(1) Number of pages 34

(2) Date of repair 20.10.87

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W DEPARTMENT

G.O. No. / B.P. No:	1385 W	Press. / Mis.
Dated	13. 6. 1885	~~198~~ .

Not to be folded or roughly handled

Archives I--10,006 I -80.

1385/1

13th June 1885, No. 1385 W., Public Works.

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 6th June 1885, No. 13 W. :—

I have the honor to submit the following report of the progress on these works during the past month of May, and I must preface it with the remark that it would have been submitted earlier if I had not been most seriously pressed with work owing to sickness on the staff.

2. *North pier works.*—Divers have been working at levelling the rubble base to receive the new blocks for restored work, and at blowing up concrete blocks in the line of the new foundations. There have now been twenty-one blocks blown up by dynamite, of which number twelve were destroyed in May; these represent the equivalent to depositing 567 tons of rubble base in the new line of foundation. Latterly this work has been retarded owing to the illness of Mr. C. Underdown, foreman diver, who is under medical treatment, which prevents him from diving, but permits of his superintending the diving staff who are not so experienced. The medical officer at the general hospital thinks that a little rest is all that is required in his case, and this is what I am endeavouring to give him. The month of May is always a trying one for those who have much out-of-door work to do.

3. *Foreshore north pier.*—During May 2,282 tons of stone were deposited in the foreshore of the north pier. This work is now completed and ready to receive the wave-braker blocks so soon as the machines for depositing them are erected. These machines are, I believe, on their way out, and may shortly be expected in Madras. I have not yet been able to experiment upon recovering old blocks from the line of new work, but I have obtained two excellent boats at last, from Karical, which will be fitted out for the purpose.

4. *Railway line on north pier.*—The railway line on the north pier has been extended 393 feet for the purpose of loading the boats for depositing rubble in the new foundations, but the persistent swell from the south-east has prevented work from being carried on under this head.

5. The superstructure of the north pier has been repaired where necessary so as to be fit to receive the rails for carrying the Titan and other cranes.

6. *South pier works, rubble base.*—At the south pier the railway lines were extended with old rails for a length of 611 feet for the purpose of tipping rubble in the new line of foundations, and from the 13th to the end of the month 5,893 tons of stone were deposited.

7. *Contract for tipping rubble base.*—All the work of depositing rubble from boats since 1st May has been carried on under the new contract, referred to in my report for March (G.O., No. 989 W., of 27th April 1885, paragraph 12 of my letter therewith),

at lower rates than ever before obtained. It is satisfactory to be able to report that the work has, up to this date, been satisfactorily performed in every way.

8. *Concrete block-making.*—For the future section of work eighty-eight of the concrete blocks now on stock have been altered to suit the new design, of these thirty-five were altered in May. The alteration consists in dressing them down and plastering them with granite chips in strong cement so as to bring them exactly to the tapering form required for fitting into the curve of the new work.

9. *Block-making by machinery.*—On the 18th the machinery for block-making was started, and has been working ever since. As might be expected, on the first day the stone-crushing machines, concrete mixers, and stationary engine were occasionally pulled up by hot bearings. Since the first day all has gone well. The blocks for the abutment of the new work are complicated in shape, and required more time and trouble expended on them than will be the case with other blocks hereafter. Since the 18th there have been eighty-three blocks made by machinery for the new design, some made from Madras cement and some from the English cement imported in 1882.

10. *Block frames.*—The carpenters have been hard at work making the moulds or frames for the new blocks. These frames are of themselves very heavy pieces of work, and have to be fitted together with the most perfect accuracy. There are now seven new ones built, of which three were completed in May.

11. *Railway lines in block-yard.*—The railway lines for carrying the boxes of liquid concrete were extended 217 feet, thus commanding the full length of the block ground.

12. *New contract for block-making.*—The making of the concrete blocks has been carried on since 18th May under the new contract, and at a lower rate than formerly (*vide* Government order before quoted) and all is going on satisfactorily.

13. *Pallávaram quarries.*—The quarries at Pallávaram have been working fairly well, but the want of increased railway sidings is felt. Since the 13th May three trains have been running daily, and from 8th June four trains will be worked. A total quantity of 8,741 tons of stone has been received from the quarry during the month of May.

14. While on the subject of the Pallávaram work I would venture to ask if orders may soon be passed on my letter, No. 1 W., of 2nd April 1885, asking for the assistance of some magisterial power in keeping the coolies to their work.

15. *Miscellaneous.*—In order to be able to extend the railway lines on the two piers it became necessary to remove some of the rails which were laid down in 1880-81 for forming protecting revetment to the north of the harbour. These rails have not been needed since the coast to the north became Government property, and if additional works should at a future date be desirable, necessitating again the use of a line of rails, the old rails can be replaced, as I am informed the new railway material is shipped by this time.

16. The influx of cement from England necessitated using the large cement store which was built in 1877 outside the boundary of these works and adjacent to the old town wall behind the municipal pumping station for drainage. The municipal pumping station has cut off all available access to this shed, but in November 1883, on my representing this fact to the Vice-President, I was informed that a road would be made before February 1884. As this road is not yet made, I had to cut through the town wall and so form a new entrance to the shed. This was done with the consent of the municipality and at the cost of the harbour works.

17. *Stores and plant received.*—During May the Steamers *Cormorant*, *Sirsa*, *Tasmania*, and *Avocet* arrived with stores for the works. A total of 5,587 casks of cement was received, of which 994 were brought by the *Sirsa* transhipped from the *India* at Colombo. These casks were all slightly damaged. The other stores consisted of white paint, black paint, red lead, hides, claws for lifting blocks, diving dresses, boat oars, &c., and are all much needed.

18. *Illness of Mr. Beardmore.*—Although I have already had to report the sad death, on 2nd June, of Mr. N. St. B. Beardmore, Assistant Superintendent of these works, yet as this report is only up to 31st May I can only draw attention to the fact that during May he was not able to be out on the works, although until near the end of the month he was able to render every assistance in consultation on details connected with the work. Unfortunately one of the office clerks, who was specially under Mr. Beardmore, was suddenly taken seriously ill also, and these events have necessarily thrown my work rather into arrears.

ORDER—dated 13th June 1885, No. 1385 W., Public Works.

Recorded.

2. Paragraph 14 will be communicated to the Judicial Department, with the request that early orders may issue on this department No. 742 C., dated 9th April 1885.

3. The Government have received with regret the report of the death of Mr. N. St. B. Beardmore, who, since October 1875, rendered excellent service as Assistant Superintendent of the Harbour Works.

(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.
„ Judicial Department.
„ Marine „

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of 1885 Madras.

PUBLIC WORKS.

Dated June, 13th.

Recd. *Encl.*

G.O., 13th June 1885, No. 1385 W.

JUNE.

Madras Harbour Works

Orders on progress report of — for May 1885.

1385/3

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 Pallávaram 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 random 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. Annamalay 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 Alí Nakvy Sáhib, 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.

1385/4

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 watermark 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. 3343, 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 farther 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.

Exd. A. Grubert.
Spare Copies

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.

Madras Harbour Works

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

1385/6

27th April 1885, No. 990 W., Public Works.

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. Grubert.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Gobt. of (1885) Madras.

PUBLIC WORKS.

Dated April, 27th.

Encl.

Recd.

27th April 1885, No. 990 W.

APRIL.

Madras Harbour Works

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

1885/1

13th May 1885, No. 1136 W., Public Works.

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 (uneatable) 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.)

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

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

Exd. E. Fernandez.
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BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated May, 13th.

Encl.

Recd.

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

MAY.

Madras Harbour Works

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

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Madras Harbour Works, 29 May. 1885.

OFFICE NOTE.

To
D. W.

Previous to the destruction of the piers in Nov. 1881, the monthly progress reports to Govt. from these works used to be published in the papers — I am so very frequently asked by merchants "What is being done on the Harbour Works" that I think it would be a good plan to resume this habit, unless some new objection has arisen — Would you mind naming the matter in the interest of the mercantile public who are paying heavy dues, and who know not that work is resumed.

F. N. J.

Dec 4 1857

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No. 1328 D.

GOVT. OF MADRAS. } 188 . { P. W. DEPT.

SECRETARY.

S. o. A. No 1136 W a/13. 5. 85

Chêpâk, 2nd June 1885.

OFFICE NOTE.

From

D. W.

To

S. M. H. W.

Your office note of 29th May 1885.

—

Copies of the last progress report and orders thereon (1136 W of 13th May 1885) are going today to the news-papers.

All such reports will be sent to the papers as formerly.

Sd/ C.B.

D. W. 2/6/85

No. 1374.

138/12

From

The SUPERINTENDENT,
MADRAS HARBOUR WORKS,

To

The Secretary to Government
Public Works Department
Madras

MADRAS, 6th June 1885.

Sir,

I have the honour to submit the following report of the progress on these works during the past month of May, and I must preface it with the remark that it would have been submitted earlier if I had not been most seriously pressed with work owing to sickness on the staff.

North Pier Works

2. Divers have been working at levelling the rubble base to receive the new blocks for restored work, and at blowing up concrete blocks in the line of the new foundations. There have now been 21 blocks blown up by dynamite, of which number 12 were destroyed in May, these represent the equivalent to depositing 564 tons of rubble base in the new line of foundation. Latterly this work has been retarded owing to the illness of Mr. C. Underdown, Foreman Diver, who is under medical treatment which prevents him from diving, but permits of his superintending the diving staff who are not so experienced. The Medical Officer at the General Hospital thinks that a little rest is all that is required in his case,

and

and this is what I am endeavouring to give him. The month of May is always a trying one for those who have much out of door work to do.

Foreshore N. Pier

3 During May 2282 tons of stone were deposited in the foreshore of the N. Pier. This work is now completed and ready to receive the wave breaker blocks so soon as the machines for depositing them are erected. These machines are I believe on their way out and may shortly be expected in Madras. I have not yet been able to experiment upon recovering old blocks from the line of new work but I have obtained two excellent boats at last, from Karical, which will be fitted out for the purpose.

Railway line on north Pier

4. The railway line on the North Pier has been extended 393 feet for the purpose of loading the boats for depositing rubble in the new foundations, but the persistent swell from the south east has prevented work from being carried on under this head.

5. The superstructure of the North Pier has been repaired where necessary so as to be fit to receive the rails for carrying the Titan and other Cranes.

South Pier Works. Rubble base

6 At the south Pier the railway lines were extended with old rails for a length of 611 feet for the purpose of tipping rubble in the new line of foundations, and from the 13th to the end of the month 5893 tons of stone were deposited.

Contract for tipping rubble base

7. All the work of depositing rubble from boats

since

1385/12 p 2

since May 1st has been carried on under the new Contract referred to in my report for March (G.O. No 989 W of 27th April 1885, para 17 of my letter therewith) at lower rates than ever before obtained. It is satisfactory to be able to report that the work has up to this date been satisfactorily performed in every way.

Concrete block making

8 For the future section of work 88 of the Concrete blocks now in stock have been altered to suit the new design, of these 35 were altered in May. The alteration consists in dressing them down and plastering them with granite chips in strong cement so as to bring them exactly to the tapering form required for fitting into the curve of the new work.

Block making by Machinery

9 On the 18th the machinery for blockmaking was started and has been working ever since. As might be expected on the first day the stone breaking machines, concrete mixers, and stationary engine were occasionally pulled up by hot bearings. Since the first day all has gone well. The blocks for the abutment of the new work are complicated in shape, and required more time and trouble expended on them than will be the case with other blocks hereafter. Since the 18th there have been 83 blocks made by machinery for the new design, some made from Madras Cement and some from the English Cement

imported

11-6-85 US.

imported in 1882.

Block frames

10 The Carpenters have been hard at work making the moulds or frames for the new blocks. These frames are of themselves very heavy pieces of work, and have to be fitted together with the most perfect accuracy. These are now 7 new ones built, 4 of which were completed in May.

Railway lines in block yard

11 The railway lines for carrying the boxes of liquid concrete were extended 217 feet thus commanding the full length of the block ground.—

New Contract for block making

12 The making of the Concrete blocks has been carried on since May 18th under the new contract, and at a lower rate than formerly (vide G. O. before quoted) and all is going on satisfactorily.—

Pallavaram quarries

13 The quarries at Pallavaram have been working fairly well, but the want of increased railway sidings is felt. Since the 13th May three trains have been running daily, and from June 8th four trains will be worked. A total quantity of 8741 tons of stone have been received from the quarry during the month of May.—

14 While on the subject of the Pallavaram work I would venture to ask for decision

soon

soon be passed on my letter No 1W of 2d April 1885 asking for the assistance of some magisterial power in keeping the coolies to their work..

No 762 C - 9/4/85

Miscellaneous

15 In order to be able to extend the railway lines in the two piers it became necessary to remove some of the rails which were laid down in 1880-81 for forming protecting revetment to the North of the Harbour. These rails have not been needed since the coast to the North became Government property, and if additional works should at a future date be desirable, necessitating again the use of a line of rails, the old rails can be replaced, as I am informed the new railway material is shipped by this steamer.—

16 The influx of Cement from England necessitated using the large cement store which was built in 1877 outside the boundary of these works and adjacent to the old town wall behind the Municipal pumping station for drainage. The Municipal pumping station has cut off all available access to this shed, but in November 1883 on my representing this fact to the Vice President I was informed that a road would be made before February 1884. As this road is not yet made I

had

had to cut through the town wall and so form a new entrance to the shed. This was done with the consent of the Municipality and at the cost of the Harbour works.—

Stores and Plant received

17 During May the Steamers "Cormorant," "Sirsa," "Tasmania" and "Ascot" arrived with stores for the works. A total of 5587 casks of Cement were received, of which 994 were brought by the "Sirsa" transhipped from the "India" at Colombo— These casks were all slightly damaged— The other stores consisted of, White Paint, Black Paint, Red Lead, Hides, Clams for lifting blocks, Diving Dresses Boat oars &c &c &c and are all much needed.

Illness of Mr Beardmore

G.O. 934–85
5-6-85

18 Although I have already had to report the sad death on June 2 of Mr. N. St. B. Beardmore Assistant Superintendent of these works, yet as this report is only up to May 31st I can only draw attention to the fact that during May he was not able to be out on the works, although until near the end of the ~~of the~~ month he was able to render every assistance in consultation on details connected with

1385/19

with the work. Unfortunately one of the office clerks who was specially under Mr Beardmore was suddenly taken seriously ill also, and these events have necessarily thrown my work rather into arrears.

I have the honour to be,
Sir
Your most Obedient Servant
F. W. Morewood
Superintendent

11-6-85

Inc 5050

(13)

Gw 1328D. 2.6.85
" 742C. 9.4.85.
G.O. No 990W. 27.4.85
" " 989W. 27.4.85
" " 1136W. 13.5.85.

Buildings & Roads

From
The Superintendent
Madras Harbour Works

No 13 W
Dated 6th June 1885
Rec 8

Put up No 1328 D d/2.6.85 [illegible]
S.P.
9/6/85

No of Enclosures Nil

Last report

Progress Report

Submits — for May 1885

C. 9.6.85. R. 13.6.85.

1385/13

PUBLIC WORKS DEPARTMENT.

No 1385 W

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 13th June/85

READ the following

Letter from the Supt Madras Harbour Works } H.E. No. 13 W d/6th June 1885.

Recorded.

2. Paragraph 14 will be communicated to the Judicial Department, with the request that early orders may issue on this Department No. 742 C, dated 9th April 1885.

3. The Government have received with regret the report of the death of Mr. A. H. B. Beardmore, who, since October 1875, rendered ~~good~~ excellent service as Assistant Superintendent of the Harbour works, ~~for nearly~~

19.6.85 W.

~~nearly ten years~~

Cd.
9.6.85

(13)

To

The Supt M. H. Works.
Exr P. W. Accounts
Judicial Department
Marine Department

Despd
20/6/85

A.M.S. 39/6.
Editor's Table

O. 9.6.85 [illegible] 6.85

J.B.

5036

Govt. of 1885 Madras.

PUBLIC WORKS.

16/6/85.

Dated

Recd.

Encl.

G.O., 13 June 1885, No. 385 W.

Madras Harbour works

=

Orders on progress report for May 1885.

60/5

50 21/15/6