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Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
11th March 1873.*

Read the following letters:—

No. 229. From Major J. VERTUE, R.E., Officiating Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 28th September 1872, No. 1,520.

In continuation of the remarks recorded in paragraphs 7 to 10 of my letter under date the 13th instant, No. 1,360, I have the honour to submit a further report regarding the work known as the "Bellary Water Supply Project."

2. In my letter referred to, I brought to the notice of Government, in general terms, the defective construction of the work, and recorded my opinion that a large expenditure will have to be incurred to thoroughly repair the tank and channels. The estimate for this is in course of preparation, and I have asked Mr. Fraser, Executive Engineer, to put the same out of hand as soon as possible, as it is very desirable to have the work completed in time for the early rains in 1873.

3. I regret it is my duty to bring to the notice of Government a "check statement of work done, as compared with expenditure and sanctioned estimate" for this project. The statement which accompanies shows that work to the extent of Rupees 25,200 cannot be accounted for, thus:—

	RS.
Net expenditure as shown in column "as paid for" ...	69,946
As per measurements taken by or under orders of Mr. Fraser ...	44,750
Difference, less Rupees ...	25,196

4. The headings with which I have to deal (*vide abstract*) are—

I.—As estimated for.

II.—As paid for.

III.—As it exists.

IV.—Difference between II. and III., which, under the sub-heads of "Increase" and "Decrease," represents value.

5. Under sub-head "Increase," I find only one item for Rupees 4, for which Mr. Fraser found work done to the full value. This therefore calls for no observations.

6. Under sub-head "Decrease" the principal items are—

	RS.
Earthwork ...	2,283
Revetment ...	12,111
Masonry in anicut, head sluice, etc. ...	2,091
Sundries ...	8,550
	25,035
Other items ...	165
Total ...	25,200 — 4 = 25,196

the net sum for which work cannot be found.

7. In the absence of the responsible officers, it cannot of course be expected that I would be able to ascertain the precise particulars which led to this state of things; I am therefore necessarily obliged to confine my remarks to information obtainable from records.

8. EARTHWORK.—The work done under this head by the department appears to have been to the tank itself and supply channel above it.

The deficiency against this item is Rupees 2,283. I was disposed to attribute a good deal of this to Mr. Fraser not allowing for "consolidation," but on turning to his report* (paragraph 3) I find he states that he has *liberally* calculated for all the earthwork actually done.

* No. 115, dated 11th May 1872.

From the records to hand, I find certain correspondence on this matter. I forward Colonel Palmer's letter, No. 12, dated 23rd May 1870, to the address of my predecessor, in which he reports certain discrepancy between the quantity of earthwork paid for and that actually executed under the superintendence of Serjeant Swallow, of the C. Company Sappers and Miners, who was temporarily employed on the work. In paragraph 9 of his letter, Colonel Palmer admits that the contract for the earthwork was given out at 9 cubic yards per rupee, the estimate rate being Annas 2 Pice 4 per yard, or nearly seven yards per rupee. This being the case, a saving ought to have been effected, instead of which the difference (saving) appears to have been applied to make up for the deficiency. The work was then in progress.

There is nothing on record to show what disposal Colonel Moberly made on this letter, but in the Office Register book I find a note made to the effect that the letter was returned to Colonel Palmer, with certain remarks *in pencil*, and was re-transmitted by that officer, as the date of receipt back (30th May 1870) is initialed by Colonel Moberly. The remarks having been rubbed out, by whom it is not known, their purport cannot be given. However there can be no doubt that Colonel Moberly recognized the action proposed to be taken by the Executive Engineer, for I find that, writing on the 25th and 28th May 1870, to the Officer Commanding C. Company Sappers and Miners, Colonel Moberly confirms the action taken by the Executive Engineer in dispensing with the services of Serjeant Swallow.

I may here state that these occurrences took place previous to the issue of G. O., No. 3,311, dated 14th October 1869, which refers to Serjeant Swallow being permanently appointed to the department.

I would also beg to refer to the papers disposed of by G. O., No. 2,606, dated 13th October 1871, regarding the claims of A. Dhurmalingum Moodelliar, the contractor who did a large portion of the earthwork to the tank bund, etc.

No further reliable information being obtainable, I leave this item for the orders of Government.

9. REVETMENT.—The loss noted against this is Rupees 12,111, nearly one-half of the total deficiency.

From Mr. Fraser's report it will be seen that the work was not done in accordance with the provision made for it in the sanctioned estimate; what was done was so badly carried out, and with such inferior materials, that any further remarks from me, beyond those recorded in my letter No. 1,360, dated 13th September 1872, would be superfluous.

The estimate provides for a rate of Rupees 1-0-2 per cubic yard, but the rate at which payment was made is Rupees 2-9-8, or Rupees 1-9-6 in excess. No

authority for the same appears, nor was any report sent in by the Executive Engineer. As rendered in the statement, this item calls for very full explanation, for not only is the work done less, but the rate paid is much greater than even the increased rate allowed by Mr. Fraser for similar work ordinarily carried out. I say "ordinarily," but I think this is giving very full value to the work done, for really the same may be said to be just worth the value of the materials used. The size of stones used bears a very large proportion to what ought to have been provided. Stones of 18 inches or even from 15 inches to 18 inches ought to have been used, instead of which very many of 9 inches to 12 inches found place in the stone facing of so important a tank. The backing, as I have already remarked, is in some places decomposed rock, and in others an inferior description of gravel, which has been so imperfectly *tamped* (dry-tamped, if tamped at all) as to be really of no use.

The charge for Sapper labour, which amounted to in all Rupees 9,802, forms a separate item, which increases the cost of the work to Rupees 79,102.

10. MASONRY WORK IN ANICUT, HEAD SLUICE, ETC., ETC.—The value of work to be accounted for is Rupees 2,091. Mr. Fraser's remark is the only record of explanation which can be offered.

Soon after my arrival here, and on assuming charge of the Division, I directed Mr. Fraser to pull down and rebuild a portion of the sluice which is contiguous to the worst and most dangerous portion of the revetment; the masonry was of very inferior description, and badly put together. I considered the whole structure unsafe. The work now done is of the best description, and carefully carried out with due regard for the purpose it is required to serve.

11. I have thought it unnecessary to enter this work to the head sluice in the estimate for Rupees 8,628, which accompanies this letter. I have, however, requested Mr. Fraser to include the same in the estimate which he is preparing for the *thorough* repair of the Alipoor Tank, and which will be ready in less than six weeks.

12. SUNDRIES.—Rupees 8,550 is the amount set down to be accounted for. Mr. Fraser allowed 5 per cent. on this account, but, considering that special superintendence had to be employed, the work being five miles distant from the Range Office, and that in other respects it was necessary to deal somewhat exceptionally with it, I would allow 8 per cent. as a fair rate. The sums entered against each of the items (sundries, superintendence, and petty items) are unreliable, as Mr. Fraser himself states. The contingent expenses must have been in several cases of so petty a nature, that however strictly scrutinized, it would be difficult to obtain accurate information of details to correspond with the sums stated to have been spent; I think therefore that the entries must be accepted. It is, however, not clear how the item, Rupees 8,888, provided in the estimate was exceeded by Rupees 2,740, for I find in column, "as paid for," Rupees 11,628 entered.

13. OTHER ITEMS.—Rupees 165 call for no remark. It appears to me to be simply impossible to now get at particulars.

14. In concluding his report which accompanies the statement, Mr. Fraser refers to the particulars of the statement in these terms:—

"I would hope that on a revision of this statement the deficit may be reduced, and I consider a revision necessary."

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15. The doubt herein expressed as to the correctness of his (Mr. Fraser's) own measurements is one which would probably be raised by the responsible officers themselves. I must, however, record my opinion that such doubts cannot fairly be expressed against Mr. Fraser. His inability to obtain accurate information, and so clear up matters, is due to the non-maintenance of complete information, and orders issued by his predecessor to contractors and subordinates employed to superintend the work. From correspondence at hand, it appears that Colonel Palmer was a good deal deceived by both contractors and subordinates, but whether or not, the present state of the work reflects very little credit on any concerned with it. Much money has either been plundered, or thrown away on work not commensurate with its money value. It seems to me that no useful purpose can be served by deputing an officer to re-examine and re-measure all the works connected with this Alipoor Tank, for, to obtain reliable information, the details of the accounts must be examined, and in many instances, I believe, accurate details are not forthcoming to clear up the deficiency shown, which, I may say, was arrived at by Mr. Fraser after looking up all available papers.

16. The estimate for Rupees 8,628, which I now send, provides for necessary and emergent repairs which are being carried out to render the tank safe, and to secure the storage of water during the later rains. This estimate has been prepared in lieu of that for Rupees 7,745, alluded to in my letter of the 13th instant, No. 415, dated 26th September 1872.

No. 1,360, which has been cancelled. In his letter* giving cover to the estimate for Rupees 8,628, which is also forwarded herewith, Mr. Fraser explains the necessity for its submission, which is on account of the rates being increased. I have already explained that the somewhat isolated position of the work claims for it consideration for a liberal per-centage on account of "Sundries." At present the work of repairs is being carried out by a Contractor, and an Overseer is on the spot to see to the work being done satisfactorily. Subject to frequent inspections by the Range Officer and myself, Government have, therefore, full assurance of the stability of the work already done, and being done, on the estimate which is forwarded for sanction. I trust then, for the reasons given by Mr. Fraser, that the small increase over the prevailing rates, for which data can be given, may be allowed to remain.

17. It would probably have been much more satisfactory to Government had Colonel Moberly, who had a perfect knowledge of all matters connected with this project, submitted his report to Government; but unfortunately the statement and Mr. Fraser's report were received on the very day Colonel Moberly handed over charge.

18. As the officers and subordinates concerned with the execution of the work are no longer in Bellary, the matter might perhaps have been allowed to stand until the project is finally completed, but as I am going on leave, and may not return to the division, I have thought it my duty to acquaint Government with what has come to my notice, although the task is a very disagreeable one.

19. In conclusion, I trust that Government will take steps to provide the required funds as early as possible.

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List of Enclosures.

- 1 Letter, No. 12, dated 23rd May 1870, with three enclosures, from Lieutenant-Colonel Palmer, Executive Engineer in charge, Bellary Range.
- 1 Letter, No. 115, dated 11th May 1872, with a check statement, from Mr. Fraser, Executive Engineer in charge of Bellary Range.
- 1 Letter, No. 415, dated 26th September 1872, with an estimate for Rupees 8,628 for Alipoor Tank, from Mr. Fraser, Executive Engineer in charge of Bellary Range.

To be kindly returned.

From W. FRASER, Esq., Executive Engineer, Bellary Range, to the Superintending Engineer 3rd Division, dated Bellary, 26th September 1872, No. 415.

I HAVE the honour to forward a revised abstract of the estimate for repairing the bund of Alipoor Tank.

2. This revision has become necessary, as I found, during the progress of the work, that some of the rates were much too low. Besides this the Contractor was hurried through the earlier part of the work, so that we might get the new revetment above the ordinary high water level before the heavy rains set in; in which, as you are aware, we happily succeeded, but at the expense of very considerable cost to the Contractor, not only from the crowding of the coolies, but from his having to pay enhanced rates for every description of labour.

I need not say anything of the quality of the new work as you have seen it, and I think you will admit that ordinary rates are not sufficient for work of this description.

3. No stone in the revetment is less than sixteen inches in length (the majority are eighteen), and are all laid as headers and packed with chips; at the back the gravel is laid in layers of about three inches in thickness, watered and tamped; and at the rear of the gravel the tamped earth is laid, so that the revetment, gravel and earth, form one solid mass.

If required I can forward the data from which these rates were prepared.

4. By getting the new work above ordinary high water level so speedily, we have been enabled to fill Fischer's tank, the Native Infantry Goontah, and to fill the fort ditch to a greater height than it has been for twenty years; and had not the supply channel from the Chuttrum Nullah, and the delivery channel from Alipoor breached, a very large quantity of surplus water would have been thrown into Bellary.

5. The main bund having given way, and the banks of the two channels having been breached more than once, will, I trust, show that it is only wasting money to execute such works in any but the most substantial manner.

No. 230. From Colonel J. BEAN, R. E., Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 26th November 1872, No. 1,979.

I HAVE the honour to enclose, with reference to Under Secretary's letter,

- 2 Comparative Statements.
- 1 Survey.*
- 1 Estimate.
- 1 Letter.
- 1 Data for rates.
- 1 Section of channel bank.*
- 1 " of tank bank.*
- * By Banghy.

No. 147, dated 9th October 1872, a comparative statement showing the differences which exist between the several amounts of the sub-heads of the sanctioned estimate for the "Water Supply Project" of Bellary or "Alipoor Tank Project" and the expenditure incurred

under each head, with the causes of increase and decrease. Columns are also introduced showing the valuation of work actually measured in comparison with the expenditure incurred. The plans and documents as per margin accompany the statement. I have, as directed by Government, made a close scrutiny of all the accounts and papers connected with this project, and I have carefully gone over every portion of the work in two lengthened inspections.

2. The sixth and tenth columns of the comparative statement give nearly similar results with regard to their aggregate totals, though marked differences may be observed in the quantities and rates of work performed under the sub-heads of estimate. These columns represent the amount of estimate and the amount of expenditure incurred. There was an excess of 3,200 Rupees on the tank supply channel, whilst on the tank itself the short outlay was 2,700 Rupees, though this decrease is more nominal than real. There was also an excess of 1,600 Rupees on the tank head sluice, and a saving of 1,300 Rupees on the Cantonment Distribution Channel. I shall go into these figures more particularly hereafter, but as regards the tank bund I would observe that though there is a decreased expenditure of over 2,700 Rupees, the stone revetment work of the face is actually 9,000 cubic yards less than the quantity allowed in the estimate, and if this facing is to be carried out the cost alone will be 27,000 Rupees, the rate of work now being 3 Rupees instead of 1 Rupee per cubic yard. Though 6,900 yards (actually 5,352 yards) were said to be carried out instead of 14,900 yards, the cost* was almost the full amount of the estimate,†

* Rupees 14,892.
† „ 14,914.

the rate having risen to Rupees 2-2-4½ per cubic yard.

3. The Government will observe that I have in column 17 shown the total expenditure incurred above the value of work performed, which amounts to Rupees 6,505 3-4, that is to say expenditure incurred not represented by work, whilst Major Vertue in his report* under reference makes out this amount to be two sums of Rupees 18,690-15-5.

* No. 1,520, dated 28th September 1872.

4. To account for the discrepancy between these amounts it will be necessary for me to show in what manner the late Officiating Superintending Engineer calculated the expenditure under each sub-head, and compared it with the several corresponding items of the sanctioned estimate. In paragraph 6 of this report, Major Vertue gives certain heads of excessive outlay, the totals of which represent the net sum for which “work cannot be found” and the principal of these heads are revetment, masonry in anicut, head sluice, and sundries. As regards his calculation of excess in the item of revetment, he takes the actual work done to have cost 1 rupee per cubic yard, the rate entered in the estimate, whilst the work actually performed cost Rupees 2-2-4½ per cubic yard, and could not be done for less, a proof of which is shown by Mr. Fraser having to charge 3 Rupees per yard for revetment of the same nature now going on at the tank, though of a better description. Again, in the cost of the tank head sluice, Major Vertue shows the value of the reconstruction of the sluice which had to be undertaken. In the item of superintendence and sundries, likewise, the actual outlay incurred has been set aside, and the excess expenditure over the allotment in the estimate has been taken as a portion of the sum for which “work cannot be accounted for.”

5. Now, in making out the comparative statement of the increase and decrease of expenditure, I have adopted the usual course, and I have entered the actual cost of the work at the rates paid. These rates may or may not be excessive, and I shall have to make a few remarks on this subject further on, but it

cannot be said, because increased expenditure over estimate has been incurred from enhanced rates and from other causes, that such expenditure represents the outlay on work “unaccounted for or not found.” As I said above, I have given full valuation for work performed in column 16, and the total of this column deducted from the actual outlay, column 10 will give a result representing really the unaccounted for expenditure.

6. The abstract statement shows that the excess unaccounted for was incurred principally under the following heads:—

	RS.	A.	P.
1st.—Revetment and other work of tank	...	...	3,488 12 2
2nd.—Revetment and other work of supply channel	...	...	2,301 12 5
3rd.—Construction of tank head sluice	...	...	347 1 10

the other small items of increase were on the anicut and its head sluice.

On the first head, though the cubic yards of tank revetment actually measured amounted to 5,352 yards or 9,562 yards less than the estimate, the outlay was Rupees 14,892 or Rupees 22 short only of the sanction, and this was caused by the work being carried out per yard at Rupees 2-2-4½ instead of Rupee 1 per cubic yard, as remarked in paragraph 2.

To account for the enhanced rate, from 4 to 6 rupees per 1,000 were paid for stones, and 12 annas per square yard for building, and 6 annas per yard for broken stone as packing in rear. The data is given elsewhere. The difference of 1,586 cubic yards of stone charged for

Cubic yards.	Rupees.
14,914	14,914
5,352	14,892
9,562	22

on the tank face cannot be found. On the Chuttrum Nullah channel which supplies the tank, the estimate allowed 308 cubic yards of stone pitching, but 720 cubic yards were actually carried out, and for this revetment a sum of Rupees 3,548 was charged in cost of stone conveyance to the spot and packing per yard. The rate at which this work ought to have been done was Rupees 1-9-3 per yard, and there is no explanation given of this large excess. All that I can discover in the station books, etc., to account for the very large outlay of Rupees 3,548, instead of Rupees 1,136 allowed for, are the entries of payments made for stone, packing charges, and lump sums given to wudders, making up the above amount.

The third item of excess is not large, and considering that the sluice having been found to have been built in a wrong place and wrong level, which caused much leakage, was in great part rebuilt, I am surprised that so little was expended in excess of the sanction.

In reference to the tank revetment, I would observe that it was intended to face the inner bank of the tank to its full height with stone, but the plan herewith forwarded of the tank bund will show how much of this work was carried out. When the measurements of the earthwork were checked by Colonel Palmer in April 1870, he discovered that Serjeant Swallow, the Sapper Non-commissioned Officer, had overpaid the contractors to the extent of 36,896 cubic yards, but owing to his having been enabled to carry out the work at the average rate of

Serjeant's measurements	...	132,350
Bund measurement by Colonel Palmer	...	95,454
		36,896

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eight cubic yards in place of six cubic yards per rupee, the estimated cost, the loss which accrued to Government was not so great as it otherwise would have been. The quantity in the estimate was 134,796 cubic yards, the quantity charged for was 150,036 cubic yards, and the quantity actually measured by Mr. Fraser 114,847 cubic yards, which nearly coincides with the amount of discrepancy discovered by the former Executive Engineer. The Serjeant was removed from the work, his incorrect measurement having been supposed to have been made through his inexperience and not with any fraudulent intent.

7. These are all the remarks I have to make on the causes of an excess charge of Rupees 6,505-3-4, for which no work can be found. As the estimate ran out when only half the revetment work of the tank was completed, I suppose it was Colonel Moberly's intention not to raise the work to any further height, at least I would gather as much from his letter to Government embodied in G. O., No. 578, dated 2nd March 1872.

8. As regards an outlay of Rupees 10,334-8-8 under the head of "Superintendence and Sundries," when only Rupees 3,939-3-3 were allowed for these items in the estimate, it would appear that the probable outlay to be incurred was miscalculated. The cost of the Serjeant's allowance and small establishment amounted from January 1868 to March 1870 to Rupees 2,012-13-7. About forty huts were built for the Sappers at Alipoor at a cost of 2,000 Rupees. These were set on fire accidentally, and on this account Rupees 1,240 were written off to Profit and Loss in G. O., No. 3,017, dated 27th September 1867. The Sappers' huts with mud roofs were rebuilt at a cost of nearly 5,000 Rupees, so that these charges alone are nearly sufficient to account for the increased outlay. To sum up the results of the comparison between the estimate as sanctioned, and the work paid for on this estimate, the following excess outlay appears:—

	RS.	A.	P.
On Anicut	...	...	...
„ Head Sluice	...	...	...
„ Supply Channel	...	...	...
„ Tank Sluice	...	...	...
„ Superintendence	...	...	...
„ Sundries	...	...	...
	5,191	5	6
Deduct decrease on tank	...	...	...
	11,554	4	2
	2,757	5	10
Deduct decrease on three famine relief works not carried out	...	...	...
	8,796	14	4
	6,777	4	2
Net excess...	645	12	2

which would have been increased to the above sum of Rupees 8,796-14-4 if the allowance for work already carried out in the estimate had not been appropriated.

9. I have now to remark on the project itself, on the way it was carried out, and the causes which have led to a very large estimate being still required to be sanctioned to supplement the outlay already incurred on the Bellary Water Supply Works before they can be considered safe from further danger of breaching. The project, amounting to 69,300 Rupees, was sanctioned in G. O., No. 947, dated 26th March 1867. It consisted of an anicut thrown across the Chuttrum Nullah stream about seven miles from Bellary, with head sluice, from which a channel was led, nearly two miles in length, to feed the new Alipoor Tank. A head sluice

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was constructed in the bund from which a channel was taken off to feed Fischer's tank, a small reservoir, which supplied a small goontah in the Native Infantry lines and the fort ditch. The channel to the ditch was to be improved, and a distribution channel dug for feeding certain cantonment wells. The channel from Alipoor to Fischer's tank, a small road tunnel, and the improvements to the channel from Fischer's tank to the fort were carried out from famine relief funds and not charged to this estimate.

10. The sanctioned estimate allowed for a head sluice of five vents with shutters. The work has been erected without any sluices or vents in it; it is merely a floor on the level of the bed with wing-walls, and the only reason I can ascertain from Mr. Fraser for the deviation was the want of money to complete the design. The channel from the sluice to tank was intended to have a fall of 2 feet per mile, and carry 69,000 cubic yards per hour, as reported in the specification and letter to Government. On examining the bed and inspecting the levels, I find that the fall, as carried out, though all the sections vary, is from 4 to 5 feet per mile, giving a discharge with 20 feet at sole, and height of water 5 feet, side slopes 2 to 1, of 97,000 cubic yards per hour. The channel from the Chuttrum Nullah crosses a large jungle stream, which is a branch of the one dammed up to from the tank, and which joins it again below the tank bund. To cross this jungle stream a small bank with loose stone revetment without foundation, laid on the bed in cotton and mixed soil, has been thrown up. The Chuttrum Nullah has a fall of average 25 feet per mile, and when in flood rushes down with great rapidity; its supply, which must be five times the quantity capable of being drawn off by the tank supply channel, is derived from the Copper Mountains and the water shed is the same as that which feeds the jungle stream bunded across by the supply channel. These two jungle streams, therefore, are in flood together, and when the channel is full, the water backs and the weak bund is overtopped, as well as breached where it crosses, from end to end. A section of this bund of the channel is given in plan A, and there is nothing on record to account for the officer in charge having permitted such a section, perpendicular in parts, to be built. No effort likewise has been made to turn this jungle stream into the tank, and so ease the pressure on the channel bank, which might easily have been done, and the levels of the supply channel are so defective that the inlet into the tank is two feet above the bed of the jungle stream.

11. The Alipoor tank revetment was built of small stones without any attempt at foundation, and the toe rests in the cotton soil of the natural ground, now the bed of the tank, instead of on the gravel below. When the water was let into this reservoir the porous soil subsided and cracked, and the revetment slipt, causing fissures in the bank and settlement in the stone courses. The "stone chips," as they are called in the report, laid at the back of the stone, without any layer of gravel or hard material of any kind, afforded but little support to the stone pitching, and did not arrest the settlement of the face when the water reached it.

12. The sluice was built in the lowest bed of the tank in the jungle stream which was to be dammed up. It was found to leak excessively when first building, and Colonel Palmer gave orders to have most of the upper work pulled down, and

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the foundations and body raised to a higher level. The channel from the sluice to Fischer's tank is taken off on a low level, and breaches into the jungle streams which cross the tank and Chuttrum Nullah supply channel. This channel is out of level, for in carrying out the work rock was met with below the bed, and no money was forthcoming to remove it effectually and so rectify the fall. I would refer to Mr. Fraser's report, embodied in G. O., No. 578, dated 2nd March 1872, for information on this point. The channel from Fischer's tank to the Native lines goontah is in the same state, for the rock found in the bed has not been blasted away in sufficient quantity to give an even fall, and in both these channels, when the bed is full, the water backs up to a considerable extent. The channel which feeds the Fort Ditch from Fischer's tank, and which passes through the cantonment is in need of repair in places, where it skirts the public road and where the surface drainage has passed through the revetment of the channel bank and breached it.

13. Owing to the weak state of the Chuttrum Nullah channel banks, there was some apprehension that the water could not be passed down, and immediately a supply was obtained Mr. Fraser was obliged to left off the water from the tank, from the banks showing signs of settlement. So long ago as the 8th June 1870, when the work was in progress, Colonel Palmer reported to Colonel Moberly that a night's fall of rain of 5 inches had breached the channel at the site of the cross drainage above referred to. Again, in paragraph 3 of Mr. Fraser's report mentioned in the above G. O., it is stated that another breach, which had occurred in 1871, was closed. In Major Vertue's letter of the 13th September 1872, No. 1,360, paragraph 10, reference is again made to the breaches which had taken place in the channel from the late rains. The tanks and channels from Alipoor have been lately of some use, for the water which gathered in the former was let down to the Fort Ditch and Native Infantry Goontah, but it was impossible to retain any water in the Alipoor Tank, in the dangerous state of its banks, and no supply could be received from the Chuttrum Nullah, the channel from the anicut being breached as above stated.

14. As regards the charge for Sapper labour, Rupees 9,802, which has been added to the expenditure on the project, and regarding which I am ordered to report, I beg to say that in G. O., No. 1,304, dated 1st May 1867, a party of Sappers was stationed at Alipoor to construct the tank. Their working pay was monthly charged to the estimate, and the revetment of the bund carried out by them, from the sluice northwards, has stood well, and forms no portion of the work reflected on in this report. It also appears that the Sappers were employed in Bellary on Cantonment works in 1869-70 and 1870-71, and the Controller, on the 2nd August and 1st November 1871, wrote to the Superintending Engineer to afford credit to the Military Department for the amount of work done by Sapper labour, and to know why the transaction had not been adjusted. He wrote again on the same subject on the 9th March 1872, when circulating a requisition from the Accountant-General to know whether the value of work actually performed by Sappers in those years had been adjusted in the accounts of the Presidency for 1871-72. Colonel Moberly does not appear to have had any bills forwarded to him previously for Sapper labour in Bellary, and he was furnished with a statement

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by the Commandant of Sappers, dated 8th July 1871, showing the amount to be Rupees 9,802-3-6. The matter was again brought to the Superintending Engineer's notice in an endorsement, without date, from the Controller in the end of March 1872, and an allotment of Rupees 6,900 was made for adjustment, in part, in the orders marginally noted. In Mr. Fraser's letter to the Superintending Engineer on the 24th April 1872, he reports that he is unable to verify these bills, as there were no check measurements and no means of measuring the work done by the Sappers at Allipore. Colonel Prendergast's bill* was submitted separately for the work done on the project and in Bellary, but the works in Bellary have been closed and no separate account has been kept. In G. O. No. 919, dated 19th March 1869, instructions were issued to credit the Military Department in the cost of work done by the Sappers and Miners, but it was not properly attended to in the range, and, moreover, no bills appear to have been submitted by the Sapper Officers. It is now impossible to separate the expenditure and show what is properly debitable to the Allipore tank project, and what to Bellary cantonment works.

Vide G. O. No. 872-C, dated 30th March 1872, originally No. 874, dated 30th March 1872.

		RS.	A.	P.
*Allipore Tank work	...	5,105	5	0
Cantonment under Executive Engineer	...	4,696	14	6
		9,802	3	6

15. I now beg to enclose the estimate* for Rupees 8,628, submitted by Major Vertue with letter No. 1,520, dated 28th September 1872, which provides for immediate requirements, but I have requested Mr. Fraser to hasten the preparation of the supplemental estimate before his departure for Kurnool. The work is going on, and the rates are high as compared with former work, but the quality is superior, whilst great care is taken with the stone work and tamping. I submit the data and would observe that the rate for stone work allows a full thickness for solid stone one yard, whilst the original estimate, in its rate per yard, included stone chips in the rear of the revetment. I regret to say that Fischer's tank requires repair, as the bank is leaking and the provision for it should be made in this estimate. I regret also to observe that a large sum will be required to place the project, as regards the safety of the works, in a satisfactory state. I believe not less than 30,000 or 40,000 Rupees.

16. I have already observed that the chuttrum nullah has a very rapid fall from the hills, and, as the rainfall is limited to very short periods, the water passes down with great rapidity and in a few hours, during which period the tank must be supplied. Mr. Fraser proposes to abandon the present head-sluice, or to supplement the supply by giving the channel a new head more in the direction of the nullah. I am not altogether in favour of this arrangement, because the channel has a very rapid fall, and, owing to the large amount of cross drainage, it is necessary to regulate the supply at the head. I would, therefore, have cross bars and shutters provided for in the estimate, not vents, and the levels of the bed of channel rectified as far as possible. The work of repairing the breaches will be very expensive, as it will not only be necessary to pull down the present revetments

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and rebuild them with good foundations, but to regulate the course of the jungle stream crossing the channel. At Allipore tank the revetment has already been in course of re-construction, and a good deal has been done in a permanent manner. I have already observed that 9,000 cubic yards of stone would still have to be built were the original plan decided on, but it will not be necessary to revet to the full height of the bund, and the thickness may be reduced, below one yard, as the work approaches the top. A deviation at the head of the present supply channel is proposed by the Executive Engineer, which will involve extensive cutting, to avoid the low grounds in the vicinity of the Dharwar road which is flooded. I do not consider this work essentially requisite, and I would provide only for the rectification of the levels between the Allipore and Fischer's tank by the removal by blasting of the rocks. It is necessary further to strengthen the latter tank bank and to rectify the levels, in a similar way, of the channel from this reservoir to the Native Infantry tank, as well as to repair and re-build the revetment of the channel from Fischer's tank which feeds the fort ditch and thus supplies the Native bazaars.

17. To briefly re-capitulate the work remaining to be done, it will be necessary:—

1st.—To regulate the bed of the chuttrum nullah near the anicut, to prevent a scour round the wing, and to regulate, by shutters, the supply at the head-sluice of the delivery channel.

2nd.—To rectify the levels of the bed of the supply channel, to fill in the breaches, strengthen the banks, re-build the revetment, and to alter the course of the jungle stream.

3rd.—To re-build the tank bank and revetment in portions, and to raise the latter to its proper level.

4th.—To alter the levels of the supply channel to Fischer's tank from Allipore tank, and

5th.—To repair Fischer's tank, and supply channel from it to Bellary fort ditch, as well as to rectify the levels of the channel to the Native Infantry small tank.

18. I regret that this report should extend beyond the limits I had intended, and that neither officers nor subordinates who were in any way connected with the execution of the project are available to afford information as to the accounts and details of work done. Even the Head Accountant of the range has been dismissed prior to my investigation, and I have been obliged to trust solely to my own examination of the documents forthcoming in the office, and to the measurements of the works taken by officers who had taken no part in the work operations.

Expenditure, including Sapper labour, to end of 1871-72 ...
Estimate for emergent works.

RS.	A.	P.
79,707	13	10
8,628	0	0

Supplemental estimate, say ...

88,335	13	10
35,000	0	0
1,23,335	13	10

19. The sanctioned estimate amounts to Rupees 69,300, and, as Rupees 1,23,300 may have to be expended, as per margin, before the works are in thorough order, an excess of Rupees 54,000 will be incurred.

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No. 231. From Lieutenant-Colonel J. G. PALMER, Executive Engineer, Public Works Department, on furlough, to the Secretary to Government, Public Works Department, Fort St. George, dated Bath, 30th October 1872.

I HAVE the honour to acknowledge the receipt of Proceedings of Government, dated 6th September 1872, No. 2,119, and, in compliance with the instructions therein contained, beg to offer the following statement for your favourable consideration.

2. Having been absent from India seventeen months, and without access to office records or local information, my statement must be more general than I could wish, and I must trust to memory on many points; I hope therefore that full consideration may be accorded and allowance made for any apparent shortcoming.

3. I beg respectfully to point out that, on joining the range, I found that the Bellary timber yard had for many years been a source of difficulty and anxiety to the officers in charge, and when I joined there was not only considerable confusion in the timber accounts, but a large quantity unaccounted for, subsequently struck off the accounts by order of Government. My predecessor assured me he had so received charge, and that he had given it his utmost and closest attention, but without success. He could not unravel the mystery of the accounts, but believed robbery to take place from outside. He had failed in an endeavour to get men punished by the Cantonment Magistrate.

4. The intricacy of the accounts was so great, that I appealed to Colonel Moberly, the Superintending Engineer, for an efficient Yard Superintendent, some one who had been accustomed to the working up of timber; but he informed me that he could not make an application to that effect, as on a former occasion they had refused him a similar demand before I joined.

5. No suspicion ever attached to my Head Accountant, and finding him in all his accounts apparently scrupulously correct, and receiving a high character with him from my predecessor, I trusted him more than I otherwise would have done, feeling at the same time sure that the check of the Controller's Office would keep matters straight, and I made it my more particular concern to superintend the construction of works which had formed subject before I joined of severe animadversion, and I am sure I effected a great reform.

6. Unfortunately, the order to close our stock account was received, and this could only be done by debiting works in progress with unwrought timber and timber in log; and this, as works progressed, caused repeated re-apportionments or transfers between different works; to these transfers I now attribute all the irregularity and possibly opportunities for fraud, and I now see that I have laid myself open to the serious and severe construction placed on those acts by Government of endeavouring to conceal deficiencies. The original transfer of timber from stock to different works I looked upon as a book, not a cash, transaction or entry, and the practice of transfer must have lessened in my mind the integrity of such entries, as it was not present to me that I was doing wrong.

7. On the Accountant suggesting to me that there was something wrong about the timber, I endeavoured to take stock to ascertain its actual state (there was no stock account, as it had been closed), but the timber having been charged over so many works, and mixed up with expenses of working it up, only approxi-

mate estimates could be made, and in these many errors were from time to time detected. The heavy duties of the office, and the absolute necessity of despatching the regular monthly accounts so as to reach the Controller's office by a given day, rendered it almost impossible to find time for searching investigation into such complicated additional work. Moreover I was convinced, and my Head Accountant was of the same opinion, that robbery took place from outside, and from the following statement I hope Government will credit me with using every possible exertion to unravel the cause.

8. I at once reported matters to the Police, and had suspected persons tried before the Cantonment Magistrate, and, in one case where I discovered a deliberate fraud, was successful in having the man punished with a month's imprisonment. At the suggestion of the Police, I kept a man on pay in their service in the yard. I again asked for an efficient Superintendent, but again the Superintending Engineer informed me the application would be useless, having been before so decidedly refused. I mentioned matters to General Shubrick, Commanding the Division, who placed sentries inside and outside the timber yard.

9. I applied to Government, through the Superintending Engineer, for the purchase of a house which stood at one corner of the yard, and was formerly the residence of the Overseer, it had windows and a door opening into the yard through which robberies might I thought be effected; I was authorized to make terms with the landlord, but he stood out for such an exorbitant price, so much more than its actual valuation, that Government declined to purchase it and were averse from taking it up as I suggested under Act X.

10. I had acted upon the resolve I had early formed and purchased no more timber; but from time to time as the wood was used up, reduced the employés in the yard and gave all wood work out on contract.

11. On mentioning the frauds to the Controller when he visited my range in 1870, he told me it was a remarkable fact that every timber yard in the Presidency had been in difficulties; the temptation to plunder was so great.

12. I respectfully submit that the above statement shows anything but a wish on my part to conceal deficiencies; but, on the contrary, I was most anxious with the assistance of the Police, to discover the source of these frauds, before reporting matters to Government.

13. I was in daily contact with the Police authorities, who never hinted a suspicion against the Head Accountant.

14. Unfortunately, I was suddenly attacked by an illness which necessitated my return to England; even then, against medical advice, I delayed my departure for six months; I wished to put the whole case personally before my successor, but again, unfortunately, he was more than once prevented from joining on the dates he himself had fixed.

15. I trust I have now satisfactorily shown that I was not inert in my endeavours to trace the frauds now brought to light, and that Government will not condemn me in anything more than a want of judgment in the transfer and re-transfer of timber; and, considering my long service of nearly thirty-one years, eighteen of which were passed in the department, they will graciously save me from the disgrace of public removal from my appointment.

No. 232. From Lieutenant-Colonel A. S. MOBERLY, R.E., on furlough, to the Secretary to Government, Public Works Department, dated Kensington, 25th October 1872.

WITH reference to G. O. No. 2,119 of 6th September 1872, I have the honour to inform you that it is with extreme regret I learn that Government consider I showed grave neglect of duty and absence of check in the matter of the timber accounts of the Bellary Range.

2. I would beg to draw attention to the correspondence that passed between Lieutenant-Colonel Palmer and myself, copies of which were submitted to Government, and to inform you that the subject of the timber accounts of the Bellary Range was constantly discussed between Lieutenant-Colonel Palmer and myself whenever I was in Bellary. In a letter, copy of which has been submitted, Colonel Palmer distinctly stated that the loss then reported was the whole amount deficient, and in a subsequent letter stated that, as all the wood-work in future was to be given out on contract, there could not occur again any deficiency.

3. In the absence of records, etc., it is impossible to give correct dates, but I believe I am correct in stating that, at the time of my hearing of the deficiency above referred to, I was on a tour of inspection in my division, the largest in the Presidency and the one with the greatest number of ranges. It is true that Bellary was my head-quarters; but a reference to my diaries will show that I was away on tour during the greater part of the year.

4. As I have already stated the subject of the timber accounts of the Bellary Range was constantly discussed between Colonel Palmer and myself whenever I was at Bellary; he had informed me in writing that there was at that time no other deficiency in the timber, but what he had reported, and subsequently told me that Kamal Saib had not brought in some logs which he had to cart in; but as I was led to understand that the amount due for cartage covered the value of the logs and that there would be no loss to Government, I did not see any necessity for inquiring further into the matter, particularly as Kamal Saib never made any complaint to me until the beginning of this year and after I had submitted the matter to Government. I knew that the Bellary Range Office found great difficulty in keeping up the office work, and so I did not wish to give extra work unless I could see good reason for it, and, as Colonel Palmer himself reported in writing a deficiency and stated that that amount comprised the whole deficiency, I respectfully contend that I had no reason but to believe that Colonel Palmer was telling me the whole truth.

5. It is difficult to understand how Colonel Palmer came to make the statements to me he did knowing, at the time he reported, a small deficiency; that from the stock-taking the deficiency was some thousands. I had no reason to doubt Colonel Palmer's word, and as he himself reported the deficiencies to me, I had, I would respectfully urge, every reason to believe that the information he gave me was perfectly correct. As I have already stated in a previous letter all knowledge of the several stock-takings was kept from me, they being, as the dates show, always taken when I was away from Bellary. The last that was made by Colonel Palmer was in 1871, during my absence on privilege leave, and when he was in charge of my office, and though Colonel Palmer went away himself on

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furlough shortly after my return from privilege leave, he never mentioned anything about any deficiency except as regarded Kāmal Saib.

6. I would respectfully urge that it is very difficult, if not almost impossible, for a Superintending Engineer or any one else to discover a matter of this kind if the Range Officer and his establishment are determined to conceal matters, unless he had reason to believe that they were concealing matters. The Controller of Public Works Accounts examined all the books of the Bellary Range. If I remember rightly it was just about two years ago, and expressed himself greatly pleased with the manner in which the books were kept. Copies of estimates are supposed to be sent to him, and, if not sent, he had only to report the Range Officer; more detailed information was submitted monthly to his than to the Superintending Engineer's Office, and if an officer of his experience failed to discover the defalcations, I, with due respect to the opinion of Government, contend that I could not be expected to discover them. It was only in the case of the transfer of the range on the relieving officer carefully measuring up all the timber at the different works that the matter would be discovered, and the difficulty even then in arriving at a correct statement is exemplified by the great difference between the last stock-taking as made by Colonel Palmer, the estimate prepared by Mr. Fraser after careful examination of the books, etc., and that now arrived at by the Controller.

7. There is one point which the Controller has not mentioned in his letter, but which he had informed me in conversation he would bring to the notice of Government, and that is the percentage (25 per cent.) allowed for wastage. He told me, and subsequent inquiries I have made lead me to believe, that this is utterly insufficient, and that the average which should be allowed is nearer 40 per cent. Taking this difference of 15 per cent. on the purchases made after March 1868, namely, Rupees 78,396-9-3, as per paragraph 6 of the Controller's letter, the extra sum that should be admitted for wastage is about Rupees 11,760.

8. With due deference to the opinion of Government, I respectfully urge that I did not neglect my duty, but that my fault, if such it can be called, was entrusting, not only the work but also the written statement of an officer older and of longer service than myself; and I again repeat that it is extremely difficult, if not almost impossible, for a Superintending Engineer or the Controller to discover false entries in the course of their examination of a Range Officer's books, if the Range Officer and his office establishment set themselves to keep the matter from his knowledge, unless something should crop out to lead him to suspect some wrong doing.

9. In conclusion, I beg I may be furnished with a copy of G. O. No. 1,376 of 3rd June 1872, as no copy has been supplied to me, and I am at a loss to know in what manner I mismanaged the 3rd Division.

No. 233.

ORDER THEREON, 11th March 1873, No. 769.

ESTABLISHMENT, No. 28.

AN estimate of Rupees 69,300 was sanctioned in G. O. No. 947 of 26th March 1867, for the "Allipore Tank Project," a Military work, intended to improve the water-supply of the Bellary Cantonment.

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In his letter recorded with G. O. No. 578 of 2nd March 1872, Lieutenant-Colonel A. Moberly reported that the scheme was so far a success that water had been let in to the cantonment reservoirs in sufficient quantity to remove all apprehensions of any scarcity occurring in that year. He reported at the same time certain defects and damages which he hoped to meet by savings from the allotment for Military Repairs. A sum of Rupees 7,745, afterwards increased to Rupees 8,628, was reported by Major Vertue as having been estimated to be required for such repairs which were found to consist chiefly of re-building portions of stone revetment which showed signs of slipping; and, in their Order No. 2,326 of 4th October 1872, the Government authorized the carrying out of such work as was emergent.

2. But Major Vertue had at the same time stated that a very considerable additional expenditure would be necessary before the water-supply could be based on a sure and satisfactory footing; and with a further communication he sent in a comparative statement prepared by the Executive Engineer purporting to show that no less than Rupees 25,196 had been paid away in excess of the value of work actually performed. A comparative statement, of which abstract is appended, submitted by Colonel Bean with his letter No. 1,979 of 26th November 1872, reduces such excess to Rupees 6,505-3-4, and explains that the former sum was arrived at by the measured work being charged only at estimate rates, although it was admitted that the rates which had actually to be paid were much higher, and by charging the large excess of Rupees 6,400 on *superintendence* and *sundries* as unexecuted work.

3. It is perfectly impossible that the true state of affairs with reference to this work can be understood until a detailed estimate is submitted showing what more is required to be done, with which should be prepared a statement showing work already performed and remaining to be performed under each head of the original sanction. All that can be made out at present is that Rupees 79,707-13-10 were spent up to 31st March 1872 against a sanction of Rupees 69,300 (which should have been reduced to Rupees 62,500 by deduction for three items of the estimate carried out by famine agency and funds) out of which gross outlay Rupees 9,802 was spent on Sapper labour, which is quite unaccounted for, and Rupees 6,505 has been paid for work which cannot be found; that Rupees 8,638 are required for emergent repairs to the works executed; and that it will take Rupees 35,000 more to complete the work, some 9,000 cubic yards of revetment to the Allipore tank alone, estimated to cost Rupees 3 a cubic yard, having been left undone. The Government have not yet been supplied with the detailed estimates supposed to have been taken in hand by Mr. Fraser and promised shortly to be laid before them, and must now rely on Captain Edgcome's going thoroughly into the project and submitting, at the earliest possible period, a trustworthy report and estimate based upon correct levels and data.

4. In paragraph 3 of their Order No. 2,119 of 6th September 1872, the Government had already stated their opinion that nothing could justify or palliate Lieutenant-Colonel Palmer's conduct with reference to the Bellary Timber Accounts; on which ground alone it was announced to him that his removal from the Public Works Department was contemplated. His letter of 30th October 1872 having failed to give any satisfactory explanation of the concealment of deficien-

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cies in the stock under his charge, His Excellency the Governor in Council resolves to carry into effect the removal of Colonel Palmer from the Department Public Works and his remand to Military duties, without reference to the charge of executive inefficiency which might be brought against him in connection with the Allipore Water Supply Project. It will take effect from the end of the current official year.

5. From the same date Lieutenant-Colonel A. Moberly will be reduced in the departmental list of Executive Engineers of the 1st grade, to rank below all officers who have acted as Superintending Engineers, i. e., next below Mr. R. Smith; and he will forfeit on return to duty the personal allowance he would otherwise have drawn as having attained the rank of Superintending Engineer under the former organization. It will be open to him to lay before Government any explanation he may wish to give of his share in the responsibility for the mismanagement of the Allipore works; but he will understand that the Government are dissatisfied with the defence made by him under date the 25th October 1872, in reply to paragraphs 5 and 6 of the order above quoted, which has failed to remove from their minds the impressions they had been led to conceive of his gross neglect of his duties in connection with the Bellary timber transaction and the work of the 3rd Division generally.

(True Extract.)

Colonel, R. E.,
Secretary to Government.

To the District Engineer, Bellary.
" Military Department.
" Controller of Public Works Accounts.
To Lieutenant-Colonel A. S. Moberly, R. E.
" J. G. Palmer.

Ed. E. C. Shunker.

Item of Work.	Estimate as sanctioned.	Amount actually Paid.	Increase.	Decrease.	Difference between Columns 2 and 3, and 4 and 5.	Value of Work actually performed and measured.	Difference between Columns 3 and 7.
1	2	3	4	5	6	7	8
1. Anicut across Chuttrum Nullah ...	Rs. A. P. 2,542 14 3	Rs. A. P. 2,791 3 1	Rs. A. P. 917 9 8	Rs. A. P. 669 4 10	Rs. A. P. 248 4 10	Rs. A. P. 2,565 10 8	Rs. A. P. 25 8 5
2. Head Sluice ...	1,030 11 8	1,162 13 0	340 7 3	268 5 11	72 1 4	965 0 6	137 12 6
3. Channel from Chuttrum Nullah to Allipore Tank.	8,206 11 2	11,414 7 4	3,707 12 2	500 0 0	3,207 12 2	9,112 10 11	2,301 12 5
4. Allipore Tank.	41,592 6 10	38,835 1 0	504 13 0	3,262 2 10	2,757 5 10	35,346 4 10	3,488 12 2
5. Do. Calingulah ...	1,069 3 3	1,069 3 3	.....	.....	.....	1,064 15 3	4 4 0
6. Do. Sluice ...	2,141 9 5	3,772 6 1	1,630 12 8	.....	1,630 12 8	3,425 4 3	347 1 10
7. Channel from Allipore Tank to Fischer's Tank.	3,838 8 4	.....	.....	3,838 8 4	3,838 8 4	.....	.....
8. Road Tunnel ...	938 11 10	.....	.....	938 11 10	938 11 10	.....	.....
9. Improving Channel to the Fort Ditch.	2,000 0 0	.....	.....	2,000 0 0	2,000 0 0	.....	.....
10. Distributing Channel ...	2,000 0 0	626 2 0	.....	1,373 14 0	1,373 14 0	626 2 0	Incomplete.
11. Superintendence ...	840 0 0	2,013 15 8	1,203 15 8	.....	1,203 15 8	2,043 15 8	Nearly 20 per cent. on the valuation of work performed.
12. Sundries ...	3,039 3 3	8,290 8 9	5,191 5 6	.....	5,191 5 6	8,290 8 9	.....
Total...	69,300 0 0	69,945 12 2	13,496 11 11	12,850 15 9	+ 645 12 2	63,440 8 10	6,505 3 4
	.....	9,802 3 6	Paid for Sapper labour.	.....	.....	.....	.....
	.....	79,747 15 8	.....	.....	.....	.....	.....

Work performed with Famine Relief Funds.

No 415 of 1872/73, Bellary Range Office
Bellary 26th Sept/73

From,
The Executive Engineer
Bellary Range.

To,
The Superintending Engineer
3rd Division,

Sir,

I have the honor to forward
a revised Abstract of the Estimate
for repairing the Burns of Alipore
Tank.

2 This revision has become
necessary, as I found, during the
progress of the work, that some
of the rates were much too low.
Besides this the Contractor was hurried
through the earlier part of the work
so that we might get the new renet-
ment above the ordinary high-
water level before the heavy rains
set in; in which, as you are aware,
we happily succeeded; but at
the expense of very considerable
cost to the Contractor, not only from
the crowding of the Coolies, but from
his having to pay enhanced Rates
for every description of Labor.

I need not say any thing

of the quality of the new work
as you have seen it, and I think
you will admit that ordinary
rates are not sufficient for work
of this description.

3 No stone in the revetment
is less than 16" in length, (the majority
are 18") and are all laid as headers
and packed with chips, at the
back the gravel is laid in layers
of about 3" in thickness, watered
and tamped, and at the rear
of the gravel, the tamped earth
is laid, so that the revetment, gravel
and earth form one solid mass.

If required, I can forward
the data from which these rates were
prepared.

4 By getting the new work
above ordinary high water level
so it speedily we have been enabled
to fill in Fischer's Tank, the statue
Infantry Gun, and to fill the
Fort ditch to a greater height.
It has been for 20 years, and
has not the supply channel
from the Chuthramullah, and
the delivery channel from Cleppow
breached, a very large quantity of
surplus water would have been
thrown

12
thrown into Bellary
5 The main levee hanging
given way, and the banks of the
two channels hanging been breached
more than once, well, I trust, when
that it is only wasting money to
execute such work in any but
the most substantial manner

I have the honor to be
Sir
Your most obedient
Servant
William Fraser. C. B.
Executive Engineer

Forwarding a revised
estimate for repairing
the old
Tank Road Amount
May 5th 1872.

Enclosed are.

1872.

1872.

1872.

1872.

1872.

1872.

1872.

1872.

"Repairs"

"Abstract Estimate"
Bellary District.

"Military"

Abstract of an Estimate for repairing the Bund of Allipoor Tank. 13

Number of Items.	Quantity	Description of work.	Rate per	Amount of each part	Amount
1	1327.37	6. yards of stone removed from the old Revetment	9	byd	62 36
2	1008.98	" of earth removed from the old Bund	18	"	938 56
3	1593.87	" of earth in trench for foundation of new Revetment	2	"	199 39
4	663.865	" of stone work - rebuilding revetment with old stones	1	"	663 13 10
5	972.941	" of " with new stone	3	"	2918 13 2
6	1121.83	" of gravel carted, averaged 500 yds and tamped with 100 yds near of Revetment	9	"	636 13 11
7	2151.982	" of gravel backing, the gravel being got near the work	14	"	605 3 11
8	6672.64	" of earth work tamped the earth being got from the old Bund	32	"	1320 10
9	3336.32	" of new earth work including tamping	1	"	834 1 3
10	865.38	" of filling in and tamping foundation trench	9	"	40 9
Total					8219 13 10
Contingencies 2% at 5 per cent					408 2 2
Total Estimate of Expend					8628

Bellary Range No. 1

Bellary

26th September 1872.

James Weir

Off. Supply Engineer of
Majors Rd

Executive Engineer.

14

William Rando

C.E.

No

No. 1520

Superintending Engineer's Office,
3rd Division.

Bellary 28th September 1872

15

From,

The Superintending Engineer

3rd Division,

To,

The Secretary to Government
Public Works Department
Fort St George

Enclosures. 8.

Sir,

102326
H. Schipp

In continuation of the remarks
recorded in paragraphs 7 to 10 of my
Letter under date the 15th Instant, No. 1360
I have the honor to submit a further
report regarding the work known as the
Bellary Water Supply Project.

2. In my Letter referred to, I
brought to the notice of Government,
in general terms, the defective construction
of the work, and recorded my opinion that
a large expenditure will have to be in-
curred to thoroughly repair the tank

Received
The Officer in-
charge of Bellary
District
The Superintending
Engineer
3rd Division
Bellary
28th Sept. 1872
Michael Joseph
for representing the
of Bellary District
28th Sept. 1872

and Channels. The Estimate for this is in course of preparation and I have asked Mr. Fraser, Executive Engineer, to put the same out of hand as soon as possible, as it is very desirable to have the work completed in time for the early rains in 1873.

3. I regret it is my duty to bring to the notice of Government a "Check Statement" of work done, as compared with Expenditure and Sanctioned Estimate for this project. The Statement which accompanies shows that work to the extent of Rupees 25,200 cannot be accounted for thus:-

At Expenditure as shown in Columns "as paid for"	}	69,946.
As per measurements taken by or under orders of Mr. Fraser -		

Difference less Rs. 25,196.

4. The headings with which I have to deal (Vide Abstract), are:-

2^d Sheet

I. As Estimated for
 II. As paid for
 III. As it exists
 IV. (Difference between II and III which under the sub-heads of "Increase" and "Decrease" represents value.

5. Under sub-head "Increase", I find only one item for Rupees 4, for which Mr. Fraser found work done to the full value. This, therefore, calls for no observations.

6. Under sub-head "Decrease" the principal items are:-

Earthwork	Rs. 2,283
Revetment	12,111.
Masonry in Aricut	} — 2,091.
Head sluice. See -	
Incudries	8,550.

Rupees — 25,035.

Other items — 165.

Total Rupees — 25,200 — Rs. 25,196.

The net sum for which work cannot be found.

7. In the absence of the responsible Officers, it cannot of course be expected that I would be able to ascertain the precise particulars which led to this state of things. I am therefore, necessarily obliged to confine my remarks to information obtainable from records.

8. The work done under this head by the Department appears to have been to the Tank itself and supply Channel above it.

The deficiency against this item is Rupees 2283. I was disposed to attribute a good deal of this to Mr. Fraser not allowing for "Consolidation" but on turning to his Report (para 3), I find he states, that he has liberally calculated for all the earthwork actually done.

From the records to hand, I find certain correspondence on this matter.

N/B

I forward Colonel Palmer's letter No. 12 dated 23rd May 1870, to the address of my predecessor, in which he reports certain discrepancy between the quantity of earthwork paid for and that actually executed under the Supervisance of Sergeant Hoalson of the C Company Sappers and Miners, who was temporarily employed on the work. In para 9 of his letter Colonel Palmer admits that the Contract for the earthwork was given out at 9 Cuyards per Rupee, the Estimate rate being Annas 2 pice 4 perry and, or nearly 7 yards per Rupee. This being the case, a saving ought to have been effected, instead of which, the difference (saving) appears to have been applied to make up for the deficiency. The work was then in progress.

There is nothing on record to show
what disposal Colonel Moberly
made of this letter, but in the
Office Register book I find a
note made to the effect that the
letter was returned to Colonel Palmer,
with certain remarks in pencil,
and so as retransmitted by that
Officer, as the date of receipt back
(30.5.70) is initialed by Colonel
Moberly. The remarks having been
pencil'd out, by whom it is not known,
their purport cannot be given. How-
ever, there can be no doubt that
Colonel Moberly recognized the action
proposed to be taken by the Executive
Engineers, for I find that, writing on
the 25th and 28th May 1870, to the
Officer Commanding Company

3^d sheet.

Tappers and Miners, Colonel Moberly
confirms the action taken by the Executive
Engineers in dispensing with the services
of Sergeant Swallow.

I may here state that these
occurrences took place previous to the
issue of G.O. No. 3311 dated 14th
October 1869, which refers to Sergeant
Swallow being permanently
appointed to the Department.

I would also beg to refer to the
papers disposed of by G.O. No. 2606
dated 13th October 1871, regarding
the claims of A. P. Hummel-
gren Snoodr, the Contractor who
did a large portion of the hearthwork
to the Lamb. Brand sea.

No further reliable informa-
tion being obtainable, I leave this

item for the orders of Government.

9. The Cops noted against this, is Rs 12.11, nearly one half of the total deficiency.

From Mr. Trace's Report it will be seen that the work was not done in accordance with the provision made for it in the sanctioned estimate. What was done, was so badly carried out, and with such inferior materials, that any further remarks from me, beyond those recorded in my letter No. 1360 dated 13th September 1872, would be superfluous.

The Estimate provides for a rate of Rs 1.00-2 per Coyard but the rate at which payment was made is Rs 2-9-8 or Rs 1-9-6 in excess. No authority for the same appears, nor was any

for the estimate letter.

19 5
report sent in by the Executive Engineer. As rendered in the statement, this item calls for very full explanation, for not only is the work done, less, but the rate paid is much greater than even the increased rate allowed by Mr. Trace for similar work ordinarily carried out. I say "ordinarily" but I think, this is giving very full value to the work done, for really the same may be said to be just worth the value of the materials used. The size of stones used bears a very large proportion to what ought to have been provided. Stones of 18 inches or even from 15 to 18" ought to have been used instead of which, very many of 9 inches to 12 found place in the stone facing of so important a Tank. The backing, as I have

selected for stone work

what was the reason - (small)?

already remarked in some places
decomposed rock, and in others, an
inferior description of gravel, which
has been so imperfectly tamped
(dry-tamped, if tamped at all) as to
be really of no use.

The charge for Sapper labor
which amounted to in all Rs. 9,802,
forms a separate item which increases
the cost of the work to Rs. 79,102.

Masonry work in P. in. 1. 1. 1.

10 — The value of work to
be accounted for is Rupees 2071. Mr.
Fraser's remark is the only record of
explanation which can be offered.

Soon after my arrival here, and
on assuming charge of the Division,
I directed Mr. Fraser to pull down
and rebuild a portion of the sluice,
which is contiguous to the coast and

4. Sheet

most dangerous portion of the ^{restment};
the masonry was of very inferior descrip-
tion, and badly put together. I considered
the whole structure unsafe. The work
now done is of the best description and
carefully carried out with due regard
for the purpose it is required to serve.

11. I have thought it unnecessary
to enter this work to the Head Office
in the Estimate for Rupees 8,628. which
accompanies this letter. I have, how-
ever, requested Mr. Fraser to include
the same in the Estimate which he is
preparing for the thorough repairs
of the Alipor Fairk. and which will
be ready in less than six weeks.

12 — Rupees 8,550. is the
amount set down to be accounted for.
Mr. Fraser allowed 5 per cent on this
account but, considering that special
superintendence had to be employed, the
work being 5 miles distant from the

It has been pointed out to Mr. Fraser that the masonry work in P. in. 1. 1. 1. is of a very inferior description and is badly put together.

Range Office and that in other respects it was necessary to deal somewhat exceptionally with it, I would allow 8 per cent as a fair rate. The sums entered against each of the items (Sundries, Superintendence and Petty items) are unreliable, as Mr. Fraser himself states. The Contingent expenses must have been in several cases, of so petty a nature, that, however strictly scrutinized, it would be difficult to obtain accurate information of details to correspond with the sums stated to have been spent. I think therefore, that the entries must be accepted. It is, however, not clear how the item Rs. 8,888 provided in the Estimate was exceeded by Rs. 2740, for I find in Column, "As paid for" Rs. 11,628 entered.

13. Rs. 165 - Call (for no remark. It appears to me

to be simply impossible to ²⁷slow get at particulars.

14. In Concluding his Report which accompanies the statement, Mr. Fraser refers to the particulars of the statement in these terms.

"I would hope that on a revision of this statement the deficit may be reduced, and I consider a revision necessary."

15. The doubt herein expressed as to the correctness of his (Mr. Fraser's) own measurements is one which would probably be raised by the responsible Officers themselves. I must, however, record my opinion that such doubts cannot fairly be expressed against Mr. Fraser. His inability to obtain accurate information, and so clear up matters is due to the non-maintenance of complete

information, and orders issued by his
predecessor to Contractors and Subordi-
nates employed to Superintend the
work. From Correspondence at hand,
it appears that Colonel Palmer was
a good deal deceived by the Contractor
(and Subordinates, but whether or
not, the present state of the work reflects
very little credit on any concerned
with it. Much money has either
been plundered, or thrown away on
work, not commensurate with its
money value. It seems to me that
that no useful purpose can be
served, by deputing an Officer to
peramine and permeasure all the
works connected with the Alipore Tank,
for, to obtain reliable information, the
details of the Accounts must be examined
and in many instances, I believe,
pecuniary details are not forthcoming

5th Sheet.

to clear up the deficiency shown, which
I may say was arrived at by Mr. Fraser
after looking up all available papers.
16 The Estimate for Rupees 8,628, which
I now send, provides for necessary
and emergent repairs which are being
carried out to render the Tank safe,
and to secure the storage of water dur-
ing the later rains. This Estimate
has been prepared in lieu of that for
Rupees 7,745 alluded to in my letter
of the 13th Instant, No. 1360, which has
been cancelled. In his Letter giving
over to the Estimate for Rupees 8,628,
which is also forwarded herewith, Mr.
Fraser explains the necessity for its
submission which is on account of the
rates being increased. I have already
explained that the somewhat isolated
position of the work claims for it con-
sideration for a liberal percentage

No. 415 dated 26th
September 1872.

on account of "summers". At present
the work of repairs is being carried out
by a Contractor, and an Overseer is on
the spot to see to the work being
done satisfactorily. Subject to frequent
inspections by the Range Officer
and myself, Government have there-
fore, full assurance of the stability
of the work already done, and being
done, on the Estimate which is forward-
ed for sanction. I trust then, for the
reasons given by Mr. Fraser, that the
small increase over the prevailing rates,
for which rate, can be given, may be
allowed to remain.

17 It would probably have been
much more satisfactory to Government
had Colonel Moberly, who had a perfect
knowledge of all matters connected with
this project, submitted his Report to
Government: but unfortunately,

the Statement and Mr. Fraser's Report
were received on the very day Colonel
Moberly handed over charge. 18.
As the Officers and Subordinates
concerned with the execution of the
work are no longer in Bellary, the
matter might perhaps have been
allowed to stand until the Project
is finally completed, but as I am
going on leave, and may not return
to the Division, I have thought it
my duty to acquaint Government
with what has come to my notice,
although the task is a very dis-
agreeable one.

19 In conclusion, I trust that
Government will take steps to provide
the required funds as early as possible.

Sanctioned to be
for,
Honourable Chief Secy.
Sd/- J. C. Moberly
Offg. Superintending Engineer
3rd Division

List of Enclosures

- 1 Letter No. 12 dated 23rd May 1870 with
3 Enclosures from Lieut Col Palmer,
Executive Engineer in charge
Bellary Range.
- 1 Letter No. 115 dated 11th May 1872 with a
Check Statement from Mr.
Traver, Executive Engineer,
in charge of Bellary Range.
- 1 Letter No. 415 dated 21st September 1872,
with an Estimate for Rs. 8628 for
Allupor Tank, from Mr.
Traver Executive Engineer in
charge of Bellary Range.

N

24

104

1872-73
From: *Joseph, Esq. for Mr. H. J. 4767.*
The Superintending Engineer
3rd Division.

To,
The Secretary to Govt.
Public Works Dept.
Fort St. George
No. 1520.
Dated 28th September 1872.
Received 1st Oct/72.

x ben want
Submits for execution
and provision of funds
an estimate for Rs. 8,550-
for Emergent repairs to
Alipore Tank - Bellary
and remarks with reference
to its construction.
No 769-11th Dec/73

No 229
2nd Dec/73
17th Dec/73

Data for one
Cubic yard of
New Stone Re-
vetment.

Data
Rebuilding Alipore Tank Banks.

Cost of Granite Stone including quarrying
delivered at quarry — *1" 8" 0*
Cartage of Stone average distance 2 miles — *0" 8" 0*
Rebuilding Revetment — *1" 0" 0*
Total cost per Cubic yard Rebuild-
ing New stone — *3" 0" 0*

Gravel carted
from 100 yards
to half a mile
distance.

Digging and throwing gravel out of pit per
load — *0" 2" 6*
Removing earth overlying gravel average thick-
ness of 9 inches — *0" 1" 0*
Cartage of gravel to bund average distance
500 yards — *0" 2" 2*
Lifting and Spreading gravel from bottom
to top of bund average height 3 yards — *0" 0" 6*
Carrying water 50 yards — *0" 1" 0*
Tamping and Sundries — *0" 0" 11*
0" 8" 1

Bellary
26th November
1872

Signed M. Fraser
Proc. Engineer
Main Colonel R.
Superintending Engineer
28th Dec

No

No 1979

Superintending Engineer's Office
Bellary 26 November 1872

From The Superintending Engineer
F. Division

To The Secretary to Government
P.W. Department
Fort St. George

Sir

I have the honor to enclose with reference to Under Secretary Letter No 147, dated 9th October 1872, a Comparative Statement showing the differences which exist between the several amounts of the sub-heads of the sanctioned Estimate for the "Water Supply Project" of Bellary or "Mipore Tank Project" and the expenditure incurred under each head, with the causes of increase and decrease. Columns are also introduced showing the valuation of work actually incurred in comparison with the expenditure incurred. The Plans and documents as per margin accompanying

- 2. Comparison of Statements
 - 1. Survey
 - 1. Estimate
 - 1. Data for rates
 - 1. Section of Channel
 - 1. Section of Tank

Enclosed are 1/1979 of 26 November 1872 from the Engineer to the Secretary to Government P.W.D.

S. K. S. 1872

Date

Bellary 26 November 1872

the Statement. I have, as directed by Government, made a close scrutiny of all the accounts and papers connected with this Project, and I have carefully gone over every portion of the work in the lengthened inspections.

2. The 6th and 10th columns of the Comparative Statement give nearly similar results with regard to their aggregate totals, though marked differences may be observed in the quantities and rates of work performed under the sub-heads of Estimate. These columns represent the amount of Estimate and the amount of expenditure incurred. There was an excess of 3,200 Rs. on the Tank Supply Channel; whilst on the Tank itself the short outlay was 2,700 Rupees, though the decrease is more nominal than real. There was also an excess of 1,000 Rs. on the Tank Head Sluice, and a saving of 1,300 Rupees on the Containment distribution Channel. I shall go into these figures more particularly hereafter, but as regards the Tank Bund, I would observe that though there is a decreased expenditure of over 2,700 Rupees,

* Rs. 14,892

• Rs. 14,914

✓
No 1520 dated
28 September
1872

2/14
the stone revetment work of the face is actually 9000 cubic yards less than the quantity allowed in the Estimate, and if this facing is to be carried out the cost alone will be 27,000 Rupees, the rate of work now being 3 Rupees instead of 1 Rupee per Cubic yard. Though 6900 yards (actually 5352 yards) were said to be carried out, instead of 14,900 yards, the cost was almost the full amount of the Estimate, the rate having risen to Rs. 2.22 1/8 per cubic yard.

3. The Government will observe that I have in column 17 shown the total expenditure incurred above the value of work performed, which amounts to Rs. 6,505 1/2 3/4, that is to say, expenditure incurred not represented by work, whilst Major Verrier, in his report under reference makes out this amount to be Rs. 25,196 1/2 9/16 as detailed in the Statement, showing a difference between the two sums of Rs. 18,690 1/2 5/16.

4. To account for the discrepancy between these amounts, it will be necessary for me to show in what manner the late Officiating Superintending Engineer calculated the expenditure under each sub-head, and

compared with the several corresponding items of the
sanctioned Estimate. In paragraph 6 of this report -
Major Verrier gives certain heads of excessive outlay the
totals of which represent the ~~in excess~~ sum for which work
cannot be found and the principal of these heads are,
Revetment, Masonry in Arment, Head Sluice, and
Sundries. As regards his calculation of excess in the
item of Revetment, he takes the actual work done to
have cost 1 Rupee per Cubic yard, the rate entered in the
Estimate, whilst the work actually performed cost Rs. 2
2-1/8 per Cubic yard, and could not be done for
less, a proof of which is shown by Mr Fraser having
to charge 3 Rupees per yard for revetment of the same
nature, now going on at the Tank, though of a better
description. Again in the cost of the Tank Head
Sluice, Major Verrier shows the value of the work
existing on the spot, whilst no calculation has
been made of the cost of the reconstruction of the Sluice
which had to be undertaken. In the item of Su-
perintendence and Sundries, likewise, the actual
outlay incurred has been set aside, and the excess -

15
expenditure over the allotment in the Estimate has
been taken as a portion of the sum for which work can
not be accounted for.

5. Now in making out the Comparative Statement
of the increase and decrease of expenditure, I have adopted
the usual course, and I have entered the actual cost of
the work at the rates paid. These rates may or may not
be excessive, and I shall have to make a few remarks
on this subject further on, but it cannot be said, because
increased expenditure over Estimate has been incurred
from enhanced rates and from other causes, that such
expenditure represents the outlay on work "unaccounted
for or not found". As I said above, I have given full
valuation for work performed in column 10, and the
total of this column deducted from the actual outlay in
column 10, will give a result representing really the
unaccounted for expenditure.

6. The Abstract Statement shows that the excess
unaccounted for was incurred principally under the
following heads.

1st Revetment and other work of Tank Rs 348, 12, 2

2nd Revetment and other work of Supply Channel } 2301, 12, 5

3rd Construction of Tank Meas Sluice 347, 1, 10

The other small items of increase were on the account of the Meas Sluice.

On the first head, though the Cubic yards of Tank revetment actually measured amounted to 5352 yards or 9562 yards less than the Estimate, the outlay was Rspees 14,892 or Rspees 22 short only of the sanction, and this was caused by the work being carried out per yard at Rs. 2.20 1/8 instead of Rspees 1 per Cubic

Cubic yards
14914
5352
9562
Rspees
14,914
14,892
22

yard as remarked in paragraph 2. To account for the enhanced rate, from 4 to 6 Rspees per 1000 were paid for stones, and 12 Annas per Square yard for building, and 6 Annas per yard for broken stone as packing in rear. The rates are given elsewhere. The difference of 1586 Cubic yards of stone charged for on the

Cubic yards
6738
5352
1586

Tank face cannot be found. On the Chutthum Meas Sluice Channel which supplies the Tank, the Estimate allowed 308 cubic yards of stone pitching, but 420 Cubic yards were actually carried out, and

for this revetment a sum of Rs. 3548 was charged, in cost of stone, conveyance to the spot and packing per yard - The rate at which this work ought to have been done was 1 1/2 Rs. 3 per yard, and there is no explanation given of this large excess - All that I can discover in the Station books &c. to account for the very large outlay of Rs. 3548, instead of Rs. 1136 allowed for, are the entries of payments made for stone, packing charges, and lump sums given to Mudders, making up the above amount.

The 3rd item of excess is not large and considering that the Sluice, having been found to have been built in a wrong place and wrong level which caused much leakage, was in great part rebuilt, I am surprised that so little was expended in excess of the sanction.

In reference to the Tank revetment, I would observe that it was intended to face the inner bank of the Tank to its full height with stone, but the plan herewith forwarded of the Tank Bund will show how much of this work was carried out. When the measurements of the Earthwork were checked by Colonel Palmer in April 1870, he discovered that Sergeant Swallow, the Sapper Non-Commissioned

Sergeant's measurement 132,350
Bund mea-
surement by } 95,454
Col. Palmer } 36,896

(Officer), had overpaid the Contractors to the extent of 36,896 Cubic yards, but owing to his having been enabled to carry out the work at the average rate of 8 Cubic yards in place of 6 cubic yards per Rupee, the estimated cost, the expense accrued to Government was not so great as it otherwise would have been. The quantity in the Estimate was 134,796 Cubic yards; the quantity charged for was 150,036 cubic yards, and the quantity actually measured by Mr. Fraser 144,817 cubic yards, which nearly coincides with the amount of discrepancy discovered by the former Executive Engineer. The Sergeant was removed from the work, his incorrect measurement having been supposed to have been made through his inexperience and not with any fraudulent intent.

7. There are all the remarks I have to make on the causes of an excess charge of Rs 6505 2 1/4 for which no work can be found. As the Estimate was not when only half the ~~present~~ work of the Tank was completed, I suppose it was Colonel Mordaunt's intention not to raise the work to any further height, at least I would gather as much from his letter to Government.

Government embodied in G.O. No 578 dated 2nd March 1842.

8. As regards an outlay of Rs. 10,334 8 8 under the head of "Superintendence and Sundries," when only Rs. 3939 3 3 were allowed for these items in the Estimate, it would appear that the probable outlay to be incurred was miscalculated. The cost of the Sergeant's allowance and small Establishment amounted from January 1868 to March 1870 to Rs. 2012 13 7. About 40 Huts were built for the Sappers at Alipore at a cost of 2000 Rs. These were set on fire accidentally, and on this account Rs. 1240 were written off to Profit and Loss in G.O. No 3014 dated 24th September 1864. The Sappers' Huts with mud roofs were rebuilt at a cost of nearly 5000 Rs, so that these charges alone are nearly sufficient to account for the increased outlay. To sum up the results of the comparison between the Estimate as sanctioned, and the work paid for on this Estimate the following excess outlay appears:—

On Account	248 4 10
" Head Office	72 1 4

On Supply Channel — 3207 " 12 " 2
 " Tank Sluice — 1630 " 12 " 8
 " Superintendence — 1203 " 15 " 8
 " Sundries — 5191 " 5 " 6
 Total — 11,534 " 4 " 2

Deduct decrease on Tank — 2757 " 5 " 10
 8796 " 14 " 4

Deduct decrease on 3 Famine Re-
 lief works not carried out } 6777 " 4 " 2
 Net excess — 615 " 12 " 2.

which would have been increased to the above sum
 of Rs 8796 " 14 " 4 if the allowance for work already
 carried out in the Estimate had not been appro-
 priated.

9. I have now to remark on the Project itself,
 on the way it was carried out, and the causes which
 have led to a very large Estimate being still required
 to be sanctioned to supplement the outlay already
 incurred on the Bellary Water Supply works, be-
 fore they can be considered safe from further
 danger of breaching. The Project amounting to

Rs 300

31/18

Rs 300 was sanctioned by O. A. No. 47 dated 26th
 March 1864. It consisted of an Aricut thrown a-
 cross the Chuttrun Mullah Stream, about 7 miles
 from Bellary, with Head Sluice from which a chan-
 nel was led, nearly two miles in length, to lead the
 new Alipore Tank. A Head Sluice was
 constructed in the Bund, from which a channel
 was taken off to feed Fischer's Tank, a small re-
 servoir, which supplied a small Gountah in the
 Native Infantry Lines and the Fort Ditch. The
 channel to the Ditch was to be improved and a dis-
 tribution Channel dug for feeding certain Canton-
 ment wells. The Channel from Alipore to Fischer's
 Tank, a small road tunnel, and the improvements
 to the Channel from Fischer's Tank to the Fort
 were carried out from Famine Relief Funds and
 not charged to this Estimate.

10. The sanctioned Estimate allowed for a Head
 Sluice of 5 vents with Shutters. The work has been
 erected without any Sluices or vents in it; it is
 merely a flow on the level of the bed with wing

walls

walls, and the only reason I can ascertain from
Mr. Fraser for the deviation, was the want of
money to complete the design. The Channel from
the Sluice to Tank was intended to have a fall
of 2 feet per mile, and carry 19,000 cubic yards per
hour, as reported in the Specification and letter
to Government. On examining the bed and in-
specting the levels, I find that the fall, as carried
out, though all the sections vary, is from 4 to 5 feet
per mile, giving a discharge with 20 feet at sole,
and height of water 5 feet, side slopes 2 to 1, of
9,000 Cubic yards per hour. The Channel from
the Chuttrum Nullah crosses a large jungle
Stream which is a branch of the one dammed
up to form the Tank, and which joins it again
below the Tank bund. To cross this Jungle Stream
a small bank with loose stone revetment with-
out foundation, laid on the bed in cotton and
mixed soil, has been thrown up. The Chuttrum
Nullah has a fall of average 2.5 feet per mile,
and

37/19
and when in flood, rushes down with great rapidity;
its supply, which must be five times the quantity
capable of being drawn off by the Tank Supply Chan-
nel, is derived from the Copper Mountains and the
watershed is the same as that which feeds the Jungle
Stream bounded across by the Supply Channel.
These two Jungle Streams therefore are in flood to-
gether, and when the Channel is full the water
backs and the weak bund is overtopped, as well as
breached where it crosses from end to end. A sec-
tion of this kind of the Channel is given in plan
A, and there is nothing on record to account for
the Officer in charge having permitted such a sec-
tion, perpendicular in parts, to be built. No effort
likewise has been made to turn this Jungle Stream
into the Tank, and so ease the pressure on the
Channel bank, which might easily have been done,
and the levels of the Supply Channel are so de-
fective that the inlet into the Tank is two feet
above the bed of the Jungle Stream.

11. The Allipore Tank revetment was built
of small stones without any attempt at formation,
and

and the too rests in the cotton soil of the natural ground, now the bed of the Tank, instead of on the gravel below. When the water was let into this Reservoir, the porous soil subsided and cracked, and the revetment slipped causing fissures in the banks and settlement in the stone courses. The "Stone chips" as they are called in the report, laid at the back of the stone, without any layer of gravel or hard material of any kind, afforded but little support to the stone pitching and did not arrest the settlement of the face when the water reached it.

12. The Sluice was built in the lowest bed of the Tank in the Jungle Stream which was to be dammed up. It was found to leak exceedingly when first building, and Colonel Palmer gave orders to have most of the upper work pulled down, and the foundations and body raised to a higher level. The Channel from the Sluice to Fischer's Tank is broken off on a low level and breaches into the Jungle Stream which cross the Tank

and

3/20
and Chuttrum. Nullah Supply Channel. This Channel is out of level, for in carrying out the work, rock was met with below the bed, and no money was forthcoming to remove it effectually and so rectify the fall. I would refer to Mr. Fraser's report embodied in G.O. No 548 dated 2nd March 1842 for information on this point. The Channel from Fischer's Tank to the Native Sires' Gountah is in the same state; for the rock found in the bed has not been blasted away in sufficient quantity to give an even fall, and in both these channels, when the bed is full, the water backs up to a considerable extent. The channel which feeds the Fort Ditch from Fischer's Tank, and which passes through the Cantonment is in need of repair in places, where it strikes the public road and where the surface drainage has passed through the revetment of the channel bank and breached it.

13. Owing to the weak state of the Chuttrum Nullah Channel banks, there was some apprehension that the water could not be passed down,

and immediately a supply was obtained, Mr. Fraser was obliged to let off the water from the Tank, from the banks showing signs of settlement - So long ago as the 8th June 1870, when the work was in progress, Colonel Palmer reported to Colonel Maberly that a night fall of rain of .5 inches had breached the Channel at the site of the cross drainage above referred to - Again in paragraph 3 of Mr. Fraser's report mentioned in the above G.O., it is stated that another breach which had occurred in 1871 was closed - In Major Vertue's letter of the 13th September 1872, No. 1360, paragraph 10, reference is again made to the breaches which had taken place in the Channel from the late rains - The Tanks and Channels from Alipore, have been lately of some use, for the water which gathered in the former was let down to the Fort Ditch and Native Infantry Quarters, but it was impossible to retain any water in the Alipore Tank in the dangerous state of its banks, and no supply could be secured from the Chattrum Muttah, the

34 21
Channel from the Amlut being breached as above stated.

14. As regards the charge for Sapper Labor, Rs. 9802, which has been added to the expenditure on the Project, and regarding which I am ordered to report, I beg to say that in G.O. No. 1504 dated 1st May 1867, a party of Sappers was stationed at Alipore to construct the Tank - Their working pay was monthly charged to the Estimator and the revetment of the bund carried out by them, from the Shui northwards, has stood well, and forms no portion of the work reflected on in this report - It also appears that the Sappers were employed in Bellary on Cantonment works in 1869/70 and 1870/71, and the Controller on the 2nd August and 1st November 1871, wrote to the Superintending Engineer to afford credit to the Military Department for the amount of work done by Sapper Labor, and to know why the transaction had not been adjusted - He wrote again on the same subject on the 9th March/72, when circulating a requisition from the Accountant General to know whether the value of work actually performed by Sappers in those years had been adjusted in

in the accounts of the Presidency for 1841-42 -
 Colonel Moberly does not appear to have had
 any bills forwarded to him previously for Sapper
 per Labor in Bellary, and he was furnished with
 a Statement by the Commandant of Sappers
 dated 8th July 1841 showing the amount to be Rs.
 9802 " 3 " 6 - The matter was again brought to the
 Superintending Engineer's notice in an endorse-
 ment, without date, from the Controller in the
 end of March 1842, and an allotment of Rs. 6000
 was made for adjustment, in part, in the orders
 marginally noted - In Mr. Francis's letter to
 the Superintending Engineer, on the 24th April
 1842, he reports that he is unable to verify these
 bills as there were no check measurements, and
 no means of measuring the work done by the
 Sappers at Alipore - Colonel Prendergast's
 bill was submitted separately for the work
 done on the Project,

and in Bellary, but
 the works in Bellary
 have been closed and
 a separate Account
 has been kept - In G. O. No 917 dated 19th March
 1864

Alipore Tank	Rs.
work	5105 " 5 " 0
Contingent	
under Execution	4696 " 14 " 6
Engineers	
	<u>Rs 9802 " 3 " 6</u>

vide G. O. No 8720 dated
 30th March 1842, origi-
 nally No 874 dated
 30th March 1842

*
 vide Mr. Francis's
 letter No 415 dated
 26th September 1842
 accompanying

1869, instructions were issued to credit the mili-
 tary Department in the cost of work done by the
 Sappers and Miners, but it was not properly attend-
 ed to in the Range, and, moreover, no bills appear
 to have been submitted by the Sapper Officers -
 It is now impossible to separate the expenditure and
 show what is properly debitable to the Alipore Tank
 project, and what to Bellary Contingent works -
 15. I now beg to enclose the Estimate for
 Rs 8628, submitted by Major Vetcher with letter
 No 1520 dated 28th September 1842, which provides
 for immediate requirements, but I have requested
 Mr. Fraser to hasten the preparation of the
 Supplemental Estimate before his departure for
 Kurnal - The work is going on, and the rates are
 high as compared with former work, but the
 quality is superior, whilst great care is taken with
 the stonework, and ramming - I submit the Data
 and would observe that the rate for stone work
 allows a full thickness for solid stone one yard,
 whilst the original Estimate in its rate per yard,
 included stone chips in the rear of the revetment.
 I regret to say that Focher's Tank requires repair
 as

as the bank is leaking, and the provision for it should be made in this Estimate - I regret, also, to observe that a large sum will be required to place the Project, as regards the safety of the works, in a satisfactory state - I believe not less than thirty or forty thousand rupees.

16. I have already observed that the Chuturni Nullah has a very rapid fall from the hills, and as the rain fall is limited to very short periods, the water passes down with great rapidity and in a few hours, during which period the Tank must be supplied. Mr. Fraser proposes to abandon the present Head Sluice or to supplement the supply by giving the Channel a new head more in the direction of the Nullah - I am not altogether in favor of this arrangement, because the Channel has a very rapid fall, and, owing to the large amount of cross drainage, it is necessary to regulate the supply at the head. I would therefore have cross bars and shutters provided for in the Estimate, not vents, and the level of the bed of Channel rectified as far as possible. The work of repairing the breaches will be very expensive as it will not only be necessary to pull down the present

Revetments

23

revetments and rebuild them with good formations; but to regulate the course of the jungle stream crossing the Channel - At Alipori Tank the revetment has already been in course of reconstruction and a great deal has been done in a permanent manner - I have already observed that good (old) yards of stone would still have to be built, more the original plan decided on, but it will not be necessary to reset to the full height of the bund, and the thickness may be reduced below one yard, as the work approaches the top - A deviation at the head of the present supply Channel is proposed by the Executive Engineer, which will involve extensive cutting, to avoid the low grounds in the vicinity of the Dharnia road which is flooded. I do not consider this work essentially requisite, and I would provide only for the rectification of the levels between the Alipori and Fischers' Tank, by the removal by blasting of the roots. - It is necessary further to strengthen the latter Tank bank, and to rectify the levels, in a similar way, of the Channel from this reservoir to the Native Tank, as well as to repair and rebuild the revetment of the Channel from Fischers' Tank

Tank which feeds the Fort Ditch and thus supplies the native bargans.

17. To briefly recapitulate the work remaining to be done, it will be necessary,--

1st To regulate the bed of the Chuttrun Mullah near the Anicut to prevent a scour round the wing) and to regulate by shutter the supply at the Head Sluice of the delivery Channel.

2nd To rectify the levels of the bed of the Supply Channel, to fill in the breaches, strengthen the banks, rebuild the revetment, and to alter the course of the Jungle Stream.

3rd To rebuild the Tank bank and revetment in portions, and to raise the latter to its proper level.

4th To alter the levels of the Supply Channel to Fischer's Tank, from Alipore Tank, and,--

5th To repair Fischer's Tank, and Supply Channel from it to Bellary Fort Ditch, as well as to rectify the levels of the Channel to the Native Infantry Small

Tank

18. I regret that this report should extend beyond the limits I had intended, and that neither Officers nor Subordinates who were in any way connected with the execution of the project are available to afford information as to the accounts and details of work done. Even the Head Accountant of the Range has been dismissed prior to my investigation, and I have been obliged to trust solely to my own examination of the documents forthcoming in the Office, and to the measurements of the works taken by Officers who had taken no part in the work operations.

19. The sanctioned Estimate amounts to Rs. 69,300.

Expenditure, including Super
labour, to end of 1871-72 - 79,704 " 13 " 10
Estimate for emergent works } 8,628 " 0 " 0
88,335 " 13 " 10
Supplemental Estimate } 35,000 " 0 " 0
123,335 " 13 " 10
and as Rupees 123,300 may have to be expended, as per margin, before the works are in thorough order, an excess of Rupees 54,000 will be incurred.

J

I have the honor to be

Sir

Your most Obedt. Servant

Wm Col. R.E.

Superintending Engineer

3^d Div.

P. No. 1872 Sept
From P. No. 5808
The Supty. Engineer
3^d Div.

To The Secy. to Government
P. W. Department
Fort St. George
No. 1949

Dated 26th
Recd. 28 November 1872
Enclos. Seven
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Forwards Comparison
Statement for the
Water Supply Project
of Bellary or Mysore
Tank Project.
No. 769 - 11 March 73.

No 230

11. 3. 73 P. 17th

16

From
Lieutenant Colonel J. E. Palmer
Executive Engineer RWD
in Mysore

1. The Secretary
Government RWD.
Fort St. George

Sir Please the honor to acknowledge
the receipt of Proc. of Govt. dated
6th Sept. 1872 No. 2119 and in com-
pliance with the instructions therein
contained beg to offer the following
statement for your favourable con-
sideration.

2. Having been absent from India
17 months, and without access to
office records, or local information,
my statement must be most general
than I could wish, and I must trust
somewhat on many points; I hope
therefore that full consideration may
be accorded and allowance made
for any apparent shortcoming.

3. They respectfully point out that
on joining the Force, I found that
the Bellary Timber Yard had for
many years been a source of difficulty
and anxiety to the Officers in charge,
and when I joined there was not
only considerable confusion in the
timber accounts but a large quantity
unaccounted for, subsequently struck
off the accounts by order of Government.
My predecessor assured me he had
no sharp, and that he had

attention but without success. He could not unravel the mystery of the accounts but believed robbery to take place from outside - He had failed in an endeavour to get men punished by the Cantonment Magistrate.

4. The intricacy of the accounts was so great that I appealed to Colonel, Indraly, the Superintending Engineer for an efficient and Superintendant, some who had been accustomed to the working up of Timber - but he informed me that he could make an application to that effect as on a former occasion they had refused him a similar demand. before I joined.

5. No suspicion ever attached to my Head Accountant and finding him in all his accounts apparently scrupulously correct, and receiving a high character with him from my predecessor, I trusted him more than I otherwise would have done - feeling at the same time sure that the check of the Controller's Office would keep matters straight, and I made it my most particular concern to superintend the construction of works which had formed disputes before I joined. I became criminally careless and I am sure effected a great reform.

6. Unfortunately the order to close our stock account was received, and this could only be done by debiting works in progress with unwrought Timber and Timber in logs. And thus as works progressed

or transfers between different works I, these transfers I now attribute all the irregularity and possibly opportunities for fraud - and I now feel that I have laid myself open to the serious and severe constructions placed on these ^{acts} by Government, of endeavouring to conceal deficiencies.

The original transfer of Timber from stock to different works I looked upon as a book not a cash transaction or entry, and the practice of transfer must have lessened in my mind the integrity of such entries, as it was not present to me that I was doing wrong -

7. On the Accountant suggesting to me that there was something wrong about the Timber, I endeavoured to take stock to ascertain its actual state. (There was no stock account as it had been closed) - but the Timber having been charged over to many works, and mixed up with expenses of working it up, hardly any approximate estimates could be made and in these many errors were from time to time detected. The heavy duties of the Office, and the absolute necessity of despatching the regular monthly accounts to the Controller's Office by a given day, rendered it almost impossible to find time for searching investigation into such complicated additional work. Moreover I was convinced, and my Head Accountant was of the same opinion that nothing took place from outside the following statement.

I hope Government will credit me with using every possible exertion to unravel the case.

- 8 I also reported matters to the Police and had suspected persons tried before the Cantonment Magistrate, and in one case where I discovered a deliberate fraud, was successful in having the man punished with a month's imprisonment. After the suggestion of the Police I kept a man on pay in their service in the yard. I again asked for an efficient Superintendent but again the Supg Engineer informed me the application would be useless having been before & so decidedly refused. I mentioned matters to General Chibrik Commanding the Division, who placed sentries inside and outside the Timber Yard.
- 9 I applied to Government through the Supg Engineer for the purchase of a house which stood at one corner of the yard, and was formerly the residence of the Receiver (it had windows and a door opening into the yard through which robberies might be effected); I was authorised to make terms with the landholder but he asked not for such an exorbitant price, so much more than its actual valuation, that Government declined to purchase it and were averse from taking steps, as suggested under Act II. I had asked upon the promise I

- had early formed and purchased 2500 more timber, but from time to time as the wood was used up, reduced the employees in the yard and gave all wood work out on contract.
- 11 on mentioning the frauds to the Controller when he visited my range in 1870, he told me it was a remarkable fact that every Timber yard in the Presidency had been in difficulties, the temptation to plunder was so great.
- 12 I respectfully submit that the above statement shows anything but a wish on my part to conceal deficiencies, but on the contrary I was most anxious with the assistance of the Police, to discover the source of these frauds, before reporting matters to Government.
- 13 I was in daily contact with the Police Authorities, who never hinted a suspicion against the Head Accountant.
- 14 Unfortunately I was suddenly attacked by an illness which necessitated my return to England. Even then, against medical advice I delayed my departure for six months. I wished to put the whole case personally before my successor, but again unfortunately, he was more than once prevented from joining on the dates he himself had fixed.
- 15 I trust I have now satisfactorily shown that I was ever intent on

my Endeavours to trace the frauds
now brought to light, and that
Government will not condemn
me in any thing more than a
want of judgment in the transfer
& retransfer of Timber, and consid-
ering my long service of nearly
31 years, 18 of which were passed
in the Department, they will
graciously save me from the
disgrace of public removal
from my Appointment.

I have the honor to be
Sir

Your most Obedient Servant

Walter H. Col

Esq. Engineer

on Furlough

Bath

30th October 1872

Dec 16th Feby 1734/17th

15 Marlboro Road

Pressing ton

25th October 1892

Y
form

Sient. / d. A. S. Moberly

Royal Engineers

The Secretary to Govt P.W.D.

Marras

Sir

With reference to G.O. No. 2119 of 6th Sept. 1892
I have the honor to inform you that it is with extreme
regret I learn that Govt. considers I showed grave neglect
of duty and absence of check in the matter of the timber
accounts of the Bellary Range.

2 I would beg to draw attention to the correspondence that passed between Lieutenant Colonel Palmer & myself, copies of which were submitted to Govt, and to inform that the subject of the timber accounts of the Bellary Range was constantly discussed between Lieut. Colonel Palmer and myself whenever I was in Bellary. In a letter, copy of which has been submitted, Colonel Palmer distinctly states that the ~~deficiency~~^{loss} then reported was the whole amount deficient and in a subsequent letter states that as all the woodwork in future was to be given out on Contract, there could not occur again any deficiency.

3. In the absence of records it is impossible to give correct dates but I believe I am correct in stating that, at the time of my hearing of the deficiency above referred to, I was on a tour of inspection in my Division, the largest in the Presidency and the one with the greatest number of Rangers. It is true that Bellary was my head-quarters

but a reference to my Diaries will show that I was away on leave during the greater part of the year.

4 As I have already stated the subject of the timber accounts of the Bellary Range was constantly discussed between Colonel Palmer and myself whenever I was at Bellary: he had informed me in writing that there was at that time no other deficiency in the timber but what he had reported and subsequently told me that Kamal Sait had not brought in some logs which he had to cut in, but as I was led to understand that the amount due for cartage covered the value of the logs and that there would be no loss to Government I did not see any necessity for inquiring further into the matter, particularly as Kamal Sait never made any complaint to me until the beginning of this year and after I had submitted the matter to Government. I knew that the Bellary Range Office found great difficulty in keeping up the Office work and so I did not wish to give extra work unless I could see good reason for it and as Colonel Palmer himself reported in writing a deficiency and stated that that amount comprised the whole deficiency I respectfully contend that I had no reason but to believe that Colonel Palmer was telling me the whole truth.

5 It is difficult to understand how Colonel Palmer came to make the statements to me he did knowing, at the time he reported a small deficiency, that from the Stock-taking the deficiency was some thousands. I had no reason to doubt Colonel Palmer's word and as he himself reported the deficiencies to me, I had, I would respectfully urge, every reason to believe that the information he gave me was perfectly correct. As I have already stated in a previous letter all knowledge of the several Stock-takings was kept from me, they being, as the dates show, always taken when I was away from Bellary. The last that was made by Colonel Palmer was in 1891 during my absence on furlough leave and when he was in charge of my Office

114 57
and though Colonel Palmer went away himself on furlough shortly after my return from furlough leave he never mentioned anything about any deficiency except as regarded Kamal Sait.

6 I would respectfully urge that it is very difficult, if not almost impossible for a Superintending Engineer or any one else to discover a matter of this kind if the Range Officer and his establishment are determined to conceal matters, unless he had reason to believe that they were concealing matters. The Controller of P.W. Accounts examined all the books of the Bellary Range - if I remember rightly it was just about two years ago - and expressed himself greatly pleased with the manner in which the books were kept. Copies of Estimates are supposed to be sent to him & if not sent he had only to report the Range Officer; more detailed information was submitted monthly to his then to the Superintending Engineer's Office; and if an Officer of his experience failed to discover the defalcations, I, with due respect to the opinion of Government, contend that I could not be expected to discover them. It was only in the case of the transfer of the Range on the relieving Officer carefully measuring up all the timber at the different works that the matter would be discovered and the difficulty even then in arriving at a correct statement is exemplified by the great difference between the last Stock-taking as made by Colonel Palmer, the estimate prepared by Mr. Treas after careful examination of the books & and that now arrived at by the Controller.

7 There is one point which the Controller has not mentioned in his letter but which he had informed me in conversation he would bring to the notice of Government and that is the percentage (25%) allowed for wastage. He told me and subsequent inquiries I have made lead me to believe that this is utterly insufficient and that the average which should be allowed is more

40 per cent. Taking this difference of 15% on the purchases made after March 1868 - viz Rs 78396.94.3, as per Para 6 of the Controller's letter, the extra sum that should be admitted for wastage is about Rs 11760.

8. With due deference to the opinion of Government I respectfully urge that I did not neglect my duty; but that my faith, if such it can be called, was in trusting, not only the word but also the written statement of an Officer older and of longer service than myself; and I again repeat that it is extremely difficult, if not almost impossible, for a Superintending Engineer or the Controller to discover false entries in the course of their examination of a Range Officer's books, if the Range Officer and his Office Establishment set themselves to keep the matter from his knowledge, unless something should crop out to lead him to suspect some wrong doing.

In conclusion I beg I may be furnished with a copy of G.O. No. 1376 of 31st June, 1892 as no copy has been supplied to me and I am at a loss to know in what manner I mismanaged the 3rd Division.

I have the honor to be

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Yours most obedient, Servant

W. H. H. H. H.

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The Secretary to Govt

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 Witness my hand and seal this ... day of ...
 1872.

[illegible][illegible][illegible][illegible]

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Year	Amount	Year	Amount
1875	28.146	1875	28.146
1876	375	1876	375
1877	28.146	1877	28.146
1878	375	1878	375
1879	28.146	1879	28.146
1880	375	1880	375
1881	28.146	1881	28.146
1882	375	1882	375
1883	28.146	1883	28.146
1884	375	1884	375
1885	28.146	1885	28.146
1886	375	1886	375
1887	28.146	1887	28.146
1888	375	1888	375
1889	28.146	1889	28.146
1890	375	1890	375
1891	28.146	1891	28.146
1892	375	1892	375
1893	28.146	1893	28.146
1894	375	1894	375
1895	28.146	1895	28.146
1896	375	1896	375
1897	28.146	1897	28.146
1898	375	1898	375
1899	28.146	1899	28.146
1900	375	1900	375
1901	28.146	1901	28.146
1902	375	1902	375
1903	28.146	1903	28.146
1904	375	1904	375
1905	28.146	1905	28.146
1906	375	1906	375
1907	28.146	1907	28.146
1908	375	1908	375
1909	28.146	1909	28.146
1910	375	1910	375
1911	28.146	1911	28.146
1912	375	1912	375
1913	28.146	1913	28.146
1914	375	1914	375
1915	28.146	1915	28.146
1916	375	1916	375
1917	28.146	1917	28.146
1918	375	1918	375
1919	28.146	1919	28.146
1920	375	1920	375
1921	28.146	1921	28.146
1922	375	1922	375
1923	28.146	1923	28.146
1924	375	1924	375
1925	28.146	1925	28.146
1926	375	1926	375
1927	28.146	1927	28.146
1928	375	1928	375
1929	28.146	1929	28.146
1930	375	1930	375
1931	28.146	1931	28.146
1932	375	1932	375
1933	28.146	1933	28.146
1934	375	1934	375
1935	28.146	1935	28.146
1936	375	1936	375
1937	28.146	1937	28.146
1938	375	1938	375
1939	28.146	1939	28.146
1940	375	1940	375
1941	28.146	1941	28.146
1942	375	1942	375
1943	28.146	1943	28.146
1944	375	1944	375
1945	28.146	1945	28.146
1946	375	1946	375
1947	28.146	1947	28.146
1948	375	1948	375
1949	28.146	1949	28.146
1950	375	1950	375
1951	28.146	1951	28.146
1952	375	1952	375
1953	28.146	1953	28.146
1954	375	1954	375
1955	28.146	1955	28.146
1956	375	1956	375
1957	28.146	1957	28.146
1958	375	1958	375
1959			

for dam

Stony & open long Moss - off 1060 15 " 159 "

1020 15 " 159 "

Loping North Blunbury off 436 " 2. 548 "

436 " 2. 574 "

437 " 2. 540 "

1030 15 " 1378 "

18 "

154 "

[illegible]

Lead Pipes

and

—Cty 308.8 / 8.46332

.....

1801 27 00

* 79.580' 96 87.5' " " " " " "

Descriptive grade

Aug 15. From 8' to 11'
26th Nov.
1842.

Difference between
 Columns 2 and 3 the estimate
 to amount of work paid for.
 Amount of
 work actually
 performed and
 measured.
 Difference
 between 6-
 lums 3 and 6
 i.e. work paid
 for and work
 as measured
 and performed.

Increase.		Decrease		Amount		Amount.	
⁴ R ₂	A. P.	⁵ R ₂	A. P.	⁶ R ₂	A. P.	⁷ R ₂	A. P.
248.	4 10.	"	"	256.	8.	225.	85.
72	14	"	"	965.	6	137.	126.
3207	12 2.	"	"	9112	10 11	2301.	125.
		2757.	510.	35346.	4 10.	3480.	125.
				1064.	163	4.	47.
1130.	12 8.	"	"	3425.	4 3	347.	1 10.
		84	"	"	"	"	"
		11 10	"	"	"	"	"
		14	"	626.	2	"	"
				10334	85.	"	"
3372				18140	8 10.	6505.	34.

Mean Colonel C. B.
Superintending Engineer
N. C. Division

Estimated as sanctioned by Government and paid for.								
Description of work	Quantity		Rate		Amount		Total	
	3	4	5	6	7	8	9	
Stake over Vents	2.00	180.	"	3.	90.	"		
Excavation	Cy.	50.	"	3.	150.	"		
Reinforcing Roadway	"	"	"	25.	"	"		
Masonry wall	"	50	5	72	275.	"		
Blasting Rock	"	"	"	200	"	"		
							938	1110.

Improving the Fort Belk Channel.
 including present Channels to
 the widened 1/2 widening 3.
 Run all bridges, one distributer.
 Run sluice. " " " " 2000.

Masonry for Channel for
 distributing water to 3 Wells in
 the 7th Regt. and Barrack lines. " " " " 2000.

Superintendence	65360.129.
Services	840.
Grand Total	30993.8
	69300. " "

Differences between Columns 8 & 9 in Estimated amount work and measured.									
Total	10	11	12	13	14	15	16	17	18
			90.						
			9						
			25.						
			275.						
			200.						
			938.						

65 ✓
 This was carried out from
 Tammie Relief funds.

626. 2	1373 14
59611 3 9	7101 6 10 12850 15 9
2043 15 8	1203 15 8
8290 8 9	5191 5 8
69945 12 2	13496 12 2 12850 15 9
	63440 8 10 6505 3 4

This work has not been completed.

65 ✓

These originally estimated and approved by the State.

These originally estimated and approved by the State.

Description of work	Estimate as sanctioned by Govt.				Amount of work actually changed and paid for.				Difference between estimated amount and work paid for.				Amount of work actually changed and measured.				Difference between estimated amount and work performed.		Cause of increased or decrease in Columns 11 and 12.	
	Quantity	Rate	Amount	Total	Quantity	Rate	Amount	Total	Increase	Decrease	Quantity	Rate	Amount	Total	Increase	Decrease				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
Large slabs to fasten into 2 high holes 7x10x9--	1	20	..	20	..	1	20	..	20	..				20	..					
Stake for standing place 8x12x6--	1	10	..	10	..	1	10	..	10	..										
Copp stone to support same 12x1x1--	1	6	..	6	..	1	6	..	6	..				10	..					
Copp for tunnel 6x1x1--	1	4	..	4	..	1	4	..	4	..				16	..					
Coping with concrete & stone work 220 8x1x1 Total 8 hrs. 2 1/2	220	8	..	17	97	220	8	..	17	97				4	..					
Plugs & chains in wooden poles	2	..	..	30	..									17	97					
Stone shutters	1	..	..	25	..				156	82										
Centering for tunnel		..	..	52	..				52	..				2	12	..	24	..		
Slabs		..	..	..	..				72	1							52	..		
Earth work raising bund over tunnel including stamping--Cyp.		..	..	..	..				126	8										
Stone facing		..	..	..	..				170	..	28			29	108					
Raising and dismantling bund across the mouth of the Ruffley Channel--Cyp.		..	..	..	..				165	..	5			51	9					
(Dismantling blasting--Cyp.		..	..	..	..				200	1	..	2								
Stone in Channel		..	..	..	..				88 5/16	..	6			214	4					
Removing bund		..	..	..	..				48 5/16	..	2			60	108					
Blasting Rock		..	..	..	..				37 1/2	..	6			1630	128					
Stone revetment		..	..	..	..															
Earthwork		..	..	..	..															
Bank embankment		..	..	..	..															
Stone in Channel		..	..	..	..															
Blasting with dynamite		..	..	..	..															

This was carried out from
Famine Relief Funds.

This was carried out from Finance Relief funds.

319 15

and the estimate showing the details of the work.

Description of work.	Estimated as vouchered by Govt.				Amount of work actually and paid for.				Total	Difference between estimated and actual work paid for.		Amount of work actually performed and measured.				Total	Difference between estimated and actual work performed and measured.	Remarks regarding the cause of increase and decrease in Columns 11 and 12.
	Quantity	Rate	Amount	Total	Quantity	Rate	Amount	Total		Increase	(Decrease)	Quantity	Rate	Amount	Total			
Excavating	Cy	17485	1/2	2914 2 8														
do	Cy	9022	do	151 8														
do	Cy	34970	1/10	3497														
				53357.2		2	1512 10 8											
								38894										
Embankment including tamping	Cy	1085	2 8	100 13 4														
Stone Revetment	Cy	3088	1 8	463 3 2														
Blasting (Contingent)				500														
Masonry retaining wall	Pys	100	5	500														
								8206 11 2										
Cart work	Cy	134796 1/4	2 8	22416 8														
Tamping								152036										
Stone facing																		
Rough Stone Revetment																		
Stone in Chumam	Cy	5731 1/4	2 6	801 9 3														
Pointing with Chumam	Sy	575	2 8	14 6														
Flaming to apron large slabs																		
Pointing with Chumam																		
Excavation	Cy	212	3	39 12														
Stone in Chumam	Cy	10118	2 6	1580 15														
Brick in Chumam	Cy																	
Arch work to Tunnel Stone in Chumam																		
do - Brick in Chumam																		
Plastering to do	Sy	816	4	24 10 2														
Pointing	Sy	1198	2	23 15 4														
Flaming																		
Excavation	Cy	487 1/8	12	58 8 2														

There was an excess charge on account of the work done for the brick work though but a portion of the stone revetment to face was carried out at the rate per Cy. as was considered that the estimated allowance was near by spent. The work measured does not agree with the quantity charged for. Vide Report.

The excess in the work was caused by the stone having been in part pulled down and rebuilt. The measurement of quantities taken however does not agree with the quantities charged for.

1872/73.

From.

The Supy. Engr.
3 Division

The Secretary to Govt.
P. W. D.
Madras.

Date 26: Nov / 72.

Recd. P. W. 5888/72

Comparative Statement
showing the details of the
Estimate for the P. W. D.
Cant. Project sanctioned in
G. O. 947 dated 26: Nov
1867 and the expenditure
incurred thereon with the causes
of increase and decrease and
the value of the work actually
performed.

effect from the end of the
current official year.

From the same date to 1st
A. Robert, will be reduced
in the departmental list
of Executive Engineers of the
1st Grade, below all
Officers who have noted as
Supy. Engineers, i.e. next
below ~~Mr. R. Smith~~ Mr. R. Smith,
and he will forfeit the
in return to duty the personal
allowance he would otherwise
have drawn as having attained
the rank of Supy. Engr.
The former organization. It
will open a new way before
any explanation he may wish
to give of his ~~neglect~~ ^{responsibility}
~~of the~~ ^{the} ~~Whip~~ ^{Whip} ~~Work~~ ^{Work} which have
been undertaken
but he will ~~distinctly~~ ^{under} ~~stand~~ ^{stand} that the Govt. are
~~not~~ ^{not} ~~disatisfied~~ ^{disatisfied} with the
defence made by him, in reply
to Nos 5 & 6 of the order above
quoted, by which he has failed to
remove from their minds the
impression they had formed
to conceive of his gross neglect
of his duties in connection
with the Bellary Dams, transactions
and the works of the Division generally.

allowance he would
otherwise have held
as having attained the
rank of Super Engineer
under the former
organization.

ГМУ

In para 3 of their Order No: 2119 of
6th Sept: 1872 The Govt. had already
stated their opinion that nothing
could justify or palliate L. Col. Pal-
mer's conduct with reference to the
Bellingham Trube. Accounts, in which
it was announced that he
was removed from his command
The Pub. Works Dept. ~~would have been~~
~~placed~~ His letter of 30th October
1872 having failed to give any sa-
tisfactory explanation of the com-
mitment of deficiencies in the
work under his charge, N.E. The
in [] ~~the removal of Mr Palmer from the duty of Public works~~
into effect (that sentence of dismissal)
and ~~his removal~~ to Military duties,
~~this measure appears to have taken effect~~
~~from the date of the Government Official~~
~~order without reference to the change~~
of Executive inefficiency which might
~~be brought against him~~
in connection with the Alipore
Water Supply project - It will take

return to India, when he will be considered to be available for military duty. This utter failure of Lieutenant Colonel A. S. Moberly to check the work and outlay on a project deeply affecting the welfare of the Military Cantonment which was his Head Quarters will entail his degradation in the Departmental List of Executive Engineers of the 1st grade below all officers who have acted as Super Engineers; i.e. next below Major Harted; and he will forfeit the personal allowance

allowance

at the earliest
possible period
1881

submitting a trustworthy
Report and estimate
based upon correct
levels and data.

I was informed when
presented with regard
to the Officer
on the ground which
has been the subject
of the report.

Were there no other
proof of Lieutenant
Colonel Palmer's
inability to perform
Executive duties of the
Public Works Department

it would have been
furnished by the record
of this work as shown
in the papers under
review and his Excel-
lency the Governor in
Council can no longer
delay intimating to
that officer that his
further services in the
Department will be
dispensed with on his

Palmer's discharge
as necessary
consequence of
incompetence. It is
stated that Col. Palmer
will be expected to
explain his share
in the transaction

Note.

Colonel Palmer was
accused by General
of making a permitting
transfer and other
entries in the accounts
of the water supplies
from the Bellary tank
yard, with the manifest
intention of concealing
deficiencies known by him
from stock taking
to have arisen -
and with grave neglect
of duty and abuse of
all checks leading to
peculation and fraud.
Col. Palmer in writing
apologizing in the charge
of all accounts records, from
the general character
his defence is that the
accounts are in conformity
with the principles
of the system the difficulties
which beset his procedure
to show what his own
hand has been.

1. Complain of the
refusal to grant him
a fully qualified
superintendent.

2. He trusts his
accountant & looked
to the Controller to check
him and give him
time & attention to the
execution of the work.

3. States that frequent
transfers of account, the
recruitment of the notes
to close the stock account
of himself the
of his accountant where
the speculation of the
system.

4. Admits want of time
to be able to put things
investigating the deficiency
the known.

5. Appeals to his efforts
in connection with the
policy to get offenders
punished, as a proof
of his energy.

It does not appear, from
when writing his report,
to have occurred to
him that

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primary duty of the
works officer to check
all other subordinates,
is to ascertain for time
to time and be assured
what his work is
costing him, in fact
what he is getting for
the public money he
disburses; no faults of
system advocated or re-
ordered by Govt; no fault
in subordinates, can
justify the omission to
attempt to ascertain
this; Col. Palmer's
thoughts is characterized
by a reckless disregard of
Government interests, and
this he has not attempted
to disprove. An officer
in Col. Palmer's position
might, as he says, permit
his accountant to make
book transfers that he
did not thoroughly understand
at the time. but had he
attempted to find out
when & for what the money
he had sent all

The Controller brought to
light. Quits have been
spelled present to him
and he must be the
sitter, telling to the
signants. 12. Having this
was going on have intention
conceal it for others?
C.H.

Volé

It is observed
from the records that
in March 1867 an
application was made
for sanction to the
walling in of the
timber yard at Bellamy,
that in September of
the same year two
months before the trans-
fer of the yard to
Col. Palmer, a fire,
clearly the act of an
incendiary, broke out,
the property destroyed
being

Necessity for caution
evidently recognized by
officers in charge.

This ought to have in-
dicated something

being struck off to
Profit and Loss with
the sanction of Govern-
ment as conveyed in
their Order dated Janry
1868.

In April of the
same year Col^l Palmer
reported to Government
that the timber in

stock handed over
to him by his predecessor
was much of it un-
serviceable and Gov^t
having authorized the
sale by Auction, in
their Order dated July
1868 sanctioned the
writing off to Profit
and

(Colonel Palmer -
Gregory. started
a claim since

A concession on the part
of Government that ought
surely to have secured a
careful supervision on the
part of the Supg. G^o as well
as of the Rang Officer.

In April 1869 stock was
taken and a deficiency of
4929 found -
Necessity for further work

and Loss of Rs 6,418.2.

In September of
the same year however
the Government on
the assurance of the
Superintending Eng^r
that the opportunity
of a complete clearance

of the wood, had been
taken to remodel the
system and calculate
the actual wastage on
timber, sanctioned an
increase asked for in
the timber rates for all
the works then in
progress in Bellary.

In February and
May 1869 the question
of protecting the timber
yard

yard was again brought before Govt. but any outlay for the object was declined.

In April 1870, a robbery of wood having been reported, and a lawman convicted, the Government consented under the explanation afforded to write off the sum of £. 752 to Profit and Loss.

Col. Palmer in his letter on the subject then wrote as follows.

"All these difficulties are now happily at an end"..... Thanks to

Col. Palmer's management was improved in this order and defeated by the Govt. but no stock was taken apparently.

There is no record of stock being taken, or any commission taken for work done.

to have been... Stock taking... closing of accounts.

73/
the extension of the Railway to Gooty, I have succeeded in securing Contractors... this has enabled me to stop my yard work, dismiss a large staff of workmen and has rendered unnecessary the storage of 20,000 Cubic feet of timber per annum which is our average expenditure."

The subject of the Bellary Timber yard does not appear to have again come before Government until 7th March 1872, when the

was made by the Govt. for the purpose of...

Superintending Engr
forwarded a letter
from the Executive Engr
in charge of the Bellary
Range reporting a large
deficiency -

The Government
thereon requested the
Controller of P.W. Accounts
to depute a competent
member of his Establish-
ment to enquire into
the "timber Accounts"
and the Controller's
Report on the subject
is that now under
consideration - It

It is observed that
Col. Hoberly has been
in uninterrupted charge
of the Bellary Dist.
since Oct/64 and so
that Col. Palmer was
in charge of the timber
yard from Nov/67
to June 1871, that these
Officers therefore are
jointly responsible for
all that took place
in connection with the
timber yard during
the latter period.

The following facts
may be gathered from
Mr. Fraser's letter, which
accompanied the Supg.
Engr's report dated Feb/72.
There was no account
of the expenditure of rough
timber, the timber was brought
into shape, the net number

of Cubic feet in such work was made out by the yard Overseer, 25% was added for wastage and the account thus arrived at, sent in to the Range Office.

As the Controller in his report refers to a "Timber yard List" a "yard issue book" and a "Log book," the latter as showing issue to works, it is enforced that the account of "rough timber" the absence of which is referred to by Mr. Fraser is one showing the outturn of each log when worked up.

2. That in March 1868, in consequence of a Controller's Circular the spirits of which appears to have been misapprehended (the cost of all timber then in

stock was distributed amongst certain works in progress, some of which however being given out on Contract could not require the timber

A careful comparison by Col. Palmer has only from time to time of the entries in these books would have shown the necessity of an account referred to.

The fact of these frequent transfers ought to have attracted Col. Palmer's notice. Admittance of misapprehension of Controller's Circular the intention to do work in future.

The arrangement possibly forced on Col. Palmer, but likely to cause confusion and therefore more exact record for close scrutiny of the accounts.

Col. Palmer found on Col. Palmer's determination of the accounts.

3. In consequence of an alteration in design of certain buildings already given out on Contract, wrought timber work was received from Contractors and brought into stock while other wrought timber of the same description (it is presumed, revised scantling) was purchased from the same Contractors and also brought into stock, all being charged off to works in progress.

4. That timber already charged to works was sold to Contractors to whom the works were

given on contract, and that recoveries or deductions were made in paying the bills for work done. and that in one case an over recovery of timber to the value of Rs 3,358 had been made.

5. That some of the timber supplied by Binny and Company was so bad that the usual percentage (25%) would not be sufficient to cover legitimate wastage.

6. That timber contractors worked in the Govt. yard, selected and marked what logs they required, and

Given on contract

As this was noticed by Col. Palmer it ought to have led both Col. Palmer & Mr. Fraser to an immediate investigation into "wastage"

The arrangement of questionable policy, but not necessarily wrong, as it was for the benefit of the Govt.

If there is no "waste" timber is better sold, but every such sale should be a full a partial if not on the stock taking.

Subscribed by

⁷⁶
purchased them from Govt., these same logs having been already changed to work in progress.

7. That great loss was incurred by selling what was called "waste timber" (Mr. Fraser does not explain how).

8. That stock was taken on the following occasions with the results here shown.

April 1869	Deficiency	Rs 4,929
August 1869	"	8,844
November "	"	7,981
April 1871	"	10,371

From the marginal notes by the Superintendence

Mr. Livers's letter, it would appear that he was not aware that the stock.

taking in August 1869.

was supposed to be

wrong and that it

was therefore repeated

in November, or he

would have had one

taken in his presence

it may be inferred

it may be
that he knew

(therefore) that in the other dat

of those on the other side

and of the deficiencies the

found, Grow the second

not it may be inferred

41. Col Palmer au

that Col. Palmer and
the Sub. Engineer held

the Super Engineer held

It seems inadequate in

checked it may be held to
be proved by inference.

62 joined the three original
notes - the first, the

Notes: This copy is for the
author's use only.

1. *Pharmaceutical industry* – The pharmaceutical industry is a major player in the healthcare sector, responsible for the development, production, and distribution of drugs. It is a highly regulated industry with significant research and development costs.

and were particular

I have all questions

and answers in writing

and answers in writing

this remark must apply

to a period immediately

to a period immediately

ately preceding Colonel

Palmer's departure 1.

Palmer's departure for
Palmer's departure for

Europe June 1871 and

succeeding the stock

succeeding the stock
in 1871 it was

taking in April 1871.

He further states that

Mr. Fraser stated that

he is satisfied that

there was wholesale

there was wholesal

robbery practised in

This proves most exciting
into " " of to
cover to show how it all
has a corresponding entry in
the

cover to the other end of the line

...a corresponding entry in

... ..

on them, for which no corresponding entries of issue in the timber yard accounts could be found.

2. Similar to the value of Rs 8,745 ~~to be repaid~~ represented by entries in the Range Accounts

and in the Timber yard lists, as issued to workmen or sold to Contractors, but no such transaction ever took place.

The logs were not really sold, and were in other cases improperly charged to workmen on the estimates for which there happened to be small savings.

This appears to prove deliberate false entries in the timber accounts which must have been found out had Col Palmer examined them. It is probably not of great importance.

If the debits in the Range Accounts were cancelled by Col Palmer with a view to cover up supposed "wastage" there ought to have been no entries in log lists but a deduction in sum. It is a small sum.

It is not stated whether the material pertained to the works to which the recoveries were debited, if not it is an unreasonable transaction.

(Proves how thoroughly the Accounts must have been examined and how much was lost to the Government.)

3. A sum of Rs 616.7.1 representing the value of "the building material" instead of being credited to "Revenue Miscellaneous" was improperly credited to workmen, to meet the known timber deficiency.

4. That a sum of Rs 2,585 represents the value of timber stated in the "yard lists" for the period from June to November 1869 to have been sold to certain Contractors, but for the issue of which the "yard issue book" shows no entry, the "log book"

however shows that
these specific logs were
issued to work.

The Range Officer's
cash book shows no
record of payment at the
time but the Progress
Report for December 1870
shows a debit against
work of Rs 7007-0-4
for timber supplied by

the above Contractors,
and the cash book for
the same period shows
that two cheques were paid
to the new amounting in
aggregate to Rs 1124-1-11.

The difference between these
two sums appearing in the
accounts as recoveries, the
portion = Rs 2,585 being for
timber the alleged sale of which
is objected to. The Controller's
objection would appear to simply
be that the timber entries were

to make the work
to work to work

being a comparison between
the work valued at Rs 7007-0-4
and the timber charged
could determine this point.

meeting the known defi-
ciency in the timber accounts
either at the expense of the
Contractor from whom the
recovery was duly made,
or of Government by in-
cluding the charge in
the sum of Rs 7007-0-4
in excess of work actually
done.

5. That a Contractor ad-
vances a claim for cartage
of timber, which the District
officers dispute, and that
two of the logs numbered as
per Messrs. Pining & Co. list
16 and 111, which the Con-
tractor is alleged not to
have delivered, find a place
in the "yard Log book," which
appears to have been
tampered

must be subject
want of a proper
distribution of
Range Officer could not at a
how it must also be checked
The claim must have been
allowed to stand over for
beyond the Palmerston

tampered with, leaving
however no doubt in the
mind of the Controller that
the logs were actually deli-
vered.

With regard to this claim
Colonel Palmer endorsed
the stock statement of April
1871 as follows. 13 whole logs
7 half " } in all 752
4 quarters "

cubic feet have yet to be
delivered by Canal Sahib,
on delivery Rs 1611-5-9 will
be due to him. He declares
they have been delivered
but they have not been
received nor are they in
our accounts, when asked
for receipts of delivery to
us, he says he has none;
this man's claim for freight

to be noted that the statement of
"entire" of the timber involves
speculation of "dear" of the wood
or want of it, and it is not possible
to say whether or no goods of the kind
worth of timber should be paid for to
him. This has been done before and
yet no steps appear to have been taken
the timber man can be paid for the
quantity of timber delivered up to him
all the rest is his own property.

writes "The whole of this
transaction is involved in
difficulty." He claims a
sum of Rs 1611 as the
balance of the cost of car-
riage due to him, but
Colonel Palmer refused
to pay on the supposition
that he did not deliver
the 752 cubic feet. If he did
not deliver the 752 cubic feet his
claim for what he did
not deliver would be Rs 1505.

In connection with this
timber, the present officiating
Superintending Engineer re-
ports certain further claims
the correspondence connected
with which throws further
light on the system of
accounts.

accounts as followed in
Billary.

In consequence of alterations
ordered by Government in
the sanctioned designs of
certain buildings already
in course of execution, &
for which contracts had
been entered into, the
Contractors claimed com-
pensation for work done
prepared and thrown on
their hands.

Colonel Palmer ap-
pears to have promised

in writing that payment
in full should be made

If Col. Palmer intended
to convey that he would apply
for sanction to devote the saving
by the omission of the ventilator to
meet the claim for compensation,
which he considered just, there is
nothing very objectionable in the matter.

But if he intended to pay
the money out of the public
treasury, it is a different matter.
It is not the same as the
money which he has already
received for the same work.

for the ridge ventilator
but that he ^{contractor} would not
be required to put it up.

The ridge ventilator in
question was paid ^{for} (it is
inferred) ~~in~~ before Col. Palmer's
departure, but
Mr. Fraser not finding
the work and knowing
nothing of the circumstances
stuck the value out of
next bill.

In reply to the Contractor's
remonstrance Col. Palmer
wrote as follows:

"I always intended gi-
ving him" putting up charges,
if the estimate could stand
it.

See the first account.
It is impossible to deal with
dealing with it.

it, indeed there is an allowance for it, though not included in his contract.

The Officiating Superintending Engineer explains that "putting up charges" are admitted in connection with timber-work at the rate usually of 8 annas per cubic foot which is included in the estimated rate per cubic foot.

Regarding these claims for compensation Colonel Incher wrote as follows before leaving the

Sanitary Superintending Engineer might have made a point of adjusting claims of this sort before allowing a transfer of Range still more going away himself. The Controller on only one occasion made a point of adjusting claims with a view to increasing themselves in some way.

The omission to report and clear up the known deficiencies and the recognized claims has involved the present minority and showed great want of moral courage and consideration if not fairness.

81/
the District Colonel Palmer did mention this man's case to me and I requested him to draw up a statement of it which I might submit to Government. He never submitted it and the matter escaped my memory until Mr. Trauer mentioned it about two or three days ago. The Controller makes the following general remarks upon his examination of the accounts.

"I am forced to the conviction that wholesale robbery was practiced

in the Bellamy timber
yard. There is positive
proof that Colonel Palmer
was at least to some
extent aware of the
deficiencies brought to
his notice. These irregularities could not
I am convinced have
been carried out without
at least the cognizance
of the Range Officer.
A perusal of the Head Ac-
countant's letter to Col Palmer
and of that Officer's reply
will show that it was
usual to credit the tim-
ber account with savings arising

from any cause or
where the estimates in-
for which contained
a provision for "timber".
In order to
arrive at a thorough
satisfactory conclusion
as to the actual extent
of loss, which Post
have sustained in
this matter, I requested
the present Range
Officer to have the
various buildings
measured up and
the results reported
to this Office. It has
however been found
impracticable to
comply

Remark
is not admissible on this
ground - The records of
Post and Col Palmer
show as to its merits, in
as Controller says
on the part of
Palmer

comply with this demand
for the reasons explained
in Mr. Fraser's letter
No. 194. 15th June 1872.

It is observed

that from a subsequent
letter by the Head

Accountant to Col.

Palmer in the book

marked K, it may

be inferred that Col.

Palmer did not object

to the practice of devoting

the saving on any

one Estimate to the

excess on another.

see letter under

This letter finally
leads to the inference
agreed by the Board.

84
date 27th May 1877
marked (red X) -

As regards the
exact amount for the
adjustment of which
the sanction of Govt.
is now requested and
the best manner of
dealing with it in the
Accounts, it seems es-
sential that the Controller
should report further.

As regards Kamal
Sahib's claim for cartage
the Superintending Engr.
will have to report
further in communication
with the Controller whether
or no the timber was
paid for to Binny,
conveyed

conveyed by railway
and delivered or not
at Bellary & D

From Col Palmer's
quoting the actual logs
it would seem that he
believed the tank at that
time to be lying at
Gooty Railway Station

The claim for
compensation on account
of alteration in design
seems to be a just one
and to be equitably met
by the arrangement pro-
posed by Mr. Fraser

and recommended by
the Committee

45
Engineer Captain Venter.

Revised Estimates
for all works now in
progress will probably
be necessary.

C.L.

30 July/2

20 ✓
Note by Capt. Smith -

The Government
in their order No. 2326-
4th October 1872 directed
the Superintending En-
gineer / Major Weston /
to report in detail the
causes of increased ex-
penditure on the works
connected with the
Bellary water supply
project, and to state
who was responsible for
the bad work, and in-
correct levels.

Major

Major Vertue in
his letter No. 1520-28th
September 1872 forward-
ed a statement com-
prising the work done,
as ascertained by subse-
quent measurement with
the work actually paid
for, and shewing that
a sum of Rs. 25,196
was unrepresented by
work.

This statement and
the accompanying let-
ter not being perfectly
intelligible Colonel
Bean who had mean-
time relieved Major
Vertue was instructed
to submit a further full
report which he has

done. It now appears
that Major Vertue in
his statement compared
the qualities of different
descriptions of work actual-
ly done, valued at estimated
rates with the money
paid for them, although
the rates of the present
day are more than
double those allowed
in the Estimate.

Colonel Bean
estimates the work not then
found, at Rs. 6505-3-4.
This sum appears to in-
clude 1586 cubic yards
of stone charged for
that cannot be found.
on overcharge of Rs.
2,412 for stonework

in the supply channel,
and an excess of cost
estimated at 327-1-10.
on the tanks - head stucco,
this latter item Colonel
Bean appears to con-
sider intelligible as
being due in great part
to the demolition and
rebuilding of a portion
of the stucco by Major
Vertue's order.

Colonel Palmer
and Lieutenant Colonel
Moberly appear to be
the responsible officers
and no practical good
would result from

any further endeavours
to lodge the responsibility
on them.

It is further evident

from both Colonel Bean's
and Major Vertue's letters
that gross professional
blunders have been made
in the designing of
the project and that
excessively bad work
has been executed in spite of
the high rates paid -
A supplemental Esti-
mate was submitted
for sanction by Major
Vertue and re-submitted
with Colonel Bean's letter
under review but this should
be returned, as the only
course is to order Captain
Edgewood to take up
the project anew, and
send in a report
and estimate illustrated
by surveys and levels,
utilising

utilizing as far as he
can the work already
done -

[illegible]

and cutting in which
we characterized
with such helpless
inability as to be
most irreparable, a
fitting opportunity
is afforded for the
misleading the reader
relating to the
Patmer and for
issuing the de-
serving of the Mo-
berly from the posi-
tion and personal
attentions he would
otherwise give to
return to India -
A bundle of books were
noticed his neglect
and chief supervision
of work in the
Division is lost.

Yours truly,
G.W.

In regard to Colonel Patmer, the revelations
of his inefficiency as exhibited in the Bellary
water supply, only serve to confirm the
Resolutions to which the Govt arrived as
to dispensing with his services as agent

of the scandalous negligence displayed
by this officer in connection with the
Bellary Timber yard and the falsification
of the accounts.

Colonel Moberly's unsuitability for the office
of a Superintending Engineer has been
frequently represented to Government &
expressed by them in their orders.

There is now added the entire omission
to perform his duty in superintending
a most important Military work, the Bellary
water supply, and ^{his failure} to bring to the notice
of the Govt the real state of matters in respect
of the Bellary Timber Yard.

It is painful to have to inflict severe
punishment on an officer of Mr Moberly's
standing, but I do not see how the Govt
can punish any officer of the D.P. or
hereafter, if they fail to mark Col
Moberly's negligence by exemplary severity.

I therefore have papers
the order removing
Col Palmer from
the department, &
reducing Col. Moberly's
position in that department

On my recent visit to
Dellany, I found the
whole community there
in a state of painful
apprehension in regard
to their water supply (which
has been secured for
a short time by the late
arrangement) and
must have been removed
from the park of
Superior Landing. Engineer
McCallie & Co. had been
alluded to. This is absolutely
reciprocal that the works
connected with the
Albany Trench should be
started for that purpose

Circulated for Orders - 11/11/72

With Notes by Captain
C. J. Smith &

Lt. Col. Palmer's name has
been returned in the de-
partmental list of offi-
cers under the Reorganization
train, pending receipt of
this letter -

G.W.W.
27.11.72

I consider that Lt. Colonel Palmer
has failed to give any satisfactory
explanation of the concealment of deficiencies
in the Timber stock under his charge -
which was the serious charge against him
I do not think his retention in the Public
Works department desirable - P.S.C.
J.D.S.

* Note should be if
intended for the personal
of Mr. he written in ink
marginally or on a separate
paper. - W.L. 11/11/72

W. 69 - same fund
No 469
[illegible]

W

W

W. E.

An estimate of Rs. 69,300 was sanctioned in G.O. No. 947 of 26th March 1867 for the "Mysore Tank Project" a Military work intended to improve the water supply of the Bellary Cantonment. In his letter recorded with G.O. No. 578 of 2nd March 1872 Lieutenant Colonel St. Moberly reported that the scheme was so far a success that water had been let in to the Cantonment Reservoirs in

sufficient quantity to remove
all apprehensions of any
scarcity occurring in that
year. He reported at the
same time certain defects
and damages which he
hoped to meet by savings
from the allotment for Mi-
litary Repairs. A sum of
Rs 4445, afterwards in-
creased to Rs 8628, was
reported by Major Tertue
as having been estimated to
be required for such repairs,
which were found to con-
sist chiefly of rebuilding
portions of stone Revetment
which showed signs of
slipping; and in their
order No. 2326 of 4th October
1842 the Government autho-
rized the carrying out
of such work as was
emergent.

23
But Major Tertue
had at the same time
stated that a very con-
siderable additional
expenditure would be
necessary before the water
supply could be based
on a sure and satisfactory
footing; and with a
further communication
he sent in a comparative
statement prepared by
the Executive Engineer
purporting to show that
no less than Rs 25196
had been paid away in
excess of the value of work
actually performed. A
comparative statement
of which abstract is ap-
pendix, submitted by
Colonel Beau with his
letter No. 1979 of 26 November
1842 reduces such excess

to Rs 6505-3-4, and ex-
plains that the former
sum was arrived at by
the measured work being
charged only at estimate
rates although it was
admitted that the rates
which had actually to be
paid were much higher,
and by charging the large
excess of Rs 6,400 on
sunclies and Superintendence
as unexecuted work.

It is perfectly im-
possible that the true
state of affairs with re-
ference to this work can
be understood, until a
detailed estimate is sub-
mitted showing what
more is required to be
done, with which should
be prepared a statement
showing

showing work already per-
formed and remaining
to be performed under
each head of the origi-
nal sanction. All
that can be made out
at present is that
Rs 9,404-13-10 were spent
up to 31st March 1872
against a sanction of
Rs 69,300 (which should
have been reduced to
Rs 62,500 by deduction
for 3 items of the estimate
carried out by Famine
Agency and Funds) out
of which gross outlay Rs
9802 was spent on Sapper
Labour, which is quite
unaccounted for, and
Rs 6,505 has been paid
for work which cannot
be found that

Rs 8,638 are required for
emergent repairs to the
work executed; and
that it will take Rs
35,000 more to complete
the work, some 9000 cubic
yards of Revetment to the
Atipore Tank alone, esti-
mated to cost Rs 3 a
cubic yard, having been
left undone. The Govern-
ment have not yet
been supplied with the
detailed estimates sup-
posed to have been
taken in hand by Mr
Fraser and promised
shortly to be laid before
them, and must now rely
on Captain Edgcombe
going thoroughly into the
project and submitting at the
earliest possible period a true working

25
levels and data. 95
In para 3 of their
Order No 2119 of 11th Sept
1872 the Government had
already stated their opinion
that nothing could jus-
tify or palliate Sir
Colonel Palmer's conduct
with reference to the
Bellary Tank Accounts;
on which ground alone
it was announced to him
that his removal from
the Public Works Dept
was contemplated. His
letter of 30th October 1872
having failed to give
any satisfactory explana-
tion of the concealment
of deficiencies in the
Stock

to stock under his charge,
His Excellency the Governor
in Council resolved to carry
into effect (that sentence of
dismissal) and remanded
to Military duties, without
reference to the charge of
executive inefficiency which
might be brought against
him in connection with
the Alipore Water Supply
project. It will take
effect from the end of the
current Official year.

From the same
date Lieut Colonel McRoberty
will be reduced in the
Departmental List of Execu-
tive Engineers of the 1st grade,
to rank below all Officers
who

the removal of Mr Palmer
from the D.P.W and his

responsibility for the
mismanagement

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who have acted as Super-
intending Engineers, i.e.
next below Mr P. Smith,
and he will forfeit on
return to duty the person-
al allowance he would
otherwise have drawn
as having attained the
rank of Superintending
Engineers under the
former organization.
It will be open to him
to lay before Government
any explanation he may
wish to give of his share
in the mismanagement
of the Alipore works,
but he will understand
that the Government are
dissatisfied with the
defence

to deference made by him under
date the 25th October 1872
in reply to paras 5 & 6
of the Order above quoted,
which has failed to
remove from their minds
the impression they had
been led to conceive of
his gross neglect of
his duties in connection
with the Bellary Timber
transaction and the work
of the 3rd Division generally
Y.M.W.

To The St. Eugene Barrage
• Mich. Dept
• Counter-Genl
• Lieut. Col. A. S. M. M. M.
• J. J. Palmer

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Statement of Work.

Item of Work.	Estimate as sanctioned.	Amount actually paid	Increase 4	Decrease 5	Difference between Columns 2 & 3 + 4 & 5 6	Value of work actually performed 7	Difference between Columns 3 & 7 8
1. Inicut across Chuttrum Kullah	2542-14-3	2491-3-1	917-9-8	669-4-10 + 245-4-10	2565-10-8	225-8-5	
2. Head Sluice	1030-11-8	1102-13-1	340-7-3	368-5-11 + 72-1-4	965-0-6	137-12-6	
3. Channel from Chuttrum Kullah to Alipore Tank	8206-11-2	11,414 7-4	3707-12-2	500-0-0 + 3207-12-2	9112-10-11	2301-12-5	
4. Alipore Tank	41,592-6-10	38,835-1-1	504-13-0	3262-2-14 - 2757-5-10	35,346-4-10	3488-12-2	
5. Do Calingulali	1069-3-3	1069-3-3			1064-15-3	4-4-0	
6. Do Sluice	2141-9-5	3772-6-1	1630-12-8		1630-13-8	3425-4-3	
7. Channel from Alipore Tank to Fischer's Tank	3838-8-4			3838-8-4 - 3838-8-4		work performed with Famine Relief Fund	
8. Road Tunnel	938-11-10			938-11-10 - 938-11-10			
9. Improving channel to the Port Ditch	2000-0-0			2000-0-0 - 2000-0-0		Incomplete	
10. Distributing Channel	2000-0-0	626-2-0		1373-14-0 - 1373-14-0	626-2-0	Nearly 20 per cent. in the valuation of work performed.	
11. Superintendence	840-0-0	2043-15-8	1203-15-8	+1203-15-8	2043-15-8		
12. Sundries	3099-3-3	8290-8-9	5191-5-6	+5191-5-6	8290-8-9		
Totals	69,300-0-0	69,945-12-2	13,496-12-11	12,850-15-9 + 645-12-2	63,440-8-10	6505-3-4	
		9,802-3-6	Paid for Sapper Labour				
		49,747-15-8					

This should be

of which a picture within

1873

10/33 470
1007.
Cdt. of 1873 Madras.

PUBLIC WORKS.

The District Engineer
Bellary

Encl. 7

Office No. 769.

No. 22 233

Responsibility in the
Bellary timber traverse.
two