M.R.O. 1—77,006—8-6-37.

(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. 2695 Press / Mis.
260-261

Dated 16-11- 1872.

Not to be folded or roughly handled

No. 260. Read the following paper:—

No. 246.

Note by the Acting Chief Engineer for Irrigation.

THE Superintending Engineer re-submits estimates for repairing the tanks noted below with letter No. 3,062 of 19th October.

		Original.	Revised.
	Vellore Taluq.	RS.	RS.
1.	Closing breaches in Chittary Tank	3,050	1,500
2.	Do. do. in Singanary do.	1,600	1,380
3.	Do. do. in Cattupattoor do.	1,350	1,130
4.	Do. do. in Pootoor do.	2,087	1,800
5.	Do. do. in Thorapudi do.	7,400	5,700
	Arcot Taluq.		
6.	Closing breaches in Mooranum Tank	150	87
7.	Emergent repairs to Vellum do.	1,380	950
	Total ..	17,017	12,547

2. These estimates were returned with G. O. No. 2,051 of 28th August 1872, and the revised estimates show a saving of Rupees 4,530, or rather more than 25 per cent. on the original estimates.

3. All the estimates, except No. 4, fall within the revenue derived from the tanks during the last four years, and hence do not require the sanction of Government.

4. The revenue derived from the Pootoor tank during the last four years has been Rupees 1,333, while the estimate amounts to 1,800; an increase of revenue of Rupees 150 is stated to be expected, but no reasons are given for anticipating this increase, while no provision is made for retaining more water in the tank, but, on the contrary, the bank is to be cut away to form, what the Assistant Engineer calls, safety valves. From sections sent of the ground in the neighbourhood of the calingulah of No. 5, where it is proposed to remove a part of the bank to afford extra means of escape, it is clear that the Assistant Engineer should not be entrusted with the selection of the sites for the natural weirs, for, in the case in point, unless there is rock at the spot at which the water is to be allowed to escape; the only result of removing the bank would be that a breach below soil level would be made long before the water in the tank rose to what may be termed the maximum safe level.

5. In almost all the tanks provision has been made for aiding the weirs by allowing water to escape at or near them over the natural surface of the country; this should not be done by cutting away the existing bank as appears to be intended, but the site for the overflow of the tank should be selected where the country is tolerably flat for some considerable distance, or where the soil is gravelly or stony; if no such site can be obtained, the bank should be weakened at the spot most favourable for the discharge of surplus, the crest of the bank being at least 1½′ above the highest level to which it is desired to retain water, and when the water rises above this level the small bank should be removed. The selection of these sites should not be left to the Assistant Engineer.

6. The drainage of the tanks appears to be very small, so much so that it is probable that by "the drainage" the Assistant Engineer intends to signify the area of the water-spread of the tanks, and not the area of the drainage basin. It is on the latter and not on the former that the capacity of the weirs must be calculated, and hence the term drainage should not be used by itself to signify the area from which a tank receives its supply.

7. In addition to the estimates noted above, estimates are submitted for a sluice* in the Thorapudi tank and for a weir† across the Allapuram surplus channel for the supply of the Thorapudi tank. The former may be carried out from the allotment for Minor New Works, with reference to the observations on the plan. The latter appears to be a restoration, but no information is afforded as to the dimensions of the original work, the cause of its destruction, the probable quantity of water the new work may have to discharge, or how the dimensions proposed have been arrived at. The plan provides for a weir placed obliquely to the stream; this may probably be modified by slight alterations at the channel head. This estimate should be revised. The clearing of the channel appears to be unnecessary as also the cutting away of the bank of the Thorapudi tank for the purpose of providing additional means of escape. These items should more properly have appeared in the estimate for repairing the tank.

* Rupees 200.
† Rupees 940.

8. The estimates for increasing the capacity of the surplus weirs where necessary should be submitted as early as possible, but where a series of tanks in a valley are connected with each other, and the lower tanks receive a supply from or through the upper, the latter should be first provided with means of passing off the surplus water safely, or, in other words, in improving a chain of tanks, the tank in the chain which is in the highest part of the valley should be the first to be rendered safe.

9. The rates for earthwork are high, but this is stated to be due to the fact that earth had to be brought in some cases from considerable distances; in checking the work care should be taken that the rates paid are fairly due to the distances from which earth has actually been brought.

10. The ayacut is stated to represent the area ordinarily cultivated under the tanks some years back, and all revenue derived from land irrigated beyond the ayacut limit is said to be entered in the accounts as Teervajasti. In the south the ayacut signifies the area under the influence of a work which could be irrigated if sufficient water were available for the whole area. It would be well if the ayacut were everywhere calculated as in the south, for it would then be possible to tell at a glance what area under the influence of any work remained uncultivated owing to the want of water or to defective drainage, etc. The ayacut accounts, as prepared in the North Arcot District, do not afford the information required by this department. Where the Revenue Survey has been completed there would be little or no difficulty on the part of the village authorities in determining the area which might be brought under the influence of the tanks and channels generally.

Proceedings of the Madras Government, Public Works Department,
16th November 1872.

11. There appear to have been some errors in the ayacut statements originally sent, for the Vellum tank, which was shown to have yielded an average revenue of only Rupees 5 during five years, is now stated to have yielded an average of Rupees 38-3-11.

FORT ST. GEORGE,
2nd November 1872.

(Signed) R. F. OAKES, Major, R.E.,
Acting Chief Engineer for Irrigation.

No. 261. ORDER THEREON, 16th November 1872, No. 2,695.

IRRIGATION, No. 19.

HIS Excellency the Governor in Council sanctions the estimates submitted with the papers recorded above with the exception of that for the weir in the Allapuram surplus channel, the estimate for which should be revised with reference to the remarks by the Acting Chief Engineer for Irrigation.

2. The Superintending Engineer's special attention is called to paragraphs 4, 5, 7, 8 and 9 of the Note by the Acting Chief Engineer for Irrigation.

3. It would appear that in different parts of the country the term "Ayacut" bears different significations; where its signification is limited to the area cultivated some years ago under a tank or channel, the ayacut returns do not afford the information required by the members of the Department Public Works. The Revenue Board will state whether there will be any difficulty in having the ayacut statements revised, where necessary, in order to include in them the total area which is under the command of the various works as proposed in paragraph 10 of the Acting Chief Engineer's Note.

4. The term "Ayacut" should universally be held to mean the total irrigable area.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

To the Superintending Engineer, 4th Division, with thirteen Enclosures.
,, Acting Chief Engineer for Irrigation.
,, Revenue Department.
,, Board of Revenue.
,, All other Superintending Engineers.

Exd. E. C. Shunker.

No 3062

Supdg Engrs Office 4th Dn
Madras 4th October 1872.

From

Colonel F. J. Moberly R. E
Superintending Engineer 4th Division

To

Major R. F. Oakes R.E.
Actg Chief Engineer for Irrigation

Enclosures
9 Estimates.

Sir

I have the honor to forward for the sanction of Government the estimates marginally noted for repairs to works damaged by the Cyclone in May last. The original estimates were submitted to the Collector at a time of great urgency to obtain his opinion as to the necessity and advantage of carrying out the restoration of the particular works in question.

2 In the mean time, I travelled over very much of the country traversed by the cyclone, and revised numerous estimates, shewing to the Range Officers &c the errors of their calculation &c.

Sootraye hanna

Vellore Estimates.

1. Closing breaches in the Chittoor tank bund ... Rs 1300-
2. do ... do ... Kingsway tank ... " 1330-
3. do ... do ... Cauliflower tank bund ... " 1130-
4. do ... do ... Kongarapalle Mamidipalli tank bund ... " 18000-
5. { Constructing a Sluice & Waste weir to Chittoor tank ... " 5700-
   { Do a Dam across the Allapuram supplementary channel ... " 200-
6. Closing breaches in the Great Vellore small tank ... " 940-
7. do ... do ... the Pillayamal small tank ... " 87-
   ... Rs 30680-

3. Soobroya channar on my instruc-
tions re-examined many / nearly all / his
works and among others the seven which
were returned with G. O. N° 2057. 28 August.

4 You will observe that in consequence
5 of these are now below the sum of 4
years revenue. I should not have troubled
Government with them, if they had not been
the subject of the above order.

6. With reference to your Note I beg
to observe that the action of the water
under the influence of the Cyclone round
this part of the country being nearly at
the Centre of the Cyclone was very
various. In many places it appears to have
run along the face of the tank stripping the slope
along in a deep furrow where it was
unprotected by trenches. the top of the
bank in some cases overhangs, in others
it has fallen in.

6. Revetments generally were not hurt
and I was of opinion from personal
inspection that there was no necessity for
putting additional new stone at great
cost for a standard to which the water
would only rise again in such excep-
tional circumstances. It has been ad-
mitted in all cases where the Range
Officers shewed good grounds for it as in
breaches &c.

7. Under these circumstances I cannot
but think that you will admit that it
was impossible to make estimates very
accurately.

8. Ayakut represents the area ordi-
narily cultivated under the tank, at a date
fixed some years ago. the revenue realised
from land cultivated beyond this area
is entered as Iseva Jasthi. the entries
under this system afford us no standard
for assessing the value of a work. this
subject has been brought to the notice of
General Collectors by me, and I would
suggest that it would be far more useful
to us to know as Ayakut, the whole area
which could be irrigated by a tank
under

under most favorable circumstances, and in the best condition - any decrease of revenue not clearly due to deficiency of rain, or causes beyond control, would represent in some degree at least, deterioration of the work.

9. There is of course under the existing method room for large excess of revenue above Assessment.

10. The rates for Earth work are necessarily high. In many cases the closure of the breaches, which was done immediately, has enabled the ryots to commence cultivation, as we have had an unusual amount of rain. Earth could not be procured from the bed of the tanks in question, and being required in large quantities, had to be carried from a great distance

11. The works connected with Thoraipady tank will cost less than the original Estimate, but include the rebuilding of a dam to turn the water into the tank, and

× Omit this was drafted I hear the 4th I have water turned into Vellar contonment instead of being put to the tank

and for a sluice which were not provided for before

12. The subject of Union New Works will be taken up in detail immediately and the whole matter properly considered with a view to turning our allotments to the best account. The Collectors of North Arcot and Trichinopoly have returned all estimates which have been accumulating for years in their Offices, and I propose to discuss with Range Officers the object and necessity of works to a moderate amount for each Range, before I again meet the Collectors, who have cordially assented to any suggestions.

I have the honor to be
Sir
Your Most Obedient Servant
J Pennycuick Col R E
Supdg Engr 4th Dn

No 246

Note by the Acting Chief Engineer for Irrigation.

The Superintending Engineer

Encl= 14 resubmits Estimates for repairing the Tanks noted below with Letter No. 3062 of 19th October.

Vellore Taluq

		Original	Revised
1	Closing breaches in Chittary Tanks	3,050	1,500
2	Do Do Singanary Do	1,600	1,380
3	Do Do Cattupattoor Do	1,350	1130
4	Do Do Pootloor Do	2,087	1,800
5	Do Do Thirapudie Do	7,400	5,700
	Arcot Taluq		
6	Do Do Moorannum Do	150	87
7	Emergent repairs to Vellum Do	1,380	950
	Total	17,017	12,547

2 These Estimates were returned with G.O. No. 2058 of 28th August 1872 and the revised Estimates show a saving of Rupees 4,470 or rather more than 25 per Cent on the original Estimates.

All

No dated Nov. 1872

To

The Chief Engineer
for Irrigation
& Divisional Officer

Sir

I have the honor to forward herewith Estimates for Repairs to Tanks in Vellore Taluq Arcot Taluq Arnee Taluq Cheyar Taluq Chingleput Taluq Conjeeveram Taluq Poonamallee Taluq Saidapet Taluq Sholinghur Taluq Tiruvallore Taluq Trivellore Taluq & Wallajah Taluq Arcot District.

I have &c.

Dated 19th Dec. 1872

Rec'd 21st Do

No. R. 5403 of 1872

Dy Chief Engr 13

Estimates for Irrigation

19 Estimates for Repairs to Tanks in Vellore Taluq Arcot District

Dy Chief Engr
for Irrigation

Dy Chief Engr
& Superintendent

3 All the Estimates except No 4 fall within the Revenue derived from the Tanks during the last 4 years and hence do not require the exaction of Government

4 The Revenue derived from the Pootoor tank during the last 4 years has been Rupees 1,333 while the Estimate amounts to 1,800 an increase of revenue of Rupees 150 is stated to be expected, but no reasons are given for anticipating this increase while no provision is made for retaining more water in the tank, but on the contrary the bank is to be cut away to ascertain that the Assistant Engineer calls safety valves. From the actual extent of the ground in the neighbourhood of the Caliyugalah of No 5 where it is proposed to remove a part of the bank to afford extra means of escape, it is clear that the Assistant Engineer should not be entrusted with the selection of the site for the natural weirs, for, in the case in point, unless there

there is provided at the spot at which the water is to be allowed to escape, the only result of providing the bank would be that a breach below soil level would be made long before the water in the tank rose to what may be termed the maximum safe level.

5 In almost all the tanks provision has been made for giving the water to escape at or near the natural surface of the country, this should not be done by cutting away the existing bank as appears to be intended but the site for the over flow of the tank should be selected where the country is tolerably flat for some considerable distance or where the soil is gravelly or stony, if no such site can be obtained the bank should be weakened at the spot most favorable for the discharge of surplus, the crest of the bank being at least 1½ above the highest level to which it is desired to retain water and within the water

rises

rises above this level the middle bank &c. should be removed. The selection of these sites should not be left to the Assistant Engineer.

6. The drainage of the tanks appears to be very small so much so that it is probable that by "the drainage" the Assistant Engineer intends to signify the area of the water spread of the tanks and not the area of the drainage basin. It is on the latter and not on the former that the Capacity of the Weir must be calculated and hence the term drainage should not be used by itself to signify the area from which a tank receives its supply.

7. In addition to the Estimates noted above Estimates are submitted for a Sluice in the Thorapady tank and for a Weir across the Allapuram duplicate Channel for the supply of the Thorapady tank. The former may be carried out from the allotment for Minor new works with reference to the observations on the Plan. The latter appears to be a restoration but no information is afforded as to the dimensions of the original work the cause of its destruction the probable quantity of water the new work may have to discharge or how the dimensions proposed have been arrived at. The Plan provides for a weir placed obliquely to the stream this may probably be modified by slight alterations at the channel head. The Estimate should be revised. The clearing of the channel appears to be unnecessary as also the cutting away of the bank of the Thorapady tank for the purpose of providing additional means of escape. These items should more properly have appeared on the Estimate for repairing the tank.

8. The Estimates for increasing the capacity of the Surplus weirs where necessary should be submitted as early as possible but where a series of tanks in a Valley are connected with each other and

* Rs. 200

+ Rs. 940

and the lower tanks receive a supply from or through the upper, the latter should be first provided with means of passing off the surplus water safely or in other words in improving a chain of tanks the tank in the chain which is in the highest part of the valley should be the first to be rendered safe.

9. The rates for Earthwork are high but this, so stated is due not to the fact that Earth had to be brought in some cases from considerable distances; in checking the work care should be taken that the rates paid are fairly due to the distances from which Earth has actually been brought.

10. The Ayacut is stated to represent the area ordinarily cultivated under the tanks some years back and all revenue derived from land irrigated beyond the Ayacut limit is said to be entered in the Accountants Sheets as the South the Ayacut signifies the area under the influence of a tank which could be irrigated if sufficient water were available for the whole area. It would be well if the Ayacut were everywhere calculated as in the South, for it would then be possible to tell at a glance what area under the influence of any work remained uncultivated owing to the want of water or to defective drainage &c.

The Ayacut accounts as prepared in the North Arcot District do not afford the information required by this Department. Where the Revenue Survey has been completed there would be little or no difficulty on the part of the Village Authorities in determining the area which might be brought under the influence of the Tanks and Channels generally.

11 There appear to have been some errors in the Ayacut Statements originally sent for the Vellum tank which was shewn to have yielded an average Revenue of only Rupees 5 during 5 years is now stated to have yielded an average

averages of Rupees 38 : 3 : 11

Fort St. George
2nd November
1872

A. Pate
Major R.E.
Asst. Chief Engineer for
Irrigation

To,

The Secretary to Government
Department of Public Works
Fort St. George

Public Works Dept

12-8-45 Fwd

P.W. 1872 Depart
Opn. of Govt for Nov.
No. 5400.

From
The Actg Chf Engr
for Irrigation

To
The Secretary to Govt
P.W.D.

No. 246.

Dated 2nd
Despd 4th Nov 1872
Recd 5th

Encl. 14

Note on the estimate for the repair of certain tanks damaged by the cyclone of May last.

No. 2695-16 Dy

No Obs
R.C. 18 hours 72-
6 13 hours 72 Dl. 14

Public Works Department

Proceedings of the Madras Government

Read the following

From The Actg Chief Engineer for Irrigation. No. 246 dated 2nd Nov 1872

To His Excellency
The Governor in Council

I have the sanctions the Estimates submitted with the papers recorded above with the exception of that for the Weir in the Allapuram Surplus Channel, the Estimate for which should be revised with reference

reference to the remarks by the Acting Chief Engineer for Irrigation.

The Superintending Engineer's special attention is called to paragraphs 4, 5, 7, 8 and 9 of the Note by the Acting Chief Engineer for Irrigation.

It would appear that in different parts of the Country the term "Ayacut" bears different significations, where its signification is limited to the Area cultivated some years ago under a tank or Channel, the Ayacut returns do not afford the information required by the Members of the Dept. Public Works. The Revenue Board will state whether there will be any difficulty in having the Ayacut statements revised, where necessary, in order to include in them the total area which is under the command of the various works as proposed in para 10 of the Acting Chief Engineer's Note.

I would add The term "Ayacut" should universally be held to mean the total irrigable area.

To The Superintending Engineer 4th Dn. with 13 Enclosures
" Chief Engineer for Irrigation
" Revenue Board
" Secretary to Govt. P.W.D.
Mad. dispatched 16/11/12
" to all 22/11/12

13-6-65 Pam 6

R.C. 18 Nov 172
& 13 Inst Pro Rel

Op. 5700

Govt. of {1872} Madras.

PUBLIC WORKS.

To The Superintending Engr
4th Division

Dated

Recd. Encl.

G. O. 16 Nov. 1872. No. 2695.

Nos. 2604 & 261

Works. Passing Orders
on the bills by the Chief
Engr. Engrs in the
Executives for the
Execution of Works
managed by the Engr.
Officers in Charge
of the respective Divns
&c.

R.C. 18 Nov. 172
& 13 Encl. to R. No.