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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W. DEPARTMENT

G.O. No.
B.P. No.

712

Press.
Mis.

Dated

16.3.1881 ~~197~~.

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

16th March 1881, No. 712 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 45. From W. PARKES, Esq., M. INST., C.E., Engineer-in-Chief, Madras Harbour Works, to the Secretary to Government, Public Works Department, Buildings and Roads, dated Madras, 1st March 1881.

At the suggestion of the Examiner of Public Works Accounts, I have the honor to submit herewith a revised estimate of the Harbour Works in a form that can be more easily compared with the expenditure than the original estimate. The two are shown side by side on the accompanying statement A.

2. As you will observe the total amount is the same within 6,000 rupees as that of the original estimate, but the items which go to make up that amount have been altered so as to be more nearly proportional to the actual expenditure. On each of these items there is up to the present time a saving amounting in the aggregate to upwards of a lakh of rupees independent of "contingencies," and I have every hope this saving will be maintained to the completion of the work, but I do not think it would be desirable at the present stage to submit an estimate of reduced total amount. The estimate as now presented however includes the cost of the proposed additions to the pier heads.

3. I should explain also that no credit is taken for the value of the plant and machinery now on the works. These may probably be valued at about $1\frac{1}{2}$ lakhs of rupees, but whether such an amount be realised will depend of course on the demand. The original estimate however was intended to cover the first cost of these materials.

4. I may take this opportunity of explaining the reasons for some of the differences both in quantity and price between the corresponding items of the two estimates, which will be substantially equivalent to explaining the differences between the original estimate and the rate of expenditure to the present time.

5. The two sub-heads "Preliminary Works" (items 1—7) and "Tools and Plant" (items 15—21) were included in my original estimate in one item "Plant and Preliminaries" for which £80,000 was allowed. This was afterwards divided rather arbitrarily into two sub-heads estimated respectively at Rs. 3,80,000 and 4,20,000 which I have adopted in the accompanying abstract A, so that they may be inserted side by side with the similar sub-heads in the revised estimate. The sums inserted against the several items in the revised estimate are simply the expenditure upon those several items up to the 31st December last except in one case "General Tolls," No. 20, where a further sum of Rs. 6,000 is estimated as liable to be required before the work is completed.

6. My original estimate of £80,000 was for the supply of a sufficient stock of plant for carrying on the work at full speed, and it was intended that the account should be closed when this was accomplished, leaving any future additions to be

charged to the works. I was desirous of closing the account in February 1879 (see report of that date G.O., No. 608 W., of 27th February 1879) in order that for the future the expenditure on the works might be definitely compared with the estimate. Under the direction of the Examiner however the accounts of expenditure were kept upon a different system which involved keeping them all open to a much later stage. I do not offer any opinion on the relative merits of the two systems, but it is clear that an estimate made on one system is not fairly comparable with an account of expenditure on the other.

7. Besides this the apparent cost of most of these items has been materially enhanced by the purchases in England being converted into Indian currency at the depreciated rate, while the estimate was converted at par. In the case of some of the articles purchased also, the prices in England had materially risen from those on which my estimate was based. These facts will, I think, sufficiently explain the reason of an excess of Rs. 9,45,771 over Rs. 8,00,000, which in a great measure is more apparent than real. I should also here mention that the cost of the Goliath crane and other machinery at the south pier block ground which has hitherto been charged to "Contingencies" as having been procured after the account for plant was supposed to be closed is now charged to "Tools and Plant." Some other similar transfers have also been made in accordance with the same principle.

8. Passing now to the rubble stone in surf banks and bases (items 8 and 11), it will be seen that I have added 10,000 tons to the quantity originally estimated for the north pier, and deducted 35,000 tons from that for the south pier. In the original estimate I made a liberal allowance for an excess of stone actually to be used over that calculated from the bare sections, and this has been on the whole more than enough, notwithstanding the greater depth of water in which the heads are now placed. I made the allowance however on a supposition which has not been confirmed by experience. I thought it would sink into the sand, and more so near the shore than in deep water, so I made my greatest allowance for the work first executed. It turned out however that it sunk very little into the sand, so there was at first a large saving in quantity, but the higher bank in deeper water consolidated to an extent I did not anticipate, and to allow for this an extra quantity had to be deposited which more than balanced the saving on the earlier portions of the north pier, and reduced them materially in the case of the south pier.

9. The increase of price from $1\frac{1}{2}$ to 2 rupees is partly due to the fact that, though I made an allowance over the ordinary prices for rubble stone which prevailed in 1873 for the extra cost which is sure to follow a pressing demand for labor, yet that allowance was not sufficient. It is to be remarked that there is no effectual competition for the contracts. A rise of price followed immediately on a public advertisement being issued for tenders in 1878, since which time the only contractors who have command of labor appear to have felt themselves more secure of their monopolies.

10. The steam hopper barges also have been unexpectedly expensive owing to the long periods during which they were unable to work either from being out of repair or obliged to shelter at Cocanada. While they are at work however they deposit the stone at a very cheap rate, and I have no doubt they have served to keep down the price of the deposit from cargo boats.

11. The saving of rather more than a rupee per cubic yard in the cost of the concrete blocks is due to the stone of which they are formed being supplied from Pallavaram at Rs. 2 per ton instead of from Tirutani at Rs. $2\frac{1}{2}$ as estimated. The saving would have been greater, but for the enhancement of the apparent cost of the Portland cement by the state of the exchange.

12. In the cost of setting blocks the estimated rate of Rs. 80 per lineal foot is equivalent to Rs. 3-3-0 per cubic yard, while the actual cost is rather under Rs. 1-9-0, a saving of 40 per cent. This is solely due to the increasing skill and care displayed in the various departments of the work.

13. *Lighthouses.*—In the original estimate £3,000 was allowed for each light-house, but this was before any definite design had been considered for the pier heads, and the amount is sufficient to allow of independent submarine foundations. These

will be unnecessary with the widened pier heads now proposed, and the cost of them may therefore be transferred to the estimates for the piers, leaving 20,000 rupees for the superstructures only.

14. *Establishment.*—This was originally estimated at 5 per cent., but during the years 1877 and 1878 first one pier and then the other were so many months without making much progress that the expenditure was reduced without a corresponding reduction in the cost of establishment, which latter consequently rose to 9 per cent. at the end of 1878. In the two following years the greater rate of expenditure reduced it to $6\frac{1}{4}$. As, however, during the later stages the expenditure on works will be reduced before that on establishment can be, the percentage of the latter will again rise, though I hope the allowance of 7 per cent. will leave a surplus.

15. *Contingencies.*—This was originally taken at 10 per cent., but up to 31st December 1880 the charges debited to this head had amounted to little over 3 per cent. on the expenditure on works. The $3\frac{1}{2}$ per cent. now taken on the whole will allow 7 per cent. on the unexpended portion of the estimate for any future contingencies. The only further charge in prospect, however, is for storm water channels from the outlets of the drains to the water's edge amounting to Rs. 5,000.

16. There is indeed one claim now being made which, if substantiated, will make a further charge against the Harbour Works; I allude to the claim of the Madras Railway Company for a payment to cover their alleged loss in the carrying of the stone from Ambatūr. I do not at present offer any opinion on the merits of this claim, but I would remark that, inasmuch as the cost of conveyance was an item which I was obliged to take on the word of the Agent and Manager quite irrespective of my own judgment, a special amendment of the estimate should be made, by an order of Government to cover the amount of the claim.

17. Abstract B is a statement of the expenditure to 31st December 1880 compared with the revised estimate, which I hope may be found suitable in form for future monthly statements. In the case of four sub-heads, "General Tools," "Stores," "Contingencies" and "Establishment," I have given the details in separate schedules so as to show particulars of expenditure which should be placed on record, but which, not having corresponding details in the estimate, cannot be conveniently inserted in the body of the statement.

No. 46.

ORDER THEREON, 16th March 1881, No. 712 W.

WITH this letter the Engineer-in-Chief, Madras Harbour Works, submits the estimate for the works recast so as to admit of easier comparison with expenditure.

2. The total amount of the estimate as now submitted amounts to Rs. 58,45,165 and includes Rs. 2,00,000 on account of the moorings, but excludes a corresponding sum for extra rubble not now required. It also includes an additional sum of Rs. 10,394 for the pier heads, the amount being transferred from lighthouses under the circumstances explained in paragraph 13 of Mr. Parkes' report. No credit has been taken for recoveries by sale of tools and plant on completion of the works for which they have been procured. A sum of Rs. 1,00,000 may be shown on this account as a deduction from the total amount of the estimate, the full provision under "Tools and Plant" being allowed to stand. This course will admit of the full expenditure on the sub-head, while the recoveries can be checked when the work is finished and the accounts closed.

3. As regards the lump sum provision for lighthouses (Rs. 20,000), and moorings (Rs. 2,00,000), it seems desirable that detailed abstract estimates should be submitted so as to have some record of the kind of work executed as well as the quantity, rate, and cost thereof in the event of future reference becoming necessary.

4. It is noticed that the revised estimate provides Rs. 1,78,806 for contingencies, of which Rs. 1,41,899 would appear from Schedule 2 to have been already expended. A sum of Rs. 79,751 only of this sum, however, is shown as outlay on the protective

works north of the harbour, the probable cost of which as estimated by Mr. Thorowgood will be about 1½ lakhs if the revetment is to be proceeded with. This point, as well as the claim for compensation by the Madras Railway Company for conveyance of material, will require further special consideration and orders.

5. With these remarks the revised estimate as amended by the deduction entry of Rs. 1,00,000 on account of sale of tools and plant will be printed for future guidance in the execution and accounts of the works.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Engineer-in-Chief, Madras Harbour Works.
„ Superintendent, do. do.
„ Examiner of Public Works Accounts.
„ Marine Department.

Exd. E. C. Shunker.
Spare Copies

Cont. of 11831. **Public Works.**

THE ENGINEER-CHIEF,
MADRAS HARBOUR WORKS.
&c. &c. &c.

2002

Encl.

G. O., 1892-1893, No. 712 W.

100-45-45

Marine Engineer Works.—Orders or letter from the Engineer-in-Chief submitting a revised estimate for the —.

Abstract of Estimates for the Madras Harbour Works as recast.

ORIGINAL.					REVISED.						
Quantity.	Per.	Rate.	Cost.	Total.	Item Number.	Sub-heads.	Quantity.	Per.	Rate.	Cost.	Total.
<i>Preliminary Works.</i>											
1					1	Railways					
2					2	{ Marine surveys..				6,408	
3					3	{ Rails from England				1,34,659	
4					4	{ Sleepers				39,492	
5					5	{ Formation, &c.				69,039	
6					6	Block ground, original				45,032	
7					7	Do. at south pier				9,598	
8					8	Buildings				63,451	
3,80,000					Total, Preliminary Works ..						
<i>North Pier.</i>											
9	479,910 Ton	1.5	719,865		9	Rubble stone in surf bank and base ..	479,910 Ton	2	9,79,820		3,75,970
10	100,050 C. yard	10	10,00,500		10	{ Original .. 4,79,910	100,050				
11	550 Linl. feet	70	38,500		11	{ Extra required 10,000					
12	8,350 Do.	80	2,68,000		12	{ Original estimate 1,00,050	103,863 C. yard	89	9,12,181		
50,25,565					13	{ Extra for pier head 6,513	103,863 Do.	1.9	2,01,140		21,23,141
<i>South Pier.</i>											
14	9,910 Ton	1.5	719,865		14	Rubble stone in surf bank and base ..	9,910 Ton	2	8,89,820		
15	100,050 C. yard	10	10,00,500		15	{ Original .. 4,79,910	100,050				
16	550 Linl. feet	70	38,500		16	{ Saving effected 35,000	104,831 C. yard	8.9	9,31,216		
17	8,350 Do.	80	2,68,000		17	{ Original estimate 1,00,050	104,831 Do.	1.9	1,99,799		
22,28,565					18	{ Extra pier head 4,581	104,831				
60,000					19	Total, South Pier ..					20,19,843
<i>Tents and Tents.</i>											
20					20	Lighthouses (site and design not yet decided on)					20,000
21					21	Locomotive engines					
22					22	Rolling stock				53,171	
23					23	Flouring plant				26,066	
24					24	Do. Expenses of helper bulges previous to being employed on the works				1,41,285	
25					25	Crane, machinery, &c.				41,064	
26					26	General tools				2,56,388	
27					27	Office furniture				44,858	
4,91,272					28	Total, Tents and Tents ..				4,029	
<i>Grand Total ..</i>											
29	5 percent.		49,12,773		29	Total, Tents and Tents ..					5,71,801
30	10 " "		4,91,272		30	Total, Tents and Tents ..					61,08,747
56,50,760					31	Total, Tents and Tents ..					3,37,312
2,00,000					32	Total, Tents and Tents ..					1,78,800
<i>Product—</i>											
For extra rubble (not required).											
56,45,165											
2,00,000											
68,45,165											
1,00,000											
57,45,165											

As there shall be
 no material change
 in design and
 cost of the work
 well as the
 considered necessary
 consideration - especially
 the [?] of [?]; but the
 necessity to bring
 Revised Estimate
 in regard with the
 of this [?] of
 [?] of all [?]
 [?] [?] [?] [?]
 - [?] that the [?]
 in [?] of [?] [?]
 with [?] [?] [?]
 but he takes no
 this amount as
 it was provided,
 the [?] [?]
 Any [?] [?]
 credit [?] to
 [?] the [?]
 [?] [?] [?]

I think
 that the Revised
 estimate provided by
 806 in "Contingencies of
 the Geological Survey" 2d R.
 1899 appears to have been
 fully paid, and of this
 only \$79,717 so to the
 State under contract of
 Purchase - It seems to
 have been paid by Parker
 in full. In his Report
 note all further charges
 for and compensation
 to the item which it
 involved estimated as
 less i.e. if the result
 be increased with -
 in point requires further
 attention
 there is the claim for
 return on account of two
 rates by the London R.
 para 16 of the P's Report
 are also not very clear
 something should be
 be provided in main
 of the whole base of the
 original Section in a
 after completing the

Should not also the
 interest & other indirect
 charges be included in
 a Journal Review? etc?
 R.H.

W. 7/6
 I would not lay
 stress upon any of the
 three points marked (a)
 (b) or (c) in dealing with
 Mr. Parker's present
 letter - The estimate
 herewith submitted is
 not a new one, but
 merely a rearrangement
 of subheads of the old
 one -
 With regard to (a) the
 estimate provides for the
 full cost of all the plant,
 and any value which they
 may fetch after use
 is a saving on the estimate.
 I do not think it practicable
 to enter any definite sum

on this account, as the
amount in which the plant
will sell is so much a
matter of conjecture -

The effect of (B) will
be to increase the expenditures
on the network "contingencies"
and probably to come in
excess on that network,
but this excess is due to
the coming outside the scope of
the original estimate, and
need not be taken
into consideration in the
rearrangement of the latter,
moreover we do not know
at present what the excess
will be -
I think the same remarks
apply to (C) -
(d) I do not think is
in any case a legitimate
discharge against the estimate
after completing the

for construction - which
should only include
changes in the construction of
construction -

(e)
Yes, if the estimate
were really a revised one,
but not in a mere
rearrangement of the
original estimate -

S. W.

I think we shall
have to call the Estimate
a "Revised" one as there
is a term here

L. W. F. H. H.

to be revised. I think
our estimate is not
for the purpose of
revision. I think
it is

State like to make in
C about (a)

(b) and (c) could be
examined about - under
the former more rightly is
custom to take place in
the last order of account
but as to (c) I have no
means of judging

(d) is comparatively
immaterial and I do
not care to insist on
its inclusion

~~Ally~~

7/3/87

No 2654

C Please send me
your opinion about the
points adverted to
above

~~Ally~~

7/3/87

No 1163
11/3/87

The fluctuations on the
different subheads has
been considerable & fresh
one "Worries" has been
inserted & Extra Budget
inserted. The Sanctioned
therefore be, in any event
accorded as to a Revised
Estimate for which the
Powers of the L. Govt. will
suffice

(2) The full provision for
"Tools & Plant" etc. I think
be allowed to stand against
that subhead of Estimate
the anticipated recovery
might be shown as a
deduction entry at the
foot of the Estimate as
Probable recoveries due to
Sales of Tools & Plant.
This course will admit
of the full expenditure on
the subhead while the recovery
can be checked when the
work is finished & settled.
(6) Mr. Parker remarks

appear necessary
(b) If not handed over
to the Port Trust but
if handed over such
maintenance charges
would be provided for
by separate estimates
debited to current
"revenue".

c. The indirect charges
shd be added at the foot
of the estimate but
the amount sanctioned
will only be the total
of the direct charges.

The temporary provision
for light houses may
be temporarily accepted
but when work comes
to be done a detailed
abstract estimate showing
the work to be done
shd be submitted for
sanction.

The same remarks
apply to moorings
as it appears desirable

to retain some record
of the kinds of work
executed as well as
the quantity done &
cost thereof in case
of future reference
becoming necessary

DM

1/3

C. R. W.

The estimate will
be revised in accordance
with the above remarks.
John Enamined &
circulated to the Secretary
of the Port under a
brief note which I should
draw up.

No notice need be
taken into future maintenance
charges in the year (b) or
of the indirect charges
(c).

The amount debited
above for the year

The sales of goods & plant
may be taken as taken
and deducted at foot
as suggested by the C.

The order with reference
to the C's remark as to
the advisability of having
details in the camp.
Dinner entered under
the morning and the
light house so soon
as they are sufficiently
known.

Platt

11-3-77

A Abstract of Estimates for the C. Madras Harbour Works

Original		Revised		Quantity Per Rate Cost	Total
Quantity Per	Rate Cost	Sub-heads	Sub-heads		
Preliminary Works					
1		Marine Surveys			6108
2		Plans from England			138,600
3		Salaries			39,400
4		Formation &c			69,020
5		Black Ground Original			45,000
6		Do at South Pier			9958
7		Buildings			65,451
Total Preliminary Works					
373,970					
North Pier					
8		Wharves along in Chief Bank & Bay (original 4,79,900)		4,89,910	12
extra against 10,000					
9		Concrete Blocks	(original estimate 1,00,000)	1,05,863	19
extra for Portland - 5,813					
10		Setting Blocks		1,05,863	19
Total North Pier					
21,23,141					
South Pier					
11		Wharves along in Chief Bank & Bay (original 4,79,900)		4,44,910	2
being offset 35,000					
12		Concrete Blocks	(original estimate 1,00,000)	1,04,521	19
extra for Pier head 4,521					
13		Setting Blocks		1,04,521	19
Total South Pier					
20,19,835					
14		Light houses/cats and design not yet decided on!			
Tools and Plant					
15		Locomotive Engine		55,171	
16		Rolling Stock		20,000	
17		Floating Plant		14,4285	
18		Do Do Expenses of Hopper barges persons &c being employed on all works		41,004	
19		Cranes & Machinery &c		2,50,388	
20		General Tools		14,858	
21		Office Furniture		4,029	
Total Tools and Plant					
571,801					
51,08,747					
5 per cent		Establishment 1/2 per cent		2,57,012	
10 per cent		Contingencies 3 1/2 per cent		1,78,006	
Grand Total					
56,75,165					
Mooring					
2,00,000					
for extra rubble					
not required					
58,45,165					

for extra rubble
not required!

W Parkes
1/3/87

B-Comparison of Expenditures to date with sanctioned Estimate

Sl. No. & Description of Subhead as per Estimate & Register of Works	As per Estimate		As sanctioned		Remarks
	Quantity	Rate	Estimated cost	Actual cost	
	2	3	4	5	6
<u>1</u> Preliminary Works					
1 Marine Survey			6400	6400 22	
2 Work from England			138 600	138 600 111	
3 Railways {			39 402	39 402 75	
4 {			69 020	69 020 81	
5 Block Ground / Original			45 032	45 032 155	
6 {			49 58	49 57 123	
7 Buildings {			65 451	65 450 146	
8 {			572 570	572 570 1	
9 North Pier					
10 Public Store in Surf Bank & base	489 910	2.00	979 820	474 990	1980 19
11 Concrete Blocks	105 863	8.90	942 181	8909 11	5002 00
12 Setting Blocks	105 863	1.90	201 140	8 909 14	1805 61
13 South Pier					
14 Public Store in Surf Bank & base	444 910	2.00	889 820	349 300	16019 19
15 Concrete Blocks	104 631	8.90	931 216	7709 7	1435 32
16 Setting Blocks	104 631	1.90	198 799	7709 7	1700 34
17 Light houses / site & design			20 000		135 161 23
18 not decided on					
19 Moles and Plant					
20 Locomotive Engines			55 171	55 171 38	
21 Rolling Stock			26 066	26 065 100	
22 Steaming Plant			144 285	144 284 83	
23 as Expenses of Hopper Barges			44 004	44 004 00	
24 Engines & Mac. running on			258 388	258 387 120	
25 General Tools as per Schedule No 1			44 858	44 857 141	
26 Office Furniture			40 29	40 29 149	
27 Contingencies as per Schedule No 2			5108 747	5108 747 23	
28 Estimated as per Schedule No 3			178 806	178 806 1	
29 Materials at site of Works			357 612	357 612 9	
30 Concrete Blocks					
31 Advances to Work people					
32 Manufacture					
33 Other stores as per Schedule No 4					
34 Total of Estimate value of work done			56 451 165	56 451 165	
35 Meetings			2 000 000	2 000 000	
36 Estimated amount due					
37 Total outlay to date by Works					
38 Deduct outlay to end of last year					
39 Total outlay of Current year					

W Parker
1/3/01

C. J. 14-3-81.

Schedule No 1

General Tools

Total cost to end of October 1880	38,395	6	9
November			
Files, rough, flat and $\frac{1}{2}$ round No 60	35	11	0
do smooth $\frac{1}{2}$ round 24	18	6	0
do Pit saw 144	9	0	0
Shovels 12	13	8	0
Hammers sledge 10 lbs each 12	19	9	0
Metallic tape 100 feet 1	6	5	4
Grapnell 1	30	0	0
do 1	17	0	0
Anchors small 9	82	14	6
Buoys and Anchors 5	135	6	0
Lead line for deep sea Coil $\frac{1}{2}$	30	0	0
Brass chain 59 feet Coil 1	14	12	0
Files, pit saw No 48	12	0	0
do flat smooth 6	6	0	0
do $\frac{1}{2}$ round rough 3	1	4	0
Chisel (carpenters) 1	0	12	0
Pier tolls for iron chains & "County of Sutherland"	5	9	2
December			
Freight $\frac{1}{3}$ for iron chains & "County of Sutherland"	24	13	4
	38,857	14	1

M.P.
4/3/81

Schedule No 2

Contingencies

Subd
No 125

	Month December			Total			Amount paid at date included in total		
Expenses of setting Memorial stone by H.R.H. Prince of Wales in November 1875.				8,654	1	7			
Protective Works along shore	19	16	15	79,751	10	7	13,06	7	6
Intercepting drain, Port to No 10 ship				10,028	7	2			
do do No 10 drain trench	48	1	1	23,123	4	1	287	14	5
Purchase of Mr. Sadler's land				1,400	0	0			
On account of law charges in re barge "James Aikins"	6	90	9	690	9	4			
Constancy	33	11	0	16,75	1	8	21	6	0
Police and Guards	81	8	0	3266	11	3	81	8	0
Temporary Office assistance				798	0	3	14	0	0
Purchase of Office Stationery	7	8	0	263	12	9			
Lighting in Office and Titan	39	8	0	1284	9	10	6	0	0
Temporary Store Establishment	23	5	6	1510	15	9	23	12	0
Travelling allowances	2	4	0	423	6	3			
Medical				720	6	7			
General Sundries	29	14	5	4276	11	8	25	2	8
Advertisement charges				435	11	6			
Photographs				1893	0	0			
Office Sundries	11	2	0	1551	13	1	7	14	0
Theft				50	0	0			
Municipal tax for sheds				100	13	5			
	28	84	6	141,899	2	9	1774	0	7

W.P. 1/3/81

10

Schedule No 3
Establishment

Excl. 3
20.2.1881

	Month of December			Total			Amounts not paid at date in- cluded in Total		
Salaries	4,192	8	"	253,168	8	9			
Office Contingencies	39	5	"	3,719	4	10			
Travelling Allowances	59	"	"	29,288	5	7	nil		
Medical				359	15	8			
Assistance in Surveys				5,119	11	11			
	4,280	13	0	291,655	11	9			

W.P.
1/3/81

Schedule of Stores N^o 4

	Month of		Total	Areas not paid at del.		included in Total
	December					
Small Stores	nil		2952	10	9	
Building materials			70	6	-	
English Cement			117	69	7	4
Indian - do			388	6	8	734 4 9
Timber			854	9	10	11
Metals			191	70	12	7
Fuel			23	61	15	9
Painter's Stores			27	95	-	8
House fittings			5	12	-	
Cordage			41	97	5	1
Miscellaneous			608	5	6	3
Spare gear for machinery			6400	-	-	381 12 4
			1744	7	19	- 1116 1 1

W.P.
1/3/81-

81
From
W. Parks, Esq^r M. Inst. C.E.
Engineer in Chief
Madras Harbour Works.

To
Colonel R. H. Sankey, C.B., R.E.
Secretary to Government P.W. Dept.
Buildings and Roads,
Fort Saint George

Madras 1st March 1881.

Sir,

At the suggestion of the Examiner
of Public Works accounts, I have the
honour to submit herewith a revised
estimate of the Harbour Works in a
form that can be more easily compared
with the expenditure than the original
estimate. The two are shown side by
side on the accompanying statement A.

2. As you will observe the total
amount is the same within 6000 Rupees
as

17.
as that of the original estimate but
the items which go to make up that
amount have been altered so as to be
more nearly proportional to the actual
expenditure. On each of these items
there is up to the present time a saving
amounting in the aggregate to upwards
of a lac. of rupees independent of
"Contingencies" and I have every hope
this saving will be maintained to the
completion of the work, but I do not
think it would be desirable at the
present stage to submit an estimate
of reduced total amount. The estimate
as now presented however includes
the cost of the proposed additions
to the Pier Heads.

3. I should explain also that
no credit is taken for the value of
the

20 P3
the Plant and Machinery now on the
works. These may probably be
valued at about 1½ lac of rupees, but
whether such an amount be realized
will depend of course, on the demand.
The original Estimate however was
intended to cover the first cost of
these materials—

4. I may take this opportunity
of explaining the reasons for some of
the differences both in quantity and
price between the corresponding items
of the two estimates, which will be
substantially equivalent to explaining
the differences between the original
estimate and the rate of expenditure
to the present time.

5. The two sub-heads "Preliminary
Works" (Items 1-11) and "Tools and Plant"
(Items 15-21) were included in my
original estimate.

175
original estimate in one item "Plant
and Preliminaries" for which £80,000
was allowed. This was afterwards
divided rather arbitrarily into two
subheads estimated respectively at
Rupees 3,80,000 and 4,20,000 which
I have adopted in the accompanying
abstract A so that they may be
inserted side by side with the
similar subheads in the revised
estimate. The sums inserted
against the several items in the
Revised Estimate are simply the
expenditure upon those several items
up to the 31st December last except
in one case "General Tools" Rs. 20,
000 is estimated as liable to be
required before the work is completed.
C. My original estimate of
£80,000

175
£80,000 was for the supply of a
sufficient stock of Plant for carrying
on the work at full speed, and
it was intended that the account
should be closed when this was
accomplished, leaving any future
additions to be charged to the
works. I was desirous of closing
the account in February 1879/see
Report of that date C.O. 12608W
of 27th February/79 in order that for the
future the expenditure on the
works might be definitely compared
with the Estimate. Under the
direction of the Examiner however
the accounts of expenditure were
kept upon a different system
which involved keeping them all
open to a much later stage. I do
not offer any opinion on the
relative

relative merits of the two systems,
but it is clear that an estimate
made on one system is not
fairly comparable with an
account of expenditure on the
other.

7. Besides this the apparent
cost of most of these items has
been materially enhanced by the
purchases in England being con-
verted into Indian currency at
the depreciated rate, while the
estimate was converted at par. In the
case of some of the articles purchased
also, the prices in England had
materially risen from those on
which my estimate was based.
These facts will I think sufficiently
explain the reason of an excess
of Rs. 9,45,771 over Rs. 8,00,000 which
in

24 87
in a great measure is more apparent
than real. I should also here
mention that the cost of the
Goliath Crane and other machinery
at the South Pier Blockground which
has hitherto been charged to "Contingencies"
as having been procured after the
account for Plant was supposed to be
closed is now charged to "Tools and Plant".
Some other similar transfers have also
been made in accordance with the
same principle.

8. Passing now to the Rubble stone
in Surf Banks and Bases (Items 8
and 11) it will be seen that I have
added 10,000 tons to the quantity originally
estimated for the North Pier, and deducted
35,000 tons from that for the
South Pier. In the original
estimate I made a liberal allow-
ance for an excess of stone
actually to be used over that
calculated

8
calculated from the bare sections,
and this has been on the whole
more than enough, notwithstanding
the greater depth of water in
which the heads are now placed.
I made the allowance however on
a supposition which has not been
confirmed by experience. I thought
it would sink into the sand,
and more so near the shore
than in deep water, so I made
my greatest allowance for the
work first executed. It turned
out however that it sunk
very little into the sand, so there
was at first a large saving in
quantity, but the higher bank
in deeper water consolidated to
an extent I did not anticipate,
and

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and to allow for this an extra quantity had to be deposited which more than balanced the saving on the earlier portions of the North Pier, and reduced them materially in the case of the South Pier.

9. The increase of price from $1\frac{1}{2}$ to 2 rupees is partly due to the fact that though I made an allowance over the ordinary prices for rubble stone which prevailed in 1873 for the extra cost which is sure to follow a pressing demand for labour, yet that allowance was not sufficient. It is to be remarked that there is no effectual competition for the contracts.

27 P 10
A rise of price followed immediately
on a public advertisement being
issued for tenders in 1878, since
which time the only contractors
who have command of labour
appear to have felt themselves
more secure of their monopolies.

10. The steam hopper barges
also have been unexpectedly
expensive owing to the long
periods during which they are
unable to work either from
being out of repair or obliged
to shelter at Coconada. While
they are at work however they
deposit the stone at a very
cheap rate, and I have no
doubt they have served to keep
down the price of the deposit
from

from cargo boats.

11. The saving of rather more than a rupee per cubic yard in the cost of the Concrete blocks is due to the stone of which they are formed being supplied from Pallavaram at Rs. 2 per ton instead of from Trittany at Rs. 2½ as estimated. The saving would have been greater but for the enhancement of the apparent cost of the Portland cement by the state of the exchange.

12. In the cost of setting blocks the estimated rate of Rs. 80 per lineal foot is equivalent to Rs. 3.3 per cubic yard while the actual cost is rather under Rs. 1.9 a saving of 40 per cent.

This

112

This is solely due to the increasing skill and care displayed in the various departments of the work.

13. Lighthouses - In the original estimate £3000 was allowed for each lighthouse, but this was before any definite design had been considered for the pier heads and the amount is sufficient to allow of independent submarine foundations. These will be unnecessary with the widened pier heads now proposed, and the cost of them may therefore be transferred to the estimates for the piers leaving 20,000 rupees for the superstructures only.

14. Establishment - This was originally estimated at 5 per cent, but

713

but during the years 1877 and 1878 first one pier and then the other were so many months without making much progress that the expenditure was reduced without a corresponding reduction in the cost of establishment, which latter consequently rose to 9 per cent at the end of 1878. In the two following years the greater part of expenditure reduced it to 6 $\frac{1}{2}$. As however during the later stages the expenditure on works will be reduced before that on establishment can be the percentage of the latter will again rise though I hope the allowance of 7 per cent will leave a surplus.

15. Contingencies. This was originally taken at 10 per cent but

but up to 31st December 1880 the charges debited to this head had amounted to little over 3 per cent on the expenditure on works. The 3½ per cent now taken on the whole will allow 7 per cent on the unexpended portion of the estimate for any future contingencies. The only further charge in prospect however is for storm water channels from the outlets of the drains to the water edge amounting to Rs. 5,000.

16. There is indeed one claim now being made which, if substantiated, will make a further charge against the Harbour Works; I allude to the claim of the Madras Railway Company for a payment to cover their alleged loss in the carrying of the stone from Ambatom. I do not at present offer

P 15

offer any opinion on the merits of this claim but I would remark that inasmuch as the cost of conveyance was an item which I was obliged to take on the word of the Agent and Manager quite irrespective of my own judgement, a special amendment of the estimate should be made by an order of Government, to cover the amount of the claim.

17. Abstract B is a statement of the expenditure to 31st December 1880 compared with the revised Estimate, which I hope may be found suitable in form for future monthly statements. In the case of four sub-heads "General Tools", "Stores", "Contingencies" and "Establishment" I have given the details in separate schedules so as to shew particulars of expenditure.

Page 16
Expenditure which should be placed
on record but which not having
corresponding details in the estimate
cannot be conveniently inserted in
the body of the Statement.

I have the honor to be,
Sir,
Your most Obedient Servant

W Parkes M. Inst. C. E.,
Engineer-in-Chief
Madras Harbour Works.

Shls
G. D. 2/4

S. G. No. 609 W. 27-2-79.

S. W. C. No. 1298.

Encl: 6.

Received 3rd March 1881.

No. 4128

B & R
PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the 16th March/81.

Read the following:

From

The Engineer-in-Chief (H.E. No. 4128) of 1st March/81.
The Harbour Works

With this letter the Engineer-in-Chief Madras Harbour Works submits the Estimate for the works recast so as to admit of easier comparison with expenditure.

The total amount of the Estimate as now submitted amounts to Rs. 58,45,165 and includes Rs. 2,00,000 on account of the Moorings, but excludes a corresponding sum for extra rubble not now required. It also includes an additional sum of Rs. 10,394 for the Pier-Heads

heads, the amount being transferred from Light houses under the circumstances explained in para 13 of Mr. Parker's Report. No credit has been taken for recoveries by sale of tools and plant on completion of the works for which they have been procured. A sum of Rs. 1,00,000 may be shown on this account as a deduction from the total amount of the Estimate, the full provision under "Tools and Plant" being allowed to stand. This course will admit of the full expenditure on the subhead, while the recoveries can be checked when the work is finished and the accounts closed.

3. As regards the lump sum provision for
• Light

Light houses (Rs. 20,000) and Moorings (Rs. 200,000) it seems desirable that detailed abstract estimates should be submitted so as to have some record of the kind of work executed as well as the quantity, rate, and cost thereof in the event of future reference becoming necessary.

4. It is noticed that the revised Estimate provides Rs. 1,78,806 for contingencies of which Rs. 1,41,899 would appear from Schedule 2 to have been already expended. A sum of Rs. 79,751 only of this sum, however, is shown as outlay on the protective works north of the Harbour, the probable cost of which as estimated by Mr. Thoroughgood being

Memorandum

being about 1/4 lakhs if
the retentment is ~~the~~ he
proceeded with. This point
as well as the claim for
compensation by the Indian
Railway Company for
conveyance of material
will require further ~~consideration~~
~~and~~ ~~consideration~~ ~~and~~ ~~consideration~~
~~and~~ ~~consideration~~ ~~and~~ ~~consideration~~
~~and~~ ~~consideration~~ ~~and~~ ~~consideration~~

5. With these remarks,
the revised estimate as
amended by the deduction
entry of Rs. 1,00,000 on
account of sale of Tools
and Plant will be printed
for future guidance in
the execution and accounts
of the works.

[Signature]

14.3.81

Recd. in Chief. In. & Works,
Sup^l, In. & Works.
Rev. P. W. Sects. ✓
Marine Dept. ✓ 21-3-81.

Govt. of 1884. *Alfred*
PUBLIC WORKS.

Noted

Fixed

Arch.

1954

E. O. 16 Mar 1891, 53. 712

nos. 15 676

Madras Harbour has
 Orders on letter from the
 Engineer-in-Chief sub.
 mitting a revised estimate
 for the —

5/11