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# MADRAS RECORD OFFICE

## Government of Madras

*Public Works*

DEPARTMENT

|          |              |       |
|----------|--------------|-------|
| G.O. No. | 1269         | Press |
| B.P. No. |              | Mis.  |
| Dated    | 5 - 5 - 1955 | 1875  |

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,  
5th May 1875.*

No. 105. Read the following endorsement of the Chief Engineer for Irrigation, dated Fort St. George, 7th April 1875, No. 350-B:—

From Colonel F. J. MOBERLY, R.E., Superintending Engineer, Chingleput District, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Camp at Alinjeevakum, 24th February 1875, No. 4,002.

I HAVE the honor to forward a comparative statement of the cost of the bridge at Thandalam over the supply channel of the Chembrumbakum tank showing grounds for an increase in cost of Rupees 1,320.

1 Comparative Statement.  
1 Plan (will follow.)

2. On the other hand, however, there appears good reason for lowering by 3 feet the abutments and pier and effecting a saving of Rupees 500 on the sanctioned estimate.

3. The catchment basin above the bridge is about 19 square miles, producing a discharge of 4,005 cubic feet per second, which, with a fall of 5 feet per mile (the general slope of the country), can be easily discharged by the space two vents of 30 feet each below the springing line, 9 feet above floor.

4. The space in the segment of the arch will be more than enough to pass the water from the two or three petty tanks which surplus into this valley.

5. I recommend, therefore, that the change in the form of the bridge be sanctioned instead of the increased amount of the revised estimate, and beg early consideration of the subject as the road is very bad around this point.

6. As the alteration is purely professional, and the Chembrumbakum tank pays half its cost, I have submitted it to Government through you to save time.

From the same Officer, dated Camp at Red Hills, 24th March 1875, No. 4,424.

In reply to your No. 289, dated 12th instant, I have the honor to observe that the section of stream on the accompanying plan is very incorrect. I had overlooked its existence on the plan, which was sent in a hurry merely to inform you regarding the form of the waterway.

2. The calculations forwarded with my No. 4,002, dated 24th ultimo, err, I believe, considerably on the safe side, as I have serious doubts as to the catchment basin being nearly so large as entered by Mr. Lowry.

3. The Local Fund Board are very anxious for the completion of the work, the want of which causes great inconvenience to traffic.

SUBMITTED for the consideration of Government.

The Superintending Engineer's letter and the comparative statement therewith forwarded show that, if the bridge be completed as sanctioned, its cost will be Rs. 1,320, more than the sanctioned estimate of Rupees 10,300, while if the roadway be lowered 3 feet, it will be finished for Rupees 500, less than the estimate. It is not quite clear how this great difference of Rupees 1,820 can result from the alteration of 3 feet in the height of the roadway, as it amounts to one-sixth of the whole estimate.

Proceedings of the Madras Government, Public Works Department,  
5th May 1875.

2. From the plan forwarded it appeared that the highest flood level would be very nearly flush with the roadway as sanctioned, and on the Superintending Engineer's attention being called to this circumstance, he reported that the section of the stream on the plan "is very incorrect," and since then Colonel Moberly has had the height of the embankment, in which the bridge is situated, marked on the plan, and this scales about 4 feet below the level of the bridge roadway.

3. Such being the case there appears to be no good reason for making the roadway at the bridge so much higher than elsewhere, and the alteration proposed may be allowed. The Superintending Engineer, however, must be responsible for the facts, for this office cannot determine whether an embankment is 24 feet as in the plan, or only 18 feet 4 inches above the bed of the stream, or as to what the flood level and catchment basin are, and the Superintending Engineer himself has serious doubts about the latter being as large as entered by the Range Officer. All that can be said is that, if the road embankment is at a proper level, the bridge need not be higher.

4. With regard to the causes of increase of cost shown in the comparative statement, it may be noticed that about half the amount appertains to works for diverting drainage, and, though these works were probably necessary under the circumstances, had the bridge for which funds were allotted in December 1873 been

G. O., No. 3,081-B.  
constructed with reasonable rapidity, no such diversion would have been necessary or imperative. Most of the other items of consequence are due to errors in the estimate which appear to be inexcusable, seeing that, had the exact circumstances of the site been put on paper, they could hardly have occurred.

(Signed) JOHN MULLINS, Lieut.-Colonel, R.E.,  
Chief Engineer for Irrigation.

No. 106.

ORDER THEREON, 5th May 1875, No. 1,269.

IRRIGATION, No. 9.

His EXCELLENCY the Governor in Council sanctions the lowering of the roadway of the bridge on the Western Trunk Road, 20th mile, as proposed by the Superintending Engineer, Chingleput, provided the latter officer satisfies himself fully that the revised level will afford ample waterway, and that the level of the embankment is suitable to the circumstances.

(True Extract.)

Colonel, R.E.,  
Secretary to Government.

To the District Engineer, Chingleput.  
" Chief Engineer for Irrigation.

Ed. A. Grubert.  
Spare Copies

Submitted for the consideration  
of Government.

The Superintending Engineer's  
letter and the comparative statement  
therein forwarded show that, if the  
bridge be completed as sanctioned,  
its cost will be Rs. 1320 more than the  
sanctioned estimate of Rs. 10,300, while  
if the roadway be lowered 3 feet, it will  
be finished for Rupees 500 less than the  
estimate. It is not quite clear how this  
great difference of Rs. 1020 can result  
from the alteration of 3 feet in the height  
of the roadway, as it amounts to  $\frac{1}{8}$  of  
the whole estimate.

2. From the plan forwarded it  
appeared that the highest flood level  
would be very nearly flush with the  
roadway as sanctioned, and on the  
Superintending Engineer's attention  
being called to this circumstance,

he reported that the section of the stream on the plan "is very incorrect" and since then Colonel Crokerly has had the height of the embankment in which the bridge is situated marked on the plan and this scales about 4 feet below the level of the bridge roadway.

3. Such being the case there appears to be no good reason for making the roadway at the bridge so much higher than elsewhere and the alteration proposed may be allowed. The Superintending Engineer, however, must be responsible for the facts, for this office cannot determine whether an embankment is 24 feet as in the plan or only 18' 4" above the bed of the stream, or as to what the flood level and catchment basin are, and the Superintending Engineer himself has serious doubts about the latter being as large as stated by the Naib officer. All that can be said is that, if the pond embankment is at a proper level, the bridge need not be higher.

4. With regard to the causes of increase of cost shown in the comparative statement

L.O. N. 3081 B.

3 5  
statement; it may be noted that about half the amount appertains to works for diverting drainage, and though these works were probably necessary under the circumstances, had the bridge for which funds were allotted in December 1873 been constructed with reasonable rapidity, no such diversion would have been necessary or imperative. Most of the other items of consequence are due to errors in the estimate which appear to be inexcusable, seeing that had the exact circumstances of the site been put on paper they could hardly have occurred

Fort Saint George  
7<sup>th</sup> April 1875

Lieut. Col. R.E.

Chief Engineer for Irrigation

To,

The Secretary to Government

Q R. 1895. Sept  
No 350 B No 2563

From the Chief Engineer  
for Immigration

To the Secretary & Post  
Office

Dated 7<sup>th</sup> April

Received 19<sup>th</sup> April

Recd: 20<sup>th</sup>

Encls: 2

Note on the Compensation

Statement for the Standard  
and from bridge on the 20<sup>th</sup>

Guide of Western Canada  
Road No. 111. and built

by the City of Chicago  
No. 120. 1209. 5-5795

6204-75  
 117  
 20-12-01-07-0-75

Comparative statement showing the quantity, Rate and amount of the original estimate and the quantity of work to be done and its cost as per revised estimate for the construction of Bridge of 2 Arches of 30 feet each on the 20<sup>th</sup> mile of the Great Trunk Road No. III.

| Items                                                                                             | As Estimated |      |        | Quantity of work to be done as per revised Estimate |      |          | Less than the original Estimate |        | More than the original Estimate |          | Remarks                                                                                        |
|---------------------------------------------------------------------------------------------------|--------------|------|--------|-----------------------------------------------------|------|----------|---------------------------------|--------|---------------------------------|----------|------------------------------------------------------------------------------------------------|
|                                                                                                   | Quantity     | Rate | Amount | Quantity                                            | Rate | Amount   | Quantity                        | Amount | Quantity                        | Amount   |                                                                                                |
| 20 <sup>th</sup> mile Bridge                                                                      |              |      |        |                                                     |      |          |                                 |        |                                 |          |                                                                                                |
| Concrete Cub. yds                                                                                 | 278 1/2      | 3 8  | 975    | 346                                                 | 3 8  | 1211     |                                 |        | 67 1/2                          | 236      |                                                                                                |
| Lakute in chunam                                                                                  | 128          | 2 8  | 320    |                                                     |      |          | 128                             | 320    |                                 |          | There was under estimated in the original estimate                                             |
| Brick in chunam                                                                                   | 1319         | 5    | 6595   |                                                     |      |          | 1319                            | 6595   |                                 |          | Lakute has been substituted for this with a small saving                                       |
| Lakute in chunam                                                                                  |              |      |        | 1447                                                | 4 8  | 6511 8   |                                 |        | 1447                            | 6511 8   |                                                                                                |
| Arch work " feet                                                                                  | 2898         | 4    | 725    | 2898                                                | 4    | 725      |                                 |        |                                 |          |                                                                                                |
| Plastering Squares                                                                                | 104          | 2 8  | 260    |                                                     |      |          | 104                             | 260    |                                 |          |                                                                                                |
| Pointing                                                                                          |              |      |        | 116                                                 | 1    | 116      |                                 |        | 116                             | 116      | This is substituted for plastering                                                             |
| Metalling                                                                                         | 27           | 1 8  | 40     | 27                                                  | 1 8  | 40 8     |                                 |        |                                 |          |                                                                                                |
| Excavating Foundations Cub. yds                                                                   | 1122         | 2    | 140    | 2759                                                | 2    | 344 16   |                                 |        | 1637                            | 204 16   | There was an error made in original estimate in calculating the quantity of excavation         |
| Grubbing for 2 arches                                                                             | No. 2        | 100  | 200    | No. 2                                               | 100  | 200      |                                 |        |                                 |          | It was under estimated                                                                         |
| Removing and reforming embankment both sides of the bridge and filling the earth between parapets |              |      | 350    | 4499                                                | 1 6  | 121 12 6 |                                 |        | 71                              | 12 6     | This also was under estimated                                                                  |
| Removing Lakute stones from the banks both sides of the bridge Cub. yds                           |              |      |        | 128                                                 | 2    | 16       |                                 |        | 128                             | 16       | It charged in estimate was intended that it and other such matters should be met from sundries |
| Dismantling the old masonry Cubic yards                                                           |              |      |        | 296                                                 | 4    | 74       |                                 |        | 296                             | 74       | Do do                                                                                          |
| Filling in foundation and between wing walls Cub. yds.                                            |              |      |        | 2566                                                | 1 3  | 200 7 6  |                                 |        | 2566                            | 200 7 6  | This item was overlooked in the original estimate                                              |
| Carried over                                                                                      |              |      | 9605   |                                                     |      |          |                                 |        | 7175                            | 7431 2 0 |                                                                                                |

Comparative statement showing the quantity, Rate and amount of the original Estimate and the quantity of work to be done and its cost as per revised Estimate for the Construction of Bridge of 2 Arches of 30 feet each on the 20<sup>th</sup> mile of the Great Western Trunk Road No. III.

| Items                                                                                                                       | As Estimated |      |         | Quantity of work to be done as per revised Estimate |      |           | Less than the original Estimate |          | More than the original Estimate |          | Remarks                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------|--------------|------|---------|-----------------------------------------------------|------|-----------|---------------------------------|----------|---------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                             | Quantity     | Rate | Amount  | Quantity                                            | Rate | Amount    | Quantity                        | Amount   | Quantity                        | Amount   |                                                                                                                           |
| Brought forward                                                                                                             |              |      | 9605 .. |                                                     |      | 9861 2 .. | 7175 ..                         | 7191 2 0 |                                 |          |                                                                                                                           |
| Revetting the wings with loose Labeite with 1/2 inch stones C. yd.                                                          |              |      |         | 128                                                 | 6 .. | 48 ..     |                                 |          | 128                             | 48 ..    | This and such like petty items I left to be met from sundries but the Sub. Officer has expended all the sundries already. |
| Cutting a channel to allow the drainage from the catchment basin to pass off while the bridge is being built - Cubic yards. |              |      |         | 3352 1/2                                            | 1 1  | 226 15 9  |                                 |          | 3352 1/2                        | 226 15 9 |                                                                                                                           |
| Reinforcing and replacing bank over the 3 vents culverts west of the Bridge - Cubic yards                                   |              |      |         | 2176                                                | 1 6  | 204 ..    |                                 |          | 2176                            | 204 ..   |                                                                                                                           |
| Do Do 1 Vent Culvert West of the Bridge Cubic yards                                                                         |              |      |         | 1292 3/4                                            | 1 6  | 121 2 10  |                                 |          | 1292 3/4                        | 121 2 10 |                                                                                                                           |
| Do Do 1 Vent Culvert East of the Bridge                                                                                     |              |      |         | 1220 5/8                                            | 1 5  | 108 1 6   |                                 |          | 1220 5/8                        | 108 1 6  |                                                                                                                           |
| Removing Labeite stones from the slopes of the 3 culverts L. yd.                                                            |              |      |         | 370                                                 | 6 .. | 11 9 ..   |                                 |          | 370                             | 11 9 ..  |                                                                                                                           |
| Sundries and scaffolding for boiling water and extra superintendence at 10 Per Cent.                                        |              |      | 695 ..  |                                                     |      | 1039 ..   | 16 ..                           |          | 344 ..                          | 11 ..    |                                                                                                                           |
| Total Rupees 10000 ..                                                                                                       |              |      |         |                                                     |      | 11620 ..  | 7175 ..                         | 8195 ..  | 7176 ..                         | 1320 ..  |                                                                                                                           |

to 3 Range off  
17 January 1877

Deputy Director  
S. B. Engineer  
R. S. D. S. S.  
S. B. Engineer  
R. S. D. S. S.

620-4-75

107

1

Enclosure in a letter  
 No 4002 of 24<sup>th</sup> Sept/75  
 from the Sub-Engineer  
 to the Chief Engr for  
 Irrigation—  
 C.E. of 14/10/75  
 J. E. G. M.  
 C.E. 2533/75  
 11/1/75

107

No of the Madras Govt.

Read the following

from the Chief Engr for Irrigation (H.E. No 350 B of 7 April 75)

of Decr 12/74 of 5<sup>th</sup> May 75

His Excellency the  
 Governor in Council sanc-  
 tions the lowering of the  
 roadway of the bridge  
 on the Western Bank Road,  
 20<sup>th</sup> mile, as proposed by the  
 Superintending Engineer,  
 Chingleput, provided the  
 latter officer satisfies him-  
 self fully that the revised  
 level will afford ample  
 waterway, and that the  
 level of the river bankment  
 is suitable to the circum-  
 stances. It would be much

Good stop here

To D. H. G. Chingleput  
 of Engr. Irrigation with 2 enclos: Sep: 13/75  
 better

better if Colonel Shoberly  
would, before asking  
permission to make altera-  
-tions, ascertain conclusively  
what the circumstances  
are.

G.M.M.

2563

Govt. of 1875 Madras.  
PUBLIC WORKS.

To

The St. Engr.,  
Chingleput

Dated

Issued

Recd.

Encl.

G.O. 5 May 75, No. 1269

No. 105-106

Roadway of the bridge on the  
Western Trunk Road - Sanctioning

the lowering of the — 20<sup>th</sup> mile  
as proposed by the Superintending  
Engineer, Chingleput, on  
certain conditions:-