Govt. of {1888} Madras.

LOCAL AND MUNICIPAL.

Issued

Read. *Encl.*

G.O., 30th July 1888, No. 831 M.

G.O.No. 2581 Wtd 21-8-88

JULY.

Drainage Scheme.

Approving, subject to the remarks of the Chief Engineer, the plans and estimates for the drainage of the Kumbakónam town, and directing the Municipal Council to take steps for putting the work in hand and to submit proposals for raising funds.

P.W.C. No 8016

Govt. of {1888} Madras.

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GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—again the following paper :—

G.O., dated 7th March 1887, No. 210 M., Local and Municipal.

ABSTRACT.—Communicating to the Public Works Department certain papers relating to the Kumbakónam drainage scheme, and requesting that a competent officer may be deputed for completing the work.

READ—also the following papers :—

From M.R.Ry. P. TAMBISAMY MUDALIAR, Chairman, Municipal Council, Kumbakónam, to the Chief Secretary to Government (through the Sub-Collector and the Collector of Tanjore), dated Kumbakónam, 16th March 1888, No. 543.

With reference to the order of Government, dated 31st January last, No. 80 M., I beg to submit, for the information of Government, an extract from the proceedings of the council, dated 10th instant, expressive of the opinion of the council on the drainage scheme to be adopted, together with the other papers in connection therewith as per list enclosed.

2. There was a meeting convened for the consideration of this subject, but no meeting was held for want of a quorum ; and at two others, which were held on the 25th February last and on the 3rd instant, it was deferred to fuller meetings. Thus it was at last disposed of on the 10th instant. Hence there has been some delay in the submission of a reply.

3. The estimates, &c., having been submitted in original, I solicit their safe return when no longer required.

ENCLOSURES.

PROCEEDINGS of the Municipal Council, Kumbakónam, dated 10th March 1888.

* * * * *

3. Read G.O., No. 80 M., dated 31st January 1888, requesting to submit, without unnecessary delay, the papers connected with the drainage scheme of this town, with the opinion of the council thereon.

Proposed by Mr. Atkinson and seconded by Mr. V. Krishnaier that, having regard to the smaller cost of the Nandalar scheme and to the fact that in that scheme there are fewer masonry works to be kept in repair, and these works of a simpler nature than in the other scheme, the council is prepared to accept the scheme for drainage into the Nandalar on the distinct understanding that such scheme is intended to carry off all drainage with the exception of solid sewage and the liquid from latrines.

Resolved unanimously that the proposition be adopted.

30TH JULY 1888, No. 831 M., LOCAL AND MUNICIPAL.

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GENERAL Report on the Kumbakónam Drainage Scheme.

The scheme submitted with this report deals only with surface water and not with solid sewage, and such like, which it is thought should be dealt with by dry conservancy. The washings from the cook-rooms, &c., and the drainage of the backyards, roads, streets, &c., is, however, to be admitted into the drains, and it is hoped that eventually side drains will be provided to all the streets and that house drains will be led into them. This of course cannot be done at once, and in this scheme only the principal streets have been considered and a system of drainage laid down for them.

The insanitary condition of the town, mainly owing to the large quantities of water which lie stagnant in many parts, has been so often the subject of report that it is scarcely necessary that further remark be made here.

The present condition of the roads, streets, &c., can only be described as bad, and it is hoped that they will be properly repaired and sectioned when the drainage scheme is put in hand in order that surface water, &c., may readily find its way to the drains.

The present scheme is briefly as follows:—First, the prevention of any surface water from land above or west of the town passing through it, except down the Oolloor irrigation channel; second, the provision of drains to the principal streets as above stated; third, the construction of three branch drains to run through the north, centre and south of the town; and, fourth, the construction of a main drain with an adequate outfall.

With regard to the first of these: the Oolloor channel will be improved and a road running north and south will be raised and used as a bank to prevent any of the drainage entering the town, except down the Oolloor channel. The old Thapperumanullur channel, which is the only other channel entering the town from above, will be provided with a good screw shutter where it crosses the road or bank. The Oolloor channel head-sluice in the Cauvery is also to be provided with a screw shutter, but this work has not been included in this scheme, as it will be carried out by the Irrigation Department. It seems necessary that the control of this sluice should be placed under the municipal authorities.

Street Drains.—The system of drainage for the principal streets has been marked on the survey plan of the town prepared in this office. The drains have in all cases been carried to one or other of the main drains, with the exception of one or two short ones, which have unavoidably been run into the Oolloor channel. They have been provided to both sides of the streets, except in one or two cases, where the streets are too narrow to admit of this being done. Nothing has been allowed in this scheme for house connections, as it is supposed that the municipal authorities will arrange for this being done by the house owners.

Three Branch Drains of the Main Drain.—Two irrigation channels, the Oolloor and its branch, the old Thapperumanullur enter the town from above it; the first runs through the centre and the other through the north of the town. Soon after entering the town, the Oolloor channel throws off a branch from its right bank, which runs through the town in a south-easterly direction, and is called the Pavathancutlay channel. The Thapperumanullur channel has now a new head in the Cauvery, which takes off a few hundred feet below the road bridge and joins the old channel below or east of the town. The old portion of the channel passing through the town is therefore no longer used as an irrigation channel. Another irrigation channel called the Sembodi takes off from the Arasillár river below the Tanjore road bridge and runs through the south part of the town. There are therefore four channels passing through different sections of the town, and three of these, namely, the old Thapperumanullur, the Pavathancutlay and Sembodi, will be taken up for main drains, and for the sake of convenience have been called the north, centre and south branch drains.

The north drain starts west of Reddy Row's tank and is taken into the old Thapperumanullur channel, and passing down this through the town is run by means of a new cut into an existing drain which runs out east of the town to the Thapperumanullur channel. By this proposal existing irrigation is not interfered with in any way.

The centre branch drain starts from the head of the Pavathancutlay and runs down the line of this channel to the east of the town, and the land now irrigated by this channel will be supplied by means of a new cut from the Oolloor channel made east of the town.

The south branch drain starts near the head of the Sembodi channel and is taken along it nearly to its end and then run by a new cut to the end of the centre branch. The irrigated land under this channel consists of three plots, altogether amounting to 37 acres; the first plot of 7 acres will not be interfered with, but the two lower ones must be bought up. The land is valuable, but the municipality will have little difficulty in selling it again at a small loss for building and other purposes.

These three branch drains are to be joined together and carried to an outfall.

Main Drain.—There are two proposals for the outfall, both of which have been worked out in order that the municipality may decide which is to be adopted. The first is to start the main drain from the end of the north branch and connect it with the centre and south branches and carry it southward under the Arasillár to the Nanduthandi drain and down this to carry the

drainage to the Arasillár some four miles below. The other proposal is to carry the centre and south branch drains to meet the north branch and from thence to make a new channel rather more than five miles in length to the head of the Nandalar drain. The report which accompanies the estimate for these works gives in detail the requirements for each of these drains. The drains have in all cases been made sufficiently large to carry off all the rainfall they may receive from the area of the town and they are capable of discharging 12 inches of rain from their respective areas in 24 hours. It is thought that the bottoms and sides to height of 2 feet of these drains should be lined with concrete 1 foot thick and plastered with Portland cement in order to keep them as clean as possible. The cost of this has been in each case shown separately at the foot of the different estimates.

Compensation for land required to be taken up has been calculated upon statements received from the Kurnams. It is possible that the municipality will be able to obtain the land at cheaper rates than are allowed in the estimate.

With regard to the rates allowed for the different works, these are in nearly every case in accordance with the schedule of rates of this district, a copy of which was obtained from the Executive Engineer's Office, Tanjore.

(Signed) E. HANDCOCK,
Engineer in charge of Drainage Scheme, Kumbakónam.

No. 242 M.

Submitted to Government.

2. The two schemes may be called (*a*) the Nandalar scheme, and (*b*) the Arasillár scheme.

3. The council have chosen the former on the ground that it is less expensive and is likely to cost less to maintain.

4. An examination of the estimates shows that a large part of the work contemplated is common to both schemes, *i.e.*, the following items appertain to both:—

		RS.
(1)	Road formation on the west of the town	1,006
(2)	North drain	2,105
(3)	Central drain	911
(4)	South branch drain	8,194
(5)	Branch irrigation channel from Oolloor channel to Palavathankattalai channel	1,222
	Concrete drains in *streets*	53,923
	Total ..	67,361

5. The main drains (without concrete) cost respectively (*a*) Rs. 29,792 and (*b*) Rs. 38,356.

6. So far therefore the Nandalar scheme (*a*) comes to Rs. 67,361 + Rs. 29,792 = Rs. 97,153, and the Arasillár (*b*) to Rs. 67,361 + Rs. 38,356 = Rs. 1,05,717, a difference in favor of Nandalar of Rs. 8,564.

7. But the engineer is of opinion that besides the street drains, the main drains should also be lined with concrete, and if his estimate on account of this work be added the totals will be (*a*) Rs. 1,39,678 * and (*b*) Rs. 1,40,823 †—a difference of only Rs. 1,145.

8. If therefore the work which may be decided upon is to be carried out in its entirety, there is little to choose on the score of prime cost. The council think, however, that the maintenance of the Nandalar scheme will be less expensive. But the difference in any case is not likely to be very great, and it would seem therefore that the choice must depend upon the relative advantage to the town of the two schemes. That is a matter upon which Government will doubtless consult their

* Rs. 97,153 + Rs. 42,525. † Rs. 1,05,717 + Rs. 35,106.

professional advisers. In regard to expense, there is little to recommend one scheme in preference to the other.

VALLAM,
18*th April* 1888. (Signed) E. GIBSON,
Acting Collector.

Referred to the Public Works Department for early remarks.

(By Order.)

OOTACAMUND,
26*th April* 1888. (Signed) W. S. MEYER,
Assistant Secretary.

To the Public Works Department.

NOTE by the Chief Engineer for Irrigation.

Kumbakónam Drainage Scheme.

It does not appear necessary for me to go into the details of these schemes, the plans and estimates for which have been carefully prepared by Mr. Handcock, and his report shows plainly what is intended.

2. The question of the drainage of Kumbakónam has been for years under discussion, and I would refer to my letter, No. 2215 T. J., dated 3rd March 1883, printed in G.O., dated 7th March 1887, No. 210 M., in which will be found a short history of what had been done regarding it and my own proposals, and again to the papers printed in G.O., dated 31st January 1888, No. 80 M., which show what the general proposals are. The difficulty in preparing a drainage scheme for the town has been to provide a proper outfall, as there is none at present for the town, and, until one is made, it is useless to attempt drainage in the town.

3. Mr. Handcock forwards two schemes, called (*a*) the Nandalar scheme, (*b*) the Arasillár scheme.

As regards cost they are, as remarked by the Collector, practically the same when fully carried out. I consider the Nandalar scheme the best, and recommend its adoption. My chief reason for this is that to me it is the natural line for the drainage to be taken and that there are no large masonry works required like in the Arasillár scheme where a large under-tunnel is necessary. I consider also that the maintenance of the channel five miles in length with a uniform fall will be less than that of the other scheme.

4. If the work is sanctioned and carried out, the first thing to do is to cut out the main drain, second the branch drains, and finally the minor street drains.

5. The total estimate is as follows:—

		Rs.	Rs.
(1)	Road west of town	1,006	
(2)	North drain	2,105	
(3)	Central do.	911	
(4)	South do.	8,194	
(5)	Branch irrigation channel	1,222	
(6)	Concrete drain in streets	53,923	
(7)	Main drain	29,792	
(8)	Concrete lining to south branch	20,242	97,153
(9)	Do. to centre do.	14,600	
(10)	Do. to north do.	12,170	
	Total lining for branches ..	47,012	
(11)	Concrete lining to main drain for 8,100 feet ..	42,525	
	Total lining ..		89,537
	Total scheme ..		1,86,690

6. This amount, under two lakhs of rupees, is not a large amount for the proper drainage of a large and rich town like Kumbakónam, and I would urge that the branch and main drains should have the bottom two feet lined with concrete; but I consider that Mr. Handcock's section might be reduced and the work done for less, also that it is not necessary for 8,100 feet of the main drain to be so lined—a length of 6,000 should be sufficient.

H. R. MEAD, Colonel, R.E.,
Chief Engineer for Irrigation.

OOTACAMUND,
5*th July* 1888.

To the Chief Engineer, Public Works Department.

No. 387-D.

The papers are retransferred to the Local and Municipal Department with the above note by the Chief Engineer for Irrigation who has examined the proposed schemes on the ground.

2. Colonel Mead's remarks are concurred in by the Public Works Department.

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

OOTACAMUND,
9*th July* 1888.

To the Local and Municipal Department, with original papers.

ORDER—dated 30th July 1888, No. 831 M., Local and Municipal.

The plans and estimates prepared by Mr. Handcock for the drainage of the town of Kumbakónam are approved, subject to the remarks of the Chief Engineer for Irrigation. The Council should now take the necessary measures for putting the work in hand including submission of proposals for raising funds for the works.

(True Extract.)

Ag. Chief Secretary.

To the Chairman, Municipal Council, Kumbakónam,
through the Collector of Tanjore, with estimates, &c., returned.
" Public Works Department.
" Sanitary Commissioner for Madras.

Exd. J. Moses.

P.W.C. No 8016

Govt. of {1888} Madras.

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(7)

Issued

Recd. 14.8.88 Encl.

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(11)	Concrete lining to main drain for 8,100 feet	42,525	
	Total lining		89,537
	Total scheme		1,86,690

6. This amount, under two lakhs of rupees, is not a large amount for the proper drainage of a large and rich town like Kumbakónam, and I would urge that the branch and main drains should have the bottom two feet lined with concrete; but I consider that Mr. Handcock's section might be reduced and the work done for less, also that it is not necessary for 8,100 feet of the main drain to be so lined—a length of 6,000 should be sufficient.

OOTACAMUND,
5*th July* 1888. H. R. MEAD, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

No. 387-D.

The papers are retransferred to the Local and Municipal Department with the above note by the Chief Engineer for Irrigation who has examined the proposed schemes on the ground.

2. Colonel Mead's remarks are concurred in by the Public Works Department.

OOTACAMUND,
9*th July* 1888. (Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Local and Municipal Department, with original papers.

ORDER—dated 30th July 1888, No. 831 M., Local and Municipal.

The plans and estimates prepared by Mr. Handcock for the drainage of the town of Kumbakónam are approved, subject to the remarks of the Chief Engineer for Irrigation. The Council should now take the necessary measures for putting the work in hand including submission of proposals for raising funds for the works.

(True Extract.)

Ag. Chief Secretary.

To the Chairman, Municipal Council, Kumbakónam,
through the Collector of Tanjore, with estimates, &c., returned.
,, Public Works Department.
,, Sanitary Commissioner for Madras.

Exd. J. Moses.

Govt. of {1888} Madras.

LOCAL AND MUNICIPAL.

Issued

Recd. *Encl.*

G.O., 30th July 1888, No. 831 M.

JULY.

Drainage Scheme.

Approving, subject to the remarks of the Chief Engineer, the plans and estimates for the drainage of the Kumbakónam town, and directing the Municipal Council to take steps for putting the work in hand and to submit proposals for raising funds.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—again the following paper :—

G.O., dated 7th March 1887, No. 210 M., Local and Municipal.

ABSTRACT.—Communicating to the Public Works Department certain papers relating to the Kumbakónam drainage scheme, and requesting that a competent officer may be deputed for completing the work.

READ—also the following papers :—

From M.R.Ry. P. TAMBISAMY MUDALIAR, Chairman, Municipal Council, Kumbakónam, to the Chief Secretary to Government (through the Sub-Collector and the Collector of Tanjore), dated Kumbakónam, 16th March 1888, No. 543.

With reference to the order of Government, dated 31st January last, No. 80 M., I beg to submit, for the information of Government, an extract from the proceedings of the council, dated 10th instant, expressive of the opinion of the council on the drainage scheme to be adopted, together with the other papers in connection therewith as per list enclosed.

2. There was a meeting convened for the consideration of this subject, but no meeting was held for want of a quorum ; and at two others, which were held on the 25th February last and on the 3rd instant, it was deferred to fuller meetings. Thus it was at last disposed of on the 10th instant. Hence there has been some delay in the submission of a reply.

3. The estimates, &c., having been submitted in original, I solicit their safe return when no longer required.

ENCLOSURES.

PROCEEDINGS of the Municipal Council, Kumbakónam, dated 10th March 1888.

* * * *

3. Read G.O., No. 80 M., dated 31st January 1888, requesting to submit, without unnecessary delay, the papers connected with the drainage scheme of this town, with the opinion of the council thereon.

Proposed by Mr. Atkinson and seconded by Mr. V. Krishnaier that, having regard to the smaller cost of the Nandalar scheme and to the fact that in that scheme there are fewer masonry works to be kept in repair, and these works of a simpler nature than in the other scheme, the council is prepared to accept the scheme for drainage into the Nandalar on the distinct understanding that such scheme is intended to carry off all drainage with the exception of solid sewage and the liquid from latrines.

Resolved unanimously that the proposition be adopted.

GENERAL Report on the Kumbakónam Drainage Scheme.

The scheme submitted with this report deals only with surface water and not with solid sewage, and such like, which it is thought should be dealt with by dry conservancy. The washings from the cook-rooms, &c., and the drainage of the backyards, roads, streets, &c., is, however, to be admitted into the drains, and it is hoped that eventually side drains will be provided to all the streets and that house drains will be led into them. This of course cannot be done at once, and in this scheme only the principal streets have been considered and a system of drainage laid down for them.

The insanitary condition of the town, mainly owing to the large quantities of water which lie stagnant in many parts, has been so often the subject of report that it is scarcely necessary that further remark be made here.

The present condition of the roads, streets, &c., can only be described as bad, and it is hoped that they will be properly repaired and sectioned when the drainage scheme is put in hand in order that surface water, &c., may readily find its way to the drains.

The present scheme is briefly as follows:—First, the prevention of any surface water from land above or west of the town passing through it, except down the Oolloor irrigation channel; second, the provision of drains to the principal streets as above stated; third, the construction of three branch drains to run through the north, centre and south of the town; and, fourth, the construction of a main drain with an adequate outfall.

With regard to the first of these: the Oolloor channel will be improved and a road running north and south will be raised and used as a bank to prevent any of the drainage entering the town, except down the Oolloor channel. The old Thapperumanullur channel, which is the only other channel entering the town from above, will be provided with a good screw shutter where it crosses the road or bank. The Oolloor channel head-sluice in the Cauvery is also to be provided with a screw shutter, but this work has not been included in this scheme, as it will be carried out by the Irrigation Department. It seems necessary that the control of this sluice should be placed under the municipal authorities.

Street Drains.—The system of drainage for the principal streets has been marked on the survey plan of the town prepared in this office. The drains have in all cases been carried to one or other of the main drains, with the exception of one or two short ones, which have unavoidably been run into the Oolloor channel. They have been provided to both sides of the streets, except in one or two cases, where the streets are too narrow to admit of this being done. Nothing has been allowed in this scheme for house connections, as it is supposed that the municipal authorities will arrange for this being done by the house owners.

Three Branch Drains of the Main Drain.—Two irrigation channels, the Oolloor and its branch, the old Thapperumanullur enter the town from above it; the first runs through the centre and the other through the north of the town. Soon after entering the town, the Oolloor channel throws off a branch from its right bank, which runs through the town in a south-easterly direction, and is called the Pavathancutlay channel. The Thapperumanullur channel has now a new head in the Cauvery, which takes off a few hundred feet below the road bridge and joins the old channel below or east of the town. The old portion of the channel passing through the town is therefore no longer used as an irrigation channel. Another irrigation channel called the Sembodi takes off from the Arasillár river below the Tanjore road bridge and runs through the south part of the town. There are therefore four channels passing through different sections of the town, and three of these, namely, the old Thapperumanullur, the Pavathancutlay and Sembodi, will be taken up for main drains, and for the sake of convenience have been called the north, centre and south branch drains.

The north drain starts west of Reddy Row's tank and is taken into the old Thapperumanullur channel, and passing down this through the town is run by means of a new cut into an existing drain which runs out east of the town to the Thapperumanullur channel. By this proposal existing irrigation is not interfered with in any way.

The centre branch drain starts from the head of the Pavathancutlay and runs down the line of this channel to the east of the town, and the land now irrigated by this channel will be supplied by means of a new cut from the Oolloor channel made east of the town.

The south branch drain starts near the head of the Sembodi channel and is taken along it nearly to its end and then run by a new cut to the end of the centre branch. The irrigated land under this channel consists of three plots, altogether amounting to 37 acres; the first plot of 7 acres will not be interfered with, but the two lower ones must be bought up. The land is valuable, but the municipality will have little difficulty in selling it again at a small loss for building and other purposes.

These three branch drains are to be joined together and carried to an outfall.

Main Drain.—There are two proposals for the outfall, both of which have been worked out in order that the municipality may decide which is to be adopted. The first is to start the main drain from the end of the north branch and connect it with the centre and south branches and carry it southward under the Arasillár to the Nanduthandi drain and down this to carry the drainage to the Arasillár some four miles below. The other proposal is to carry the centre and south branch drains to meet the north branch and from thence to make a new channel rather more than five miles in length to the head of the Nandalar drain. The report which accompanies the estimate for these works gives in detail the requirements for each of these drains. The drains have in all cases been made sufficiently large to carry off all the rainfall they may receive from the area of the town and they are capable of discharging 12 inches of rain from their respective areas in 24 hours. It is thought that the bottoms and sides to height of 2 feet of these drains should be lined with concrete 1 foot thick and plastered with Portland cement in order to keep them as clean as possible. The cost of this has been in each case shown separately at the foot of the different estimates.

Compensation for land required to be taken up has been calculated upon statements received from the Kurnams. It is possible that the municipality will be able to obtain the land at cheaper rates than are allowed in the estimate.

With regard to the rates allowed for the different works, these are in nearly every case in accordance with the schedule of rates of this district, a copy of which was obtained from the Executive Engineer's Office, Tanjore.

(Signed) E. HANDCOCK,
Engineer in charge of Drainage Scheme, Kumbakónam.

No. 242 M.

Submitted to Government.

2. The two schemes may be called (*a*) the Nandalar scheme, and (*b*) the Arasillár scheme.

3. The council have chosen the former on the ground that it is less expensive and is likely to cost less to maintain.

4. An examination of the estimates shows that a large part of the work contemplated is common to both schemes, *i.e.*, the following items appertain to both:—

	RS.
(1) Road formation on the west of the town	1,006
(2) North drain	2,105
(3) Central drain	911
(4) South branch drain	8,194
(5) Branch irrigation channel from Oolloor channel to Palavathankattalai channel	1,222
Concrete drains in *streets*	53,923
Total ..	67,361

5. The main drains (without concrete) cost respectively (*a*) Rs. 29,792 and (*b*) Rs. 38,356.

6. So far therefore the Nandalar scheme (*a*) comes to Rs. 67,361 + Rs. 29,792 = Rs. 97,153, and the Arasillár (*b*) to Rs. 67,361 + Rs. 38,356 = Rs. 1,05,717, a difference in favor of Nandalar of Rs. 8,564.

7. But the engineer is of opinion that besides the street drains, the main drains should also be lined with concrete, and if his estimate on account of this work be added the totals will be (*a*) Rs. 1,39,678 * and (*b*) Rs. 1,40,823 †—a difference of only Rs. 1,145.

8. If therefore the work which may be decided upon is to be carried out in its entirety, there is little to choose on the score of prime cost. The council think, however, that the maintenance of the Nandalar scheme will be less expensive. But the difference in any case is not likely to be very great, and it would seem therefore that the choice must depend upon the relative advantage to the town of the two schemes. That is a matter upon which Government will doubtless consult their

* Rs. 97,153 + Rs. 42,525. † Rs. 1,05,717 + Rs. 35,106.

professional advisers. In regard to expense, there is little to recommend one scheme in preference to the other.

VALLAM,
18*th April* 1888.

(Signed) E. GIBSON,
Acting Collector.

Referred to the Public Works Department for early remarks.

(By Order.)

OOTACAMUND,
26*th April* 1888.

(Signed) W. S. MEYER,
Assistant Secretary.

To the Public Works Department.

NOTE by the Chief Engineer for Irrigation.

Kumbakónam Drainage Scheme.

It does not appear necessary for me to go into the details of these schemes, the plans and estimates for which have been carefully prepared by Mr. Handcock, and his report shows plainly what is intended.

2. The question of the drainage of Kumbakónam has been for years under discussion, and I would refer to my letter, No. 2215 T. J., dated 3rd March 1883, printed in G.O., dated 7th March 1887, No. 210 M., in which will be found a short history of what had been done regarding it and my own proposals, and again to the papers printed in G.O., dated 31st January 1888, No. 80 M., which show what the general proposals are. The difficulty in preparing a drainage scheme for the town has been to provide a proper outfall, as there is none at present for the town, and, until one is made, it is useless to attempt drainage in the town.

3. Mr. Handcock forwards two schemes, called (*a*) the Nandalar scheme, (*b*) the Arasillár scheme.

As regards cost they are, as remarked by the Collector, practically the same when fully carried out. I consider the Nandalar scheme the best, and recommend its adoption. My chief reason for this is that to me it is the natural line for the drainage to be taken and that there are no large masonry works required like in the Arasillár scheme where a large under-tunnel is necessary. I consider also that the maintenance of the channel five miles in length with a uniform fall will be less than that of the other scheme.

4. If the work is sanctioned and carried out, the first thing to do is to cut out the main drain, second the branch drains, and finally the minor street drains.

5. The total estimate is as follows:—

		RS.	RS.
(1)	Road west of town	1,006	
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To the Chief Engineer, Public Works Department.

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The papers are retransferred to the Local and Municipal Department with the above note by the Chief Engineer for Irrigation who has examined the proposed schemes on the ground.

2. Colonel Mead's remarks are concurred in by the Public Works Department.

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9*th July* 1888.

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

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The plans and estimates prepared by Mr. Handcock for the drainage of the town of Kumbakónam are approved, subject to the remarks of the Chief Engineer for Irrigation. The Council should now take the necessary measures for putting the work in hand including submission of proposals for raising funds for the works.

(True Extract.)

J. F. PRICE,
Ag. Chief Secretary.

To the Chairman, Municipal Council, Kumbakónam,
through the Collector of Tanjore, with estimates, &c., returned.
" Public Works Department.
" Sanitary Commissioner for Madras.

Exd. J. Moses.

Govt. of {1888} Madras.

LOCAL AND MUNICIPAL.

Issued

Recd. *Encl.*

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JULY.

Drainage Scheme.

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GOVERNMENT OF MADRAS.

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2. There was a meeting convened for the consideration of this subject, but no meeting was held for want of a quorum ; and at two others, which were held on the 25th February last and on the 3rd instant, it was deferred to fuller meetings. Thus it was at last disposed of on the 10th instant. Hence there has been some delay in the submission of a reply.

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3. Read G.O., No. 80 M., dated 31st January 1888, requesting to submit, without unnecessary delay, the papers connected with the drainage scheme of this town, with the opinion of the council thereon.

Proposed by Mr. Atkinson and seconded by Mr. V. Krishnaier that, having regard to the smaller cost of the Nandalar scheme and to the fact that in that scheme there are fewer masonry works to be kept in repair, and these works of a simpler nature than in the other scheme, the council is prepared to accept the scheme for drainage into the Nandalar on the distinct understanding that such scheme is intended to carry off all drainage with the exception of solid sewage and the liquid from latrines.

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With regard to the first of these: the Oolloor channel will be improved and a road running north and south will be raised and used as a bank to prevent any of the drainage entering the town, except down the Oolloor channel. The old Thapperumanullur channel, which is the only other channel entering the town from above, will be provided with a good screw shutter where it crosses the road or bank. The Oolloor channel head-sluice in the Cauvery is also to be provided with a screw shutter, but this work has not been included in this scheme, as it will be carried out by the Irrigation Department. It seems necessary that the control of this sluice should be placed under the municipal authorities.

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drainage to the Arasillár some four miles below. The other proposal is to carry the centre and south branch drains to meet the north branch and from thence to make a new channel rather more than five miles in length to the head of the Nandalar drain. The report which accompanies the estimate for these works gives in detail the requirements for each of these drains. The drains have in all cases been made sufficiently large to carry off all the rainfall they may receive from the area of the town and they are capable of discharging 12 inches of rain from their respective areas in 24 hours. It is thought that the bottoms and sides to height of 2 feet of these drains should be lined with concrete 1 foot thick and plastered with Portland cement in order to keep them as clean as possible. The cost of this has been in each case shown separately at the foot of the different estimates.

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(Signed) E. GIBSON,
Acting Collector.

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(By Order.)

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(Signed) W. S. MEYER,
Assistant Secretary.

To the Public Works Department.

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	Total lining		89,537
	Total scheme		1,86,690

6. This amount, under two lakhs of rupees, is not a large amount for the proper drainage of a large and rich town like Kumbakónam, and I would urge that the branch and main drains should have the bottom two feet lined with concrete; but I consider that Mr. Handcock's section might be reduced and the work done for less, also that it is not necessary for 8,100 feet of the main drain to be so lined—a length of 6,000 should be sufficient.

Ootacamund,
5*th July* 1888.

H. R. MEAD, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

No. 387-D.

The papers are retransferred to the Local and Municipal Department with the above note by the Chief Engineer for Irrigation who has examined the proposed schemes on the ground.

2. Colonel Mead's remarks are concurred in by the Public Works Department.

Ootacamund,
9*th July* 1888.

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Local and Municipal Department, with original papers.

Order—dated 30th July 1888, No. 831 M., Local and Municipal.

The plans and estimates prepared by Mr. Handcock for the drainage of the town of Kumbakónam are approved, subject to the remarks of the Chief Engineer for Irrigation. The Council should now take the necessary measures for putting the work in hand including submission of proposals for raising funds for the works.

(True Extract.)

J. F. PRICE,
Ag. Chief Secretary.

To the Chairman, Municipal Council, Kumbakónam,
through the Collector of Tanjore, with estimates, &c., returned.
" Public Works Department.
" Sanitary Commissioner for Madras.

Exd. J. Moses.

MEMORANDUM.

For C. No. 1585/90

REQUESTED for reference the undermentioned papers:—

5 More additional copies of G. O no:
831 M d/30th July 1888 (Local & Municipal)

Ag. Chief Assistant

P. W. SECRETARIAT,
Chepâk, 17th Feby: 1890.

To

The Chief Assistant
Public Works Department
Fort

D. D. 17-2-90-

Furnished

V. Ragan Charles
1st " Assist't "
Fort St George
19th Feby 1890. } 2d Lt 4th " Dept "