(1) பக்கங்களின் எண்ணிக்கை 34

(2) புதுக்கித் திருப்பிய நாள் July 89

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம் [illegible]

தமிழ்நாடு ஆவணக் காப்பகம்.

30

தமிழ்நாடு அரசு

PWD துறை

அரசாணை எண்.
மு. கோப்புத் தாள் எண். 1396 அச்சகம்
பலவகை

நாள் : 27 5 1889 198 .

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

17 Sheets

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ஆவண, கா-1—18,000—15-6-87.

17+7

1396

27TH MAY 1889, No. 1396 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following paper :—

From Sir RICHARD BARLOW, *Bart.*, C.S., Chairman, Harbour Trust Board, to the Secretary to Government, Public Works Department, dated Madras, 10th May 1889, No. 1676.

I have the honor to submit, for the information of Government, letter (in original) from the Engineer, Harbour Trust Board, No. 141, dated 2nd May 1889, reporting upon the progress made upon the Madras Harbour Works during the month of March 1889, with a tracing in duplicate.

2. The quarterly report called for in G.O., No. 1062 W., dated 18th April 1889, will follow in due course.

ENCLOSURE.

From A. L. POGSON, Esq., Engineer, Madras Harbour Trust Board, to the Chairman, Harbour Trust Board, dated Madras, 2nd May 1889, No. 141.

I have the honor to submit my report on the progress made on these works during the past month of March 1889.

2. Accompanying this report is a lithographed plan of the harbour (submitted in triplicate) showing the work done during the month in red.

3. *North Pier Works Rubble Base.*—At the north pier 2,544½ tons of rubble stone was tipped which went to make up the base immediately under the pier and widening out the foreshore.

4. *Superstructure.*—The progress at this arm was rapid and regular throughout the month, which is shown by 29½ courses of blocks being set in 26 working days or 294 blocks being set by divers, extending the north pier by 177 running feet, which nearly completes the north pier curve.

5. *Concrete Blockmaking.*—The work of blockmaking was carried on from the 5th to 27th March, which was as long as the supply of stone for this purpose lapsed. During these 20 working days 233 blocks were made containing 3,852½ cubic yards of concrete.

6. *South Pier Works Rubble Base.*—After blasting 18 of the old 27-ton blocks thrown from the old ruined wall and lying in the way of the new work (which adds 486 tons of material to the base), the rubble base was extended a short distance by depositing 1,959 tons of stone by boats; thus the total materials added to the base in March was equal to 2,445 tons.

7. *Superstructure.*—Unfortunately the progress at this arm was limited, owing to the want of blocks, over three months old, caused through the constant stoppages to block making for want of chips.

8. From the 1st to the 4th, 40 blocks were set which added a length of 25 feet to the pier, bringing up the total length of the masonry pier to 3,519 feet from the first block set in shore.

9. *Wavebreaker.*—As the titan crane could no longer be supplied with superstructure blocks, the work of protecting the new length of pier built this season was commenced earlier than necessary. By the end of March 276·30 ton blocks had been deposited with the wavebreaker crane to a width of as near 40 feet from the bonded work as possible.

10. *Pallávaram Quarries.*—Thirty-two trains brought a supply of 6,861 tons of stone for the works, but only 2,357½ tons of this quantity were chips supplied by the contractor.

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

			TONS.	CWTS.	QRS.	LB.
By the S.S. "Rewa"	1,350	casks of Portland cement containing ...	241	1	1	20
Do. "Golconda"	500	do. do. ...	89	5	2	24
Do. "India"	930	do. do. ...	166	1	1	20
Total ...	2,780	Total ...	496	8	2	8

MADRAS HARBOUR WORKS.

RETURN OF WORK FOR MARCH 1889.

Railway Lines.—On the north pier 72 running feet titan permanent-way was relaid, 1,172⅓ running feet single rail for mixed gauge, 442½ running feet temporary metre gauge siding and 184 running feet temporary broad gauge lines were laid. On the south pier 810 running feet permanent titan road and 119 running feet temporary titan road were laid.

Quarries.—Thirty-two trains worked in the month bringing stone from Pallávaram.

Rubble.

	TONS.
Total quantity received up to 31st March 1889	356,219¾
Do. do. 28th February 1889	351,716¼
Received in March ...	4,503½

Chips.

Total quantity received up to 31st March 1889	131,940¼
Do. do. 28th February 1889	129,582¾
Received in March ...	2,357½

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 31st March 1889	13,749½	52,412½	119,425¼
Total quantity deposited up to 30th April 1887	11,826¾	52,280½	118,935½
In March ...	1,922¾	132	489¾

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North Pier Superstructure.

	NO.	Contents. C. YDS.
Blocks set up to 31st March 1889	1,184	19,105$\frac{8}{27}$
Do. 28th February 1889	890	14,334$\frac{5}{9}$
In March ...	294	4,770$\frac{20}{27}$

Running feet of new wall built up to 31st March 1889	775
Do. do. 28th February 1889	598
In March ...	177

Total length of wall completed from B	2,825
Do. do. F	775

North Pier supplementary works.—Nothing done since 31st January 1889.
Do. capping.—Nothing done since 30th November 1888.
Do. cramps.— Do. 31st May 1887.
South Pier surf bank.— Do. 30th April 1888.

South Pier Rubble Base.

—	Large rubble under wave-breaker.	Widening foreshore.	Base.
Total quantity deposited up to 31st March 1889	12,061½	38,389¾	120,571
Total quantity deposited up to 28th February 1889	10,102½	38,389¾	120,085
In March ...	1,959	...	* 486

* Eighteen old blocks blasted by dynamite at 27 tons per block.

South Pier Superstructure.

	NO.	Contents. C. YDS.
Blocks set up to 31st March 1889	1,723	28,076$\frac{2}{9}$
Do. 28th February 1889	1,683	27,416⅔
In March ...	40	659$\frac{5}{9}$

Running feet of new wall built up to 31st March 1889	1,132
Do. do. 28th February 1889 ...	1,107
In March ...	25

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 31st March 1889	1,525	26,437$\frac{25}{216}$	...	...
Do. 28th February 1889	1,249	21,484$\frac{97}{216}$	...	...
In March ...	† 276	4,952⅔	3,179 to 3,465 3,119 to 3,159 3,083 to 3,104	40 feet.

† 273 wavebreaker blocks.
¾ old blocks.
1 do.
½ do.
} Picked up by north pier titan from site of work at north pier.

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

Concrete Blocks.

Description of block.	Made up to 28th February 1889.	Made in March.	Made up to 31st March 1889.	Placed in works.		In hand.
				Up to 28th February 1889.	Up to 31st March 1889.	
Old blocks	806	..	806	806	806	..
Wavebreaker blocks	3,092	6	3,098	2,361	2,634	464
Superstructure.						
North pier bottom blocks	227	..	227	152	212	15
Do. middle do.	750	..	750	537	713	37
Do. top do.	248	..	248	175	233	15
South pier bottom do.	387	36	423	330	338	85
Do. middle do.	1,093	102	1,195	922	946	249
Do. top do.	387	68	455	327	335	120
Special	71	..	71	71	71	..
Counterbalance	1	..	1	..	..	1
Special abutment	..	21	21	..	..	21

3,852$\frac{14}{27}$ cubic yards blocks were made in the month.

Blockmaking was commenced on the 5th and was stopped on the 27th.

Nine hundred and thirty-three tons cement was the balance at the end of the month.

One hundred and twenty-three superstructure and 48 wave breaker blocks were transferred from north to south block ground.

Tools and Plant—Stationary Engine.—Two lubricator cocks were ground and the doors and windows of the engine-room repaired and painted.

No. 1 *Boiler.*—Was disconnected and removed from seating.

No. 4 *Boiler.*—Joints of safety valve seating were remade.

Donkey Pump No. 2.—All brass bearings were closed.

Stonecrushers.—Twelve hooks, seven crowbars and a shoot repaired.

No. 1.—A new front jaw, brass bearing, two side wedges and set plates were fixed.

No. 2.—A new eccentric shaft, a new brass bearing for eccentric jaw, two new white metal bearings for eccentric shaft and a new brass bearing were fixed.

No. 3.—A new side wedge and set plates fixed.

No. 4.—A new front jaw and set plates fixed.

No. 5.—Two new side wedges supplied and fixed.

Pump in Running-shed No. 1.—The foot valves were repaired.

Elevator.—Six boxes were repaired.

Concrete Mixers.—Four new canvas water-pipes were supplied.

No. 1.—A new catch and hinges were fixed to door of hopper. Four new brass bearings, four new buckets and four new brass washers for plungers; two new bushes for guide and brackets and a new loose pulley were fixed to the pump and the pump handle was repaired.

No. 6.—A new door-catch was fixed.

Concrete Skips.—Six were repaired.

Goliath Crane No. 1.—A travelling wheel was chipped and a new key fitted.

Goliath Crane No. 2.—A new tumbler was fixed for the square shaft and a new hydraulic piston leather supplied.

Goliath Crane No. 3.—Two new tumblers were fixed for the square shaft, the faces of two crab wheels were chipped and a new hydraulic piston leather was supplied.

Light Traveller No. 2.—A new chain was supplied to the crab winch.

Light Traveller Nos. 1, 2, 3 *and* 4.—All footboards were repaired and painted.

North Pier Titan.—A new screw and nut were made for the releasing gear brake. The valves were ground and joints remade to the boiler feed pump. The teeth and pinion of the travelling gear of crab carriage were chipped. A new pall wheel and a new lever for pall were fitted and the crane was painted. The crane stood at the end of the new work at the end of the month.

South Pier Titan.—A $\frac{3}{4}''$ shunting chain was supplied. The crane stood at the end of the new work at the end of the month.

Wavebreaker Crane.—Two broken teeth were cut out and wrought iron ones fitted on the spur wheel of heaving up gear, and the releasing gear brakes were lined with new blocks. The crane stood at 3,094 feet on south pier at the end of the month.

Block Frames.—Nine block frames were altered for the new special "abutment blocks."

Miscellaneous.—A new handle was made for a riding trolly. Two brake ropes were made for titan cranes. Seventy-six cramps were made for north and south piers. Twelve iron rowlocks and two rudder hooks were made for the divers' boats. Twelve rubble dogs and three pairs of toe caps for divers' boots were made; 135 pickaxes were repaired for the block ground and twelve knee-pieces were made for Lewis wedges.

1396

Locomotive Engine No. 1.—L.H. dummy gland joints were made, waste water cocks were set and two water gauge column cocks were ground.

Locomotive Engine No. 2.—L.H. dummy glands were made. The lead plug was examined. The brass bearings of connecting and coupling rods were closed and the boiler cocks ground.

Locomotive Engine No. 3,—L.H. dummy gland joints were remade. A new waste water cock, a new bracket nut and new bolts to coal bunker were fitted. A new spring hanger was made and fitted, one old stud was drilled out and a new one fitted. A buffer was repaired and fixed.

Block Truck No. 17.—Rebuilt and painted

Block Truck No. 19.—A coupling chain and a cotter pin were made and fitted.

Sand Wagon No. 1.—Four new pedestals were fitted.

Sand Wagon No. 2.—Four new pedestals, four pins to doors, and two pins to draw hook and chain were fitted, the wagons painted.

Sand Wagon No. 6.— A new wheel was fitted.

Sand Wagon No. 11.— Two cotter pins were made and fitted.

Sand Wagon No. 20.— A cotter pin was made and fitted.

Harbour Trust—Beach improvements.—A new line of railway to connect the iron pier with the Madras Railway was laid out and commenced.

Iron Pier.—Seventy running feet half width of the timber work were thoroughly renewed.

Two turn-tables in the Custom-house were supplied with new footplates.

No. 10 B portable crane was thoroughly repaired.

ORDER—dated 27th May 1889, No. 1396 W., Public Works.

Recorded. The progress during the month of March is very satisfactory.

2. A separate report for the last month of the quarter is not required by Government. The quarterly report for the Secretary of State will contain sufficient information.

(True Extract.)

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

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

Exd. J. Henricus.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1889} Madras.

PUBLIC WORKS.

Dated May, 27th.

Recd. *Encl.*

G.O., 27th May 1889, No. 1396 W.

MAY.

Madras Harbour Works

Progress report submitted by the Chairman, Harbour Trust Board, of the — for March 1889, recorded with remarks.

Emb[illegible] W M Barlow

1396 No. 141

9 MAY 89 2 8p

HARBOUR TRUST MADRAS 9 MAY 89 Register No. 2026

From
The ~~SUPERINTENDENT~~, Engineer
MADRAS HARBOUR ~~WORKS~~, Trust Board

To
The Chairman
Harbour Trust Board
Madras

Madras, 2 May 1889.

Circulate
[illegible] 9.5.

Sir,

I have the honor to submit my report on the progress made on these Works during the past month of March 1889.

2. Accompanying this report is a Lithographed plan of the Harbour (submitted in triplicate) shewing the work done during the month in red.

North Pier Works

Rubble Base. 3. At the North Pier 2544½ Tons of Rubble Stone was tipped which went to make up the base immediately under the Pier, and widening out the Foreshore.

Superstructure. 4. The Progress at this arm, was rapid and regular throughout the month, which is shewn by 29½ courses of blocks being set in 26 working days or or 294 blocks being set by Divers extending the North Pier by 177 Running feet which nearly completes the North Pier Curve.

Concrete Blockmaking

5. The Work of Blockmaking was carried on from the 5th to 27th March which was as long as the supply of stone for this purpose lasted - During these 20 working days 233 blocks were made containing 3352½ Cubic yards of Concrete.

South Pier Works

Rubble Base

6. After blasting 19 of the old 27 Ton blocks thrown from the old ruined wall and lying in the way of the New Work (which adds 486 tons of Material to the base), the rubble base was extended a short distance by depositing 1959 Tons of Stone by boats - thus the total materials added to the base in March was equal to 2445 tons.

Superstructure

7. Unfortunately the progress at this Arm was limited, owing to the want of blocks, over three months old; caused through the constant stoppages to Blockmaking

for want of Chips.

8. From the 1st to the 4th 40 blocks were set which added a length of 25 feet to the Pier bringing up the total length of the Masonry Pier to 3519 feet from the first block set in shore.

Wavebreaker.

9. As the Titan Crane could no longer be supplied with Superstructure blocks, the work of protecting the new length of Pier built this Season was commenced earlier than necessary. By the end of March 276, 30 Ton blocks had been deposited with the Wavebreaker Crane to a width of as near 40 feet from the bonded Work as possible.

Pallavaram Quarries

10. Thirty two trains brought a supply of 6861 tons of stone for the Works - but only 2354½ tons of this quantity were Chips supplied by the Contractor.

Stores from England.

11. The following Vessels arrived during the month of March with the following Casks of Cement.

By

By the SS "Rewa". 1350 Casks of Portland Cement containing

			Tons. Cwt. qrs. lbs.
By the SS "Rewa"	1350		241. 1. 1. 20
" " "Golconda"	500	D°	89. 5. 2. 24
" " "India"	930	D°	166. 1. 1. 20.
Total Casks.	2780.	Total Tons	496. 8. 0. 8.

Return of Work for the Month of March 1889.

1326

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Madras Harbour Works

Return of Work for March 1889.

Railway Lines. On the North Pier 72, Rg ft. Titan permanent way was relaid, 1172½ Rg ft. single rail for mixed gauge, 442½ Rg: ft. temporary meter gauge siding and 184 Rg ft. temporary broad gauge lines were laid. On the South Pier 810 Rg ft. permanent Titan road and 119 Rg ft. temporary Titan road were laid.

Quarries. Thirty two trains worked in the month bringing stone from Pallaveram

Rubble	Total quantity received up to 31st March '89 -	356219¾
	D° 28th Feby '89 -	351716¼
	Received in March	4503½
Chips	Total quantity received up to 31st March '89 -	131940¼
	D° 28th Feby '89 -	129582¾
	Received in March -	2357½

Ballast - None received

North Pier Surf Bank. Nothing done since 30th Novr '88

North Pier Rubble Base

	Foreshore		Base
	Large rubble under - Wave Breaker	Widening " Foreshore	
Total quantity deposited up to 31st March '89	13749½	52412½	119425¼
D° 30th April '87	11826¾	52280½	118935½
In March	1922¾	132	489¾

North Pier Superstructure	No.	Con. yds
Blocks set up to 31st March '89 -	1184	19105 8/27
do 28th Feby '89 -	890	14334 5/9
In March -	294	4770 20/27

6

5 sp

Rg ft. of New wall built up to 31st March '89 — 775

——— do ——— 28th Feby '89 — 598

In March — 177

1386

Total length of wall completed from B — 2825

——— do ——— F — 775

North Pier Supplementary Works — Nothing done since 31st Jany '89
North Pier Capping ——— Nothing done since 30th Novr. '88
North Pier Cramps ——— do 31st May '87
South Pier Surf Bank ——— do 30th April '88

South Pier Rubble Base

Total quantity deposited	Large rubble under Wave-Breaker	Widening Foreshore	Base
up to 31st March '89	12061 1/2	38389 3/4	120571
Do. 28th Feby '89	10102 1/2	38389 3/4	120085
In March	1959	0	*486

* 18 old blocks blasted by dynamite, at 27 tons per block.

South Pier Superstructure

	No.	Con cyds
Blocks set up to 31st March '89	1723	28076 2/9
——— Do. 28th Feby '89	1683	27416 2/3
In March	40	659 5/9

Rg ft. of new wall built up to 31st March '89 — 1132

——— Do. ——— 28th Feby '89 — 1107

In March 25

Total length of wall completed from F — 3519

——— Do. ——— G — 1132

South Pier Supplementary Works

Blocks deposited in Wave-Breaker

	No. of Blocks	Con cyds	Dist on Pier	Av Breadth from face of Pier
Up to 31st March '89	1525	26437 25/216	"	"
Do. 28th Feby '89	1249	21484 97/216	"	"
In March	* 276	4952 2/3	3179 to 3465 3119 to 3159 3083 to 3104	40 ft.

* 273 W.B. Blocks
3/4 old blocks
1 do
2/3 — do
} Picked up by North Pier Titan from site of work at North Pier

South Pier Capping - Nothing done since 31st December '88
South Pier Cramps - Do. 31st October '88
Protective Works - Nothing done

396 **Concrete Blocks**

Description of Block	Made up to 28th Feby 1889	Made in March	Made up to 31st March 1889	Placed in Work up to 28th Feby 1889	Placed in Work up to 31st March 1889	In hand	Remarks
Old blocks	806	"	806	806	806	"	
Wave Breaker Blocks	3092	6	3098	2361	2634	464	
Superstructure							
North Pier Bottom Blocks	227	"	227	152	212	15	
Do. Middle Do	750	"	750	537	713	37	
Do. Top Do	348	"	248	175	233	15	
South Pier Bottom Do	387	36	423	330	338	85	
Do. Middle Do	1093	102	1195	922	946	249	
Do. Top Do	387	68	455	327	335	120	
Special	71	"	71	71	71	"	
Counterbalance	1	"	1	"	"	1	
Special Abutment	"	21	21	"	"	21	

3852 $\frac{14}{27}$ cyds blocks were made in the month

Blockmaking was commenced on the 5th and was stopped on the 27th

933 Tons cement was the balance at the end of the month

123 Superstructure and 48 Wavebreaker blocks were transferred from North to South block ground

Tools and Plant

Stationary Engine. Two lubricator cocks were ground and the doors and windows of the Engine-room repaired and painted.

No. 1 Boiler was disconnected and removed from seating

No. 4 Boiler - joints of safety valve seating were remade.

8

No 2

Donkey pump. No. 2. All brass bearings were closed

Stone Crushers. Twelve hooks, seven crow bars and a shoot repaired

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No. 1. A new front jaw, hass bearing, two side wedges and set plates were fixed

No. 2. A new eccentric shaft, a new brass bearing for eccentric jaw, two new white metal bearings for eccentric shaft and a new brass bearing were fixed.

No. 3. A new side wedge and set plates fixed

No. 4. A new front jaw and set plates fixed

No. 5. Two new side wedges supplied and fixed

Pump in Running Shed - No. 1 - The foot valves were repaired

Elevator - Six boxes were repaired

Concrete Mixers. Four new canvas water pipes were supplied

No. 1. A new catch and hinges were fixed to door of hopper - Four new brass bearings four new buckets and four new brass washers for plungers; two new bushes for guide and brackets and a new loose pulley were fixed to the pump and the pump handle was repaired

No. 6 - A new door catch was fixed

Concrete Skips. Six were repaired

Goliath Crane - No. 1. A travelling wheel was chipped and a new key fitted

— Do. — No. 2 - A new tumbler was fixed for the square shaft and a new hydraulic piston leather supplied.

—— Do. —— No. 3. Two new tumblers were fixed for the square shaft, the faces of two crab wheels were chipped and a new

C Hydraulic piston leather was supplied,

Light Traveller. **No 2.** A new chain was supplied to the Crab Winch

Do. **Nos 1. 2. 3. & 4.** All foot boards were repaired and painted

North Pier Titan. A new screw and nut were made for the releasing gear brake. The valves were ground and joints remade to the boiler feed pump. The teeth and pinion of the travelling gear of crab carriage were chipped. A new Pall wheel and a new lever for pall were fitted and the crane was painted. The crane stood at the end of the new work at the end of the month.

V386

South Pier Titan. A 3/4" shunting chain was supplied The crane stood at the end of the new work at the end of the month.

Wave-breaker Crane. Two broken teeth were cut out and Wrot-Iron ones fitted on the spur wheel of heaving up gear, and the releasing gear brakes were lined with new blocks. The crane stood at 3094 feet on South Pier at the end of the month.

Block Frames. Nine block frames were altered for the new special "abutment blocks".

Miscellaneous. A new handle was made for a riding trolly. Two brake ropes were made for Titan Cranes. 76 cramps were made for North and South Piers. Twelve iron rowlocks and two rudder hooks were made for the divers boats

10

1380

boats. Twelve rubble dogs and three pair of toe caps for divers boots were made 135 pickaxes were repaired for the block ground and twelve knee pieces were made for lewis wedges.

Loco Engine - No. 1. L.H. dummy gland joints were made, waste water cocks were set and two water gauge column cocks were ground.

Do. - No. 2. L.H. dummy glands were made, the lead plug was examined. The brass bearings of connecting and coupling rods were closed and the boiler cocks ground

Do. - No. 3. L.H. dummy gland joints were remade. A new waste water cock, a new bracket nut and new bolts to coal bunker were fitted. A new spring hanger was made and fitted one old stud was drilled out and a new one fitted. A buffer was repaired and fixed.

Block Truck - No. 17 - Rebuilt and painted

Do. No. 19 - A coupling chain and a cotter pin were made and fitted

Sand Wagon No. 1. Four new pedestals were fitted

No. 2. Four new pedestals, four pins to doors, and two pins to draw hook and chain were fitted, the wagons painted

Do. - No. 6. A new wheel was fitted

No. 11

U

Sand Wagon — No 11 — Two cotter pins were made and fitted.

— Do. — No. 20. A cotter pin was made and fitted 386

Harbour Trust

Beach Improvements. A new line of railway to connect the Iron Pier with the Madras Railway was laid out and commenced

Iron Pier — 70 Ry ft half width of the timber work were thoroughly renewed

Two turntables in the Custom House were supplied with new foot plates

No 10 B Portable Crane was thoroughly repaired.

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

1P

1396

Harbour Trust Board Office,

MADRAS, 10th May 1889.

No. 1676

FROM

Sir Richard Barlow Bart C. S.

CHAIRMAN, HARBOUR TRUST BOARD,

MADRAS,

TO

Colonel R R E Drake Brockman R.E.

~~CHIEF~~ SECRETARY TO GOVERNMENT,

Public Works ~~Marine~~ Department.

Sir,

I have the honor to submit for the information of Government letter (in original) from the Engineer, Harbour Trust Board, No. 141 dated 2d May 1889, reporting upon the progress made upon the Madras Harbour Works during the month of March 1889, with a tracing in duplicate.

2. The quarterly report, called for in G. O. No. 1062, W dated, 18th April 1889, will follow in due course.

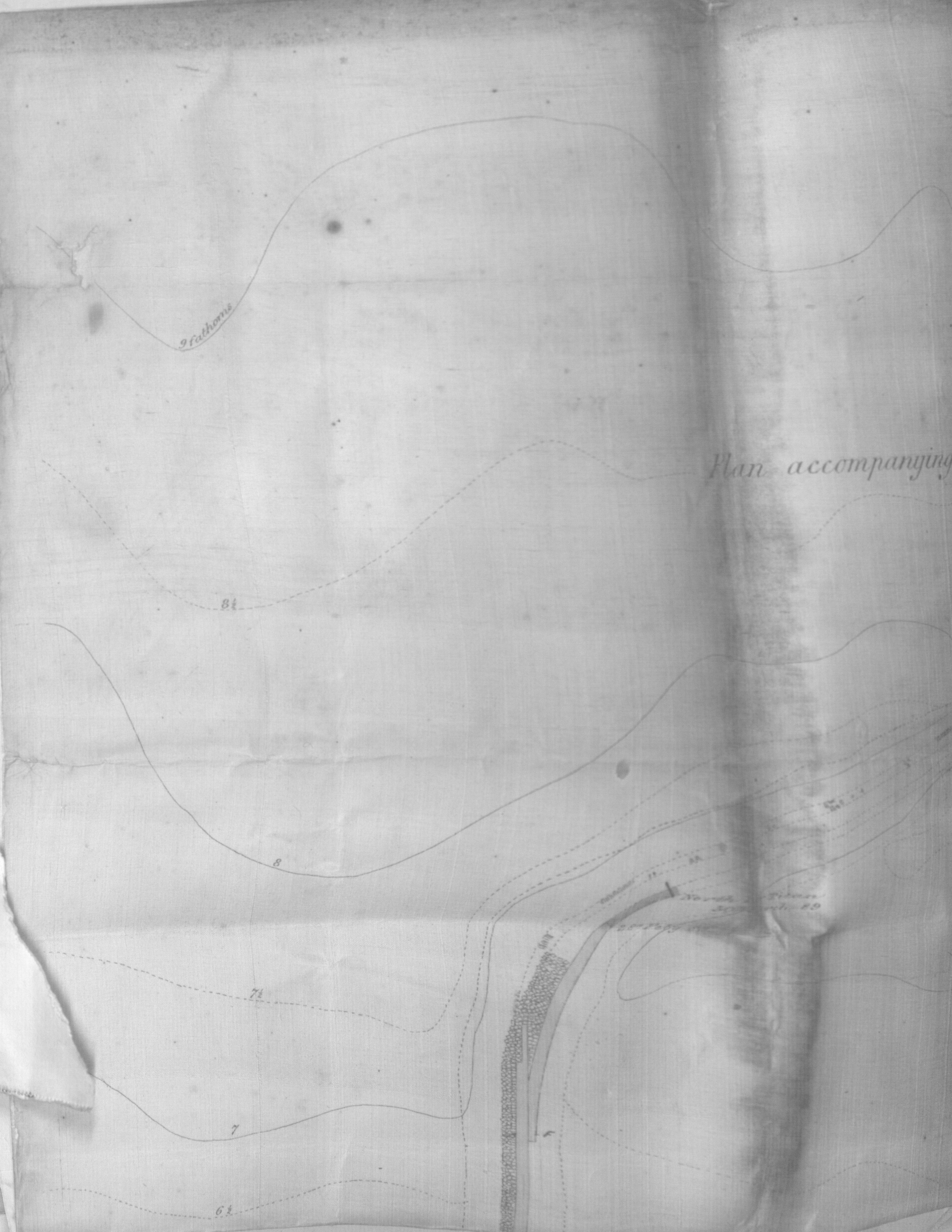
I have the honor to be
Sir
Your most obedt. servant

R. Barlow

hairman, Harbour Trust Board.

C. P. Lee

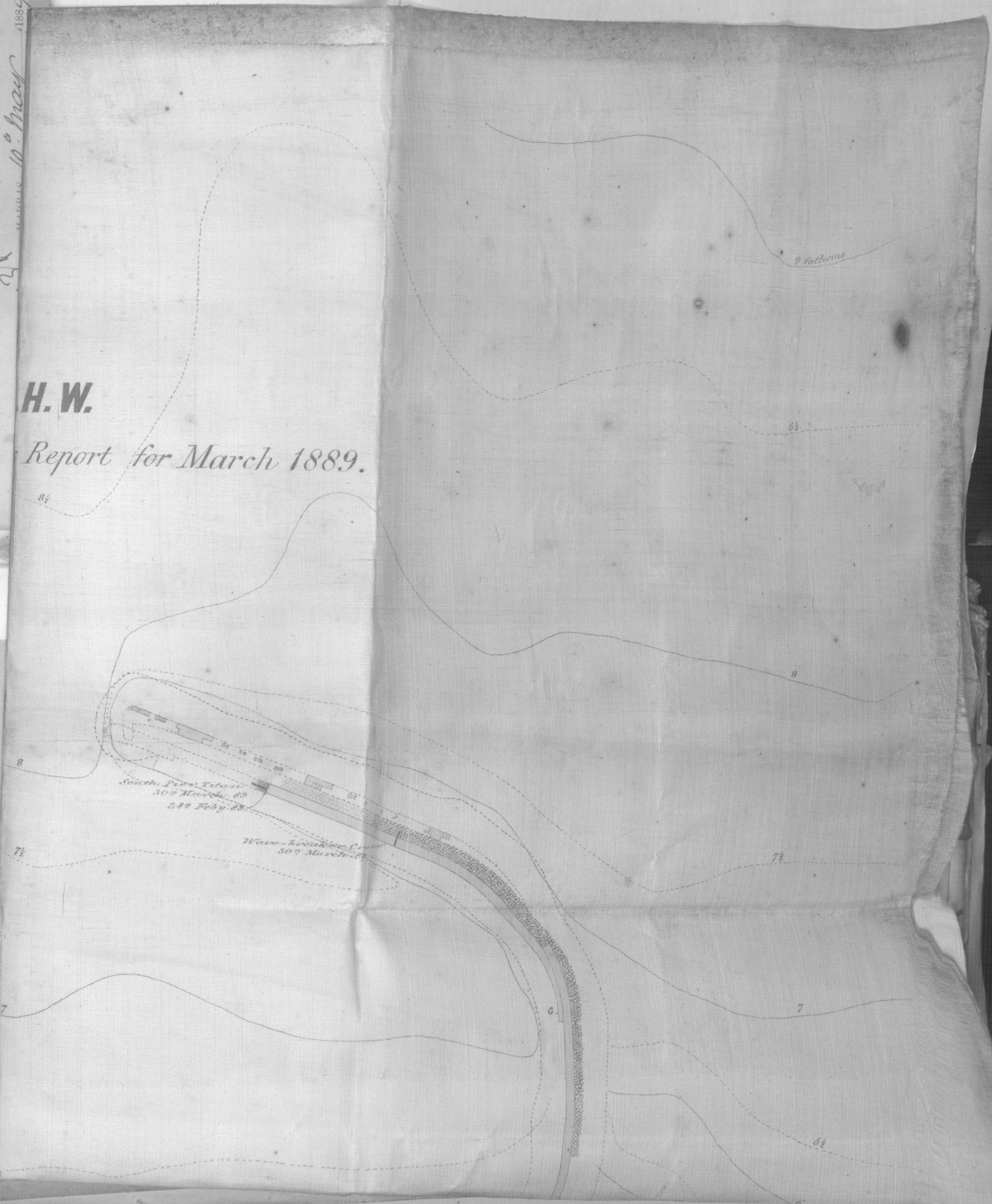
G.N



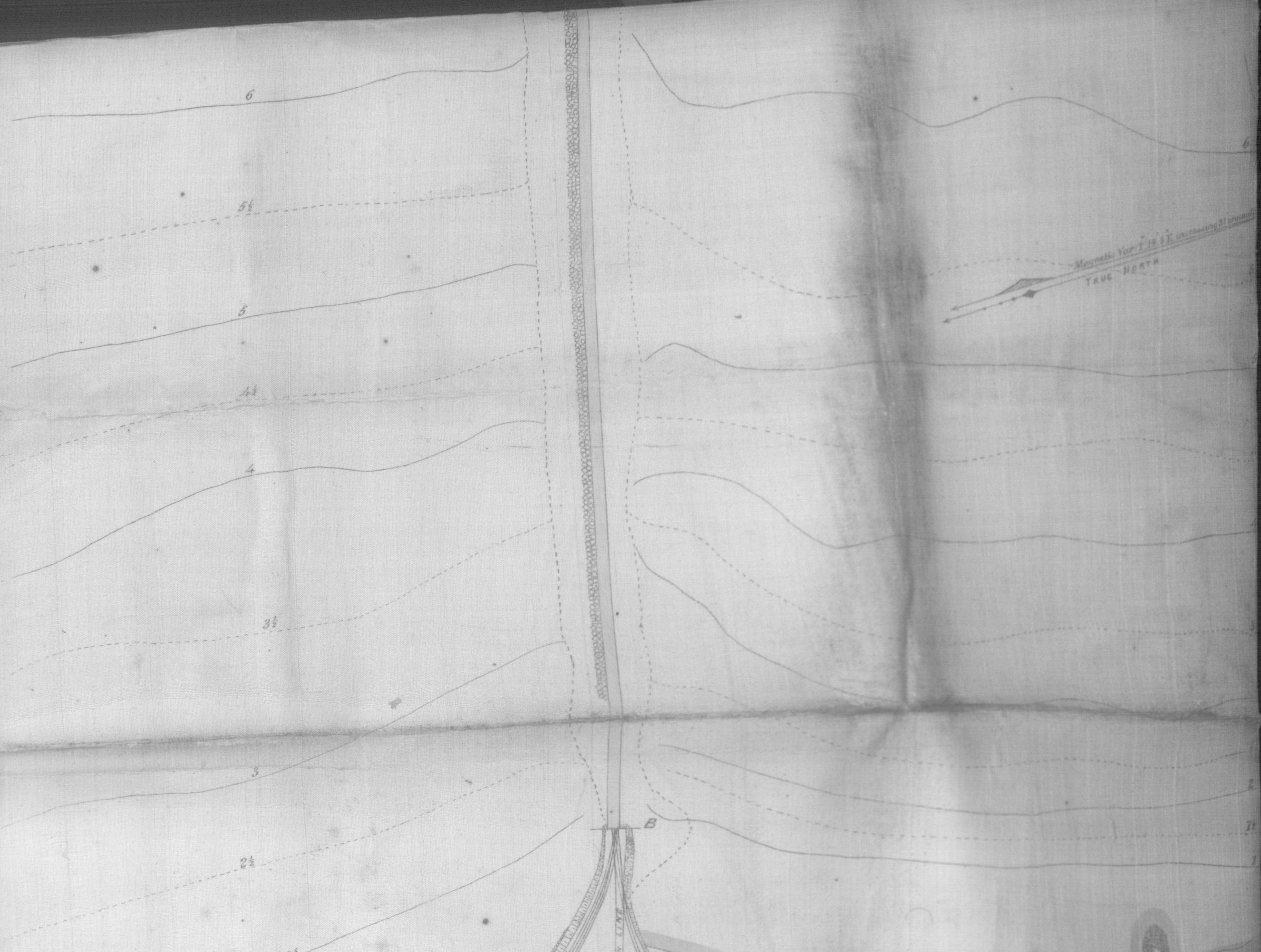
Plan accompanying

H. W.

Report for March 1889.

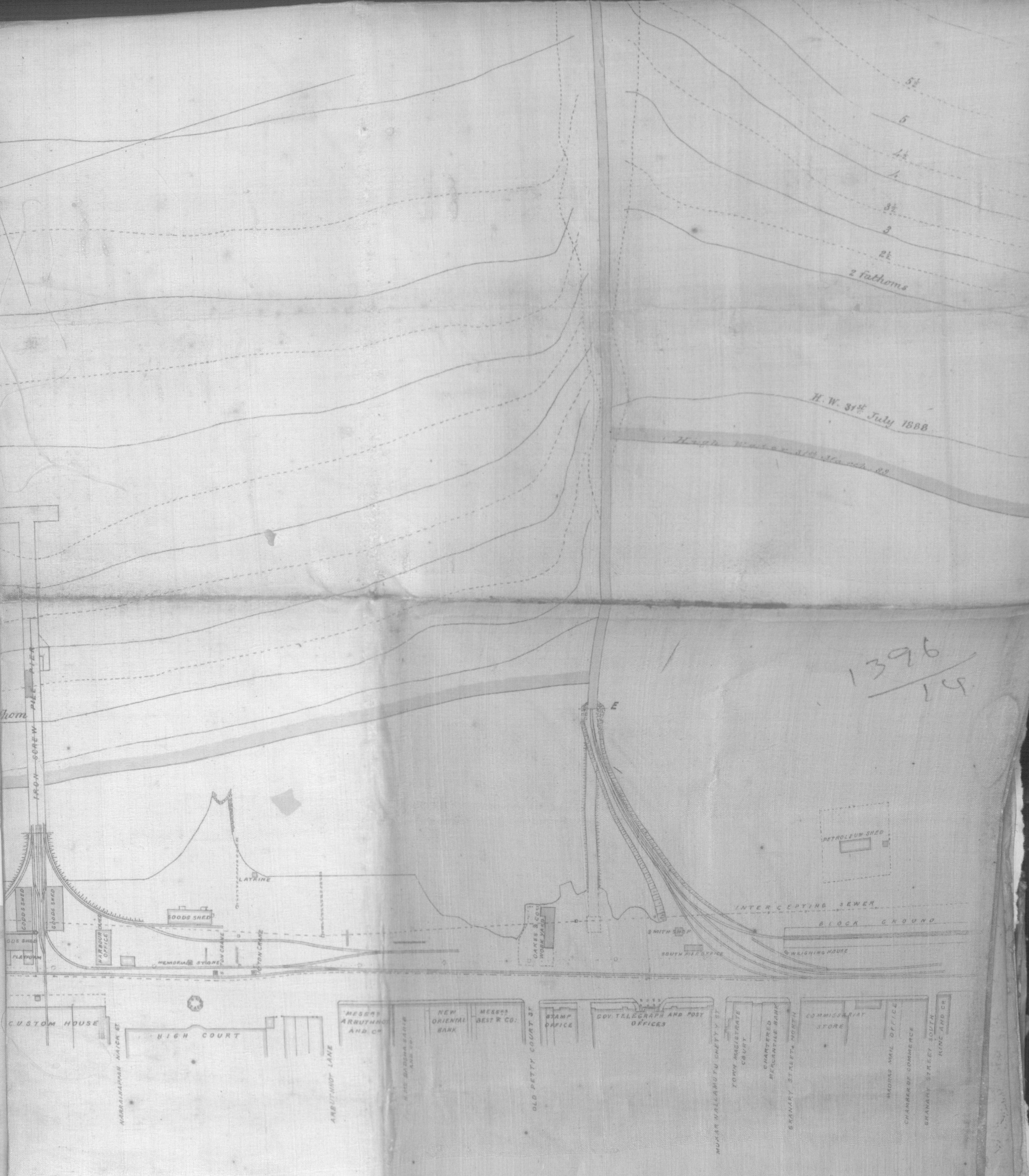


MADRAS 10th May 1889



Note – The Contour lines shew the depths

LITHOGRAPH



1396
14

– 200 feet = 1 inch

De Havilland's Mean Sea Level in September 1886

Engineer
Harbour Trust Board

Lawrence Asylum Press, Madras, 1889.

8?. Avo 1062 w a/ 18-4-89
" " " 2065 w a/ 9-7-88

11 P

B & R Works

Hon. 1396 W d/ 27th May 1889

A

Ind
19 May.

Recorded. The progress during the months of March is very satisfactory.

2. A separate report for the last months of the quarter is not required by Govt. The quarterly report for the Secy: of State will contain sufficient information.

MCR
15.5.89

Phasm
18.5.89

One plan is with D.Y.M.
6-6-89

Ch: H. T. Bd
Marine Dept.

J D
3/6

3/6/89

Ays. 80/5. A M 18/5.

18/5

PWC No 4376

MARINE DEPARTMENT.

(5)

From

THE CHAIRMAN,
Harbour Trust Board,
MADRAS,

To

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

Dated 10th
Received 13th } May 1889

Enclosure (3) 2 (+1 plan in office)

No. 1676

SUBJECT.

Submitting for the information of Government Progress report upon the Madras Harbour Works for March 1889

With orders

1386

12

Govt. of (1889) Madras.
PUBLIC WORKS.

Dated

Recd. Encl.

G.O., 27 May 1889 No. 1390 W.

M. H. Works

Progress report, submitted by the Chairman, H. T. Com, of the — for March/89, recorded with remarks.

(17)