Public Works (1896) Department.

G.O., No. $\frac{301}{302}$ I

DATED 31-3-96

[Despatch Abstract.]

Pelandorai Anicut: Estimate of Rs 71,100 for lowering the — and fitting it with 6 feet girder shutters counterweighted and with suitable gearing, sanctioned with remarks.

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The above forwarded to the Govt: of India

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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.
ACCOUNT.

Govt. of {1896} Madras.

PUBLIC WORKS.

Dated March, 31*st*.

Recd. *Encl.*

G.O. Nos. 301, 302 I., 31st Mar. 1896.

MARCH.

Pelandorai Anicut

Forwarding copy of Proceedings sanctioning, with remarks, an estimate of Rupees 71,100 for lowering the — and fitting it with 6 feet girder shutters, counter-weighted and with suitable gearing.

No. 301 I., 31st March 1896.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From Lieutenant-Colonel A. W. SMART, R.E., Superintending Engineer on Special Duty, to the Chief Engineer for Irrigation, dated Tanjore, 28th February 1896, No. 90.

Abstract.—Submitting for sanction plans and estimates (Rs. 57,800) for lowering the Pelandorai anicut and fitting it with 6 feet girder shutters.

Enclosure.

Report to accompany the estimate for lowering Pelandorai anicut and fitting with 6 feet shutters.

	RS.
Amount of estimate	57,800

The object of this estimate is to raise the F.S.L. of the main channel in order to increase the supply which at present through the silt deposits and for other reasons is very meagre. In fact if something is not soon done there will be no longer any supply. At various times spasmodic attempts have been made to clear the channel, but it has always been found that the clearances do little or nothing to increase the supply and the channel again fills up to the original level in one season, if not in the first few days that the head sluice is opened. By raising the F.S.L. there will be no necessity to clear, at all events, the bottom 3 feet of silt now in the channel.

The lowering of the anicut becomes necessary, if the raising of full supply level is to be effected with safety, and provision is therefore made for cutting down the anicut and fitting with 6 feet shutters. Each shutter is 31′ 6″ long, weighing about $3\frac{1}{2}$ tons, counter-weighted and fitted with rollers 1 foot diameter and 5″ wide. The axle pins are gun-metal and the rollers are to be bushed with lignum vital. The lubrication will therefore be water and there will be no fear of rust preventing the rollers going round. The counter-weights will slide down the back of the piers as shown on South Indian Railway rails. In very high floods, perhaps once in five or six years, the counter-weights will dip into water. The loss, if it is wholly submerged, would be 500 lb. for the displacement, or between $\frac{1}{7}$ and $\frac{1}{8}$ of the total weight; this may be considered of no consequence.

With 1 foot of water going over the shutter the pressure will be about 20 tons. The resultant of the pressure and weight of pier comes well within the $\frac{1}{3}$rd limit from outside of base. Number of vents required will be for length of anicut 17 of 29 feet clear span, with piers 5′ $8\frac{2}{3}$″ thick. The end bay of under sluices is left untouched with the exception that one under sluice has to be built up for the end pier.

The total weight of shutter, counter-weights, &c., will be under 8 tons on each pier, which is less than an arch and superstructure of a bridge would be. As the foundations would be considered ample for a bridge, they may be also considered safe for the piers and shutters now proposed.

(Signed) A. W. SMART, Lt.-Col., R.E.,
Superintending Engr. on Special Duty.

29th February 1896.

No. 65 I.

Submitted to Government, with a recommendation, that the estimate forwarded by the Superintending Engineer on Special Duty, Cauvery Completion Estimates, be sanctioned under rule V (*a*), paragraph 11, chapter IX, Volume II, Public Works Code.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

15th March 1896.

Order—No. 301 I., dated 31st March 1896.

The following estimate is sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Minor works for which Capital and Revenue accounts are kept.
Pelandorai Anicut System.
Open Capital Account.
1. Head Works.
3. Works.

Lowering the Pelandorai anicut and fitting it with 6 feet girder shutters, counter-weighted and with suitable gearing—

	RS.
I. Works	57,800
II. Establishment	13,294
III. Tools and plant	6
Total estimate ...	71,100

2. This sanction is registered as No. 222 I. of 1895–96 and will expire on 31st March 1898.

3. The Superintending Engineer, V Circle, will apply, at an early date, for the allotment required for expenditure on the work during 1896–97, and will submit, for the sanction of Government, in supersession of the estimate sanctioned in G.O., No. 1088 I., dated 18th December 1895, a revised estimate providing for the work now actually required to be done in clearing and widening the main channel.

4. Ordered that a copy of these Proceedings be forwarded to the Government of India for information.

[Here enter No. 302 I., dated 31st March 1896.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Secretary to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle, with plans and estimate.
" " " on Special Duty, Cauvery Completion Estimates.
" Examiner, Public Works Accounts.
" Revenue Department.

Endorsement—No. 302 I., dated 31st March 1896.

Forwarded.

(By order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Secretary to Govt., P.W.D.,
Irrigation Branch.

Exd. C. M. Thumbuswamy Pillay.
Spare Copies

PUBLIC WORKS DEPARTMENT,
IRRIGATION BRANCH.

No. 301-I d/ 31st march/96

In Mr K's A & S.E. on special duty's

PROCEEDINGS OF THE MADRAS GOVERNMENT.

10 f

1/6

UNDER date the

READ the following

Print with Report

From Supg Engr, on Special duty, Cauvery Completion Estimates, No 33 d/ 29 Jan /96.
To do No. 19 S.a. d/ 4. 2. 96
From do. - 90 d/ 29. 2. 96
To Supg Engr V Circle 39 S.a. d/ 4. 3. 96
To do. " 46 S.a. d/ 9. 3. 96

No 65 I d/ 15-3-96

Submitted to Govt with a recommendation that the estimate forwarded by the Supg Engr, on special duty, Cauvery completion estimates, be sanctioned under rule V(a), para 11, Chapter IX, Vol II, P.W.D. Code.

Appd.
A.G.H.
23.3.96

25/3/96

25/3/96

Order thereon

The following estimate is sanctioned

Irrigation

43. Minor Works & Navign.

Minor Works for which Capital & Revn. Accounts are kept.

Pelandorai Anicut System

Open Capital Account.

1. Head Works.

3. Works.

Lowering the Pelandorai anicut & fitting it with 6 feet girder shutters counterweighted & with suitable gearing.

	Rs
I. Works	57,800
II. Establishment	13,294
III Tools & Plant	6
Total Estimate	71,100

2. This sanction is registered as No. 222 I of 1895-96 & will expire on 31st March 98.

The Supdg Engr. V Circl. will apply at an early date for the allotment required for expenditure on the work during 1896-97 & will submit, for the sanction of Govt, in supersession of the estimate sanctioned in G.O. No 1088 I., d/ 18 Dec/95, a revised estimate providing for the work now actually required to be done in clearing & widening the main channel.

4. Ordered that a copy of these Procs be forwarded to the Govt of India for information.

for the
ance

To the Chief Engr for I.
Supdg Engr V in Ms 31/3
(with plans & estimate)
Do. on Special Duty
Cauvery Completion Estimates. In Ms 31/3

5

Endorsement (H.E. No 302 I d/ 31st March/96) forwarded.

12/3

15/3

ICS 12/3 Ex. P.W.D. Rev Dept B.R.

1

No. 1088 I of 18-12-95
" 150 I " 10-2-96

Enc 20/3 R 26/3.

P. W. CURRENT No. 2773

H2

Honble Mr. Bliss
Honble Mr. Grose
Encls 11 (2 plans)
Recd: 18.3.96

Estimate for lowering the Pelandorai Anicut & fitting with 6 feet girder shutters

Urgent

F.E.D.
30/3

F.E.D. Will you please say to whom the plans & estimate should be sent. 30/3

Issue to S.E. V Circle
31/3

Rued

Regd
31/3

26.3.96

12/3

Office of Superintending Engineer
on Special duty
No. 33 Tanjore dated 29th January /96

From
A. W. Smart Lt. Col. R.E.
Superintending Engineer
on special duty

To,
The Chief Engineer,
for Irrigation.

Sir,
In my memo submitted with my letter No. 25 dated 26th January /96, I suggested that experiments should be made on silt clearances in the North and South Arcot Districts as well as in this. I understand that a large clearance estimate ~~f~~ has been sanctioned for Pelandorai Channel. I would request that velocity observations may be made on this channel for two years to ascerta the effect of the clearance now proposed.

vide S.D. No. 150 I 10/2/96

It would be necessary to take cross sections at the same points at which the cross sections have been taken for the estimate immediately after the clearance has been completed and before water

3.

is

is admitted. Velocity observations and cross sections, a simple float is quite enough, should then be taken at intervals just below the third mile, where, if I remember right, the Channel comes out of cutting. The guage readings front and rear at the head should also be noted.

2. I am of opinion that it is quite useless to attempt to clear this channel below the 3 ft above floor level at the head and correspondingly down the channel, and there are a large number of springs en route which force up sand &c from below the slopes with which there is a great difficulty in coping — besides this to do a large clearance within the time, special arrangements will have to be made to get the labour required and to complete the work before the water comes down.

3. If you will permit me I will submit plan and estimate for cutting down the anicut by 3 ft and fitting with 6 ft shutters to be worked from a screw pile bridge up stream.

This

This will give a lowered anicut which will be safer in floods than the anicut is at present and a F.S.L in channel higher than now by 3 ft. The silt will then be of little or no moment.

I have the honour to be
Sir,
your most Obed^t Servant.

Lt Col RE
Superintending Engineer
on Special duty

CHIEF ENGINEER
FOR IRRIGATION.
31 JAN 96
No. 20 SA

From

A. W. Smart Lt. Col. R.E.
Superintending Engineer
— on special duty

To. The Chief Engineer
for irrigation

No. 33
Dated 29th
Despd 29th } January/96
Recd.

Subject

Pelandorai Channel:— making certain suggestions on the silt clearance of — for which an estimate has been sanctioned.

Ows S.S
2773/96

No 20/19 SA d/4-2-96

Memo.

In reply to letter No 33 dated 29 January 1896 from Lt. Col. A.W. Smart R.E., Supdg. Engineer on special duty, Cauvery Completion Estimates, the undersigned has the honor to inform him that the proposed improvements to the Pelandorai Anicut may be worked out as suggested, and the plans and estimates forwarded when ready.

4/2

To Lt. Col. A.W. Smart R.E.
Supdg. Engineer on special duty
Cauvery Completion Estimates
Tanjore.

No 20 SA/96
Copy to S.E. Fifth Circle for information together with copy of Col. Smart's letter No 33 dated 29-1-96.

4/2/96 B.R.

Pw. S.8
2773/56

Report to accompany the estimate for lowering Pelandorai anicut and fitting with 6 ft shutters.

Amount of Estimate Rs ~~6,000~~ 5787

1-Plan of anicut
1-detail plan of shutter
1 stress diagram
3

The object of this estimate is to raise the F. S. L. of the main Channel in order to increase the supply which at present thro' the silt deposits and for other reasons is very meagre. In fact if something is not soon done there will be no longer any supply. At various times spasmodic attempts have been made to clear the Channel, but it has always been found that the clearances do little or nothing to increase the supply and the Channel again fills up to the original level in one Season, if not in the first few days that the head sluice is opened. By raising the F. S. L. there will be no necessity to clear at all events the bottom 3 ft of silt now in the Channel.

The lowering of the anicut becomes necessary if the raising of full supply level is to be effected with safety and provision is therefore made for cutting down the anicut and fitting with 6 ft shutters. Each shutter is 31'-6" long, weighing about 3½ tons,

Counterweighted

Counterweighted and fitted with rollers 1 ft diameter and 5" wide. The axle pins are gun metal and the rollers are to be bushed with lignum vitae. The lubrication will therefore be water and there will be no fear of rust preventing the rollers going round. The counterweights will slide down the back of the piers as shewn on S. I. R rails. In very high floods, perhaps once in five or six years, the Counterweights will dip into water. The loss if it is wholly submerged would be 500 lbs for the displacement, or between $\frac{1}{7}$ and $\frac{1}{8}$ of the total weight; this may be considered of no Consequence.

With 1 ft of water going over the shutter the pressure will be about 20 tons. The resultant of the pressure and weight of pier Comes well within the $\frac{1}{3}$rd limit from outside of base. Number of vents required will be for length of anicut 17 of 29 ft clear span, with piers 5'–8⅔" thick. The end bay of undersluices is left untouched with the exception that one undersluice has to be built up for the end pier.

The total weight of shutter, Counterweights &c will be under 8 tons, on each pier which is less than an arch and superstructure of a bridge would be. As the foundations would be considered

ample

ample for a bridge they may be also considered safe for the piers and shutters now proposed.

Lt. Col. R.E.

29/12/96

Superintending Engineer
on Special duty

CHIEF ENGINEER
FOR IRRIGATION.
2-MAR 96
No.

PWE 6
2773/96

W.D.

No. 90

Office of Superintending Eng
Cauvery Completion Estimate
Tanjore dated 28th Febry
desp. 29th

From

A. W. Smart Lt Col RE
Superintending Engineer
on Special duty

To

The Chief Engineer
for Irrigation
Madras

Encls 4
x{ 1. Plan of anicut
x{ 1. Plan (detail) of Shutter
1. Stress diagram
1. Estimate with report, abstract & complete
4
x sent separately

Sir,

With reference to your no. $\frac{V}{1984}$ dated 4.2.96, I have the honor to submit plan and estimate (Rs ~~60,000~~ 57,860) for lowering the Pelandorai anicut and fitting with 6 ft girder shutters counterweighted and with suitable gearing. I anticipated no difficulty with these shutters and though we may not be able to reduce friction to such an extent as Mr. Stoney does, with his loose rollers, the friction will not be so great as to prevent the shutters going down by their weight, when lowered into water. If for any reason the rollers should not work and the worst comes to the worst we have only to pay Mr. Stoney a royalty & put in his rollers.

I have the honor to be
Sir
Your most obedt. Servant
AW Smart Lt Col RE
Superintending Engineer
on Spl duty

CHIEF ENGINEER
FOR IRRIGATION.
2-MAR.96.
No. 39/a

From
A W Smart Lt Col RE
Superintending Engineer
on Special duty

To The Chief Engineer
for Irrigation

No.
Dated 29th }
Despd 29th } February/96
Recd }

No 90

Subject

[illegible]

Ow.E.3
2773/96

Forwarding for Sanction
an estimate Rs 57800,
with plans &c. for
lowering the — and
fitting with 6' shutters

No 39 b/SA d/4.3.96

8P

Memo:

In continuation of this office No 20 SA d/ 4.2.96, the undersigned has the honor to intimate to the Supdg Engineer V Circle that the suggestions contained in paras 1 & 2 of Lieutenant Coll Smart's letter 2033 dated 29th January 1896, a copy of which was forwarded with this office No quoted above are app'd by the Chief Engr for Irrign. Plans & estimates for improving the ancient or as suggested in para 3 are now under consideration.

4/3

To
The Supdg Engr V Circle

No 40 SA
Copy to Lt Coll A W Smart RE
on Special duty. Batticaloa C.C.
in continuation of this office
No 19 SA d/ 4.2.96

BR 3.3.96

Re.E.2
2773/96

D.S.I.

A full copy of Col Smart's letter was sent to the Supdg Engr V Circle with No 20 S.A. 8/4 2 96 – As the endorsement bearing this No was written on the copy of the memo 19 S.A. itself, copy of Col Smart's letter was treated as the only enclosure which accompanies the communication –

BR
3.3.96

Very well
JB 3/3

I have made an addition to draft which please type

JB 4/3

Attended to
NW
4/3

No. V/46 S.A

L.E.V

In continuation of this office No. V/39 S.A. dated 3rd March 1896, regarding the Palendorai anicut & Channel the undersigned has the honour to inform the S.E.V. that as an estimate for ~~cutting down~~ ~~the [illegible]~~ cutting down the anicut by 3ft and providing 6ft shutters is about to be sanctioned it will not be of any use clearing the channel below 3ft above the floor level at the head sluice & correspondingly down the channel. Such portions of the

Estimate Rs 23 180
for clearing the
Channel C ~~as provides~~
~~for~~ Sanctd. in G.O.
No. 1088 P dated
18.12.85 as provide
for clearing below
the sluices ~~[illegible]~~ therefore
be deferred —

9/3.

M.E.E.

As this is only a confirmation of the previous letter but more definite and as I have received verbal orders this can go without waiting for E.E.'s initials

Ch. Ex.
27/3/86

[illegible]

HD
9/3