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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

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*Proceedings of the Madras Government, Public Works Department,
14th June 1876.*

Read the following papers :—

No. 245. From N. St. B. BEARDMORE, Esq., Officiating Superintendent of the Madras Harbour Works, to Colonel W. T. F. FAREWELL, Officiating Deputy Chief Engineer, Public Works Department, dated Madras, 29th May 1876, No. 17 W.

With regard to G.O., No. 1,238, of 17th May 1876, questioning the advisability of acquiring land at Chinnamapett, I have the honor to submit to you the following Memoranda :—

1. The Government could hardly have been ignorant of the proposal to obtain stone from another point than from Tritany, for it is referred to in G.O., No. 1,100, dated 3rd May, that Government Order being founded on a letter addressed by the late Superintendent of these works to Major-General G. W. Walker, dated 28th March of this year, in which, after referring to a conversation held with His Grace the Governor the previous day on the same subject, he quoting from his letter of October 4th, to the Agent of the Madras Railway, included in G.O., No. 3,324, states that there was reason to believe in the existence of hard stone suitable for concrete in the neighbourhood of Arconum, 40 miles from Madras, and this would obviate the necessity of drawing supplies from Tritany.

2. The subject as above-mentioned is also referred to in the correspondence covered by G.O., No. 3,324, dated as far back as 22nd November 1875, where the anticipation of obtaining stone from Arconum or Chinnamapett is referred to both by Mr. May and Mr. Elwin in their letters: from Mr. May to Mr. Elwin, dated October 4th, in which he states—"There is reason to believe that stone suitable for this purpose (the manufacture of concrete) exists at two points in the vicinity of the railway; one near Chinnamapett, 36 miles up, and the other near Arconum, 42½ miles;" from Mr. Elwin to Mr. May October 5th; from Mr. May to Mr. Elwin October 30th. The printed correspondence being, in fact, in a great part on the question as to how far the railway should be doubled in consequence of the probability of obtaining stone at some point nearer to Madras than Tritany.

3. For some time past the subject had been a matter of correspondence between the Engineer-in-Chief in London and the late Superintendent. The latter in his letter of February the 5th, 1876, says:—"There is no question as to the quality of the stone if the quantity is sufficient." And reports more fully in his letter of February the 12th, 1876, as follows:—"Yesterday I, accompanied by Mr. Beardmore and Mr. Lowe, visited the country adjoining the Railway Station at Chinnamapett, 36½ miles from Madras. On a moor of half-a-mile square or thereabouts, north of, and close to, that station, there is a sufficient quantity of stone for all the concrete required, and it is to be had for the picking up, in the shape of water-washed round pebbles of every variety of size from 12 inches diameter down to an inch or less. The ground is the property of the Rajah of Carvetnuggur; it is of no agricultural value, and none of the stone spread over it and under it for several feet in depth appears ever to have been utilized. These stones must once have been placed in water, although there is no water near them now; and they consist of quartz, jasper, and such like pebbles, brittle and easily broken, but each of them hard enough to cut glass. Specimens of this stone

will be sent to your address by next P. and O. parcel post, and a plan of the ground showing the platforms and buildings at Chinnamapett Station will be prepared at once."

Mr. Parkes having received specimens of the stone, in reply to the above report discusses the question; and, on the supposition that it would be cheaper than granite, gave his acquiescence, mentioning that the final decision must rest with the local Superintendent.

4. Mr. May had instructed me on the subject, and in the last conversation he ever had with me on business affairs directed me to make the application to Government contained in my letter to the Secretary to Government, Public Works Department, dated April 25th, 1876.

5. Although waterworn, the stones are not all round and polished as might be supposed, but in a great part are broken and a little angular. River ballast is one of the best and most suitable of all stones for making concrete when of a hard character as these are; and, as stated in my letter above-mentioned, there are boulders which, after being crushed, will form, it is considered, sufficient angular pieces to fill the interstices between the pebbles.

6. To get them requires the removal of no large quantity of spoil, for they lie on the surface or mixed up with not a very large quantity of sandy soil from the river drift immediately below.

7. Chinnamapett is to be preferred to Tritany on account of the shorter railway journey, 36 miles compared to 51.

8. A saving would be effected in the cost of crushing, as so much of the Chinnamapett stone is small and broken.

9. The stone at Tritany moreover would be more expensive to quarry than that of Chinnamapett, as many of the boulders there will require blasting or otherwise breaking before they can be removed, whereas at Chinnamapett few of the boulders will so require breaking.

10. Alternative sites have been considered but not favorably. Mr. Parkes himself in his report of November 1873, in paragraph 63, discountenances going to St. Thomas' Mount or to Palaveram on account of the greater expense of quarrying there.

11. Other sites have not been reported on, because it was considered in the Superintending Engineer's discretion where he should obtain stone.

12. Moreover, it was always considered we were obliged under previous arrangement to go to some point on the Madras line of railway to quarry stone until G.O., No. 1,100, of 3rd May, repudiating all previous arrangements, was issued.

13. Referring to paragraph 5, it is possible that sufficient boulders may not be found at Chinnamapett in order to form the item quarry lumps in the manufacture of concrete blocks, as well as to form, after being crushed, a sufficient number of angular pieces to fill in the interstices; it is proposed, therefore, that the supply for the total quantity of stone required might be divided into two portions, one portion to come from Chinnamapett and the other portion of granite to be obtained from Tritany or some other quarry to be decided on. These portions may be advertised for under two separate contracts, if the Government so desire, or they might be supplied by

the same Contractor, the proportions that would be required from the two different points being stated in the specification. It is considered that the river ballast and pieces of granite or such other stone would marry well together; but, in my opinion, the quantity of granite thus required need be very small.

14. In conclusion, I beg to submit that the above memoranda have shown that the subject had been brought before the Government on the 22nd November of last year, the correspondence being dated as far back as October the 4th, and that the matter had been settled long ere this in the minds of the Engineers connected with the works.

P.S.—I append certain extracts from Mr. Parkes, Mr. May's, and my own private letters on the subject, from which it will be seen that every endeavour is being made to economise the work as much as possible.

No. 245-A. From Colonel W. T. F. FAREWELL, Officiating Deputy Chief Engineer, Public Works Department, to Major-General G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Fort St. George, 30th May 1876, No.—.

WITH reference to G.O., No. 1,238, of the 17th May 1876, the Officiating Superintendent of the Madras Harbour Works having informed that it is of importance that he should, as early as possible, be in a position to advertize for tenders for the hard stone required for concrete block-making, and as Government may desire at once to pass orders on the subject, I have the honor to report upon the sites for quarries on the Madras Railway Line; the report upon possible sites for quarries in the other localities in the neighbourhood of Madras will follow at an early date. I have, as directed, communicated with the Consulting Engineer for Railways, but as yet have received no reply from him.

2. On the 25th instant, in company with the Officiating Superintendent of the Harbour Works, I inspected the land at Chinnamapett Railway Station referred to in G.O., No. 1,238, dated the 17th May 1876. The Officiating Superintendent's letter to my address, attached hereto, explains the whole history of the selection of this site, &c. &c.

3. The ground at Chinnamapett, 36 miles from Madras, lies close to the railway, from which it can be easily approached by sidings; it measures 103½ acres; there is room for extending it; it is said to belong to a Zemindar, who now, I was informed, charges a tax of one anna a cart-load (about half a ton) for stone removed from the ground. On the surface of the ground lies scattered, and in some places in heaps, pebbles of various hard descriptions, of stone of all shapes and sizes from about a cubic inch to near three-fourths of a cubic foot; much of it fit for use at once, *i.e.*, requiring no breaking up at all. I saw but few large boulders. Many of the pebbles reminded me of those I had seen used for concrete block-making for the Breakwater at Kurrachee; below the surface of the earth, the pebbles appear to be loosely embedded in the soil, *i.e.*, easily removable with a pickaxe; some shallow pits of about 3 feet in depth sunk in different parts of the ground showed a fair amount of stone as being obtainable;

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taking this depth, the area proposed to be taken up would, after deducting, say, two-thirds for spoil, yield 333,000 tons of pebbles, or about the quantity of hard stone required for concrete block-making for the Madras Harbour Works.

4. The cost of quarrying should not amount to much; this could be practically ascertained before tenders are advertized for.

5. The difference in distance between Chinnamapett and Tritany being $14\frac{1}{2}$ miles, at 6 Pies per ton per mile, represents a saving of 7 Annas 3 Pies per ton in carriage; let alone wear and tear of rolling stock, &c. &c.

6. At Tritany, $50\frac{1}{2}$ miles* from Madras, stone can be obtained almost as easily as at Chinnamapett; it is good granite and would furnish fine angular boulders and smaller chips for concrete block-making; quantities of suitable stone, much of which can be had without blasting, lie all over the hill side and ground near the station, and, if necessary, quarries could be opened close by.

7. I see by my report on the manufacture of the concrete blocks at Kurrachee, published with G.O., No. 93, dated 14th January 1874, that the quantity of pebbles used in each block is nearly double that of the boulders. If it be determined that the boulders required be obtained from Tritany, the quantity of land proposed to be taken up at Chinnamapett will be greatly in excess of what is wanted; should Government approve of the pebbles being drawn from this source, it might be more convenient, than purchasing the land, to arrange with the owner to pay him, as per railway lading bill, some small seigniorage per ton of pebbles removed. The agreement being that he should, say for ten years, allow pebbles or stones of all kinds to be removed from the ground shown in the survey on account of Government at a fixed rate which he shall not have the power to increase.

8. Lastly, I would note that, since there can be no doubt that the different kinds of stone required for the Madras Harbour Works can be supplied by contract, and it has been determined that such should be taken advantage of, Government having approved of certain specimens of each kind of stone selected by the Superintendent, the whole question of quarries, carriage, &c. &c., would be very simply disposed of by advertizing for tenders for certain fixed quantities of each description of stone, as per standard specimens lodged in the Superintendent's Office, to be delivered daily within a certain period on the Madras Harbour Works. Legally drawn up tenders prepared by the Government Law Officers should be printed and available at the Superintendent's Office for any one applying for them.

No 246.

ORDER THEREON, 14th June 1876, No. 1,483.

CIVIL WORKS, No. 38-A.

UNDER the fuller explanation now given by the Officiating Superintendent of the Madras Harbour Works, His Grace

the Governor in Council withdraws his objections to the Chinnamapett quarry site being entertained. The Collector of North Arcot will take immediate steps for obtaining from the Zemindar of Carvetnuggur terms of the exclusive use of the stone on the site in question, and also at Tritany Station, for a term of seven years, at a

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reasonable charge per ton of stone removed. The Officiating Harbour Superintendent will prepare in consultation with the Government Solicitor draft forms of tender for quarrying and loading the material at these points, and depositing it where required.

2. The Officiating Harbour Superintendent will at the same time submit sketches and sections showing the probable amount and cost of the sidings that it will be necessary to construct at Chinnamapett and Tritany respectively, and their relative levels with the material to be quarried and loaded, the latter quarry site being also

* No. 40, dated 7th June 1876.
† „ 1,484, „ 14th „ „

taken up in case of further need. It is seen from the Collector's letter* recorded in separate Proceedings† that this land is also Zemindary property. All particulars concerning it should be ascertained and reported without delay.

(True Extract.)

W. Harcourt Colonel,
Offg. Under Secy. to Govt., P.W.D.

To the Superintendent of the Madras Harbour Works.
„ Consulting Engineer for Railways.
„ Government Solicitor.
„ Revenue Department.
„ Judicial „

Exd. W. J. Lewis.

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PUBLIC WORKS.

No 1000

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By the Board of Revenue
28 June 76

Vide No 3085/76. In the B of Rev
of 28 July 76.

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THE SUPERINTENDENT,
MADRAS HARBOUR WORKS.

1503

Dated June 14th.

Issued

Recd. June 20/76

Encl.

G. O., 14th June 1876, No. 1483.

JUNE.

Nos. 245-246.

No 1000 - 28 June 1876

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Madras Harbour Works.—Passing orders
on papers relating to the question of obtain-
ing stone from the quarries at Chinnampett
and Tritany for the —.

with order

MADRAS RECORD OFFICE