M.R.O. 1—77,006—8-6-37.

(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. 402, 409 40H	2766	Press / Mis.
Dated	25.11.	18 72.

Not to be folded or roughly handled

Read the following papers :—

No. 402. From the Superintending Engineer, 5th Division, to the Secretary to Government, Public Works Department, dated Camp at Salem, 9th September 1872, No. 116 :—

I HAVE the honour to forward, for the sanction of Government, a revised estimate of Rupees 6,800 for constructing a cistern at the old Infantry Barracks at Bangalore. The amount allowed for this cistern in the large estimate sanctioned this year for completing the Ulsoor Water Works is Rupees 5,820.

One plan.
" estimate.
" specification.

2. The estimate has been revised, because after excavating at the site it was found that it would be necessary to take the foundation of the floor down to the stratum of gravel. This entails a greater thickness of floor. I have also had the thickness of the walls increased by six inches.

3. According to the specification the flooring is to consist of two courses of brick on edge in cement over the concrete, the bricks to be obtained from the Sappers and Miners; but, as there is some doubt whether a sufficient quantity of these bricks can be supplied in time, an alternative estimate has been prepared for this part of the work by substituting stone slabs for the brick on edge. Government, in their Order of the 16th of January 1869, No. 132, disapproved of a stone flooring for the Race Course cistern; but the stones now proposed to be used are of a different kind. Each slab is to contain twenty-six superficial feet in the upper surface and the joints are to be accurately wrought. The estimated difference of cost between this kind of stone flooring and brick on edge is under 10 Rupees.

No. 403. From the Executive Engineer, Bangalore, to the Chief Engineer, Public Works Department, dated Bangalore, 8th November 1872, No. 835.

IN reply to your demi-official letter of the 6th instant I have the honour to state that, as far as can be judged at present, the foundations of the Government Bakery are bad.

2. A portion was opened out for the inspection of the Superintending Engineer when he was last here. The foundations are supposed to be of stone-in-chunam; but hardly any chunam appears to have been used, and the so-called chunam appears to be very little else but sand.

3. There appears to have been no attempt at bonding the work. It is possible, of course, that some of the work may be better than that opened out; but, as the portion selected was taken at hap-hazard, I take for granted that the foundations throughout are of a similar nature and untrustworthy.

4. The plans for the new Bakery are complete and the estimate is nearly ready. It will probably be forwarded on Monday. The preparation of the plan was delayed some ten days as the Superintending Engineer requested me to send him the plan in pencil for his approval.

5. Below I give replies to questions asked by you regarding the European Infantry Barrack Cistern :—

Subject—Cistern to be built at Infantry Barracks, Bangalore.

1*st*.—How many days' supply, with reference to the purpose for which it is intended, has this cistern been designed to hold?

The cistern will hold, with a depth of five feet, 89,250 gallons, sufficient for a week's supply, ten gallons a day for 1,275 people.

2*nd*.—If more than eight days' supply, is there any objection to reduction of its size to that capacity only?

No reply is necessary as it is fully answered above.

3*rd*.—If not, what will be the dimensions and cost of the revised work?

This also requires no reply.

4*th*.—Is there any objection to altering the shape of the cistern internally by rounding at the angles which seem to be points of weakness at which fractures are liable to occur through imperfection of work?

So far from there being any objection it appears to me it would be an improvement.

5*th*.—Have you ensured timely delivery of bricks from the Sappers and Miners?

I applied to the Commandant for 40,000 bricks to line the cistern but was told they were unable to supply them. Another application will be made to-day. It would perhaps be as well if you were to induce the Government to direct that the bricks should be supplied by the Sappers. The total quantity of bricks required would be 2¼ lacs. I thought of merely getting sufficient from the Sappers to line the cistern.

The excavation for the cistern is finished and stone for concrete is ready at the spot, so that we can commence work as soon as sanction is obtained.

No. 404. ORDER THEREON, 25th November 1872, No. 2,766.

MILITARY WORKS, No. 13.

HIS EXCELLENCY the Governor in Council sanctions the increased expenditure recommended to be incurred in the construction of a cistern at the Old Infantry Barracks at Bangalore in providing an extra thickness of concrete foundation for the floor. This is not in itself desirable, but is reported to be necessary to bring the bottom of the foundation down to a solid substratum. And it is presumed that the same object could not conveniently be attained by lowering the top of the cistern floor below the ground level at site; otherwise a saving might well be effected as a height of five feet above the level of delivery is stated to be adequate for storage of eight days' supply, the maximum required.

2. The Commandant of Sappers will be requested to supply in good time the bricks required for flooring the cistern in preference to the stone already dis-

approved of as a flooring material. In the execution of the work the shape of the cisterns will be altered internally by rounding off the angles, which seem to be weak points, at which fractures are liable to occur through imperfection of work.

(True Extract.)

Colonel, R. E.,
Secretary to Government.

To the Superintending Engineer, 5th Division, with Specification.
" Controller of Public Works Accounts.
" Commandant of Sappers.
" Military Department.

Exd. A. S. Rodgers.

No. 835

Executive Engr: Office
Bangalore 8th Nov. 1872.

From

The Executive Engineer
Bangalore.

To

The Chief Engineer
P. W. Department
Madras.

Sir,

In reply to your demi-official letter of the 6th instant, I have the honor to state that as far as can be judged at present, the foundations of the Government Bakery are bad.

A portion was opened out for the inspection of the Supg. Engineer when he was last here. The foundations are supposed to be of stone in Chunam - but hardly any Chunam appears to have been used, and the so called Chunam appears to be very little else but sand.

There appears to have been no attempt at bonding the work. It is possible, of course, that some of the work may be better than that opened out, but as the portion selected was taken at hap-hazard. I take for granted that the foundations throughout are of a similar nature and untrustworthy.

The Plans for the new Bakery are complete, and the estimate is nearly ready. It will probably be forwarded on Monday. The preparation of the plan was delayed some 10 days as the Chief Engineer requested me to send him the plan in pencil for his approval.

Below I give replies to questions asked by you regarding the Cantt. Infantry Barrack Cistern.

Subject - Cistern to be built at Infantry Barracks, Bangalore.

1. How many days' supply with reference to the purpose for which it is intended has this cistern been designed to hold?

The cistern will hold with a depth of 5 feet, 89,250 gallons, sufficient for a week's supply. "

10 Gallons a day for 1275 people.

2. If more than 6 days supply is there any objection to reduction of its size to that capacity only?

No reply is necessary, as it is fully answered above.

3. If not, what will be the dimensions and cost of the revised work?

This also requires no reply.

4. Is there any objection to altering the shape of the cistern internally by rounding at the angles which seem to be points of weakness at which fractures are liable to occur through imperfection of work?

of work?

So far from there being any objection it appears to me, it would be an improvement.

5.th Have you ensured timely delivery of bricks from the Sappers and Miners?

I applied to the Commandg.r for 40,000 bricks to line the cistern, but was told they were unable to supply them. Another application will be made to day. It would perhaps be as well if you were to indice the Government to direct that the bricks should be supplied by the Sappers. The total quantity of bricks required would be 2/4 lacs. I thought of merely getting sufficient from the Sappers to line the Cistern [illegible] The excavation for the cistern is finished and stone for concrete is ready at the spot, so that we can commence work as soon as sanction is obtained.

I have the honor to be
Sir,
Your most Obd.t Servt.

Henry Le Vesconte
Capt.n R.E.

Executive Engr.s Bangalore.

No 91 of 1872

Revised Estimate of the probable cost of constructing a Cistern proposed to be built at the South east corner of Commissariat Square Old Infantry Barracks Bangalore.

Particulars of work	No.	Measurement L	B	D	Content	Total
Excavation						
Front and rear walls of cistern	2	129½	6	5½	8547	
End walls of —— Do ——	2	22½	6	5½	1485	
Floor —— Do ——	1	19¼	22½	4½	1949 1/16	
—— Do —— Do ——	1	98¼	22½	3½	7737 3/16	
Total cft of Excavation						19718 1/4
Concrete						
Front and rear walls of cistern	2	129½	6	2	3108	
End walls of —— Do ——	2	22½	6	2	540	
Floor —— Do ——	1	19½	23	3¼	1457 5/8	
—— Do —— Do ——	1	98 5/8	23¼	2¼	5159 41/128	
Total cft of Concrete						10264 121/128
Foundation						
Front and rear walls of cistern	2	128¾	5¼	3	4065 5/8	
End walls of —— Do ——	2	23¼	5¼	3	732 3/8	
Total						4788
Deduction						
Lining walls around the bottom of cistern	1	289	1	¾	216¾	
Total Deduction						216¾
Total cft of Foundation brick in chunnam						4571¼

5½ ½ = 5¼
5 0 ½

Rd 18 Dec 1872 Abstract No: 5513.
Exd Executive Engineer
Examined
Recd 11 ——
Certified that the Chunnam and white pounded lime of the Foundations of the Cistery is every Coat & Course & every Reflues is the Quantity & Quality Specified in the Contract & that the Quantities charged in the Abstract No 2 dated 8th Nov 72 are correct.
Chief Engineer
Rd 18 Dec 1872 Abstract No: 5513.
Exd Executive Engineer
Examined
Recd 11 ——
Certified that the Chunnam and white pounded lime of the Foundations of the Cistern is every Coat & Course & every Reflues is the Quantity & Quality Specified in the Contract & that the Quantities charged in the Abstract No 2 dated 8th Nov 72 are correct.
Chief Engineer

C. 15 Nov 1872 R. 18

Particulars of work	Measurement No.	L	B	D	Content	Totals
Superstructure						
Front and rear walls of Cistern	2	126	2 3/4	6	4158	
End walls of ——— Do. ———	2	24	2 3/4	6	792	
Total Cft. of Superstructure brick in chunam						4950
Brick in cement						
Lining walls around the inside of Cistern	1	289	3/4	6	1300 1/2	
Floor ——— Do. ———	1	120 1/2	25 1/2	3/4	2304 9/16	
Total Cft. of Lincg walls and floor brick in cement						3605 1/16
Plastering with cement						
Lining walls around the inside of Cistern	1	286		6 1/2	1859	
Floor ——— Do. ———	1	119	24		2856	
Total Sqrs. of Plastering with cement						47.15
Plastering with chunam						
Front wall and rear wall of Cistern outside	2	126		6 1/2	1638	
End walls ——— Do. ———	2	31		6 1/2	403	
Total Sqrs. of Plastering with chunam						20.41
——— Do. ——— of Colour washing						20.41
Rft. of Stone coping along the top of Cistern 3 feet broad and 6" thick.	1	298			298	298

Abstract of the foregoing Estimate

Quantity	Description of work	Rate	Per	Amounts	Totals
19718	Cft. of Excavation	1	Cft.	103	
10265	Cft. of Concrete	3 3	Cft.	2085	
9521	Cft. of Foundation and Superstructure Brick in chunam	3 6	Cft.	2083	
		2 9 ×			original Estimate
3605	Cft. of Lining walls and floor brick in cement	6	Cft.	1352	
		10 6			
	Sqrs. of Plastering with cement	12	Sqrs.	566	
47.15	Sqrs. of Plastering with cement				
	Do. ——— chunam	2 8	Sqrs.	51	
20.41	Sqrs. of ——— Do. ——— chunam	4	Sqrs.	5	
20.41	Sqrs. of Colour washing				
298	Rft. of Stone coping along the top of Cistern 3 feet broad and 6" thick	10 12	Rft.	224	
				6469	
	Sundries			331	
	Totals Rupees				6800

Ex: Engrs. Office
Bangalore
13th August 1872

Captain R.E
Executive Engineer Bangalore

E A and C R E
Superintending Engineer

No. 116.

Supg: Engineer's Office, 5th Dn.
Camp Salem, 9th September 1872.

From

The Superintending Engineer,
5th Division.

To

The Secretary to Government,
Public Works Department.

Sir,

Enclosures 3
1 Plan
1 Estimate
1 Specification

I have the honor to forward for the sanction of Government a revised estimate of Rs: 6800 for constructing a cistern at the old Infantry Barracks at Bangalore. The amount allowed for this cistern in the large estimate sanctioned this year for completing the Water Works is Rs: 5820.

2. The Estimate has been revised, because after excavating at the site, it was found that it would be necessary to take the foundation of the floor down to the stratum of gravel. This entails a greater thickness of floor. I have also had the thickness of the walls increased by six inches.

3. According

No. 1172/73
Bangalore
Military
Army
Abstract Estimate Rec'd
From 23 Aug 1872
The Executive Engineer
Bangalore.
To P.W. 495/1772
The Supt. Engineer
5th Division
Dated 13th
Received } August 1872

Revised Estimate for constructing a Cistern proposed to be built at the South East corner of Commissariat Square old Infantry Barracks Bangalore.

Amounting to Rs. 6800-0-0

3. According to the specification the flooring is to consist of two courses of bricks on edge in cement over the concrete — the bricks to be obtained from the Sappers and Miners. But as there is some doubt whether a sufficient quantity of these bricks can be supplied in time an alternative estimate has been prepared for this part of the work, by substituting stone slabs for the bricks on edge. Government, in their order of the 16th of January 1869 No. 132, — disapproved of a stone flooring for the Race course cistern, but the stones now proposed to be used are of a different kind. Each slab is to contain 26 superficial feet in the upper surface and the joints are to be accurately wrought. The estimated difference of cost between this kind of stone flooring and brick on edge is under ten rupees.

I have the honor to be,
Sir,
Your most Obedt Servant.

E A Ford Lieut, R.E.
Supg. Engineer, 5th Division.

Public Works Department

Proceedings of the Madras Government

Read the following

From The Supg Engineer 5th Dn / H.E. No: 1167 19th Sept 1872 /
Ex: Engr, Bangalore / — No: 835 Dy 8th Oct 1872 /

His Excellency
the Governor in Council
sanctions the increased
expenditure recommend-
-ed to be incurred in
the construction of a
Cistern at the Old In-
-fantry Barracks at
Bangalore, in providing
an extra thickness of
concrete foundation for
the

Public Works Dept
From Dy: Genl Engrs No: 4441
The Supg: Engineer,
5th Dn

To The Secy: to Govt:
P. W:

Dated 9th
Recd: 11 } September 1872
No: 116.

Encls: 3

Forwarding for the
Sanction of Govern-
-ment a revised Estimate
of Rs: 6,800. for construct-
-ing a Cistern at the
old Infantry Barracks
at Bangalore. —

No 402

615 Nov/72 R. 18

No: 2766. 25th Nov/72

the floor. This is not in itself desirable, but is reported to be necessary to bring the bottom of the foundation down to a solid substratum. And it is presumed that the same object could not conveniently be attained by lowering the top of the Cistern floor below the ground level at site. Otherwise a saving might well be effected as a height of 5 feet above the level of delivery is stated to be adequate for storage of 8 days supply; the maximum required.

The

The Commandant of Sappers will be requested to supply in good time the Bricks required for flooring the Cistern in preference to the Stone already disapproved of as a flooring material. In the execution of the work the shape of the Cisterns will be altered internally by rounding off the angles, which seem to be weak points, at which fractures are liable to occur through imperfection of work.

45/5

GWW

To The Supt Engr 5 Dt Draft Men
5 " Controller P.W.A.
3 " Commandant of Sappers
15 " Military Supt. Dupe 26/11/72

Con 4441 L 5573

Govt. of [1872] Madras.

PUBLIC WORKS.

To The Superintending Engr.
5th Division

Dated

Read. Encl. 2
102 Lines

G. O. 25 Nairs. N. 2766.

Nos. 402 & 404

Sickern at the old Infantry Barracks at Bangalore.

Passing orders on the revised Estimate of Rs 6800 for constructing a Sickern at the Bangalore.