

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Establishment.

READ—the following papers :—

From Lieutenant-Colonel H. R. MEAD, R.E., Superintending Engineer, Sixth Circle, to the Chief Engineer for Irrigation, dated Kodaikānal, 6th September 1883, No. 234 M.D.

I regret much to have to report a serious failure with regard to the repair of the

- 1 Plan.
- 1 Estimate.
- 1 Madura Division Officer's report, No. 440, of 30th May 1883.
- 1 Madura Division Officer's letter, No. 1311, dated 15th August 1883, with its two enclosures.

Paranai anicut, in Madura district, the estimate for which was Rs. 8,620; the failure is due, I consider, entirely to bad work, and the value of the work that is destroyed and useless is about Rs. 3,100.

2. I forward the original report, estimate and plan (to be returned); it allowed for a portion of the anicut, 370 feet in length, a curved concrete apron 27 feet in width and 2 feet deep on a gravel bed; the estimate was sanctioned in November 1882; the repair is reported to be completed by the end of March. Early in April there were two small freshes in the river, not lasting six hours; these caused no damage. On the 9th May there was a flood that rose $3\frac{1}{2}$ feet above crest and flowed over for four days; when this went down it was found that 218 feet of concrete and gravel backing had been swept away, and the remainder was much damaged.

3. I enclose the Executive Engineer's report, with enclosures (to be returned), No. 1311, dated 15th August 1883 (the delay in this report was in consequence of the first report, dated 30th May, not being brought to my notice until the middle of July, and not being satisfactory it was returned), and I think you will agree with me in considering that the work was utterly neglected by Mr. Johnston, the Executive Engineer, and Overseer Muthu Erulappah Pillay; that it was left entirely almost to a contractor who was allowed to do disgracefully bad work; that no proper precautions were taken to ensure good work; and that the way the concrete was made was sufficient to ensure failure.

4. I have inspected at Madura some of the gravel and concrete used on the work. The gravel is a mixture of red earth and gravel; the concrete is not properly mixed and has never set; the outer coating of plaster is better, but this is only about $\frac{3}{4}$ of an inch thick; any portion of it can easily be crumbled with the fingers.

5. Mr. Johnston's instructions for mixing the concrete and laying it in layers 3 feet wide and 2 feet thick prevented it being properly mixed and beaten (which is so necessary with concrete made of lime not mixed with sand and beaten into mortar), and the Overseer's report that only two rammers were used shows that little or no consolidation was attempted.

6. I do not recommend Overseer Muthu Erulappah Pillay's dismissal, as the orders he received were wrong; but at the same time, he being a man of more than six years' service in the department, and educated in the Civil Engineering College, ought

and I think must have known that the mixing and ramming of the concrete was utterly neglected. I therefore recommend that he be allowed to retire and seek service elsewhere.

7. With regard to Mr. Johnston, he certainly has proved himself incompetent to hold a division; he ought to have known how to make concrete; the standard specifications might have been followed; and he certainly ought to have made special arrangements for carrying out this important work, and not trusted it to a contractor.

8. In conclusion, I request your orders and advice as regards the repair of this anicut. I see no reason why the original proposal of a concrete curved apron should not be carried out; if properly made, it ought to answer perfectly; it will be noticed that the retaining wall and apron are not injured. This subject is an important one for Madura district, where I believe concrete and masonry can be with great advantage used in place of the huge massive stones of which the anicuts and aprons are chiefly built, and which now are not procurable except at a great cost.

Note by the Acting Chief Engineer for Irrigation.

The Superintending Engineer reports the destruction of a considerable portion of the curved apron of the Paranai anicut on the Vaigai river, in the Madura district, in the floods of May last. The anicut had recently been repaired at a cost of about Rs. 8,400, a considerable length of new curved apron of concrete having been constructed, in lieu of the ruined apron, between the body wall and retaining wall, resting on a bed of gravel, which, according to the estimate, should have been screened and well rammed. The cost of repairing the damage done is roughly estimated at Rs. 3,100.

2. The design of the work is good, and if the materials had also been good and the work properly executed there is no reason why it should have failed. Two feet thickness of concrete resting on a well rammed mass of clean gravel is sufficient, and the only addition that would have been suggested, had the plan passed through this office, is plastering the front face of the body wall and introducing a puddle wall above it. The coping stones should, of course, be heavy and well and carefully bedded, and the concrete should be made with hydraulic mortar spread in layers of not more than 6 inches and well rammed; plastering the surface of the concrete is useless. Concrete that has thus been laid in sluice floorings exposed to a very heavy scour has stood quite satisfactorily.

3. The specification attached to the estimate on which the work was carried out is very meagre, particularly under the head concrete, which was allowed of nine parts broken stone, three parts sand, and two parts unslaked hydraulic mortar lime. If the concrete had been carefully laid, this would have answered, but unless there is very good superintendence it is better to mix the lime and sand as mortar. The way in which the concrete was laid was, however, fatal to its success, the Executive Engineer having directed that it should be put down in one layer 2 feet thick, and it having been shown that only two rammers were used for consolidating it. It is not to be wondered at that the work failed.

4. The Executive Engineer, Mr. Johnston, is on leave to Europe, and therefore explanation could only be sought from the Overseer who superintended the work under his direction. He appears to have been called on to produce samples of the material used, and the gravel produced is condemned by the Superintending Engineer as useless, and certainly does not agree with the specification. It is on record that the Executive Engineer inspected the work three or four times during construction, and the Overseer states he inspected it ten times on several occasions, remaining there two days; and the only conclusion, therefore, that can be drawn is that both the Executive Engineer and the Overseer allowed bad work to be done through ignorance of what good work ought to be.

5. The Superintending Engineer considers that Mr. Johnston has proved himself incompetent to hold a division, but it is considered desirable that he should not be condemned unheard, and it is suggested that he should, on return from leave, be furnished

with the correspondence on the subject and asked for his explanation before placing him in charge of a division. The Overseer, Muthu Erulappah Pillay, is only in the third class, and had been more than six years in Government service; the Superintending Engineer recommends that he should be allowed to retire from Government service and seek employment elsewhere; but as he acted under the instructions of the Executive Engineer, and was bound to carry out orders given by that officer, it is considered that he might be transferred to a division where he will work more directly under the eye of an officer, and his work be reported on after six months, his continuance in Government service being dependent on his being reported competent.

OOTACAMUND,
18th September 1883.

(Signed) J. O. HASTED, Colonel, R.E.,
Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 1st October 1883, No. 795 I., Public Works.

The failure of the Paranai anicut, in the Madura district, in consequence of bad work allowed in carrying out the partial reconstruction of the anicut, has led to a very considerable loss, and calls for serious notice.

2. The work was carried out under the superintendence of Mr. Johnston, Executive Engineer of the division, and Overseer Muthu Erulappah Pillay, and the instructions given by Mr. Johnston were such that the work was almost certain to fail. It would appear also from samples of the materials that have been produced that the materials allowed to be used were inferior and not according to specification. Mr. Johnston being on furlough, final orders in his case will not now be passed; but on his return to duty he will be required to furnish explanation, and it will then be decided whether he is fit to be entrusted with the charge of an important division. Overseer Muthu Erulappah Pillay, who acted under the orders of the Executive Engineer, will be transferred, as suggested, to another division, where his competency can be tested, and will be reported on after six months.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, Sixth Circle, with five enclosures.
„ Mr. J. C. Johnston, with five enclosures to be returned to the
Superintending Engineer, Sixth Circle (on return from furlough).
„ the Chief Engineer for Irrigation.

Exd. A. F. Goodall.
Spare Copies

IRRIGATION.
ESTABLISHMENT.

Govt. of 1883 Madras.

PUBLIC WORKS.

Dated October, 1st.

Recd.

Encl.

G.O., 1st Oct. 1883, No. 795 I.

OCTOBER.

Paranai Anicut

Passing orders on the report of the destruction of the curved apron of the — on the Vaigai river, in the Madura district, in the floods of May last.

G.O. 795 Idy 1-10-83

No. D.
GOVT. }
OF MADRAS. } 188 . { P. W.
DEPT.

SECRETARY.

Chepak,

9th May 1884.

OFFICE NOTE.

No. 922 Idy 14-5-84

To W

Mr. J. C. Johnston reported his arrival yesterday. I have, in accordance with a note I have kept, directed him to proceed to Cuddalore & take charge of that Division. Mr. Taylor does not leave till end of month. Mr. Johnston will start from Madras on Monday, 12th, so the "taking over" can be conveniently effected.

In G.O. of 1st October 83, No 795 I, you will observe that he has to furnish certain explanations when it will be decided whether he is fit to be entrusted with the charge of an important division. This you were I think aware of, when the transfer of Mr. Johnston to Cuddalore was decided on.

He assures me he can satisfactorily explain away the charge of negligence against him, and I have asked him to lose no time in submitting his report. Unfortunately he has to get manuscripts from Madras which may delay the matter a little.

Cd.

9-5-84

Mr. Johnston is under order to explain, on his return, certain unsatisfactory work in the Madura Division.

This should not be lost sight of.

W
9-5-84

Mr. Johnston has received the G.O. in question.

Cd
12-5-84

W
12-5-84

W
16/5
G.O. 9-5-84. R 14/5

Noted
9-5-84
10-5-84

S. A. W.

P. W. DEPARTMENT.

General Branch.

Madras, 12th May 1884.

OFFICE NOTE.

To C.

The under-mentioned draft notification is
forwarded for ~~check~~ publication

NOTIFICATION.

Posting.

THE following posting is ordered.

Mr. J. C. Johnston, Asst
Engineer, I Grade, to the III Circle
for duty in the District Cuddalore
Dion

To join.

12/5 CB
12/5 J.S.

E
W.
14/5

may 16/15

No 905 D

WORKS FORM NO. 4.

P. W. DEPARTMENT.

R No 197/12-5-84

General Branch.

Madras, 12th May 1884.

OFFICE NOTE.

To C.

The under-mentioned draft notification is forwarded for ~~check~~ publication

NOTIFICATION.

Posting.

THE following posting is ordered.

Mr. J. C. Johnston Assst
Engineer, I Grade, to the III Circle of
Duty in the Cuddalore District Division.

To join.

at.
5-5-84

W.
9-5-84

SUPERINTENDING ENGINEER'S OFFICE,

No. 1613.

Madras, 10th Nov. 1884.
Camp Gurnuttunda

From

Lt-Col H. M. Vilar R.E.

THE SUPERINTENDING ENGINEER,

III Circle,

To

THE Chief Engineer

J. W. D.

Madras

SIR,

Enclosures.

I have the honor to request that the Examiner P.W. accounts may be authorised to pass pay and travelling allowance to Executive Engineer Mr Johnston from the 17th to 19th May 1884.
2. Mr Johnston commenced to take charge of the Cuddalore Division on the 17th May 1884, which he finally completed on the afternoon of the 19th idem. He was, by my orders, engaged in inspecting the work at the Kondamalai, which is two days march from Cuddalore, and is thus entitled to pay and

allowance for the above days, but the
Examiner says that under the spirit of
the P.W. Code para 410; and under Section
160 Rule 5 of the Civil Leave Code, orders
of Government permitting Mr Johnston
to enter upon charge of the Division
elsewhere than at its Head Quarters
are necessary.

3. I may add that it was very neces-
sary that Messrs Taylor and Johnston
should visit the Honour Amicut site toge-
ther as the work (an important one) was
then just about to be commenced.

I have the honor to be.

Sr

Your most obedt servant.

Herbert Robert
Lt Col R.E.

Supg. Engineer
Z Litch

[Handwritten mark]

From

The Superintending Engineer,

IIIrd Circle,

Bellary

To

The Chief Engineer
P.W. Department.
Madras.

Dated

10th
Dec^r 13th
Recd.

November 1884

ENCLOSURES. 4

No. 1613.

Mr. J. C. Johnston, Exec-
utive Engineer.

Requesting that the
Examined, be authorized
to pass the pay & travelling
allowance for the days
occupied by _____ in relieving
Mr. Taylor late Executive
Engineer.

With Order

B.N. 2880. Wap 18 November

In the circumstances
explained by the Supg.
Engineer, the Examiner is
authorized to pass pay
and travelling allowances
from the 17th to the 19 May
1884 to Mr J C Johnston
15.11.84

15.11.84

S.E. III Circle ✓ 20/11
Ex. P.W. A. ✓ Dec^r 18-11-84