Archives ! 10,006—16-8 77.

(1) Number of pages 4

(2) Date of repair 9.6.86

(3) Initials of the Referencer long

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Revenue DEPARTMENT

G.O. No. / ~~B.P. No.~~	1368	Press. / ~~Mis.~~
Dated	3-6-1878	~~197~~ .

Not to be folded or roughly handled

3-21

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

13th May 1878, No. 405 I.

Irrigation.
Account.

Read the following paper :—

No. 65. Endorsement of the Chief Engineer for Irrigation, dated Ootacamund, 8th May 1878, No. 129 I.

From Lieutenant-Colonel J. BEATTY, R.E., Superintending Engineer, Godavery District, to the Chief Engineer for Irrigation, dated Dowlaishweram, 23rd April 1878, No. 214.

As directed in your memorandum, No. 5 G.D., of 10th January 1878, I have the honor to forward herewith plans, estimates, and report by the Officer in charge Eastern Delta for fitting the remaining 14 vents of the Dowlaishweram under-sluices with gearing and shutters of Captain Brockman's pattern, modified as suggested in clause 4 of paragraph 2 of the above-mentioned memorandum.

One detailed estimate.
One abstract estimate amounting to Rs. 8,650.
One estimate for shutters and gearing.
Two plans.
One report from the Eastern Delta Division Office, No. 15, of 8th April 1878.

From G. T. WALCH, Esq., Executive Engineer in charge Eastern Delta Division, to the Superintending Engineer, Godavery District, dated Dowlaishweram, 8th April 1878, No. 15.

With reference to your No. 3,301, 24th January last, I have the honor to forward plan (two sheets tracing line) and estimate for fitting the western 14 vents of the Dowlaishweram under-sluices with shutters and gearing of Captain Brockman's pattern, modified as suggested by the Chief Engineer for Irrigation in his No. 5 G.D., 10th January 1878.

One detailed estimate.
One abstract do.
One estimate for shutters.
Two tracings of plans.

2. I have adopted the chain arrangement suggested in clause 4 of paragraph 2 of the Chief Engineer's letter, because I consider it will act efficiently and will not require the manipulation that the system sketched in clause 3 would render necessary.

3. It will be seen that I propose to carry a light working platform (the boards of which are to be lifted and moved from vent to vent as required) in front of the gearing beam between T iron side pieces, connected in front by an angle iron, the boards being thus prevented from sliding out.

Submitted to Government.

The estimate of Rupees 8,650 transmitted by the Superintending Engineer, Godavery, provides for fitting up with improved shutters, to be worked by Captain Brockman's portable gear, the remaining 14 vents of the Dowlaishweram under-sluices of the Godavery Anicut. The gear was made up and one vent fitted with shutters under the sanction given in the G.O., No. 2,692, 20th September 1875, orders as per margin. The arrangement has been fully tested with, even as the gear was first made up very satisfactory results, for the raising of the shutters is effected with ease and only as regards the lowering of the upper shutter was any difficulty experienced at times, owing to the attachment for this purpose not coming readily into place. After a full examination of the gear in

December and January last, modifications of this part of the original design were suggested, and one of the arrangements proposed for ensuring the closing of the upper shutter has been adopted in the revised design now proposed to be carried out, together with other improvements as regards the platform arrangements, form of spanner, &c. The correspondence which has taken place is noted in the margin.

To Supg. Engr., No. 99 G.D. 25th May 1877.
From „ „ 707 1st June „
From „ „ 1,610 18th Aug. „
To „ „ 175 G.D. 24th Sept. „
From „ „ 2,504 3rd Nov. „
To „ „ 5 G.D. 10th Jan. 1878.

2. The essential feature of Captain Brockman's design is that no gear is left at the under-sluices when the river is in fresh and passing over the ramp over the sluices. A design of this kind had for many years been desired, as the difficulty experienced in lifting the old shutters with levers only, and still more in ramming them down, resulted in much less use being made of the sluices than was desirable; for the fear of not being able to open or close them when required led to their being closed when they ought to have been open, and open when to close them was of importance to maintain a sufficient supply in the main canal.

3. About the same time, that is in 1875, Mr. Lorraine designed gear which has been applied experimentally to one vent of the Vigeshwaram under-sluices which are bridged above flood level, and is about to be applied to all the vents. This gear, unlike Captain Brockman's which is carried by lascars from vent to vent, is mounted on a traveller and could by laying down a tramway, admitting of a traveller being run up the ramp to beyond flood level, have been applied to the Dowlaishweram under-sluices, but its application would have been more expensive, and as Captain Brockman's gear is available, and will be completely efficient, it is considered proper to retain it for the whole of the Dowlaishweram under-sluices.

4. A few remarks on the details of design shown on the tracing sheet No. 2 are required:—

(1.) The hook* at lower end of screw spear. The bearing of the T head should be on the centre line of the spear so that all cross strain may be avoided. The concavity of the upper and lower parts of the hook should be equal and the opening in the hook should be $2\frac{3}{4}$ inches instead of $2\frac{1}{2}$ inches. The concave surfaces can be struck with $1\frac{1}{4}$ inch radii. The alterations have been shown on the tracing.

* Called grappler on tracing.

(2.) The chain attachment at top of lower shutter should be of the form shown for the top of the upper shutter, so as to ensure the fall of the chain, when slack, on the outside face of the shutter. The chain is entered in the estimate as three-sixteenths† it should be three-eighths‡ and as the latter weighs only 8 lbs. the fathom the provision in the estimate should be more than ample. The means of adjusting the length of the chains so that the length of each pair may be equal should be provided.

† Proof strain $9\frac{1}{2}$ cwt.
‡ Do. $36\frac{1}{4}$ „

(3.) The two hinged plates which cover the trunnions of the screw box should be about twice the thickness of those of the experimental gear, as the strain on them may be considerable when the shutters are being screwed down.

(4.) The L irons to be placed between the T irons to carry the moveable platform, should be removed at the same time as the platform. They would be apt to catch brushwood were they left standing. They may be arranged to fit on to pins fixed in the T irons; and indeed it is thought that these L irons might be dispensed with altogether were the web of the T irons cut off for $2\frac{1}{2}$ inches at the outer end and the flanges turned up. The platform planks should have ring or rope handles to facilitate shifting them from vent to vent.

Sheet No. 1.

(5.) The cast iron groove pieces are shown in horizontal section as projecting beyond the face of the lower shutter for about $\frac{3}{8}$th of an inch. It will be better to transfer this metal to the opposite side to strengthen the web which forms the bearing of the upper shutter. The groove casting is prevented from lifting by the girder which carries the gear, but it seems to be advisable to check vibration by adding a web at the back at about the level where the new masonry begins.

Sheet No. 2.

(6.) The ten inch walls for blocking the arches above the beam stones are slight. There appears to be no reason for making them less than 12 inches, the width of the beam stones, and it would be better to make both a little wider.

(7.) The packing of the cast iron in the masonry grooves should be of Portland or Morgan's cement, kept moist by fillets of wet grass.

5. The estimate is recommended for sanction, and there is provision for the work to the extent of Rupees 5,000 in Part II of the Budget, pages 31, 32.

The classification will be—

GODAVERY DELTA SYSTEM.
CAPITAL ORDINARY.
(1) *Head Works.*
C. Works.

	Improvements to Dowlaishweram under-sluices.	Rs.
Estimate	... ...	8,650

To be carried out by the Officer in charge Eastern Delta Division.

(Signed) JOHN MULLINS, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

No. 66. ORDER THEREON, 13th May 1878, No. 405 I.

THE estimate of Rupees 8,650 for improvements to the Dowlaishweram under-sluices is sanctioned under Capital Ordinary, and this sanction is registered as No. 58 I of 1878-79.

(True Extract.)

(Signed) JOHN MULLINS, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

(True Copy.)

Major, R.E.,
Under Secy. to Govt., P.W.D.,
Irrigation Branch.

To the District Engineer, Godavery.
„ Collector of Godavery.
„ District Engineer, Kistna.
„ Chief Engineer for Irrigation.
„ Examiner of Public Works Accounts.
„ Revenue Department.

Exd. T. D. Ryan.

Spare Copies

316

Clearance 1878 Appropriation
No 2207
Indian Affairs
Account

Gobl. of 1878 John

PUBLIC WORKS.

To

The DISTRICT ENGINEER,

Dated Regimental

Issued

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G. O. 104 Nov 1878, No 109, A.

MAY.

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