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(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	2502	(9)	Press
B.P. No.			Mis.
Dated	1.9.		1875.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
1st September 1875.*

Read the following papers —

No 32 From J D. GRANT, Esq, Officiating District Engineer, Tinnevely, to
Major J O HASTED, R E, Officiating Chief Engineer for Irrigation, dated
Camp at Panacoody, 14th August 1875, No 59

I HAVE the honor to forward to you revised plans and estimates for the head
sluice of the Paulhem Channel, the esti-
mate amounting to Rupees 15,700, or
exactly double that originally sanctioned
2. In accordance with your instruc-
tions, most careful inquiry regarding
floods has been made along the river
banks, and a comparison of the heights
pointed out at different places would seem to show that our information may be
depended on

- 1 Estimate
- 1 Comparative Statement
- 1 Specification
- 1 Plan of Head Sluice
- 1 Site Plan
- 1 Plan of Masonry Works
- 1 Level Section
- Plans sent separately

3 As might be expected, there was some diversity in the information given,
but taking into consideration the levels pointed out at various places along the river,
there seems to be little doubt that the highest flood known reached at Pahlavur Anicut,
a height equal to 156 25 above mean sea level, or about $3\frac{1}{2}$ feet higher than the flood
of last November

4 Assuming this to be correct, and I do not think it possible to obtain more
reliable information, the roadway of the sluice must be raised to 159 50 3 25 feet
above flood level

5 As the necessity for the further raising of the sluice was not discovered till
the work had reached a height of more than 6 feet above the flooring, the walls were
not built of sufficient thickness to admit of their being raised with safety, and in the
accompanying estimate provision has been made for the addition of two counterforts to
each of the front wings and for increasing the top width of the walls This will, I
hope, give sufficient strength to the walls to obviate any danger from their increased
height

6 I regret that the flooring was laid before your memorandum, No 496, of
11th May 1875, was received, and that the stones are therefore not laid as directed by
you in that memorandum

7 For the same reason the face wall is carried on beam stones, as shown in
the plan originally sanctioned

8 A granite coping has been allowed, as it will greatly improve the appearance
of the work and add but slightly to the cost

9 Provision is also made in the estimate for the flood bank from the head sluice
up the river and for six self-acting sluices.

10 The line selected for the flood bank is shown on the tracing, and is the only
one practicable, there being no high ground except at the extremity of the line chosen,
from which point a ridge some feet above flood level extends to the tanks under the
Cannadian channel

11 From 4,225 feet on the section, which is the point where there is an abrupt
turn from the river, the height of the bank is allowed only 2 feet above flood level,

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(elsewhere 3 feet is given,) this reduction of height being considered safe, as the bank is comparatively low and forming a pathway between the village and river will probably be kept in order.

12. It is besides desirable to reduce, as much as is possible with safety, the quantity of earthwork for this section of the bank, since the earth required will have to be brought on an average from a distance of 300 yards

13 The self-acting sluices are required to discharge the drainage from the nunjah through the embankment, and are intended to be built at the points marked on the section.

14 The whole subject has been very carefully considered, and the designs now submitted will, I trust, meet your approval and receive early sanction, as it is of importance that the work should be raised to a height of 12 feet before the October floods are due

15 I would therefore beg that you will give me early instructions regarding the work, to admit of its being raised sufficiently to be out of danger during the monsoon

AGRICULTURAL—ORDINARY—CAPITAL

ABSTRACT ESTIMATE

Tinnevely District, Tinnevely Taluk

WORK—Constructing a Head Sluice for Paulhem Channel

Quantities	Description of Work	Rate	Amount	Total
	<i>Head Sluice.</i>			
52½	Cubic yards concrete in hydraulic mortar at	RS A P.	RS A P.	RS A P.
88½	Do brick in do at	3 8 0	185 1 9	
443½	Do brick in mortar at	5 8 0	486 0 7	
110½	Do cut stone in mortar and pointed with Portland cement	5 0 0	2,215 13 4	
9½	Do cut stone for coping with do	21 0 0	2,325 12 0	
23	Do arch work including centering	27 0 0	247 8 0	
33½	Squares of pointing	6 8 0	149 8 0	
110½	Cubic yards loose rough stone	4 0 0	133 0 0	
24	Cubic feet ranga or congoo wood wrought and put up	2 0 0	220 8 0	
4	Teakwood shutters with iron liftings and all fittings, &c., complete	3 8 0	84 0 0	
	Excavating foundation and filling in	300 0 0	1,200 0 0	
	Temporary embankment	..	200 0 0	
	Baling	..	200 0 0	
	Scaffolding, sundries, and contingencies	..	200 0 0	
			352 12 4	
	<i>Raising Embankment</i>			
28,072½	Cubic yards earth at			8,200 0 0
3,552½	Do do at	0 1 6	2,631 12 9	
1½	Acres nunjah compensation at	0 3 0	666 2 0	
	Compensation for palmyrah and other trees at	450 0 0	731 4 0	
	Tamping and sundries	..	120 0 0	
			80 13 3	
				4,230 0 0

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1st September 1875.*

WORK—Constructing a Head Sluice for Paulhem Channel—(Concluded)

Quantities	Description of Work	Rate	Amount	Total
	APPENDIX, No 1			
	<i>Constructing a Culvert of one vent 1 x 1'</i>	RS A P.	RS A P.	RS A P.
19½	Cubic yards rough stone in hydraulic chunam at	4 0 0	76 7 1	
7½	Do brick in chunam at	5 0 0	38 12 0	
1	Square plastering at	2 0 0	2 0 0	
2½	Cubic yards cut stone in chunam at	16 0 0	40 0 0	
1	Small shutter including iron work at	5 0 0	5 0 0	
	Excavating foundation and sundries	...	7 12 11	170 0 0
	APPENDIX, No 2			
	<i>Constructing an outlet Sluice of two vents</i>			
24½	Cubic yards concrete	3 0 0	74 4 0	
88½	Do rough stone hydraulic in chunam at	4 0 0	355 0 0	
61½	Do brick in chunam at	5 0 0	308 12 0	
7½	Do cut stone in chunam	20 0 0	150 0 0	
10½	Squares plastering at	2 0 0	20 12 0	
14½	Cubic yards arch work including centering at	6 0 0	87 6 0	
2	Shutters at	20 0 0	40 0 0	
2	Iron bars each 4 of 2" diameter at	6 0 0	12 0 0	
2½	Cubic yards rough stone pitching in front	2 8 0	6 6 3	
	Excavating foundation and sundries		45 7 9	1,100 0 0
	APPENDIX, No 3			
	Particulars as per Appendix No 1	..		170 0 0
	APPENDIX, No 4			
	<i>Constructing an outlet Sluice of one vent</i>			
18½	Cubic yards concrete at	3 0 0	55 10 8	
55½	Do rough stone in hydraulic mortar at	4 0 0	221 5 4	
30½	Do brick in chunam at	5 0 0	154 7 1	
6	Squares plastering at	2 0 0	12 0 0	
1½	Cubic yards cut stone in chunam at	20 0 0	34 1 2	
7	Do arch work including centering	6 0 0	42 0 0	
1½	Do rough stone packing at	2 8 0	3 7 0	
1	Iron bar 4½ of 2" diameter at	6 0 0	6 0 0	
1	Shutter at	16 0 0	16 0 0	
	Excavating foundation and sundries		25 0 9	570 0 0
	APPENDIX, No 5			
	Particulars as per Appendix No 4	..		570 0 0
	APPENDIX, No 6			
	Particulars as per Appendix No 1	..		170 0 0
	Superintendence	..	...	520 0 0
	Total ...	..		15,700 0 0

No 968

76

Note by the Chief Engineer for Irrigation.

Enclosure 8. In submitting the estimates for the Pakem and Kodagan Channel head sluices, from the Sambraipoorney in Sinnivelly it was noticed that the flood level had not been marked on the plan and the remarks made have led to investigations which show that the design sanctioned in L. O. No 3193 of the 11th November 1874 would not have effected the object in view.

From D. G. D. 194

24 March

To " - 268-10184

From " 23-17 May

To " 356-22 do

From " 59-14 Aug.

2. The correspondence as far margin has taken place between the District Engineer and this office, and the result has been the submission with the last letter of a revised design and estimate, the latter amounting to Rs 15,400 being just double the sum already sanctioned. The causes of increase are all connected directly with the fact that maximum flood

level has now been ascertained to be several feet higher than that assumed as the basis for the original design and the circumstance has involved not only the raising of the head sluice itself, but an extensive revision of the flood bank without which the sluice would be liable to be turned and rendered useless.

3. The comparative statement submitted shows that the excess is accounted for as follows.

Head sluice	Rupers 426
Flood bank	" 4004
Masonry works in do —	" 2750
Superintendence and Sundries	" 370

Total Rupers 7850

The head sluice having been commenced before the additional information was obtained, it has been necessary to adapt it to the altered circumstances in the

manner

manner explained in the District Engineer's letter. The roadway will be 3.35 feet above the maximum flood level, and 13.67 feet above the mean level of the crest of the Pahlavān Aricut.

The flood bank as estimated is proposed to be 3 feet above M.W.L. for 4,335 feet from the head sluice and for the remaining 175 feet only 2 feet above that level. It has however been noticed that as the 4,335 feet run parallel to the river up stream, and the remaining 175 feet is a return bank nearly at right angles to the river, the flood level will certainly be somewhat higher at the up stream end of the bank than at the head sluice. The margin of 3 feet allowed for the higher part of the bank is none too great at the sluice

and

and it is considered that it should be carried at a gradient of not less than 1 foot in the 4,335 feet from its junction with the sluice, so that the river instead of being made up to 160.41 should be 163.41. It would be a matter of great regret were this flood bank, on which so much depends, be made too low.

It also appears to be doubtful whether the outlet sluices proposed be constructed in the embankment are absolutely necessary. The section of the ground indicates that for them might be substituted a drain running along the south side of the embankment which might carry surplus into the Palem Channel below the head sluice. If this arrangement be feasible, the saving in masonry works will probably suffice to make up the flood bank to the level indicated to

to be necessary.

2. These papers are submitted in their present shape without waiting for the settlement of the points noticed in the foregoing paragraphs, because, as the District Engineer points out, it is very desirable that the head sluice should be raised to a height of 12 feet above the sill before October, and there is therefore no time to be lost. It is therefore recommended that sanction should be given for proceeding with the sluice and for going on with the flood bank in anticipation of the receipt of further information as to the details of the latter work, and in anticipation of this sanction the District Engineer has been instructed to carry on the work at the head sluice forthwith.

Colacum

27. Aug 1/15

3

To, The Secretary

to Government

Madras

157

1st W. 1875 Sept
No 5694.

From

The Chief Engineer

No 968

Dated 27th Aug
Recd 4th Sept } 1875

In 8

4 Plans at City

State to be Estimated
Amounting to Rs 15700 for
the Paulum Channel
Head Sluice.

152
No 2502. O.K.B. ^{Print}
Proceedings of the Madras Govt.
Under date the 1st Sept
Read the following:-

The Chief Engineer } (H.E. No 968 of 27th Aug 1875)
for Irrigation }

The Government no-
tice with regret that
the design for the Paulum
Channel head sluice
as sanctioned in G.O.
No 3193 of the 11th November
1874, was based upon
very insufficient in-
formation as to the
level of the floods in
the Sambraapoorney and
that the revision of
its height and that

11th Dec 1875

of the flood bank can-

-nected with it will add

so much to the cost of the

works that the estimate

submitted by the District

Engineer amounts to

Rupies 15,400 or just

double that of the

original estimate, while

a further revision of

the arrangements of the

flood bank is indi-

-cated in the foregoing

note the requisite, which

may add still further

to the outlay required.

Sanction is given for

proceeding with the head

sluice and flood bank

at once, and a report

enabling the details

of the flood bank to be

finally decided upon

should be submitted

by the District Engineer

as soon as possible.

11/28/8

G. M.

Not despd to D. E. 11/9/75

D. L. Sumnerly 24 with 4 Enclosures
Chgo for Enlyn 5
C. P. H. H. H. 5

SC Deskd - 20 - 9 - 75

1875; STAMPS.
PUBLIC WORKS.

Mr. W. H. L. H. L.

Minimally

Dep't. of the Interior

32-53

Valued and Stamped
Channel Head Stone
from the San Antonio
in currently - 1875
Orders on file by the
for large quantities
Refinements for the