Public Works, (189) Department.

G.O., No. 536-J.J.

DATED 6 June 89.

[Despatch Abstract.]

Godavari Anicut: Approving the estimate of Rs. 217,000 for falling Shutters 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.

Godavari Anicut: Forwarding Copy of Proc: requesting the early sanction of the Govt of India to the estimate of Rs 217,000 for falling Shutters proposed for the — in lieu of the estimate for raising the crest by two feet already sanctioned by that Govt.

MC 3697

BACK

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. } 1897. *Enclosures*

Regd. *Spare copies*

G.O., Nos. 536, 537 I., 10th June 1897.

JUNE.

Godavari Anicut

Forwarding copy of Proceedings requesting the early sanction of the Government of India to 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 that Government.

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.

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

25th May 1897.

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

The estimate amounting to Rs. 2,17,000 as shown in the margin for falling shutters proposed for the Gódávari anicut in lieu of the estimate of Rs. 1,33,000 for raising the crest 2 feet sanctioned in Government of India letter No. 4 I., dated 13th January 1896, printed with G.O., No. 114 I., dated 3rd February 1896, is approved. The work will be classed as unremunerative.

Gódávari 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, Gódávari Delta System, Open Capital Account."

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

(True Extract.)

(Signed) W. HUGHES,
Joint Secy. to Government,
Irrigation Branch.

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

ENDORSEMENT—No. 537 I., dated 10th June 1897.

Forwarded.

(By order.)

(Signed) W. HUGHES,
Joint Secy. to Government,
Irrigation Branch.

Exd. Md. Pahilvan.

N.

of Madras.

RKS.

osures

e copies

June 1897.

t

alling shutters proposed for the
feet already sanctioned by the
tion of that Government to the

9

with reference to G. O. No. 536 I dt 10.6.97 which has been marked E.T., it is submitted that as a general rule papers still pending the consideration of the Govt. of India are not communicated to the newspapers - please see para 197 of the Secretariat Manual.

Sir
30/6/97.

Noted. I thought the Sanction of Govt. of India had been received. The Communication of the G.O. to the press should be deferred.

30.6.97

Please put this up with the Govt. of India papers dt 30/6/97.

Mr. Pahilvan

30.6.97 Left send to Mr. Hughes

To SCs 2/7/97

M. E. 9

30/6/97

This might be filed with the orgl. of the Govt. so that it can be placed on the E.T. when Govt. sanction is received.

30/6/97

E.T.

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 Gódávari 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 Gódávari anicut.

	RS.
Amount of estimate	1,75,500

It having been considered expedient to substitute falling shutters, in lieu of a permanent raising of the crest of the Gódávari 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′ 2¾″ in height each as per plan accompanying.

* 12 feet being the usual length, plates can be procured.

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′ 8¾″ 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 Gódávari 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 Gódávari anicut have been found liable to get bent. Round 1¼″ 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 Gódávari shutters there should be two holes for the pins—one at 6″ and one at 7½″ above the base.

(3) The plan shows a rail apparently about 3″ width attached to the angle iron which is 2″ × 2″ × ½″ 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 Gódávari 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 1½″ or 2″ above the concrete.

The plans and estimate are herewith returned for revision.

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

17th March 1897.

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.	
7½″	4·8″ over.	
7¾″	6″ ,,	
8″	7·8″ ,,	2nd trial after an interval of some days.
8″	9″ ,,	
8½″	12″ ,,	

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 7½″ to 7¾″ 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 edgeways 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 cutstone 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 Gódávari 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 I., dated 10th June 1897.

The estimate amounting to Rs. 2,17,000 as shown in the margin for falling shutters proposed for the Gódávari anicut in lieu of the estimate of Rs. 1,33,000 for raising the crest 2 feet sanctioned in Government of India letter No. 4 I., dated 13th January 1896, printed with G.O., No. 114 I., dated 3rd February 1896, is approved. The work will be classed as unremunerative.

Gódávari 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, Gódávari Delta System, Open Capital Account."

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

(True Extract.)

(Signed) W. HUGHES,
Joint Secy. to Government,
Irrigation Branch.

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

Exd. Md. Pahilvan.

Hr. the Governor
The Hon'ble Mr Bliss C.I.E
" Mr Grose "

PUBLIC WORKS DEPARTMENT,
IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Estimate for providing falling shutters to the Godavery Anicut

UNDER date the

READ the following

Brief note of Papers
From the Supg Engr I. Circle (Mr. No 2574. G.D of 6. 3. 97)
To " " " (Mr. " 42. G.D " 17. 3. 97)
From " " " (Mr. " 113. G.D " 11. 4. 97)

Print
Note by the Chief Engineer for Irrigation - - - - - (Mr. " 115 I " 26-5-97)

78

An estimate of Rs 217,000 for fitting shutters on the crest of the Godavery Anicut is submitted for sanction in lieu of the estimate of Rs 133,000 sanctioned in P. W. G. No 917. I. dated 2 November 1895 and by the Government of India in letter No. 4. I. dated 13 Jany 1896 printed with G.O. No 114. I. dated 3 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 no [illegible] submitted

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 & reduce the resistance to falling. As far as his experiments go, the use of these rails has been completely successful.

4. 309 feet length of the [illegible] has been raised on the sanctioned estimate. It is proposed to leave this unaltered and fit the shutters on the remaining 11422 feet. The estimate for this comes to Rs 1,61,330 but Rs 14170 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 Supg 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 quality.

SP

Order thereon:
No 536 S&O 6.97

The estimate amounting to Rs 2,17,000 as shown in the margin for falling shutters proposed for the Godavery Anicut in lieu of the estimate of Rs 1,33,000 for raising the crest 2 feet sanction in Government of India

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

	Rs
Works	1,75,500
Establishment	40,365
Tools & Plant	1,135
Total Estimate	Rs 2,17,000

letter No 4. I. dt/13 January 1896
printed with G. O. No 114. I.
dated 3 February 1896,
is approved. The work
will be classed as
unremunerative.

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
Godavery Delta System,
open Capital account"

Endorsement. No 5-37 I. dt 10-6-97

Forwarded.

To
The Chief Engineer for Irrign
" Supdg. Engr I. Circle
" Exec P. W. Accts
" Revenue Dept

I. Form No. 1—500—14-5-95

Public Works (1897) Department.

CURRENT No. 5539

Order

From
The Chief Engineer for Irrigation

No. 115 I.

Dated 25-5-97
Received 5-6-97
Enclosures 7 (+2 plans)
Spare copies

SUBJECT.

Falling Shutters to the Godavari
Anicut — Note recommending
for sanction the revised estimate
for —

BACK PAPERS.

No.	Date.

FURTHER PAPERS.

No.	Date.

CH/3597

Public Works (1897) Department.

CURRENT No. 7548

5369
5377 Soon

Order

From J. C. Larminie Esq.
Supg. Engineer, 18" Circ.

No. 113 G.D.

Dated 11.4.97

Received 17. 4. 97

Enclosures 6

Spare copies

SUBJECT.

Falling Shutters to the Governor's
Arcade — Resubmits the
Estimate for providing —
duly revised, with remarks.

To D.E.

Laid 1cc
21/4/97

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

No. 113 GD.

From

J. G. Lawrence Esquire M.I.C.E.
Superintending Engineer
First Circle

To

The Chief Engineer
for Irrigation
Madras

Dated Waltair 11th April 1897.

Encls-6.

Sir,

Referring to your memo No. I 4295 of 17th ultimo, I have the honor to report that two of the falling shutters were erected below the Dowlaishwaram 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 shutters.

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 ¼ the height above floor the shutters would fall when water had risen to about 3 inches below their upper edge.

3. I append the results of a few of the

the trials.

Height of Pivot point above floor	Depth of water flowing over upper edge of shutter when it fell.	
6 inches	4·8" Below upper Edge	
7"	3·6" over upper Edge	
7½"	4·8" over	
7⅝"	6" over	
8"	7·8" over	2nd trial after an interval of some days.
8"	9" over	
8½"	12" over	

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 7½" & 7¾" 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 furthermore they are placed Edgeways Vertically and so are more Exposed than

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 adopted.

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 Cutstone have been reduced and as now Corrected the Estimate is resubmitted.

I have the honor to be
Sir,
Your most obedient Servant

J Clarke
Superintending Engineer
First Circle

GS/10.4.97

CHIEF ENGINEER FOR IRRIGATION
21 APR. 1897
No.

CHIEF ENGINEER FOR IRRIGATION.
17 APR. 1897
No. 756D

P.W. E-7/5539/97

6

48

Enc 6

Upstream

No. I / 42.9.D dy 17-3-97

SE I.

With reference to the design of the Godavari Anicut Shutter received with the SE's No 2574 GD dy 6.3.97 the following details require further consideration

1°. The flat tee bars at the Q. Anicut have been formed with top bent. Round 1¼ 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 & the friction of the Shutter with base. At the Grand Anicut the former that with the bars attached at ¼ the height the shutters do not fall until 1 ft depth is formed over them but but they is only partly due to the width of the base. At the Sone weir also the bars are attached at ¼ the height. In the Godavari Shutters there should be two holes for the pins one at 6" and one at 7½ above the base

2 2 3/4 b

3° The plan shows ~~2" x 2" x ½"~~ angle iron a rail apparently about 3" width attached to the angle iron which is 2½ x 2½ x ½" by a single rivet near its outer edge. This is much insecure as the hold is not sufficient to prevent the rail being doubled over evenly & 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 rivet the Insp.ᵍ Engˢ. might have braces 3" angle irons against which there is not the same objection as at the G. Arrival as the shutter does not rest on them.

4° The angle iron stop in rear of the shutter appears unnecessary. It would be better to use a stone projecting 1½" & 2" above the Concrete —

The plans and estᵉ are herewith returned for perusal —

17/3 WH.

BACK

P.W. E-8/55-34/97

Public Works (1897) Department.

CURRENT No. 479 D

Urgent

Order

C.I.
12/3/97

From J.C. Larminie Esq.
Supg. Engineer, 1st Circle,
To The Chief Engineer for Irrigation
No. 2574 G.D.

Dated 6-3-97.
Received 11-3-97
Enclosures 5.
Spare copies

SUBJECT.

Falling Shutters proposed for the Godavari Anicut — Submits plans and Estimate for Rs. 1,29,500 for — for approval and sanction.
To D.I. with papers.

11/3/97

11/3/97

P.W. 12-3-97

BACK PAPERS.

Acctt G.O. Line	No.	Department.	Date.
~~75 I~~	75 I	P.W.D.	20.1.97
R	8884	2-4-98	

FURTHER PAPERS.

Issue G.O. Receipt	No.	Department.	Date.
Issue	4080	P.W.	3.97
R	75-98	P	10.4.97

P.W.S.

Report to accompany plan and Estimate for falling shutter proposed for the Godavari Anicut.

Amount of Estimate Rs. ~~124500~~ 166000 175500

It having been considered expedient to substitute falling shutters, in lieu of a permanent raising of the crest of the Godavari Anicut by two 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 ft* in length and 2-2 3/4" ft in height each as per plan accompanying.

* 12 feet being the usual length, plaks can be procured.

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 3/4" above present Anicut Crest Level. The additional masonry work required involves

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.

J Lawrence
Superintending Engineer
1st Circle.
8/3/97

CHIEF ENGINEER FOR IRRIGATION. No. 7562

CHIEF ENGINEER FOR IRRIGATION. 1897 No.

8.3.97

1602 80

P.W. E-1/55 39/97

No. 2574 G.D.

FROM

J.C. Lawrence Esqr. M.J.C.E.
SUPERINTENDING ENGINEER,

FIRST CIRCLE.

Enclosures. 5. TO

THE CHIEF ENGINEER
FOR IRRIGATION.

WALTAIR, 6. 3. 1897.

SIR,

With reference to para 9 of your Inspection Notes printed with G.O. no: 75 I dated 20th January 1897, I have the honor to submit herewith the plan and estimate amounting to Rs 1,29,500 for falling shutters proposed for the Godavari 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

CHIEF ENGINEER FOR IRRIGATION. Dated 21

No.....

S. E. 1. 500—29-2-96.

FROM

SUPERINTENDING ENGINEER,
FIRST CIRCLE.

TO

THE CHIEF ENGINEER

FOR IRRIGATION.

DATED
DESPATCHED } 189 .
RECEIVED

No.

ENCLOSURES.

SUBJECT.

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.

I have the honor to be
Sir,
Your Most obedt Servt

J Dewinne
Supdg Engineer 1st Cir

P.W. E-I/55 39/97

8/J

GS/63/97

9

Yrs