

(1) Number of pages 1-10

(2) Date of repair 23-4-38

(3) Initials of the Referencer [Signature]

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.
On 15/3/39

G.O. No. <u>573</u>	Press Mis. <u> </u>
<u>89.90</u> Dated <u>16-3-18</u> <u>39</u>	

Not to be folded or roughly handled

Fort Saint George, Public Works Consultation of 15th March 1859.

No. 89. Read the following letter from Colonel C. E. FABER, Chief Engineer; to J. D. BOURDILLON, Esq., Secretary to Government, dated 5th February 1859, No. 7665.

SIR,

I have the honor to submit for the sanction of Government three Bills, amounting to Rupees (1,545-6-10), one thousand, five hundred and forty-five, annas six and pice ten, for building a place of Arms and Magazine for the Detachment of Troops at Ongole, in the District of Nellore, on the high Northern Road from Madras to Hyderabad.

	Rs.	A.	P.
Bill No. 415,	1,121	6	5
Bill do. 416,	142	8	0
Bill do. 417,	281	8	5
	1,545	6	10

3 Bills.
2 Letters and one Comparative Statement.

2. In Extract Minutes Consultation, No. 2071, of the 7th November 1856, a sum of Rupees 3,000 was sanctioned on account of these Works, and the first part Bill, up to end of April 1857, for Rupees 2,723-8-4, after undergoing the usual course of audit in this Office, was passed on the 18th September last, this Bill, added to the three now submitted for sanction, will make the total expenditure Rupees 4,268-15-2, or about 29½ per cent., in excess of the amount authorized.

3. The excess is attributed to the rates allowed in the Estimate having proved insufficient. The District Engineer, in his letter submitting the Bill, also explains that although the Estimate was twice revised by him, the revisions had reference only to the alterations in the Plan recommended by the Commander-in-Chief, and not to the rates, which were allowed to remain as in the original Estimate, prepared by the Civil Engineers, of the 2nd Division, in December 1855, in consequence of the District Engineer's inexperience of the country and the rates prevailing then, I must confess however, that this explanation is scarcely satisfactory, as the rates were examined in the Central Office, and were not considered insufficient.

4. A comparative Statement shewing the excess in each item accompanies the Bills, from which it will be noticed that the increase is mainly owing to the substitution of rough stone for brick work. The re-building of a part of the Verandah, which fell down, is also another cause of the excess, as explained in the District Engineer's letter,* which is herewith forwarded.

* No. 129, dated 20th January 1859.

5. The work was commenced in January 1857, and completed in October 1858, and this protraction has been influenced by the want of a sufficient number of Bricklayers and Carpenters, and also to the Rains during the Monsoon of 1857, which is a further reason for the excess, as the Maistry superintending the work on monthly pay was obliged to be kept on and thus added to the item of superintendence for the whole. I beg to recommend that sanction be given to the Bills.

Letter from Lieutenant R. C. A. MARSHALL, Executive Engineer, Northern Range; to Captain J. MULLINS, District Engineer, Nellore, dated Camp Nellore, 15th December 1858, No. 467.

SIR,

With reference to your letters, Nos. 1580 and 2437, dated 28th July and 5th November 1858 respectively, I have the honor to state that after deducting the sum of Rupees 107-13-4, the amount saved on different portions of the work of the Ongole Barracks, the total excess of Expenditure in the construction is Rupees 1,121-1-10, as per the accompanying Statement, for the complete work done to the same, which cancels the former Statement made out while the work was incomplete, and the excess is accounted for as follows:

- 1stly. Rupees 197-9-8 for Superintendence which is not allowed in the Estimate.
- 2ndly. An excess of Rupees 116-13-2 has, been charged by the Engineer Store-yard for materials supplied above the amount sanctioned for them in Estimate.
- 3rdly. Surplus materials remain in hand in value Rupees 294-10-8, which were placed in store before I took charge, but which can be available, should the Estimate for the Bath and Cook Rooms be sanctioned.

insufficiency

4thly. Which amounts if deducted from the total excess, leaves a balance of Rupees 512-0-4, out of which Rupees 420-10-2, has been over-expended for Brick work in Chunam, including Plastering, and which is owing to the following reasons, viz.

1st. Brick, Chunam, and sand have been purchased at dear rate namely.

1,000 Bricks.....	at Rupees	2	12	0
1 Pooty of Chunam.....	"	6	12	0
1 Pooty of Sand.....	"	0	8	0

2ndly. Good Bricklayers are scarcely to be procured at Ongole or in its neighbourhood, and the few Bricklayers procurable can hardly in a day lay more than 300 bricks, and they will not work unless paid from 5 to 6 annas per day, moreover the Bricklayers being very inexperienced workmen, laid the mortar thicker than the usual data allowed, owing to which and the other reasons aforesaid, produced an increase of labor and materials, as per the subjoined Statement prepared from the actual expenditure.

	Rs.	As.	P.
1000 Wall Bricks of the 1st and 2nd Sort	2	12	0
7 Parahs of Chunam, at 6-12-0 per candy	2	5	10
14 do. of Sand, at 0-8-0 do.	0	5	7
1 Viss of Jaggery, at 0-2-11	0	2	11
3 Bricklayers, at an average 0-5-6 each	1	0	6
6 Women pounding Chunam, 0-1-4 do.	0	6	8
1/2 Man Cooly, at 0-2-0 do.	0	1	0
3 Boys at 0-1-0 do.	0	3	0
Sundries	0	1	1
Total for 60 Cubic feet.	7	6	7
do. for 1 do.	0	1	11 1/2
Amount allowed in the Estimate for one Cubic foot.	0	1	6

3rd. The excess in Roofing Rupees 91-6-2, has been occasioned on account of the Palmyrahs having been brought from Cauvelly Talook to Cottapatam by Sea, and from the latter place to Ongole by land, and Ceylon Palmyrah rafters having been brought from Madras.

4th. I have further to state that on account of the want of a sufficient number of Bricklayers and Carpenters, the work progressed but slowly, and was occasionally stopped while in progress, owing to the Rains during the Monsoon of the last year and also the supplying of Palmyrah trees from the Cauvelly Talook was exceedingly dilatory, they having been written for in the month of February and not received until July 1857.

Letter from Captain J. MULLINS, District Engineer, Nellore; to Colonel C. E. FABER Chief Engineer, dated, Camp Nalatoor, 20th January 1859, No. 129.

SIR,

In forwarding the Bills as per margin

	Rs.	A.	P.
Bill No. 415 of 1857-58	1,121	0	5
" No. 416 of "	142	8	0
" No. 2 of 1858-59	281	8	5
Bill No. 20 of 1856-57	1,545	6	10
	2,723	8	4
Sanctioned Estimate	4,268	15	2
	3,300	0	0
Excess	968	15	2
Per centage	29 1/2	nearlly.	

2. It will be seen that the actual excess of cost in the construction of the Barracks amounts to Rupees 826-7-2 or 25 per cent. on the Estimate, but if the cost of re-constructing the part of the Verandah which fell, and which is included in the 2nd Bill entered in the margin above, the excess of cost amounts to Rupees 968-15-2, or 29 1/2 per cent. nearly on the Estimate.

3. Of the first mentioned increase of 826-7-2, Rupees 197-9-8 is shown by Lieutenant Marshall to be due to superintendence, which was not provided for in the Estimate. The superintendence shown in the Bill consists of a Bricklayer Maistry, 1 Head Cooly, and a Storekeeper, making a monthly charge of 17 Rupees, and had the Barracks been completed within a reasonable time from their commencement, such a charge would have formed but an insignificant item in the general cost, but owing to causes which Lieutenant Marshall has touched upon, the works were carried on very slowly, and thus this unprovided item amounts to nearly 5 per cent. Sanction for the construction of the Barracks was received in November 1856, and on visiting Ongole in the following month, finding that considerable delay would occur in the preparation of bricks, I, with a view to expedite the work, obtained sanction to take away some of the stone of the old fort for the foundations and lower parts of the walls, and the work was started almost immediately after I left. I also after due enquiry settled the rates for bricks and chunam at 2-12 per thousand for the former, and 6-12 per candy for the latter, and these prices were paid throughout the work.

4. At that time there was no Officer in charge of the Northern Range, but Lieutenant Marshall was posted to it in January 1857, and joined in February, from which time the execution of the works remained under his charge.

5. The cost of the stone in chunam; which to the extent of 9,674 cubic feet, was used instead of brick in chunam, was a little under the estimated rate for the latter, viz, 1 1/2 annas per foot, so that no extra expense was caused by its use, while on the other hand, the total increase would have been much greater had brick been employed at the rate which the brick work actually executed came to, Lieutenant Marshall shews that Rupees 420-10-2, or rather more than half the total increase is due to the excess of cost of the brickwork above the estimate rate, the latter being as above stated, 1 1/2 annas and the actual cost 1-11 1/16, taking the cost of bricks and chunam as above shewn, I think the cost per cubic foot should not have exceeded 1 1/2 annas, and that the remainder of the increase is due to causes (such as idleness of Bricklayers, &c., which although they may have been difficult to control, cannot be admitted as legitimate items in framing data of the cost of works. In the details of cost of a cubic foot exhibited in the letter from Lieutenant Marshall, 3 Bricklayers are entered as having executed 60 cubic feet or 20 feet per man, but inclusive of stone work the total amount executed is in round numbers 16,500 cubic feet, and the bricklayers are 1325, or 12 1/2 feet per man, and though a large deduction must be made from the Bricklayers on account of other work that was done by them, I think that more than 3 Bricklayers must have been engaged in laying each 1000 bricks, more especially as with 21 parahs of mortar to each 1000 bricks, the space occupied could hardly have been so little as 60 cubic feet. I find also that the average pay of the Bricklayers was 5 1/2 and not 5 1/4 annas, so that 3 1/2 Bricklayers would be required to make up the Rupees 1-0-6 shewn in the details, and probably 4 would be nearer the actual number. The superintendence was certainly bad, the work was up to 15th September 1857, in the immediate charge of Narrainsamy, a Bricklayer Maistry, and at that time a Sub-Overseer, but I was so dissatisfied with the manner in which he was reported to be conducting the work, that I was glad of the opportunity, which the reduction of the Department afforded, of replacing him by one of the older Maistries, who had been thrown out of employ by the reduction, and in September 1857 accordingly he was dismissed.

6. The remaining item of increase of cost is Rupees 116-13-2 for the doors, windows and other fittings. This, if the cost of carriage from Nellore to Ongole be excepted, was entirely due to the enhanced price of teak wood, between the time of the framing of the estimate and the execution of the work, it being about Rupees 1-5-4 per foot in 1856, while that purchased for the Barracks cost 1-14-0 per foot.

7. It only remains in connection with this part of the subject to explain how it occurred that an insufficient rate for brick-work was entered in the estimate. The original estimate was prepared and submitted by the Civil Engineer, 2nd Division, on the District data, and although the estimate was twice revised by me before that dated 9th November 1856, was actually sanctioned, these revisions had reference to the alterations in the Plan recommended by the Commander-in-Chief, and not to the rates, which, in the absence of any actual experience to the contrary, were left as in the original estimate.

8. With regard to the fall of a part of the Verandah in September 1857, a good deal of correspondence took place and various reasons were given, but on its being stated that the height of the Verandah pillars was insufficient for the height of the main wall, it was found on enquiry that the width of the Verandah had been made 13½ feet inclusive, instead of exclusive of the pillars and this was, I have but little doubt, the principal cause of the accident, added to which it is reported that the Verandah rafters were not properly secured to the wall plates and to the principal rafters.

9. In conclusion, I would beg to inform you, that I think that the following portions of the increased cost are due to unavoidable causes, viz.

	Rs.	A.	P.
One half the increased cost of brick in chunam... ..	210	5	1
The increased cost of wood-work... ..	116	13	2
¾ of the cost of superintendence... ..	131	11	9
(The remaining ¼ being due to the great length of time occupied in the construction of the Barracks was not unavoidable) Excess on roofing... ..	91	6	2
Actual Excess	550	4	2
Difference... ..	826	7	2
	276	3	0

Of the difference, if I expect the ¼ superintendence, it is not easy to say what might have been avoided by more careful general superintendence, and what is due to the fact that the Bricklayers were idle and inefficient, and that others were not procurable. The Sub-Overseer lost his appointment through his carelessness in supervising the Bricklayers, and on several occasions the unsatisfactory progress of the works formed the subject of references to the Officer in charge of the Range.

10. The amount for which sanction is required, is Rupees 1,121-6-5, for construction charge for 1857-58 and Rupees 281-8-5 for 1858-59, and Rupees 142-8-0 for 1857-58, for the expenditure incurred in repairing the Verandah, being an excess above the sanction of Rupees 826-7-2, for the former and Rupees 142-8-0, on account of the latter, or altogether Rupees 968-15-2.

No. 90. ORDER THEREON, No. 573; dated 14th March 1859.

	Rs.	A.	P.
* Bill for work up to end of April 1857 sanctioned by the Chief Engineer... ..	2,723	8	4
Present Bills	1,545	6	10
Total amount of Bills... ..	4,268	15	2
Amount of Estimate	3,300	0	0
Excess	968	15	2

2. The excess is mainly attributed to three causes. 1st, the omission to provide for Superintendence; 2ndly, the insufficiency of the rates allowed in the estimate; and 3rdly, the re-construction of the verandah of the place of Arms.

† Letter dated 20th January 1859 para. 3.

3. The charge for Superintendence is Rupees 198; but it is stated by the† District Engineer that the greater portion of this would have been avoided, had the buildings been completed within a reasonable time from their commencement. The delatory manner in which operations were conducted and which enhanced the cost of Superintendence, is attributed (para. 5) to the careless supervision of the Sub-Overseer immediately in charge, who was in consequence dismissed in September 1857. In para. 9 however it is stated that, on several occasions, the unsatisfactory progress of the works formed the subject of references to the Officer in charge of the Range. The Officer alluded to is Lieutenant Marshall, who as stated in para. 4 was in charge from February 1857; and as his attention was repeatedly drawn to the work, the Governor in Council must hold him censurable for not exercising a more vigilant supervision over his Subordinates.

4. With regard to the next cause of excess, viz. the insufficiency of the rates entered in the estimate, the Governor in Council cannot regard as satisfactory the explanation which has been furnished on the subject. The point is not so much was the estimate wrong, as whether the actual cost is right. This the Chief Engineer leaves wholly untouched; and the Governor in Council desires that he will ascertain and report on the point, with reference to the actual cost of similar work in Nellore and elsewhere, and to the constituent elements of cost.

5. As regards the Verandah of the Place of Arms, it appears from para. 8 of the District Engineer's letter that its fall in September 1857 was owing to two mistakes of construction. The Chief Engineer merely adverts to the rebuilding of a part of it as a cause of excess in the expenditure, but does not state who is responsible for the mistakes which led to the accident. He will now call for full information on the subject, and lay it before Government with his own opinion.

(Signed) J. D. BOURDILLON,
Secretary to Government.

"Military Building"

N^o 7665

From

The Chief Engineer

To

The Secretary to Government
P.W.D.

Sir,

Bill N^o 1,15 Rs 1121-6-5

Bill N^o 416 Rs 1428-0-

Bill N^o 1 Rs 281-8-5

Encl. 6

3 Bills

2 Letters &
one Comparative
Statement.

I have the honor to submit for the
sanction of Government three Bills
amounting to Rupees 1545-6-10 One
thousand five hundred and forty five,

annas six and pice ten for building a place of
arms and Magazine for the Detachment of
Troops at Ongole in the District of Nellore on the
high Northern road from Madras to Hyderabad.

In Extract Minutes Consultation
N^o 2071 of the 7th November 1856, a sum of
Rupees 3000, was sanctioned on account of these
works, and the first part Bill up to end of
April 1857, for Rupees 2723-8-4 after under-
going the usual course of audit in this Office
was passed on the 18th September last, this bill
added to the three now submitted for sanction
will

insufficiency

will make the total expenditure Rupees 1,268. 15. 2. or about 29 $\frac{1}{2}$ per Cent in excess of the amount authorized.

3 ----- The excess is attributed to the rates allowed in the Estimate having proved insufficient. The District Engineer in his letter submitting the Bill also explains that although the Estimate was twice revised by him, the revisions had reference only to the alterations in the plan recommended by the Commander in Chief, and not to the rates, which were allowed to remain as in the original Estimate, prepared by the Civil Engineers of the 2^d Division December 1855, in consequence of the District Engineers inexperience of the country and the rates prevailing then, I must confess however that this explanation is scarcely satisfactory, as the rates were examined in the Central Office, and were not considered insufficient.

4 ----- A Comparative Statement shewing the the excess in each item accompanies the Bills from which it will be noticed that the increase is mainly owing to the substitution of rough stone for brick work. The rebuilding of a part of the verandah, which fell down is also another cause of the excess as explained in the District Engineer's letters which is herewith forwarded.

The

* N^o. 127
dated 20th June/59

9-
5 ----- The work was commenced in January 1857, and completed in October 1858, and this protraction has been influenced by the want of a sufficient number of Bricklayers and carpenters and also to the rains during the Monsoon of 1857, which is a further reason for the excess as the Maistry Superintending the work on monthly pay was obliged to be kept on and thus added to the item of Superintendence for the whole. I beg to recommend that sanction be given to the Bills.

Central Office of P.W.
Fort-Saint George }
5th February 1859 - }

I have the honor to be,
Sir,
your most obedient servant
Wm. Lister Colonel
Chief Engineer

Wm. Lister

insufficiency

Extract from the Minutes of Consultation

Under date the 14th March, 1857.

Read the following letter from the Chief Engineer

/ Here enter 5 February 1857 N 7665 /

The bills submitted with this letter being for the construction of a Place of arms, Hospital, and Magazine at Angulo in the District of Vellore are laid before Government, in consequence of an excess of Rupees 968-15-2, or 29 1/2 per cent, over the sanctioned estimate.

2. The excess is mainly attributed to three causes. 1st The omission to provide for Superintendence, 2^d the insufficiency

[Handwritten signature]

* Bill for work up to end of April 1857 sanctioned by the Chief Engineer	2723-8-14
Present bills	1545-6-10
Total amount of bills	4268-15-2
Amount of Estimate	3300-0-0
Excess	968-15-2

W. to Com 11th Mar 1857 N 7665

20th 1857 20th Feb 1857
29th 1857 29th Jan 1857
1st 1857 1st Dec 1856

From
The Chief Engineer

To
The Secy to Govt

Dated 5th February 1857
No 88

Recommended
Inc: 6-

Sanction 3 Bills amounting to Rupees 1545-6-10 for constructing a Place of arms and Magazine at Angulo & which exceed the estimate by more than 5 per cent.

S. S. No 873. 14th March 1857

23 March 1857

insufficiency of the rates allowed
in the estimate, and 3rd the
reconstruction of the Verandah of
the Place of Arms.

3rd The charge for
Superintendence is Rupees 198,
but it is stated by the District
Engineer that the greater portion
of this would have been avoided,
had the buildings been completed
within a reasonable time from
their commencement. The dilatory
manner in which operations
were conducted, and which
enlarged the cost of Superintendence,
is attributed (para 5) to the careless
supervision of the Sub Overseer im-
mediately in charge, who was
in consequence dismissed in
September 1857. In para 9 however
it is stated that, on several occasions,
the unsatisfactory progress of
the works formed the subject
of references to the Officer in
charge

* Letter dated 26th January 1859 para 3

13
charge of the range. The
Officer alluded to is Lieutenant
Marshall, who is stated in
para 4 was in charge from
February 1857; and as his
attention was repeatedly
drawn to the work, the
Governor in Council must
hold him censurable for
not exercising a more re-
gular supervision over
his Subordinates.
4th With regard to the
next cause of excess, vizt
the insufficiency of the rates
allowed in the estimate, the
Governor in Council cannot
regard as satisfactory the ex-
planation which has been
furnished on the subject. The
point is not so much
was the estimate wrong,
as whether the actual cost
is right. Thus the Chief
Engineer

Engineer leaves wholly un-
touched, and the Governor
in Council desires that he
will ascertain and report
on the point, with reference
to the actual cost ^{of similar work} in Bellary
and elsewhere, and to the
constituent elements of
cost.

5th. As regards the
Verandah of the Place of
Arms, it appears from
para 8 of the District
Engineer's letter that its fall
in September 1857 was owing
to two mistakes of construc-
tion. The Chief Engineer
merely adverts to the rebuilding
of a part of it as a cause
of excess in the expenditure,
but does not state who is
responsible for the
mistakes which led to the
accident. He will now
call

15
call for full information
on the subject, and lay it
before Government with his
own opinion.

10 Copy to the Chief Eng^r D^{ist} 15th
with Mr. D^{ist} 15th

Or. Cons: 11 Nov/56. 42.13.

11

Public Works 1869 Deposit
Dy. to Cons: 15th March

No 573.

Contract Trans. of Cons:

11th March/69

From the Chief Engr. in charge
of the Central office. Dated 1st Augt.
1859 b. n. 2008 in Cons.

Calling information
as to the causes of the excess of
the Bills for the construction
of a place of Arms, Hospital,
and Magazine at Ongole in
Bellary.

No 89 & 90.

23 March 1869