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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

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Dated 13-11-1877

Not to be folded or roughly handled

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

13th November 1877, No. 1,618 W.

Buildings and Roads.

Civil Works.

Read the following paper:—

No. 117. From F. N. THOROWGOOD, Esq., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, Buildings and Roads Branch, dated Madras, 1st November 1877, No. 59 W.

I HAVE the honor to submit the following report of progress on these works during the month of October.

2. *North Pier.*—The sand accumulation at the end of the North Pier has continued to be very troublesome, and although the north-east wind and sea cleared away a considerable amount of sand at first, now that the sea is smooth again, the sand remains hard and stationary. Divers have been at work whenever such work could do any good, and Bull's Dredge has been worked also. In addition to diving and dredging work, I have tried conducting a pipe down to the sand and sending steam at a pressure of 100 lbs. to the square inch through the pipe. The sand, however, was so compact and hard that when the mouth of the pipe was touching the bottom it stopped the current of steam, and when it was held a few inches from the bottom it displaced only a small quantity of the sand.

3. On the 10th October, the foundation for one block was prepared and three blocks were set on the south side of the pier, the lowest block being founded on the rubble base. Since that time the sand has been too deep to allow the excavation to be carried through, and I therefore have set two blocks on the sand itself in order to see whether it may safely be used as a foundation. These blocks will have to be well protected by foreshore.

4. The following is a summary of the block-setting since the end of March, when the sand first began to hinder the advance of the North Pier:—

										No. of Blocks
										SFT.
April	1877	...	...	...	...	...	...	...	...	13
May	"	...	...	...	...	...	...	...	...	NL
June	"	...	...	...	...	...	...	...	...	18
July	"	...	...	...	...	...	...	...	...	NL
August	"	...	...	...	...	...	...	...	...	NL
September	"	...	...	...	...	...	...	...	...	6
October	"	...	...	...	...	...	...	...	...	5
Total since March ...										42

5. Although the wind has now settled into the north-east, there is scarcely any southerly current, and the sand accumulation has not been affected at all since the first two days of the north-east wind, when the sand was reduced in depth by 3 feet at the north corner of the breakwater.

6. *Block-making.*—The making of concrete blocks has been carried on steadily during October on the south block ground, and 154 blocks have been made. The total number of blocks made on the south block ground is now 413, and the number which it will hold when quite full is 432. The number of concrete blocks made for the two breakwaters since August 1876 (when block-making commenced) is 1,121.

7. On two days during October the block-making was at a stand still for want of stone from Chinnamapett. The contractor had loaded the stone into wagons, but the Madras Railway appear to have had some difficulty in bringing the wagons down.

8. *Quarries.*—The amount of stone sent down from Chinnamapett during the month has been 2,288 tons, all of which has been used in making concrete blocks on the south block ground. From Ambathoor 452 tons of ballast have been received for maintaining the railway lines and for other purposes.

9. *Buildings.*—The additions to the Head Office have been completed, and are found to be a very great improvement.

The brick-work of the locomotive engine-shed, to hold three locomotives, is also completed, and a roof of corrugated iron will shortly be erected.

10. *South Pier Works.*—The south surf bank remains the same in length as it was at the end of September. During the past month 720 tons of large granite boulders from Palaveram have been tipped at the side of the bank to make it sufficiently wide for the Titan crane, and in addition to this 174 six-ton concrete blocks have been placed at random round the end of the bank. These blocks form an excellent protection to the end of tip, and I think the Titan will now be able to advance to the extreme end in perfect safety.

On the 23rd October the advance of the Titan commenced, and it has now about 200 feet further to go before it is in the position required. Two days will be required to get over this 200 feet. The advance of the Titan is necessarily slow owing to the whole distance being on a curve, which involves constant shifting of the rails and frequent backing of the Titan itself. While the Titan is advancing all other work at the South Pier is necessarily stopped.

12. *Plans and Sections.*—Accompanying this report I have the honor to send six tracings of plans and sections. The tracing marked No. 1 is a plan of the proposed Harbour as at present existing, and the red lines at right angles to the North Pier and to the Beach Road mark the places where cross-sections have been taken.

Tracing No. 2 is a longitudinal section in front of the North Pier, and shows the most recent soundings in a dotted green line.

Tracing No. 3 shows the most recent cross-sections, also in a dotted green line.

Tracings Nos. 4, 5, and 6 show in a full green line some sections of the beach in October. The sections on No. 4 are all within Harbour limits from the north breakwater to the iron pier, those on No. 5 are from the iron pier to the south of the south breakwater, and those on No. 6 are still further southward.

13. *General Observations.*—On the 3rd October I visited the iron tank which was deposited at the bottom of the sea on 1st September in 4½ fathoms water. There is a hole 18 inches in diameter on the top of this tank, and the Diver reported on 3rd October that immediately under this hole inside the tank there was a heap of sand 10 inches high, the sides of which gradually sloped off to the bottom corners of the tank. Outside the tank there was no perceptible accumulation of sand.

On 5th October the crates that were first put down were visited. Crate No. 1 deposited in 5½ fathoms water was found to be in the same position as when last visited in June 1877, but on the eastern side there was a slight increase in the deposit of sand. Crate No. 2 in 7½ fathoms appears to have been carried away by a ship's cable, for after two long searches no trace of it could be found. Crate No. 3 in 4½ fathoms, deposited on 24th April 1877, was found to be overturned on 16th July 1877, and in accordance with the wish of His Grace the Governor it was set up right again. On 5th October it was found to have been once more overturned, and there was a

depth of 6 inches of sand all round it. Crate No. 4, deposited on 24th April 1877 in 5½ fathoms water, was found to have been overturned, but there was no accumulation of sand round the sides.

14. On 26th October the north and south breakwaters were visited by His Grace the Governor and General Kennedy, R.E.

No. 120. ORDER THEREON, 13th November 1877, No. 1,618 W.

ORDERED to be recorded.

(True Extract.)

Colonel, R.E.;

Secretary to Government, P.W.D.

To the Superintendent, Madras Harbour Works.
" Marine Department.

Ed. A. F. Goodall.
Spare Copies

No. 59 IV

From

THE SUPERINTENDENT,

MADRAS HARBOUR WORKS,

To

Colonel E. A. Ford, P. G.
Secretary to Government, P. W. D.
Buildings & Roads Branch
MADRAS, 12 November 1877.

SIR,

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

North Pier

2. The sand accumulation at the end of the North pier has continued to be very troublesome, and although the North East wind and sea cleared away a considerable amount of sand at first, now that the sea is smooth again, the sand remains hard and stationary. Divers have been at work whenever such work could do any good, and Bull's Dredge has been worked also. In addition to diving and dredging work, I have tried conducting a pipe down to the sand and sending steam at a pressure of 100 lbs to the square inch through the pipe. The sand however was so compact and hard that when the mouth of the pipe was touching the

the bottom, it stopped the current of steam, and when it was held a few inches from the bottom, it displaced only a small quantity of the sand.

3. On the 10th October the foundation for one block was prepared and three blocks were set on the South side of the pier, the lowest block being founded on the rubble base. Since that time the sand has been too deep to allow the excavation to be carried through, and it therefore have set two blocks on the sand itself in order to see whether it may safely be used as a foundation. These blocks will have to be well protected by foreshore.

4. The following is a summary of the block setting since the end of March when the sand first began to hinder the advance of the North Pier.

	No. of blocks set
April, 1877.	13
May —	nil
June —	18
July —	nil
August —	nil
September —	6
October —	5
<u>Total since March 1872</u>	<u>42</u>

5. Although the wind has now settled into the North East, there is scarcely any southerly current.

current, and the sand accumulation has not been affected at all since the first two days of the North East wind, when the sand was reduced in depth by 3 feet at the North corner of the Breakwater.

Blockmaking

6. The making of concrete blocks has been carried on steadily during October, on the South block ground, and 154 blocks have been made. The total number of blocks made on the South block ground is now 413 and the number which it will hold when quite full is 432. The number of concrete blocks made for the two breakwaters since August 1876 (when block-making commenced), is 1121.

7. On two days during October the blockmaking was at a standstill for want of stone from Chinnamapett. The contractor had loaded the stone into waggons, but the Madras Railway appear to have had some difficulty in bringing the waggons down.

Quarries

8. The amount of stone sent down from Chinnamapett during the month has been 2288 tons, all of which has been used in making concrete blocks on the South block ground.

the last 100 tons of
ground. There have been 200 tons of
ballast have been received for maintaining the
railway lines and for other purposes.

9. The additions to the Head Office have
been completed and are found to be a very
great improvement.

Buildings

The brickwork of the Locomotive Engine shed
to hold three Locomotives, is also completed,
and a roof of corrugated iron will shortly
be erected.

10. The South Surf bank remains the same
in length, as it was at the end of September.
During the past month 720 tons of large granite
boulders from Palaveram have been tipped at the
side of the bank to make it sufficiently wide
for the Titan Crane, and in addition to this,
174 six ton concrete blocks have been placed
at random round the end of the bank. These
blocks form an excellent protection to the end
of tip, and I think the Titan will now
be able to advance to the extreme end in perfect
safety.

South Pier works

11. On the 23rd October, the advance of the
Titan commenced, and it has now about

200 feet further to go, before it is in the position
required. Two days will be required to get over
this 200 feet. The advance of the Titan is necessarily
slow, owing to the whole distance being on a
curve, which involves constant shifting of the rails
and frequent backing of the Titan itself. While
the Titan is advancing, all other work at the
North Pier, is necessarily stopped.

Plans & Sections

12. Accompanying this report, I have
the honor to send six tracings of plans and
sections. The tracing marked No 1 is a plan
of the proposed Harbour as at present existing,
and the red lines at right angles to the North
Pier and to the Beach Road, mark the places
where cross sections have been taken.

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of the North Pier, and shows the most recent
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sections also in a dotted green line.

Tracings Nos 4, 5 & 6, show in a full green
line, some sections of the beach in October.

The sections on No 4, are all within Harbour
limits from the North Breakwater to the
North Pier, those on No 5 are from the North
Pier

Pier to the south of the South Breakwater, and those on No 6, are still further southward.

13. On the 3^d October, I visited the iron tank which was deposited at the bottom of the sea on September 1st in 1 1/2 fathoms water. There is a hole 18" in diameter on the left of this tank and the diver reported on October 3^d, that immediately under this hole inside the tank there was a heap of sand ten inches high the sides of which gradually sloped off to the bottom corners of the tank. Outside the tank there was no perceptible accumulation of sand.

General Observations

On October 5th the crates that were first put down were visited. Crate No 1 deposited in 5 1/2 fathoms water, was found to be in the same position, as when last visited in June 1877, but on the eastern side, there was a slight increase in the deposit of sand. Crate No 2 in 7 1/2 fathoms, appears to have been carried away by a ship's cable, for after two long searches, no trace of it could be found. - Crate No 3 in 1 1/2 fathoms deposited on April 24. 1877, was found to be overturned on July 16. 1877, and in accordance with the wish

wish of His Grace the Governor, it was set up right again. On October 5th it was found to have been once more overturned, and there was a depth of 6' of sand all round it.

Crate No 4 deposited on April 24. 1877, in 5 1/2 fathoms water, was found to have been overturned, but there was no accumulation of sand round the sides.

14. On October 26th the North and South Breakwaters were visited by His Grace the Governor and General Kennedy, R. E. -

I have the honor to be,

Sir,

Your most obedient servant

J. N. Mervin good.

Superintendent
Madras Harbour Works

9.0. 12 Oct 1877 No 100111

Buildings & Works

From
The Superintendent
Marine Harbour Works

A.59W
Dated 1st November 1877

No. of Enclosures 6

With enclosure

40 13th Nov 77 No 118

40 5.11. 1877

Progress Report

Submits report of progress of the
works during October 1877.

PUBLIC WORKS DEPARTMENT.

Letter from the Superintendent
Marine Harbour Works No 59W
Dated 1st November 1877.

FOR ORDERS.

Edw. J. O'Brien

Fort George } Key to Fort George
5 Oct 1877 }

The general character of the
works during the month of
October 1877 has been
very satisfactory. The
works have been carried out
in accordance with the
programme of work
submitted to the
Committee on 1st October
1877.

J. B. O'Brien



Sept. 1877
 Capt. of 1877
 PUBLIC WORKS.

FOR ORDERS.

To

The Capt. Harbor
 Harbor

Dated

Issued

Recd.

Encl.

G. O., 13 Nov 1877, No. 10214

Nos. 118-120

Harbor Harbor
 progress report for Oct
 1877, recorded.

Capt. in Rep.

No. 1610 W of 13 Nov 77
 Recorded
 Oct 11/77

Supt. M. H. Walker
 Marine Dept
 Dec 19-11-77

Oct 5-11-77