

Public Works (189) Department.

G.O., No.

30496

DATED

21st March 99

21st March

24

[Despatch Abstract.]

Cocanada Water Supply.

The revised estimate, amounting to
Rs 4,19,950, for the — sanctioned.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

BUILDINGS AND ROADS.
CIVIL WORKS.

Government {1899} of Madras.
PUBLIC WORKS.

Recd.

Regd.

} 1899.

Enclosures

Spare copies

G.O., No. 3049 W., 21st November 1899.

NOVEMBER.

Cocanada Water-supply

The revised estimate, amounting to Rs. 4,19,950, for the —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers :—

From W. C. DeMORGAN, Esq., M.I.C.E., Superintending Engineer, I Circle, to the Chief Engineer, Public Works Department, dated Camp Narsapur, 20th September 1899, No. 1967 G.E.

- * 5 tracings.
- 1 plan of off-takes.
- 7 sheets of sections.
- † 7 revised estimates with abstracts.
- 2 sheets of abstracts.
- 1 general abstract.
- 1 comparative statement.
- 1 report.
- 6 data sheets.
- 1 file of original estimate.

32

- * 13 sent in two tin cases registered.
- † 19 sent per registered packet post.

3. The principal excess is caused by the increased depths of foundations required for the filter beds and clear water reservoir, and by the revision of rates, which, in the original, were too low. From the position of the site and nature of soil, and depth to which foundations had to be carried (M.S.L. 16.00), it should have been anticipated at the outset that special arrangements would have to be made for excavating and getting in the foundations. Springs were met with in the clear water reservoir foundations at M.S.L. 2.00 and continuous pumping and heavy timbering were indispensable.

The arrangement of foundations for the clear water reservoir were approved in my Inspection notes, dated 28th April 1899.

4. The report accompanying the revised estimates explains the arrangement of foundations adopted. It was found impracticable to proceed with the clear water reservoir and S filter at the same time. The former is by this time nearly arched over. The arrangement of the Portland cement concrete skew backs has answered very well; they are rather cheaper than cut stone and can be turned out more rapidly.

In compliance with memorandum (Public Works Department), No. 4723 C., dated 13th November 1897, I have the honour to forward the marginally-noted revised plans and estimates for the Cocanada water-supply scheme.

2. The original estimate, Rs. 3,74,396, was prepared by Mr. Jones, the Sanitary Engineer, and sanctioned in G.O., No. 146 M., dated 3rd February 1897. The estimate now submitted amounts to Rs. 4,09,250, including charges for contingencies, petty supervision and tools and plant. The excess is Rs. 34,854, or 9.3 per cent. on the original estimate.

5. The principal excesses are as follows :—

Increase in quantity and rates.

	RS.
Filter beds—	
Earthwork	785
Concrete in cement	5,227
Concrete in surki	3,298
Random rubble in surki	3,476
	12,786
Clear water reservoir—	
Earthwork	5,960
Concrete in cement	1,429
Concrete in surki	7,298
	14,687
Bailing, shoring and timbering	7,310
Additional work to Raja's tank, including Rs. 4,916 for clay facing.	6,636
<i>Additional items not provided.</i>	
Stone drain, scaffolding, etc.	4,300

6. There is also an excess item Rs. 5,320 for an unclimbable steel paling. Rs. 4,000 are allowed in the original. The public must be prevented from entering the enclosure of the engine house, clear water reservoir and filter beds. At present the surroundings are filthy and the slopes of the Raja's tank little better than a latrine. The public and cattle are allowed to bathe in the bed of the tank. The area of the tank is too large to fence and the Municipality will have to organize an effective system of watching after the tank is filled. It would have been better had they commenced to do so from the outset, as it would have saved much trouble in the end. The filter bed, etc., however, must be protected. Wire fencing is no use, and it is proposed to erect Lockrins unclimbable paling, which will cost Rs. 9,320.

7. By omitting puddling the sides and bed of the reservoir, a saving of Rs. 18,396 is effected. Puddling is certainly not required in the bed; and the experimental patches tried on the slopes have proved utter failures. The bund of the tank consists of pure sand, and suffers greatly from wind and rain. It is proposed, therefore, to protect the face with 6" of good clay. Provision is also made for clearing the site and bringing the bund up to the proper section. It is to be regretted that the improvement of the tank was not deferred until the remainder of the work was well advanced.

8. As the probable cost of the pipes is not known, the provision of the original estimate is unaltered. Similarly, as the drawings of the pumps and engines have not been received, the design of the engine house has not been altered as may, possibly ultimately, be necessary.

Data have been carefully worked out and it is believed that the estimate provides for all that is necessary.

Telegram from the Superintending Engineer, I Circle, dated 15th October 1899.

From W. C. DeMORGAN, Esq., M.I.C.E., Superintending Engineer, I Circle, to the Chief Engineer, Public Works Department, dated Camp Dowlaisheram, 15th October 1899, No. 2116 G.E.

In continuation of this office No. 1967 G.E., dated 20th September 1899, forwarding a revised estimate for Cocanada waterworks, I have the honour to enclose copy of No. 381 S. of 13th October 1899, from the Executive Engineer, Gódvári Eastern division. It appears that the probable actual compensation to be paid will amount to about Rs. 14,200, or Rs. 10,700 in excess of the compensation provided in the Sanitary Engineer's estimate.

I have the honour to request that the revised estimate may be corrected accordingly.

Read the following:—

Print Letter from the Suptg. Engineer, I Circle, No. 1967 G.E. d/20th Sept. 1899.
 Print Telegram from ----- do ----- dated 15th October 1899.
 Print Letter ----- do ----- No. 2110 G.E. d/15th October 1899.



Circulated to H. E. the Governor

68

No. 3049 W., 21st November 1899.

ORDER—No. 3049 W., dated 21st November 1899.

The revised estimate, amounting to Rs. 4,19,950, for the Cocanada water-supply, is sanctioned in supersession of the estimate of Rs. 3,74,396 sanctioned in G.O., No. 573 W., dated 1st March 1897.

(True Extract.)

Under Secretary to Government.

To the Superintending Engineer, I Circle, with 32 enclosures.
 „ Examiner, Public Works Account.
 „ Local and Municipal Department.
 „ Sanitary Engineer, with file returned.

*Bds + Rm
Cint works*

ORDER.

No. 3049 W. 21.11.99

The revised estimate, amounting to Rs. 4,19,950 for the Cocanada Water Supply, is sanctioned in supersession of the estimate of Rs. 3,74,396 sanctioned in G.O. No. 573 W., dated 1st March 1897.

To The S. E. I Circle with 32 enclos
 „ Examiner, P.W.Accounts.
 „ Local & Municipal Deptt.
 „ Sanitary Enggr with file returned

NOTE

The estimate is reviewed the accompanying technical note.

The L & M Deptt for forwarding of counter-initialed.

Not for the Secretary

Notification in this Department.

Exd. T. K Narayana Aiyangar.

[P. W. 4.
1,000-18-7-99.]

Handwritten notes and signatures at the bottom of the page, including dates like 10/11/99 and 12/11/99, and names like H. E. the Governor.

8279

Current No. 7908

Letter No. 1967 G.E.

Dated 20/22 Sept. 1899.

From the S.E.I. Circle

NOTE BY TECHNICAL SECTION.

Name of work Cocouada Water

Supply

Revised Estimate Rs. 419950
~~409250~~W. The increases appear un-
avoidable and the Revised

Estimate may be sanctioned

H.L.

23/10/99

(a) Secy. W.

D.W.

The estimate has been
raised to Rs. 419950 with
an increase of Rs. 10700.
8479 + 8601 = 17080
8601 9-1/99.Do H.L. 24.10.1899. H.L.
Submitted for sanction
for Revised Estimate
24.10.1899. H.L.Submit for sanction. The reasons
are unavailing. The increase
in the further cases in
cost of pipes, engines, because
it is impossible in the present
fluctuating state of the iron
market to say what their cost
will be.This revised Estimate has
been prepared by the S.E.I. Circle
in compliance with Memo No.
4723 C. 9-13 Nov. 1897. The origi-
nal Estimate for Rs. 3,74,396
was prepared by Mr. Jones the Sani-
tary Engineer and was sanc-
tioned in G.O. No. 146 M. 9-3-2-97.
This revised Estimate amounts to
409250. The excess is Rs.
34854 or 9.3% on the
original estimate.2. The estimate is accompa-
nied by a comparative
statement and the excess
has been pointed out on
different heads in the slips attached
to these notes - and explanation
of differences given further on.3. The principal excess is
due to increased depths in
the foundations of the filter beds -
and Clear Water Reservoir.
The nature of the soil re-
quiring deeper founda-
tions. Springs were found in the
foundations of the Reservoir,
which necessitated continuous
pumping and heavy timbering.

The rates also had to be increased as some of those provided were found to be very low. The data accompanying the Estimate have been carefully prepared.

An unclimable fence has been provided instead of the ordinary steel railing, as it is imperative that pollution should be prevented within the enclosures of the Engine house. Filter beds and Clear water Reservoir. The excess for this description of fence is Rs: 5320.

By omitting building the sides and back of the Reservoir, a saving of Rs 18396 is effected. The S.E. explains that such a thing is not necessary and it will be sufficient if the sandy sides slopes be protected with 6" of fork clay.

4. As the probable cost of the pipes is not known, the provision under the original Estimate is allowed to stand. Again, as the drawings of the pumps & Engines have not been received, the design of the Engine house has not been altered. It may be necessary to alter these hereafter.

5. The report accompanying the Estimate fully explains the alterations made previous to the work in each Sub Estimate.

6. The reasons as taken from the Comparative statement are explained below for each Sub Estimate - note slip attached.

Offtake at Samulcotta Canal.

(b) The small excess is due to Rough Stone packing work as allowed by S.E.

(c) The saving under this head is effected chiefly by substituting ordinary rubble masonry for brick work by order of W. & A. M. E. I.

(d) Excess caused by charges made for better supervision and control - provision not originally provided against such Sub Estimate.

(f) Saving in this case, by omission of Cast iron vertical pipes and horizontal strainer with sockets by order of W. & A. M. E. I.

(s) Saving effected by omitting the down flooring with brick on top set in cement, as it was not required.

Saving on the whole Est: - 657.

Extending and Improving Rajah's Tank.

(b) Actual quantity of earthwork executed was 87 units in excess of original provision - hence excess cost.

(d) Excess due to provision made for better supervision and control - provision not provided in original Sub Estimate.

(e) The following new provision was found necessary.

1. Clay banking to protect slopes -	4916
2. Clearing site -	485
3. Repairing earthen walls &c -	713
Total Excess	6114.

(f) Saving under this head due to the brick-lined House being omitted - 18396.

(s) Saving due to less cost in taking.

Saving on this Estimate 10913

Filler beds.

- (a) The increase in the rates unavoidable in the following items.
1. Concrete in Cement from 4.5 to 6.5 ^{R. R.}
Excess 2275.
 2. Filling with sand - sand brought from a longer distance. Excess 569.
 3. There is a decrease in rate for Cement Plaster effected by reducing the proportion of Cement $\frac{1}{2}$ from 12 to 8-14-0. - 330
- Total Excess - 2514.
in this bed

- (b) Excess here due to.
1. Earthwork, increase due to more depth on account of nature of soil - - - 500
281
 2. Increase in quantity of Cc. ^{Concrete} ^{ment} ^{generally} ^{unavoidable}. - 2953
 3. Increase in Arch work - this being extended over whole length of outlet chamber - - - 76
 4. Small excess in Cut Stone ^{improving the} 29
 5. Saving effected by placing of the terminal floor drain off ~~the~~ tiles - this reducing number. - 1908
- Total Excess 1934.

- (c) Excess due
1. Filling with large framed gravel and broken stone - - - 748
 2. Saving effected by substituting Ram. on rubble for brickwork - - - 54
- Total Excess 691

- (d) Petty Submissions to Contingencies provided - omitted in original 2140

- (e) following new provision found necessary.
1. Concrete for increased depth of foundations - 3298
 2. Trench trap door - - - 60
 3. Quarry rubbish - - - 70
 4. Labourer backing - - - 820
 5. Timbering formwork - - - 1000
 6. Centreings - - - 60
 7. Scaffolding - - - 400
 8. Shed for materials - - - 200
- Total Excess - 5908.

- (g) Excess due to extra cost of boring - - - 310

- (h) effected in following items found unnecessary.
1. Screens with tank frames - - - 14
 2. Lining pounds round pillars - - - 100
 3. Sand washing boxes - - - 1090
- 1204.

Total Excess on last Estimate 12293.

Clear Water Reservoir.

- (a) Increase due to rate for Cement concrete being revised from 4.5 to 6.5 ^{R. R.} per unit in original rate reported when too low.
- (b) Excess under this head is due to the following.
1. Excavation due to increased depth of foundations - - - 5960
 2. Concrete in brick motor drive - - 7298
 3. Saving by omission of inverted arches - - - 2527
 4. Increased length of iron bracket - 120
- Total 10851.

- (c) ~~Graveling done to the following.~~
1. ~~Filling with large framed gravel and broken stone - - - 748~~
- By substitution of Ram. rubble for brickwork - but quantity increased - - - 4308

- (d) By omission of the following
1. Asphalt over roof arches - - 2296
 2. Ropes over beam - - - 24
 3. Iron work - - - 60
 4. General labour - - - 2
 5. Centreings - - - 600
 6. Scaffolding - - - 500
 7. Shed for materials - - - 400
 8. Petty Submissions - - - 11496
 9. Contingencies - - - 2914
 10. Score hole - - - 1680
- Total Excess 10013

(c) following new provision found necessary.

(c)

1 - Filling with broken stone	--	602
2 - Cut stone in South window		2332
3 - Timbering jambs	--	7800
Total Green		<u>10634</u>

1. Larkite poleski	- - - - -	106
2. Cut stone work	- - - - -	32
3. Balmy	- - - - -	1500
4. 6" stone ware over flow pipe	- - - - -	825
5. Lowering front 2nd window	- - - - -	108
		- 2571

I love Thee.

(a) Cost increased from R 2000 to R 2500.

Fencing

(b) Proposed erect an
unobstructed fence, raising
cost from \$4000 to \$9320
The erected ~~wood~~ ^{metal} fence bet.
Chas. Carter Reservoir and
Squire house, to prevent
hunting.

Contents above

(c.) Rs 200. found necessary for Borkin Road.

Trees & Plants

! wrong effected - - - - - 2792.

Country scenes.

Sammy's House - - - - - 3003.

Total Success on Whole Estimate

R: 34-8574

or 9-3% are significant.

Ans. 62
17.10.99

Steps:

Public Works (1899) Department.

CURRENT No. 7908

From The Engr. Engrs.
Trust Circle

Order

No. 1967 G E.

Dated 20/22-9-99

Received

Registered

Enclosures

Spare copies

25999
2 rolls of plans and
24 sheets of particulars
This - 12. 1999
Mar 14

SUBJECT.

Cocanada Water Works. App.
Scheme - Submit revised
plans and estimates for -

T. and
for security
May 29/99

He

No. 1967 GE

FROM

W. F. De Morgan Esq. M. I. C. E.,
THE SUPERINTENDING ENGINEER

FIRST CIRCLE,

TO

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT

WALTAIR,

189

Camp, Narasapur, Dated 20-9-99.

22

Enclosures. 32

SIR,

5 Trainings

1 Plan of off lake

7 Skuts of Sections

7 Revised Estimates

with abstracts

2 Skuts of Abstract

1 Genl. abstract

1 Conc. Stat. 1

1 Report

1 Data Book

1 File of Abstracts

1

1

13

* Sent in two tin cases

Registers

* 19 Sent per Registered

Parcel Post

In compliance with memorandum

L. W. D. No. 4723-C, dated 13th November 1897

I have the honor to forward the marginal

noted Revised plans and estimates for the

Coconada Water Supply Scheme.

2. The original estimate, Rs 374,376/-

was prepared by Mr. Jones the Sanitary

Engineer, and sanctioned in G.O. No. 14648

The estimate now submitted amounts to

Rs 409,250 including charges for contingen-

cies, Petty Supervisor, and Tools and Plant.

The excess is Rs 34,874 or 9.3% on the origi-

nal estimate.

3. The principal excess is caused by

the increased depths of foundations re-

quired for the filter beds and clear

water reservoir, and by the provision

of rates which in the original, were too low. From the position of the site and nature of soil, and depth to which foundations had to be carried (M.S.L. - 16.00), it should have been anticipated at the outset that special arrangements would have to be made for excavating and getting in the foundations. Springs were met with in the clear water Reservoir foundations at M.S.L. - 2.00 and continuous pumping and heavy timbering were indispensable.

The arrangement of foundations for the clear water Reservoir were approved in my inspection notes dated 28-11-77.

4. The Report accompanying the Revised Estimates explains the arrangement of foundations adopted. It was found impracticable to proceed with the clear water Reservoir and Filter, at the same time. The former is by this time nearly arched over. The arrangement of the Portland Cement concrete skew backs, has answered very well; they are rather cheaper than cut stone and can be turned out more rapidly.

5. The principal excesses are as follows:
Increase in quantity and rates.

Filter beds.

Earthwork	Rs 785
Concrete in cement	5227
Concrete in surki	3298
Random Rubble in surki	2476
<u>Increase in Quantity and Rates</u>	<u>12786</u>

Clear water Reservoir.

Earthwork	5760
Concrete in cement	1429
Concrete in surki	7298
Bailing, shoring and Timbering	Rs 14,944 14687
Additional work to Raja's Tank, including Rs 4,916 for clay facing	6636

Additional items not provided:

Stone drain Scaffolding etc. - 4300

6. There is also an excess item Rs 5320/- for an undimable steel piling. Rs 4000/- are allowed in the original. The public must be prevented from entering the enclosure of the Engine House, clear water Reservoir and Filter beds. At present the surroundings are filthy and the slopes of the Raja's Tank little better than

a latrine. The public and cattle are allowed to bathe in the bed of the tank. The area of the tank is too large to fence and the municipality will have to organize an effective system of watching after the tank is filled. It would have been better had they commenced to do so from the outset, as it would have saved much trouble in the end. The filter bed or however, must be protected. Wire fencing is no use, and it is proposed to erect Locking unclimbable paling, which will cost Rs 9320.

7. By omitting puddling, the sides and bed of the Reservoir, a saving of Rs 8396, is effected. Puddling is certainly not required in the bed; and the experimental patches tried on the slopes have proved utter failures. The bank of the tank consists of pure sand, and suffers greatly from wind and rain. It is proposed, therefore, to protect the face with 6" of good clay. Provision is also made for clearing the site and bringing the bund up to

the proper section. It is to be regretted that the improvement of the tank is not deferred until the remainder of the work was well advanced.

8. As the probable cost of the pipe is not known, the provision of the original estimate is unaltered. Similarly, as the drawings of the pump and engines have not been received, the design of the engine house has not been altered as may, possibly, ultimately, be necessary.

9. Data have been carefully worked out and it is believed that the estimate provides for all that is necessary.

I have the honor to be

Yours most obedt servant

20.9.99

Superintending Engr.
Civil

Telegram

Public Works (1897) Department.

CURRENT No. 8479

30494

304

Order

From Suptg Engineer,
Icicle.

No.

Dated 15-10-98

Received } 16-10-98

Registered

Enclosures nil

Spare copies.

SUBJECT.

Requesting to defer
final orders on the esti-
mate for Cocanada
Water Works.

T. H. C.
H.C.

Exchanging the bond upon

FURTHER PAPERS.

Public Works (1899.) Department.

CURRENT No. 8601
7908

From Mr. Sup. Piquin
First 2x6

Order

No. 211098

Dated 5.10.99

Received

Registered

Enclosures

Spare copies

SUBJECT.

Cocaine Water Works -
Enclosed a copy of E.S. No. 381 S.M.
13.10.99. & request that the Com.
pension for the same may be corrected
to Rs 14200 in the Revised S.D.

HC

BACK PAPERS.

FURTHER PAPERS.

Letter from C. Mildred Esquire, Executive Engineer
Godavari Eastern Division to the Suptg. Engineer
First Circle, No 3813 of 13. 10. 99.

In the revised Estimate of Rs 40,250 for
Cocanada water works, submitted with this office
No. 242 & dated 2nd August-99, provision of Rs 3500
was made on account of Compensation for 35 acres
of land at Rs 100 per acre as provided for in
the original Estimate by the Sanitary Engineer.

2. As per notification published in pages 36 & 37 of Part I A of Port St. George Gazette dated 2nd February, 1899, 15.71 acres of land was declared as needed for the work according to land plan and Schedule submitted from this office.

I have not received a letter from the Head Quarter Deputy Collector informing me that the sum of Rs 10923.7-3 has been awarded for 12.23 acres which is at the rate of about Rs 900 per acre.

Assuming that the balance of 3.48 acres will be awarded the same rate of Compensation the total amount for the 15.71 acres will be about Rs 14,200- and I request you will telegraph to Chief Engineer as I understand that the Estimate has been sent on to him -

76

Urgent

No. 2110 GE

FROM

H. F. De Morgan Esq. In. Sec.

THE SUPERINTENDING ENGINEER

FIRST CIRCLE,

TO

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT

WALTAIR,

189

Camp, *Lowlaishwaram* Dated 15-10-99
16

SIR,

In continuation of this office ¹⁹⁶⁷ ~~1967~~ ²⁰⁴⁹⁻⁹⁹ forwarding a revised estimate for Godavari Water Works, I have the honor to enclose copy of No. 381-S. of 13-10-99, from the Executive Engineer Godavari Eastern Division. It appears that the probable actual compensation to be paid will amount to about Rs 14200 or Rs 10700 in excess of the compensation provided in the Sanitary Engineer's estimate.

I have the honor to request that the Revised estimate may be corrected accordingly.

I have the honor to be
Yours most obedt. Servt.
15.10 *H. F. De Morgan*
Superintending Engineer

Enclosures.

2908/99
with

It is not clear why compensation for 35 acres was allowed in the original estimate.

I regret this matter escaped my notice when submitting the revised estimate.

(True copy)

H. F. De Morgan
Superintending Engineer
First Circle

2001/99

[Faint, mostly illegible handwritten text, possibly bleed-through from the reverse side. Some words like "copy" and "copying" are visible.]

When given for copying _____
 When copied _____ } 191
 When examined _____
 When signed _____

READ AGAIN G.O., No. 191

, DATED

CURRENT No.

ENCLOSURE TO G. No.

ORDER OF GOVERNMENT.

A A A A A A A

LETTER OF GOVERNMENT.

STATEMENT WITH DEDUCTION.

PAPERS NOT BOUND UP, BEING MEANT FOR DISPATCH
 IN ORIGINAL.

N.B.—

A = Copy in full.
 B = Not to be copied.
 F = Copy abstract only.
 Q = Copy Heading only