

- (1) பக்கங்களின் எண்ணிக்கை 8
 (2) புதுக்கித் திருப்பிய நாள் 2/90
 (3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம் 10/0

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

P. M. 10 துறை

அரசாணை எண். மு. கோப்புத் தாள் எண். <u>3210</u>	அச்சகம் பலவகை
நாள் : <u>4. 12. 1890</u>	19 <u>8</u> .

மடிக்கவோ கண்டபடி கையாளவோ கூடாது



KIDDERPORE DOCK WORKS.

Progress Report for the quarter ending 30th September 1890.

During the quarter 664,485 cubic feet of brickwork were executed, leaving only 322,258 cubic feet or 3.15 per cent. to be done in order to complete the tidal basin, dock No. 1, and the boat canal.

Sixty-foot lock—Was completed with the exception of the riverside revetments.

Eighty-foot entrance—Was completed with the exception of the riverside revetments.

Tidal basin.—Walls completed with the exception of coping.

Double entrance to dock No. 1.—Is finished, including the swing bridge, which is open to road traffic.

Graving Dock.—Only 5 per cent. of the masonry remains to be done. The erection of the caisson has been commenced.

Government graving dock.—Is completed with the exception of 15 per cent. of the masonry.

The foundations of the engine and boiler houses which serve both graving docks have been got in, and the centrifugal pumps are being erected as the work proceeds.

Dock No. 1.—The walls are completed and the coping is in progress.

Boat canal.—Lift lock finished, main pumping station being roofed and the pumps being erected. The Chetla lock walls raised to within a few feet of coping level.

Subsidiary works.—The hydraulic engine-house is completed. The four jetty heads to the entrances are about half done and the foundations of the cargo sheds are in progress.

J. H. APJOHN,

Engineer, Port Trust.

The 14th October 1890.

Health Return compiled from the monthly report of the Medical Officer for the months of July, August, and September 1890.

MONTH.	Daily average number of workmen.	DAILY AVERAGE NUMBER OF CASES UNDER MEDICAL TREATMENT.			DEATHS.							Mortality per 1,000 of population per annum.
		Cholera.	Other diseases.	Total.	In hospital.			Out of Hospital and Tolly-gunge.			Total deaths.	
					Cholera.	Other diseases.	Total.	Cholera.	Other diseases.	Total.		
1890.												
July	7,419	0'25	56'25	55'5	1	2	3		2	2	4	8'08
August	5,037		65	65		2	2		2	2	4	4'26
September	6,386	0'50	77'50	78				1	2	3	5	11'14
Average total divided by 3 months	6,144	0'25	65'91	66'16	0'3	1'4	1'7	0'3	2	2'3	4	7'82

MOHENDRO NATH BISWAS,
Medical Officer.

O'C. RAYE, M.D.,
Surgeon.

J. H. APJOHN,
Engineer, Port Trust.

Statement detailing the expenditure incurred on the Dock works to the end of September 1890.

PARTICULARS.				Amount.	Total.
				Rs. A. P.	Rs. A. P.
Works	...	...	...	1,70,48,464 13 3	
Land	...	...	...	25,33,389 15 5	1,95,81,854 12 8
Total					1,95,81,854 12 8

J. H. APJOHN,
Engineer, Port Trust.

The 10th October 1890.

KIDDERPORE DOCK WORKS: Progress Report for the quarter ending 30th September 1890.

Estimate.	Sub-head.	Estimated quantity.	Executed to end of previous quarter.	Executed during the quarter.	Total executed up to end of quarter.	PERCENTAGE OF WHOLE ESTIMATED QUANTITY.		
						Done during the quarter.	Done up to end of quarter.	Remains to be done.
Sixty-foot lock	Excavation	c. ft. 7,394,077	6,304,374	NIL	6,304,374	85.3	85.3	14.7
	Masonry	8,339,430	2,175,207	15,000	2,190,207	26.1	26.1	73.9
Eighty-foot entrance	Square feet of foundation	74,600	74,600	NIL	74,600	100	100	0
	Excavation	c. ft. 2,087,108	3,131,650	NIL	3,131,650	150.5	150.5	0
	Masonry	7,11,071	715,000	NIL	715,000	10.1	10.1	89.9
Double entrance to lock No. 1.	Square feet of foundation	27,000	27,000	NIL	27,000	100	100	0
	Excavation	c. ft. 4,10,720	38,945	NIL	38,945	0.9	0.9	99.1
	Masonry	1,708,171	1,000,000	NIL	1,000,000	58.5	58.5	41.5
Tidal basin	Square feet of foundation	70,000	70,000	NIL	70,000	100	100	0
	Excavation	c. ft. 2,100	2,100	NIL	2,100	100	100	0
	Masonry	3,001,000	1,900,000	41,000	1,941,000	64.7	64.7	35.3
Graving dock	Excavation	12,000,000	12,000,000	NIL	12,000,000	100	100	0
	Masonry	1,200,000	1,200,000	NIL	1,200,000	100	100	0
Government graving dock	Square feet of foundation	1,200,000	1,200,000	NIL	1,200,000	100	100	0
	Excavation	c. ft. 1,200,000	1,200,000	NIL	1,200,000	100	100	0
	Masonry	1,200,000	1,200,000	NIL	1,200,000	100	100	0
Dock No. 1.	Square feet of foundation	1,200,000	1,200,000	NIL	1,200,000	100	100	0
	Excavation	c. ft. 1,200,000	1,200,000	NIL	1,200,000	100	100	0
	Masonry	1,200,000	1,200,000	NIL	1,200,000	100	100	0
Boat canal	Excavation	1,200,000	1,200,000	NIL	1,200,000	100	100	0
	Masonry	1,200,000	1,200,000	NIL	1,200,000	100	100	0

The 10th October 1890.

J. H. ARTHUR,
Engineer, Port Trust.

QUARTERLY INSPECTION OF THE KIDDERPORE DOCK WORKS.

From—MAJOR A. D. McARTHUR, R.E., and W. CONNAN, Esq.,
To—The Secretary to the Government of Bengal, Public Works Department.

In accordance with the orders of the Government of Bengal, communicated with letter No. 178T.—M. of the 21st ultimo (received on the 4th instant), we have the honour to report that the 14th quarterly inspection of the Kidderpore Dock Works was made on the 8th instant.

The usual tabular statement and the index plan showing the work done during the quarter ending 30th September 1890, and the total amount of work executed from the commencement, which has been prepared by the Superintending Engineer of the Dock Works, are already with Government. The present state of the various works under construction is reported in the following paragraphs.

Sixty-foot Lock.—As reported in the last quarter, the work was almost completed, with the exception of the riverside revetment. Of the estimated quantity of masonry, viz. 2,229,490 c. feet, 98.1 per cent. was executed up to the end of the quarter, thus leaving only 1.9 per cent. remaining to be done.

Eighty-foot Entrance.—With the exception of the riverside revetments, this work is completed; about 21.0 per cent. of excavation remains to be done.

Double Entrance to Dock No. 1.—Is finished, including the swing-bridge which is open to traffic.

Tidal Basin.—Quay walls completed, with the exception of coping, of which 35.4 per cent. still remains: 5.3 per cent. of the masonry also remains to be done.

Graving Dock.—About 5 per cent. of the masonry remains to be done. The erection of the caissons has been commenced.

Government Graving Dock.—Is almost finished, with the exception of 6.7 per cent. of the estimated quantity of masonry. The foundations of the engine and boiler houses, which serve both graving docks, have been got in, and the centrifugal pumps are being erected as the work proceeds.

Dock No. 1.—The quay wall was completed with the exception of the coping which was in progress. We regret to record that in the beginning of October, or shortly after the expiry of the quarter ending September, to which period the progress herein stated bears reference, a considerable length of the walls of this Dock suddenly showed signs of failure. We understand that the matter has already been reported to Government, and that a more detailed report is in course of preparation, which will be submitted in due course. As far as we could note during our inspection, the following is the present condition of the damaged work, the same being roughly indicated on the diagram accompanying the progress report and submitted herewith.

Movement of the long straight length of the east wall of the Dock has taken place over 2,050 feet, commencing about 50 feet from the angle of the short berth at the north end and extending to the angle of the wall at the south end. The displacement at the extremities of this length is shown by slight cracks in the face of the masonry extending through the wall and by longitudinal cracks along the course of the tunnel arch; but it is not considered that the latter extend through the solid masonry. The wall has been thrust forward by the earth backing, and tilted so as to bring the face to a vertical position along the whole damaged length. The movement is very slight at the two extremities and attains a maximum at a distance of 1,650 to 1,700 feet from the south angle, where the displacement at the coping level is 7' 5½". From this point of maximum displacement to the south angle, an almost perfect straight line has been preserved, the remaining 400 feet at the north end being more or less bulged. The original batter of the wall was ½" to the foot or about 2' in the total height from the foundation, and this amount would represent the forward movement at the top edge of the coping due to tilting, the remainder of the movement, or a maximum of 5' 5½", being the bodily transfer of the whole wall to the front sliding over its bed. The earth backing has sunk an average of perhaps 6' for a distance of 75 to 120 feet from the front of the wall, filling completely the gap caused by the displacement of the wall. The average height through which the wall has sunk is 15".

Shortly after the occurrence above mentioned, a serious movement and fracture of the wall at the southwest angle of the Dock took place. About 450 feet of the inclined portion of the wall was affected, and about 50 feet adjoining this at the end of the Dock. The greatest forward movement was at a point 120 feet from the angle of the side walls, being $1\frac{1}{2}$ inches, or, allowing 2 feet for the tilting of the wall, a forward movement of the whole wall of nearly 11 feet. The masonry of this portion is much shaken, showing cracks both on the face extending through the wall and longitudinal cracks. No less than seven cracks appear on the face of the wall and extending through it, while one appears at the extremity of the detached length at the end of the Dock. The mass of masonry here appears to have received a severe wrench from the force exerted by the backing at the point of maximum displacement, but the movement of the wall itself is small.

It was reported to us that since the first movement of the wall no further displacement or settlement has taken place. The masonry of both the damaged walls appears to us to be of thorough good quality.

Boat Canal.—Lift lock is finished, the main pumping station is being roofed and the pump being erected; 19.5 per cent. of excavation and 17.0 per cent. of masonry still remain.

The Chetla lock walls are raised to within a few feet of coping level. *Subsidiary Works.*—The hydraulic engine-house is completed. The four jetty heads to the entrance are about half done and the foundations of the cargo sheds were in progress. The latter along the length of the damaged portion of the Dock walls have sunk with the earth backing.

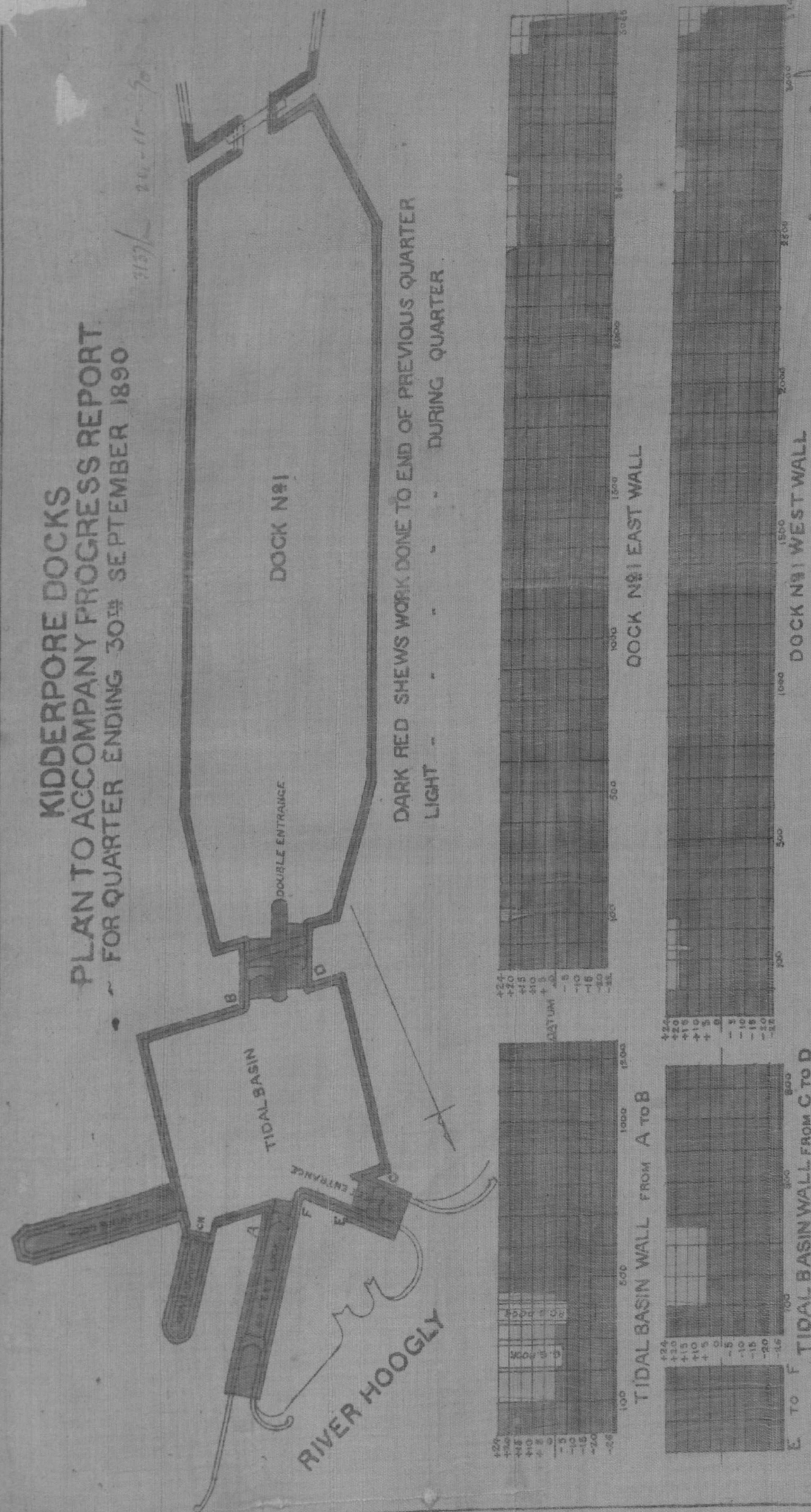
Expenditure.—The total expenditure up to the end of the quarter under review is reported to be Rs. 1,95,81,854, of which Rs. 1,70,48,464 represent outlay on works and Rs. 25,33,389 on account of land.

Sanitary.—During the quarter under review the health of the workpeople was generally good. The daily average number of coolies employed was 6,144, among whom there were four deaths, thus showing a death-rate of 7.82 per mille per annum.

General remarks.—We are of opinion that fair progress was made with the work up to the end of the quarter, which would have been maintained up to the date of our inspection but for the partial failure of the Dock walls. The quality of the work, as far as we have been able to judge, is satisfactory.

E. J. H.—Reg. No. 7976C—102—20-11-20.

KIDDERPORE DOCKS PLAN TO ACCOMPANY PROGRESS REPORT FOR QUARTER ENDING 30th SEPTEMBER 1890



W. J. H.
Engineer
Calcutta Port Tr.

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Regt. 1880-80-30-9-90.

Any further communication should be addressed to
THE SECRETARY TO THE GOVT. OF BENGAL,
PUBLIC WORKS (MARINE) DEPT.,
CALCUTTA.
And the following number should be quoted:—

No. 3137 MARINE.

GOVERNMENT OF BENGAL,

(MARINE DEPARTMENT),

CALCUTTA.

The 24th Novr 1890.

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To

The Secretary to the Govt. of Madras
Public Works Deptt

Sir,

I am directed by the Lieutenant Governor to forward for the information of the Govt. of Madras the accompanying copy of the report (with plan and statement) of the 14th quarterly inspection of the Dock Works at Kidderpore which are being carried out by the Commissioners of the Port of Calcutta.

1 P.C. of encl.

I have the honor to be,
Sir,
Your most obedt. Servt.

Accompts.
Copy of the inspection
report (with plan and Stab.)
referred to.

W.D. Rustie
Under Secretary

Dec 1-12-90
Enc 5 (1 cc)

Copy forwarded
to the Chairman Mr. H.
J. B. in continuation
of No. 2326 of 82
Aug. 1990

WCB
2.12.90

S. A.

Ch. Mr. H. J. B.
with original papers
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