(1) Number of pages 36

(2) Date of repair - 2 - 88

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W. DEPARTMENT

G.O. No. / B.P. No.	2857 W	Press. / Mis.
Dated	1-11-1886	~~198~~ .

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B.S.G/

Archives 1--10,006 1 -80.

2857/1

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following letter from the Chairman, Harbour Trust Board, Madras, to the Secretary to Government, Public Works Department, dated Madras, 25th October 1886, No. 954 :—

I have the honor to acknowledge receipt of G.O., No. 2793 W., dated 22nd October 1886, forwarding copy of progress report of the Superintendent, Madras Harbour Works, for the month of September 1886, submitted with my letter, No. 856, dated 19th October 1886, and directing that paragraph 14 should be expunged.

2. The original report has been returned to the Superintendent, Madras Harbour Works, and he has struck out paragraph 14 as directed.

3. I have the honor to forward, herewith, copy of the corrected progress report for September as it now stands.

Enclosure.

From F. N. THOROWGOOD, Esq., M. Inst., C.E., Superintendent, Madras Harbour Works, to the Chairman, Harbour Trust Board, Madras, dated 7th October 1886, No. 329 M.

I have the honor to submit, herewith, a plan showing the progress on these works during September, and to make the following report.

2. *North pier rubble base.*—On ten days during September the swell was such as either to prevent work altogether or seriously to interfere with it. It became extremely difficult to load the boats with rubble stone at the north pier, so I transferred them to the south to receive their load, which had then to be conveyed to the north rubble base to be deposited. This extra long journey in the boats adds a little to the price of the rubble base, but it is better to incur this extra cost rather than stop work. There were 15,660 tons of stone deposited in September, extending the base by a length of 240 feet, as shown in the accompanying plan.

3. *North pier superstructure.*—I reported last month that we had arrived at the first row of blocks in the new section of the work. This has been progressing fairly well during September, but was delayed by local swell and thick water, which greatly hindered diving operations. There were 94 of the new blocks set in position, advancing the work by a length of 56 feet. This now brings the new work clear away from the old ruined wall, and when the space between the old and new walls is properly filled up with 30-ton blocks, the cranes will have to be drawn back for the stormy season. This new section of work, of which 62 feet is now built, is, in my opinion, very satisfactory, and I do not see that the fact of the blocks being "bonded" together causes much delay in construction, as was at one time feared might be the case.

4. *North pier wave-breaker.*—Work was resumed at the wave-breaker in September, but for various reasons not at full speed. There were 170 blocks dropped over during the month, representing about 5,000 tons of concrete, and protecting a length of about 246 feet of the north pier. I earnestly hope to be able to carry on this protective work during the stormy season, except in bad weather, and thus render the whole of the north pier secure from accident.

5. To do this it will be necessary to draw back the north Titan and "shunt" it on a siding so as to allow the larger wave-breaker crane to pass it. Then the latter crane can be run out every morning by two locomotives, drop blocks, and be drawn back every night to shore. If I can manage to carry this out, it will be a great advantage; but all depends upon whether I can effect this "shunt" of the Titan.

6. *Concrete block-making.*—This work was hindered a good deal by rain on several mornings, but 218 blocks were made during September, all of them for the curved work at the south pier. I fear it will be impossible to keep on block-making throughout the current month, as few blocks will be placed in the sea after the 15th instant.

7. *South pier.*—No work was done at the rubble base of the south pier in September, the boats being all transferred to the north pier as already reported. In the superstructure, 45 blocks were set in the new work, advancing the wall by 42½ lineal feet. This brings the south pier work to its new section, and, in future, the wall will be of the "bonded" design as at the north pier. There were 356 cubic yards of concrete filling put in at this work and the old and new walls have been clamped together as usual. The heavy swell from the south of east rushing past the end of the old work has interfered most seriously with progress at the south pier. On two occasions, the moorings of the diving boat were carried away, and once a diver got knocked down and his face-glass broken. He was just hauled up in time to be saved from drowning. Having reached the full new section of the south pier, the Titan will have to be turned round through 180° to drop wave-breaker blocks over the outer side of the wall previous to being withdrawn for the stormy season, as already mentioned in my last report.

8. *Pallávaram quarries.*—Owing to various causes, it was necessary to cancel 28 trains during September, so the out-put of stone was not so large as it has sometimes been, the total for the month being 20,102 tons as compared with 22,596 tons quarried in August, and 25,762 tons in July. The lines at the quarry are in good order, and no derailments or other accidents have occurred during the month. A new piece of line, about ¼ mile in length, has been opened for traffic, after having been passed by the South Indian Railway Engineers.

9. *Estimate and expenditure.*—It was with great satisfaction that I received the order sanctioning the estimate for the work of restoration. It is rather a complicated undertaking to take out the expenditure since 1st January 1885 and divide it over the proper sub-heads of the new estimate; but this is being done. I have compared the estimate with the actual cost of several items, and I think they are not unsatisfactory, always bearing in mind that the estimate was framed when the South Indian Railway charge for haulage of stone was exactly half of what it is now, the increased rate meaning an addition of 8½ annas on to every ton of stone delivered. I subjoin a few items—

	Estimate.			Actual.		
	RS.	A.	P.	RS.	A.	P.
Rubble base per ton	2	0	0	1	15	3
Large rubble „	1	12	0	1	12	4
Building abutment of new work, north pier, per cubic yard	2	0	0	1	15	0
Concrete blocks per cubic yard	9	0	0	9	4	0
Depositing wave-breaker blocks	1	0	0	0	6	3

10. Another item (of great importance on works like these) is that of "contingencies," which Mr. Parkes estimated at 2½ per cent. on the cost of construction. Up to 31st August 1886 the expenditure on the new work (exclusive of "stock" charges and "establishment") has been Rs. 13,48,643, and 2½ per cent. on this sum would be Rs. 33,716, whereas the actual sum expended under "contingencies" up to 31st August 1886 has been only Rs. 20,905, giving an excellent margin on the safe side.

11. With the item "establishment" (estimated as being 7½ per cent. of the cost of construction), in the early part of a large work this often goes to a much higher percentage than it ought to do, because with the full "establishment" it is often not possible to show the full return of work (and consequently of expenditure on work) until affairs have settled down into a groove. So, on this work of restoration, which is officially supposed to have commenced on 1st January 1885, there was very little actual work done until November of that year. Still, on this sub-head the result is not wholly unsatisfactory as the expenditure on establishment has actually been Rs. 1,19,116 to 31st August 1886, while 7½ per cent. on the expenditure on construction up to that date gives Rs. 1,01,148.

12. *Stores from England.*—Three vessels brought stores from England in September as beneath—

S.S. *Bulimba*	50 tons Portland cement.
„ *India*	500 „
„ „	Diving dresses.
„ „	Blocks and tackles.
„ „	1 Cement gauger.
„ *Abergeldie*	1 Case leather lacings for belts.

The Portland cement is by White Brothers, a most eminent firm, but one from which cement has never before been supplied direct to these works, although I have occasionally purchased some locally.

2857/2

13. *Survey of the roadstead and harbour.*—The survey of the harbour and adjacent roadstead is being carried out, as opportunity offers, under the charge of Mr. A. Lee Pogson, Assistant Superintendent. When completed and plotted, the survey will be forwarded to the Harbour Trust Board.

14. *Mr. W. Boteler.*—I am glad to learn from Mr. Parkes that Mr. Boteler, General Foreman, should arrive here on 25th October.

Order—dated 1st November 1886, No. 2857 W., Public Works.

Recorded.

2. Paragraph 8 will be communicated to the Consulting Engineer for Railways.

3. The figures quoted in paragraphs 9, 10 and 11 appear to be generally satisfactory.

4. The submission of the quarterly progress map for the Government of India is awaited.

(True Extract.)

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

To the Chairman, Harbour Trust Board.
„ Consulting Engineer for Railways.
„ Marine Department.
„ Newspapers.

Exd. E. Fernandes.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1886) Madras.

PUBLIC WORKS.

Dated November, 1st.

Recd. *Enc*

G.O., 1st Nov. 1886, No. 2857 W.

NOVEMBER.

Madras Harbour Works

The progress report of the — for Se
ber 1886, recorded, with remarks.

27th September 1886, No. 2510 W., Public Works.

2857
3

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following letter from the Honorable R. W. BARLOW, C.S., Chairman, Harbour Trust Board, Madras, to the Secretary to Government, Public Works Department, dated Madras, 15th September 1886, No. 474.

I have the honor to forward, herewith, for the information of Government, copy of a letter from the Superintendent, Madras Harbour Works, No. 266 M., dated 7th September 1886, reporting progress made during the month of August last, together with the original plans referred to therein, which I request may be returned.

Enclosure.

From F. N. THOROWGOOD, Esq., M. Inst., C.E., Superintendent, Madras Harbour Works, to the Chairman, Madras Harbour Trust Board, dated Madras, 7th September 1886, No. 266 M.

I have the honor to submit, herewith, a plan and report showing the progress on these works during the past month of August.

2. *North pier rubble base.*—For the latter half of the month, the boats and stone trains were transferred from the south to the north side of the harbour, as the rubble foundation of the north pier is not so far advanced as at the south. Working at the north base during the south-west monsoon is troublesome, as the boats have to be loaded on a leeshore, as it were, and are liable to swamping and other damage, besides which, most rigid inspection is necessary to see that stone is not wasted. With sundry interruptions from the waves 6,058 tons were deposited in August, bringing the limit of the base now to within 600 feet of its final termination. No blocks were blown up by dynamite in the past month, as they are already cleared away, except at the extreme end, where the ruined Titan crane lies submerged and covered with blocks.

3. *North pier superstructure.*—With this branch of the work, I am extremely sorry to have once more to adopt an apologetic tone. The progress has been very small, and I feel that a full explanation of the difficulties (now I trust past) we have had to contend against, is called for. In a general way, the slow progress is due to very heavy excavation, by divers, in a particularly awkward situation, and to frequent heavy ground swell, which, on many days, prevented a diving boat from lying near the spot at all. Again, I have had to knock off one of the diving boats, as I have not enough dresses to keep the whole diving staff at work, as I mentioned in paragraph 10 of my last report. I am expecting a fresh supply daily, when I shall be able to keep four men at a time at one pier.

4. *Plan.*—I annex, with this paragraph, a small plan showing in detail precisely what has been going on. In black is shown the existing end of the north pier and in red the "scarf" by which the new section is approached. The letters A B C indicate cross-walls securely tied into the old work. It can readily be understood, on reference to this sketch plan, that when the row A has been set, and until the row B is reached, the sea will run up into the space between the old and new work with great force and magnified vertical height. Similarly from B to C and from C to the end. At times when, to any one on shore, the average surface of the sea has appeared smooth, there has been no less than 17 feet of swell in these openings, utterly prohibiting all work, and sometimes rendering it dangerous to stand at the end.

5. I am happy to state that, although in August we only succeeded in setting 24 blocks, advancing the "scarf" by a length of 12 feet, we have now got clear of the old work and the old section, and good progress is being made with the new and approved section of the work. As a proof of this, I may remark that in the first 6 days of this month, the progress has been as great as in the whole of August.

6. To carry on the work as at present, it became necessary to turn the Titan crane through 90° in a very awkward situation. This is itself a work of no small difficulty, and of great

responsibility, as each move has to be made with the care and foresight of a problem in chess. One spur wheel and one circular steel rail gave way during the operation of turning, which occupied two days.

7. *North pier wavebreaker.*—The screen of blocks termed the "wavebreaker" was extended slightly shorewards during August by dropping over 35 concrete blocks, weighing 1,050 tons. I am unable yet to carry on this work at full speed, as I must reserve 200 wavebreaker blocks to protect the sides of the new walls at both piers. Work is resumed at date of writing, and will be continued for some time, so as to render the security of the north pier as certain as possible.

8. *Concrete blockmaking.*—Blockmaking machinery was kept at work during the whole of August, and 240 blocks were added to the stock, representing a mass of concrete weighing 6,240 tons. These blocks were mostly for the superstructure of the south pier curve.

9. *Cost of blockmaking.*—Pending the sanction of the proper estimate, I have worked out, for my own information, the cost of the concrete blocks made up to 30th June 1886, and whereas the estimated rate is Rs. 9 per cubic yard, the actual price comes out more than Rs. 9¼ per cubic yard. This is chiefly owing to the South Indian Railway having doubled their rate for carriage of stone since the estimate was made: but it is also owing to the complicated shapes (requiring more labor and more cement) of some of the first blocks in the scarf abutments. I can safely predict that, as more blocks are made, the rate per cubic yard will decrease, and I have every hope of reducing it to less than Rs. 9 over the whole work.

10. *South pier rubble base.*—In August there were 11,952 tons of stone deposited at south pier, of which 1,345 tons were used to widen the foreshore at the extreme end, on which wave-breaker blocks will be deposited before the north-east monsoon bursts. The south pier base is now within 180 feet of its final termination.

11. *South pier superstructure.*—At the south pier the spot at which we are working is sheltered by the old wall, backed up by wave-breaker blocks, and at the same time the old rubble foundation is not so high as at the north pier; consequently, less excavation by divers is necessary. The progress has therefore been satisfactory, a length of 86 lineal feet having been built, as compared with 12 feet at the north pier. The space between the old and new walls has been thoroughly concreted up, and the work tied securely together by wrought-iron cramps cemented in.

12. As soon as the new section of work is reached, and one row completed at the south pier, it will become necessary to turn the Titan crane through 180° so as to finish the wavebreaker at the end of the new work. All this will have to be done by the 15th October, when I hope to draw back the Titan to a safe position during bad weather.

13. *Pallávaram quarries.*—Five stone trains daily ran from Pallávaram during August except on several occasions when some or all had to be cancelled. The total outturn of stone from the quarry was 22,596 tons, being slightly less than in July.

14. The whole quarry line was inspected, on 16th August, by the Deputy Consulting Engineer for Railways in company with an Engineer of the South Indian Railway and myself. The lines were pronounced to be in fair order, but sundry alterations and improvements were suggested, which are being carried out.

15. A new survey of the whole line and quarry sites has been made by the Harbour works staff, as the Chief Engineer, South Indian Railway, wished to have a record of the curves and gradients over which the engines run, and from which there have been occasional derailments.

16. *Estimate and actual cost.*—I regret that I am still unable to give a proper comparison between estimate and actual cost, except so far as I have done so in paragraph 8 with regard to concrete blocks. Affairs remain as they were at the date of my last report.

17. *Hindrances and accidents.*—The past month of August has been an unfortunate one with the staff of these works. On 14th August Mr. G. W. Lowe, the indefatigable foreman, was laid up and unable to work. He sent in a proper medical certificate accounting for his absence, but his health has quite broken down, and he has resigned his appointment. It is a serious matter to be suddenly deprived of so good a worker, who looked after every branch of work out of doors, with the exception of Pallávaram quarry.

18. Mr. Underdown, foreman diver, has, in addition to his own work, been very ably supplying Mr. Lowe's place. Unfortunately Mr. G. Gunther, foreman of mechanics, was so knocked up by hard-work and exposure, that he was sent to Bangalore for a month on 4th August. He has had no leave since his appointment in January 1879.

19. My managing clerk, Mr. E. deCaster, who has been in the office since 1875, when an office was first opened, also has had to retire owing to broken-down health. I shall have occasion to address you separately on this subject.

20. On 30th August one of the locomotive drivers got jammed between the buffers of two stone trucks and was disabled.

21. All these things unavoidably make their presence felt in the conduct of works such as these, but I hope to no serious extent.

2857/4

Order—dated 27th September 1886, No. 2510 W., Public Works.

Recorded.

2. Paragraphs 13, 14, and 15 will be communicated to the Consulting Engineer for Railways.

3. With reference to paragraph 16, it is remarked that the sanction of the Secretary of State to the revised estimate was communicated in G.O., No. 2251 W., dated 8th September 1886.

4. Considering the difficulties encountered during the month, the Government are of opinion that the progress was fairly satisfactory.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chairman, Harbour Trust Board, with two original plans returned.
„ Consulting Engineer for Railways.
„ Marine Department.
„ Newspapers.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1886} Madras.

PUBLIC WORKS.

Dated September, 27th.

Recd. *Encl.*

G.O., 27th Sept. 1886, No. 2510 W.

SEPTEMBER.

Madras Harbour Work

Orders on the progress report — for August 1886.

2457/5

MARINE DEPARTMENT.

From

THE CHAIRMAN,
Harbour Trust Board,
MADRAS,

To

The ~~Chief~~ Secretary to Government,
Public Works ~~Marine~~ Department.
Chepauk

Dated 19th } October 1886.
Received }

Enclosure 12

Ne-1 [illegible]
PW. 81 34/

No. 856

SUBJECT.

Submitting for the information of Government Progress Report of the Madras Harbour Works during the month of September last.

V. & Co. H. T. / No. 5

Harbour Trust Board Office,
MADRAS, 19th October 1886.

No. 856. 2857/6

From

The Chairman
Harbour Trust Board,
MADRAS,

To

Colonel J. O. Hasted R. E.
Secretary to Government
Public Works Department.
Chepauk

Sir,

I have the honor to forward herewith for the information of Government, Copy of a letter from the Superintendent Madras Harbour Works No. 329 M, dated 7th October 1886, reporting progress made during the month of September last, together with the Original plan referred to therein which I request may be returned.

I have the honor to be
Sir
Your most Obedient Servant
Secretary
for Chairman
Harbour Trust Board

P.W.C. No 8131

Rp 19.10.86

En: 2

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Public Wo

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PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following

Letter from the Chairman, Madras Harbour Trust Bd. } (Ht. No 856 d/ Oct. 19. 1886)

2857

The progress report for September receive with letter from the Cha Harbour Trust Board, No 856 d/ 19th Octr 1886, will be returned in view to the Superintendent of the works being directed to expunge para 14 as the subject dealt with therein should not find place in a report on the progress of the works. Further the remarks made by the

…intendent are not
… as should be made
by any officer in a
communication that he is
aware will be laid before
Govt. It is noted that
the Superintendent has
addressed the Chairman
of the Board separately
… the subject.

2. The Govt would be
glad if the Chairman
would arrange that
communications to their
address should be signed
by himself.—

D. …. C
20/10/86

FB.
20.10.86.

Joh
20/10/86

To The Hon: E. Forster Webster—

To be [illegible]
G.O. 2793 W d/ [illegible] 86
29 10 86

FW
21/10

To
The Chairman,
H. T. Board with 1 enclo ret.

DW/

PUBLIC WORKS DEPARTMENT.

No 2793 W d/ 29 Oct/86

PROCEEDINGS OF THE MADRAS GOVERNMENT.

B/

2857/8

READ the following

2857/8

Letter from the Chairman,
Madras Harbour Trust Bd } (Ho No 856 d/ Octr 19 1886)

The progress report for September received with letter from the Chairman Harbour Trust Board, No 856 d/ 19th October 1886, will be returned in view to the Superintendent of the Works being directed to expunge para 14 as the subject dealt with therein should not find place in a report on the progress of the works. It is noted that the Sutdt

has addressed the Chairman
of the Board separately
on the subject

Jo
20/10/86

2510 W 27/9/86.

No. 2793 W of 22nd Oct/86

To,
The Chairman,
H.T.Bd with 1 enclosure

D
~~22~~/10

F.P.B.
20.10.86.

Cm 25/10
J 27/10

V. & Co. H.T. No. 5

Harbour Trust Board Office,
MADRAS, 25th October 1886.

No. 954

2857/9

FROM
The Chairman
HARBOUR TRUST BOARD,
MADRAS,

TO
Colonel J. O. Hasted R.E.
Secretary to Government
Public Works Department.
Chepauk

SIR,

I have the honor to acknowledge receipt of G.O. No. 2793 W dated 22nd October 1886, forwarding Copy of progress report of the Superintendent Madras Harbour Works for the month of September 1886, submitted with my letter No. 856, dated 19th October 1886, and directing that para 14 should be expunged.

2. The original report has been returned to the Superintendent Madras Harbour Works

Works and he has struck out para 14 as directed.

3. I have the honor to forward herewith copy of the corrected progress report for September as it now stands.

I have the honor to be
Sir
Your most Obedient Servant
C. Brisent
Secretary
for Chairman
Harbour Trust Board.

No. 329 M.

2857
10

From,
The Superintendent,
Madras Harbour Works,

To
The Chairman,
Harbour Trust Board, Madras.

Madras 7th October 1886.

Sir,

I have the honour to submit herewith a plan showing the Progress on these works during September and to make the following report.

North Pier
Rubble Base

2. On 10 days during September the swell was such as either to prevent work altogether or seriously to interfere with it. It became extremely difficult to load the boats with rubble stone at the North pier, so I transferred them to the South to receive their load which had then to be conveyed to the North rubble base to be deposited. This extra long journey in the boats adds a little to the price of the rubble base, but it is better to incur this extra cost rather than stop work. There were 15,600 tons of stone deposited in September extending the base by a length of 240 feet as shewn in the accompanying plan.

3. I reported last month that we had arrived

North Pier
Superstructure

arrived at the first row of blocks in the new Section of the work. This has been progressing fairly well during September, but was delayed by local swell and thick water which greatly hindered diving operations. There were 94 of the new blocks set in position advancing the work by a length of 56 feet. This now brings the new work clear away from the old ruined wall, and when the space between the old and new walls is properly filled up with 30 ton blocks the cranes will have to be drawn back for the stormy season. This new section of work, of which 62 feet is now built, is in my opinion very satisfactory, and I do not see that the fact of the blocks being "bonded" together causes much delay in construction, as was at one time feared might be the case.

North Pier
Wave breaker

4. Work was resumed at the wave-breaker in September but for various reasons not at full speed. There were 170 blocks dropped over during the month representing about 5·000 tons of concrete, and protecting a length of about 246 feet of the North Pier. I earnestly hope to be able to carry on this protective work during the stormy season, except in bad weather, and thus render the whole of the North pier secure from accident.

5. To do this it will be necessary to draw

draw back the North Titan and "Shunt" it on a Siding so as to allow the larger Wavebreaker crane to pass it. Then the latter crane can be run out every morning by two locomotives, drop blocks, and be drawn back every night to Shore. If I can manage to carry this out it will be a great advantage, but all depends upon whether I can effect this "Shunt" of the Titan.

2857/12

Concrete Block Making

6. This work was hindered a good deal by rain on several mornings, but 218 blocks were made during September, all of them for the curved work at the South Pier. I fear it will be impossible to keep on blockmaking throughout the current month as few blocks will be placed in the Sea after the 15th instant.

South Pier

7. No work was done at the rubble base of the South pier in September the boats being all transferred to the North pier as already reported. In the Superstructure 45 blocks were set in the new work advancing the wall by 42½ lineal feet. This brings the South pier work to its new Section, and in future the wall will be of the "bonded" design as at the North Pier. There were 356 cubic yards of of concrete filling put in at this work and the old and new walls have been clamped together as usual. The heavy swell from the South of East rushing past the end of the old work has interfered

most

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Pallavaram Quarries

8. Owing to various causes it was necessary to cancel 28 trains during September, so the output of stone was not so large as it has sometimes been, the total for the month being 20,102 tons as compared with 22,596 tons quarried in August, and 25,762 tons in July. The lines at the quarry are in good order, and no de-railments or other accidents have occurred during the month. A new piece of line about $\frac{1}{4}$ mile in length has been opened for traffic, after having been passed by the South Indian Railway engineers.

Estimate and Expenditure

9. It was with great satisfaction that I received the order sanctioning the estimate for the work of restoration. It is rather a complicated undertaking to take out the expenditure since January 1st 1885 and divide it over the proper sub-heads of the new estimate; but this is being done

I have compared the estimate with the actual cost of several items, and I think they are not unsatisfactory, always bearing in mind that the estimate was framed when the South Indian Railway charge for haulage of stone was exactly half of what it is now, the increased rate meaning an addition of 8½ annas on to every ton of stone delivered. I subjoin a few items.

	Estimate.	Actual.
Rubble Base per ton	Rs 2 – 0 – 0	Rs 1 – 15 – 3.
Large Rubble	" 1 – 12 – 0	" 1 – 12 – 4
Building abutment of new work – North Pier – per c. yd.	" 2 – 0 – 0	" 1 – 15 – 0
Concrete Blocks	" 9 – 0 – 0	" 9 – 4 – 0
Depositing Wave breaker blocks	" 1 – 0 – 0	" 0 – 6 – 3.

10. Another item (of great importance on works like these) is that of "Contingencies" which Mr Parkes estimated at 2½ per cent on the cost of construction. Up to August 31st 1886 the expenditure on the new work (exclusive of "Stock" charges and "Establishment") has been Rs 13,48,643 and 2½ per cent on this sum would be Rs 33,716, whereas the actual sum expended under "Contingencies" up to August 31st 1886 has been only Rs 20,905, giving an excellent margin on the safe side.

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Stores from England

12. Three vessels brought stores from England in September as beneath

	Tons	
S. S. "Bulimba"	50	Portland Cement
" "India"	500	ditto
" "		Diving dresses
" "		Blocks and tackles
" "		1 Cement gauger
S. S. "Abergeldie"		1 Case leather lacings for belts

The Portland cement is by White Brothers, a most eminent firm, but one from which cement has never before been supplied direct to these works, — although I have occasionally purchased some locally.

Survey of the Road Stead and Harbour

13. The Survey of the harbour and adjacent roadstead is being carried out as opportunity offers under the charge of Mr. A. Lee Pogson, assistant Superintendent. When completed and plotted the Survey will be forwarded to the Harbour Trust Board.

2857/16

Mr. W. Boteler

14. I am glad to learn from Mr. Parkes, that Mr. Boteler, General Foreman should arrive here on October 25th.

I have the honor &c

(Signed) F. N. Thorowgood M. Inst. C.E.
Superintendent,
Madras Harbour Works.

(True Copy)

Secretary,
Harbour Trust Board.

B&R
el works

P.W. Coll. 8366

A No. 2857 W d/ Novr. 1. 1886

MARINE DEPARTMENT.

FROM

THE CHAIRMAN,
HARBOUR TRUST BOARD,
MADRAS,

TO

THE ~~CHIEF~~ SECRETARY TO GOVERNMENT,
Public Works ~~Marine~~ Department.

SECRETARIAT 27 OCT 86

DATED 25th } October 1886.
RECEIVED }

ENCLOSURE 1

No. 954

SUBJECT.

Forwarding amended progress report of the Madras Harbour Works for September 1886.

Recorded.

2. Para. 8 will be communicated to the Consulting Engineer for Rys.

3. The figures quoted in paras 9, 10 and 11 appear to be generally satisfactory.

4. The submission of the quarterly progress map for the Govt of India is awaited.

28/10/86

G.O. 987 W d/ 27.4.85
" 990 W d/ 27.4.85
" 1760-5 W d/ 13.7.86
" 2570 W d/ 27.9.86
" 2793 W d/ 22.10.86

28/10/86.

To,
The Chairman, H.T.Bd.
with 1 Encl.
C.E. for Rys
11/1(4)(2) Marine depts
Newspapers

Cor. 29.10.86 R 1.11.86

TO BE COMMUNICATED TO NEWSPAPERS.

With order

2857/18

8356

Govt. of (1886) Madras

PUBLIC WORKS.

Dated

Recd. Encl.

G.O., 1st November 1886, No. 285/w

Madras Harbour Works.

The progress report of the — for September '86, recorded with remarks