

5745

Proceedings of the Madras Government, Public Works Department,
13th September 1875.

Read the following paper :—

No. 992.

No. 308. *Note by the Chief Engineer for Irrigation.*

In submitting, for the sanction of Government in July 1874, an estimate of Rupees 600 for the repair on emergency of the Polliem Tank, remarks were made on the incompleteness of the information furnished, and on the possibility of the inadequacy of the proposed arrangements for the disposal of surplus. The tank has in its bund and supply channel 66 feet of escape weir, and 24 feet were then proposed to be added making a total of 90 feet. The Superintending Engineer now explains that 213 feet of escape are necessary, and that the frequent breaching of the tank has been due to the absence of sufficient means of disposing of surplus. The following are the revenue particulars and expenditure, and it has to be noticed that the ayacut assessment is represented at widely different amounts in the list and statement A.

				Ayacut area, acres 984.*	
				List.	Statement A.
				RS.	RS.
Ayacut assessment				2,277	3,952
Average revenue				2,348	2,277
Expenditure on repairs, last four years ...				...	2,863
Present estimate				...	5,240
Total ...				8,163	

The area of the catchment basin has not been ascertained, and without at least an approximation to this, the requirements of the tank cannot be properly determined. It appears that the principal supply of the tank is derived from the Goondal stream, and the proposed additions to the surplus weirs have been based upon a calculation of its discharge, which is estimated at 2,014 cubic feet a-second. Now this quantity is the maximum flood discharge of a basin of some 7 or 8 square miles, and it is improbable that this area would furnish a supply to 984 acres. The circumstances of the locality are not known, and the rainfall and character of the ground draining into the tank may be such as to enable a high acreage per square mile to be irrigated, but it is thought that the actual area of the basin is not likely to be less than 20 square miles, and it may be as much as 25 square miles. If so the maximum discharge would be 4,000 to 4,500 cubic feet a-second, and the arrangements proposed, viz., a bund $4\frac{1}{2}$ feet above F. T. L. and a difference of 2 feet between F. T. L. and M. W. L. would not suffice.

The depth passing over 240 feet of surplus weirs required to discharge 4,250 cubic feet a-second would be 3 feet, and the lowest corresponding level of bund which would be reasonably safe would be 2 feet above this M. W. L., and this would involve the raising of the bund 6 inches above the proposed level. A good deal of the present bund is, however, still higher, and so this modification would add but little to the estimate. Of the total amount of the latter, moreover, some 3,150 Rupees are for new revetment, the necessity for which has not been explained, while as the rate per cubic

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13th September 1875.*

yard is Rupees $1\frac{1}{2}$, it is clear that, if practicable, some less expensive method of protecting the inner slope from wash should be substituted. The old surplus weirs were apparently without any proper wings or good wing revetments, and at the end of one of them a considerable breach has, as a natural result, occurred. The design for the new weirs is generally appropriate, but unprotected retaining walls would be very liable to damage, and either these should be omitted or a rough stone apron should be added on the lower side and be placed 1 foot or $1\frac{1}{2}$ feet below the level of the first apron. Moreover, it is very doubtful whether the ground does not fall rapidly away from the weir sites, and if this be the case designs suited to ground which has little or no transverse slope may need to be modified so as to drop the water as quickly as possible, and to provide for its being prevented by material not easily disturbed from cutting away the ground while this lowering is being effected. Possibly the proper design would have an overfall of $1\frac{1}{2}$ feet on to the first apron, and a second drop of a foot or so on to an apron to be placed below the retaining wall.

Pending more complete information, it is recommended that sanction be given as follows to enable the repairs and improvement of the tank, which at present is manifestly far from safe, to be gone on with:—

<i>Revenue.</i>			RS.	A.	P.	RS.	A.	P.
Repairing supply channel	...	...	...	...	...	137	13	6
„ tank bund, as per estimate...	...	...	426	5	4			
Add for raising 6 inches, say	...	...	150	0	0			
Repairing sluices	...	...	...	...	...	586	5	4
Sundries	...	...	...	...	...	300	0	0
						45	13	2
						1,070	0	0
<i>Capital.</i>								
New revetment where indispensable...	...	...	...	...	...	500	0	0
Additional surplus weirs, 240 feet at, say, 7 Rupees a foot...	...	...	...	...	...	1,680	0	0
Total	...	...	...	...	...	2,180	0	0

On the statement A a section of the bund is given showing revetment with a backing of puddle. The revetment is somewhat steep; a backing of puddle is less appropriate than gravel concrete unless the bund be leaky; the interior slope should be carried out to the edge of the stone work, a few sods being laid over the stones, and the top of the bund should slope towards the rear face. The foregoing remarks show that there are many matters to be attended to, and it is hoped that future estimates will be much more carefully prepared.

OOTACAMUND,
1st September 1875.

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

No. 309.

ORDER THEREON, 13th September 1875, No. 2,638.

IRRIGATION, No. 30.
Account.

THE following estimates are sanctioned according to the particulars detailed in the latter part of the foregoing note.

*Proceedings of the Madras Government, Public Works Department,
13th September 1875.*

COIMBATORE DISTRICT.

	Revenue.	Capital.
Repairing Polliem Tank	 1,070	
Improvements to do.		2,180

It is not satisfactory to find that the general instructions issued for the treatment of tanks, and those contained in Proceedings, Madras Government, No. 2,336, of the 20th August 1874, have not sufficed to secure the preparation of an estimate for this tank in a proper and complete manner, and that the foregoing sanctions will probably have to be supplemented hereafter. The Superintending Engineer's special attention should be given to the remarks of the Chief Engineer for Irrigation, and he should take care that in future all essential items of information are duly obtained as a basis for the preparation of tank estimates.

(True Extract.)

Major-General, R.E.,
Secretary to Government.

To the Superintending Engineer, Coimbatore.
„ Controller of Public Works Accounts.
„ Chief Engineer for Irrigation.

Exd. E. C. Shunker.

Five Copies

W. 992

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Note by the Chief Engineer for
Irrigation.

Encl. 5.

P.M. G. No.
2336 - 20th
August, 1874.

In submitting for the sanction
of Government in July 1874 an esti-
mate of Rupees 600 for the repair
on emergency of the Polhem Tank,
remarks were made on the incom-
- pleteness of the information fur-
- nished, and on the possibility of the
inadequacy of the proposed arrange-
- ments for the disposal of surplus.
The tank has in its head and sup-
- ply channel 66 feet of escape weir,
and 24 feet were then proposed to be
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The Supr Engineer now explains that
213 feet of escape are necessary, and
that the frequent breaching of the
tank has been due to the absence
of sufficient means of disposing
of surplus. The following are the
revenue particulars and expendi-
- ture and it has been noticed that
the

the ayacut assessment is represented at widely different amounts in the List and Statement A.

Ayacut area	acres 984	* given by the Supt. Engineer in Com. M.S.
" Assessment Rs	2277 3952	which should have been re- duced to acres.
Average revenue "	2348 2277	
Expenditure on repairs, last 4 years Rs	2863	
Present estimate	5240	
	<u>3103</u>	

The area of the catchment basin has not been ascertained and without at least an approximation to this, the requirements of the tank cannot be properly determined. It appears that the principal supply of the tank is derived from the Koondal stream, and the proposed additions to the surplus weirs have been based upon a calculation of its discharge, which is estimated at 2014 C.F. a second. Now this quantity is the maximum flood discharge of a basin of some 7 or 8

square miles, and it is improbable that this area would furnish a supply to 984 acres. The circumstances of the locality are not known, and the rainfall and character of the ground draining into the tank may be such as to enable a high acreage per square mile to be irrigated, but it is thought that the actual area of the basin is not likely to be less than 20 square miles, and it may be as much as 25 square miles. If so the maximum discharge would be 4,000 to 4,500 C.F. a second, and the arrangements proposed viz a bund $4\frac{1}{2}$ feet above F.T.L. and a difference of 2 feet between F.T.L. and M.W.L. would not suffice.

The depth passing over 240 feet of surplus weirs required to discharge 4,250 C.F. a second would be 3 feet, and the lowest corresponding level of bund which would be reasonably safe would be 2 feet above the M.W.L. and

and this would involve the raising of the bund 6 inches above the proposed level. A good deal of the present bund is however still higher, and so this modification would add but little to the estimate. Of the total amount of the latter moreover some 3,150 Rupees are for new revetment the necessity for which has not been explained, while as the rate per cubic yard is Rupees $1\frac{1}{2}$ it is clear that, if practicable, some less expensive method of protecting the inner slope from wash should be substituted.

The old surplus weirs were apparently without any proper wings or good wing as considerable breach has, as a natural result, occurred. The design for the new weirs is generally appropriate, but unprotected retaining walls would be very liable to damage and either these should be omitted or a rough stone apron should be added on the lower side and be placed 1 foot or $1\frac{1}{2}$ feet below the level of the

9
first apron. Moreover it is very doubtful whether the ground does not fall rapidly away from the weir sites and if this be the case designs suited to ground which has little or no transverse slope may need to be modified so as to drop the water as quickly as possible and to provide for its being prevented by material not easily disturbed from cutting away the ground while this lowering is being effected. Possibly the proper design would have an overfall of $1\frac{1}{2}$ feet on to the first apron and a second drop of a foot or so on to an apron to be placed below the retaining wall.

Pending more complete information it is recommended that sanction be given as follows to enable the repairs and improvement of the tank, which at present is manifestly far from safe, to be gone on with.

Revenue

Revenue

Repairing supply channel -	137-13-6
" Santo bund as per estimate	486-5-4
Add for raising 6 inches say 150-0-0	586-5-4
Repairing sluices -	300-0-0
Sundries -	45-13-2
	<u>1070-0-0</u>

Capital

New revetment where indispensable -	500-0-0
Additional surplus weirs, 340 feet at say 7 Rupees a foot -	1,680-0-0
	<u>2,180-0-0</u>

On the statement A, a section of the bund is given showing revetment with a backing of puddle. The revetment is somewhat steep; a backing of puddle is less appropriate than gravel concrete unless the bund be leaky; the interior slope should be carried out to the edge of the stone work, a few rods being laid over the stones, and the top of the bund should

should slope towards the rear face.

The foregoing remarks show that there are many matters to be attended to, and it is hoped that future estimates will be much more carefully prepared.

Wm. L. Smith, Esq.
Chief Engineer for Irrigation

Cotacamund
1st September 1873

To The Secretary to Government
D.H.C.

P. W. 1895 Sept.
No: 5938

From

The Chief Engr.
for Irrigation

Dated 1 Sept. 1895.
Recd. 15th " 1895.

E. S. No: 992

Note on Estimate
for rendering the Pol-
liem Tank Safe and
efficient, Coimbatore
Dist.

L. B. 2628. 10-5-95.

1670

2182

3850

No 308

No 2638 (B) O.M. D. Accts.
Pro. of the Madras Government

Under date the 15th Sept 1895

Read the following:-

From
The Ch. Engr. for Irrig. (H. S. No 992) 1st Sept 1895

The following estimates
are sanctioned according
to the particulars detailed
in the latter part of the
foregoing note.

Coimbatore District

Revenue

Repairing Pollim Tank. Refers 10/95

Capital

Improvements to do - " 2/180

It is not satisfactory to
find that the general
instructions issued for the
treatment of tanks, and
those contained in Pro:
Madras Govt No 2336 of the
20th August 1894, have not

sufficed to secure the pre-
paration of an estimate
for this tank in a proper
and complete manner,
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sanctions will probably
have to be supplemented
hereafter. The Superin-
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attention should be given
to the remarks of the
Chief Engineer for Irriga-
tion and he should take
care that in future all
essential items of informa-
tion are duly obtained
as a basis for the pre-
paration of tank es-
timates.

4.1.3/9
G.M.W.

X with 5 Enclosures
N-308/9

Sc Disp^d 4. 10. 75

Chief Eng^r for Irrigaⁿ ²⁵/₄ X
S.P. Committee 88
Com. B. & Co. S-5 with 1
P.O. 17 Cde

59387

Govt. of Madras.

PUBLIC WORKS.

To

Supergr.

Cumbalur

Dated

Issued

Recd.

Encl.

G. O. No. 12 N.P. No. 7638

No. 308-309.

Repairing & improving the
Colliery Tank, Cumbalur.

Estimate of Rs. 3,250
for ———, sanctioned
with remarks.