29/29/85

(1) பக்கங்களின் எண்ணிக்கை 58

(2) புதுக்கித் திருப்பிய நாள் 23.2.89

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

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தமிழ்நாடு அரசு

PWD துறை

அரசாணை எண்.
மு. கோப்புத் தாள் எண். 831

அச்சகம்
பலவகை

நாள் : 19.3.1889 198 .

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

22 sheets

217 Letters

ஆவண: கா-1—18,000—15-6-87.

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831

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following paper:—

From R. W. BARLOW, Esq., C.S., Chairman, Harbour Trust Board, to the Secretary to Government, Public Works Department, dated Madras, 13th March 1889, No. 973.

I have the honor to submit, for the information of Government, copy of a letter from the Engineer, Harbour Trust Board, No. 1565, dated 5th March 1889, reporting upon the progress made upon the Madras Harbour Works during the month of January 1889, with a tracing in duplicate.

ENCLOSURE.

From A. LEE POGSON, Esq., Engineer, Harbour Trust Board, to the Chairman, Harbour Trust Board, dated Madras, 5th March 1889, No. 1565.

Accompaniment—Tracing (in triplicate).—I have the honor to submit my report on the progress made on these works during the past month of January. Accompanying this report is a return of work and a plan of the harbour (submitted in triplicate) showing the progress made during the month, *in red*.

2. *Surveys.*—Several cross sections were taken of the rubble base during the month, and a work iron beacon was fixed in position at sea, marking the true centre line.

3. *North Pier works—Wavebreaker.*—At the north pier 76 30-ton wavebreaker blocks were dropped into position along the inner straight of the pier by the Titan crane, completing the wavebreaker to the required width as it worked its way towards the end of the pier, where I could have made good progress at blocksetting had the telegram received from the Secretary of State on the 24th December 1888 been communicated to me earlier than 31st January.

4. *Concrete block-making.*—The work of concrete block-making was carried on briskly throughout the month when 282 large blocks were made, of which 142 were wavebreakers; the total outturn of concrete, from which these blocks were made, was 4,864½ cubic yards. All the machinery used in the making of blocks will have to undergo heavy repairs during the ensuing month.

5. *South Pier works—Superstructure.*—At the south pier the progress was as rapid as could be wished for; during the 24 working days 22 rows, containing 220 large blocks, were set in position by divers, which added a length of 137·6 to the pier during January.

6. *Wavebreaker.*—The wavebreaker crane was completed and tested on the 17th January. To thoroughly satisfy myself and all who have the handling of this ponderous crane, I tested it with a full load out to the greatest overhang, viz., 40 feet; and tested also several other movements about which there was some doubt, and I am happy to report that I found the crane quite equal to the extra strains. The alterations I suggested to make in this crane, to enable it to travel round the different curves, have been completed and a serious error in its original design has been overcome.

7. *Pallávaram quarries.*—Twenty trains were despatched from the Pallávaram quarries in January, conveying to the crushing station 4,322¾ tons of chips for block-making.

8. *Stores from England.*—The following vessels arrived during the month of January with stores for the Madras Harbour Works as follows :—

By the S.S. "Navarino."—Six cases containing miscellaneous stores such as spanners, rules, steel jack planes, twine and spun yarn, leather belting, paint brushes, taps, stocks and dies.

By the S.S. "Goorkha."—2,093 casks containing 373¾ tons of Portland cement, also 14 Lewis bolts, six Messent's concrete mixers and two cases of fittings.

By the S.S. "Duke of Argyle."—732 casks containing 130¾ tons of Portland cement.

By the S.S. "Asia."—One case of brass screws overcarried by the S.S. *Pundua.*

9. *Stores—Local supply.*—The contractor, M. C. Ragava Charry, delivered 483 hard wood sleepers, of which 44 were for the quarries.

RETURN OF WORK FOR JANUARY 1889.

Railway lines.—On the south pier 157 rg. ft. broad gauge temporary lines and 967 rg. ft. single rail for South Indian Railway wagons were laid; 604 rg. ft. wavebreaker crane lines and 572 rg. ft. broad gauge lines were laid to take out the crane. On the sand road, 110 rg. ft. broad gauge lines were laid, 2,500 rg. ft. new rails were laid in renewing and extending lines.

Quarries.—Twenty trains worked during the month bringing stone from Pallávaram.

Rubble.—None received since 30th November 1888.

Chips—

	TONS.
Total quantity received up to 31st January 1889	127,119½
Do. do. 31st December 1888	122,796¾
Received in January ...	4,322¾

Ballast.—None received.

North Pier surf bank.—Nothing done since 30th November 1888.

Do. rubble base.— } Nothing done since 30th April 1887.
Do. superstructure.— }

Do. supplementary works.—

Blocks deposited in wavebreaker.

——	Number of blocks.	Concrete, cubic yards.	Distance on pier.	Average breadth on base of pier.
Up to 31st January 1889	1,928	35,019 1/12	...	...
Do. 29th February 1888	1,852	33,651 1/12	...	...
In January* ..	76	1,368	487—2,222	9′ to 28′

* All wavebreaker blocks.

North Pier, capping.—Nothing done since 30th November 1888.
Do. cramps.— Do. 31st May 1887.
South Pier, surf bank.— Do. 30th April 1888.
Do. rubble base.— Do. 31st October 1888.
Do. superstructure.—

		TONS.
Blocks set up to 31st January 1889	1,453	23,624¾
Do. 31st December 1888	1,233	20,016⅓
In January ...	220	3,607⅚

	TONS.
Rg. ft. of new wall built up to 31st January 1889	960½
Do. do. 31st December 1888	823
In January ...	137½
Total length of wall completed from E	3,347½
Do. do. G	960½

South Pier, supplementary works.—Nothing done since 31st October 1888.
Do. capping.—Nothing done since 31st December 1888.
Do. cramps.— Do. 31st October 1888.
Protective works.—Nothing done.

831

Concrete Blocks.

Description of blocks.	Made up to 31st December 1888.	Made in January 1889.	Made up to 31st January 1889.	Placed in Works: Up to 31st December 1888.	Placed in Works: Up to 31st January 1889.	In hand.
Old blocks	806	..	806	806	806	..
Wavebreaker blocks	2,926	142	3,068	2,266	2,342	726
Superstructure.						
North pier, bottom blocks ..	227	..	227	108	114	113
Do. middle do. ..	750	..	750	405	417	333
Do. top do. ..	248	..	248	131	135	113
South pier, bottom do. ..	359	28	387	246	284	103
Do. middle do. ..	1,009	84	1,093	663	783	310
Do. top do. ..	359	28	387	242	282	105
Special blocks	71	..	71	71	71	..
Counterbalance	1	..	1	..	..	1

4,864¼ cubic yards concrete blocks were made in the month.
943 tons cement was the balance in store.
127 superstructure and 87 wavebreaker blocks were transferred from north to south pier stacking ground.

TOOLS AND PLANT.

Stationary engines.—Brass bearings of boiler donkey pumps were closed.

Stone crushers, No. 1.—Two side wedges were refitted.

No. 4.—Two new side wedges were fitted and twelve handles were fitted to set plates and two shoots repaired.

Concrete mixers, No. 3.—Two new door catches were fitted.

Elevators.—Six wheels were made for elevator boxes and four others were repaired.

Sand crane, No. 1.—On mixing platform, a tie rod was repaired.

Goliath cranes, No. 3.—A new hydraulic piston leather was fitted and a new key to the flywheel of small engine.

Light ga try travellers, No. 1.—The foot board was repaired and crane painted.

No. 3.—Foot boards painted, and a new chain supplied to the crab.

No. 4.—A new chain supplied to the crab.

Fitting shop.—Plungers lined up, and four new valves were fitted to the hand pumps.

Diver's helmet.—A new special nut was fitted to the air valve, the old studs were drilled out of the pump barrels, and twenty-four new brass bolts made.

Miscellaneous.—Diver's ladders repaired. A new canvas water-pipe was supplied to the running shed. Twenty-eight bolts and thirty-three cotters were repaired for block frames. Twelve ¾″ bolts and three eye bolts were made for joggle boxes. A coupling chain was made for No. 1 Locomotive engine. Seven pins and cotters for shackles and eight 1¼″ special links were welded into 1″ chain for divers. Gear of pontoon was cleaned and fitted. A 4-inch pin was made for the block dropping claws. Seven concrete skips were repaired. Twenty-nine cramps made for S. P. superstructure. Twenty-four spike nails and five brackets were made for a diver's boat. Twenty-four square washers, twelve pins and seven knee pieces were made for Lewis wedges. Two sounding irons were also made for the divers.

Locomotive Engines, No. 1.—L.H. steam chest cover joint was made and a new stud fitted. A shaft was fitted to the driving wheel. A new key fitted to R.H. driving wheel. A new key fitted to eccentric sheave. A stud was fitted to blow off cock. The boiler cocks ground and the lead plug renewed. Brass bearings of connecting and coupling rods and eccentric straps closed and the spark-catcher repaired.

No. 2.—The R.H. cylinder cover joint was re-made.

No. 3.—Brass bearings of connecting and coupling rods were closed. The lead plug was renewed. The whistle and steam gauge cocks were ground. A buckle was fitted to the slide valve and valve spindle turned. The slide valves were reset and dummy gland and steam chest cover joints made, a waste watercock reset.

Block trucks, Nos. 4 *and* 9.—Brass bearings were cased and keeps were fitted with waste and grease.

2 H

Sand wagon, No. 3.—A tail board hinge, and four second-hand pedestals were fitted and the wagon painted.

Nos. 6 *and* 7.—A pair of new wheels and a buffer band fitted and the wagon painted.

No. 8.—Liners were fitted to pedestals and the wagon painted.

Wavebreaker crane.—This crane was completed and tested on the 17th.

North Pier Titan crane.—After depositing 76 wavebreaker blocks the crane was taken out to 2,382 feet on the new wall, where it stood at the end of the month.

South Pier Titan crane.—The south pier Titan crane stood at the end of the south pier. Three feathers were made and fitted to the brake drum, and pinion; two brass bearings were cased and a pin was made for the double gear lever. Three brake ropes were also supplied.

HARBOUR TRUST.

Iron Pier.—110 rg. ft. for the half width of the pier timber work was renewed.

B. Portable cranes, No. 11.—This 2-ton crane was thoroughly repaired.

Smiths' shop.—A ventilator was added to the smiths' shop.

ORDER—dated 19th March 1889, No. 831 W., Public Works.

The report will be forwarded to the Secretary of State for India.

(Here enter No. $\frac{10}{831}$ W., dated 19th March 1889.)

(True Extract.)

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

To the Chairman, Madras Harbour Trust Board.
" Marine Department.

Exd. J. Henricus.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1889} Madras.

PUBLIC WORKS.

Dated March, 19*th*.

Encl.

Recd.

G.O., 19th March 1889, No. 831W.

MARCH.

Madras Harbour Works

Ordered that the progress report of the — for January 1889 be forwarded to the Home Government.

831

19TH MARCH 1889, No. $\frac{10}{831\ W.}$, PUBLIC WORKS.

PUBLIC WORKS DEPARTMENT.

LETTER—to

THE RIGHT HONORABLE THE SECRETARY OF STATE FOR INDIA.

MY LORD,

In continuation of our despatch No. $\frac{9}{658\ W.}$, dated 5th March 1889, we have the honor to forward, for your Lordship's information, the progress report of the Madras Harbour Works for the month of January 1889, together with a plan showing the advance made during the month.

Proceedings of Government, dated 19th March 1889, No. 831 W.

2. The usual statement of expenditure will follow.

We have the honor to be,
My Lord,
Your Lordship's most obedient, humble servants,

(Signed) CONNEMARA.
(„) H. E. STOKES.
(„) J. H. GARSTIN.

(True Copy.)

Colonel, R.E.,
Ag. Secy. to Govt., P.W.D.

FORT ST. GEORGE,
19th March 1889.

Exd. J. Henricus

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GOVT. OF MADRAS.

PUBLIC WORKS DEPARTMENT.

(Copy.)

LETTER to the Right Honorable the Secretary of State for India.

No. $\frac{10}{831\ W.}$, dated 19th Mar. 1889.

Forwarding progress report of the Madras Harbour Works for January 1889.

831

5TH MARCH 1889, No. $\frac{9}{658\ W.}$, PUBLIC WORKS.

PUBLIC WORKS DEPARTMENT.

LETTER—to

THE RIGHT HONORABLE THE SECRETARY OF STATE FOR INDIA.

MY LORD,

In continuation of our despatch No. $\frac{6}{469\ W.}$, dated 16th February 1889, we have the honor to forward, for your Lordship's information, the progress report of the Madras Harbour Works for the month of December 1888, together with a statement of expenditure to date, and a plan showing the advance made during the month.

Proceedings of Government, dated 5th March 1889, No. 658 W.

We have the honor to be,

My Lord,

Your Lordship's most obedient, humble servants,

(Signed) CONNEMARA.

(„) H. E. STOKES.

(„) J. H. GARSTIN.

FORT ST. GEORGE,
5th March 1889.

6

Exd. J. Henricus.

GOVT. OF MADRAS.

PUBLIC WORKS DEPARTMENT.

(Copy.)

LETTER to the Right Honorable the Secretary of State for India.

No. 9/658 W., dated 5th March 1889.

Forwarding progress report of the Madras Harbour Works for December 1888.

631

5TH MARCH 1889, No. 658 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following paper :—

From R. W. BARLOW, Esq., C.S., Chairman, Harbour Trust Board, to the Secretary to Government, Public Works Department, dated Madras, 1st March 1889, No. 821.

I have the honor to submit, for the information of Government, in accordance to G.O., No. 59, dated 13th February 1889, copy of a letter from the Board's Engineer, No. 1509, dated 23rd February 1889, reporting upon the progress made upon the Madras Harbour Works during the month of December 1888, with a statement of expenditure and tracing in duplicate.

ENCLOSURE.

From A. L. POGSON, Esq., Engineer, Harbour Trust Board, to the Chairman, Harbour Trust Board, dated Madras, 23rd February 1889, No. 1509.

I now have the honor to submit my report on the progress made on these works during the month of December 1888, together with a return of work and a tracing of the plan of the harbour (submitted in triplicate) showing the progress in red.

2. The statement of expenditure cannot be completed in time to accompany each report, but will be submitted separately in future and as early as possible.

3. *North Pier works.*—There was nothing done at this arm beyond relaying a few rails which had been ripped up by the heavy seas during the monsoon, and thoroughly overhauling the Titan crane, after which it was travelled out on the 19th to a point where additional wave-breaker blocks were required to complete the necessary section.

4. *Concrete block-making.*—The work of concrete block-making was carried on steadily throughout the month, with the exception of four days' stoppages, which were unavoidable on account of rain and holidays.

5. Two hundred and fifty-seven large blocks were made, of which 136 were for the wave-breaker, representing in all an outturn of 4,413½ cubic yards of concrete.

6. *South Pier works capping.*—The total length of wall built during the past working season received a capping of concrete just sufficient to make the surface level enough to allow the Titan lines and all necessary rail roads to be built in concrete so as to save the wear and tear of sleepers.

7. *Superstructure.*—The above capping having had time to harden by the 21st, the Titan crane was travelled over it and out to the extreme end of the pier, and on the 22nd of December turned into position for forward work, and the tank forming the 30-ton balance weight was filled with sea-water.

8. On the 27th December 1888 block-setting was commenced and, by working through the Christmas holidays, the superstructure was advanced by 31 feet up to the evening of the 31st December.

9. This progress must be taken as an additional length of pier built to the coming season's progress or of that made in any of the past years, as block-setting has never before been attempted at an earlier date than the 18th of January.

10. *Pallávaram quarries.*—The renewing of all necessary railway lines at the Pallávaram quarries and repairs to the damaged permanent way through rain and accumulation of silt was well supervised, which enabled twenty-three trains being run during the month, by which 4,917¾ tons of chips were delivered at the crushers for block-making.

11. *Stores from England.*—The following steamers arrived in December 1888 with stores for these works, namely—

By the S.S. *Clan Macarthur* with 24 chilled cast iron wheels for trollies.

By the S.S. *Pundua* with 999 casks containing 178½ tons of Portland cement, also one case hand and cross-cut saws; three cases screw augers, one case brass screws, one case wood screws,

38

one case coach screws, three rivets, bolts and nuts, twenty drums linseed oil, and twenty kegs of chocolate paint.

By the S.S. *India* with 961 casks containing 172⅛ tons of Portland cement.

12. *Stores, local supply.*—The contractor, M. C. Ragava Charry, delivered 392 hard-wood sleepers, of which 16 were for the quarries.

RETURN OF WORKS FOR DECEMBER 1888.

Railway lines.—The lines at the beach and quarries were kept in repair during the month, 1,172 running feet new rails and a new crossing were used in renewing and extending lines, 408 running feet Titan road, 555½ running feet broad gauge permanent line, 299 running feet temporary broad gauge line and 336 running feet meter gauge single lines were laid on the south pier and 573 running feet of broad gauge line was taken up on the said road.

Quarries.—Twenty-three trains worked during the month bringing stone from Pallâveram.

Rubble.—None received since 30th November 1888.

Chips.

			TONS.
Total quantity received up to	31st December 1888 ...	...	122,796¾
Do. do.	30th November 1888 ...	...	117,879
	Received in December ...		4,917¾

Ballast.—None received.

North Pier surf bank.—Nothing done since 30th November 1888.

Do.	*rubble base.*—	Do.	30th April 1887.
Do.	*superstructure.*—	Do.	29th February 1888.
Do.	*supplementary works.*—	Do.	30th November 1888.
Do.	*capping.*—	Do.	30th April 1888.
South Pier surf bank.—		Do.	31st October 1888.
Do.	*rubble base.*—	Do.	

South Pier superstructure.

		NO.	C. YDS.
Blocks set up to	31st December 1888	1,233	20,016½
Do.	30th September 1888	1,187	19,260⅞
	In December ...	46	755⅝

Running feet of new wall built up to	31st December 1888 ...	823
Do. do.	30th September 1888 ...	792
	In December ...	31

Total length of wall completed from	F	3,210
Do. do.	G	823

South Pier supplementary works.—Nothing done since 31st October 1888.

Do. capping.—Eight cubic yards capping done.

Do. cramps.—Nothing done since 31st October 1888.

Protective works.—Nothing done.

Concrete blocks.

Description of block.	Made up to 30th Nov. 1888.	Made in Dec. 1888.	Made up to 31st Dec. 1888.	PLACED IN WORK: Up to 30th Nov. 1888.	PLACED IN WORK: Up to 31st Dec. 1888.	In hand.
Old blocks	806	..	806	806	806	..
Wavebreaker blocks	2,790	136	2,926	2,266	2,266	660
Superstructure.						
North pier bottom blocks ..	227	..	227	108	108	119
Do. middle do.	743	7	750	405	405	345
Do. top do.	246	2	248	130	131	117
South pier bottom do.	336	23	359	238	246	113
Do. middle do.	939	70	1,009	535	663	346
Do. top do.	340	19	359	233	242	117
Special	71	..	71	71	71	..
Counterbalance	1	..	1	..	..	1

4,413⅛ cubic yards of concrete was made in the month, block-making was suspended on the 4th and 14th on account of rain, and on the 25th and 26th on account of holidays.

1,134¾ tons was the balance of cement in store at the end of the month.

Fourteen wavebreaker and 6 superstructure blocks were transferred from north to south pier and stacked.

Tools and Plant—Stationery engine-boiler, stonecrushers.—Nos. 1 and 2 donkey pumps brass bearings closed.

No. 1. Two new keys fitted to eccentric and keep and set plates fitted and fixed.

No. 2. Shoot repaired and side wedge and set plates fixed.

No. 3. Side wedge and set plates fixed.

No. 4. Two new jaws and two side wedges fitted and fixed.

Concrete mixers.—No. 1. A new door catch fitted and brass bearings of pump closed and foot-valve repaired.

No. 2. A new door catch fitted and a hammer supplied.

No. 4. A hammer supplied.

Nos. 5 and 6. Brass bearings closed and lined up.

No. 7. Brass bearings closed and lined up, a new pinion and intermediate spur wheel fitted.

No. 8. Brass bearings closed and lined up, a new pinion, intermediate spur wheel, and a new door catch fitted.

Elevators.—Two of the elevator iron boxes were repaired.

Mixing platform.—No. 2. Crane tie rods, chain and pall repaired.

Concrete skips.—Three wrought iron concrete skip boxes were repaired and issued.

Goliath hydraulic crane.—A new wrought iron chimney was made, fitted and painted.

No. 3. Manhole cover to boiler repaired, three fire bars and a travelling wheel fixed and the crane painted throughout.

Light Gantry traveller.—Nos. 1 and 2. Light traveller. The footboards were renewed in teak timber.

Miscellaneous.—Two special brass nuts were made for divers' air pump; thirty-six bolts repaired and fifty cotters and twenty-four eye-bolts made for block frames; six Lewis wedges were made; four parah measures completed; sets of two ⅜", two ½", one ¼" and ⅜" dies were made for the fitting shop.

North Pier Titan.—Three fire bars were made and crane thoroughly overhauled previous to being run out on the 19th December. It stood at 495 feet from B at the end of the month.

South Pier Titan.—This crane was painted throughout; twenty-four new bolts made for ballast tank; the salt-water pump was repaired; a new chain was made for the divers' pump bob; three new wheels were fitted to the traverser and the planking partially renewed. The Titan was taken out on the 21st and turned into position for setting blocks on the 22nd December. It stood at the termination of the new work at the end of the month.

Sand wagons.—No. 5. A tail board hinge fitted and repaired.

Concrete skip trucks.—Nos. 6 and 11. Painted and overhauled. New iron work for two concrete skip trucks was made and fitted.

Harbour Trust Board—Iron Pier repairs.—One hundred feet in length for the half width of the pier; timber work renewed and completed.

Beach improvements.—Two cast iron brackets and lamps were fitted to the north and south goods shed; seven lamp posts with lanterns were fixed about the iron pier.

Harbour Trust boundary fence.—An entrance north of the pier was made and a double gate fixed with a level crossing leading to the coal yard.

A turntable to connect the iron pier with the Madras Railway Engineer's Department was well in hand.

Forty-eight palmyrah breaks were made for the iron pier trucks.

No. 10 B portable crane was undergoing repairs.

ORDER—dated 5th March 1889, No. 658 W., Public Works.

The report will be forwarded to the Secretary of State for India.

(True Extract.)

To the Chairman N. E. Board
Marine Dept.

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

Exd. J. Henricus.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1889} Madras.

PUBLIC WORKS.

Dated March, 5th.

Encl.

Recd.

G.O., 5th March 1889, No. 658 W.

MARCH.

Madras Harbour Works

Progress report of the — for December 1888, ordered to be forwarded to the Secretary of State.

631

16TH FEBRUARY 1889, No. $\frac{6}{469\ W.}$, PUBLIC WORKS.

PUBLIC WORKS DEPARTMENT.

LETTER—to

THE RIGHT HONORABLE THE SECRETARY OF STATE FOR INDIA.

MY LORD,

In continuation of our Despatch, No. $\frac{3}{177\ W.}$, dated 23rd January 1889, we have the honor to forward, for your Lordship's information, the progress report of the Madras Harbour Works for the month of November 1888, together with a statement of expenditure to date compared with the sanctioned estimate.

2. A plan is not forwarded with this report, as no progress was made at sea during the month.

We have the honor to be,
My Lord,
Your Lordship's most obedient, humble servants,

(Signed) CONNEMARA.
(„) H. E. STOKES.
(„) J. H. GARSTIN.

(True Copy.)

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

FORT ST. GEORGE,
16th February 1889.

Exd. A. D. Xavier.

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GOVT. OF MADRAS.

PUBLIC WORKS DEPARTMENT.

(Copy.)

LETTER to the Right Honorable the Secretary of State for India.

No. $\frac{6}{469\ W.}$, dated 16th Feb. 1889.

Forwarding progress report of the Madras Harbour Works for November 1888.

63

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following paper :—

From R. W. BARLOW, Esq., C.S., Chairman, Harbour Trust Board, to the Secretary to Government, Public Works Department, dated Madras, 11th February 1889, No. 550.

I have the honor to forward, herewith, a copy of the Engineer's letter, No. 1416, dated 30th January 1889, reporting progress upon the harbour, with a return of work done during the month of November 1888. I also forward a triplicate copy of comparison of expenditure to the 30th idem. Tracing of the harbour was not prepared, as there was no progress made at sea during the month.

2. Copies of the above have also been submitted to the Chief Secretary to Government, Marine Department.

ENCLOSURE.

From A. L. POGSON, Esq., Superintendent, Madras Harbour Works, to the Chairman, Harbour Trust Board, dated Madras, 30th January 1889, No. 1416.

I have the honor to forward a brief account of the work done on these works during the month of November 1888, which as usual during the monsoon is confined to repairs to all the cranes and machinery both in the block-making grounds and workshops, &c.

2. The statement of expenditure for November is submitted with a return of work, but as there was no progress made at sea, I have not prepared the usual plan of the harbour.

MADRAS HARBOUR WORKS.

3. *Concrete block-making.*—The most important work worth mentioning in addition to the information given in detail in the return of work was the very satisfactory way the concrete block-making contractor, M. C. Ragava Charry, carried on on this branch of the works. As many as 14 blocks have been made in a day while only working at one platform, where, with former contractors, 9 blocks was thought to be the greatest number possible, and as the progress when working at both piers would be retarded for the want of blocks, this increased outturn, while reducing the cost per cubic yard, is very important as well as satisfactory.

Two hundred and thirty-seven blocks were made during the month, of which 155 were for the wave-breaker, so that the total quantity of concrete made was 3,883⅓ cubic yards.

4. *Pallávaram quarries.*—The Pallávaram quarry lines were maintained in good order and repair during the month. Twenty-two trains conveyed to Madras 4,418 tons of chips and 245½ tons of rubble, which was deposited at the extreme end of the south pier, making up the base to the full required section.

5. *Stores from England.*—The following stores were received during the month of November :—

By the SS. *Manora*, 1,260 casks containing 225 tons of Portland cement.

By the SS. *Golcondah*, 1,056 casks containing 188½ tons of Portland cement, also 3 cases of iron spikes of sizes and 150 fathoms of iron chain ¾″, ½″ and ⅜″.

By the SS. *Duke of Buccleuch*, 952 casks containing 170 tons of Portland cement, also 48 special deal planks and two cases of hammers and washers for the stone-crushers.

By the SS. *Olan Grant* with iron bars round and square and 3 cases containing 2,000 fish plates and bolts which were much needed.

6. *Stores from local supply.*—The contractor for hard junglewood sleepers delivered 472 sleepers, of which 45 were for the Pallávaram quarries.

7

12

Return of Work for November 1888.

Railway lines.—The lines at the beach and the quarries were kept in repair during the month; 696 running feet Titan permanent-way and 787 broad gauge permanent-way was built in cement and 812 broad gauge temporary lines laid on south pier; 904 running feet of lines was taken up and 520 running feet laid at sand line; 2,296 running feet of steel rails was issued during the month.

Quarries.—Twenty-two trains worked during the month, bringing the following stone from the Pallávaram quarries.

		Tons.
Rubble	Total quantity received up to 30th November	350,993¾
	Do. do. to 31st October	350,748¼
	Received in November	245½
Chips	Total quantity received up to 30th November	117,879
	Do. do. to 31st October	113,461
	Received in November	4,418

Ballast—none received.

North pier, surf bank—245½ tons rubble deposited
Do. rubble base } nothing done since 30th April 1887.
Do. superstructure }
Do. supplementary works—nothing done since 29th February 1888.
Do. capping—33 cubic yards capping done.
Do. cramps—nothing done since 31st May 1887.

South pier, surf bank—nothing done since 30th April 1888.
Do. rubble base do. 31st Oct. ,,
Do. superstructure do. 30th Sept. ,,
Do. supplementary works—nothing done since 31st October 1888.
Do. capping—36½ cubic yards capping done.
Do. cramps—nothing done since 31st October 1888.

Protective works—nothing done.

Concrete Blocks.

Description of blocks.	Made up to 31st October 1888.	Made in November 1888.	Made up to 30th November 1888.	Placed in work: Up to 31st October 1888.	Placed in work: Up to 30th November 1888.	In hand.
Old blocks	806	..	806	806	806	..
Wave-breaker blocks	2,635	155	2,790	2,266	2,266	524
Superstructure	..	..	..	..	..	..
North pier, bottom blocks	227	..	227	108	108	119
Do. middle do.	682	61	743	405	405	338
Do. top do.	225	21	246	130	130	116
South pier, bottom do.	336	..	336	147	147	189
Do. middle do.	939	..	939	635	635	304
Do. top do.	340	..	340	233	233	107
Special	71	..	71	71	71	..
Counterbalance	1	..	1	..	..	1

3,883½ cubic yards of concrete was made in the month, from which the above blocks were made.

There was no block-making on the 9th on account of it being a holiday and heavy rain stopped work on the 24th.

1,427 tons cement was the balance at the end of the month.

Tools and Plant.

Stationery engine-boiler.—Nos. 1 and 2 donkey pumps, brass bearings closed.
Stone-crushers.—The iron work for a new shoot was made.
No. 1.—White metal run and fixed new jaws, two new side wedges and set plates fixed.
No. 2.—A new hook for the pump rod was made and two new side wedges were fixed.
No. 3.—Two new jaws, two side wedges, one pair brass bearings, and set plates were fixed and grooves chipped for new movable jaws.
No. 4.—New set plates were fixed.

No. 5.—Two new jaws, two side wedges, and a new key to the fly-wheel was fixed.
Concrete mixers, No. 5.—A new door catch was fixed and the brass bearings closed.
No. 6.—Brass bearings closed and four hammers were made for the doors.
Elevators.—Six elevator boxes were repaired.
Concrete skips.—Two repaired. Portable cranes on mixing platform Nos. 1 and 2 each fitted with a new chain.
No. 1 *Goliath crane.*—This crane was repainted and put in thorough repair.
No. 2 *Goliath crane.*—Was fitted with a new hydraulic piston leather.
No. 3 *Goliath crane.*—Was painted and a new travelling wheel fitted to the crab.
Sundries.—Thirteen bolts repaired and a chain sling made for blocking the frames. Shunting ropes were also made for Nos. 1 and 3 locomotive engines. Six knee pieces were made for wedges for lewises and eighty-four spike nails for the diving boats.
Divers' air pump.—Brass bearings closed, twelve ⅝" bolts, three new screw divers, six fly nut spanners, one hexagonal box spanner, nine spanners of sizes and two new nuts for water- were supplied.
ave-breaker crane.—The erection of crane was progressing. Two new lever pins, a d for brake lever, twelve bolts, six new shafts and sixteen keeps for the travelling were made.
outh Pier Titan.—A new travelling wheel for the crab and another for crab carriage was and the other travelling wheel of the crab were chipped.
No. 1 *Locomotive engine.*—Brass bearings of connecting and coupling rods closed, waste- and blow of cocks and coupling chain repaired, boiler cocks and clack box and safety s ground, left-hand dummy joints remade and foot-steps straightened.
No. 2 *Locomotive engine.*—Brass bearings of connecting and coupling rods closed. Two e-water cocks and blow through cock for water gauge column fitted and waste-water cock ing set.
No. 3 *Locomotive engine.*—Dummy gland joints made and boiler cocks ground.
Sand wagons No. 7.—Painted and a pair of new wheels fitted.
Sand wagons No. 10.—Rebuilt and painted.
Sand wagons No. 11.—Painted and a pair of new wheels fitted.
Skip trucks.—The ironwork of these new trucks was made and fitted.
Materials trucks.—Two new axles made and fitted to the wheels.

Harbour Trust.

Beach improvements.—The new shed north of iron pier was completed with the exception of the guttering 116½ running feet, new broad gauge siding was laid and a turn-table near the north goods shed completed. The turn-table connecting Madras Railway stores with iron pier was also completed.

Iron pier.—Forty feet half width of the pier woodwork was renewed and two pile caps fixed.

No. 6.—Sentry-box was repaired. The door of the combustible shed was repaired.
No. 3.—B-class portable crane was thoroughly repaired.
A stand and cage was made for meteorological instruments erected for the use of the Port office.
The ironwork for one of the leading lights of the harbour entrance was completed.

Order—dated 16th February 1889, No. 469 W., Public Works.

The report will be forwarded to the Secretary of State for India.

(Here enter No. 6/469 W., dated 16th February 1889.)

(True Extract.)

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

To the Chairman, Madras Harbour Trust Board.
,, Marine Department.

Exd. A. D. Xavier.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1889} Madras.

PUBLIC WORKS.

Dated February, 16th.

Recd. *Encl.*

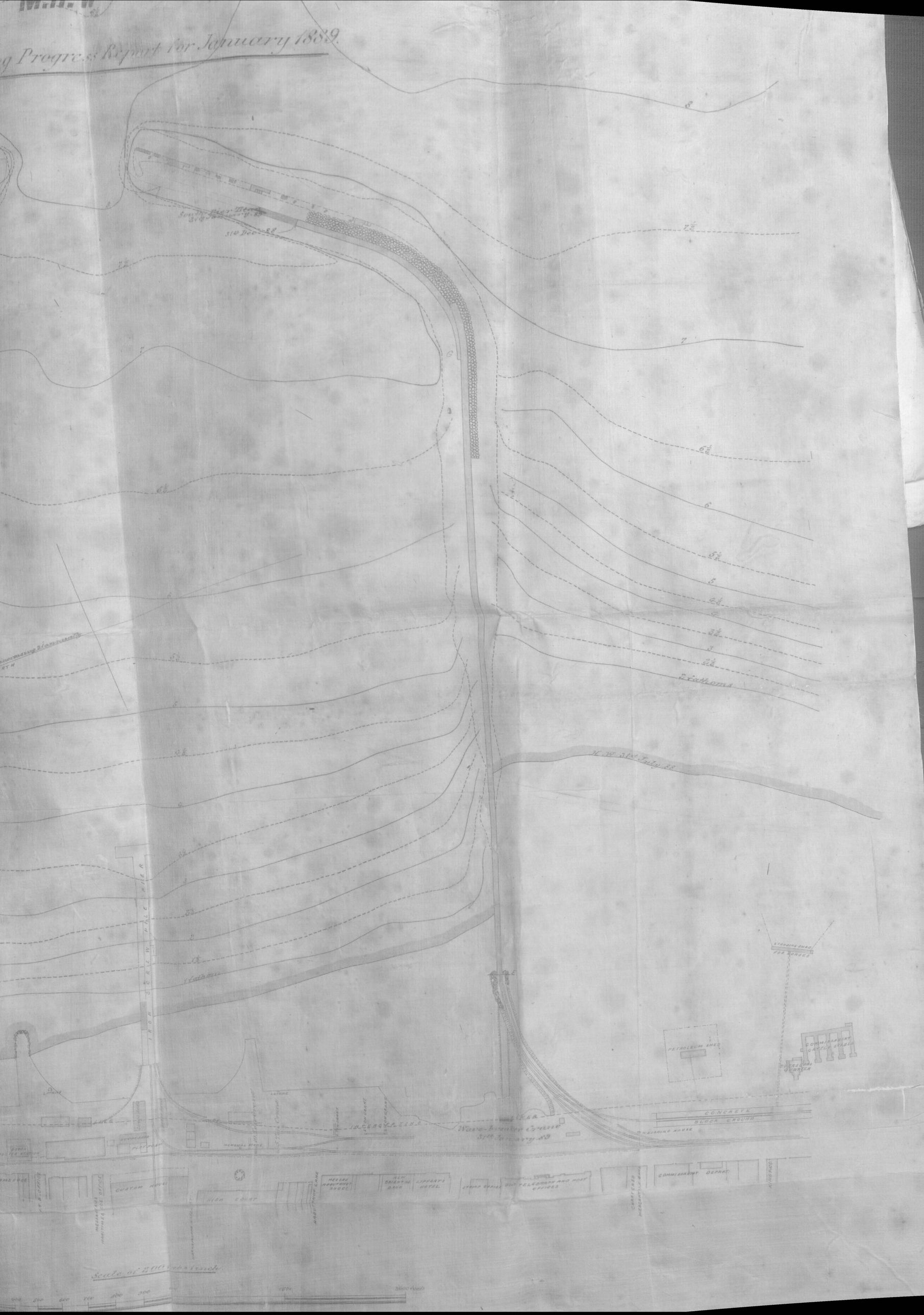
G.O., 16th Feb. 1889, No. 469 W.

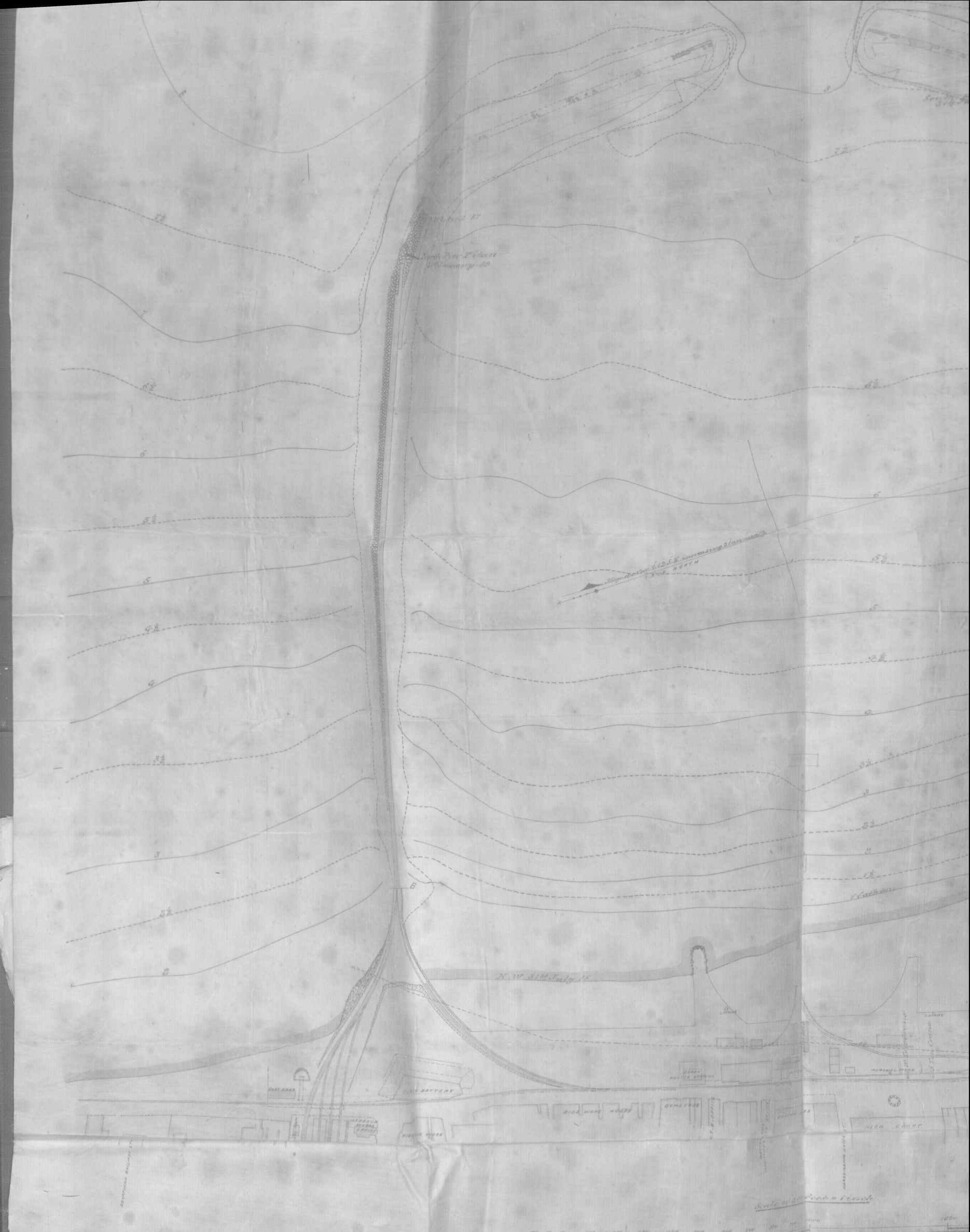
FEBRUARY.

Madras Harbour Works

Progress report of the — for November 1888, ordered to be forwarded to the Secretary of State.

Progress Report for January 1889.




North Pier Extn
H. W. 31st July '78
Light House
Signal Mast
Flag Staff
Gun Battery
Rice Ware House
Dykes Bob
Custom House
Police Station
Memorial Stone
Harbour
Scale of 400 Feet = 1 Inch.
Note.

10

631

Harbour Trust Board Office,

Madras, 13th March 1889.

No 433

From R. W. Barlow Esquire C.S.

Chairman, Harbour Trust Board,

Madras,

To Colonel H. R. Mead R.E.

ag Chief Secretary to Government,

Public works Marine Department.

Sir,

I have the honor to submit for the information of Government, copy of a letter from the Engineer, Harbour Trust Board, No 1565 dated 5th March 1889, reporting upon the progress made upon the Madras Harbour works during the month of January 1889, with a tracing in duplicate.

I have the honor to be
Sir
Your most obdt Servant

R. W. Barlow
15

Chairman
Harbour Trust Board

No. 1565

Encl

2 Sp

From

The Engineer,

Harbour Trust Board

Madras

To

The Chairman

Harbour Trust Board

Madras

Madras, 5th March 1889

Sir,

Accompaniment (Tracing in triplicate) I have the honour to submit my Report on the Progress made on these Works during the past month of January. Accompanying this report is a return of work and a plan of the Harbour — (submitted in triplicate) shewing the progress made during the month, viz:-

Surveys. 2. Several cross sections were taken of the rubble base during the month, and a mark Iron Beacon was fixed in position at sea, marking the Inner centre Line.

North Pier Works 3. At the North Pier 76; 30 Ton Wavebreaker

Wave breaker blocks were dropped into position along the Inner Straight of the pier by the Titan Crane, completing the Wavebreaker to the required width and it worked its way towards the end of the Pier, where I could have made good progress at Blocksetting had the work received from the Secretary of State on or before December '88, been communicated to me earlier than 31st January.

Concrete Blockmaking 4. The work of Concrete Blockmaking was carried on briskly throughout the month when 282 Large blocks [illegible] which 42 were Wavebreakers, The

which these blocks were made, was 4864½ cubic yards. All the machinery used in the making of blocks will have to undergo heavy repairs during the ensuing month.

South Pier Works Superstructure

5. At the South Pier the progress was as rapid as could be wished for. During the 24 working days 22 rows, containing 220 large blocks were set in position by divers, which added a length of 137.6 to the pier during January.

Wavebreaker

6. The Wavebreaker crane was completed and tested on the 17th January. To thoroughly satisfy myself and all who have the handling of this handsome crane. I tested it with a full load out to the greatest overhang viz 40 feet, and tested also several other movements about which there was some doubt, and I am happy to report that I found the crane quite equal to the extra strain. The alterations I suggested to make in this crane to enable it to travel round the different curves, have been completed and a serious error in its original design has been overcome.

Pallaveram Quarries

7. Twenty trains were despatched from the Pallaveram Quarries in January conveying to the Crushing Station 4322¾ tons of chips for Blockmaking.

Stores from England

8. The following vessels arrived during the month of January with stores for the Madras Harbour Works as follows:—

By the S.S. "Navarino"— Six cases containing miscellaneous stores, and spanners, Rules, Steel to— Planes, Twine and Spun yarn, Leather, Oiling Paint, Brushes, Soap, Stocks and Dies.

— 14 — containing 3783¾ — and, Cement also

14 Lewis bolts, Six mercurial Concrete mixers and 2 cases of fittings.

By the SS. "Duke of Argyle". 732 casks, Containing 1805¼ Tons of Portland Cement.

— " — SS. "Asia" — One case of brass screws — overcarried by the SS. "Pundua"

Stores Local Supply

9. The Contractor. Mr. C. Rajava Chetty delivered 483 hard wood Sleepers of which 44 were for the Quarries.

Return of Work for January 1869

Railway lines,

On the South Pier 157 Rg ft broad gauge temporary lines and 967 Rg ft single rail for L.I.R. wagons were laid 604 Rg ft Wavebreaker crane lines and 572 Rg ft broad gauge lines were laid to take out the crane. On the sand road, 110 Rg ft broad gauge lines were laid 2500 Rg ft new rails were laid in renewing and extending lines.

Quarries,

Twenty trains worked during the month bringing stone from Pallaveram.

Rubble. None received since 30th November 1868

Chips { Total quantity received up to 31st January 1869 - 12711½ Tons / Do 31st December 1868 - 12279¾ "

Received in January — 4322 9/4

Ballast — None received

North Pier. Sand backing. Nothing done since 30th June 68

— Do — rubble backing } Nothing done since 30th April 69

— Do — superstructure

— Do — supplementary works.

15 Brooks

Blocks deposited in Wave-breaker

	No of Blocks	Cu: C yds	distance on Pier	average weight on each of Pier
up to 31st Jany '89	1928	3501 9/12	— " —	— " —
— to 29th Feby '88	1852	3365 1 11/12	— " —	— " —
In Jany:	76	1368	487	2222-9/628

all wave-breaker blocks

North Pier, Capping — Nothing done since 30 November '88.
— Do — Cramps — Do — 31st May '87
South Pier - surf bank — Do — 30th April '88
— Do — Rubble base — Do — 31st October '88
— Do — Superstructure

Blocks set up to 31st January 89	1453	23624 2/9	
— Do — 31st December '88	1233	20016 1/3	
In January	220	3607 5/9	
Rt: ft of new wall built up to 31st Jany 89		960 1/2	
— Do — 31st Dec. 88		823	
In Jany:		137 1/2	
Total length of wall completed from E.		3347 1/2	
— Do —	A	960 1/2	

South Pier - supplementary Works - Nothing done since 31st Oct. '88
— Do Capping — do — 31st Dec '88
— Do cramps — do — 31st Oct '88
Protective works. Nothing done —

Concrete Blocks

Description of Blocks	number on 31st Dec '88	made in January 89	number in position	placed in works up to 31st Dec 88	up to 31st January 1889	in Yard	Remarks
old blocks	806		806	806	806		
Wave-breaker Blocks	2926	142	3068	2268	2342	726	
Superstructure							
North Pier - Bottom Blocks	227	"	227	103	114	113	
— Do — Middle — Do	750	"	750	417	417	333	
— Do — Top — Do	248	"	248	131	135	113	
South Pier - Bottom Do	2487	280	3367	2411	2784	583	
— Do — middle — Do	1093	84	1693	000	783	310	
— Do — Top — Do	350	"	387	241	282	105	
Special — Do	71	"	71	71	71	"	
Special Irons	1	"	1	"	"	1	

4864 4/9 C yds concrete blocks were made in the month. (43) (45)

943 Tons Cement was the balance in Store.

127 Superstructure and 87 Wave-breaker blocks were transferred from North & South Pier stacking ground

Inboard Plant

Stationary Engines — Brass bearings of boiler donkey pumps were closed.

Stone Carriers - No. 1. Two side wedges were refitted.
No. 4. Two new side wedges were fitted and twelve handles were fitted to set plates and two shoots repaired.

Concrete mixers Elevator — No. 3. Two new door catches were fitted. Lip wheels were made for elevator boxes and four others were repaired.

Sand Crane - No. 1. An piping platform, a tie rod was repaired
Goliath Cranes, No. 3. A new hydraulic friction leather was fitted and a new key to the fly wheel of small engine

Light Gantry Travellers No. 1 - The foot board was repaired and crane painted
No. 3. Foot boards painted, and a new chain supplied to the crab
No. 4. A new chain supplied to the crab.

Fitting Shop. — Plungers lined up, and four new valves were fitted to the hand pumps

Divers Helmet — A new shifting nut was fitted to the air valve, the old studs were drilled out of the pump barrels, and twenty four new brass bolts made.

Miscellaneous — Divers ladders prepared. Six new Camas water pipe sections supplied to the Running shed. Twenty eight bolts and thirty nuts were

were repaired for block frames. Twelve 9/4" bolts and three eye bolts were made for goggle boxes. A coupling chain was made for No 1 Locs: Engine. Seven pins and collars for shackles and eight 1 1/4" special links were welded into 1" Chain for Divers. Gear of pontoon was cleaned and fitted. A four inch pin was made for the block dropping claws. Seven Concrete skips were repaired. Twenty nine Cramps made for S.P. Superstructure. Twenty four spike nails and five brackets were made for a divers boat. Twenty four square washers, twelve pins and seven knee pieces were made for Lewis wedges. Two sounding irons, were also made for the divers.

Locs: Engines

No 1. L.P. Steam chest cover joint was made and a new stud fitted. A shaft was fitted to the driving wheel. A new key fitted to R.H. driving wheel. A new key fitted to eccentric sheave. A stud was fitted to blow off cock. The boiler cocks ground and the lead plug renewed. Brass bearings of connecting and coupling rods and eccentric straps closed and the spark catcher repaired

No 2. The R.H. cylinder cover joint was remade

No 3. Brass bearings of connecting and coupling rods were closed. The lead plug was renewed. The whistle and steam gauge cocks were ground. A buckle was fitted to the slide valve and valve spindle turned. The slide valves were reset and dummy gland and steam chest cover joints made as made water cock reset.

Block Trucks

No 449. Brass bearings were closed and keys were fitted with wedge and axe.

Sand wagon. No 3. A tail board hinge, and four second hand pedestals were fitted and the wagon painted.

Nos 6 & 7. A pair of new wheels and a buffer band fitted and the wagon painted.

No 8. Liners were fitted to pedestals and the wagon painted.

Ward. Breaker Crane. This crane was completed and tested on the 17th.

North Pier Titan Crane. After depositing 76 Ward-Breaker blocks the Crane was taken out to 2382 feet on the new wall, where it stood at the mouth of the month.

South Pier Titan Crane. The South Pier Titan Crane stood at the end of the South Pier. Three feathers were made and fitted to the brake drums, and pinion; two brass bearings were cased and a pin was made for the double gear lever. Three brake ropes were also supplied.

Harbour Trust

Iron Pier 110 Rft for the half width of the pier, timber work was renewed

B. Portable Cranes No 11. This 2 Ton Crane was thoroughly repaired.

Smiths Shop A ventilator was added to the Smiths shop.

19

I have the honour to be
Sir
Your most obedient servant
signd. Arthur Popham
Engineer, Harbour Trust Board

19

True Copy
C Pinhorn
Harbour Trust Board

HARBOUR TRUST BOARD
13 MAR 89
MADRAS

Go 469 W dy 16.2.89
658 W dy 5.3.89

PWC No 2473

MARINE DEPARTMENT.

From

THE CHAIRMAN,

HARBOUR TRUST BOARD,

Madras,

To

THE ~~Chief~~ SECRETARY TO GOVERNMENT,

~~*Marine*~~ *P. Works Department.*

Dated 13 } March 1889.
Received 15 }

SECRETARY TO GOVERNMENT MADRAS. 15 MAR 89

ENCLOSURES (3)

973 (Replies)

Subject.

Submitting for the information of Government Copy of Engineer's letter No. 1566 dy 5 March 1889 reporting Progress made on the Madras Harbour Works during January 1889.

Pub. Wks. 831 W

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 19 March 89

READ the following

From the Chairman, M. H.T. Bd No 973 dy 13.3.89.

831

To the Ch. M. H.T. Bd
" Marine Dept

831

The report will be forwarded to the Secretary of State for India

Pub. No 831 W dy 19 March 89

To the Rt. Hon. the S. of S. for I.

My Lord,

In continuation of our despatch No 9 dated 5th March 1889, we have the honour to forward, for your Lordship's information, the progress report of the

P. C. No. 831 W dy 19-3-89

The Madras Harbour Works for the months of January 1889, together with a plan showing the advance made during the months.

2. The usual statement of expenditure will follow.

15/3/89

Accepted with thanks
and forwarded to the
Secretary of State
for India in Council
26/3/89.

SC D
26/3/89.

D
5/7/3

Rec'd 15 III 89
R 16 III 89

831

9

22

764

Govt. of [illegible]

PUBLIC WORKS

Dalal

Read

End

G.O., 19 March 1889 No. 0314

Mr. H. Weeks

Ordered that the prospecting report of the Mr. Jacobs be forwarded to the Home Dept. -

Mr. H. Weeks

Primary prospecting report of the Mr. Jacobs

Jany 89

8093 Gold 3