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# TAMIL NADU ARCH

## GOVERNMENT OF TAMIL NADU

Publicworks DE

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| G.O. No.<br>~~B.P.~~ No. | 2547—W |
| Dated | 2-11-1885 |

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*Not to be folded or roughly handled*

2nd November 1885, No. 2547 W., Public Works.

# GOVERNMENT OF MADRAS.

# PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following papers :—

From F. N. THOROWGOOD, Esq., M. Inst. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 2nd October 1885, No. 31 W.

I have the honor to submit the following report of the progress on these works during September. As all the constructive work has been below water, I do not forward a plan, as there would be little to show in addition to the coast line at high water on 30th September.

2. *North pier rubble base.*—Work has been going on steadily at the north pier base during September, and there were very few days on which the boats could not work. The line of new foundations is accurately marked out with iron beacons, and the divers have been employed in blowing up those blocks which lie in the line of the work so as to interfere with the superstructure hereafter. There have been 9,192 tons of rubble deposited during the month, being 2,000 tons more than was deposited in August. This portion of the work is now in a forward state, and bids fair to be executed at lower rates than shown in the estimate.

3. *Recovering old blocks.*—On the 7th and 14th September the sea was as smooth as it ever is at Madras, and a fine opportunity was offered for trying the floating craft for raising blocks. On each occasion the best and most experienced diving staff and boat lascars endeavoured without ceasing for half a day to attach the claws to a block lying apart at the bottom of the sea, but the movement of the boats even on a smooth day was such that it was absolutely impossible to manage these claws in a depth of $3\frac{1}{2}$ fathoms, and I finally put a stop to the attempts as the experiment really was unsafe for a diver in the thick water. The attempt on the 14th was more nearly successful than on the 7th, but it was nevertheless a failure. I have reported these results to Mr. Parkes, who is very anxious that old blocks should be recovered; and, in the meantime, have given up this section of the work as, in my opinion, hopeless with the plant at command—an opinion which I am bound to say I have been inclined t from the first. Mr. Parkes may have some suggestion to make which will justify a renewed attempt. If, however, he should be satisfied that it is not worth while t proceed further in the matter, there will have been but little money lost on the experiments, as the boats, crab, chains and timber-work will all be available in othe directions.

4. *South pier rubble base.*—At the south pier the sea has interfered very muc with all work, the site of operations being still opposite to the first large gap in the damaged wall, referred to in paragraph 5 of my last report. It is to be feared tha so long as the swell comes from the south of east there will always be trouble at thi point both in diving operations and working at the superstructure. At this spot th fallen blocks lie very thick and in much confusion, so that it is delicate work insertin the cartridges for blasting. During September 17 blocks were blown to pieces, givin an equivalent to 460 tons of rubble deposited, in addition to which 2,005 tons o granite from Pallávaram were thrown in from boats. This work is now proceedin satisfactorily on the whole.

5. For the blasting of blocks at the south pier, I have tried a few charges o "blasting gelatine," which is about 50 per cent. more powerful than dynamite, an possesses the additional advantage of being water-proof, a quality of great value in se work. The dynamite, however, I find is the more satisfactory material for the particular work in question, as the gelatine seems to be too quick in its explosion, cuttin

a block of 432 cubic feet clean in two pieces, whereas dynamite shakes the block throughout.

6. *Block-making.*—The work of making concrete blocks has been suspended during September owing to want of room in the block platforms. It will be resumed during the current month, the second platform having been completed in September, and the old blocks being stacked away.

For the commencement of the new work in the north and south piers old blocks are being altered by manual labor to suit the new design. A total number of 231 blocks have thus been modified, of which 38 were done in September.

7. *Pallávaram quarries.*—At Pallávaram for three days the quarry line was completely blocked up owing to very sudden and heavy rains, which caused a land-slip on the side of the hill. The contractor met the difficulty very well, and the result was only the cancelling of three trains on one day. During the month 13,264 tons of stone were delivered at Madras, being 1,400 tons more than was delivered in August.

8. *Titan cranes and plant.*—The titan crane for the north pier is now approaching completion. The top frame, consisting of four heavy girders and an end piece, being now rivetted together was raised to its full height of 15 feet on the 26th September. The operation of raising this frame was necessarily slow, as it had to be done entirely with hydraulic and screw-jacks. On the 30th the packing or scaffolding was removed and the machine brought to rest on its own wheels. The engine and boiler, the crab and balancing tank have yet to be erected, which I think will be done during this month. All pressure has been put on this work by working overtime every day to bring it to completion as soon as possible. I regret to state that 950 important bolts and nuts appear to have been omitted from the shipment of this machine, and I fear they will have to be made on the works. I have telegraphed to Mr. Parkes to know if it is any good waiting for them. The titan crane for the south pier is being landed and placed in position for erection at the root of the pier. The foundation "compressors" (referred to in paragraph 17 of Mr. Parkes' report—G.O., No. 3127 W., of 19th December 1884) have arrived in pieces and are being put together.

9. *Stores received on works.*—During September there arrived from England the following vessels:—

| | Cargo. |
|---|---|
| S.S. Cormorant ... ... ... ... ... | 900 tons cement. |
| ,, Rewa ... ... ... ... ... | 40 ,, ,, |
| ,, Clan Mackenzie ... ... ... ... | Plates and rivets for titan roads. |
| ,, Lamington ... ... ... ... | South pier titan. |
| ,, Almora ... ... ... ... ... | Foundation compressors. |

Also from Gopálpur there arrived the steamers *Secundra* and *Sirdhana* with sálwood sleepers and pieces for block-making.

10. *Expenditure.*—Until the new estimate receives sanction it is hardly possible to give an intelligible statement of expenditure, for at present all outlay has to be charged to the obsolete and unsuitable heads of the estimate for the original work. But I have extracted some of the rates at which the work is now being carried on, and they compare favorably with the estimate as here shown:—

| | | Estimate. | | | Actual. | | |
|---|---|---|---|---|---|---|---|
| | | RS. | A. | P. | RS. | A. | P. |
| Concrete blocks ... ... ... | per c. yard ... | 9 | 0 | 0 | 7 | 12 | 8 |
| Rubble deposit from breakwater ... | per ton ... | 1 | 8 | 0 | 1 | 5 | 0 |
| Do. from boats, north pier | ,, .. | 2 | 0 | 0 | 1 | 10 | 9 |
| Do. do. south pier | ,, .. | 2 | 0 | 0 | 1 | 8 | 7 |

It is possible that these rates may be increased by delays in the work, but they are taken from the total cost of a considerable amount of work and may be considered satisfactory so far as they go.

11. *The public and the breakwaters.*—On the 24th September a lad was washed off the south breakwater and drowned. There are plain notices in English and Tamil at the commencement of each breakwater warning the public against walking on the piers as the seas are treacherous. At the inquest on the body of the lad the Coroner's jury remarked that the notices "were useless to illiterate persons," which is no doubt true; and the jury recommended that a watchman should stand at each pier to

Pa

"warn the public of the danger." This could hardly be carried out, and have therefore taken measures to exclude the public as much as is possible, and thus prevent a recurrence of such accidents. On works like these in England the public are always jealously excluded, but my attempt to do so here in 1879 was greatly resented. Now, however, that a Coroner's jury have considered the present system insufficient, I trust that Government will lend its approval to the closing of the piers to the public with reasonable exceptions.

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From F. N. THO[illegible]OOD, Esq., M. Inst. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 14th October 1885, No. 35 W.

In reply to your memorandum of the 12th October, No. 1623 C., regarding the public and the harbour piers, I regret to state that I have no correspondence on this subject. I will relate what occurred.

2. In 1878-79 the public used to come on to the works in progress very freely, and in my opinion to their imminent risk, as well as to the serious inconvenience of those working at the pier ends. I then resolved to do, as is nearly always done on similar work, viz., erect a barrier with a notice prohibiting the public from passing. At the same time watchmen were posted at the barrier with written instructions signed by myself, explaining that it was necessary to keep the public back.

3. This move was followed by people *insisting* on passing the barrier, defying the watchmen, and by repeated letters * addressed to me complaining that, as the works were "public works," the public ought to be admitted. So far did this resentment go that some individuals had to be forcibly removed from the south pier, because they persisted in crowding round the men engaged in setting blocks.

One man came to me in a perfect frenzy of rage because he was not allowed to see the works, "public works" as he reminded me that they were.

4. The Harbour Works have always been subject to the criticism of almost every cooly who has seen them, and no doubt the closing of the breakwaters was supposed to arise from a wish to keep something from meeting the public eye.

5. It became so extremely unpleasant at last to have these little battles with the public, and to receive resentful letters from natives who could hardly write, that I relaxed the watch on the piers, and put up notices in Tamil and English warning people of the danger. Since then two natives have been drowned, and at the inquest on the last case the jury recommended that a watchman should be stationed to warn illiterate persons of the danger verbally. This is a refinement that I do not feel disposed to carry out, for it is hardly to be expected that a watchman would explain to every cooly-child the danger of walking on the breakwater. I think it will be better once more to close the piers, allowing discretion to the watchman as to who shall pass, and thus try to prevent the public from being washed off.

* The letters are not preserved.

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Order—dated 2nd November 1885, No. 2547 W., Public Works.

The Harbour Works appear to have made satisfactory progress during September.

2. With advertence to the concluding paragraph of his letter, dated 2nd October 1885, the Superintendent will state the portion of the length of each breakwater which he considers it necessary to close, in view to the safety of the public.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent, Madras Harbour Works.
r. n. Marine [illegible]
Exd. J. Henricus.
Spare Copies.

BUILDINGS AND ROADS.
CIVIL WORKS.

Gobt. of {188[illegible] Madra

PUBLIC WORKS.

Dated November, 2nd.

Recd. Encl.

G.O., 2nd Nov. 1885, No. 2547 W.

NOVEMBER.

Please reprint 30 copies

D.P.
F W C.A.W 12/2/86

**Madras Harbour Works**

Orders on the progress report of the — for the month of September 1885.

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All communications should be addressed to the Secretary.

No. 317 M.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

Civil Works
Miscellaneous.

To
The Secy: to the Govt: of
P. W. Dep

Simla 18th Augu

Sir,

In acknowledgi
receipt (with your dock
1940 W dated 23rd ultimo)
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of the Madras Harbour
for the quarter ending 30
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P.W.D.

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I have the honor to be,
Sir,
Your most Obedt. Servt.
Dundas
Captn R.E.
For Secy: to the Govt. of India

28.4.79 W 1252 W
23.7 - 1940 W

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Wilcott 4

No. 2228 W Public Works Departn

**PROCEEDINGS OF THE MADRAS GOVERNMENT.**

Under date the 28th Augt.

Read the following:—

From

The Government of India (N.E. No. 317 M dd 18th Aug

Communicated

Superintendent Madras

Works, who will ~~in the~~

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To

The Supt. M. H. Works

Despd

28.8.79

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Ms N-2228 W of 28-8-7

14TH SEPTEMBER 1885, No. 2[illegible]4 W., PUBLIC WORKS.

## GOVERNMENT OF MADRAS.

## PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following letter from [illegible] N. THOROWGOOD, Esq., M. INST. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 3rd September 1885, No. [illegible]28 W.:—

I have the honor to submit the following report of the progress on these works during the past month of August.

2. *North pier rubble base.*—During several days in August the ground swell stopped all work in the sea, and the trains of rubble stone for the base of the north pier had to be cancelled. Throughout the whole of the month the work of tipping rubble was much retarded by the broken and confused seas, caused by the blocks in the damaged piers, in close proximity to which the tipping boats have to work. This, however, is a contingency that has always been foreseen in carrying out the reconstruction. On the whole, more work has been done at the new rubble base during August than in July, a total of 7,217 tons of stone having been deposited, making a grand total of 67,937 tons deposited in the north pier since the work of reconstruction commenced.

3. *Recovering old blocks.*—The task of recovering or attempting to recover the old concrete blocks in the fallen walls is one that necessitates a smooth sea; and, although all the gearing is in readiness for the work, hitherto I have been unable to get any satisfactory result. An attempt was made at the north pier on the 31st, but after lying over the spot for some time the diving boats had to be removed, as occasionally a breaking wave rendered the position highly dangerous.

4. The apparatus prepared for this work consists of two very excellent new cargo boats purchased by me at Karikal, each capable of sustaining 20 tons. These are fastened together by four large teakwood beams which lie athwart the boats' gunwales and are secured by heavy iron straps and bolts passing down the outside of the sides to the keel. The boats have a space of 6 feet clear between them, and over this space is fixed a powerful crab winch with treble purchase gear and treble purchase blocks attached to the chain from the crab. The gear for laying hold of a block below water consists of a pair of wrought iron claws weighing 33 cwts., having a grip of 12′ 6″ wide; these are so arranged that they can be made to descend wide open over a block, and having reached the block, a diver frees four small catches, when on heaving up with the winch the block is caught hold of and carried up by the claws. All this works admirably in experiment, but the actual test of raising a block out of the ruins, I have not yet been able to apply.

5. *South pier rubble base.*—Work of tipping rubble at the south pier has been suspended during August, as the length of work set out for the purpose is much encumbered by old blocks from the damaged wall. These have to be blasted to pieces by divers before rubble can be thrown in, and diving work at this particular spot has been most seriously interrupted by the swell which has persistently rushed through the gap in the damaged work, sweeping divers off their legs. For the last few days the swell has abated and divers have been able to work.

6. *Block-making.*—The important work of making blocks went on satisfactorily throughout August up to the 29th, when it had to be stopped for want of room on the block-making platform. The second platform is being prepared as rapidly as possible, and when this is built block-making can be renewed. Of this second platform a length of 332 feet out of a total of 1,140 feet has been completed.

The number of blocks made during August has been 203, making the total of new blocks for the restored works now 688, representing a weight of about 20,000 tons of concrete.

7. *Pallávaram quarries.*—The quarries at Pallávaram have not yet been taxed very severely, and as yet not more than four trains daily have been received. During August, 11,859 tons of stone were sent down to Madras, of which 4,642 tons were used for block-making. The railway lines at the quarry have been extended and considerable blasting operations carried on.

8. The Mussulman contractor Ká[illegible]m Alí Nakavy Sáhib has succeeded in obtaining for himself what I endeavoured to obtain for him, viz., two police constables to be on duty about the quarry, and a slight extension of magisterial power to the sarishtadár of the district. This is a great help in working the quarry, and tends materially to maintaining punctuality in loading the trains, by making the coolies more afraid to run away, as is their custom after having received an advance of pay.

9. *Titan crane for north pier.*—On the 7th August the S.S. *Harrogate* arrived with the first titan crane. It was originally hoped that this machine would have been ready in March last; but numerous causes have joined to delay its completion, and now it will not be possible to do much work with it before the storm season of the north-east monsoon.

10. This massive machine arrived in 325 different pieces and packages, and weighs 105 tons. The work of erection was commenced on 17th August, and cannot be wholly completed much under two months from that date. Owing to delay in shipping the second crane for depositing the wave-breaker blocks, I have had to build this titan with its overhanging girders pointing to the north, in which position it will advance, and begin work by depositing blocks on the foreshore of the existing north pier. The titan cranes for this work of reconstruction are capable of a greater number of movements than those now lying at the bottom of the sea, which were used for the first work.

11. *Stores received on the works.*—During August, in addition to the *Harrogate* with the titan above mentioned, there arrived the S.S. *Sutlej*, *Nuddea*, *Goorkha*, and *Goa*; these brought 960 tons of Portland cement, 8 sets of points and crossings which are much needed, and 708 sâl-wood sleepers from Gopálpur, besides other stores of various kinds. I was surprised to find a charge made of Rs. 2-8-0 a ton as import duty by the Madras Municipality for the sâl-wood sleepers. These sleepers do not leave the harbour limits and never are brought into the area of jurisdiction of the municipality; so after taking the opinion of the Government Solicitor on the subject of this charge, I am at present withholding payment pending a settlement of the question.

12. I am pleased to report that Mr. A. L. Pogson arrived here 20th August and assumed charge of the post of Assistant Superintendent on the 21st August.

---

ORDER—dated 14th September 1885, No. 2144 W., Public Works.

Recorded.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent, Madras Harbour Works.
" Examiner, Public Works Accounts.
" Marine Department.
" Judicial Department for information, with advertence to paragraph 8.
" Financial (Municipal) Department for information, with advertence to paragraph 11, and with copy of note by the Honorable Member.

Exd. J. Henricus.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

## Govt. of (1885) Madras.

PUBLIC WORKS.

*Dated September, 14th.*

*Encl.*

*Recd.*

**G.O., 14th Sept. 1885, No. 2144 W.**

**SEPTEMBER.**

**Madras Harbour**

Progress report of — for August 1885, recorded.

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C/

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P.W.

No. 1623 Coll. 12 Octob

Memo

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October 1885.

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Despd 12/10/85

Vide the following paper :-

p1

No. 411

FROM

THE SUPERINTENDENT,
MADRAS HARBOUR WORKS,

To The Honble Col. J. H. M. Shaw Stewar
Secretary to Government,
Public Works Department
Fort Saint Georg

MADRAS, 2 October 188

Sir,

I have the honour to submit
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| | | Estimate | Actual |
|---|---|---|---|
| per c yd | Concrete Blocks | Rs 9 " | 7 12 8 |
| per Ton | Rubble deposit from Breakwater | " 1-8 | " 1-5 |
| " | " from boats N. Pier | " 2-" | " 1-10- |
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ations

On the 24th September a lad was wa

off the South Breakwater and drowned. There are plain notices in English and Tamil at the commencement of each Breakwater warning the public against walking on the piers as the seas are treacherous. At the inquest on the body of the lad the Coroner's jury remarked that the notices "were useless to illiterate persons" which is no doubt true, and the jury recommended that a watchman should stand at each pier to "warn the public of the danger". This could hardly be carried out, and I have therefore taken measures to exclude the public as much as is possible and thus prevent a recurrence of such accidents. On works like these in England the public are always jealously excluded, but any attempt to do so here in 1879 was greatly resented. Now however that a Coroner's jury have considered the present system insufficient I trust

No papers can be traced on this point
J.F.
3-11-85

12

that Government will lend its approval to the closing of the piers to the public, with reasonable exceptions.

I have the honour to be,
Sir,
Your most Obdt. Servt.
F.W. Horowgood M.Inst.C.E.
Superintendent

G.O. A/2144 W. d/14-9-83
" B/2228 W. d/28-8-79

Incl. 80.51

Buildings & Roads

From The Superintendent
Madras Harbour Works

(4)

Dated 2nd Oct. 1885
Rec. 3

No 1623 C of 12th October 1885

No 31 W

No of Enclosures Nil

Progress Report

Submits — for
September 1885.

Circ: 21/10/85

---

No. 35 W.

FROM
THE SUPERINTENDENT,
MADRAS HARBOUR WORKS,

TO The Hon'ble Colonel J. H. M. Shaw Stewart, R.E.
Secretary to Government,
Public Works Department,
Fort St. George.

MADRAS, 14th October 1885.

Sir,

In reply to your Memorandum of the 12th Octo No 1623 C regarding the public and the Harbour Piers, I regret to state that I have no correspondence on this subject - I will relate what occurred.

2. In 1878-79 the public used to come on to the works in progress very freely, and in my opinion to their imminent risk as well as to the serious incon-venience of those working at the Pier ends. I then resolved to do as is nearly always done on similar work, namely erect a barrier with a notice prohibit-ing the public from passing. At the same time watchmen were posted at the barrier with written instructions signed by myself, explaining that it was necessary to keep the public back.

3. This move was followed by people insisting on passing the barrier, defying the watchmen and by

G.O. A/2144 W. a/14-9-83
" B/2228 W. a/28-8-79

Buildings & Roads

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3. This move was followed by people insistin
on passing the barrier, defying the watchmen an

by repeated letters* addressed to me complaining that as the works were "Public Works" the public ought to be admitted. So far did this resentment go that some individuals had to be forcibly removed from the South Pier, because they persisted in crowding round the men engaged in setting blocks.-

One man came to me in a perfect frenzy of rage because he was not allowed to see the works "public works" as he reminded me that they were.

4. The Harbour Works have always been subject to the criticism of almost every body who has seen them and no doubt the closing of the breakwaters was supposed to arise from a wish to keep something from meeting the public eye.

5. It became so extremely unpleasant at last to have these little battles with the public, and to receive resentful letters from natives who could hardly write, that I relaxed the watch on the piers, and put up notices in Tamil and English warning people of the danger. Since then two natives have been drowned and at the Inquest on the last case the jury recommended that a watchman should be stationed to warn illiterate persons of the danger verbally- This is a refinement that I do not feel disposed to carry out, for it is hardly to be expected that a watchman could explain to every co
child the danger of walking on the breakwater. I
think it will be better once more to close the piers, allo
ing discretion to the watchman as to who shall pa
and thus try to prevent the public from being washed off.

I have the honour to be,
Sir,
Your most Obedient Servant,
F.W. Horowgood,
Superintendent.

---

* the letters are not preserved.

Mis. No. 2228 W. 28.8.79
G. O. No. 2144 W. 14.9.85
No. 16238. 12.10.85

Incl. 9024

Buildings and Roads

(16)

From

The Superintendent

Madras Harbour Works,

No. 35 W

Dated 11th October 1885

No. 16

No. of Enclosures. Nil

Harbour Piers

Explaining why it was necessary to keep the public from going

Rec. 21/10/85

---

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

From the Supt. Madras Harbour Works

No. 31 W dated 2nd Octr/

With his letter abov

recorded the Supt. Madra

Harbour Works submits

report of the progress o

the works during the

month of September,

the Govt. are pleased

to note, is satisfactory

2. The failure of the

experiment tried for

recovering sunken blocks

[illegible]
is not surprising
[illegible]
The
[illegible] when [illegible]
roughness of the sea [illegible]
[illegible]
& depth are
taken into consideration.

The Govt note that [illegible]
can been taken it should not
has [illegible] costly.

3. The rates at ~~as~~
which the work has been
carried on compar~~ing~~
favorably with the estimated
cost [illegible] it is [illegible]
expected that any
[illegible]
[illegible] increased due
to delays in the work
will be [illegible] slight.

4. With reference
to the concluding paragraph
of the foregoing letter

for the information of Govt ho
the Supt. will report [illegible]
much of the South Pie
Length he considers it necess
for the [illegible]
to close [illegible]
[illegible] the pub
at which point a barr
[illegible]
might be placed [illegible]
[illegible]
[illegible]
[illegible]

It would be co
Equally impossib
& undesirable mea
to deprive the frequ
of the Pier entirely of the priv
they have heretofo
enjoyed.

CH
Oct 5 1885

To
The Supt. M. H. Works
" Examiner P.W. Accts
" Marine Dept

Receipt

SAW Received fwd

14

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

From the Supt Madras
Harbour Works

H. E No. 31W d/2nd
October 1885

With his letter above" recorded the Supt, Mad
Harbour Works submit
a report of the progress
on the works during the
month of September,
which, the Governmen
are pleased to note as
satisfactory.

2 The failure of the
experiment tried for

the roughness of the
Sea and depth are
taken into consideration,
The Government note
that care has been
taken it should not
be costly—

3 The rate at which
the work has been carried
on comparing favourably
with the estimated cost, but
it is expected that
any increases due to
delays ~~in~~ the work
will be slight —

4 With reference to the

19

of the foregoing letter,
Supt will report for th
information of Govt.
how much of the South
Piers length he consid
it necessary to close
the safety of the public
at which point a
barrier might be plac

It would be an equall
unpopular and unde-
-sirable measure to
deprive the frequenters
of the Pier entirely of
the privilege they have
heretofore enjoyed—

To
Supt M H W
[illegible] W A
Marine

5(4)

It seems to me that a G.O. as follows will suffice.

(6) 47W.

The Harbour works appear to have made satisfactory progress during September.

With advertence to the concluding paragraph of this report, the Supt. will state the portion of the length of each breakwater which he considers it necessary to close, in view to the ~~public~~ safety of the public.

But before any order issues, Mr. Thorowgood may be requested to quote the correspondence to which he refers as having passed in 1879.

Let me see the papers again after receipt of his reply.

9.10.85

B & R
Works.

PUBLIC WORKS DEPARTMENT.

OF THE MADRAS GOVERNMENT

UNDER date the Nov. 2. 1885

READ the following

H. E. No 31 W. 2nd Octr/85
H. E. No. 35 W. 14th " "

p 9

The Harbour Works appear to have made satisfactory progress during September —

2. With advertence to the concluding para=graph of ~~the report~~ his letter dated of 2nd October 1885, the Superintendent will state the portion of the length of each breakwater which

The draft can go to the
H. M. — but I sho
like to see the paper
again on my return
to Madras before
issue of G. O.

W

Papers resubmitted
the draft has been
H. M.

---

Chief
I suppose both
the letters read at
the head of this Order
are to be printed—

S. L.
3/11/85

254 W

---

B & R
& works.

No. 2547 W.

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT

UNDER date the Novr 2nd 1885

READ the following

om the Supdt M. H.
Works ——— H. E. No 31 W. 2nd Octr/85
H. E. No. 35 W. 14th " "

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The draf
H. M. —
like to
kyeur
to Thea
issued

21

W

Papers resubmitted
the draft has been
approved by H. M.
Cu
26.10.85

B & R
Works.

No. 2547 W.

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT

UNDER date the Nov. 2nd 1885

READ the following

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Mr Hon'ble [illegible] Sullivan

e considers it ne-
cessary to close, in
iew to the safety
f the public

W
19.10.85

Issue
2/11/85

To
The Supdt. M. H. W.
Marine Supdt.

Issued
11/11/85

Cu

8615.
9024.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated 3/11/85

Recd.  Encl.

G.O. 2 Novr 1885, No. 2547 W

Madras Harbour Works.

Orders on the Progress report of the for the month of Sept 1885

Printed Copy sent to P.W. Res. Printed 30 copies

J.F.
[illegible]-2-86

30/2