No. 495 G.L.

FROM, THE SUPERINTENDING ENGINEER

FIRST CIRCLE.

TO, THE CHIEF ENGINEER
P. W. Department
~~FOR IRRIGATION.~~

DOWLAISHWERAM, 22 February 1883.

SIR, D.O./I 23 Do—

With reference to G.O No 478 W. 13/2/83, I have the honor to say that I strongly advocate the adoption of the proposed simple form of completion Report for periodical repairs.

I have the honor to be,
Sir,
your most obedient Servt

C. Stewart,
Offg Supt Engineer 1st Circle

Compd by
[illegible]

No. 4783

From

The Supdg Engineer
1st Circle

To

The Chief Engineer
P. W. Department

Dated 22
Despd. 23
Recd. February 1883

No. 495 G.L.

Completion Report Advocating the adoption of the proposed simple form for periodical repairs.

Compd Rtd

No. 453 G.L.

Superintending Engineer's Office,
2nd Circle, Masulipatam.
17th February 1883.

From

The Superintending Engineer,
2nd Circle.

To

The Chief Engineer
Public Works Department.

Sir,

With reference to G.O. No. 478 W. of the 13th Instant, forwarding for opinion, Government of India Circular No. 30-42 B of the 25th January, I have the honour to state that, I think the proposed alteration of the form of Completion Report will save much clerical work in offices where many Completion Reports for annual repairs have to be prepared.

2. The proposal appears to relate only to Civil Buildings, but the change might, with advantage, be extended to all Estimates classed as "Annual".

I have the honour to be,
Sir,
Your most Obdt Servant.
I. O. Rundall
Superintending Engineer II Circle

Compd Rtd.

P.W.C. No. 1833

From

The Superintending Engineer,
II Circle

To

The Chief Engineer
P. W. D.
Madras

Dated 14th February 1883
Despd 19th —do—
Recd 23rd —"—

No. 453 G.L.

Completion Report for Periodical Repairs - Gives his opinion regarding the proposed alteration of the form of —

Completion Reports

Oct 7-4

SUPERINTENDING ENGINEER'S OFFICE,

No. 57. MADRAS,

Bellary ~~Chepauk~~, 4th April 1883.

From Major S.C. Clarke R.E.
~~THE~~ SUPERINTENDING ENGINEER,
III ~~1ST~~ CIRCLE,

To THE Chief Engineer
P.W.D.
Madras

SIR,

Enclosures. With reference to G.O. No. 478 W dated 13th February 1883, I have the honour to report that the proposed form of Completion report for periodical repairs is in my opinion well worthy of adoption as it will reduce much of the present clerical labour in all the Divisional Offices.

I have the honour to be
Sir
Your most obdt. servant.

S. Clarke Major R.E.
Offg: Supdg: Engineer II Circle

M.R.

From

The Superintending Engineer,

~~III~~ Circle,

To

The Chief Engineer
P.W.D.
Madras.

Dated 4th April 1883.
Recd.

Enclosures.

No. 57.

Form of Completion Report for periodical repairs.

Reporting that the — is most suitable.

Supg. Engineer's Office 4th Circle,
Coimbatore 2nd March 1883.

No. 104/W

From,

The Superintending Engineer,
Fourth Circle.

To, The Chief Engineer
P. W. Department.

Sir,

With reference to G.O.No 478W of 13th February 1883, I have the honor to state that in my opinion the simple forms proposed for completion Reports on periodical repairs would be sufficent for all requirements, and that this alteration would certainly effect a considerable saving in clerical work without in any way reducing the efficiency of such check as is now kept on the accounts of those works.

2 For works costing above Rs 2,500 — work vouchers in details are at present submitted, repetition of the same details

ORS 7-4

details in the completion Report are therefore unnecessary.

3 Detailed completion Reports are at present submitted for works below Rs 2,500 also, but no register of works by sub heads being maintained for such works, these reports must usually be based mainly on approximate quantities.

4 No detailed completion reports are submitted for works below Rs 500, but to obtain certificates from the Departments concerned, this Department furnishes those officers with copies of the estimates to enable them to satisfy themselves whether the works estimated for have been fully carried out.

5 Since the establishment at the disposal of Divisional officers is limited, it will not be possible to maintain accounts by sub heads for all works below Rs 2,500; I therefore recommend the adoption of the Government of India forms of completion Reports for those works and ~~following~~ that the same procedure should be followed as is now in force with regard to works below Rs 500.

I have the honor to be,

Sir,

Your most obt Servant

R. Beatty Colonel R.E

Supg Engineer 4th Circle

Sr. II

P.W.D. No. 1950

From,

The Supg. Engineer
4th Circle.

Dated 2nd
Ad. 5 } March 1883.

No. 104/W

Enclosure-

Completion Report
for periodical repairs-
Reports about the adoption
of simple form of—

Completion Rs

(110)

OLS 7-4

SUPERINTENDING ENGINEER'S OFFICE,
5TH CIRCLE, MADRAS,
Chepauk, 15th March 1883.

No. 4450

From

THE SUPERINTENDING ENGINEER,
5TH CIRCLE,

To

THE Chief Engineer
P.W.D.

SIR,

Enclosures.

With reference to G.O. No. 478W dated 13th February 1883, I have the honor to Report that I recommend the adoption of the Simple form of Completion Report for periodical Repairs.

I have the honor to be
Sir
Your Most Obedt. Servt.

Superintending Engineer
5th Circle.

From

THE SUPERINTENDING ENGINEER,

5TH CIRCLE,

To

THE Chief Engineer
P. W. D.

Dated 15th
Recd. } March 1883.

ENCLOSURES.

No. 4450

Completion Report—
Recommending the adoption
of the simple form of— for
periodical repairs.

Complete W.P.

(110)

0287-4

W- 2054 T.J.

Supt. Engineer's office, Trichinopoly. 15th February 83.

From,

Lt Col H. R. Mead R.E.
Supt. Engineer, 5th Circle.

To.

Colonel R. H. Sankey C.I.E. R.E.
Chief Engineer, P.W.D.

Sir,

With reference to G.O. No. 478 W dated 13th February 83 asking for my opinion with regard to the new form of completion report for periodical repairs, I have the honor to report that I consider its use in lieu of Madras Forms M. 27a and M. 27b for periodical repairs exceeding Rs 500 in cost (for those below form M 27a should be retained) would save clerical labour and therefore it would be advantageous to adopt it.

2. I would suggest that as all other P.W. Forms, it should be made to fold lengthways and not across.

I

I have the honor to be
Sir
your most obedient servant.

2d Lieut R.E.

Asst Engineer, Cincle.

fo 7-9v. 23. 3. 82.
940c. - 26. 4. 82.
fo 160&v- 26. 6. 82 in Original
262D. 5- 2. 83.
fo 478v- 13. 2. 83.

M.C. No 149

From,

The Supt Engineer
6: Circle

To,

The Chief Engineer
P. W. D

No. 205 H T.J.

Dated 15: February 183

Subject

New Form of Com-
-pletion Report for
periodical repairs

---

offers opinion in
regard to the —

Complete

Copy 9/4
Copy 4

No 1123 W Public Works Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the 14th April 83

Read the following

| | | |
|---|---|---|
| From the Supt Engr 1st Circle | N E No 496 dt 22nd Feby/83 | |
| " " " 2nd " | N. E No 453 dt 17 " " | |
| " " " 3rd " | N E No 61 dt 4th April " | |
| " " " 4th " | N E. No 104 W dt 2nd March " | |
| " " " 5th " | N E. No 4450 dt 15 " " | |
| " " " 6th " | N. E No 2054 T J - 16 Feby " | |

Ordered that the Government of India be addressed -

N. E No 1124 W dated 14th April/83

To The Secretary to the
Govt of India P.W.D.

Sir -

With reference to your endorsement No 30-42 B dated 25th January 1883, I am directed to state that this Government, having taken the opinions of Supts Engrs and the Examiner of P.W. Accts are entirely in favor of the adoption

of the simplified form
of completion report for
periodical repairs recom-
-mended by the Govt
of Punjab —

Dy 9/4

Advt

10/4/83

Nos 1123/1424 Wdy 14-4-83

2C.
L.No. 3370 W. 23-11-83.

Revd
14/4/83.

537

Dy 9/4. - R 14-4-83

Sent in Receipt Regr.

GOVERNMENT OF MADRAS.

## PUBLIC WORKS DEPARTMENT.

Read—the following papers :—

From Lieutenant-Colonel P. MONTGOMERIE, R.E., in special charge of Tank Divisions, to the Chief Engineer for Irrigation, dated Chepâk, 30th March 1883, No. 3.

With reference to G.O., No. 743 W., dated 7th March 1883, appointing me for special duty in your office in connection with the work of the new Tank divisions authorized in Proceedings of Madras Government, No. 143 I., dated 12th February 1883, I have the honor to submit a statement of the establishment required to make up one Tank division, costing Rs. 32,000 per annum, as proposed in your note* on minor irrigation works, dated 27th November 1882, and to request permission to appoint, temporarily, from the 1st April 1883, the draughtsmen and office establishments included therein, to enable me to put in hand the preparatory work required in connection with the professional investigations on which the Tank divisions have to be employed.

* Also a statement of the special establishment to be attached to your office, Rs. 33,600.

2. As you are aware, there is a vast quantity of information in the Revenue Survey office, connected with the districts in which these operations will be carried out, although unfortunately this information has not been arranged altogether in a manner suitable for our purpose. There is also a good deal of data with reference to the grouping of the minor irrigation works generally, in a more or less disconnected form, available in your office, and perhaps also in some of the district offices. And I need hardly point out that the more completely this information is utilized, preparatory to the field work in the districts being taken up, the less will be the delay in completing the professional investigation which is the fundamental work required in the practical treatment of the minor irrigation works of the presidency.

3. I propose carrying out these professional investigations somewhat on the system followed for the Mysore tank scheme, but the same detail will not be necessary if the information in the Revenue Survey office can be utilized. The detailed instructions for a systematic prosecution of these investigations will be forwarded to you, in due course, for approval; they will be based on the Irrigation circulars which have, from time to time, been issued from your office. And I am in hopes of being able to embody, in a more comprehensive manner, the substance of these circulars with other hydraulic data in the form of a Manual, for the use and guidance of the tank divisions or for the conservancy establishment that may supersede them in the future. This, however, must take time.

4. From the tenor of your remarks, in your note above referred to, it would appear that it is proposed to utilize the new Tank divisions not only in the work of investigation, estimating and registering, but also in the actual execution and supervision of work at the same time. If this be the intention, I would venture respectfully to point out that these absolutely necessary and essential investigations will

never be completed within a definite period: for it is very certain that, before the period of fifty-five years, which you allow will be necessary to complete the work, has elapsed, famines, wars and other distracting influences must be reckoned upon, and the collapse of the operations will be as complete as that of the Mysore scheme apparently was under the pressure of the last famine. Whereas, on the contrary, if the investigation and estimating is in an advanced state, the mere accident of a famine must advance rather than retard any scheme for actually carrying out the work.

5. Without asking you, therefore, to commit yourself to any scheme for the actual maintenance and repair of the minor irrigation works of the Madras presidency, which must necessarily be more of a revenue than a professional question, and which will depend, in a great measure, on the intentions of Government, with reference to the revival of Kudimaramut, the enforcement of an Irrigation Act, and the extent to which the Revenue Department will be required to carry out all necessary unskilled labor, by means of the cultivators themselves, I would most strongly recommend that, in the treatment of the subject generally, the principle of carrying out the professional investigations separately and distinctly from the actual execution of the work be strictly followed, at least for some time to come. Should this principle meet with approval, I shall attend to this portion of the scheme with the view to insuring the systematic examination and record of all the minor irrigation works thoughout the presidency within a definite period.

6. The importance and magnitude of these preliminary operations do not appear to be fully realized; and I would venture to draw your attention to the remarks of the late Colonel W. R. Johnson, Superintending Engineer, Mysore, who, in the 6th paragraph of his memorandum of the 14th February 1882, stated: "It may be as well here to give some idea of the amount of preliminary work this scheme entailed. ..... I pointed out that this work would be necessary before the restoration of the tanks could be commenced, and estimated that the establishment charges alone would probably amount to 50 per cent. of the total cost of the work." Captain Woodward, R.E., in his report on the working of the Ceylon Ordinance, dated 22nd August 1874, says with reference to preliminary operations: "The large tank of Bassawakulam .....intended for the irrigation of about 1,000 acres..... The extensive surveys required to ascertain the capabilities of this tank occupied two officers for eight months." And again: "The repairs of the Mahawema Madawachiya, a tank..... to irrigate 300 acres..... The survey occupied one officer nearly five months."

In drawing up the Mysore tank scheme it was estimated that one individual could examine and dispose of 47 tanks in a year, but whether so much was actually accomplished is not clear. If, however, we take 50 minor irrigation works as the most which one individual can dispose of, it will take the entire strength of the six Tank divisions fifteen years to deal with the 50,000 minor irrigation works of Madras.

7. This investigation work is even more necessary for the treatment of the minor irrigation works than the revenue survey is for the settlement of the land revenue, and it must be carried out in as complete and systematic a manner as possible, whatever other arrangements are made for the execution of the work thereafter. And the only possible circumstances under which the carrying out of these investigations might be considered unnecessary would be in the event of the entire abandonment of all the minor irrigation works being decided upon. The abandonment of a few, or even of a considerable number, of them would not lessen the investigation work in the least; for, until the investigations have been carried out, it cannot possibly be decided which tanks may be abandoned.

8. As I understand that it is the wish of Government to commence operations in the Madura district as soon as practicable, I have written to the Superintendent of the Revenue Survey Department to put in hand at once the detailed irrigation maps required for that district, and to complete them so far as information is available in his office; and the Tank divisions, if appointed, will probably be in a position to commence work energetically in about a couple of months' time.

9. There are other localities for which information is much more complete than for Madura, and the collection of these data will also be proceeded with, if the temporary establishment now asked for is allowed. And as soon as I have some office establishment, I shall prepare and submit estimates for the maps to be prepared by the Revenue Survey Department, &c.



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2. As you are aware, there is a vast quantity of information in the Revenue Survey office, connected with the districts in which these operations will be carried out, although unfortunately this information has not been arranged altogether in a manner suitable for our purpose. There is also a good deal of data with reference to the grouping of the minor irrigation works generally, in a more or less disconnected form, available in your office, and perhaps also in some of the district offices. And I need hardly point out that the more completely this information is utilized, preparatory to the field work in the districts being taken up, the less will be the delay in completing the professional investigation which is the fundamental work required in the practical treatment of the minor irrigation works of the presidency.

3. I propose carrying out these professional investigations somewhat on the system followed for the Mysore tank scheme, but the same detail will not be necessary if the information in the Revenue Survey office can be utilized. The detailed instructions for a systematic prosecution of these investigations will be forwarded to you, in due course, for approval; they will be based on the Irrigation circulars which have, from time to time, been issued from your office. And I am in hopes of being able to embody, in a more comprehensive manner, the substance of these circulars with other hydraulic data in the form of a Manual, for the use and guidance of the tank divisions or for the conservancy establishment that may supersede them in the future. This, however, must take time.

4. From the tenor of your remarks, in your note above referred to, it would appear that it is proposed to utilize the new Tank divisions not only in the work of investigation, estimating and registering, but also in the actual execution and supervision of work at the same time. If this be the intention, I would venture respectfully to point out that these absolutely necessary and essential investigations will

never be completed within a definite period: for it is very certain that, before the period of fifty-five years, which you allow will be necessary to complete the work, has elapsed, famines, wars and other distracting influences must be reckoned upon, and the collapse of the operations will be as complete as that of the Mysore scheme apparently was under the pressure of the last famine. Whereas, on the contrary, if the investigation and estimating is in an advanced state, the mere accident of a famine must advance rather than retard any scheme for actually carrying out the work.

5. Without asking you, therefore, to commit yourself to any scheme for the actual maintenance and repair of the minor irrigation works of the Madras presidency, which must necessarily be more of a revenue than a professional question, and which will depend, in a great measure, on the intentions of Government, with reference to the revival of Kudimaramut, the enforcement of an Irrigation Act, and the extent to which the Revenue Department will be required to carry out all necessary unskilled labor, by means of the cultivators themselves, I would most strongly recommend that, in the treatment of the subject generally, the principle of carrying out the professional investigations separately and distinctly from the actual execution of the work be strictly followed, at least for some time to come. Should this principle meet with approval, I shall attend to this portion of the scheme with the view to insuring the systematic examination and record of all the minor irrigation works thoughout the presidency within a definite period.

6. The importance and magnitude of these preliminary operations do not appear to be fully realized; and I would venture to draw your attention to the remarks of the late Colonel W. R. Johnson, Superintending Engineer, Mysore, who, in the 6th paragraph of his memorandum of the 14th February 1882, stated: "It may be as well here to give some idea of the amount of preliminary work this scheme entailed. ..... I pointed out that this work would be necessary before the restoration of the tanks could be commenced, and estimated that the establishment charges alone would probably amount to 50 per cent. of the total cost of the work." Captain Woodward, R.E., in his report on the working of the Ceylon Ordinance, dated 22nd August 1874, says with reference to preliminary operations: "The large tank of Bassawakulam .....intended for the irrigation of about 1,000 acres..... The extensive surveys required to ascertain the capabilities of this tank occupied two officers for eight months." And again: "The repairs of the Mahawema Madawachiya, a tank..... to irrigate 300 acres..... The survey occupied one officer nearly five months."

In drawing up the Mysore tank scheme it was estimated that one individual could examine and dispose of 47 tanks in a year, but whether so much was actually accomplished is not clear. If, however, we take 50 minor irrigation works as the most which one individual can dispose of, it will take the entire strength of the six Tank divisions fifteen years to deal with the 50,000 minor irrigation works of Madras.

7. This investigation work is even more necessary for the treatment of the minor irrigation works than the revenue survey is for the settlement of the land revenue, and it must be carried out in as complete and systematic a manner as possible, whatever other arrangements are made for the execution of the work thereafter. And the only possible circumstances under which the carrying out of these investigations might be considered unnecessary would be in the event of the entire abandonment of all the minor irrigation works being decided upon. The abandonment of a few, or even of a considerable number, of them would not lessen the investigation work in the least; for, until the investigations have been carried out, it cannot possibly be decided which tanks may be abandoned.

8. As I understand that it is the wish of Government to commence operations in the Madura district as soon as practicable, I have written to the Superintendent of the Revenue Survey Department to put in hand at once the detailed irrigation maps required for that district, and to complete them so far as information is available in his office; and the Tank divisions, if appointed, will probably be in a position to commence work energetically in about a couple of months' time.

9. There are other localities for which information is much more complete than for Madura, and the collection of these data will also be proceeded with, if the temporary establishment now asked for is allowed. And as soon as I have some office establishment, I shall prepare and submit estimates for the maps to be prepared by the Revenue Survey Department, &c.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | Grounds of Proposition. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Amount of Pay. Maximum. | Amount of Pay. Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman .. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Do. .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| Nil. | .. | .. | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | .. | .. | 8 | 1 | 8 | | | |
| | | | 1 | Moochee .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | *Office Establishment.* | | | 1,870 | .. | 1,870 | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman, 1st class .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | 316 | .. | 316 | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 93 | .. | 93 | | | |
| | | | | Contingencies .. .. | .. | .. | 287 | .. | 287 | | | |
| | | | | Total per mensem .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per annum .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Or, say .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Grand Total .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | | | | 65,600 | .. | 65,600 | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the $1\frac{1}{2}$ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

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Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | Grounds of Proposition. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Draughtsman .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| Nil. | .. | .. | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | .. | .. | 8 | 1 | 8 | | | |
| | | | 1 | Moochee .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | | | | | | |
| | | | | | | | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | | | | | | |
| | | | | | | | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | | | | | 93 | .. | 93 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 287 | .. | 287 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per annum .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Or, say .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Grand Total .. | .. | .. | 65,600 | .. | 65,600 | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the $1\frac{1}{2}$ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

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Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.

Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | Grounds of Proposition. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman .. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Do. .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| Nil. | | .. | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | .. | .. | 8 | 1 | 8 | | | |
| | | | 1 | Moochee .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 93 | .. | 93 | | | |
| | | | | | | | 287 | .. | 287 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Contingencies .. .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per mensem .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Total per annum .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Or, say .. | .. | .. | 65,600 | .. | 65,600 | | | |
| | | | | Grand Total .. | .. | .. | | | | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | Grounds of Proposition. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman .. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Do. .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| Nil. | | .. | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | .. | .. | 8 | 1 | 8 | | | |
| | | | 1 | Moochee .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. | .. | .. | .. | | | | | |
| | | | | | | | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | | | 93 | .. | 93 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 287 | .. | 287 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per annum .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Or, say .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Grand Total .. | .. | .. | 65,600 | .. | 65,600 | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.



No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the 1½ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

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Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.

Exd. E. Fernandez.

No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the 1½ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

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Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | Grounds of Proposition. |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Draughtsman .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | .. | .. | 8 | 1 | 8 | | | |
| | | | 1 | Moochee .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do do. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 93 | .. | 93 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 287 | .. | 287 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per annum .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Or, say .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Grand Total .. | .. | .. | 65,600 | .. | 65,600 | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

## No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the $1\frac{1}{2}$ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

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Order—dated 16th April 1883; No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | Grounds of Proposition. |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman .. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Do. .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Do. .. .. | 35 | 50 | $42\frac{1}{2}$ | 1 | $42\frac{1}{2}$ | | | |
| Nil. | .. | .. | 1 | Do. .. .. | 35 | 50 | $42\frac{1}{2}$ | 1 | $42\frac{1}{2}$ | | | |
| | | | 1 | Do. .. .. | .. | .. | 8 | 1 | 8 | | | |
| | | | 1 | Moochee .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | | | 93 | .. | 93 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 287 | .. | 287 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per annum .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Or, say .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Grand Total .. | .. | .. | 65,600 | .. | 65,600 | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the $1\frac{1}{2}$ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

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Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | Grounds of Proposition. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Draughtsman .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| Nil. | .. | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | | | 8 | 1 | 8 | | | |
| | | | 1 | Moochee .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | | | | | | |
| | | | | | | | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. | .. | .. | | | | | | |
| | | | | | | | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | | | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | | | | | | |
| | | | | | | | 93 | .. | 93 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 287 | .. | 287 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per annum .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Or, say .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Grand Total .. | .. | .. | 65,600 | .. | 65,600 | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

## No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the 1½ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

---

Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | Grounds of Proposition. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman .. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Do. .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| Nil. | | .. | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Moochee .. .. .. | .. | .. | 8 | 1 | 8 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | | | | | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do do. .. | 20 | 30 | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 93 | .. | 93 | | | |
| | | | | | | | 287 | .. | 287 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Contingencies .. .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per mensem .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Total per annum .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Or, say .. | .. | .. | 65,600 | .. | 65,600 | | | |
| | | | | Grand Total .. | .. | .. | | | | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the 1½ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

---

Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | Grounds of Proposition. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman .. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Do. .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| Nil. | | .. | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | | | 8 | 1 | 8 | | | |
| | | | 1 | Moochee .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | | | | | | |
| | | | | | | | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | | | | | | |
| | | | | | | | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | | | | | | |
| | | | | | | | 93 | .. | 93 | | | |
| | | | | | | | 287 | .. | 287 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Contingencies .. .. | .. | .. | | | | | | |
| | | | | Total per mensem .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per annum .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Or, say .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Grand Total .. | .. | .. | 65,600 | .. | 65,600 | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the $1\frac{1}{2}$ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

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Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | Grounds of Proposition. |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman .. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Do. .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| Nil. | .. | .. | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | .. | .. | 8 | 1 | 8 | | | |
| | | | 1 | Moochee .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 93 | .. | 93 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 287 | .. | 287 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per annum .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Or, say .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Grand Total .. | .. | .. | 65,600 | .. | 65,600 | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the $1\frac{1}{2}$ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

---

Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | Grounds of Proposition. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | | | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | | | | | | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman .. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Do. .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| Nil. | .. | .. | 1 | Do. .. .. | 35 | 50 | $42\frac{1}{2}$ | 1 | $42\frac{1}{2}$ | | | |
| | | | 1 | Do. .. .. | 35 | 50 | $42\frac{1}{2}$ | 1 | $42\frac{1}{2}$ | | | |
| | | | 1 | Do. .. .. | | | 8 | 1 | 8 | | | |
| | | | 1 | Moochee .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | | | | | | |
| | | | | | | | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. | .. | .. | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 93 | .. | 93 | | | |
| | | | | | | | 287 | .. | 287 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Contingencies .. .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per mensem .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Total per annum .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Or, say .. | .. | .. | 65,600 | .. | 65,600 | | | |
| | | | | Grand Total .. | .. | .. | | | | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the 1½ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

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Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Amount of Pay. | | | | | | | |
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | Grounds of Proposition. |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | | as Major .. .. .. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | | | | | | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman .. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Do. .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | .. | .. | 8 | 1 | 8 | | | |
| | | | 1 | Do. .. .. | .. | .. | 18 | 3 | 18 | | | |
| Nil. | .. | .. | 1 | Moochee .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | .. | | | | | |
| | | | 3 | Lascars at Rs. 6 each .. | | | 2,565 | .. | 2,565 | | | |
| | | | | | | | 135 | .. | 135 | | | |
| | | | | Travelling allowances .. | .. | .. | .. | | | | | |
| | | | | Contingencies .. | .. | .. | 100 | .. | 100 | | | |
| | | | | | | | 2,800 | .. | 2,800 | | | |
| | | | | Total per mensem .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | Total per annum .. | .. | .. | | | | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | | | | | 650 | 1 | 650 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 320 | 4 | 320 | | | |
| | | | 4 | Overseers, 2nd grade .. | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | | | | | 70 | 1 | 70 | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 50 | 70 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | 20 | 30 | 7 | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. | .. | .. | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | | | | | 25 | 1 | 25 | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 93 | .. | 93 | | | |
| | | | | | | | 287 | .. | 287 | | | |
| | | | | Travelling allowances .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Contingencies .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per mensem .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Total per annum .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Or, say .. | .. | .. | 65,600 | .. | 65,600 | | | |
| | | | | Grand Total .. | .. | .. | | | | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the 1½ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

---

Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | Grounds of Proposition. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 2nd do. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Draughtsman | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Do. | 35 | 50 | 42½ | 1 | 42½ | | | |
| Nil. | | .. | 1 | Do. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. | .. | .. | 8 | 1 | 8 | | | |
| | | | 1 | Moochee | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each | .. | .. | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Messenger | .. | .. | 6 | 1 | 6 | | | |
| | | | 1 | Do. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each | .. | .. | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each | .. | .. | 93 | .. | 93 | | | |
| | | | | Travelling allowances | .. | .. | 287 | .. | 287 | | | |
| | | | | Contingencies | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per annum | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Or, say | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Grand Total | .. | .. | 65,600 | .. | 65,600 | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the $1\frac{1}{2}$ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

Ootacamund,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

---

Order—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



Enclosure.

Statement showing the proposed scale of special establishment required for improving tanks.

| Present Scale. | | | Proposed Scale. | | | | | Increase. | | Decrease. | | Grounds of Proposition. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Maximum. | Average. | Number. | Amount of Pay. | Number. | Amount of Pay. | |
| | | Rs. | | | Rs. | Rs. | Rs. | | Rs. | | Rs. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman .. .. | 80 | 100 | 90 | 1 | 90 | | | |
| | | | 1 | Do. .. .. | 50 | 70 | 60 | 1 | 60 | | | |
| Nil. | .. | .. | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | 1 | 42½ | | | |
| | | | 1 | Moochee .. .. .. | .. | .. | 8 | 1 | 8 | | | |
| | | | 3 | Messengers at Rs. 6 each .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | | | | | 2,565 | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 300 | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 150 | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. .. | .. | .. | 320 | 4 | 320 | | | |
| | | | | | | | 1,870 | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Draughtsman, 1st class .. | 50 | 70 | 60 | 1 | 60 | | | |
| | | | 1 | Do. 3rd do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 7 | 1 | 7 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 6 | 1 | 6 | | | |
| | | | 3 | Lascars at Rs. 6 each .. .. | .. | .. | 18 | 3 | 18 | | | |
| | | | | | | | 316 | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | 1 | 25 | | | |
| | | | 1 | Do do. .. | 20 | 30 | 18 | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | 93 | .. | 93 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 287 | .. | 287 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,666 | .. | 2,666 | | | |
| | | | | Total per annum .. | .. | .. | 31,992 | .. | 31,992 | | | |
| | | | | Or, say .. | .. | .. | 32,000 | .. | 32,000 | | | |
| | | | | Grand Total .. | .. | .. | 65,600 | .. | 65,600 | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the $1\frac{1}{2}$ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

OOTACAMUND,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

---

ORDER—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.



## PUBLIC WORKS DEPARTMENT.

LETTER—from

COLONEL R. H. SANKEY, C.B., R.E.,
*Secretary to the Government of Madras,*
*Public Works Department,*

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
PUBLIC WORKS DEPARTMENT.

SIR,

Adverting to your letter, No. 40 I., dated 26th January 1883, communicating the approval of the Government of India to the financial programme which has been prepared for dealing with the minor irrigation works of the Madras Presidency, I am now directed to forward, for sanction, a statement showing the scale of special establishment required for dealing systematically with the tank systems. The scale is the same as that laid down in the note by the Chief Engineer for Irrigation, copy of which accompanied my letter, No. 3273 W., dated 11th December 1882. The establishment of the Tank division should, in the opinion of this Government, form an addition to the permanent sanctioned scale, while the Superintending Engineer and the Executive Engineer attached to his office, with their establishment of clerks, are intended to be temporary only. The cost will be met from the grants sanctioned in your letter, No. 40 I., dated 26th January 1883, which are to cover expenditure both under Works and Establishment.

2. As regards the officers required to fill appointments as Executive and Assistant Engineers, I am to invite attention to my letter, No. 1132 W., of this day, in which it is explained that this Government are not in a position to provide suitable incumbents, and to request that the Government of India will, if possible, engage the services of officers with the requisite qualifications.

3. Should the Government of India be pleased to sanction a permanent increase in the strength of the establishment to meet the requirements, I am to express a hope that no transfer of a senior officer be made from another province, as looking to the unduly retarded promotion of the officers in this department and for other reasons His Excellency the Governor in Council would venture strongly to deprecate any such measure.

4. I am to add that the Superintending Engineer has been authorized to at once entertain his office establishment to admit of a commencement being made with the inquiry on which he is to be engaged, and to this proceeding I am to request the confirmation of the Government of India.

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

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Government, P.W.D.

FORT ST. GEORGE,
16th April 1883.

Exd. E. Fernandez.

## PUBLIC WORKS DEPARTMENT.

Letter—from

Colonel R. H. SANKEY, C.B., R.E.,

*Secretary to the Government of Madras,*

*Public Works Department,*

To

The SECRETARY to the GOVERNMENT of INDIA,

Public Works Department.

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Your most obedient servant,

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Government, P.W.D.

Fort St. George,
16th April 1883.

Exd. E. Fernandez.

16th April 1883, No. 1134 W., Public Works.

# PUBLIC WORKS DEPARTMENT.

Letter—from

Colonel R. H. SANKEY, C.B., R.E.,

*Secretary to the Government of Madras,*

*Public Works Department,*

To

The SECRETARY to the GOVERNMENT of INDIA,

Public Works Department.

Sir,

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(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Government, P.W.D.

Fort St. George,
16th April 1883.

Exd. E. Fernandez.

## PUBLIC WORKS DEPARTMENT.

Letter—from

Colonel R. H. SANKEY, C.B., R.E.,

*Secretary to the Government of Madras,*

*Public Works Department,*

To

The SECRETARY to the GOVERNMENT of INDIA,

Public Works Department.

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(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Government, P.W.D.

Fort St. George,
16th April 1883.

Exd. E. Fernandez.

## PUBLIC WORKS DEPARTMENT.

Letter—from

Colonel R. H. SANKEY, C.B., R.E.,

*Secretary to the Government of Madras,*

*Public Works Department,*

To

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Public Works Department.

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GOVERNMENT OF MADRAS.

## PUBLIC WORKS DEPARTMENT.

READ—the following papers :—

From Lieutenant-Colonel P. MONTGOMERIE, R.E., in special charge of Tank Divisions, to the Chief Engineer for Irrigation, dated Chepâk, 30th March 1883, No. 3.

With reference to G.O., No. 743 W., dated 7th March 1883, appointing me for special duty in your office in connection with the work of the new Tank divisions authorized in Proceedings of Madras Government, No. 143 I., dated 12th February 1883, I have the honor to submit a statement of the establishment required to make up one Tank division, costing Rs. 32,000 per annum, as proposed in your note * on minor irrigation works, dated 27th November 1882, and to request permission to appoint, temporarily, from the 1st April 1883, the draughtsmen and office establishments included therein, to enable me to put in hand the preparatory work required in connection with the professional investigations on which the Tank divisions have to be employed.

* Also a statement of the special establishment to be attached to your office, Rs. 33,600.

2. As you are aware, there is a vast quantity of information in the Revenue Survey office, connected with the districts in which these operations will be carried out, although unfortunately this information has not been arranged altogether in a manner suitable for our purpose. There is also a good deal of data with reference to the grouping of the minor irrigation works generally, in a more or less disconnected form, available in your office, and perhaps also in some of the district offices. And I need hardly point out that the more completely this information is utilized, preparatory to the field work in the districts being taken up, the less will be the delay in completing the professional investigation which is the fundamental work required in the practical treatment of the minor irrigation works of the presidency.

3. I propose carrying out these professional investigations somewhat on the system followed for the Mysore tank scheme, but the same detail will not be necessary if the information in the Revenue Survey office can be utilized. The detailed instructions for a systematic prosecution of these investigations will be forwarded to you, in due course, for approval; they will be based on the Irrigation circulars which have, from time to time, been issued from your office. And I am in hopes of being able to embody, in a more comprehensive manner, the substance of these circulars with other hydraulic data in the form of a Manual, for the use and guidance of the tank divisions or for the conservancy establishment that may supersede them in the future. This, however, must take time.

4. From the tenor of your remarks, in your note above referred to, it would appear that it is proposed to utilize the new Tank divisions not only in the work of investigation, estimating and registering, but also in the actual execution and supervision of work at the same time. If this be the intention, I would venture respectfully to point out that these absolutely necessary and essential investigations will

never be completed within a definite period: for it is very certain that, before the period of fifty-five years, which you allow will be necessary to complete the work, has elapsed, famines, wars and other distracting influences must be reckoned upon, and the collapse of the operations will be as complete as that of the Mysore scheme apparently was under the pressure of the last famine. Whereas, on the contrary, if the investigation and estimating is in an advanced state, the mere accident of a famine must advance rather than retard any scheme for actually carrying out the work.

5. Without asking you, therefore, to commit yourself to any scheme for the actual maintenance and repair of the minor irrigation works of the Madras presidency, which must necessarily be more of a revenue than a professional question, and which will depend, in a great measure, on the intentions of Government, with reference to the revival of Kudimaramut, the enforcement of an Irrigation Act, and the extent to which the Revenue Department will be required to carry out all necessary unskilled labor, by means of the cultivators themselves, I would most strongly recommend that, in the treatment of the subject generally, the principle of carrying out the professional investigations separately and distinctly from the actual execution of the work be strictly followed, at least for some time to come. Should this principle meet with approval, I shall attend to this portion of the scheme with the view to insuring the systematic examination and record of all the minor irrigation works thoughout the presidency within a definite period.

6. The importance and magnitude of these preliminary operations do not appear to be fully realized; and I would venture to draw your attention to the remarks of the late Colonel W. R. Johnson, Superintending Engineer, Mysore, who, in the 6th paragraph of his memorandum of the 14th February 1882, stated: "It may be as well here to give some idea of the amount of preliminary work this scheme entailed. ..... I pointed out that this work would be necessary before the restoration of the tanks could be commenced, and estimated that the establishment charges alone would probably amount to 50 per cent. of the total cost of the work." Captain Woodward, R.E., in his report on the working of the Ceylon Ordinance, dated 22nd August 1874, says with reference to preliminary operations: "The large tank of Bassawakulam .....intended for the irrigation of about 1,000 acres..... The extensive surveys required to ascertain the capabilities of this tank occupied two officers for eight months." And again: "The repairs of the Mahawema Madawachiya, a tank..... to irrigate 300 acres..... The survey occupied one officer nearly five months."

In drawing up the Mysore tank scheme it was estimated that one individual could examine and dispose of 47 tanks in a year, but whether so much was actually accomplished is not clear. If, however, we take 50 minor irrigation works as the most which one individual can dispose of, it will take the entire strength of the six Tank divisions fifteen years to deal with the 50,000 minor irrigation works of Madras.

7. This investigation work is even more necessary for the treatment of the minor irrigation works than the revenue survey is for the settlement of the land revenue, and it must be carried out in as complete and systematic a manner as possible, whatever other arrangements are made for the execution of the work thereafter. And the only possible circumstances under which the carrying out of these investigations might be considered unnecessary would be in the event of the entire abandonment of all the minor irrigation works being decided upon. The abandonment of a few, or even of a considerable number, of them would not lessen the investigation work in the least; for, until the investigations have been carried out, it cannot possibly be decided which tanks may be abandoned.

8. As I understand that it is the wish of Government to commence operations in the Madura district as soon as practicable, I have written to the Superintendent of the Revenue Survey Department to put in hand at once the detailed irrigation maps required for that district, and to complete them so far as information is available in his office; and the Tank divisions, if appointed, will probably be in a position to commence work energetically in about a couple of months' time.

9. There are other localities for which information is much more complete than for Madura, and the collection of these data will also be proceeded with, if the temporary establishment now asked for is allowed. And as soon as I have some office establishment, I shall prepare and submit estimates for the maps to be prepared by the Revenue Survey Department, &c.



ENCLOSURE.

STATEMENT showing the proposed scale of special establishment required for improving tanks.

| PRESENT SCALE. | | | PROPOSED SCALE. | | | | | | INCREASE. | | DECREASE. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Designation. | Amount of Pay. | Number. | Designation. | Amount of Pay. Minimum. | Amount of Pay. Maximum. | Amount of Pay. Average. | | Number. | Amount of Pay. | Number. | Amount of Pay. | Grounds of Proposition. |
| | | RS. | | | RS. | RS. | RS. | | | RS. | | RS. | |
| | | | 1 | Superintending Engineer, 3rd grade, staff and military pay as Major .. .. .. | .. | .. | 1,341 | | 1 | 1,341 | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | | 1 | 650 | | | |
| | | | | *Office Establishment.* | | | | | | | | | |
| | | | 1 | Clerk, 2nd class, 1st grade .. | 160 | 200 | 180 | | 1 | 180 | | | |
| | | | 1 | Do. 3rd do. 3rd do. .. | 50 | 60 | 55 | | 1 | 55 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 80 | 100 | 90 | | 1 | 90 | | | |
| | | | 1 | Draughtsman .. .. | 50 | 70 | 60 | | 1 | 60 | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | 35 | 50 | 42½ | | 1 | 42½ | | | |
| | | | 1 | Do. .. .. | .. | .. | 8 | | 1 | 8 | | | |
| Nil. | .. | .. | 1 | Do. .. .. | .. | .. | 18 | | 3 | 18 | | | |
| | | | 1 | Moochee .. .. | .. | .. | 18 | | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | .. | .. | | | | | | | |
| | | | 3 | Lascars at Rs. 6 each .. | | | 2,565 | | .. | 2,565 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 135 | | .. | 135 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,800 | | .. | 2,800 | | | |
| | | | | Total per annum .. | .. | .. | 33,600 | | .. | 33,600 | | | |
| | | | | *Establishment for one Tank Division.* | | | | | | | | | |
| | | | 1 | Executive Engineer, 3rd grade. | .. | .. | 650 | | 1 | 650 | | | |
| | | | 1 | Assistant Engineer, 1st grade .. | .. | .. | 450 | | 1 | 450 | | | |
| | | | 1 | Sub-Engineer, 2nd grade .. | .. | .. | 300 | | 1 | 300 | | | |
| | | | 1 | Supervisor, 2nd grade .. | .. | .. | 150 | | 1 | 150 | | | |
| | | | 4 | Overseers, 2nd grade .. | .. | .. | 320 | | 4 | 320 | | | |
| | | | | | | | 1,870 | | .. | 1,870 | | | |
| | | | | *Office Establishment.* | | | | | | | | | |
| | | | 1 | Clerk, 3rd class, 2nd grade .. | 60 | 80 | 70 | | 1 | 70 | | | |
| | | | 1 | Do. 4th do. 1st do. .. | 40 | 50 | 45 | | 1 | 45 | | | |
| | | | 1 | Do. 4th do. 2nd do. .. | 30 | 40 | 35 | | 1 | 35 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 20 | 30 | 25 | | 1 | 25 | | | |
| | | | 1 | Do. 4th do. 3rd do. .. | 50 | 70 | 60 | | 1 | 60 | | | |
| | | | 1 | Draughtsman, 1st class .. | 20 | 30 | 25 | | 1 | 25 | | | |
| | | | 1 | Do. 3rd do. .. | | | 7 | | 1 | 7 | | | |
| | | | 1 | Messenger .. .. .. | .. | .. | 6 | | 1 | 6 | | | |
| | | | 1 | Do. .. .. .. | .. | .. | 18 | | 3 | 18 | | | |
| | | | 3 | Lascars at Rs. 6 each .. | .. | .. | | | | | | | |
| | | | | | | | 316 | | .. | 316 | | | |
| | | | | *Sub-Divisional Office Establishment.* | | | | | | | | | |
| | | | 1 | Clerk, 4th class, 3rd grade .. | 20 | 30 | 25 | | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | | 1 | 25 | | | |
| | | | 1 | Do. do. .. | 20 | 30 | 25 | | 1 | 25 | | | |
| | | | 1 | Do. do. .. | .. | .. | 18 | | 3 | 18 | | | |
| | | | 3 | Messengers at Rs. 6 each .. | | | | | | | | | |
| | | | | | | | 93 | | .. | 93 | | | |
| | | | | Travelling allowances .. .. | .. | .. | 287 | | .. | 287 | | | |
| | | | | Contingencies .. .. | .. | .. | 100 | | .. | 100 | | | |
| | | | | Total per mensem .. | .. | .. | 2,666 | | .. | 2,666 | | | |
| | | | | Total per annum .. | .. | .. | 31,992 | | .. | 31,992 | | | |
| | | | | Or, say .. | .. | .. | 32,000 | | .. | 32,000 | | | |
| | | | | Grand Total .. | .. | .. | 65,600 | | .. | 65,600 | | | |

(Signed) P. MONTGOMERIE, Lieut.-Col., R.E.,
In Special Charge of Tank Divisions.

Bk. 1134 W 16/4/83



No. 26 E.W.

*Note by the Acting Chief Engineer for Irrigation.*

The list of establishment submitted by Lieutenant-Colonel Montgomerie is recommended for sanction. The scale is the same as laid down in the note submitted to the Honorable Major Baring, and, while the Superintending Engineer and Executive Engineer, with their office establishment, are intended to be temporary, the Tank division will, it is hoped, be made permanent. Permission has been given to the Superintending Engineer to employ temporarily such office establishment and upper subordinates as he requires to start the work, but I have no proposal to make for filling the appointments of Executive and Assistant Engineers, as I am aware that there is not a man whose services can be spared from the permanent staff of the department. At present I should only ask for the Executive Engineer for the Tank division, as the other Executive Engineer is not yet wanted. If officers are not available I can only suggest a reference being made to the Government of India, who may be able to supply them.

2. The arrangements to be made in starting the Tank divisions have been discussed with Lieutenant-Colonel Montgomerie, and his action thus far is approved. I am not prepared at present to lay down any rule regarding the agency by which the works estimated as necessary for the restoration of irrigation works are to be carried out. It has been fully realized that the work of investigation will occupy the special establishment employed for a very long time, and it was intended originally that the work estimated for should be carried out under this establishment. This need not be the invariable rule, but I think that, while the work of investigation is progressing in a district, the requirements of various groups will have been ascertained, and the establishment being on the spot, an upper subordinate can be detached to superintend the carrying out of the required work, which could be examined by one of the officers of the special establishment. It may be that some of the work could well be handed over to the Executive Engineer of the division, in cases where his subordinates were employed on work near at hand, but it must be remembered that at present Executive Engineers are unable to spend their ordinary allotments, and to throw more work on them would be to delay all. In other cases the Revenue Department might be willing to carry out work, and occasionally it may be that earthwork might be entrusted to the villagers themselves, but in these instances the work would have to be laid out and examined by an officer of the special establishment. I think it is advisable first to work out the requirements of a part of the Vigay basin, and then, with the maps and estimates prepared, for Lieutenant-Colonel Montgomerie to bring forward proposals for carrying out the works. The establishment now recommended for appointment will cost Rs. 65,600, and from the balance of the $1\frac{1}{2}$ lakhs available, estimates for surveying, putting down bench mark stones, clearing tank bunds, emergently lengthening escapes, &c., will have to be sanctioned, so that, if, as I hope, a considerable part of the basin has been worked out before the north-east monsoon, there should be no difficulty in expending on the works the remainder of the grant.

OOTACAMUND,
11th April 1883.

(Signed) J. O. HASTED, Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

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ORDER—dated 16th April 1883, No. 1133 W., Public Works.

Ordered that the proposed scale of establishment be forwarded for the sanction of the Government of India. Meanwhile authority is granted for the entertainment of the office establishment required by Colonel Montgomerie.

(Here enter No. 1134 W., dated 16th April 1883.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Superintending Engineer, Tank Divisions.
Exd. E. Fernandez.