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(2) Date of repair

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 2157 Press Mis.

28485

Dated 22-8- 1871.

Not to be folded or roughly handled

E/4

No. 284. Read the following Endorsement of the Under Secretary to Government, in charge of Office of Chief Engineer for Irrigation, dated Fort St. George, 2nd August 1871, No. 57 —

From the Agent and Manager of the Madras Irrigation and Canal Company, to the Chief Engineer for Irrigation, dated Madras, 1st July 1871, No. 287.

In submitting revised estimates for the Pennair Anicut, I have the honour to apply for sanction for an additional expenditure of Rupees 41,560 making, with Rupees 3,44,440 already sanctioned, a total for anicut and head works of Rupees 3,86,000.

2. By G. O., No. 2,394, of 28th July 1868, an expenditure of Rupees 3,00,000 was sanctioned for constructing the Pennair Anicut and head works, afterwards adjusted to Rupees 3,44,440 in conformity to the requirements of the foundations, also to raise and shingle the stop bank and insert culverts therein, and Rupees 22,955 for protective groynes in front of the anicut.

3. The relation of actual to estimated expense may be simply stated: skilled work cost less owing to a large accession of skilled men from the works above during the last two seasons. Quarrying, haulage, and maintenance of tramway cost more than was estimated, especially the quarrying and haulage of the masonry apron was heavy. This apron was intended to be made of alternate courses of stone 2 feet deep and 2½ deep, but it was found impossible to get good work in the packing below the narrower stones without such delay that they were given up, thus adding nearly 1,600 cubic yards to the quantity required. This was with difficulty made up for by quarrying in the wet weather, which required baling by picottas. The rubbish and broken stone were more than was expected, the latter being much in excess of what could be used up economically in the rubble masonry. Also the haulage on the south tramway was much interfered with the first season 1870, owing to a deficiency of tramway in the river bed, and the rubble deposit necessarily having the preference. In 1871 a third line of rails was laid in the river bed.

4. Had the tramways been vigorously used from the first the whole of the stone *might* perhaps have been carried before the rains of 1870. Up to 1st March 1870, 1,344 cubic yards had been deposited about half an average month's work, and before the end of January 1871 work had begun to slacken from approaching completion. The average quantity monthly deposited during the months March to July 1870 inclusive was above 3,000 cubic yards. This rate could have been kept up from December to July inclusive without interference from the weather. Thus theoretically the re-laying of nearly the whole tramway with new sleepers could have been prevented; as it was, this expense had to be incurred.

5. It has been stated that the quantity of masonry apron was increased. That of dry rubble apron seems reduced. The Chief Engineer had the rubble carefully tested *in situ*, and found that the allowance made by his directions in the measuring up of the rubble stacks was more than requisite, and the rubble in

examination and return of the measure-

the apron really exceeds the quantity given by measurement by above 2,000 cubic yards, and is of the full sanctioned thickness.

6. The Madras charges have been increased by the necessity of renewing the trucks with better wood than the district afforded. Teak wagon frames were sent up from Madras after considerable loss and trouble in repairing the old ones. But the item "Depreciation of Plant" is still undetermined, since accounts are not yet finally made up.

7 The actual expenditure in excess of the estimate up to the end of April last was Rupees 85,666, but the Chief Engineer seems to be under the impression that the plant and tools returned from the work will amount, on valuation, to the difference between the above sum and the amount, for which that officer now asks sanction.

8. There will doubtless have been further expenditure before the end of June, and as any estimate made now of the value of plant and tools returned may prove more or less fallacious, I cannot pledge myself that the sanction now asked for will be a final one

9 Two revised abstract estimates and a comparative statement accompany this letter.

From the Agent and Manager of the Madras Irrigation and Canal Company, to the Chief Engineer for Irrigation, dated Madras, 29th July 1871, No 332.

In reply to your letter, No 88, of the 18th instant, asking for explanations with reference to the Chief Engineer's revised estimate for the Pennair Anicut, I have the honour to inform you that the large increase in the item of "Depreciation of Plant" arises in part from the circumstance of a very inadequate sum having been entered under this head in the original estimate. There was no provision made for stores other than this of "Depreciation of Plant," and that was only Rupees 33,950, while the value of plant and stores issued to the work was more than three times that amount

2 Besides this inadequacy of the original estimate there was, as is implied in my No 287, another cause of excess, namely, the necessity which arose for re-laying the entire tramway with new sleepers, and for the re-construction of the bodies of the wagons, which added considerably to the expenditure under the head of Plant This tramway, I may mention, turned out to be a work of considerable magnitude It was developed to a much greater extent than it had been thought would be necessary, and reached a length of about 5 miles without including sidings, etc.

3 You are correct in the inference you draw from the latter portion of my letter, that if the stores and materials returned from the work do not realize the difference between the extra amount the Chief Engineer now asks sanction for and the actual amount of over-expenditure, it will be necessary to apply for further sanction.

4 The figures of excess expenditure which I gave you in my No. 287 were only to the end of April. The accounts have since been made up to the end of May and the excess had then increased to Rupees 95,342, and there was some expenditure in June, the accounts for which month are not yet completed

The account at the end of May stood thus—

	Rs
Sanctioned estimate	3,44,440
Excess expenditure	95,342
Actual expenditure	4,39,782

P S.—The three estimates are herewith returned.

SUBMITTED for the orders of Government.

It appears from the letter last noted above, that the total of the estimate, called the final bill of cost, represents the expenditure only to the end of April last; that the accounts to the end of May show an additional expenditure of Rupees 9,676; and that besides this there has been expenditure in June for which the accounts are not yet completed.

	Rs
Expenditure to the end of May	4,39,782
Do. as per letter No 287 to end of April	4,30,106
	9,676

2. I had made some progress in the examination and review of the documents submitted with the first letter when I received the second, which, as explained above, conveys the information that the present estimate is by no means of the nature of a final bill of cost, and as I think it is in a great measure waste of labour to investigate the question further on the basis of such an incomplete account, and the work is now in all probability completed, I would suggest that the documents should be returned to the Agent of the Company with a request that he will exhibit all expenditure therein up to the date of completion and as far as practicable close the account

3. The explanations given in reference to the increases or decreases in the cost of the several items of work are incomplete. In the "column of remarks" of the comparative statement opposite to every such entry there should be a concise note explanatory of the cause of the difference with the original estimate, whether from change of design involving a greater or less quantity of work, increase or decrease of rates, increase or decrease in depth of foundations, etc., etc. It will be necessary in any case to return the papers with a view to the insertion of this information.

(Signed) A. deC. SCOTT, Captain, R.E.,
Under Secretary to Government,
In charge of Office of Chief Engineer for Irrigation.

No. 285. ORDER THEREON, 22nd August 1871, No. 2,157.

IRRIGATION, No. 22.

THE Government are not prepared to take into consideration, in their present incomplete form, the revised estimates submitted with this letter for the Adamapully Anicut and head works, and they direct that the documents be returned to the Agent and Manager of the Madras Irrigation and Canal Company with a view to a comparative statement being submitted exhibiting the *total* expenditure on the works, which it is presumed are now completed, with full explanation of the causes of difference between the estimated and actual expenditure

(True Extract.)

Captain, R.E.,
Under Secretary to Government.

To the Chief Engineer for Irrigation.
,, Agent and Manager of the Madras Irrigation and Canal Company.
Exd S. T. Augustin

Letter from Agnt and Addl Engr Madras Irrigation and Canal Registry No 287 dated 1st July 1871. forwarding Revised Estimate (Final bill of Cost) Abstract Estimate and Comparative Statement of Adamapillay Aument &c

No 332 - 29th July 1871 - relating to the above -

Submitted for the orders of Government

It appears from the letter last noted above, that the total of the estimate called the final bill of cost represents the expenditure only to the end of April last. That the accounts to the end of May show an additional expenditure of Rs 9676 and that besides this there has been expenditure in June &c for which the accounts are not yet completed.

Expenditure to the end of May 439782
Expenditure as per letter No 287 to end of April 430106
9676

2. I had made some progress in the examination and perusal of the documents

Submitted with the first letter when I received the second which as explained above conveys the information that the present estimate is by no means of the nature of a final bill of cost and as I think it is in a great measure waste of labour to investigate the question further on the basis of such an incomplete account and the work is now in all probability completed I would suggest that the documents should be returned to the agent of the company with a request that he will exhibit all expenditure therein up to the date of completion and as far as practicable close the account.

3. The explanations given in reference to the increases or decreases in the cost of the several items of work are incomplete. In the column of remarks of the comparative statement opposite to every such entry there should be a concise note explanatory of the cause of the difference with the original estimate. Whether from change of design involving a greater or less quantity of work, increase or decrease of rates, increase or decrease in depth of foundations &c &c.

It will be necessary in any case to return the papers with a view to the insertion of this information.

Office of the Chief Engineer for Irrigation and Joint Secretary to Government
Fort St. George 2nd Aug. 1871.

[illegible]
Capt. R. E.
Under Secy. to Govt.
In charge of Office of Ch: Engr. for Irrigation

To
The Secretary to Government
Public Works Department

Madras Irrn. and P.W.C.

Madras 1st July 1871.

No. 287.

From

The Agent and Manager

To,

Major J. G. Ryves R.E.

Chief Engineer for Irrigation

and Joint Secretary to Govt.

Madras.

Sir,

I submitting Revised Estimate for the Permanent Anicut I have the honor to apply for sanction for an additional Expenditure of Rupees 64,560 making with Rupees 344,440 already sanctioned a total for Anicut and head Works of Rupees 386,000.

By G.O. No. 2394 of 28 July 1868. an Expenditure of Rupees 300,000 was sanctioned for constructing the Permanent Anicut and head works afterwards augmented to Rupees 344,440 in conformity to the requirements of the foundations also to raise and strengthen the Stop bank and insert culverts therein and Rupees 22,955/ for protective groynes in front of the Anicut.

The

The relation of actual to estimated expense may be simply stated. Skilled work will keep owing to a large deficiency of skilled men from the works above during the last two seasons. Quarrying haulage and maintenance of tramway cost more than was estimated. Especially the quarrying and haulage of the masonry apron was heavy. This apron was intended to be made of alternate courses of stone 2' deep and 2½ deep but it was found impossible to get good work in the packing below the narrower stones without such delay that they were given up thus adding nearly 1000 C.yd. to the quantity required. This was with difficulty made up for by quarrying in the wet weather which required baling by pic collar. The rubbish and broken stone was more than was expected the latter being much in excess of what could be used up economically in the rubble masonry. Also the haulage on the bulk tramway was much interfered with the first season 1870, owing to a deficiency of tramway in the riverbed, and the rubble deposit unseasonably having the preference. In 1871 a

3 line of railway was laid in the riverbed.

Had the tramways been vigorously used from the first the whole of the stone might perhaps have been carried before the rains of 1870 - Up to 1st March 1870. 1346 Cyds had been deposited. about half an average months work and before the end of January 1871 work had begun to slacken from approaching completion. The average quantity monthly deposited during the months March to July 1870 inclusive was above 3000 Cyds. This rate could have been kept up from December to July inclusive with little interference from the weather. Since then initially the relaying of nearly the whole tramway with new sleepers could have been prevented, as it was this expense had to be incurred.

It has been stated that the quantity of Masonry Apron was increased. That of Dry Rubble apron decreased. The Chief Engineer had the Rubble carefully tested in situ, and found that the allowance made by his directions in the measuring up of the Rubble stacks was more than requisite and the rubble in the apron really

...

...prally exceeds the quantity given by measurement by above 2000 Cyds and ex of the full sanctioned Thickness.

The deadrus Charges have been increased by the necessity of renewing the Sheets with better wood than the district afforded - Teak Waggon frames were sent up from Madras after Consi-derable loss and trouble in repairing the old ones - But the ultimate disposa-tion of Plant is still undetermined since accounts are not yet finally made up.

The actual expenditure in excess of the Estimate up to the end of April last was Rupees 85,666 but the Chief Engineer considers the under the impression that the Plant and Tools returned from the work will be sufficient on Valuation to the difference between the above sum and the amount for which that office view the sanction.

There will doubtless have been further expenditure before the end of June and a Supplementary Estimate made in view of the value of Plant and Tools returned may prove more or less fallacious I cannot pledge myself that the Sanction now asked for will be a final one.

Two

Two revised Abstract Estimates and a Comparative Statement accompanies this letter. 13X

I have the honor to be
Sir
Your most Obed. Servants
[illegible]
Master Attendant & Manager

× Estimate Rupees 85242
Actual 85665
Difference 423

Enclosure 13 to No 114.

No 332. Dept.

From The Agent & Manager
W. S. & C. Co

To The Chief Engineer
for Irrigation
& Power

Dated Colombo 29 July 1871

Ref. No. 3713/71

Offers Sketch & Estimates
in the annexed Schedule
for clearing & removing
Rock in Aman Channel
from Rs 41,510 - for reasons
stated within.

No 287.

From The Agent & Manager Dept.
W. S. & C. Co

To The Chief Engineer
for Irrigation
& Power

Dated Colombo 1st July 1871

Ref. No. 3713/71 3 Encls:

Forwards Revised
Estimates for the Peria
Aricut. & requests sanction
for Rs 41,510. for reasons
stated within.

No. 332

Madras Irrign. & C. Co.

Madras 29th July 1871

From,

15

The Agent and Manager

M. I. & C. Co.

To,

Major J. G. Ryves, R.E.

Chief Engineer for Irrign. &

Joint Secretary to Government

Madras.

Sir,

In reply to your letter No. 88 of the 18th Instant asking for explanations with reference to the Chief Engineers revised Estimate for the Penneir Anicut I have the honor to inform you that the large increase in the item of "Depreciation of Plant" arises in part from the circumstance of a very inadequate sum having been entered under this head in the original Estimate. There was no provision made for Stores other than this of "Depreciation of Plant" and that was only Rs. 33,950 while the value of Plant and Stores issued to the Work was more than three times that amount.

Besides this inadequacy of the Original Estimate there was, as is implied in my No. 287, another cause of Excess namely the necessity which arose for relaying the entire tramway with new Sleepers and for the reconstruction of the bodies of the wagons which added considerably to the Expenditure under the head of Plant. This tramway

I

I may mention turned out to be a work of
Considerable Magnitude - It was developed
to a much greater extent than it had been
thought would be necessary and reached a
length of about 5 Miles without including
Sidings &c.

You are correct in the inference you
draw from the latter portion of my letter -
that if the Stores and Materials returned from
the Work do not realise the difference between
the extra amount the Chief Engineer now asks
Sanction for and the actual amount of over=
expenditure it will be necessary to apply for
further Sanction.

The figures of Excess Expenditure which I
gave you in my No 287 were only to the end of
April. The Accounts ~~for May~~ have since
been made up to the end of May and the Excess
had then increased to Rs 95342 and there was
some Expenditure in June the Accounts for
which month are not yet completed.

The Account at the end of May stood thus

Sanctioned Estimate	344440
Excess Expenditure	95342
Actual Expenditure	Rs 439782

I have the honor to be, Sir,
Your Most Obedt Servant,

Chief Accountant.

Agent and Manager.

P.S. The three Estimates are herewith returned -

No 2153 dated 19th

No 3713

The Government are not prepared to take into consideration in their present complete form the Estimates submitted with this letter for the Adamapelly Anicut and heads works, and they direct that the documents be returned to the Agent and Manager

of the Madras Irrigation
and Canal Company
with a view to a com
parative Statement
being submitted exe:
hibiting the total exe
penditure and the works,
which likewise pretended
are now completed,
with full explanation
of the causes of difference
between the estimated
and actual expenditure.

Chief Engr. for Irrigation
Agent & Manager
Madras 23/6/71

Ch 373

Govt of {1871} Madras.

PUBLIC WORKS.

To Tholchiy Engr for Irrigation

Dated

Recd. 2nd 2

G. O. 22 Augt 1, No 2157.

Nos. 284 & 285

Adamapally anicut Head work. The revised estimates for the Adamapally Anicut and Head work returned to the Agent & Manager of the Madras Ry Co with remarks.

Ecor