M.R O 1—77,006—8-6-37.

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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 3426 Press ~~Mis.~~

603-604

Dated 30 — 11 — 1864.

Not to be folded or roughly handled

AR

Read the following papers:—

No. 603. From Colonel A. J. M. BOILEAU, R. E., Superintending Engineer, 4th Division, to Colonel C. A. ORR, R. E., Secretary to Government, Public Works Department, dated Madras, 2nd November 1864, No. 3,537.

SIR,

1. In continuation of my letter, No 1,667, dated 16th July 1864, embodied in G. O. No. 2,127, dated 25th idem, I have the honor to report progress as regards the works connected with the Guindy Government House water-supply project, and at the same time to forward a comparative Statement showing the variations from the former estimate which it has been deemed advisable to make, entailing in some cases an increase and in others a decrease, as compared with the original estimate.

1 Comparative Statement.
6 Plans

2. One of the principal deviations is the omission of the dam which it was at first intended to construct across the Adyar river, for I found the springs at certain points so strong (and ascertained that they were so all the year round) that it occurred to me that by deepening out the bed at one of these places and forming an open (and eventually a carefully revetted) reservoir communicating as in the original scheme by a conduit with the filter and reservoir placed at a convenient distance within the bank, the construction of the dam would not be necessary; and this I should observe is a contingency which Mr. Fraser, Civil Engineer, himself seems to have contemplated, but he thought that by the raising of the dam, and the water spread caused thereby, a more picturesque appearance would be given to the river and to the adjoining scenery. There are, however, I think two stronger reasons for its being left alone at least for the present; the one is, that it has been more recently estimated at Rupees 4,300 in lieu of Rupees 2,115; and the other is that if that most desirable project of linking the north and south canals together be sanctioned, the dam to be erected in connection with that scheme may probably be made available for both projects.

3. In Plan No. 4 the place marked A has been selected by me as a suitable one from which to derive a direct supply of water to Guindy House, and the river bank just there presents an excellent site for the Engine house, filter, &c.

4. At one time I thought of recommending a more radical change in the original plan in proposing the construction of a water tower adjacent to the Engine, the water being pumped directly up to its full height, and being allowed to reach its eventual destination by gravitation. The Executive Engineer however estimated that such a tower, 100 feet high, would cost 10,000 Rupees; moreover on conversing with those who have had to deal with similar matters in England, I ascertained that the system of water towers is not so much in vogue as it was, the more economical and equally simple mode of forcing the water up to any elevation direct through the pipes being now generally followed.

5. In paragraph 7 of his report, Mr. Fraser observed that if the Adyar dam were built, the causeway on the road from Saidapett to the Mount would have to be raised; this work was taken in hand at once and has been completed, but the Assistant Engineer having represented that the traffic over the causeway was very great, greater indeed than that over the Marmalong bridge, and the other causeway put together, as all the carts from the Southern Trunk Road No. VIII go by it, I considered that only 9 feet clear roadway as allowed by Mr Fraser was insufficient and I ordered it to be made 18 feet. The non-construction of the Adyar dam does away also with the necessity of raising, as was intended the causeway below the Marmalong bridge.

6. The only alteration I would suggest is the enlargement of the capacity of the portion marked No. 4 which is in fact the pump well which I would make of the same area as the filter. The latter and the Engine house are just about to be commenced. The roof cisterns are ordered. The Garden basin is completed. Stores (as per margin), are now due from England.

Expected to arrive in October 1864.	Socket pipes, cast iron, 6 inches diameter running feet ..	...	150	} 20 or 30 feet of this to be in ½ lengths.	
	Do do do 5 do do do	...	4,100		
	Do. do. 2½ do do.	...	2,000	30 or 40 do. do.	
	Branches, cast iron 6 do.	... No.	1	The branch to be curved to about 135°	
	Bends Dº. dº. 2½ do ..	...	6	All to be curved.	
	Do do do. 6 do ..	...	1	Curve 100°	
	Do. do do. 5 do. ...	...	2	,, 135°	
	Do. do do. 5 do do ...	..	2	,, 160°	
	Do do do. 5 do ...	...	2	,, 90°	
	Do do do. 2½ do. ..	...	2	,, 160°	
	Do do do. 2½ do ...	..	5	,, 90	
	Welded wrought iron tubes, 1 inch diameter feet	...	1,600	About 20 feet of this should be in ½ and ¼ lengths	
	Do. do 1 do do. do.	..	15	1.5 Tees for the above.	
	Do do do. 1 do. do do	..	12	Elbows for do	
	Sluice cocks or sliding valves under Haye's patent 5 inch diameter	No.	2		
	Round full way bath cocks, 1 inch diameter ..	...	24	To be equal to a pressure of 20 feet	
	Stand posts with draw off cocks and spout ...	...	5		
Expected to arrive in September 1864	WARNER'S FOUNTAIN DESIGNS.				
	Prince of Wales feather	No	1		
	Crown, large	,,	1		
	Convolvulus	,,	1		
	Barker's Mill with 4 strait arms and holes on the upper side	,,	1		

7. An application for the following additional Stores will be embodied in the annual indent for 1865-66:—

Socket pipes, cast iron, 5 inch diameter	...	1,800 and 4 bends of 160°
Welded wrought iron tubes, 1 inch diameter feet.		200
Round full way bath cock, 1 inch	do	7
Lead pipe, 1 inch diameter running feet		750

8. The following is an abstract of the comparative Statement showing the increase and decrease under each general head, showing a net expected increase of Rupees 4,005, but from the novelty of the kind of work, and the prices of articles to be obtained from England, actual charge for freight, &c., not being very well known, there may still be a considerable modification to be made in the estimates.

Description of work.	Original estimate. No. and date of sanction.	Original estimate. By whom framed.	Original estimate. Amount.	Work executed. Amount.	Work remaining to be executed. Amount.	Difference between original and revised estimate. Increase.	Difference between original and revised estimate. Decrease.	Remarks.
			RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P	RS. A. P.	
1. Proposed Dam ...	.....	.....	2,115 0 0	67 9 6	.....	.....	2,047 6 6	Work now proposed, not to be executed.
2. Raising Causeway below Marmalong bridge.	.....	.....	289 0 0	50 6 0	.....	.....	238 10 0	Unnecessary, if dam is not built.
3. Do. do. on Saidapett road.	.....	.....	252 0 0	1,310 0 0	.....	1,058 0 0	.....	Additional roadway given and two sluices built.
4. Filter	.....	.....	501 0 0	.....	640 0 0	139 0 0	.....	Higher rates required.
5. Engine house, &c. ...	.....	.....	1,465 0 0	.....	1,600 0 0	135 0 0	.....	Do. do.
6. Roof Cisterns ...	.....	.....	700 0 0	.....	1,220 0 0	520 0 0	.....	Two small cisterns preferred to one large.
7. Earth Basin in Garden	.....	.....	1,196 0 0	1,700 0 0	.....	504 0 0	.....	Made larger than intended at first and turf brought long distance.
8. Open Channel ...	.. ...	.....	197 0 0	.....	560 0 0	363 0 0	.....	Deeper cutting required consequent on alteration of line.
9. Pipes, &c.... ...	.....	.....	5,060 0 0	.....	8,224 0 0	3,164 0 0	.....	Additional length required owing to alteration of site.
10. Laying pipes... ...	.....	.....	506 0 0	.....	1,114 0 0	608 0 0	.....	Additional length to be laid, also proposed to be laid in lead
11. Fountain houses and Fountains.	.....	.....	1,700 0 0	.....	1,700 0 0	.....	.....	Ornamental building nearly completed. Two cheap summer houses built.
			13,981 0 0	3,127 15 6	14,858 0 0	6,491 0 0	2,486 0 6	

Proceedings of the Madras Government, Public Works Department,
30th November 1864.

9. I do not however at present apply for additional funds to be held at my disposal more particularly as under recent rules. Articles required through the Public Works Stores need not be paid for, and thus a considerable sum will be set free to pay for what would otherwise be excesses.

Referred to the Public Department, with reference to the Orders in that Department, No. 1,290, dated 24th November 1863.

CHEPAUK,
4th November 1864.

(Signed) CHARLES A ORR, Colonel, R. E.,
Secretary to Government, P. W. D.

No. 603A. Memorandum from the Chief Secretary to Government, Public Department:—
(Here enter 17th November 1864, No. 582.)

No. 604. ORDER THEREON, 30th November 1864, No. 3,426.

1. In the foregoing letter the Superintending Engineer, 4th Division, reports on the works in progress in connection with the Guindy water supply project, and he submits a comparative Statement showing the variations from the original estimate which it has been deemed advisable to make,

2. The original estimate for the project amounted to Rupees 13,981 and the cost of work executed is Rupees 3,128. The work remaining to be done is estimated at Rupees 14,858 and the net excess as far as can be ascertained at present is Rupees 4,005. Colonel Boileau considers that owing to the novelty of the work and to other causes, a considerable modification in the estimate may still be necessary,

3. The Government authorize the execution of the work as now proposed; but they observe that no provision has been made for a Pumping Engine.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R E,
Secretary to Government.

To the Superintending Engineer, 4th Division.
" Controller of Public Works Accounts.
" Accountant Genl.
" Public Department.

Exd. T. O'Connor.

No. 3887. Superintg. Engr. Office 4th Dn.

5 X

Public Department

No. 1489

From the Superintending Engineer 4th Division
2nd November 1864

For Orders

As so much has been done the remainder may as well be put in hand - but no provision is made for the Pumping Engine

Public Works Department

No. 3887. Superintg. Engrs. Office 4th Divn.

7

Public Department.

No 582.

Memorandum.

From Supg Engr 4th Divn
dated 2nd November 1864
No 3887.

The Chief Secretary has the honor to return the letter noted in the margin, together with the Plans and Comparative Statement which accompanied it showing the variations from the original Estimate for the water Supply at Cuddy, which it has been considered advisable to make, and to inform Colonel Orr that there is no objection to the work as now proposed. It is observed, however, that no provision is made for the Pumping Engine

Fort St. George
17th Novr. 1864

G. J. Cumberland
Chief Secretary

To

The Secretary to Government
Public Works Department

ent.

Pro - 4th Decr /63 No 112 - 113
" 25th July /64 - 437 - 438

No 603 A

9th W 1864 Deptt
Pro: of Govt for November
No 4993
From the Chief Secy
to Govt Public Deptt
D/ 17 } Nov 7/64
Recd 18 }
No 582
E. 9.

Approving of the variations proposed, from the original Estimate for the water supply at Guindy, Madras Dt; and observing that no provision is made for the Pumping Engine.

No 3426 - 30th Nov 1864

No 3887. Superintg Engr Office 4th Dn
Madras 2d November 1864.

From,

Colonel A. J. M. Boileau R. E.
Superintending Engineer 4th Dn.

To,

Colonel C. A. Orr R. E.
Secretary to Government P. W. D.

Sir,

In continuation of my letter No 1667 dated 16th July 1864 embodied in G. O. No 2127 dated 25th Idem, I have the honor to report progress as regards the works connected with the Gindi Government House Water-supply project, and at the same time to forward a Comparative Statement showing the variations from the former estimate which it has been deemed advisable to make, entailing in some cases an increase and in others a decrease, as compared with the original Estimate.

2 One of the principal deviations is the omission of the dam which it was at first intended to construct across the Adyar River, for I found the springs at certain points so strong (and ascertained that they were so all the year round) that it occurred to me that by deepening

ont.

out the Bed at one of these places and forming an open (and eventually a carefully revetted) reservoir communicating as in the original scheme by a conduit with the Filter and Reservoir placed at a convenient distance within the bank, the construction of the Dam would not be necessary; and this I should observe is a contingency which Mr. Fraser, Civil Engineer, himself, seems to have contemplated; but he thought that by the raising of the Dam, and the water spread caused thereby, a more picturesque appearance would be given to the River and to the adjoining scenery. There are, however, I think two stronger reasons for its being left alone at least for the present; the one is, that it has been more recently estimated at Rupees 4,300 in lieu of Rupees 2,115; and the other is that if that most desirable project of linking the North and South Canals together be sanctioned, the Dam to be

erected

erected in connection with that scheme may probably be made available for both projects.

3. In Plan No. 4 the place marked A has been selected by me as a suitable one from which to derive a direct supply of water to Gindi House, and the River Bank just there presents an excellent site for the Engine House Filter &c.

4. At one time I thought of recommending a more radical change in the original plan in proposing the construction of a water tower adjacent to the Engine, the water being pumped directly up to its full height, and being allowed to reach its eventual destination by gravitation. The Executive Engineer however estimated that such a tower 100 feet high would cost 10,000 Rupees; moreover on conversing with those who have had to deal with similar matters in England, I ascertained that the

system

system of water towers is not so much in vogue as it was; the more economical and equally simple mode of forcing the water up to any elevation direct through the pipes being now generally followed.

5 In para 7 of his Report Mr. Fraser observed that if the Adyar Dam were built, the Causeway on the Road from Saidapett to the Mount would have to be raised; this work was taken in hand at once and has been completed, but the Assistant Engineer having represented that the traffic over the Causeway was very great, greater indeed than that over the Marmalong Bridge, and the other causeway put together, as all the Carts from the Southern Trunk Road No. VIII ply on it, I considered that only 9 feet clear Roadway as allowed by Mr. Fraser was insufficient and I ordered it to be made 18 feet. The non-construction of the Adyar dam does away also with the necessity of raising, as was intended, the Causeway below the Marmalong Bridge.

The

6 The only alteration I would suggest is the enlargement of the capacity of the portion marked No. 4 which is in fact the Pump Well which I would make of the same area as the Filter

The latter and the Engine House are just about to be commenced.

The roof of cisterns are ordered.

The Garden Basin is completed.

Stores (as per margin) are now due from England.

Expected to arrive in October 1864.

Socket pipes, Cast Iron 6" Diam. R. ft. feet		150	20 or 30 feet of this to be in ½ lengths.
do do 5" " "		4100	
do do 2½" " "		2000	30 or 40 do do
Branches Cast Iron 6"	No.	1	One branch to be curved to about 135°.
do do 2½"		6	All to be Curved.
Bends do 6"		1	Curve 100°
do do 5"		2	" 135°
do do 5"		2	" 160°
do do 5"		2	" 90°
do do 2½"		2	" 160°
do do 2½"		5	
Welded wrought Iron tubes 1" Diam. feet		1600	About 20 feet of this should be in ½ and ½ lengths.
do do 1" " "		15	15 Tees for the above
do do 1" " "		12	Elbows for do
Sluice Cocks or Sliding Valves under Wages patent 5" diam.		2	
Round full way bath Cocks 1" diam.		24	To be equal to a pressure of 120 feet.
Stand posts with draw off Cocks and Spout		5	

Expected to arrive in October 1864.

Warners Fountain Designs.

Prince of Wales feather	No.	1
Crown large	"	1
Convolvulus	"	1
Barkers Mill with 4. Strait arms and Holes on the Upper Side		1

7 An application for the following additional Stores will be embodied in the annual Indent for 1865/66.

Socket pipes Cast Iron 5" Diameter	1800	& 4 bends of 160°
Welded wrought Iron tubes 1" Diameter feet	200	
Round full way bath Cock 1" do	7	
Lead Pipe 1" Diameter Running feet	750	

8 The following is an Abstract of the Comparative Statement shewing the increase and

Decrease

Decrease under each general head showing a net expected increase of Rupees 4,005-"-", but from the novelty of the kind of work, and the prices of Articles to be obtained from England, actual charge for freight &c. not being very well known, there may still be a considerable modification to be made in the Estimates.-

	Description of work.	Original Estimate: No. and date of sanction	Original Estimate: By whom framed	Original Estimate: Amount	Work Executed: Amount	Work remaining to be executed: Amount	Difference between original and Revised Estimate: Increase	Difference between original and Revised Estimate: Decrease	Remarks
1	Proposed Dam			2115 " "	67 9 6	" " "	" " "	2047 6 6	Work now proposed not to be executed.
2	Raising causeway below Marmaling Bridge			289 " "	50 6 "	" " "	" " "	238 10 "	Unnecessary if dam is not built.
3	do do on Saidapett Road			252 " "	1310 " "	" " "	1058 " "	" " "	Additional roadway given and 2 Sluices built.
4	Filter			501 " "	" " "	640 " "	139 " "	" " "	Higher rates required
5	~~Engine~~ Engine House &c.			1465 " "	" " "	1600 " "	135 " "	" " "	do. do
6	Roof Cisterns			700 " "	" " "	1220 " "	520 " "	" " "	Two small cisterns preferred to one large.
7	Earth Basin in Garden			1196 " "	1700 " "	" " "	504 " "	" " "	Made larger than intended at first and turf brought long distance.
8	Open Channel			197 " "	" " "	560 " "	363 " "	" " "	Deeper cutting required consequent on alteration of line.
9	Pipes &c.			5060 " "	" " "	8224 " "	3164 " "	" " "	Additional length required owing to alteration of site
10	Laying pipes			506 " "	" " "	1114 " "	608 " "	" " "	Additional length to be laid also proposed to be laid in lead
11	Fountain houses and Fountains			1700 " "	" " "	1700 " "	" " "	" " "	Ornamental building nearly completed - 2 cheap summer houses built.
				13981 " "	3127 15 6	14858 " "	6491 " "	2486 " 6.	

9 I do not however at present apply for additional Funds to be held at my disposal more particularly as under recent Rules. Articles required thro' the Public Works Stores need not be paid for, and thus a considerable sum will be set free to pay for what would

would otherwise be excesses.-

I have the honor to be
Sir
Your Most Obedient St.

Supy. Engr. Office
4th Dn.
Madras 2d November
1864.

A. Boileau Colr. R.E.
Supy. Engr. 4th Dn.

To,
Colonel C. A. Orr R.E.
Secretary to Government
Public Works Deptt.

...dings of the Madras Government
Under date the 30th Novr/64
Read the following

From the Supt Engr 4th Dn

Reports progress as regards the works connected with the Guindy Govt House Water supply project & forwards a comparative Statement shewing the variations from the former Estimate which it has been deemed advisable to make, entailing in some cases an increase & in others a decrease as compared with the original Estn

Memo: Chief Secy Dl, Govt Pub: Dept

H.E. 2nd Novr/64 - No 3887

H.E. 17 Novr/64 - No 582

In the foregoing letter the Supt Engr 4th Division reports on the works in progress in connection with the Guindy water supply project, & he submits a comparative statement showing the variations from the original estimate which it has been deemed advisable to make.

The original estimate for the project amounted to Rs 13,981 & the cost of work executed is Rs 3128. The work remaining to be done is estimated at Rs 14,858 and the

Pub Dept 1864 Dn
Public Govt Jany November
Nov No 4764
The Supt Engineer 14th Dn
To the Secretary to Govt Pub Dn
Dated 2d Nov 1864
Rec. 3 November 1864.
Q F Hall
No 3887/No 1489
Reports progress as regards the works connected with the Guindy Govt House Water supply project & forwards a Comparative Statement shewing the variations from the former Estimate which it has been deemed advisable to make, entailing in some cases an increase and in others a decrease as compared with the original Estimate.
With another
No 3426 - 30th October 1864.

Referred to the Public Department with reference to the orders in that Department No 1290 dated 24 November 1863.
Edmund W. Cole R.E.
Secy to Govt Pub Dept
Department
4 Novr/64
No 87.
Pub Dn 30 July/64 No 187-88
24 Novr/63 - 131-32.
Cd Pub
R 12 1.
No 603
Sd 4 Novr/64 87

not excess as far as can be ascertained at present is Rs 4005. Col. Boileau considers that owing to the novelty of the work & to other causes, a considerable modification in the estimate may still be necessary.

The Government authorize the execution of the work as now proposed; but they observe that no provision has been made for a Pumping Engine.

The Supg Engr to Dr Wm & Plans & 1 Comp. Sts
Cont of Mr Acctt
Accountant General
Public Dt 1st December

P W 1864 Deptt
Pro: of Govt for Novr

No 3426

Pro: of the A Govt
D/ 30th Novr /64

P W Cl 8/64

The modifications proposed by the Supg. Engr. 4th Dn in the Estimate for the Guindy Water Supply project, Madras Destt. approved.

No 603 @ 603 &
No 604