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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No. / B.P. No. 251-1253	1596-97	Press / Mis.
Dated	19-6-	1873

Not to be folded or roughly handled

No. 251. Read the following letter from Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, to Colonel G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Madras, 19th May 1873, No. 277 :—

ADVERTING to the Proceedings of the Madras Government, dated the 26th March 1873, No. 947, and to the 4th paragraph of the letter* from the Government of India embodied therein, I have the honour to submit letters† from the Agents of the Great Southern of India and the Carnatic Railway Companies, conveying the opinions of the respective Chief Engineers as to the strength of the Engineering Staff which will be required in constructing the Railway between Madras and Cuddalore.

* No. 396 G. R., 25th February 1873.

† From Agent, Great Southern of India Railway, No. 5,975, 7th May 1873.
Do. Carnatic Railway, No. 155, 10th May 1873.

2. It will be seen that Mr. Logan has adopted an estimate of the requirements between the original one as framed by Mr. Dibblee and the revised one as sent from this office.

Mr. Dibblee proposed to divide the 123 miles of line into ten districts, and looking to the unusual lightness of the work upon most of the line, I recommended its division into six and a half districts. Mr. Logan suggests its division into eight and a half districts, averaging in length fifteen miles each.

The number of Assistant Engineers, which Mr. Dibblee fixed at twelve, and which was reduced in this office to eight, is recommended by Mr. Logan as ten.

The cost of the Engineering Establishment, which Mr. Dibblee estimated at Rupees 8,55,276, and which was reduced by me to Rupees 1,01,250,* Mr. Logan estimates at Rupees 1,87,632.

* Including Rupees 50,000 under the head of "Contingencies."

3. Mr. Logan explains that his estimate of the Engineering Staff is "a maximum one, *within* the limits of which he should expect to work." I am still of opinion that, under the special circumstances of the Cuddalore line, the number of Engineering districts might have been smaller; but as it is now almost certain that the work will be carried out under Mr. Logan, as Chief Engineer of the amalgamated Companies, I am perfectly satisfied in leaving the arrangements to his discretion, within the limits of the estimate submitted by him, which is accordingly recommended for sanction.

4. I request that the Government of India may be moved to sanction an additional sum of Rupees 83,382 under the head of "Establishment," which in that case will stand as follows :—

	Rs.
Direction, including Audit and Account	80,000
Engineering	4,87,632
Locomotive	57,360
Stores	23,200
	6,49,192

5. Mr. Logan's object, in submitting this preliminary report upon the strength of the Engineering Staff, was to enable Mr. Dibblee to begin work by dividing the line into districts, building Engineer's bungalows, etc., and I have accordingly authorized Mr. Dibblee, in anticipation of the approval of Government, to commence

From J. T. FISHER, Esq., Agent and Manager of the Carnatic Railway Company, to Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, dated Madras, 10th May 1873, No. 155.

With reference to your letter dated the 10th instant, No. 137, I have the honour to submit herewith the copy of a letter from the Chief Engineer upon the item "Establishment" of the sanctioned estimate as reviewed by Mr. Logan and forwarded through the Agent, Great Southern of India Railway Company, with his letter dated the 8th instant, No. 1,057.

2. Mr Dibblee explains in some detail the reasons which induced him to estimate for an Engineering Establishment for ten districts, with two additional ones for the terminal works and other occasional or special duty, but, in deference to your own opinions, and to the wishes of Government, he has prepared to adopt an economical establishment for eight districts with the two additional for terminal works and other special requirements, and this accords with Mr. Logan's recommendation also.

3. This arrangement would give an average of nearly sixteen miles to each District Engineer, or deducting a short length in charge of the Engineer deputed to take the terminal works of, say, fifteen miles, and having in view the period for which the establishment is estimated, viz., two years, it is, I think, quite the utmost that can be allotted to one Engineer consistently with efficiency and the rapidity with which the works will have to be carried on.

4. On the Mauritius Railways, with the construction of which I was connected, the establishment consisted originally of one Chief and seven Assistant Engineers, afterwards reduced to six, being an average of one Engineer for every eleven miles of railway, both including the two engaged at head quarters, and in charge of the Central Station works, the Workshops, the Tron Tamforan Viaduct, and the Grand River Bridge, all within a distance of four miles, the lines were actually divided into four districts of about fifteen miles each, but if I remember rightly the staff were employed for a period of fully three years, the works on this railway being generally of a lighter character. I think it is probable a shorter time may suffice for their completion, provided the iron-work for the bridge is received at an early date.

5. I concur with Mr. Logan rather than with Mr. Dibblee as to the rate at which the Engineers have been allowed for, and I agree it will be well not to cover all the incidence of promotion or increase of pay of the existing establishment. I concur also with Mr. Logan that the lump sum estimated for clerks and draughtsmen will cover the cost of that part of the establishment as a whole.

6. In Mr Dibblee's estimate provision is made, I fancy, for work to be done which more properly belongs to the Audit Department, and as regards Draughtsmen I take it the time is not, or should not be, far distant when the sets of fair plans and drawings of the line and works for Government and the Board will be completed, after which a much smaller establishment will suffice for the requirements; these requirements can be provided for in the half-yearly revision of the staff lists in consultation with yourself, and should the items prove insufficient there will be a margin from the contingencies from which any little deficiency may be met.

7. In other respects Mr. Logan's estimate in amount is very similar to that of Mr Dibblee, and in these circumstances I trust you will also agree that the sum asked is not an extravagant one.

8. In the concluding paragraph of Mr Logan's letter before referred to, he states that in the event of his estimate being adopted, the total estimate amount for establishment will stand at Rupees 6,99,132, but in this he has omitted to include the establishment for the temporary telegraph, Rupees 10,800 being added for this, the total will stand Rupees 7,00,932, and if you concur, I request you will be good enough to bring the sanction of the Government to an increase of Rupees 1,44,132 in the item Establishment so as to bring it up to that sum.

From F. I. DIBBLEE, Esq., Chief Engineer, to J. T. FISHER, Esq., Agent and Manager of the Carnatic Railway Company, dated Madras, 14th May 1873, No. 325.

Adverting to the Consulting Engineer's letter, No. [illegible], a copy of which you sent me, I learn from the Chief Engineer of the Great Southern that being unable from press of other engagements

to consider at the present time all the questions concerning our estimates, which had been referred to him and myself for report, he has sent forward separately his views on the subject of the proposed staff, for the purpose of preventing, as far as possible, delay to our works. I think it advisable therefore to send you the remarks on the same subject that seem to be called for from me.

2. The principles which guided me originally in fixing upon the number and proposed length of the districts are as follows. I conceived it to be of the utmost importance that an Engineer should have his work within such a compass that he would be enabled to give every portion of it his constant personal supervision, and to have payments to work-people made as much under his own eye as possible. As regards the amount or cost of the work, in my opinion all the masonry and earthwork on the whole distance might without difficulty be superintended by one Engineer if they were within a length such as I speak of, but I think there can be no greater mistake committed than to have even small works conducted at such a distance that they cannot have the direct supervision that is looked for from a Covenanted Officer. That I am not singular in holding this view is, I think, shown by the fact that at the time the last large extent of work was undertaken on the Madras Railway, for which fresh Engineers were engaged in England, the length of the districts was reduced to ten miles, and on the Great Southern on their present extension some of them are shorter than those I proposed.

3. I gather, however, from the quotations, of the Proceedings of the Government of India, and those of the Government of Madras, which were enclosed in the Consulting Engineer's letter, that it is thought desirable that my original proposal should be modified, and with a view to meet their wishes, I now propose to increase the length of those districts where the work is of the lightest description, and to reduce the number of them by two, making the divisions, terminal works, and districts, 1 to 8, instead of 10 as previously.

4. I would ask however, considering that the amount of work to be executed on the several districts will be more nearly equalized, that I should be allowed to have a larger proportion of 2nd Assistants than was recommended by the Government Consulting Engineer, and that the two additional men should be 2nd Class Engineers, making the full staff as follows:—

1 Chief Engineer.
2 Assistants, 1st Class
4 Do 2nd do.
4 Do. 3rd do

5. The Consulting Engineer in his Note on my estimate* while speaking of the work being in some places of the very lightest, remarks that I have allowed a full establishment for each district. I had thought it would be understood that, in submitting my estimate for sanction, I was taking care to provide an amount that would cover the expenditure in any circumstances, and that I looked to effecting a saving where from the work being light a smaller number would be required, and which would be arranged in the provisional revision of staff which is made with the Consulting Engineer. I thought, moreover, that the necessity for references to obtain a supplementary sanction in case items were under-estimated, could not fail to cause delay and possibly additional expense, and that it would be more economical to have a slight surplus rather than run the risk of being deficient. I am still of the same opinion on this subject, and, therefore, think it would be desirable to make any reduction except as is effected by the number of districts above alluded to, and I would ask that the full amount as to details of salaries, etc., should be sanctioned, on the understanding that economy is to be effected wherever the nature of the work will permit of it.

* Government Proceedings, 4th December 1872.

6. I have received from Mr Logan a copy of his letter containing his report on this subject. He has made up his estimate in the form which has been sanctioned for the Southern Extension of their Railway, and has, I presume, also taken the rate of salaries for Assistant Engineers to be the same, which, I think, is a matter that will require attention in the event of his estimate being adopted. You will remember that the sanction of Government has been received to an alteration in the rates of salary to the Engineering Staff, and that orders have been received from our Directors with regard to the extension of engagements on explicit condition, an alteration in the amount

of sanction that will prevent the Engineers being paid the rates arranged for in their Covenants, may lead to complication, I would, therefore, recommend that the rates I have entered, which will cover possible allowances, should be sanctioned.

7. It will be seen that Mr. Logan provides for Engineering Stores in his estimate; this was not provided in my original application, as it was my intention to have all issues made from General Stores direct, merely providing clerks in my office for the arrangement of distribution accounts. Under the arrangement however, as they will probably be made for our amalgamation with the Great Southern, I am inclined to think that Mr. Logan's proposal will be more suitable than mine, and on those grounds I would prefer that it should be adopted.

8. There is, I think, but one other point to which I would call attention in Mr. Logan's estimate, which is the amount proposed for *Chief Engineer's office, Clerks, Draughtsmen, etc.* I think that this will be found insufficient, and that it should be increased. The amount of work in my drawing office up to the present time has all along been more than could be got through with expeditiously, and there has been frequent delay from an insufficiency of staff; there will be fully as much work, if not more than there has been, up to the time when the set of fair plans and drawings of line and works for Government and our Directors are completed, and, in my opinion therefore, the number of Draughtsmen should not be reduced for the present, or until it is clearly ascertained that the work will no[illegible] want of it.

9. With the above exception [illegible] see that there is any reason why Mr. Logan's estimate, both as to rates and form, [illegible] of my own, should the Government deem it to be preferable.

No. 252. Ordered [illegible], 19th June 1873, No. 1,596.

RAILWAY, No.

Ordered that these papers be forwarded to the Government of India.

2. It is observed that the Consulting Engineer recommends [illegible] made by the Chief Engineer of the Great Southern of [illegible] in regard to the division of the line into districts and the strength [illegible] establishment, the cost of which Mr. Logan estimates at Rupees [illegible]; an addition to the sanction under the head of Establishment [illegible]. These proposals meet with the approval of His Excellency the Governor in Council, and will be recommended to the Government of India for sanction. It is understood that Mr. Logan's demand includes the charge of Rupees 10,800, which formed a separate item of the Consulting Engineer's estimate on account of temporary telegraph establishment.

(Here enter No. 1,597, dated 19th June 1873.)

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the Consulting Engineer for Railways.

Fd. S. T. Austin.

Spare Copies.

PUBLIC WORKS DEPARTMENT,
OOTACAMUND, *19th June* 1873.

No. 253

No. 1,597.

FROM

COLONEL G. W. WALKER, R.E.,
Secretary to the Government of Madras,
Public Works Department.

To

THE SECRETARY TO THE GOVERNMENT OF INDIA.
Public Works Department.

RAILWAY, No. 37.

SIR,—With reference to your letter No. 306 G.R., dated 25th February 1873, reviewing the estimates of the line of railway proposed to be constructed from Madras to Cuddalore, I am directed by His Excellency the Governor in Council to forward the accompanying papers showing the necessity for an addition of Rupees 83,382 to the item of "Establishments" in the estimates in question, and to request, under the circumstances explained, that the sanction of the Government of India may be accorded to the increased amount.

2. Instead of six and a half districts, as previously recommended, the division of the line into eight and a half sections of an average length of fifteen miles has now been decided on as the most suitable for effective supervision during the progress of constructive operations, and this arrangement has been authorized by the Consulting Engineer.

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

Colonel, R.E.,
Secretary to Government.

Fd. S. T. Austin.

Spare Copies.

Railway Department

Consulting Engineer's office

No. 277.

From

Lt Col H. M. R. Shaw Stewart R.E.

Consulting Engineer for Railways

To

Col. C. W. Macken Esq

Secretary to Government

Public Works Department

Fort Saint George

Sir,

Adverting to the proceedings of the Madras Government dated the 26th March 1873, No. 947, and to the fourth paragraph of the letter from the Government of India enclosed therein, I have the honour to submit letters from the agents of the Great Southern of India and the Carnatic Railway Companies conveying the opinions of

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No. 390 C. R.
25 Feby 73

Agents Great Southern & Carnatic Railways
7 May 1873
Con. Engr's No 1255
16 May 1873

of the respective Chief Engineers as to the strength of the Engineering Staff which will be required in constructing the railway between Madras and Cuddalore.

2 It will be seen that Mr Logan has adopted an estimate of the requirements between the original one as framed by Mr Bibbee, and the revised one as sent from this office. Mr Bibbee proposed to divide the 128 miles of line into two districts; and looking to the unusual lightness of the work upon most of the line, I recommended the division into six and a half districts. Mr Logan suggests the division into eight and a half districts, averaging in length 15 miles each.

The number of assistant Engineers, which Mr Bibbee fixed at twelve, and which was reduced in this office to eight, is recommended by Mr Logan as low.

The cost of the Engineering establishment, which Mr Bibbee estimated at £ 8,65,376, and which was reduced by me to £ 4,04,208* Mr Logan estimates at £ 4,87,632.

*Including £30,000 now reduced by me to £ 4,04,208 under the head of contingencies.

3 Mr Logan explains that his estimate of the Engineering staff is a maximum one, within the limits of which he should expect to work. I am still of opinion that, under the special circumstances of the Cuddalore line, the number of Engineering districts might have been smaller; but as it is now almost certain that the work will be carried out under Mr Logan, as Chief Engineer of the amalgamated

amalgamated Companies, I am perfectly satisfied in leaving the arrangements to this direction, within the limits of the estimate submitted by him, which is accordingly recommended for sanction.

4. I request that the Government of India may be moved to sanction an additional sum of £ 83,382 under the head of "Establishments" which in that case will stand as follows:-

Direction, including audit and account	£ 80,000
Engineering,	" 434,632
Locomotive,	" 97,300
Stores	" 25,200
	£ 640,132

5. Mr Logan's object in submitting this preliminary report is to show the strength of the Engineering staff

staff, was to enable the Director to - begin work, by dividing the line into districts, building Engineers - bungalows, &c., and I have accordingly authorized the Director, in anticipation of the approval of Government, to - consider that the division of the line into eight and a half districts, as recommended by Mr Logan, is settled.

I have the honour to be

Sir

Your most obedient servant

Secretary Govt. Madr. P.W.

Madras

19 May 1873

Col. Engineer for Railways

Ent. Audit

Canada Railway Company Limited

Montreal, 1st May 1874

Dear Sir,

I am directed by the Board of Directors to request that you will be kind enough to attend a meeting of the Board at the Company's Office, Montreal, on Friday the 15th instant at 10 o'clock a.m. for the purpose of considering the Report of the Chief Engineer and the Contracts for the construction of the Canadian Railway.

Yours truly,

Secretary.

To

Sandford Fleming Esq.
Chief Engr. for Railways
Ottawa

Sir,

I have the honor to transmit herewith a letter from the Secretary of the Canada Railway Company dated the 15th instant, requesting me to attend a meeting of the Board of Directors on the 15th instant for the purpose of considering the Report of the Chief Engineer and the Contracts for the construction of the Canadian Railway.

I have the honor to be, Sir,
Your obedient servant,
Chief Engineer.

Ottawa, 1st May 1874.

Sandford Fleming Esq.
Chief Engr. for Railways
Ottawa

Sir,

Regarding the Engineering Staff required for the efficient construction of the Canadian Railway.

I W. 3006/73.

Engineer, or deducting a short length in charge of the Engineer deputed to take the Vermont works of say 15 miles, and having in view the period for which the establishment is estimated say 2 years it is I think quite the utmost that can be allotted to one Engineer, consistently with efficiency and the rapidity with which the works will have to be carried on.

On the Mauritius Railways with the Construction of which I was connected, the establishment consisted originally of 1 Chief, and 7 Asst Engineers afterwards reduced to 6 being an average of one Engineer for every 11 miles of Railway, but deducting the two engaged at Head Quarters and in charge of the Central Station works, the workshops, the Tranquebar Viaduct, and the Grand River Bridge, all within a distance of 11 miles, the lines were actually divided into 4 districts of about 15 miles each, but if I remember right the staff were employed for a period of fully three years; the works on this Railway being generally of a lighter character I think it is probable a shorter period may suffice for their completion, provided the new work for the Bridges is resumed at an early date.

I concur with Mr Logan rather than with Mr Gibbs as to the rate at which the Engineers have been allowed for

for, and believe it will be sufficient to cover the incidence of promotion & increase of pay of the existing establishment. I agree also with Mr Logan that the lump sum estimated for Tents and draughtsmen will cover the cost of that part of the establishment as will that for Mr Gibbs's estimate from amounts made if any for work to be done which more properly belongs to the Audit Department, and as regards draughtsmen if at the time it is not it would not be for distant when the pile of four plans & drawings of the lines and works for Goa and the Canal will be completed after which a much smaller establishment will suffice for the requirements. These requirements can be provided in the half yearly revision of the staff both in consultation with myself, and should the demand from insufficient data will be at once known from the Contingencies from which any little deficiency may be met.

In other respects Mr Logan's estimate amounts on an amount to very similar to that of Mr Gibbs, and in these circumstances I trust you will also agree that the sum named is not an extravagant one.

In the concluding paragraph of Mr Logan's letter before referred to, he states that in the event of his estimate being adopted, the total estimated amount for

From
The Agents Manager
Cornwall Mining Co
To
The Secretary Cornwall Mining Co
London

Dated 16th June 1873
Rec'd 16. 1873
A 5 No 155

Relative to the alleged
Establishment in the
Sandwich Islands

S M 390/73.

For establishment with plant at Kea.
Pumps &c. 132 but which has not hitherto
to include the establishment for this share
Foreman Telegraphic Office reserve having arrived
for this. Site local will please &c. 1873.
and of new cancel of August year under
by good enough to Retail-the Sandwich
of this Gentle an increase of Oct 1873 132.
which does establishment as returning
of the last pumps
of Shares the Secretary
Yours most obedt. Servt
Wm. H. Trevithick
Agent-Manager

...ment Estimate while speaking of this work I beg to ...
...some future year. I might remark, that if there ...
...allowed a Public Establishment for each District of ...
...that it might also be understood that in ...
...subsidiary ... Estimate for erection of ...
...are the Hospitals ... remark that would cover the ...
...expenditure ... remarks and that of boring ...
...is effecting a saving when from the work being light ...
...number would be required, and which ...
...would be arranged in the usual manner of ...
...staff which is made with the Executive Engineer ...
...I thought moreover that the necessity for Reference ...
...to obtain a supplementary sanction on each item ...
...were considered trivial, could not fail to cause delay ...
...and possibly additional difficulty, and that it would ...
...be more economical to have a slight surplus, rather ...
...than run the risk of being deficient. Should the ...
...same opinion on this subject and therefore think that ...
...it undesireable to make any reduction except ...
...is effected by the number of districts above stated ...
...to, and I would ask that the full amount as to ...
...details of salaries &c should be sanctioned, on ...
...the understanding that economy is to be effected ...
...whenever the nature of the work will permit of it.

I have received from the Executive Engineer a copy of ...
...this letter, containing the proposals on the subject ...
...has made up his Estimate in the form which has ...
...been sanctioned for the Southern Section of the ...
...Railway and has prepared also the Estimate for the ...
...salaries for Assistant Engineers & the same, ...
...which I think is a matter that will require ...
...attention in the amount of this Estimate being ...
...adopted. You will remember that the sanction of ...
...Government has been received to an alteration ...
...in the rates of pay to the Engineering staff, and ...

that

...must be committed them to have even small works ...
...conducted at such a distance that they cannot ...
...have the least impression that is labour for from ...
...a Commanded Officer. That I am not singular ...
...in holding this view, is I think shown by the fact ...
...that at the time the last large extent of work was ...
...undertaken on the Madras Railway, for which four ...
...Engineers were engaged in England, the length of ...
...the districts was reduced to 60 miles, and on the ...
...Great Southern in their present extension some of ...
...them are shorter than those I proposed.

I gather however, from the proceedings of the Government of India, and those of the Government of Madras which were enclosed in the Consulting Engineer's letter, that it is thought desireable that my original proposal should be modified, and with a view to meet their wishes, I now propose to increase the length of three districts where the work is of the lightest description, and to diminish the number of them by two - making the Divisions, Executive Works, and Districts 1 to 8, instead of 10 as previously.

I would ask however, remembering that the amount of work to be executed on the Second Division will be much more limited, that I should be allowed to have a larger proportion of 2nd class Officers, recommended by the Government Consulting Engineer and that the two additional men should be 2nd Class Engineers, making the full staff as follows -

1	Chief Engineer
2	Assistants 1st Class
4	Do 2nd Do
4	Do 3rd Do

The Consulting Engineer in his note-

on

that orders have been received from the Directors with regard to the Execution of Engagements on explicit conditions, any alteration in the amount of Expenditure that will prevent the Engineer from finishing the Line arranged for in their Commands, must lead to complications; I would therefore recommend that the sum Seven thousand pounds be sent will cover possible Expenses should be sanctioned.

It will be seen that Mr. Logan's Estimate for Engineering Stores for the Extension, has not provided for any original Application as it was my intention to have all Stores made from General Stores direct, merely providing Clerks in my Office for the Arrangement of distribution accounts. Under the Arrangement however as they will probably be made, for an amalgamation with the Great Southern Line included in that Estimate Mr. Logan's proposal will be more reasonable than mine, and on that ground I would prefer that it should be adopted.

There is I think but one other present which is the amount proposed for Chief Engineers Office, Clerks &c. Assistants & Co I think that this will be found sufficient, and that it should be increased. The amount of work in my Drawing Office up to the present time has all along been more than could be got through with the sufficiency and there has been frequent delay from insufficiency of staff. This will be further increased if not more than three times as much work to be done when the set of four plans and Drawings of Line and works for Government, and Directors are completed, and in any future, the number of Draughtsmen should not be reduced for the present or until it is clearly ascertained that the work will not be delayed for want of them.

With the above exceptions I do not see that there is any reason why Mr. Logan's Estimate should be made and form should not be adopted as it is the most favourable.

I have the honor to be
Sir
Your faithful
Obedt. Servt.
J. F. Fisher
Chief Engineer

The Secretary
for Public Works
Sydney

No 1596

Proceedings of the Board of Directors
Under date the 19th January 1853

From the Chief Engineer Agra 14th December 1852

Ordered that these
papers be forwarded to
the Government of India
It is suggested
that the Consulting Engi-
neer recommends for
sanction the proposals
made by the Chief Engineer
of the Great Southern of
India Railway in regard
to the division of the line
into Districts and the
strength

Rec. 19th June 1853
25/

Answered.

Estimate on account
of Temporary Telegraph
establishment-

No 1597

To the Engineer
Dated 6/6/71

The Secretary to the
Government of India

Sir

With reference to
your letter No 206 G.R
dated 25th February 1871
reviewing the estimate of
the line of Railway pro-
-posed to be constructed
from Madras to Cudda-
-lore, I am directed by
His Excellency the Gover-
-nor in Council to forward
the accompanying papers
showing

strength of the Engineering establishment the cost of which Mr Logan esti-mates at Rs 4,37,632 in-volving an addition to the sanction under the head of establishments of Rs 83,382- These propo-sals meet with the ap-proval of His Excellency the Governor in Council and will be recommended to the Government of India for sanction-

It is understood that Mr Logan's demand in-cludes the charge of Rs 10,800 which formed a separate Item of the Consulting Engineer's Estimate

showing the necessity for an addition of Rs 83,382 to the item of "Establishments" in the estimates in question, and to request, under the circumstances explained, that the sanction of the Government of India may be accorded to the increased amount.

Instead of six and a half Districts as previously recommended the division of the line into eight and a half sections of an average length of 15 miles has now been decided

decided on as the most suitable for effective supervision during the progress of constructive operations, and this arrangement has been authorized by the Consulting Engineer.

G.W.W.

Despatch 26/6/73 and Progs. Nos 15 & 16 and S. Circ.

7 / 3605

Govt. of {1873} Madras

PUBLIC WORKS.

The Commelling Coy's
Ld Railways
&
To Harbours along the
Coast of India

1st Dec: 1876-1877

251-952x26.3

Railway. Piercing waters
on letter from the Engr
regarding the arrange-
ments to be made in
the engineering Staff for
the construction of
line from Arconam
Cuddalore and the
Coast which is required
for Govt purposes
establishments".

Forwards, with
remarks, correspond-
Showing the necessity
~~sanctioning~~ an addi-
tion of 3,382 to the Mar.
Establishments in
Estimate for the portion
from Arconam to Cuddal-
& Negapatam Sanction
increased cost