M.R.O.1—2400—17-11-47

MADRAS RECORD OFFICE.

Government of Madras.

Judicial Services DEPARTMENT.

G.O. No. 2424 Press Mis.

Dated 6—12— 18 57

Not to be folded or roughly handled

No. 100. Read the following letter from Lieutenant-Colonel E. LAWFORD, Officiating Chief Engineer; to W. H. BAYLEY, Esq., Acting Secretary to Government, dated 13th November 1858, No. 5388.

SIR,

1 Original letter from the Officiating District Engineer of Madura, No. 571 dated 21st October 1858.
1 Sketch.
1 Abstract Estimate.

In acknowledging the receipt of Extract from the Minutes of Consultation under date the 17th June 1858, No. 1149, I have the honor to state, for the information of Government, that the non-completion of the Ambravutty bridge, in the Madura District, prior to the receipt of the restrictive orders of Government on the 17th July 1858, is mainly to be attributed to the unseasonable freshes that occurred in April and May 1856.

2. Lieutenant Scott, in a letter of the 11th April 1856, to the Civil Engineer 8th Division reported "that owing to the quantity of rain during the preceding fortnight and consequent "increase of water in the river, the work at the bridge had been much retarded;" and in his Diary from the 1st to 4th May 1856, he again remarks, "that the works of the Ambravutty "bridge had been almost entirely stopped by the floods."

3. The work was, however for the first, carried on under great difficulties from the want of skilful workmen. On every occasion of the work being stopped, the Bricklayers, Stone-cutters, &c., who almost all had to be obtained from the Tanjore District, went back to their villages, and on the re-commencement of the work a fresh set had to be sought for and brought from a distance of 80 or 100 miles.

* Letter, No. 571 dated 21st October 1858.

4. On the 28th of August last, Captain Ryves proceeded* to the site of the bridge and thoroughly examined the work, 5 arches and piers then standing and 4 arches and 3 piers destroyed, abutments and wing-walls on both sides sound.

5. The bed of the river at the side of the bridge is rocky, (on the west side 7 feet lower than the east) with shifting sand varying from 3 to 6 feet in depth, the set of the river is therefore deep and strong on the left or east bank, on which the three piers have now to be rebuilt. Two of these piers have indeed been so, but as it is not certain, whether before the fall of the arches, the piers had not sunk, or settled irregularly, preparatory to their complete fall, Captain Ryves has very judiciously recommended their re-construction of brick in Cement from a levelled course laid in the rock cut for that purpose, to which proposition I beg to add my full concurrence and support.

6. The expenditure incurred up to the end of September last, amounted to Rs. 3,232-0-0
Balance of Estimate... ... ... ,, 3,907-0-0

* Four thousand and eight hundred.

7. In conclusion, therefore, I have the honor to solicit the early sanction of Government, as the working season may be said to have commenced for the accompanying Estimate, amounting to Rupees 4,800,* as the excess required for completing the bridge over the Ambravutty on the high road from Dindigul through Pulney to Coimbatore, Palghat and the Western Coast.

Letter from Captain J. G. RYVES, Officiating District Engineer of Madura; to the Chief Engineer, dated Camp Veerapaundy, 21st October 1858, No. 571.

SIR,

With reference to your Memorandum dated 8th Instant, I have the honor to furnish the information called for in Extract Proceedings No. 2356, dated 30th July.

2. According to the instructions received with the Proceedings above quoted, I proceeded to the Ambravutty bridge and closely examined the works on the 28th August last.

3. The bridge was then almost in the same state as reported by Major Marshall, 5 arches and piers standing, 4 arches and 3 piers destroyed, the abutments and wings on both sides of the river sound.

4. We have therefore to rebuild from the foundation three piers* and to turn 4 arches to complete the bridge, and the question to be decided is, whether the foundations of the three piers should be taken up and rebuilt from the rock upwards or whether we may depend upon the old foundation and be saved this additional labor and expense.

* This has been done for two of the piers.

5. I am of opinion that the foundations of the three piers should be removed and that the new work should be carried up in Brick and Cement (Lieutenant Scott's Hydraulic Cement) from a levelled course laid in the rock cut out for the purpose.

6. The bed of the river at the site of the bridge is rock covered with from 3 to 6 feet of shifting sand the rocky bed at the west side of the river is about 7 feet lower than it is on the east, accordingly the set of the river is deep and strong along the left bank and it is the three piers on that side of the river which have now to be rebuilt, the work will therefore be very difficult and expensive. The accompanying section taken at the time of my inspection by sounding through the sand with an Iron rod illustrates what I have now stated.

7. I am confirmed in my opinion expressed in para. 5 because it is very doubtful whether the foundations to the three piers 6, 7 and 8 were in the first instance properly laid. I state this doubt only with reference to our future proceedings and not as having any bearing on the probable cause of the accident, for from the statements of Mr. Bywater and the subordinates at the bridge, I am given to understand that the arches fell several hours before the piers and it is not now possible to determine whether before the fall of the arches the piers had sunk or drooped at one end or settled in any way preparatory to their complete fall a few hours after.

8. If the piers be carefully built up by Brick and Cement from the levelled rock to the spring of the arch the flooring proposed by Major Marshall will be unnecessary: nor would that flooring be of any use unless its retaining walls were carried down to and built into the rock below, which would be more expensive than simply raising the piers from the rock as I propose.

9. I also beg to recommend that the spandril arches be discarded in that part of the work which remains to be done, the arch being a flat ellips of 40 feet span, heavy spandrils are required. The result of the hollow spandrils in those arches which are still standing is excessive settlement at the crown and dangerous looking and unsightly arches.

10. These are the two principal points to be settled with reference to future operations concerning which only I am called upon to report.

11. I have the honor to submit with this a Statement of the expenditure and balance of estimate remaining with an estimate of probable excess on the amount already sanctioned by Government for which sanction will be required to complete the bridge according to the original design.

12. I hope that Mr. Bywater will be able to recommence work about the end of November, so as to have four clear months for work in the bed of the river and turning arches: bricks, Chunam, and centrings are all ready and we only await the falling of the river to a manageable depth before we commence work.

13. Before closing this letter I ought to state that from a perusal of records and Memoranda of the bridge work, it appears that the work was from the first carried on under great difficulties from want of skilled workmen on every occasion of the work being stopped, the Bricklayers and skilled workmen who almost all had to be obtained from Tanjore went back to their villages and at the re-commencement of work and fresh set had to be sought for and brought from distances of 80 or 100 miles.

No. 101. ORDER THEREON, No. 2626; dated 6th December 1858.

Resolved that the Supplemental Estimate amounting to Rupees (4,800) four thousand and eight hundred, submitted with the above letter for completing the Bridge over the Ambravutty river in the Madura District be forwarded to the Government of India for sanction, with reference to No. 1 of the Rules printed at page 371 of the Circular Order Book.

(Signed) W. H. BAYLEY,
Acting Secretary to Government.

No. 102. Ordered in consequence that the following letter be despatched.

From W. H. BAYLEY, Esq., Acting Secretary to Government of Fort Saint George; to Lieutenant-Colonel R. STRACHEY, Officiating Secretary to the Government of India, D. P. W., dated 6th December 1858, No. 2627.

SIR,

I have the honor under the orders of the Governor in Council to submit with reference to No. 1 of the Rules communicated with Colonel Baker's letter of the 1st August 1856 No. 3605, a supplemental Estimate (with Sketch and copies of the papers noted in the margin*) amounting to Rupees 4,800 for completing the Bridge over the Ambravutty river in the Madura District.

*Letter from Officiating Chief Engineer dated 13th November 1858, No. 5388.
Do. from District Engineer of Madura dated 21st October 1858, No. 571.

2. On the 27th February 1855, the Government sanctioned for entry in the Budget of 1855-56, an Estimate of Rupees 21,540 for the construction of this Bridge. The expenditure on the work to the close of the Official year 1856-57, was only Rupees 9,430, and its progress was arrested by the restrictive orders of the 3rd of July 1857. On the 27th January† 1858, the Chief Engineer reported that five arches of the Bridge had been turned and three more piers with the western abutment completed up to springing line, and that the work in its unfinished state would not stand the test of a heavy fresh. Under this representation and with the view of saving the work already done, the Government granted authority for the completion of the structure.

†Vide P. W. Consultation 16th Feby. 1858, Nos. 21 and 22.

3. Operations had been resumed and were in progress when it was reported that four arches of the Bridge,‡ were carried away consequeut on the heavy rains in April and May last; and this accident has rendered the present supplemental Estimate for completing the structure absolutely necessary. I am desired therefore to solicit that the early sanction of the Government of India may be accorded to the additional expenditure, in view to the work being vigorously proceeded with and brought to completion at an early date.

‡ Vide P. W. Consultation 22nd June 1858, Nos. 12 and 13.

Chancery Office 13th November 1838

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had been almost entirely stopped by the Floods

3 The work was, however, in the first [illegible] carried on under great difficulties for the want of skilful workmen. On every occasion of the work being stopped, the Bricklayers [illegible] returned from the [illegible] [illegible] and [illegible] on the recommencement of the work [illegible] to be sought for and brought from a distance of [illegible] Miles

4 On the 29th of August last Captain Sykes proceeded to the site of the Bridge and thoroughly examined the work, [illegible] and [illegible] then standing, and at [illegible] [illegible] declined [illegible] and Wing walls [illegible]

Letter No. [illegible] dated [illegible] October 1855

5 The [illegible] at the site of the Bridge is rocky, on the West side quite [illegible] than the Banks with [illegible] and varying from 3 to 6 feet in depth, the [illegible] of the River is [illegible] along on the left or East bank, on which the three Piers now [illegible] to the [illegible] [illegible] to, but as it is not certain whether before the fall of the Arches the Piers had not sunk or settled irregularly, preparatory to their complete fall, Captain Sykes has very judiciously recommended their reconstruction of Bricks in Cement from a levelled surface laid in the rock cut for that purpose

be [illegible] to which by [illegible] I beg to [illegible] my full concurrence and approval.

6 [illegible] is [illegible]

[illegible] — 3,202 [illegible]

[illegible] — [illegible]

7 In conclusion, therefore, I [illegible] to solicit the early sanction of Government as the working season may be said to have commenced, for the [illegible] Estimate amounting to Rupees 4,600, [illegible] completing the Bridge on the [illegible] on the right bank [illegible] [illegible]

× Four thousand and six hundred

I have the honor to be,
Sir,
Your most Obedient Servant

[illegible] 15th November 1855

[illegible]
Crawford Lieut Colonel
Superintending Chief Engineer

To
The Secretary to Government
[illegible]

Capt [illegible]

Dft to Govt 22d Dec 58 R 12 Jan 59

Copy with 2 Sigd Duplicates to Govt of India — 6 Dec 58

No 100 & 101.

25 Nov R 30

P.N. 5th December

Dft to Govt dated 4th December No 2718.

Chief Engr & Chief Engr

Chief Engr Bengal Govt

Dft

Dated 13th } November 1858

Received 15th }

From the Govt of India 15th Dec Ley/59 No 215 Enclosure No 5388

From Chief Engr 0/26th Dec 4/59 Enc 4 2nd Govt Returned 2-12-59

Sanctioned Estimate amounting to Rupees (4,800) Four thousand and eight hundred submitted with the above letter for completing the Bridge over the Cumbumatty River in the Madura District the forwarded to the Govt of India for sanction with reference to Para 7 of the Rules printed at page 371 of the Circular Order Book.

Ordered accordingly that the following letter be despatched

To Major Genl Strachey Offg Secretary to Govt of India.

Herewith 6 Dec 58 No 2626

W H Sharp Esq

Fort St George 1st Dec 58

Chief Engr

Dated 7th

No 2626

Sanctioned Estimate amounting to Rupees (4,800) Four thousand and eight hundred submitted with the above letter for completing the Bridge over the Cumbumatty River in the Madura District the forwarded to the Govt of India for sanction with reference to Para 7 of the Rules printed at page 371 of the Circular Order Book.

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To Major Genl Strachey Offg Secretary to Govt of India.

Herewith 6 Dec 58 No 2626

W H Sharp Esq

Fort St George 1st Dec 58

Chief Engr

Dated 7th

Copy of Govt Order No 2626 dated 6th Dec 1858