

Public Works (1898) Department.

✓ G.O., No.

807 25

DATED

24 March 1898

[Despatch Abstract.]

Vizalapatam Waterworks: Inspection notes by the
As. Chief Engineer regarding the records.

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Rs 3.98

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
	14910	11-3-98					

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

Note - Copy has already been
sent to Mr J. S. T. with

112. *Rm*
19.2.88

[P. W. 43.
500-27-1-28.

Public Works Department.

Inspection Notes

of

the Acting Chief Engineer.

22nd February 1898.Vizagapatam Water Works.

Inspected in company with Mr. Hancock,

Executive Engineer and Mr. Brown

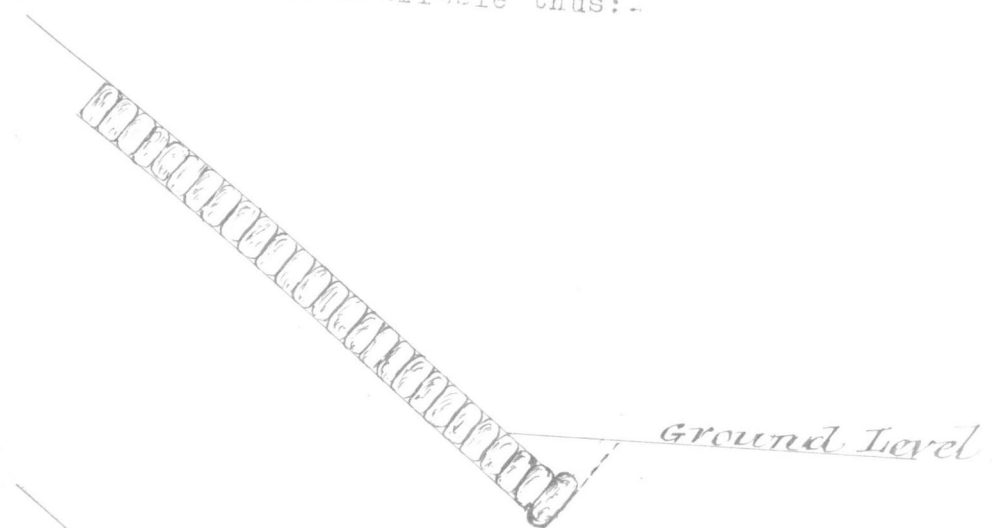
Assistant Engineer in charge.

1. Bund. The bund is nearly completed except at the sluice, across the nullah and at the weir. The earth is excellent for the purpose, being a loamy clay, and the work has been carefully done in layers, well watered and the clods well broken and is creditable to Mr. Brown and his overseer Mr. Scanlon. The layers are rather too thick, it is much easier to consolidate 6" than 1 foot, and the rate (Rs. 15) being a liberal one, there should be no difficulty about this.

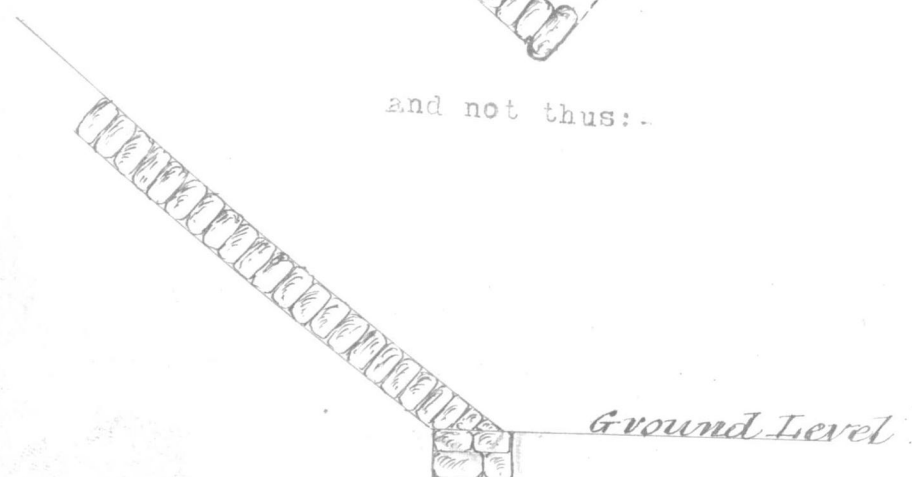
2. Sluice. The sluice is nearly completed with the exception of the stand pipes, and is soundly built. The stone on which the stand pipes rest should be anchored down by 2 railway rails built into the masonry of the well.

3. Revetment. Stone is under collection for this, and is fairly suitable. The stones should be laid all as headers, i.e. with their greatest length perpendicular to the slope and the toe should

should be also perpendicular to the slope and laid with the largest stones available thus:-



and not thus:-



The revetment should be backed with gravel or chips or small broken stone.

4. Filters. The beds have been excavated and broken stone collected. I ordered construction to stop till further orders. It can now proceed.

5. Nullah. Laying the bund across the nullah will require careful treatment, there being a thick deposit of large sized gravel for which something more watertight must be substituted, and a good deal of sand, stones and vegetation to be removed. A puddle core has been provided in the estimate, but the ordin-

is so good that I consider this --- quite unnecessary. The work should be carried out as follows:-

(1) Stop the flow of water --- through the breach by a little puddle bund placed well above front-toe of bund, and sunk, if possible, below the sand and --- gravel. If care is taken in laying this, subsequent trouble --- will be avoided. The water --- should be diverted to pass --- through the sluice.

(2) Remove all sand, stones and vegetation from site of bund.

(3) Excavate a trench in centre line of bund, 150' long or thereabouts, 20' wide, and as deep as is necessary to remove all gravel.

(4) Fill this trench with the --- good soil used for the rest of the bund, the whole being brought up pari passu with the rest of the bund across the nullah, i.e. the trench should not be filled first and the rest of the bund finished afterwards. The soil is quite sufficiently good to stop percolation if laid in a homogeneous mass.

6. Weir. This is nearly completed, and has been well built on a good design.

7. Frick manufacture. Some shapely and well burnt bricks have been made, but I think they want a little more firing.

8. Lime & Surki. are both good, Sand rather fine, but the best procurable apparently. I should like some experiments made of mortar made from the following ingredients:-

<u>1</u>	<u>2</u>	<u>3</u>
1 lime.	1 lime.	1 lime.
$\frac{1}{4}$ Surki.	$\frac{1}{2}$ Surki.	$\frac{3}{4}$ Surki.
$1\frac{1}{2}$ Sand.	$1\frac{1}{2}$ Sand.	$1\frac{1}{4}$ Sand.

The mixtures should be made into bricks in the moulds, kept dry for 24 hours, and then placed in still water, and tested roughly for hardness and strength, after a week, a fortnight, a month & 3 months respectively. A dozen bricks of each mixture to be made and the results reported.

9. Line of main pipe. This has never been properly settled yet. Mr. Brown should now go over the whole line and select the best possible on the principle that the shortest is the best, provided that

- (a) the hydraulic gradient is not interfered with,
- (b) the ground is not much cut up with nullahs etc.

Land need only be temporarily occupied & a right of way obtained to inspect pipes whenever necessary.

The

The planting of new trees within 50 yards should also be prohibited.

10. Indent for Main & Distributary pipes & iron work connected with weir.

This has just been received from the Superintending Engineer V Circle for transmission to the India Office. I have great doubts as to its accuracy, or sufficiency in the supply of air valves, scour valves etc. It also may be possible to -- reduce the length of main, after the inspection by Mr. Brown now ordered, & this seems very necessary, if possible, because the Examiner states that the indent amounts at ^{s d} 1-2 $\frac{1}{2}$ per rupee to Rs. 4,08,733, whereas the total of the sanctioned estimate is only Rs. 4,21,000, so that it is evident that if the cost of this indent is correctly estimated, there will be a large excess on the estimate. I am very unwilling to delay the submission of the indent any longer, because it has already taken too long to prepare, but this is better than to send it incomplete, or inaccurate. It will therefore be returned for careful scrutiny on the spot in connection with the inspection of the main line above ordered, and should be returned as soon as possible, complete and accurate in all particulars.

AS

As it is impossible that any portion of the iron work can be out before next monsoon, all iron work in the -- storage reservoir itself, i.e., stand-pipes with their fittings etc. must be obtained in the country and ordered at once; sanction being obtained in the usual manner.

11. Compensation for loss of water.

The construction of the Reservoir will deprive a considerable area of wet cultivation of its supply of water, and no provision is made in the estimate for compensating the owners thereof, either in water or money. The Superintending Engineer should take this matter up in consultation with the Collector, and report what arrangements he proposes to make.

H. H. H. H. H.
Acting Chief Engineer.

Tyke

Order to H.S.

To come for inspection before 15/10/98

14.9.10, d. 11-3-98
Inspection Notes 7
By C.S.

22 Feb. 1898

1. Upper part water works.

ected in company with Mr. Handcock, Mr. Brown, and Mr. G. in charge.

1. Ground

The ground is nearly completed except at the sluice, across the muck & at the head. The earth is excellent for the purpose, being a heavy clay. The work has been carefully done in layers, well watered & the chods well broken. & is creditable to Mr. Brown & his foremen Mr. & Cantor. The layers are rather too thick. It is much easier to consolidate 6" than 1 foot. & the rate (16 15) being liberal me. There shall be no difficulty about this.

2. Sluice

The sluice is nearly completed, with the exception of the stand pipes, & is soundly built. The stone in which the stand pipes rest

12/3/98

will be anchored down by 2
airway rails fixed into the masonry
of the well.

Resetment Stone is under collection
In this case being suitable.

The stones should be laid with
headers, i.e. with their greatest
length ~~at right angles~~ ^{perpendicular} to the slope.

The toe should be $\perp$ to the slope
and laid with the largest stones at the
- the toes

and not thus

Fillers. The resetment should
be backed with gravel or
chips or small broken stone

Fillers. The beds have been covered
a broken stone collected
under construction to stop
the further slides - It can be
proceeds -

5. Nullah. Laying the tunnel across
the nullah will require careful
treatment, there being a thick
deposit of clay, silt and gravel
in which something more water
tight must be substituted, &
a good deal of sand & stones
a hyacinth. The removed
a middle core has been provided
in the concrete but the roadway
can be available in good
that I consider this point must
- ~~clearing work~~ ^{the work} should be carried out as follows
to stop

(1) ~~the point~~ ^{the point} ~~where the~~ ^{where the} through the
the flow of water through the
beach by a little middle
bund. 20 yards to the
above point. The of bund, a
bank, of 100 ft., below the same
a gravel. If care is taken in
laying this, the will be

it be avoided. The water should be directed to pass through the thence.

(2) Remove all sand, stones & vegetation from site of mound.

R (3) Excavate a trench in center line of mound, 150' long or thereabouts, 20' wide, & as deep as is necessary to remove all gravel.

(4) Fill this trench with the good soil from the mound. The soil must be brought up from whole being brought up from the rest of the mound across the middle - the trench should not be over the trench. The rest of the mound must be left as the mound finished appears. The soil is not sufficient, good to stop levelling if laid in a homogeneous mass -

6. Mass. This is nearly completed. It has been well built in a good design -

7. Back rampart line. Some steps & a well built back have been made but I think they want a little more going.

f. Some a tank. are both good - some rather fine, but the best however is apparently - I should like some cement made with mortar made from the following ingredients

$\frac{1}{4}$ time	$\frac{2}{4}$ time	$\frac{3}{4}$ time
$\frac{1}{4}$ tank	$\frac{1}{2}$ tank	$\frac{3}{4}$ tank
$\frac{1}{4}$ same	$\frac{1}{2}$ sand	$\frac{1}{4}$ sand

The mixtures should be made into bricks in the moulds kept dry for 24 hours. When placed in still water, & tested for setting hardness a strength after a week a fortnight, a month, & 3 months respectively. A dozen bricks of each mixture to be made & the results reported.

2 Paper
Line of main tubes. This has been

been properly settled. It has
been shown now for the
whole line, & select the best
work in the line. It is
shorter to the best. It would
not (a) be hydraulic gradient
is not so interfered with
(b) the ground is not much
cut up with mounds etc.

Land need not be temporary
occupied, & a right of way
should be to select holes
wherever necessary. The planting
of new trees within 50 yards
should also be prohibited.

10. Indent for main & subsidiary pipes
a line work connected with

them. This has not been seen
from the Ind. Supt. to which he
transmission. The India
Office - I have sent draft

to accuracy, or

suffering in the ^{light} ~~matter~~ of
air valves. Some valves are
that may be liable to
reduce the length of main, after
the inspection by Mr. Brown
was ordered, & this seems
very necessary. If possible, because
the Govt. state that the indent
amounts at 1.25 per pipe to
Rs 4,00,700. Whereas the total
of the detailed estimate is
Rs 4,21,000. So that it
is evident that if the cost
of this indent is correct
estimated, there will be a
large excess in the estimate.
~~At the risk of further delay~~
I am very unwilling to delay the
introduction of the indent any
longer, because it has already
been too long to prepare. But
this is better than to send
it incomplete, or inaccurate.
It will therefore be returned

be careful & cutting in the that
 in connection with the inspection
 of the main line above referred.
 & should be returned as soon
 as possible. Complete & accurate
 in all particulars. But any
 as it is impossible that any
 portion of the work can
 be completed before next monsoon.
 all work in the stragg
 unwork itself is stand where
 with their fittings as want
 be obtained in the country
 & ordered at once - ~~caution being taken~~ in the local measures.

Confederation in loss of water
 the construction of the Reservoir
 will deprive a considerable area
 of net cultivation. If the supply of
 water - no provision is made
 in the estimate for compensating
 the losses likely to be suffered
 in money. The L.S. should take
 this matter up in consultation
 with the Collector, & report what
 arrangements he proposes to make
 24/10/90

To
 The S. E.
 I birlie.
 11/3/98

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