

Revenue (1897) Department.

ROUTINE SERIES.

G.O., No. 1241

DATED 1st July

[Despatch Abstract.]

Coming to the Board of Revenue G. O. Public Works Department approving the estimate of Rs 2,17,000 for filling the tanks proposed for the — in lieu of the estimate for raising the crest by two feet already sanctioned by the Govt of India, and requesting the early sanction of that Govt to the estimate

BACK PAPERS.

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

FURTHER PAPERS.

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

IRRIGATION.

Government { 1897 } of Madras. PUBLIC WORKS.



Recd.

Enclosures

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1897.

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G.O., No. 536 I., 10th June 1897.

JUNE.

CORR no. 1241 of 1st July 97
Communicated
to the Board of Rev.

16 To the Board of Rev. - Rs.
20-6-97
6-7-97

Godavari Anicut

Approving the estimate of Rs. 2,17,000 for falling shutters proposed for the — in lieu of the estimate for raising the crest by 2 feet already sanctioned by the Government of India, and requesting the early sanction of that Government to the estimate.

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers:—

From J. C. LARMINIE, Esq., M.I.C.E., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Waltair, 6th March 1897, No. 2574 G.D.

With reference to paragraph 9 of your inspection notes printed with G.O., No. 75 I., dated 20th January 1897, I have the honour to submit herewith the plan and estimate amounting to Rs. 1,29,500 for falling shutters proposed for the Gódvári anicut for your approval and early sanction so that the funds allotted under capital account for raising the anicut may be utilized during the current official year.

2. The work in raising the anicut sanctioned in G.O., No. 917 I., dated 2nd November 1895, has been stopped.

3. Two of the shutters as now designed have been made up and work extremely well. Arrangements are being made to try one of them under water pressure.

ENCLOSURE.

Report to accompany plan and estimate for falling shutters proposed for the Gódvári anicut.

Amount of estimate RS. 1,75,500

It having been considered expedient to substitute falling shutters, in lieu of a permanent raising of the crest of the Gódvári anicut by 2 feet, this estimate was called for in G.O., No. 75 I., dated 20th January 1897, in supersession of the one already sanctioned in G.O., No. 917 I., dated the 2nd November 1895, for Rs. 1,33,000.

2. The shutters designed are 12 feet * in length and 2' 2 $\frac{3}{4}$ " in height each as per plan accompanying.

3. The attachment of tie bars to shutters has been made adjustable to admit of varying the water level at which they will fall. As now arranged they will hold up water 2' 8 $\frac{1}{2}$ " above present anicut crest level. The additional masonry work required involves a permanent raising of only 9 inches.

Advantage will be taken of the work to bring the crest to the uniform level of + 38.75.

No. I/42 G.D.

With reference to the design of the Gódvári anicut shutters received with the Superintending Engineer's No. 2574 G.D., dated 6th March 1897, the following details require further consideration:—

(1) The flat tie bars at the Gódvári anicut have been found liable to get bent. Round 1 $\frac{1}{4}$ " bars would be more suitable.

(2) The point of attachment of the bars to the shutter is too high. No allowance appears to have been made for the inclination of the bar or the friction of the shutter on its base. At the grand anicut it is found that with the bars attached at one-fourth the height the shutters do not fall until 1 foot depth is going over them but this is only partly due to the width of the base. At the Sone weir also the bars are attached at one-fourth the height. In the Gódvári shutters there should be two holes for the pins—one at 6" and one at 7 $\frac{1}{2}$ " above the base.

(3) The plan shows a rail apparently about 3" width attached to the angle iron which is 2" x 2" x $\frac{3}{4}$ " inch by a single rivet near its outer edge. This is most insecure as the hold is not sufficient to prevent the rail being doubled over even by a slight

force. A rivet on either side of the rail flange is indispensable and it is thought that in order to get space for the rivets the Superintending Engineer will have to use 3" angle irons against which there is not the same objection as at the Gódvári anicut as the shutter does not rest on them.

(4) The angle iron stop in rear of the shutter appears insecure. It would be better to use a stone projecting 1 $\frac{1}{2}$ " or 2" above the concrete.

The plans and estimate are herewith returned for revision.

17th March 1897.

(Signed) W. HUGHES,
Chief Engineer for Irrigation.

From J. C. LARMINIE, Esq., M.I.C.E., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Waltair, 11th April 1897, No. 113 G.D.

Referring to your memorandum No. I/42 G.D. of 17th ultimo, I have the honour to report that two of the falling shutters were erected below the Dowlaishweram under sluices and a series of experiments carried out to ascertain the position for the pivot joint with various depths of water going over the top of the shutter.

2. The rail base on which these shutters slide introduces quite different conditions to those prevailing at the grand anicut. With these shutters, were the pivot points placed at only one-fourth the height above floor the shutters would fall when water had risen to about 3" below their upper edge.

3. I append the results of a few of the trials:—

Height of pivot point above floor.	Depth of water flowing over upper edge of shutter when it fell.
6"	4.8" below upper edge.
7"	3.6" over upper edge.
7 $\frac{1}{2}$ "	4.8" over.
7 $\frac{3}{4}$ "	6" "
8"	7.8" " 2nd trial after an
8 $\frac{1}{2}$ "	9" " interval of some
	12" " days.

I think, it will be well to arrange that the shutters shall not fall until at least 6" in depth is passing over their upper edges and this will be secured by fixing the pivot points between 7 $\frac{1}{2}$ " to 7 $\frac{3}{4}$ " above the floor by means of the adjusting arrangement provided, the necessary alteration can be made.

4. At the grand anicut the tie bars are much longer than as now proposed and further more they are placed edgewise vertically and so are more exposed than will these bars, which, when the shutters are down, lie almost flush with the anicut. As arranged they act as guides to retain the shutter in its proper place when falling, for which purpose, round bars could not well be adapted.

5. In regard to the attachment of the rail to base of the shutter, the plan conveys an erroneous idea. The rail is securely attached to the L iron by a double row of rivets on either side of the rail flange. So there is no likelihood of its doubling over.

6. Since this estimate was prepared it has been decided to fix two iron rings to each shutter to facilitate raising by means of a crowbar or other lever. The rates for outstone have been reduced and as now corrected the estimate is resubmitted.

No. 115 I.

Note by the Chief Engineer for Irrigation.

An estimate of Rs. 2,17,000 for fitting shutters on the crest of the Gódvári anicut is submitted for sanction in lieu of the estimate of Rs. 1,33,000 sanctioned in Proceedings, Madras Government, No. 917 I., dated 2nd November 1895, and by the Government of India in letter No. 4 I., dated 13th January 1896, printed with G.O., No. 114 I., dated 3rd February 1896.

2. For reasons already reported to Government, it has been recommended that falling shutters should be fitted on the crest instead of raising the work 2 feet as

provided in the current estimate. The estimate now submitted provides as nearly as feasible for carrying out this recommendation. It is unavoidable to raise the anicut in front of the shutters by a small amount, as the crest is built of massive stones which cannot be removed and rebuilt to a different section.

3. The shutters are similar to those of the Sone weir in Bengal and the Grand anicut in Tanjore. Some experimental shutters have been made, and the working of these during the coming season will indicate whatever improvements may be required in the details. There is a large quantity of old rails in hand for which there is no further use, and the Superintending Engineer proposes fitting these at the foot of the shutters to provide a rounded edge and reduce the resistance to falling. As far as his experiments go, the use of these rails has been completely successful.

4. Three hundred and nine feet length of the anicut has been raised on the sanctioned estimate. It is proposed to leave this unaltered and fit the shutters on the remaining 11,422 feet. The estimate for this comes to Rs. 1,61,330, but Rs. 14,170 spent on the estimate which this is to supersede has to be added making the total Rs. 1,75,500 for works or Rs. 67,500 in excess of the sanction. The Superintending Engineer's estimate has been considerably raised in this office, as it was considered that some of his rates were too low and some of the work provided for not of sufficiently good quantity.

25th May 1897.

(Signed) W. HUGHES,
Chief Engineer for Irrigation.

ORDER—No. 536 L, dated 10th June 1897.

The estimate amounting to Rs. 2,17,000 as shown in the margin for falling shutters proposed for the Godavari anicut in lieu of the estimate of Rs. 1,38,000 for raising the crest 2 feet sanctioned in Government of India letter No. 4 L, dated 18th January 1896, printed with G.O., No. 114 L, dated 3rd February 1896, is approved. The work will be classed as unremunerative.

Godavari Delta System.
I. Head works.
3. Works.

	Rs.
I. Works	1,75,500
II. Establishment	40,365
III. Tools and plant	1,135
Total, Estimate	2,17,000

2. Ordered that a copy of these Proceedings, together with the estimate and plans, be forwarded to the Government of India with a request that early sanction thereto may be accorded under "49 Capital Expenditure not charged to Revenue, Godavari Delta System, Open Capital Account."

[Here enter No. 537 L, dated 10th June 1897.]

(True Extract.)

W. Hughes
Under Secretary to Government.
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" Examiner of Public Works Accounts.
" Revenue Department.

Exd. Md. Fakhruddin.

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READ AGAIN G.O., No.
189

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CURRENT No.

ENCLOSURES TO G. No.

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STATEMENT WITH DITTO.

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