(1) பக்கங்களின் எண்ணிக்கை 98 +3 Statement

(2) புதுக்கித் திருப்பிய நாள் 9/89

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

PW துறை

அரசாணை எண். மு. கோப்புத் தாள் எண்.	2277	அச்சகம் பலவகை
நாள் :	19 5 1889	198 .

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(52) sheets

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19th August 1889, No. 2277 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads
Civil Works.

EAD—the following papers :—

From Sir RICHARD BARLOW, *Bart.*, C.S., Chairman, Harbour Trust Board, to the Chief Secretary to Government, Marine Department, dated Madras, 17th July 1889, No. 2524.

I have the honor to forward herewith report (No. 440, dated 10th July 1889) of progress made on the Harbour Works during April 1889, with enclosures, and copy of the Board's resolution thereon passed at their meeting last evening.

2. With reference to the latter, I have the honor to solicit the attention of Government to paras. 3, 4 and 5 of the report, and to request the earliest possible orders by wire, if considered necessary, as regards the wavebreaker protection to the north arm. Should definite instructions not be received before the end of August at latest, protection cannot be afforded according to the sanctioned design before the north-east monsoon, and the spot which suffered most in the cyclone of 1881 will be left without the protection of random blocks as considered necessary by both the late Mr. Parkes and the Board's Engineer.

3. I venture further respectfully to submit that whatever north-east entrance may or may not be decided upon hereafter, it will not be Mr. Parkes' suggested No. 1 A, in reference to which only the deposit of these random blocks at this spot has been delayed; and I may add that the Trustees are very strongly of opinion that full protection, so far as appliances will permit, should be afforded according to the sanctioned design, so as to absolve them from all responsibility for further disaster.

Enclosures.

From A. L. POGSON, Esq., Engineer, Harbour Trust Board, to the Chairman, Harbour Trust Board, dated Madras, 9th July 1889, No. 440.

I have the honor to submit my report on the progress made on these works in April, with a ithographed plan of the harbour (submitted in triplicate) showing the new work in red.

2. With this report I have the pleasure also to forward one mounted and two unmounted pies of a three-plate panoramic photograph of the harbour and beach improvements, &c., ken from the top of the High Court, showing the progress to the 30th April 1889.

3. *North Pier Works.*—Works at the north pier during April was confined to protecting the length of superstructure built to the 31st March with wavebreakers. But owing to an alteration having been ordered by Government in the mode of depositing the wavebreaker blocks (*vide* G.O., No. 821 W., dated 19th March 1889) progress was considerably slower and more difficult, and I trust that before the close of this season or at latest the end of August, this order may be countermanded and the protection ordered to be changed to the random system in *accordance with the sanctioned design*, as the present arrangement of "set" blocks in the place of their being dropped is not in my opinion sufficient protection to the bonded work to stand a first-class cyclone, as the old wall is so much damaged at this point as to be of little or no protection.

4. Under the provisional instructions, 266 wavebreaker blocks were set by divers, and, to able me to do this, 537 tons of rubble had to be spread over the base and levelled up so as to rm a level foundation for these blocks.

5. This temporary protection is only 18 feet wide against a required width of 40 feet of wavebreaker protection, and is lighter, or weakens the stability of the curved length of the

north pier by a dead weight of 5,370 tons of material at one of the points where the works suffered most in the storm of November 1881.

6. By the 28th April 49 of the iron cramps for clamping each course together were fixed in cement and all temporary rails, &c., removed and the titan crane run on shore, closing work at this arm for the rough weather, usual in May.

7. *Concrete Blockmaking.*—In April blockmaking was carried on for 21 days when 224 blocks were turned out, which is equal to a make of 3,626$\frac{7}{9}$ cublic yards of concrete; of the 224 blocks, 211 were for the wavebreaker screen and 25 for the abutment, which completed the 46 special abutment blocks ordered to be made under G.O , No. 622 W., dated 2nd March 1889.

8. *South Pier Works—Rubble Base.*—In April the south pier rubble base was extended a short distance by adding 2,116$\frac{1}{4}$ tons of material, made up of 1,927$\frac{1}{4}$ tons of rubble from the quarries and 189 tons of old blocks fallen from the old wall, which were blasted by dynamite to the size of ordinary rubble.

9. *Superstructure.*—For want of old enough blocks no progress could be made at extending the south pier superstructure above sea level, but, as is usual at the close of the season's work, four of the lower blocks were set on the 6th April to prevent any movement in the lower blocks of the last finished course.

10. On the 7th the titan crane was lowered down on to its permanent rails, and on the 8th turned round into position for protecting the end of the new work with the wavebreakers.

11. As at the north pier, 54 iron cramps were fixed, clamping together all the new courses set during the season.

12. *Wavebreaker.*—The titan crane deposited wavebreaker blocks to protect the length of pier it stood upon, where the wavebreaker crane carried on the protection towards shore until the 15th of April, by which date these two cranes had dropped 164 large wavebreaker blocks.

13. The two cranes were run safely on shore by the evening of the 17th, and all temporary rails, sleepers, &c., were taken up, closing work for the season.

14. *Pallávaram Quarries.*—Thirty-six trains brought a supply of 7,660 tons of stone for the works, but only 3,557 tons of this quantity were chips supplied by the contractor for block-making, the remainder being rubble drawn from the stock supplied by the late contractor Mr. Abdoola Badsha Sahib.

15. *Stores from England.*—The following vessels arrived during the month of April with the following casks of cement :—

		TONS.	CWTS.	QRS.	LB.
By the S.S. *Lindula* 1,100 casks of Portland cement containing		196	8	2	8
By the S.S. *Goorkha* 934 casks of Portland cement containing		166	15	2	24
Total ...	2,034	363	4	1	4

RETURN OF WORK FOR APRIL 1889.

Surveys.—Some cross sections were taken of the north and south pier bases.

Railway lines.—On the north pier 442 running feet metre gauge lines were taken up. On the south pier 537 running feet broad gauge lines and 276 running feet temporary titan road lines were taken up for the rough weather. The sand line was extended 130 feet and a bridge was commenced to span the new drain for carrying away storm water overflow for the intercepting sewer. 855 running feet broad gauge lines were laid to connect the Madras Railway Company with the iron pier.

Quarries.—Thirty-six trains worked during the month bringing stone from Pallávaram.

Rubble.

	TONS.
Total quantity received up to 30th April 1889	360,322$\frac{3}{4}$
Do. do. 31st March 1889	356,219$\frac{3}{4}$
Received in April ...	4,103

Chips.

	TONS.
Total quantity received up to 30th April 1889	135,497$\frac{1}{4}$
Do. do. 31st March 1889	131,940$\frac{1}{4}$
Received in April ...	3,557

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Ballast.—None received.

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

North Pier Rubble Base.

—	FORESHORE.		Base.
	Large rubble under wave-breaker.	Widening foreshore.	
Total quantity deposited up to 30th April 1889 ..	14,286$\frac{1}{2}$	54,051$\frac{1}{4}$	119,425$\frac{1}{4}$
Do. do. 31st March 1889.	13,749$\frac{1}{2}$	52,412$\frac{1}{2}$	119,425$\frac{1}{4}$
Deposited in April ..	537	1,638$\frac{3}{4}$	..

North Pier superstructure.—Nothing done since 31st March 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 30th April 1889	2,194	39,807$\frac{11}{12}$	..	..
Up to 31st January 1889	1,928	35,019$\frac{11}{12}$	..	..
In April ..	* 266	4,788	2,525 to 2,822	18 feet.

* Wavebreaker blocks.

North Pier capping.—Nothing done since 30th November 1888.

North Pier cramps.—Forty-nine cramps fixed in the month.

South Pier surf bank.—Nothing done since 30th April 1888.

South Pier Rubble Base.

—	FORESHORE.		Base.
	Large rubble under wave-breaker.	Widening foreshore.	
Total quantity deposited up to 30th April 1889	12,061$\frac{1}{2}$	38,389$\frac{3}{4}$	122,687$\frac{1}{4}$
Total quantity deposited up to 31st March 1889	12,061$\frac{1}{2}$	38,389$\frac{3}{4}$	120,571
Deposited in April ..	..	..	† 2,116$\frac{1}{4}$

† 1,927$\frac{1}{4}$	Rubble from quarries.
189	Seven old blocks at 27 tons per block.
2,116$\frac{1}{4}$	Blasted by dynamite.

South Pier Superstructure.

	No.	Contents, cubic yards.
Blocks set up to 30th April 1889	1,727	28,145$\frac{1}{9}$
Do. 31st March 1889	1,723	28,076$\frac{2}{9}$
Set in April ...	‡ 4	68$\frac{8}{9}$

‡ Two bottoms and two middles to close the season's work.

Running feet of new wall built up to 30th April 1889	1,132
Do. do. 31st March 1889	1,132
Built in April ...	...

	FEET.
Total length of wall completed from E	3,519
Do. do. G	1,132

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 30th April	1,689	29,389$\frac{35}{216}$	..	..
Up to 31st March	1,525	26,437$\frac{35}{216}$	..	..
In April ..	* 164	2,952	2,597 to 3,083	40 feet.

* Wavebreaker blocks.

South Pier capping.—Nothing done since 31st December 1888.
South Pier cramps.—Fifty-four cramps fixed in the month.
Protective works.—Nothing done.

Concrete blocks.

Description of blocks.	Made up to 31st March 1889.	Made in April.	Made up to 30th April 1889.	Placed in work.		In hand.
				Up to 31st March 1889.	Up to 30th April 1889.	
Old blocks	806	..	806	806	806	..
Wavebreaker blocks	3,098	11	3,109	2,634	3,064	45
Superstructure.						
North pier bottom blocks	227	..	227	212	212	15
Do. middle	750	..	750	713	713	37
Do. top	248	..	248	233	233	15
South pier bottom	423	36	459	338	340	119
Do. middle	1,195	97	1,292	946	948	344
Do. top	455	55	510	335	335	175
Special	71	..	71	71	71	..
Counterbalance	1	..	1	..	..	1
Special abutment	21	25	46	..	..	46

Three thousand six hundred and twenty-six and seven-ninth cubic yards blocks were made in the month. Blockmaking was commenced on the 2nd and stopped on the 24th and again commenced on the 30th.

Seven hundred and fifty-eight tons cement was the balance at the end of the month.

Seventy-nine superstructure and 64 wavebreaker blocks were transferred from north to south pier block ground.

Miscellaneous.—The south pier titan was turned in position for depositing wavebreaker blocks on the 8th.

The pontoon was taken to pieces on the 11th and was brought ashore on the 12th.

The south pier titan and wavebreaker cranes were brought to their shore stations on the 17th and the north pier titan was brought to its standing ground on the 28th.

Tools and Plant—Stationary Engine No. 2.—Donkey pump brass bearings were closed.

Stonecrushers—No. 1.—New set plates were fixed.

No. 2.—Brass bearings were closed.

No. 3.—A new eccentric jaw was fitted.

No. 4.—Two new side wedges were fitted.

No. 5.—An old side wedge was refitted, six hooks were repaired, and the iron work of a shoot was repaired.

Elevators No. 2.—A new shaft was fixed and four boxes were repaired.

Concrete Mixers—No. 1.—A new door-catch was fitted and two new pins were made and fitted to donkey pump.

No. 2.—A new door-catch and new intermediate spur wheels were fitted.

No. 3.—A new door-catch was fitted.

No. 4.—A new door-catch was fitted.

No. 5.—Two new door-catches were fitted.

No. 6.—A new handle was fitted to door.

No. 7.—Two new door-catches were fitted.

No. 8.—A new door-catch was fitted.

Concrete skips.—Two were repaired.

Cranes on Mixing Platform—No. 1.—A new stay was made.

No. 3.—A new chain supplied.

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Goliath Crane No. 3.—A new tumbler was fitted to the square shafts and a new hydraulic piston leather supplied.

100-*ton Hydraulic Jacks, Nos.* 1 *and* 2, were repaired.

Concrete Skip Trucks.—Four pairs of wheels were keyed and fitted.

Light Travellers No. 2.—The brackets of footboard were repaired.

10-*ton Crab.*—Taken to pieces and refitted with new spur wheels and pinions.

North Pier Titan.—A new travelling wheel was fitted to crab.

South Pier Titan.—A new driving pulley was made and fitted to the salt-water pump. The traverser was cleaned and tarred. The boiler feed pump repaired and a new stay rod made for the claws and a chain was supplied to secure crab to boiler when turning the crane.

Wavebreaker Crane.—Two pinch bars and special shackle and pin were made and supplied.

Sundries.—A shunting rope was made for No. 3 Locomotive engine. A hood was made for hearth for smiths' shop. Five dies were repaired and one ½" and one ⅞" dies were made. Six 1¼" bolts were made and 18 repaired for block frames. Two bands were fitted to barrel buoys and eight pins and cotters were made for divers. A keel was made for the survey boat *Grasmere*. The wavebreaker claws were cleaned and painted.

Locomotive Engine No. 1.—Waste water cock gearing was fitted with a lever, a bracket, two studs and a new waste water cock.

No. 2.—Waste water cocks were ground and regulated and a new key was fitted to L.H. back gear sheave.

No. 3.—L.H. new valve spindle was fitted and slide valve reset.

Block Truck—No. 7.—A coupling chain was repaired and fitted.

No. 8.—Brass bearings were eased and keeps filled with grease and waste and the truck painted.

No. 13.—Dismantled.

Sand Wagon—No. 1.—Was generally repaired and painted.

No. 5.—A tail board hinge was repaired and fitted.

No. 19.—Was fitted with a coupling chain.

Harbour Trust—Iron Pier.—Eighty running feet half width timber work was renewed and a new pile cap was fixed. Four lamp-posts were fixed and fitted with frames for lamps.

No. 6 iron pier truck was repaired.

No. 25 iron pier truck was repaired.

A pattern was made of a turn-table for the iron pier.

A pattern was made of the fire bars for the portable steam cranes.

EXTRACT of Proceedings of the Trustees of the Harbour of Madras, at a meeting held at the offices of the Board on Tuesday the 16th day of July 1889.

* * * * *

8. Read letter No. 440, dated 10th July 1889, from the Engineer, Harbour Trust Board, reporting upon the progress made on the Madras Harbour Works during the month of April 1889.

Read note by Chairman.

Resolved,—that this report be submitted to Government and that early orders be solicited in reference to the wavebreaker protection at the north-east corner of the harbour, and that a reply by wire be requested.

* * * * *

(True Extract.)

(Signed) C. PINSENT,
Secretary, Harbour Trust Board.

Transferred to the Public Works Department.

(Signed) W. S. MEYER,
Asst. Secretary.

20th July 1889.

From Sir RICHARD BARLOW, *Bart.*, C.S., Chairman, Harbour Trust Board, to the Chief Secretary to Government, Marine Department, dated Madras, 18th July 1889, No. 2613.

I have the honor to acknowledge the receipt of telegram from Public Works Department, dated 12th instant, directing that the abutment be placed in the north

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arm at the spot now reached, and to confirm reply sent the same day, copies enclosed, also to submit for the orders of Government copy of resolution passed by the Trustees at their meeting of the 16th idem.

2. The Board's Engineer has been directed to stop all work at the north arm until further orders.

3. The Trustees are strongly of opinion that as this abutment is only required for the late Mr. Parkes' suggested entrance No. 1 A, and that as this plan has been condemned by all authorities consulted, it is worse than useless to make provision for it, inasmuch as it must leave a weak spot in the wall just where it should be strongest, and it will very seriously delay the construction of the north arm as already pointed out, thus preventing protection being greatly increased against the approaching north-east monsoon.

4. The Board solicit the very earnest attention of Government to these points, and would strongly urge that orders be issued at a very early date to proceed with the north arm on the lines of the sanctioned design, securing it with random wave-breakers as it progresses.

ENCLOSURES.

COPY of telegram from Government, dated 12th July 1889, to the Chairman, Harbour Trust Board.

Your telegram 9th. Abutment should be put in at point now reached by north arm, namely, 2,862 feet.

From the Chairman, Harbour Trust Board, Madras, to the Secretary to Government, Public Works Department, dated 12th July 1889.

Work stopped north arm. Abutment blocks ready, but sea too rough to set them. Rendel's report makes it clear that the abutment will never be required. If insisted on it will delay work seriously and make a weak place in the wall just where it should be strongest in section.

EXTRACT of Proceedings of the Trustees of the Harbour of Madras, at a meeting held at the offices of the Board on Tuesday the 16th day of July 1889.

* * * * *

2. Read telegram from the Secretary to Government, Public Works Department, dated Ootacamund, 12th July 1889, and the Chairman's reply of same date in reference to proposed abutment in the north arm of the harbour.

Read note by the Chairman and letter No. 2487 addressed to the Engineer directing him to at once stop work at the north arm until further orders.

Resolved,—that the further orders of Government be awaited

* * * * *

EXTRACT of Proceedings of the Trustees of the Harbour of Madras, at a meeting held at the offices of the Board on Tuesday the 23rd day of July 1889.

* * * * *

3. Read note by the Chairman circulating, for the consideration of the Trustees, draft letter to Government, dated 18th July, in reference to telegram from the Secretary to Government, Public Works Department, directing the setting of abutment blocks in the north arm of the harbour.

Read minutes by Captain W. L. C. Baddeley, R.E., and Mr. Turnbull.

Approved and resolved that this letter be forwarded to Government.

* * * * *

(True Extract.)

(Signed) C. PINSENT,
Secretary, Harbour Trust Board.

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Transferred to the Public Works Department.

(Signed) W. S. MEYER,
Asst. Secretary.

26th July 1889.

From Sir RICHARD BARLOW, *Bart.*, C.S., Chairman, Harbour Trust Board, to the Chief Secretary to Government, Marine Department, dated Madras, 22nd July 1889, No. 2614.

I have the honor to acknowledge the receipt of your telegram, dated 20th instant, and have directed the Engineer to comply with the order therein contained, and set the abutment blocks, the moment the weather renders it feasible to do so.

2. I beg at the same time to submit, for the information of Government, and any notice they may consider advisable, a tracing and short explanation prepared by the Board's Engineer showing how an abutment can be placed in either arm of the harbour, at any time and at any spot, without delaying the work.

ENCLOSURES.

From A. L. POGSON, Esq., Engineer, Harbour Trust Board, to the Chairman, Harbour Trust Board, dated Madras, 22nd June 1889, No. 364.

In continuation of my letter No. 351, dated 20th instant, I have the honor to inform you that I have just come to the conclusion that *no abutment* is required in the north pier as a provision for opening an entrance under Mr. Parkes' condemned plan A, and I trust the sketch-plan now submitted will be clear enough to convince the Trustees that *no abutment is necessary*, since I have shown how the ordinary work can be removed and the special blocks (reduced to 36 in number against the 55 required in Mr. Parkes' abutment) set afterwards by the present appliances, *when* this form of entrance has (if ever) been decided upon.

2. The advantages gained under my proposal by leaving out the abutment altogether, are—

1*stly*.—No delay in the present progress of the north arm.

2*ndly*.—That the piers will be of a uniform strength throughout, with a continuous bond whereas the abutment once set will in my opinion always be a weak point, besides being a most uncertain and difficult piece of work to build, with the present appliances at hand, as I have already reported.

3*rdly*.—That my form of abutment (which will not be required until the entrance *has been opened*) is of the same bonded section as the present sanctioned piers, and possesses the advantage that each course can set independently of the next, which is the principle on which the Madras piers are built.

3. When Mr. Parkes as Chief Engineer stated that an abutment *was* necessary in case a north-eastern entrance, under his plan A, should eventually be adopted, it was not for me to question the matter; in fact, I never gave it a second thought, as my time was fully occupied with other work; but now that I have no such Engineer to refer to, I have gone into the question of the necessity of such a provision myself, and I find that not only am I correct in stating that I can open an entrance at any point in the piers without the abutment, but that Mr. Parkes must have also considered it possible, as in his report printed under G.O., No. 3127 W., dated 19th December 1884, para. 73, he states that the south pier can be cut through and an entrance formed leading to the proposed boat harbour he therein suggests, where no abutment has been built, so that, if it is possible to do so in the south pier, the undertaking will be no more difficult at the north pier.

4. I trust under this new discovery, which sets aside the necessity of an abutment at all, I may receive immediate orders to proceed without Mr. Parkes' unnecessary abutment, and I only regret the way out of the difficulty had not struck me at an earlier date so as to have saved all the past correspondence.

EXTRACTS from Mr. Parkes' letters, dated 19th October 1888 and 11th January 1889.

* * * * * *

"If you have anything materially different from this to suggest, you had better send me the details of your proposal privately and at the same time ask for a formal reference to me."

* * * * * *

"Prepare abutment blocks. When this is communicated to you it will rest with you to carry it out in your own way, making such use as you think proper of the information you have as to the object and intention of the order; you are in no way bound by the details given in my tracing, but you are bound to carry out the order."

* * * * * *

W. PARKES.

Telegram from the Secretary to Government, Public Works Department, to the Chairman, Harbour Trust Board, dated 20th July 1889.

My telegram 12th July ordering abutment to be put in at 2,862 feet is confirmed. Orders follow.

Extract of Proceedings of the Trustees of the Harbour of Madras, at a meeting held at the offices of the Board on Tuesday the 23rd day of July 1889.

* * * * * *

4. Read telegram from the Secretary to Government, Public Works Department, dated 20th instant, confirming his telegram of 12th idem, directing that the abutment blocks be set in the north arm at the spot now reached.

Read again letter from the Board's Engineer, No. 364, dated 22nd June 1889.

Read draft letter to the Chief Secretary to Government, Marine Department, dated 22nd July 1889, submitting, for the consideration of Government, the proposals of the Board's Engineer read above for placing an abutment in either arm of the harbour at any time and at any spot without delaying progress.

Approved.

* * * * *

(True Extract.)

(Signed) C. PINSENT,
Secretary, Harbour Trust Board.

Transferred to the Public Works Department.

26th July 1889.

(Signed) W. S. MEYER,
Asst. Secretary.

Note by the Ag. Joint Secy. to Govt., Public Works Department, dated 1st August 1889.

Order—dated 19th August 1889, No. 2277 W., Public Works.

On reconsideration, the Government resolves to withdraw its orders * in which the construction of an abutment in the north arm of the harbour was insisted upon. In accordance with the recommendation in para. 6 of Colonel Mead's note printed with Proceedings, No. 821 W., dated 19th March 1889, the "set" blocks in the wavebreaker of the north arm may now be placed in random, and the work may be proceeded with in accordance with the sanctioned design.

* No. 622 W., dated 2nd March 1889.
,, 1995 W., ,, 24th July ,,

2. A copy of these Proceedings will be forwarded to the Secretary of State for information.

(Here enter No. $\frac{16}{2277 \text{ W.}}$, dated 19th August 1889.)

(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. Henricus.
Spare Copies

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5

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1889} Madras.

PUBLIC WORKS.

Dated August, 19th.

Recd. *Encl.*

G.O., 19th Aug. 1889, No. 2277 W.

AUGUST.

Madras Harbour

Orders dispensing with the construction of the proposed abutment in the north arm of the —.

~~No. 3462 C of 31st July 1889~~ Pl W.D.

2277

To the Chairman
Mr. H. T. Bd.

Sir.

With reference to your letters marginally noted, I am directed to state that the Govt. has withdrawn its orders insisting on the construction of the abutment ~~being~~ ~~put~~ in the north arm of the Harbour, & that work may therefore be resumed on the lines of the sanctioned design - The orders of Govt. will follow as regards the placing of the wave breaker blocks in landing

No. 2524 of 17.7.89
" 2613 of 18.7.89
" 2614 of 22.7.89

31.7.89

6/7

Russell 1.8.89

Despatched by
D.W. on evening of
31-7-89

No. 3462 c 1/ 31st July 1889

95/7
31/7

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Note by the Ag. Joint Secretary to Govt P.W.D.

I inspected the Madras Harbour Works in Company with Mr Lee Pagson and Captn Baddeley on the morning of the 29 July with reference to the points raised, regarding the precise position and form the abutment proposed by the late Mr Parkes was to take. Mr Parkes' instructions to Mr Pagson in a private communication to the latter were that the abutment should consist of specially made blocks, of such a form that the breakwater could be joined on to it, if the North East entrance was ultimately decided upon. The form these blocks were to take was left to the discretion of the Harbour Engineer. They were accordingly designed after the form suggested by Mr Parkes, but on closer reconsideration of the subject, and keeping in mind that no weak part should exist in the Reef should the idea of a North Eastern entrance be negatived,

Mr.

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Mr Pogson drew up a modified design for them, the details of which he forwarded to the Harbour Trust Board with his letter No. 304 d/22d June last. Had these papers been then forwarded on for my consideration instead of having been delayed until their transmission ~~to~~ by the Chairman with his letter No. 2414 d/22d July last, the subject would have come before me in such a form that I could have advised the Govt. at once regarding the construction of the abutment. This action of the Harbour Trust Board is to be regretted, as a deal of unnecessary correspondence by letter and by wire could have been saved.

Mr. Pogson's modified form of abutment blocks clearly shows that the North Arm may be carried on uninterrupted on the sanctioned design, as at any point in its length a certain number of the blocks now in use could be removed without

without difficulty, and by the use of a number of blocks of somewhat different form and fewer than would be required in the original design for the abutment, a reverse face could be given for the continuation of the arm for the North East entrance.

The originally designed form of abutment blocks had every tendency to settle independently of the remainder of the work, and by the lifting action of the sea waves would cause a breach in the work. The revised form guards effectually against such an accident occurring.

The next subject which I had to consider on the statement made by Mr. Pogson was the request made in the Board's letter No. 2613 d/18th July last that the sanctioned design of protecting the North Arm by rounded wave breaker blocks be adhered to, as the set blockwork proposed by Col. Mead in his note of the 16th March did not ensure the stability of the walls and was not sufficient

protectio

protection against the undermining of the rubble base either in front or inside the work. I went into this point carefully and judging from the poor protection afforded by the set blocks (of which two rows aggregating 18' in width have been placed) in not breaking up the waves, but allowing them to sweep over the wall, I came to the opinion that the original method of random work was necessary.

The sea on the morning I inspected the work was nearly calm with a little swell from the South and East, yet the waves flowed over the set blocks while they were effectually broken up on the portions where random work had been put down –

Of the 662 feet of the North arm that would have to be removed in the event of a North East entrance being adopted, no less than 346' have been protected by random blocks after the sanctioned design, and the tra work that would be

be involved in removing the 316 additional feet of random work now advocated to be carried out would be a small item of cost as compared with the security such random work would afford to the North arm in the face of the ensuing North East monsoon.

I would therefore advise

1st that the abutment b not constructed, as originally intended, a
2nd that the sanctioned design of wall with wave breaker blocks, placed *perdue*, be proceeded with –

W
1.8.89

Class X S.

INDIAN TELEGRAPH.

Monthly Local No. 171

To Station: Madras Triplicane

From Station: Ootacamund

Words	Day.	Hour.	Minute.	Official Instructions
42/1	31	14	27	Urgent

To (Person): Madras Works Chepauk

From (Person): Madras Works Irrigation +

1. your telegram twenty
2. ninth the order for
3. (a) constructing abutment
4. are withdrawn + inform
5. (b) Chairman + as to para 6
6. Colonel Meads memoran-
7. dum your telegram not
8. fully understood we
9. await your return
10. and explanation + expedite
11. return +

Hum 31.7.89

(a) pull order

(b) inform chairman

…NE 31-7-89

Recd. from L. N.

At Hrs. Mts. By

Sent to L. N.

At Hrs. Mts. By

Date

10

Postmaster.

RATES OF CHARGE FOR INLAND TELEGRAMS.

The address (including name of Sender, and name and residence of Addressee), is transmitted free.

	First 8 words.	Each additional word.
Deferred Message	... 8 Annas	... 1 Anna.
Ordinary „	... 1 Rupee	... 2 Annas.
Urgent „	... 2 Rupees	... 4 Annas.

A group of 3, or less figures, is reckoned as one word.

No charge for delivery within a distance of 5 Miles.

Memo No. 5462 C d/ 31-7-89
Pr. Rec. 1995 W d/ 24-7-89
" " " 17874 d/ 1-7-89
" " " 15834 d/ 17-6-89
Despatch No. 2 / 1492 W / A d/ 6.6.89
Pr. Rec. 1492 W / A d/ 6-6-89
" " 1376 W d/ 20-5-89
" " 17457 W d/ 4-5-89
" " 1189 W d/ 29-4-89
" " 622 W d/ 2-3-89
" " 3172 W d/ 19-12-84

O.H. 21/8. H.M. 5/8.
1/8.

To
D.W.

Progress Report of the Madras Harbour for April.

9277

The above with a Complete file are forwarded herewith under instructions from W. who wishes you to kindly bring the papers when you meet him on Monday morning, prior to going over the works.

I notice that the Collection of papers printed with G.O. 3624 W d/ 17 November 1888 is incomplete. Mr. Sagson's report No. 909 d/ 1 Octr 88 – a most important document – has not been printed. The original report may perhaps be available in the Madras office with the draft of the G.O.

The plans sent up with the present Progress Report have been removed from the file by S.W. They are too bulky to send down, and other plans of the kind are on record in the Madras office.

C.S.
22-VII-89

Note

It is desired that the file be sent back for use in the Dftg office when done with.

C.S.

2277

HARBOUR TRUST BOARD,
29 JUL 89
MADRAS.

Despatched at
9 30 am signed by
Col Drake Brockman
as he passed this
morning

~~45~~ 12

The draft of the G.O.

To Honble. Mr H. E. Stokes
Ootacamund

From
Madras Works

Inspected North Arm this 29/7 morning — Abutment as proposed by Parkes not required as breakwater if built upon present section can easily be opened up ~~and~~ at any point and wall carried on if N. E. entrance ultimately decided upon — Set blocks do not afford sufficient protection against undermining of rubble base — Proposal para 6 Col. Meads ~~letter~~ note 16th March should be carried out, please wire orders at once —

RMeads

29.7.89

29.7.89

13

46

2277

Forwarded for information — The subject of protecting the north arm of the Break water ~~by "set" blocks~~ was carefully considered by the late Chief Engineer, and Government having approved of and sanctioned his proposal to form the protection by blocks "set" in position, and as the Harbour Engineer brings forward no reasons for saying that such protection is insufficient, I

14

47 do not consider that the order passed by the Govern-

Hm

ment in their Orders No. 821 W d/. 19 March /89 require modification.–

Rnc 8/1
20.7.89

I don't pretend to have any opinion on the question. I understood from Col. Mead that the decision taken was in accordance with Mr. Parkes's views. It would probably be well to refer the matter to the S. of S. after the works have been visited by Col. Brookman, so that his & Parkes's attention may be specially called to it.

U.e.s
21 July

Ayl. 88/7. Hm 20/7.89 M. 22/VII-89

1P

2277

Harbour Trust Board Office.

MADRAS, 17th July 1889.

No. 2524

FROM Sir Richard Barlow Bart. C.S.

CHAIRMAN, HARBOUR TRUST BOARD,
MADRAS,

TO The Honorable J. F. Price C.S

CHIEF SECRETARY TO GOVERNMENT,
Marine Department.

Sir

I have the honour to forward herewith report (No. 440 dated 10th July 1889) of progress made on the Harbour Works during April 1889 with enclosures, and copy of the Board's resolution thereon passed at their meeting last evening.

2 With reference to the latter, I have the honour to solicit the attention of Government to paras 3, 4 and 5 of the report, and to request the earliest possible orders by wire if considered necessary.

8 13

over

as regards the wave-breaker protection to the North Arm. Should definite instructions not be received before the end of August at latest, protection cannot be afforded according to the sanctioned design before the North East monsoon, and the spot which suffered most in the cyclone of 1881 will be left without the protection of random blocks as considered necessary by both the late Mr. Parkes, and the Board's Engineer.

3 I venture further respectfully to submit that whatever North East Entrance may or may not be decided upon hereafter, it will not be Mr. Parkes suggested No. 1a - in reference to which only the deposit of these random blocks at this spot, has been delayed; and I may add that the Trustees are very strongly of opinion that full protection, so far as appliances will permit, should be afforded according to the sanctioned design, so as to absolve them from all responsibility for further disaster.

I have the honour to be
Sir
Your most obedient Servt.

Chairman
Harbour Trust Board

No 1062W. 18-4-87.
1296W. 27.5.87
1245W. 11.5.87
3484W. 20.12.87
1624W. 4.6.88
2335-36W. 1.8.88.
11
2635W. 1.8.88.
3068W - 1.10.88.
19
3068W - 1-10.88.
3644.5W - 17.11.88
74
3644W. 17-11.88.
3919W. 13-12.88.
622W. 2.3.89
821W - 19-3.89
174W. 22-1.89

MARINE DEPARTMENT.

From PWC No. 0.833

THE CHAIRMAN,
Harbour Trust Board,
MADRAS.

To

The Chief Secretary to Government,
Marine Department.

Dated } 17 } July 1889
Received }

SECRETARIAT 19 JUL 89

Enclosure (3)

No. 2624

19 24.7.89

SUBJECT.

Submitting Progress report on the Madras Harbour Works for April/89 for the information of Govt.

18 3720 July/89

Transferred to the Public Works department

Assistant Secretary

Ord 2118.

2297 No. 440 Enclosure

R R Barlow

12 JUL 89

3 SP

From

THE ENGINEER,
HARBOUR TRUST BOARD,
MADRAS.

HARBOUR TRUST MADRAS 12 JUL. 89 Register No. 3713

To

Sir Richard Barlow, Bart C.S.
Chairman Harbour Trust Board
Madras

Madras, 9th July 1889.

Circulate with notes
12.7-

Sir,

Accompaniments
Plan in triplicate
1 Mounted Photo
2 Unmounted - do

I have the honor to submit my report on the progress made on these Works in April, with a Lithographed plan of the Harbour (submitted in triplicate) shewing the new work in red.

2. With this report I have the pleasure also to forward 1 mounted and 2 unmounted copies of a three plate Panoramic photograph of the Harbour and Beach Improvements &c taken from the top of the High Court shewing the progress to the 30th April 1889.

North Pier Works.

3 Work at the North Pier during April was confined to protecting the length of Superstructure built to the 31st March, with Wavebreakers. But owing to an alteration having been ordered by Government in the mode of depositing the Wavebreaker blocks vide G.O No. 821W dated 19th March 1889 — progress was considerably slower and more difficult, and I trust that before the

17-19

the close of this season or at latest the end of August, this order may be countermanded and the protection ordered to be changed to the random system in accordance with the Sanctioned Design as the present arrangement of "set" blocks in the place of their being dropped is not in my opinion sufficient protection to the bonded Work to stand a first class Cyclone as the old wall is so much damaged at this point as to be of little or no protection.

4. Under the provisional instructions, 266 Wavebreaker blocks were set by Divers and to enable one to do this 537 tons of rubble had to be spread over the base and levelled up so as to form a level foundation for these blocks.

5. This temporary protection is only 18 feet wide against a required width of 40 feet of Wavebreaker protection; and is lighter, or weakens the stability of the Curved length of the North Pier by a dead weight of 5,370 tons of material at one of the points where the Works

suffered

suffered most in the storm of November 1881.

6. By the 28th April 49 of the Iron cramps for clamping each course together were fixed in cement and all temporary rails &c removed and the Titan crane run on shore - closing work at this Arm for the rough weather, usual in May.

Concrete Blockmaking. 7. In April Blockmaking was carried on for 21 days when 224 blocks were turned out which is equal to a make of 3626 7/9 cubic yards of concrete; of the 224 blocks, 211 were for the Wavebreaker screen and 25 for the Abutment which completed the 46 special Abutment blocks ordered to be made under G.O. No. 622 W dated 2nd March 1889.

South Pier Works

Rubble Base. 8. In April the South Pier Rubble Base was extended a short distance by adding 2116¼ Tons of material, made up of 1927¼ Tons of Rubble from the Quarries and 189 Tons of old blocks fallen from the old Wall, which were blasted by dynamite to the size of ordinary rubble.

19

Superstructure. 9. For want of old enough blocks no progress could be made at extending the South Pier Superstructure above sea level, but as is usual at the close of the Seasons Work four of the lower blocks were set on the 6th April, to prevent any movement in the lower blocks of the last finished course.

10. On the 7th the Titan Crane was lowered down, on to its permanent rails, and on the 8th turned round into position for protecting the end of the new Work with the Wavebreakers.

11. As at the North Pier 54 Iron Cramps were fixed clamping together all the new courses set during the Season

Wavebreaker. 12. The Titan Crane deposited Wavebreaker blocks to protect the length of Pier it stood upon, where the Wavebreaker Crane carried on the protection towards shore until the 15th of April by which date these two cranes had dropped 164 large Wavebreaker blocks.

13. The two cranes were run safely on shore by the evening of the 17th and all temporary rails sleepers &c were taken up, closing work for the Season.

Pallaveram Quarries. 14. Thirty six trains brought a supply of 7,660 tons of Stone for the Works, but only 3557 tons of this quantity were chips supplied by the Contractor for Blockmaking, the remainder being rubble drawn from the stock supplied by the late Contractor Mr. Abdoola Badsha Sahib.

Stores from England. 15. The following vessels arrived during the month of April with the following casks of cement:-

		Tons cwts qrs lbs
By the S.S. "Lindula"	1100 casks of Portland Cement containing	196. 8. 2. 8
— Do — Goorkha	934 — Do	166. 15. 2. 24
	Total 2034	Total 363. 4. 1. 4

Return of Work for April 1889

Surveys. Some cross sections were taken of the North and South Pier bases.

Railway Lines. On the North Pier 442 running feet metre gauge lines were taken up. On the South Pier 537 running feet broad gauge lines and 246 running feet temporary Titan road lines were taken up for the rough weather. The sand line was extended 130 feet and a

Bridge was commenced to span the new drain for carrying away storm water overflow for the Intercepting Sewer. 855 running feet broad gauge lines were laid to connect the Madras Railway Company with the Iron Pier.

Quarries. Thirty six trains worked during the month bringing stone from Pallaveram,

Rubble

	Tons
Total quantity received up to 30th April '89 -	360322 3/4
——— Do ——— 31st March '89 -	356219 3/4
Received in April.	4103

Chips

Total quantity received up to 30th April '89 -	135497 1/4
——— Do ——— 31st March '89 -	131940 1/4
Received in April.	3557

Ballast. - None received.

North Pier overflank. Nothing done since 30th November 1888.

North Pier Rubble Base

—	Foreshore		Base	
	Large rubble under wavebreaker	Widening foreshore		
Total quantity deposited up to 30th April 1889 -	14286 1/2	54051 1/4	119425 1/4	
Total quantity deposited up to 31st March 1889 -	13749 1/2	52412 1/2	119425 1/4	
Deposited in April -	537	1638 3/4	— " —	

22
~~17~~

North Pier superstructure. Nothing done since 31st March 1889

North Pier supplementary works -

Blocks deposited in Wave Breaker.

—	Number of blocks	Contents cubic yards	Distance on pier	Average breadth from face of pier
Up to 30th April 1889.	2194	$39807\frac{11}{12}$	— " —	— " —
— do 31st January 1889.	1928	$35019\frac{11}{12}$	"	"
In April	× 266	4788	2525 to 2822	18 feet

× Wavebreaker blocks

North Pier capping. Nothing done since 30th November 1888

North Pier cramps - 49 Cramps fixed in the month

South Pier surf bank. - Nothing done since 30th April 1888.

South Pier Rubble Base

—	Foreshore		Base	—
	Large rubble under wavebreaker	Widening foreshore		
Total quantity deposited up to 30th April 1889 -	$12061\frac{1}{2}$	$38389\frac{3}{4}$	$122687\frac{1}{4}$	
Total quantity deposited up to 31st March 1889 -	$12061\frac{1}{2}$	$38389\frac{3}{4}$	120571	
Deposited in April -	"	"	× $2116\frac{1}{4}$	

× $1927\frac{1}{4}$ Rubble from Quarries

189 7 old blocks @ 27 ton per block

$2116\frac{1}{4}$ blasted by dynamite

S. P. Superstructure

South Pier Superstructure

	No.	Contents cubic yards
Blocks set up to 30th April 1889 -	1727 -	28145 $\frac{1}{9}$
Do. 31st March 1889 -	1723 -	28076 $\frac{2}{9}$
Set in April ×	4 -	68 $\frac{8}{9}$

× 2 bottoms and 2 middles to close the seasons work.

Running feet of new wall built up to 30th April 89 -	1132
do 31st March '89 -	1132
Built in April	"

Total length of wall completed from Ex.	3519'
do C.	1132'

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 30th April	1689	29389 $\frac{25}{216}$	"	"
do 31 March	1525	26437 $\frac{25}{216}$	"	"
In April	× 164	2952	2597 to 3083 -	40 feet

× Wavebreaker blocks

South Pier capping - Nothing done since 31st Decemr 1888

South Pier cramps - 54 cramps fixed in the month

Protective Works - Nothing done

24 19 Concrete Blocks

Concrete Blocks 2277

Description of blocks	Made up to 31st March '89	Made in April	Made up to 30th April 1889	Placed in work: Up to 31st March 1889	Placed in work: Up to 30th April 1889	In hand	Remarks
Old blocks	806	"	806	806	806	"	
Wavebreaker blocks	3098	11	3109	2634	3064	45	
Superstructure							
North Pier bottom blocks	227	"	227	212	212	15	
" Middle	750	"	750	713	713	37	
" Top	248	"	248	233	233	15	
South Pier bottom	423	36	459	338	340	119	
" Middle	1195	97	1292	946	948	344	
" Top	455	55	510	335	335	175	
Special	71	"	71	71	71	"	
Counterbalance	1	"	1	"	"	1	
Special Abutment	21	25	46	"	"	46	

3626 $\frac{7}{9}$ Cubic yards blocks were made in the month. Blockmaking was commenced on the 2nd and stopped on the 24th and again commenced on the 30th.

758 Tons cement was the balance at the end of the month.

79. Superstructure and 64 Wavebreaker blocks were transferred from North to South Pier block ground.

[illegible] Miscellaneous

2277 12 SP

Miscellaneous - The South Pier Titan was turned in position for depositing wavebreaker blocks on the 8th.

The Pontoon was taken to pieces on the 11th and was brought ashore on the 12th.

The South Pier Titan and Wavebreaker Cranes were brought to their shore stations on the 17th and the North Pier Titan was brought to its standing ground on the 28th.

Tools and Plant

Stationary Engine - No. 2. - Donkey pump brass bea[illegible] were closed.

Stone Crushers - No. 1 - New set plates were [illegible]xed.

No. 2 - Brass bearings [illegible] losed.

No. 3 - A new ecce[illegible] jaw was fitted.

No. 4 - Two new [illegible] fitted.

No. 5 - An old side wedge was refitted. Six hooks were repaired and the Iron work of a shoot was repaired.

Elevators. No. 2. A new shaft was fixed and four boxes were repaired.

Concrete Mixers - No. 1. A new door catch was fitted and two new pins were made and fitted to Donkey pump.

26

No. 2

(11) 2277 138p

Concrete Mixers. No. 2. A new door catch and new intermediate spur wheels were fitted

No. 3. A new door catch was fitted.

No. 4. A new door catch was fitted

No. 5. Two new door catches were fitted

No. 6. A new handle was fitted to door

No. 7. Two new door catches were fitted

No. 8. A new door catch was fitted

Concrete [illegible]ks. Two were repaired.

G[illegible]rnes Plough. No. 1. A new stay was made.

No. 3. A new chain supplied.

Goliath Crane. No. 3. A new tumbler was fitted to the square shafts and a new hydraulic piston leather supplied.

100 Tons Hydraulic Jacks. Nos. 1 + 2 were repaired.

Concrete Skip trucks. Four pairs of wheels were keyed and fitted.

Light Travellers No. 2. The brackets of foot board were repaired

10 Ton Crab. Taken to pieces and refitted with new spur wheels and pinions.

North Pier Titan. A new travelling wheel was fitted to Crab.

2277

S.P. Titan

South Pier Titan. A new driving pulley was made and fitted to the salt water pump. The traverser was cleaned and tarred. The boiler feed pump repaired and a new stay rod made for the claws and a chain was supplied to secure crab to Boiler when turning the crane.

Wavebreaker Crane. Two pinch bars and special shackle and pin were made and supplied.

Sundries. A stunning rope was made for No. 3 Locs engine. A hood was made for hearth for Smith's shop. Five dies were repaired and one 1/2" and one 7/8" dies were made. Six 1¼" bolts were made and 18 repaired for block frames. Two bands were fitted to barrel buoys and eight pins and cotters were made for Divers. A keel was made for the survey boat "Grasmere". The Wavebreaker claws were cleaned and painted.

Loco Engine. No. 1. Waste water cock gearing was fitted with a lever, a bracket, two studs and a new waste water cock.

No. 2. Waste water cocks were ground and regulated and a new key was fitted

23/26 to

2277 15.81

to L. H. back gear sheave.

Loco Engine - No. 3. L. H. new valve spindle was fitted and slide valve reset.

Block Truck. No. 7 A coupling chain was repaired and fitted

No. 8. Brass bearings were eased and Keeps filled with grease and waste and the truck painted.

No. 13. Dismantled

Sand Wagon. No. 1. Was generally repaired and painted.

No. 5. A tail board hinge was repaired and fitted.

No. 19. Was fitted with a coupling chain

Harbour Trust

Iron Pier 80 running feet half width timber work was renewed and a new pile cap was fixed. Fou lamp posts were fixed and fitted wi frames for lamps.

No. 6 Iron Pier Truck was repaired
25 ———— do ————

A pattern was made of a turntable for the Iron Pier.

2429 A

A pattern was made of the fire bars for the Portable Steam cranes.

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

Ex
Mr 1835/89

2277

17 810

EXTRACT of Proceedings of the TRUSTEES of the HARBOUR of MADRAS, at a Meeting held at the Offices of the Board on Tuesday the 16th day of July 1889.

× × ×

8. Read letter No. 440 dated 10th July 1889 from the Engineer Harbour Trust Board reporting upon the progress made on the Madras Harbour Works during the month of April 1889.

Read note by Chairman.

Resolved; – that this report be submitted to Government and that early orders be solicited in reference to the wave breaker protection at the north east corner of the Harbour and that a reply by wire be requested.

× ×

(True Extract)

HARBOUR TRUST BOARD
17 JUL. 89
MADRAS.

C Pinsent

Secretary
Harbour Trust Board

26 37

640752

2277

Harbour Trust Board Office.

MADRAS, 18th July 1889

No. 2615 Dis 22-7-89

198

FROM Sir Richard Barlow Bart C.S.

CHAIRMAN, HARBOUR TRUST BOARD,
MADRAS,

TO The Honorable J. F. Price C.S.

CHIEF SECRETARY TO GOVERNMENT,
Marine Department.

Sir

I have the honour to acknowledge the receipt of telegram from Public Works Department dated 12th instant, directing that the abutment be placed in the North Arm at the spot now reached, and to confirm reply sent the same day - copies enclosed, also to submit for the orders of Government copy of resolution passed by the Trustees at their meeting of the 16th idem.

2 The Board's Engineer has been directed to stop all work at

35 27

at the North Arm until further orders.

3 The Trustees are strongly of opinion that as this abutment is only required for the late Mr. Parkes' suggested Entrance No. 1A and that as this plan has been condemned by all authorities consulted, it is worse than useless to make provision for it, inasmuch as it must leave a weak spot in the wall just where it should be strongest, and it will very seriously delay the Construction of the North Arm as already pointed out, thus preventing protection being greatly increased against the approaching North East Monsoon.

4 The Board solicit the very earnest attention of Government to these points and would strongly urge that orders be issued at a very early date to proceed with the North Arm

Arm on the lines of the sanctioned design, securing it with random wave breakers as it progresses.

I have the honour to be
Sir
Your most obedient Servant
MMorton
Chairman
Harbour Trust Board

C. Sec

33

28

CLN

Cao 752

MARINE DEPARTMENT.

O.W.C. No. 7031

FROM

THE CHAIRMAN,
HARBOUR TRUST BOARD,
MADRAS.

TO

THE CHIEF SECRETARY TO GOVERNMENT,
Marine Department.

DATED 18 } July 1889.
RECEIVED ~~20~~ } R. 30. 7. 89

ENCLOSURE ~~(1)~~

No. 2643

CHIEF SECRETARY
26 JUL 89
GOVERNMENT OF

E. 4

SUBJECT.

Soliciting very early orders of Govt. to proceed with the North arm of the Harbour on the lines of the Sancliere's design.

2 S P

Transferred to the Public Works department

Assistant Secretary

W 28 VII

Strenhonest
26 July 89

0/2/8. Recd. 21/8. Hrs 5/8.

M. T. B. R.

2277 Enclosure 21 8/10

Copy of Telegram from Government dated 12th July 1889. to the Chairman H. T. Bd.

Your telegram ninth abutment should be put in, at point now reached by North arm namely 2862 feet.

(True Copy)

C. Brunet
Secretary
Harbour Trust Board

HARBOUR TRUST BOARD
18 JUL. 89

29 34

J. Gev

Marine 782/89

E. C.
M 702/89

22 77

2258

To
Ootacamund
Madras
Madras Works

From
The Chairman
Harbour Trust Board
Madras

State Urgent dated 12th July 1889.

Work stopped north arm abutment blocks ready but sea too rough to set them Rendel's report makes it clear that the abutment will never be required. If insisted on it will delay work seriously and make a weak place in the wall just where it should be strongest in section.

(True copy)

C. Vincent
Secretary
Harbour Trust Board.

18 JUL. 89

30-35

J. Her

E.3
Pr 703/89

2
Mis. Cor. 752/89

2277 23

EXTRACT of Proceedings of the TRUSTEES of the HARBOUR of MADRAS, at a Meeting held at the Offices of the Board on *Tuesday* **the** *16th* **day of** *July* **1889.**

× × ×

2. Read telegram from the Secretary to Government P. W. D. dated Ootacamund 12th July 1889, and the Chairman's reply of same date in reference to proposed abutment in the north arm of the Harbour.

Read note by the Chairman and letter No. 2487 addressed to the Engineer, directing him to at once stop work at the north arm until further orders.

Resolved:- that the further orders of Government be awaited.

× × ×

True Extract

Secretary
Harbour Trust Board

HARBOUR TRUST BOARD
17 JUL. 89
MADRAS

36

2277 2485

EXTRACT of Proceedings of the **TRUSTEES** of the **HARBOUR** of **MADRAS**, at a Meeting held at the Offices of the Board on Tuesday the 23rd day of July 1889.

× × ×

3. Read note by the Chairman – Circulating for the Consideration of the Trustees draft letter to Government dated 18th July in reference to telegram from the Secretary to Government P. W. D directing the setting of abutment blocks in the north arm of the Harbour.

Read minutes by Captain W. L. C. Baddeley R. E. and Mr Turnbull.

Approved and resolved that this letter be forwarded to Government.

× × ×

(True Extract)

HARBOUR TRUST BOARD,
24 JUL. 89
MADRAS.

C. Vinsent

Secretary
Harbour Trust Board

3237

(in 751 26P

2279

Harbour Trust Board Office,

MADRAS, 22nd July 1889.

Des. 24-7-89

No. 2614

FROM Sir Richard Barlow Bart. C.S.
CHAIRMAN, HARBOUR TRUST BOARD,
MADRAS,

TO The Honorable J. F. Price C.S.
CHIEF SECRETARY TO GOVERNMENT,
Marine Department.

Sir

I have the honorr to acknowledge the receipt of your telegram dated 20th instant; and have directed the Engineer to comply with the order therein contained, and set the abutment blocks, the moment the weather renders it feasible to do so.

2 I beg at the same time to submit for the information of Government, and any notice they may consider advisable a tracing and short explanation prepared by the Board's Engineer

3839

shewing how an abutment can be placed in either arm of the Harbour, at any time and at any spot, without delaying the work.

I have the honor to be
Sir
Your most obedient Servt.

J W Morton
Chairman
Harbour Trust Board

Psue

HGN

2277

34 39

~~Gal~~

MARINE DEPARTMENT.

FROM P.W.C. No 7832

THE CHAIRMAN,
HARBOUR TRUST BOARD,
MADRAS.

TO

THE CHIEF SECRETARY TO GOVERNMENT,
Marine Department.

DATED 22 } July 1889
RECEIVED ~~ ~~ }
30-7

ENCLOSURE 4

No. 2648

CHIEF SECRETARY
26 JUL 89
GOVERNMENT OF MADRAS

SUBJECT.

Submitting for the information of Govt. letter from the Boards Engineer with reference to the setting of abutment blocks.

34P

Transferred to the Public works department

[illegible]
Assistant Secretary

Dy. 21/8. Hr. 8/8.

Engineer
No. 364

From 2227 278P

The Engineer
Harbour Trust Board
Madras

To

Sir Richard Barlow Bart C.S.
Chairman, Harbour Trust Board
Madras

Madras 22nd June 1889

Sir,

With tracing

In continuation of my letter No. 351 dated 20th Instant, I have the honour to inform you that I have just come to the conclusion that no abutment is required in the North Pier as a provision for opening an Entrance under Mr. Parkes' condemned Plan A, and I trust the Sketch Plan now submitted will be clear enough to convince the Trustees that no abutment is necessary, since I have shown how the ordinary work can be removed and the Special Blocks (reduced to 36 in number against the 55 required in Mr. Parkes abutment) set afterwards; by the present appliances; when this form of Entrance has

48 38

has (if ever) been decided upon

2. The advantages gained under my proposal, by leaving out the abutment altogether, are:—

1stly – No delay in the present progress of the North arm –

2ndly – That the Piers will be of a uniform strength throughout, with a continuous bond – whereas the abutment once set, will in my opinion always be a weak point, besides being a most uncertain and difficult piece of work to build, with the present appliances at hand; as I have already reported.

3rdly That my form of abutment (which will not be required until the Entrance *has been opened*) is of the same bonded section as the present sanctioned Piers and possesses the advantage that each course can set independently of the next, which is the principle on which the Madras piers are built.

3. When Mr. Parkes as Chief Engineer stated that an abutment *was* necessary in case a North Eastern Entrance, under his plan A, should eventually be adopted, it was not for me to question the matter, in fact, I never gave it a second thought, as my time was fully occupied with other work; but now that I have no such Engineer to refer to, I have gone into the question of the necessity of such a provision myself, and I find that not only am I correct in stating that I can open an Entrance at any point in the piers, without the abutment, but that Mr. Parkes must have also considered it possible, as in his report printed under G. O. No. 3127 W, dated 19th December 1884, para 73, he states that the South Pier can be cut through, and an Entrance formed leading to the proposed Boat Harbour; he therein suggests; where no abutment has been built - So that, if it is possible to do so in the South Pier, the undertaking will be no more difficult at the North Pier.

42 37

4. I trust under this new discovery, which sets aside the necessity of an Abutment at all, I may receive immediate orders to proceed without

Mr Parkes' unnecessary abutment, and I only regret, the way out of the difficulty had not struck me at an earliar + date so as to have saved all the past correspondence.

I have &c.

Signed / A.Lee. Popson
Engineer, Harbour Trust Board

Extracts from Mr Parkes' letters dated 19th October 1888 and 11th January '89

× × ×

"If you have anything materially "different from this to suggest, you had "better send me the details of your proposal "privately and at the same time ask for a "formal reference to me"

× × ×

"Prepare abutment blocks": when this "is communicated to you it will rest with "you to carry it out in your own way "making such use as you think "proper of the information you "have as to the object and intention "of the order, you are in no way

"bound by the details given in my
"tracing but you are bound to carry out
"the order".

2277

× × ×

(Signed) W. Parkes.

True Extracts
(Signed.) A. Lee Pogson
Engineer, Harbour Trust Board

True Copy

Secretary
Harbour Trust Board

HARBOUR TRUST BOARD
22 JUL 98
MADRAS

EXTRACT of Proceedings of the TRUSTEES of the HARBOUR of MADRAS, at a Meeting held at the Offices of the Board on Tuesday the 23d day of July 1889.

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× × ×

4. Read telegram from the Secretary to Government D.P.W. dated 20th instant Confirming his telegram of 12th idem directing that the abutment blocks be set in the north arm at the spot now reached.

~~Read telegram of same date despatched in reply thereto.~~

Read again letter from the Boards Engineer No. 364 dated 22d June 1889.

Read draft letter to the Chief Secretary to Government Marine Department dated 22d July 1889 submitting for the Consideration of Government the proposals of the Boards Engineer read above for placing an abutment in either arm of the Harbour at any time and at any spot without delaying Progress.

Approved

× × ×

(True Extract)

HARBOUR TRUST BOARD,
24 JUL. 89
MADRAS.

45 ~~40~~

Secretary
Harbour Trust Board

[illegible]

To (Station) 2277 From (Station)
Madras Ootacamund

Dated 20 July 1889.

To (Person) From (Person)
Chairman Madras Works
Harbour Trust Board

24 JUL. 89

My telegram 12 July ordering abutment to be put in at 2862 feet is confirmed Orders follow.

True Copy

C Brissett

Secretary
Harbour Trust Board

MARKS.

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MADRAS HARBOUR WORKS.

Comparison of Expenditure to date with Sanctioned Estimate for the month of April 1889.

	Sub-head of Work.		As per Estimate.				As executed.							Remarks.
			Quantity.	Rate.	Per	Cost.	Quantity.	Rate.	Cost. Total up to 31st December 1884	Cost. During the month	Cost. Up to date.	Arrears not paid.	Grand Total as compared with Estimate.	
	1		2	3	4	5	6	7	8	9	10	11	12	13
				Rs. A. P.		Rs.		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
	As per Old Estimate.													
1	Works		....			49,15,752			5509324 8 10		5509324 8 10		5509324 8 10	
2	Establishment		....			3,57,612	....		529904 - -		529904 - -		529904 - -	
3	Tools and Plant		....			4,71,801	....		515262 6 -		515262 6 -		515262 6 -	
	Total		....			57,45,165	....		6554490 14 10		6554490 14 10		6554490 14 10	
	New Estimate.													
4	Alteration and extension of block ground	Prely.	....			8,000	....				5882 3 5	9 13 6	5892 - 11	
	North Pier.													
	Rubble Stone in Foreshore and Base.													
5	Ordinary deposited from break-water	Tons	5,532	1 8 0	Ton	8,297	2780	1 12 -			4865 - -		4865 - -	
6	Do. from boats	"	1,82,260	2 0 0	"	3,64,520	192273½	1 [illegible] 6		2104 - -	367418 2 2	11080 1 1	378498 3 3	
7	Large ordinary deposited under wave breaker from break-water	"	14,750	1 12 0	"	25,812	11149¾	1 12 -			19512 9 -		19512 9 -	
8	Concrete blocks for building	C. yds.	58,116	9 0 0	C. yd.	5,23,044	19141 4/27	10 7 9			200713 3 3		200713 3 3	
9	Setting blocks at commencement of new work	"	2,062	2 0 0	"	4,124	2515¼	2 [illegible]			5414 11 2		5414 11 2	
10	Do. from 2,200 to 3,600 feet	"	35,245	2 8 0	"	88,112	16526 10/27	2 [illegible] 5		3175 10 4	35562 8 7	15 3 2	35577 11 9	
11	Do. at Pier head	"	20,809	3 0 0	"	62,427	-				-		-	
12	Concrete in mass for filling	"	500	10 0 0	"	5,000	263	4 8 3			1188 - 7		1188 - 7	
	Wave Breaker.													
13	Built blocks	C. yds.	288	10 0 0	C. yd.	2,880	228	[illegible] 6 7			2692 - -		2692 - -	
14	Ordinary concrete blocks	"	70,849	9 0 0	"	6,37,641	38708 23/35	10 5 4		54563 4 -	399950 2 8		399950 2 8	
15	Depositing do.	"	70,849	1 0 0	"	70,849	39274 35/27	[illegible]		1133 15 5	29641 7 10	4784 3 6	34426 11 4	
16	Apron blocks	"	1,667	9 0 0	"	15,003	-				-		-	
17	Setting do.	"	1,667	4 0 0	"	6,668	-				-		-	
18	Concrete in bags	"	742	12 0 0	"	8,904	-				-		-	
19	Cramps	No.	330	10 0 0	Each	3,300	136	2 11 6		80 8 -	313 8 7	56 4 -	369 12 7	
20	Concrete capping	C. yds.	22,400	10 0 0	C. yd.	2,24,000	281⅓	16 14 4			4752 13 4		4752 13 4	
	Total for North Pier		....			20,50,581				61057 5 9	1072024 3 2	15935 11 9	1087959 14 11	
	South Pier.													
	Rubble Stone in Foreshore and Base.													
21	Ordinary deposited from break-water	Tons	675	1 8 0	Ton	1,013					-		-	
22	Do. from boats	"	1,69,517	2 0 0	"	3,39,034	164188	2 [illegible] 10		2585 12 11	406512 4 10	11747 3 6	418259 8 4	
23	Large, deposited from break-water	"	15,038	1 12 0	"	26,317	8814½	[illegible]			15075 13 -		15075 13 -	
24	Concrete blocks for building	C. yds.	52,153	9 0 0	C. yd.	4,69,377	28146¾	10 9 11		785 - 9	298881 6 4		298881 6 4	
25	Setting blocks at commencement	"	2,062	2 0 0	"	4,124	2556	3 1 6			7911 13 3		7911 13 3	
26	Do. from 2,550 to 3,700 feet	"	29,282	2 8 0	"	73,205	25589½	3 1 10		1554 2 11	78455 11 7	1205 7 -	79661 2 7	
27	Do. at Pier head	"	20,809	3 0 0	"	62,427	-				-		-	
28	Concrete in mass for filling	"	500	10 0 0	"	5,000	602	7 [illegible] 1			4554 14 4		4554 14 4	
	Wave Breaker.													
29	Concrete blocks	C. yds.	57,066	9 0 0	C. yd.	5,13,594	29251 [illegible]	10 13 8		33640 8 -	317610 13 9		317610 13 9	
30	Depositing blocks	"	57,066	1 0 0	"	57,066	29388 9/169	1 2 11		1750 8 4	34356 4 -	375 15 9	34731 3 9	
31	Apron do.	"	1,667	9 0 0	"	15,003	-				-		-	
32	Setting do.	"	1,667	4 0 0	"	6,668	-				-		-	
33	Concrete in bags	"	742	12 0 0	"	8,904	-				-		-	
34	Cramps	No.	275	10 0 0	Each	2,750	143	2 [illegible] 6		33 10 -	358 10 2	38 13 9	397 7 11	
35	Concrete capping	C. yds.	19,200	10 0 0	C. yd.	1,92,000	388 [illegible]	[illegible]			7757 13 4		7757 13 4	
	Total for South Pier		....			17,76,482				40449 10 11	1171374 8 7	13367 8 -	1184742 - 7	
36	Tools and Plant		....			3,19,529				37 7 10	383283 6 2	4942 - 8	388225 6 10	
						3,19,529							388225 6 10	
37	Contingencies at 2½ per cent.		....			1,03,865				10 10 8	54995 1 8	7679 14 3	62674 15 11	
						1,03,865							62674 15 11	
38	Lighting entrance		....			20,000								
39	Establishment		....			3,11,594				4395 10 4	309265 - 1	107 13 -	309372 13 1	
						3,11,594							309372 13 1	
40	Materials at site (concrete blocks in yards)	C. yds.	....			....	11892 4/27	[illegible]		[illegible]	118968 2 6	16372 12 10	135340 15 4	
41	Advances to work-people		....			....					4970 14 5		4970 14 5	
42	Other stores		....			....					29406 7 11	64319 13 8	93726 5 7	
	Total of Estimate and value of work done		....			45,90,051				54190 6 6	3150169 15 11	122735 7 8	3272905 7 7	
	Deduct Probable recoveries due to sales of Tools and Plant.		....			....				-1617 13 10	[illegible]		[illegible]	
	Total		....			45,90,051				52572 8 8	3115457 6 2	122735 7 8	3238192 13 10	
	Deduct Arrears due		....			....	....		....	....	....	....	122735 7 8	
	Total Outlay to date by books		....			....	....		....	....	....	....	3115457 6 2	
	Deduct Total Outlay to end of last year		....			....	....		....	....	....	....	× 3033478 5 7	
	Total		....			....	....		....	....	....	....	81979 - 7	
	Deduct Value of Stock		....			....	....		....	....	....	....	29406 7 11	
	Total		....			....	....		....	....	....	....	× 52572 8 8	
	Add Net Debits to Suspense Heads during the year		....			....	....		....	....	....	....	[illegible]	
	Net Debits of the year		....			....	....		....	....	....	....	16911 14	
	Grant for 188 -8 , Rupees		....			....	....		....	....	....	....		

× Outlay on Works up to 31st March 1889 — 3033478-5-7

Do. — during the Current year for April 1889 — 52572-8-8

Total Net outlay up to 30th April 1889 — Rs 3086050-[illegible]-3

Madras, 9th July 1889

[illegible]
Accountant
M.H. Works Office

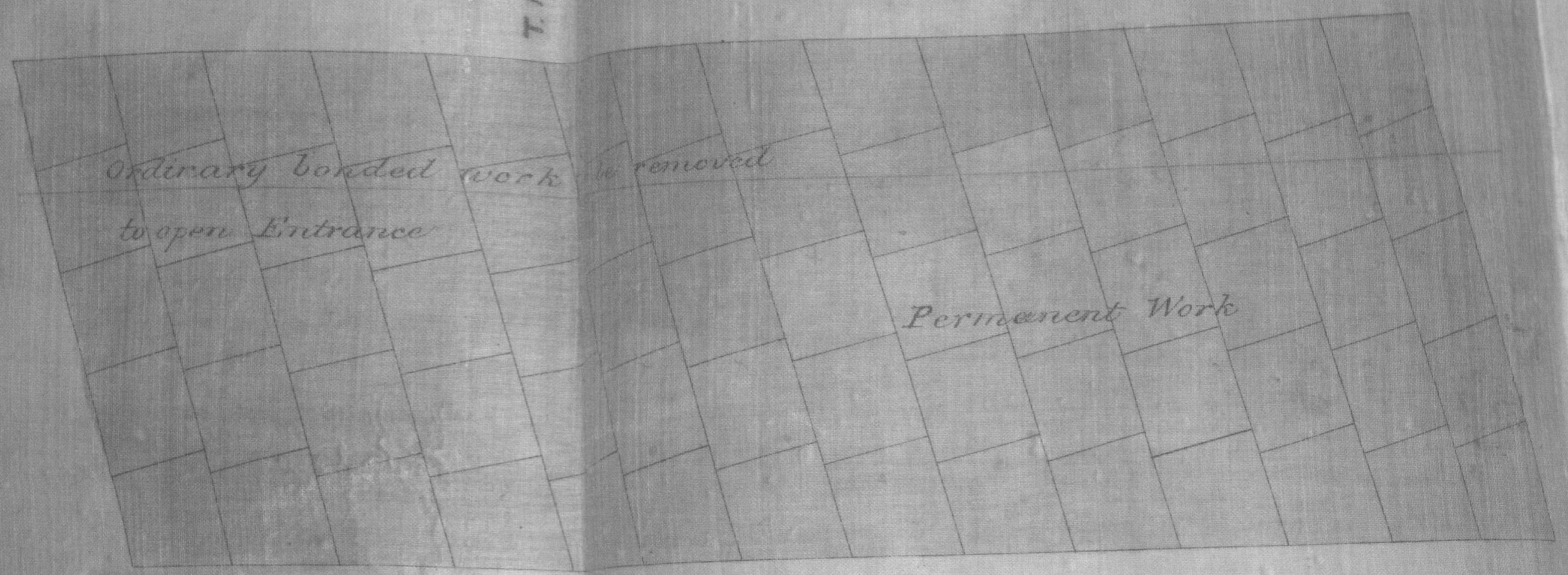
48

A.M. Pogson
Engr. & Superintendent Trust Board
~~Madras Harbour Works.~~

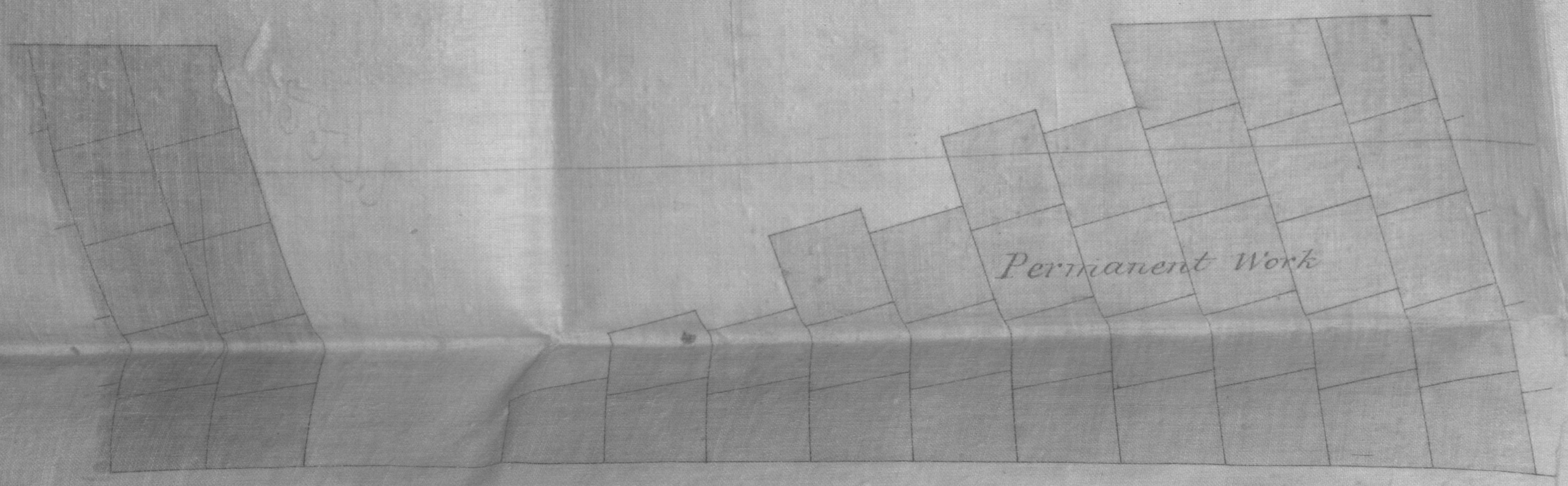
M.H.W.

Alternative for opening N. E. Entrance Plan A. (without Abutment)

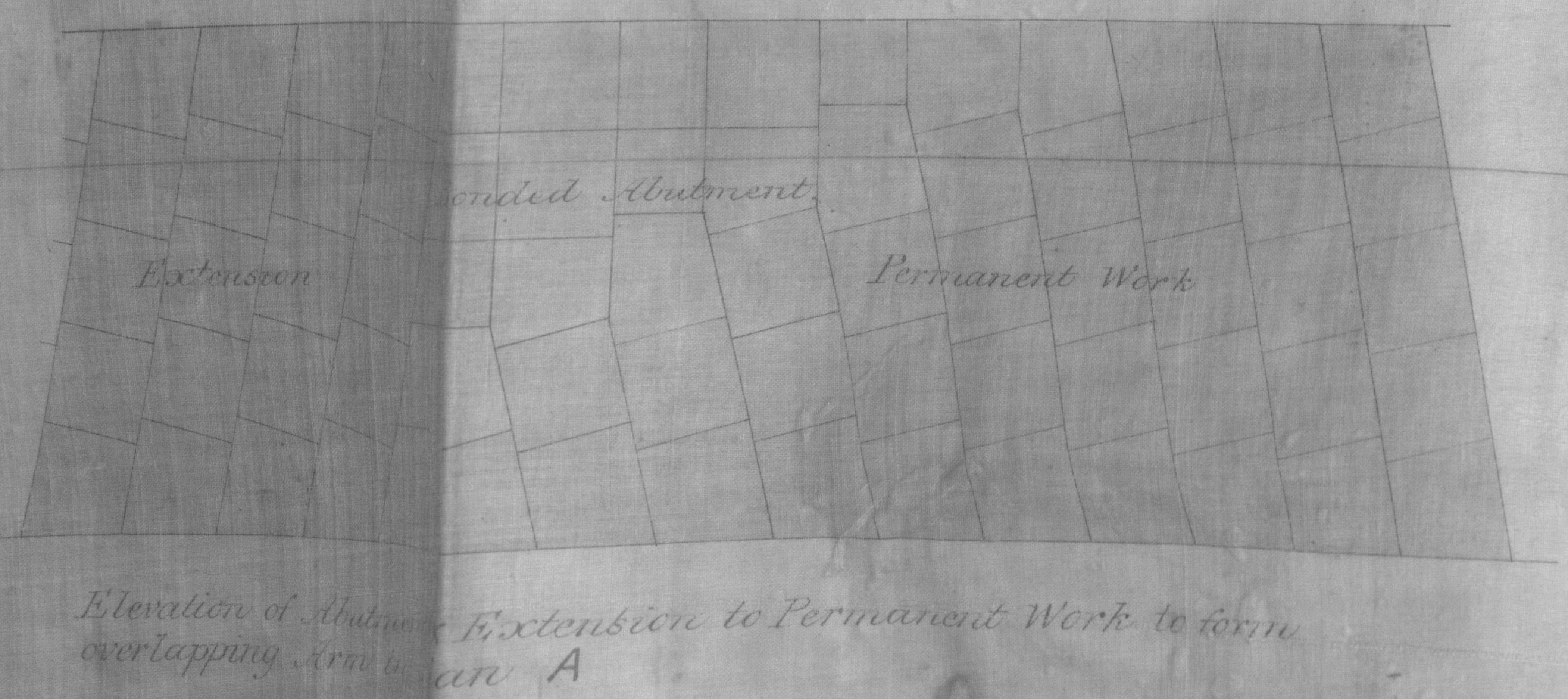
T.P.



Elevation North Pier Curve.



Elevation shewing Blockwork removed.



Elevation of Abutme[illegible] Extension to Permanent Work to form
overlapping Arm i[illegible]an A

Tracing accompanying Engineer's letter
No 364 dated 22nd June 1889

A. Lee Bryan
Engineer, Harbour Trust Board.

12 JUL 89

MADRAS HARBOUR WORKS.

Comparison of Expenditure to date with Sanctioned Estimate for the month of April 1889.

	Sub-head of Work.	As per Estimate. Quantity.	Rate. Rs.	A.	P.	Per	Cost. Rs.	As executed. Quantity.	Rs. .. P.	Cost. Total up to 31st December 1888 Rs.	A.	P.	During the month Rs.	A.	P.	Up to date. Rs.	A.	P.	Arrears not paid. Rs.	A.	P.	Grand Total as compared with Estimate. Rs.	A.	P.	Remarks.
	1	2	3			4	5	6		8			9			10			11			12			13
	As per Old Estimate.																								
1	Works	....	..	..	..	..	49,15,752	....		5509324	8	10	-	-	-	5509324	8	10	-	-	-	5509324	8	10	
2	Establishment	....	..	..	..	..	3,57,612	....		529904	-	-	-	-	-	529904	-	-	-	-	-	529904	-	-	
3	Tools and Plant	....	..	..	..	..	4,71,801	....		515262	6	-	-	-	-	515262	6	-	-	-	-	515262	6	-	
	Total	....	..	..	..	..	57,45,165			6554490	14	10	-	-	-	6554490	14	10	-	-	-	6554490	14	10	
	New Estimate.																								
4	Alteration and extension of block ground .. Proly.	....	..	..	..	..	8,000	....		-	-	-	-	-	-	5882	3	6	9	13	6	5892	-	11	
	North Pier.																								
	Rubble Stone in Foreshore and Base.																								
5	Ordinary deposited from break-water .. Tons	5,532	1	8	0	Ton	8,297	2780		-	-	-	-	-	-	4865	-	-	-	-	-	4865	-	-	
6	Do. from boats .. "	1,82,260	2	0	0	"	3,64,520	192273¼		-	-	-	2104	-	-	367418	2	2	11080	1	1	378498	3	3	
7	Large ordinary deposited under wave breaker from break-water .. "	14,750	1	12	0	"	25,812	11149¾		-	-	-	-	-	-	19512	9	-	-	-	-	19512	9	-	
8	Concrete blocks for building .. C. yds.	58,116	9	0	0	C. yd.	5,23,044	19141 4/27		-	-	-	-	-	-	200713	3	3	-	-	-	200713	3	3	
9	Setting blocks at commencement of new work .. "	2,062	2	0	0	"	4,124	2615 4/9		-	-	-	-	-	-	5414	11	2	-	-	-	5414	11	2	
10	Do. from 2,200 to 3,600 feet .. "	35,245	2	8	0	"	88,112	16525 14/27		-	-	-	3175	10	4	35562	8	7	15	3	2	35577	11	9	
11	Do. at Pier head .. "	20,809	3	0	0	"	62,427	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	Concrete in mass for filling .. "	500	10	0	0	"	5,000	263		-	-	-	-	-	-	1188	-	7	-	-	-	1188	-	7	
	Wave Breaker.																								
13	Built blocks .. C. yds.	288	10	0	0	C. yd.	2,880	268		-	-	-	-	-	-	2692	-	-	-	-	-	2692	-	-	
14	Ordinary concrete blocks .. "	70,849	9	0	0	"	6,37,641	38708 11/33		-	-	-	54563	4	-	399950	2	8	-	-	-	399950	2	8	
15	Depositing do. .. "	70,849	1	0	0	"	70,849	39274 25/27		-	-	-	1133	15	5	29641	7	10	4784	3	6	34425	11	4	
16	Apron blocks .. "	1,667	9	0	0	"	15,003	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	Setting do. .. "	1,667	4	0	0	"	6,668	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	Concrete in bags .. "	742	12	0	0	"	8,904			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	Cramps .. No.	330	10	0	0	Each	3,300	136		-	-	-	80	8	-	313	8	7	56	4	-	369	12	7	
20	Concrete capping .. C. yds.	22,400	10	0	0	C. yd.	2,24,000	281⅓		-	-	-	-	-	-	4752	13	4	-	-	-	4752	13	4	
	Total for North Pier ..	....	..	..	..	..	20,50,581			-	-	-	61067	5	9	1072024	3	2	15935	11	9	1087959	14	11	
	South Pier.																								
	Rubble Stone in Foreshore and Base.																								
21	Ordinary deposited from break-water .. Tons	675	1	8	0	Ton	1,013	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	Do. from boats .. "	1,69,517	2	0	0	"	3,39,034	164088		-	-	-	2685	12	11	406512	4	10	11747	3	6	418259	8	4	
23	Large, deposited from break-water .. "	15,038	1	12	0	"	26,317	8614¾		-	-	-	-	-	-	15075	13	-	-	-	-	15075	13	-	
24	Concrete blocks for building .. C. yds.	52,153	9	0	0	C. yd.	4,69,377	28145 1/9		-	-	-	785	-	9	298881	6	4	-	-	-	298881	6	4	
25	Setting blocks at commencement .. "	2,062	2	0	0	"	4,124	2550		-	-	-	-	-	-	7911	13	3	-	-	-	7911	13	3	
26	Do. from 2,550 to 3,700 feet .. "	29,282	2	8	0	"	73,205	25589 4/9		-	-	-	1554	2	11	78455	11	7	1205	7	-	79661	2	7	
27	Do. at Pier head .. "	20,809	3	0	0	"	62,427	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28	Concrete in mass for filling .. "	500	10	0	0	"	5,000	602		-	-	-	-	-	-	4554	14	4	-	-	-	4554	14	4	
	Wave Breaker.																								
29	Concrete blocks .. C. yds.	57,066	9	0	0	C. yd.	5,13,594	29251 11/27		-	-	-	33640	8	-	317510	13	9	-	-	-	317510	13	9	
30	Depositing blocks .. "	57,066	1	0	0	"	57,066	29289 26/189		-	-	-	1750	8	4	34355	4	-	375	15	9	34731	3	9	
31	Apron do. .. "	1,667	9	0	0	"	15,003	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	Setting do. .. "	1,667	4	0	0	"	6,668	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	Concrete in bags .. "	742	12	0	0	"	8,904	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	Cramps .. No.	275	10	0	0	Each	2,750	143		-	-	-	32	10	-	358	10	2	38	13	9	397	7	11	
35	Concrete capping .. C. yds.	19,200	10	0	0	C. yd.	1,92,000	388 1/12		-	-	-	-	-	-	7757	13	4	-	-	-	7757	13	4	
	Total for South Pier ..	....	..	..	..	..	17,76,432			-	-	-	40429	10	11	1171374	8	7	13367	8	-	1184742	-	7	
36	*Tools and Plant*	....	..	..	..	..	3,19,529			-	-	-	37	7	10	383283	6	2	4942	-	8	388225	6	10	
							3,19,529															388225	6	10	
37	*Contingencies at 2½ per cent.* ..	....	..	..	..	..	1,03,865			-	-	-	-10	10	8	54995	1	8	7679	14	3	62674	15	11	
							1,03,865															62674	15	11	
38	Lighting entrance	....	..	..	..	..	20,000			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	Establishment	....	..	..	..	..	3,11,594			-	-	-	4395	10	4	309265	-	1	107	13	-	309372	13	1	
							3,11,594															309372	13	1	
40	Materials at site (concrete blocks in yards) .. C. yds.	....	..	..	..	..	....	11892 2/27		-	-	-	-51739	1	6	118968	2	6	16372	12	10	135340	15	4	
41	Advances to work-people	....	..	..	..	..	....			-	-	-	-	-	-	4970	14	5	-	-	-	4970	14	5	
42	Other stores	....	..	..	..	..	....			-	-	-	-	-	-	29406	7	11	64319	13	8	93726	5	7	
	Total of Estimate and value of work done ..	....	..	..	..	..	45,90,051			-	-	-	54190	6	6	3150169	15	11	122736	7	8	3272905	7	7	
	Deduct Probable recoveries due to sales of Tools and Plant.	....	..	..	..	..	....			-	-	-	-1617	13	10	-34712	9	9	-	-	-	-34712	9	9	
	Total ..	....	..	..	..	..	45,90,051			-	-	-	52572	8	8	3115457	6	2	122735	7	8	3238192	13	10	
	Deduct Arrears due ..	....	..	..	..	..	....	....	..	....	..	..	....	..	..	....	..	..	....	..	..	122735	7	8	
	Total Outlay to date by books	....	..	..	..	..	....	....	..	....	..	..	....	..	..	....	..	..	....	..	..	3115457	6	2	
	Deduct Total Outlay to end of last year	....	..	..	..	..	....	....	..	....	..	..	....	..	..	....	..	..	....	..	..	3033478	5	7	
	Total ..	....	..	..	..	..	....	....	..	....	..	..	....	..	..	....	..	..	....	..	..	81979	-	7	
	Deduct Value of Stock	....	..	..	..	..	....	....	..	....	..	..	....	..	..	....	..	..	....	..	..	29406	7	11	
	Total ..	....	..	..	..	..	....	....	..	....	..	..	....	..	..	....	..	..	....	..	..	52572	8	8	
	Add Net Debits to Suspense Heads during the year	....	..	..	..	..	....	....	..	....	..	..	....	..	..	....	..	..	....	..	..	-35660	10	[illegible]	
	Net Debits of the year	....	..	..	..	..	....	....	..	....	..	..	....	..	..	....	..	..	....	..	..	16911	14	-	
	Grant for 188 -8 , Rupees	....	..	..	..	..	....	....	..	....	..	..	....	..	..	....	..	..	....	..	..	....			

Abstract

Outlay on Works up to 31st March 1889 — Rs 30,33,478-5-7

Do. during the current year for April 1889 — 52572-8-8

Total Net outlay up to 30th April 1889 — Rs 30,86,050-14-3.

227

Madras, 9th July 1889.

Accountant
M. H. Works Office.

429

Engineer, Harbour Trust Board
~~Superintendent,~~
~~Madras Harbour Works.~~

Civ

2277

No 2277 W PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 19th Augt./89

READ the following

From the Chairman M. H. T. Bd. No 2524 d/ 17.7.89

Endt. thereon in Marine Dept d/ 20.7.89.

From the Chairman M. H. T. Bd. No 2613 d/ 18.7.89.

Endt. thereon in the Marine Dept ~~No 26~~ d/ 26.7.89

From the Chairman M. H. T. Bd. No 2616 d/ 22.7.89

Endt. thereon in the Marine Dept d/ 26.7.89.

35 Note by the Ag. Joint Secy to Govt P.W. Dept d/ 1-8-89

36 P

On reconsideration, the Govt. resolves to withdraw its orders+ in which the construction of an abutment in the North arm of the Harbour was insisted upon. In accordance with the recommendation in para 6 of Colonel Mead's note printed with Pros. No 821 W d/ 19th March 1889

+ No 622 W d/ 2 March 1889.
" 1995 W d/ 24 July 1889.

VCS
5 Aug.

50

1889. the "set" blocks in the wave breakers of the North arm may now be placed in random, and the work may be proceeded with in accordance with the sanctioned design.

2. A copy of these Pros. will be forwarded to the Secy. of State for information.

16

A.S. No. 2277W dy 19th Augt./89

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

My Lord,

With reference to Your Lordship's despatch No. 8 Public Works dated 20th June 1889, we have the honour to forward a copy of our Pros. No. 2277W dy 19th Augt. 1889, from which Your Lordship will observe that we have permitted

pressed to, the

Chairman M.H.T. Bd

Marine Dept

D 22/8/89

2277

388

the Madras Harbour Trust Board to dispense with the construction of the proposed abutment in the North Arm of the Harbour. We have arrived at this decision on perusal of Sir A. M. Rendel's report of 7th June 1889, in which he stated ~~that~~ he attached no great importance to the abutment; on the strong representation of the Harbour Trust Board that the construction of the abutment will seriously delay the progress of the works; and on a report by our Chief Engr., who personally inspected the works & satisfied himself that the abutment is unnecessary.

MCB
31.7.89

Cl

1.8.89

44 57

Hm

Draft to B[illegible]

Abutment in North Arm of Harbour Works.

Agg. 21/8. Hm 578.

2277

2277

39

52

52

Govt. of 18 , Madras.

PUBLIC WORKS.

~~Urgent~~

Dated

Recd. Encl.

50 copies
3

G.O., 30 copies 18 , No. 2274

Madras Harbour

Orders dispensing wi
the construction of the
proposed abutment
in the North Ar
of the ———

Forward copy of
Pro.- dispensing with
the construction of the
proposed abutment in
arm of the