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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,
1st December 1876. No 3,263.*

Read the following —

No 266 W

No. 64-A. *Note by the Chief Engineer for Irrigation*

The following estimates from the No 3 or Chingleput Range are forwarded by
No 2,040, dated 9th September 1876 the Superintending Engineer, Chingleput,
with his letter marginally noted —

Taluq	Village	Work	Amount
Madaranticum	Pulliput Pathoor	S No 337, V tank and supply channel	RS 4,710
Do	Budur	S No 341, V tank and supply channel	6,755

2 The financial and hydraulic details of the Irrigation Works concerned are
exhibited in the following statement —

I—Financial Details

Name of Work	Ayacut Area	Assessment	Average Revenue for 5 Years	Highest Revenue for 5 Years	OUTLAY			
					During the previous 4 Years	PROPOSED ORDINARY AGRICULTURAL		
						Original Works	Repairs	Average Annual Proportion of Charges to Revenue
	ACRE RS	RS	RS	RS	RS	RS	RS	RS
Pulliput Pathoor tank and supply channel	646	2,715	2,105	2,464	Nil	1,470	3,240	44 7
Budur tank and supply channel	539	2,999	1,919	2,140	"	2,450	3,305	59 9
Total	1,185	5,714	4,024	4,604	Nil.	3,920	6,545	52 0

II—Hydraulic Details.

Name of Work.	Catchment Basin Area	MAXIMUM SUPPLY		LENGTH OF ESCAPE		AVERAGE HEIGHT OF BUND		Surplus discharged at M.T.L. per Second	Tanks above
		per Catchment Second	Channels per Second	Total	Effective	Above F.T.L.	Above M.T.L.		
	SQ. M.	C.F.T.	C.F.T.	FT.	FT.	FT.	FT.		
Pulliput Pathoor tank and supply channel	1	562		Nil	Nil	25	10		No
				E 136	136	40	25	558 7	Nil.
Budur tank and supply channel	25	1,036		Nil	Nil	25	05		
				E 163	163	45	25	1,030 9	1

NOTE.—The proposed dimensions of escapes and heights of bund are printed in large type The existing dimensions in small type The following abbreviations are used —C—Calingulih with dam stones W—Weir with flush crest E—Escape at ground level. B—Bund of tank S—Revenue No V—Village

3 The following is a summary of the work proposed to be carried out in each case —

Pulliput Pathoor Tank and Supply Channel—This tank was breached by the floods of 1874, but the breaches were closed and the cost is entered in the estimate now submitted. The tank is shallow and the supply is received by an offtake from the Palar.

The Irrigation sluices are leaky. The tank is not provided with a surplus escape, nor the channel with a head sluice to regulate the supply.

The length of the channel is over 2 miles, but the extent to be cleared is 2,507 yards. The fall is reported to be 18 inches to the mile, and the discharge in the wet season when carrying a depth of 3 feet, 591 cubic feet per second, or 7,128 cubic yards per second, and in the dry season when carrying a depth of 9 inches is 661 cubic feet per second, or 888 cubic yards per hour. It is proposed to remove the sand deposited on the berms where the banks of the channel are high and to give the channel a bottom width of 7 feet with side slopes of 1 to 1. The estimate provides for raising and repairing the bund, planting (kus-kus grass) and turfing, repairing three irrigation sluices and channel outlet, constructing a dry stone escape for the tank, repairing the channel, and converting the bridge over it into a head sluice.

Budur Tank and Supply Channel—Almost the whole of the foregoing particulars regarding the Pulliput Pathoor tank and channel are applicable to these works except that the Budur channel is $3\frac{1}{2}$ miles in length, and the extent to be cleared in this instance is 3,432 yards.

The section of the channel for the first 2 miles averages 6 feet in width at bottom, with slopes of 1 to 1, and as it advances nearer to the basin it narrows to $4\frac{1}{2}$ feet in width. The inclination of the bed, which is 21 inches per mile for the first 2 miles, alter gradually to 15 inches at the tank. This arrangement is remarkable when the fall is greater the width is less. The channel runs parallel and in close proximity to the river, the fall of the latter is 4 feet in a mile, and the soil sandy. The minimum discharge at the head of the channel is 833 cubic yards. The proposed head sluice with its minimum depth, viz, 9 inches, is intended to discharge 932 cubic yards per hour.

The estimate provides for raising and repairing the bund, planting (kus-kus grass) and turfing, repairing three irrigation sluices, constructing a dry stone escape for the tank, repairing the supply channel, and constructing a head sluice.

4. The only work which can be recommended for sanction without revision is the repair of the tank bund and the construction of the escape.

If the low level vents for spring channels are required at the head sluice, the channels themselves must be so arranged as to a level of the cuts being made below normal bed level annually by the ryots, and it is clear that these cuts must be made in a channel with very little spare bed width and steep sides. The low level vents of the sluice are $4\frac{1}{2}$ and $4\frac{1}{2}$ feet below normal bed level, and each is could not be carried down in channels of 6 and 7 feet bottom width and with a bottom width of 3 feet for the lower channel without being likely to cause a part of the channel sides. A longitudinal section of each channel is necessary showing the bed for ordinary supply, and that for carrying the spring water and the sections should correspond and should be adapted to the required arrangement.

The cost of adapting the bridge of the Pulliput channel to regulation appears very great; what is the present level of the floor of this bridge is not stated, if that at the proposed spring channel vent, the foundations must be very shallow.

The head sluices must give a margin of 3 feet at least above flood level of 1874.

The wings do not correspond with the slopes, revetments seem necessary for the bridge, and will be still more so when the roadway is raised. At the Budur channel head sluice it is clearly unnecessary to have rear wings 8 feet high at the ends with a depth of water of 3 feet, especially as the section of the channel has a berm at $4\frac{1}{2}$ feet above bed. There is much room for improvement in the designs, which should be reconsidered in connection with Circular No 76.

5 The following statement shows the proposed distribution of the outlay recommended for sanction, to the debit of the several heads of account involved —

Name of Tank	Items of Estimate	FUND, ORDINARY AGRICULTURAL		Total for each Tank, &c
		Original Works	Repairs	
Pulliput Pathoor tank and supply channel	Repairing the bund, channel outlet, and three irrigation sluices	RS 410	RS 1,680	} 2,090
Budur tank and supply channel	Dry stone escape for tank Repairing the bund and three irrigation sluices Dry stone escape for tank	450	1,550	

FORT ST George,
24th November 1876

(Signed) A DEC SCOTT, Major, R E,
Dy Chief Engineer for Irrigation,
for Chief Engineer for Irrigation

To the Secretary to Government, Public Works Department

No 64-B

ORDER THEREON, 1st December 1876, No 3,263

IRRIGATION, No 9-A.
Account

No 266 W, dated 24th November 1876

The following estimates for Irrigation Works in the No 3 or Chingleput Range, Chingleput District, forwarded by the Chief Engineer for Irrigation with his memorandum marginally noted, are sanctioned —

Name of Work	Item of Estimate	FUND		Amount	Irrigation Registry No
		Ordinary Agricultural			
Pulliput Pathoor tank and supply channel	Repairing the bund, channel outlet, and three irrigation sluices	Repairs	RS 1,680	1	} 188-I
	Dry stone escape	Original Works	410	2	
Budur tank and supply channel	Repairing the bund and three irrigation sluices	Repairs	1,550	1	} 189-I
	Dry stone escape	Original Works	450	2	

2 These sanctions are registered as shown above

Proceedings of the Madras Government, Public Works Department,
1st December 1876 No 3,263

3 The plans of the head sluices to the channels should be revised in accordance with the remarks of the Chief Engineer

(True Extract)

(Signed) G. W. WALKER, Major-General, R.E.,
Secretary to Government

Form No 1

OFFICE OF CHIEF ENGINEER FOR IRRIGATION,

No 266-W Fort St George 24th November 1876.

Note by the Chief Engineer for Irrigation

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7 Sept 1876
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The following Estimates from the No. 3 or Chingleput Range are forwarded by the *Superintending* Engineer *Chingleput* with his letter marginally noted —

Taluq	Village	Work.	Rs.	Amount
		Madarantium - Pulliput Pathon, S. No 337 V. Tank & supply channel	47710	
		— do — Rudur - S. No 341 V. Tank & supply channel	5755	

2 The Financial and Hydraulic details of the Irrigation works concerned are exhibited in the following statement —

I — Financial Details

Name of Work	Ayacut Area Acres	Assessment Rs	Average Revenue for 5 years Rs	Highest Revenue for 5 years Rs	During the previous 4 years Rs	OUTLAY		
						Proposed Ordinary Agricultural Reparations Rs	Average annual proportion of Charges to Revenue Rs	
Pulliput Pathon Tank & supply Channel	646	2715	2115	2464	Nil.	1470	3240	467
Rudur Tank and supply Channel	539	2999	1919	2160	do	2650	3315	59.9
Total	1185	5714	4034	4624	Nil	3920	6555	52.0

II - Hydraulic Details

Name of Work	Catchment Basin Area	Maximum Supply		Length of Escape		Average Height of Bund		Surplus discharged at M T L per Sec	Tanks above
		Catchment per Second	Channels per Second	Total	Effective	Above F T L	Above M T L		
Sq M	C ft	C ft	Ft	Ft	Ft	Ft	C ft	No	
Pulliput Pathoor Tank and Supply Channel -	1	562	"	Nil	Nil	2.5	1.0	"	Nil
Budur Tank and Supply Channel -	2.5	1036	"	Nil	Nil	2.5	0.5	"	1

Note - The proposed dimensions of escapes and heights of bund are entered in red. The existing dimensions in black. The following abbreviations are used - E - Escape at ground level B - Bund of tank S. Revenue & V. Village.

3 The following is a summary of the work proposed to be carried out in each case -

Pulliput Pathoor Tank and Supply Channel -
This tank was breached by the floods of 1874 but the breaches were closed and the cost is entered in the estimate now submitted. The tank is shallow and the supply is received by an off-take from the Dalar.

The Irrigation sluices are leaky. The tank is not provided with a surplus escape nor the channel with a head sluice to regulate the supply.

The length of the channel is over 1000 miles, but the extent to be cleared is 2507 yards.

The fall is reported to be 18 inches to the mile and the discharge in the wet season when carrying a depth of 3 feet, 59.1 cubic feet per second or 7128 cubic yards per hour and in the dry season when carrying a depth of 9 inches is 6.61 cubic feet per second or 888 cubic yards per hour. It is proposed to remove the sand deposited on the banks where the banks of the channel are high and to give the channel a bottom width of 7 feet with side slopes of 1 to 1. The estimate provides for raising and repairing the head, planting (Kush grass) and turfing - Repairing three irrigation sluices, and channel outlets - Constructing a dry stone escape for the tank. Repairing the channel and converting the bridge over it into a head sluice.

Budur Tank and Supply Channel -
Almost the whole of the foregoing particulars regarding the Pulliput Pathoor tank & channel are applicable to these works except that the Budur channel is $3\frac{1}{2}$ miles in length and the extent to be cleared in this distance is - 3432 yards.

The section of the channel for the first 2 miles averages 6 feet in width at bottom, with slopes of 1 to 1 and as it advances nears to the basin it narrows to $4\frac{1}{2}$ feet in width. The inclination of the bed which is 20 inches per mile for the first 2 miles afterwards

to 15 inches at the tank. This arrangement is remarkable when the fall is greater the width is less. The channel runs parallel and in close proximity to the river the fall of the latter is 4 feet in a mile and the soil sandy. The minimum discharge at the head of the channel is 330 cubic yards. The proposed head sluice with its minimum depth viz 9 inches is intended to discharge 932 cubic yards per hour.

The estimate provides for repairing and repairing the bund, planting (Sisymbrium grass) and turfing. Repairing three irrigation sluices:— Constructing a dry stone wall for the tank:— Repairing the supply channel and constructing a head sluice.

4. The only work which can be recommended for sanction without previous construction of the tank bund and the construction of the escape is.

If the low level vents for spring channels are required at the head sluice, the channels themselves must be so arranged as to admit of the cuts being made below normal level annually by the pyots and it is clear that there could not conveniently be made in a channel with very little space bed width and steep side slopes. The low level vents

of the sluice are 4 to 4 1/2 feet below normal high level and such cuts could not be carried down in channels of 647 feet bottom width and with a bottom width of 3 feet for the lower channel without being likely to cause slips of the channel sides. A longitudinal section of each channel is necessary showing the bed for ordinary supply and that for carrying the spring water and the sections should correspond and should be adapted to the required arrangements.

The cost of adapting the bridge of the Pulliput channel to regulation appears very great, what is the present level of the floor of this bridge, if that of the proposed spring channel of the proposed spring channel is correct the foundations must be very shallow.

The head sluices must give a margin of 3 feet at least above flood level of 1874.

The wings do not correspond with the slopes, revetments seem necessary for the bridge and will be still more so when the roadway is raised. At the Budur channel head sluice it is

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to is clearly necessary to have ear wings
is 8 feet high at the ends with a depth
w. of water of 3 feet especially as the
a. section of the channel has a berm
f. at 4 1/2 feet above bed. There is much
th. room for improvement in the design
a. which should be reconsidered in
of connection with circular top box
to

5. The following statement shows
the proposed distribution of the outlay
as recommended for sanction, to the
of debit of the several heads of account
s. involved:-
for

Name of Tank	Items of Estimate	Amounts in Rupees		Total	Total in Rupees
		Original	Revised		
Pullput Patten Tank & supply channel	Repairing the bund & channel outlet & three irrigation sluices Dry stone escape for Tank	1680	400	2080	2080
Budur Tank & supply channel	Repairing the bund & three irrigation sluices Dry stone escape for Tank	1550	450	2000	2000

The Secretary to Govt.
Public Works Dept.

By Order
Major P. H. B.
Sd/- Chief Engineer, for
Sd/- Chief Engineer, for

9820-9-76 No 2715

18/6

from
The Chief Engineer for Irrigation

P.W.D.

27 Nov 76

No. 266-W

Dated 24 } Nov. 1876
Recd. 27 }
Encl. 1

No. 266-W.

Pulliput and Badur Tanks
- Chingleput District. -
Submitting for sanction estimates
for Rs. 2000 & Rs. 2000 for certain
works to be done.

No. 266-W

E I Form No 3

No 3263 of 1876 Ba 9th Dec 5

The following Estimates for Irrigation
works in the No 3 or Chingleput Range,
Chingleput District, forwarded by the
Chief Engineer for Irrigation with his Memo.
marginally noted are sanctioned —

No 266-W
dated 24th November 1876.

Name of Work	Item of Estimate	Fund	Amount	Irrigation Registry No
		Ordinary Agricultural		
Pulliput Pattern Tank and Supply Channel	Repairing the bund, Channel outlet & three Irrigation Sluices	Repairs	1680	1887
	Dry stone Escape	Original Works	410	
Badur Tank and Supply Channel	Repairing the bund & three Irrigation Sluices	Repairs	1550	1897
	Dry stone Escape	Original Works	450	

2. These sanctions are registered as shown
above.

3. The Plans of the Head Sluices to the
Channels should be revised in accordance
with the remarks of the Chief Engineer.

Sd/- Chingleput
Collector ditto
Ch. Engr. for Irrigation
Sd/-
Revenue Dept
1876
14-12-76

Govt. of 1876 Madras.

PUBLIC WORKS.

To *The Sup^y of Bangalore*

Dated

Issued

Recd

Recd

G. O. 1st November, 1876 3263

Nos. *147-64-B*

*Polliput. Puthon and
Bunder. Puthis. Puthis.
-put. In't - - - - -
summarized respectively & the
Cogo & Res. for Sep. 1876
etc - - - - - sanctioned*

Ch. B. in P. O.