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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W. DEPARTMENT

G.O. No.	1136 - W	Press.
B.P. No:		Mis.
Dated	13 - 5 - 1885	198

Not to be folded or roughly handled

1136
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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following letter from F. N. THOROWGOOD, Esq., M. Inst., C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 7th May 1885, No. 7 W.:—

I have the honor to submit a brief report of the progress on these works during the past month of April.

2. *North pier rubble base.*—The work of widening the base of the north pier to receive the wave-breaker blocks has been steadily advanced, and at places where the slight storm of 20th November 1884 had washed down the foreshore to a greater depth below high-water than the approved sections show, large granite boulders have been thrown in to restore the surface to the proper level. For this purpose 1087 tons of boulders have been used, varying in weight from 3 cwt. each to 10 cwt.

3. *Widening foreshore.*—In widening out the deeper portion of the base at a distance of 2,200 feet from the commencement of the breakwater, 5,667 tons of stone have been deposited in April. It is hardly necessary to remark that this amount of work is very small compared to what will eventually be accomplished in a month, but until I get more railway material on the spot, it is not possible to increase the outturn and deposit of stone very considerably.

4. *Blasting old concrete blocks.*—In addition to the above work I have had the diving staff (now slightly increased in strength) engaged at blowing up old concrete blocks which lie in the way of the proposed new foundations. At present we have been able to do little more than experiment in this direction so as to arrive at the minimum quantity of dynamite required to demolish each block. Eight blocks, each of 432 cubic feet, have been broken up, and at present the amount of dynamite found to give the best results is 4 lb. per block. I am anxious to press on with this work, but have been stopped, first, by want of electric fuses, and at present by the giving out of the submarine cable for exploding the fuses. Some delay must occur before these things are obtained.

5. I am still awaiting the arrival of boats with which to make the attempt to raise old blocks, as mentioned in paragraph 10 of my report for March last.

6. *Levelling base for new work.*—The divers are now at work levelling the rubble base adjacent to the existing north pier, at 2,050 feet from the commencement and outwards, ready for the reception of the abutment blocks of the new pier. The work is difficult owing to the immense growth of barnacles and rough (unusable) oysters on the rubble, which render it very awkward to handle. The superfluous rubble is being removed by the divers, and, by means of a crane, is lifted out and again deposited on the north side of the pier, where it goes to widen the foreshore. During the current month additional rubble will be deposited on the new line of foundation for both piers.

7. *Concrete block mould.*—For the somewhat complicated arrangement of blocks to form the abutment or starting point of the new work, all the moulds for the blocks were completed in April, so that the work of making concrete blocks can very shortly

be resumed. The first twenty-eight rows of blocks beyond this abutment can be made from the blocks now on stock, and for this purpose twenty-nine blocks were suitably altered during the month of April.

8. *South pier works.*—No repairing or constructive work has gone on at the south pier during April, as the state of the sea prevented any attempt being made on the outside, and the want of railway material has prevented me from extending the lines to the necessary spot for depositing rubble in the new foundations. By taking up disused rails in other parts of the works I shall be able next week to commence this work.

9. *Line of sand.*—A new railway line for obtaining sand has been laid in between the south pier and the Commissariat mule stables.

10. *Tools, plant and stores and supplementary works.*—A new boat-shed is in course of erection to replace one that was built of temporary materials in 1878 and which was in danger of falling on the survey boats. This shed is mostly built of old materials on the works and is a necessity.

11. *Travelling crane.*—A light travelling crane (the third mentioned in my last report) has been completed in detail, but the erecting of it is not finished owing to the men being taken away to other work. Other plant on the works has been renewed, repaired and satisfactorily maintained.

12. *S.S. "India."*—The S.S. *India* was expected about 18th April with various stores and 1,000 casks of cement for the works, but she transferred her cargo into another ship at Colombo and I have not yet heard when these stores may be expected to arrive in Madras.

13. *Expenditure and estimate.*—The expenditure during April on the works was Rs. 19,165, and this, until further orders, has to be accounted for on the old arrangement of estimate, not on that referred to in G.O., No. 776 W., of 30th March 1885.

ORDER—dated 13th May 1885, No. 1136 W., Public Works.

Recorded.

2. With reference to paragraph 13, it is observed that, in their letter embodied in G.O., No. 1076 W., dated 8th May 1885, the Government of India intimated that the revised estimates for restorative works were forwarded to the Secretary of State for India on the 24th February 1885 for sanction.

(True Extract.)

Major, R.E.,
Under Secy. to Govt., P.W.D.

To the Superintendent, Madras Harbour Works.
" Examiner, Public Works Accounts.
" Marine Department.

Exd. E. Fernandez.
Spare Copies

1136
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BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated May, 1885.

Recd.

Encl.

G.O., 13th May 1885, No. 1136 W.

MAY.

Madras Harbour Works
Progress report of — for April 1885,
recorded with remarks.

27TH APRIL 1885, No. 990 W., PUBLIC WORKS.

1136
3

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

LETTER—from

COLONEL J. SHAW-STEWART, R.E.,

Secretary to the Government of Madras,

Public Works Department.

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,

PUBLIC WORKS DEPARTMENT.

SIR,

Adverting to this office endorsement No. 2677 W., dated 1st November 1881, I am directed to inquire whether the Government of India wish the submission of quarterly reports on the progress of the Madras harbour works to be resumed, now that active operations for the reconstruction of the harbour have been commenced.

I have the honor to be,

Sir,

Your most obedient servant,

(Signed)

J. SHAW-STEWART, Colonel, R.E.,

Secretary to Govt., P.W.D.

OOTACAMUND,
27th April 1885.

Exd. A. Gruber,
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Gobt. of (1885) Madras.
PUBLIC WORKS.

Dated April, 27th.

Recd.

Encl.

27th April 1885, No. 990 W.

APRIL.

Madras Harbour Works

Inquiring whether quarterly reports on the progress of the — are required to be submitted.

30TH MARCH 1885, No. 777 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following letter from D. C. GORDON, Esq., Examiner, Public Works Accounts, to the Secretary to Government, Public Works Department, dated Madras, 26th March 1885, No. 139 W. :—

With reference to G.O. No. 3127 W., dated 19th December 1884, and G.O. No. 66 W., of 9th January 1885, I have the honor to forward, for information of Government, two original statements (which kindly return) furnished by the Superintendent, Madras Harbour Works, showing the arrangement which we propose for adoption in recasting the details of expenditure on the works.

2. It will be noticed that the date to which outlay has been taken is the 31st December 1884, instead of 30th April 1884, the amount being Rs. 69,04,090. Of this amount Rs. 65,63,647 is proposed to be set against the old work previous to the commencement of the restoration, and Rs. 3,40,443 to be set against the restoration estimate, which has been submitted for Rs. 45,90,051.

3. The revised estimate for the works has not yet been sanctioned, and expenditure is consequently being shown as against the old estimates. The recasting of the details as now proposed will have effect in the accounts so soon as sanction to the revised estimate has been received.

ORDER—dated 30th March 1885, No. 776 W., Public Works.

The arrangements proposed in the foregoing letter are approved.

2. Ordered that a copy of these proceedings be forwarded to the Government of India, with advice to endorsement, from this department, No. 3128 W., dated 19th December 1884, and with request that early sanction to the estimates for the reconstruction of the Madras harbour may be communicated to this Government.

(Here enter No. 777 W., dated 30th March 1885.)

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent, Madras Harbour Works.
Examiner, Public Works Accounts with two statements.
Marine Department.

ENDORSEMENT—dated 30th March 1885, No. 777 W., Public Works.

Forwarded.

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

Exd. H. Fernandez.
Spurn Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of Madras.

PUBLIC WORKS.

Dated March, 30th.

Recd.

Encl.

G.O. 30th March 1885, No. 777 W.

MARCH.

Madras Harbour Works

Forwarding copy of proceedings approving of arrangements for accounting for outlay on ---, and requesting early sanction to the estimates for reconstruction of the harbour.

27TH APRIL 1885, No. 982 W., PUBLIC WORKS.

1136
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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following letter from F. N. THOROWGOOD, Esq., M. Inst. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated 11th April 1885, No. 3 W. :—

I have the honor to submit, herewith, two plans and a report of the progress and general state of the Madras harbour works up to 31st March 1885, and I think that, as active operations are now resumed, it will be advisable to resume also the submission of monthly reports to Government as was done regularly up to end of 1881.

2. *Last report.*—My last report of progress was dated 4th November 1884, and in the fourth paragraph I drew attention to the special protective works that had been carried out at a spot 200 feet from the commencement of the north pier. I shall have occasion to refer to this again, and in the meantime will review what has been done during the financial year 1884-85.

3. *North pier foreshore work.*—The work of preparing the foreshore of the north pier for carrying the 30-ton blocks of the "wave-breaker" has been pushed steadily forward whenever the state of the weather would permit, and will be completed during the current month. The work consists merely in raising and widening the present foreshore in accordance with the approved design for restoration. During the year 43,357 tons of stone from Pallavaram have been used for this purpose, of which 39,167 tons were deposited from boats and the remainder thrown into the sea by hand. The South Indian Railway having now more wagons available for stone traffic I hope very shortly to bring this part of the work up to its proper rate of execution. The greater the quantity of work got through in a day the less per ton will be the cost, and as with the present state of affairs the cost of the foreshore deposited in the sea has been during the year only a fraction over Rs. 1-8-0 per ton (Mr. Parkes' estimate being Rs. 2), there is every prospect of a considerable saving being effected in this branch of the work.

4. *Storm of 20th November 1884.*—On 20th November a sudden and sharp cyclonic storm during the night raised a heavy sea from the north-east, and so great was the force of the waves that, at the spot referred to in paragraph 4 of my last report, the rubble protective mound, carrying 16 blocks of 30 tons weight each, was battered down very rapidly, causing 12 of the 30-ton blocks to fall over gently towards the sea and so take up the modern position intended for them. A remarkable feature of the storm was that the attacking waves threw up some 50 tons of the boulders of the mound on to the surface of the pier and indeed over into the harbour during the night, yet at daybreak on the 21st the wind and sea were coming from the south of east, and the battered mound of rubble was in absolutely smooth water. It is noteworthy that high water occurred at 10-30 p.m., when the rise of tide was so

high that the self-registering tide gauge on the iron pier-head could not record it, the pencil running off the diagram paper.

5. *Position of blocks shown on plan.*—On the accompanying plan I have shown in red at the point marked M the site of this rubble mound, also the remaining four of the 30-ton blocks which have not yet fallen forward. There is also shown by red lines nearly parallel to the two piers the extent of the new foreshore deposited.

6. *South pier foreshore work.*—At the south pier during the past year only 19,538 tons of rubble were deposited in the foreshore, but this work only was commenced on 11th October 1884, and had to be stopped in February when the wind and waves came from the south of east.

7. *Plants and machinery on shore.*—Preparations on shore for the work of rebuilding the piers have been going steadily on throughout the year, but it was not until receiving the grant of Rs. 50,000 (G.O. No. 308 W., of 9th February 1885) that I was able to throw any briskness into the work. Since that date two platforms, each 1,134 feet in length, have been completed for making and storing the new concrete blocks required. This work, which I estimated would cost Rs. 3,037, has cost actually only Rs. 2,632. There remain now two more similar platforms to be altered at the north pier-yard and two of smaller dimensions at the south pier-yard. The work of altering three others, however, cannot be taken in hand until the concrete blocks now covering the sites can be deposited in the sea, and this cannot be done until the arrival of one of the cranes from England. With reference to these new block platforms I should remark that two tiers of blocks can be stacked on each platform, and at the same time the blocks can be placed much nearer together than was the case during the construction of the original works, and by these means the number of blocks on hand, as compared with the stock in former years, can nearly be trebled.

8. *Block moulds.*—There have been made twenty-four blocks moulds for the "wave-breaker" blocks, and these have been made mostly from old material. The block moulds for the new work of construction are being pushed rapidly forward. These are made from some very excellent teakwood supplied by the Superintendent of the Public Works Stores who has been good enough to arrange for a further supply, which will be necessary shortly.

9. *Light travellers.*—Three light travelling cranes are required for block-making, and of these one has been completed, another is well forward, and the third is in hand. All that can be done to repair and renew existing machinery has been carried out.

10. *Recovery of old blocks.*—Mr. Parkes' orders to me are to construct some apparatus for the recovery of those concrete blocks that lie under water in the line of the proposed new foundations. It will be necessary to obtain two powerful lighters, each capable of sustaining at least 20 tons for this purpose. I have hitherto not been successful in obtaining suitable boats, but am now trying to get two from Cocanada, to which port the Master Attendant recommended me to apply at first. I am not very sanguine of success in recovering the old blocks, but the value of each block recovered is so considerable that the experiment may well be made. In the meantime, I am blowing up with dynamite many of the old submerged blocks, thus converting each block into 432 cubic feet of rubble foundation, and preparing the way for depositing more rubble for the base of the new built work. At the present moment I have had to suspend this work owing to failure of the electric fuses lately supplied; others, however, are ordered from Bombay.

11. *Preparation for work tenders.*—With the prospect of heavy work going on for the next four years in connection with this harbour, I deemed it advisable to call for tenders by public advertisement for all those branches of the work which admit of working by contract. These are three, viz.,—

I. Deposit of rubble base in foundations.

II. Labor in making concrete blocks.

III. Quarrying and supplying stones.

12. Having prepared specifications for each of these works, together with forms of tender, I advertised in all the local papers. More than fifty persons applied for

specifications of each different work, the greater part of them probably not having the slightest knowledge of what was required, nor the slightest intention of tendering. For the first work (I) I received seventeen tenders, out of which I selected four as being fair and reasonable, and of the four I selected the tender whose rates gave the lowest total for the whole work, the name of the tenderer being Dhonadee Peddah Thumboo. For the second work (II) I received only ten tenders, all nearly equal, and I accepted the tender of the man who had done the work since the commencement, by name P. Annamalai Chetty. For the third work (III) I received only nine tenders, and, after rejecting two as out of all question too low, I accepted the lowest of the remaining seven, the contractor being G. M. Kazim Ali Nakvy Sahib, who has hitherto done the work satisfactorily. The result of my calling for tenders in this way is that every branch of work will be executed at a less rate than heretofore, and consequently at a lower rate than we estimated.

13. *Survey of harbour.*—In February and March, Mr. Beardmore and I resurveyed the whole area of the harbour and much of the coast to the south. The result of our survey is shown on the plan accompanying this report, the depths being below DeHavilland's mean sea level, which is 2.7½ above low water spring tides. The weather having been peculiarly favorable, the soundings given on this chart may be relied on as absolutely correct. I have shown the successive positions of high water-mark from February 1879 (green line) to February 1885 (black line), and it will be seen that the advance of the shore is very regular and steady outside the harbour and to the south.

14. *Survey of 1882.*—The blue contour lines are taken from the survey of September and October 1882, and serve well for comparison. Commencing outside the harbour area it will be seen that where the 5 fathoms line fell in 1882 we now get depths of from 21 feet to 26 feet, and where the 3 fathoms line fell in 1882 there are now only from 13 to 16½ feet of water.

15. *Shoaling.*—This shoaling up to the south was always foreseen by Mr. Parkes, and is no way more rapid than was at first predicted by him—see G.O. No. 3345, dated 9th December 1876 (paragraphs 41 and seq. of Mr. Parkes' letter therewith).

16. *Depths inside harbour.*—Inside the harbour area there is also some shoaling as may be seen on looking at the soundings. The 7 fathom contour has not altered appreciably, but at the 3 fathom line of 1882 there is a shoaling of from 1 to 1½ feet and at the 2 fathom line of from 1 to 3 feet. The H.W. line of 1879 (green) is 120 feet further back at the iron pier than the present H.W. line.

17. *Commissary-General's remarks on H.W. line.*—Before leaving this subject of the H.W. line, I would call special attention to the fact that, in 1879, its position cuts the present site of the Commissariat mule lines—a fact which the Commissary-General appears to disbelieve in his letter attached to the proceedings of Government recorded with G.O. of 19th December 1884, No. 3127 W.

18. *Expenditure.*—The expenditure during the year has been Rs. 2,04,244, of which Rs. 29,775 was incurred during the past month of March.

19. *Dates for new establishment to begin.*—In conclusion, I would respectfully ask if 1st April may not be taken as the date from which the new scale of establishment sanctioned in G.Os. No. 3574 W., dated 14th December 1883, and No. 292 W., dated 7th February 1885, may take effect, active operations being now resumed.

ORDER—dated 27th April 1885, No. 989 W., Public Works.

The Government have read this report with great interest, and are especially pleased to learn the success which has attended Mr. Thorowgood's endeavours to secure the execution of the work by contract at comparatively low rates.

2. The scale of establishment sanctioned in G.O. No. 3574 W., dated 14th December 1883, may have effect from 1st April 1885.

3. The Superintendent's proposal to resume the submission of monthly progress reports is approved.

4. Prior to the cyclone of November 1881, special quarterly progress reports were submitted for the information of the Government of India. That Government will be requested to state whether they wish that practice to be resumed.

(Here enter No. 990 W., dated 27th April 1885.)

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.
Secretary to Govt., P.W.D.

To the Superintendent, Madras Harbour Works.
" Examiner, Public Works Accounts.
" Marine Department.

Ed. A. Grubert.
Spare Copies

1136
7

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of 1885 Madras.
PUBLIC WORKS.

Dated April, 27th.

Recd.

Encl.

G.O., 27th April 1885, No. 989 W.

APRIL.

1130 4

Madras Harbour Works

Orders on progress report of the — up to
31st March 1885.

No. 727

1136/8

FROM

THE SUPERINTENDENT,
MADRAS HARBOUR WORKS,

TO

The Secretary to Government.
P. W. Department

MADRAS, 7th May 1885

Sir

I have the honour to submit a brief report
of the progress on these works during the past month
of April. —

1. The work of widening the base of the breakwater
to provide the present breakwater blocks have been steadily
advanced and at times when the slight storm of
November 20th 1884 had washed down the fore shore to
a greater depth than the high water than the appearance
of the shore, large granite boulders have been
thrown in to restore the surface to the proper level.
For this purpose 1087 tons of boulders have been used,
varying in weight from 3 cwt each to 10 tons.

2. In widening out the deeper portion of the
base at a distance of 300 feet from the commence-
ment of the breakwater, 566 tons of stone have
been deposited in April. It is hardly necessary
to remark that the amount of work is very
small compared to what will eventually be
accomplished in a month, but would I get in

railway material on the spot it is not possible
to increase the path and steepness of stone
very considerably.

4 In addition to the above work I have Blasting old con-
crete blocks crack blocks
had the diving staff (formerly increased in
strength) engaged at blowing up old concrete
blocks which lie in the way of the proposed new
foundations. At present we have been able to
do little more than experiment in this direction
so as to arrive at the minimum quantity of
dynamite required to demolish each block.
Eight blocks, each of 1232 cubic feet, have been
broken up and at present the amount of
dynamite found to give the best results is 14 lbs
per block. I am anxious to proceed with this
work but have been stopped first by want of
electric fuses, and at present by the going out
of the submarine cable for re-planting the fuses.
Some delay must occur before these things
are obtained.

5 I am still awaiting the arrival of boats
with which to make the attempt to pass old
blocks as mentioned in para 10 of my report
for March last.

6 The divers are now at work levelling the Levelling Base
rubble pass adjacent to the existing North Pier, the
at 2050 feet from the commencement and new work
outwards, ready for the reception of the abut-
ment blocks of the new pier. The work is difficult
owing to the enormous growth of barnacles

and might possibly require on the rubble which
under it goes outwards to handle. The super-
fluous rubble is being removed by the divers, and
by means of a crane is lifted out and again
deposited on the North side of the pier where it goes
to make the foundation. During the present month
additional rubble will be deposited on the new
line of foundation for both piers.

Concrete Block month 7. For the somewhat complicated arrangement
of blocks to form the abutment or starting point
of the new work, all the moulds for the blocks were
completed in April, so that the work of making
concrete blocks can now shortly be commenced.
The first 28 rows of blocks beyond this abutment
can be made from the blocks now on stock, and
for this purpose 29 blocks were actually ordered
during the month of April.

North Pier Work 8. No repairing or constructive work has
gone on at South Pier during April, as the state
of the pier prevented any attempt being made on
the outside, and the want of railway material
has prevented any from extending the lines to the
necessary spot for depositing rubble in the new
foundations. By taking up disused rails in other
parts of the works I shall be able to get rails to
commence this work.

Line of Sand 9. A new railway line for obtaining sand has
been laid in between the South Pier and the
Commisariat Mole, St. Helier.

1126/10

10. A new boat shed is in course of erection. Tools, Plant & Store
to replace one that was built of temporary materials & Supplementary
in 1878, and which was in danger of falling in the
stormy boats. This shed is mostly built of old material
on the works and is accessibility.

11. A light travelling crane (the third one. Travelling crane
mentioned in my last report) has been completed in
detail, but the erecting of it is not finished owing
to the men being taken away to other work. Other
plant on the works has been repaired, repaired and
satisfactorily maintained.

12. The S.S. "India" was expected about April. S.S. India
18th with various stores and 1000 sacks of cement
for the works, but she transferred her cargo
into another ship, at Colombo and she has not
yet been seen. The stores may be expected
to arrive in Madras.

13. The expenditure during April on the works Expenditure
was Rs 1985 and this until further orders has Estimated
to be accounted for on the old arrangement of
Estimated not on that referred to in L.O. No. 100
of 30th March 1885.

I have the honor to be,
Sir,
Yours obedient servant
G. H. M. W. P. &
Superintendent

112

9.6. No 777 W. 30-3.88
" " 989 W. 27-4.88
" " 990 W. 27-4.88

No 1136 W of 13 May 1885.

Recorded.

With reference
to para 13, it is
observed that,
in their letter
embodied in G.O.

No 1076 W of 8 May
1885, the Government
of India intimated
that the revised
estimates for restoration
works were forwarded
to the Secretary
of State for India
on the 24th Febry
1886, for sanction.

Buildings and Road

From

(10)

The Superintendent
Madras Waterworks

Dated 7 May 1885

No 7 W.

Encls. nil

Progress Report.

Submitted for April
1885.

CS

9.5.85

A. M. N. W.

Exec. M. accy.

Marine Dept.

10.5.85

with order

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409p

Coll. of 1885 India

FISHING WORKS

15/5/51
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