

- (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.	637 (9)	Press
B.P. No.		Mis.
Dated	10-3-	1874
		-195-

Enigma

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
10th March 1874.*

Read the following paper:—

No. 112.

No. 231.

Note by the Chief Engineer for Irrigation.

THE estimate for the Chinnadevalapuram Tank has been carefully prepared, and the work proposed to be done is not in excess of the requirements. The amount however, Rupees 3,200 is large, owing to four annas a cubic yard being entered for earthwork watered and tamped, and two annas for such work without water. The reason given for the four anna rate is that water will probably have to be brought half a mile. In paragraph 7 of the report it will be seen that there was water in the tank when the estimate was prepared, and probably it will be obtainable at no great distance from the surface. If not the repairs should be confined for the present to those portions which are less than one foot or fifteen inches above maximum water level, or three feet three inches above escape weir crest level, and the rest of the work should be completed when water is available in the tank. Two and a half annas a cubic yard should be the maximum rate for watered earthwork, other than that which may have to be done with water brought from a long distance, and ten cubic yards a rupee, with three pias a cubic yard for tamping, should suffice for the dry earthwork. Wherever the maximum water line is above the present top of the bund, a longitudinal trench should be cut in the latter, or there will be risk of dangerous leakage. The stepping shown in the cross sections on the rear slope of the bund is inadequate; a mere roughing will not do, but steps at least two feet wide with a slight slope* towards the inside of the tank.

* About one in fifteen.

2. The space between the body and retaining walls of the escape weir should not be excavated below the black line; the risk of settlement of these walls would more than counterbalance the advantage to be derived from a greater depth of rammed gravel.

3. The sluices should be carefully examined; tunnels as well as heads.

4. It will be seen that the highest revenue is Rupees 1,406, the average being Rupees 1,159.

FORT SAINT GEORGE,
30th January 1874.

(Signed) J. MULLINS, Lieut.-Colonel, R.E.,
Chief Engineer for Irrigation.

KURNOOL DISTRICT, NANDIAL RANGE, NANDIAL TALUQ.

CHINNADÉVALAPURAM TUMMALA TANK.

Report to accompany estimate for raising the bund and repairing the calingulah and two sluices.

THIS tank belongs to the village of Chinnadevalapuram, and is on a small tributary (from the Nalla Malla Hills) of the Galieru. The bund is not rivetted, but is partially protected from the action of the waves by patches of the Vavali plant. It is supplied by a channel from the tributary alluded to above.

See Longitudinal Sections.

The top of the bund is very low; in some places under the level of the highest water. In the month of October 1872, it was breached in two or three places. The ryots filled in the breaches roughly, and nothing has been done since.

See Figure 2.

The rough-stone apron of the calingulah was washed away, and the space between the body and retaining walls scooped out to a depth of about 4 feet; no water passed over the calingulah this year.

The two sluices leak at their heads; but the tunnels are said to be all right.

2. The average revenue of the last five years is 1,159 Rupees, and the highest in 1872 was 1,406 Rupees.

Proposed Works.

3. With this report are forwarded a longitudinal section showing the top of the present bund, the bed of the tank, and in red the height to which the bund is proposed to be raised. High floods flow over the land at each end of the tank bund, and this arrangement is not to be disturbed for the present. All the water that passes away is utilized in the tanks lower down.

4. There are twenty-four cross sections showing the present bund and the proposed raising. (It is requested that these cross sections may be returned, as I have no means of getting them copied.)

In this case I have put all the additional earth on the outside of the bund, because the present inside slope has been formed by the action of the water and will stand waves better than fresh earth.

The top of the bund is to be picked up and watered before the fresh earth is laid on, and the outer slope to be cut into steps as drawn. The upper part of the tamped, The remainder to be laid in similar layers and tamped but need not be watered.

The work is to be commenced at the bottom and carried up layer by layer to the top, the layers sloping slightly inwards towards the bund. The wet and dry tamped work must be carefully united.

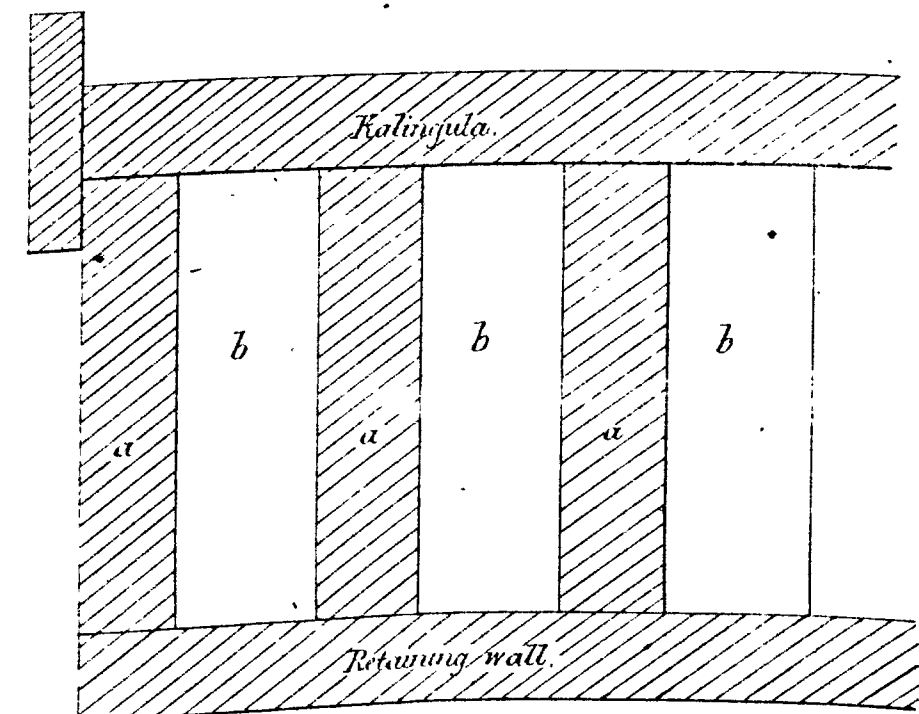
Over the inner face of the new work and wherever there are unplanted spaces on the old work, cuttings of Vavali (Neer Nuchi) are to be planted six inches apart and be watered three times a week until the rains set in.

5. The cross section of the calingulah shows its present condition. The body wall, wings, retaining wall, and lower apron are all in good sound order; they are built with hard, blue slate about three inches in thickness. The upper apron was built with small rough stones, which were washed out when the water rose two feet over the calingulah.

It is a pity that the calingulah and retaining wall were not founded upon the laterite gravel which is only six feet from the surface of the land. I now propose to fill in the space between them with gravel laid in layers, watered and tamped, and upon this to build the new apron with blue slate laid on edge across the direction of the current. In this work no stone is to be used less than 15" x 12" x 3". They are to break joint carefully and be packed close together. The joints are to be hammered square, and any spaces between them are to be filled with chips

hammered in. Fine screened gravel is to be swept over the work, so that all unavoidable openings may be filled. It may not be necessary to excavate down to the laterite. The Range Officer will see to this personally when the rough stones thrown in by the ryots are cleared away. The excavation should stop where the soil is hard or compact, but it should be consolidated by hard ramming before the first layer of gravel is laid in.

6. Should it be found necessary to excavate to the full depth, and should any damage to the calingulah be likely to arise therefrom, the earth should be removed in sections of four or five feet thus:—



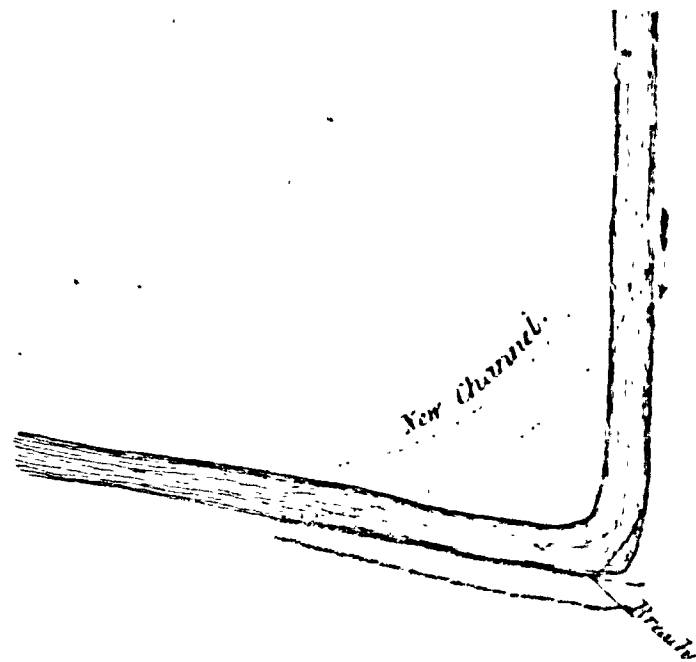
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The whole should be cut down nearly to the level of the foundation, and then the sections marked a. a. &c., should be cut to the full depth and filled in with gravel, as described above, to a little over the level of the present foundations; the section b. b. &c., should then be removed and similarly filled in with gravel to the same height, care being taken in both cases to pack it close to the present walls. The work could then be carried up evenly to the required height.

Sluices.

7. As there is water now in the tank, and as the sluices have not been uncovered, a detailed estimate cannot be made for repairing them; but the Overseer considers that the sums entered in the estimate will be sufficient.

8. If these works are carefully carried out the tank will be put into a good and safe condition and no further repairs should be required for many years. The supply channel has, near the tank, a sudden bend, nearly 90 degrees, and at this place a breach occurs almost every year. It is now proposed to convert it into an easy curve thus:—



The earth excavated is to be used in filling up the present channel.
9. The village of Chinnadevalapuram is just under the tank, and in 1872 when the water passed over the bund about one-fourth of the village was flooded from one to three feet in depth, and four or five houses were swept away. The accident occurred during day-light and all the people, except one girl, escaped to high ground. The girl was eventually rescued.

KOILKUNTALA,
14th January 1874.
To the Chief Engineer for Irrigation.

(Signed) W. FRASER, C.E.,
District Engineer, Kurnool.

*Proceedings of the Madras Government, Public Works Department,
9th March 1874.*

No. 232.

ORDER THEREON, 10th March 1874, No. 637.

IRRIGATION, No. 24.

THE estimate, amounting to Rupees 3,200, for the repair of the Chinnadevalapuram Tank in the Kurnool

District is sanctioned to such extent as may be requisite to carry out the work in the manner stated in the note by the Chief Engineer for Irrigation.

2. The District Engineer will take special care that the rates paid are not in excess of those absolutely necessary for efficient work under the circumstances under which this may have to be done.

(True Extract.)

Colonel, R.E.,

Secretary to Government.

To the Chief Engineer for Irrigation.
" District Engineer, Kurnool.
" Officiating Controller of Public Works Accounts.

Exd. E. C. Shunker.
Spare Copies

No 112

Note by the Chief Engineer for Irrigation.

The estimate for the Chinna-
Enclosures. 5. devalapuram Tank has been care-
fully prepared, and the work pro-
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above maximum water level, or 3'-3" above escape weir crest level, and the rest of the work should be completed when water is available in the Tank. $2\frac{1}{2}$ Annas a Cubic yard should be the maximum rate for watered earthwork, other than that which may have to be done with water brought from a long distance, and 10 C yds a Rupee, with 3 pias a C. yd. for tamping, should suffice for the dry earth work. Wherever the maximum water line is above the present top of the bund, a longitudinal trench should be cut in the latter, or there will be risk of dangerous leakage. The stepping shown in the cross sections on the rear slope of the bund is inadequate: a mere roughing will not do, but steps at least 2 feet wide with a slight slope towards the inside of the Tank. ^{x about 1 in 15.}

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3 The Shices should be carefully examined - tunnels as well as heads.

4 It will be seen that the highest Revenue is Rupees 1406, the average being Rupees 1159.

Fort St. George
30th January
1874

W. H. W. W.

Leith 10th 1874

Chief Engineer for Irrigation.

To,
The Secretary to Government
P. W. D.

637 P. W. Dept.

Proceedings of the Madras Government.
Read the following

From the Chief Engr. for India / No. 112 of 30 Jan'y 1874

The estimate amount-
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for

Md
12/2

S. M. 1874, Deput
Chief Engr. for India
No 112

No. 676.

From

The Chief Engineer for
Irrigation.

To the Secretary to
Government
Bombay

Dated 30 January
1874
No. 5 - do 23

Enclosure 5

Note on the Estimate
for the repair of the
Chinnadava Tank in the
Kurnool District
No. 637 10-3-74

10-3-74

No. 231.

for efficient work under
the circumstances under
which this may have
to be done. -

W. 3/2/74
GMM

C/2675
Govt. of Madras.
PUBLIC WORKS.

The Chief Engineer
for Irrigation

Dated

Recd.

Encl. 57

G. O., 10th March 1874, No. 637

231-232.

Chinnadavapuram
Tank, Kurnool District.

Return for the repair
of the tank, sanctioned
with remarks.

Ch: Engr for the tank
D: Engr Kurnool
for roller with at 1/2

Recd. with L.C. 14/3/74

231-232.

C/10 July 74