

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 2770

Press
~~Mis.~~

329-31

Dated 18 11 1870.

Not to be folded or roughly handled

No. 329. Read the following letter from the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 17th October 1870, No. 2,407 :—

ADVERTING to paragraph 3 of G. O. of the 23rd September last, No. 2,300, I have the honour to forward two sections of the weir therein referred to; one showing the Acting Chief Engineer's proposal, and the other as I had arranged it.

2. It will be seen, if the former is carried out, the lower water, in its ordinary state, will stand 3.66 above the cushion-wall, and 8.66 feet above the apron; so that this work is practically useless, and, as the foundations have to be taken down to +6.5, or $7\frac{1}{2}$ feet below the bed of the lower channel, the whole thing, besides being of no use, is unscientifically arranged, and will be far more costly than the outlay noted as its probable cost.

3. I have arranged to get rid of the fall in the ordinary manner, and, if 3 feet of water did rise on the water-cushion as I have made it, the water in the lower channel must rise in proportion. The expected surface fall of 6.34 feet is quite illusory, as we all know from years of experience, that as the head on any weir or anicut increases, the bed below fills up; in fact, if this did not occur, neither the Godavery nor Kistna anicuts would have stood for an hour in any heavy floods. The mistake is to take the fall from surface of upper water to the bed of channel below, which is quite unnecessary, and only makes the confusion referred to in paragraph 4 of his Note.

4. It is proposed, I find, to increase the height of the lock-walls at Modapoorum, and leave out the proposed weir; but this arrangement does not provide for meeting the danger at all: in the event of the water rising too high in the canal, it would practically be of little moment if the water went over the lock, for, as it is of solid masonry, little or no damage could be done. But the weir provides for lowering the water in any such emergency, so as to save the canal-banks as well as to regulate the flow of the water at the time the head sluices of the irrigating channels are closed; and these cannot be conveniently used to get rid of surplus water at all times. The same mistake regarding the fall has been made as regards this work as before pointed out.

5. I beg, therefore, to request the whole design, as originally proposed by me, may be allowed to stand. There is no such confusion in the arrangement as is supposed, and we have only done here what has been done all over the delta in dozens of instances, and a little practical acquaintance with such works would make the thing quite apparent.

No. 213.

No. 330. *Note by the Acting Chief Engineer for Irrigation.*

MAJOR FISCHER, in paragraph 3 of this letter, says: "If 3 feet of water did rise on the water-cushion as I have made it, the water in the lower channel must rise in proportion; the expected surface fall of 6.34 feet is quite illusory." The weir channel compared with the Weyairu is of very small cross section; a rise of 3 feet, therefore, in the former will occasion but a small rise in the latter. Major Fischer should show what the rise in the Weyairu will probably be, and, consequently, what the surface fall from the cushion-wall to the Weyairu will amount to.

*Proceedings of the Madras Government, Public Works Department,
18th November 1870.*

I should say that it will approximate to 6 feet under the conditions referred to, while probably the maximum surface fall allowable would be at the rate of about 2 feet a mile.

2. The Superintending Engineer having ascertained what the maximum difference of level between the water in the canal and that in the Weyairu will probably be, when the weir is discharging fully, should design his work so as to provide for this fall—

1st.—By a reasonable surface slope of the water in the weir channel.
2ndly.—By a drop for the remainder.

3. I have shown, by pencil notes on the sketch enclosed in the Superintending Engineer's letter above cross section No. 1, how the general arrangements of the weir should be determined, and, above cross section No. 2, why that design is unsuitable. Paragraphs 4 and 7 of the Note, printed in G. O. of the 23rd September, No. 2,300, should have, I think, made the matter sufficiently clear. Now, as then, the instructions were quite definite, and whether Major Fischer be convinced or not of the propriety of the arrangements indicated, he should prepare the design and estimate in conformity with the instructions he has received.

FORT SAINT GEORGE,
29th October 1870.

(Signed) J. MULLINS, Major, R.E.,
Acting Chief Engineer for Irrigation.

No. 331.

ORDER THEREON, 18th November 1870, No. 2,770.

IRRIGATION, No. 24.

Engineer, 1st Division, for information and guidance. The enclosure received with Major Fischer's letter is returned.

(True Extract.)

Colonel, R.E.,

Secretary to Government.

To the Superintending Engineer, 1st Division, with one enclosure.
Chief Engineer for Irrigation.

Exd. F. R. Bantleman.

Superintending Engineer
1st Division, Downland
17th October 1870

No. 2407

From

The Superintending Engineer
1st Division

The Secretary to Government
Madras.

Adverting to para 3 of G. O. of the 23rd September last 22300, I have the honor to forward two sections of the weir therein referred to, one showing the acting Chief Engineer's proposal, and the other, as I had arranged it.

2 It will be seen, if the former is carried out, the lower water in its ordinary state will stand 3.66 above the cushion wall, and 8.66 ft above the apron, so that the work is practically useless, and the foundations have to be taken down to + 6.5 or 7.2 ft below the bed of the lower channel.

channel, the whole thing besides being of no use is unscientifically arranged and will be far more costly than the outlay noted as its probable cost.

3. I have arranged to get rid of the fall in the ordinary manner and if the water did rise on the water cushion as I have made it, the water in the lower channel must rise in proportion to the expected surface fall of 6.34 feet is quite illusory, as we all know from years of experience that when any river or creek increases, the bed below fills up; in fact, if this did not occur, neither the Godavery or this two rivers would have stood for an hour in any heavy floods; the mistake is to take the fall from the upper surface of water to the bed of channel below which is quite unnecessary and only makes

When the water rises in the channel it will occasion a rise in the bed below it. This is the nature of the thing and is a well known fact.

There is no analogy in the one case the capacity of the channel is increased and in the other a small channel is increased into a small one.

A small hole in a dam will not be made by the water.

Confusion is present in his report of his work.

4. It is proposed to find to increase the height

height of the Lock walls shall be as arranged and leave out the proposed weir, but this arrangement does not provide for meeting the danger at all, in the event of the water rising too high in the canal it would practically be of little moment if the water went over the Lock, for as it is of solid masonry, little or no damage could be done, but the weir provides for lowering the water in any such emergency so as to save the canal banks as well as to regulate the flow of the water at the time the head sluices of the irrigating channels are closed, and these can be conveniently used to get rid of surplus water at all times; the same mistake regarding the fall has been made as regards this work as before pointed out.

5. They, therefore, to request the design as originally proposed by me may be allowed

allowed to stand, there is ~~no~~ such confusion
in the arrangement as is supposed and
we have only done here what has been
done all over the Delta in dozens of
instances and a little practical ex-
perience with such works would make
the thing quite apparent.

I have the honor to be

Sir,

Your most able servant

Wm. T. Fisher Major A.E.

By Superintending Engineer

N^o 213, N. P. R.
Note by Acting Chief Engineer for Irrigation.
Major Fischer in para. 3 of this letter says "if
3 feet of water did rise on the water cushion as
I have made it, the water in the lower chan-
nel must rise in proportion; the expected sur-
face fall of 6.34 feet is quite illusory." The
cross channel compared with the Weyairu is of
very small cross section; a rise of 3 feet therefore
is the former, with occasion but a small rise
in the latter. Major Fischer photo. photo. what
the rise in the Weyairu will probably be, and
consequently what the surface fall from the
cushion wall to the Weyairu will amount
to. I should say that it will approximate
to 6 feet under the conditions referred to, which
probably the maximum surface fall allowable
would be at the rate of about 2 feet a mile.
The Superintending Engineer having
ascertained what the maximum difference
of level between the water in the canal
that in the Weyairu will probably be, when
the

the weir is discharging fully should design his
works, as to provide for this fall.

1st by a reasonable surface slope of the water
in the weir channel.
2nd by a drop for the remainder.
I have shown by pencil notes on the
sketch enclosed in the Superintending Engineer's
letter, above cited, a plan of the general
arrangement of the weir, should he determine,
and, a cross section at a point where the design is
submitted. I have also of the note printed
in No. 1 of the 23rd September, at 2000, printed;
I have, I think, made the matter sufficiently
clear. Now, as the instructions were quite
definite, and whether the design be carried
out, or not, of the propriety of the arrangements, it
is settled, he should prepare the design and
submit it in conformity with the instructions he
has received.

Yours very truly,
Col. J. G. B. Cunningham
29th October 1870. Acting Major R. B.
The Secretary to Govt. of India

1878
C. C. No. 2,300 of 23rd Volume

174256

Chief Engineer
1st Division

The Secretary to Govt
D. P. W. Madras

Dated 17th October

Received 26th

Forwards two sections
of the memo referred to in
C.C. No. 2,300 of 23rd Volume
showing the Chief Engineer's
proposal and his own
and requests the design
originally proposed may
be allowed to stand for
reasons explained.

174256
174256
174256

10th 1870 Sept
From Mr. [unclear] No 43670
The Mr. [unclear] designed
for irrigation

To the Secretary to Govt
N.W. Terr.

Dated 29th October 70.
Despatch 31st October 70.
Recd. 1st Nov 70.
Encl. 2. N 213.

Vote on the pro-
posed additional waste
will to be built near
the head of the Yellow
Canal. Goddard Dist.
No 2770-18th November 70
With an order

2. 10. 49.

Further Recd 8th 8th 59
21-3-71

Ordered that this note be by the Acting

Chief Engineer for irrigation be communicated
to the Chief Engineer 1st Div. for information and
guidance. The enclosure received with Major
Trimmer's letter is returned.
The Chief Engineer's note is filed.

W.B.

Recd 21/11/70

Dec. 11/11/70

No 330
64th Dec 70

12
C/12 43624 4256
Govt. of 1870: 3110000000

PUBLIC WORKS.

The Superintendent Engr
1st Division

Dated

Recd.

G. O. 18 Nov 1870, No 2778

Nos. 229-230 & 231

Waste Weir. The Stake by the
Chief Engr for Light on the
proposed additional waste
weir to be built near the head
of the Elmore Canal, Goddard
District, Com^d of the Engrs.
The Engr

lun