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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	2246	Press
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Dated	4-8	1875
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*Proceedings of the Madras Government, Public Works Department,
4th August 1875.*

Read the following:—

No. 50.

No. 852.

MEMORANDUM.

No. 22, 17th May.

THE following Estimates have been
submitted by the District Engineer,
Kurnool:—

Ratnapully Tank Rupees 450.

Ayacut area	...	...	...	...	...	...	...	Acres	81
„ Assessment	...	...	...	...	...	...	...	Rupees	175
Average Revenue	...	...	...	...	...	...	...	„	125

The date and cost of last repairs are not known,

The bund from want of repair became so low that though the means of disposing of surplus from the reported area of 6 square miles of catchment basin are ample, the surplus weirs measuring 200 feet, the tank breached last year for a width of 150 feet at the bottom. A comparatively small sum spent early in 1874 would have sufficed to render the tank safe. The bund is to be 4 feet above full tank level, which, with the ample escapes, will suffice. The area of cultivation compared with the drainage basin is very small, and the assessment, it will be seen, is low. Possibly some extension of the irrigated area will be practicable when the tank is put to rights.

No. 17, dated 19th April and 1st July 1875.

2. Kondamayapully Chinnarazu
Tank, Rupees 4,890.

Ayacut area	...	...	...	...	...	...	...	Acres	282
„ Assessment	...	...	...	...	...	...	...	Rupees	1,522
Average Revenue	...	...	...	...	...	...	...	„	1,743

Outlay on repairs in the last four years Rupees 707.

This tank is one of those the breaching of which caused a high flood in the Vaikaleru, and endangered the aqueduct of the Madras Irrigation and Canal Company's canal across that river. The area of the catchment basin is reported to be 14 square miles, and the means of disposing of surplus being a calingulah 37 feet long it is not surprising that the tank was extensively breached. The proposal is to demolish the old calingulah and to build in lieu of it a surplus weir 284 feet long, with a difference between full tank level and maximum water level of $2\frac{1}{2}$ feet. This provision, however, is more than ample, and its extent appears to have been determined by the fact that on the occurrence of heavy rainfall the water comes down rapidly by the Thuncadavagu from the hills. A maximum depth of 3 feet of water may be allowed to pass over, and the discharge per foot run will then be $17\frac{1}{2}$ cubic feet a second, and with $c=600$ the proper length of weir will be 200 feet. The tank also receives surplus from the Rudravaram Peddarazu tank. With regard to the details of the work to be done, the bund is to be $5\frac{1}{2}$ feet above full tank level, leaving a margin of $2\frac{1}{2}$ feet above maximum water level. The interior slope of the bund above revetment is to be carefully formed and protected by tank grass. The design of the surplus weir would do with slight modification and correction (the plan and section do not agree) were the fall of the ground in rear not so heavy, or were the soil suitable, but in 50 feet or so there is a fall of about 3 feet, and even at 5 feet below the surface

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there is nothing but hard red earth, so the securing of the foundations from the effect of the retrogression of levels would be difficult were the work built as designed with the surface of the lower apron at 28.13, while the outfall channel close by will in all probability soon be at 20.00 or even lower. If possible, therefore, a better site should be selected, at which the soil or subsoil may not be liable to be scoured out, but if such be not obtainable the water must be dropped at once from the crest wall some 8 feet, and the first apron must be so built as to stand this overfall. The stone of this part of the country is well adapted for masonry work, and a revised section has been sketched on the tracing. The crest wall, with the exception of the coping, to be of rubble in hydraulic mortar; the first apron of selected stones 18 inches deep with close joints in hydraulic cement, bedded on 18 inches of concrete; the retaining wall coping should be secured by bar iron and holding-down bolts as shown, and the wings will need revision as noted on the plan. The cost of rendering a surplus weir at this site secure makes it very necessary to see if a better site cannot be selected. Pending the revision of the weir design and estimate sanction may be given for repairs and improvements to the bund as follows, it being understood that temporary and sufficient arrangements for the discharge of surplus must be made concurrently by letting the water run over a sort of pavement which can be formed of the material intended for the surplus weir:—

New revetment ..	Capital.
Repairs of bund, revetment, and sluices. ..	Revenue.
..	.. Rupees 450
..	.. 1,980

A longitudinal section of the present outfall channel for a length of 250 to 300 yards should accompany the weir plan, if the site be retained; otherwise the levels of the ground on the line the surplus would take at any other site. The puddle wall shown on the sections at the breaches should not, as drawn, be wide at the top and narrow at the bottom, but the dimensions should be revised. On these sections the extent of old soil to be removed before filling in has been revised, but the plans have no note upon them showing which lines are to be adopted, though probably the smaller extent of excavation is intended and is correct.

3. Yathavad East Tank, Rupees 750.

Ayacut area ..	Acres	38
" Assessment ..	Rupees	171
Average Revenue ..	"	194
Highest do. ..	"	240

The date and cost of last repairs are not known. This tank also surpluses into the Vaikaluru. Its catchment basin is reported to be 4 square miles, and it receives water apparently from beyond its proper basin by a supply-channel. The bund nearly 2 miles long is much out of repair. The area of cultivation should be much larger than it is, about 100 acres would be a fair extent, and as the water-supply is stated to be good, perhaps this may be attained if there be land available. Surplus has hitherto been discharged by a cut 20 feet wide, and in supersession of this the estimate provides for a pavement, 276 feet long, and on the longitudinal section the difference between full tank level and maximum water level is noted as 1 foot, while in the Report the entry is "one ½ foot." The maximum flood discharge may be taken as 1,512 cubic feet a

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second, and for the few hours that this may last it will in a tank of this class be prudent to allow the water to rise to 2 feet above full tank level when 160 feet of escape will suffice. Instead of making the wing revetments as shown, they should be carried round the bund ends with a moderate slope or batter, which should either increase from ½ to 1 at the body wall to 1 to 1 at the ends, or be made of the latter slope throughout. The ends, as drawn, would be liable to be undermined by scour. The estimate may all be charged to Revenue, viz. :—

Bund repairs ..	Rs.	430
Dry stone escape 160 feet ..	..	220
Total ..	..	650

The longitudinal section has been plotted on an inconveniently large scale.

4. Moothialpad Yerra Tank, Rupees 1,900.

Ayacut area ..	Acres	315
" Assessment ..	Rupees	3,316
Average Revenue ..	"	2,086

Cost of repairs in the last four years Rupees 8,994, of which Rupees 689 were spent in 1873-74.

Notwithstanding the large outlay which has been incurred the tank breached in 1874, and in the remarks attached to the specification it is said that the surplus weirs, which aggregate 400 feet in length, were unequal to discharge all the water which found its way into the tank by the overflow of the Bhowanasi. The information given should have been much more complete and definite. The catchment basin is said to be 12 square miles, and if so the escapes, if all at full tank level, are ample for the discharge of the surplus due to the basin. If the Bhowanasi overflowed its banks to any serious extent, this spill must be prevented, or arrangements in connection therewith must be made. Then, it is said, the "tank was quite full and the calingulabs (weirs) were discharging before it breached," but the exact level of the water at the time was clearly an important matter and should have been carefully ascertained. The papers indicate that the tank was not examined with sufficient care when the large estimates previously sanctioned were carried out, and that the work was very indifferently executed. Moreover, the top of the bund appears not to have been level, and to have been considerably below the intended level of 35.00 on one side of the breach, this level for a tank of this size being none too high. As far as can be judged leakage through the bund was the cause of the accident, and in so shallow a tank this might easily have been prevented. In closing the breach it should be remembered that there is no need to widen the upper part greatly as shown on the longitudinal section, but that a trench should be cut into the bund at the two sides so as to make a good joint. The puddle wall should be revised, and should be not less than 2 feet thick at top, which should be 1 foot above maximum water level and with a batter on each side of 1 in 8, which will make the base at the highest part about 8 feet wide. It is very probable that the villagers were remiss, as noticed by the Range Officer, in looking after the tank, and it is quite possible that it might have been saved if the leakage had been attended to when first apparent; but there is too much reason

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to believe that defective work had much to do with the accident, and if the villagers were to be required to contribute a moiety of the present estimate those who had charge of the work under former estimates should pay the other half. This tank surplus falls into the Vaikaleru. The estimate is chargeable entirely to Revenue.

5. Ellavathoola Peddarazu tank, Rupees 1,600.

Ayaut area	...	...	Acres 74
" Assessment	...	...	Rupees 390
Average Revenue*	...	...	" 589

* Area irrigated 140 acres.

Date and cost of last repairs unknown.

The tank has a catchment basin of 4 square miles, and its means of disposing of surplus being a cut 18 feet wide, and the bund being, as shown on the longitudinal section, the correctness of which is very doubtful, in places below full tank level and also below the bottom of the cut, a breach occurred. It is proposed to lower the ground at one end for a length of 160 feet, the end of the bund adjacent thereto being at the same time revetted. Apparently there is laterite gravel at the site, and if so, the full tank level may be secured; otherwise a pavement will ere long be required. It must be noticed however, that the discharge will be as a maximum about 1,512 cubic feet a second, and that with the intended difference of 3 feet between full tank level and maximum water level a weir 86 feet long would suffice, but that depth it is not desirable to pass over the natural soil, and as the larger escape will cost little and with its maximum water level, will be nearly 1 foot lower, the 160 feet may be allowed and the level of top of bund may be reduced 9 inches, which will save a good deal in earth works. The estimate is chargeable entirely to Revenue.

6. Chennur Iskapully Dava tank, Rupees 830.

Ayaut area	...	...	Acres 38
" Assessment	...	...	Rupees 207
Average Revenue	...	...	" 290

Cost of repairs in the last four years Rupees 182.

The catchment basin is reported to have an area of 6 square miles, and the cultivation is only 60 acres or less than half the area that would be reasonable. It is not stated whether there are any tanks above which intercept a portion of the drainage under ordinary circumstances. The provision for the discharge of surplus has been a calingulah of 25 feet total and 14 feet effective length, and it is intended to supplement this by levelling the ground for a length of 300 feet to full tank level at a cost of about Rupees 70, the soil being gravel. The whole expenditure will be chargeable to Revenue.

7. Thalalingumdinne Chintala Tank, Rupees 960.

Ayaut area	...	...	Acres 156
" Assessment	...	...	Rupees 905
Average Revenue	...	...	" 755

The tank was last repaired in 1867 at a cost of Rupees 132.

The area of the catchment basin is 6 square miles, and the only outlet for flood water being a 30-feet opening, and the bund being low, the water passed over the latter and did much damage. The ground is to be levelled for an additional length of 195 feet, but the position of this escape is not shown on the longitudinal section; Where not revetted the new earth work should be placed more to the inside of the

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bund which has a long flat interior slope, and less earth will be required to bring it to section. The supply is stated to be good, and it may be hoped that the ayaut assessment will hereafter be obtained. The whole of the work provided for will come under Revenue.

8. The remarks made upon these estimates should receive attention in preparing others.

OOTACAMUND,
27th July 1875.

(Signed) JOHN MULLINS, Lieut.-Colonel, R.E.,
Offg. Chief Engineer, P.W.D.

AGRICULTURAL—ORDINARY—REVENUE.

ABSTRACT ESTIMATE.

District, Kurnool; Taluk, Ravelakota; Village, Rutnapully.

Work.—Raising bund, repairing, enlarging calingulah and filling breach of Rutnapully Tank.

Quantity.	Description of Charges.	Rate.	Per	Amount.	Total.
		RS. A. P.		RS. A. P.	RS. A. P.
559	Cubic yards of excavation ...	0 1 0	C. yd.	31 15 0	
2,569	Do. of embankment including tamping bed, 150 feet escape, height 8 feet ...	0 1 3	"	185 1 3	
2,369	Do. of tamping ...	0 0 2	"	24 10 10	
45	Do. of dry stone on edge (1 mile cartage) ...	1 0 0	"	45 0 0	
141	Do. of revetment new stone.	0 14 0	"	123 6 0	
				413 1 1	
	Sundries at about 9 per cent. ...	...	...	36 14 11	
	Total ...	...	...	...	450 0 0

AGRICULTURAL—ORDINARY—CAPITAL—MINOR NEW WORKS.

ABSTRACT ESTIMATE.

District, Kurnool; Taluk, Sircell; Village, Kondamayapully.

Work.—New revetment to Kondamayapully Clannarazu Tank.

Quantity.	Description of Charges.	Rate.	Per	Amount.	Total.
		RS. A. P.		RS. A. P.	RS. A. P.
210	Cubic yards of new stone revetment to raise the old stone here and there to F. T. L. ...	1 15 0	C. yd.	406 14 0	
	Sundries and contingencies, &c., at about 10 per cent. ...	...	...	43 2 0	
	Total ...	...	...	...	450 0 0

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AGRICULTURAL—ORDINARY—REVENUE.

ABSTRACT ESTIMATE.

District, Kurnool; Taluq, Sirucell; Village, Kondamayapully.

Work.—Closing the breaches and raising the bund of Kondamayapully Chinnarazu Tank—
“a Rain-fed Tank.”

Quantity.	Description of Charges.	Rate.	Per	Amount.	Total.
	<i>Repairing the Bund.</i>				
7,160	Cubic yards of earth work ...	RS. A. P.		RS. A. P.	RS. A. P.
7,160	Do. of tamping ...	0 1 3	C. yd.	559 6 0	
1,374	Do. of old stone revetment.	0 0 2	"	74 9 4	
5,690	Square yards of tank grass above stone revetment ...	0 4 0	"	243 8 0	
	Repairing sluice No. 1	0 0 6	S. yd.	177 13 0	
	Do. do. No. 2	...	...	100 0 0	1,055 4 4
	<i>Closing Breaches.</i>				
4,863	Cubic yards of earth work ...	0 1 3	C. yd.	379 15 4	200 0 0
1,931	Do. of cutting trenches ...	0 1 0	"	64 7 0	
4,863	Do. of tamping ...	0 0 3	"	75 15 4	
783	Square yards of turfing with tank grass ...	0 0 6	S. yd.	24 7 6	
	Total for raising and closing breaches ...	...	...	...	544 13 2
	Sundries and superintendence at about 10 per cent. ...	...	...	...	1,800 1 6
	Total ...	...	...	...	179 14 6
		...	...	...	1,980 0 0

AGRICULTURAL—ORDINARY—REVENUE.

ABSTRACT ESTIMATE.

District, Kurnool; Taluq, Sirucell; Village, Yathavad.

Work.—Repairing the Bund in Yathavad East Tank.

Work.—Constructing rough stone escape in do. do.

Quantity.	Description of Charges.	Rate.	Per	Amount.	Total.
	<i>Tank Bund.</i>				
5,452	Cubic yards of earth work ...	RS. A. P.		RS. A. P.	RS. A. P.
5,452	Do. of dry tamping ...	0 1 0	C. yd.	340 12 8	
	Sundries and superintendence at about 10 per cent. ...	0 0 2	"	56 12 9	
	<i>Rough Stone Escape.</i>				
118	Cubic yards of earth removing high ground ...	...	...	32 6 7	430 0 0
		0 1 3	C. yd.	9 4 3	

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Work.—Repairing the Bund in Yathavad East Tank.—(Concl'd.)
Work.—Constructing Rough Stone Escape in do. do.—(Concl'd.)

Quantity.	Description of Charges.	Rate.	Per	Amount.	Total.
	<i>Revetment.</i>	RS. A. P.		RS. A. P.	RS. A. P.
801	Cubic yards of rough stone work to front and rear retaining walls and wings ...	1 8 0	C. yd.	121 1 10	
53	Do. of apron stone in edge ...	1 4 0	"	66 10 8	
110	Do. of excavations ...	0 1 0	"	6 11 6	
	Sundries and superintendence at 10 per cent. ...	...	...	16 0 9	
	Total ...	...	...	...	220 0 0
		...	...	...	650 0 0

AGRICULTURAL—ORDINARY—REVENUE.

ABSTRACT ESTIMATE.

District, Kurnool; Taluq, Sirucell; Village, Moothialpad.

Work.—Raising the bund, closing the breach and reforming inside slope with good earth, &c., of Moothialpad Yerra Tank.

Quantity.	Description of Charges.	Rate.	Per	Amount.	Total.
	<i>Breach.</i>	RS. A. P.		RS. A. P.	RS. A. P.
1,755	Cubic yards of removing silt ...	0 1 0	C. yd.	109 11 0	
2,918	Do. of earth work filling breach.	0 1 6	"	273 9 9	
2,918	Do. of tamping ...	0 0 3	"	45 9 8	
298	Do. of puddle wall ...	0 6 0	"	111 15 0	
233	Do. of new stone pitching to breach ...	1 4 0	"	291 10 8	
123	Do. of gravel backing ...	0 12 0	"	92 8 0	
80	Do. of earth work excavations ...	0 1 0	"	5 0 0	
1,689	Square yards of turf revetment ...	0 0 6	S. yd.	34 0 6	
19	Cubic yards of earth work (filling ruts) ...	0 1 3	C. yd.	1 7 9	965 8 4
	<i>Rebuilding the slipped portions.</i>				
228	Cubic yards of new stone pitching with stones got from bed of tank ...	0 8 0	"	114 2 8	
	Rebuilding the revetment wherever it has slipped ...	...	...	90 0 0	
689	Cubic yards of earth backing with wet tamping ...	0 1 8	C. yd.	71 12 4	
37	Do. of gravel backing ...	0 12 0	"	27 12 0	
	Removing the temporary bund thrown across the breach ...	...	...	20 0 0	303 11 0
	<i>Reforming inside slope above stone revetment as per section.</i>				20 0 0
2,329	Cubic yards of good earth ...	0 2 0	C. yd.	291 2 0	
4,693	Square yards of tank grass ...	0 0 6	S. yd.	146 10 0	
		...	...	...	437 12 0
	Sundries and superintendence ...	10 0 0	Cent.	...	1,726 15 4
		...	...	...	173 0 8
	Total ...	...	...	...	1,900 0 0

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4th August 1875.

AGRICULTURAL—ORDINARY—REVENUE.

ABSTRACT ESTIMATE.

District, Kurnool; Taluq, Sirucell; Village, Ellavathoola.

WORK.—Repairing Peddarazu Tank.

Quantity.	Description of Charges.	Rate.	Per	Amount.	Total.
		RS. A. P.		RS. A. P.	RS. A. P.
5,729	Cubic yards of earth work (hard laterite gravel)	0 1 6	C. yd.	547 1 6	
5,729	Do. of tamping	0 0 3	"	89 8 3	
1,944	Do. of earth work, cutting the bund to open a natural escape	0 1 6	"	182 4 0	
2,411	Squares of turfing, "tank grass"	0 0 6	Sqre.	76 6 0	
583	C. yards of rough stone revetment.	1 12 0	C. yd.	1 0 4	
	Repairing the sluice, Nos. 1 and 2..	100 0 0	Each.	200 0 0	
	<i>Breach.</i>				1,096 4 0
268	C. yards of earth work cutting steps	0 1 3	C. yd.	20 15 0	
735	Do. do. filling breach..	0 1 6	"	68 14 6	
146	Do. do. raising to do. above	0 1 6	"	13 12 0	
832	Do. of tamping the filling and raising to breach	0 0 4	"	18 6 0	
135	Do. of rough stone revetment..	1 12 0	"	236 4 0	
	Sundries and superintendence, at ..	10 0 0	Cent.	358 3 6	
	Total ..			145 8 5	
				1,600 0 0	

AGRICULTURAL—ORDINARY—REVENUE.

ABSTRACT ESTIMATE.

District, Kurnool; Taluq, Sirucell; Village, Chennur.

WORK.—Repairing Iskapully Dava Tank.

Quantity.	Description of Charges.	Rate.	Per	Amount.	Total.
		RS. A. P.		RS. A. P.	RS. A. P.
6,099	C. yards of earth work "stiff clay."	0 1 3	C. yd.	476 7 9	
6,099	Do. of tamping	0 0 3	"	95 4 9	
666	Cubic yards of earth work (cutting bund to open a natural escape) "gravel"	0 1 6	"	62 8 0	
1,000	Square yards of turfing "tank grass".	0 0 6	S. yd.	31 4 0	
	Repairing No. 1 sluice			50 0 0	
	Repairing the calingulah and its apron			40 0 0	
	Sundries and superintendence, at ..	10 0 0	Cent.	755 8 6	
	Total ..			74 7 6	
				830 0 0	

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AGRICULTURAL—ORDINARY—REVENUE.

ABSTRACT ESTIMATE.

District, Kurnool; Taluq, Sirucell; Village, Thalalingumdinne.

WORK.—Repairing Chintala Tank.

Quantity.	Description of Charges.	Rate.	Per	Amount.	Total.
		RS. A. P.		RS. A. P.	RS. A. P.
4,580	Cubic yards of earth work, "soil, laterite gravel and red earth" ...	0 1 6	C. yd.	429 6 0	
4,580	Do. of tamping ...	0 0 3	"	71 9 0	
985	Squares of turfing ...	0 0 6	Sqre.	30 12 6	
24	Cubic yards of earth work cutting trench ...	0 3 0	C. yd.	4 8 0	
24	Do. of puddle work required to stop a leak ...	0 8 0	"	12 0 0	
311	Do. of (rocky soil) removing high ground in the western natural escape ...	0 3 0	"	58 5 0	
579	Do. of earth work removing do. eastern escape "gravel" ...	0 1 3	"	45 3 9	
	Repairing No. 1 sluice ...	100 0 0	Each.	100 0 0	
	Do. No. 2 do. ...	120 0 0	"	120 0 0	
	Sundries and superintendence ...	10 0 0	Cent.	88 3 9	
	Total ..			960 0 0	

No. 51.

ORDER THEREON, 4th August 1875, No. 2,246.

IRRIGATION, No. 1-AA.

Account.

The following estimates for the repair and improvement of tanks in the Kurnool District are sanctioned :—

	Capital.	Revenue.
	RS.	RS.
1. Rutnapully Tank ...	...	450
2. Kondamayapully Chinnarazu Tank ...	450	1,980
3. Yathavad East Tank ...	...	650
4. Moothialpad Yerra Tank ...	...	1,900
5. Ellavathoola Peddarazu Tank ...	...	1,600
6. Chennur Iskapully Dava Tank ...	...	830
7. Thalalingumdinne Chintala Tank ...	...	960

The arrangements for the disposal of surplus from the Kondamayapully Chinnarazu Tank should be reconsidered, and a design and estimate submitted as soon as possible.

(True Extract.)

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

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

Exd. E. C. Shunker.
Spare Copies

Irrigation.

42852

Memorandum.

Enclosures 17

The following estimates have been submitted by the District Engineer (Munich.)

to 22-17 May.

Naturally tank ————— Repairs 450
Apical weir ————— Area 31
" — Assessment ————— Repairs 175
Average revenue ————— " 125

The date and cost of last repairs are not known. The land from want of repairs became so low that though the means of disposing of surplus from the reported area of 6 square miles of catchment basin are ample, the surplus weir measuring 200 feet, the tank breached last year for a width of 150 feet at the bottom. A comparatively small sum spent early in 1874, would have sufficed to render the tank safe. The bund is 10 to 12 feet above

F.T.L. which, with the ample escapes, will suffice. The area of cultivation compared with the drainage basin is very small and the assessment it will be seen is low. Possibly some extension of the irrigated area will be practicable when the tank is put to rights.

3. Andamagapully Chinnaravu Tank No. 37. No. 17-19-1911
 Approx. area Acres 233
 Approx. Revenue Rs. 1522
 Approx. Revenue Rs. 1943

Outlay on repairs in the last 4 years Rs. 400
 This tank is one of those the breaching of which
 caused a high flood in the Tail Race, and
 caused the consequent of the Madras
 Irrigation and Canal Company Canal across
 that river. The area of the catchment basin
 is reported to be 16 square miles, and the means
 of disposing of surplus being a Calingulak
 37 feet long, it is not surprising that the
 tank was extensively breached. The proposal
 is to demolish the old Calingulak, and to build
 in lieu of it a surplus weir 284 feet long,
 with a difference between F.T.L. and M.W.L. of
 2 1/2 feet. This provision however is more than
 ample, and its extent appears to have been
 determined by the fact that on the occurrence
 of heavy rain fall the water comes down rapidly
 by the Chinnaravu from the hills. A maxi-
 mum depth of 3 feet of water may be allowed
 to pass over, and the discharge per foot run

will then be 17 1/2 C.F. or second, and with
 C=600 the proper length of weir will be asst.
 The tank also receives surplus from the
 Rudravaram Poddaravu tank. With
 regard to the details of the work to be done,
 the bund is to be 5 1/2 feet above F.T.L.
 leaving a margin of 2 1/2 feet above M.W.L.
 The interior slope of the bund above the
 revetment is to be carefully formed and
 protected by tank grass. The design of the
 surplus weir would do with slight modifi-
 cation and correction (the plan and
 section do not agree) were the fall of the
 ground in rear not so heavy or were the
 soil suitable, but in so far as there is
 a fall of about 5 feet, and even at 5 feet
 below the surface there is nothing but
 hard red earth, so the securing of the
 foundations from the effect of the retro-
 -gression of levels would be difficult were
 the work built as designed with the surface
 of the lower apron at 28.13 while the out-
 fall channel close by will in all probability

nowhere at 30.00 or even lower. If possible
therefore a better site should be selected
at which the soil or subsoil may not
be liable to be secured out, but if such
be not obtainable the water must be
dropped at once from the crest wall
some 8 feet, and the first apron must
be so built as to stand this overfall.
The stone of this part of the country is
well adapted for masonry work and a
revised section has been sketched on the
tracing. The crest wall with the excep-
tion of the coping & bed of rubble in
hydraulic mortar; the first apron of
selected stones 18 inches deep with close
joints in hydraulic cement, bedded on
18 inches of concrete. The retaining wall
coping should be secured by bar iron and
holding down bolts as shown, and the wings
will need revision as noted on the plan.
The cost of rendering an surplus weir at this
site seems makes it very necessary to see
if a better site cannot be selected. Pending
the revision of the weir design and estimates

sanction may be given for repairs and
improvements to the weir as follows,
it being understood that temporary
and sufficient arrangements for the
discharge of surplus must be made
concurrently, by letting the water run over
a sort of pavement which can be formed
of the material intended for the surplus
weir.

Capital

Reconstruction — Rupees 450

Revenue

Repairs of band, revetment
and sluice " 1780

A longitudinal section of the present out-
fall channel for a length of 250 to 300 yards
should accompany the weir plan if the site
be retained; otherwise the levels of the ground
on the line the surplus would take at
any other site. The puddle wall shown
on the sections at the breaches should not
be drawn so wide at the top and narrow at
the bottom, but the dimensions should be
reversed. On these sections the extent of old
soil

soil to be removed before filling in has been revised but the plans have no note upon them showing which lines are to be adopted though probably the smaller extent of excavation is intended and is correct.

3. Yathavadi East Tank. Revenue 50
Agriculture area acres 28

Aforementioned Revenue 171
Average Revenue " 174
Highest " do " 240

The date and cost of last repairs are not known. This tank also outflows into the Tail Race. Its catchment basin is reported to be 4 square miles and it receives water apparently from beyond its proper basin by a supply channel. The bund nearly 2 miles long is much out of repair. The area of cultivation should be much larger than it is. About 100 acres would be a fair extent and as the water supply is stated to be good perhaps this may be attained if there be land available. Surplus has

hitherto been discharged by a cut 20 feet wide and in supercession of this the estimate provides for a permanent 2 1/2 feet long and on the longitudinal section the difference between F.T.L. and M.W.L. is noted as 1 foot the entry is "one 1/2 foot". The maximum flood discharge may be taken as 1,512 C.F. in second and for the four hours that this may last it will in a tank of this class be prudent to allow the water to rise to 2 feet above F.T.L. when 160 feet of escape will suffice. Instead of making the wing revetments as shown, they should be carried round the bund ends with a moderate slope or batter, which should either increase from 1/2 to 1 at the body wall to 1 to 1 at the ends or be made of the latter slope throughout. The ends as drawn would be liable to be undermined by scour. The estimate may all be charged to Revenue viz:-

Bund repairs	430
Wing stone escape 160 feet	230
Total	Revenue 660

The

The longitudinal section has been plotted
on an inconveniently large scale.

Dr. Macleod and J. G. Macleod (Rupur 1700)

Bygone area acres 215

Assessment. Rupur 3,816

Average revenue . . . 2,086

Cost of repairs in the last 4 years Rupur
3,774, of which Rupur 689 were spent in
1873-74.

Notwithstanding the large outlay which
has been incurred, the tank breached in
1874, and the remarks attached to the spe-
cification it is said that the outflow
weirs which aggregate 400 feet in length
were unequal to discharge all the water
which found its way into the tank by
the overflow of the Bhawanasi. The in-
formation given should have been much
more complete and definite. The Catla-
ment basin is said to be 12 square miles
and if so the escape, if all at F.T.L. are
ample for the discharge of the outflow due
to the basin. If the Bhawanasi overflowed

192
its banks to any serious extent, this spill-
ment has prevented or arrangements in
connection therewith must be made.
Then it is said the tank was quite full
and the Calingulaho (pursis) were dis-
charging before it breached, but the
exact level of the water at the time was
clearly an important matter and should
have been carefully ascertained. The papers
indicate that the tank was not examined
with sufficient care when the large estimate
previously sanctioned were carried out, and
that the work was very indifferently ex-
ecuted. Moreover the top of the band appears
not to have been level and to have been
considerably below the intended level
of 35.70 on one side of the breach, the
level for a tank of this size being more
too high. As far as can be judged the
through the band was the cause of the
accident and in so shallow a tank this
might easily have been prevented. In closing
the breach it should be remembered that

There is no need to widen the upper part
greatly as shown in the longitudinal
section, but that a trench should be
cut into the band at the two sides so as
to make a good joint. The puddle wall
should be revised and should be not less
than 3 feet thick at top which should
be 1 foot above maximum W.L. and with
a batter on each side of 1 in 8 which will
make the base at the highest part about
8 feet wide. It is very probable that
the villagers were warned as noticed by
the Range Officer in looking after the
tank, and it is quite possible that it
might have been saved if the leakage
had been attended to when first apparent,
but there is too much reason to believe
that defective work had much to do with
the accident, and if the villagers were to
be required to contribute a moiety of the
present estimates those who had charge
of the work under former estimates
should

should pay the other half. This tank
surplus falls into the Vairakern. The
estimate is chargeable entirely to Revenue.

5. Ellavathoola Peddabai tank Rs 1600

Adjacent area acres 41

area irrigated
440 acres

assessment Rs 390

Average revenue " 589

Date and cost of last repairs unknown.

The tank has a catchment basin of 6
square miles and its means of disposing
of surplus being a cut 18 feet wide and
the band being, as shown in the lon-
gitudinal section, the correctness of which
is very doubtful, in places below F.T.L.
and also below the bottom of the cut,
a breach occurred. It is proposed to lower
the ground at one end for a length of 160
feet, the end of the band adjacent thereto
being at the same time resettled. Appari-
ently there is latent gravel at the site,
and if so the F.T.L. may be secured, otherwise
a pavement will in long be required. It
must be noticed however that the discharge

It will be as in main and about 1612 C.F. as
 second, and that with the intended difference
 of 2 feet between F.T.L. and M.W.L. a weir
 26 feet long would suffice, but that depth
 it is not desirable to pass over the
 natural soil, and as the largest escape
 will not little and with it M.W.L. will be
 nearly 1 foot lower, the 160 feet may be
 allowed and the level of top of land may
 be reduced 7 inches, which will save a
 good deal in earth works. The estimate
 is chargeable entirely to Revenue.

6. Chennur Suburbally Dava Tank Rs 220
 Aqueous area 32 acres

Assessment 207

Estimated revenue 290 Rupees

Cost of repairs in the last 6 years Rs 182.

The catchment basin is reported to have
 an area of 6 square miles and the cultivation
 is only 60 acres or less than half the area
 that would be reasonable. It is not
 stated whether there are any tanks above,
 which intercept a portion of the drainage
 under ordinary circumstances. The provision
 for

for the discharge of surplus has been
 a catchment of 25 feet total and 10 feet
 effective length, and it is intended to
 supplement this by levelling the ground
 for a length of 300 feet to F.T.L. at a cost
 of about Rupees 90, the soil being gravel.
 The whole expenditure will be chargeable
 to Revenue.

7. Thalajungundinne Chhatla Tank Rs 760
 Aqueous area acres 166

Assessment Rupees 715

Average revenue " 755

The tank was last repaired in 1867 at
 a cost of Rupees 132.

The area of the catchment basin is 6
 square miles and the only outlet for flood
 water being a 30 feet opening, and the
 head being low the water passed over the
 latter and did much damage. The ground
 is to be levelled for an additional length
 of 195 feet, but the position of the weir
 is

is not shown on the longitudinal sec-
tion. It has not reached the new earth
work should be placed near to the
inside of the bank which has a long
flat interior slope, and new earth will
be required to bring it to section.
The supply is stated to be good and it
may be hoped that the agent's assess-
ment will hereafter be obtained. The
whole of the work provided for will
come under Revenue.

8. The remarks made upon these
estimates should receive attention
in preparing others.

Not a command; should follow.
27 July 1875. Offg. Chief Engineer
D.D.P.

To The Offg. Secy. to Govt.
D.D.P.

28/7/75

recd. 28/7/75
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P. W. 1875 Dept.
No: 5133

From

The Offg. Chief
Engineer

Dated 24 July 1875.
Recd. 7 Aug. 1875.

L. 2. No: 852.

Memo on Estimates
for the repair and
improvement of tanks
in the Kurnool Dist.

S.B. 2246. 4-8-75.

1250/3

No 2246 S.B.

Proceedings of the Madras Government
Dated the 4th Aug. 1875
Read the following:-

From
The Offg. Chief Engineer (H. E. No 852 of 24 July 1875)

The following estimates
for the repair and improve-
ment of tanks in the
Kurnool District are
sanctioned.

	Capital Rupees	Revenue Rupees
1. Puttapally Tanks	-	1,50
2. Kondamangally Chinna valu Tanks	1,50	1,980
3. Gathavada East do	-	650
4. Inotthilford Gorr do	-	1,900
5. Ellavathoola Peddappa do	-	1,600
6. Chennur Ichapally Dava do	-	230
7. Thalalingundinna Chintala Tanks	-	760

The arrangements for the
disposal of surplus from
the Kondamangally

1875

Chinnaraya Sanku ch
 to be considered and
 design and estimate
 submitted as soon as
 possible.

5/33

Govt. of 11875 Madras
 PUBLIC WORKS.

Recd. 23/8

[Signature]

Dated

Issued

Recd.

Encl.

G. O. 11875 No. 2246

No. 50-57.

Works in the Kurnool Dist.
 Estimates amounting to
 Rs. 8370 for the repair
 improvement of ———
 sanctioned. The arrangement
 for the disposal of surplus
 from the Kondamayapully
 Chinnaraya Sanku
 is reconsidered & a design
 estimate submitted as soon
 possible.

11-50/57
 Dyce Lm. North 2 Ind
 DE Kurnool 35
 Cont M. A. C. 4
 S C D. P. - 1-9-75