

(1) Number of pages 20

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.**Government of Madras.***Public works* **DEPARTMENT.**

G.O. No.

98

Press

~~Mis.~~

Dated

13-1-

1871.

Not to be folded or roughly handled

Read the following letters:—

No. 203. From the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 15th October 1870, No. 2,391.

IN continuation of this Office letter, No. 2,366, dated 12th instant, I have the honour to observe there are several errors in the calculations of the Acting Chief Engineer for Irrigation as given in paragraph 5 of his Note, printed with G. O. of the 28th ultimo, No. 2,335. The depth of water in the main duct sluice is given at 8.21 feet when carrying a full supply; the area of the sluice vents should then be 640 square feet, and not 624 square feet. The discharge per second is 2,822.55 cubic feet, but the co-efficient used, .666, for ascertaining the head is altogether incorrect, as this is only applicable for still heads, or very small weirs, or through thin plates. For such large rivers as the Godavery, the co-efficient should not be less than .82, or perhaps .9, taking into account the natural velocity of flow increased in its ordinary state by the obstruction of a large anicut, consequently the velocity will be about 4.40 feet per second, and not 4.52 as given; the head then will be .537 feet or $6\frac{1}{2}$ inches nearly, and not $8\frac{1}{2}$ inches or .72 feet as stated; and for a full supply the water will have to be at + 36.54 nearly, and not + 36.93. A full supply is only required for 60 days in July and August, when the water is usually considerably above this on the anicut.

2. The total of Captain Ryves' estimates is 7,01,310 Rupees, and mine 12,16,300 Rupees, the difference being Rupees 5,15,000. Of this sum 3,07,000 Rupees is for the drainages, for which Captain Ryves only made approximate estimate; Rupees 63,000 has to be added for the compensation for land which he omitted altogether; this then makes the difference between us Rupees 1,45,000. Of this sum Rupees 32,500 is for the Bank canal which had to be arranged to irrigate nearly double the extent of land he had provided for; Rupees 32,000 is for the Coringa canal for the same purpose, and to rectify serious defects before not noticed; Rupees 55,000 is for the Injeram canal, to meet the views of the Acting Chief Engineer, and to provide for a large expected increase in traffic. This accounts for 1,20,000 Rupees nearly, leaving only Rupees 25,000 for consideration. To this item, however, belongs 7,500 Rupees for Rest-house; Rupees 8,100 for the Mundapettah canal; and Rupees 6,800 for the main duct and Cocanada canal.

3. It is admitted the drainage estimates have been worked out in detail and as fully as required; the total for these is 4,70,000 Rupees in round numbers. Captain Ryves allowed approximately for these works Rupees 1,62,000 "from an intimate knowledge of the country, and aided by some levels." The difference is Rupees 3,08,000, or 190 per cent. on the estimates he allowed for entirely in earthworks, calculated on the data he had given to be provided for. As the estimate for the Bank canal and its extension to the Coringa Island consists principally of earthwork, the latter almost entirely so, and had been only approximately estimated for by Captain Ryves, I can see no reason for supposing he was more correct in his data for these than in those for the drainages, and the same remark applies to all the other estimates, as the Acting Chief Engineer remarked "the cross sections for all these required to be completed throughout," and without these the detail estimates could not be prepared.

*Proceedings of the Madras Government, Public Works Department,
13th January 1871.*

4. For the Injeram canal I beg some further instructions may be sent. The estimate prepared by us specially provided for reducing this heavy item for earthworks, which Captain Ryves had very insufficiently provided for, and at the same time the views of the Acting Chief Engineer were attended to. Now Captain Ryves' suggestions for this work are recommended for adoption, because his allowance for earthworks and ours agree pretty well; but the manner in which this was arrived at in the two instances is left wholly out of all consideration. About Rupees 40,000 must be added at least to provide for the necessary earthworks, and then the difference between us will not be so great as to warrant our having excluded the through navigation approved of.

5. I beg again to add, these comparisons have been forced upon. I carefully avoided the matter as far as I was able to do so, as I do not consider such proceedings show any very good taste, and, if made at all, should be made on such data so as to display the utmost impartiality, as the results arrived at by careful consideration by a well-balanced mind; but here I respectfully submit I had no alternative but to go into the matter simply to do justice to the Range Officer as well as to defend myself against allegations, which only implied we had not attended to matters properly.

6. I have already shown Captain Ryves' drainage estimates had to be exceeded by 190 per cent. for earthworks, almost entirely. His estimate for the extension of the Bank canal to Coringa Island is Rupees 66,000, principally for earthworks, so that, if this be increased in the same manner, it will amount to Rupees 1,91,400, and then his Bank canal estimate, with temporary locks in it, will be Rupees 3,06,900 for all the work he proposed to do. Ours amounts to Rupees 2,14,900 without the Coringa Island extension, but provides for permanent locks, improving the head at a most dangerous point, and for bringing a much larger area of land into cultivation. It must be noted I have not added any increase to Captain Ryves' earthwork estimate for the Bank canal; but this, under any circumstances, would have to be greatly increased, as the levels he worked upon were found to be incorrect, and he had omitted some 2 feet of cutting in the bed for nearly 20 miles.

7. If the Injeram canal is not made navigable into tide water, a most important line, connecting the river and Central Delta with the port of Cocanada via the Mundapet canal, will be left imperfect and the boats will have to go round by sea or the Coringa canal. From some enquiries lately made by Mr. Rundall and myself at the old Nundamoor lock, it appears the mere transshipping of the grain from the boats in the old Weyairoo to the Ellore canal, a distance of not more than 100 yards, adds 3 Annas a pooty to the cost of transport, or fully 3 pence a ton. This will perhaps show how important it is to establish through traffic in almost any canal, and reduce the cost of transport in every way we possibly can, otherwise we can never expect to be able to increase the water-rate.

No. 204. From the same Officer, dated Dowlaiswaram, 21st October 1870,
No. 2,484.

ADVERTING to paragraph 16 of the Acting Chief Engineer's Note, printed with G. O. of the 23rd September 1870, No. 2,335, I have the honour to observe, with

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13th January 1871.*

reference to that Officer's general complaint, I had not paid proper attention to his suggestions that the Injeram canal was made navigable, not only on the words quoted by him, but because he had also, in paragraph 10 of his Memorandum of the 10th July 1869, No. 221, said, "The first three of these appear to be blind canals, etc., and it is thought desirable that they should be carried through to connecting lines." When instructions of such very general nature as the above are never attended to, I respectfully beg to submit there is very little or no ground for declaring an officer has not paid proper attention to his duties.

2. In the same paragraph above referred to is the following suggestion: "There should be no difficulty, it is thought, in managing a single drop of 12 or 13 feet, but if, etc., etc." On this I applied to the Acting Chief Engineer for further instructions, but received no reply. As the matter may be urged against me as an instance of not paying proper attention to suggestions or surmises, I beg to say at once I have exercised my own judgment and not attempted anything of the kind proposed, knowing full well the danger and cost of such an experiment in a delta.

3. If the very important matter of arranging the drops of locks could then be safely confided to my hands, I beg respectfully to submit so far less important a subject as 2 or 3 feet difference in width, involving very little additional cost and providing at the same time very much more convenience and accommodation in the passing of boats, can hardly be considered as one which was beyond my power to deal with, particularly as the instructions sent to me were of the most general nature such as above quoted, and not positive orders to be attended to without any reference.

No. 205. ORDER THEREON, 13th January 1871, No. 98.

IRRIGATION, No. 8.

ORDERED to be recorded with
reference to G. O., No. 2,955, dated 6th
December 1870.

(True Extract.)

Colonel, R.E.,

Secretary to Government.

To the Acting Superintending Engineer, 1st Division.
.. Chief Engineer for Irrigation.

Exd. E. C. Shunker.

No 2391

Superintending Engineer's Office
Dowlatabad 15 Oct 1870

From
Major J. P. Fischer R.E.
Acting Superintending Engineer
Colonel C. A. Orr R.E.
Secretary to Government D.P.W.
Madras

In continuation of this Office letter No 2366
dated 12th instant I have the honor to observe
that there are several errors in the calculations of the
Acting Chief Engineer for Irrigation as given in
para 5 of his Note printed with G.O. of the 28th ult.
No 2335. The depth of water in the Main duct
since is given at 8.21 feet when carrying a full
supply, the area of the sluice vents should then
be 640 square feet and not 624 square feet.
The discharge per second is 2822.55 cubic feet but
the coefficient used 666 for ascertaining the head
is altogether incorrect, as this is only applicable
for still heads or very small weirs ^{or thin plates} for such
large rivers as the Godavari the coefficient
should not be less than 82 or perhaps 9 taking
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into account the natural velocity of flow increased
in its ordinary state by the obstruction of a large
Anicut consequently the velocity will be about
14.40 feet per second and not 14.52 as given,
the head then will be 53.7 feet or 6 1/2 inches nearly
and not 8 1/2 inches or 72 feet as stated and for
a full supply the water will have to be at +36.54
nearly and not +36.93 - a full supply is only
required for 60 days in July and August - when
the water is usually considerably above this on
the Anicut -

2. The total of Captain Ryner's ^{Estimates} is 7.01.310 Rs
and Rs 12.16,300 Rupees, the difference being
Rupees 5.15,090, of this sum 3.07,000 Rupees is for
the drainages, for which Captain Ryner only made
approximate estimate, Rupees 63,000 has to be added
for the compensation for land which he omitted.
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the Bank Canal which had to be arranged to
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is for the Sujerum Canal to meet the views of the
Acting Chief Engineer and to provide for a large
expected increase in traffic - this accounts for
1.20000 Rupees nearly - leaving only Rupees 25,000
for consideration - to this item however belong
7,500 Rupees for rest house, Rupees 8100 for the
Mundapettah Canal and Rupees 6,800 for the
Main duct and Geoanada Canal -
3. It is admitted the drainage Estimates
have been worked out in detail and as fully as
required, the total for these is 4.70,000 Rupees in
round numbers, Captain Ryner allowed approx-
imately for these works Rupees 1,62,000 from
an intimate knowledge of the country and aided
by some levels - the difference is Rupees 3.08,000
or 190 per cent. in the Estimates he allowed for,
entirely in Earthworks calculated on the data he
had given to be provided for. As the Estimate
for the Bank Canal and its extension to the
Corniga island consists principally of earthwork -
the latter almost entirely so and had been only
approximately estimated for by Captain Ryner,
I can see no reason for supposing he was more
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Sir
Your Most Obedt Servant

Wm. T. Fischer Major R.E.

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1st Division

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chrs

Supg Engineer's Office 1st Division
Dowlaishweram 21st October 1870
13

No 2404

To From
Major J. F. Fischer R.E.
Acting Supg. Engineer 1st Div.

To
Colonel C. A. Orr R.E.
Secretary to Government D.P.W.
Madras.

Sir,
Adverting to para 16 of the
Acting Chief Engineer's note printed with
G.O. of the 28th September 1870, No 2335, I have
the honor to observe with reference to that
Officers' general complaint, I had not paid
proper attention to his suggestions, that the
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Major J. F. Fischer R.E.
Acting Supg. Engineer 1st Div.
To
Colonel C. A. Orr R.E.
Secretary to Government D.P.W.
Madras.
Dated 15th October 1870.
Recd 24
Offering for the
in the Note of Chief Engineer
for the
G.O. No. 2335 dated 28th
Sept 1870
Ag 8-13 1871

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2 In the same para above referred to, is the following suggestion. "There should be no difficulty, it is thought, in managing a single drop of 12 or 13 feet but if not on this. I applied to the Acting Chief Engineer for further instructions, but received no reply, as the matter may be regarded, against me, as an instance of not paying proper attention to suggestions or surmises. I beg to say at once, I have exercised my own judgment, and not attempted anything of the kind proposed, knowing full well the danger and cost of such an experiment in a Delta.

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I have the honor to be
Sir
Your most obedient servant
Wm. F. Fisher Major R.E.
Acting Supg. Engineer, &c.

In the one case
a discretion was
allowed - In the
other specific
instructions were
given - Major
Fisher's duty in
the two cases was
different

Proceedings of the Madras Government

Read the following letters from
the Acting Super Engineer 1st Division.

offering additional remarks
with reference to the papers
communicated to him in
G. O. No. 2335 dated 28 Sept 70

Here Enter No. 2391-15 Oct 70
2484-21-170

Ordered to be
recorded with reference
to G. O. No. 2955 dated
6th December 1870.

[Signature]

The S. Eng. p^{ro}g^{ress}
"Chief Eng^r for Town" Dec^r 16/1/71

Off 1870 No 1
No 2404

From
The Actg Super Engineer
1st Division

The Secretary to Govt
Mr. M. M. M. M. M.

Recd 21st Dec 1870

Submitted further explaining
them with reference to 18th
Nov of the 19th Chief Eng^r
who pointed out G. O. No
2335 of the 28th September
1870

No 98-13th Dec 70

Op 219 74334

Govt. of 1870 Madras.

PUBLIC WORKS.

To The City Superintending Engineer
1st Division

Dated

Recd.

Per

G. O. 13 Jan 1870, No. 98.

Nos. 202 @ 215

For the City Superintending Engineer
The City Superintending Engineer
Additional explanations with
reference to the papers and
drawings in G. O. No. 2335 A.
and by the instructions of
the system of irrigation in
the Eastern portion of the
Madras District.