

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No.	693	Press
		Mis.
268-250		
Dated	19-10-	18

Not to be folded or roughly handled

104

Proceedings of the Madras Government, Public Works Department.
19th April 1871.

No. 248. Read the following letter from the Acting Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 21st March 1871, No. 117 :—

With reference to G. O., No. 717, of the 18th July 1870, I have the honour to forward, for submission to the Government of India, a revised estimate of Rupees 2,73,136 for substituting galvanized iron poles for the wooden telegraph posts over 410 miles on the South West Line of the Madras Railway.

	RS.	A.	P.
English expenditure from stores.	1,97,456	11	5
Freight and Insurance.	27,643	15	0
Contingencies	19,745	5	7
Indian expenditure—Labour ...	28,290	0	0
Total...	2,73,136	0	0

The estimate has been reduced by Rupees 51,330, and is now made up of the four principal items.

It is proposed to apportion to Revenue Rupees 1,68,086, and to charge to Capital the value of the improvement effected by replacing the wooden with iron posts, or Rupees 1,05,050.

2. The following explanation is furnished on the points noticed by the Government of India in letter No. 1,184-R., dated 5th July 1870. Mr. Winter, the Telegraph Engineer, writes :—

“ On a straight line, Siemens states that 21 poles per mile are sufficient ; if, however, the line has frequent curves, 21 intermediate and 3 or 4 stretching poles are recommended to construct a safe line, which number must be sometimes increased even to 24 intermediate and 4 stretching posts per mile. I estimated from this that, considering the curves on this line, we should require at least 10 per cent. more poles than we should have required had the line been straight throughout. This explains the 10 per cent. on the value of the 21 poles per mile in the original estimate.”

“ Next, with regard to the 20 per cent. on the value of the insulators, as we have allowed 10 per cent. on the poles we must also allow 10 per cent. on the insulators ; but it will be remembered that insulators being made partly of a fragile material are much more likely to be broken in carriage than strong iron poles. I must also remark that I am very particular to test every insulator electrically before it is issued for use, and out of the last supply a very great number had to be rejected in consequence of their not testing properly, so I had to add an additional 10 per cent. to cover the loss through faulty and broken insulators.”

“ With regard to the 10 per cent. for packing, I give the following extract from Siemens’ price list :—‘ They (the prices) include delivery in London, but no packing expenses. The cost of strong iron-hooped packing cases amounts to 7 to 9 per cent. and above of the value of the insulators.’ Taking then 9 per cent. as the value of the cases and 1 per cent. for the labour of packing we obtain the 10 per cent. referred to.”

3. Since the submission of the original estimate, however, the Telegraph Engineer has erected an experimental line of 2 miles with Siemens’ standards, and instead of giving per-centages on the value, as before, he provides for additional poles and insulators in the details of the revised estimate, taking his data from actual experience.

4. The charge for freight and insurance has been brought down from 33 per cent. to 14 per cent., this latter rate being given on consideration of the payments on a former shipment that amounted to 12·8 per cent. The Acting Chief Engineer’s letter on this item is as follows :—

*Proceedings of the Madras Government, Public Works Department,
19th April 1871.*

"The charge of 14 per cent. on account of freight, insurance, etc., in the estimate under notice was based on the actual payments made in the case of a former shipment of similar stores."

"Thus:—

"Total value as per invoice <i>St. Magnus</i> ...	£ 2,563-14-11	=	37,968	2	2
"Charges—Freight and Insurance ...	£ 259-13-4	=	2,832	1	8
"Boat-hire ...	...	...	400	2	0
"Cooly ...	...	...	115	2	0
"Government duty ...	...	...	220	6	6
Total ...	3,577	12	2		

"Total charges at 12.8 per cent. on the above value. On my communicating this information to the Telegraph Engineer, he suggested that 14 per cent. should be entered in the estimate for these charges."

5. No entry is now made in the estimate for carriage of material over the line.

6. Although provision is made in the detailed estimate for the stores required, there is still a further item of 10 per cent. on the value of stores as contingencies, and the Chief Engineer explains Agent's letter, No. 132, dated 3rd March 1871, herewith forwarded.

this by stating that in the preparation of estimates provision is made as carefully as possible for all items of expenditure, but that unforeseen requirements continually exhibit themselves as work progresses, and these can only be provided for under the head of Contingencies. It is certainly the usual custom to enter in an estimate 10 per cent. for contingencies, and some such provision is necessary to provide for unforeseen expenses in the progress of a work, as well as to cover minor sundries that are not calculated with accuracy beforehand. Thus the item of contingencies is admissible in the present estimate under Labour, but I am not satisfied that a similar allowance is required on the value of the articles to be issued from store, namely, Rupees 1,97,456. In my opinion extra provision of about 5 per cent. is sufficient; and if Rupees 9,136 be deducted from the item of contingencies, Rupees 19,745-5-7, the total amount of the estimate will become Rupees 2,61,000, which I would recommend for sanction.

7. With reference to G. O., No. 2,302, dated 23rd September 1870, I submit a report* from the Telegraph Engineer furnishing the information called for by the Government of India to accompany the revised estimate with regard to the "description of the standards or posts proposed for adoption, their height above the ground, the number to the mile to be used, and their cost both in England and India on issue from store."

From the Agent and Manager of the Madras Railway Company, to the Acting Consulting Engineer, for Railways, dated Madras, 3rd March 1871, No. 132.

ADVERTING to your letter No. 118, of the 17th ultimo, I have the honour to state that the Chief Engineer* points out that in the preparation of estimates provision is made as carefully as possible for all items of expenditure, but that unforeseen requirements continually exhibit themselves as work progresses, and these can only be provided for under the head of Contingencies.

*Proceedings of the Madras Government, Public Works Department,
19th April 1871.*

2. The work of renewing the wooden telegraph posts on 410 miles is most pressing, as the wooden poles now in use are becoming unsafe, and as the item in the estimate to which you have taken exception, "Contingencies," is one which has been heretofore invariably allowed, I trust that there will be no further delay in obtaining the required sanction of Government, especially considering that the safe working of the line depends so much upon the efficiency of the telegraph.

From the Acting Chief Engineer, to the Agent and Manager of the Madras Railway Company, dated Madras, 3rd October 1870, No. 523.

Your endorsement on G. O., No. 2,302, dated 23rd ultimo.

2. I beg to forward herewith copy of letter (No. 336 of 1st October) received from Mr. Winter, Telegraph Engineer, furnishing the information required by the Government of India.

From G. K. WINTER, Esq., Telegraph Engineer, to the Acting Chief Engineer of the Madras Railway Company, dated Bangalore, 1st October 1870, No. 336.

In answer to your letter forwarding the Proceedings of the Madras Government No. 1,547-R., dated 8th September 1870, I beg to forward the following information respecting the iron telegraph posts that have been selected by the Consulting Engineer in England for the renewal of the telegraph supports on the South West Line of the Madras Railway.

2. The poles are known as Siemens' Patent Tubular Iron Telegraph Posts, and consist of

A square wrought-iron buckled foot-plate.

A cast-iron lower post, 7 feet long, with flange to fix it to the foot-plate, and with socket to receive the upper post.

A welded wrought-iron conical tube 12 feet long, forming the upper post with boss welded in at the top for the reception of a lightning discharger.

A lightning discharger.

Four screw bolts with nuts and washers for connecting the foot-plate with lower post.

A cake of cement } for cementing the wrought-iron tube into the socket of the
Two paper discs } cast-iron post.

3. The total length of the post when put together is 18 feet 8 inches, not including the length of the lightning discharger, which projects 16 inches. The post will stand from 16 to 17 feet above the ground when erected, 2 feet 6 inches being the greatest depth to which it is placed in the ground. All the parts are dipped into hot oil to prevent rusting.

4. The sizes that have been selected are those known as Nos. 6 and 10, weighing respectively 230 lbs. and 315 lbs. each, and the English prices are,

For No. 6 intermediate stretching post ...	£. s. d.
... ..	1 5 6
" " 10 do. do. do. ...	1 19 0

6. The cost delivered in Madras will be about 14 per cent. more than the cost entered above.

7. The insulators are iron capped, and will be fixed about 14 or 15 feet above the ground.

8. As I have not yet had any experience with these poles, I am unable to say exactly how many to the mile we shall require, but the following information is afforded by Siemens Brothers respecting the poles:—

"No. 6 intermediate, combined with No. 10, stretching post, are used for the construction of the strongest lines erected. Six intermediate to one stretching post is the usual proportion required, the intermediate posts serving to support the wires only, whereas the stretching posts are used to fix the same at certain intervals:—

Per statute mile, 18 intermediate posts,

Do. do. 3 stretching do.,

are required, provided the telegraph line follows a straight and even route. If, however, the line

*Proceedings of the Madras Government, Public Works Department,
19th April 1871.*

has frequent curves or angles, or runs through a mountainous country, 21 intermediate and 3 or 4 stretching posts are recommended to construct a safe line, which number must be sometimes increased even to 24 intermediate and 4 stretching posts per mile."

No. 249. ORDER THEREON, 19th April 1871, No. 1,093.

RAILWAY, No. 37.

ORDERED that the estimate and report submitted with these papers be forwarded to the Government of India, and that the sanction of that Government be requested to the proposed outlay of Rupees 2,64,000 :—

(Here enter No. 1,094, dated 19th April 1871.)

(True Extract.)

Colonel, R.E.,

Secretary to Government.

To the Acting Consulting Engineer for Railways.

No. 250.

No. 1,094.

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,

PUBLIC WORKS DEPARTMENT.

RAILWAY, No. 38.

No. 1,184-R., dated 5th July 1870.
,, 1,547-R., „ 8th September 1870.

Sir,—With reference to your letters marginally noted, I am directed to forward the accompanying amended estimate, amounting to Rupees 2,73,136, for substituting galvanized iron poles for the wooden posts on which the telegraph wires on 410 miles of the South West Line of the Madras Railway are supported, together with a report from the Telegraph Engineer of the Company descriptive of the standards or posts proposed for adoption.

2. The estimate having been revised in accordance with the orders contained in the first of the letters above quoted, a reduction of Rupees 51,330 has been effected, and it is now made up of the following four principal items :—

	RS.	A.	P.
English expenditure from stores	1,97,456	11	5
Freight and Insurance	27,643	15	0
Contingencies	19,745	5	7
Indian expenditure, labour	28,290	0	0
	2,73,136	0	0

Of this amount it is proposed to apportion Rupees 1,68,086 to Revenue, and Rupees 1,05,050, being the value of the improvement to be effected by replacing the wooden with iron posts, to Capital.

3. With reference to the remarks of the Government of India in paragraph 3 of their letter regarding the several items requiring elucidation, I am to invite attention to the Deputy Consulting Engineer's letter, herewith forwarded, in which detailed explanations are furnished. Captain Smith points out that the charge in the amended estimate of 10 per cent. for contingencies under articles supplied from stores appears excessive, and he recommends that 5 per cent. only be allowed, thus reducing the total amount to Rupees 2,64,000, for which sum I am to request that sanction be communicated.

4. Provision has been made for the work in the Railway Budget for 1871-72.

I have the honour to be,

Sir,

Your most obedient servant,

Colonel, R.E.,

Secretary to Government.

Exd. S. T. Augustin.

Exd. S. T. Augustin.

No. 132

MADRAS RAILWAY.

AGENT AND MANAGERS' OFFICE

Madras, 3^d March 1877

From

R. D. Edwin Esq.

Agent and Manager of the M.R.

To

Major H. C. Prendergast Esq.
acting Consulting Engineer for Railways.

Sir,

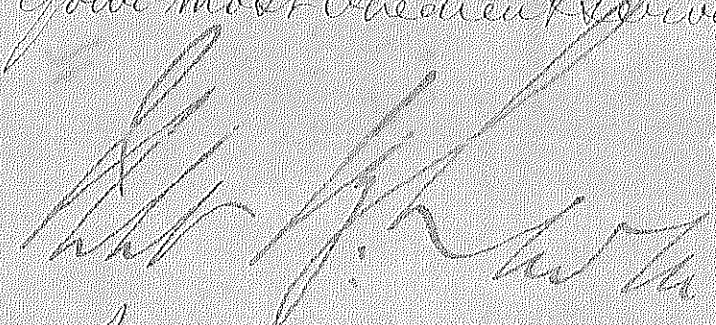
x

cto 108 - March
1877 -

Adverting to your letter
cto 118 of the 17th ultimo, I have the
honour to state that the Chief Engineer
points out that in the preparation
of Estimates provision is made
as carefully as possible for all
items of expenditure but that
unforeseen requirements continually
exhibit themselves as work
progresses and these can only
be provided for under the head
of Contingencies.

2 The work of renewing the
wooden telegraph posts on 440
miles is most pressing, as the
wooden poles now in use are
becoming unsafe, and as the
item in the Estimate to which
you have taken exception "Contingencies"

is one which has been heretofore
invariably allowed, I trust
that there will be no further
delay in obtaining the required
sanction of Government,
especially considering that the
safe working of the line depends
so much upon the efficiency
of the telegraph.

I have the honor to be
Sir
Your most Obedient servant

Agent and Manager.

Madras Railway Company
Chief Engineer's Office
Madras 3rd October 1870.

The Agent and Manager
Dover Lane,

Yours and answer on J. Oct. 2302
dated 23rd ult.

I beg to forward herewith copy of letter
(P. 336 of 1st October) received from Mr. Hunter
Telegraph Engineer, furnishing the information
required by the Government of India.

Yours faithfully
H. J. Francis B. Hanna
for Ag. Chief Engineer.

P. 336
Madras Railway Company
Telegraph Engineer's Office
Bangalore 1st Oct. 1870.

My dear Sir,
In answer to your letter forward-
ing the Proceedings of the Madras Government
P. 1547 B dated 8th September 1870, I beg to
forward the following information respecting
the iron telegraph posts that have been selected
by the Consulting Engineer in England for the
renewal of the telegraph supports on the South
West Line of the Madras Railway.

The poles are known as Siemens
Patent Tubular Iron Telegraph posts and
consist of
A square wrought iron buckled foot plate
A cast iron lower post, 7 feet long,
with flange to fix it to the foot plate, and

MADRAS RAILWAY.
From

The Agent and Manager.

To

The Consulting Engineer

for Railways.

1870/10/31

Per
1871.

No. 132

Noting the receipt of the
Chief Engineer with regard to
the item of telegraph
renewal of telegraph
posts on the South
West Line of the
Madras Railway.
1410 Miles -

with socket to receive the upper post.

A welded wrought iron conical tube 12 feet long, forming the upper part with base welded at the top for the reception of a lightning discharger.

A lightning discharger.

Four screw bolts with nuts and washers for securing the foot plate with same parts.

A Cask of cement for cementing the wrought iron paper discs in view tube into the socket of the cast iron part.

The total length of the posts when put together is 18 feet 8 inches, not including the length of the lightning discharger, which projects 16 inches. The post will stand from 16 to 17 feet above the ground when erected, 2 feet 6 inches being the greatest depth to which it is placed in the ground. All the parts are dipped into hot oil to prevent rusting.

The sizes that have been selected are those known as a No. 6 and 10 weighing respectively 230 lbs and 315 lbs each and the English prices are

For a No. 6 intermediate stretching post £1. 5. 6
do do do do do do 1. 19.

The cost delivered in trucks will be about 14 per cent more than the cost entered above.

The Insulators are iron capped and will be fixed about 14 or 15 feet above the ground.

As I have not yet had any experience with these poles I am unable to say exactly how many to the mile are actually required but the following information is afforded by Siemens Brothers respecting the poles.

"No. 6 intermediate combined with No. 10 stretching post, are used for the construction of the strongest lines erected. Six intermediate to one stretching post, is the usual proportion required, the intermediate posts serving to support the wires only, whereas the stretching posts are used to fix the same at certain intervals.

Per statute mile.

18 intermediate posts

3 stretching ———

are required, provided the Telegraph line follows a straight and even route. If, however, the line has frequent curves or angles, or runs through a mountainous country, 21 intermediate and 3 or 4 stretching posts are recommended to construct a safe line, which number must be sometimes increased even to 24 intermediate and 4 stretching posts per mile."

Yours very truly
Geo. G. H. Kimber
Telegraph Engineer.

To

The Acting Chief Engineer
of the Railway.

True Copy
of Francis B. Hanna
for a g. Chief Engineer.
True Copy

W. J. Hanna
Agent & Manager.

Completed

1871 1542/11

Railway Department

Consulting Engineer's Office

No 117.

From,

Major H. E. Prendergast R.E.,
Asst. Comm. Engrs for Railways.

To,

Colonel C. A. O. R.E.,
Secretary to Government
Public Works Department
Fort Saint George

Sir,

With reference to G.O. No 1177 of the
18th July 1870, I have the honour to forward
for submission to the Government of India
a revised estimate of Rs 273,136 for substituting
galvanized iron poles for the wooden telegraph
poles over 120 miles on the South West Line
of the Madras Railway.

The estimate has been reduced by
Rs 57,230, and is now made up of the four prin-
cipal items.

Original estimate from stores	197,456.	11.	5.
Freight and Insurance	24,612.	15.	0.
Contingencies	19,715.	5.	7.
Indian expenditure	25,290.	0.	0.
<u>Total</u>	<u>266,973.</u>	<u>16.</u>	<u>2.</u>

It is proposed to apportion to Revenue Rs 168,000, and to charge to Capital the value of the improvement effected by replacing the wooden with iron posts, or Rs 105,050.

2. The following explanation is furnished on the points noticed by the Government of India in letter No. 1184 D, dated 5th July 1870. Mr. W. Winter the Telegraph Engineer writes:-

"On a straight line, Siemens states that 21 poles per mile are sufficient, if however, the line has frequent curves, 21 intermediate and 3 or 4 stretching poles are recommended to construct a safe line, which number must be sometimes increased even to 24 intermediate and 4 stretching posts per mile. It is estimated from this that considering the curves on this line we should require at least 10 per cent more poles than we should have required had the line been straight throughout. This explains the

"the 10 per cent on the value of the 21 poles per mile in the original estimate."

"Next, with regard to the 20 per cent on the value of the insulators, as we have allowed 10 per cent on the poles we must also allow 10 per cent on the insulators, but it will be remembered that insulators being made partly of a fragile material are much more likely to be broken in carriage than strong iron poles. I must also remark, that I am very particular to test every insulator electrically before it is passed for use, and out of the last supply a very great number had to be rejected in consequence of their not testing properly, so I had to add an additional 10 per cent to cover the loss through faulty and broken insulators."

"With regard to the 10 per cent for packing, I give the following extract from

Siemens

" Siemens' price list. They / the prices / include
 " delivery in London, but no packing expenses.
 " The cost of strong iron hooped packing cases
 " amounts to 7 to 9 per cent and above of the
 " value of the insulators. Taking then 9 per
 " cent as the value of the cases and 1 per cent
 " for the labour of packing, we obtain the
 " 10 per cent referred to."

3. Since the submission of the original
 estimate, however, the Telegraph Engineer has
 erected an experimental line of 2 miles with
 Siemens' standards, and instead of giving
 per centages on the value as before he provides
 for additional poles and insulators in the
 details of the revised estimate taking his
 data from actual experience.

4. The charge for freight and insur-
 -ance has been brought down from 33
 per cent to 14 per cent, this latter rate being
 given on consideration of the payment on

a former shipment that amounted to 12.8 per
 cent. The Acting Chief Engineer's letter on
 this item is as follows:—

" The charge of 14 per cent on account of
 " freight, insurance, &c., in the estimate under
 " notice was based on the actual payment
 " made in the case of a former shipment of
 " similar stores.

Thus:—

Total value as per invoice "St. Magnus".

£2513. 14. 11. — Rs 27968. 2. 3.

Charges.

Freight and Insurance	£259. 13. 4. — Rs 2832. 1. 8.
Post & Fire	400. 2. 0
Coaly	115. 2. 0
Government Duty.	230. 6. 6.
	<u>3577. 12. 2.</u>

" Total charges at 12.8 per cent on the above
 " value. On my communicating this infor-
 " mation to the Telegraph Engineer he sugges-
 " -ted that 14 per cent should be entered

in

"in the Estimate for these charges."

5. No entry is now made in the estimate for carriage of material over the Line.

6. Although provision is made in the detailed estimate for ^{the} stores required, there is still a further item of 10 per cent on the value of stores as contingencies, and the Chief

Engineer explains this by stating that in the preparation of estimates provision is made as carefully as possible for all items of expenditure but that unforeseen requirements continually exhibit themselves as work progresses and these can only be provided for under the head of Contingencies.

It is certainly the usual custom to enter in an estimate, 10 per cent for contingencies and some such provision is necessary to provide for unforeseen expenses in the progress of a work, as well as to cover minor sundries, that are not calculated with accuracy

Agent's letter No 102
dated 3rd March
1871 herewith forwarded.

primary husband. Thus the item of contingencies is admissible in the present estimate under labor, but I am not satisfied that a similar allowance is required on the value of the articles to be issued from stores, viz. Rs 19,745.6. In my opinion extra provision of about 5 per cent is sufficient and if Rs 936 be deducted from the item of contingencies Rs 19,745.6 - 5 = 7, the total amount of the estimate will become Rs 24,000 which I would recommend for sanction.

Rs 936
17th Oct 70

7. With reference to G.O. No 2302 dated 23rd September 1870, I submit a report from the Telegraph Engineer furnishing the information called for by the Government of India to accompany the revised estimate with regard to the "description of the standards or posts proposed for adoption, their height above the ground, the number

number to the mile to be used, and their
cost both in England and India on
issue from store.

Madras
21st March 1871

I have the honour to be
Sir

Your most Obedient servant
W. Smith Captain R.E.

Asst. Comm. Eng. for Railways.

Madras 21st March 1871

21st March 1871

It was ordered
a piece of estimate
for the construction of a
bridge at the junction of
the road and the railway
on the 11th of March 1871.
The estimate was 117-
10-14.

21st March 1871
The 11th of March 1871
The 11th of March 1871

The 11th of March 1871
The 11th of March 1871
The 11th of March 1871

Public Works Department
1093
Proceedings of the Madras Government
Under date the 19th April 1871
Read the following
From The Dy. Consulting Engineer
for Railways.
H.E. No. 117 of 21st March 1871

Ordered that the
estimate and report sub-
mitted with these papers
be forwarded to the Govt.
of India, and that the
sanction of that Govt. be
requested to the proposed
outlay of Rs 2,64,000.

To
The Dy. Consulting Engineer
for Railways.
Recd 20/4/71

H. E. No. dated
1094.
To
The Secy. to the Govt.
of India P. P. S.
Sir

With reference to your
letters marginally noted,
I

No. 1184 P. 25 July 1870
" 1047 P. 28 Sept 1870

am directed to forward the accompanying amended estimate amounting to

Rs 2,73,136 for substituting galvanized iron poles for the wooden posts on which the telegraph wires on 410 miles of the South West Line of the Madras Railway are supported, together with a report from the Telegraph Engineer of the Company describing the standards or posts proposed for adoption.

The estimate having been revised in accordance with the orders contained in the first of the letters above quoted, a reduction of Rs 51,330 has been effected and it is now made up of the following four principal items.

10
English Expenditure from stores - Rs 1,77,456-11-5
Freight and Insurance - " 27,643-15-
Contingencies - " 17,745-5-7
Indian Expenditure - Labor - " 28,290-

Rs - 2,73,136-...

Of this amount it is proposed to apportion Rs 1,68,086 to Revenue, and Rs 1,05,050, being the value of the improvement to be effected by replacing the wooden with iron posts, to Capital.

With reference to the remarks of the Govt. of India in paragraph 3 of their letter regarding the several items requiring elucidation, I am to invite attention to the Deputy Com Engineer's letter, herewith forwarded, in which detailed explanations are furnished

submitted. Capt. Smith
points out that the charge
in the amended estimate
of 10 per cent for contingencies
under articles supplied from
stores appears excessive,
and he recommends that
6 per cent only be allowed
thus reducing the total
amount to Rs 2,64,000
for which sum I am to
request that sanction
be communicated.

Provision has been
made for the work in
the Railway Budget
for 1871/72.

(M)

Despatch 20/4/71 into two
parts + copy of G.O. 104
of 1871-

Despatch April 71 No 150 C 1871

Despatch 20/4/71 into two
parts + copy of G.O. 104
of 1871-

79
The Acting Comr. of the Eng-
for Railways

Thompson

1102

[illegible]

Box 248-249-250

Myself best. Making
under the best best best
best best best best
A best best best best
best best best best
For to make best best
The best best best best
The best best best best
are best.