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MADRAS RECORD OFFICE.

Government of Madras.

DEPARTMENT.

G.O. No.

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18

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*Proceedings of the Madras Government, Public Works Department,
17th September 1866.*

No. 422. Read the following letter from the Consulting Engineer for Irrigation and Canal Company, to the Secretary to Government, Public Works Department, dated Anantapore, 27th August 1866, No. 54 :—

• From Agent, No. 74, 20th June.
To do. „ 58, 29th do.
From do. „ 140, 27th July.
To do. „ 96, 3rd August.
From do. „ 189, 21st do.

1. I have the honor to submit, for the consideration of Government, the correspondences as per margin,* on the subject of a modification of the arrangements of the towing path of the Hindry aqueduct.

2. The Chief Engineer wishes to substitute a masonry parapet for the iron railing entered in the sanctioned estimate, and, as it appears that the railing, though ordered some years ago, is not likely to be received from England, there can be no objection to this change.

2 Tracings.

3. From the tracings, however, which were sent in explanation of the proposed arrangements, it appeared that the width of the towing path would be reduced from five feet in the clear, as sanctioned, to 3 feet 9 inches, and this was a matter of some importance, especially as the great reduction seemed to be easily avoidable by corbelling.

4. It also appeared that in completing the superstructure of the aqueduct, on the tow path side, the Chief Engineer proposed to finish the side wall and parapet over 13 arches, on a design differing greatly from that adopted for the work already executed at the first arch, and as it seemed a pity that this aqueduct, the most important masonry work on the line of canal, should be so completed as to make its appearance less creditable than might fairly be expected, it was suggested that, if the Chief Engineer wished to lessen expense, it would be better to remove the corbelled work over the one arch, and make the whole elevation agree in design, than to effect a striking change in passing from the first opening to the second.

5. Mr. Latham in his last letter shows that with a masonry parapet and six inches corbelling on the inside, he can give a towing path 4 feet 3 inches wide, and he defends the change in design, which he has proposed for the superstructure, by an ingenious reference to the different uses to which the arches under the varied superstructure are put. I think it is much to be regretted that the appearance of this large aqueduct will be likely to be mean instead of handsome and striking, and that the want of relief in the lower parts will be continued throughout the elevation, by the abandonment of the only part of the design which possessed any sufficient projection, but as, I think, the Government are interested, in their official relations with the Company, only in the efficiency of the aqueduct as a water carrier, and not in its architectural effects, I beg to recommend that sanction be given for the substitution of a masonry parapet for the iron railing, and the adoption of any section which the Chief Engineer may prefer, and which will afford a towing path not less than 4 feet 3 inches wide. The parapet itself, independently of the side walls which carry it, will not in any case cost as much as the railing.

Proceedings of the Madras Government, Public Works Department,
17th September 1866.

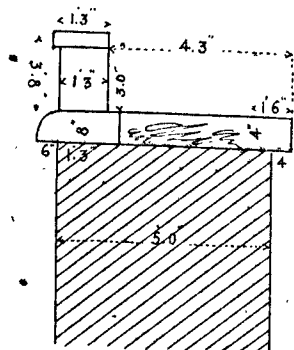
From the Agent and Manager Madras Irrigation and Canal Company, to the Consulting Engineer—
Madras Irrigation and Canal Company, dated Madras, 20th June 1866, No. 74.
In handing you copy of a letter from the Provisional Chief Engineer, proposing to substitute

No. 149 of 15th June 1866. a masonry parapet for the iron railings provided in the estimate of the Hindry aqueduct, I have the honor to inform you that I have as yet received no intimation of the despatch of the iron railings by the Board.

From the Provisional Chief Engineer, to the Agent and Manager, dated Kurnool, 15th June 1866, No. 149.

Hindry aqueduct Railings.

1. Will you kindly inform me whether these have been procured by indent from Home.
2. If not yet purchased, I propose to substitute a masonry parapet, which will, I think, be more in keeping with the massive stone aqueduct.



3. The shaded portion shows the present work, and the rest the form in which I would finish it off. For one bullock a path of four feet three inches with a solid parapet would be more convenient than six feet with a railing, I believe. For men the same. Two bullocks could scarcely pass in either case. In case you have to refer home, perhaps it would be well to ascertain the views of the Consulting Engineer. The parapet might be open work, if wished.

From the Consulting Engineer Irrigation and Canal Company, to the Agent and Manager Irrigation and Canal Company, dated Madras, 29th June 1866, No. 58.

1. In reply to your letter No. 74, of the 20th instant, I have the honor to inform you that I see no objection to the substitution of a masonry parapet for an iron railing at the Hindry aqueduct, provided it be quite clear that the railings have not already been purchased. I observe that the estimate in which these railings are included was sanctioned in 1862.
2. Should a parapet be adopted, I would recommend that its height above the towing path be not less than three and a half feet, and the details should be in keeping with a work of the size of the aqueduct. A string course eight inches deep with a six-inch projection on such a large work would not, I think, have a good effect.
3. When the point is finally decided, I shall be glad of a Memorandum showing the probable cost of the parapet, should that be deemed preferable, and I may add that as the tracing of the aqueduct in this Office gives but a very imperfect idea of the work as constructed, I should wish for a correct and complete plan, giving information regarding all parts of the work, including foundations and superstructure.

From the Provisional Chief Engineer, to the Agent and Manager, dated Kurnool, 18th July 1866, No. 272.

Your No. 141 of 30th instant, Hindry Aqueduct.

1. By book post I have the honor to forward three tracings for the Consulting Engineer, showing the plan of the aqueduct as constructed, and the form of parapet which I propose to substitute for the iron railing.
2. In comparing the cost of the two, I have only reckoned so much of the parapet as will actually replace the railing, which is shown by etching over the portion colored red. The remaining portion colored red shows the work now actually remaining to be completed.

	Rs.	A.	P.
Cost of iron railing as originally estimated	...	...	...
Cost of total bulk of parapet, 155 at 3½ Rupees...	3,752	8	0
Coping and plinth dressed 40 yards at Rupees 10	512	8	0
Total cost Rupees 942-8-0. Saving ...	400	0	0
	2,810	0	0

Proceedings of the Madras Government, Public Works Department,
17th September 1866.

No. 140.

Forwarded with reference to the Consulting Engineer's No. 58 of 29th June 1866, together with a tracing of the proposed parapet to the Hindry aqueduct—

Plan elevation and section of, do.
Plan of road under arch No. 1 of do.

MADRAS,
27th July 1866.

(Signed) C. A. BADHAM,
Pro. Agent and Manager.

From the Consulting Engineer Irrigation and Canal Company, to the Agent and Manager Irrigation and Canal Company, dated Madras, 3rd August 1866, No. 96.

1. I have the honor, with reference to the Chief Engineer's letter No. 272, of the 18th ultimo, a copy of which was forwarded with your endorsement No. 140, of the 27th idem, to remark that the tracing, giving plan, section, and elevation of proposed parapets of the Hindry aqueduct on an enlarged scale, shows that the present corbelled wall at the upper end will, with masonry parapets, admit of a towing path 4½ feet wide, whereas the rest of the side wall is proposed to be constructed so that the path will be only 3 feet 9 inches, as marked on plan, but by measurement on section 3 feet 7½ inches.

2. The plan sanctioned in December 1861, gives a width of 7 feet for the top surface of the side wall on the tow path side, and a clear width inside the railing of 5 feet.

3. Mr. Latham's letter of the 15th June, No. 149, paragraph 3, stated that 4 feet 3 inches would be the clear width with the proposed parapet, and I think the reduction of width shown in the successive designs is a matter of too much importance to be passed over without special notice.

4. The aqueduct is a work of very considerable length, and against stream it will take a laden boat sometime, perhaps ten minutes, to pass it. If the towing path be made very narrow, therefore, the traffic will be much inconvenienced, and as to make alterations at a future date would entail great additional cost, I think the tow path should now be constructed, so as to provide that accommodation which may be deemed amply sufficient to admit of the towing power of different boats passing and re-passing without difficulty.

5. I do not myself think it is likely that bullocks will be used to tow boats, and probably coolies will be employed for this purpose, as is the case in Southern India on all the navigable canals and channels; 6 feet perhaps would be the least width on which bullocks could pass safely, but, leaving them out of the question, is 3 feet 7½ inches, or 3 feet 9 inches even sufficient for coolies. I believe it is not enough, for coolies when towing have to walk at an angle with the direction in which they are proceeding, and a string of 3 or 4, the number used for the lightest boat, against stream, would cover a width of perhaps 3½ feet, and the longer strings of cargo boats a considerably greater space.

6. Under these circumstances, it seems to be advisable that as great a width as possible should be obtained, and by corbelling out both on the outside and inside of the side walls, as shown in the sanctioned design, the desired object could, I think, be attained without any material addition to the cost. If the description of corbelling for the

At the roadway arch with 6 to 9 inches of corbelling on the inside 5 feet to 5 feet 3 inches would be obtained.

outside of the wall already executed over the roadway arch be too expensive, and if it be desired

to substitute some cheaper work, I do not see any objection to that arrangement, provided the short length so done be removed; but although the Government are concerned rather with the fitness of the Company's works than with their appearance, I should not feel myself at liberty to approve, or to recommend the adoption, of such variations in style on one face of a work like the aqueduct, as could not fail to attract the attention of the most casual observer, and to induce, and deservedly so, remarks the reverse of complimentary as to the effect produced.

*Proceedings of the Madras Government, Public Works Department,
17th September 1866.*

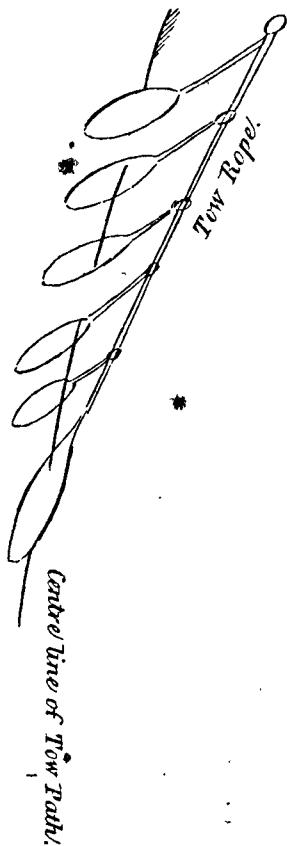
From the Provisional Chief Engineer, to Agent and Manager, dated Kurnool, 11th August 1866, No. 350.

Hindry Aqueduct tow path.

1. I have the honor to acknowledge receipt of Captain Mullins' letter No. 96 of 3rd instant, with your foot Note No. 216 of 7th instant. I enclose a sketch of the original design with iron railings compared with the one I proposed* with as parapet. I only make out 6 feet 6 inches as the original design on the inner and outer side of centre line of railing. My letter No. 149 of 15th June was written on the supposition of the inner coping being corbelled out six inches. If that were done, as it might safely be (see dotted lines in figure 2), a width of 4 feet 3 inches at the ground, and 4 feet 6 inches for practical purposes would be obtained. If more than this were wanted, the parapet might be moved out to the position cross hatched with dotted lines in Fig. 2, and 5 feet towing path secured.

* My No. 272 of 18th ultimo.

2. I imagine that if six men (say) tow a boat they have a tow rope looped into six loops, or loops on cords fixed to a stopper on the rope, thus (see margin), and put the loops each man one across his chest over his shoulders, as on the Pulicat canal; on that canal the track of the men is no broader than a village foot path, worn by single passenger; I think, then, that it would not be well to corbel out the parapet, and so make it far less secure, for the sake of six inches of tow room, but the inside might be well corbelled out 6 inches.



3. Happiness in structure may often lie in the violation of symmetry (or monotony) wherever a reason for so doing is apparent. In the case of the aqueduct, one arch spans a raised main road, and an observer would at once look to see what special provision had been made for the road; and if none, would think that often the aqueduct were made it had been found convenient to mar one of the arches by taking a road through it. If he saw some extra moulding over that arch, and especially a heavy cornice and parapet apparently calculated to protect the road from bodies falling over from the tow path side, I think he might approve it. No Cathedral in England, except Saint Paul's at Salisbury, is without great "variation in style"—(Captain Mullin's paragraph 5.)

4. I confess that I completed the corbelling over the whole arch because it was cheaper to do so than to pull the old part down; and possible to take down the corbels, if not approved, but not possible to build any easily if required. I have no preference either way, and if Captain Mullins, on inspection, does not think the argument for and against its style as equally balanced as I do, I will willingly remove the corbelling over the road arch.

*Proceedings of the Madras Government, Public Works Department,
17th September 1866.*

No. 189.

Communicated with reference to Consulting Engineer's No. 96 of 3rd August 1866.

MADRAS,

21st August 1866.

(Signed) F. H. HENSLOWE,
Agent and Manager.

No. 423.

ORDER THEREON, 17th September 1866, No. 2,972.

CIVIL WORKS, No. 79.

The Government sanction the substitution of a masonry parapet for iron railings provided in the estimate for the Hindry aqueduct, and the adoption of such a design as will afford a towing path not less than 4 feet 3 inches in width.

(True Extract.)

Colonel, R. E.,
Secretary to Government.

To the Consulting Engineer for Madras Irrigation and Canal Company, with ten Enclosures.
" Manager for do. do.

Ed. S. T. Augustin.

4. It also appeared that in completing the superstructure of the Aqueduct, on the tow path side, the Chief Engineer proposed to finish the sidewall and parapet over 13 arches on a design differing greatly from that adopted for the work already executed at the first arch, and as it seemed a pity that this aqueduct, the most important masonry work on the line of Canal - should be so completed as to make its appearance less creditable than might fairly be expected, it was suggested that, if the Chief Engineer wished to lessen expense, it would be better to remove the Corbelled work over the one arch, and make the whole elevation agree in design, than to effect a striking change in passing from the 1st opening to the 2nd.

5. Mr. Nathan in his last letter shows that with a masonry parapet and 6 inches corbelling on the inside, he can give a towing path 16' 3" wide, and he defends the change in design, which he has proposed for the superstructure, by an ingenious reference to the different uses to which the arches under the varied superstructure are put. I think it is much to be regretted that the appearance of this large Aqueduct will be likely to be mean instead of handsome and striking, and that the want of relief in the lower parts will be continued throughout the elevation, by the abandonment of the only part of the design which possessed any sufficient projection, but as, I think, the

Government

Government are interested, in their official relations with the Company, only in the efficiency of the Aqueduct as a water carrier and not in its architectural effects, I beg to recommend that sanction be given for the substitution of a masonry parapet for the iron railing, and the adoption of any section which the Chief Engineer may prefer, and which will afford a towing path not less than 16' 3" wide. The parapet itself, independently of the sidewall which carry it, will not in any case cost as much as the railing.

I have the honor to be,
Sir

Your most obedient servant,

Wm. Miller Captain R.E.

Consulting Engineer I.C.C.

93

Public Works Department.

22972

PROCEEDINGS of the **MADRAS GOVERNMENT**
Under date the 17th Sept 1865
Read the following

(Here enter No. 54, dated 27 Aug 1865)

From
The Consulting Engineer
Sir: H. H. Campbell

The Government
sanction the substitution of
a masonry parapet for the
iron railings provided in the
estimate for the Mindy Aqueduct,
and the adoption of
such a design as will
afford a flowing path not
less than 4' 3" in width.

Wm

[Signature]

The Secy. Genl. to Govt. of Madras
for the Engineer for

[Handwritten signature]
The Consulting Engineer
for the Government
of Madras
D. P. H.

Enclosure 10
for the Government
of Madras

for the Government
of Madras
for the Government
of Madras

[Handwritten signature]

for the Government
of Madras
for the Government
of Madras

22972

17th Sept 1865

P. W. 1866. Department.
Proc. of Govt. of India
No. 2972

PROCEEDINGS OF GOVERNMENT.

Dated 17 Feb 1866.

(The substitution
of a masonry parapet
for iron railings provided
in the estimate for Hindy
aqueduct (Irrigation and
Canal Company's), sanctioned
also the adoption of such a
design as will afford a turn-
ing path not less than
4 feet, 3 inches in width.

N^o 422-423

7th Sept 1866. (N^o 104)