably owing to want of sufficient funds, the work is not of a nature and extent calculated to permanently improve the road, which will be provided for in the estimate now being prepared.

7. That portion of the road from the head of the ghât, near Lakkidi to Vayitri, is on the whole slightly better than the ghât itself just described.

ORDER—dated 26th February 1884, No. 524 W., Public Works.

With his letter above recorded, the Superintending Engineer, IV Circle, submits a preliminary report from Mr. Nordmann in which he suggests a plan of operations, and brings forward the points upon which he requires definite orders, to enable him to proceed with the requisite surveys and estimates for the improvement of communications in Wynaad.

2. In memorandum No. 395 E., dated 26th September 1883, Mr. Nordmann was instructed to make himself thoroughly acquainted with local requirements upon which to base a programme of operations. The most urgent work in the opinion of the Wynaad Planter's Association being the road from Calicut to Vayitri (43 miles); attention was in the first instance to be confined to this line, estimates for which were to be prepared.

3. Of the two alternative routes to the foot of the Támrachéri ghât, suggested for consideration, Mr. Nordmann, after collecting information as to the work required on each route and the cost of the inprovements, gives a decided preference to the shorter though somewhat steeper line *viâ* Puddanellum. The route *viâ* Challye besides being more circuitous, will cross several large waterways on which expensive bridges will be required. Mr. Nordmann states that this preference is shared by all persons interested in the subject; and, as it is expected that the steep gradients on the existing line *viâ* Puddanellum will be found susceptible of improvement at no great cost, and that the ruling gradient need not be steeper than 1 in 18, this route may be adopted should the proposed surveys confirm present anticipations.

4. The Támrachéri ghât itself, though somewhat faulty as regards trace, is a substantial work requiring only surface improvement and proper conservancy. The proposals in paragraph 19 of Mr. Nordmann's report for improving the gradient of the ghât in places, and his subsequent suggestions for consolidating the surfaces along the whole line, are approved. It is considered however, that, on the ghât itself, the thickness of metal should not be less than 9 inches; elsewhere it may be reduced to 6 inches. The metal should be spread over a minimum width of 12 feet, which should also be the minimum width of the roadway over bridges.

5. Under-drains on the ghât should be provided as recommended by the Superintending Engineer, viz., not less than two slab drains to each furlong; and, where the gradient is steeper than 1 in 16, one at every 100 feet. Catch-drains should also be provided wherever practicable.

6. The width of roadway on the ghât should be increased to a minimum of 16 feet.

7. The bridges and culverts may be provided as recommended by Mr. Nordmann.

8. Provision should also be made for camping grounds for carts at convenient places on the ghât, as well as on the road between the foot of the ghât and Calicut, should such halting places not already exist.

9. Shelter for establishments may be provided as proposed.

10. The Government are not prepared to make any grant for the maintenance of the present imperfect ghât road, as suggested by Mr. Nordmann in paragraph 16 of his report. The scope of the action contemplated by the appointment of a special Engineer and survey establishment does not embrace the maintenance of existing lines of road, the charge of which devolves on the Local Fund Board.

11. The surveys and levels of the line from Calicut to Vayitri through the Támrachéri ghât should first be taken in hand, and an estimate framed of the cost of improvements, as indicated above. The inquiry may then be extended to the other lines of communication, as proposed by Mr. Nordmann. The development of these additional lines will, however, depend on the resources at the disposal of Government; due

regard being paid to the numerous pressing demands for assistance from other parts of the Presidency.

(True Extract.)

Major, R.E.,
Under Secy. to Govt., P.W.D.

To the Superintending Engineer, IV Circle.
" Honorary Secretary, Wynaad Planter's Association.
" Financial Department.
" Consulting Engineer for Railways.

Exd. A. Aubert.
Spare Copies

12

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1884} Madras.

PUBLIC WORKS.

Dated February, 26th.

Recd. *Encl.*

G.O., 26th Feb. 1884, No. 524 W.

FEBRUARY.

Wynaad Communications

Passing orders on the preliminary report by Mr. K. F. Nordmann on the —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 29th September 1884, No. 448 E. W.

With reference to G.O., No. 524 W., of 26th February 1884, I have the honor to submit, herewith, the estimate for improving the Calicut-Vayitri road.

1. Appendix No. 1.
2. " " 2.
3. List of plans 55 and estimates 28 sent in a box.
4. Report 1.
5. One original letter, No. 300, of 5th September 1884, from Mr. Todd.

2. The report prepared by Mr. A. B. Todd, Assistant Engineer, is so clear, complete and concise that I need only observe that the estimates include, first, the improvements to the road amounting to Rs. 2,80,708; secondly, buildings required for the establishment for which two proposals are made, one amounting to Rs. 94,689 and the other to Rs. 66,329. The difference between the two proposals is that the first provides for the purchase of land and construction of nearly all new buildings, while the second provides for the purchase of certain properties with the buildings on them and for improving the buildings.

The estimate further provides for repairs to the road while the improvements are in progress. This sum of Rs. 33,300, which is exclusive of establishment and tools and plant, would be met from Local Funds.

Lastly, the estimate provides for establishment and tools and plant at 25 per cent. and $2\frac{1}{2}$ per cent., respectively, on the cost of works.

3. As regards the alternative proposals in connection with buildings, I have to recommend that the second and less costly plan of purchasing and improving Hinde and Company's and the Coola Quee properties should be adopted.

4. In that case the estimates to be sanctioned would be for—

	Rs.
Works	2,80,708
Establishment	70,177
Tools and plant	7,018
Total for Works ...	3,57,903
Buildings	66,329
Establishment	16,582
Tools and plant	1,658
Total for Buildings ...	84,569
Repairs	33,300
Establishment	8,325
Tools and plant	833
Total for Repairs ...	42,458
Grand Total ...	4,84,930

5. I should also point out that the estimates for buildings include only accommodation for the Executive Engineer and his establishment employed in estimating and

carrying out the improvement of all the Wynaad roads, and do not therefore appertain specially to the Calicut-Vayitri road.

As regards repairs the Local Fund Department should provide funds not only for the work of repairs, but also for establishment and tools and plant required in connection with the repairs. It would be very inconvenient to have two departments at work on any one road at the same time.

6. It will also be observed from paragraph 13 of the report that two of the estimates of bridges are considered to require alteration, and the plans and estimates of these will have to be revised, but this will not make "any great difference in the cost; if any thing the cost will be less." As the estimate has been so long under preparation I have thought it best not to delay it on account of this revision.

ENCLOSURE.

Estimate framed by A. B. TODD, Esq., Assistant Engineer, of the probable cost of improving the Calicut-Vayitri Road *viâ* Támrachéri Ghât.

References.

G.O., No. 2821 W., dated 14th November 1881.
G.O., No. 1416 W., „ 6th June 1882.
No. 311 E., dated 27th August 1883.
No. 395 E., „ 26th September 1883.
G.O., No. 524 W., dated 26th February 1884.

Report.

1. With his No. 43 of the 31st January 1884 the Superintending Engineer, IV Circle, submitted a preliminary report from Mr. Nordmann, the late Executive Engineer on special duty, Wynaad, in which he suggested a plan of operations and brought forward the points upon which he required definite orders, to enable him to proceed with the requisite surveys and estimates for the improvement of communications in Wynaad.

2. In G.O., No. 524 W., Public Works, dated 26th February 1884, orders were passed on the points which Mr. Nordmann brought forward, and the accompanying estimate has been framed in terms of those orders.

3. In the Government Order above quoted it was laid down that the Calicut-Vayitri road through the Támrachéri ghât should first be taken in hand, that the line *viâ* Pudanellum should be adopted in preference to that *viâ* Chellye, and that an estimate should be framed of the cost of improvements as indicated.

4. *Reformation of Road.*—The improvements are included under the following heads:—

Gradients.	Surface.
Drainage.	Bridges.
Width.	

5. *Gradients.*—The longitudinal section of the road shows that in the plains portion everywhere the gradients must be reduced to 1 in 18 by cutting and filling, as it is not found practicable to improve the gradient by fresh traces.

6. On the Támrachéri ghât the gradients are more severe, but as any alteration of the gradients now would involve immense expense it has been decided to let them remain as they are. The ghât is most solidly and substantially built, and it is thought that any interference with it would not be advisable, especially as the revetments are in capital order. The cause no doubt of the unsatisfactory condition of the ghât for traffic is want of drainage.

7. *Drainage.*—In the first place the roadway itself is very much out of section, and the storm water instead of flowing away in the side drains makes its way down the roadway, scouring out deep gullies and washing out any materials that may be put in to fill them up. The hill side is exceedingly steep in most places, and in heavy storms the amount of water running off transversely to the roadway is very considerable. Special attention has therefore been paid to the provision of catch drains wherever practicable, *i.e.*, where the hill side does not consist of solid rock, with a view to turning the hill drainage and carrying it off at convenient places through the under drains. Where catch drains are not practicable the side drains will be made of greater section. To discharge the drainage of the road itself the estimate provides firstly for forming up the road with a slope from the centre to both sides of 1 in 20, secondly for clearing out side drains, thirdly for providing under drains, as per Government Order, viz., two per furlong, where the gradient does not exceed 1 in 16 and one at every 100 feet where steeper.

8. *Width.*—The width of the roadway throughout the plains portions is not less than 18 feet, but on the ghât there are two places where the width will be increased as directed to, 16 feet clear width from inside of parapet to hill side.

9. *Surface.*—The proposals in paragraph 19 of the preliminary report having been approved provision has been made in this estimate for carrying them out, except that as directed in G.O., No. 524 W., of 26th February 1884, 9 inches of metal has been allowed for on the ghât and 6 inches elsewhere. The width of metalling to be 12 feet.

10. *Bridges.*—There are three large bridges on the line which are at present wooden structures and which are in an unsafe condition. These bridges were inspected by the Superintending Engineer some time back, and he fixed the waterways to be given in reconstructing the bridges. The table below shows the present and proposed waterways and the situation of the bridges:—

Mile and furlong.	Present waterway.	Number and span of proposed girders.	Total waterway proposed.
	FEET		FEET
23 8	65	2 of 40 feet	80
27 2	52	1 of 55 „	55
27 4	89	2 of 50 „	100

11. In addition to these there are nine bridges, varying in span from 10 to 21 feet, for which it is proposed to provide simple rolled iron girders.

12. In designing the bridges the points chiefly kept in view were (first) to have as little timber as possible on account of its rapid deterioration in the Wynaad climate and (2) to adopt such designs as have already been tried and have been found to answer well. The first bridge in the table is an adaptation of a bridge which it is understood has been erected over the Velpur canal in the Godávari district, Western delta, and has been found to answer satisfactorily. The only modification that has been introduced is in the roadway, which has been made of bare three inches teak planking, as recommended by the Superintending Engineer in his No. 43 of the 31st January. The cross girders have been made level across and the planking has been secured to the cross girders from below by means of coach screws passing through a quarter inch plate rivetted to the top flange of the cross girder. The planking is spaced quarter inch apart to allow of water draining off and through the floor. The abutments and pier are of stone masonry, and the girders will rest on three-fourth inch of lead in a cast-iron bed plate. This bridge was partly drawn when I arrived in the Wynaad, and through some misunderstanding of the late Executive Engineer the spans were made 43 feet, similar to the Velpur bridge, instead of the design being modified for 40 feet spans.

13. The second bridge in the table was drawn and estimated for before my arrival. The span is in excess of that laid down by the Superintending Engineer, but I have not altered the design for fear of further delaying the submission of this estimate. Fresh designs for the above bridges will, however, now be prepared. It is not thought that there will be any great difference in the cost; if any thing the cost will be less.

14. The third bridge, designed by me, is a modification of the first to suit the increased span. The data for loads have been taken from those recently adopted in the designs for the Iritti bridge in Malabar, the total distributed mixed load being taken as ·44 of a ton per foot run. A table of stresses in the braces of the girders accompanies the design, and for the strain in the top and bottom boons the formula $\frac{W\,L}{8D}$ has been used. There is a slight excess of strength in the girder, which was unavoidable, to give room for the rivetting. To summarise the cost of improvement we have—

		RS.
Reformation, &c., as per detailed estimate		2,30,647
	RS.	
SPANS.		
80'	17,066	
55	10,068	
100	17,596	
1 of 10	309	
2 × 12	752	
4 of 15	1,968	
1 of 16	548	
1 of 20	780	
1 of 21	820	
	49,907	
Bridging		49,907
Total ...		2,80,554.

For 39 miles of road, or approximately Rs. 7,194 per mile.

Buildings.

15. *Buildings.*—The designs for buildings accompanying the estimate were prepared in accordance with the proposals made in the preliminary report, which proposals were approved by Government—*vide* paragraph 9 of G.O., No. 524 W., dated 26th February 1884.

16. The houses are of wood with horizontal overlapping planked walls. Mangalore tiles over corrugated iron (as the Mangalore tiles alone would not keep the place watertight in time of high wind with heavy rain) are used for the roofs of the main portion of the buildings. Corrugated iron alone for the verandahs. The reason for using corrugated iron for the verandahs is that the slope is considerably flatter than that of the main roof, and tiles would be liable to leak. The flooring is of cement. Good examples of this style of house may be seen at Lakkidi and Pookote. They are very neat in appearance, keep out heat, cold, wind and rain, and last from twenty-five to thirty years.

17. The following buildings have been estimated for in terms of the approved proposals of Mr. Nordmann :—

	Rs.	A.	P.
Executive Engineer's dwelling-house with out-houses ...	20,963	0	0
Do. office and stores	10,947	0	0
Dwelling-houses for office establishment	12,202	0	0
One inspection bungalow at Támrachéri with out-houses ...	8,276	3	2
Three dwelling-houses for upper subordinates do. ...	24,955	5	8
One dwelling-house for hospital assistant with do. ...	8,318	7	2
Three coolies lines	590	0	0
Total ...	86,252	0	0

18. The house for the hospital assistant has been made similar to that for upper subordinates. These buildings will answer in a great measure for all the roads contemplated in the scheme for improving Wynaad communications, although for the present they are included in the estimate for the Calicut-Vayitri road.

19. *Compensation.*—The site selected by Mr. Nordmann for the establishment buildings is on the borders of the Pookote lake. The area he proposed to take up is A. 28 R. 0 P. 10, and would cost about Rs. 2,800. The land belongs partly to Messrs. Hinde and Company of Calicut and partly to Messrs. Brown and Company of Pookote. On Messrs. Hinde and Company's land are situated two buildings, the one a store, which is at present being rented as an office, and the other a bungalow known as the Bank bungalow. It is questionable whether the site in the vicinity of the lake is a healthy one, but apart from this as a question of economy I would make the following proposal.

20. Mr. Yonge is willing to sell a bungalow known as Coola Quee with five acres of land for Rs. 7,500. Coola Quee is situated on high ground and about a mile from the Munsif's Court and Calicut-Vayitri road. It would probably be advisable to have the office, stores, upper subordinate's bungalow and lines near the road, and I therefore suggest that Messrs. Hinde and Company's land only be taken up with the two buildings, and that Coola Quee be bought for the Executive Engineer's residence. The existing Bank bungalow would answer for an upper subordinate's or hospital assistant's house, and the store with slight improvements might be converted into an office.

21. In the absence of the information asked for regarding the actual amount of compensation to be paid the value of the land has been assumed at Rs. 100 per acre. The value of the buildings has been estimated at Rs. 2,000 for the store-house and Rs. 3,000 for the Bank bungalow.

22. The area to be taken up according to the first proposition being about 28 acres, and the area to be taken up according to the second proposition being about 10 acres, the cost of compensation will be respectively Rs. 7,800 and Rs. 6,000.

23. The comparative cost of the two proposals is shown below :—

	Rs.	Rs.
I. Cost of buildings as per estimates		86,252
Compensation for land, 28 acres, at Rs. 100 per acre ...	2,800	
Value of Hinde and Company's buildings	5,000	
		7,800
Total ...		94,052

	Rs.	A.	P.
II. Cost of Coola Quee property	7,500	0	0
Improvements to bungalow for Executive Engineer's residence including repairs to out-houses and construction of new stables	5,870	0	0
Cost of Hinde and Company's land, 10 acres, at Rs. 100 per acre 1,000			
Value of buildings 5,000			
	6,000	0	0
Improvements to store for Executive Engineer's office ...	132	0	0
Repairs to Bank bungalow...	434	0	0
Cost of remaining buildings, viz., for office establishment.	12,202	0	0
One inspection bungalow at Támrachéri with out-houses.	8,276	3	3
Two houses for upper subordinates with out-houses ...	16,636	14	6
One house for hospital assistant with out-houses	8,318	7	3
Three cooly lines	590	0	0
Total ...	65,960	0	0
Difference ...	28,092	0	0

24. The cost of the whole project for improving the Calicut-Vayitri road will then stand as follows :—

WORKS.

Original.

	Rs.
(*a*) Reformation or completion of 39 miles of road at an average rate of Rs. 7,194 per mile	2,80,554
(*b*) Buildings	86,252
(*c*) Compensation for land	7,800
Repairs.	
To roads during construction, say, for three years, according to this year's Local Fund budget, at Rs. 11,100 per annum ...	33,300
Total Works ...	4,07,906
Establishment.	
(Calculated at 25 per cent. on cost of works)	1,01,977
Tools and Plant.	
(Calculated at 2½ per cent. on cost of works)	10,197
Grand Total ...	5,20,080

or by adopting the alternative proposal for buildings—

WORKS.

Original.

	Rs.
(*a*) Reformation or completion of 39 miles of road at an average rate of Rs. 7,194 per mile	2,80,554
(*b*) Buildings (including compensation for land)	65,960
Repairs.	
To roads during construction, say, for three years, according to this year's Local Fund budget, at Rs. 11,100 per annum ...	33,300
Total Works ...	3,79,814
Establishment.	
(Calculated at 25 per cent. on cost of works)	94,954
Tools and Plant.	
(Calculated at 2½ per cent. on cost of works)	9,495
Grand Total ...	4,84,263

Specification.

As per printed copies of Madras Presidency specifications.

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 10th October 1884, No. 465 E.W.

In continuation of my letter, No. 448, of 29th ultimo, I have the honor to forward a specification which ought to have accompanied the report, plans and estimates for improving the Calicut-Vayitri road submitted with the above letter.

2. The specification shows how each portion of the work is to be done and what materials are to be used.

Note by the Chief Engineer, Public Works Department.

With his letters above quoted the Superintending Engineer, IV Circle, submits an estimate, amounting to Rs. 4,84,930, for improving the road from Calicut to Vayitri.

2. The estimate has been drawn up in general accordance with the orders passed on Mr. Nordmann's preliminary report, printed with Proceedings of Government, No. 524 W., dated 26th February 1884.

3. In paragraph 19 of that report Mr. Nordmann, in suggesting that all steep gradients above and below the ghât should be corrected to at least 1 in 18, stated that "the average gradient on the ghât itself is believed to be not steeper than this (as the line of levels will show) and need not therefore be interfered with." An inspection of the drawings now submitted, however, shows the severe character of the gradients on the Támrachéri ghât. For about 8 miles there is a continuous unbroken rise, varying from 1 in 10·68 to 1 in 18, and the average gradient throughout is found to be about 1 in 17. In the report on the estimate it is stated that the improvement of these grades "would involve immense expense," and as it is not probable that funds will be forthcoming for such a radical and costly improvement as a change of alignment (the only real remedy in the opinion of the Chief Engineer) this blot on the system of Wynaad communications must remain.

4. Provision has not apparently been made in the estimate for camping grounds, as directed in paragraph 8 of G.O., No. 524 W., dated 26th February 1884. Possibly such already exist, but if not one or two on the steep ghât should be provided. Convenient depôts for storing metal at short intervals are of importance on such a line as this, where much will depend on the necessary repairs being executed rapidly, and the cross sections appear to indicate that there are suitable sites along the road for the purpose.

5. A width of 12 feet of metalling throughout has been estimated for, as ordered in G.O., No. 524 W., dated 26th February 1884; but the Chief Engineer is of opinion that, on the 8 miles of steep and narrow ghât, the full width of road should be metalled. This would not involve much extra expense, and would be of advantage.

6. Three new large iron bridges have been estimated for, one with two spans of 40 feet each, one with one span of 55 feet, and one with two spans of 50 feet each. There are mistakes in the designs of two of these bridges, but it is stated that the plans and estimates will be revised, and that such revision will not make any great difference in the cost.

7. The first and third bridges, each with two spans, are of the double N. or Whipple-Murphy type. The second, with one span, is a kind of bow-string lattice girder. The object of proposing for this bridge a girder of a different type from the others is not apparent; and in the opinion of the Chief Engineer it would be advisable to construct all three bridges upon the same type. This point might be left to the manufacturers in England, who should be ordered to supply girders for given spans, to carry a given load, and a certain kind of roadway; or the Warren-girder, with pin connections, which offers great facility of erection, a matter of importance in such a locality, might be adopted.

8. For the smaller bridges rolled iron girders are provided with teak roadway and railings. For these structures it is considered that the wrought-iron bridges referred to in Captain Dorward's notes, printed with Proceedings of Government, No. 412 I., dated 22nd April 1884, would be suitable.

9. In connection with the buildings provided for the staff, two proposals are submitted, the first involving an outlay of Rs. 94,689 and the second Rs. 66,329. The former provides for the purchase of land, and for the construction thereon of nearly all new buildings; the latter provides for the purchase of land with existing buildings, which are to be improved. The Superintending Engineer recommends the adoption of the second alternative, and the Chief Engineer supports that recommendation, as the outlay proposed for buildings for a division which is to last but for a limited number of years is very heavy. It must be noted, however, that the buildings provided for in this estimate do not appertain solely to the Calicut-Vayitri road, but to the whole system of roads to be dealt with in the Wynaad, and to insure good and economical working it is always desirable, in such a climate, to house the staff comfortably.

10. The amount of the estimate as given by the Superintending Engineer (Rs. 4,84,930) includes charges on account of establishment and tools and plant. Those charges have been calculated at the old rates of 25 and 2½ per cent., whereas, under existing orders, the rates should be 23 and 1 per cent., respectively. As, however, the cost of the project, under new work and buildings, will fall on Provincial Funds, separate provision for establishment and for tools and plant need not be made in the estimate. The total amount to be now sanctioned by Government is Rs. 3,80,337, of which Rs. 33,300, the estimated cost of repairs, will be debitable to Local Funds, which will have to contribute, in addition, the usual charges on account of establishment and tools and plant, to admit of the work being carried out by the Public Works Department.

11. The manner in which the project has been prepared does great credit to Mr. Todd, Assistant Engineer.

ORDER—dated 12th December 1884, No. 3043 W., Public Works.

This estimate provides for improving the road from Calicut to Vayitri *viâ* Pudanellum and the Támrachéri ghât, and is drawn up in general accordance with the orders passed on Mr. Nordmann's preliminary report printed with Proceedings of Government, No. 524 W., dated 26th February 1884.

2. The importance of connecting Wynaad with the coast by a road suitable for wheeled traffic has long been pressed on the Government by the planting interest, and His Excellency the Governor in Council considers that sufficient private capital has been invested in the various industries of the district to justify the claim of the planters to improved communications. The state of the existing roads is described in paragraph 2 of the Chief Engineer's memorandum printed with Proceedings of Government, No. 1417 W., dated 6th June 1882. With one exception they are there said to be "only fair weather lines, some fairly traced, others indifferently so, and all insufficiently opened or formed, and as a rule quite unmetalled." The residents are thus isolated, not only from the coast to which the produce of their industry has to find its way for shipment, but also from the general system of roads outside Wynaad limits. The proposed reconstruction of the road from Vayitri to Calicut will, to a considerable extent, remedy the first defect, and later, as funds become available, the fair weather roads which radiate from Vayitri should similarly be improved, so as to connect the taluk with the general system of roads and railways.

3. The undermentioned estimates now submitted are sanctioned as follows, subject to the remarks contained in the Chief Engineer's note printed with these Proceedings:—

—	Amount.	Classification.	Register number.
	RS.		
(1) Improvements to road from Calicut to Vayitri.	2,80,708	Communications, Original Works.	Provincial No. 214 W. of 1884-85.
(2) Repairs to the same road	33,300	Communications, Repairs.	Local No. 45 W. of 1884-85.

4. The question of an allotment of funds for the first-named work will be considered in connection with the Provincial budget for 1885-86.

5. With regard to the repairs, the cost of which will fall on Local Funds, the Government concur with the Superintending Engineer that the work should be carried out by the Public Works Department conjointly with the proposed improvements, and it will therefore be considered in the Financial Department what sum can be placed at the disposal of the Public Works Department for the purpose, either immediately or in 1885-86. The total amount required will be—

	Rs.
For works	
„ establishment	33,300
„ tools and plant	7,659
	333
Total ...	41,292

6. With respect to the estimate of Rs. 66,329 for buildings, the Government agree with the Chief Engineer that, in a climate like that of Wynaad, good weather proof accommodation is essential for the working staff; but, in view of the fact that the work contemplated will probably not extend over more than ten or twelve years, they consider that that object may be secured more economically than by constructing permanent buildings such as those proposed. The scale of accommodation also appears unnecessarily large for the limited time the staff will be employed in the locality. The Superintending Engineer will therefore, without delay, submit revised proposals for housing the staff.

7. The Superintending Engineer does not give details of the staff required to carry out the work provided for in the present estimates. Mr. Nordmann in his preliminary report mentioned one Executive Engineer, two Assistant Engineers, eight upper subordinates, and two medical subordinates; but that staff was named with reference to requirements for the entire scheme of Wynaad communications. The Chief Engineer will arrange for the provision of the temporary establishment which may be applied for by the Superintending Engineer as the work progresses.

8. The Government concur in the Chief Engineer's commendation of the creditable manner in which the project has been submitted by Mr. Todd.

(True Extract.)

Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, IV Circle, with eighty-nine enclosures.
„ Examiner, Public Works Accounts.
„ Financial Department.
„ Consulting Engineer for Railways.
„ Honorary Secretary, Wynaad Planters' Association.

Exd. C. Howarth.
Spare Copies

63 17

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1884} Madras.

PUBLIC WORKS.

Dated December, 12th.

Read.

Enel.

G.O., 12th Dec. 1884, No. 3043 W.

DECEMBER.

Road from Calicut to Vayitri

Orders on letters from the Superintending Engineer submitting estimates for improvements and repairs to the — *viâ* Pudanellum and the Támrachéri ghât.

18

6TH JULY 1885, No. 1563 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following papers:—

From the Superintending Engineer,	I Circle,	dated	27th May	1885,	No.	C-56.
" " "	II "	"	16th "	"	"	56 G.L.
" " "	III "	"	4th "	"	"	(3 statements.)
" " "	" "	"	16th "	"	"	345.
" " "	IV "	"	14th "	"	"	194 E.W.
" " "	" "	"	16th "	"	"	200 E.W.
" " "	" "	"	15th "	"	"	197 E.W.
" " "	" "	"	16th "	"	"	203 E.W.
" " "	" "	"	18th "	"	"	205 E.W.
" " "	" "	"	28th "	"	"	221 E.W.
" " "	" "	"	6th June	"	"	232 E.W.
" " "	" "	"	26th "	"	"	264 E.W.
" " "	V "	"	15th May	"	"	650.
" " "	" "	"	15th "	"	"	652.
" " "	VI "	"	7th "	"	"	791.
" " "	" "	"	21st "	"	"	32 C-T.J.
" " "	" "	"	6th June	"	"	129 T.N.
" " "	" "	"	12th "	"	"	430 T.J.
" " "	" "	"	30th April	"	"	320.
" Director-General of Telegraphs,		"				

ORDER—dated 6th July 1885, No. 1563 W., Public Works.

In the papers read above, the Superintending Engineers apply for funds, under Imperial Military and Civil Buildings, Roads and Services, on account of—

(*a*) anticipated outlay on minor works, in lump sums;
(*b*) incomplete works of 1884-85;
(*c*) new works recommended to be taken up in the current official year, and
(*d*) repairs.

2. Under Imperial Military, the budget grant for minor works amounts to Rs. 20,000; and the Superintending Engineer, V Circle, having surrendered a sum of Rs. 2,203 from the grant for new barracks for Royal Artillery at St. Thomas' Mount, the same will be resumed and added to the grant for minor works, in anticipation of sanction by the Government of India. Against the total of Rs. 22,203 so arrived at, the demands of Superintending Engineers amount to Rs. 47,824, as shown below:—

	Rs.
For minor works anticipated, lump sums	2,133
" incomplete minor works	5,175
" " major works	5,755
" new minor works specified	18,873
" " major works	15,888
Total ...	47,824

3. The minor works grant has been distributed as follows:—

					RS.
For incomplete minor works, *vide* statement B					
" " major works,	"	...	...	...	4,256
" new minor works,	"	...	...	...	5,637
" " major works,	"	...	...	...	9,812
	"	...	...	...	2,498
				Total ...	22,203

4. There is thus no balance left in hand, and it is found impossible to provide any lump sums for anticipated outlay on minor works.

5. The allotment under Repairs will be found in statement A. The demands under that head amount to Rs. 1,61,796, but have been reduced to Rs. 1,48,359 in order to bring the allotments within the available grant.

6. Under Imperial Civil Buildings, Roads and Services, the demands against original works amount to—

	RS.
Postal incomplete works	4,217
" new works	3,220
Telegraph incomplete works	4,375

of which Rs. 3,909 under Postal have been allotted for incomplete works. The balance of the minor works grant, after the above allotment, is Rs. 1,991; and it is placed at the disposal of the Director-General of Post Offices as shown in statement A.

7. A sum of Rs. 2,500, being the available minor works grant under Telegraph, has been allotted to complete the improvements to the telegraph office at Cocanada.

8. The allotments under Repairs will be found in statement A. The demands under Telegraphs have been reduced to Rs. 3,000, in order to bring the allotments within the provision in the budget.

9. Ordered that copies of these proceedings be forwarded to the Government of India in the Military and Public Works departments.

(Here enter No. 1564 W., dated 6th July 1885.)

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To Superintending Engineers.
To the Examiner, Public Works Accounts.
" Director-General of Post Offices.
" " of Telegraphs.
" Military Department.

Exd. E. Fernandez.
Spare Copies

19

GENERAL.
ACCOUNT.

Govt. of [1885] Madras.

PUBLIC WORKS.

Dated July, 6th.

Recd. *Encl.*

G.O., 6th July 1885, No. 1563 W.

JULY.

Funds

Orders distributing — under *Imperial* Military and Civil Buildings, *Roads* and Services, for incomplete and minor new works.

Appendix to G.O., No. 1563 W., dated 6th July 1885

A.—Statement showing amounts applied for and those granted under Imperial Military and Civil Buildings, Roads and Services.

	Amounts applied for.								Amounts granted.							
	Minor Works.			Repairs.					Minor Works.			Repairs.				
		Civil Buildings.			Civil Buildings.					Civil Buildings.			Civil Buildings.			
	Military.	Postal.	Telegraph.	Salt.	Military.	Postal.	Telegraph.	Salt.	Military.	Postal.	Telegraph.	Salt.	Military.	Postal.	Telegraph.	Salt.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Ganjam ..	..	..	..	..	2,000	500	..	..	..	..	..	..	2,000	500	..	..
Vizagapatam ..	1,290	59	..	..	2,270	300	300	..	..	..	..	..	2,500	300	..	..
Eastern Godavari ..	143	100	..	..	700	..	..	..	..	..	..	..	700	..	..	..
Central do. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Western do. ..	..	..	..	..	..	73	300	..	..	..	..	..	..	..	..	..
Bushikalya ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eastern Kistna ..	..	..	..	..	..	..	200	..	..	..	..	..	..	..	..	..
Guddalda ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Western Kistna ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nellore ..	..	..	..	..	20,000	200	200	..	..	..	..	..	20,000	200	..	..
Sangam Project ..	..	..	..	..	..	200	..	..	..	..	..	..	..	..	..	..
Bellary ..	500	..	..	..	20,000	200	..	..	..	..	..	..	20,000	..	..	..
Cuddapah ..	..	100	..	..	..	200	..	..	..	..	..	..	..	..	..	..
Kurnool ..	..	..	..	..	15,000	500	..	..	..	..	..	..	15,000	..	..	..
Nilgiri ..	..	..	..	..	25,000	500	..	..	..	..	..	..	25,000	..	..	..
West Coast ..	..	..	590	..	6,000	200	..	..	..	..	..	..	6,000	..	..	..
Coimbatore ..	..	..	..	..	2,000	100	..	..	..	..	..	..	2,000	..	..	..
North Arcot ..	..	..	..	..	..	100	..	..	..	..	..	..	..	..	..	..
South Arcot ..	..	..	..	..	10,000	..	..	..	..	..	..	..	20,200	..	..	..
Chingleput ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Buckingham Canal ..	..	..	..	..	65,000	500	500	..	..	..	..	..	66,000	..	..	..
Presidency ..	..	..	..	..	3,000	500	..	..	..	..	..	..	3,000	..	..	..
Trichinopoly ..	200	..	..	..	..	300	1,060	..	..	..	..	..	..	..	..	..
Tanjore ..	..	..	..	..	389	30	..	..	..	..	..	..	396	..	..	..
Negapatam ..	..	..	..	..	..	..	440	..	..	..	..	..	..	..	..	..
Madura ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevelly ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Director-General of Post Offices.	..	..	..	..	1,297	..	..	..	..	..	..	..	..	..	..	..
Reserve with Government ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	2,133	349	..	..	1,18,359	5,000	3,000	..	..	..	..	..	1,61,796	3,720	..	..

B.—STATEMENT of requirements on account of Imperial Incomplete Works for 1884-85 and of New Works sanctioned but not yet commenced.

Division.	Item No.	Name of Work.	Amount of Estimate.	Number and Date of Sanction.	Past Expenditure.	Balance of Estimate.	Amount applied for 1885-86		Amount allotted		Item No.	Remarks.
							For Incomplete Works.	For New Works.	For Incomplete Works.	For New Works.		
1	2	3	4	5	6	7	8	9	10	11	12	13
		IMPERIAL.	Rs.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
		CIVIL BUILDINGS, ROADS AND SERVICES.										
		Minor Works.										
Ganjam ..	1	Purchase of a postal building at Russellkonda for post-office.	641	G.O., No. 2363 W., dated 24th September 1884.	..	641	..	641	..	..	1	No funds available.
Godávari, Eastern	2	Post-office at Bhadráchalam	830	G.O., No. 2623 W., dated 27th October 1884.	..	830	..	830	..	..	2	Do. do.
Kistna, Western	3	Post-office at Duggirala	900	G.O., No. 1918 W., dated 9th July 1883, and G.O., No. 2415 W., dated 1st October 1884.	..	900	..	900	..	..	3	Do. do.
Cuddapah ..	4	Improvements to the post-office at Cuddapah.	1,440	G.O., No. 1995 W., dated 14th August 1884.	300	1,140	1,140	..	1,140	..	4	From minor works grant.
North Arcot ..	5	Constructing a parapet-wall to the post-office at Rénigunta.	133	Superintending Engineer's Register No. 25 of 1883-84.	90	43	43	..	..	..	5	Appropriation not necessary under code paragraph 2293, III.
Do. ..	6	Constructing a kitchen and a well in the post-office at Venkatagirikótta.	355	G.O., No. 71 W., dated 9th January 1885.	90	265	265	..	..	..	6	Do. do. do.
Presidency ..	7	Dismantling and rebuilding the stable and latrine of the Government telegraph office, Bangalore.	447	....	281	166	166	..	..	..	7	Do. do. do.
Do. ..	8	Adapting the old telegraph office at Bangalore as signallers' quarters.	280	....	59	221	221	..	..	..	8	Do. do. do.
Do. ..	9	Providing new teak fittings to the new telegraph office, Bangalore.	397	....	296	101	198	..	..	..	9	Do. do. do.
Trichinopoly ..	10	Constructing a post-office at Musiri ..	2,495	G.O., No. 2083 W., dated 23rd August 1884.	1,473	1,022	1,022	..	1,022	..	10	From minor works grant.
		Total ..	..		..	..	3,055	2,371	2,162	..		
		Major Works.										
Vizagapatam ..	1	Constructing a post-office with out-houses and quarters for the post-master at Korapet.	2,560	G.O., No. 80 W., dated 11th January 1884.	813	1,747	1,747	..	1,747	..	1	From minor works grant.
Godávari, Eastern	2	Improvements to the telegraph office at Cocanada.	4,000	G.O., No. 1084 W., dated 8th May 1885.	210	3,790	3,790	..	2,500	..	2	Do. do.
		Total ..	..		..	..	5,537	..	5,247	..		
		MILITARY										
		Minor Works.										
Ganjam ..	1	Constructing a school-house for the native infantry regiment at Berhampore.	1,390	G.O., No. 3536 W., dated 10th December 1883.	..	1,390	..	1,390	..	..	1	Funds allotted in separate orders.
Vizagapatam ..	2	Additions to the regimental hospital of the 16th Regiment, Madras Native Infantry, at Vizianagrum.	515	G.O., No. 179 W., dated 21st January 1884.	..	515	..	515	..	..	2	No funds available.
Do. ..	3	Improvements to the hospital of the 16th Regiment, Madras Native Infantry, at Vizianagrum.	545	G.O., No. 1746 W., dated 16th July 1884.	..	545	..	545	..	..	3	Do. do.
Do. ..	4	Constructing a magazine for the 16th Regiment, Madras Native Infantry, at Vizianagrum.	1,530	G.O., No., 278 W., dated 5th February 1885.	..	1,530	..	1,530	..	..	4	Do. do.
Do. ..	5	Constructing three latrines for the 16th Regiment, Madras Native Infantry, at Vizianagrum.	2,040	G.O., No. 1237 W., dated 28th May 1885.	..	2,040	..	2,040	..	..	5	Do. do.
Do. ..	6	Latrines for the Madras native infantry at Vizianagrum.	..	....	..	..	..	747	..	..	6	Estimate awaited.
Nilgiri ..	7	Converting a portion of No. 5 barracks at Wellington into a canteen, and the present canteen into a store-room.	1,130	G.O., No. 1083 W., dated 8th May 1885.	..	1,130	..	1,130	..	1,130	7	From minor works grant.
Do. ..	8	Constructing arm racks for the detachment of native infantry at Ootacamund.	660	G.O., No. 2822 W., dated 11th November 1884.	..	660	..	660	..	660	8	Do. do.
West Coast ..	9	Constructing a rifle range at Calicut ..	200	Superintending Engineer's Register No. 6 of 1884-85.	107	93	93	..	..	..	9	Appropriation not necessary under code para. 2293 III.
Do. ..	10	Fixing lightning conductor to the old station magazine at Cannanore.	500	Do. No. 68 of 1883-84.	82	418	418	..	..	..	10	Do. do. do.
Do. ..	11	Fixing lightning conductors to the new station magazine at Cannanore.	500	Do. No. 67 of 1883-84.	92	408	408	..	..	..	11	Do. do. do.
Do. ..	12	Fixing iron dampers to the ovens of the Government bakery, and alterations to the buildings at Cannanore.	..	....	92	658	658	..	658	..	12	From minor works grant.
Do. ..	13	Wire fence round the European infantry barracks at Cannanore.	1,130	....	150	980	980	..	980	..	13	Do. do.
Do. ..	14	Cart-shed at Malapuram	950	G.O., No. 287 W., dated 17th November 1884.	..	950	..	950	..	950	14	Do. do.
Do. ..	15	Converting the old cells in the Cannanore fort into a double magazine and treasure-room.	2,420	G.O., No. 2368 W., dated 24th September 1884.	..	2,420	..	2,420	..	2,000	15	Do. do.
Do. ..	16	Reroofing the regimental store-room at Quilon.	372	Superintending Engineer's Register No. 16 of 1884-85.	..	372	..	372	..	..	16	No funds available.
Do. ..	17	Alterations to the recreation and reading room of the British infantry regiment at Cannanore.	710	G.O., No. 271 W., dated 4th February 1885.	..	710	..	710	..	710	17	From minor works grant.
Coimbatore ..	18	Constructing two cisterns to hold water for fire-engine at the Remount depôt, Hosúr.	1,330	G.O., No. 961 W., dated 23rd April 1885.	..	1,330	..	1,330	..	..	18	No funds available.
Do. ..	19	Fixing up a weigh-bridge and constructing a shed over it in shed lines at the Remount depôt, Hosúr.	172	Superintending Engineer's Register No. 6 of 1884-85.	..	172	..	172	..	..	19	Do. do.
North Arcot ..	20	Materials for the sanitary improvements in the court-yards of sepoy lines of the 10th Regiment, Native Infantry, at Vellore.	1,810	G.O., No. 2877 W., dated 18th November 1884.	10	1,800	1,800	..	1,800	..	20	From minor works grant.

B.—*Statement of requirements on account of Imperial Incomplete Works for 1884-85 and of New Works sanctioned but not yet commenced—cont.*

Division.	Item No.	Name of Work.	Amount of Estimate.	Number and Date of Sanction.	Amount Applied for 1885-86		Amount Allotted		Item No.	Remarks.—
					Past Expenditure.	Balance of Estimate.	For Incomplete Works.	For New Works.		
1	2	3	4	5	6	7	8	9	10	11	12	13
		IMPERIAL—*cont.*	Rs.		Rs.	Rs.	Rs.	Rs.	Rs.			
		MILITARY—*cont.*										
		Minor Works—cont.										
Presidency	21	Parade barracks, provost cells	1,198	G.O., No. 595 W., dated 13th March 1885.	..	1,198	..	1,127	21	From minor works grant.
Do.	22	Constructing surface drains for wash-houses, parade barracks	780	G.O., No. 1646 W., dated 1st July 1884.	..	780	..	780	22	Do. do.
Do.	23	Constructing a rifle range for the British infantry near Fort St. George.	1,830	G.O., No. 1388 W., dated 15th June 1885.	..	1,830	..	1,830	23	Do. do.
Chingleput	24	Providing drains from bath-rooms as far as main drains of 24 family quarters of troop lines at Saint Thomas' Mount.	1,050	G.O., No. 2116 W., dated 27th August 1884.	232	818	818	..	24	Do. do.
Do.	25	Rebuilding five latrines attached to the family quarters of the Q-1st, Royal Artillery at St. Thomas' Mount.	625	G.O., No. 1417 W., dated 17th June 1885.	..	625	..	625	25	Do. do.
		Total ..	..		..	..	6,175	18,873	4,236	9,812		
		Major Works.										
Vizagapatam	1	Constructing a store-shed for the 16th Regiment, Madras Native Infantry, at Vizianagram.	3,480	G.O., No. 843 W., dated 6th April 1885.	..	3,480	..	3,480	..	..	1	No funds available.
Bellary	2	Slaughter-house and hanging-shed for meat at Bellary.	10,066	G.O., No. 269 W., dated 4th February 1886, and No. 1573 W., dated 6th July 1886.	2,449	2,617	2,617	..	2,617	..	2	From minor works grant.
Nilgiri	3	Additional hospital accommodation for women and children at Wellington.	3,036	G.O., No. 2571 W., dated 20th October 1884.	..	3,036	..	3,000	..	..	3	No funds available.
West Coast	4	Putting the Cannanore fort into a state of defence.	2,958	G.O., No. 528 W., dated 7th March 1885.	..	2,958	..	2,958	..	2,498	4	From minor works grant.
North Arcot	5	Constructing a draw-bridge and gate for the fort at Vellore.	6,450	G.O., No. 1647 W., dated 20th June 1881.	382	6,450	..	6,450	..	..	5	Funds allotted in separate orders.
Do.	6	Armourer's shop for the native infantry regiment at Vellore.	2,800	G.O., No. 1250 W., dated 29th May 1885.	67*	2,833	3,020	..	3,020	..	6	Appropriation not necessary under code paragraph 229 III.
Presidency	7	Fortified post at Aganam, Bangalore	37,300		..	..	..	..	..	2,498	7	From minor works grant.
		Total ..	..		..	..	5,755	15,888	5,637	2,498		

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Military Works.

READ—the following papers:—

From Brigadier-General R. C. STEWART, Quartermaster-General, to the Secretary to Government, Military Department, dated Ootacamund, 28th May 1885, No. 1197 B:—

I have the honor, by order, to forward, for sanction and transfer to the Public Works Department for disposal, the estimate, plan, &c., below mentioned, which have been approved by the Commander-in-Chief. The plan and estimate have been countersigned:—

I. Estimate, amounting to Rs. 2,300, for remodelling the fronts, &c., of the three coast batteries at Madras, in accordance with G.O., dated 1st April 1885, No. 1786.
II. Plan.
III. Report, dated 21st April 1885, by the Executive Engineer, Presidency division.

2. His Excellency is of opinion that the work is of a very urgent nature, and desires me to express a hope that Government will see fit to issue the necessary orders in view to its being taken in hand as soon as possible.

3. The Commander-in-Chief understands that the thickness of earthwork in front of the Napier and Lighthouse batteries is 38 feet, which is so near that laid down by the Inspector-General of Fortifications in his memorandum, dated 6th December 1884, that His Excellency does not see the necessity for further increasing its thickness in the case of these two batteries.

4. Sir Frederick Roberts considers that the screen of trees proposed by the Executive Engineer should be extended along the coast line, so as to give no indication of the position of the batteries from the sea, and likewise that the bamboo screens, proposed to be erected before the trees have grown, should be placed on other points of the shore besides those where batteries have been erected.

5. I am also desired to invite the attention of Government to the timber lying on the shore referred to by the Executive Engineer in his report, and to suggest that, under the orders of Government, it may be either removed or utilised on the work under reference.

No. 2907, Military.

Approved and transferred to the Public Works Department for disposal.

(By Order.)

OOTACAMUND,
29th May 1885.

(Signed) A. R. KENNEY-HERBERT, Lieut.-Col.,
Offg. Secretary to Government.

From Colonel H. L. PRENDERGAST, R.E., Superintending Engineer, V Circle, to the Chief Engineer, Public Works Department, dated Chepâk, 18th July 1885, No. 1651.

With reference to your memorandum, No. 1059 C., dated 15th June 1885, I have the honor to submit plans and estimate, amounting to Rs. 8,240, for modifying the coast batteries at Madras, as suggested by the Quartermaster-General in his letter, No. 1197 B., dated 28th May 1885, now returned.

2. Regarding the removal of timber lying on the shore and referred to by the Quartermaster-General in paragraph 5 of his letter, a separate report has been sent in Colonel Burton's letter, No. 1143, dated 19th June 1885.

Order—dated 14th August 1885, No. 1877 W., Public Works.

The estimate, amounting to Rs. 8,240, for alterations in the coast batteries at Madras, is sanctioned, and the amount is allotted by transfer from the current year's grant for public buildings for a regiment of native cavalry at Bangalore (item No. 2 in G.O., dated 10th July 1885, No. 1595 W.).

2. This sanction has been registered as Imperial, Ordinary, No. 32 W. of 1885-86, and classified as Military, Original Works.

3. Separate orders will issue on the subject referred to in paragraph 5 of the Quartermaster-General's letter.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, V Circle, with four enclosures.
" Examiner, Public Works Accounts, with general abstract estimate.
" Military Department.

Exd. J. Henricus.
Spare Copies

47 23

BUILDINGS AND ROADS.
MILITARY WORKS.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated August, 14th.

Recd. *Encl.*

G.O., 14th Aug. 1885, No. 1877 W.

AUGUST.

Coast Batteries, Madras

Estimate for alterations in —, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Military Works.

READ—the following letter from Brigadier-General R. C. STEWART, Quartermaster-General, to the Secretary to Government, Military Department, dated Ootacamund, 19th December 1885, No. 4353 A. :—

I have the honor, by order, to forward, for sanction and transfer to the Public Works Department for disposal, the estimate, &c., below-mentioned, which have been approved by the Commander-in-Chief. The estimate has been countersigned :—

Estimate, amounting to Rs. 810, for making certain improvements in the military prison, Fort St. George, to prevent prisoners committing suicide, with report.

No. 7333, Military.

Approved, and transferred to the Public Works Department for disposal.

(By Order.)

FORT ST. GEORGE,
28th December 1885.

(Signed) A. R. KENNEY-HERBERT, Lieut.-Col.,
Secretary to Government.

ORDER—dated 11th January 1886, No. 85 W., Public Works.

The estimate, amounting to Rs. 810, for improvements to the military prison, Fort St. George, is sanctioned for execution when funds are available.

2. This sanction has been registered as Imperial, Ordinary, No. 54 W. of 1885-86, and classified as Military, Original Works.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, V Circle, with two enclosures.
„ Examiner, Public Works Accounts, with the abstract estimate for note and return to Superintending Engineer, V Circle.
„ Military Department.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
MILITARY WORKS.

Govt. of {1886} Madras.

PUBLIC WORKS.

Dated January, 11th.

Recd. *Encl.*

G.O., 11th Jan. 1886, No. 85 W.

JANUARY.

Military Prison, Fort St. George

Estimate for improvements to the —, sanctioned.

GOVERNMENT OF MADRAS.

MILITARY DEPARTMENT.

8th January 1886, No. 183.

Military Buildings.

Read the following paper:—

No. 116. *From Major D. J. S. McLEOD, Deputy Quarter Master General, to Lieutenant-Colonel A. KENNEY-HERBERT, Secretary to Government, Military Department; dated Ootacamund, 5th January* 1886, *No. 23-A.*

Referring to O.G., No. 6225, dated 6th November 1885, intimating the stations at which the extra battalion British Infantry and Battery of Field Artillery allotted to this Presidency are to be located, and calling for a report relative to the extra accommodation that will be required for these corps and for the augmented strength of British Regiments, Cavalry and Infantry, I have the honor, by order, to report as follows, the requirements at each station being detailed in succession:—

BANGALORE—*British Cavalry.*—Accommodation will be required for sixty-six single men and sixty-six horses. In the current year no expenditure at all will be requisite on either head, and next year, making allowance for absentees at Wellington, &c., the few extra men to be provided for could, without unduly interfering with either health or comfort, be easily accommodated in the verandahs of existing barracks at an outlay of Rs. 1,000. It would be desirable, however, ultimately to provide another block of barracks for single men, and the Provincial Commander-in-Chief would propose to include this building in the schedule of works required, which is annually submitted to Government, leaving its execution to be delayed until convenient with reference to other wants. For the stabling of sixty-six horses an expenditure of Rs. 11,880 will have to be incurred next year.

British Infantry.—The existing barracks contain ample accommodation for a battalion of augmented strength, and no expenditure will, therefore, be requisite on them.

BELLARY—*British Infantry.*—No expenditure need be incurred on the present barracks in which the extra strength can be properly accommodated without overcrowding.

CANNANORE.—The augmented strength of British Infantry Regiment can be accommodated in existing barracks without extra expense.

FORT ST. GEORGE.—As Government is aware nothing can be done towards providing additional accommodation for troops in Fort St. George until the buildings now occupied by the Accountant-General's and Military Accounts Department Offices are made available; the manner in which it is proposed to utilize these will be mentioned in the report which is under preparation in reply to the Reference Order of Government, No. 5126, dated 16th September 1885; but

even with these buildings sufficient accommodation for the augmented strength of the British Infantry Regiment, as it will stand when the detachment at present at the Andamans rejoins, will not be available in the Fort, and it will be necessary to place a detachment of the regiment in the old, and now vacant, north barracks of artillery at St. Thomas' Mount; the expenditure connected with this arrangement will be noted in the remarks on that station.

ST. THOMAS' MOUNT—*Field Battery, Royal Artillery.*—This battery will be accommodated in the old south barracks, which were abandoned in favor of the new barracks; these barracks are complete with all subsidiary buildings for a Field Battery, and the horses of the battery can be placed in the old lines in the "Begum's compound;" the house in this compound is now used as an office by the Executive Engineer, which, however, would not be interfered with by the re-occupation of the horse lines.

British Infantry.—The detachment of the regiment quartered in Fort St. George would be placed in the old north (artillery) barracks, which contain accommodation for eight Sergeants and 145 men.

The fact that the two sets of old artillery barracks, north and south, above alluded to have been abandoned will account for the necessity of some considerable expenditure on their general repair; the approximate amount of this is Rs. 5,000, composed of the following items, and it is recommended that authority for their immediate execution be granted, so that, if possible, they may be completed by the time the barracks, &c., have to be taken into occupation :—

Re-roofing guard and prisoners' rooms near rear gateways	1,000
Do. cook-houses	1,200
Additions to shed to be used as shoeing shed	200
White washing, &c., of all buildings	500
General repairs to main roofings	500
Arm racks and shelves and pegs for kits	800
Contingencies	800
	5,000

SECUNDERABAD—*British Cavalry.*—The augmented strength can be provided for in existing barracks without extra expense.

British Infantry.—The augmented strength of two battalions can be provided for in existing barracks without any extra expense.

The third battalion, British Infantry, allotted to this station can only be accommodated by dividing it between the barracks of the other two battalions, and consequently the arrangement must be looked on as a purely temporary one, pending final redistribution of British troops in India.

The cost of the temporary additions requisite to the barracks in the shape of iron roofed outer verandahs, the existing outer verandahs having to be used for dining purposes, will amount to Rs. 12,000, and the blocking up of certain doors in married quarters will cost Rs. 300.

If it should be decided to give a more permanent character to the location of the third battalion at the station, without going to the expense of building new barracks for it, further expenditure, as below, would, at any rate, be essential; for, except as a very temporary arrangement, it is most undesirable that regimental institutions of two battalions should be combined :—

Extra hospital accommodation	60,000
Purchasing and adapting houses for Officers' quarters	30,000
Mess-house	32,000
Canteen	27,000
Recreation-room, &c.	20,000
Guard-room, &c.	25,000
Orderly-room	6,000
Stores	12,000
Workshops	11,000
Sergeants' mess	25,000

It has been assumed above that three battalions, British Infantry, will shortly be present together at Secunderabad; but under existing conditions a battalion of a regiment from this Presidency being assigned to Upper Burma, the Provincial Commander-in-Chief believes it will be unnecessary, at all events for an indefinite period, to provide for the location of a third battalion at Secunderabad, and, under these circumstances, no expenditure beyond the Rs. 300 mentioned as requisite in connection with blocking up of doors in married quarters would be demanded; the barracks now occupied by the depôt, 2nd Battalion, Hampshire Regiment, being large enough to accommodate a battalion on the augmented strength, together with the depôt of a battalion in Upper Burma.

The retention at Secunderabad of the depôt of the battalion in Upper Burma is necessary only so long as the depôt of the 1st Battalion, Oxfordshire Regiment, is located at Bangalore; when that battalion goes home it would be as well that Bangalore should be looked on as the station for the depôt of the battalion, British Infantry, employed in Upper Burma.

KAMPTEE.—Some additions to the existing barracks estimated to cost Rs. 3,000 will be required next year to provide accommodation for the augmented strength, British Infantry, immediately, leaving a new barrack to cost about Rs. 50,000 to be built ultimately in ordinary course.

RANGOON, THAYETMYO AND TONGHOO.—Existing accommodation at these stations in the British Burma command will contain the extra numbers of men of regiments at augmented strength, without any expense having to be incurred.

A tabular statement showing expenditure requisite this year and next year, as above detailed, is attached.

It will be noted that whereas in the letter of the Government of India, Military Department, No. 1040-B., dated 28th October 1885 (Proceedings of Government, No. 6225, dated 6th November 1885), "Bellary" is mentioned as the station for the extra Field Battery to be allotted to this Presidency, the report above made contemplates the location of this battery at "St. Thomas' Mount." It is therefore necessary to explain that, after the report to the Commander-in-Chief in India was made, upon which his proposal to locate this battery at Bellary was based, it was found that such great expense would be involved immediately in alterations and additions to existing barracks at Bellary to accommodate another battery there even temporarily, that General Rowlands was obliged to modify his original report and to recommend the location of the extra Field Battery at St. Thomas' Mount, instead of at Bellary, barracks, &c., being ready for the reception of the battery at the former place without extraordinary expenditure being demanded.

This recommendation has been adopted by His Excellency the Commander-in-Chief in India and has been submitted to the Government of India, so that orders directing the indicated change in original arrangements may be expected shortly, and the report above made has been framed in anticipation of these orders.

Before closing, General Rowlands thinks it desirable to observe, with reference to para. 6 of the letter of the Government of India, Military Department, No. 1040-B., dated 28th October 1885 (Proceedings of Government, No. 6225, dated 6th November 1885), that, before long, when the work of remodelling the hill fort of Sitabuldi has been completed, another battery garrison artillery will be required by this Presidency permanently for that fort, and that, unless the garrison battery taken from Fort St. George for the Expeditionary Force to Upper Burma is sent back to that station, it would be desirable that the spare battery mentioned as to be kept in reserve might, with advantage, be sent direct to Fort St. George on arrival from England, it being most undesirable that the fort armament and guns in the shore batteries at Madras should be left without a battery to look after them for any time.

Statement showing expenditure necessary to provide extra accommodation at Stations, Madras Presidency, in connection with increased strength of British Troops.

Stations.	Purpose.	Expenditure.		Remarks.
		This year.	Next year.	
Bangalore ...	Additions to Barracks— British Cavalry ...	Nil.	1,000	A barrack block will be required ultimately.
Bellary ... } Cannanore ... }	Stabling British Cavalry.	Nil.	11,880	
St. Thomas' Mount.	.....	Nil.	Nil.	
	General repairs to barracks for Field Battery, Royal Artillery, and Detachment British Infantry.	5,000	...	
Secunderabad ...	Additions, &c., to existing barracks if temporarily required to accommodate a third battalion.	12,300	...	If the third regiment is not actually located at Secunderabad, but merely two full regiments and depôt of a third, only small alterations to married quarters, costing Rs. 300, need be carried out this year.
Kamptee	Additions to existing barracks for augmented strength.	Nil.	3,000	A new barrack block will be required ultimately.
Rangoon ... } Thayetmyo ... } Tonghoo ... }	.....	Nil.	Nil.	
	Total ...	17,300	15,880	

OOTACAMUND,
5th January 1886.

(Signed) D. J. S. McLEOD, Major,
Deputy Quarter Master General.

No. 117.

No. 183.

Copy of the above forwarded to the Secretary to the Government of India, Military Department, for the information of the Right Honorable the Governor-General in Council, in reply to Military Department No. 1040-B., dated 28th October 1885.

FORT ST. GEORGE,
8th January 1886.

(By Order.)
(Signed) A. KENNEY-HERBERT, Lt.-Col.,
Secretary to Government.

To the Quarter Master General.
" Public Works Department.

Exd. E. C. Shunker.

27

Govt. of {1886} Madras.

MILITARY.

To

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

Dated January, 8th.

Issued

Read. *Encl.*

8th January 1886, No. 183.

JANUARY.
Nos. 116-117.

Military Buildings.

Report called for by the Government of India relative to the extra accommodation that will be required for the battalion of British Infantry and battery of Field Artillery allotted to the Madras Presidency, and also for the augmented strength of British Regiments, Cavalry and Infantry, forwarded.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following letter from Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 14th January 1886, No. 15 E.W.

In forwarding the statements of savings and demands under the heads Imperial and Provincial, I have the honor to request you will be good enough to intimate your approval of the whole or any portion *by telegram*, so that arrangements may be made to utilise the grants before 31st March next.

ORDER—dated 18th January 1886, No. 152 W., Public Works.

The following sums are resumed and added to the Provincial reserve with the Government :—

	RS.
1. District munsif's court at Ottapálam	300
2. Improvements to road from Calicut to Vayitri	25,000
3. Repairs, Communications, Coimbatore division	108
4. Tools and plant, Coimbatore division	110
Total ...	25,518

2. The following appropriations are made from the Provincial reserve with the Government :—

	RS.
1. Improvements to the Collector's office at Mangalore	2,500
2. Improvements to the tahsildar's office at Putúr	107
3. Purchase of Rowe's bungalow at Devála and converting it into a police station and ten police huts, and constructing five additional huts	4,500
4. Alterations to the tahsildar's office at Mangalore	595
5. Temporary establishment for surveying the proposed cart-road from Salem to Yercaud	500
8. Sholadi bridge	3,000
9. Widening the ghât road near the Craigmore toll bar	1,000
Total ...	12,202

3. The Superintending Engineer applies for an allotment of Rs. 13,316 for the proposed new office for the Collector at Calicut, but as plans and estimates for the work have not yet been sanctioned, the amount has not been granted.

4. The following transfers of funds under Imperial, Military, are sanctioned :—

From		*To*	
Original Works.	Rs.	Original Works.	Rs.
Bakery at Wellington	4,300	Putting the Cannanore fort into a state of defence	1,802
Fixing iron dampers to the ovens of the Government bakery at Cannanore ...	566	Improving the hospital and nursery dormitories, male and female branches of the Lawrence Asylum, Ootacamund	1,700
Repairs.		Converting the old cells in the Cannanore fort into a double magazine and treasure-room and fixing lightning conductors	420
Repairs, Coimbatore division	1,700	Improvements to the rest-house at Pódanúr	150
		Minor works, Nílgiri division ...	1,631
		Do. Coimbatore do. ...	250
		Do. West Coast do. ...	613
Total ...	6,566	Total ...	6,566

5. A sum of Rs. 100 is allotted to the Coimbatore division under Imperial, Civil Buildings, Postal, Repairs, from the reserve with the Government under that head.

6. With reference to the application for funds for the post office at Salem, the attention of the Superintending Engineer is drawn to paragraph 4 of G.O., No. 2564 W., dated 2nd November 1885.

7. The following telegram will be sent to the Superintending Engineer, IV Circle :—

"Your No. 15 E.W. of 14th. Transfers under Provincial, except Collector's office, Calicut, under Military to the extent surrendered, and under Imperial, Civil Buildings, except post office at Salem, sanctioned."

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, IV Circle.
" Examiner, Public Works Accounts.
" Judicial Department.
" Revenue do.
" Financial do.
" Military do.

Exd. E. Fernandez.
Spare Copies

29

GENERAL.
ACCOUNT.

Govt. of {1886} Madras.

PUBLIC WORKS.

Dated January, 18*th*.

Recd. *Encl.*

G.O., 18th Jan. 1886, No. 152 W.

JANUARY.

Funds

Orders on letter from the Superintending Engineer, IV Circle, surrendering certain—.

30

25TH JANUARY 1886, No. 203 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following paper :—

From the Superintending Engineer, V Circle, dated 19th January 1886, No. 4347.

ORDER—dated 25th January 1886, No. 203 W., Public Works.

The following transfers of funds under Imperial, Military, Original Works, are sanctioned :—

From	RS.	*To*	RS.
Alterations to coast batteries, Madras.	1,174	Constructing six blocks of stables for two field batteries of Royal Artillery at St. Thomas' Mount ...	939
Materials for the sanitary improvements in the court-yards of the sepoy lines, 10th Regiment, Native Infantry, at Vellore	695	Minor Works, North Arcot division.	545
		Do. Chingleput division ...	150
		Reserve with the Government ...	235
Total ...	1,869	Total ...	1,869

2. As regards the other transfers of funds referred to in the Superintending Engineer's letter above recorded, the sanction of the Government of India will be applied for.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, V Circle.
" Examiner, Public Works Accounts.
" Military Department.

Exd. E. Fernandez.
Spare Copies

GENERAL.
ACCOUNT.

Govt. of {1886} Madras.

PUBLIC WORKS.

Dated January, 25th.

Recd. *Encl.*

{G.O., 25th Jan. 1886, No. 203 W.

JANUARY.

Funds

Certain transfers of —, sanctioned.

28TH JANUARY 1886, No. 250 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Military Works.

READ the following papers :—

From Brigadier-General R. C. STEWART, Quartermaster-General, to the Secretary to Government, Military Department, dated Ootacamund, 7th January 1886, No. 58 A.

In continuation of this office letter, No. 534 T., of 3rd ultimo, I have the honor, by order, to forward, for sanction and transfer to the Public Works Department for disposal, the estimate, plan, &c., below mentioned, which have been approved by the Commander-in-Chief. The plan and estimate have been countersigned :—

Abstract and detailed estimates, amounting to Rs. 390, for constructing a latrine for natives at the new Ordnance depôt, Agram, Bangalore, with specification and plan.

2. This work is necessary to complete the requirements of the Ordnance depôt mentioned in paragraph 15 of this office letter, No. 3200 A., dated 28th September 1885.

No. 231, Military.

Approved, and transferred to the Public Works Department for disposal.

(By Order.)

FORT ST. GEORGE,
11th January 1886.

(Signed) A. R. KENNEY-HERBERT, Lieut.-Col.,
Secretary to Government.

From Colonel H. L. PRENDERGAST, R.E., Superintending Engineer, V Circle, to the Chief Engineer, Public Works Department, dated Chêpâk, 23rd January 1886, No. 4402.

With reference to your endorsement, No. 223 C., dated 18th January 1886 (returned), I have the honor to forward, countersigned, the estimate of Rs. 390 for constructing a latrine for natives at the new Ordnance depôt in Bangalore.

ORDER—dated 28th January 1886, No. 250 W., Public Works.

The estimate, amounting to Rs. 390, for constructing a latrine for natives at the new Ordnance depôt, Bangalore, is sanctioned as supplemental to the estimate sanctioned in G.O., No. 3059 W., dated 18th December 1885.

2. This sanction has been registered as Imperial, Ordinary, No. 62 W. of 1885-86, and classified as Military, Original Works.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, V Circle, with two enclosures.
" Examiner, Public Works Accounts, with the estimate for note and return to Superintending Engineer, V Circle.
" Military Department.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
MILITARY WORKS.

Govt. of (1886) Madras.

PUBLIC WORKS.

Dated January, 28th.

Read. *Encl.*

G.O., 28th Jan. 1886, No. 250 W.

JANUARY.

Latrine

Estimate, amounting to Rs. 390, for constructing a — for natives at the new Ordnance depôt, Bangalore, sanctioned.

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GOVERNMENT OF MADRAS.

MILITARY DEPARTMENT.

22nd January 1886, No. 489.

Military Buildings.

Read the following :—

No. 271. *Telegram from the Secretary to the Government of India, Military Department, Calcutta, to the Secretary to the Government of Madras, Military Department, Madras; dated 21st January* 1886, *No. 75-M.W.*

Your 183, dated 8th instant. Rs. 17,300 required this year for extra accommodation sanctioned.

No. 272. ORDER THEREON, 22nd January 1886, No. 489.

Communicated to the Provincial Commander-in-Chief and the Public Works Department, in continuation of previous correspondence.

(True Extract.)

(Signed) A. KENNEY-HERBERT, Lt.-Col.,
Secretary to Government.

To the Quarter Master General.
„ Public Works Department.

Exd. E. C. Shunker

Gobt. of (1886) Madras.

MILITARY.

To

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

Dated January, 22nd.

Issued

Read. *Encl.*

G.O., 22nd January 1886, No. 489.

JANUARY.
Nos. 271-272.

Military Buildings.

Extra accommodation.—Sum of Rs. 17,300 required this year for — for the increased British Force allotted to the Madras Presidency, sanctioned.

GOVERNMENT OF MADRAS.

MILITARY DEPARTMENT.

Ordnance Department.

No. 1078.

From

THE SECRETARY TO GOVERNMENT, FORT ST. GEORGE,
MILITARY DEPARTMENT,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
MILITARY DEPARTMENT.

SIR,

With reference to your letter No. 1337-D., dated 8th September 1885, I am directed to forward, for submission to the Right Honorable the Governor-General in Council, the correspondence marginally noted, and to state, with advertence to paras. 10 and 11 of the Quarter Master General's letter, that when the new magazine on the berm of the Wállajáh Bastion of Fort St. George has been completed, and the fittings in the magazine at St. Thomas' Mount have been altered (funds for both of which works have been allotted in the budget of the Public Works Department for 1886-87), no further accommodation will be necessary for the storage of gun-powder in the vicinity of Madras.

From the Quarter Master General, No. 345-A., dated 28th January 1886.
From the Commissary-General, No. 7001, dated 4th February 1886.

2. I am to state that this Government concur in opinion with the Provincial Commander-in-Chief that there is no urgent necessity for the removal of the Laboratory from its present situation in Fort St. George to a position closer to the Arsenal.

3. As soon as funds are available for the repair of the granary buildings on the beach, the work will be taken in hand in order that the old casemate barracks now occupied by the Commissariat Department may be handed over to the Ordnance Department for the storage of the carriages of the siege train and reserve batteries.

4. Adverting to para. 3 of your letter under acknowledgment, I am to inform you that the negotiations for the purchase of Raja Gajapathi Rau's house in Madras have fallen through, the amount sanctioned by the Government of India having been found insufficient for the completion of the work which must be carried out to render the building fit for the accommodation of the Military Accounts Offices.

5. It should be noted that, had this purchase been effected, the house would only have provided accommodation for the establishment of the Military Accounts Department, and that no building outside the fort has yet been found in which the

offices of the Accountant-General could be located. Accordingly it will be seen that the question of the removal of these offices from Fort St. George is still as far from solution as it was when first mooted.

FORT ST. GEORGE,
18*th February* 1886.

I have the honor to be,
Sir,
Your most obedient servant,
(Signed) A. KENNEY-HERBERT, Lt.-Col.,
Secretary to Government.

No. 170. *From Major D. J. S. McLEOD, Deputy Quarter Master General, to Lieutenant-Colonel A. KENNEY-HERBERT, Secretary to Government, Military Department; dated Ootacamund, 28th January* 1886, *No.* 345-*A.*

In returning the letter of the Government of India as per margin forwarded for the opinion of the Provincial Commander-in-Chief under O.G., No. 5126, dated 16th September 1885,

No. 1837-D., dated 8th September 1885.

I have the honor, by order, to report that the Provincial Commander-in-Chief considers it most desirable that the carriages of the siege train and reserve batteries ordered to be maintained by the Ordnance Department in this Presidency should be stored within Fort St. George in a convenient situation with reference to the Arsenal, and he would suggest that the old casemate barracks, now used as store rooms by the Commissariat Department, should be made over to the Ordnance Department for the purpose.

2. The Inspector-General of Ordnance has approved of these casemates for the purpose, they being situated most conveniently in the vicinity of the Arsenal and being most suitably arranged.

3. General Rowlands regrets, however, that he finds himself unable to propose any redistribution of buildings within the fort, which would enable adequate provision of storage being made for the Laboratory of the Ordnance Department, or for the Commissariat stores displaced from the casemates to make way for the siege train carriages, &c.

4. Barrack accommodation for 884 single men is wanted in Fort St. George,* whereas existing barracks provide for only 577 men, so that, as matters stand, there is a deficiency of accommodation for 307 men.

* British Infantry, excluding detachment at Mylapuram	780
Garrison Battery, Royal Artillery ...	104
Total ...	884

5. The buildings to be obtained on the removal from the fort of the Civil and Military Account Offices will do no more than provide for at most 200 men, every part of the buildings being utilized and no portion left available for either Ordnance or Commissariat store purposes.

6. A hundred men or more of the British Infantry, when the regiment is at full strength, will therefore have to be kept detached at St. Thomas' Mount, the nearest place where barracks are available, an arrangement which the Provincial Commander-in-Chief would be glad to avoid if by any redistribution of buildings he saw his way to increasing barrack accommodation in Fort St. George.

7. The Director-General of Ordnance mentions the Laboratory, but it is now within the limits of the fort, being placed in an out-work which is not to be removed, and General Rowlands believes there is no great urgency for its transfer to a position closer to the Arsenal.

8. The Commissary-General has been asked to try and find accommodation for the Commissariat stores, which the arrangements above suggested will displace, in some buildings now at his disposal, and it is hoped he will find this practicable; should it not be so, however, the Provincial Commander-in-Chief would propose the

construction of a new store room for the purpose in a convenient situation with reference to the rest of the Commissariat store rooms at Madras, it being in his opinion very desirable that the Commissariat stores, which need not of necessity be stored in the fort, should be provided for elsewhere to make way for Ordnance stores which ought to be kept within the fort and close to the Arsenal.

9. There remains only the question of magazine accommodation.

10. The Provincial Commander-in-Chief has been in communication with the Inspector-General of Ordnance on this subject, and in consultation with that officer has decided that the new magazine to be placed on the berm of the Wállajáh Bastion of Fort St. George shall be constructed to contain 3,000 barrels of powder, which quantity, with 5,760 barrels to be stored in the magazine at St. Thomas' Mount when its fittings are altered, will represent all the powder which the Ordnance Department consider necessary to be stored in the vicinity of Madras as detailed in margin.

	Barrels.
Fort armament, including powder for heavier guns to be placed on Beach Batteries	5,387
St. Thomas' Mount	2,621
Total ...	8,008

11. Funds for the alteration of fittings in the magazine at St. Thomas' Mount and for commencement of the new magazine on the berm of the Wállajáh Bastion have been allotted in the budget of the Public Works Department for 1886-87, and the question of provision of storage accommodation for powder at Madras may, therefore, now be said to have been disposed of.

No. 704.

Referred for favor of *very early report* on paras. 1, 2 and 8 of the Quarter Master General's letter.

(By Order.)

FORT ST. GEORGE,
1*st February* 1886.

(Signed) A. KENNEY-HERBERT, Lt.-Col.,
Secretary to Government.

To the Commissary-General.

No. 171. *From Colonel H. P. HAWKES, Officiating Commissary-General, to Lieutenant-Colonel A. KENNEY-HERBERT, Secretary to Government, Military Department; dated Madras, 4th February* 1886, *No.* 7001.

I have the honor to return the documents regarding accommodation for the Ordnance Department in Fort St. George referred to me with your docket No. 704, dated 1st February 1886.

2. In reply I have to report that I have for some time been in communication with the Quarter Master General and the General Officer Commanding the Eastern District in reference to the casemate barracks in the fort which are now occupied as store godowns by the Executive Commissariat Officer, but which the Provincial Commander-in-Chief wishes to transfer to the Inspector-General of Ordnance for the storage of the carriages, &c., of the siege train.

3. I am very willing to meet General Rowland's wishes, but it is obviously impossible to vacate the barracks in question until other accommodation is found for the Commissariat stores, as the Executive Officer has as much need of store rooms as the Commissary of Ordnance has. I suggested that the old adult school might be repaired and handed over to us, as it is not used and has been long unoccupied, but I was informed that it is to be used again for its "proper purpose" and cannot, therefore, be made available.

4. The Quarter Master General having definitely decided that there is no other available building in the fort, I was obliged to search outside, and I therefore told him that I would appropriate part of the Commissariat granary on the

beach as an executive godown, provided that funds could be found to put it into a state of repair.

5. The whole granary is in a state of dilapidation, and it has been in that condition for years past. Estimates for the needful repairs were prepared by the Executive Engineer long ago, but he has never been able to carry them out for want of funds. The Quarter Master General, however, now states that the Commander-in-Chief might be in a position to obtain funds for the work by re-appropriation out of the budget of 1886-87 before the final issue of that budget is made, and he thinks that "probably some Rs. 7,000 or so might be found if necessary."

6. I have accordingly asked the Executive Engineer to ascertain, in communication with the Executive Commissariat Officer, what sum of money is needed for the purpose in question, and there the matter rests at present, as I have received no reply up to date.

(True Copies.)

(Signed) A. KENNEY-HERBERT, Lt.-Col.,
Secretary to Government.

Exd. E. C. Shunker.

Govt. of {1886} Madras.

MILITARY.

From

THE SECY. TO GOVT.,
FORT ST. GEORGE,
Military Department,

To

THE SECY. TO THE
GOVT. OF INDIA,
Military Department.

Dated February, 18*th*.

Issued

Recd. *Encl.*

18th February 1886, No. 1078.

Mr Encl 3105/86

FEBRUARY.
Nos. 169—172.

Ordnance Department.

Ordnance Stores.—Correspondence affording information called for relative to the accommodation required in Fort St. George for —, forwarded, with remarks, to the Government of India.

FINAL ISSUE. 36

IMPERIAL.
MILITARY WORKS. **MADRAS.**

PUBLIC WORKS DEPARTMENT.

IMPERIAL BUDGET-ESTIMATE

OF

MILITARY WORKS

OF THE

GOVERNMENT OF MADRAS

FOR THE YEAR

1886-87.

CHEPÂK,
29th April 1886.

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Government, P.W.D.

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IMPERIAL.
MILITARY WORKS.

MADRAS.

REVENUE.

ABSTRACT OF THE BUDGET-ESTIMATE OF REVENUE OF THE PUBLIC WORKS DEPARTMENT FROM MILITARY WORKS IN MADRAS FROM 1st APRIL 1886 TO 31st MARCH 1887.

——	Budget-Estimate, 1886-87.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
	Rs.	Rs.	Rs.	Rs.
In Public Works Department	30,000	29,500	29,500	33,586
In Civil and Military Departments	...	...	...	...
Total ...	30,000	29,500	29,500	33,586

CHARGES.

ABSTRACT OF THE BUDGET-ESTIMATE OF EXPENDITURE OF THE PUBLIC WORKS DEPARTMENT OF MILITARY WORKS IN MADRAS FOR THE YEAR FROM 1st APRIL 1886 TO 31st MARCH 1887.

——	Reference to Detailed Estimate.	Budget-Estimate, 1886-87.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
		Rs.	Rs.	Rs.	Rs.
Original Works. In progress ...	...	58,996	1,89,204	2,29,646	2,09,361
Original Works. Not commenced.	...	1,49,039			
Repairs ... Ordinary ...	...	3,10,465	1,72,995	2,94,549	2,83,366
Repairs ... Special ...	...	...			
Establishment	...	1,20,700	84,205	1,20,563	1,14,345
Tools and Plant	...	5,200	3,596	5,242	4,935
Suspense Account	...	...	...	...	...
Total ...	...	6,44,400	4,50,000	6,50,000	6,12,007

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IMPERIAL.
MILITARY WORKS.

MADRAS.

ABSTRACT OF THE CHARGES TO BE INCURRED BY THE PUBLIC WORKS DEPARTMENT FROM IMPERIAL FUNDS AND CONTRIBUTIONS IN BOTH INDIA AND ENGLAND.

——	Budget-Estimate, 1886-87. Original Works. In progress.	Not commenced.	Total.	Repairs.	Establishment.	Tools and Plant.	Suspense Account.	Barrack Department.	Total.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
Provision from Imperial Funds.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
In India ...	58,996	1,49,039	2,08,035	3,10,465	1,20,700	5,200	...	...	6,44,400	4,50,000	6,50,000	6,12,007
In England.	...	...	...	...	...	...	...	...	...	...	...	250
Total ...	58,996	1,49,039	2,08,035	3,10,465	1,20,700	5,200	...	...	6,44,400	4,50,000	6,50,000	6,11,757
Provision from Contributions.												
In India ...	...	...	...	...	...	...	...	...	...	...	...	261
Grand Total.	58,996	1,49,039	2,08,035	3,10,465	1,20,700	5,200	...	...	6,44,400	4,50,000	6,50,000	6,12,018

STATEMENT SHOWING THE WORKS ON WHICH THE OUTLAY IN ENGLAND ABOVE PROVIDED FOR IS TO BE INCURRED.

——	Budget-Estimate, 1886-87. Original Works. In progress.	Not commenced.	Total.	Tools and Plant.	Suspense Account.	Total.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
	...	..	...	...	...	...	...	...	250
Total ...	...	...	...	...	...	...	...	...	250

IMPERIAL.
MILITARY WORKS.

PART

DETAIL OF THE BUDGET-ESTIMATE FOR

CLASS A

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.
					Rs.
				IMPERIAL ORDINARY.	
				Military.	
				Original Works.	
(1) *Accommodation for troops*— Buildings for European troops in the plains. Permanent.	West Coast.	Malapuram ...	1	Constructing a barracks for a detachment of British Infantry to accommodate 100 men.	1,35,094
	Chingleput.	St. Thomas' Mount.	2	New barracks for Royal Artillery...	1,46,910
	Do. ...	Do. ...	3	Constructing six blocks of stables for two field batteries of Royal Artillery.	21,702
(2) *Ordnance Works* ...	Presidency.	Fort St. George.	4	Armament of Fort St. George ...	42,035
(4) *Fortifications* ...	Do. ...	Madras ...	5	Alterations to the Coast Batteries.	14,265
	Do. ...	Bangalore ...	6	Fortified post at Agram	39,180
				Total ...	...

I.

ORIGINAL WORKS FOR THE YEAR 1886-87.

WORKS.

Outlay.		Grant, 1886-87.			Item No.	Remarks and References.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs.	Rs.	Rs.		
83,531	31,448	20,115	...		1	G.O., No. 2845 W., dated 27th November 1885. Item No. 2, class A works, budget of 1885-86.
97,379	22,458	27,073	...		2	G.O., No. 1274 W., dated 2nd June 1885. Item No. 1, class A works, budget of 1885-86.
10,000	10,763	939	...	48,127	3	G.O., No. 2561 W., dated 2nd November 1885. Item No. 2, class B works, budget of 1885-86.
8,036	29,935	2,964	...	2,964	4	G.O., No. 2970 W., dated 19th October 1883. Item No. 4, class A works, budget of 1885-86.
...	6,266	6,025	...		5	G.O., No. 2126 W., dated 11th September 1885.
34,467	3,020	1,880	...		6	G.Os., Nos. 3059 W., dated 18th December 1885 and 250 W., dated 28th January 1886.
				7,905		
...	...	58,996	...	58,996		

IMPERIAL.
MILITARY WORKS.

PART

DETAIL OF THE BUDGET-ESTIMATE FOR

CLASS B

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.
					Rs.
				IMPERIAL ORDINARY.	
				Military.	
				Original Works.	
(1) *Accommodation for troops*—	Bellary ...	Bellary ...	1	Reconstructing double apothecaries' quarters, station hospital.	6,222
Buildings for European troops in the plains. Permanent.	Nilgiri ...	Wellington ...	2	Hospital accommodation for women and children.	3,036
	Presidency ...	Fort St. George.	3	Improving water-supply	6,445
	Do. ...	Do. ...	4	Alterations and additions to blocks of married quarters and to the buildings occupied by the offices of the Surgeon-General, &c.	...
	Do. ...	Bangalore ...	5	Stables for 66 extra horses, British Cavalry.	...
	Do. ...	Do. ...	6	Alterations to the British Cavalry Barracks.	8,325
	Do. ...	Bangalore ...	7	Additions to the Military prison ...	6,690
	Chingleput...	St. Thomas' Mount.	8	Constructing a coffee shop with kitchen for the upper story barracks.	...
	Do. ...	Do. ...	9	Improvements to the old barracks.	9,334
Buildings for Native troops.	West Coast.	Quilon ...	10	Constructing a regimental store-shed.	21,636
	Presidency.	Bangalore ...	11	Public buildings for one regiment of Native Infantry.	...
	Trichinopoly.	Trichinopoly...	12	Erection of a Magazine for one regiment of Madras Infantry.	...
	Do. ...	Do. ...	13	Construction of stone drains required for new lines.	...
(2) *Ordnance Works* ...	Presidency...	Fort St. George.	14	Constructing a new magazine in the Wallajah berm.	7,370
	Do. ...	Madras ...	15	New wheelers shop, Gun Carriage Factory.	2,505
	Chingleput.	St. Thomas' Mount.	16	Alterations to racks in the Ordnance Magazine.	...
			17	Minor works	...
				Total ...	...
				Grand Total ...	...

I—*cont.*

ORIGINAL WORKS FOR THE YEAR 1886-87.

WORKS.

Outlay.		Grant, 1886-87.			Item No.	Remarks and References.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs.	Rs.	Rs.		
...	...	...	6,222		1	G.O., No. 1806 W., dated 3rd August 1885.
...	...	...	3,036		2	G.O., No. 1573 W., dated 6th July 1885, Item No. 15, class C works, budget of 1885-86.
...	...	...	6,445		3	G.O., No. 2454 W., dated 20th October 1885.
...	...	...	20,160		4	Estimate is awaited.
...	...	...	5,242		5	Do. do.
...	...	...	1,210		6	Do. do.
...	...	...	8,325		7	G.O., No. 938 W., dated 5th April 1884. Item No. 3, class B works, budget of 1885-86.
...	...	...	4,320		8	G.O., No.1390 W., dated 15th June 1885.
...	...	...	8,870	63,830	9	Estimate is awaited.
...	...	...	9,334		10	G.O., No. 1556 W., dated 3rd July 1885. Item No. 32, class C works, budget of 1885-86.
...	...	...	10,000		11	G.O., No. 2952 W., dated 29th November 1884. Item No. 27, class C works, budget of 1885-86.
...	...	...	2,000		12	Estimate is awaited.
...	...	...	7,000		13	Do. do.
...	...	...	20,000	28,334	14	Do. do.
...	...	...	7,370		15	G.O , No. 2870 W., dated 17th November 1884. Item No. 36, class C works, budget of 1885-86.
...	...	...	2,505		16	G.O., No. 2416 W., dated 15th October 1885.
...	...	...	27,000	29,875 27,000	17	
...	...	..	1,49,039	1,49,039		
...	...	...	...	2,08,035		

IMPERIAL.
MILITARY WORKS.

APPENDIX

LIST OF WORKS (OR CLASS C WORKS) OMITTED FROM THE BUDGET-ESTIMATE OF 1886-87, BUT ON CLASS B

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.
					Rs.
				IMPERIAL ORDINARY.	
				MILITARY.	
				Original Works.	
(1) *Accommodation for troops*— Buildings for European troops in the plains. Permanent.	Bellary ...	Bellary ...	1	Improving the system of water-supply to British Infantry Barracks.	...
	Do. ...	Do. ...	2	Alterations to prisons and adjoined buildings.	...
	Do. ...	Do. ...	3	New gunshed with collarmakers' and wheelers' shop for the Royal Artillery.	5,663
	Do. ...	Do. ...	4	Swimming-bath, British Infantry.	7,644
	Do. ...	Do. ...	5	Infectious disease ward, station hospital.	6,140
	Do. ...	Do. ...	6	Armourer's shop, 2nd Light Cavalry.	2,695
	Nilgiri ...	Wellington ...	7	Gymnasium	...
	Do. ...	Do. ...	8	Drinking-water to be laid on to hospital.	2,226
	Do. ...	Do. ...	9	Lock hospital	...
	Do. ...	Do. ...	10	Constructing quarters with outhouses for a Barrack Sergeant.	7,348
	West Coast.	Cannanore ...	11	Plunge-bath for British Infantry.	4,640
	Do. ...	Do. ...	12	Improving latrines for British Infantry.	2,789
	Presidency.	Fort St. George.	13	Drainage of fort and barracks ...	...
	Do. ...	Do. ...	14	Wash-house outside the barracks ...	...
	Do. ...	Do. ...	15	Garrison bazaars to be done away with and new cook-houses built.	...
	Do. ...	Do. ...	16	Converting A, B, C, and D blocks into barracks and quarters for a regiment of British Infantry and Garrison Battery of Royal Artillery.	11,890
	Do. ...	Do. ...	17	Converting a racket court into a covered gymnasium.	...
	Do. ...	Do. ...	18	Alterations necessary towards rendering the offices of the Accountant-General and Controller of Military Accounts suitable for occupation by troops.	...
	Do. ...	Bangalore ...	19	Schoolmaster and mistress' quarters, Royal Artillery.	5,300
	Do. ...	Do. ...	20	Quarters for the senior apothecary, north station hospital.	...
				Carried over ...	

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MADRAS.

B.

WHICH EXPENDITURE MAY BE INCURRED DURING THE YEAR BY RE-APPROPRIATION FROM WORKS.

Outlay.		Amount applied for 1886-87.			Item No.	Remarks and References.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs.	Rs.	Rs.		
...	...	...	5,350		1	Estimate is awaited.
...	...	...	11,260		2	Do. do.
...	...	...	5,663		3	G.O., No. 914 W., dated 3rd April 1884.
...	...	...	5,000		4	G.O., No. 2434 W., dated 19th October 1885.
...	...	...	5,000		5	G.O., No. 330 W., dated 7th February 1884.
...	...	...	2,695		6	G.O., No. 2266 W., dated 14th September 1881. Item No. 5, Class B works, budget of 1885-86.
...	...	...	10,000		7	Estimate is awaited.
...	...	...	5,000		8	G.O., No. 893 W., dated 2nd April 1886.
...	...	...	4,180		9	Estimate is awaited.
...	...	...	7,348		10	G.O., No. 1941 W., dated 21st August 1885.
...	...	...	4,640		11	G.O., No. 418, dated 16th February 1876.
...	...	...	2,780		12	G.O., No. 1056, dated 4th April 1879.
...	...	...	10,000		13	Estimate is awaited.
...	...	...	2,500		14	Do. do.
...	...	...	4,500		15	Do. do.
...	...	...	4,200		16	Do. do.
...	2,000	9,890	...		17	G.O., No. 1552 W., dated 20th June 1884. Item No. 1, class B works, budget of 1885-86.
...	...	...	40,000		18	Estimate is awaited.
...	...	...	6,200		19	Estimate is awaited.
...	...	...	5,300		20	G.O., No. 3385 W., dated 27th November 1883.
...	...	9,890	1,41,616	...		

IMPERIAL.
MILITARY WORKS.

APPENDIX

LIST OF WORKS (OR CLASS C WORKS) OMITTED FROM THE BUDGET-ESTIMATE OF 1886-87, BUT ON CLASS B

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.
					Rs.
				Brought forward ...	
				IMPERIAL ORDINARY—*cont.*	
				MILITARY—*cont.*	
				Original Works—cont.	
(1) *Accommodation for troops*— Buildings for European troops in the plains. Permanent.	Presidency.	Bangalore ...	21	Quarters for the assistant apothecary, north station hospital.	4,773
	Do. ...	Do., ...	22	Constructing a fourth-class gymnasium.	44,600
	Do. ...	Do. ...	23	Parade barracks—alterations and additions to wash-houses.	12,500
	Chingleput.	St. Thomas' Mount.	24	A wheeler's and collarmaker's shop for the new Artillery barracks.	5,660
	Do. ...	Do. ...	25	Raising the roof of harness room, troop lines.	4,200
	Do. ...	Do. ...	26	Wooden shed at the proof range ...	2,820
	Do. ...	Do. ...	27	Converting the disused gunshed into a coffee shop, recreation room and library.	2,520
	Do. ...	Pallávaram ...	28	Mortuary rooms for hospitals ...	...
	Do. ...	Do. ...	29	Constructing an armourer's shop ...	2,880
	Do. ...	Poonamallee.	30	Constructing a new double storied barracks.	1,66,885
	Do. ...	Do. ...	31	Providing lightning conductors to the hospital.	...
Accommodation for Native Troops.	Vizagapatam.	Vizianagrum...	32	Regimental store-room for Native Infantry.	3,480
	Bellary ...	Bellary ...	33	School-house for a Regiment, Native Infantry.	3,030
	Presidency.	Madras (Ráyapuram).	34	Flushing drains for Native Infantry lines.	4,360
	Do. ...	Bangalore ...	35	Store-rooms and workshops for the Pioneer Regiment.	...
	Do. ...	Bangalore ...	36	Public buildings for a regiment of Native Cavalry.	23,490
	Trichinopoly	Trichinopoly.	37	Public buildings for two regiments of Native Infantry.	35,650
	Chingleput.	Pallávaram ...	38	Powder Magazine for a Native Infantry Regiment.	4,900
(2) *Ordnance Works* ...	Presidency.	Madras ...	39	Wall round the Gunpowder Factory.	...
				Carried over ...	...

MADRAS.

B—*cont.*

WHICH EXPENDITURE MAY BE INCURRED DURING THE YEAR BY RE-APPROPRIATION FROM WORKS—*cont.*

Outlay.		Amount applied for 1886-87.			Item No.	Remarks and References.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs.	Rs.	Rs.		
...	...	9,890	1,41,616	...		
...	...	...	4,773		21	G.O., No. 938 W., dated 5th April 1884.
1,788	...	42,812	...		22	G.O., No. 1560, dated 21st June 1876.
7,946	...	4,554	...		23	G.O., No. 1102 W., dated 7th May 1880.
...	...	...	5,660		24	G.O., No. 2717 W., dated 3rd November 1884.
...	...	...	4,200		25	G.O., No. 3137 W., dated 17th December 1881.
...	...	...	2,820		26	G.O., No. 3077 W., dated 13th December 1884.
...	...	...	2,520		27	G.O., No. 1234 W., dated 28th May 1885.
...	...	...	3,000		28	Estimate is awaited.
...	...	...	2,880		29	G.O., No. 3149 W., dated 22nd December 1884.
6,854	...	20,000	...		30	G.O., No. 465 W., dated 19th February 1879.
...	...	...	3,000	2,47,725	31	Estimate is awaited.
...	...	...	3,480		32	G.O., No. 2628 W., dated 27th October 1884.
...	...	...	3,030		33	G.O., No. 149 W., dated 17th January 1884.
...	...	...	4,300		34	G.O., No. 1937 W., dated 4th June 1884.
...	...	...	3,000		35	Estimate is awaited.
...	...	...	14,000		36	G.O., No. 1552 W., dated 20th June 1884. Item No. 4, Class B. Works, Budget of 1885-86.
12,739	3,370	18,000	...		37	G.O., No. 2194 W., dated 5th September 1884. Item No. 3 Class A Works, Budget of 1885-86.
...	...	...	4,500	50,310	38	G.O., No. 334 W., dated 18th February 1886.
...	...	...	10,000		39	Estimate is awaited.
...	...	95,256	2,12,779	...		

IMPERIAL.
MILITARY WORKS.

APPENDIX

LIST OF WORKS (OR CLASS C WORKS) OMITTED FROM THE BUDGET-ESTIMATE OF 1886-87, BUT ON CLASS B

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.
					Rs.
				Brought forward ...	...
				IMPERIAL ORDINARY—*cont.*	
				MILITARY—*cont.*	
				Original Works—cont.	
(2) *Ordnance Works.*	Presidency.	Madras ...	40	Extra accommodation as store-room in the Gun Carriage Factory.	...
	Do. ...	Do. ...	41	Improvements to the barrel machine shop of the Gun Carriage Factory.	4,030
	Do. ...	Do. ...	42	Improvements to the Gunpowder Factory.	2,52,412
	Do. ...	Do. ...	43	Dried deposit magazine, Gunpowder Factory.	3,975
	Do. ...	Do. ...	44	One drying house for store.	...
	Do. ...	Do. ...	45	Alterations to the roof of the final dusting-house.	...
	Do. ...	Tenampet ...	46	Constructing a wheat godown.	...
(4) *Commissariat Buildings.*	Do. ...	Bangalore ...	47	Ordnance depôt buildings, Entrenchment.	...
	Do. ...	Madras ...	48	Constructing a shed in the Camp Equipage Depôt.	...
	Do. ...	Do. ...	49	Lines for transport attendants ...	...
	Do. ...	Do. ...	50	Workshops and sheds for carts, doolies, &c., Transport Department.	5,800
	Do. ...	Bangalore ...	51	Quarters for a Conductor, Transport Department.	...
Fortifications.	Chingleput.	Guindy ...	52	Quarters for a station butcher ...	...
	Presidency.	Fort St. George.	53	Demolition of Wallajah Ravelin and two lunettes.	6,450
Miscellaneous.	North Arcot.	Vellore ...	54	Draw bridge and gate for the fort.	...
	Nilgiri ...	Ootacamund, Lovdale.	55	Water-supply, Lawrence Asylum.	
				Total ...	...

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MADRAS.

B—*concld.*

WHICH EXPENDITURE MAY BE INCURRED DURING THE YEAR BY RE-APPROPRIATION FROM WORKS—*concld.*

Outlay.		Amount applied for 1886-87.			Item No.	Remarks and References.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs.	Rs.	Rs.		
...	...	95,256	2,12,779	...		
...	...	...	6,000		40	Estimate is awaited.
1,969	...	2,061	...		41	G.O., No. 2413 W., dated 16th September 1882.
2,23,985	2,000	20,000	...		42	G.O., No. 2707 W., dated 3rd November 1884. Item No. 5, Class A works, budget of 1885-86.
...	...	...	3,975		43	G.O., No. 302 W., dated 21st April 1885.
...	...	...	26,320		44	Estimate is awaited.
...	...	...	4,300		45	Do. do.
...	...	...	5,950		46	Do. do.
...	...	...	4,823		47	Do. do.
				83,429		
...	...	...	5,300		48	Do. do.
...	...	...	48,000		49	Do. do.
...	...	...	5,500		50	Do. do.
...	...	...	4,220		51	G.O., No. 992 W., dated 16th April 1886.
...	...	...	4,740		52	Estimate is awaited.
				67,760		
...	...	...	7,434		53	Do. do.
...	...	...	6,450		54	G.O., No. 528 W., dated 7th March 1885.
				13,884		
...	...	...	7,000		55	Estimate is awaited.
				7,000		
...	...	1,17,317	3,52,791	4,70,108		

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FINAL ISSUE.

IMPERIAL.
MILITARY WORKS.

MADRAS.

PUBLIC WORKS DEPARTMENT.

IMPERIAL BUDGET-ESTIMATE

OF

MILITARY WORKS

OF THE

GOVERNMENT OF MADRAS

FOR THE YEAR

1886-87.

29th April 1886.

CHEPÂK,

Colonel, R.E.,
Secretary to Government, P.W.D.

HB 2240
5-0 Ins
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IMPERIAL.
MILITARY WORKS.

MADRAS.

REVENUE.

ABSTRACT OF THE BUDGET-ESTIMATE OF REVENUE OF THE PUBLIC WORKS DEPARTMENT FROM MILITARY WORKS IN MADRAS FROM 1st APRIL 1886 TO 31st MARCH 1887.

	Budget-Estimate, 1886-87.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
	Rs.	Rs.	Rs.	Rs.
In Public Works Department	30,000	29,500	29,500	33,586
In Civil and Military Departments	...	...	...	...
Total ...	30,000	29,500	29,500	33,586

CHARGES.

ABSTRACT OF THE BUDGET-ESTIMATE OF EXPENDITURE OF THE PUBLIC WORKS DEPARTMENT OF MILITARY WORKS IN MADRAS FOR THE YEAR FROM 1st APRIL 1886 TO 31st MARCH 1887.

	Reference to Detailed Estimate.	Budget-Estimate, 1886-87.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
		Rs.	Rs.	Rs.	Rs.
Original Works. In progress ...	...	58,996	1,89,204	2,29,646	2,09,361
Original Works. Not commenced.	...	1,49,039			
Repairs ... Ordinary ...	...	3,10,465	1,72,995	2,94,549	2,83,366
Repairs ... Special ...	...	...			
Establishment	...	1,20,700	84,205	1,20,563	1,14,345
Tools and Plant	...	5,200	3,596	5,242	3,935
Suspense Account	...	...	...	...	...
Total ...	...	6,44,400	4,50,000	6,50,000	6,12,007

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IMPERIAL.
MILITARY WORKS.

MADRAS.

ABSTRACT OF THE CHARGES TO BE INCURRED BY THE PUBLIC WORKS DEPARTMENT FROM IMPERIAL FUNDS AND CONTRIBUTIONS IN BOTH INDIA AND ENGLAND.

	Budget-Estimate, 1886-87. Original Works. In progress.	Not commenced.	Total.	Repairs.	Establishment.	Tools and Plant.	Suspense Account.	Barrack Department.	Total.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
Provision from Imperial Funds.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
In India ...	58,996	1,49,039	2,08,035	3,10,465	1,20,700	5,200	...	...	6,44,400	4,50,000	6,50,000	6,12,007
In England.	...	...	...	...	...	...	...	...	...	...	...	250
Total ..	58,996	1,49,039	2,08,035	3,10,465	1,20,700	5,200	...	...	6,44,400	4,50,000	6,50,000	6,12,257
Provision from Contributions.												
In India ...	...	...	...	...	...	...	...	...	...	...	...	261
Grand Total.	58,996	1,49,039	2,08,035	3,10,465	1,20,700	5,200	...	...	6,44,400	4,50,000	6,50,000	6,12,018

STATEMENT SHOWING THE WORKS ON WHICH THE OUTLAY IN ENGLAND ABOVE PROVIDED FOR IS TO BE INCURRED.

	Budget-Estimate, 1886-87. Original Works. In progress.	Not commenced.	Total.	Tools and Plant.	Suspense Account.	Total.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
	...	..	...	...	...	...	...	...	250
Total ...	...	...	...	...	...	...	...	...	250

IMPERIAL.
MILITARY WORKS.

PART

DETAIL OF THE BUDGET-ESTIMATE FOR

CLASS A

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.
					Rs.
				IMPERIAL ORDINARY.	
				Military.	
				Original Works.	
(1) *Accommodation for troops*— Buildings for European troops in the plains. Permanent.	West Coast.	Malapuram ...	1	Constructing a barracks for a detachment of British Infantry to accommodate 100 men.	1,35,094
	Chingleput.	St. Thomas' Mount.	2	New barracks for Royal Artillery...	1,46,910
	Do. ...	Do. ...	3	Constructing six blocks of stables for two field batteries of Royal Artillery.	21,702
(2) *Ordnance Works* ...	Presidency.	Fort St. George.	4	Armament of Fort St. George ...	42,035
(4) *Fortifications* ...	Do. ...	Madras ...	5	Alterations to the Coast Batteries.	14,265
	Do. ...	Bangalore ...	6	Fortified post at Agram	39,180
				Total ...	...

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MADRAS.

I.

ORIGINAL WORKS FOR THE YEAR 1886-87.

WORKS.

Outlay.		Grant, 1886-87.			Item No.	Remarks and References.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs.	Rs.	Rs.		
83,531	31,448	20,115	...		1	G.O., No. 2845 W., dated 27th November 1885. Item No. 2, class A works, budget of 1885-86.
97,379	22,458	27,073	...		2	G.O., No. 1274 W., dated 2nd June 1885. Item No. 1, class A works, budget of 1885-86.
10,000	10,763	939	...	48,127	3	G.O., No. 2561 W., dated 2nd November 1885. Item No. 2, class B works, budget of 1885-86.
8,036	29,935	2,964	...	2,964	4	G.O., No. 2970 W., dated 19th October 1883. Item No. 4, class A works, budget of 1885-86.
...	6,266	6,025	...		5	G.O., No. 2126 W., dated 11th September 1885.
34,467	3,020	1,880	...	7,905	6	G.Os., Nos. 3059 W., dated 18th December 1885 and 250 W., dated 28th January 1886.
...	...	58,996	...	58,996		

PART

DETAIL OF THE BUDGET-ESTIMATE FOR

CLASS B

HEAD OF CLASSIFICATION.	EXECUTIVE DIVISION.	LOCALITY.	ITEM No.	PROJECTS AND WORKS.	AMOUNT OF ESTIMATE.
					Rs.
				IMPERIAL ORDINARY.	
				MILITARY.	
				Original Works.	
(1) *Accommodation for troops*— Buildings for European troops in the plains. Permanent.	Bellary ...	Bellary ...	1	Reconstructing double apothecaries' quarters, station hospital.	6,222
	Nilgiri ...	Wellington ...	2	Hospital accommodation for women and children.	3,036
	Presidency ...	Fort St. George.	3	Improving water-supply	6,445
	Do. ...	Do.	4	Alterations and additions to blocks of married quarters and to the buildings occupied by the offices of the Surgeon-General, &c.	...
	Do. ...	Bangalore ...	5	Stables for 66 extra horses, British Cavalry.	...
	Do. ...	Do. ...	6	Alterations to the British Cavalry Barracks.	8,325
	Do. ...	Bangalore ...	7	Additions to the Military prison ...	6,690
	Chingleput...	St. Thomas' Mount.	8	Constructing a coffee shop with kitchen for the upper story barracks.	...
	Do. ...	Do. ...	9	Improvements to the old barracks.	9,334
Buildings for Native troops.	West Coast.	Quilon ...	10	Constructing a regimental store-shed.	21,636
	Presidency.	Bangalore ...	11	Public buildings for one regiment of Native Infantry.	...
	Trichinopoly.	Trichinopoly...	12	Erection of a Magazine for one regiment of Madras Infantry.	...
	Do. ...	Do. ...	13	Construction of stone drains required for new lines.	...
(2) *Ordnance Works* ...	Presidency...	Fort St. George.	14	Constructing a new magazine in the Wallajah berm.	7,370
	Do. ...	Madras ...	15	New wheelers shop, Gun Carriage Factory.	2,505
	Chingleput.	St. Thomas' Mount.	16	Alterations to racks in the Ordnance Magazine.	...
			17	Minor works	...
				Total ...	...
				Grand Total ...	...

I—*cont.*

ORIGINAL WORKS FOR THE YEAR 1886-87.

WORKS.

OUTLAY.		GRANT, 1886-87.			ITEM No.	REMARKS AND REFERENCES.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs.	Rs.	Rs.		
...	...	...	6,222		1	G.O., No. 1806 W., dated 3rd August 1885.
...	...	...	3,036		2	G.O., No. 1573 W., dated 6th July 1885, Item No. 15, class C works, budget of 1885-86.
...	...	...	6,445		3	G.O., No. 2454 W., dated 20th October 1885.
...	...	...	20,160		4	Estimate is awaited.
...	...	...	5,242		5	Do. do.
...	...	...	1,210		6	Do. do.
...	...	...	8,325		7	G.O., No. 938 W., dated 5th April 1884. Item No. 3, class B works, budget of 1885-86.
...	...	...	4,320		8	G.O., No.1390 W., dated 15th June 1885.
...	...	...	8,870	63,830	9	Estimate is awaited.
...	...	...	9,334		10	G.O., No. 1556 W., dated 3rd July 1885. Item No. 32, class C works, budget of 1885-86.
...	...	...	10,000		11	G.O., No. 2952 W., dated 29th November 1884. Item No. 27, class C works, budget of 1885-86.
...	...	...	2,000		12	Estimate is awaited.
...	...	...	7,000		13	Do. do.
...	...	...	20,000	28,334	14	Do. do.
...	...	...	7,370		15	G.O., No. 2870 W., dated 17th November 1884. Item No. 36, class C works, budget of 1885-86.
...	...	...	2,505		16	G.O., No. 2416 W., dated 15th October 1885.
...	...	...	27,000	29,875 27,000	17	
..	...	..	1,49,039	~~1,4939,0~~		1,49,039/
...	...	...	...	2,08,035		

IMPERIAL.
MILITARY WORKS.

APPENDIX

LIST OF WORKS (OR CLASS C WORKS) OMITTED FROM THE BUDGET-ESTIMATE OF 1886-87, BUT ON CLASS B

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.
					Rs.
				IMPERIAL ORDINARY.	
				Military.	
				Original Works.	
(1) *Accommodation for troops*— Buildings for European troops in the plains. Permanent.	Bellary ...	Bellary ...	1	Improving the system of water-supply to British Infantry Barracks.	...
	Do. ...	Do. ...	2	Alterations to prisons and adjoined buildings.	...
	Do. ...	Do. ...	3	New gunshed with collarmakers' and wheelers' shop for the Royal Artillery.	5,663
	Do. ...	Do. ...	4	Swimming-bath, British Infantry.	7,644
	Do. ...	Do. ...	5	Infectious disease ward, station hospital.	6,140
	Do. ...	Do. ...	6	Armourer's shop, 2nd Light Cavalry.	2,695
	Nilgiri ...	Wellington ...	7	Gymnasium	...
	Do. ...	Do. ...	8	Drinking-water to be laid on to hospital.	2,226
	Do. ...	Do. ...	9	Lock hospital	...
	Do. ...	Do. ...	10	Constructing quarters with outhouses for a Barrack Sergeant.	7,348
	West Coast.	Cannanore ...	11	Plunge-bath for British Infantry.	4,640
	Do. ...	Do. ...	12	Improving latrines for British Infantry.	2,780
	Presidency.	Fort St. George.	13	Drainage of fort and barracks ...	...
	Do. ...	Do. ...	14	Wash-house outside the barracks ...	...
	Do. ...	Do. ...	15	Garrison bazaars to be done away with and new cook-houses built.	...
	Do. ...	Do. ...	16	Converting A, B, C, and D blocks into barracks and quarters for a regiment of British Infantry and Garrison Battery of Royal Artillery.	...
	Do. ...	Do. ...	17	Converting a racket court into a covered gymnasium.	11,890
	Do. ...	Do. ...	18	Alterations necessary towards rendering the offices of the Accountant-General and Controller of Military Accounts suitable for occupation by troops.	...
	Do. ...	Bangalore ...	19	Schoolmaster and mistress' quarters, Royal Artillery.	...
	Do. ...	Do. ...	20	Quarters for the senior apothecary, north station hospital.	5,300
				Carried over ...	...

B.

WHICH EXPENDITURE MAY BE INCURRED DURING THE YEAR BY RE-APPROPRIATION FROM WORKS.

Outlay.		Amount applied for 1886-87.			Item No.	Remarks and References.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs.	Rs.	Rs.		
...	...	...	5,350		1	Estimate is awaited.
...	...	...	11,260		2	Do. do.
...	...	...	5,663		3	G.O., No. 914 W., dated 3rd April 1884.
...	...	...	5,000		4	G.O., No. 2434 W., dated 19th October 1885.
...	...	...	5,000		5	G.O., No. 330 W., dated 7th February 1884.
...	...	...	2,695		6	G.O., No. 2266 W., dated 14th September 1881. Item No. 5, Class B works, budget of 1885-86.
...	...	...	10,000		7	Estimate is awaited.
...	...	...	5,000		8	G.O., No. 893 W., dated 2nd April 1886.
...	...	...	4,180		9	Estimate is awaited.
...	...	...	7,348		10	G.O., No. 1941 W., dated 21st August 1885.
...	...	...	4,640		11	G.O., No. 418, dated 16th February 1876.
...	...	...	2,780		12	G.O., No. 1056, dated 4th April 1879.
...	...	...	10,000		13	Estimate is awaited.
...	...	...	2,500		14	Do. do.
...	...	...	4,500		15	Do. do.
...	...	...	4,200		16	Do. do.
...	2,000	9,890	...		17	G.O., No. 1552 W., dated 20th June 1884. Item No. 1, class B works, budget of 1885-86.
...	...	...	40,000		18	Estimate is awaited.
...	...	...	6,200		19	Estimate is awaited.
...	...	...	5,300		20	G.O., No. 3385 W., dated 27th November 1883.
		9,890	1,41,616			

LIST OF WORKS (OR CLASS C WORKS) OMITTED FROM THE BUDGET-ESTIMATE OF 1886-87, BUT ON CLASS B

APPENDIX

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.
					Rs.
				Brought forward ...	
				IMPERIAL ORDINARY—*cont.*	
				Military—*cont.*	
				Original Works—cont.	
(1) *Accommodation for troops*—					
Buildings for European troops in the plains. Permanent.	Presidency.	Bangalore ...	21	Quarters for the assistant apothecary, north station hospital.	4,773
	Do. ...	Do. ...	22	Constructing a fourth-class gymnasium.	44,600
	Do. ...	Do. ...	23	Parade barracks—alterations and additions to wash-houses.	12,000
	Chingleput.	St. Thomas' Mount.	24	A wheeler's and collarmaker's shop for the new Artillery barracks.	5,660
	Do. ...	Do. ...	25	Raising the roof of harness room, troop lines.	4,200
	Do. ...	Do. ...	26	Wooden shed at the proof range ...	2,820
	Do. ...	Do. ...	27	Converting the disused gunshed into a coffee shop, recreation room and library.	2,520
	Do. ...	Pallávaram ...	28	Mortuary rooms for hospitals ...	...
	Do. ...	Do. ...	29	Constructing an armourer's shop ...	2,880
	Do. ...	Poonamallee.	30	Constructing a new double storied barrack.	1,86,000
	Do. ...	Do.	31	Providing lightning conductors to the hospital.	...
Accommodation for Native Troops.	Vizagapatam.	Vizianagrum ...	32	Regimental store-room for Native Infantry.	3,480
	Bellary ...	Bellary ...	33	School-house for a Regiment, Native Infantry.	3,030
	Presidency.	Madras (Ráyapuram).	34	Flushing drains for Native Infantry lines.	4,300
	Do. ...	Bangalore ...	35	Store-rooms and workshops for the Pioneer Regiment.	...
	Do. ...	Bangalore ...	36	Public buildings for a regiment of Native Cavalry.	23,490
	Trichinopoly	Trichinopoly.	37	Public buildings for two regiments of Native Infantry.	35,650
	Chingleput.	Pallávaram ...	38	Powder Magazine for a Native Infantry Regiment.	4,900
(2) *Ordnance Works* ...	Presidency.	Madras ...	39	Wall round the Gunpowder Factory.	...
				Carried over ...	

B—*cont.*

WHICH EXPENDITURE MAY BE INCURRED DURING THE YEAR BY RE-APPROPRIATION FROM WORKS—*cont.*

Outlay.		Amount applied for 1886-87.			Item No.	Remarks and References.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs. 9,890	Rs. 1,41,616	Rs.		
...	...	...	4,773		21	G.O., No. 938 W., dated 5th April 1884.
1,788	...	42,812	...		22	G.O., No. 1560, dated 21st June 1876.
7,946	...	4,554	...		23	G.O., No. 1102 W., dated 7th May 1880.
...	...	...	5,660		24	G.O., No. 2717 W., dated 3rd November 1884.
...	...	...	4,200		25	G.O., No. 3137 W., dated 17th December 1881.
...	...	...	2,820		26	G.O., No. 3077 W., dated 13th December 1884.
...	...	...	2,520		27	G.O., No. 1234 W., dated 28th May 1885.
...	...	...	3,000		28	Estimate is awaited.
...	...	...	2,880		29	G.O., No. 3149 W., dated 22nd December 1884.
6,854	...	20,000	...		30	G.O., No. 465 W., dated 19th February 1879.
...	...	...	3,000	2,47,725	31	Estimate is awaited.
...	...	...	3,480		32	G.O., No. 2628 W., dated 27th October 1884.
...	...	...	3,030		33	G.O., No. 149 W., dated 17th January 1884.
...	...	...	4,300		34	G.O., No. 1937 W., dated 4th June 1884.
...	...	...	3,000		35	Estimate is awaited.
...	...	...	14,000		36	G.O., No. 1552 W., dated 20th June 1884, Item No. 4, Class B. Works, Budget of 1885-86.
12,739	3,370	18,000	...		37	G.O., No. 2194 W., dated 5th September 1884. Item No. 3 Class A. Works, Budget of 1885-86.
...	...	...	4,500	50,310	38	G.O., No. 334 W., dated 18th February 1886.
...	...	...	10,000		39	Estimate is awaited.
...		95,256	2,43,779			

IMPERIAL.
MILITARY WORKS.

APPENDIX

LIST OF WORKS (OR CLASS C WORKS) OMITTED FROM THE BUDGET-ESTIMATE OF 1886-87, BUT ON CLASS B

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.
					Rs.
				Brought forward ...	
				IMPERIAL ORDINARY—*cont.*	
				MILITARY—*cont.*	
				Original Works—cont.	
(2) *Ordnance Works.*	Presidency.	Madras ...	40	Extra accommodation as store-room in the Gun Carriage Factory.	...
	Do. ...	Do. ...	41	Improvements to the barrel machine shop of the Gun Carriage Factory.	4,030
	Do. ...	Do. ...	42	Improvements to the Gunpowder Factory.	2,52,412
	Do. ...	Do. ...	43	Dried deposit magazine, Gunpowder Factory.	3,975
	Do. ...	Do. ...	44	One drying house for store.	...
	Do. ...	Do. ...	45	Alterations to the roof of the final dusting-house.	...
	Do. ...	Tenampet ...	46	Constructing a wheat godown.	...
	Do. ...	Bangalore ...	47	Ordnance depôt buildings, Entrenchment.	...
(4) *Commissariat Buildings.*	Do. ...	Madras ...	48	Constructing a shed in the Camp Equipage Depôt.	...
	Do. ...	Do. ...	49	Lines for transport attendants ..	...
	Do. ...	Do. ...	50	Workshops and sheds for carts, doolies, &c., Transport Department.	...
	Do. ...	Bangalore ...	51	Quarters for a Conductor, Transport Department.	5,800
	Chingleput	Guindy ...	52	Quarters for a station butcher ...	...
Fortifications.	Presidency.	Fort St. George.	53	Demolition of Wallajah Ravelin and two lunettes.	...
	North Arcot.	Vellore ...	54	Draw bridge and gate for the fort.	6,450
Miscellaneous.	Nilgiri ...	Ootacamund, Lovdale.	55	Water-supply, Lawrence Asylum.	...
				Total ...	...

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MADRAS.

B—*concld.*

WHICH EXPENDITURE MAY BE INCURRED DURING THE YEAR BY RE-APPROPRIATION FROM WORKS—*concld.*

Outlay.		Amount applied for 1886-87.			Item No.	Remarks and References.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs. 95,256	Rs. 21,779	Rs.		
...	...	...	6,000		40	Estimate is awaited.
1,969	...	2,061	...		41	G.O., No. 2413 W., dated 16th September 1882.
2,23,985	2,000	20,000	...		42	G.O., No. 2707 W., dated 3rd November 1884. Item No. 5, Class A works, budget of 1885-86.
...	...	...	3,975		43	G.O., No. 302 W., dated 21st April 1885.
...	...	...	26,320		44	Estimate is awaited.
...	...	...	4,300		45	Do. do.
...	...	...	5,950		46	Do. do.
...	...	...	4,823		47	Do. do.
...	...	...		83,429		
...	...	...	5,300		48	Do. do.
...	...	...	48,000		49	Do. do.
...	...	...	5,500		50	Do. do.
...	...	...	4,220		51	G.O., No. 992 W., dated 16th April 1886.
...	...	...	4,740		52	Estimate is awaited.
...	...	...		67,780		
...	...	...	7,434		53	Do. do.
...	...	...	6,450		54	G.O., No. 528 W., dated 7th March 1885.
...	...	...		13,884		
...	...	...	7,000		55	Estimate is awaited.
...	...			7,000		
...	...	1,17,317	3,52,791	4,70,108		

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Final

~~PRELIMINARY~~ ISSUE.

IMPERIAL.
MILITARY WORKS.

MADRAS.

PUBLIC WORKS DEPARTMENT.

IMPERIAL BUDGET-ESTIMATE

OF

MILITARY WORKS

OF THE

GOVERNMENT OF MADRAS

FOR THE YEAR

1886-87.

CHEPÂK,
~~30th December 1885.~~
April 1886.

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Government, P.W.D.

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IMPERIAL.
MILITARY WORKS.

MADRAS.

REVENUE.

ABSTRACT OF THE BUDGET-ESTIMATE OF REVENUE OF THE PUBLIC WORKS DEPARTMENT FROM MILITARY WORKS IN MADRAS FROM 1st APRIL 1886 TO 31st MARCH 1887.

	Budget-Estimate, 1886-87.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
	Rs.	Rs.	Rs.	Rs.
In Public Works Department	30,000	29,500	29,500	33,586
In Civil and Military Departments	...	...	...	...
Total ...	30,000	29,500	29,500	33,586

CHARGES.

ABSTRACT OF THE BUDGET-ESTIMATE OF EXPENDITURE OF THE PUBLIC WORKS DEPARTMENT OF MILITARY WORKS IN MADRAS FOR THE YEAR FROM 1st APRIL 1886 TO 31st MARCH 1887.

	Reference to Detailed Estimate.	Budget-Estimate, 1886-87.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
		Rs.	Rs.	Rs.	Rs.
Original Works. In progress ...	...	58,996 / ~~91,600~~			
Not commenced.	...	1,49,039 / ~~1,60,007~~	1,89,204 / ~~1,90,888~~	2,29,646	2,09,361
Repairs ... Ordinary ...	...	3,10,465 / ~~2,71,368~~			
Special ...	...	...	1,72,995 / ~~1,71,811~~	2,94,549	2,83,366
Establishment	...	1,20,700 / ~~1,21,786~~	84,205	1,20,563	1,14,345
Tools and Plant	...	5,200 / ~~5,280~~	3,596	5,242	4,935
Suspense Account	...	...	...	...	...
Total ...	...	6,44,400 / ~~6,50,000~~	4,50,000	6,50,000	6,12,007

Budget-Estimate, 1886-87, 6,44,400
(or 99, 152 + 679 + 7644)

IMPERIAL.
MILITARY WORKS.

MADRAS.

ABSTRACT OF THE CHARGES TO BE INCURRED BY THE PUBLIC WORKS DEPARTMENT FROM IMPERIAL FUNDS AND CONTRIBUTIONS IN BOTH INDIA AND ENGLAND.

	BUDGET-ESTIMATE, 1886-87. Original Works. In progress.	Not commenced.	Total.	Repairs.	Establishment.	Tools and Plant.	Suspense Account.	Barrack Department.	Total.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Provision from Imperial Funds.	58,996	1,49,039	2,08,035	3,10,465	1,20,700	5,200			6,44,400			
In India ...	~~91,600~~	~~1,60,007~~	~~2,51,616~~	~~2,71,368~~	~~1,21,786~~	~~5,280~~	...	...	~~6,50,000~~	4,50,000	6,50,000	6,12,007
In England.	...	...	...	...	...	...	...	...	...	...	...	250
Total ...	~~91,600~~ 58,996	~~1,60,007~~ 1,49,039	~~2,51,616~~ 2,08,035	~~2,71,368~~ 3,10,465	~~1,21,786~~ 1,20,700	~~5,280~~ 5,200	...	...	~~6,50,000~~ 6,44,400	4,50,000	6,50,000	6,12,257
Provision from Contributions.												
In India ...	...	...	...	...	...	...	...	...	...	...	...	261
Grand Total.	58,996 ~~91,600~~	1,49,039 ~~1,60,007~~	2,08,035 ~~2,51,616~~	3,10,465 ~~2,71,368~~	1,20,700 ~~1,21,786~~	5,200 ~~5,280~~	...	...	6,44,400 ~~6,50,000~~	4,50,000	6,50,000	6,12,018

STATEMENT SHOWING THE WORKS ON WHICH THE OUTLAY IN ENGLAND ABOVE PROVIDED FOR IS TO BE INCURRED.

	BUDGET-ESTIMATE, 1886-87. Original Works. In progress.	Not commenced.	Total.	Tools and Plant.	Suspense Account.	Total.	Revised Estimate, 1885-86.	Budget-Estimate, 1885-86.	Actuals, 1884-85.
	...	...	...	...	...	...	...	...	250
Total ...	...	...	...	...	...	...	...	...	250

IMPERIAL.
MILITARY WORKS.

MADRAS.

PART I.

DETAIL OF THE BUDGET-ESTIMATE FOR 1886-87.

CLASS A WORKS.

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.
					Rs.
				IMPERIAL ORDINARY.	
				Military.	
				Original Works.	
(1) *Accommodation for troops*—Buildings for European troops in the plains. Permanent.	West Coast.	Malapuram ...	1	Constructing a barracks for a detachment of British Infantry to accommodate 100 men.	1,55,094
	~~Presidency.~~	~~Fort St. George.~~	~~2~~	~~Converting a racket court into a covered gymnasium.~~	~~21,890~~
	Chingleput.	St. Thomas' Mount.	2 ~~3~~	New barracks for Royal Artillery...	1,46,910
	Do. ...	Do. ...	3 ~~4~~	Constructing six blocks of stables for two field batteries of Royal Artillery.	21,702
	~~Presidency.~~	~~Bangalore ...~~	~~5~~	~~Public buildings for a regiment of Native Cavalry.~~	~~50,150~~
	~~Trichinopoly.~~	~~Trichinopoly ...~~	~~6~~	~~Public buildings for two regiments of Native Infantry.~~	~~65,650~~
(2) Ordnance Works ...	Presidency.	Fort St. George.	4 ~~7~~	Armament of Fort St. George ...	42,035
(4) Fortifications ...	Do. ...	Madras ...	5 ~~8~~	Alterations to the Coast Batteries.	14,265
	Do. ...	Bangalore ...	6 ~~9~~	Fortified post at Agram	~~39,180~~ 60,790
				Total ...	...

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I.

ORIGINAL WORKS FOR THE YEAR 1886-87.

WORKS.

Outlay.		Grant, 1886-87.			Item No.	Remarks and References.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs.	Rs.	Rs.		
83,531	31,448	20,115	...		1	G.O., No. 2845 W., dated 27th November 1885. Item No. 2, class A works, budget of 1885-86.
...	~~2,000~~	~~0,690~~	...		~~2~~	~~G.O., No. 1552 W., dated 20th June 1884. Item No. 1, class B works, budget of 1885-86.~~
97,379	22,458	27,073	...		2 ~~3~~	G.O., No. 1274 W., dated 2nd June 1885. Item No. 1, class A works, budget of 1885-86.
10,000	10,763 ~~9,160~~	939 ~~2,512~~	...	48,127 ~~50,690~~	3 ~~4~~	G.O., No. 2561 W., dated 2nd November 1885. Item No. 2, class B works, budget of 1885-86.
...	...	...	~~14,000~~		~~5~~	~~G.O., No. 1552 W., dated 20th June 1884. Item No. 4, class B works, budget of 1885-86.~~
~~12,789~~	~~9,870~~	~~18,000~~	...	~~39,000~~	~~6~~	~~G.O., No. 1701 W., dated 5th September 1884. Item No. 3, class A works, budget of 1885-86.~~
8,036	29,935 ~~81,035~~	2,964	...	2,964	4 ~~7~~	G.O., No. 2970 W., dated 19th October 1883. Item No. 4, class A works, budget of 1885-86.
...	6,266 ~~8,240~~	6,025	...		5 ~~8~~	G.O., No. 2126 W., dated 11th September 1885.
34,467	3,020	1,880 ~~5,000~~	...	7,905 ~~11,025~~	6 ~~9~~	G.O., No. 3059 W., dated 18th December 1885. ~~Further estimates are awaited.~~ and 250 W 4/28 January 1886.
...	...	~~91,000~~ 58,996	~~14,000~~	~~1,05,000~~ 58,996		

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IMPERIAL
MILITARY WORKS.

PART

DETAIL OF THE BUDGET-ESTIMATE FOR

CLASS B

HEAD OF CLASSIFICATION.	EXECUTIVE DIVISION.	LOCALITY.	ITEM No.	PROJECTS AND WORKS.	AMOUNT OF ESTIMATE.
					Rs.
				IMPERIAL ORDINARY.	
				MILITARY.	
				Original Works.	
(1) *Accommodation for troops*— Buildings for European troops in the plains. Permanent.	Bellary	Bellary ...	1	Reconstructing double apothecaries' quarters, station hospital.	6,222
	Nilgiri	Wellington ...	2	Hospital accommodation for women and children.	3,036
	Presidency	Fort St. George.	3	Improving water-supply	6,445
				[illegible]	...
				[illegible]	...
				Erection of a magazine for 1 regiment of Madras Infantry	...
	Do.	13		Construction of store sheds required for new lines	...
			7	Constructing shed.	21,636
Buildings for Native troops	West Coast.	Quilon ...	[illegible]	Public buildings for one regiment of Native Infantry.	...
	Presidency.	Bangalore ...	[illegible]	Constructing a new magazine in the Wallajah berm.	7,370
				New wheelers shop, Gun Carriage Factory.	2,505
(2) Ordnance Works ...	Do. ...	Fort St. George.	[illegible]	Alterations to racks in the Ordnance Magazine.	[illegible]
	Do. ...	Madras ...	[illegible]	[illegible]	[illegible]
	Chingleput	St. Thomas' Mount.	[illegible]	[illegible]	...
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	...
			[illegible]	Minor works	...
				Total ...	...
				Grand Total ...	...

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MADRAS.

I—*cont.*

ORIGINAL WORKS FOR THE YEAR 1886-87.

WORKS.

OUTLAY.		GRANT, 1886-87.			ITEM No.	REMARKS AND REFERENCES.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs.	Rs.	Rs.		
...	...	...	6,222		1	G.O., No. 1806 W., dated 3rd August 1885.
...	...	...	3,036		2	G.O., No. 1573 W., dated 6th July 1885, Item No. 15, class C works, budget of 1885-86.
...	...	...	6,445		3	G.O., No. 2454 W., dated 20th October 1885.
...	...	...	~~10,000~~		~~4~~	~~Estimate is awaited.~~
...	...	...	8,325		~~5~~ 7	G.O., No. 938 W., dated 5th April 1884. Item No. 3, class B works, budget of 1885-86.
...	...	...	4,320		~~6~~ 8	G.O., No.1390 W., dated 15th June 1885.
...	...	...	~~8,570~~	~~68,048~~ 63830	~~7~~ 9	Estimate is awaited
"	"	"	9,334		~~8~~ 10	G.O., No. 1556 W., dated 3rd July 1885.
...	...	...	~~expired~~	9,334		Item No. 32, class C works, budget of 1885-86.
...	...	...	10,000		~~9~~ 11	G.O., No. 2952 W., dated 29th November 1884. Item No. 27, class C works, budget of 1885-86.
				~~10,000~~		
...	...	...	20,000		~~10~~ 12	Estimate is awaited.
...	...	...	7,370		~~11~~ 13	G.O , No. 2870 W., dated 17th November 1884. Item No. 36, class C works, budget of 1885-86.
...	...	...	2,505		~~12~~ 14	G.O., No. 2416 W., dated 15th October 1885.
				29,875		
...	...	...	~~6,150~~	~~6,150~~	~~13~~	~~G.O., No. 528 W., dated 7th March 1885.~~
			~~27,000~~	~~27,000~~		
...	...	...	~~22,000~~	~~22,000~~	~~14~~ 15	
..	...	..	~~1,46,007~~ 149039	~~1,46,007~~ 149039		
...	...	...	...	~~2,51,616~~ 208035		

[7]

APPENDIX

LIST OF WORKS (OR CLASS C WORKS) OMITTED FROM THE BUDGET-ESTIMATE OF 1886-87, BUT ON CLASS B

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.
					Rs.
				IMPERIAL ORDINARY.	
				Military.	
				Original Works.	
(1) *Accommodation for troops*— Buildings for European troops in the plains. Permanent.	Bellary ...	Bellary ...	1	Improving the system of water-supply to British Infantry Barracks.	...
	Do. ...	Do. ...	2	Alterations to prisons and adjoined buildings.	...
	Do. ...	Do. ...	3	New gunshed with collarmakers' and wheelers' shop for the Royal Artillery.	5,663
	Do. ...	Do. ...	4	Swimming-bath, British Infantry.	7,644
	Do. ...	Do. ...	5	Infectious disease ward, station hospital.	6,140
	Do. ...	Do. ...	6	Armourer's shop, 2nd Light Cavalry.	2,695
	Nilgiri ...	Wellington ...	7	Gymnasium	...
	Do. ...	Do. ...	8	Drinking-water to be laid on to hospital.	...
	Do. ...	Do. ...	9	Lock hospital	...
	Do. ...	Do. ...	10	Constructing quarters with out-houses for a Barrack Sergeant.	7,348
	West Coast.	Cannanore ...	11	Plunge-bath for British Infantry.	4,640
	Do. ...	Do. ...	12	Improving latrines for British Infantry.	2,780
	Presidency.	Fort St. George.	13	Drainage of fort and barracks ...	...
	Do. ...	Do. ...	14	Wash-house outside the barracks ...	...
	Do. ...	Do. ...	15	Garrison bazaars to be done away with and new cook-houses built.	...
	Do. ...	Do. ...	16	Converting A, B, C, and D, blocks into barracks and quarters for a regiment of British Infantry and Garrison Battery of Royal Artillery.	...
	Do. ...	Bangalore ...	~~17~~	Schoolmaster and mistress' quarters, Royal Artillery.	...
	Do. ...	Do. ...	~~18~~	Quarters for the senior apothecary, north station hospital.	5,300
	Do. ...	Do. ...	~~19~~	Quarters for the assistant apothecary, north station hospital.	4,773
	Do. ...	Do. ...	~~20~~	Constructing a fourth-class gymnasium.	44,600
	Do. ...	Do. ...	~~21~~	Parade barracks—alterations and additions to wash-houses.	12,500
				Carried over ...	

B.

WHICH EXPENDITURE MAY BE INCURRED DURING THE YEAR BY RE-APPROPRIATION FROM WORKS.

Outlay.		Amount applied for 1886-87.			Item No.	Remarks and References.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs.	Rs.	Rs.		
...	...	...	5,350	...	1	Estimate is awaited.
...	...	...	11,260	...	2	Estimate is awaited.
...	...	...	5,663	...	3	G.O., No. 914 W., dated 3rd April 1884.
...	...	...	5,000	...	4	G.O., No. 2434 W., dated 19th October 1885.
...	...	...	5,000	...	5	G.O., No. 330 W., dated 7th February 1884.
...	...	...	2,695	...	6	G.O., No. 2266 W., dated 14th September 1881. Item No. 5, Class B works, budget of 1885-86.
...	...	...	10,000	...	7	Estimate is awaited.
...	...	...	5,000	...	8	Estimate is awaited.
...	...	...	4,180	...	9	Estimate is awaited.
...	...	...	7,348	...	10	G.O., No. 1941 W., dated 21st August 1885.
...	...	...	4,640	...	11	G.O., No. 418, dated 16th February 1876.
...	...	...	2,780	...	12	G.O., No. 1056, dated 4th April 1879.
...	...	...	10,000	...	13	Estimate is awaited.
...	...	...	2,500	...	14	Estimate is awaited.
...	...	...	4,500	...	15	Estimate is awaited.
...	...	...	4,200	...	16	Estimate is awaited.
...	...	...	6,200	...	~~17~~	Estimate is awaited.
...	...	...	5,300	...	~~18~~	G.O., No. 3385, W., dated 27th November 1883.
...	...	...	4,773	...	~~19~~	G.O., No. 938 W., dated 5th April 1884.
1,788	...	42,812	...	...	~~20~~	G.O., No. 1560, dated 21st June 1876.
7,946	...	4,554	...	...	~~21~~	G.O., No. 1102 W., dated 7th May 1880.
		~~47,366~~ 57,256	~~1,06,380~~ 1,46,389			

APPENDIX

LIST OF WORKS (OR CLASS C WORKS) OMITTED FROM THE BUDGET-ESTIMATE OF 1886-87, BUT ON CLASS B WHICH EXPENDITURE MAY BE INCURRED DURING THE YEAR BY RE-APPROPRIATION FROM WORKS—*cont.*

Head of Classification.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.	Outlay. Actual to end of 1884-85.	Outlay. Probable during 1885-86.	Amount applied for 1886-87. Works in progress.	Amount applied for 1886-87. Works not commenced.	Amount applied for 1886-87. Total.	Item No.	Remarks and References.
					Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
				Brought forward ...				~~47,366~~ 57,256	~~1,06,389~~ 1,46,389			
				IMPERIAL ORDINARY—*cont.*								
				MILITARY—*cont.*								
				Original Works—cont.								
(1) *Accommodation for troops*— Buildings for European troops in the plains. Permanent.	Chingleput.	St. Thomas' Mount.	~~2429~~	A wheeler's and collarmaker's shop for the new Artillery barracks.	5,660	...	...	...	5,660	...	~~2429~~	G.O., No. 2717 W., dated 3rd November 1884.
	Do. ...	Do. ...	~~2528~~	Raising the roof of harness room, troop lines.	4,200	...	...	...	4,200	...	~~2528~~	G.O., No. 3137 W., dated 17th December 1881.
	Do. ...	Do. ...	~~2624~~	Wooden shed at the proof range ...	2,820	...	...	...	2,820	...	~~2624~~	G.O., No. 3077 W., dated 13th December 1884.
	Do. ...	Do. ...	~~2725~~	Converting the disused gunshed into a coffee shop, recreation room and library.	2,520	...	...	...	2,520	...	~~2725~~	G.O., No. 1234 W., dated 28th May 1885.
	Do. ...	Pallávaram ...	~~2826~~	Mortuary rooms for hospitals ...	...	...	...	...	3,000	...	~~2826~~	Estimate is awaited.
	Do. ...	Do. ...	~~2927~~	Constructing an armourer's shop ...	2,880	...	...	...	2,880	...	~~2927~~	G.O., No. 3149 W., dated 22nd December 1884.
	Do. ...	Poonamallee.	~~3028~~	Constructing a new double storied barracks.	1,66,885	6,854	...	20,000	...	...	~~3028~~	G.O., No. 465 W., dated 19th February 1879.
	Do. ...	Do. ...	~~3129~~	Providing lightning conductors to the hospital.	...	...	...	...	3,000	~~2,47,725~~ 1,07,885	~~3129~~	Estimate is awaited.
Accommodation for Native Troops.	Vizagapatam.	Vizianagram ...	~~3230~~	Regimental store-room for Native Infantry.	3,480	...	...	...	3,480	...	~~3230~~	G.O., No. 2628 W., dated 27th October 1884.
		...ary ...	~~3331~~	School-house for a Regiment, Native Infantry.	3,030	...	...	...	3,030	...	~~3331~~	G.O., No. 149 W., dated 17th January 1884.
		...ras (Ráyaram).	~~3432~~	Flushing drains for Native Infantry lines.	4,300	...	...	...	4,300	...	~~3432~~	G.O., No. 1937 W., dated 4th June 1884.
		...ngalore ...	~~3533~~	Store-rooms and workshops for the Pioneer Regiment.	...	...	...	...	3,000	...	~~3533~~	Estimate is awaited.
(2) Ordnance Wo...					...	...	...	...	4,500	~~54,310~~ 18,310	~~3134~~	Estimate is awaited.
					...	...	...	...	10,000	...	~~3735~~	Estimate is awaited.
					...	...	...	...	6,000	...	~~4036~~	Estimate is awaited.
					4,030	1,969	...	2,061	...	...	~~4137~~	G.O., No. 2413 W., dated 16th September 1882.
	Do. ...	Do. ...	~~4238~~	shop of the ... Improvements to the Gunpowder Factory.	2,52,412	2,23,985	2,000	20,000	...	...	~~4238~~	G.O., No. 2707 W., dated 3rd November 1884. Item No. 5, Class A works, budget of 1885-86.
	Do. ...	Do. ...	~~4339~~	Dried deposit magazine, Gunpowder Factory.	3,975	...	...	...	3,975	...	~~4339~~	G.O., No. 302 W., dated 21st April 1885.
	Do. ...	Do. ...	~~4440~~	One drying house for store.	...	...	...	...	26,320	...	~~4440~~	Estimate is awaited.
	Do. ...	Do. ...	~~4541~~	Alterations to the roof of the final dusting-house.	...	...	...	...	4,300	...	~~4541~~	Estimate is awaited.
				Carried over ...				~~89,427~~ 1,17,317	~~1,99,374~~ 2,53,374	~~2,16,145~~ 2,98,035		

IMPERIAL.
MILITARY WORKS.

APPENDIX

LIST OF WORKS (OR CLASS C WORKS) OMITTED FROM THE BUDGET-ESTIMATE OF 1886-87, BUT ON CLASS B

HEAD OF CLASSIFICATION.	EXECUTIVE DIVISION.	LOCALITY.	ITEM No.	PROJECTS AND WORKS.	AMOUNT OF ESTIMATE.
					Rs.
				Brought forward ...	
				IMPERIAL ORDINARY—*cont.*	
				MILITARY—*cont.*	
				Original Works—cont.	
(2) *Ordnance Works.*	Presidency.	Tenampet ...	4842	Constructing a wheat godown.	...
	Do. ...	Bangalore ...	4743	Ordnance depôt buildings, Entrenchment.	...
(4) *Commissariat Buildings.*	Do. ...	Madras ...	4844	Constructing a shed in the Camp Equipage Depôt.	...
	Do. ...	Do. ...	4745	Lines for transport attendants ...	...
	Do. ...	Do. ...	5046	Workshops and sheds for carts, doolies, &c., Transport Department.	...
	Do. ...	Bangalore ...	5147	Quarters for a Conductor, Transport Department.	...
	Chingleput.	Guindy ...	5248	Quarters for a station butcher ...	...
Fortifications.	Presidency.	Fort St. George	5349	Demolition of Wallajah Ravelin and two lunettes.	...
Miscellaneous.					
	"	54	G.O. No. 529 War. March 1885	North West Yellow	54 Draw bridge and gate for the fort 6,450
	13,884				
				Total ...	...

[12]

MADRAS.

B—*concld.*

WHICH EXPENDITURE MAY BE INCURRED DURING THE YEAR BY RE-APPROPRIATION FROM WORKS—*concld.*

OUTLAY.		AMOUNT APPLIED FOR 1886-87.			ITEM No.	REMARKS AND REFERENCES.
Actual to end of 1884-85.	Probable during 1885-86.	Works in progress.	Works not commenced.	Total.		
Rs.	Rs.	Rs. ~~89,427~~ 117,317	Rs. ~~1,90,874~~ 2,53,374	Rs. ~~2,16,145~~ 298,035		
...	...	...	5,950	...	4842	Estimate is awaited.
...	...	...	4,823	...	4743	Estimate is awaited,
				83,429		
...	...	....	5,300	...	4844	Estimate is awaited.
...	...	...	48,000	...	4745	Estimate is awaited.
...	...	...	5,500	...	5046	Estimate is awaited.
...	...	...	4,220	...	5147	Estimate is awaited.
...	...	...	4,740	...	5248	Estimate is awaited.
				67,760		
...	...	...	7,434	~~7,434~~	5349	Estimate is awaited.
...	...	~~89,427~~ 117,317	~~2,02,341~~ 3,52,791	~~3,81,768~~ 4,70,108		

[13]

No. 5034

SUPERINTENDING ENGINEER'S OFFICE,
5TH CIRCLE, MADRAS,
Chepauk 9 March 1886

From
THE SUPERINTENDING ENGINEER,
5TH CIRCLE,

To
THE Chief Engineer
P. W. D.

SIR,

Enclosures.

The Executive Engineer Presidency Division reports that the Improvements to the Military prison in Fort St George sanctioned in G.O. No. 852 W dated 11 January 1886, have been carried out, the work having been verbally asked for by the Adjutant General in the presence of His Excellency the Commander-in-Chief, I have the honor to request that if possible Rupees 666 may be appropriated under Military Minor New Works in the Presidency Division.

I have the honor to be
Sir
Your Most Obedt Servt
Hewh Prendergast
Col. R.E.
Superint Engr 5 Circle

Do | Do

17 | Converting a racket court into a covered gymnasium | 11,890

18 | Alterations necessary towards rendering the offices of the Assistant General and Controller of Military Accounts suitable for occupation by troops

2,000 | 9,890 | 40,000

17 | G.O. No. 1562 M/d/20 June/84 Item No. 1 Class 13 Works Budget of 1885-86

18 | Estimate is awaited

Draft Grant
Budget

1884
1885 5 4

From

THE SUPERINTENDING ENGINEER,
5TH CIRCLE,

To

THE Chief Engineer,
P. W. D.

Dated 9 } March 1886.
Recd.

ENCLOSURES.

No. 5034

Military Prison in Fort St. George — Requests that Rs 666 may be appropriated under Military Minor New Works for the improvements to the —

No: 3826

SUPERINTENDING ENGINEER'S OFFICE,
V CIRCLE, MADRAS,
Bangalore Cheapāk, 7 Dec 1886.

From

THE SUPERINTENDING ENGINEER,
V CIRCLE,

To

THE Chief Engineer
P. W. Department.

SIR,

I have the honor to request that sanction may be accorded to the following proposed re-appropriation of allotments under Imperial Military in the North Arcot Division.

From		To	
Imperial Military Minor New Works. From the Grant of Rs 1800 for Defensive Lines Sanctioned in G. O. No. 1663 M. Dated 6th July 1886.	Rs 600	Imperial Military Repairs	Rs 600
600		Total	600

Enclosures.

Sec

The transfer of funds is necessary to meet the cost of repairs to the Regimental Hospital at Vellore and petty repairs to the Ramparts of the Vellore Fort. And funds are taken from the Grant for the Sepoys lines as it is not likely judging from the Span of time the Sepoys require to finish a small number of huts that the work can be completed in the Current year.

I have the honor to be.

Sir,

Your Most Obt. Servt.

W H Hunter Lt. Col. R.E.

Offg Superg Engineer

S. Circle.

From

THE SUPERINTENDING ENGINEER,

V CIRCLE,

To

THE Chief Engineer
P.W.D.

Dated 7th December 1885.
Recd.

ENCLOSURES.

No. 3826.

Reappropriation of Allotments under Imperial Mily — N. A. Dw.

Requests that sanction may be accorded to certain proposals from Mil. A. Works to Repairs.

No. 3001 Dated 12th Dec. 1885.

Explanation of necessity for reappropriation.

The transfer of funds proposed is necessary to meet the cost of repairs to the Regimental Hospital at Vellore and to the ramparts of the Vellore Fort.

12/12/85

Noted
Maj

12-12-'85

To The Secretary to the Govt of India (Military Department)
" Supdg Engr V Circle.
" Examiner of P. W. Accounts.

Despd 16-12-85.

Govt. of India Form No. 121—Vide *G.O., No.* 26, *of 5th January* 1876.

Application to the Government of India for a Reappropriation of Budget Grant.

Proposed New Grant.

Head of Service.	Item No. of Budget.	Works.	Amount of Estimate.	Outlay to end of previous year.	Original Grant for current year.	Existing Grant for current year.	Proposed Increase.	Grant as now proposed.
		Imperial Ordinary						
		Military						
		Repairs						
		Repairs, North Arcot Division	"	"	2,000	2,000	600	2,600
							600	

Proposed Reduction.

Head of Service.	Item No. of Budget.	Works.	Amount of Estimate.	Outlay to end of previous year.	Original Grant for current year.	Existing Grant for current year.	Proposed Reduction.	Amount at which Grant for Work will stand after reduction.
		Imperial Ordinary						
		Military						
		Minor Original Works.						
		Materials for the sanitary improvement	1810	10	1800	1800	600	1200
		in the court yards of sepoy lines of the					600	
		10th Regiment N.I. at Vellore						

69 64

Original

Explanation of necessity for reappropriation.

Madras, December 15th 1885

No. 3001 W.—

The transfer of funds proposed is necessary to meet the cost of repairs to the Regimental Hospital at Vellore and to the ramparts of the Vellore Fort.

J. Ker Campbell Captain R.E.
Under Secy to Govt. P.W.D.

To

The Secretary to the Government of India
(Military Department
in duplicate)

Govt. of India Form No. 121—Vide *G.O., No.* 26, *of 5th January* 1876.

Application to the Government of India for a Reappropriation of Budget Grant.

Proposed New Grant.

Head of Service.	Item No. of Budget.	Works.	Amount of Estimate.	Outlay to end of previous year.	Original Grant for current year.	Existing Grant for current year.	Proposed Increase.	Grant as now proposed.
		Imperial Ordinary Military Repairs						
		Repairs North Arcot Division	"	"	2000	2000	600	2600
							600	

Sanctioned

Military Department
No 4 M.W.

Fort William
the 2nd January 1886

J. S. Broadfoot Capt R.E.
Asst Secy to the Govt of India

Proposed Reduction.

Head of service.	Item No. of Budget.	Works.	Amount of Estimate.	Outlay to end of previous year.	Original Grant for current year.	Existing Grant for current year.	Proposed Reduction.	Amount at which Grant for Work will stand after reduction.
		Imperial Ordinary Military Minor original Works.						
		Materials for the sanitary improvement in the court yards of Sepoy lines of the 10th Regiment N.I. at Vellore	10	1800	1800	1800	600	1200
							600	

Dock 155

Funds.
Agram Entrenchment.

QUARTERMASTER-GENERAL'S OFFICE,
Ootacamund,
18th May 1885.

No. 1125/13

From

THE QUARTERMASTER-GENERAL.

To

THE SECRETARY TO GOVERNMENT,
MILITARY DEPARTMENT.

SIR,

M. D. No. 2606
dated 13th May 1885.

Referring to para 2 of G.O. No. 820
dated 27th ultimo, Public Works
Department, withdrawing the grant
of Rs 2,827, provided for works in
the Agram Entrenchment in 1885-86,
and adding that sum to the grant
for Barracks for the Detachment
British Infantry at Malliapuram,
I have the honor, by order, to bring
to the notice of Government that
very recently Estimates for consi-
derable expenditure for works con-
nected with the armament of the
Agram Entrenchment, the neces-
sity for which was originally not

not foreseen, have been submitted

Letter No: 944 B dated 29 April 1885.

to Government and that some further Estimate for works found requisite to complete the Ordnance Depôt within the fortified Post are now under revision preparatory to being submitted for the sanction of Government.

2. I am desired to ask that the Agra Entrenchment and Ordnance Depôt within it may not be considered as complete, and that further expenditure under this head may be provided for.

I have the honor to be
Sir,
Your Obedient Servant

R Stewart Brig. Genl.
Quarter Master General

P. G. 13 May/85, Rec. 23/5/85

Military (1885) Department.

No. 2357

From

THE QUARTERMASTER-GENERAL,

To

THE SECRETARY TO GOVERNMENT,
MILITARY DEPARTMENT.

No. 1128 B

Dated 18
Recd. 19 } May
Rec 22

No 1673 W dy 18 July/83

ENCLOSURES. Nil

Relative to funds for works in the Arsenal Entrenchment at Bangalore. —

SECRETARIAT TO GOVERNMENT 19 MAY 85 P.W. DEPARTMENT

No 2701

Transferred to the Public Works Department.

(By order)

A. K. Macpherson Lieut Coll
Offg Secy to Government.

Ostencammb
19 May 1885 }

B/11

A. No. 983 W dy 27-4-85
" 3161 W dy 27-12-84
" 3061 W dy 30-10-83
B No 1673 W dy 18 July 1885
Recorded, inter reference
to Go. no 1563 W dy
6 July 1885

Cd
15.7.85

Ll
17.7.85

P.W.D. 105/5. Ad 2197 Rd 2/12/85

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 11 January 1886

READ the following

From the Govt. of India Military Deptt. N. C. No: 4 M. W. dy 2nd January 1886.

The transfer of funds proposed in G. O. No: 3001 W dated 15th December 1885 has been sanctioned by the Govt. of India.

L
9/1/86

Ll
9.1.86

To The Supdg. Engr. II Circle
" Examiner of P. W. Accts.

Dated 11/1/86

Cu
W/11

Noted

68

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

From the Superintending Engineer Circle No. 4 E No. 5034, dy 9th March 1886.

A sum of Rs 150, being the available balance of the reserve with the Government under Imperial, Military Original Works, is allotted to the Presidency Division, for improvements to the Military prison, Fort St George.

To the Supg. Engineer, Circle.
" Exam. for W. Accts.
" Military Dept.

Passed 13-3-86.

11/3/86

11.3.86

No. 5089 698

SUPERINTENDING ENGINEER'S OFFICE,
V CIRCLE, MADRAS,
Chepák, 16 March 1886.

From

THE SUPERINTENDING ENGINEER,
V CIRCLE,

To

THE Chief Engineer
P.W.D. Department.

SIR,

Enclosures.

The Executive Engineer
Presidency Division, surrenders
a sum of Rs 800 from the
Grant for alterations to the
Coast Batteries at Madras for
which an allotment of Rs 8250—
was given in G. O. No. 1877 F. dated
the 14th August 1886. but Rs 1174
have been withdrawn in G. O.
No. 203 F. dated 25th January 1886.
Rupees 576 are now required for
Improvements to the Military
Prison at Fort St. George
in addition to Rs 150 appropriated
in

in G. O No 663 W. dated 12th March 1886, and I have the honor to request that Rs 576 may be transferred to Military Minor New works, and the balance of Rs 284 to Military Repairs in the Presidency Division.

I have the honor to be
&c,
Your most obt. Servt

Alex Sendey Lt
Superintending Engineer
5th Circle.

From

THE SUPERINTENDING ENGINEER,

V CIRCLE,

To

THE Chief Engineer,
P.W.D.



Dated 16th
Reed. 17th } March 1886.

ENCLOSURES.

No. 5089

Funds – Requests certain reappropriations of – under Military in the Presidency Division.

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

From the Supdg. Engineer V Circle. No. 5089 dy 16th March 1886.

The following telegram will be sent to the Govt of India Military Department:–

"Please cure sanction to following transfer to meet expenditure already incurred. From major works Military Rs 800 to minor works Do 516, Repairs 284."

Telg. despd. 17/3/86.

17/3/86

17-3-86

To The Supdg. Engr. V Circle
" Examiner of P.W. Accts

Recd 18-3-86.

No 6633 W — 12. 3. 86.
8330 - 11. 1. 86
18774 - 14. 5. 86.
2034 - 25. 1. 86.

72

Telegram

Urgent

To

Govt. of India
Military Department
Simla.

Tlg. dispd: 22/4/86.

"My telegram 2nd instant.
Reply explaining increase in revised
estimate is urgently required."

Sgd/ A. W. S.
under Secy.

22/4

C & W

To avoid
delay I send
herewith the
draft order
& the Military
works Bond &
for approval.
Mr is not here
& I have obtained
S Am's permission
to send these
papers to you
when ready —
Please try to
return them
soon after approval
by W.

W
23/4.

Accounts.
Budget.

It is requested that the above heading, with number and date of this communication, may be quoted in any subsequent correspondence on the subject.

No. 445-M-W.

GOVERNMENT OF INDIA.

MILITARY DEPARTMENT.

Fort William, the 24th March 1886.

MADRAS.

Orders on the Military Works budget estimate for 1886-87 and revised estimate for 1885-86.

READ—

Military Department Resolution No. 1208-M-W, dated 27th October 1885.

Letter No. 3093-W, dated 30th December 1885, from the Government of Madras.

Military Department telegram No. 218-M-W, dated 18th February 1886.

Telegram, dated 19th February 1886, from Government of Madras.

RESOLUTION.—The estimates of revenue are accepted for the sums entered in the following table :—

Revenue.

	Budget Estimate, 1886-87.	Revised Estimate, 1885-86.	Budget Estimate, 1885-86.	Actuals, 1884-85.
	Rs.	Rs.	Rs.	Rs.
In Public Works Department ...	30,000	29,500	29,500	33,586

Expenditure.

2. *Budget Estimate, 1886-87.*—The estimate has been framed for the total provisional grant of Rs. 6,50,000 sanctioned in Military Department Resolution No. 1208-M-W, of the 27th October last. It is represented that the grant for minor works and repairs is insufficient to meet the requirements under these heads, and that a further grant of Rs. 1,94,000* is necessary for this purpose. The Government of India are however not prepared to increase the grant already assigned, and desire that the distribution of the allotments for original works may be reconsidered with regard to the number of troops likely to be retained in Upper Burma. The amount of such reductions as may be decided upon may be applied to minor works and repairs subject to a total limit of Rs. 27,000 for minor works and Rs. 3,25,000 for repairs.

* Repairs	78,432
Minor works	78,000
	1,56,432
Establishment and tools and plant at 24 per cent.	37,544
	1,93,976
Or in round figures	1,94,000

3. The details of the estimate for original works are provisionally accepted subject to the following remarks :—

i.—Class A Works.—The allotments for items 1 to 7 are passed subject to the reconsideration referred to in para. 2. The grant for item 9, fortified post at Agram, is also passed provisionally, pending receipt of a report as to the nature of the further work to be carried out. It was understood that the work had been completed last year.

ii.—Class B Works.—None of the works in this list appear to the Government of India to be of much urgency: they might be postponed to the extent necessary to provide for increased allotments under the head minor works and repairs.

iii.—It is noticed that provision to the extent of Rs. 40,000 is proposed for alterations to the offices of the Accountant-General and Controller of Military Accounts to make the building suitable for the accommodation of troops. This expenditure would have been necessary had another building for the accommodation of the Military Account Offices been acquired. But the scheme for the location of these offices in the building known as "The Mansion" has fallen through, and with it the need for the alterations. The proposed allotment of Rs. 40,600* for alterations to the offices in the fort is accordingly withdrawn.

* Including Establishment and Tools and Plant charges.

iv.—Item 9 (B), Constructing a new magazine in the Wallajah berm.—Rs. 20,000. The grant is passed provisionally, pending sanction of the Government of India to the commencement of the work; but the necessity of the work must first be fully explained and the estimate duly sanctioned.

v.—Accommodation for additional troops.—A special grant of Rs. 44,000 (including Establishment and Tools and Plant charges) is hereby sanctioned to provide for additional accommodation owing to increased strength of British troops.

4. The modifications ordered in clauses iii and v of the foregoing paragraph result in a net reduction of the provisional grant of Rs. 6,50,000 by Rs. 5,600. The final issue of the budget estimate for 1886-87 should therefore be prepared for a total expenditure of Rs. 6,44,400.

Revised Estimate for 1885-86.

5. The estimate is passed for the full amount of the existing grant, Rs. 4,67,000.

6. The details of the estimates of expenditure passed by the Government of India are shown in the following table :—

	Budget Estimate, 1886-87.	Revised Estimate, 1885-86.	Budget Estimate, 1885-86.	Actuals, 1884-85.
	Rs.	Rs.	Rs.	Rs.
Original Works { In progress ...	91,600	2,04,600	2,29,646	2,09,361
Original Works { Not commenced ...	1,01,900			
Repairs	3,25,000	1,71,300	2,94,549	2,83,366
Total Works and Repairs ...	5,18,500	3,75,900	5,24,195	4,92,727
Establishment	1,20,700	87,400	1,20,563	1,14,345
Tools and Plant	5,200	3,700	5,242	4,935
Grand Total ...	6,44,400	4,67,000	6,50,000	6,12,007
Deduct—Expenditure in England ...	...	...	...	250
Net Indian outlay ...	6,44,400	4,67,000	6,50,000	6,11,757

7. It is observed that the estimates for the four class A works named in the margin have been revised without reference to the Government of India. It is of course within the competency of the Government of Madras to revise estimates within authorised limits, but in the case of military works it appears desirable that the Government of India should be informed of the causes which have led to the sanction of enhanced estimates.

	Amount of establishment.	
	Budget, 1885-86.	Budget, 1886-87.
Item 1.—Barrack for British Infantry, Mal'apuram ...	1,31,610	1,35,094
,, 3.—Royal Artillery barracks, St. Thomas' Mount. ...	1,35,050	1,46,910
,, 4.— Ditto stables ditto ...	20,160	21,702
,, 9.—Fortified post, Agram	34,280	58,790

8. The authority herewith given to incur expenditure within the limits of the grants shown in the table in para. 6 is subject to the condition of a strict observance of the rules in force with regard to the financial regularity of departmental work.

ORDER.—Ordered, that the foregoing be communicated to the Government of Madras for information and guidance, with the request that 45 printed copies of the budget estimate as now passed may be submitted so as to reach the Government of India not later than the 1st May 1886.

Ordered also, that a copy be forwarded to the Accountant-General, Public Works Department, for information.

(Signed) O. R. NEWMARCH,
Colonel,
Offg. Secy. to the Govt. of India.

P.W. Abs. 24. 76

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QUARTER MASTER GENERAL'S OFFICE,
Octacamund,
16th April 1886.

No. 1540/A.

From

THE QUARTER MASTER GENERAL,

To

THE SECRETARY TO GOVERNMENT,
P.W. ~~MILITARY~~ DEPARTMENT.

SIR,

In reply to your letter No. 1395C of (a) 6th instant forwarding copy of Resolution of the Government of India on the Military Works Budget of this Presidency for the current year, I am desired to state as follows as regards the several points on which you request information.

(a) - No. 445 M-Ws of 24th March 1886.

I. The Commander-in-chief regrets that he finds himself unable to recommend any modification of allotments for items 1 to 7 class A works with reference to the number of troops likely to be retained in Upper Burmah the whole of them being works of special urgency; but, if Government consider it absolutely necessary to make a reduction in the allotment for original works, His Excellency in deference

to

to such opinion, would, though most reluctant to do so, suggest that expenditure be deferred on

	Grant Rs.
2. Fort St. George. Converting a Raequet Court into a Covered gymnasium	9890.
5. Saint Thomé. Public Buildings for a Regiment of Madras Cavalry	14000.

items 2 and 5 only of that distribution. It may be observed here that, as under present conditions there is no probability of a third Regiment of Madras Infantry being located at Trichinopoly, His Excellency has recently submitted to the Government of the Military Department a proposal to appropriate from the grant of Rs 18000 made for buildings for 2 Regiments Madras Infantry at that Station (Item no. 6) a sum of Rs. 9000 towards the execution of certain repairs necessary to the Commissariat granary buildings on the beach at Madras to render them suitable as store rooms for the accommodation of Stores to be removed from the Casemates in Fort Saint George, which it is contemplated to hand over to the Ordnance Department. The remainder of the grant (viz. Rs. 9000) His Excellency proposes should be spent

* Quarter Master General's Letter No. 1420A of 17th April 1886.

¶ Para 8 of Quarter Master General's letter No. 1420A of 28th January 1886 to Secy. to Govt. Mily. Depttt.

77 167

spent on the erection of a magazine at Trichinopoly for the one Regiment Madras Infantry now placed on the new site, the only one actually requisite during the current year for buildings for that Regiment, and on the Construction of store rooms urgently required for the new lines there, regarding which Government will be addressed separately. Estimates for these works have not as yet been received; but, roughly, they may be expected to cost, the former about Rs. 2000, and the latter about Rs. 7000.

II. The further works requisite on the Agram Fortified Post are those below noted as already sanctioned:

(a) a guard room and Fire Engine shed at Rs. 1490, sanctioned in G.O. no. 3059 W. of 18th December 1885 (Military Department no. 48 of 5th January 1886).

(b) a Latrine at Rs. 390, sanctioned in G.O. no. 250 W of 28th January 1886 (Military Department no. 827 of 8th February 1886).

These works represent an aggregate cost of Rs. 1880, so that the grant for this

year

Zear would be reduced from Rs.5000, (the amount fixed when the probable maintenance of an Ordnance Depôt was contemplated) to Rs. 1850, the saving of Rs. 3150 accruing to the grant for Minor Works. It may be here noted that the decision not to maintain an Ordnance Depôt in the Fortified Post does not do away with the necessity for the works above mentioned which will still be requisite for the guard &c. kept in the Post for the magazines in the Fort.

III. His Excellency is of opinion that all the works entered in class B of the Preliminary Issue of the Budget are of real urgency and cannot therefore well be postponed, but in view of the present financial pressure, His Excellency will be prepared to relinquish this Zear the grant (Item No:12) for constructing a Drawbridge and gate for the Vellore Fort (Rs. 6450) in order to provide for increased allotments under Minor Works and repairs.

IV. The necessity for a new Magazine in the Mallajah Berm in Fort Saint George is as follows and has already been explained to Government in the Military Department in letter No. 345 A of 28th January 1886 from this Office.

(a) The Existing Magazines in Fort Saint George are not considered safe and serviceable for the accommodation of the Powder &c required for the Fort armament.

(b) The Ordnance Department requires more accommodation than the Magazine at the Mount alone provides for Powder &c which of necessity is maintained at Madras and near it.

V. The only new additional buildings required in connection with the augmented strength of British Troops in this Presidency are stables for 66 Extra horses, British Cavalry, at Bangalore, estimated to cost Rs. 6000, at Rs. 87 (say 90) per horse. Besides these new buildings, alterations to the British Cavalry Barracks at Bangalore to provide for the extra men to cost approximately Rs. 1000, and alterations and additions to Blocks of married Quarters and to the building late in occupation by the Adjutant General, and now occupied by the Offices of the Surgeon General Her Majesty's Forces &c in Fort Saint George, rendered necessary by the withdrawal of the Scheme for locating the account Offices outside the Fort, are imperative to provide accommodation for

G.O.G.M.O. No: 183 of 8 January 1887

for Troops. The cost of these latter alterations &ca cannot here be stated as Estimates for them have not yet been received, nor of the improvements emergently required to the Old Barracks at Saint Thomas Mount which are now occupied by the 3/4th Brigade Royal Artillery and Detachment 2/ Qus 88th South Wales Borderers. His Excellency would therefore suggest that in the Final Issue of the Budget, the Grant* of Rs: 44000 for providing additional accommodation for British Troops be distributed somewhat in the following manner.

Bangalore - British Cavalry Barracks and Stables		Rs. 8000.
Fort Saint George and St. Thos. Mount	Sundry alterations and improvements as above noted.	36000.
	Total Rs.	44000

* Para 3, clause 5, Government of India's Despatch above quoted.

I have the honor to be,
Sir,
Your Obedient Servant,
H. Hervey
Colonel

Offg. Quarter Master General.

79

No. 427.

Forwarded

A. Kennedy Lieut. Colo
Secretary to Commander

P.W.C. No. 3103

№ 2583 W of 28.9.82.
" 2273 C of 14.8.83.
" 3160 W of 7.11.83.
" 2476 W of 4.12.83
" 3610 W of 17.12.83
" 201 E of 29.5.84.
" 440 E of 7.8.84.
" 2295 W of 18.9.84.
" 590 W of 5.3.86.
" 1350 C of 2.4.86.
" 203 W of 25.1.86.
" 1877 W of 14.8.85.
" 85 W of 11.1.86.
" 663 W of 12.3.86.
" 720 W of 19.3.86.
" 754 W of 22.3.86.
" 152 W of 18.1.86.
" 1563 W of 6.7.85.
" 3001 W of 15.12.85.
" 996 W of 11.1.86.
" 3093 W of 30.12.85.
" 1115 C of 18.3.86.
" 1243 C of 26.3.86.
" 1673 W of 18.7.85.
" 1395 C of 6.4.86.
" 252 W of 22.1.86.
" 3060 W of 30.10.83.
" 1252 W of 29.5.85.
" 3057 W of 18.12.85.
" 1747 W of 1.10.83.
" 1274 W of 2.6.86.
" 256 W of 2.11.85.
" 580 W of 3.3.84.
" 1086 W of 1.5.84.
" 1057 W of 1.5.84.
" 1596 W of 25.6.86.
" 1275 W of 2.6.86.
" 1416 W of 17.6.85.
" 1524 W of 15.7.85.
" 2825 W of 27.11.85.

MILITARY 1886 DEPARTMENT.

From

THE QUARTER MASTER GENERAL,

To

THE SECRETARY TO GOVERNMENT,
MILITARY DEPARTMENT.

No. 1540 / A

Dated 16th April
Received 19

Read 20/4

+ ENCLOSURES.

Re. Military Works Budget of the Madras Presy: 1886–87—

Forwarded

Rs
W.D. Govt

80

Public Works Department

Proceedings of the Madras Government

Under date the

Read the following:—

from the Govt. of India, Military Department. H. E. No. 445 M.W. dy 24th March 1886.
to the Quarter Master General, Madras. H. E. No. 1540 A dy 16th April 1886.
Endorsement by the Military Department. H. E. No. 2427 dy 19th April 1886.

The allotments for original works under Class A and B have, in communication with His Excellency the Commander-in-Chief, been revised as desired by the Govt. of India, and the final issue of the Imperial Military Works budget-estimate for 1886-87 has been prepared, as shown below, for the reduced grant of Rs. 6,44,400 sanctioned by the Govt of India in their resolution read at the head of these Proceedings.

		Rs
Original Works	In progress —	58,996
	Not commenced	1,49,039
		2,08,035
Repairs		3,10,465
Establishment		1,20,700
Tools and Plant		5,200
	Total Rs.	6,44,400

2. The provision for minor works has been increased to Rs. 27,000 being the limit fixed by the Govt. of India, and that for repairs to the extent of the available grant after distribution to Original Works, Establishment and Tools and Plant.

× Rs 3,10,465.

3. The further works to be carried out in connection with the Fortified Post at Agra are detailed in para 2 of the Quarter Master Generals letter No: 1540 A dated 16th April 1886 recorded above, and in the opinion of H. E. the Commander-in-Chief they are considered necessary. As the cost of these works amounts to Rs 1880 only, the provision made for the work in the preliminary budget has been reduced to the extent actually required.

4. The necessity for constructing a new magazine in the Wallajah Barracks* has already been fully explained in Military Department letter No: 1078 dated 18th February 1886, the Govt. of India will now be requested to authorise the commencement of the work as soon as plans and estimates have been submitted by the Chief Engr. S. C. D. circle reported in April 1886.

5. Provision to the extent fixed by the Govt. of India has been made for the additional buildings required in connection with the increased strengths of British troops detailed in para 5 of the Quarter Master Generals letter recorded above. The Supdg. Engr. S. C. D. circle will take steps for the early submission of plans & estimates for the works detailed in para 2 of the Quarter Master Generals letter No: 1540 A dated 16th April 1886.

* Erection of a magazine at Trichinopoly for one regiment of Madras Infantry
Construction of stone drains required for the new lines at Trichinopoly

6. The Govt. of India will be addressed with respect to the remarks in para 7 D. letter No. 99 W dt 11th January 1886
679 W dt 13th March 1886.
764 W dt 22nd March 1886.
* put up for C. Secretary

Resolution in case of Military Works though such estimates are within the competency of the Local Govt.

7. The sums of Rs. 9,000 required for the Commissariat granary building on the beach at Madras will be allotted as an addition to the repair grant of the Presidency Division for 1886-87 in the orders on the statement of demands on account of incomplete and minor works and repairs.

8. Provision has also been made in the budget for the marginally noted works which His Excellency the Commander-in-Chief considers to be urgent. The Supdg. Engr. S. C. D. circle will take the requisite measures without delay steps for the early submission of estimates for them.

9. The revised estimates for 1886-87 against Original Works and Repairs as shown in the preliminary statement have been altered to Rs. 1,89,294 and Rs. 1,72,995 respectively, with reference to the transfers of funds since approved by the Govt. of India, and the transfer of Rs. 1,700, from repairs to original works sanctioned in Proceedings of the Madras Govt. No: 152 W dated 11th January 1886

In the absence of information requested in the telegrams noted in the margin* as to the cause of increase in the revised estimate as fixed by the Govt. of India, the amount shown in the preliminary issue has been retained.

10. With these remarks the final issue of the Imperial Military Works budget estimate for 1886-87 will be printed and circulated for the information and guidance of the officers of the Department, ~~and the number of~~ copies as noted in the margin ~~will be~~ being forwarded to the Govt. of India.

H. E. No: Wdy

~~Forwarded~~

To Secretary to the G. of B. Mily Dept

Sir

(see Secretary)

* Telegram dated 2nd April 1886
Do ——— 22nd April 1886.

To Simla —— 20
Calcutta —— 25
45

To Supdg. Engineers
The Examiner of P. W. Accts
" Military Department
" Financial Department.

W
23/4

No. 1084-W PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 29th April 86.

READ the following

From the Govt. of India, Military Depte. No. 445 M.W. dt. 24-3-86
From the Quarter Master Genl. Madras, No. 1520A dt. 16-4-86
Endt. of the Military Depte. No. 2427 dt. 19-4-86.

The allotments for original works under Class A and B have, in communication with His Excellency the Commander-in-Chief, been revised as desired by the Govt. of India; and the final issue of the Imperial Military Works budget estimate for 1886-87 has been prepared as shewn below, for the reduced grant of Rs. 644,400 sanctioned by the Govt. of India in their resolution read

read at the head of these Proceedings:—

		Rs
Original Works	In progress	58,996
	Not commenced	149,039
		208,035
Repairs		310,465
Establishment		120,700
Tools and Plant		5,200
Total Rs		644,400

2. The provision for minor works has been increased to Rs 27,000, being the limit fixed by the Govt of India; and that for repairs to the extent of the available grant after distribution to Original Works, Establishment, and Tools and Plant.

× Rs 3,10,465

3. The further works to be carried out in connection with the Intrenched Post at Agram are detailed in para. 2 of the Quarter Master General's letter No 1540 A dated 16 April 1886, recorded above; and in the opinion of His Excellency the Commander-in-Chief they are ~~unobjectionable~~ necessary. As the cost of these works amounts to Rs 1880 only, the provision made for the proposed works in the preliminary budget has been reduced to the extent actually required.

4. The necessity for constructing a new magazine in the Wallajah barracks, Fort St. George, has already been fully explained in Military Department letter No 1078 dated 18th February 1886, and the Govt of India will now be requested to authorise the commencement of the work so soon as plans and estimates have been sanctioned. Steps should be taken for the early submission of the plans and estimates, which the Supt Engineer, Trichinopoly Circle, reported would be ready on April

April 1886.

5. Provision to the extent fixed by the Govt: of India has been made for the additional buildings required in connection with the increased strength of British troops detailed in para: 5 of the Quarter Master General's letter[x] recorded above. Estimates for the works should be submitted with the least possible delay.

[x] 1540 A dy 16th April 1886.

6. The Govt: of India will be addressed with respect to the remarks in para 7 of their Resolution.

7. The sum of Rs 9,000, required for the Commissariat granary buildings on the beach at Madras, will be allotted as an addition to the repairs grant to the Presidency Division for 1886-87 in the orders on the statement of demands on account of incomplete and minor works and repairs.

Provision

11/23/4

84

Erection of a magazine at Trichinopoly for one regiment of Madras Infantry.

Construction of stone drains required for the new lines at Trichinopoly.

[x] 996 W dy 11th January 1886.
679 W dy 13th March 1886.
764 W dy 22nd March 1886.

[x] Telegram dy 2nd April 1886.
Do 22nd April 1886.

8 Provision has been made in the budget for the marginally noted works[x], which His Excellency the Commander-in-chief considers ~~to be~~ urgent. The necessary estimates should be submitted without delay.

9. The revised estimates for 1885-86 against "Original Works and Repairs", as shewn in the preliminary issue, have been attested to Rs 189,204 & Rs 172,995 respectively, with reference to the transfers of funds since approved[x] by the Govt: of India, and to the transfer of Rs 1,700 from repairs to original works, sanctioned in Proceedings of the Madras Govt: No 152 W, dated 18th January 1886. In the absence of information requested in the telegrams noted in the margin[x], as to the cause of increase in the revised estimate as fixed by the Govt: of India, the amount shewn in the preliminary

issue

issue has been retained.

10 With these remarks, the final issue of the Imperial Military Works budget estimate for 1886-87 will be printed and circulated for the information and guidance of the officers of the Department; copies as noted in the margin[x] being forwarded to the Govt. of India.

To Simla — 20
Calcutta — 25
45

H. E. No. 1085 W. dy 29th April 86

2. The Secy. to the Govt of India
Military Depte

3. Supdt Engineers
The Examr of S. W. A.
Auditing Depte
Financial Depte

Sir,

With reference to Govt. of India Resolution No. 445 MW. dy 24th March 1886, I am directed to forward a copy of the Proceedings of this Govt. No. 1084 W. dy 29th April 1886, together

3/4

together with copies of the final issue of the Imperial Military Works Budget for 1886-87, framed in accordance with the Orders of the Govt. of India, and the suggestions of H. E. the Commander-in-Chief, Madras.

2 In reply to the remarks of the Govt. of India in para 7 of the Resolution above quoted, I am desired to submit the following observations:-

Item 1. Barrack for British Infantry Malappuram -

The circumstances which led to a revised estimate being sanctioned for this work were explained in my letter No. 1087 W, dated 1st May 1884. Since then no further revision has taken place; but, in their Proceedings marginally noted, this Government sanctioned

No. 1275 W dy 2nd June 1885.
" 1416 W dy 17th "
" 1652 W dy 15th July 1885
" 2845 W dy 27th Nov. 1885.
Copies attached

sanctioned certain supplemental estimates for additional ~~estimates~~ works brought forward by His Excellency the Commander-in-Chief as urgently necessary, and the total sanction was thus brought up to Rs 13,5094

Item 3 Royal Artillery barracks, St Thomas' mount. A copy of the Proceedings of this Govt. N° 1274 W of 2d June 1885, sanctioning a revised estimate of Rs 146910 for this work, is forwarded for information. It will be seen that the want of care in the preparation of the original estimate was duly noticed by this Govt.

Item 4 Royal Artillery Stables, St Thomas' mount. The increase in this case, bringing the total estimate to Rs 21,702,

was due to a small supplemental estimate of Rs 1,542 being sanctioned on the recommendation of H.E. the Commander-in-Chief - Vide Pros: N° 2561 W of 2d Nov 1885, Copy attached.

Item 9 Intafied pat, Agram - In this case also the increase over the original estimate was caused by sanction being given to certain supplemental works brought forward by H.E. the Commander-in-Chief as necessary - Vide Proceedings of Govt marginally noted. It will be observed that since the issue of the preliminary Budget, a further small estimate of Rs 390 has been sanctioned bringing the total estimate to Rs 39180, which figure has been entered in the final issue of the Budget.

3. I am to remark that in

× N° 1250 W of 29 May 1885.
" 3059 W of 18 Dec 1885
2504 of 28 January 1886
Copies attached.

all these cases, this
Govt. have acted within
their powers, as defined
by the P. W. Code; and if
the Govt. of India consider
it necessary that reference
should be made to them
, every instance in which
supplemental or revised
timates are sanctioned
r Military works within
e powers of the local
vt., I am to suggest
at the Code rules on the
bject be modified
cordingly.

27-4-86

Cordially
with thanks
quoted in the
letter
5/5/86

11/23/4

3703

...bt. of 1886 Madras.

PUBLIC WORKS.

Dated

Read

Rec'd

G.O. 29th April 1886. No. 1084 W
1085 W

Budget Estimate

Imperial Dairy Works
for 1886-87. Orders
circulating the final
issue of Rs

Budget Estimate 750/15

Imperial Dairy Works for
1886-87. Copy of orders
circulating the final issue
of Rs forwarded to Rs
for information