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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

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*Proceedings of the Madras Government, Public Works Department,
23rd July 1875.*

No 556

Read following —

No 663

MEMORANDUM

The following estimates have been submitted by the District Engineer, North Arcot —

Luthery Small Tank, Rupees 700

Ayacut area	..	..	..	..	..	Acres	35
Do assessment	..	..	..	..	..	Rs	281
Average revenue	...	..	..	..	..	..	253

The tank was repaired in 1873 at a cost of Rupees 50

The drainage basin is about 1 square mile and surplus has hitherto been discharged by a cut, which is to be superseded by a waste weir 75 feet long, and this will be ample. The design of this work, if the rough-stone apron be carried to the ends of the rear wing returns, and if the wings be raised another 9 inches so as to be $1\frac{3}{4}$ feet above maximum W. L., which will be 2 feet above F. T. L., will do very well. The protection of the interior slope of the bund with nanel should be attended to, and possibly part of the new stone revetment might be thus rendered unnecessary.

The estimate will be thus divisible—

Repairs	..	..	..	..	..	Rs	240
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Minor New Works, Capital

New revetment	...	..	..	..	..	300
Surplus weir increased from Rupees 160 for the modifications mentioned	...	..	..	..	..	175
						<u>475</u>

The District Engineer reports that all the following tanks (3) in the Arcot taluq were breached in 1872 and hastily repaired without their requirements being ascertained and adequately provided for. The present estimates are expected to render the tanks secure.

2. Velapakum Tank, Rupees 2,310

Ayacut area	..	..	..	..	..	Acres	167
Do assessment	...	..	..	..	..	Rs	1,378
Average revenue	...	..	..	..	..	..	1,074
Expenditure on repairs in 1872-73, 1873-74	...	..	..	..	..	..	2,600

This tank was breached in 1872 and again in May 1874 at two places where the former breaches had occurred, the soil is reported to be bad, but both the Collector and the District Engineer consider that it should be maintained, and the latter after an inspection thinks that the work now provided for will render it reasonably safe. The catchment basin is 13 square miles. The present escapes measure 115 feet, and it is intended to remove the intervening bund and convert the interval into an extension of the two weirs, thus adding 95 feet of escape, then a maximum calculated discharge of 3,110 cubic feet a second will raise the tank water to about 2.70 feet above crest level. The bund is to be $5\frac{1}{2}$ feet above F. T. L., and if the breaches be carefully closed

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and all sources of danger from leakage, &c., removed, the tank should be safe and efficient. The estimate includes the following items —

<i>Repairs, Revenue</i>					
Bund	...	...	...	...	RS 550
Southern escape (old)	...	...	...	...	220
Northern do (old)	...	...	...	...	55
Reconstructing north sluice	...	...	...	...	500
Repairing central do	...	...	...	...	70
					1,395
<i>Minor New Works, Capital</i>					
New revetment	...	...	...	...	250
Additional escape	...	...	...	...	395
					945
					2,340

3. Nagalapuram Tank, Rupees 645.

Ayacut area	...	...	...	...	Acres 30
Do assessment	...	...	...	...	Rs 156
Average revenue	...	...	...	...	135
Repairs in 1872-73, 1873-74	...	...	...	...	60

The drainage basin is 1½ square miles, and for the cut by which surplus has hitherto been discharged it is intended to substitute a dry stone pavement 90 feet long. A breach near the south end of the bund at the cut has to be closed. For the new stone revetment estimated to cost 200 Rupees or considerably more than a year's revenue a belt of navel should, if possible, be substituted, but if the stone work be indispensable it must be treated as a new work and the items will then be—

Repairs, Revenue	...	...	...	...	RS 415
Minor New Works, Capital	...	...	...	...	200

It has to be noticed that the item, Rupees 140, for turfing exceeds the average revenue, and care must be taken that the expenditure is fully effective.

4. Athayanum Ottary, Rupees 1,200.

Ayacut area	...	...	...	...	Acres 54
Do assessment	...	...	...	...	Rs 290
Average revenue	...	...	...	...	158
Repairs in 1872-73, 1873-74	...	...	...	...	380

It is very doubtful whether it is worthwhile to repair this tank at all seeing that the cultivation under it, as represented by the ayacut area, is less than 3 acres per square mile of the basin of 21 square miles, the flood waters from which have to be disposed of. It is the last of the Vengalathoor and Malayoor series, and possibly its ayacut could be irrigated together with its bed from one of the upper tanks. The District Engineer and Collector recommend its repair, and therefore, if no such alternative arrangement as that suggested be practicable, the present estimate may be carried out, though it may be concluded that unless the area of irrigation can be considerably extended the result will not be satisfactory, seeing that in seasons of moderate rainfall most of the drainage will be intercepted by the upper tanks. In future the District Engineer should always attach to estimates for tanks in a series or group a memorandum giving the names of the rest of the members of the series with an intimation as to their condition. Circular No. 63 deals with the subject of

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connected tanks, and unless the upper tanks be made safe the money spent on the lower ones is likely to be wasted. The escape weirs, when enlarged as intended, will be 232 feet in length, and the maximum depth passing over will be 3 feet. The charges to Capital and Revenue respectively will be—

Minor New Works

	RS	RS
New revetment	250	
Extension and improvement of escapes	550	
		800
Repairs		400

5. Kurnavoor Tank, Rupees 1,500

Ayacut area	...	...	...	...	Acres 198
Do assessment	...	...	...	...	Rs 866
Average revenue	...	...	...	...	822
Outlay on repairs in 1873-74	...	...	...	...	45

The drainage basin is said to be 1 square mile, and no other source of supply is mentioned, but it is clear that that area will not afford water for about 198 acres. This matter should be looked into and explained. The present escape is 27 feet long, and is to be improved and an additional weir 33 feet long is to be given, together with a new high level sluice. The large item, Rupees 1,630, for new revetment should, it is considered, be disallowed, pending special information as to its necessity and as to navel not being a practicable substitute. The items recommended for sanction will then be—

Repairs, Revenue

	RS	RS
Bund	700	
Reconstructing second sluice	450	
		1,150
<i>Minor New Works, Capital</i>		
High level sluice	100	
Thirty-three foot escape	250	
		350

The high level sluice will require water wings, as the bund slopes without them would overlap the vent altogether both in front and rear. The design for the second sluice will have to be very carefully carried out, and the foundations under the head wall and front wings will be inadequate unless the soil be remarkably firm; 18 feet of masonry need generally foundations covering a larger area so as to distribute the weight.

6. Keelvothy Small Tank, Rupees 2,000.

Ayacut area	...	...	...	...	Acres 400
Do assessment	...	...	...	...	Rs 2,375
Average revenue	...	...	...	...	1,840

No recent repairs have been carried out. The drainage basin is said to be only about 1 square mile, the principal part of the supply being received from the Mahindravady tank and this can be brought under regulation, which should accordingly be done. There is at present no masonry escape and one 60 feet long is to be provided. The design is incomplete and apparently an outer rough-stone apron will be necessary, but in the absence of a cross section of the weir and information as to the levels of the outfall channel, it is impracticable to say exactly what arrangements would be proper.

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The design for the proposed new high level sluice is faulty, as noted on the plan
The items chargeable to Capital as Minor New Works are—

New revetment	Rs
High level sluice	475
Surplus weir	100
	350
	925

There is a mistake of 320 Rupees under earthworks in the abstract estimate, and the corrected total will be Rupees 1,680; the balance, Rupees 755, will be for Repairs, Revenue.

7. Menil Large Tank, Rupees 2,000

Ayacut area	Acres	194
Do assessment	Rs	1,103
Average revenue		537

The tank was repaired last year at a cost of 519 Rupees.
The catchment basin, including the basins of two tanks above it, the state of which has not been referred to, is 7½ square miles, and the only means of discharging surplus being a calingulah with an effective length of 40 feet, it is intended to supplement this by a pavement 186 feet long. Apparently there is only one sluice, which is reported to have collapsed, and this has to be replaced by a new sluice the design for which is altogether unsuitable; the tunnel being too weak, the arrangement for regulation imperfect, added to which a plug upwards of 8 feet in length without any guide for the spear would be likely to tear out or break the stone platform. The tank full water level has not been shown on the section neither has the sill level been shown on the tank longitudinal section nor anywhere else. Such omissions of essential details ought not now to occur. If a tunnel 60 feet long be needed the height of bund and depth of water must be such as to require a very different design, and the amount, Rupees 150, of the estimate for this work must be inadequate. Upwards of 1,400 Rupees are provided for the reconstruction of revetment, but the instructions given in circular No 55, paragraph 4 have not been attended to, no section showing how the work is to be done having been furnished. The rate, 8 Annas, appears to be high. Under these circumstances the only items which can be recommended for sanction are—

Repairs, earthwork	Revenue	Rs
		215
Additional surplus escape	Minor New Works, Capital	
8 Menil Small tank, Rupees 1,470		220
Ayacut area	Acres	211
Do assessment	Rs	813
Average revenue		610

No repairs have recently been executed. The drainage basin of this tank is 3½ square miles, and it is stated to be channel-fed, probably like the large tank through the Mahundravady tank. It has no surplus work, and an escape pavement 170 feet long is to be allowed. The details of the revetment to be reconstructed are not shown. Turfing at 9 Pies a square yard and costing two-thirds of a year's revenue, needs special explanation of necessity, and reason for the high rate. The rate 1½ Annas for

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earthwork likewise appears to be high. Some of the details on the sections of the bund are incorrect. The following items are recommended for sanction —

<i>Revenue Repairs</i>							RS
Earth work	..	...	...	...	.	...	330
Sluice	...	...	.	.	.	.	30
							360
<i>Minor New Works, Capital</i>							
Constructing an escape	..	...	...			...	210

Ootacamund, (Signed) JOHN MULLINS, Lieut-Colonel, R.E.,
21st June 1875. Officiating Chief Engineer.

AGRICULTURAL—ORDINARY—REVENUE

ABSTRACT ESTIMATE, No 95 of 1874-75
District, North Arcot, Taluk, Goriattum, Village, Luthery
Work—Repairing the Luthery Small Tank

Quantity	Description of Charges	Rate	Per	Amount	Total
		Rs A P		Rs A P	Rs A P
1,275½	Cubic yards of earthwork	0 1 3	Cyd	99 10 2	
2,612	Square yards of turfing	0 0 6	Syd	81 10 0	
195½	Cubic yards of old stone revetment	0 3 0	Cyd	36 10 6	
	Gravel backing	0 3 6		16 14 10	234 13 6
	Sundries and uneven items				5 2 6
	Total estimate				240 0 0

AGRICULTURAL—ORDINARY—CAPITAL—MINOR NEW WORKS

ABSTRACT ESTIMATE, No 96 of 1874-75
District, North Arcot, Taluk, Goriattum, Village, Luthery
Work—Constructing a flush escape to Luthery Small Tank

Quantity	Description of Charges	Rate	Per	Amount	Total
		Rs A P		Rs A P	Rs A P
41½	Cubic yards of rough stone in chunam	2 8 0	Cyd	111 4 0	
6	Squares of pointing	1 8 0	Sqre	9 0 0	
20½	Cubic yards of loose stone for apron	1 0 0	Cyd	26 8 0	
	Sundries and uneven items			13 4 0	
	Surplus weir increased from Rupees 160 to Rupees 175			15 0 0	175 0 0
	Revetment and backing				300 0 0
	Total				475 0 0

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AGRICULTURAL—ORDINARY—REVENUE.

ABSTRACT ESTIMATE, No 72 of 1874-75
District, North Arcot, Taluk, Arcot, Village, No III, Velupakam
Work—Repairing Velupakam Tank

Quantity	Description of Charges.	Rate	Per	Amount	Total
	Tank Bund				
4,317	Cubic yards of earth work	Rs 0 1 3	C yd	Rs 717 4 3	
115	Do of oil and new stone with jelly backing	0 0 6	S yd	6 11 0	
3,907	Square yards of turfing	0 0 6	S yd	23 15 1	
	Sundries and superintendence				100
	Improvements to Southern Chingulak				
4	Cubic yards of brick work	3 4 0	C yd	13 0 0	
3	Do of demolishing work	0 4 0	S yd	1 0 0	
3	Squares of plastering in chunnam	2 0 0	S yd	6 0 0	
76	Cubic yards of new stone in chunnam	2 0 0	C yd	152 0 0	
12	Squares of pointing	0 12 0	S yd	1 0 0	
39	Cubic yards of loose stone work	0 12 0	C yd	46 8 0	
	Sundries and superintendence			16 12 0	220
	Improvements to Northern Chingulak				
4	Cubic yards of brick work	3 4 0	C yd	13 0 0	
4	Do of demolishing work	0 4 0	S yd	1 0 0	
5	Squares of plastering in chunnam	2 0 0	S yd	10 0 0	
35	Cubic yards of loose stone work	0 12 0	C yd	42 4 0	
	Sundries and superintendence			4 12 0	55
	Repairs to Sluice				
	North sluice to be entirely renewed, and it is to be of the same dimension as that of City tank now under construction				500
	Bg or central sluice, 6 yards tunnel, and cistern in rear to be renewed, and the probable cost				70
	Total estimate, Repairs				1,395

AGRICULTURAL—ORDINARY—CAPITAL—MINOR NEW WORKS

ABSTRACT ESTIMATE, No 72 of 1874-75
District, North Arcot, Taluk, Arcot, Village, No III, Velupakam
Work—Improving Velupakam Tank

Quantity	Description of Charges	Rate	Per	Amount	Total
762	Cubic yards of new revetment	Rs 0 12 0	C yd	Rs 91 4 0	
	Sundries			21 8 0	
	Additional Escape				550
131	Cubic yards of new stone in chunnam	2 0 0	C yd	262 0 0	
19	Squares of pointing in chunnam	0 12 0	S yd	2 4 0	
13	Cubic yards of concrete	1 12 0	C yd	22 12 0	
53	Do of new loose stone work	0 12 0	S yd	63 12 0	
615	Do of earth work	0 1 0	S yd	39 7 0	
	Sundries and superintendence			17 13 0	395
	Total, New Works				945

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AGRICULTURAL—ORDINARY—REVENUE

ABSTRACT ESTIMATE, No 70 of 1874-75
District, North Arcot, Taluk, Arcot, Village, No 126, Nagalapuram
Work—Repairing Nagalapuram Tank

Quantity	Description of Charges.	Rate	Per	Amount	Total
	Tank Bund				
3,200	Cubic yards of earth work	Rs 0 1 0	C yd	Rs 200 0 0	
4,175	Square yards of turfing	0 0 6	S yd	139 13 6	
	Sundries and superintendence			20 2 6	360
	Simple Escape				
97	Cubic yards of new stone	0 8 0	C yd	48 8 0	
	Sundries and superintendence			6 8 0	55
	Sluices				
	Repairs to sluice				30
	Total estimate, Repairs				415

AGRICULTURAL—ORDINARY—CAPITAL—MINOR NEW WORKS

ABSTRACT ESTIMATE, No 70 of 1874-75
District, North Arcot, Taluk, Arcot, Village, No 126, Nagalapuram
Work—Improving Nagalapuram Tank

Quantity	Description of Charges	Rate	Per	Amount	Total
385	Cubic yards of new stone-revetment	Rs 0 8 0	C yd	Rs 192 8 0	
	Sundries and superintendence			7 8 0	
	Total estimate				200

AGRICULTURAL—ORDINARY—REVENUE

ABSTRACT ESTIMATE, No 76 of 1874-75
District, North Arcot, Taluk, Arcot, Village, No 17, Atheyanum
Work—Repairing the Atheyanum Ottery Tank

Quantity	Description of Charges	Rate	Per	Amount	Total
	Tank Bund				
3,312	Cubic yards of earth work	Rs 0 1 3	C yd	Rs 258 12 0	
3,993	Square yards of turfing	0 0 6	S yd	124 15 0	
	Sundries and superintendence			16 5 0	
	Total estimate, Repairs				400

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AGRICULTURAL—ORDINARY—CAPITAL—MINOR NEW WORKS

ABSTRACT ESTIMATE, No 76 of 1874-75

District, North Arcot, Taluk, Arcot; Village, No 17, Athayanum

Work—Improving the Athayanum Ottary Tank

Quantity	Description of Charges	Rate	Per	Amount	Total
377	Cubic yards of new stone	Rs A P		Rs A P	Rs
	Sundries and superintendence	0 10 0	C yd	235 10 0	
		...	..	14 6 0	
	Improvements to present Calinguloh to extend the same for a flush shape				250
238	Cubic yards of old stone in chunam	1 4 0	C yd	207 8 0	
200	Do of new loose stone	0 10 0	..	125 0 0	
214	Squares of pointing in chunam	0 12 0	Sqre	16 2 0	
15	Upright stones to be removed	0 4 0	..	3 12 0	
	Removal of rock and obstruction in rear for free escape of surplus	..	..	70 0 0	
	Sundries and superintendence	...	..	37 10 0	
	Total estimate				550
					800

AGRICULTURAL—ORDINARY—REVENUE

ABSTRACT ESTIMATE, No 77 of 1874-75.

Work—Repairing Kurnavoor Tank and reconstructing the Second Sluice.

Quantity	Description of Charges	Rate	Per	Amount	Total
5,215	Bund repairs	Rs A P		Rs A P	Rs
378	Cubic yards of earth work, at	0 1 6	C yd	489 14 6	
2,732	Do of repacking old stone, at	0 4 0	..	91 8 0	
108	Square yards of turfing, at	0 0 6	S yd	85 6 0	
	Cubic feet of rough stone in chunam per 100 cubic feet	14 0 0	C ft.	15 1 11	
	Sundries and uneven items	...	..	16 1 7	
	Reconstructing Second Sluice				700
2,336	Cubic feet of brick in mortar per 100 cubic feet	16 0 0	C ft.	373 12 2	
84	Squares of chunam plastering, two coats	2 8 0	Sqre	21 14 0	
1	Upper orifice stone (4 1/2 x 1 x 1/2)	3 0 0	..	3 0 0	
1	Lower do (2 1/2 x 1 x 1/2)	2 0 0	..	2 0 0	
2	Side grooved stones (1 1/2 x 1 x 1/2)	2 0 0	..	4 0 0	
1	Face stone (2 1/2 x 1 x 1/2)	1 8 0	..	1 8 0	
1	Bottom stone (3 x 2 x 1/2)	3 0 0	..	3 0 0	
	Opening and closing bund	..	..	12 0 0	
	Ring bunding and bailing if necessary	..	..	7 0 0	
	Removing old sluice	..	..	13 0 0	
	Sundries and uneven items	..	..	8 13 10	
	Total estimate, Repairs				450
					1,150

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AGRICULTURAL—ORDINARY—CAPITAL—MINOR NEW WORKS

ABSTRACT ESTIMATE, No 79 of 1874-75

Constructing a Surplus Weir and a small High Level Sluice to the Kurnavoor Tank

Quantity	Description of Charges	Rate	Per	Amount	Total
	Surplus Weir of 33 feet	Rs A P		Rs A P	Rs
1,243	Cubic feet of brick in mortar per 100 cubic feet	16 0 0	C ft	198 10 7	
244	Cubic yards of rough stone	1 2 0	C yd	27 4 6	
	Excavating foundation	..	..	15 0 0	
	Sundries and uneven items	..	..	9 0 11	
	High Level Sluice				250
470	Cubic feet of brick in mortar per 100 cubic feet	16 0 0	C ft	75 3 2	
2	Squares of chunam plastering, two coats	2 8 0	Sqre	5 0 0	
1	Upper orifice stone (4 1/2 x 1 x 1/2)	3 0 0	..	3 0 0	
1	Face stone (2 1/2 x 1 x 1/2)	1 8 0	..	1 8 0	
1	Bottom stone (3 x 2 x 1/2)	3 0 0	..	3 0 0	
	Opening and closing bund	..	..	5 0 0	
	Excavating foundation	..	..	5 0 0	
	Sundries and uneven items	..	..	2 4 10	
	Total estimate	...	...	..	100
					350

AGRICULTURAL—ORDINARY—REVENUE

ABSTRACT ESTIMATE, No 81 of 1874-75

Repairing Keelathy Chittary Tank

Quantity	Description of Charges	Rate	Amount	Total
	Bund repairs	Rs A P	Rs A P	Rs.
4,851	Cubic yards of earth work, at	0 1 6	451 12 6	
580	Do of repacking old stone, at	0 4 0	115 0 0	
4,397	Square yards of turfing, at	0 0 6	137 6 6	
	Sundries and uneven items	...	17 13 0	
	Total estimate, Repairs	..	..	755

AGRICULTURAL—ORDINARY—CAPITAL—MINOR NEW WORKS

ABSTRACT ESTIMATE, No 85 of 1874-75

Improving the Keelathy Chittary Tank and constructing new Surplus Weir and small High Level Sluice

Quantity	Description of Charges	Rate	Amount	Total
600	Cubic yards of new rough stone, at	Rs A P	Rs A P	Rs
	Sundries	0 15 0	463 12 0	
			6 4 0	
				475

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Improving the Keelvetty Chittary Tank, &c — (Conclude 1)

Quantities	Description of Charges	Rate	Amount	Total
	<i>Small High Level Sluice</i>	RS A P	RS A P	RS
470	Cubic feet of brick in mortar per 100 cubic feet ...	16 0 0	75 3 2	
2	Squares of chunam plastering two coats, at	2 8 0	5 0 0	
1	Upper orifice stone (2½ × 1½ × ½)	3 0 0	3 0 0	
1	Face stone (2½ × 1 × ½)	1 8 0	1 8 0	
1	Bottom stone (3 × 2 × ½)	3 0 0	3 0 0	
	Opening and closing bund	..	5 0 0	
	Excavating foundation	..	5 0 0	
	Sundries and uneven items	..	2 4 10	
	<i>New Surplus Weir of 60 feet</i>			100
1,749	Cubic feet of brick in mortar per 100 cubic feet	16 0 0	279 13 5	
38	Cubic yards of new rough stone	0 15 0	35 19 0	
	Excavating foundation	..	25 0 0	
	Sundries and uneven items	..	9 8 7	
	Total estimate	..		350
				925

AGRICULTURAL—ORDINARY—REVENUE

ABSTRACT ESTIMATE, No 118 of 1874-75.

Repairing Menil Large Tank

Quantity	Description of Charges	Rate	Amount	Total
	<i>Bund Repairs</i>	RS A P	RS A P	RS
2,215	Cubic yards of earth work	0 1 6	210 7 6	
	Sundries	..	4 8 6	
	Total estimate, Repairs	..		215

AGRICULTURAL—ORDINARY—CAPITAL—MINOR NEW WORKS

ABSTRACT ESTIMATE, No 119 of 1874-75

Constructing dry Stone Weir to Menil Large Tank,

Quantity.	Description of Charges	Rate	Amount	Total
		RS A P	RS A P	RS
5,040	Cubic feet of rough stone	4 0 0	201 9 7	
	Excavation and sundries	..	18 5 5	
	Total estimate ..	..		220

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AGRICULTURAL—ORDINARY—REVENUE

ABSTRACT ESTIMATE, No 122 of 1874-75

North Arcot District, No 1 or Wallajah Range, Taluq, Wallajah

WORK — Repairing the Menil Small Tank

Quantity	Description of Charges	Rate	Amount	Total
		RS A P	RS A P	RS A P
3,489	Cubic yards of earth work, including stepping, watering and tamping	0 1 6	327 11 6	
	Repairing sluice	..	30 0 0	
	Sundries	..	2 4 6	
	Total estimate	..		360 0 0

AGRICULTURAL—ORDINARY—CAPITAL—MINOR NEW WORKS

ABSTRACT ESTIMATE, No 123 of 1874-75

North Arcot District, No 1 or Wallajah Range; Taluq, Wallajah

WORK — Constructing dry Stone Weir to Menil Small Tank

Quantity	Description of Charges	Rate	Amount	Total
		RS A P	RS A P	RS A P
4,782	Cubic feet of rough stone	4 0 0	191 4 6	
	Excavation and sundries	..	18 11 6	
	Total estimate ..	..		210 0 0

No. 557.

ORDER THEREON, 23rd July 1875, No 2,090

IRRIGATION, No 68

The following estimates for Irrigation Works in the North Arcot District are sanctioned

	Capital, Minor New Works	Revenue Repairs
	RS	RS
Luthery Small Tank	475	240
Velapakum do	915	1,395
Nagalapuram do	200	445
Athayanum Ottary Tank	800	400
subject to no alternative arrangements being practicable	350	1,150
Kurnavoor Tank	925	755
Keelvetty Small Tank	220	215
Menil Large do	210	360
Do Small do		

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2 The District Engineer will give attention to the remarks in the foregoing memorandum reviewing the estimates, and he should take care that the defects pointed out are not allowed to recur

(True Extract)

Major, R E,
Offg. Joint Secretary to Government.

To the District Engineer, North Arcot
" Controller of Public Works Arcot
" Chief Engineer for Irrigation

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Agricultural Ordinary

Revenue.

Abstract Estimate No 2 of 1874/75

District, North Arcot; Taluq. Arcot, Village No 11, Velapanthum.

Works - Repairing Velapanthum Tank.

<u>Tank Rund</u>					
137	Cubic yards of earthenwork	1	3	337	4 3
115	Do of old & new stone with jelly backing	9	"	64	11 "
2907	Square yards of turping	"	6	125	1 6
	Sundries and Superintendence			25	15 3
	<u>Improvements to Southern Calinguloh</u>				600
4	Cubic yards of brick work	3	4	13	"
3	Do of demolishing work	"	4	"	12
33	Squares of plastering in Chunam	2	"	6	"
76	Cubic yards of new stone in Chunam	2	"	150	"
12	Squares of pointing	"	12	9	"
30	Cubic yards of loose stone work	"	12	22	8
	Sundries and Superintendence			16	12
	<u>Improvements to Northern Calinguloh</u>				220
4	Cubic yards of brick work	3	4	13	"
4	Do of demolishing work	"	4	"	12
5	Squares of plastering in Chunam	2	"	10	"
35	Cubic yards of loose stone work	"	12	26	4
	Sundries and Superintendence			4	12
	<u>Repairs to sluices.</u>				55
	North sluice to be entirely renewed and it is to be of the same dimension as that of Cattyam tank now under construction				500
	Dig or Central sluice, 6 yards tunnel, land cistern in rear to be renewed, and the probable cost.				70

Total Estimate Repairs..... 1395

Agricultural Ordinary

Capital. Minor New Works.

Abstract Estimate No of 1874/75

District. North Arcot; Taluk Arcot; Village No 12, Velampuram.

Work. Improving Velampuram Tank.

762	Cubic yards new revetment	12	526 8	
	Sundries		23 8	550

Additional escape.

131	Cubic yards of new stone in chunnam	2	2 1/2	
19	Squares of pointing in chunnam	12	1 1/2	
13	Cubic yards of concrete	1	22 1/2	
53	100 of new large stone work	12	59 1/2	
615	100 of earthwork.	1	38 7	
	Sundries and superintendence		17 1/2	395

Total New Works Repairs 745

Agricultural Ordinary

Revenue

Abstract Estimate No of 1874/75

District. North Arcot; Taluk Arcot; Village No 12, Nagalapuram.

Work. Repairing Nagalapuram Tank.

Tank Bund.

3200	Cubic yards of earthwork	1	200	
1175	Square yards of turfiing	6	139 13 6	
	Sundries and superintendence		20 2 6	360

Simple escape

97	Cubic yards of new stone	8	48 8	
	Sundries and superintendence		6 8	55

Sluices

	Repairs to sluice			30
--	-------------------	--	--	----

Total Estimate Repairs 445

Agricultural Ordinary

Capital. Minor New Works.

Abstract Estimate No of 1874-75

District. North Arcot; Taluk Arcot; Village No 12, Nagalapuram.

Work. Improving Nagalapuram Tank

385	Cubic yards of new stone revetment	8	192 8	
	Sundries and superintendence		7 8	

Total Estimate 200

Agricultural Ordinary

Revenue

Abstract Estimate No. of 1874/75

District, North Arcot; Taluk, Arcot; Village No. 17 Athyanam

Work. Repairing the Athyanam Otlang Tank
Tank Bund

3312	Cubic yards of earthwork	13	258	12	
3998	Square yards of turping	6	124	15	
	Sundries and Superintendence		16	5	
<u>Total Estimate Repairs.</u>			<u>400</u>		

Agricultural Ordinary

Capital: Minor New Works

Abstract Estimate No. of 1874/75

District, North Arcot; Taluk, Arcot; Village No. 17 Athyanam
Work. Improving the Athyanam Otlang Tank.

377	Cubic yards of new stone	10	233	10	
	Sundries & Superintendence		14	6	
			<u>250</u>		

Improvements to present Otlang Tank
extend the pond from Fluck to afe.

238	Cubic yards of old stone in chunam	1	27	8	
200	No. of new loose stones	10	125		
21 1/2	Squares of pointing in chunam	12	16	2	
15	Upright stones to be removed	4	3	12	
	Removal of rock & obstruction in rear for free escape of surplus		70		
	Sundries and Superintendence		37	10	
<u>Total Estimate</u>			<u>550</u>		

Total Estimate 800

Agricultural Ordinary

Revenue

Abstract Estimate

Work. Repairing Kurnavar Tank, and reconstructing the Second sluice.

<u>Bund repairs.</u>					
5215	C. yds. of earthwork at	1	6	488	14
378	Do. of repacking old stone at	4		94	8
2732	Square yards of turping at		6	85	6
108	Cubic feet of rough stone in Chunam per 100 Cubic feet	14		15	1 11
Sundries and unresew items				16	1 7
				<u>700</u>	

Reconstructing Second sluice

2336	C. ft. of brick in mortar per 100 c ft	16		373	12 2
8 3/4	Squares of Chunam plastering two coats	2	8	21	14
1	Upper surface stone (4 1/2 x 1 x 3/4)	3		3	
1	Liner " " (2 1/2 x 1 x 1/2)	2		2	
2	Side grooved stones (1 1/2 x 1 x 1/2)	2		4	
1	Face stone (2 1/2 x 1 x 1/2)	1	8	1	8
1	Bottom stone (3 x 2 x 3/4)	3		5	
Opening and closing bund				12	
Ring bunding and bailing if necessary				7	
Removing old sluice				13	
Sundries and unresew items				8	13 10
				<u>450</u>	

Total Estimate Repairs

1150

Agricultural Ordinary

Capital Minor New Works

Abstract Estimate No of 1874/75

Constructing a ^{surplus weir} Calingulak & a Small High Level

Sluice to the Kurnavoor Tank

^{surplus weir} Calingulak of 33 feet

1243	C ft. of brick in mortar per 100 c ft	16	78	10	7
24 1/4	Cyds of rough stone	1 2	27	4	1
	Excavating foundation		15		
	Sundries and uneven items		9	0	11
					250

High Level Sluice

470	C ft. of brick in mortar per 100 c ft	16	75	3	2
2	Squares of Chunnai plastering two coats	2 8	5		
1	Upper onice stone (4 1/2 x 1 x 1/4)	3	3		
1	Face stone (2 1/2 x 1 x 1/2)	1 8	1	8	
1	Bottom stone (3 x 2 x 1/4)	3	3		
	Opening and closing hand		5		
	Excavating foundation		5		
	Sundries and uneven items		2	4	10
					100

Total Estimate Rs. 350

Agricultural Ordinary

Revenue

Abstract Estimate No of 1874/75
Repairing Kulethy Chittary Tank

21

Round Repairs.

4857	Cyds of earthwork at	1	6	454	12	6
580	Do of repacking old stone at	4		145		
4397	Sq. cyds of dumping at		6	137	6	6
	Sundries and uneven items			17	13	

Total Estimate Repairs 755

Agricultural Ordinary

Capital Minor New Works

Abstract Estimate No of 1874/75

Improving the Kulethy Chittary Tank and Constructing new surplus weir
near Calingulak & Small High Level sluice

500	Cyds of new rough stone at	15	468	12	
	Sundries		6	4	
					475

Small High Level Sluice

470	C ft. of brick in mortar per 100 c ft	16	75	3	2
2	Squares of Chunnai plastering, 2 coats	2 8	5		
1	Upper onice stone (2 1/2 x 1 1/2 x 1/2)	3	3		
1	Face stone (2 1/2 x 1 x 1/2)	1 8	1	8	
1	Bottom stone (3 x 2 x 1/4)	3	3		
	Opening & closing hand		5		
	Excavating foundation		5		
	Sundries and uneven items		2	4	10
					100

^{surplus weir} New Calingulak of 60 feet

1749	C ft. of brick in mortar per 100 c ft	16	279	13	5
38	Cyds of new rough stone	15	35	10	
	Excavating foundation		25		
	Sundries and uneven items		9	8	7
					350

Total Estimate 925

10
Agricultural Ordinary

Revenue

Abstract Estimate No. of 1874/75.

Repairing Menil Large Tank.

Rund Repairs

2245 Cgds of earthwork
Sundries

16 210 7 6
4 5 6

Total Estimate Repairs. 215.

Agricultural Ordinary.

Capital Minor New Works

Abstract Estimate No. of 1874/75.

Constructing long stone weir to Menil Large tank.

5040 Cft of rough stone

Excavation & Sundries

4 . . 301 7 1
15 5 8 1/2

Total Estimate 220

Agricultural Ordinary

Revenue

Abstract Estimate No. of 1874/75
North Arcot District, No 1 or Wallojah Range; Taluk Wallojah.
Work. Repairing the Menil Small Tank.

3489 Cgds of earthwork, including slopping & watering and lamping 16 327 11 6

Repairing sluice

Sundries

30 . .

2 4 6

Total Estimate. 360

Agricultural Ordinary

Capital Minor New Works.

Abstract Estimate. No. of 1874/75

North Arcot District, No 1 or Wallojah Range; Taluk Wallojah.

Work. Constructing long stone Weir to Menil Small Tank

4782 Cft of rough stone

Excavation & Sundries

4 . . 191 11 6

18 11 6

Total Estimate. 210

Agricultural, Ordinary.

Revenue

27

Abstract Estimate Nos 5 of 1874-75.

District, North Arcot; Taluk Sriattur; Village Luthery.

Work - Repairing the Luthery Small Tank.

1275 1/2	Cubic yards of earthwork	1	3	Cy	99	10	2
2612	Square yards of turfing	.	.	Sy	81	10	.
195 1/2	Cubic yards of old stone revetment	3	.	Cy	36	10	6
	fravel hacking	3	6	.	16	14	10
	Sundries and unrev items						
	Total Estimate						

234 13 6
5 2 6

240 . .

Agricultural, Ordinary

Capital. Minor New Works

Abstract Estimate, Nos 6 of 1874/75.

District, North Arcot; Taluk Sriattur, Village Luthery

Work. Constructing a flume & escape to Luthery Small Tank.

44 1/2	Cubic yards of rough stone in chunam	2	8	.	Cy	111	4	.
6	Squares of pointing	1	8	.	Sy	9	.	.
26 1/2	C. yards of loose stone for apron	1	.	.	Cy	26	8	.
	Sundries and unrev items							
	Surplus mss increased from Rs 10 to Rs 15							
	Revetment and hacking							
	Total							

15 . .

175 . .

300 . .

475 . .

Quantity Description of charges

Rate			Per			Amount			Total		
R.	S.	P.	R.	S.	P.	R.	S.	P.	R.	S.	P.

Quantity Description of Work

Rate			Per			Amount			Total		
R.	S.	P.	R.	S.	P.	R.	S.	P.	R.	S.	P.

15

0400

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Migration.

W. 663

Memorandum.

Enclosures
20.

The following estimates have been submitted by the District Engineer for the Acet.

Putney Small Tank	Rupers 700
Agarut area	acres 35
" Assessment	Rupers 281
Average revenue	" 253

The tank was repaired in 1873 at a cost of Rs 50.

The drainage basin is about 1 square mile and surplus has hitherto been discharged by vent, which is to be super-seeded by a waste weir 75 feet long and then will be ample. The design of this work, if the rough stone apron be carried to the ends of the rear wing returns and if the wing be raised another 7 inches so as to be $1\frac{3}{4}$ feet above maximum W. L. which will be 2 feet above F. T. L. will do very well. The protection of the interior slope of the bund with mangel should be attended to and possibly part of the

new

new stone revetment might be thus rendered unnecessary.

The estimate will be thus divisible.

Repairs Rupess 2040

Minor New Works. Capital.

New revetment - 300

Surplus water increased from Rupess 160 for the modifications mentioned 175

475

The District Engineer reports that all the following tanks (3) in the Aroli Taluq were breached in 1873 and hastily repaired without their requirements being ascertained and adequately provided for. The present estimates are expected to render the tanks secure.

2. Telaparkum Tank. Rupess 3,340
Agent area acres 167

" assessment. Rupess 1,378
Average revenue " 1074

Expenditure on repairs in 1872-73 } " 2,600
1873-74 }

This tank was breached in 1873 and again in May 1874 at two places where the former breaches had occurred: the soil is reported

-6-

to be bad but both the collector and the District Engineer consider that it should be maintained, and the latter after an inspection thinks that the work now provided for will render it reasonably safe.

The catchment basin is 13 square miles. The present escapes measure 115 feet and it is intended to remove the intervening band, and convert the interval into an extension of the live weir thus adding 95 feet of escape: then a maximum calculated discharge of 3,110 C. F. a second will raise the tank water to about 2.70 feet above crest level. The band is 5 1/2 feet above F. T. L. and if the breaches be carefully closed and all sources of danger from leakages removed the tank should be safe and efficient. The estimate includes the following items.

Repairs

Repairs - Revenue.

Bund	Rupess 550	
Southern escape (old)	" 2,200	
Northern do do	" 50	
Reconstructing North sluice	" 500	
Repairing central do	70	
	<u>1,395</u>	
Minor New Govt. Capital.		
New revetment -	550	
Additional escape -	<u>875</u>	
	<u>745</u>	
	<u>2,340</u>	

3. Nagalapuram Tank	Rupess 645
Adjacent area	acres 30
" Assessment	Rupess 156
Average revenue	do 155
Repairs in 1872-73. 1873-74	do 60

The drainage basin is $1\frac{1}{2}$ square miles, and for the cut by which surplus has hitherto been discharged it is intended to substitute a dry stone pavement 90 feet long. A breach near the South end of the bund at the cut has been closed. For the new stone revetment estimated to cost 200 Rupess or considerably

more than a year's revenue a belt of mangle plants if possible be substituted, but if the stone work be indispensable it must be treated as a new work and the items will then be

Repairs - (Revenue)	Rupess 45
Minor New Govt. Capital	" 200

It has been noticed that the items Rupess 45 for drying are well the average revenue and care must be taken that the expenditure is fully effective.

4. Othayannam Ottery	Rupess 1,200
Adjacent area	acres 58
" Assessment	Rupess 270
" Average revenue	do 158
Repairs in 1872-73. 1873-74	do 300

It is very difficult whether it is worth while to repair this tank at all seeing that the cultivation under it as represented by the adjacent area is less than 3 acres per square mile of the basin of 21 square miles, the flood waters from which have been disposed of. It is the last

last of the Bengal, Allahabad and Malabar
 series, and possibly its object could be
 irrigated together with the other Div.
 District Engineer and Collector recommend
 its repair, and therefore if no such al-
 ternative arrangement as that sug-
 gested be practicable, the present
 estimate may be carried out, though
 it may be concluded that unless the
 area of irrigation can be considerably
 extended the result will not be sat-
 isfactory, seeing that in seasons of
 moderate rainfall, most of the drainage
 will be intercepted by the upper tanks.
 In future the District Engineer should
 always attach to estimates for tanks
 in a series or groups a memorandum
 giving the names of the heads of the
 members of the series, with an intimation
 as to their condition. Circular No. 3
 deals with the subject of canals to
 tanks, and unless the upper tank be
 made safer the money spent on the
 lower ones is likely to be wasted. The
 canal

escape wire when enlarged as intended,
 will be 232 feet in length, and the
 maximum depth passing over will
 be 3 feet. The charges to Capital and
 Revenue respectively will be

Minor New Works		
new revolvment	Rupers	250
Enlargement and improve-		
ment of escape	550	800
Repairs -		400
Total - Rupers 3,130		
5. The new water tank -		
• dykes and area	area	198
• do do	Rupers	866
• drainage	do	822
• cutting and repairs in 1873-74	do	45
The drainage basin is said to be 10 square miles, and no other source of supply is mentioned, but it is clear that that area will not afford water for about 198 acres. This matter should be looked into and explained. The present escape is 27 feet long, and is to be improved and an ad- ditional wire 33 feet long is to be given, together with a new high level sluice.		

Ld

The large item Rupees 1630 for masonry
 revetment should it is considered (as)
 disallowed, pending special informa-
 tion as to its necessity and as to masonry
 not being a practicable substitute.
 The items recommended for sanction
 will then be

Repairs - Revenue.

Bund -	Rupees 400	
Reconstructing 2 nd sluice -	450	115.0
Minor New Water Capital		
High level sluice	Rupees 100	
33 feet escape	250	35.0

The high level sluice will require water-
 wings as the bund slopes without them
 would overlap the wall, although better
 in front and rear. The design for the
 2nd sluice will have been very carefully
 carried out, and the foundations under
 the head wall and front wing will
 be inadequate unless the soil be
 remarkably firm, 18 feet of masonry
 need generally foundations covering a
 large area so as to distribute the weight.

26

4) Rupees 2,000
 6. Relucting small tank
 . Dyant area acres 100
 . Assessment Rupees 2,345
 . Surplus revenue " 1,840

No special repairs have been carried out.
 The drainage basin is said to be only
 about 1 square mile, the principal
 part of the supply being received
 from the Mahimbrady tank and
 then carried through regulation,
 which should accordingly be done. There
 is at present no masonry escape
 and one foot long is also provided.
 The design is incomplete and appears
 slightly unsatisfactory, but in the
 will be necessary, but in the
 of a section of the weir
 and information as to the levels
 of the out fall channel, it is im-
 - practicable to say exactly what
 arrangements would be proper. The
 designs for the proposed new high
 level sluice is faulty as noted on
 the plan. The items chargeable

to

Capital as Minor New Works are
 New revetment
 High level sluice
 Surplus weir

Rupies 445
 100
 300
 725

There is a mistake of 320 Rupies made, and the estimate
 and the balance (Rupies 1045 will be) trace made
 for Repairs. Revenue. 755 total will be
 1650;

y. Meril large tank. Rupies 2,000
 Ayacut area
 " assessment areas 176
 Average Revenue Rupies 405
 " 527

The tank was repaired last year
 at a cost of 517 Rupies

The catchment basin including the
 basins of 2 tanks above it, the state
 of which has not been referred to,
 is 7 1/2 square miles, and the only means
 of discharging surplus being a
 calingulah with an effective length
 of 1.7 feet, it is intended to supple-
 -ment this by a pavement 186 feet
 long. Apparently there is only one sluice,
 which is reported to have collapsed,
 and this has to be replaced by a
 new

new sluice the design for which is
 altogether unsuitable. the tunnel
 being also weak, the arrangement
 for regulation imperfect, added to (2)
 which weighing upwards of 8 feet in
 being the without any guide for the
 spurs would be likely to tear out or
 break the stone platform. The
 tank full water level has not been
 shown on the section neither has
 the sill level been shown on the
 tank longitudinal section or any
 other view. Such omissions of es-
 -sential details ought not now to
 occur. If a tunnel 60 feet long be
 needed the height of land and depth
 of water must be such as to require
 a very different design, and the
 amount (Rupies 150 of the estimate)
 for this work must be inadequate.
 If sum of 4000 Rupies are provided
 for the reconstruction of revetment, &c.
 but the instructions given in Cir-
 -cular No 50 para 6 have not been
 attended

attended to, no section showing how the work is to be done having been furnished. The rate 8 annas appears to be high. Under these circumstances the only items which can be recommended for sanction are.

Revenue	
Repairs - Earthwork	Rupcos 2115
Capital	
Minor new works	"
Additional surplus escape	" 2100
8. Minor small tanks	Rupcos 16.70
Adjacent area	area 211
" assessment	Rupcos 843
Average revenue	6410

No repairs have recently been executed. The drainage basin of this tank is $3\frac{3}{4}$ square miles and it is stated to be channel fed, probably like the large tank through the Mahendrawady tank. It has no surplus work and an escape pavement 170 feet long is to be allowed. The details of the revetment to be reconstructed are not shown. Surfing

0. 2981 - 2115
Surfing at 7 p.m. a square yard and
the long 2 p.m. of a year's revenue, made
of local' work' variations of necessity, eg:-
and decided on for the high rate. The
and to 4 p.m. for earth work like 1875)
which appears to be high. Some of
the details are the sections of the bund
in 1875 since then. The following items
are recommended for sanction.

Minor new works (Repairs -	Rupcos
Additional surplus escape	830
8. Minor small tanks	30
Adjacent area	360

Added to the Capital - Minor new works
which are appearing in escape
of a small tank
and all in which
Kish Kish

Palanma 23
21/2/1915

Recd from R.E. 150
Chief Engineer 1915
215
360

Responsible Secretary
R.H.C.
Responsible Secretary
R.H.C.

P. W. 1875 Sept.

No: 4282

From

The Offg. Chief
Engineers

DD 21 June
Ref. 30' 1875.

E. 20. No: 663.

Memo. on Estimates
for the repairs of certain
tanks in the North
West Dist.

GO-23 July 1875
No 556

H. Sheet 36 from
Recd to 22 Aug 1875 R 87-75
R. D. 11/10/75 30.6.75

P. W. Sept.

Proceedings of the Madras Government
Read the following:-

The Offg Chief Engineer (N. S. No 663 of 21 June 1875)

G.O. No. 2090 of 23 July 75

The following esti-
-mates for Irrigation
work in the North
West District are
sanctioned

	Capital Ex. In. No. 663.	Revenue Repairs
At the small tank R. 475		R. 240
At the small tank do " 745		" 1375
At the small tank do " 200		" 440
At the small tank do " 200		" 400
At the small tank do " 200		" 400

Subject to no alternative arrangements
being practicable?

At the small tank R. 300	R. 1150
At the small tank do " 725	" 1075
At the small tank do " 220	" 215
At the small tank do " 210	" 360

2. The District En.

will give atten-

tion to the District En.

in the foregoing Memo.
 -random reviewing the
 contents and heretofore
 take care that the defects
 pointed out are not
 allowed to recur.

4282

Govt. of Madras
 PUBLIC WORKS.

[Signature]
 Abstract-
 Esplanade.

Date

To

By

To

By

[Faint handwritten notes and scribbles]

[Faint handwritten notes and scribbles]

556-537
 38
 4

D.E. North Arch - 5
 Cont. M.W.C. - 5
 C.P. for Int. - 5 with 20 Encls

S.C. Sep 21-8-75

Re. D. Pump 30.6.75
 2 Atts. Re. 12.2.75