M.R.O. 1—10,006—23-2-50.

(1) Number of pages_____

(2) Date of repair_____

(3) Initials of the Referencer_____

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No. / ~~B.P. No.~~	3228	Press / ~~Mis.~~
Dated	14-11	1874 —195- .

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 14th November 1874.

Read the following papers :—

No. 243. From the District Engineer, North Arcot, dated 29th August 1874, No. 1,571.

No. 788.

No. 244. *Note by the Chief Engineer for Irrigation.*

THE following estimates have been revised by the District Engineer, North Arcot, since they were first submitted with the letter No. 340 of the 7th May 1874 :—

R. No. 1,595, 2nd Aug. 1874, with 9 enclosures.
D. No. 334-A, 20th May 1874.
Procs. Madras Govt., 6th July 1874, No. 1,799.

1. *Codoocanthangle*, Estimate Rs. 1,100.

Ayacut area	Acres	107
,, Assessment	Rupees	593
Average Revenue	,,	718

The outlay in the preceding four years amounts to Rupees 24, and was incurred in 1872-73. The tank is on the Western Channel from the Poiney anicut, and has an independent catchment basin of 3 square miles. The maximum rise of water is to be limited to 2 feet above full tank level, and the present 60 feet of escapes* will be increased by the construction of an additional surplus weir 48 feet in length, which, with the channel, will, it is believed, be sufficient to secure its safety. The top of the bund will be 4½ feet above full tank level. The estimate provides for—

* Two of 30 feet each.

Repairs	Rupees	940
Minor New Work—a new surplus weir	,,	160

2. *Venkatasamudrum small tank*, Estimate Rupees 680.

Ayacut area	Acres	29
,, Assessment	Rupees	135
Average Revenue	,,	139

No repairs have been previously executed so far as can be ascertained.

The District Engineer explains that this tank is, when full, connected with the larger one of the same village, and that the surplus of the latter has to pass into the small tank and to be discharged by its surplus weir, which is 31 feet in length. Under these circumstances, he recommends that the bund should be made 4½ feet above the full tank level to correspond with the larger tank, and that the surplus from the catchment basin of 3¼ square miles, common to the two tanks, should be provided for by an escape 140 feet long, with a maximum depth of 2 feet passing over. The required outlay will then be—

For Repairs	Rupees	695
Minor New Work—a surplus weir	,,	265
	,,	960

This arrangement appears to be preferable to that provided for in the smaller estimate; but it must be remarked that the revenue of the two tanks needed to be taken into account, and for the future they should be dealt with as one irrigation work. Care must be taken that the channel of communication between the two tanks is of ample capacity.

3. *Pasomathoor small tank*, Estimate Rupees 400.

Ayacut area	Acres	77
,, Assessment...	Rupees	238
Average Revenue	,,	189

No outlay on this tank is on record.

As in the case of the Venkatasamudrum tank, the District Engineer advocates the raising of the bund to the same level as that of the large tank of the same village, viz., 4½ feet above full tank level; and, although the circumstances of the case are not the same, the large tank having an escape of its own, it may, on grounds of convenience, be desirable to continue the connection between the two tanks, and to sanction the additional 130 Rupees required to carry out this arrangement. The estimate will then amount to Rupees 530. The two tanks should henceforth be treated as one irrigation work.

4. *Athicoopum Tank*, Estimate Rupees 490.

Ayacut area...	Acres	62
,, Assessment	Rupees	372
Average Revenue	,,	156

No outlay on repairs is on record.

In forwarding the first estimate it was mentioned that probably the revenue would be greatly increased by the repair of the tank, and also that the existing escape, 30 feet in length, is sufficient. If the latter be the case the drainage basin is not much more than one-fifth of a square mile at most, and the water-supply is not likely to suffice for more than the area of cultivation, some 26 acres, represented by the average revenue. If the drainage basin be larger, it would be a reason for either lengthening the escape or allowing a greater depth to pass over, with consequently a higher bund.

No. 340, paragraph 14.

2. With regard to the remarks in the concluding paragraph of Captain Pennycuick's letter, it has to be observed that this office must necessarily deal with estimates on the information submitted with them, and that apparently excessive proposed outlay cannot be approved if that information does not fully support it. In the case of the first of the above estimates, the arrangement whereby maximum water level is limited to 2 feet above the normal level, instead of a variation of 3½ feet being allowed, is decidedly preferable; in the next two instances the District Engineer's recommendations have been adopted, because additional facts in their support have been adduced; while in the last estimate, the circumstances essential to a correct and final decision are not yet fully understood. Captain Pennycuick's responsibility is limited to submitting his proposals in such a shape that in all essential respects the circumstances may be readily understood, and the arrangements proper thereto decided upon.

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

3rd October 1874.

No. 245. ORDER THEREON, 14th November 1874, No. 3,228.

IRRIGATION, No. 22.

THE following tank estimates of the North Arcot District are sanctioned:—

3

Repairs.

	Estimate. Rs.
1. Codoocanthangle	940
2. Venkatasamudrum small tank	695
3. Pasomathoor small tank	530
4. Athicoopum tank	490

Minor New Works.

1. Surplus weir, Codoocanthangle	160
2. Do., Venkatasamudrum small tank	265

2. The Chief Engineer for Irrigation will continue to take such steps as he may consider necessary to satisfy himself that estimates are sufficient to meet, and are not in excess of, the requirements of the works to which they relate. If the information furnished with estimates be in the first instance complete, the proper arrangements can be decided upon the more readily. It is the duty of the Chief Engineer for Irrigation to satisfy himself completely on the points noted, and the duty of District Engineers to furnish all information required without exhibiting impatience.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the District Engineer, North Arcot.
,, Chief Engineer for Irrigation.
,, Officiating Controller of Public Works Accounts.
,, Revenue Department.

Exd. S. T. Austin.

are Copies

(No. 89)

1336 A.

Memorandum

The undersigned has the honour to return the following estimates received with the letter No 3436 of the 7th Instant from the D.C. North Arcot

Cotteracum Temple Estimate Rupees 1,800

Excavation -

Plans & Estimates (2)

7

Dimensions of the present tanks which aggregating 60 feet in length of the water is to be kept to 30 feet wide above the full tank level with a straight line to the bottom in the tank excluding above full tank level - It appears to be desirable instead of raising the banks to 6 feet the restriction to 3 feet above full tank level to [illegible] - thus limiting the length to 2 feet less than 65 feet - the bank being then to 4 feet above F.T.L and the restriction, as proposed above, may [illegible] to 1 foot above F.T.L as it will then be submerged only occasionally for a few hours - Where two channels run through a series of tanks it is particularly desirable to limit the width of flow water as much as possible otherwise from length of channel bank in addition to the tank bunds may have to be raised

x ie to 95 feet allowing 5 feet at each end for giving actual length

Recommended

Excavation Silting channels Rupees 1290

The amount of deepening or clearing [illegible] to be dug under the name of silt digging above to be the removal of the characters which have been universally debited to the works of the channel - Some [illegible] of much more important work to be done and until it can

be shown that it is incumbent on the Government to [illegible] bear for removing this evil to a distance the undue [illegible] otherwise than with the sanction of the Estimate and the rate of 1½ annas a cubic yard would seem to be much too high. [illegible]

Vedakataguppa Small Tank — Estimate Rupees 695

Estimate sufficient to [illegible] top of the bund of this tank is 4 feet above F.T.L and 4 feet above a top width of 4 yards would suffice. Plan taken is [illegible] a complete work [illegible] marked Ambur on the Atlas sheet.

Parimattoor Small Tank — Estimate Rupees 380.

The advantage proposed of a simple weir in contemplated [illegible] would remain as it is but by [illegible] to include all work necessary to render complete efficiency of the work. The longitudinal section shows that the sill of the maximum water level is 1 foot above F.T.L but to secure this with the drainage basin from the [illegible] would be 139 feet. With 2 feet [illegible] 169 feet would suffice but 30 feet was [illegible] a depth of 33 inches. Therefore all a work as this a channel [illegible] would seem suitable and from 50 to 60 feet long cut with the top of the bund made with a height of 5½ feet above F.T.L.

Max.m flood discharge 467 Cft. a second

Attikoppam Tank — Estimate Rupees 600

This appears to be a small tank [illegible] a height of 3 feet of bund above full tank level

should suffice. The rate 2 annas a C yd. for earthwork is high, and the expenditure on [illegible] the bund may therefore be reduced. The longitudinal section indicates that between sill of the bund is below 2½ feet above F.T.L

2- The rest of the estimates have been passed [illegible] Officers and, with no [illegible] alterations and have been submitted to Govt.

Ag. 20/5/24.

Papers connected

B No 887 of 7 Dec 23 and 96 Sec
B No 206 - 26th April 24
B No 1535 - 11 June 23.
B No 752 - 14 April 24.

No. 1571

Public Works Office
Wellington, 29th August 1874.

From: District Engineer, Nelson

To: The District Engineer, North Island

The Chief Engineer for Irrigation

Madras

Sir,

I have the honor to enclose plan for revision with opinion & estimate of cost of Mary Lady's 20 Mile Canal.

Cadastral Survey Office, Estimate No. 334A

2. The Height of the Canal has been reduced to 12 feet above full tank level and additional escape of 8 feet in length are substituted for the 8 feet in length (making 108 feet in all) being provided as to discharge the maximum quantity of water. The estimate for reduction in cost is £100.

The provision of this separate escape has been found cheaper than lengthening either of the existing escapes. As yours

Encls.
1. Estimate
4. Plans.

Remo under reply 65 feet is mentioned

Side letter from the Govt Surveyor dated 12th June 74 A.H. 1874 from the Resident Engineer 29th August 74 A.H. 1874.

No. 334 A.

Re Q.S. District

Plan No. 3

Dated 20th May

Dupd 3rd June 1874.

Encd
1 Letter from Govt Surveyor dated 12th June 74 and Q.S. 116/74.

Returns for revision estimate for the repair of certain tanks &c in the Chittoor Range.

Vide 2208 of 11-74

as the additional length necessary but some deduction must be made on account of the channel below the tank and it is believed that the 48 feet allowed will be found enough. If a greater length is required it can be added at a cost of one rupee per foot.

3. The great reduction in the quantity of earth work reduces also the lead and lift and has enabled a reduction to be made in the rate allowed.

4. In the original estimate it was proposed to keep the escapes at their present length, which would discharge the maximum surplus with a depth of about 3½ feet, and to raise the bund to six feet above full tank level. The object of this was that as little water as possible might be wasted during ordinary rains. The carrying power of the Pairey western channel is by no means in excess of its requirements and it is important that as little water as possible should be returned into the river. It is true that that in such cases the raising of the tank bund "may" as stated in your Memo under reply, involve the raising of great lengths of channel bank, but in the absence of any evidence to the contrary it would seem to have been only reasonable to suppose that so self evident a point as this had not been overlooked. As a matter of fact the channel is in cutting both on entering and leaving the tank.

5. Vencatasamoodrum small tank. Estimate Rupees 680. The estimate provides for the raising of the bund to 3 feet above full tank level, and for the construction of a loose stone escape two hundred feet in length to discharge the surplus due to a drainage area of 3¼ square miles (1234 cubic feet per second) with a depth not exceeding 1½ feet. It appears on enquiry that this tank is connected with the large tank of the same village, and when both are full they unite and practically form one tank; their combined drainage area is 3¼ square miles; the large tank has no calingulah, but the water passes into the smaller one through a cut in the end

end of the bund. The caliugulah for the latter must therefore be made to discharge the whole surplus.

6. The small tank has a caliugulah but it is insufficient in length and in a disordered condition, an entirely new one, of a cheap form, has therefore been provided. I do not consider that the margin allowed is enough for safety, and am of opinion that it would be much better to make the escape 40 feet long, so as to discharge the surplus with a maximum depth of two feet, and to make the bund 4½ feet above full tank level. the estimate would then amount to Rupees 695 for the repairs and Rupees 265 for the escape or 960 in all; only Rupees 280 more than the present estimate.

7. Pasamathoor small tank, estimate Rupees 400. The circumstances of this tank are very similar to those of the last mentioned, it being connected by an open channel with the large tank of the same village and the full tank levels of both being the same. Estimates are now in progress for putting the large tank into proper order with an escape sufficient for its own drainage area, and for bringing the bund to 4½ feet above full tank level. The present estimate provides for raising the bund of the small tank to three feet above F. T. L. and providing an escape 50 feet long, but I consider that it ought to have its bund the same height as that of the large tank, in which case the estimate will be increased by Rupees 130.

13

8. Athicoopum tank. Estimate Rupees 490. The estimate has been reduced by Rupees 110 by the reduction of the height of the bund from 4½ to 3 feet above full tank level, but I think this extra sum would be well spent in raising the bund to a height sufficient to ensure its being safe for many years to come. The work is situated in the unhealthiest part of the Vencatagherrycotta division of the Palnaud Salug, where there is at all times the greatest difficulty in obtaining labour and where coolies never remain for a month without getting sick. It is highly desirable to increase as much as possible the intervals at which we have to attend to works of this kind. The position of the tank

sufficiently

sufficiently explains the high rate allowed for earth work.

9. These estimates have been prepared in accordance with the orders contained in your Memorandum under reply, and will of course be duly carried out if sanctioned; but I regret that I am unable to attach my signature to any of them. They do not provide for what I consider necessary for the efficiency of the works in the first case, nor for their safety in the others, and I must therefore decline to accept any responsibility regarding them, except as to their proper execution.

I have the honour to be,

Sir

Your Most Obed. Servant

John Perry Captain R.E.

District Engineer

North Arcot

From C.E. of N.A. Circle
To The District Engineer
Chittoor.

Sir,

I have the honor to forward herewith for the Chief Engineer's sanction, the Detailed Estimate for repairing the bund of Codoocanthangle Tank in Chittoor Taluq, Division, District, Ry. D. No. 2 of 1874-75.

Dated 29th August 1874.

Rupees 3182

Accounts 1571

Enclosures 9.

Remarks Klenvand

Estimate for the repairs of Tank in the Chittoor Range.

Ch. Engineer's No. 2418.

Rs. 6631-14

1-7-74.

ENUE IRRIGATION. REPAIRS.

DETAILED ESTIMATE No. 49 1874-75.

DISTRICT NORTH ARCOT, TALUQ Chittoor

Village ~~No.~~ Codoocanthangle.

K.

Repairing the bund of Codoocanthangle Tank

Particulars.	Measurement.			Contents.				
	L.	B.	D.	Earth work	New stone	old stone Revett.	Gravel backing	Sloping
From North end								
Tail Bank	100	6-9	1-6	1012-6	✓			
New Flush Escape	45							
Breach	37	12	5--	2220--	✓			
New Stone Revett	"	5/2	4 1/2	"	249-9	✓		
Gravel backing	"	3/4	4 1/2	"	"	"	124-10 1/2	✓
Breach	46	16 1/2	8	6072--	✓	"	"	"
New stone Revett	"	1 1/2	6	"	414--	✓	"	"
Gravel backing	"	3/4	6	"	"	"	207--	"
Breach	5	11 1/4	4 1/2	253-1 1/2	"	"	"	"
New stone Revett	"	1 1/2	6	"	45--	"	"	"
Gravel backing	"	3/4	6	"	"	"	22-6	"
Raising	46	0 3/4	1 1/2	486--	✓	"	"	"
Widening	"	6	6	7728--	✓	"	"	"
New stone Revett	"	1 1/2	3	"	216--	✓	"	"
Gravel backing	"	3/4	3	"	"	"	108--	✓
Calingulah	30							
Raising	100	5 1/4	1/2	262-6	✓	"	"	"
Widening	"	2 1/4	2	450--	✓	"	"	"
New stone Revetment	"	1 1/2	4	"	600--	✓	"	"
Gravel backing	"	3/4	4	"	"	"	300--	✓
Levelling top of bund	680	6	3/4	3060--	✓	"	"	"
Rebuilding inner top								
1 yard of old stone	"	1 1/2	3	"	"	3060--	✓	"
Gravel backing	"	3/4	3	"	"	"	1530	✓
Raising	75	5 1/4	1/2	196-10 1/2	✓	"	"	"
Widening	"	1	10	750--	✓	"	"	"
Rebuilding old stone	"	1 1/2	4 1/2	"	"	506-3	✓	"
Gravel backing	"	1	4 1/2	"	"	"	337-6	✓
Carried over				16491--	1524-9	3566-3	2629-10 1/2	"

Particulars.	Measurement.			Contents.				
	L.	B.	D.	Earth work	Stone stone	old stone	Gravel backing	Sundries
Brought forward.....				1649--	1524-9	3566-3	2829-10½	"
Raising	90	6½	1/8	658-1½ ✓	"	"	"	"
Widening	"	1½	9	1215-- ✓	"	"	"	"
Old stone Revetment	"	1½	4½	"	"	607-6 ✓	"	"
New stone Revett	"	1½	1	"	135 ✓	"	"	"
Gravel backing	"	1	5½	"	"	"	495-- ✓	"
Raising	90	6	5/8	337-6 ✓	"	"	"	"
Widening	"	1½	6¼	843-9 ✓	"	"	"	"
Old stone Revett	"	1½	4½	"	"	607-6 ✓	"	"
Backing with gravel	"	1½	4½	"	"	"	495-- ✓	"
Raising	90	6	5/8	337-6 ✓	"	"	"	"
Widening	"	1½	5	675-- ✓	"	"	"	"
Rebuilding old stone	"	1½	4½	"	"	607-6 ✓	"	"
New stone above	"	1½	1	"	135 ✓	"	"	"
Gravel backing	"	1	5½	"	"	"	495-- ✓	"
Raising	90	6	5/8	337-6 ✓	"	"	"	"
Widening	"	1½	5	675-- ✓	"	"	"	"
Old stone Revett	"	1½	4½	"	"	607-6 ✓	"	"
Gravel backing	"	1	4½	"	"	"	405-- ✓	"
Levelling Round	430	5	1/4	537-6 ✓	"	"	"	"
Old stone Revett	"	1½	4½	"	"	2902-6 ✓	"	"
New stone Revett	"	1½	1	"	645 ✓	"	"	"
Gravel backing	"	1	5½	"	"	"	2365-- ✓	"
Raising	60	5¼	½	157-6 ✓	"	"	"	"
Widening	"	1	4¼	255-- ✓	"	"	"	"
Old stone Revett	"	1½	4½	"	"	405-- ✓	"	"
New stone Revett	"	1½	1½	"	135-- ✓	"	"	"
Gravel backing	"	1	6	"	"	"	360-- ✓	"
Raising	150	6	3/4	675-- ✓	"	"	"	"
Widening	"	1½	9¼	2081-3 ✓	"	"	"	"
Filling sets in front	"	6	1	900-- ✓	"	"	"	"
Old Stone Revett	"	1½	4½	"	"	1012-6 ✓	"	"
New stone Revett	"	1½	1½	"	337-6 ✓	"	"	"
Gravel backing	"	3/4	6	"	"	"	675 ✓	"
Carried over.....				26176-7½	2912-3	10316-3	7829-10½	"

Particulars.	Measurement.			Contents.				
	L.	B.	D.	Earth work	Stone stone	old stone	Gravel backing	Sundries
Brought forward.....				26176-7½	2912-3	10316-3	7829-10½	"
Raising	90	7½	1¼	843-9 ✓	"	"	"	"
Widening	"	3	9	2430-- ✓	"	"	"	"
Filling sets in front	"	6	1	540-- ✓	"	"	"	"
Old stone Revetment	"	1½	12	"	"	1620-- ✓	"	"
New stone Revett	"	1½	2	"	270-- ✓	"	"	"
Gravel backing	"	1	14	"	"	"	1260-- ✓	"
Raising	270	6	7/8	1417-6 ✓	"	"	"	"
Widening	"	2½	9	6075-- ✓	"	"	"	"
Old stone Revett	100	1½	4½	"	"	675-- ✓	"	"
D°	170	1½	19	"	"	4845-- ✓	"	"
New stone Revett	270	1½	3/4	"	303-9 ✓	"	"	"
Gravel backing	100	1	5¼	"	"	"	526-- ✓	"
D° D°	170	"	1 9¾	"	"	"	3387-6 ✓	"
Levelling round	180	5	1/4	225-- ✓	"	"	"	"
Widening	"	½	5	450-- ✓	"	"	"	"
Old stone Revett	"	1½	4½	"	"	1215-- ✓	"	"
New stone Revett	"	1½	1½	"	405-- ✓	"	"	"
Gravel backing	"	1	6	"	"	"	1080-- ✓	"
Levelling behind	270	5	1/4	337-6 ✓	"	"	"	"
Old stone Revetment	"	1½	3¾	"	"	1518-9 ✓	"	"
New stone Revett	90	1½	1	"	135-- ✓	"	"	"
Gravel backing	270	1	3¾	"	"	"	1012-6 ✓	"
D°	90	1	1	"	"	"	90-- ✓	"
Raising	90	5	1/4	112-6 ✓	"	"	"	"
Widening	90	2¾	3	742-6 ✓	"	"	"	"
Old stone Revett	"	½	3	"	"	405-- ✓	"	"
Gravel backing	"	3/4	3	"	"	"	202-6 ✓	"
Raising	270	5	1/4	337-6 ✓	"	"	"	"
Widening	"	1	9	2430-- ✓	"	"	"	"
Old stone Revetment	"	1½	4½	"	"	1822-6 ✓	"	"
New stone Revett	"	1½	1	"	405 ✓	"	"	"
Gravel backings	"	3/4	5½	"	"	"	1113-9 ✓	"
Carried over.....				42217-10½	4431	22417-6	16471-1½	"

Particulars.	Measurement. L.	B.	D.	Contents. Earth work	Stone stone	Old stone	Grand banking	Turfing
Brought forward....				32117-½	4431-	22417-6	16471-1½	
Raising	90	5	¼	112-6				
Widening		1	6	340-				
Old stone Revett		1½	4½			607-6		
Grand banking		¾	4½				303-9	
Levelling bund	335	5	¼	418-9				
Old stone Revett		1½	4½			2261-3		
Grand banking		¾	4½				1130-7½	
Raising	140	6		840-				
Widening		2	4½	1260-				
Old stone Revett		7½	3			630-		
Grand banking		¾	3				315-	
Catinguelah	30							
Raising	180	6		1080				
Widening		3¾	3	2025				
Filling ruts & trimming front slope for turfing between 2 Calinguelahs	3650	6	¼	5520-				
Turfing front slope between 2 Calinguelahs	3650	7½						2760-
Do to back front of North Catinguelah	48	15½						744-
"	51	16½						841-6
"	37	12						444-
"	100	6						600-
Carried over				53914-½	4431-	25916-3	18220-6	30229-6

Particulars.	Measurement. L.	B.	D.	Contents. Earth work	Stone stone	Old stone	Grand banking	Turfing
Brought forward....				53914-½	4431-	25916-3	18220-6	30229-6
				53914-½	4431-	25916-3	18220-6	30229-6
				1996 22/27	164 1/9	959 23/27	674 22/27	3358 7/9

ABSTRACT.

Quantity.	Description of Charges.	Rate.	Per.	Amount.	Total.
1996 22/27	Cyds. Earth work	" 1 3	Cy.	156 " "	
164 1/9	Do. New Stone Revetment	1 8 "	do.	246 2 8	
959 23/27	Do. Old Stone Revetment	" 3 "	do.	179 15 6	
674 22/27	Do. Backing with gravel behind stone Revetment including Carting & tamping	" 4 "	do.	168 11 3	
3358 7/9	Sqyds. Turfing	" " 6	Sqy.	104 15 4	
"	Sowing grass seeds in rear slope watering it till properly grown			70 " "	925 12 9
	Sundries & Contingencies				14 3 3
	Total Estimate Rupees				940 " "

No. 2 or Chittoor Range Office,
Chittoor 22nd Augt 1874.

Supr
In charge of No. 2 or Chittoor Range.

Accompaniment to Estimate No. 49 of 1874-75 of Rupees 940
for repairing Codavacantrangle Tank in Chittoor Taluq
of North Arcot District.

Number of escape weirs or Calingulahs	2	
Aggregate length of do.	60	feet.
Deduction on account of dam stones	"	feet.
Maximum water level above crest of the escape proposed	2	feet.
Intended height of the top of the bund above escape crest level	4 1/2	feet.
Do. of top of revetment	1	feet.

ACRES.

Ayacut area Acres 107 Ayacut Revenue Rupees 593
Average Revenue during the last five years Rupees 718

Dates and cost of repairs for the last four years. { In 1872/73 34-4-5

Amount of present Estimate 940

Total Rupees 974-4-5

Necessity and object of work which it belongs. Bund weak & low in the class to Stone revetment partly disordered. and low. It is one of the series of tanks through which the Western channel of the Poiney Anicut passes, and therefore it is absolutely necessary that the bund is to be thoroughly repaired.

Range Officer.

Repair AGRICULTURAL.

"Revised"

Detailed Estimate

No. 49 of 1874-75.

District. North Arcot.

Taluq. Chittoor

Village No. Codoocanthangle

WORK.

Repairing the Bund of Codoocanthangle Tank.

W.No. 6431/2/74.

P.G.J. 14 Nov. 1874

Amount of Estimate Rs. 940

Actual Expenditure Rs.

Rs 7/1575/74

Revenue Irrigation

DETAILED ESTIMATE No. 50 OF 187 .

New 25

DISTRICT NORTH ARCOT, TALUQ Chittoor

WORK. Village Codoocanthangal

Constructing a Flush Escape at the North End of Codoocanthangal Tank

Particulars.	No.	Measurement. L.	B.	D.	Contents.
Foundation to body	1	48	3	1	432
From wings	2	19½	3	1	351
do above	2	19½	2	3	234
Total C.ft. or Cyds Rough Stone in Chunam					1017
					37 3/3
Pointing					
Body	1	48	3		144
Wings	2	19½	4½		175½
Ends of do	4	2	2		24
Cyfts or Cyfts of Pointing in Chunam					343-6
					3/2
Excavating foundation body	1	16	1	1	16
do wings	2	6½	1	1	13
Cutting Channel in front of Calingasha	1	20	16	½	160
do in rear	1	30	16	¾	360
Cyds of Earth work					549 .

Carried over.....

Particulars.	No.	Measurement. L.	B.	D.	Contents.
Brought forward.....					

ABSTRACT.

27

Quantity.	Description of Charges.	Rate.	Per.	Amount.	Total.
37 2/3	Cyds Rough Stone in Chunam	2 8 a	Cyd	94 2 8	
3 1/2	Sqrs of Pointing in Chunam	1 8 a	Sqr	5 4 a	
549	Cyds of Earth Work	1 6	Cyd	51 7 6	
	Sundries &c.			9 1 10	
	Total Estimate	Rupees			160 a a

No. 2 or Chittoor Range Office,
Chittoor 22d Augt 1874.

H. Pierce Thuroward Lieut
In charge of No. 2 or Chittoor Range.

UE IRRIGATION. 29 REPAIR.

DETAILED ESTIMATE No. 57 1874-75.

DISTRICT NORTH ARCOT, TALUQ Gudiattum

Village No. Palcommattoor

Repairing the bund of Palcommattoor Small Tank

Particulars.	MEASUREMENT. L.	B.	D.	CONTENTS. Earthwork	Old Stone	Stone Pitching	Stone Coping
From South end							
Good	47						
Raising	48	4½	X	216—			
Widening	"	1⅞	2	15—			
Raising	136	4½	1	612—			
Widening	"	1⅞	2	510—			
Levelling Top	150	4	¼	150—			
Raising	150	3¾	½	281-3			
Widening	150	1	2	300—			
Raising	156	4¾	1⅛	933-7½			
Widening	"	2¼	3¼	1140-9			
Filling front washing	"	2	½	156—			
Raising	36	6⅜	2	459—			
Widening	"	3¾	4	540—			
Filling front washing	"	1½	¾	40-6			
Raising	132	5¾	1⅝	1233-4½			
Widening	"	2½	1¾	577-6			
Filling front washing	"	1	½	66—			
Raising	290	5¾	1⅛	1712-9			
Widening	"	½	1¾	253-9			
Filling front washing	"	1	1	290—			
Raising	228	6¼	1⅝	2315-7½			
Widening	"	1¼	5¼	1496-3			
Filling front washing	"	2¾	1	541-6			
Old Stone Retaining	"	1½	10	"	3420		
Stone Backing	"	¾	10	"	"	1710—	
Carried over...				13905-11½	3420	1710—	

DETAILED ESTIMATE No. 57 OF 1874/75

DISTRICT NORTH ARCT.

Taluq Cuddalore

WORK.

Constructing a Flush Sluice at the South End of the Palcommattoor Tank

Co Executive Engineer

Cuddalore

Rs 64 31 / 3 / 94

Estimate Rupees 160—

C.S. 8/1875

Name Engineer

Particulars.	Measurement. L.	B.	D.	Contents. Earth work	old stone	grand basking	Lurfing	
Brought forward.....				13905-11/2	3420--	1710	"	
Raising	300	4 3/4	3/4	1068-9	"	"	"	
Widening	"	2	3 3/4	2250--	"	"	"	
Old stone Revetment	"	1/2	9	"	4053	"	"	
Grand backing	"	3/4	9	"	"	2025	"	
Raising	300	4/4	1/2	637-6	"	"	"	
Widening	"	1/2	3	1350--	"	"	"	
Old stone Revett	"	1/2	9	"	4050	"	"	
Grand basking	"	3/4	9	"	"	2025--	"	
Raising	504	4/4	1/2	1071--	"	"	"	
Widening & filling Rets	"	1/2	5/2	1386--	"	"	"	
Good	250							
Raising	60	4/4	5/8	159-4 1/2	"	"	"	
Widening Front Slope	"	2	2	240--	"	"	"	
Trimming Front & Slope Straight Surfing	2740	6	1/4	4110--	"	"	"	
	"	6		"	"	"	16440	
Cubics	Sqft			26178-6 3/4	11520--	5760	16440	
Cubic	Sq Yds			969 1/2	426 2/3	213 1/3	1826 2/3	
Loose Stone encake								
Bosky	20	4	1	80				
Things	2	6 1/2	1	13				
Total cubic yards				93				

ABSTRACT.

Quantity.	Description of Charges.	Rate.	Per.	Amount	Total.
969 1/2	Cyds Earth work	1 3	Cyd	75 11 10	
426 2/3	Do Old stone Repairing	3	do	80	
213 1/3	Do Backing with grand behind Stone Revett. including Basting & Stamping	4	do	53 5 4	
1826 2/3	Lg yds Lurfing	6	Lyd	57 1 4	
	Sowing grass seeds in new Slope of Bunds			40	306 2 6
	Sundries & Unforeseen items				13 13 6
	Loose stone encake				320
93	C.y. Loose stone	12 2		69 12	
	Sundries			10 4	80
	Total Estimate Rupees				400

No. 2 or Chittoor Range Office,
Chittoor 22d Augt 1874.

In charge of No. 2 or Chittoor Range.

Accompaniment to Estimate No. 51 of 1874-75 of Rupees 910
for Repairing Pasoomaamoor Tank in Gudiattum Taluq
of North Arcot District.

Number of escape weirs or Calingulahs. (one) Temporary.
Aggregate length of do. —— 10 feet.
Deduction on account of dam stones —— 4 feet.
Nil
Maximum water level above crest of the escape —— 2 feet.
Intended height of the top of the bund above escape crest level —— 3 feet.
—— Do. of top of revetment Level with do. —— —— feet.

ACRES.

Ayacut area Acres. 76 3/4 Ayacut Revenue Rupees 238—a
Average Revenue during the last five years Rupees —— 189—a

Rates and cost of repairs for the last four years. { Same

Amount of present Estimate —— 400
~~32~~

Total Rupees —— 400
~~32~~

Necessity and object of work. The bund low and weak throughout. its revetment mostly disordered. The tank bund does not appear to have undergone any repairs since a long period of time within the memory of some of the old inhabitants of the village; as it formed a part of the Polecadah Jaghier which had lapsed to Government some years back.

Allen Thuson
Range Officer.

Rs 1/1570/74

Repair AGRICULTURAL.

"Revised"

Detailed Estimate

No. 51 of 1874-75.

District. North Arcot.

Taluq Gudiattum

Village No. Pasoumathoor

WORK.

Repairing the bund of Pasoumathoor small Tank.

Mr. 643 1/74.
5-400

Amount of Estimate Rs. 320

Actual Expenditure Rs.

REPA

DETAILED ESTIMATE No. 53 1874-75.

DISTRICT NORTH ARCOT, TALUQ Gudiattum

Village No. Venkatasamudram

ORK. Repairing the bund of Venkatasamudram small Tank

Particulars.	Measurement.			Contents				
	L.	B.	D.		old stone	new stone	gravel backing	Lime
Basis Katthu			2					
Goodispoon Calingulu	158							
Rebuilding old stone								
" Revetment	3 141	1½	13		2749-6			
Gravel backing to do	"	3/4	13				1374-9	
" Raising	150	4/4	½	318-9				
Widening & filling Rate	"	2	1	300				
Old stone Revetment	"	1½	13		2925			
Gravel backing to do	"	3/4	13	"			1462-6	
Raising	360	5½	3/4	1485	"	"	"	"
Widening & filling Rate	"	2	1	720	"	"	"	"
Old stone Revetment	"	1½	12	"	6480	"	"	"
Gravel backing to do	"	3/4	12	"	"	"	"	"
Raising	200	5½	1	3300	"	"	3240	"
Hill	864							
Revetment	3		1/4	261	"	"	"	"
Filling front slope	"	7½	½	498-9	"	"	"	"
Old stone Revetment	"	1½	13	"	2593-6	"	"	"
New stone above	"	1½	2	"	"	399	"	"
Gravel backing	"	3/4	15	"	"	"	1496-3	"
" Raising								
					7888-6	14748-	399-	7573-6

Particulars.	Measurement. L.	B.	D.	Contents. E. work	old stone	new stone	gravel backing	Lurfing
Brought forward				6888-6	1474-8	399-2	7573-8	
Raising	504	4/4	3/4	1606-6	"	"	"	"
Widening	"	3/4	3/2	1323-	"	"	"	"
Filling front slope	"	18	1/4	1260-	"	"	"	"
Old stone Rem.t	"	1/2	9	"	6804	"	"	"
New stone "	"	1/2	2	"	"	1572-	"	"
Gravel backing	"	9/4	11	"	"	"	4158-	"
Raising	657	7	1	4557	"	"	"	"
Widening	"	3/4	3/2	1708-1/2	"	"	"	"
Raising Remittent	"	1/2	1/2	"	"	1446-9	"	"
Gravel backing	"	3/4	1/2	"	"	"	732-4/2	"
Trimming front slope Remittent	2539	7	1/4	4443-3	"	"	"	"
Lurfing D.o	"	7		"	"	"	"	1777-3
" "	"	22		"	"	"	"	"
" "	"	22		2	"	"	"	"
" "	"	"		"	"	"	"	"
" "	"	33		"	"	"	"	"
				21787-1/2	2155-2	3375-9	12463-10/2	1777-3
" "	"	12		806 25/27	798 2/9	1-3	461 16/27	1974 7/9
Loose stone exempt 200' lng								
Bush	66 2/3	4	1	266 2/3				
Wings 2×	6 2/3	1	1	13 1/3				
Total abridgments				280				

3/

ABSTRACT.

Quantity.	Description of Charges.	Rate.	Per	Amount	Total.
806 25/27	Cyc. Earth work	1 3	Cyc.	63 7	
798 2/9	do. old stone Revetment	3	do.	149 10 8	
125	do. New stone Revetment	12	do.	93 12	
461 16/27	do. Gravel backing behind stone Rem.t including Casting & stamping	3 0	do.	86 8 9	
1974 7/9	Sq.s Lurfing	5	Cyc.	51 6 9	444 6 9
	Sundries & Incidental items				5 9 3
	Excess				450 - -
280	Cubic feet of Loose stone	1 - 0		210 - -	
	Sundries			20	230
				Total	680 - - 8

No. 2 OR CHITTOOR RANGE OFFICE,
Chittoor 22d Augt 1874.

H. Thuillier Lieut.
In charge of No. 2 or Chittoor Range.

Accompaniment to Estimate No. 53 of 1874 - 75 of Rupees 450—

for Venkatasamudram Tank in Gudiatham Taluq

of North Arcot District.

Number of escape weirs or Calingulahs.	None	one
Aggregate length of — do.	(two hundred feet)	31 feet.
Deduction on account of dam stones	(no provision)	6 feet.
Maximum water level above crest of the escape		1½ feet.
Intended height of the top of the bund above escape crest level		3 feet.
Do. of top of revetment		1 feet.

ACRES.

Ayacut area 29 Acres Ayacut Revenue Rupees 135—

Average Revenue during the last five years Rupees 139—

Dates and cost of repairs for the last four years. None

Amount of present Estimate 680 ~~450~~

Total Rupees 680 ~~450~~

Necessity and object of work. To bund round and low as would be necessary from the section, and the revetment ~~would be~~ destroyed and fallen down.

Range Officer.

No. 1576

Repair

AGRICULTURAL

Revised

Detailed Estimate

No. 53 of 1874-75.

District. North Arcot.

Taluq Cudiattum

Village No. Venkatasamudram

WORK.

Repairing the bund of Venkatasamudram small Tank.

Rs. 6431/
7 1/4.
680

Amount of Estimate Rs. 450—4

Actual Expenditure Rs. "

C.E. 3/1595/74

REVENUE IRRIGATION.

REPAIR.

4

DETAILED ESTIMATE No. 55 1874-75.

DISTRICT NORTH ARCOT, TALUQ. Palmanair

Village No. Athicoppam

WORK. Repairing the bund of Athicoppam Tank.

Particulars.	Measurement.			Contents.				
	L.	B.	D.	Earth work	Puddling	Sawn Stone	Old Stone	Gravel backing
Commencing from								
good	50							
Raising	50	4	1/4					
Puddling	"	1 1/2	"					
Raising	100	5 3/4	1/2	187-6				
Puddling	"	2	"					
Old Stone Revetment	"	1 1/2	26				3900	
Gravel backing	"	3/4	26					1950
Raising	100	3 3/4	1/2	187-6				
Puddling	"	2	"					
Old Stone Revetment	"	1 1/2	26				3900	
Gravel backing	"	3/4	26					1950
Old Stone Revetment	100	1 1/2	28				4200	
Gravel backing	"	3/4	28					2100
Old Stone Revetment	100	1 1/2	25				3750	
Gravel backing	"	3/4	25					1875
Old Stone Revetment	100	1 1/2	28				4200	
Gravel backing	"	3/4	28					2100
Old Stone Revetment	100	1 1/2	25				3750	
Gravel backing	"	3/4	25					1875
Levelling the bund	100	"	1/4	145				
Puddling	"	1	"		100			
Old Stone Revetment	68	1 1/2	10				1500	
Gravel backing	"	3/4	10					750
Raising	100	4 1/8	3/4	309-7 1/2				
Puddling	"	2 3/4	"		275			
Raising	34	4 1/2	1	153				
Puddling	"	3 3/4	"		127-6			
Carried over...				1062-4 1/2	977-6	"	25200	12600

Particulars.	Measurement. L.	B.	D.	Contents. Earth work	Lurfing	New Stone	Old Stone	Gravel Backing
Brought forward				1062-4½	977-6		25200	12600
Facing	21	5 5/8	1¾	206-8/8				
Lurfing	"	6	"	"	126			
Facing	24	6¾	2½	405				
Lurfing	"	6½	"	"	156			
Facing	16	4 7/8	1¼	97-6				
Lurfing	"	4	"	"	64			
New stone Revetment	36	1½	7	"	"	378		
Rough stone laid dry across Caliyanda	17	2	3	"	"	102		
Revetment East of Caliyanda	15	1½	5	"	"	112½		
Rough stone wall across the present surplus Channel	9	6	6	"	"	324		
Cutting surplus Channel	95	12	3	342 0				
Trimming front slope	981	6	¼	147-6				
Lurfing D°	"	6	"	"	588			
Total Cubic & Sup. Q.				6663-1	7209-6	916-6	25200	12600
Cubic & Sup. Qrs				246 7/9	801 1/3	33 25/27	933 1/3	466 2/3

ABSTRACT.

Quantity.	Description of Charges.	Rate.	Per.	Amount	Total.
246 7/9	Cubic Earth work	" 2 "	Cp.	30 13 6	
801	Cubic Lurfing	" " 6	Cp.	25 " 6	
33 25/27	Cubic New Stone Revett	" 9 "	Cp.	19 1 4	
933 1/3	D° Old Stone Revett	" 4 "	D°.	233 5 4	
466 2/3	D° Gravel backing behind Revetment including Carting & Stamping	" 3 6	D°	102 1 4	
"	Repairing Sluice which is reported to be			70 " "	
	Sundries & Unforeseen Items				480 6 "
					9 10 "
	Total Estimate Rupees				490 " "

No. 2 or Chittoor Range Office,
Chittoor 22d Augt 1874.

H. Thuesen Supr
In charge of No 2 or Chittoor Range. H. Thuesen

Accompaniment to Estimate No. 55 of 1874-75 of Rupees 490—
for Repairing Atticcoppam Tank in Palmaner Taluq
of North Arcot District.

Number of escape weirs or Calingulahs.	One	
Aggregate length of do.	30	feet.
Deduction on account of dam stones	..	feet.
Maximum water level above crest of the escape	1½	feet.
Intended height of the top of the bund above escape crest level	3	feet.
Do. of top of revetment	1	feet.

ACRES.

Ayacut area Acres 62 Ayacut Revenue Rupees 372—

Average Revenue during the last five years Rupees 156—

Dates and cost of repairs for the last four years. { None

Amount of present Estimate 490—

Total Rupees 490—

Necessity and object of work

Tank bund in some places weak. Revetment right through entirely out of order and the Sluice is also reported leaky.

Range Officer.

Repair AGRICULTURAL.

Revised

Detailed Estimate

No. 55 of 1874-75.

District. North Arcot.

Taluq Palmanair

Village No. Athicoppam

WORK.

Repairing the bund of Athicoppam

Sanction G.O. 3228 14-11-74
M. 6431
In B. No. 1024

Amount of Estimate Rs. 490

Actual Expenditure Rs. J

Rs 5/1075/24

A 788.

Note by the Chief Engineer for Irr.

Enclosures 11

R. No. 1595-24 dt 7/24 with 9 Enclosures
D. No 334 A-2 dt 7/24

The following estimates have been revised by the District Engineer, North Arcot since they were first submitted with the letter No 340 of the 6th July 1874 No 1799 dated 7th May 1874-

1st Codoocanthangle Estimate Rs 1100

Ayacut area acres 107
Assessment Rupees 593
Average revenue — — 7/8

The outlay in the preceding 4 years amounts to Rupees 36 and was incurred in 1872-73

The bank is on the Western channel from the Poiney anicut and has an independent catchment basin of 3 square miles. The maximum rise of water is to be limited to 2 feet above F.T.L. and the present 60 feet of escapes will be increased by the construction of an additional surplus weir,

2 of 30 feet each

48

48 feet in length, which, with the channel, will it is believed be sufficient to secure its safety. The top of the bund will be 4½ feet above F.T.L. The estimate provides for

Repairs ... Rupees 940
Bund new work & new surplus weir ... " 160

2. Venkatasamudram small Tank.
Estimate Rupees 680-
Ayacut area ... acres 29
Assessment ... Rupees 135
Average revenue ... " 139

No repairs have been previously executed, so far as can be ascertained.

The District Engineer explains that this tank is when full connected with the larger one of the same village, & that the surplus of the latter has to pass into the small tank, and to be discharged by its surplus weir, which is 31 feet in length. Under these circumstances he recommends that the bund should be made 4½ feet above the F.T.L. to correspond with the larger tank, and that the surplus from the catchment basin of 3¼ square miles, common to the two tanks, should be provided for by an escape 140 feet long with a maximum depth of 2 feet passing over. The required outlay will then be:

For repairs ... Rupees 695
Bund new work & new surplus weir ... " 265
960

This arrangement appears to be preferable to that provided for in the smaller estimate, but it must be remarked that the Revenue of the two tanks needed to be taken into account, and for the future they should be dealt with as one

irrigation works- Care must be taken that the channel of communication between the two tanks is of ample capacity.

3. Kasavathoor small Tank- Estimate Rupees 400-

Ayacut area ... acres 77
Assessment ... Rupees 238
Average revenue ... " 169

No outlay on this tank is on record.

As in the case of the Senkattanamthuruvu Tank, the District Engineer advocates the raising of the bund to the same level as that of the large tank of the same village, viz 4½ feet above full tank level; and, although the circumstances of the case are not the same, the large tank having an escape of its own, it may, on grounds of convenience, be desirable to continue the connection between the two tanks, and to sanction the additional

Despatched 14.10.14

130

130 Rupees required to carry out this arrangement- The estimate will then amount to Rupees 530- The two tanks should henceforth be treated as one irrigation work-

4. Athicoopum Tank- Estimate Rupees 490.

Ayacut area ... acres 62
Assessment ... Rupees 372
Average revenue ... " 156

No outlay on repairs is on record.

No 340 14. Forwarding the first estimate

It was mentioned that probably the revenue would be greatly increased by the repair of the tanks, and also that the existing escape, of 30 feet in length, is sufficient- If the latter be the case the drainage basin is not much more than one fifth of a square mile at most and the water supply is not likely to suffice for

for more than the area of cultivation, some 26 acres, represented by the average revenue. If the drainage basin be larger it would be a reason for either lengthening the escape or allowing a greater depth to pass over, with consequently a higher bund.

2. With regard to the remarks in the concluding para of Captain Pennycuick's letter, it has to be observed that this office must necessarily deal with the estimates in the information submitted with them, and that apparently excessive proposed outlay cannot be approved if that information does not fully support it. In the case of the first of the above estimates, the arrangement whereby maximum water level is limited to 2 feet above the normal level, instead of a variation of 3½ feet being allowed is decidedly preferable; in the next two instances the District Engineers recommendations has been adopted because additional facts in their support have been adduced; while in the last estimate the circumstances essential to a correct and final decision are not yet fully understood. Captain Pennycuick's responsibility is limited to submitting his proposals in such a shape that in all essential respects the circumstances may be readily understood, and the arrangements proper thereto decided upon.

Lt Colonel Dickens R.E.
Chief Engineer for Irrigation

3rd October 1874

To The Secretary to Govt P.W.D.

Public Works Dept

Proceedings of the Madras Govt

Read the following

From the Ch Engr
Madras
Chief Engr for Irrn

G.O. No 1571 dated
29th August 1874
G.O. Ms No 93 Coll dated
13th Nov 1874

The following
Tanks, estimates
of the North Arcot
District are sanctioned

Repairs

1 Codoocauttangle Estimate Rs 940
2 Venkatasamudrum
small tank " 695
3. Pasoulthoor small
tank " 530
4 Athicoopum tank " 490

Minor new works

1 Surplus weir Codoo-
caut tangle Rs 160
2 Do Venkata-
samudrum small
tank " 265

2. The Chief Engineer

for

Q no 6431

244

Sent 14-10-74

for Irrigation will continue to take such steps as he may consider necessary to satisfy himself that estimates are sufficient to meet, and are not in excess of the requirements of the works to which they relate.

If the information furnished in the estimates be in the first instance complete, the proper arrangements can be decided upon the more readily.

Captain Strangeways energy in undertaking a great many irrigation works during the

the past season has been noticed with satisfaction, and it is to be regretted that he should have shown some impatience because his recommendations have not always been accepted without the support of more full information, than was in the first instance afforded.

Wm 7/10/74

Engr

Chief Engr for Irrigation & Canals

Controller Private Works Dept

S. Capis dept 20/11/74.

on this point should the Duty of Distributing information required either by the Secretary of State or Parliament in future.

P. W. 1874 Dept.

From,

The Chief Engineer for Irrigation.

No: 6431

To,

The Secy. to Govt. P. W. D.

Dated 3rd Dept 14th Rec 14 } October 1874.

No. 788

Enclosures 11

Note on the estimates for the repair of certain tanks in the Chittoor Range North Arcot District.

6431

Govt. of 1874 Madras.

PUBLIC WORKS.

To

The Dr. Engr.
R. Arcot

Dated

Read. Encl. 11

G. O. 4 Nov 1874, No. 3228

Nos. 243-245.

Tanks Estimates for the repair of certain Tanks in the North Arcot District sanctioned with instructions —