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MADRAS RECORD OFFICE.

Government of Madras.

Financial DEPARTMENT.

G.O. No. 151 Press / Mis. 200-201

200-201

Dated 27-1- 18 75.

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Not to be folded or roughly handled

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Proceedings of the Madras Government, Financial Department, 27th January 1875.

Municipal—Drainage.

No. 200. Read the following letter from W. CLARK, Esq., C.E., Drainage Engineer for Madras, to Colonel G. W. WALKER, R.E, Secretary to Government, Public Works Department, Fort St. George, dated Madras, 14th January 1875, No. 73:—

I purpose with your permission from time to time to send you a Memorandum of the progress made with the scheme for the Drainage of Madras, on which under instructions from the Government I am now engaged. I will also give the views which I hold on the subject, in order that I may have the benefit of the suggestions and opinions of others. Herewith I have the honor to forward the first of these Memorandums.

MEMORANDUM.

Madras Drainage.

I arrived in Madras on the 12th December last, and immediately placed myself in communication with Hon. D. F. Carmichael and Colonel G. W. Walker, R.E., and by their instructions with Mr. Loch, President of the Municipal Commission. I also commenced immediately the examination of the town guided by a small map which had been given to me by Major Tulloch, R.E., in which the main features of his scheme of drainage were shown, and I also had the benefit of the perusal of his report on the subject; with this assistance I was early able to direct my attention to its more important points, and I am anxious to bear testimony to the care evidently bestowed on the project and the great assistance it has afforded me. During the following week I was in communication with Colonel Walker, R.E., Mr. Loch, and Mr. Lee, the Municipal Engineer. I received also from the Municipal Office copies of Major Tulloch's plans, and from Colonel Walker copies of the Revenue Survey of Madras and other plans at a smaller scale. It appeared, however, that no records connected with the levels of the town were available; a few small books were sent to me, but on an examination of them it was quite evident that these do not contain the levels on which the Drainage Scheme as proposed by Major Tulloch had been prepared.

2. As no further information appeared likely to be obtained, I at once represented to Colonel Walker the fact offering to take charge of the necessary levelling operations if assistance were furnished to me. This was at once acceded to, and I received a supply of levelling instruments with other necessary articles for the establishment of a temporary office.

3. Considerable difficulty was at first experienced in obtaining qualified levellers; this however has been overcome, the Municipality having placed Mr. Stephenson, their Assistant Engineer, to take charge of the levelling operation, and two Native Assistants also capable of taking levels. More recently (on the 9th instant) they have also given me the assistance of Mr. Howell to take charge of the draughtsmen and others engaged in the office preparing plans and sections on which to lay out the work I may propose.

4. Two other levellers have also been employed to take levels at a rate per mile; one of them is doing very satisfactory work.

5. One hundred bench-marks in the form of numbered stones have been fixed as permanent points for reference; for the purpose of checking these I have employed my time for a fortnight past in taking levels during the morning hours, and have levelled over about twenty-seven miles of ground. Mr. Stephenson has also been similarly employed.

6. On the 8th instant, Mr. Loch forwarded to me two boxes of plans; these turned out to be almost entirely duplicates of those previously received containing detail plans and sections of Major Tulloch's scheme of main and branch sewers, about fourteen miles in length; but among these I also found six divisional maps of the town on which the levels are written and on which the disposition of the minor sewers of Major Tulloch's scheme is also shown.

7. So far as I have been able to compare them these levels appear to be very correct, and I can now devote my time entirely to the consideration of more important features of the drainage

scheme. Mr. Stephenson will now assume charge of the levelling operation, checked by the levels taken by myself.

8. In considering the subject it is of the greatest assistance to study carefully the arrangement which was proposed by Major Tulloch, the care and completeness with which he has given it entitle his views to great respect. The principle on which his scheme was founded was to include the whole of the thickly-populated portions of the municipal area, extending from St. Thomé to Royapoorum both inclusive, a district upwards of six miles in length, and with the pumping station near its northern end; to accomplish this a very large portion of the sewers (of which detailed information is given) exceeds twenty feet in depth. Along Triplicane it averages nearly twenty feet, and the lift of the pumps is twenty-five; considering the nature of the soil, chiefly fine sand saturated with water, the construction of works at so great a depth would I believe be very costly, much more so than is provided for by Major Tulloch in his estimate.

9. To these points my attention will be especially directed, viz., so to arrange the levels as to afford a sufficient amount of fall for each class of sewer, but to keep the work at the minimum of depth actually necessary for efficiency; and if possible to reduce the lift of the pumping operation.

10. By contracting the area so as just to include Royapett and Triplicane on the south, and Black Town on the north, and selecting another site for the pumping station, I hope to accomplish this.

11. Those parts of the area, St. Thomé and Royapoorum thus excluded, must be treated a entirely separate schemes.

12. I may mention also that I entirely agree with Major Tulloch that the surface waters mus be excluded from the sewers on account of the enormous cost which would be entailed in providing sufficient capacity for them.

13. I consider also that those portions of the area chiefly occupied by detached residences standing in large compounds need not be included in the earlier works to be undertaken; most of them however will be within reach of the means of drainage to be provided; but it seems unnecessary to carry out in purely suburban districts of this character, such as Poonamallee, Pantheon, and Police Commissioner's Roads, the expensive works which are absolutely necessary in the thickly-buil areas of Triplicane and Black Town.

14. At this stage of my inquiries I am anxious to place these views before the Governmen and shall be glad of any suggestions with which I may be favored.

(Signed) W. CLARK, C.E.,
Drainage Engineer.

Transferred to the Financial Department.

15*th January* 1875. (Signed) G. W. WALKER, Clonel, R.E.,
Secretary to Government, P.W.D.

No. 201. ORDER THEREON, 27th January 1875, No. 151.

Copy of the Memorandum will be sent to the Municipal Commissioners for the Town of Madras, to the Sanitary Commissioner, and to the Public Works Department.

(True Extract.)

Acting Chief Secretary.

To the President of the Madras Municipal Commission.
,, Sanitary Commissioner.
,, Public Works Department.

Exd. J. Wright.

Madras Drainage.

Memorandum.

I arrived in Madras on the 12th December last and immediately placed myself in communication with Honorable D. F. Carmichael and Colonel J.W. Walker R.E. and by their instructions with Mr. Lock President of the Municipal Commission — I also commenced immediately the examination of the Town guided by a small Map which had been given to me by Major Tulloch R.E. in which the main features of his scheme of Drainage were shewn, and I also had the benefit of the perusal of his Report on the subject; with this assistance I was early able to direct my attention to its more important points and I am anxious to bear testimony to the care evidently bestowed on the project and the great assistance it has afforded me — During the following

Govt. of Madras.

FINANCIAL.

No. 151

THE PRESIDENT OF THE MADRAS MUNICIPAL COMMISSION, &c., &c., &c.

Dated January, 27th.

Read.

Read.

G.O., 27th January 1875, No. 151.

JANUARY.
Nos. 200-201.

Madras Drainage.—Copy of Mr. Clark's first Memorandum on the Drainage of the Town, communicated to the President of the Municipality, the Sanitary Commissioner, and the Public Works Department.

following week I was in communication with Colonel Walker, R.E. Mr. Lock and Mr. Lee the Municipal Engineer. I received also from the Municipal Office copies of Major Tullochs Plans, and from Colonel Walker copies of the Revenue Survey of Madras and other Plans at a smaller scale — It appeared however that no records connected with the levels of the Town were available; a few small Books were sent to me but on an examination of them it was quite evident that these do not contain the levels on which the Drainage Scheme as proposed by Major Tulloch had been prepared. —

As no further information appeared likely to be obtained I at once represented to Colonel Walker the fact offering to take charge of the necessary levelling operations if assistance were furnished to me. — This was at once acceded to, and I received a supply of Levelling Instruments with other necessary articles for

for the establishment of a temporary office.

Considerable difficulty was at first experienced in obtaining qualified levellers, this however has been overcome, the Municipality having placed Mr. Stephenson their Assistant Engineer to take charge of the levelling operation, and two Native Assistants also capable of taking Levels — more recently (on the 9th Instant), they have also given me the assistance of Mr. Powell to take charge of the Draughtsmen and others engaged in the office preparing Plans and Sections on which to lay out the work I may propose. —

Two other levellers have also been engaged to take levels at a rate per mile, one of them is doing very satisfactory work. —

100 Bench Marks in the form of numbered Stones have been fixed as permanent Points for reference, for the purpose of checking these I have employed my time for a fortnight past in taking levels during the

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morning hours, and have levelled over about 27 miles of ground. Mr. Stephenson has also been similarly employed.—

On the 8th Instant Mr. Loch forwarded to me two Boxes of Plans, these turned out to be almost entirely duplicates of those previously received containing detail Plans and Sections of Major Tullochs scheme of Main and Branch Sewers; about 14 miles in length; but among these I also found 6 Divisional Maps of the Town on which the levels are written and on which the disposition of the minor Sewers of Major Tulloch's scheme is also shewn.—

So far as I have been able to compare them these levels appear to be very correct, and I can now devote my time entirely to the consideration of more important features of the Drainage Scheme— Mr. Stephenson will now assume charge of the levelling operation, checked by the levels taken by myself.—

In considering the subject it is of the greatest assistance to study carefully the arrangement which was proposed by Major Tulloch, the care and completeness with which he has given it entitle his views to great respect— The principle on which his scheme was founded was to include the whole of the thickly populated portions of the Municipal area, extending from St. Thomé to Royapooram both inclusive, a District upwards of 6 miles in length and with the Pumping Station near its northern end; to accomplish this a very large portion of the Sewers (of which detailed information is given) exceeds 20 feet in depth.— along Triplicane it averages nearly 20 feet; and the lift of the Pumps is 25 feet— considering the nature of the soil chiefly fine sand saturated with water, the construction of works at so great a depth would I believe be very costly, much more so than is provided for by Major Tulloch in his estimate.—

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by detached residences standing in large compounds need not be included in the earlier works to be undertaken; most of them however will be within reach of the means of drainage to be provided, but it seems unnecessary to carry out in purely suburban districts of this character,- such as Poonamallee, Pantheon, and Police Commissioners Roads,- the expensive works which are absolutely necessary in the thickly built areas of Triplicane and Black Town.—

At this stage of my enquiries I am anxious to place these views before the Government and shall be glad of any suggestions with which I may be favored.—

W. Clark C.E.

Drainage Engineer

Drainage Engineer's Office
123 Mount Road.
14th January 1875

13

From

W. Clarke Esqre C.E.
Drainage Engineer for Madras

To,

Colonel G. W. Walker R.E.
Secretary to Government C.W. Depart.t
Fort St. George

Sir,

Encl.

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Recd 20/1/75

Ans. 21/1/75

of these Memoss.

I have the honor to be,

Sir.

Your most obedient Servant,

W. Clark & Co

Drainage Engineer

Govt. of {187 } Madras.

Pub

G. O., 27 Jany. 1875 - No. 157.

Nos. 200-1

Madras Drainage. Copy of the Clerk's first terms on the drainage of the Town, con^d to the Pres^t of the Corp^n, the Secy Com^r of the Bd^d

Municipal - Drainage -

27 Jany 75 No 157.

Copy of the Memorandum with its Secs to the Municipal Commissioners for the Town of Madras. to the Sanitary Commissioner, & to the Public Works Department.

To the President of the Madras Municipal Corp^n
" Sanitary Commissioner.
" Public Works Department.

Dep^t 1875
Municipal
No: 264
From
The Drainage
Engineer
Dated 14 Jany 1875
Read 15 " "
& 16 " "

Answered

Municipal - Drainage -

Copy of the Memorandum with its Secs to the Municipal Commissioners for the Town of Madras. to the Sanitary Commissioner, & to the Public Works Department.

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