

(1) Number of pages 26(2) Date of repair 12-12-1965

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No.	1543	Press
148-149		~~Mis.~~
Dated	6-6-	1865.

Not to be folded or roughly handled

10/

*Proceedings of the Madras Government, Public Works Department,
6th June 1865.*

No. 148. Read the following letter from Lieutenant-Colonel G. W. WALKER, R. E., Superintending Engineer, 7th Division, to Colonel C. A. ORR, R. E., Secretary to Government, Department Public Works, dated Coonoor, 12th May 1865, No. 6:—

SIR,

1. I have little to add to what Mr. Sub-Engineer Bailey says in the accompanying letter* regarding the very considerable increase of sanction required for the three large bridges under Karcoor Ghát, amounting to no less than Rupees

Enclosures 5.

* No. 467 of 13th February 1865.

33,150 above the former aggregate of Rupees 32,850; or upwards of 100 per cent. In such a new country as the line opens it must have been impossible to get correct information at first; and it is as well that the works were delayed till after the monsoon of 1864 when Mr. Bailey personally satisfied himself of the actual rise of the extraordinary floods of that year. I have discussed the subject with him more than once, and am convinced that his demands will have to be acceded to; his intimate acquaintance with the country below Karcoor Ghát being beyond all gain-saying, and the subject having received his closest attention.

2. I disapprove however of his design for the Eddakarra bridge, and will direct the substitution of similar trusses to those used for the other two, at a difference of cost which will be immaterial. Indeed, I would rather have had all three streams bridged with solid queen post trusses, but I have understood from Mr. Bailey that he cannot get the requisite scantlings without incurring an inordinate expense for carriage. I accept therefore his designs, but with the proviso that a number of iron straps and bands shall be added from the allowance for contingencies.

3. Of the original estimates, which it is now proposed to supercede, that of the Eddakarra bridge was included in the estimate of Rupees 27,580 for earth work and minor bridges below Karcoor Ghát, sanctioned in G. O. No. 13 of 6th January 1863; the expenditure on which amounted to Rupees 14,693-15-0 up to 30th April 1865, and on account of which Rupees 10,000 have been allotted in the current year's Budget.

4. The Cherrapoya and Nellumboor bridge estimates (Rupees 26,420) were incorporated with the above, and submitted together with them, as I understand; but Lieutenant-Colonel Ouchterlony appears to have postponed asking for sanction on their account. This was overlooked by me in making up the Budget of 1864-65, in which it was presumed that the larger bridges as well as the earthwork had been sanctioned. Expenditure up to 30th April has been only Rupees 9,336-8-6, and the Budget allotment for the current year is Rupees 15,000.

5. I must explain that my reason for not submitting revised plans embodying the few alterations above alluded to, is that my own Draughtsman's time is entirely taken up with the Lawrence Asylum plans, and that I am unwilling to lay more such work on Mr. Bailey himself than can be avoided. In future, with well paid Draughtsmen, Subordinates in charge of Ranges will be able to meet such calls without neglecting their executive duties.

From H. BAILEY, Esq., Sub-Engineer, to Lieutenant-Colonel G. W. WALKER, R. E.,
Superintending Engineer, 7th Division, dated Calicut, 13th February 1865, No. 467

SIR,

I have the honor to submit herewith for sanction the following revised plans and estimates, viz.:—

1. For constructing a bridge over the Eddakarra river on the road from Mamhat to the foot of the Carcoor Ghát, amounting to Rupees 11,200.
2. The revised estimate allows for a bridge of two bays of 45 feet span and 24 feet to bottom of string pieces, the original estimate, which amounted to Rupees 6,430, being for a bridge of two bays of 40 feet span and 18 feet high.
3. The increase in the amount of the estimate is nearly altogether attributable to the change of plan; this change the floods of last monsoon show to be actually necessary, as if the

*Proceedings of the Madras Government, Public Works Department,
6th June 1865.*

bridge was constructed on the original plan it would certainly be carried away whenever a flood such as occurred in July last takes place.

4. Up to this no work has been carried out from the original estimate.

5. For constructing a bridge over the Cherrapoya river, on the same road, amounting to Rupees 14,500.

6. The revised estimate allows for a bridge of 33 feet high to bottom of string pieces, the original estimate of Rupees 9,350 being for a bridge of only 33 feet high.

7. Most of the increase of the estimate for this work is due to the embankment for the approaches, estimate to cost Rupees 3,375, this embankment I consider absolutely necessary as without it the bridge would be in floods such as that of last year practically useless for very long periods, yet if the embankment is not raised above the highest floods it would be sure to be breached by the water passing over it.

8. The balance of excess is due to extra masonry required for the additional height the bridge has to be raised, to a sum of Rupees 200 allowed for removing a reef of rocks from the bed of the river above the bridge, and which causes a set of the current to one side, and to an increase from 12 per cent. per cubic foot to 14 per cent., which I have been forced to make for the wood work, the value of timber having increased so much since the original estimate was framed that it cannot now be obtained for the estimated rate.

9. Of this bridge one abutment has been raised 31 feet, and the other 21, the remaining masonry is in progress and the wood work in preparation.

10. For constructing a bridge over the Nellumboor river on the same road, amounting to Rupees 40,100.

11. Owing to the alterations shown to be necessary by the floods of last monsoon, I have been forced to prepare a revised plan altogether, the original plan being not only deficient in height but also in span, the latter deficiency is owing to the banks of the river having been cleared for the Teak plantations, the floods therefore took much more effect on the banks than they used to do when covered with brushwood and bamboos.

12. The following alterations tend however to raise the amount of the estimate above what it would be if the work was carried out as originally intended.

13. When preparing the revised estimate I took the opportunity of carrying out the recommendation to use teak timber, contained in a letter from the Collector of Malabar, and which was forwarded to me with your endorsement, the revised estimate therefore allows teak timber for the trusses instead of jungle-wood, the additional cost of this alteration will be about Rupees 3,600, it however appears advisable in every way as the trusses will last much longer, a great advantage when the difficulty of getting work-people in this part is considered, and eventually I believe more than repay in this way the extra cost originally.

14. Cut granite stone cut-waters to the piers are also allowed, for this addition I consider absolutely necessary, as I do not think laterite stone sufficiently strong to bear the continual blows from trees and brushwood of all kinds which is swept down the river during the freshes. This improvement causes an addition of nearly Rupees 5,000 to the cost of the bridge.

15. The cost of jungle-wood has also been increased from 12 per cent. to 14 per cent. per cubic foot; the cause for this increase has already been given when reporting about the Cherrapoya bridge.

16. For masonry the rate has also been increased from Rupees 22 to Rupees 24 per 100 cubic feet. I found on opening quarries near the site of the bridge that although laterite stone of fair quality is obtainable within a reasonable distance, such stone as is required for the piers will have to be brought from a distance of about three miles. This together with the wish to build the lower part of the piers with Palghat stone-lime, the shell-lime of this coast being too weak to stand such a current as these piers will be subject to, led to my raising the rate for masonry as shown above.

17. Laterite stone is being cut for this bridge; no other work has yet been undertaken, as it is impossible to obtain labor for all the work on this road.

18. The increase in the revised estimates is so great that I fear Government will consider that as I took the sections of these rivers originally, I must have been careless when taking them.

19. Such however was not the case. I visited the Eddakarra river during the monsoon, of 1862, and found that the highest flood was under 9 feet deep; when therefore the people living near the place pointed out a spot 3 feet higher as the highest they had ever known the floods to reach, I considered they must be near correct. I again visited the river in the monsoon of 1863, and found the flood of that year only a few inches higher than that of the preceding one. Under these circumstances I felt quite satisfied that the highest flood line I had already taken was sufficient. The monsoon of last year has however shown that it was much too low, the flood line having been nearly 11 feet higher than those of 1862 and 1863, and 8 feet higher than that pointed out by the villagers.

*Proceedings of the Madras Government, Public Works Department,
6th June 1865.*

20. In the case of the Cherrapoya and Nellumboor rivers no information as to the height of the floods, near the sites for the bridges, could be obtained, as there were no houses for miles. I was therefore forced to take the flood line of the monsoon of 1862 for my guide, this I did with the more confidence, from the people living on the banks of these rivers at other points having assured me that the flood of that year was quite as high as they had previously known.

21. The floods of 1863 confirmed my previous impression, as they were only slightly above that of 1862, yet in that year the floods near the coast were commonly spoken of by the people as the highest known, more damage to roads and bridges having occurred in 1863 than had ever been previously.

22. Strange to say, however, I found last monsoon that the highest floods near the coast are no criterion for the floods near the foot of the ghats, the water in the Beypore river at Momolly, the mouth of the Cherrapoya, Nellumboor, and Eddakarra rivers being nearly 3 feet lower last monsoon, than it was the one previous, while near the foot of the ghats the rivers were 8 feet higher.

23. This effect is, I believe, attributable to the manner in which the floods come down. In 1863 the highest flood took place very early in the monsoon, when the stream was completely choked with rubbish, whereas last year the highest flood was preceded by two or three high freshes, the river was therefore comparatively clear when the extraordinary flood in July took place.

No. 149. ORDER THEREON, 6th June 1865, No. 1,543.

CIVIL WORKS, No. 27.

1. The late Colonel Ouchterlony, when Deputy Chief Engineer of the Southern Circle, submitted with his letter of the 6th December 1862, No. 154, an estimate amounting to Rupees 54,000 for completing the road from Mambat on the Beypore river to the foot of the Carcoor Ghat. This estimate provided for bridges across two streams at a cost of Rupees 26,420; but, as, in the opinion of the Deputy Chief Engineer, these works were not immediately needed, the Government, on the recommendation of that Officer, sanctioned the reduced sum of Rupees 27,580 for earthwork and minor bridges on the

6th January 1863, No. 13. line in question. The importance of the larger bridges was subsequently urged by the Collector, and Colonel Ouchterlony, on re-consideration, withdrew his demurer to their commencement.

2. The estimate of Rupees 27,580 provided a sum of Rupees 6,430 for the Eddakarra bridge. This work has not yet been commenced, and Colonel Walker now submits a revised estimate of Rupees 11,400 for it, the excess being 77 per cent. This increase is explained to be owing almost entirely to the plan of the bridge having been modified with a view to the provision of additional water way, which the floods of the last monsoon showed to be indispensable for the security of the work.

3. The Superintending Engineer also submits a revised estimate of Rupees 54,600 for the two large bridges over the Cherrapoya and Nellumboor rivers, the increase over the first estimate being Rupees 28,180 or 106 per cent. As in the case of the Eddakarra bridge the design of both these works has been altered to render them secure against floods.

4. The progress of the Cherrapoya bridge is thus described:—"One abutment has been raised 31 feet and the other 21, the remaining masonry is in progress and the wood-work in preparation." The increased cost of this work is explained to be owing chiefly to extra masonry required for the additional height to which the bridge has to be raised, and to the necessity which exists for constructing an embankment for the approaches, without which the bridge would be practically useless during floods such as those of last year. The balance of excess is stated to be due to the removal of a reef of rocks from the bed of the river above the bridge, and to an increase in the price of timber.

5. The bridge over the Nellumboor river has not yet been commenced. The excess in the case of this work is shown to be due to the following causes:—

of similar work no more work for me and two,

*Proceedings of the Madras Government, Public Works Department,
6th June 1865.*

1st.—The substitution (at the suggestion of the Collector) of teak for jungle-wood for the trusses.

2nd.—The provision of cut granite instead of laterite for the cutwaters to the piers.

3rd.—The increase in the cost of jungle-wood and masonry.

6. Lest the large excess over the original estimate be ascribed to carelessness when the sections of the rivers were originally taken, Mr. Bailey explains that when he visited the Eddakarra river during the monsoon of 1862, he found that the highest flood of that year was under nine feet, and that the people living in the neighbourhood pointed out a spot three feet higher as the highest level to which the river had been known to rise. He also reports having visited the river in the monsoon of 1863, when he found that the floods had risen a few inches above the level of the preceding year; but he adds that during the monsoon of last year the river rose 11 feet higher than in either 1862 or 1863. With regard to the two other bridges the Sub-Engineer states, that as no information whatever as to the height of the flood near the sites of the bridges could be obtained, he was compelled to take for his guide the flood line of the monsoon of 1862, more especially as the people living on the banks of these rivers, at other points, had assured him that within their knowledge the river had never been known to reach a higher level.

7. The Government are willing to accept this explanation so far as the omission to provide adequate water-way is concerned; but they consider that the expediency of using teak instead of jungle-wood for the trusses of the bridges, and of cut granite instead of laterite for the cutwaters of the piers should have been foreseen and provided for. They observe that the increase of cost due solely to these changes has been nearly 8,600 Rupees.

* Revised estimate	RS.	11,400	8. With these remarks the Government sanction the revised estimates
Original do.		6,430	of Rupees 54,600 for the bridges across
		4,970	the Cherrapoya and Nellumboor rivers,
Amount of estimate of which this work		27,580	and of Rupees 11,400 for the bridge over
forms an item		32,550	the Eddakarra river. The increased
			cost of this latter work will raise the estimate of which it forms an item from Rupees 27,580 to Rupees 32,550.

(True Extract.)

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

To the Superintending Engineer, 7th Division.
" Controller of Public Works Accounts.
" Accountant General.

Exd. S. T. Augustin.

Superintending Engineer's Office 7th Division
Coonoor 12th May 1865

From,
Lieut. Colonel G. W. Walker R. E.
Superintending Engineer 7th Division.

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

Sir,
I have little to add to what Mr. Sub

Engineer Bailey says in the accompanying letter regarding the very considerable increase of sanction required for the 3 Large Bridges under Hartwood Grant, amounting to no less than Rupees 33,150 above the former aggregate of Rupees 32,850; or upwards of 100 per cent. In such a new country as this opens it must have been impossible to get correct information at first; and it is as well that the works were delayed till after the Monsoon of 1864 when Mr. Bailey personally satisfied himself of the actual rise of the extraordinary floods of that year. I have discussed the subject with him more than once, and am convinced that his demands will have to be acceded to, his intimate acquaintance with the country below Hartwood Grant being beyond all gainsaying, and the subject having received his closest attention.

2. I disapprove however of his design for the Eddakarra Bridge, and will direct the substitution of similar trusses to those used for the other two, at

a difference of cost which will be immaterial. Indeed, I would rather have had the 3 streams bridged with solid Queen Post Trusses but I have understood from Mr. Bailey that he cannot get the requisite scantlings without incurring an inordinate expense for carriage.

I accept therefore his designs but with the proviso that a number of Iron Straps and Bands shall be added from the allowance for Contingencies.

3. Of the original Estimates which it is now proposed to supersede that of the Eddaturna Bridge was included in the Estimate of Rupees 24,580 for Earthwork and Minor Bridges below Harkoot Chaut, sanctioned in G. O. No. 13 of 6th January 1863, the expenditure on which amounted to Rupees 14,693-15- up to 30th April 1865, and on account of which Rupees 10,000 have been allotted in the current year's Budget.

4. The Cherrupoya and Kellumboot bridge Estimates (Rupees 26,420) were incorporated with the above, and submitted together with them, as I understand; but Lieut. Col. Ochterlony appears to have postponed asking for sanction on their account. This was overlooked by me in making up the Budget of 1864/65, in which it was presumed that the larger Bridges as well as the Earthwork had been sanctioned. Expenditure up to 30th April has been only Rupees 9,336-8-6 and the Budget allotment for the current year is Rupees 15,000.-

5. I must explain that my reason for not submitting Revised Plans embodying the general alterations

alterations above alluded to, is that my own Draftsman's time is entirely taken up with the Lawrence Asylum Road, & that I am unwilling to lay more such work on Mr. Bailey himself than can be avoided. In future, with well paid Draftsmen, Subordinates in charge of Ranges will be able to meet such calls without neglecting their Executive duties.

I have the honor to be,

Sir,

Your most Obedt. Servant.

Wm. L. L. L. L. L.
Superintending Engineer of the B. & C.

c. 24th May 1865 D. 29th
 21543-6 June 1865.

Roads and Bridges
 Estimate of the Probable Expense of Constructing a Bridge for the Eddakarra River on the Road from Mumbat to the foot of the Gancor Ghat. No. 3 of 1865/66

Value	Quantity	Measurements				Particulars	Rate	Amount of each		Explanation of the necessity of work	By whom recommended					
		Length	Breadth	Depth	Volume			Article	Unit							
Grand	Constructing Eddakarra Bridge on Road from Chumbul to the foot of the Gancor Ghat.	60	11 1/2	6	4140-0	Foundation to abutments										
		30	12	6	2160-0	Do to Pier										
		116	7	6	4872-0	Do to Wing walls										
		52	8	24	9984-0	Abutments abutted										
		26	8	24	4992-0	Pier Do										
		120	5	24	14400-0	Wing walls do										
		148	2 1/4	1 1/2	498-6	Roadway										
		148	1 1/2	3 1/2	777-0	Drainage										
		Total			48824-6	Value of Estimate in Current	C	18	ft	7528	6 6					
		<u>Woodwork</u>														
		5 1/2	1 1/2	9	478-1-6	10 Beams										
		17 1/2	1	8	170-0-0	20 Struts & Posts										
		2 1/2	1 1/2	1 1/2	10-5-0	4 Wall Plates										
		102	18	2 1/2	382-6-0	Planting										
		160	1	2 1/2	33-4-0	Projecting end of Planks to support struts of Grand Rails										
		102	6	4	68-0-0	4 Copy of bottom Rails of Grand rails										
		8 1/2	6	4	24-6-0	42 Rail Posts										
		102	4	1 1/2	17-0-0	4 Carriage Rails for Grand Rails										
		13 1/2	4	6	17-9-4	10 Struts to Grand rails										
		Total			1531-10-4	Left of Woodwork	C	15	ft	1460	6 1					
Grand	Constructing Eddakarra Bridge on Road from Chumbul to the foot of the Gancor Ghat.	Shew Work														
		Carpenter and Body line for 102 ft										3	ft	306	"	
		Scaffolding												500	"	
		Ballast water												675	"	
		Expenditure of Carriage work for approaches										C	2	brd	10169	12
90	12	5	5400													
Total											10376	23	14			
Superintendence and Sundries about 10											10376	23	14			
Total for Eddakarra Bridge											10376	23	14			
Deduct amount already sanctioned											4970	11	0			
Balance to be sanctioned											5306	12	14			

Sub Engineer's Office
Patent
11th February 1865

As shown by the high flood of last year the original Plan is much too low the water would be over the Beams of the Bridge.

As shown by the high flood of last year, the original plan is much too low the water would be over the beams of the bridge.

Sub Engineer's Office
 Vincent
 12th February 1865

Geo. P.A.A.

W. Walker Esq
 Supd. Engr.
 H. Bailey
 Sub Engineer
 P. K. L. S.

2101543-6th June 1865.

Estimate of the double

Charles and Charles

Apr 3 1865-66.

201699/65

Endocnemis *Saleri*. From the upper
Eng. p. 15 to the stratum below
R-P. 10 - dated by Perry 15 B & C.

Madame de la Rivière

St. George and St. Andrew.

722 206566

The birds of the Middle range of Connecticut. Ranges over the Adirondacks and
 the Catskills.

[illegible]

Oct. 24th Nov 1865 Da. 29th

~~June 8th 1884~~

820-17	Planking	120	sq ft	1.50	180.00
820-18	Planking	120	sq ft	1.50	180.00
820-19	Planking	120	sq ft	1.50	180.00
820-20	Planking	120	sq ft	1.50	180.00
820-21	Planking	120	sq ft	1.50	180.00
820-22	Planking	120	sq ft	1.50	180.00
820-23	Planking	120	sq ft	1.50	180.00
820-24	Planking	120	sq ft	1.50	180.00
820-25	Planking	120	sq ft	1.50	180.00
820-26	Planking	120	sq ft	1.50	180.00
820-27	Planking	120	sq ft	1.50	180.00
820-28	Planking	120	sq ft	1.50	180.00
820-29	Planking	120	sq ft	1.50	180.00
820-30	Planking	120	sq ft	1.50	180.00
820-31	Planking	120	sq ft	1.50	180.00
820-32	Planking	120	sq ft	1.50	180.00
820-33	Planking	120	sq ft	1.50	180.00
820-34	Planking	120	sq ft	1.50	180.00
820-35	Planking	120	sq ft	1.50	180.00
820-36	Planking	120	sq ft	1.50	180.00
820-37	Planking	120	sq ft	1.50	180.00
820-38	Planking	120	sq ft	1.50	180.00
820-39	Planking	120	sq ft	1.50	180.00
820-40	Planking	120	sq ft	1.50	180.00
820-41	Planking	120	sq ft	1.50	180.00
820-42	Planking	120	sq ft	1.50	180.00
820-43	Planking	120	sq ft	1.50	180.00
820-44	Planking	120	sq ft	1.50	180.00
820-45	Planking	120	sq ft	1.50	180.00
820-46	Planking	120	sq ft	1.50	180.00
820-47	Planking	120	sq ft	1.50	180.00
820-48	Planking	120	sq ft	1.50	180.00
820-49	Planking	120	sq ft	1.50	180.00
820-50	Planking	120	sq ft	1.50	180.00
820-51	Planking	120	sq ft	1.50	180.00
820-52	Planking	120	sq ft	1.50	180.00
820-53	Planking	120	sq ft	1.50	180.00
820-54	Planking	120	sq ft	1.50	180.00
820-55	Planking	120	sq ft	1.50	180.00
820-56	Planking	120	sq ft	1.50	180.00
820-57	Planking	120	sq ft	1.50	180.00
820-58	Planking	120	sq ft	1.50	180.00
820-59	Planking	120	sq ft	1.50	180.00
820-60	Planking	120	sq ft	1.50	180.00
820-61	Planking	120	sq ft	1.50	180.00
820-62	Planking	120	sq ft	1.50	180.00
820-63	Planking	120	sq ft	1.50	180.00
820-64	Planking	120	sq ft	1.50	180.00
820-65	Planking	120	sq ft	1.50	180.00
820-66	Planking	120	sq ft	1.50	180.00
820-67	Planking	120	sq ft	1.50	180.00
820-68	Planking	120	sq ft	1.50	180.00
820-69	Planking	120	sq ft	1.50	180.00
820-70	Planking	120	sq ft	1.50	180.00
820-71	Planking	120	sq ft	1.50	180.00
820-72	Planking	120	sq ft	1.50	180.00
820-73	Planking	120	sq ft	1.50	180.00
820-74	Planking	120	sq ft	1.50	180.00
820-75	Planking	120	sq ft	1.50	180.00
820-76	Planking	120	sq ft	1.50	180.00
820-77	Planking	120	sq ft	1.50	180.00
820-78	Planking	120	sq ft	1.50	180.00
820-79	Planking	120	sq ft	1.50	180.00
820-80	Planking	120	sq ft	1.50	180.00
820-81	Planking	120	sq ft	1.50	180.00
820-82	Planking	120	sq ft	1.50	180.00
820-83	Planking	120	sq ft	1.50	180.00
820-84	Planking	120	sq ft	1.50	180.00
820-85	Planking	120	sq ft	1.50	180.00
820-86	Planking	120	sq ft	1.50	180.00
820-87	Planking	120	sq ft	1.50	180.00
820-88	Planking	120	sq ft	1.50	180.00
820-89	Planking	120	sq ft	1.50	180.00
820-90	Planking	120	sq ft	1.50	180.00
820-91	Planking	120	sq ft	1.50	180.00
820-92	Planking	120	sq ft	1.50	180.00
820-93	Planking	120	sq ft	1.50	180.00
820-94	Planking	120	sq ft	1.50	180.00
820-95	Planking	120	sq ft	1.50	180.00
820-96	Planking	120	sq ft	1.50	180.00
820-97	Planking	120	sq ft	1.50	180.00
820-98	Planking	120	sq ft	1.50	180.00
820-99	Planking	120	sq ft	1.50	180.00
820-100	Planking	120	sq ft	1.50	180.00

[illegible]

2101543-6th June 1865.

Sub Lieutenant Office
 19th February 1881
 Dear Sir,
 I have the honor to acknowledge the receipt of your letter of the 17th inst. in relation to the above named vessel, and in reply to inform you that the same has been forwarded to the proper authorities for their consideration.

Madras District

Enclosure in a Letter from the Sup^r
Eng^r 7th 1865 to the Secretary to Govt.
P.W. dated 12 May 1865 No 6

Estimate No 2 of 1865-66

O.M. 694/65

Roads and Bridges

Revised Estimates of
the probable expense of construct-
ing Bridges over the Kaveri
-poyah & Nallumboor Rivers
on the Road from Mambhat
to the foot of the Caroor ghāt
amounting to Rs 28,180-00
From 1 June 1865 to 31 May 1866

Civil Works

Public Works Department
No 1543.

Proceedings of the Madras Government
Under date the 6th June 1865

From the Sup^r Eng^r 7th D^y
Submitting Revised Plans and
Estimates for constructing Bridges
over Cherupoyah, Nallumboor,
and Edalamma Rivers on the Road
from Mambhat to the foot of the
Caroor Ghāt; and also Sub-
Engineer Bailey's Letter No 467 of
13th February 1865.

Read the following

J.E. 12th May 1865 No 6

The late Col Ouchterlong,
when Deputy Chief Engineer
of the Southern Circle, submitted
with his letter of the 6th December
1862, to 1864, an estimate amount-
ing to Rs 54,000 for completing
the road from Mambhat on the
Beyhar river to the foot of the
Caroor ghāt. This estimate
provided for bridges across two
streams at a cost of Rs 26,420;
but, as, in the opinion of the
Deputy Chief Engineer, these
works were not immediately
needed, the Government, on the

20
11
WOL

recommendation of that Officer,
sanctioned the reduced sum of
Rs. 27,880 for earthquake & minor
bridges on the line in question.
The importance of the larger
bridge was subsequently urged
by the Collector, & Col. Auch-
terlony, on reconsideration,
withdrew his demurrer to their
Commencement.

The estimate of
Rs. 27,500 provided a sum of
Rs. 6,430 for the Coldatara
bridge. This work has not
yet been commenced, & Col
Walker now submits a revised
estimate of Rs. 11,600 for it, the
excess being 77 1/2 Cents. This
increase is explained to be
owing almost entirely to the
plan of the bridge having
been modified with a view to
the provision of additional
waterway, which the floods of
the last monsoon showed to be

6 Jan'y /63 - No 13.

W.W.

indispensable for the security
of the work.

The Subj. Engr also
submits a revised estimate
of Rs. 54,600 for the two large
Bridges over the Chirrapoya
& Kellumitor rivers, the increase
over the first estimate being
Rs. 28,180 or 106 7/8%. As in the
case of the Coldatara bridge,
the design of both these works
has been altered to render
them secure against floods.

The progress of the
Chirrapoya bridge is thus described - One
abutment has been raised 31 feet
& the other 21 - the remaining
masonry is in progress & the
woodwork in preparation. The
increased cost of this work is
explained to be owing chiefly
to extra masonry required for
the additional height to which
the bridge has to be raised,
and to the necessity which
exists for constructing an

embankment for the approaches,
without which the bridge would
be practically useless during
floods such as those of last
year. The balance of exp
is stated to be due to the
removal of a reef of rocks

Why was the reef of rocks
removed WD

above the bridge, & to an increase
in the price of timber.

The bridge over the
Kallumbong river has not yet
been commenced. The exp
in the case of this work is
stated to be due to the follow-

ing causes:-

1. The substitution
(at the suggestion of the Collector) of teak for junglewood for the
trusses. It was a piece of gross folly
to use such rotten stuff for
the main work of a bridge. WD

2. The provision of
cut granite instead of lake rock
for the cutwaters to the pier.

3. The increase in the
cost of junglewood & masonry.

Let the large exp

over the original estimate the
ascribed to the Canal Commr. when
the sections of the river were
originally taken. Mr. Bailey
explains that when he visited
the Suddakara river during
the monsoon of 1882, he found
that the highest flood of that
year was under 9 feet, & that
the people living in the
neighbourhood pointed out a
spot three feet higher as the
highest level to which the
river had ever known to
rise. He also reports having
visited the river in the mon-
soon of 1883, when he found
that the floods had risen a
few inches above the level
of the preceding year; but he
adds that during the monsoon of last
year the river rose 11 feet,
higher than in either 1882 or
1883. With regard to the two
other bridges the Sub. Eng. states

that some information, whatever
 as to the height of the flood
 near the sites of the bridges could
 be obtained, he was compelled
 to take for his guide the flood
 level of the river of 1852,
 more especially as the people
 living on the banks of these
 rivers at these points had assured
 him that within their knowledge
 the river had never been known
 to reach a higher level.

The Govt are willing
 to accept this explanation
 so far as the mission to
 provide adequate waterway
 is concerned, but they consider
 that the expediency of using
 salt instead of junglewood for
 the trunks of the Bridges &
 of cut granite instead of laterite
 for the cutwaters of the piers
 should have been previously
 provided for. They advise that
 the increase of cost due solely

Revised Estimate	11,400
Original do	6,430
	4,970
Amount of Estimate of	27,580
which this work	
forms an item in	32,550

The Supy Engr. & Dy. Engr. & Letter
 Cont. of Mr. Accy
 Arch General

Deputy Engr.

to these changes has been nearly
 8600 Rs.

With these remarks
 the Govt sanction the revised
 estimates of Rs 54,600 for the
 Bridges across the Cheroofoy &
 Kellumbor rivers, & of Rs.
 11,400 for the Bridge over the Ethel
 river. The increased cost of this
 latter work will raise the estimate
 of which it forms an item from
 Rs 27,580 to Rs 32,550.

W.B.

To W 1865 Depts
Pres. of Gov. for June

No. 15423.

Pres. of the M Govt
Of 6 June/65.

(The Government of
Madras) Rs. 20,000 for
the bridge across
the Cherrapaya and
Mallamoor river and
of Rs. 11,400 for the bridge
over the Odolankara
river in the Malabar
District. Sanctioned.

No. 148-149