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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Public Works DEPARTMENT

G.O. No.	4093 W	Press.
B.P. No.		Mis.
Dated	19. 10. 1878	197—

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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

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7. SOUTH PIER—SUPERSTRUCTURE.—The progress at the South Pier has been very small indeed during the past month, the sand having caused such difficulty that the work has been almost brought to a standstill. Still I am glad to be able to report more work done than was the case with the North Pier in September 1877 under nearly similar conditions. At times the sand has been 10 feet deep over the rubble base, a depth which I need hardly say prevents any work from being carried on. At other times the depth of sand has been such as to allow of working Bull's dredger and to use other means for preparing the bed for a course of blocks. By taking advantage of every opportunity for work we succeeded in setting 30 blocks and advancing the pier $23\frac{3}{4}$ lineal feet. The total length of the blockwork from the point marked E on September 30th was $570\frac{1}{2}$ feet. The sand continues to form an obstruction to further advance.

8. RUBBLE BASE.—This sand accumulation has not only caused delay in the advance of the superstructure but has interfered considerably with depositing rubble base by creating so much broken water around the pier that it has often been a difficult matter to load the masula boats. The amount of stone tipped is therefore less than in July and August. In each of those months over 5,000 tons were deposited and in September only 3,954 tons. It is to be hoped that before the end of the present month of October, much of the sand will be cleared away and a better rate of progress attained.

9. SEA ENCROACHMENT, NORTH OF HARBOUR.—The high tides which have occurred during September have acted very injuriously on the coast line to the north of the Railway Station at Royapooram, and on September 27th, 28th, and 29th much of the roadway and some fishermen's huts were brought down. I can assign no reason for the encroachment being confined to the particular spots where it has occurred, unless the subsoil is of such a nature as to be more readily affected by wave action at those places than at others.

10. The encroachment has occurred chiefly at a distance of from 2,000 to 3,000 feet north of the North Pier, but at a corresponding distance northward of the South Pier no such encroachment has taken place although the surf has beaten constantly and freely all along the line of beach between the two piers.

11. Protective works have been carried on during September with the groynes, and between the groynes laterite boulders are thrown in to form a rough retaining wall at a natural slope. It is difficult to devote more than 10 wagons per day to this work, and consequently progress is slow. During September 1,468 tons of boulders were used for protective work, and since the end of May there have been 4,615 tons thus disposed of.

12. Judging from experience in former years it seems almost certain that this month of October will be the last during this season in which one may expect the sea to encroach. By continuing to devote 10 wagons of laterite daily to protecting the beach and forming groynes while no encroachment is going on it is probable that the 30 feet width of road ordered in G.O., No. 3,122, dated August 3rd, 1878, will be accomplished.

13. I am very reluctant to curtail the supply of laterite for the base of the North Pier in order to increase the quantity used for protective work, unless I receive express orders to do so, more especially since it is so evident that the more recent encroachments are wholly attributable to very high equinoctial spring tides.

14. SOUNDINGS, SECTIONS, TIDAL OBSERVATIONS, &c., &c.—During September, Mr. Beardmore has completed an interesting set of longitudinal and cross sections of the sea bottom in advance and on each side of the North and South Piers. These are most valuable as showing the state of the bases of the piers at the termination of the south-west monsoon.

15. As there was reason to expect a high equinoctial spring tide on the 26th, men were put on to take the rise and fall of tide during the day and night from the 25th September until further notice. The results show that the rise of tide in the night was generally higher than in the day, and the greatest difference between high

and low water was observed in the early morning of the 27th September, when it measured 4 feet 9 inches. The high water level of this tide was 1 foot 5 inches above, and the low water was 3 feet 4 inches below DeHavilland's mean sea level.

16. PLANS AND SECTIONS.—I am obliged respectfully to ask that I may be allowed to send the plans and sections which should accompany this report as soon after it as possible, for it is hardly possible to have all the work surveyed, plotted and traced on the second day after the end of the month.

17. EXPENDITURE.—The total sum expended on the works up to September 30th is Rupees 21,79,769.

18. GENERAL.—The two cement sheds for storing and testing Portland cement mentioned in paragraph 15 of my last report are nearly finished, and will be ready to receive the next cargo of cement from England. The block ground at the South Pier sanctioned in G.O., No. 3,730 W, dated 21st September 1878, has been commenced, and as soon as there is a length of 200 feet completed, blocks for the South Pier will be made upon it by hand labor. As directed by the Government Order above mentioned, every care shall be taken to interfere as little as possible with the public convenience.

19. It will perhaps be satisfactory to the Government to know that in the recent month's work at the North Pier, 168 of the concrete blocks are made of General Morgan's cement, and that they stand the strains to which they are subjected as well as most of the blocks made with an equal amount of English cement.

No. 254-A. From the same Officer, dated Madras, 5th October 1878, No. 38 W.

With reference to paragraph 16 of my progress report, dated 2nd instant, for the month of September 1878, I have the honor to submit the plans and sections which should have accompanied that report.

No. 255. ORDER THEREON, 19th October 1878, No. 4,093 W.

HIS GRACE the Governor in Council notices that the plan indicates a steady increase of sand accumulation and the advance of the beach from the South Pier to the Fort as well as inside the Harbour. This may probably be removed by the action of the north-east monsoon, the result of which will be awaited with interest.

2. The protection of the beach to the north of the Harbour Works should be attended to whatever the cause of the encroachment of the sea may be due to.

(True Extract.)

(Signed) E. A. FOORD, Colonel, R.E.,
Secretary to Govt., P.W.D.

(True Copy.)

Major, R.E.,
Under Secy. to Govt., P.W.D.

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

Exd. T. D. Ryan.
Spare Copies

BUILDINGS AND ROADS,
CIVIL WORKS.

Govt. of (1878) Madras
PUBLIC WORKS.

To
THE SUPERINTENDENT,
MADRAS HARBOUR WORKS.

Dated October 1878.

Forwarded

Recd.

Encl.

G. O., 18th October 1878, No. 4,023 W.

OCTOBER.

No. 254-255.

Madr. Harb. Works. — Forwarding orders
on the progress report of the — for the
month of September 1878.

No. 37 W.

P/4093
3

From

THE SUPERINTENDENT,
MADRAS HARBOUR WORKS.

To

Colonel C. A. Ford, P. E.
Secretary to Government, P. W. Dept.
Buildings & Roads,
Fort Saint George,
MADRAS, 22 October 1878.

SIR,

I have the honor to submit the
following report of progress on these works
during the month of September 1878. —

North Pier. 2. Blocksetting has been carried on
Superstructure steadily throughout the month of September,
and 200 superstructure blocks have been success-
fully placed in the work; a greater number
than has been set in any previous month
since the commencement of blocksetting on
December 18th 1876. The advance in length
has been 119½ lineal feet, and the total
length of the work from the point B was,
on September 30th 1122½ feet. The end of the
work is now between the five and six
fathom contour lines of the bottom of the
sea, and the steady advance continues.

The

3. The work of tipping the rubble base for the foundation has been carried on as briskly as possible by the *S. S. Salisbury* and by cargo boats. The *Salisbury* was unfortunately ordered away to Coconada by the Master Attendant on the 24th September, as there was a possibility of bad weather coming on, and since that date more cargo boats have had to be employed which will add considerably to the cost of this branch of the work. The *Salisbury* deposited 3597 tons of laterite during the period that she was at work, and the total amount of stone tipped in the base by all means was 9162 tons; a greater amount than in any previous month. The relative amounts during the past four months being as follow:—

	tons
June 1878—	3784
July—	5821
August—	7044
September—	9162

Until the two Hopper Barges return to work at Madras, I fear that the out turn of rubble base

Rubble Base

Blockmaking

base cannot be made to exceed that of September.

14 The making of blocks in the yard has not been carried on every day of September, as owing to obstructions to work at the South Pier more blocks have been made daily than have been set. During the time that block making was carried on 188 blocks were added to the stock in the yard.

Quarries

5. The quarry at Ambathoor has supplied 9762 tons of laterite during September and the lines are being extended for working fresh sites. I am in communication with the Collector on the subject of taking up more ground for the working of which tenders will shortly be invited by advertisement.

6. The quarries on the South Indian Railway have been working regularly and 56 wagons of stone have been received from there daily, bringing a total quantity of 7675 tons from Pallavaram and other places. The total amount of stone received on the works

works during September from all sources has been 17,139 tons. —

7. The progress at the South pier has been very small indeed during the past month, the sand having caused such difficulty that the work has been almost brought to a stand still. Still I am glad to be able to report more work done than was the case with the North Pier in September 1877 under nearly similar conditions. At times the sand has been 10 feet deep over the rubble base, a depth which I need hardly say prevents any work from being carried on. At other times the depth of sand has been such as to allow of working Bull's dredger and to use other means for preparing the bed for a course of blocks. By taking advantage of every opportunity for work we succeeded in setting 30 blocks and advancing the pier $23\frac{3}{4}$ lineal feet. — The total length of the block-work from the point marked E on September

South Pier
Superstructure

Rubble Base.

30th was $570\frac{3}{4}$ feet. The sand continues to form an obstruction to further advance. —

8. This sand accumulation has not only caused delay in the advance of the superstructure but has interfered considerably with depositing rubble base by creating so much broken water around the pier that it has often been a difficult matter to load the masula boats. The amount of stone tipped is therefore less than in July and August. In each of those months over 5000 tons were deposited and in September only 77 tons. It is to be hoped that before the end of the present month of October, much of the sand will be cleared away and a better rate of progress attained. —

Sea encroachment.

North of Harbour.

9. The high tides which have occurred during September have acted very injuriously on the coast-line to the north of the Railway Station at Royapuram, and on September 27th, 28th & 29th much of the roadway and some fisherman's huts were brought down. I can assign no reason for the encroachment being confined to the particular spots where it has occurred, unless

unless the subsoil is of such a nature as to be more readily affected by wave action at those places than at others. -

10. The encroachment has occurred chiefly at a distance of from 2000 to 3000 feet north of the North Pier, but at a corresponding distance northward of the South pier no such encroachment has taken place although the surf has beaten constantly and freely all along the line of beach between the two piers. -

11. Protective works have been carried on during September with the groynes, and between the groynes laterite boulders are thrown in to form a rough retaining wall at a natural slope. It is difficult to devote more than 10 wagons per day to this work, and consequently progress is slow. - During September 14,68 tons of boulders were used for protective work, and since the end of May there have been 4615 tons thus disposed of. -

12. Judging from experience in former years it seems almost certain that this month

of

of October will be the last during this season in which one may expect the sea to encroach. By continuing to devote 10 wagons of laterite daily to protecting the beach and forming groynes while no encroachment is going on it is probable that the 30 feet width of road ordered in G.O. No 3122, dated August 3rd 1878, will be accomplished. -

13. I am very reluctant to curtail the supply of laterite for the base of the North pier in order to increase the quantity used for protective work unless I receive express orders to do so, more especially since it is so evident that the more recent encroachments are wholly attributable to very high equinoctial spring tides. -

Soundings sections
tidal observations
yes yes

14. During September Mr. Beardmore has completed an interesting set of longitudinal and cross sections of the sea bottom in advance and on each side of the North and South piers. These are most valuable as showing the state of the bases of the piers at the termination of the South West monsoon. -

As

15. As there was reason to expect a high equinoctial spring tide on the 26th, men were put on to take the rise and fall of tide, during the day and night from the 25th September until further notice. The results shew that the rise of tide in the night was generally higher than in the day, and the greatest difference between high and low water was observed in the early morning of the 27th September, when it measured 4 feet 9 inches. The high water level of this tide was 1.5" above, and the low water was 3.14" below De Havilland's Mean Sea Level.

16. I am obliged respectfully to ask that Plans & Sections I may be allowed to send the plans and sections which should accompany this report as soon after it as possible, for it is hardly possible to have all the work surveyed, plotted and traced on the second day after the end of the month.

17. The total sum expended on the works up to September 30th is Rs 2179.769. - Expenditure

General.

18. The two cement sheds for storing and testing Portland cement mentioned in paragraph 15 of my last report are nearly finished, and will be ready to receive the next cargo of cement from England. The block ground at the South pier, sanctioned in G.O. No. 3730 W, dated 21st September 1898, has been commenced, and as soon as there is a length of two hundred feet completed, blocks for the South pier will be made upon it by hand labour. As directed by the G.O. above mentioned every care shall be taken to interfere as little as possible with the public convenience.

19. It will perhaps be satisfactory to the Government to know that in the recent month's work at the North pier, 168 of the concrete blocks are made of General Morgan's cement, and that they stand the strains to which they are subjected as well as most of the blocks made with an equal amount

of English cement. -

I have the honor to be

Sir,

Your most Obedient Servant,

J. N. Morowgood.

Superintendent

Madras Harbour Works

4093

8

20403730 21st Sept 78
on 3607W. 11
on 3122W. 3 ang

Buildings & Roads

From

The Superintendent

Madras Harbour Works

N. 37 W
Dated 2nd October 1878

N^o of Enclosures nul

Progress Report

Submits report of the progress of
the works during September 1878.

To Acty 3-10-78
Recd 14-10-78
Cir 5-10-78
Dated 19-10-78
Dated 11-10-78

No. 39 W.

From

THE SUPERINTENDENT,

MADRAS HARBOUR WORKS.

To

Colonel C. A. Ford R. E.

Secretary to Government, P.W. Deptt.

Buildings & Roads

Madras 5th October 1878.

Sir,

Enclosures 3

With reference to para 16 of my pro-
gress Report, dated 2nd instant, for the month
of September 1878, I have the honor to submit
the Plans and Sections which should have
accompanied that report.

I have the honor to be

Sir,

Your most Obedient Servant

A. H. Mowood.

Superintendent

Madras Harbour Works

4093

10

17-11-78
No. 11173
Buildings & Roads
From The Superintendent
Madras Harbour Works

No 3812
Dated 5th October 1878

No of Enclosures 3 Plans

Progress Report
Submits plans & sections for
September 1878's Progress Report

To Arty 5-10-78
Cir 8-10-78
Recd 14-10-78
1 Oct 14-10-78
1 Oct 19-10-78

J. W. D.
4093
Letter from the Supt. Madras Harbour
Works No. 38 W dated 5th Octr 1878.

The plan appears to
indicate a steady increase
of sand accumulation
between of Beach from
Spur nearly to the fort &
also inside Harbour

Circulated in
Continuation of the
Progress Report.

E A Mnd Col. Rb.
Seng. to Gt. PMD.

11/10
I permit does so. & I
do so with apprehension
that the base of the work 8th Octr 1878
is becoming more & more
a late accumulation
of sand. It may possibly
be again removed by
human action & the
improvement undermined

L.R.
This is the most anxious feature the bottom-line (na-
tural) is ten feet in parts below the red line on black &

- After the rubble founda-
tion is being deposited

The advance of the
sand on the South break
water seems checked at
ends in the structure at
a right angle - May be not
like that the harbour then
complete will assume the
character of a promontory in the sea
The wash on both sides of break
will keep the sides free from sand
throughout their greater part
of their length.

12/10/78 M.D.

Left C. Ho. 1102.
His Grace the Governor
Hon. W. H. St. John
Hon. Sir H. Robinson
Hon. Mr. J. Carmichael

Recd 14.10.78. Retd 19.10.78
Cir 8.10.78. Retd 14.10.78
5.10.78

Progress Report of the Madras Harbour
Works for Sept 1878.

4093
12

FOR ORDERS.

There is no allusion to
drainage question -

inculcate when plans
+ sections are over

By 7/10

M.D.

M.D. 10/10/78

5th Oct 1878.

E. A. M. D. Coldwell
Secy to Govt M.D.

FOR ORDERS.

*His Grace the Governor
Don't think it right
to be in the
of the*

*Recirculated with
plans.*

*207
14/10*

15/10

*MB
17/10*

*Recd 14.10.78. Del 19.10.78.
Cir 5.10.78. Utd 11.10.78
2.10.78*

*387
Public Works Department*

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the *19 Oct 78*.
Read the following:—

*From the Sup^t, Madras Harbour Works. (H.E. No 374 of 2 Oct 78
584/78-5)*

*His Grace the Governor
in Council notices that
the plan indicates a
steady increase of sand
accumulation and the
advance of the beach
from the South Pier to
the Fort as well as in-
side the Harbour. This
may probably be re-
moved by the action
of the North East Mon-
soon, the result of
which will be awaited
with interest.*

*The protection of the
Beach to the North of
the Harbour Works should
be attended to whatever*

R.P.

the cause of the en-
croachment of the
sea may be due to.

207
10/10

Supt. M. A. Workoff
Marine Dept.

Sept 30-10-78

4093
14

Ch. 11082-
11173



Govt. of Madras.

PUBLIC WORKS.

To

Date

Issued

Recd.

Encl.

Suplt. Resident
W. J. P. M.

G. O. 19th Oct. 1878, No. 4093W

NOB. 25 1878

Madras Harbour Works
Passing order on the
progress report of the
for the month of September
1878.

W. J. P. M.

41-3