(1) பக்கங்களின் எண்ணிக்கை 66

(2) புதுக்கித் திருப்பிய நாள் 5-5-89

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

P.W.D துறை

அரசாணை எண். 419 W
மு. கோப்புத் தாள் எண்.

அச்சகம்
பலவகை

நாள் : 8.2.1890 198 .

டிக்கவோ கண்டபடி கையாளவோ கூடாது

வண, 87-1—18,000—15-6-87.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following paper :—

From G. McWATTERS, Esq, M.A., C.S., Chairman, Harbour Trust Board, to the Chief Secretary to Government, Marine Department, dated Madras, 27th January 1890, No. 283.

I have the honor to submit, for the information of Government, the progress report upon the Madras Harbour Works for the quarter ending 31st December 1889.

2. The statement showing expenditure to that date compared with the sanctioned estimate will follow.

ENCLOSURE.

From A. L. POGSON, Esq., Engineer, Harbour Trust Board, to the Chairman, Harbour Trust Board, dated Madras, 23rd January 1890, No. 1264.

I have the honor to forward my report upon the progress made on these works during the quarter ending 31st December 1889, with a lithographed plan showing the state of the works on shore and at sea at the close of the year 1889. All new work done during the quarter is shown in red.

2. Through the early submission of this report I am obliged to leave out all mention of the expenditure on these works during the quarter, and the usual statement as compared with the sanctioned estimate will have to follow some weeks later, as it is impossible to close the accounts of such extensive works as these, with so limited a staff, under at least six weeks after date.

3. During the last quarter in each year no attempt is made at extending the piers on account of the uncertain state of the weather, consequently all attention is turned towards improvements to works on shore and the thorough repair of every piece of machinery too numerous to mention in detail. These repairs, though unnoticeable to the eye of the public, gives the whole staff far harder work than in a working or block-setting season, while the office establishment have an equal share in bringing up the accounts, stock returns, estimates, &c., for the season.

4. *Surveys.*—Several cross sections of the rubble bases and wavebreaker were taken during the quarter, all of which show, as far as the "restoration works" have gone to date, that a most careful watch has been kept upon the deposit of stone, and that the work is strictly in accordance with the required section of the rubble foundations.

5. *North Pier Works.*—At the north pier, as I have already stated, no advance was made to the superstructure, and the only work done during the quarter was to complete the wavebreaker protection, which was done by depositing 143 wavebreaker blocks in the random system by the Titan crane to a width of 28 feet from the superstructure at high water. This work was completed by the 13th of October, and on the evening of the 14th of October the Titan crane was travelled home to its shore station for general repairs and safety from the north-east monsoon cyclones.

6. By the close of October all the temporary block and Titan rails had been brought ashore, and the top blocks of each course secured in the usual manner with 24 specially made iron cramps, fixed in position with cement.

7. *South Pier Works.*—The work remaining to be done at the south pier to close operations for the season was similar to that of the north pier, but the protection to this superstructure only necessitated 64 blocks being added to the wavebreaker. I am pleased to report that 17

of this number were the special abutment blocks made for the north pier, which dispenses with fully half the number made for the work.

8. On the 14th of October both the Titan and wavebreaker cranes were brought on shore, and a week later all rails, &c., had been removed from the pier and 18 of the special iron cramps fixed in cement as at the north pier, securing all the top blocks set during the past working season, which closed all work at this arm in October.

9. *Pallávaram Quarries.*—As no rubble was required during the quarter, traffic at the quarries was not very brisk, but the outturn of the specially quarried stone for blockmaking was very satisfactory, and fully met the requirement of the works. Thirteen thousand and fifty-three and half tons of stone was delivered on the works in sixty trains, which were despatched from the quarries punctually in accordance with the South Indian Railway Company's time-tables, and I trust the constant complaints by this Company of delay to the trains through late loading, &c., is now a grievance of the past.

10. *Concrete Block-making.*—The work of making concrete blocks was carried on for 54 days in the quarter, viz., October 14 working days, November 23 days, and December 17 days only, on account of stoppages, &c., for rain and other causes given in the return of work for the quarter. During the three months, 630 blocks were made, showing an outturn of 11,599½ cubic yards of concrete against an outturn of 8,835 cubic yards in the corresponding quarter last year.

11. *Cost and progress of works.*—The following statement gives rough details of the work done this quarter as compared with the progress under the same headings in the corresponding quarter last year, but the total expenditure to 31st December 1889 cannot be arrived at till all the bills for materials, &c., and the returns have been brought up to date, consequently no remarks can be made upon the expenditure as compared with the estimated cost. Therefore the cost given below may require slight alteration when the complete statement of expenditure has been drawn out.

Item.	Particulars.	In quarter ending 31st December 1888.		In quarter ending 31st December 1889.	
		Quantity, &c.	Cost.	Quantity, &c.	Cost.
A	Length of superstructure built				
B	Number of wavebreakers placed in position.	31	Rs. A. P. 20,019 4 7	*Nil.*	Rs. A. P. 15,146 12 8
C	Cubic yards of concrete made	208	46,974 6 5	* 207	† 47,361 2 4
D	Number of concrete blocks made	8,834[29]/[27]		11,599½	
E	Tons of chips received from quarries for blockmaking.	527	at 11 5 4½ 1,0[illegible],142 6 4	680	at 12 1 4 63,287 6 8
F	Tons of rubble received from quarries for foundations.	12,450 **12,706**	19,729 13 0	12,957½ **13,053½**	21,204 10 1
		195¼ 245½ N.P.S. bank.	312 11 8	*Nil.*	*Nil.*

The thick black figures denote the total quantity of chips received from the quarries and the ordinary thin black the quantity used for blockmaking.

* Wavebreaker blocks 190
Special abutment blocks 17
Total .. 207

† Excluding Rs. 33,015 adjusted in October 1889, being the value of 155 blocks placed in September 1889.

12. *Stores from England.*—The following stores were received on the works from the India Office during the quarter ending 31st December 1889, viz.:—

In October.

	Tons.	Cwt.	Qrs.	Lb.
By the S.S. *Golconda* with 4,674 casks of Portland cement containing ... ... Also 2 casks, containing 120 steel stone-breaking hammers of 14 and 16 lb. each. Two dozen fitters' hammers, fifteen shovels, one ton of French nails, twenty drums of white paint weighing 10 cwts., and 112 ingots of Bull's patent metal weighing 10 cwts. were also received. 1,600 feet of special copper survey sounding lines, one ton of 7-inch spike nails, and thirty-nine ingots of Babbit's patent white metal weighing ... ... was also landed.	834	12	3	12
	0	10	0	2

In November.

	Tons.	Cwt.	Qrs.	Lb.
By the S.S. *Aurora* 500 tons of steam coal.				
By the S.S. *India* 1,020 casks of Portland cement containing ... ... and one case containing speaking apparatus for divers.	182	2	3	12
By the S.S. *Manora* 980 casks of Portland cement containing ... ... and one case of steam pressure gauges and two cases of diving gear, &c.	178	11	1	20
By the S.S. *Clan Grant* with 30 bundles of steel fish-plates for special 50-lb. rails.				
By the S.S. *Goorkha* 1,750 casks of Portland cement containing ... ... and one case containing 6 dozen augers and 10 dozen carpenter's chisels.	312	10	0	0
By the S.S. *Clan McArthur* with 7 cases containing fish-bolts for 75 and 50 lb. rails and dog-spikes for 75 and 50 lb. rails also.				

In December.

By the S.S. *Chyebassa* 1,045 casks of Portland cement containing ... ... and three cases containing safety valve spring balances and 33 dozen assorted files.	186	15	0	0
By the S.S. *Thorndale* with 100 steel rails 75 lb. per yard each 24 feet in length.				
By the S.S. *Rewa* 1,604 casks of Portland cement containing ... ... and nine coils of Manilla rope, also one set of tracings of tank locomotive engine.	286	10	0	0

RETURN OF WORK FOR THE QUARTER ENDING 31ST DECEMBER 1889.

Railway Lines.—On the north pier 854 running feet temporary broad-gauge lines and 84 running feet permanent Titan road lines were laid. On the south pier 777 running feet temporary broad-gauge lines were laid and 228 running feet broad-gauge lines were taken up and relaid. 800 running feet of the sand line were taken up and relaid further east and the line was extended 646 running feet. 2,616 running feet new steel rails were used in extensions and renewals.

Quarries.—Sixty trains were worked during the quarter which brought the following stone from the Pallávaram quarries, viz.:—

Rubble.—None received since 30th September 1889.

		Tons.
Chips.— Total quantity received up to 31st December 1889 ...		167,036¾
Do. up to 30th September „ ...		153,983¼
Received in the quarter ...		13,053½

Ballast.—None received.

North Pier Surf Bank.—Ninety-five and a quarter tons, composed of pieces of four abutment blocks and an old block recovered from the old walls and blasted by dynamite, deposited to make up the bank and protect the railway lines.

North Pier Rubble Base.—Nothing done since 30th September 1889.

North Pier Superstructure.—Nothing done since 31st August 1889.

North Pier Supplementary Works.—Blocks deposited in wavebreaker.

—	Number of blocks.	Contents, cubic yards.	Distance on pier.	Average breadth from face of pier.
Up to 31st December 1889	2,451[illegible]/[illegible] 2,308½	44,444[illegible]/[illegible] 41,870½	..	..
Up to 30th September 1889			..	..
In the quarter ..	143	2,574	2,220 to 2,718	28 feet

of this number were the special abutment blocks made for the north pier, which dispenses with fully half the number made for the work.

8. On the 14th of October both the Titan and wavebreaker cranes were brought on shore, and a week later all rails, &c., had been removed from the pier and 18 of the special iron cramps fixed in cement as at the north pier, securing all the top blocks set during the past working season, which closed all work at this arm in October.

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11. *Cost and progress of works.*—The following statement gives rough details of the work done this quarter as compared with the progress under the same headings in the corresponding quarter last year, but the total expenditure to 31st December 1889 cannot be arrived at till all the bills for materials, &c., and the returns have been brought up to date, consequently no remarks can be made upon the expenditure as compared with the estimated cost. Therefore the cost given below may require slight alteration when the complete statement of expenditure has been drawn out.

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Up to 31st December 1889	2,451⁷⁄₁₂ 2,308½	44,444⁵⁄₁₂ 41,870½	..	..
Up to 30th September 1889	143	2,574	2,220 to 2,718	28 feet
In the quarter ..				

North Pier Capping.—Sixteen cubic yards capping done.
North Pier Cramps.—Twenty-four cramps were fixed.
South Pier Surf Bank.—Nothing done since 30th April 1888.
South Pier Rubble Base.—Nothing done since 30th September 1889.
South Pier Superstructure.—Nothing done since 31st August 1889.

South Pier Supplementary Works.—Blocks deposited in wavebreaker.

——	Number of blocks.	Contents, cubic yards.	Distance on pier.	Average breadth from face of pier.
Up to 31st December 1889	1,861	32,380$\frac{11}{27}$	..	..
Up to 30th September 1889	1,797	31,333$\frac{5}{16}$	..	..
In the quarter ..	* 64	1,047$\frac{1}{2}$	2,790 to 3,319	29 to 40 feet.

* Special abutment blocks 17
Wavebreaker blocks 47

South Pier Capping.—Twenty-five and half cubic yards capping done.
South Pier Cramps.—Eighteen cramps were fixed.
South Pier Apron Blocks.—Nothing done since 31st August 1889.
Protective Works.—Cross sections and levels were taken of the revetment north of the harbour with a view to forming an estimate of cost of repairs necessary to prevent further encroachment by the sea.

Concrete Blocks.

Description of blocks.	Made up to 30th September 1889.	Made in the quarter.	Made up to 31st December 1889.	Placed in works		In hand.
				Up to 30th September 1889.	Up to 31st December 1889.	
Old blocks	806	..	806	806	806	..
Wavebreaker blocks	3,798	253	4,051	3,286	3,476	575
Superstructure.						
North pier bottom blocks	227	..	227	223	223	4
Do. middle do.	750	..	750	743	743	7
Do. top do.	248	..	248	244	244	4
South pier bottom do.	499	84	583	412	412	171
Do. middle do.	1,415	258	1,673	1,171	1,171	502
Do. top do.	557	85	642	408	408	234
Special	71	..	71	71	71	..
Counterbalance	1	..	1	..	..	1
Special abutment	46	..	46	..	21	25
Test weight blocks	4	..	4	..	..	4

Six hundred and eighty blocks equal to 11,599$\frac{1}{2}$ cubic yards of concrete were made in the quarter.

There was no block-making on 3rd October on account of Ayuda Pooja, from 13th to 27th October on account of the transfer of the quarry contract to M. C. Ragava Charry, when the chips trains ceased to run, on the 9th November on account of the Prince of Wales' birthday, on 18th November on account of rain, on 19th November on account of Prince Victor's arrival, on the 2nd December on account of rain, on 16th December on account of Prince Victor's departure, on 19th December on account of rain, and from 25th to 31st December on account of the Christmas holidays.

Miscellaneous.—One hundred and fifty-four wavebreaker and 128 superstructure blocks were transferred from north to south block grounds. The pontoon was taken to pieces on the 11th October and was brought ashore on the 12th October. The north and south pier Titans and wavebreaker crane were brought to land on the 14th October and secured. Two 27-ton and two 10-ton blocks were removed by the pontoon from site of new work at the north pier and were placed in position to be removed by the north pier Titan.

Tools and Plant.

Stationary Engine.—A new float was made for the superheater, the water-valve was repaired and new joints made, and the over-flow pipe, superheater and superheater plates were tarred. A new plug was fitted to the waste-water cock. The brass bearings of No. 2 donkey pump were closed, No. 3 boiler was thoroughly scaled. The clack-box valve of No. 4 boiler was repaired. Sixty-six boiler fire-bars were straightened. The two water tanks on the mixing platform were tarred.

Stone-crusher.—A new shoot was made, and two shoots, four crowbars and forty-four hooks were repaired.
Stone-crusher No. 1—Was fitted with a new jaw, new set-plates and new side wedges.
Stone-crusher No. 2—Was fitted with new side wedges, set-plates and pump-rod hooks.
Stone-crusher No. 3—Was fitted with new set-plates and side wedges, and the covering over the belts was repaired.
Stone-crusher No. 4—Was fitted with a new side wedge and the covering over the belts was repaired.
Stone-crusher No. 5—Was fitted with two new jaws, new side wedges, an eccentric shaft, two new keys for fly-wheels, and a new key for coupling, and the bearings were refitted.
Elevators.—Three wheels were cast for boxes and nine boxes, were repaired.
Elevator No. 3—Was fitted with a new brake.
Concrete-mixers.—Eight hammers were repaired.
Concrete-mixer No. 1.—The striking gear was repaired and two hammers were supplied.
Concrete-mixer No. 2.—Two hammers were supplied.
Concrete-mixer No. 3—Was fitted with a new brake and two new door-catches.
Concrete-mixers Nos. 5 *and* 6—Were fitted with new door-catches.
Concrete-mixers Nos. 7 *and* 8.—The door-catches were eased.
Mixing platform.—No. 1 crane: the spur-wheel was fitted with a new tooth and the crane was supplied with a new half-inch chain. No. 2 crane was supplied with a new half-inch chain.
Goliath crane No. 1.—A new top sill, a new strut, a new nut for valve-spindle with a new packing gland, a pin for eccentric rod and six new studs for steam-chest cover were made and fitted. A new key to a bottom travelling wheel and a new fire-bar were fitted. The slide-valves and ports were faced up and slide-valve reset for small engine. The brass bearings of large engine were closed. The lines on the running beams were relaid with new packing. An old crab wheel was chipped. Two crab wheels were removed, turned and set to gauge. The crane was painted.
Goliath crane No. 2—Was fitted with a new hydraulic piston leather.
Goliath crane No. 3—Was fitted with a new hydraulic leather and the crane painted.
Light traveller No. 3.—A new plate was fitted to the upright.
Light traveller No. 4.—A new large spur-wheel was fitted to the crab winch.
Hydraulic jack No. 2—Was thoroughly repaired.
North Pier Titan.—Three joints were made for boiler-stays and the boiler-cocks were ground. A new waste-water pipe to engine, a new lubricator-pipe to a bottom travelling wheel, a new travelling wheel to crab, a new clack-box cover and two new feathers to the sheaves were fitted. A hole was drilled and a new stud fitted to the barrel for fixing the chain. One $\frac{3}{4}$-inch and one $\frac{7}{8}$-inch spanners were supplied, the traverser was repaired and the crane painted.
South Pier Titan.—The boiler-stay joints were remade and the boiler-cocks reground.
Pontoon.—A stanchion was made for the awning and the pontoon generally repaired.
Miscellaneous.—Two monkey spanners, twelve pairs of screw-cutting dies and two screw-jacks were repaired; fifteen drills were made for the drilling machine and the frame was repaired. New valves fitted and plungers lined up of hand pump for fitting shop. A portable forge was thoroughly renovated, a portable forge and two sledge-hammers were repaired, and six set of swage tools were made for smiths' shop. Two new brasses were made and fitted to cramps for carpenters' shop. A crossing, two tongue-rails and twelve chair-bolts were made, a point and crossing were repaired. A new set-screw was fitted to a jim-crow, and twenty-four Titan road-rails were fitted with plates for railway lines. Six joggle-boxes and ironwork for eight lewis wedges were made, and twenty-two 1$\frac{1}{4}$" bolts were repaired for block-frames. Four thimbles were made for slings for mixing platform. Four eye-bolts were made for lewis pins. A new iron sand-skip was made. Two slings for mooring boats and twenty $\frac{3}{4}$" copper rivets for boat *Violet* were made and the keel and rudder of the boat *Violet* were repaired. Two concrete skips were made and eight were repaired. Three crow-bars were repaired for the block ground. The running shed was supplied with three new canvas pipes. A rudder, fifty-four spike nails, six $\frac{1}{4}$" fenders and a new keel was made for a diver's boat, three pairs of soles were made for divers' boots, four $\frac{3}{4}$" and twelve $\frac{1}{2}$" nuts ironwork of box, a new nut for waste-water pipe and two pair of brass hinges were made, the piston-rod was straightened and two cocks ground of air-pump for divers. A 1" and a 1$\frac{1}{4}$" link and two rings were made for sling chains. A material truck and a tube were repaired. Two new brass sheaves were made and the ironwork of the mast for drying divers' air-pipes was altered. Six shafts were jumped for skip trucks. An iron tipping-box was made for protecting the base with concrete. The wooden fencing round the foundation stone was painted. A bar was fitted and a lock repaired to the door of the Accountant's room and a weighing machine was transferred from the Harbour Trust stores to the coal godown.
Locomotive engine No. 1—Was thoroughly over-hauled and repaired. A new buckle for right-hand slide-valve, two new slide-valve spindles, two new packing glands and neck-rings and nuts, two new neck-rings for packing glands, four new slide blocks, a new brake screw and nut four new spring and piston pins were made and fitted. Slide-valves and ports, slide-bars and all pipe joints were faced up. Two piston-rods were turned. The right-hand dummy gland was bored out. Two packing glands were bushed for pistons. Four new piston rings, two new quadrant links, boss levers for four axle-boxes and keep and four new brass bearings,

new catch and bracket pin for reversing lever, new gauze-wire for spark-catcher of chimney, two new logging-plates for cylinder, new connecting and coupling rods, a new seating for lubricator pipe for steam-chest, a new plug for front cylinder cover, a new nut for blower-pipe, a new boiler mountings and new waste-water cocks were fitted. Quadrant links and reversing lever rack were fitted out. Straps for coupling-rods, sand-boxes and eccentric straps were refitted. The slide bars and valves were set. New ferrules were fixed to the spring balance which was set to 120 lb. pressure per square inch.

Locomotive engine No. 2.—The brass bearings of connecting and coupling rods were closed. The joints of the blow-through cock of water-gauge column were remade and the waste-water cock gearing was reset. A tube was plugged, the copper stays were caulked and a new stay was fitted to the fire-box and a new steam-gauge was fitted.

Locomotive engine No. 3.—The blow-through cock of water-gauge column was fitted, the right and left hand steam-chest cover joints were remade and the copper stays of fire-box were caulked.

Block trucks, Nos. 4 *and* 9—Were each fitted with a new coupling chain.

Block truck No. 16—Was fitted with a new key.

Block truck No. 17—Was dismantled.

Block truck No. 18—Was rebuilt and painted.

Sand wagon No. 3—Was fitted with a new draw-hook

Sand wagon No. 7—Was fitted with a new pedestal.

Sand wagon No. 9—Was fitted with a new pedestal and had the old pedestals lined up.

Sand wagon No. 10—Was fitted with a new draw-hook.

Sand wagon No. 14—Was fitted with a new pedestal and was generally repaired.

Sand wagon No. 17—Was fitted with a pair of new wheels.

A new wagon was under construction.

Concrete skip-trucks.—Six pair of new wheels were fitted to shafts.

Concrete skip-truck No. 1—Was fitted with new pedestals.

Concrete skip-truck No. 2—Was fitted with new pedestals and a pair of new wheels.

Concrete skip-trucks Nos. 3, 4, 5, 8 *and* 9—Were fitted with new pedestals.

Two new trucks were built and painted.

Iron Pier.—One hundred and twenty running feet for the half-width of the timber work was renewed and an 8" and two 6" pile caps were fitted. At the T end two beams and four pile caps were fitted. A cabin was repaired and two latrines built for the pier employés. A tally clerk's cabin was built and furnished with a desk and two benches. A gangway and davit were fixed and provided with a hand-rail and door. A lamp-post was fixed. The old dismantled timber and iron girders from the iron pier were removed to the ground at the south pier.

The tide-gauge was repaired and the water-pipe fitted with a new quarter bend.

Truck No. 27—Was thoroughly repaired.

Truck No. 33—Was thoroughly repaired.

A Portable crane No. 2—Was fitted with a new single gear pinion.

B Portable crane No. 2—Was thoroughly repaired and fitted with a new truck.

C Portable crane No. 6—Was repaired.

North Goods-shed (tiled).—A partition was fitted for the Commissariat Department.

Market buildings at Cassimode—Were thoroughly repaired.

Harbour Trust Office.—The windows were repaired and twelve letter-trays supplied. The clerk's tiffin-room was repaired.

A man-hole cover was made for the turn-table leading into the Madras Railway Company's Stores. The harbour enclosure fence was repaired and two boxes were made for measuring stone and sand for concrete works.

Transferred to the Public Works Department.

FORT ST. GEORGE,
29th January 1890.

(Signed) J. GROSE,
Acting Chief Secretary.

ORDER—dated 8th February 1890, No. 419 W., Public Works.

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

(Here enter No. $\frac{3}{419\ W.}$, dated 8th February 1890.)

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.

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

Exd. J. Moses.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1890) Madras.

PUBLIC WORKS.

Dated February, 8th.

Recd.

Encl.

G.O., 8th Feb. 1890, No. 419 W.

FEBRUARY.

Progress Report, Madras Harbour Works

Ordered that the — for the quarter ending 31st December 1889, be forwarded to the Secretary of State for India.

8th February 1890, No. 419 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. 341 W. dated 3rd February 1890, we have the honor to forward a copy of our Proceedings, No. 419 dated 8th February 1890, embodying a report of the progress of the Madras Harbour Works for the quarter ending 31st December 1889.

2. A plan showing the state of the works at the end of the quarter is also forwarded for information. The usual statement comparing the expenditure with the sanctioned estimate 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.

Fort St. George,
8th February 1890.

Exd. J. Moses.

GOVT. OF MADRAS.

PUBLIC WORKS DEPARTMENT.

(Copy.)

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

No. $\frac{3}{419\ W.}$ dated 8th Feb. 1890.

Forwarding the Progress Report of the Madras Harbour Works for the quarter ending 31st December 1889.

C. No. 77

Harbour Trust Board Office.

MADRAS, 27th January 1890

No. 283

From Geo: McWatters Esquire

Chairman, Harbour Trust Board,

MADRAS.

To

The Honorable J. Grose C. S.

Ag Chief Secretary to Government,

Marine Department.

Fort Saint George.

Sir

I have the honor to submit for the information of Government the progress report upon the Madras Harbour Works for the quarter ending 31st December 1889.

2. The Statement showing expenditure to that date Compared with the sanctioned estimate will follow.

I have the honor to be

Sir

Your most Obedient Servant.

Geo: McWatters

Chairman

Harbour Trust Board

P.W.C. No. 942.
Le. No. 77

MARINE DEPARTMENT.

From

THE CHAIRMAN,
HARBOUR TRUST BOARD,
MADRAS.

To

THE CHIEF SECRETARY TO GOVERNMENT,
Marine Department.

DATED 27
RECEIVED 27 } January 1890
Read 30 " "
ENCLOSURE S.C. 27 on 2 (including enclosure)
No. 283

SUBJECT.

Submitting for the information of Government Progress Report upon the Madras Harbour Works for the Quarter ending 31st December 89

Transferred.

26

D/29 Jany 90.

Transferred to the Public Works Department.

J Gwyn
Actg Chief Secretary.

No. 19 dy 26-12-89
3660 w
3660 w - 26-12-89

No. 12624 Engineer 2 No 9

From

THE ENGINEER,
HARBOUR TRUST BOARD,
MADRAS.

R. 24 JAN. 90

HARBOUR TRUST BOARD MADRAS 24 JAN. 90 Register No. 485

To

The Chairman
Harbour Trust Board
Madras

Madras, 23rd Jany 1890.

Enclosures

1 Plan (in triplicate)
1 Statement of Expenditure (in triplicate)

Sir,

I have the honor to forward my report upon the progress made on these Works during the Quarter ending 31st December 1889, with a lithographed plan showing the state of the Works on shore and at sea, at the close of the year 1889. All new Work done during the Quarter is shown in red.

2. Through the early submission of this report I am obliged to leave out all mention of the Expenditure on these Works during the Quarter, and the usual statement as compared with the Sanctioned Estimate will have to follow some weeks later as it is impossible to close the accounts of such extensive Works as these, — with so limited a staff, under at least 6 weeks after date.

3. During the last Quarter in each year no attempt is made at extending the piers

on

3288
10/

on account of the uncertain State of the weather, consequently all attention is turned towards improvements to Works on shore and the through repairs of every piece of machinery, too numerous to mention in detail. These repairs though unnoticeable to the eye of the Public, gives the whole staff far harder Work than in a Working or Blocksetting season, while the Office Establishment have an equal share in bringing up the accounts, stock returns, Estimates &c for the season.

Surveys. 4. Several cross sections of the rubble bases, and Wavebreaker; were taken during the Quarter, all of which show, as far as the restoration Works have gone to date, that a most careful watch has been kept upon the deposit of stone, and that the Work is strictly in accordance with the required section of the rubble foundations.

North Pier Works 5. At the North Pier, as I have already stated, no advance was made to the Superstructure and the only work done during the Quarter, was to complete the Wavebreaker protection - which was done by depositing 143 Wavebreaker blocks in the random system; by the Titan Crane to a width of 28 feet from

the

the Superstructure at High Water. This work was completed by the 13th of October and on the evening of the 14th of October, the Titan Crane was travelled home to its shore station, for general repairs, and safety from the North East monsoon, Cyclones.

6. By the close of October all the temporary Block, and Titan pails, had been brought ashore, and the top blocks of each course secured in the usual manner with 24 specially made Iron cramps, fixed in position with cement

South Pier Works 4. The work remaining to be done at the South Pier to close operations for the season, was similar to that of the North Pier, but the protection to this Superstructure only necessitated 64 blocks being added to the Wavebreaker. I am pleased to report that 17 of this number were the special Abutment blocks made for the North Pier, which dispenses with fully half the number made for the Work.

5. On the 14th of October both the Titan and Wavebreaker cranes were brought on shore, and a week later all

rails

5-12
12

rails &c had been removed from the Pier and 18 of the special Iron Cramps fixed in cement, as at the North Pier; securing all the top blocks set during the past working season; which closed work at this Arm in October.

Pallavaram Quarries. 9. As no rubble was required during the Quarter, traffic at the Quarries was not very brisk, but the outturn of the specially Quarried Stone for Blockmaking was very satisfactory, and fully met the requirement of the works. 16,053½ Tons of stone, was delivered on the Works in sixty trains, which were despatched from the Quarries punctually in accordance with the South Indian Railway Company's Timetables, and I trust the constant complaints by this Company, of delay to the trains through late loading &c, is now a grievance of the past.

Concrete Blockmaking. 10. The work of making Concrete Blocks was carried on for 54 days in the quarter viz October 14 working days, November 25 days, and December 17 days only; on account of stoppages &c for rain and other causes given in

6 13

in the return of Work for the Quarter. During the three months, 680 blocks were made, showing an outturn of 11599½ Cubic yards of Concrete against an outturn of 8835 Cubic yards in the corresponding quarter, last year.

Cost & progress of Works. — The following statement, gives rough details of the Work done this Quarter as compared with the progress under the same headings in the corresponding quarter last year, but the total expenditure to 31st. December '89 cannot be arrived at, till all the bills for materials &c. and the returns have been brought up to date, consequently no remarks can be made upon the expenditure as compared with the Estimated cost. Therefore the cost given below may require slight alteration when the complete Statement of Expenditure has been drawn out.

Item	Particulars	In quarter ending 31st December '88 — Quantity &c.	In quarter ending 31st December '88 — Cost	In quarter ending 31st December '89 — Quantity &c.	In quarter ending 31st December '89 — Cost	Remarks
A	Length of Superstructure built	31	20,019 4 7	Nil	15146 12 8	
B	Number of Wavebreakers placed in position	208	45,974 6 5	* 207	†47361 2 4	
C	Cubic yards of Concrete made	8834 26/27	@11/5/43 100142 6 4	11.599½ 680	@12 1 4 63287 6 8	
D	Number of Concrete blocks made	527				
E	Tons of Chips received from Quarries	12450 12746	19729 13 11	12957½ 13653½	21204 10 1	
F	do. Rubble do. for blockmaking for foundations	195½ 245½	312 11 8	Nil	Nil	

The red figures denote the total quantity of chips received from the quarries and the black the quantity used for blockmaking

190 Wavebreaker blocks
17 Special Abutment blocks
* 207

† Excluding Rs 33,015 adjusted in October 1889 being the value of 155 Blocks placed in September '89

7/20
14/

Stores from England.

12. The following Stores were received on the Works, from the India Office; during the Quarter ending 31st December 1889 viz

In October

By the S.S "Golconda" - With 4694 casks of Portland Cement containing Tons cwt qrs lbs 834- 12 - 3 - 12 - also 2 casks, containing 120 steel stone breaking hammers of 14 and 16 lb each.
2 Dozen Fitters hammers, fifteen shovels one ton of French nails, twenty drums of White Paint weighing 10 cwts and 112 Ingots of Bulls' Patent metal weighing 10 cwts were also received - 1600 feet of special copper Survey sounding lines, One ton of 7" Spike nails, and thirty-nine Ingots of Babbits Patent white metal weighing Cwts qrs lbs 10 - 0 - 2 was also landed.

In November

By the S.S. "Aurora" - 500 Tons of Steam Coal.

" " " "India" - 1020 casks of Portland Cement Tons cwt qrs lbs containing 182 - 2 - 3 - 12 and one case containing Speaking Apparatus for Divers.

15/

By the S.S. "Manora" 980 casks of Portland Cement containing - 178 - 11 - 1-20 Tons cwt qrs lb and one case of Steam Pressure Gauges and two cases of Diving Gear &c -

" " " "Clan Grant" - With 30 bundles of Steel fish plates for special 50 lbs rails.

" " " "Goorkha" - 1750 casks of Portland Cement containing 312 - 10 - 0 - 0 - Tons cwt qrs lb and one case containing 6 dozen Augers and 10 Dozen Carpenters Chissels.

" " " "Clan McArthur" - With 7 cases containing Fish bolts for 75 and 50 lbs rails and Dogespikes for 75 and 50 lb. rails also

In December

By the S.S. "Chyebassa" - 1045 casks of Portland Cement containing 186 - 15 - 0 - 0 Tons cwt qrs lb and three cases containing Safety Valve spring balances and 33 Dozen assorted files

" " " "Horridale" - With 100 Steel rails 75 lbs per yard 24 feet in length.

" " " "Rewa" - 1604 casks of Portland Cement containing - 286 - 10 - 0 - 0 Tons cwt qrs lb and nine coils of Manilla Rope also one set of Spacings of Tank Loco Engine -

Return of Work

9 23 16

Return of work for the quarter ending 31st December 1839.

Railway Lines

On the North Pier, 354 Rq: feet temporary Broad Gauge lines and 34 Rq: feet permanent Tilar road lines were laid. On the South Pier 777 Rq: feet temporary Broad Gauge lines were laid and 333 Rq: ft. Broad Guage lines were taken up and relaid 300 Rq: feet of the same line were taken up and relaid further east and the line was extended 646 Rq: feet. 2616 Rq: feet new steel rails were used in extensions and renewals.

Quarries

Sixty trains were worked during the quarter which brought the following stone from the Pallavaram Quarries viz:

Rubble.

None received since 30th Sept: 1839.

Chips

Total quantity received up to 31st Dec: 1839

Tons.
167036 3/4

—— Do —— Do —— 30 September 1839 — 133933 1/4

Received in the quarter 13053 2/3

Ballast — None received

1939

North Pier Surf. Bank — 95¼ tons, composed of pieces of four abutment blocks, and 17 an old block recovered from the old Walls and blasted by dynamite, deposited to make up the bank and protect the Railway lines

North Pier Rubble Base. — Nothing done since 30th September 1939.

North Pier Superstructure — ——— Do. ——— Do. ——— 31 August 1939.

North Pier Supplementary Works. — Blocks deposited in Wave breaker

	No. of Blocks	Contents Cubic Yds	Distance on Pier	average breadth from face of Pier
Up to 31 Dec. /39.	2345 7/12	1144 1/2 5/12	"	"
do 31 Sept /39	2308 7/12	1118 7/10 5/10	"	"
In the Quarter	143	25 7/4	2220 to 2290	28 ft

North Pier Capping — 16 Cubic Yds Capping done

North Pier Cramps — 24 Cramps were fixed

South Pier Surf Board — Nothing done since 30 April /39

South Pier Rubble base — ——— do ——— do ——— 30 Sept 1939

South Pier Superstructure. — ——— do ——— do ——— 31 August /39

South Pier Supplementary Works.

Blocks deposited in Wave breaker

	No. of Blocks.	contents Cubic Yds	Distance on Pier	average breadth from face of Pier
Up to 31 Dec. /39.	1861	3038 27/216	"	"
do. 31 Sept /39.	1797	3133 25/216	"	"
In the quarter	* 64	104 7 1/3	2790 to 3319	29 to 40 ft

* 17 Conical abutment Blocks
47 Wave breaker Blocks

South Pier Capping. 25½ Cub. Yds capping done.

South Pier Cramps 18 Cramps were fixed

South Pier Apron blocks. Nothing done since 31 Augt/39

Protective Works Cross sections and levels were taken of the revetment North of the Harbour with a view to forming an Estimate of cost of repairs necessary to prevent further encroachment by the sea.

Concrete Blocks

Description of Blocks	Made up to 30 Sept 1939	Made in the Quarter	Made up to 31 Dec/39	Placed in Works: Up to 30 Sept 1939	Placed in Works: Up to 31 Dec 1939	In Yard	Remarks
Old blocks	306	"	306	306	306	"	
Wavebreaker blocks	3793	253	4046	3536	3476	570	
Superstructure							
North Pier bottom blocks	227	-	227	223	223	4	
Do Middle "	750	"	750	743	743	7	
Do Top "	248	"	248	244	244	4	
South Pier bottom "	499	24	523	410	412	111	
do Middle "	1415	253	1673	1171	1171	502	
do Top "	337	36	642	403	403	234	
Special	71	"	71	71	71	"	
Counterbalance	1	"	1	"	"	1	
Special Abutment	46	-	46	"	21	25	
Test weight blocks	4	-	4	"	"	4	

600 blocks equal to 11599⅓ Cubic yards of concrete were made in the quarter.

There was no blockmaking on 3rd October on account of Ayuda Pooja from 13th to 27th October on account of the transfer of the quarry contract to M. b. Ragava Thavy when the chips trains ceased to run, on the 9th November on account of the Prince of Wales birthday on 13th November on account of rain, on 19 November on account of Prince Victor's arrival, on the 2nd December on account of rain, on 16th December on account of Prince Victor's departure on 19 December on account of rain and from 25th to 31st December on account of the Xmas holidays.

Miscellaneous

154 Wave Breaker and 129 Superstructure blocks were transferred from North to South block grounds. The pontoon was taken to pieces on the 11th October and was brought ashore on the 12th October. The North and South

Topsaker repa-
to land on the 14th October and
secured. Two 27 lbs 20/ and two
10 ton blocks were removed by
the pontoon from site of new
work at the North Pier and
were placed in position to be
removed by the North Pier
Titan.

Tools and Plant.

Stationary Engine- A new float was made for the Superheater the water valve was repaired and new joints made and the over-flow pipe. Superheater and Superheater plates were tarred. A new plug was filled to the waste water cock. The brass bearings of N° 2 donkey pumps were closed N° 3 boiler was thoroughly scaled. The clack box valve of N° 4 boiler was repaired. Sixty six boiler fire bars were straightened. The two water tanks on the

mixing

Stone Crusher. A new set
and two shoots, four crowbars and
forty four hooks were repaired.

Do. No 1. Was filled with a new jaw
new set plates and new side
wedges.

Do. No 3. Was filled with new side
wedges set plates and pumps
rod hooks. The old moveable
jaw was replaced by a second
hand one and the bands were
shrunk.

Do. No 3. Was filled with new set-
plates and side wedges and
the covering over the belts
was repaired.

Do. No 4. Was filled with a new
side wedge and the covering
over the belts was repaired.

Do. No 5. Was filled with two new
jaws, new side wedges, an
eccentric shaft, two new Keys
for fly wheels, and a new Key
for coupling and the bearings
were refilled.

boxes — d nine r——
repaired

—D°—N°3. Was filled with a new 77
brake.

Concrete Mixers. Eight hammers were
repaired

—D°—N°1 The striking gear was re-
paired and two hammers
were supplied.

—D°—N°2. Two hammers were supplied

—D°—N°3. Was filled with a new brake
and two new door catches.

—D°—N°5.4.6. Were filled with new door
catches.

—D°—N°7.8.9. The door catches were
eased.

Mixing Platform. N°1 Crane, the spur
wheel was filled with a new
tooth and the crane was sup-
plied with a new 1/2" chain
N° 2 Crane was supplied
with a new 1/2" chain.

Goliath Crane A new top sill.
N°1

a

ing gland a pin for eccentric rod and six new studs for steam chest cover were made and fitted. A new key to a bottom travelling wheel and a new fire bar were fitted. The slide valves and ports were faced up and slide valve reset for small engine. The brass bearings of large engine were closed. The lines on the running beams were relaid with new packing. The old coal wheel was chipped. Two coal wheels were removed, turned and set to gauge. The crane was painted

Goliath Crane N° 2. Was fitted with a new hydraulic piston leather

Do. N° 3. Was fitted with a new hydraulic leather and the crane painted

Light Traveller N° 3. A new plate was fitted to the upright.

wheel was fitted to the c—
winch

Hydraulic Jacks. No 2 was thoroughly repaired.

North Pier Titan Three joints were made for boiler stays and the boiler cocks were ground. A new waste water pipe to engine, a new lubricator pipe to a bottom travelling wheel, a new travelling wheel to crab, a new block box cover and two new feather to the streaves were fitted. A hole was drilled and a new stud fitted to the bar for fixing the chain. One 5/8" and one 3/4" spanners were supplied, the traverser was repaired and the crane painted.

South Pier Titan. The boiler stay joints were remade and the boiler cocks regroun

for the am[illegible]
generally repaired.

Miscellaneous. Two monkey s/hammers $25
Twelve pairs of screw cutting dies and two screw jacks were repaired fifteen drills were made for the drilling Machine and the frame was repaired; New valves filled and plungers lined up of hand pumps for filling shops. A portable forge was thoroughly renovated a portable forge and two sledge hammers were repaired and six set of swa tools were made for Smith shops. Two new brasses were made and filled in cramps for carpenters shops- A crossing, two torque rails and twelve chair bolts were made, a point and crossing were repaired

and twenty four yards road rails were
fitted with plates for railway lines - Six
Joggles bosses and iron work for Eight
Lewis pedges were made, and twenty two
1¼" bolts were repaired for block frames. Four
thimbles were made for slings for mixing
platform - Four Jap bolts were made for
Lewis pins - A new iron band ship was made
Two slings for mooring boats and twenty 8/8"
copper rivets for boat "Violet" were made and
the keel and rudder of the boat "Violet" were
repaired - Two concrete skips were made and
Eight were repaired - Three Crow bars were
repaired for the Block Ground - The running
Shed was supplied with three new canvas
pipes - A rudder, fifty four spike nails,
six ¼" fenders and a new keel was made for
a divers boat, three pairs of soles were made
for divers boots, four 3/4" and twelve 3/8" nuts
iron work of box, a new nut for waste water pipe
and two pair of brass hinges were made, the
piston rod was straightened and two cocks gland
of air pump for Divers - A 1" and a 1¼" link and two
rings were made for sling chains - A material
truck and a tube were repaired - Two new
brass sheaves were made and the iron work
of the mast for drying divers' air pipes was alter
Six shafts were jumped for skip trucks. An iron
lifting box was made for protecting the base with Cone
The wooden fencing round the foundation stone was f

A

door of the Accountants room as
machine was transferred from the Harbour
Trust Stores to the Coal Godown. 27/

Steam Engine No 1 was thoroughly overhauled and repaired
A new buckle for right hand slide valve, two
new slide valve spindles, two new packing
glands and neck rings and nuts, two new
neck rings for packing glands, four new
slide blocks, a new brake screw and nut
four new springs and piston rings were made
and fitted - Slide valves, and ports, slide bars
and all pipe joints were faced up - Two piston
rods were turned - The right hand dummy
gland was bored out - Two packing glands
were bushed for piston rods - Four new piston
rings two new quadrant links, boss levers
for four agle boxes and Mush and four new
brass bearings, a new catch and bracket pin
for reversing lever, new gauge bore for
spark catcher of Chimney two new
lagging plates for Cylinder, new connecting
and Coupling rods, a new seating for
lubricator pipe for steam chest, a new plug
for front cylinder cover a new nut for
blower pipe, a new boiler mountings
and new Water cocks were fitted -
Quadrant links and reversing lever

Each

rack pears filled out. Straps for coupling rods, sand boxes and eccentric straps were refitted - The slide bars and valves were set - New ferules were fixed to the spring balance which was set to 120lbs pressure per square inch

Locomotive Engine no 2. The brass bearings of connecting and coupling rods were closed - The joints of the blow through cock of water gauge column were remade and the brake water cock gearing was reset - A tube was plugged, the copper stays were caulked and a new stay was fitted to the fire box and a new steam gauge was fitted

Locomotive Engine no 3 The blow through cock of water gauge column was fitted, the right and left hand steam chest cover joints were re-made and the copper stays of fire box were caulked.

Block Trucks nos 4 & 9. were each fitted with a new coupling chain

no. 16 was fitted with a new key

no 17 was dismantled

no 18 was rebuilt and painted.

Sand wagons no 3 was fitted with a new draw hook.

No. 7 was fitted with a new pedestal 29/

No. 9. was fitted with a new pedestal and had the old pedestals lined up.

No. 10 was fitted with a new draw hook.

No. 14. was fitted with a new pedestal and was generally repaired

No. 17 was fitted with a pair of new wheels

A new wagon was under construction

Concrete Skip Trucks. Six pair of new wheels were fitted to shafts

No 1 was fitted with new pedestals

No 2 was fitted with new pedestals and a pair of new wheels

Nos 3 4 5 8 & 9 were fitted with new pedestals

Two new trucks were built and painted

Iron Pier. 120 running feet for the half width of the timber work was renewed and an 8" and two 6" pile caps were fitted. At the T end two beams and four piles caps were fitted. A cabin was repaired and two latrines built for the pier employés. A tally clerk's cabin was built and furnished with a desk and two benches. A gangway and davit were fixed and provided with a hand rail and door. A lamp post was fixed. The old dismantled timber and iron girders from the Iron Pier were removed to the ground at the South Pier.

FL

The side gauge was repaired and the water pipe fitted with a new quarter bend.

Truck.
No 27 was thoroughly repaired
No. 33 was thoroughly repaired

A. Portable Crane
No 2 was fitted with a new single gear pinion

B Portable Crane
No 2. was thoroughly repaired and fitted with a new truck

C Portable Crane
No 6. was repaired

North Goods shed (Tiled) A partition was fitted for the Commissariat Department.

Marked Buildings at Cassimode were thoroughly repaired

Harbour Trust Office The windows were repaired and twelve letter trays supplied - The clerks tiffin room was repaired
A man-hole cover was made for the turntable leading into the Madras Railway Co's Stores
The Harbour enclosure fence was repaired and two boxes were made for measuring stone and sand for concrete works.

I have the honour to be,
Sir
Your most obedient Servant,
A. Lee Pogson
Engineer, Harbour Trust Board

P.W. Lec I.
942/90.

12

Bdl
Ch work

PUBLIC WORKS DEPARTMENT.

37

PROCEEDINGS OF THE MADRAS GOVERNMENT.

25

READ the following

From Lord Chairman
Instt. J. Board
Encouragement to Inams Dept.
Dated 28 & 29 January 1890.

To Secretary Instt. J. B.
Inam Dept.
No
Dated 12/2/90

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

Mem. No. 3/4194 to

The Right Honble
the Secy of State
for India.

My Lord,

In continuation of our despatch No. 2 of 3rd February 1890, we have the honor to forward a copy of our Proceedings, No. W dated 7th February 1890 embodying a report of the progress of the Madras Harbour works for the quarter ending 31st December 1889.

* Forwarding report for quarter ending 30.9.89 - one paper

Rec'd 17th

2. A plan showing the state of the works at the end of the quarter is also forwarded for information. The usual statement comparing the expenditure with the sanctioned estimate will follow.

WCB
31.1.90

Russell
31.1.90

Joseph
49 W 419 W
Plan
12/2/90

962

Govt. of 18 Madr

PUBLIC WORKS

Immediate

4/1/90

G.O. 8th February 1890.

419

Proposed Rep

Ordered that the

for the grant

Rs. 810 Rs. 12

be paid to the

Collector for Tinn

From the Secretary
Report of the Inst
for the quarter en
31st March 1889.