

(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. | 2206   | <del>Press</del> |
| B.P. No. |        | Mis. <i>mis</i>  |
| Dated    | 21-8 - | 1876.            |

Not to be folded or roughly handled

132/22

Madras Harbour

23 Abingdon Street.

9<sup>th</sup> June 1876

Sir,

I have the honor to acknowledge receipt of a copy of a report by the late Mr. May on the Manora Breakwater, Karachi, and of a request contained in an order of the Government of Madras appended to the report, that I will furnish replies to the following questions:

- 1<sup>st</sup> "Whether he considers it necessary to make any change in, or addition to, the structure as designed by him" (for the

The Under Secretary of State  
for India -

the Madras piers) "in order to  
"counteract the subsidence that  
"may probably take place—"

2<sup>nd</sup> "What precautions he  
"proposes to take for the preservation  
"of the sea faces of the rubble banks  
"between the shore and the  $2\frac{1}{2}$   
"fathoms water before next monsoon—"

2: In reply to the first question I  
beg to state that my design for the  
Madras piers includes every precaution  
which I consider necessary to prevent  
any evil result from subsidence  
similar to that which has occurred  
at Kurrachee, and which may be  
reasonably expected to a greater or  
less extent at Madras— When  
making that design I was perfectly

aware

aware of the subsidence which had  
taken place at Kurrachee, and that  
no damage had resulted, or was  
likely to result, from it to that  
portion of the breakwater which was  
on a foundation comparable with  
that at Madras— It is a simple  
subsidence of from 2 to 3 feet without  
change of form, and so long as the  
Madras piers have no other function  
to perform than that of simple  
breakwaters, their efficiency will not  
be affected by such subsidence— If  
for any reason it becomes desirable  
to restore them to their original height,  
this may be done at small cost by  
the addition of concrete on the top.  
The height of 5 feet above mean sea  
level was fixed for no other reason

than

than that it is convenient for carrying on the work. A lower level would be sufficient for stopping the waves.

3. The second question is not based on anything that occurred in Mr. May's report, but as it is a subject on which I know some of the authorities of the Government of Madras have felt apprehension I am glad of the opportunity of giving such explanation as may I think be satisfactory to them. The "surf banks" are simple mounds of rubble stone intended for no other purpose than to connect the shore with the built work of the pier which cannot be commenced within the belt of surf. The

The cost of the two banks appears in my estimate as £47,437, while the total cost of the two piers is taken (exclusive of 10 per cent. for contingencies and 5 per cent. for superintendence) at £491,372. They are therefore less than one tenth of the whole work. But the construction of this tenth part involves more uncertainties and casualties than the whole of the other nine tenths.

4. I have now to show what provision has been made for meeting those uncertainties and casualties. Up to the end of April the northern surf bank had been carried to within about 200 feet of its intended termination and in it had been deposited 46,027 tons of rubble

rubble stone - To complete the remaining  
200 feet about 20,000 tons more would  
be required (as summing circumstances  
of weather & similar to those which  
have hitherto prevailed,) this making  
a total of say 66,000 tons. Now the  
quantity I estimated as probably  
required for this work was 15,000 tons,  
so that by the time the bank is carried  
to its full extent there will remain  
a saving of 92,000 tons representing  
a sum of £13,500 or 138,000 rupees available  
for any purposes of protection of work in  
the formation of which  
only 84,862 rupees would have been  
expended. This will I think be  
sufficient to show that there need  
be no anxiety as to my estimate  
being sufficient to cover any reasonable

amount

amount of protection of the sea slope.  
But the question now arises, what  
should be the nature of the protection.  
The determination of this question  
almost necessarily depends on the  
observation of local conditions by a  
competent and experienced person. & the  
conditions are of a kind which  
the most experienced engineer would  
be unable to form a definite idea of  
except during the actual progress of the  
work. The points are as the following:-  
1. The force of the waves when opposed  
by a bank of rubble stone. 2. The form  
which the rubble stone bank will  
assume under their action. 3. The  
extent to which sand will accumulate  
against the bank. 4. The extent  
to to

to which it will be scoured out under other circumstances. 5- The extent to which the stone will sink into the sand, and others which it is unnecessary to name. In the absence of definite information based on direct local experience on such points as these it would be useless to devise any system of protection, and I therefore decided, being satisfied that my estimate would cover the cost, that it would be better to leave the determination of the best kind of protection to Mr. May, than whom a more competent person could not be found. I however furnished Mr. May both in conversation and subsequently in writing, with such ideas as I felt justified

justified in basing on general principles, but I left him quite free to adopt his own course.

6. Mr. May's observations led him to recommend the formation of some large concrete blocks on the bank so as to form a barrier against the sea. If he has left full instructions as to this, I can recommend nothing better than to carry them out, but if there is any uncertainty as to the details, I should be disposed to abandon them and fall back on the system to which I gave at first a general preference, which is to widen the bank to seaward with additional rubble stone in such quantities that the sea might wash it down.

- to

to a slope so flat that it would become a beach requiring no protection. The facts reported to me rather confirm my preference for this principle, but it is a matter in which my own judgment formed at a distance should certainly defer to Mr May's if the latter were maturely formed on the spot—

7. I propose to go into this matter fully with Mr May's successor before he leaves so that on his taking charge of the works he may be in a position to complete Mr May's instructions or modify them as may be desirable—

8. I may mention that immediately on receiving intimation of Mr May's leaving

having given up charge of the works I wrote privately to General Walker, Chief Engineer of the Presidency, who had approved Mr May's proposals, to much the same effect as the above. I have also written to Mr Beardmore urging him to carry out Mr May's instructions, but warning him upon what points it appeared to me that special care was required. I do not think it would be judicious under the circumstances to do more than I have done, and propose to do, and I may add that I think there is more fear of money being spent unnecessarily in attempting to avert imaginary damage than there is of any really extensive damage being done

done by the sea—

I have the honor to be

Sir,

Your most obedient servant

(W) W Parkes

H.C. 4 P.W.D.  
23/4/76  
No 12, 2

Copy letter from Mr. Parkes

Public Works.  
No 26

India Office, London.  
13<sup>th</sup> July, 1876.

My Lord Duke,

1. Upon receipt  
of your Grace's letter,  
No 26, of the 29<sup>th</sup> April  
last, it was communicated,  
as desired by your  
Government, to Mr  
Parkes, who was requested  
to reply to the questions  
relative to the  
Madras Harbour

His Excellency,  
The Right Honorable,  
The Governor in Council  
Fort St. George.  
Works,

Referent to Public Works  
Madras No 26, dated 13<sup>th</sup> July/76  
Part 2.

6/10  
M

24/8/76

Works, raised in  
paragraph 3, of  
the Order of the  
20<sup>th</sup> April.

2. A copy of  
Mr. Parkes' reply is  
transmitted herewith.

I have the honor to be,  
My Lord Duke,

Your Grace's most obedient  
humble servant,

\*dated 9<sup>th</sup> June. 1876

Yours faithfully,  
[Signature]

per [Signature]  
[Signature]  
[Signature]

No. 20 apl 76. No 987  
Depts. No 26 of 1876

P.W.D.

No 3.

23/7/76

No 1000

Public Works  
13<sup>th</sup> July 1876.

The  
Letter to Mr. George  
No 26.

Recd & ✓

From

The Secy. of State.

Dated 13<sup>th</sup> July 1876.

In transmitting a copy  
of Mr. Parker's reply to  
certain questions rela-  
tive to the Madras Har-  
bour Works.

No 493

Recd at 18.8.76  
P.H. Shurt 25 Augt.

Recd at 6th 5 Augt 1876.

PUBLIC WORKS DEPARTMENT.

Letter from the Right Honourable  
the Secretary of State for India  
No 26 dated 13<sup>th</sup> July 1876.

No 220 of 21 Aug 76.

FOR ORDERS

Ordered to be

recorded -

Done

Major Genl. R. G.  
Secretary to Government - D. V. M.

Copy of the above  
had already been  
submitted for the  
information of  
Mr. James the Secy.  
- 31222 - See the  
accompanying file.

When the Major Genl.  
has seen the file.

18-8-76

FOR ORDERS

K<sub>2</sub> 493/94

6082

Govt. of Madras.  
PUBLIC WORKS.

No

Part I

Issue I

Part I

Part I

G. O. 21<sup>st</sup> August 1870, No

Nos. 1193-1194

Madras Harbour Works

Despatched from Secy of  
State transmitting a  
copy of Mr. Parkes's reply  
to certain questions re  
reference to the — (revenue)

Encl. 1193-1194  
1-9-70