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(2) Date of repair _____
(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	<i>A49</i>	(9)	Press
B.P. No.			Mis.
Dated	<i>17-2-</i>	<i>1876</i>	

Not to be folded or roughly handled

Read the following papers:—

No. 336. From Major J. BEATTY, R.E., District Engineer, Godavery, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Dowlaishweram, 1st January 1876, No. 2,934.

WITH reference to your memorandum, No. 1,127, of 27th September 1875, I have the honor to observe that as a revised design for head-sluice gearing has since been sanctioned* for trial at the centre bay of the Dowlaishweram head-sluices with a view to raising a set of shutters simultaneously, I presume I had better defer sending the drawings and estimate called for in paragraph 4 of your memorandum until the result of the latest design has been ascertained.

* Your telegram of 21st instant.

2. As regards the Vejaishweram head-sluices, for which Rupees 10,500 were allotted in the current year's Budget,* I find that the work must be carried out by the officer in charge of No. 1 Range. *He* would, of course, supply the wood and iron work and the stone from the workshops and quarries; and the work is most inconveniently situated at the most distant extremity of the Western Delta for *that* Range Officer's inspection while in progress. It will be best to have it carried out by the Range Officer of the Eastern Delta, and I request that authority may be given to make this change.

* Of the Western Delta Range.

3. Owing to the Dowlaishweram workshop being at present provided with only two lathes for screw cutting, and a large number of other screws (some 57) being already indented for and urgently required before 1st April, I inquired of the Workshop Officer at Madras if he could help us, but his rate for a set of pipes and screws is Rupees 248 as against Rupees 160, the Dowlaishweram price.

4. Besides this, there is so much other urgent masonry and cut-stone work required at the anicut and under-sluices and in the Eastern Delta, during the three months the canals will be closed, that I have decided only to undertake this year fitting up the centre bay of five vents at the Dowlaishweram head-sluices with the revised design of gearing, and the western bay of five vents at Vejaishweram with the pattern of gearing tried this year with success at Dowlaishweram.

5. It seems probable, therefore, that it will not be possible to spend more than 8,000 Rupees at most on the Vejaishweram head-sluices before 1st April, and it has become necessary to consider to what works in the Eastern Delta the balance of allotment for those head-sluices should be transferred.

6. The new project work that is most suitable appears to be the parallel drains with masonry inlets required on the north bank of the Biccavole main drain, for which the Range Officer will submit estimates at an early date, and to this trifling deviation from the revised Budget of Extraordinary Works of the present year I now solicit your approval.

*Proceedings of the Madras Government, Public Works Department,
17th February 1876.*

No. 336-A. From the same Officer, dated Dowlaishweram, 24th January 1876,
No. 3,127.

In continuation of my letter, No. 2,934, of 1st instant, I have the honor now to forward, for your approval, the estimate for a parallel drain and inlet sluices on the north bank of the Biccavole main drain in the Eastern Delta.

- 1 Estimate.
- 1 Tracing showing survey of a portion of the Biccavole drain.
- 1 Do. showing longitudinal section of the Biccavole drain.
- 1 Plan of Inlet Sluice, No. 1.
- 1 Do. do. No. 2.
- 1 Specification.

2. At present the ryots breach the north bank of the drain to relieve their lands when the surface level in the drain is low; and when the Biccavole surplus

sluices are opened, the gaps in the north bank cause flooding.

3. It is proposed to begin the parallel drain at the No. 2 drop, about $1\frac{3}{8}$ miles below the Biccavole surplus sluices, and to carry it down to the junction of the Vatlallem drain, about $9\frac{1}{2}$ miles below the surplus sluices. The excavation from the parallel drain would be used to repair and strengthen the north bank of the main drain.

4. The first section of the parallel drain will discharge into the main drain a little above the iron bridge on the road from Biccavole to Ramachendrapur, and at this point no inlet sluice will be required. Below this two inlet sluices are required, one in the 5th mile and one at the junction with the Vatlallem drain. The sluices would be closed with shutters and screw gearing, and the conservancy establishment would shut them before opening the surplus sluices.

5. At the inlets, to facilitate construction, Captain Brockman has proposed to employ plate-iron rectangular tubes, with flanges at intervals to prevent leakage along them; these tubes to be laid on a bed of concrete and covered in to a thickness of one foot with gravel.

6. It is proposed to meet the cost of this parallel drain and its inlet sluices from savings on the estimate for improving the main drain; and as funds are not available for it this official year from the Eastern Delta allotments under Extraordinary, it may be covered by the unexpended balance under Improvements to Vejaishweram head-sluides in the Budget of the Western Delta.

No. 171.

Note by the Chief Engineer for Irrigation.

THE Biccavole drain is designed to carry off both the upland drainage received by the Samulcottah canal near Biccavole, which is discharged therefrom by a powerful set of sluices, and local drainage from lands lying below the Samulcottah canal; and it having been found that lands on the left side of the drain cannot be effectually drained without some subsidiary arrangements, the District Engineer proposes to cut a catch-drain in rear of the left bank, and to admit water to the main drain at two points through inlet sluices.

*Proceedings of the Madras Government, Public Works Department,
17th February 1876.*

2. The arrangement is likely to prove beneficial, and is recommended for sanction, and for execution from the estimate*
* Rupees 65,000. Expenditure 45,000 to date of last report. for the Biccavole drain, on which the ultimate saving will be much more than will suffice for this subsidiary work, though, until there shall have been a very heavy rain-fall, it cannot be decided what the final dimensions of the main drain should be.

3. With regard to the design for the inlets, and the proposal to substitute iron tubes for masonry tunnels, it is considered that concrete or masonry will be a more suitable material and less expensive; and that wherever water may be salt or brackish, as would possibly be the case at the lower inlet, iron would rapidly deteriorate. Self-acting swing shutters should be substituted for those with screw lifting gear of the design, and these swing shutters should be placed at the main drain end of the tunnel.

4. The papers contain no information as to the dimensions of the subsidiary drain which should be recorded on the plans.

5. The expenditure should be recorded under the proper heads and sub-heads. The following is a classified abstract of the estimate:—

GODAVERY.

Eastern Delta Project.

Main head (4) Drainage and Protective works.

Biccavole Drain.

A.—Preliminary expenses	Rs. ...
B.—Land	...
C.—Works	...
Inlet Sluice No. 1	1,120
Do. " 2	1,240
	2,360
L.—Earthworks	2,700
	5,060
Total Rupees	5,060

CAMP, PUDUVOIL,
8th February 1876.

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

To the Secretary to Government, Public Works Department.

No. 337.

ORDER THEREON, 17th February 1876, No. 449.

IRRIGATION, No. 37.
Account.

THE estimate, amounting to Rs. 5,060, for constructing a subsidiary drain on the left bank of the Biccavole drain, Eastern Delta, Godavery, is approved for execution as a part of that drain, on the understanding that the cost of this work will be covered by savings on the main drain, to which it will be subsidiary.

Proceedings of the Madras Government, Public Works Department,
17th February 1876.

2. Unless there should be funds available from the allotments for the Eastern Delta the work must stand over until next year.

3. The sanction accorded in paragraph 1 has been registered as No. 8 I of 1875-76.

(True Extract.)

(Signed) G. W. WALKER, Major-General, R.E.,
Secretary to Government.

To the District Engineer, Godavery.
" Chief Engineer for Irrigation.
" Controller of Public Works Accounts.

" Revenue Dept
" Collector Godavery.

Enclor. 7.

N^o 171
Note by the Chief Engineer for Irrigation

The Biccavole drain is designed to carry off both the upland drainages received by the Samulcottah canal near Biccavole, which is discharged therefrom by a powerful set of sluices, and local drainage from lands lying below the Samulcottah canal, and it having been found that lands on the left side of the drain cannot be effectually drained without some subsidiary arrangements, the District Engineer proposes to cut a catch-drain in rear of the left bank, and to admit water to the main drain at two points through inlet sluices.

2. The arrangement is likely to prove beneficial, and is recommended for sanction, and for execution from the estimate for the Biccavole drain on which the ultimate saving will be much more.

* Rupees 65,000
Expenditure.
45,000 to date of
last report.

more than will suffice for this subsidiary work though, until there shall have been a very heavy rain-fall, it cannot be decided what the final dimensions of the main drain should be.

3 With regard to the design for the inlets, and the proposal to substitute iron tubes for masonry tunnels, it is considered that concrete or masonry will be a more suitable material and less expensive, and that wherever water may be salt or brackish, as would possibly be the case at the lower inlet, iron would rapidly deteriorate. Self-acting swing shutters should be substituted for those with screw lifting gear of the design, and these swing shutters should be placed at the main drain end of the tunnel.

4 The papers contain no information as to the dimensions of the subsidiary

subsidiary drain which should be recorded on the plans.

5 The expenditure should be recorded under the proper heads and subheads. The following is a classified abstract of the estimate.

Godavery
Eastern Delta Project.
Main head (4). Drainage and Protective works.

Picavole drain

A. Preliminary expenses - Rupees —
B. Land — " —
C. Works

Inlet sluice No. 1. Rs. 1120

— do. — No. 2 — " 1240 2360

L. Earth works — 2700

Total — 5060

Camp at
Puduvail
8th February
1876.

W. H. Jenkins
Lieut. Col. R.E.
Chief Engineer for Irrigation

To The Secretary to Government P.W.D.

FORMER CASES.

Current No. of 187
 " " " " " "

M. WORKS FORM No. 3.

Current No. 1128

From The Chief Eng^r for Irrig.

No. 171
 Dated 8th Feb. 1876.
 Recd. 12th

Subject:—

Note on Est. &c for parallel drains & inlet sluice on the North Bank of the Biccarole Main Arise—

LATER CASES.

Current No. of 187
 " " " " " "

ENCLOSURES. 7.

From to
 " " " "

"G.O. No 449." 17.2.76.
 Orders and Proceedings in file.

Depart- ment.	No.	Date.	ENDORSEMENTS.		
			Depart- ment.	No.	Dated.
Pro ^d .	2335	28.7.70			

Public Works Dept.

Proceedings of the Madras Government
 Under date the 17th Feb. 1876.

Read the following

From The Chief Eng^r for Irrigation } (H.E. No 171 d/s^d Feb 1876)

The estimate amount-
 ing to Rupees 5060 for
 constructing a subsidiary
 drain on the left bank
 of the Biccarole drain
 Eastern Delta, Godavery
 is approved for execution
 as a part of that drain,
 on the understanding that
 the cost of this work will
 be covered by savings on
 the main drain, to which
 it will be subsidiary—
 2 Unless there should
 be

FORMER CASES.

Current No. of 187
 " " " " " "

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be funds available from
the allotments for the
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must stand over until
next year.

W. 9/2
G.M.W.

The sanction accorded
in para. 1 has been
registered as designation
No 8th of 1875-76.

N 336-337

To The District Engineer of
" Collector Godavery
" Chief Insp. for Irrigation
" Controller of P. W. Accounts
" " Rev. Dept.
* With 7 Orig. Enclosures
Dated 6-8-70

Salt. of 1876 Madras.

PUBLIC WORKS.

1872 Godavery

Date

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G. O., 7th July, 1976, No. 449

Doc 336-337

Subsidiary drain on the left
bank of the Riceville drain,
Eastern Delta, Louisiana. The
estimate of \$1,500.00 for construct-
ing a ——— approved for
execution as a part of the
main drain construction
~~and is planning about to start~~
~~its work.~~