

Marine (189) Department.

G.O., No. 5966

DATED 9 July '98

[Despatch Abstract.]
Bridge at Mahasungi. In: P.W. Dept.
Sanctioning with remark, the second revised estimate
of Rs. 68100 for constructing a — on the road from
Saravada to Kalliguda in the Gungun and
observing that it is not necessary to submit
revised estimates for the Antaresignature
of the Office unless some structural
alteration is made, communicated to
the Port Officer

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

Sanctioning the second revised estimate of Rs. 68,100 for constructing a — on the road from Sarangada to Balliguda in the Ganjam division; drawing the attention of the officers concerned to the remarks of the Chief Engineer, especially in regard to delay in the execution of the work and carelessness in the preparation of the original estimate; and observing that it is not necessary to submit revised estimates for the countersignature of Civil officers, unless some structural alteration is made.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

From W. C. DEMORGAN, Esq., M.I.C.E., Executive Engineer in charge, I Circle, to the Chief Engineer, Public Works Department, dated Waltair, 9th May 1898, No. 150 G.N.

- I have the honour to forward the marginally-noted papers in connection with the re-revised estimate for constructing a bridge over the Mahasingi nala, for favour of sanction.
- 1 Memorandum to accompany the re-revised estimate.
 - 1 List of officers and subordinates employed on the bridge work.
 - 1 Re-revised estimate.
 - 1 Comparative statement.
 - 1 Copy of letter No. 148/Ag. of 7th April 1898, from the Agent to the Governor, to Superintending Engineer, I Circle.
 - 1 Copy of letter No. 67 G.N., dated 17th April 1898, from Superintending Engineer, I Circle, to the Agent to the Governor.
 - 1 Copy of letter No. 220/Ag., dated 23rd April 1898, from the Agent to the Governor, to Superintending Engineer, I Circle.
 2. This estimate was submitted to the Collector for countersignature as is, I believe, usual.
 3. The Collector objected to sign copy of letter attached.
 4. I pointed out in my letter, No. 67 G.N. of 20th ultimo (copy enclosed), that the original estimate was returned by the Chief Engineer for countersignature by the Collector.

5. The Collector replied in his No. 220, dated 23rd April 1898 (copy attached), and asks for a definite ruling of Government on this point. This, I have the honour to request, may now be given.

ENCLOSURES.

From H. D. TAYLOR, Esq., Acting Agent to the Governor in Ganjam, to the Executive Engineer in charge, I Circle, dated 7th April 1898, No. 148/Ag.

With reference to your letter, No. 5 G.N., dated 1st instant, I have the honour to request that you will be good enough to let me know under what provision these estimates have to be countersigned by me and why I should render myself responsible for estimates for works in the management and control of which I have no share.

From W. C. DEMORGAN, Esq., M.I.C.E., Executive Engineer in charge, I Circle, to the Agent to the Governor, Ganjam district, dated 17th April 1898, No. 67 G.N.

With reference to your letter, No. 148, dated 7th April 1898, I have the honour to inform you that the original estimate for Mahasingi bridge which was sent up for sanction in 1890 was returned by the Chief Engineer for obtaining the countersignature of the Agent to the Governor of Ganjam and it was obtained accordingly (*vide* your office letter, No. 448, dated 1st August 1890, and also this office letter, No. 537 G.N., dated 9th August 1890, printed with G.O., No. 2465 W., dated 15th September 1890), and so the present estimate was forwarded for your countersignature.

2. If you still think that your countersignature is unnecessary, the Chief Engineer will be informed accordingly.

3. The return of the estimate is requested.

From H. D. TAYLOR, Esq., Acting Agent to the Governor, Ganjam, to the Superintending Engineer, I Circle, dated 23rd April 1898, Dis. No. 220/Ag.

With reference to your letter, No. 67 G.N., dated 17th instant, I have the honour to state that I cannot see that my countersignature is necessary. The work is not provided for in my budget, nor have I anything to do with its construction.

I have no objection to merely signing the estimate, but cannot accept any responsibility for its correctness either as to the rates quoted, the measurements, or technical details.

My signature, therefore, would appear to be a farce. I should take a definite ruling of Government as to whether it is necessary.

The estimate in question is herewith returned.

MEMORANDUM to accompany re-revised estimate for constructing Mahasingi Bridge, Rs. 68,100.

There was a bridge over the Mahasingi nala on the road from Sarangada to Balliguda in the Ganjam Maliahs.

2. This old bridge constructed in 1868 was washed away in 1872; and plans and estimates for a new bridge were called for in G.O., No. 318, dated 5th February 1886.

3. An estimate, amounting to Rs. 41,200, was prepared by Mr. Medlicott and sanctioned in G.O., No. 2465 W., dated 15th September 1890.

4. Very little was known about the rates at which work could be done in the Maliahs, the amount of labour available, and what arrangements could be made for carrying on work.

5. It soon, however, became evident that the sanctioned estimate was too low; and a revised estimate for Rs. 55,100 was prepared by Mr. Hayes and sanctioned in G.O., No. 2261 W., dated 8th September 1894.

6. In his report accompanying this estimate, the Superintending Engineer remarks on the want of sufficient experience to enable correct rates to be fixed.

7. There is no doubt that the work was allowed to drag on in the most unsatisfactory way. No systematic attempt appears to have been made to carry it out. Much time was wasted in getting up the girders and pump required, and as nobody knew much about the Mahasingi river, the pumping power provided was inadequate. With sufficient power the time of construction would have been materially shortened.

8. In addition to this, the Maliahs are remote and unhealthy. Labour has to be imported, and the work people continually run away.

9. It must be added that the working season at Mahasingi is very short. The river is practically perennial and at the driest season full of springs. Floods occur at any time from June to January; so taking into consideration the delays that occur in starting work, opening out foundations which have been covered in by sand and silt, &c., hardly more than five clear months can be depended on.

10. It was not until January 1897 that the work was put into proper order. Up to that time a number of wells had been sunk, and the whole of one abutment and a part of another built.

11. During the season 1897-98, the abutments were completed, the wells of four piers completed. Masonry of piers raised to full height, and girders over bays placed in position.

12. The wells of the fifth pier are now in progress, and if no early flood comes down and puts a stop to the well-sinking, there will be no difficulty in finishing off the work. But if the fifth pier is not started before the floods, there will be a further delay of eight months, and consequent additional expenditure. Mr. Marrow, the officer in charge, is now doing his best to complete the work.

13. The re-revised estimate now submitted amounts to Rs. 68,100, or Rs. 13,000 in excess of the revised estimate. The principal items of excess are—

	RS.
Well-sinking	2,686
Excavating foundations	2,500
Baling	3,600
Forming approaches to bridge	2,900

14. There is a small saving (Rs. 782) owing to errors detected in the original estimate.

15. The explanations given in the comparative statement with the following remarks are, I think, sufficient.

16. *Well-sinking*.—Rs. 1,725 is principally for completing the wells to pier No. 5. Well-sinking has all through given great trouble. It is difficult to get labour, and the sinkers object to use Bull's dredgers although plenty were available. All sinking is done by diving, and as up to March, it is cold, it was difficult to induce the people to work at all, and then only for a short time in the middle of the day. The time when good progress could be made was limited to April and May.

17. *Concrete in Surki mortar*.—The depth of concrete under the inner part of wings was increased from 5' to 6'. The possibility of having to alter the plan was foreseen—vide Superintending Engineer's report (paragraph 8), printed with G.O., No. 2465 W., dated 15th September 1890; 1,366 cubic feet of concrete were used in filling between the wells.

18. *Ironwork*.—Time and labour were wasted in getting the rolled iron girders up to the worksite. Two special carts were constructed for the purpose which proved of no use. The girders were taken up and left at the caprice of the cartmen at different places on the ghât. It was not, however, an easy item to estimate at the outset.

19. *Excavation of Foundations*.—As the work has been in progress for eight years, the remark in the comparative statement is sufficient explanation; and the same is the case under *baling*. A pulsometer pump only was used. The addition of a centrifugal pump would have made a great difference. It should, at the same time, be borne in mind that it is very difficult to induce an Engine driver or even a Fireman to remain at Mahasingi.

20. *Petty supervision*.—Remark in the comparative statement sufficient.

21. *Forming approaches*.—No provision is made in the original or revised estimate. As the bridge is in connection with the road from Balliguda, and the road from Udayagiri *via* Raika, it is singular that the item should have been overlooked. A special estimate has been framed and is now submitted for sanction.

22. The revised estimate now submitted has been framed by Mr. Lacey, and carefully checked in my office. Mr. Lacey writes: "I have every reason to believe that sufficient provision has been made in the re-revised estimate, and that it will not be exceeded. But an unfavourable season may delay the work and cause further expenditure."

23. As remarked above, if all the wells of the fifth pier are sunk and filled, the work will probably be completed; but if an early flood comes down, work will be delayed for eight months and the silt deposited again removed next dry weather.

24. A list of officers who have been connected with the work since the commencement, showing the periods of their incumbencies, is attached.

11th May 1898.

(Signed) W. C. DeMORGAN,
Ex. Engineer in charge, I Circle.

STATEMENT showing the names of Executive Engineers and Sub-division officers in charge of the Mahasingi Bridge.

Names.	Period of incumbency.	
	From	To
<i>Executive Engineers.</i>		
A. M. Hayes, Esq.	Oct. 1890.	Mar. 1893.
G. F. Hancock, Esq.	April 1893.	June 1893.
A. M. Hayes, Esq.	July 1893.	April 1894.
John Inglis, Esq.	May 1894.	Mar. 1896.
M. Loam, Esq.	April 1896.	June 1896.
W. C. DeMorgan, Esq.	July 1896.	Nov. 1897.
<i>Sub-Divisional Officers.</i>		
M.R.Ry. P. Ramanarain Pondai	Oct. 1890.	Mar. ..
C. Ramanna Pantulu	Nov. 1890.	Mar. 1891.
J. S. Wilson, Esq.	Sept. 1891.	April 1893.
M. Loam, Esq.	May 1893.	July 1894.
Mr. C. H. Marrow	Aug. 1894.	Nov. 1894.
M. Loam, Esq.	Dec. 1894.	July 1895.
Mr. C. H. Marrow	Aug. 1895.	Oct. 1895.
M. Loam, Esq.	Oct. 1895.	Mar. 1896.
Mr. C. H. Marrow	Mar. 1896.	Feb. 1898.

8th March 1898.

(Signed) J. M. LACEY,
Offg. Ex. Engr., Ganjam Division.

Note by the Chief Engineer, Public Works Department.

The construction of this bridge is now estimated to cost Rs. 68,100 as compared with an original estimate of Rs. 41,200 and a first revised estimate of Rs. 55,100. The original estimate was sanctioned in 1890 and the first revised estimate in 1894, and the Superintending Engineer now reports that, if the season is favourable, the work will be soon completed. Otherwise there will be a further delay of eight months.

2. The causes of the excess are fully explained in the comparative statement, and in the memorandum submitted by the Superintending Engineer.

The principal items are—

	RS.
(1) Well-sinking	2,686
(2) Excavating foundations	2,500
(3) Baling water	3,600
(4) Forming approaches to bridge	2,900
	11,686

Items (1) and (3) may be accepted as inevitable in the case of a river situated in a remote, unhealthy locality, of which little is known.

Item (2) is chiefly due to the time occupied in the execution of the work. However remote and unhealthy the locality, however short the working season may be, however difficult it is to obtain labour, it is extremely discreditable to the officers concerned that eight years should have been spent in building a still unfinished bridge. It took a shorter time to complete the Periyar Project in the face of similar difficulties!

Item (4) is due to carelessness in the preparation of the original estimate, and it is incomprehensible that the mistake should have escaped notice when that estimate was revised.

3. The estimate now submitted has apparently been prepared with greater care, and is recommended for sanction. There is stated to be a possibility of further excess if the weather proves unfavourable, and it is probably impossible to work in the locality during the flood season: but every endeavour should be made, by keeping a competent subordinate on the spot, to utilize all available fine weather for the speedy prosecution of the work.

4. With regard to the Superintending Engineer's question in paragraph 5 of his letter, No. 150 G.N. of 12th May 1898, he may be informed that it is not necessary to submit revised estimates to the Revenue officer concerned, in cases where important structural alterations are not made.

13th June 1898.

(Signed) W. B. DeWINTON,
Chief Engineer.

ORDER—No. 1591 W., dated 24th June 1898.

The second revised estimate of Rs. 68,100, for constructing a bridge at Mahasingi on the road from Sarangada to Balliguda in the Ganjam district, is sanctioned in supersession of the first revised estimate of Rs. 55,100 sanctioned in G.O., No. 2261 W., dated 8th September 1894.

2. This sanction has been registered as Provincial No. 28 W. of 1898-99 and classified as Communications—Original Works.

3. The attention of the officers concerned will be drawn to the Chief Engineer's note, especially to paragraph 2 thereof, with which His Excellency the Governor in Council fully agrees.

not sanctioned
maine bahin
copy hali

4. The Government agrees with the Chief Engineer in considering that it is not necessary to submit revised estimates for the countersignature of the Civil officers concerned unless some structural alteration is made.

(True Extract.)

A. K. M. S.

Under Secretary to Government.

To the Superintending Engineer, I Circle, with two enclosures.
,, other Superintending Engineers.
,, the Examiner, Public Works Accounts.
,, the Judicial Department.
,, the Public Department,
,, the Revenue Department, } with reference to paragraph 4
,, the Ecclesiastical Department, } of the Government Order.
,, the Marine Department,
,, the Consulting Architect.
,, the Chief Engineer for Irrigation.
,, the Superintendent of Works, Lighthouse Division.

BUILDINGS AND ROADS.
CIVIL WORKS.

Government {1898} of Madras.
PUBLIC WORKS.

Recd.

Enclosures

1898.

Regd.

Spare copies

G.O., No. 1591 W., 24th June 1898.

No. 596 Marine 8 9th July 1898.

Communicated to
JUNE. Presidency Port Officer.
(Id) A. S. R.

The P. P. O.

Bridge at Mahasingi

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11th May 1898.

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Ex. Engineer in charge, I Circle.

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13th June 1898.

(Signed) W. B. DEWINTON,
Chief Engineer.

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2. This sanction has been registered as Provincial No. 28 W. of 1898-99 and classified as Communications—Original Works.

3. The attention of the officers concerned will be drawn to the Chief Engineer's note, especially to paragraph 2 thereof, with which His Excellency the Governor in Council fully agrees.

No. 1591 W., 24TH JUNE 1898.

4. The Government agrees with the Chief Engineer in considering that it is not necessary to submit revised estimates for the countersignature of the Civil officers concerned unless some structural alteration is made.

(True Extract.)

(Signed) W. B. DEWINTON,
Secretary to Government.

To the Superintending Engineer, I Circle, with two enclosures.
 „ other Superintending Engineers.
 „ the Examiner, Public Works Accounts.
 „ the Judicial Department.
 „ the Public Department,
 „ the Revenue Department, } with reference to paragraph 4
 „ the Ecclesiastical Department, } of the Government Order.
 „ the Marine Department,
 „ the Consulting Architect.
 „ the Chief Engineer for Irrigation.
 „ the Superintendent of Works, Lighthouse Division.

Exd. T. K. Narayana Aiyangar.

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CIVIL WORKS.

Government {1898} of Madras. PUBLIC WORKS.

Recd.

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Communicated to the
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The P.P.O.

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Civil Works.

READ—the following papers:—

From W. C. DEMORGAN, Esq., M.I.C.E., Executive Engineer in charge, I Circle, to the Chief Engineer, Public Works Department, dated Waltair, 9th May 1898, No. 150 G.N.

I have the honour to forward the marginally-noted papers in connection with the re-revised estimate for constructing a bridge over the Mahasingi nala, for favour of sanction.

- 1 Memorandum to accompany the re-revised estimate.
- 1 List of officers and subordinates employed on the bridge work.
- 1 Re-revised estimate.
- 1 Comparative statement.
- 1 Copy of letter No. 148/Ag. of 7th April 1898, from the Agent to the Governor, to Superintending Engineer, I Circle.
- 1 Copy of letter No. 67 G.N., dated 17th April 1898, from Superintending Engineer, I Circle, to the Agent to the Governor.
- 1 Copy of letter No. 220/Ag., dated 23rd April 1898, from the Agent to the Governor, to Superintending Engineer, I Circle.

5. The Collector replied in his No. 220, dated 23rd April 1898 (copy attached), and asks for a definite ruling of Government on this point. This, I have the honour to request, may now be given.

ENCLOSURES.

From H. D. TAYLOR, Esq., Acting Agent to the Governor in Ganjam, to the Executive Engineer in charge, I Circle, dated 7th April 1898, No. 148/Ag.

With reference to your letter, No. 5 G.N., dated 1st instant, I have the honour to request that you will be good enough to let me know under what provision these estimates have to be countersigned by me and why I should render myself responsible for estimates for works in the management and control of which I have no share.

From W. C. DEMORGAN, Esq., M.I.C.E., Executive Engineer in charge, I Circle, to the Agent to the Governor, Ganjam district, dated 17th April 1898, No. 67 G.N.

With reference to your letter, No. 148, dated 7th April 1898, I have the honour to inform you that the original estimate for Mahasingi bridge which was sent up for sanction in 1890 was returned by the Chief Engineer for obtaining the countersignature of the Agent to the Governor of Ganjam and it was obtained accordingly (*vide* your office letter, No. 448, dated 1st August 1890, and also this office letter, No. 537 G.N., dated 9th August 1890, printed with G.O., No. 2465 W., dated 15th September 1890), and so the present estimate was forwarded for your countersignature.

2. If you still think that your countersignature is unnecessary, the Chief Engineer will be informed accordingly.

3. The return of the estimate is requested.

From H. D. TAYLOR, Esq., Acting Agent to the Governor, Ganjam, to the Superintending Engineer, I Circle, dated 23rd April 1898, Dis. No. 220/Ag.

With reference to your letter, No. 67 G.N., dated 17th instant, I have the honour to state that I cannot see that my countersignature is necessary. The work is not provided for in my budget, nor have I anything to do with its construction.

I have no objection to merely signing the estimate, but cannot accept any responsibility for its correctness either as to the rates quoted, the measurements, or technical details.

My signature, therefore, would appear to be a farce. I should take a definite ruling of Government as to whether it is necessary.

The estimate in question is herewith returned.

MEMORANDUM to accompany re-revised estimate for constructing Mahasingi Bridge, Rs. 68,100.

There was a bridge over the Mahasingi nala on the road from Sarangada to Balliguda in the Ganjam Maliahs.

2. This old bridge constructed in 1868 was washed away in 1872; and plans and estimates for a new bridge were called for in G.O., No. 318, dated 5th February 1886.

3. An estimate, amounting to Rs. 41,200, was prepared by Mr. Medicott and sanctioned in G.O., No. 2465 W., dated 15th September 1890.

4. Very little was known about the rates at which work could be done in the Maliahs, the amount of labour available, and what arrangements could be made for carrying on work.

5. It soon, however, became evident that the sanctioned estimate was too low; and a revised estimate for Rs. 55,100 was prepared by Mr. Hayes and sanctioned in G.O., No. 2261 W., dated 8th September 1894.

6. In his report accompanying this estimate, the Superintending Engineer remarks on the want of sufficient experience to enable correct rates to be fixed.

7. There is no doubt that the work was allowed to drag on in the most unsatisfactory way. No systematic attempt appears to have been made to carry it out. Much time was wasted in getting up the girders and pump required, and as nobody knew much about the Mahasingi river, the pumping power provided was inadequate. With sufficient power the time of construction would have been materially shortened.

8. In addition to this, the Maliahs are remote and unhealthy. Labour has to be imported, and the work people continually run away.

9. It must be added that the working season at Mahasingi is very short. The river is practically perennial and at the driest season full of springs. Floods occur at any time from June to January; so taking into consideration the delays that occur in starting work, opening out foundations which have been covered in by sand and silt, &c., hardly more than five clear months can be depended on.

10. It was not until January 1897 that the work was put into proper order. Up to that time a number of wells had been sunk, and the whole of one abutment and a part of another built.

11. During the season 1897-98, the abutments were completed, the wells of four piers completed. Masonry of piers raised to full height, and girders over bays placed in position.

12. The wells of the fifth pier are now in progress, and if no early flood comes down and puts a stop to the well-sinking, there will be no difficulty in finishing off the work. But if the fifth pier is not started before the floods, there will be a further delay of eight months, and consequent additional expenditure. Mr. Marrow, the officer in charge, is now doing his best to complete the work.

13. The re-revised estimate now submitted amounts to Rs. 68,100, or Rs. 13,000 in excess of the revised estimate. The principal items of excess are—

	Rs.
Well-sinking	2,686
Excavating foundations	2,500
Baling	3,600
Forming approaches to bridge	2,900

14. There is a small saving (Rs. 782) owing to errors detected in the original estimate.

15. The explanations given in the comparative statement with the following remarks are, I think, sufficient.

16. *Well-sinking*.—Rs. 1,725 is principally for completing the wells to pier No. 5. Well-sinking has all through given great trouble. It is difficult to get labour, and the sinkers object to use Bull's dredgers although plenty were available. All sinking is done by diving, and as up to March, it is cold, it was difficult to induce the people to work at all, and then only for a short time in the middle of the day. The time when good progress could be made was limited to April and May.

17. *Concrete in Surki mortar*.—The depth of concrete under the inner part of wings was increased from 5' to 6'. The possibility of having to alter the plan was foreseen—vide Superintending Engineer's report (paragraph 8), printed with G.O., No. 2465 W., dated 15th September 1890; 1,366 cubic feet of concrete were used in filling between the wells.

18. *Ironwork*.—Time and labour were wasted in getting the rolled iron girders up to the worksite. Two special carts were constructed for the purpose which proved of no use. The girders were taken up and left at the caprice of the cartmen at different places on the ghât. It was not, however, an easy item to estimate at the outset.

19. *Excavation of Foundations*.—As the work has been in progress for eight years, the remark in the comparative statement is sufficient explanation; and the same is the case under *baling*. A pulsometer pump only was used. The addition of a centrifugal pump would have made a great difference. It should, at the same time, be borne in mind that it is very difficult to induce an Engine driver or even a Fireman to remain at Mahasingi.

20. *Petty supervision*.—Remark in the comparative statement sufficient.

21. *Forming approaches*.—No provision is made in the original or revised estimate. As the bridge is in connection with the road from Balliguda, and the road from Udayagiri *viâ* Raika, it is singular that the item should have been overlooked. A special estimate has been framed and is now submitted for sanction.

22. The revised estimate now submitted has been framed by Mr. Lacey, and carefully checked in my office. Mr. Lacey writes: "I have every reason to believe that sufficient provision has been made in the re-revised estimate, and that it will not be exceeded. But an unfavourable season may delay the work and cause further expenditure."

23. As remarked above, if all the wells of the fifth pier are sunk and filled, the work will probably be completed; but if an early flood comes down, work will be delayed for eight months and the silt deposited again removed next dry weather.

24. A list of officers who have been connected with the work since the commencement, showing the periods of their incumbencies, is attached.

11th May 1898.

(Signed) W. C. DEMORGAN,
Ex. Engineer in charge, I Circle.

STATEMENT showing the names of Executive Engineers and Sub-division officers in charge of the Mahasingi Bridge.

Names.	Period of incumbency.	
	From	To
<i>Executive Engineers.</i>		
A. M. Hayes, Esq.	Oct. 1890.	Mar. 1893.
G. F. Hancock, Esq. ...	April 1893.	June 1893.
A. M. Hayes, Esq.	July 1893.	April 1894.
John Inglis, Esq.	May 1894.	Mar. 1896.
M. Loam, Esq.	April 1896.	June 1896.
W. C. DeMorgan, Esq. ..	July 1896.	Nov. 1897.
<i>Sub-Divisional Officers.</i>		
M. B. Ry. P. Ramanarrain Pondai ..	Oct. 1890.	Mar. 1891.
C. Ramanna Pantulu	Nov. 1890.	April 1893.
J. S. Wilson, Esq.	Sept. 1891.	July 1894.
M. Loam, Esq.	May 1893.	Nov. 1894.
Mr. C. H. Marrow	Aug. 1894.	July 1895.
M. Loam, Esq.	Dec. 1894.	Oct. 1895.
Mr. C. H. Marrow	Aug. 1895.	Mar. 1896.
M. Loam, Esq.	Oct. 1895.	Feb. 1898.
Mr. C. H. Marrow	Mar. 1896.	

8th March 1898.

(Signed) J. M. LACEY,
Offg. Ex. Engr., Ganjam Division.

Note by the Chief Engineer, Public Works Department.

The construction of this bridge is now estimated to cost Rs. 68,100 as compared with an original estimate of Rs. 41,200 and a first revised estimate of Rs. 55,100. The original estimate was sanctioned in 1890 and the first revised estimate in 1894, and the Superintending Engineer now reports that, if the season is favourable, the work will be soon completed. Otherwise there will be a further delay of eight months.

2. The causes of the excess are fully explained in the comparative statement, and in the memorandum submitted by the Superintending Engineer.

The principal items are—

	RS.
(1) Well-sinking	2,686
(2) Excavating foundations	2,500
(3) Baling water	3,600
(4) Forming approaches to bridge	2,900
	11,686

Items (1) and (3) may be accepted as inevitable in the case of a river situated in a remote, unhealthy locality, of which little is known.

Item (2) is chiefly due to the time occupied in the execution of the work. However remote and unhealthy the locality, however short the working season may be, however difficult it is to obtain labour, it is extremely discreditable to the officers concerned that eight years should have been spent in building a still unfinished bridge. It took a shorter time to complete the Periyar Project in the face of similar difficulties!

Item (4) is due to carelessness in the preparation of the original estimate, and it is incomprehensible that the mistake should have escaped notice when that estimate was revised.

3. The estimate now submitted has apparently been prepared with greater care, and is recommended for sanction. There is stated to be a possibility of further excess if the weather proves unfavourable, and it is probably impossible to work in the locality during the flood season: but every endeavour should be made, by keeping a competent subordinate on the spot, to utilize all available fine weather for the speedy prosecution of the work.

4. With regard to the Superintending Engineer's question in paragraph 5 of his letter, No. 150 G.N. of 12th May 1898, he may be informed that it is not necessary to submit revised estimates to the Revenue officer concerned, in cases where important structural alterations are not made.

13th June 1898.

(Signed) W. B. DEWINTON,
Chief Engineer.

ORDER—No. 1591 W., dated 24th June 1898.

The second revised estimate of Rs. 68,100, for constructing a bridge at Mahasingi on the road from Sarangada to Balliguda in the Ganjam district, is sanctioned in supersession of the first revised estimate of Rs. 55,100 sanctioned in G.O., No. 2261 W., dated 8th September 1894.

2. This sanction has been registered as Provincial No. 28 W. of 1898-99 and classified as Communications—Original Works.

3. The attention of the officers concerned will be drawn to the Chief Engineer's note, especially to paragraph 2 thereof, with which His Excellency the Governor in Council fully agrees.

4. The Government agrees with the Chief Engineer in considering that it is not necessary to submit revised estimates for the countersignature of the Civil officers concerned unless some structural alteration is made.

(True Extract.)

(Signed) W. B. DEWINTON,
Secretary to Government.

To the Superintending Engineer, I Circle, with two enclosures.
,, other Superintending Engineers.
,, the Examiner, Public Works Accounts.
,, the Judicial Department.
,, the Public Department,
,, the Revenue Department, } with reference to paragraph 4
,, the Ecclesiastical Department, } of the Government Order.
,, the Marine Department,
,, the Consulting Architect.
,, the Chief Engineer for Irrigation.
,, the Superintendent of Works, Lighthouse Division.