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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W.D. DEPARTMENT

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

2842-W.

Press.
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Dated

11.11.1879

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Not to be folded or roughly handled

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

11th November 1879, No. 2,842 W.

Buildings and Roads.

Civil Works.

Read the following paper:—

No. 56. From F. N. THOROWGOOD, Esq., M. INST. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, Buildings and Roads, dated Madras, 3rd November 1879, No. 37 W.

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

2. *North Pier Superstructure.*—The weather since the middle of October has not been favorable to sub-marine operations and since the 15th the progress was necessarily small. During the month 200 concrete blocks were set, advancing the work by a length of 114 lineal feet, and making the total length from the point B or commencement of blockwork 2,316½ feet.

3. On the 18th October the straight portion of the North Pier, 2,300 feet in length, was completed, and the last rectangular block was set in position. The first block was set on 18th December 1876 in the broken water of the surf, since then to the 18th October last there have been 3,473 blocks set, and the end of the straight work of the pier is now in 7 fathoms depth of water below mean sea level.

4. Since the 18th the work has only been advanced 16½ feet, and the curve of 528 feet radius does not yet make itself perceptible to the eye. A slight adjustment has been made in the Titan wheels and in the rails, and the difficulty of moving so heavy and rigid a machine round the curve will not, I hope, be so great as I had anticipated.

5. *North Pier Rubble Base.*—What little work has been done in the North Pier base has been carried on entirely by the cargo boats, but frequent ground swells have interfered with this portion of the work to a great extent. The total amount of rubble deposited has been 9,231 tons, of which quantity 191 tons were thrown in from the pier by hand to be used by the divers in levelling the foundations. There is now about 41,800 tons of rubble base in advance of the blockwork, and it extends over a length of about 490 lineal feet round the curve.

6. It is desirable that the laterite rubble base should be formed for as long a time as possible before the superstructure is built, as with its present height of over 20 feet the compression and settlement of the bank when the blocks and the ponderous Titan come upon it is considerable, and the more recent the tipping of the bank the greater is this settlement. The top of the bank has always to be made nearly 4 feet higher than the original section to allow for the compression and settlement of the laterite, but I am (with Mr. Parkes' permission) keeping the top level of the blocks from 18 inches to 2 feet higher than his design to facilitate working operations. The settlement of the rubble base is the great cause of so many of the blocks cracking at the edges, as in going down ever so slowly the friction between one row of blocks and another is so great, that I think even solid granite would crack and splinter slightly.

7. *Blockmaking.*—The making of concrete blocks has been carried on as briskly as the cement supply would permit, and in October 380 blocks were turned out, of which 60 were made by hand labour at the South Pier. The cement with which the blocks were made was chiefly English, but I have used some of General Morgan's also. The inferior quality of this latter has obliged me to increase the quantity used in each block and demand a reduction in price of Rs. 5 per ton. Since 18th September (mentioned in paragraph 5 of my last report) no cement of a really good quality has been received from General Morgan's factory, putting the works to serious inconvenience for the third time since January. I am taking every precaution to prevent a failure in the next contract for 300 tons a month regularly, and General Morgan has informed me that he has now about 600 tons of excellent cement nearly ready for delivery.

8. *Quarries.*—The supply of stone from the quarries has not been large, but sufficient for the requirements of the work at this season. From Ambatoor 10,328 tons of laterite were sent to the works, and from the Pallavaram quarry 14,432 tons of stone. The quarry at the 15th mile is now closed and all the stone from the South Indian Railway is loaded up at the extended platform at Pallavaram station. The best quality of rock (that used for blockmaking) is obtained, as I have previously stated, by drilling and blasting, but the outlying stone is good enough for rubble base. In addition to the stone supplied from Pallavaram, I took about 148 tons of very hard stone ballast from a ship in the roads from Mauritius. This was good material for blockmaking. The total quantity of stone supplied in October was 24,908 tons.

9. *South Pier Superstructure.*—Very little work has been done at the South Pier since 12th September, owing to the small supply of blocks on hand caused by want of cement in June and July last. Blocksetting was resumed on the 27th October and 32 blocks were set before the end of the month, advancing the work by a length of $18\frac{1}{2}$ lineal feet, and making the total distance from the commencement (E) $1,608\frac{1}{2}$ feet.

10. *South Pier Rubble Base.*—The cargo boats deposited 8,636 tons of stone in the South Pier base during October. The base now extends nearly 800 feet in front of the blockwork and the amount of stone in advance may be approximately reckoned as 55,036 tons. The base of the South Pier (the greater portion of which is composed of the rough stones from Pallavaram) does not settle down so much as the North Pier base already referred to, which is entirely built of laterite.

11. *Protective Works and Coast Line.*—No great variation has occurred in the general line of coast either north or south of the harbour. The sea still tends to cut away the shore to the north and to pull down the laterite revetment by Mr. Coleman's property. Protective measures have still to be taken and the shore line constantly watched. For keeping up the groynes and revetment 1,027 tons of laterite were used in October.

12. *Stores received on works.*—During October there arrived at Madras with stores for these works the following ships:—

S.S. <i>Duke of Lancaster</i>	with 238 tons	Portland cement.
S.S. <i>Manora</i>	" 254 "	" "
S.S. <i>Gannet</i>	" 237 "	" "
S.S. <i>Khandalla</i>	with 275	salwood sleepers.
S.S. <i>Euphrates</i>	" 478 "	" "

The cement was used up as fast as it arrived and yet was not sufficient to keep blockmaking going at full speed. General Morgan supplied nearly 80 tons during the month, the quality of which was not satisfactory.

13. *Plans, &c., accompanying this report.*—On 4th October Mr. Beardmore and I had completed the survey of the roadstead, and I submit the soundings on the plan accompanying this report, plotted to a scale of 200 feet to 1 inch. The lithographed plans are not yet completed, or one would have been sent instead of a tracing. The soundings of last month are shown in black figures and the fathom contour lines in black dots corresponding to the number of fathoms depth the line is supposed to

represent. The red dotted contour lines show the state of the bottom in October 1878. It will be seen that the sand in the south-west corner of the harbour has been driven in-shore a little, but there is no sign of silting up in the last twelve months.

14. I likewise submit two longitudinal sections as usual showing the progress of the piers and the most recent sections of the bases. In addition to these plans I also forward three photographic views taken in October. The general view (two copies) is for the quarter ending 30th September, and is taken as usual from the lighthouse. The other picture is only of interest as representing an incident in the history of these works, namely, the setting of the last block in the straight work of the North Pier, 18th October 1879.

15. The usual quarterly plan and photograph for the Government of India is overdue and shall be submitted in a few days on tracing paper, as there seems no certainty of receiving for some time the lithographed plan referred to in paragraph 17 of my last report. The orders given in G.O., No. 2,228 W, of 28th August 1879 on this subject shall be attended to as nearly as possible; but to give high and low water contours as suggested by the memorandum of the Government of India will only cause confusion on a plan of a coast with so small a range of tide.

16. *Expenditure.*—The total outlay on these works, as far as can be adjusted at present to the end of October, has been Rs. 32,72,281.

17. S.S. *Hindustan.*—On the urgent application of the Agent to the Peninsular and Oriental Steam Navigation Company, I sent away on 24th October a diver with gear and assistants to try and save the S.S. *Hindustan*, now ashore at Sadras. Although I cannot well spare a diver just now, I judged that the emergency of the case justified my lending what help I could to the Peninsular and Oriental Company, more especially as the assistance my diver has rendered appears to have been considerable.

No. 57. ORDER THEREON, 11th November 1879, No. 2,842 W.

RECORDED, in continuation of G.O., No. 2,555 W, dated 10th October 1879.

2. The Superintendent's action in detaching a diver to Sadras at the request of the Peninsular and Oriental Steam Navigation Company is approved.

(True Extract.)

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

To the Superintendent, Madras Harbour Works.
" Secretary, Harbour Works Committee.
" General Superintendent, Public Works Workshops and Stores.

Exd. E. C. Shunker.
Spare Copies

BUILDINGS AND ROADS
CIVIL WORKS.

Gobt. of Madras.
PUBLIC WORKS.

THE SUPERINTENDENT, MADRAS
HARBOUR WORKS.

Dated November 11th.

O. G., 11th November 1879, No. 2892 W.

NOVEMBER.

Nos. 56-57.

MADRAS HARBOUR WORKS. - Progress report
for the month of October 1879 received.

No. 37 W

From

THE SUPERINTENDENT,
MADRAS HARBOUR WORKS.

To

Colonel R. H. Sankey, C.B., R.E.
Secretary to Government P.W. Dept.
Buildings & Roads
MADRAS, 3 November 1879

SIR,

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

North Pier
Superstructure.

2. The weather since the middle of
October has not been favourable to sub-
marine operations and since the 15th
the progress was necessarily small. -
During the month 200 concrete blocks
were set, advancing the work by a length
of 114 lineal feet, and making the total
length from the point B or commence-
ment of blockwork 2316½ feet. -

3. On the 18th October the straight por-
tion of the North Pier 2300 feet in length,
was completed, and the last rectangular
block was set in position. The first block
was set on December 18th, 1876, in the
broken water of the surf, since then
to the 18th October last, there have been
3476 blocks set, and the end of the
straight

The cement with which the blocks were made was chiefly English, but I have used some of General Morgan's also. The inferior quality of this latter has obliged me to increase the quantity used in each block and demand a reduction in price of Rs 5 per ton. Since September 18th mentioned in para 5 of my last report, no cement of a really good quality has been received from General Morgan's factory, putting the works to serious inconvenience for the third time since January. I am taking every precaution to prevent a failure in the next contract for 300 tons a month regularly, and General Morgan has informed me that he has now about 600 tons of excellent cement nearly ready for delivery.

The supply of stone from the quarries has not been large, but sufficient for the requirements of the work at this season. - From Ambathoor 10328 tons of laterite were sent to the works, and from the Pallavaram quarry 14,432 tons of stone. The quarry at the 15th mile is now closed

and

and all the stone from the South Indian Railway is loaded up at the extended platform at Pallavaram Station. The best quality of rock (that used for blockmaking) is obtained as I have previously stated, by drilling and blasting, but the outlying stone is good enough for rubble base. In addition to the stone supplied from Pallavaram, I took about 148 tons of very hard stone ballast from a ship in the roads from Mauritius. This was good material for blockmaking. The total quantity of stone supplied in October was 24,908 tons. -

South Pier.

Superstructure.

9. Very little work has been done at the South pier since September 12th owing to the small supply of blocks on hand caused by want of cement in June and July last. Blocksetting was resumed on the 27th October and 32 blocks were set before the end of the month advancing the work by a length of 104^{ft} lineal feet, and making the total distance from the commencement (H) 16044 feet. -

South Pier.

Rubble Base.

10. The cargo boats deposited 8636 tons of stone in the South pier base during

October

October. The base now extends nearly 800 feet in front of the blockwork and the amount of stone in advance may be approximately reckoned as 55036 tons. The base of the South pier (the greater portion of which is composed of the rough stones from Pallavaram) does not settle down so much as the North Pier base already referred to which is entirely built of laterite.

11. No great variation has occurred in the general line of coast either North or South of the Harbour. The sea still tends to cut away the shore to the North and to pull down the laterite revetment by Mr. Coleman's property. Protective measures have still to be taken and the shore line constantly watched. For keeping up the groynes and revetment 1097 tons of laterite were used in October.

12. During October there arrived at Madras with stores for these works the following ships:-

S.S. "Duke of Lancaster"	with 238 tons Portland Cement
S.S. "Manora"	253 do
S.S. "Gannet"	237 do
S.S. "Khanda" -	with 275 Salwood sleepers
S.S. "Euphrates"	1478 do do

The

Plans for
accompanying
this report

Protective Works
& Coast Line

Stores required
on works.

9826
The cement was used up as fast as it arrived and yet was not sufficient to keep blockmaking going at full speed. - General Morgan supplied nearly 80 tons during the month, the quality of which was not satisfactory.

13. On October 14th, Mr. Beardmore and I had completed the survey of the roadstead, and I submit the soundings on the plan accompanying this report plotted to a scale of 200 feet to 1 inch. The lithographed plans are not yet completed or one would have been sent instead of a tracing. - The soundings of last month are shown in black figures and the fathom contour lines in black dots corresponding to the number of fathoms depth the line is supposed to represent. The red dotted contour lines show the state of the bottom in October 1878. It will be seen that the sand in the South West corner of the Harbour has been driven in shore a little, but there is no sign of silting up in the last 12 months.

14. I likewise submit two longitudinal sections as usual, showing the progress of the piers and the most recent sections of the bases. In addition to these plans, I also forwarded 3 photographic views taken in October. The general view (2 copies) is for the quarter ending September 30th and is taken as usual from

from the Lighthouse. The other picture is only of interest as representing an incident in the history of these works, namely the setting of the last block in the straight work of the North Pier October 18th 1879.

15. The usual quarterly plan and photograph for the Government of India is overdue and shall be submitted in a few days on tracing paper as there seems no ^{of receiving} certainty, for some time the lithographed plan referred to in para 14 of my last report. The orders given in G. O. N. 2228 W of August 28th 1879 on this subject shall be attended to as nearly as possible, but to give High & Low water contours as suggested by the Memo: of the Government of India will only cause confusion on a plan of a coast with so small a range of tide.

16. The total outlay on these works as far Expenditure as can be adjusted at present, to the end of October has been Rs. 52,722 251.

17. On the urgent application of the Agent to the Peninsular and Oriental Steam Navigation Company, I sent away on October 24th a diver with gear and assistants to try and save the S. S. "Hindustan" now ashore at Madras. Although - I cannot well

spare

spare a diver just now, I judged that the emergency of the case justified my lending what help I could to the P. & O. Company, more especially as the assistance my diver has rendered appears to have been considerable.

I have the honor to be
Sir

Your most Obedient Servant,

J. H. Rowood, Esq. J. P. S.
Superintendent
Madras Harbour works

40. 20000 N-10-10-79

P.W.D.
4 NOV 79

Buildings & Roads.

From The Superintendent
Madras Harbour Works

40. 20000 N-11-11-79

No 37 W
Dated 3rd November 1899.

No. of Enclosures 6.

* in library

Submits Report of Progress
for the month of October 1899.

56

Cir 5-11-79 Re 8/11/79
Lo Dats 11-11

Cine

P. W. Department.

No 2842 W

PROCEEDINGS of the MADRAS GOVERNMENT

Under date the 11th Nov/79
READ the following

From
The Supt. M. H. Works (No. 37 W d/3rd Nov/79)

Recorded in con-
tinuation of G.O. No. 2555 W
dated 10th Octr 1899.

The Superintendent's
action in detaching a diver
to Sadras at the request
of the S. & O. Steam Navigation
Company is approved.

Supt. M. H. Works ✓
Secy. H. Works Committee ✓
Genl. Supt. M. H. Works ✓
General Morgan ✓

Desd 18-11-79

to ras.

S
4-11

P. W. D.

28/12

Memo:

*"Why not try Dynamite
at the quarries"?

With reference to the
remark (marginally quoted)
by the Honble W. Middleton
on Proceedings of Govt in
this Dept. disposing of the
Report of Progress, Madras
Harbour Works, for the month
of October 1879, the under-
signed has the honor to
explain that the subject
has already attracted con-
siderable attention, and that the
Superintendent has under-
taken to try some experiments
in connection therewith.

Per Order of
Major R.E.

for Secy to Govt P. W. D.

order command
14 November
1879

4th

Wm. H. H.

Cir. 5-11-79 Re. 8-11-79
to P.W.D. 11-11

2842
11

9. Oct 1842 b. 711-11-77

Cir. 14-11. Re. 15-11.

to Oct 12-a O. L. Chart. 1842 7

Cu 7860 (D)

Govt. of (1879) Madras.

PUBLIC WORKS

To

Dated

Issued

Recd.

Encl.

G. O., 11 Nov 1879, No. 28426

Nos. 56-57

Madras Harbour Works
progress report for the
month of Dec 1879. recorded