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(2) Date of receipt 9-4-38

(3) Initials of the Referencer [Signature]

MADRAS RECORD OFFICE

Government of Madras.

Public Works DEPARTMENT

Order No. 15-1-38

GO No.	<u>12</u>	Pres.
Dated	<u>10</u>	<u>1938</u>

Not to be folded or roughly handled

Fort Saint George, Public Works Consultation of 15th March 1859.

No. 127. Read the following letter from Colonel A. COTTON, Commandant of Engineers ;
to J. D. BOURDILLON, Esq., Secretary to Government, dated Nellore, 12th March
1859.

SIR,

Agreeably to the orders contained in the Extract Minutes Consultation, dated 7th Instant, to proceed to Nellore and give my opinion upon the Annicut, I have the honor to report that I have inspected this work and its neighbourhood, and as it seems to me there is no room for question on the matter, so far as is necessary to decide about immediate proceedings, I at once forward my conclusions for the information of Government.

2. I should observe that on first reading my orders, I thought that I was authorized to issue instructions to the District Engineer respecting his further proceedings about the works but on re-considering them, I find that they mention only the "*proposed channel works*," as those on which that Officer is to give prompt attention to my instructions. I am rather at a loss on this point, as to whether it means literally the Channel works as distinct from the Annicut or not. If in answer to my Telegram, I find that I am authorized to direct the immediate repair of the Annicut I shall do so.

The first question of course is about the site of the Annicut. On this point the following circumstances seem to me quite sufficient to determine that the present site should be adhered to.

1st. The quantity of work already done and remaining uninjured, viz., the excellent Head Sluice, 2 sets of under Sluices, both wing-walls and about $\frac{1}{3}$ of the body of work.

2nd. The large mass of stones sunk on this spot about 40 thousand tons, forming an important foundation to the superstructure.

3dly. The excellent Railway now in complete working order from the Quarry to the Annicut.

3. These are sufficient to satisfy me that the present site should be adhered to, for I feel certain that there is no essential objection to the site.

4. The 2nd question is upon what principle as to mode of construction should the work be rebuilt.

5. This seems to me quite as clear as the other, on the ground that the Railway is already laid to the finest Quarry for rough stone work that could be found anywhere, stone of the hardest kind already in blocks of a few tons only and capable of being reduced by fire into pieces of the most convenient size for the work, and in romboidal forms which will pack in the most immovable manner and this in abundant quantity, provides the Engineer with all that he could possibly desire in the way of material, and now that there is a most excellent Railway with good waggons and cranes all ready for the work, a rough stone Annicut of any dimensions can be completed at a moderate expense and within a moderate time. At the same time advantage can be taken of the part of the present season still remaining, because work on that construction can be left at any height without danger during the Monsoon.

The Kistnah Annicut is completely conclusive to me as to this mode of construction being adopted wherever ample Quarries are at hand.

I beg therefore at once to recommend that the following works should be commenced in order that all possible advantage may be taken of the present season.

1st. The rebuilding of the front retaining wall.

2nd. The filling in behind it with rough stone to such a height as can certainly be accomplished this season.

I do not attempt here to decide to what height it may be carried, but probably the following will be the amount and cost of work for this season.

which that officer is to give prompt attention to.

Fort Saint George, Public Works Consultation of 15th March 1859.

Front retaining wall.	Rs.
300 x 3 x 1½ = 1,350 cubic yards of laterite Masonry, at 3-8-0 ...	4,725
400 x 2 x 30 = 24,000 cubic yards of rough stone or 30,000 tons at 8 annas	15,000
Sundries	3,000
	<u>22,725</u>

I give this merely as what I would propose at all events to do this year, and which I think may be done with perfect safety to the work, leaving it 1½ yard only above the bed of the river; and in order to give the Government an idea of the expense that might in this way be incurred. I have however scarcely any doubt that a much greater extent of work might be executed this season, and I hope to go further into this part of the question in a few days.

I need only add here, that I am also satisfied that the cost of the completion of the work will be such as will be fully justified by its returns.

I shall endeavour fully to investigate all the points referred to me and to forward my complete report as soon as possible.

My reason for transmitting this hasty letter is first, that no time may be lost now that the season is so far advanced; and secondly, to recommend that if the work is resumed Lieutenant Smith of the Engineers who is now here, but is under orders to go to Cuddapah in a few days, may if possible be placed under Lieutenant Mullins to do this duty, Lieutenant Mullins highly approves of him, and he would himself greatly approve of the charge. Immediate orders are necessary on this point also.

No. 128. ORDER THEREON, No. 592; dated 15th March 1859.

Colonel Cotton is empowered to give immediate orders for such work as he may think necessary both for the Anicut and Channels. The District Engineer will be guided by his instructions, and the Collector will issue such funds as may be required to carry them into effect.

2. In accordance with Colonel Cotton's recommendation the Governor in Council resolves to direct that Lieutenant Smith shall remain at Nellore to superintend these works; and the Chief Engineer will suggest to Government the measures, if any, which he would recommend for the purpose of supplying that Officer's place in Cuddapah.

(Signed) J. D. BOURDILLON,
Secretary to Government.

From
Colonel Cotton
Commandant of Engineers.

To J. D. Bourdillon Esq.
Revenue Secretary to Govt.

Sir,
Agreeably to the orders contained in the Extract Minutes consultation dated 4th Instant to proceed to Nellore and give my opinion upon the Anicut I have the honor to report that I have inspected this work & its neighborhood & as it seems to me there is no room for question on the matter so far as is necessary to decide about immediate proceedings, I at once forward my conclusions for the information of Government.

2 I should observe that on first reading my orders I thought that I was authorized to give instructions to the District Engineer respecting his further proceedings about the works, but on reconsidering them I find that they mention only the proposed

which that officer is to give prompt attention to

"proposed channel works" as those on which that officer is to give prompt attention to my instructions. I am rather to lose on this point, as to whether it means literally the channel works as distinct from the Amnicut or not. If in answer to my Telegram I find that I am authorized to direct the immediate repair of the Amnicut I shall do so.

The first question of course is about the site of the Amnicut. On this point the following circumstances seem to me quite sufficient to determine that the present site should be adhered to.

- 1st the quantity of work already done and remaining unengaged viz^t the excellent Head Sluice, 2 sets of under sluices, both wing walls & about 1/3 of the body of the work.
- 2nd The large masses of stones sunk on this spot about 40 thousand tons forming an important foundation to the superstructure.
- 3rd The excellent railway use in complete working order from the Quarry to the Amnicut.

These

3 These are sufficient to satisfy me that the present site should be adhered to, for I feel certain that there is no essential objection to the site.

4 The 2^d question is upon what principle as to mode of construction should the work be rebuilt.

5 This seems to me quite as clear as the other, on the ground that the railway is already laid to the finest quarry for rough stone work that could be found any where. Stone of the hardest kind already in blocks of a few tons only & capable of being reduced by fire into pieces of the most convenient size for the work and in round-sided forms which will pack in the most invariable manner & this in abundant quantity, provides the Engineer with all that he could possibly desire in the way of material & now that there is a most excellent railway with good waggons & cranes all ready for the work a rough stone Amnicut

which that officer is to give prompt attention to

Amnicut of any dimensions can be completed at a moderate expense & within a moderate time. At the same time advantage can be taken of the part of the present season still remaining because work on that construction can be left at any height without danger during the monsoon.

The Krishna Amnicut is completely conclusive to me as to this mode of construction being adopted wherever ample quarries are at hand.

I therefore at once to recommend that the following works should be commenced in order that all possible advantage may be taken of the present season.

1st The rebuilding of the front retaining wall.

2nd The filling in behind it with rough stone to such a height as can certainly be accomplished this season.

I do not attempt here to decide to what height it may be carried, but probably the following will be the amount

amount & cost of work for this season

Front retaining wall

$300 \times 3 \times 1\frac{1}{2} = 1350$ c yds of laterite

Masonry at 3-8- " 4725..

$400 \times 2 \times 30 = 24000$ c yds of

rough stone or 30000 tons at 15000..

8 annas

Sundries 3000 " "

22725 " "

I give this merely as what I would propose at all events to do this year & which I think may be done with perfect safety to the work, leaving it $1\frac{1}{2}$ yard only above the bed of the river; & in order to give the Government an idea of the expense that might in this way be incurred I have however scarcely any doubt that a much greater extent of work might be executed this season & I hope to go further into this part of the question in a few days.

I need only add here that I am also satisfied that the cost of the completion of the work will be such as will be fully justified by its returns.

O

proposed construction

which that officer is to give prompt attention

I shall endeavour fully to investigate all the points referred to me and to forward my complete report as soon as possible

My reason for transmitting this hasty letter is first, that no time may be lost now that the season is so far advanced & secondly to recommend that if the work is resumed Lieut Smith of the Engineers who is now here but is under orders to go to Calcutta in a few days may if possible be placed under Lieut Mullins to do this duty Lieut Mullins highly approves of him & he would himself greatly approve of the change - Immediate orders are necessary on this point also -

I have the honor to be

Sir

your most Obedient Servant

Nellore,

12th March 1859

(Signed) A. Cottonboll
Commandant of Engineers

1282

proposed Channel works
which that officer is to give prompt
attention

From
Colonel A. Cotton
Commandant of Engineers

To
J. Bourdillion Esq
Revenue Secretary to Government

Sir,
I agreeably to the orders contained in the Ex. Min. Cons. dated 7th Inst. to proceed to Bellora & give my opinion upon the adjacent I have the honor to report that I have inspected this work & its neighbourhood & as it seems to me ^{there is} no room to question on the matter so far as is necessary to decide about immediate proceedings, I at once forward my conclusions for the information of Government.

I should observe ^{that} first reading my orders I thought that I was authorized to give instructions to the District Engineer respecting his further proceedings about the works, but on reconsidering them I find that they mention only the "proposed Channel works" as those on which that officer is to give prompt attention.

D. No 1539 D. 15th
Cons 15th March
No. 592

From Col. A. Cotton
Commandant of Engs.

Dated 12th
March 59
J.

From the Chief Engr. 15th
March 59 & 15th March 59
J. A. Cotton Esq
Revenue Secretary to Government

15th

attention to my instructions. I am
rather to lose on this point, as to whether
it means ^{literally} ~~it is~~ ^{the} ~~the~~ Channel works
as distinct from the Arricut or not.

If in answer to my Telegram I
find that I am authorized to
direct the immediate repair of the
Arricut I shall do so.

The first question of course is
about the site of the Arricut. On this
point the following circumstances
seem to me quite sufficient to deter-
mine that the present site should
be adhered to.

1st the quantity of work already
done & remaining uninjured viz
the excellent Head Sluice, 2 ~~sluices~~
of under sluices, both wing walls
& about 1/3 of the body of the work.

2nd The large mass of stones sunk
on this spot about 40 thousand
tons forming an important founda-
tion to the superstructure

3rd The excellent railway is in
complete working order from the
Quarry to the Arricut.

3 These are sufficient to satisfy
me that the present site should be
adhered to, for I feel certain that
there is no essential objection to the
site.

4 The 2^d question is upon what
principle & mode of construction
should the work be rebuilt.

5 This seems to me quite ^{as} clear
as the other, on the ground that the
railway is already laid to the finest
quarry for rough stone work that could
be found anywhere. Stone of the hard
kind already in blocks of a few tons
only & capable of being reduced by fire
into pieces of the most convenient
~~size for the~~
~~scarping~~ work & in rounded forms
which will pack in the most immor-
table manner & this in abundant
quantity provides the Engineer with
all that he could possibly desire in
the way of material & now that there is
a most excellent railway with good
waggons & cranes all ready for the
work, rough stone Arricut of
any dimensions can be completed
at a moderate expense & within a

Moderate.

moderate time at the same time
 advantage can be taken of the part
 of the ^{present season} still
 remaining because work on that
 construction can be left at any height
 without danger during the monsoon.

The Mistral Argument is completely
 conclusive to me as to this mode of
 construction being adopted wherever
 ample quarries are at hand.

I beg therefore at once to recom-
 mend that the following works should
 be commenced in order that all
 possible advantage may be taken
 of the present season.

1st The rebuilding of the front-
 retaining wall

2^d The filling in behind it with
 rough stone to such a height
 as can certainly be accomplished
 this season.

I do not attempt here to decide
 to what height it may be carried, but
 probably ^{the following} will be the amount & cost of
 work for this season.

Front retaining wall

$300 \times 3 \times \frac{1}{2} = 1050$ @ yds of labour }
 may be at 3-8-0 } 4,825-0-0

480
 $400 \times 2 \times 30 = 24000$ yds of }
 rough stone ^{or} at 30000 tons at } 15000-0-0
 8 annas

Sandries ————— 3000-0-0
22725-0-0

I give this merely as what I should
 propose at all events to do this year
 which I think ^{may be done} with perfect
 safety to the work, leaving it ^{at} 1 1/2
 yards only above the bed of the river,
 & in order to give the Government
 an idea of the expense that might in
 this way be incurred. I have however
~~no doubt~~ ^{no doubt} that a much greater
 extent of work might be executed this
 season & I hope to go further into this
 part of the question in a few days.

I need only add here that I am
 also satisfied that the cost of the
 completion of the work will be such
 as will be fully justified by its
 returns.

I shall endeavour fully to
 investigate all the points referred to
 me & to forward my complete report
 as soon as possible.

My reason for transmitting this
 hasty

hasty letter ^{is, all} of first, that our time may
be lost now that the season is so far
advanced & secondly, to recom-mend that
if the work is resumed Lieut
Smith of the Engineers who is now
here but is under orders to go to Fiddah
in a few days ^{if possible} may be placed under
Lieut Mullins to do this duty - Lieut
Mullins highly approves of him & he
would himself greatly approve of
the change - Immediate orders are
necessary on this point also -

I have the honor to be

Yours

Sir

12th March 1859

~~Your most obedient servant~~

H. Cotton Esq.

Commandant of Engineers

N^o 592

Extract from the Minutes of Consultation
Under date the 15th March 1859.

Read the following
letter from Colonel A.
Cotton, Commandant
of Engineers.

Reporting his
opinion on the Plan of (Here enter 12th March 1859)
Ancient in Vellore

Colonel Cotton
is empowered to give im-
mediate orders for such
work as he may think
necessary, both for the
Ancient and the Channel.
The District Engineer will
be guided by his instruc-
tions, and the collector
will issue such funds
as may be required to
carry them into effect.
In accordance
with Colonel Cotton's
recommendation the
Governor

[Signatures]

Cons. March 15th 1859

Cons. March 15th 1859

Cons. March 15th 1859

N^o 592

From Col^l A. Cotton
Commandant of Engineers

March 12th 1859
Received 11th 1859

9th

Cons. March 15th 1859
From the Chief Engineer
March 15th 1859

Reporting his opinion
on the Plan of Ancient
in Vellore.

127

Governor in Council
resolves to direct that Lt
Smith shall remain
at Kollam to superintend
these works, and the
Chief Engineer will sug-
gest to Government the
measures, if any, which
he would recommend
for the purpose of sup-
plying that Officer's place
in Cochin.

[Signature]

[Signature]
To Col. Cotton. C.S. 25
To Chief Engineer ✓
To Col. of Kollam ✓
To Civil Auditor ✓
To Account General ✓
To Lt. Engr. Kollam ✓

Cons 8th March 59 to 9th 298.

Copy in a letter to E
14th 232. Nov 1859. M. 68

Public Works 1859. Sept 1st
Cons 15th March.

2 No 592.

Contract Minis of Cons.

15th March 59.

From the Chief Engrs 2nd
16th March 59 to 1st 620 in
Cons 5th 24th 59 M. 68-59.
I have received the 19th 28th from 59
10th 24th 2nd Cons M. 68-59.

Cons 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21st 22nd 23rd 24th 25th 26th 27th 28th 29th 30th 31st

From Cons 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21st 22nd 23rd 24th 25th 26th 27th 28th 29th 30th 31st

11th 18th 19th 20th 21st 22nd 23rd 24th 25th 26th 27th 28th 29th 30th 31st

14th 12th 17th 18th 19th 20th 21st 22nd 23rd 24th 25th 26th 27th 28th 29th 30th 31st

to give immediate notice for
drawn works as the many think
necessary to be for the Cons
Committee and Committee in
better and directing the
Cons 1st Engrs to be guided by
his instructions. He also to
issue such funds as may
be required to carry them out
effect and state them to
be done and allow to be done
within the works.