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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Revenue DEPARTMENT

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GOVERNME ADRAS.

PUBLIC WORE ARTMENT.

27th Decembe . 634 I.

Irr

Read the following paper:—

No. 82. From Major J. O. HASTI Superintending Engineer, Kistna, to the Chief Engineer for Ir dated Masulipatam, 16th November 1877, No. 149.

Wrth reference to your memorandr K.S., dated 23rd May 1877, I have nor to return revised the plans and es for improvements to head Eastern and Western Delta, Kistna.

2 Plans.
1 Estimate, Rupees 9,610.

3 Sitanagaram side.

2 Plans.
1 Estimate, Rupees 11,380.

3 Bezwada side.

6 Total by Banghy.

The roadway at the top of the ading to the anicut cannot be o the same height as that over the uices, as it crosses the tramway from the quarries to the anicut. therefore given the raised road- r the head sluices a slope to the temporary bank must be thrown

tramway, and in case of a higher fl across the tramway as was done in t

3. I have allowed for a grani v the block wall in vents, as you requested. I think, however, we c stones at the Bezwada quarries which would have been up to the .

4. In the original estimates s and gearing according to a plan I had received from the Goda have since had an opportunity of seeing the Godavery shutters w le such alterations in the plan as seemed to me to be necessary. thickness of shutters required, taking into account that during t will be at least 8½ feet in the canal (generally more, to reduce bank between the river and canal), and have given what seem ensions.

5. The iron beam through es pass cannot be flanged as suggested without interfering wit nry, which are left in case it is necessary to remove the shutte

...MATE.

WORK.—Proposed Screw ... tters to Sitanagram Head Sluice.

Quantity.	Description.	...ate.	Per	Amount.	Total.
		A. P.		RS. A. P.	RS. A. P.
602·33	lbs. of iron tubes 2½" dia.	5 0	lb.	188 3 8	
50·00	„ of brass	0 0	„	50 0 0	
160·07	„ of wrought iron ...	2 6	„	25 0 2	
1197·26	„ of cast iron ...	0 0	per ton.	106 14 4	
34·52	Cubic feet of wood-work	0	C. ft.	103 8 2	
				473 10 4	
	Sundries		...	26 5 8	
				500 0 0	
	Centage		...	20 0 0	
	For one vent		...	520 0 0	
	Total for 15 vents		...	...	7,800 0 0

ABST... OF 1877-78.

KISTNA ... ERN DELTA.

WORK.—Raising the Head Works ... hest known flood level and constructing Shutters and Screw G... ead Sluice at Sitanagram.

Quantity or Number.	Description of Work.	Per	Amount.	Total.
	1.—HEAD WORK.		RS. A. P.	RS. A. P.
	C. Works.			
446·91	Cubic yards of earthwork	C. yd.	55 13 9	
	Sundries	...	4 2 3	60 0 0
	2.—MAIN CANALS AND BRA... WESTERN DELTA.			
	D. Regulators.			
51·50	Cubic yards of rough ... chunam.	... yd.	160 15 0	
7·78	Squares of facing	Sqr.	77 12 9	
15·08	Do. of pointing	„	22 9 11	
20·68	Cubic yards of ... granite.	... yd.	310 3 2	
44·0	Cubic yards of arch ...	„	242 0 0	
*3·85	Squares of plastering	Sqr.	0 13 11	
21*·76	Cubic feet of woodwo...	... ft.	644 4 5	
			1,467 11 2	
	Sundries ...	...	72 4 10	
			1,540 0 0	
	Iron work for screw ... per separate estimat...	...	7,800 0 0	9,340 0 0

198/2

Quantity or Number.	Description of Work.	R...	Per	Amount.	Total.
		RS.		RS. A. P.	RS. A. P.
	I.—NAVIGATION WORK.				
	Raising Sitanagram Lock.				
26·74	Cubic yards of rough stone in chunam.	3	C. yd.	83 9 4	
8·89	Squares of facing	10	Sqr.	88 14 4	
8·89	Do. of pointing	1	„	13 5 4	
3·24	Cubic feet of woodwork ..	3	C. ft.	9 11 6	
				195 8 6	
	Sundries		...	14 7 6	210 0 0
	Grand Total ...		...	...	9,610 0 0

MASULIPATAM,
16th November 1877.

(Si... J. O. HASTED, Major, R.E.,
Superintending Engineer, Kistna.

SPECIFICATION Report to accompany Plan an... ...mounting to Rupees 9,610) for raising Head Works and providing Screw G... hutters to the Head Sluices at Sitan...

		Margin.
The extraordinary flood level being ...	... + 62·42	
the head works are to be raised to the followi...		
Top of existing parapet of head slui...	... + 66·0	3·58
The platform for screw gearing ...	... + 64·42	2·0
Spoil bank connecting the head sluic...	...gs ... + 67·5	5·08
Sitanagram lock do. front.	... + 66·0	3·58
Lock gates to top of balance beam ... planking will be joined	... + 66·5	4·08
Lock wings and chamber walls rear ...	... + 64·0	1·58

In front of head sluice and outside the ...pet a platform will be raised to the required height, by raising existing piers and ...es of brick in chunam between the piers 1½ feet thick supporting 9 inches of ...urface of platforms inside the shutter grooves. Outside the grooves the piers to ... same level, carrying a timber foot-bridge with hand-rail so that the shutters m... ...afety. The space within the vents of the head sluice above level of top of upp... ...blocked by a granite beam 3 feet wide and 1 foot deep, supporting a masonry ... and 2 feet at top, to be carefully built so as to secure a close contact with the ... ...ry except arch-work to be coursed rubble, face dressed, set in mortar and joint... ...t.

Raising of lock upper wings and ...tone in chunam, pointed with cement.

Upper lock gates to be planked in f... ...eak planks up to lower edge of balance beams.

Bank between lock and head sluice ... top, side slopes 2 to 1 of well rammed earth or quarry rubbish.

New shutters and screw gearing t... ...timated for in Eastern Delta, Kistna.

The weep-holes in the wall connectin... ...e under sluice will be blocked up, and surface water drained into the car...

MASULIPATAM,
16th November 1877.

...ASTED, Major, R.E.,
...intending Engineer, Kistna.

ABST ATE OF 1877.

KISTNA EASTERN DELTA.

WORK.—Raising the Head Works e highest known flood level and constructing Shutters and Screw G Head Sluice at Bezwada side.

Quantity or Number.	Description of Works.	Rate.	Per	Amount.	Total.
		P.		RS. A. P.	RS. A. P.
	1.—HEAD WORK.				
	C. Works.				
27·96	Cubic yards of rough stone chunam.	0	C. yd.	87 6 0	
18·12	Square of facing ...	0	Sqr.	181 3 2	
23·42	Do. of pointing ...	0	„	35 2 1	
8·42	Cubic yards of cut-stone co	0	C. yd.	84 3 2	
205·35	Do. of earthwork	0	„	25 10 8	
				413 9 1	
	Sundries		...	26 6 11	
					440 0 0
	C.—MAIN CANALS A BRANCHES, E. D.				
	D. Regulator.				
100·66	Cubic yards of rough s chunam.	0	C. yd.	314 9 0	
27·43	Squares of facing ...	0	Sqr.	274 4 9	
51·43	Squares of pointing ...	0	„	77 2 3	
60·04	Cubic yards of granite.	0	C. yd.	900 9 7	
	Screw gearings as per estimate.		...	7,800 0 0	
50	Cubic yards of concre		C. yd.	75 0 0	
162·88	Do. of earthw		„	20 5 9	
				9,461 15 4	
	Sundries ...		...	478 0 8	
					9,940 0 0
	I.—NAVIGATION W				
129·06	Cubic yards of rough s chunam.		C. yd.	403 5 0	
21·15	Squares of facing		Sqr.	211 8 0	
21·15	Do. of pointing		„	31 11 7	
207·32	Cubic yards of ro revetment.		C. yd.	259 2 4	
20·37	Cubic yards of con		„	30 8 10	
72·60	Cubic yards of ea		„	9 1 2	
2·16	Cubic feet of w planks.		C. ft.	6 7 8	
				951 12 7	
	Sundries ...		...	48 3 5	
					1,000 0 0
	G		...	...	11,380 0 0

MASULIPATAM,
16th November 1877.

I. O. HASTED, Major, R.E.,
Suptg. Engineer, 1st Division.

SPECIFICATION Report to accompany Plan and E Head Works and providing Screw Gearin mounting to Rupees 11,380) for raising ers to the Head Sluices at Bezwada.

1. The highest known flood being the head works are to be raised to the follo :—

		Margin.
I.—Head sluice parapet	... ... + 62·42	
Do. roadway	... ... + 66·0	3·58
II.—Existing compound wall which con	... .. + 64·0	1·58
the lock right wing	... ... + 66·0	3·58
III.—The lock wings	... ... + 66·0	3·58
IV.—Revetment of channel from river		
nose wall with the lock wing ...	... ... + 66·0	3·58
V.—Nose wall	... ... + 66·0	3·58
VI.—Lock gates to top of balance beam	... ... + 66·25	3·83

2. This raising of the masonry walls will e flood-water, except such as might enter under the wall of the lock bungalow through holes, by which water might find its way. It is proposed to block up the weep-ho ack the parapet by a bank 3 feet top width having a slope of 2 to 1 and 2 feet age of the compound being discharged into the canal instead of into the river.

3. The existing parapet wall in front of th ce will be widened in rear by 8 inches, bringing its rear face flush with the shutter gro n rear of the shutter groove a wall of 1 foot 6 inches in thickness will be raised to the present top of parapet wall, the surface affording a platform from which to work the ing of new shutters. A parapet wall will be raised 2 feet in height and 1½ feet thic g parapet wall in front, and a corre- sponding parapet 1 foot 6 inches thick up to l platform and 1½ feet thick above will be raised on the rear of old sluices and in front of the present space for 2nd shutters. The head sluice roadway will be rais ry rubbish to the level of the shutters platform (+ 64·), and will be sloped down at and western ends at a gradient of about 1 in 9 to the roadway over the bridge sluice, and the ground in rear of the wall connecting the sluice with the lock, resp e space within the vents of the head sluices above level of top of upper shutters will p by a cut-granite stone beam 3 feet wide and 1 foot deep, supporting a masonry wa se and 2 feet at top, being carefully built so as to secure a close contact with the ar

4. Nose wall at entrance of silt chambe o be raised by a parapet 3 feet thick and 4 feet 6 inches high on outside of present e between parapet being filled with quarry rubbish.

5. All masonry to be coursed rubble, fa in mortar, and joints pointed with cement.

6. Raising silt chamber above lock to b cked large rough stone revetment, interstices filled with quarry chips and backe quarry rubbish.

7. Upper lock gates to be planked in fr ick teak planks up to lower edge of balance beams.

8. New shutters and screw gearings t ttern now in use in Eastern Delta, Godavery, head sluices. The shutters will be the lower to be 2 feet 9 inches high and 4 inches thick, middle shutter 3 feet hi es thick, and upper shutters 3 feet 9 inches high and 3 inches thick. The end rs to be shaped thus ⩗ shod with cast-iron and working in cast-iron grooves of ape, bolted into the masonry. The shutters will be raised by screws 2¼ inche inch pitch, working into hollow tubes, the lower ends of which will be turne bear screws. The tubes will work through holes in a cast-iron cross beam on platform and a brass guide plate attached to lower cross beams. The iron held down by cast-iron saddles bolted to holding down-plates in the maso

MASULIPATAM,
16th November 1877.

ASTED, Major, R.E.,
ptg. Engineer, 1st Division.

No. 82-A. *Note by the C ation.*

THE high fresh in the Kistna ced the head works in very

Proceedings, Madras Government, No. dated 31st October 1874. danger, which was averted strenuous and successful

of flood waters. The particulars of le to prevent the ingress ently more fully reported

on in the letter forming Appen[dix] Government, 29th September 18[77] an increase to the height of the h[ead]

2. The settlement of details n[ot]

No. 16, 21st April 1877.

mates for the improvements requ[ired]

* No. 30 K.S., 23rd May 1877.

tending Engineer has transmitte[d] slight alterations noted on the [mar]gin safe.

3. The estimates provide[d] above the flood level of 1874, a[nd] level as detailed in the specifica[tion] shutters and suitable gear.

4. The estimates amount[ed] and for the western or Sitanag[ar] sion has been made in the com[plete] Government in 1876, because [the] canal for which a completion e[stimate] though a lump sum had been [provided] given and no designs transmitt[ed] mates for that section of the de[lta].

note printed in Proceedings, Madras and it was made perfectly clear that head sluices was essential.

angements generally has unfortunately cupied a much longer time than it hould have done. In April last esti- forwarded, but some modifications were deemed* necessary, and with his letter No. 149, of the 16th ultimo, the Superin- sed plans and estimates which, with the t is considered, be complete, efficient and

all masonry walls and works to 3·58 feet works connecting them to a rather higher ; also for [illegible] head sluices with

ern or Bezwadah side to Rupees 11,380, Rupees 9,610 ; for the former no provi- ates of the Eastern Delta submitted to item in those estimates for the main been previously sanctioned, and because Lieutenant Campbell no details were litions therefore to be made to the esti-

nal.

		Rs.
D. Regulators.—Improv	... ...	9,940
I. Navigation Works.—	... ...	1,000
	Total ...	10,940

In the estimates for the [Eastern] delta, note paragraph 4, Proceed- ings, Madras Government, [1874], No. 3,572, Rupees 9,840 were provided for alterations to [head] sluice, besides Rupees 15,160 for a supplemented head sluice to [be built] time if found necessary. The items for the main canal in the pr[esent]

		Rs.
D. Regulators.—Imp[rov]	... ...	9,340
I. Navigation Works.—	... ...	210
	Total ...	9,550

so no additional sanction f[or] needed.

For the head works

C. Works.—Raisin[g]	... ...	440
Do. do. do.	... ...	60
	Total ...	500

and this amount is additi[onal] already submitted; which included nothing for head works.

5. It is not desirabl[e] h the safety of the delta canals so essentially depend should the items above enumerated will have to be carried out at king season is just about to com- mence, and if authority rying out of these estimates they can be completed before s for the season of 1878. It is

therefore recommended that the work, wh[ich] ndent of all other improvements in the delta for which estimates have [been] should be sanctioned at once.

CAMP AT OOLLOOR, (Sig[ned]) N MULLINS, Colonel, R.E.,
11th December 1877. Chief Engineer for Irrigation.

To the Joint Secretary to Government, Pub[lic] Department, Irrigation Branch.

No. 83. ORDER THEREON, 27[th] [DE]7, No. 634 I.

THE estimates submitted by the C[hief] r Irrigation provide for raising the head works at the Kistna Delta an[d] f the main canals of that delta to a safe level with reference to the fres[hes] ch is the highest on record, and which threatened grave danger to the d[elta]

2. Provision has already been [made] Western Delta estimates for the

Proceedings, Madras Government, No. 3,57[2], 19th December 1874.

* Rupees 9,840.
† „ 9,550.

ent of the head sluice of the al on that side, and the amount* ded is slightly in excess of the w found to be necessary to do all required at the head of the L.

3. In the Eastern Delta completio[n] nothing was provided for the

Proceedings, Madras Government, No. 3,528, 22nd December 1876.

ents needed to the main canal, mount required is Rs. 10,940.

total Rupees 500, and provide for raising [the] he other items of the estimates ks.

5. Taking into account the serious [risk] h would occur were the river in a high fresh to breach in at the head of e[ither] canal and the great interests at stake, His Grace the Governor in Council so much delay has been allowed to occur in designing and estimating for ds required, and in order that no further risk may be incurred the Su[perintending] Engineer will be authorised to carry out these improvements in anticip[ation] sanction of the Government of India to the estimates, which will be im[mediately] plied for. The Superintending Engineer will take care that the work [is] efficiently completed before the commencement of the freshes of 1878.

6. Ordered that the following lett[er] mber 1877.)

(Here enter No. 635 I,

(True

Major, R.E.,
gy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineers, Kistna
„ Collector of Kistna.
„ Examiner of Public Works Acco
„ Chief Engineer for Irrigation.
„ Revenue Department.

Exd. S. T. Austin.

Spare Copies

Secretary's Dept.

No 293

IRRIGATION.

Govt. of {1877} Madras.

PUBLIC WORKS.

To the SUPERINTENDING ENGINEERS,
KISTNA and GODAVERY,
&c., &c., &c.

dated December 27th.

Rect.

22 January /80

G. O. 27th December 1877, No. 634 I.

DECEMBER.

Nos. 82-83

Main Canals of the Kistna Delta.—The
tion of the Government of India applied
the estimates for raising head works
and head sluices of the — and the
provements authorised to be carried out
licipation.

No 198
Commd to the
Board of Revenue
Laing 80.