Archives I-10,006—16-8 77.

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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Public Works DEPARTMENT

G.O. No. 2721-W

B.P. No.

Press.

Mis.

Dated 3-11-1881. ~~197~~.

Not to be folded or roughly handled

2721-W
1

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

3rd November 1881, No. 2721 W.

Buildings and Roads.
Civil Works.

Read the following papers :—

No. 19. Endorsement of the Chief Secretary to Government in the Financial Department, dated 15th August 1881, No. 1,384.

From A. T. ARUNDEL, Esq., President, Municipal Commission, Madras, to the Officiating Chief Secretary to Government, dated Madras, 26th July 1881, No. 895.

I HAVE the honor to forward, for the consideration of Government, a memorandum with plans and estimate by the Vice-President Mr. Jones regarding the seaward extension of the southern main drain near the Fort, and also a copy of a letter on the same subject from Colonel Ross Thompson, the Superintendent of Works, Presidency.

2. The Government are aware that the south main drain, the outfall of which is near the Fort, receives the drainage of a large portion of Black Town. To prevent the great nuisance caused by the daily discharge of this sewage into the sea, the harbour intercepting sewer was constructed, and now by the aid of a powerful engine and centrifugal pump the sewage is raised out of the main drain and shot into the harbour intercepting sewer which carries the sewage away to an outfall in the sea north of the harbour.

3. But, although the ordinary daily flow of sewage is thus disposed of, the main drain must still discharge into the sea the storm waters received from every heavy fall of rain in the town. Such storm waters are of course mixed with the sewage, and the opening of the gates of the main drain reproduces the intolerable nuisance which at ordinary times is got rid of.

4. If the nuisance thus caused lasted no longer than the time required for the discharge of the storm waters through the open gates, it would have to be endured and little would remain to be said.

The new harbour has, however, entirely altered the condition of the shore, and whereas before the commencement of the harbour the sea washed up to the gates of the main drain, it is now separated from them by a belt of sand, 350 feet in breadth, which is increasing at a present rate of about 15 feet a month.

5. The result is that the storm waters when discharged from the main drain are spread out over the sand depositing a layer of liquid filth and giving rise to noxious exhalations, and at times, instead of finding their way into the sea, they rush north between the sand and the road towards the battery leaving deposits of filth in their course.

6. A gang of lascars is maintained night and day at the outfall of the main drain to open the gates and clear a passage to the sea in time of rain, but the distance to the sea is now too great for them to accomplish the latter task satisfactorily when the emergency arises.

7. Colonel Ross Thompson has been good enough to meet Mr. Jones and myself on the spot to discuss the means of remedying the present evils, and from his letter it will be seen that he concurs in the opinion that the only method of relief is by extending the main drain itself over the belt of sand, so that it may once more discharge its contents into the sea.

8. Mr. Jones has drawn up an estimate for this work which, inclusive of new gates or shutters, amounts to Rs. 13,663.

As the work in question has been rendered necessary solely by the extension of the foreshore caused by the new harbour, the cost would seem to be a proper charge against the harbour, and, if the Government concur in this view, I beg that orders may be issued for the execution of the work, or that the amount of the estimate may be placed at the disposal of the Municipality and the work carried out by the Municipal Engineer.

Memorandum regarding the Southern or Fort Outfall of Black Town Main Drain.

EVER since the commencement of the harbour works the work of keeping clear the outfall of this drain has been one of considerable difficulty and expense, so much so that eventually it became almost impossible to discharge the ordinary daily collection of sewage, and the harbour intercepting sewer was extended under G.O., No. 718 W., of 17th May 1879, up to the main drain mouth, where the Municipality erected a pumping engine, pumps, &c., to raise the sewage into that sewer. This so far has been a success as regards the ordinary *sewage* discharge.

2. The main drain, however, is the main duct for discharging the storm waters of Black Town, and it is therefore necessary, notwithstanding the diversion of the ordinary sewage flow, to maintain at all times an open channel between the mouth of the drain and the sea. This mouth is now 350 feet from the sea, and from the section hereinafter referred to it will be seen that the increase of sand between the 20th March and 28th June was about 50 feet.

3. The sand, in fact, is extending so quickly in front of the drain that a channel can hardly be cleaned out, for the drain after one tide before the next tide comes and fills it up again.

4. The necessity of always having a free outfall in a country which experiences sudden and heavy rainfalls need hardly be pointed out, and were there no other reasons than this it behoves that something be done to improve the outfall.

5. There are, however, other reasons, and two of these are that the storm water running over this large expanse of sand leaves a deposit of sewage over a considerable area, and at other times the rainfall is so sudden that the outfall cannot be cleared sufficiently before it is imperative to open the doors, and the drain flows not to the sea but along a valley formed by the sand between the road and the sea. In both cases a large amount of sewage is deposited; the nuisance is very great and complaints are loud and long.

6. It has now become necessary to do something to get rid of this great and increasing nuisance, and it is to be remembered that although the main drain on completion of the drainage scheme will not ordinarily receive sewage, it will still remain the main artery for the discharge of storm waters, and these will not be altogether free from sewage.

7. No temporary expedient therefore ought to be adopted; permanent works are a necessity. Attached to this memorandum are plans and estimates for the works considered necessary, and it will be seen from Colonel Ross Thompson's letter No. 1,351, dated 13th July 1881, with reference to a meeting with him at the outfall of the drain, that he concurs with the undersigned in thinking that the nuisance can be cured only by the extension of the drain.

8. The plans have been carefully designed, and the estimates, amounting to Rs. 13,663, looking to the size and position of the new drain, cannot be considered large.

9. An alternative section of less expensive design accompanied by an estimate is given for the extension with the floor formed of 3 inches depth of concrete on a rubble base. This, however, is not recommended, as the scour caused by a sudden discharge of a large and confined body of water is very great which it is doubted such a floor being able to withstand.

10. The doors for which a large detailed plan is forwarded are designed so as to be perfectly water-tight and so that they can be opened even if a considerable body of sand be in front of them; to prevent which, however, a separate flap door is provided. One self-opening and closing door is placed in each of these main doors to relieve the drain when the water reaches within 1½ feet of top of the drain. The main doors are not proposed to be self-acting; such would probably be ineffective in case of sand lodging in front of them, and the doors will have to remain permanently closed until the main drain is relieved of sewage altogether. This will not yet be for some time to come. The present doors are ineffective and being much out of order are of little use.

2721.W
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11. A model has been made of the proposed door in the Public Works Department Workshop, and Mr. Baddeley, R.E., has estimated the cost at Rs. 2,000. This amount may perhaps be reduced during construction.

12. As the sand is gradually increasing in amount and the difficulty of keeping open the outfall becomes proportionately greater daily, early sanction for the prosecution of the work is requested.

MADRAS,
19th July 1881.

(Signed) J. JONES, C.E.,
Vice-President, Municipal Commission.

From Lieutenant-Colonel ROSS THOMPSON, R.E., Superintendent of Works, Presidency, to the President, Municipal Commission, Madras, dated Bangalore, 13th July 1881, No. 1,351.

IN reply to your letter No. 808 of 8th July 1881, I have the honor to state that I fully concur with Mr. Jones in thinking that the nuisance in question can only be remedied by extending the drain as the land or shore in front forms.

2. The south arm of the harbour causes sand from the south to deposit in front of the drain, and I believe will continue to cause it to do so for some years to come. Even, though the drainage of Madras may be extended and improved, I believe the drain in question must be retained as an outlet for *storm* water, and consequently the mouth of the drain must be kept in free communication with the sea, otherwise water will "back up" in the drain and flood parts of Madras.

TRANSFERRED to the Public Works Department.

(By Order.)

(Signed) R. DAVIDSON,
Chief Secretary.

No. 389.

REFERRED to the Superintendent of the Madras Harbour Works for such remarks (at an early date) as he may wish to offer.

OOTACAMUND,
18th August 1881.

(Signed) R. H. SANKEY, Col., R.E.,
Secy. to Govt., P.W.D.

No. 19-A. From F. N. THOROWGOOD, Esq., M. INST. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 23rd August 1881, No. 37 W.

IN returning herewith the papers and drawings which accompanied your endorsement No. 389 of 18th August, I have the honor to submit a few remarks on the subject of the Fort outfall drain as invited.

2. The scheme submitted by Mr. Jones of a covered brick channel terminating with a double set of doors near the present edge of the sand, at a cost of Rs. 13,663, would certainly remedy the evil complained of for a time. But it is perfectly certain that the shore will advance steadily seaward, and I cannot believe that in three years time the proposed outfall would be of much service.

3. There is one point mentioned by both Mr. Arundel and Mr. Jones which in a great degree surprises me, viz., the filthy condition of the storm water overflow. It appears that the great nuisance complained of arises entirely from the overflow during and after heavy rains, and I cannot help believing that it would be possible to prevent the admixture of sewage with this storm water except to a very small extent.

4. In the harbour area and going out from the intercepting drain, there are three channels for carrying off storm water from the large town drains; these channels do not flow until the drain is full nearly to the top, they then take away the surplus water due to the rainfall. It is conspicuous how free from unpleasant smell these channels are when overflowing, the discharge being almost entirely muddy water. If it were possible to keep down the average level of the sewage in the Fort drain and

let the outfall only run when the drain is nearly full of rain to the top, I think the present nuisance might be lessened.

5. Between July 1878 and July 1881 the sand has advanced 225 feet at the Fort drain, and, allowing that the advance will be at an annually decreasing rate, I think it not unreasonable to expect that by 1884 the shore will be 180 feet beyond the outer door proposed by Mr. Jones, and by 1885 the present state of affairs will be repeated.

6. It appears to me that the only permanent and effectual remedy (always supposing that the whole drainage and storm water cannot be diverted from the Fort) will be to build a really substantial groyne about 200 feet south of the outfall extending to 3 fathom water. This would effectually prevent sand from gathering at the outfall, and would be capable of extension in fifteen years' time if necessary, but this would be a most expensive work to carry out.

7. There seems no doubt that for the money named in the estimate Mr. Jones' plan would be as good as any that could be thought of, but it is a thing to be regretted that in re-organising the Madras drainage the situation of the outfall cannot be changed altogether.

8. With regard to the incidence of the cost of whatever is proposed, that would of course be entirely decided by Government; but I would mention that when I proposed and wished to build an intercepting drain large enough to carry off the storm water, the Municipality declined to share any portion of the expense.

No. 20. ORDER THEREON, 3rd November 1881, No. 2721 W.

THE letter from the Superintendent of the Harbour Works, No. 37 W., dated 23rd August 1881, will be communicated to the President of the Municipal Commission, who will, with special reference to the observations contained in paragraphs 3 and 4, furnish at an early date an explanation as to the reasons for the excess proportion of sewage which is found to be mixed with the storm water from the Fort outfall drain, and report whether arrangements cannot be adopted for so far reducing this as to render the surplus water at least as inoffensive as with other surplus drains discharging within the harbour limits.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the President, Municipal Commission, Madras.
" Superintendent, Madras Harbour Works.
" ~~Superintendent of Works, Presidency.~~ S.E. 5° Circle
" Public Department.

Exd. E. C. Shunker.
Spare Copies

2721-W
3

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1881} Madras.

PUBLIC WORKS.

To

The PRESIDENT, MUNICIPAL
COMMISSION, MADRAS,
&c., &c., &c.

Dated November, 3rd.

Issued

Recd. *Encl.*

G.O., 3rd November 1881, No. 2721 W.

NOVEMBER.
Nos. 19-20.

Fort Outfall Drain.—The President, Municipal Commission, requested to explain the reasons for the excess proportion of sewage found to be mixed with the storm water from the —, and to report if arrangements could be made for reducing this.

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

22nd December 1881, No. 3180 W.

Buildings and Roads.
Civil Works.

Read the following papers:—

No. 83. Endorsement of the Chief Secretary to Government in the Financial Department, dated 1st December 1881, No. 1934.

From A. T. ARUNDEL, Esq., President, Municipal Commission, Madras, to the Chief Secretary to Government, dated Madras, 29th November 1881, No. P.W.C. 2323.

In reply to G.O., No. 2721 W., dated 3rd November (Public Works), I have the honor to forward a memorandum on the subject by the Vice-President Mr. Jones, which gives full explanation on the points in question.

Memorandum in reply to G.O., 3rd November 1881, *No.* 2721 *W.*

In reference to letter from Superintendent of Harbour Works embodied in the above and chiefly in regard to paragraphs 3 and 4, the following explanation is that required by Government in the above order.

2. The channels discharging within the harbour area, referred to by Mr. Thorowgood, receive an extremely small quantity of sewage when compared with the quantity flowing into the main drain, and while these drains are flowing day and night, because they are above the level of the sea and of the intercepting sewer, the main drain at its southern end is closed and is pumped only during the day from 6 A.M. to 6 P.M. with two hours intermission at midday. The sewer then during these two hours and during the night is a sewer of deposit and therefore a large quantity of sewage must be swept out of the drain when it is opened on the occasion of a storm overflow. Without an additional engine and a very increased staff it would be impossible to keep pumping out the sewage continually and so prevent the deposit. The very slight gradient of the sewer is an additional reason why the deposit is much more than in the other smaller sewer referred to.

3. To adopt Mr. Thorowgood's suggestion as to allowing the drain only to run off when the drain is nearly full of rain to the top would be to cause at least most disastrous flooding in the lower parts of Black Town. The drain with its full area is only sufficient to discharge a rainfall over the area drained equal to one-fourth of an inch per hour. An infinitely decreased area means an infinitely decreased discharge, while even now the secondary drains leading into the main drain are frequently burst open into the street for want of sufficient outlet of the flood waters which they carry.

4. The reorganization of the drainage does not at present extend itself to the disposal of flood waters, and as far as I can see even should in future arrangements be made for their disposal the Fort outfall would remain in *statu quo*.

5. Paragraph 8 might lead Government to suppose that a sewer had been designed by the Superintendent of the Harbour Works which would have carried away the storm water from the Fort drain, but so far as this office is aware no intercepting sewer which would have carried off the storm water was ever even proposed, and no intercepting sewer passing along the beach could effectively do so, as the floor of the drain even at its present outfall is below mean sea level. A large storm water sewer was however proposed in connection with the other lesser drains referred to by the Superintendent.

6. Although the sand is still increasing in front of the drain and will have extended some 180 feet more in 1884, the same necessity for a further extension of the drain will not then exist, as before that time it is trusted that the main drain will have been relieved of all sewage and will then be wholly for the discharge of storm waters.

MADRAS,
17th November 1881.

(Signed) J. A. JONES,
Vice-President, Municipal Commission, Madras.

TRANSFERRED to the Public Works Department.

(Signed) R. DAVIDSON,
Chief Secretary.

No. 83-A. From A. T. ARUNDEL, Esq., President, Municipal Commission, to the Acting Under Secretary to Government, Public Works Department, dated Madras, 6th December 1881, No. P.W.C. 2393.

IN reply to your letter No. 2903, dated 3rd December, I have the honor to forward a letter from the Vice-President giving the information you require. As the works connected with the main outfall in the drainage scheme of Black Town, viz., pumping engines, outfall pipe and channel, lie at the northern end of the town and must first be undertaken, it is clear that the diversion of the sewage that now falls into the south main drain must be postponed until these essential works are completed. The outfall works are estimated to cost one lakh of rupees and to be completed by the end of 1882. The connecting works required to relieve the south main drain of sewage are now estimated by Mr. Jones to cost Rs. 3,22,000, and will probably take a further period of between one and two years to complete.

2. If therefore the proposed extension of the present south main drain be not carried out, the exhalations from it that now at times poison the air of the Fort and the neighbourhood will remain in *statu quo* till 1884.

From J. A. JONES, Esq., Vice-President, Municipal Commission, Madras, to the President, Municipal Commission, Madras, dated Madras, 5th December 1881, No. P.W.C. 2392.

IN reply to letter No. 2903, dated 3rd December 1881, from the Under Secretary to Government, Public Works Department, I have the honor to inform you that before the sewage now flowing out at the Fort can be diverted from its present outfall, not only will it be necessary to complete the works proposed to be completed next year and costing about one lakh, viz, the pump well, house, erection of engine and pumps, outfall pipe and channel, which are necessarily the basis of the scheme, but that in addition it would be necessary to undertake the alteration of the whole or certainly a great portion of the surface drainage which flows into the valley along which Popham's Broadway runs, and to construct the proposed new main sewer, No. 1, which is to carry off this drainage to the pumping station.

Such additional work would amount to—

	RS.
Surface drainage	2,79,981
Sewer No. 1	42,545
Total ...	3,22,526

2. Though it cannot be positively affirmed that the whole surface drainage of this section would require to be carried out if the sewage had to be diverted from the Fort to sewer No. 1, there is no doubt that a very considerable portion would require to be so.

No. 83-B. From A. T. ARUNDEL, Esq., President, Municipal Commission, Madras, to the Secretary to Government, Public Works Department, dated 19th December 1881.

WITH reference to our meeting and discussion yesterday about the extension of the Fort or south main drain outfall, I enclose a letter from Jones explaining what he would be able to do in 1882 towards the scheme for relieving the present main drain of sewage, and what his additional proposals would cost.

2721-W
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2. You will see that he considers he could finish in 1882 about one-half of the new sewer which is to take the place of the present main drain and which is provided for in the general drainage scheme. The remainder would be finished in 1883. The total cost of this new sewer would be Rs. 46,400.

3. The injury to the harbour will, I suppose, set aside the arrangement for the transfer of the harbour engines, engine-house, &c., to the Municipality, and we must make our own arrangements. This we have already prepared for and have written home to inquire of Messrs. Gwynne and Co. the cost of engines to work the pumps already ordered of them. Pending definite information, Jones has estimated the cost of engines and engine-house, &c., at Rs. 45,000.

4. If the drainage scheme be thus urged on during 1882, we shall require a loan of Rs. 1,68,000 instead of the Rs. 1,00,000 at first proposed, viz.—

	RS.
For half of new sewer	23,000
,, engines, &c.	45,000
Total ...	68,000

5. The interest on the additional sum of Rs. 68,000 would be at 6 per cent. (4 per cent. interest and 2 per cent. sinking fund) Rs. 4,080, or at 7 per cent. Rs. 4,760 per annum. Half these amounts only would be required, as the money would not be required before the middle of the year.

6. If the Government can lend the amounts required—a question now under reference—there will be no difficulty in obtaining the assent of the Commissioners to the additional loan, but if we have to go into the market we must await the result of the attempt about to be made to raise the loan of Rs. 3,50,000 already sanctioned, viz., Rs. 1,00,000 for drainage and Rs. 2,50,000 for water-supply extension.

7. Under the most favorable conditions the new sewer to relieve the south main drain cannot be completed till well into 1883, so that as was agreed yesterday the necessity for extending the outfall of the main drain is still as urgent as ever.

From J. A. JONES, Esq., Vice-President, Municipal Commission, Madras, to the President, Municipal Commission, Madras, dated Madras, 19th December 1881.

WITH reference to our meeting with Colonel Sankey, Chief Engineer, at the outfall of the Black Town main drain near the north-east angle of the Fort, I have the honor to annex the following information with regard to the proposal for the immediate execution of the sewer No. 1 along Popham's Broadway which will carry off to the new pumping station the sewage now flowing into the main drain.

2. The sewer will be throughout its length below the level of the present main drain, and therefore by temporarily connecting it at intervals with the main drain all or nearly all of the sewage could be drawn from the latter, and the outfall at the Fort relieved of almost all sewage matters.

3. The estimated cost of this sewer is Rs. 38,680, of the temporary connections necessary about Rs. 3,500, in all Rs. 42,180. To this has to be added 10 per cent. for supervision and contingencies, so that the estimated total required to carry out the work will be Rs. 46,398 (say Rs. 46,400).

4. As it is probable the harbour engines will not now be available, and as the works proposed to be executed with the lakh of rupees to be borrowed during 1882 do not include the cost of engines or buildings, about Rs. 45,000 will be required for these works.

5. The total amount therefore which could be spent on drainage works in 1882, if funds be available, will be as follows :—

	RS.
Outfall works, pump well and sewer No. 3	1,00,000
50 per cent. of sewer No. 1 = $\frac{46,400}{2}$	23,200
(Remainder to be executed in 1883)	
Engines, boilers and buildings	45,000
	1,68,200

6. The acceptance of these proposals will not dispense with the necessity for the extension of the main drain outfall, and this, I think, was the opinion of all present at yesterday's meeting.

No. 83-C.

MEMORANDUM.

THE President, Municipal Commission, Madras, brought to notice in his letter, No. 895, of 26th July 1881, that, notwithstanding the construction of the intercepting sewer along the base of the harbour discharging to the north of the works, the sluice of the main sewer immediately north of the Fort has to be opened in times of flood, with the result that the pent-up sewage is discharged over the sands in front creating a very serious nuisance.

2. The belt of sand now intervening between the sluice and the sea is some 350 feet and must increase owing to the existence of the Harbour Works.

3. Government, in their Order, No. 2721 W., of the 3rd November 1881, inquired, on the report of the Superintendent of the Harbour Works, whether by better arrangements in regard to the pumping at the tail of the Fort sewer the quantity of actual sewage in the storm waters at such times could not so far be kept down as to render these on issue from the sluice at least as inoffensive as with the other surplus drains discharging within the harbour limits.

4. In reply to this it is pointed out that, notwithstanding the best arrangements as regards the pumping, owing to the small slope in the present main sewer, a very large quantity of sewage must remain ponded back behind the sluice, and that until the sewage has been diverted, as proposed in the new drainage scheme in the reverse direction towards the north of the town, there can be no radical change in this respect.

5. It is in fact clear, first that an extension of the main sewer to the furthest limit possible across the sands as proposed by the President at an estimated cost of Rs. 13,663 is absolutely necessary as an immediate relief, and second that even after the construction of the new main sewer diverting the sewage to the north of the town this extension of the present main sewer across the sands is needed for the discharge of all storm waters which under all circumstances it will still have to convey to the sea.

6. Further inquiries and an examination of the works on the spot with the President of the Municipal Commission (see annexed communication) has shown that, in order to divert the whole of the sewage now carried by the Fort drain to the north of the town, the outfall channel, sewage well and pumps, as also main sewer to the north, will have to be executed as part of the drainage scheme of the Municipality.

7. Mr. Jones, as will be observed, estimated at first that Rs. 3,22,000 would have to be expended before the requisite relief could be afforded, and that probably three years in all would be required for the operation; it however would now appear (see letter and annexure from Mr. Arundel of 19th instant) that the money and time required can be sensibly reduced.

8. If, as I understand, the Municipality could be lent Rs. 1,68,000 for 1882 at 6 per cent. (4 interest on loan, 2 for sinking fund) and could secure a further loan possibly of Rs. 25,000 in 1883, they would be enabled to guarantee the diversion of all sewage from the Fort main drain by the end of the latter year.

9. As the extension of the drain across the sands is (however absolutely essential) after all only a palliative, I would strongly urge the desirability of at once accepting the proposal now made and authorize the Municipality to lose no time in commencing and pushing on the work.

10. They might also be entrusted with the construction of the extension of the main drain across the sands at the cost of Rs. 13,663, the amount being met from the Harbour Works estimate.

11. It can hardly be doubted that this would under all the circumstances be the proper incidence of the charge, at the same time the Government may possibly be disposed to recommend to the Government of India that the amount be met from Imperial (Military), so that a general contribution from this source be made to the Municipality, on the grounds that the removal of this long-standing and intolerable nuisance from the immediate vicinity of the Fort is a matter in which the Military authorities, who for years have been loud in their complaints, are directly interested in the matter.

2721-W
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(Signed) R. H. SANKEY, Colonel, R.E.,
Chief Engineer, P.W.D.

21st December 1881.

No. 84. ORDER THEREON, 22nd December 1881, No. 3180 W.

THE Right Honorable the Governor in Council sanctions the estimate of Rs. 13,663 submitted by the President of the Madras Municipal Commission for the extension seaward of the southern main drain near the Fort, and as the evil complained of is directly traceable to the action of the harbour piers, the cost will be met from the estimate for the Harbour Works.

2. The work now sanctioned will be carried out by the Municipality, and will be commenced at once.

3. The other works proposed in the papers recorded above will be deferred for the present.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, Fifth Circle.
" President, Madras Municipal Commission.
" Superintendent, Madras Harbour Works.
" Examiner of Public Works Accounts.
" Financial Department.

Exd. E. C. Shunker.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1881) Madras,
PUBLIC WORKS.

To

THE SUPERINTENDING ENGINEER,
FIFTH CIRCLE,
&c., &c.

Dated December, 22nd.

Issued

Recd. Recd.

G.O., 22nd December 1881, No. 8189 W.

DECEMBER
Nos. 63-64.

Southern Main Drain near the Fort.—Estimate of Rs. 13,664 for extension seaward of the — sanctioned for execution by the Municipality, and the cost to be met from the estimate for the Harbour Works.

G. O. No. 875

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Municipal Office,
Madras, 26th July 1881.

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From ~~Presdt. F. Arundel Esq~~
President, Municipal Commission.

CURRENT No. 1978

To Presdt.

The Offg. Chief Secretary to Government
Ootacamund

Sir,

I have the honor to forward for the consideration of Government a Memorandum* with plans and estimate by the Vice President, Mr Jones, regarding the seaward extension of the southern Main Drain near the Fort, and also a copy of a letter* on the same subject from Colonel Ross Thompson, the Superintendent of Works, Presidency.

* pr Book post

The Government are aware that the South Main drain the outfall of which is near the Fort, receives the drainage of a large portion of Black Town. To prevent the great nuisance caused by the daily discharge of this sewage into the sea, the Harbour Intercepting Sewer was constructed, and now by the aid of a powerful engine and centrifugal pump the sewage is raised out of the main drain and shot into the Harbour Intercepting sewer which carries the sewage away to an outfall in the sea north of the Harbour.

3 But although the ordinary daily flow of sewage is thus disposed of, the Main Drain must still discharge into the sea the storm waters received from every heavy fall of rain in the Town. Such storm waters are of course mixed with the sewage, and the opening of the gates of the Main Drain reproduces the intolerable nuisance which at ordinary times is got rid of.

4 If the nuisance thus caused lasted no longer than the time required for the discharge of the storm waters through the opened gates, it would have to be endured, and little would remain to be said.

The new Harbour has however entirely altered the condition of the shore, and whereas before the commencement of the Harbour the sea washed up to the gates of the Main Drain, it is now separated

from

from them by a belt of sand 300 feet in breadth, which is increasing at a present rate of about 15 feet a month.

5 The result is that the storm waters when discharged from the Main Drain are spread out over the sand depositing a layer of liquid filth and giving rise to noxious exhalations, and at times instead of finding their way into the sea they rush north between the sand and the road towards the Battery leaving deposits of filth in their course.

6 A gang of lascars is maintained night and day at the outfall of the Main Drain to open the gates and clear a passage to the sea in time of rain, but the distance to the sea is now too great for them to accomplish the latter task satisfactorily when the emergency arises.

7 Colonel Ross Thompson has been good enough to meet Mr Jones and myself on the spot to discuss the means of remedying the present evils

and from his letter it will be seen that he concurs in the opinion that the only method of relief is by extending the Main Drain itself over the belt of sand so that it may once more discharge its contents into the sea.

Bed of it is increasing at the rate of 15' a month.

8. Mr Jones has drawn up an estimate for this work which inclusive of new gates or shutters amounts to Rs 13,663.

[illegible]
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As the work in question has been rendered necessary solely by the extension of the foreshore caused by the new Harbour the cost would seem to be a proper charge against the Harbour, and if the Government concur in this view I beg that orders may be issued for the execution of the work or that the amount of the estimate may be placed at the disposal of the Municipality and the work carried out by the Municipal Engineer.

I have the honor to be
Sir,
Your most obedt Servt
A. T. Arundel
President, Munl Comn

No 1351.

2724-W
9

Madras
Camp Bangalore
13th July 1881

From
The Superintendent of Works
Presidency

To
The President, Munl Comn
Madras.

Sir,

In reply to your letter No 808 of 8th July 1881, I have the honor to state that I fully concur with Mr Jones in thinking that the nuisance in question can only be remedied by extending the drain as the sand or shore in front fo

The south arm of the Harbour causes sand from the south to deposit in front of the drain, and I believe will continue to cause it to do so for some years to come. Even though the drainage of Madras may be extended and improved, I believe the drain in question must be retained as an outlet for storm water; and consequently the mouth of

The

he drain must be kept in free communi- ation with the sea – otherwise water will ack up" in the drain and flood parts of Madras.

I have the honor to be
Sir,
Your most Obedt Servant
(sd) Ross Thompson Lt Col
R.E.
Superintendent of Works,
Presidency

(True Copy)

A. Arundel
President M.C

2727-W
10

Municipal Office
Pub. Works & Convy Departt
Madras 19th July 1881.

Memorandum regarding the Southern or Fort Outfall of Black Town Main Drain.

Ever since the commencement of the Harbor Works the work of keeping clear the outfall of this drain has been one of considerable difficulty and expense, so much so, that eventually it became almost impossible to discharge the ordinary daily collection of sewage and the Harbor Intercepting Sewer was extended under G.O. No. 718 W of 17th May 1879 up to the Main Drain Mouth where the Municipality erected a pumping engine, pumps &c to raise the sewage into that sewer. This so far has been a success as regards the ordinary sewage discharge.

The Main Drain, however, is the main duct for discharging the storm waters of Black Town and it is therefore necessary notwithstanding the diversion of the ordinary sewage flow to maintain at all times an open channel between the mouth of the drain and the sea. This mouth is now 350 feet from the sea and from the section hereinafter referred to it will be seen that the increase of sand between the 20th March and 28th June was about 50 feet.

The sand, in fact, is extending so quickly in front of the drain that a channel can hardly be cleaned out for the drain after one tide before the next tide comes and fills it up again.

The necessity of always having a free outfall in a country which experiences sudden and heavy rainfalls needs hardly be pointed out, and were there no other reason than this it behoves that something be done to improve the outfall.

There are, however, other reasons and two of these are that the storm water running over this large expanse of sand, leaves a deposit of sewage over a considerable area and at other times the rainfall

2721-W
11

is so sudden that the outfall cannot be cleared sufficiently before it is imperative to open the doors and the drain flows not to the sea but along a valley formed by the sand between the road and the sea. In both cases a large amount of sewage is deposited – the nuisance is very great and complaints are loud and long.

It has now become necessary to do something to get rid of this great and increasing nuisance and it is to be remembered that although the Main Drain on completion of the drainage scheme will not ordinarily receive sewage – it will still remain the main artery for the discharge of storm waters and these will not be altogether free from sewage.

No temporary expedient therefore ought to be adopted, permanent works are a necessity. Attached to this Mem. are plans and estimates for the works considered necessary and it will be seen from Colonel Ross Thompson's letter No. 1351 dated 13th July 1881 with reference to a meeting with him at the outfall of the

drain

her the prosecution of the work is requested

J L Jones C.E.

Vice President &c.

Lbm
cM

P?

2721
13

Br Suel 3
4803
4804 /81

P8

2721-W
14

No 1384. P9

Transferred to the Public Works Dept.

(By order,)

J. Davidson

Chief Secy.

15/8/81.

MADRAS HARBOUR WORKS AUG 20 1881

W.S. 29/7

Fincl (1881) Depr

(Munl. - Drainage)

Madras Municipality

P. W. C. No 4803

From

The President

Municipal Commission

Madras.

Pr [illegible] 4804 /81

To

The Offg. Chief Secretary to Government

Ootacamund

P. W. C. No 895.

Dated 26 July }
Recd. 28 } 1881
Ansd. ~~28~~ 24

Enclosure 7 (& plan)

CURRENT No. 1978

Subject

Forwards for the consideration of Government a memorandum with plans & Estimate by the Vice President Mr. Jones regarding the sea ward Extension of the Southern main Drain near the Fort

Entered

No 389 P.W. Department

2721-W / 15

Endorsement of Financial Department No 1384, d/ 15th August 1881, on letter from President Madras Municipality, No 895 d/ 26th July 1881.

—

P10

Referred to the Superintendent of the Madras Harbour Works for such remarks (at an early date) as he may wish to offer.

C. W. Hutchinson

Colonel R. E.

Secretary to Government

P. W. Department.

Ootacamund }
18th Augt. 1881 }

To

The Superintendent

Madras Harbour Works

MADRAS HARBOUR WORKS
AUG 20
1881

Pr. Est 9 / 4804 / 81

No. 37 W

111

2721-W / 16

From

THE SUPERINTENDENT,
MADRAS HARBOUR WORKS,

To Colonel R. H. Sankey, C.B. R.E.
Secretary to Government, P. W. Dept.
Buildings and Roads
Fort Saint George

MADRAS, 23rd August 1881.

6 SIR,

In returning herewith the paper and drawings which accompanied your endorsement No. 389 of August 18th, I have the honor to submit a few remarks on the subject of the Fort outfall drain, as invited.

2. The scheme submitted by Mr. Jones of a covered brick channel terminating with a double set of doors near the present edge of the sand, at a cost of Rs 13,663, would certainly remedy the evil complained of for a time. But it is perfectly certain that the shore will

advance steadily seaward, and I cannot believe that in 3 years time the proposed outfall would be of much service-

3. There is one point mentioned by both Mr Arundel and Mr Jones which in a great degree surprises me, namely the filthy condition of the storm water overflow. It appears that the great nuisance complained of arises entirely from the overflow during and after heavy rains, and I cannot help believing that it would be possible to prevent the admixture of sewage with this storm water, except to a very small extent-

In

4. In the Harbour area and going out from the intercepting drain, there are three channels for carrying off storm water from the large town-drains, these channels do not flow until the drain is full nearly to the top, they then take away the surplus water due to the rain fall- It is conspicuous how free from unpleasant smell these channels are when overflowing, the discharge being almost entirely muddy water- If it were possible to keep down the average level of the sewage in the Fort Drain, and let the outfall only run when the

drain is nearly full of rain to the top I think the present nuisance might be lessened.

5. Between July 1878 and July 1881 the sand has advanced 225 feet at the Fort drain, and allowing that the advance will be at an annually decreasing rate, I think it not unreasonable to expect that by 1884 the shore will be 180 feet beyond the outer door proposed by Mr Jones, and by 1885 the present state of affairs will be repeated.

6. It appears to me that the only permanent and

effectual

effectual remedy (always supposing that the whole drainage and storm water cannot be diverted from the Fort) will be to build a really substantial groyne about 200 feet south of the outfall, extending to 3 fathom water. This would effectually prevent sand from gathering at the outfall, and would be capable of extension in 15 years time if necessary, but this would be a most expensive work to carry out.

7. There seems no doubt that for the money named in the estimate Mr Jones's plan

would be as good as any that could be thought of, but it is a thing to be regretted that in re-organising the Madras drainage, the situation of the outfall cannot be changed altogether.

8. With regard to the incidence of the cost of whatever is proposed, that would of course be entirely decided by Government; but I would mention that when I proposed and wished to build an intercepting drain large enough to carry off the storm water the Municipality declined to share any portion of the

the expence.

I have the honor to be,
Sir,
Your most Obdt. Servant

F. N. Harwood M. Inst. C.E.
Superintendent
M. H. Work

Shd
Exd EDC

P. W. C. No 4804

Buildings and Roads

From,

The Superintendent

Madras Harbour Works

No 37 W

Dated 23rd August 1881

No of Enclosures ~~6~~ 9

(2 plans)

Fort outfall Drain

Returns with remarks, papers regarding —

D. W.

2721-W / 20

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

SECRETARY.

Chepauk, 28 Oct. 1881.

OFFICE NOTE.

2721 W

To W

From Supt. Hr. W.

No 37 W. of 23rd Aug

I have kept this by me for some time in the hope of being able to see some way of avoiding the expense of constant extensions of the outfall drain, but have quite failed to do so.

If the sewage could be separated in any way from the storm water and carried into the intercepting sewer, the storm water might be allowed to spread over the beach, but I do not see any way to this result—

The difficulty arises from the false economy of making the intercepting sewer too small—

I do not see why the cost of the extension should be charged against the Harbour Works— The latter have received no credit for the value of the ground reclaimed, and should therefore not be debited with the cost of extending the sewer over this ground—

B & R Works

No. 2721 W

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 3d Nov /81

Read the following:—

2721-W / 21

Endt. Financial Dept. on letter from the President Municipal Commission, Madras, W & C No. 895 of 26th July 1881 . . . . . (W.E. No. 1384 of 15th Augt. 1881)

Chief Engineer's Endorsement (" " 389 of 18 " ")

Letter from the Supdt. Madras Harbor Works . . . (" " 37 W of 23d " ")

The letter from the Superintendent of the Harbour Works No. 37 W of 23d August 1881 will be communicated to the President of the Municipal Commission who will, with special reference to the observations contained in paras 3 and 4, furnish at an early date an explanation as to the reasons for the excess proportion of sewage which is found to be mixed with the storm water from the Fort outfall drain, and report whether arrangements cannot be adopted for so far reducing this as to render the surplus water at least as inoffensive as with other surplus drains discharging within

P.16

the Harbour limits

2721-W
22

3/11/81

To,

The President, Municipal
Commission, Madras with 4 Enc:
with 4 enclos.
" Supdt. Madras Harbour Works.
S.E. 5th Circle
" ~~S.W. Presidency~~
" Public Dept. Despd 15-11-81.

22.10.075

4804

1881

Govt. of [illegible] Madras.

PUBLIC WORKS.

7-11-81

To

Dated

Issued

Recd. Encl.

G.O. 3rd Novr. 81 No. 2721 W.

Nos. 19 to 20

Fort outfall drain.

The President, Municipal Commission requested to explain the reasons for the excess proportion of sewage found to be mixed with the storm water from the ——, and to report if arrangements could be made for removing this.

Entd in Receipt Regr.

Indexed 9/11