Local & Munl. (1897) Departmen

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G.O., No. 76 Mu

DATED 21-1-97

DESPATCHED

[Despatch Abstract.]

Water Supply

Sanctioning, with remarks Submitted by the Sanitary Engineer the revised estimate of Rs 240555. for the Scheme of — for the town of Kurnool prepared by the same officer and the estimate of Rs 23112. for the extension of the works proposed by the Municl. Council ~~submitted by the Sanitary Engineer~~.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

Government {1897} of Madras.

LOCAL AND MUNICIPAL.

To the Secretary

Proof for approval

15/1/97

Issue as corrected 17/1

Read. *Regd.* } 1897. *Enclosures* *Spare copies*

G.O., No. 76 M., 21st January 1897.

JANUARY.

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Water-supply.

Sanctioning, with remarks, the revised estimate of Rs. 2,40,555 submitted by the Sanitary Engineer for the scheme of — for the town of Kurnool and the estimate of Rs. 23,112 prepared by the same officer for the extension of the works proposed by the municipal council.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following papers :—

From the Public Works Department, No. 1332-C., dated 9th March 1896.

ABSTRACT.—Transferring memorial from Mr. Prendergast and others, residents of Kurnool, regarding water-works at Kurnool.

No. 392, dated 25th March 1896.

Referred to the Sanitary Engineer for early remarks.

(By order)

(Signed) W. W. PHILLIPS,
Ag. Assistant Secretary.

From Surgeon-Lieutenant-Colonel W. G. KING, M.B., C.M., D.P.H., Sanitary Commissioner for Madras, to the Secretary to Government, Public Works Department, dated Fort St. George, 10th March 1896, No. 549-S.

I have the honour to inform you that I am in receipt of a copy of a petition from certain inhabitants of Kurnool municipality in which they refer to the absence of provision for the supply of water for houses occupied by Europeans. I agree with the petitioners in thinking that, if it be possible for these to be commanded by the water-works, it is most desirable for sanitary reasons that they should not be neglected.

2. I would also take this opportunity of pointing out that the absence of provision for the supply of the suburb of Budapett is, in my opinion, a serious defect in the original scheme.

No. 1535-C., dated 19th March 1896.

Transferred to the Local and Municipal Department.

(Signed) D. McNEIL CAMPBELL, Col., R.E.,
Joint Secy. to Government, P.W.D.

No. 402, dated 27th March 1896.

Referred to the Sanitary Engineer for remarks in continuation of Government endorsement No. 392, dated 25th March 1896.

(By order)

(Signed) W. W. PHILLIPS,
Ag. Assistant Secretary.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 14th April 1896, No. 1133.

In reply to reference Nos. 392 and 402 of 25th and 27th March 1896, respectively, and which are herewith returned along with the petition from certain residents in Kurnool, I have the honour to report as follows :—

2. The scheme for Kurnool, as you are aware, it has been possible to carry out only by very large and extraordinary grants from Government and the scheme was therefore limited to supplying the main bulk of the population and not the outlying portions of the town. Government are also aware that the scheme, even as it now stands, is likely to cost considerably more than estimated. It is quite true, as stated by Mr. Thorburn in his demi-official accompanying the papers noted, that "the Sanitary Engineer's department did all this with their eyes open," simply because of financial considerations. It does not affect this department in any way whether more or less piping is laid down, and if Government can see their way, looking to the circumstance hereafter stated, to extend the supply as required, no doubt, the distribution will be more complete than it now is; the question, however, is: Are the benefits which may accrue worth the additional expense?

3. Taking first the petition from the residents and referring to paragraph 3, I have prepared an estimate which will meet the request for water, items A, B, C and E. The cost of extending pipes to these sites amounts to Rs. 11,050. The population to be served is not known exactly, but may be as follows:—

Collector's house	10	
Forest-officer's house	8	
District Board's office	5	(staff during day).
Travellers' bungalow	4	
American Mission	20	
Total	47	

But suppose the population is 100, then the expenditure will be Rs. 110 per head.

4. I have not included in the above the taluk cutcherry, the Superintendent of Police's house, the house of the Nawab of Banganapalle, the Local Fund Engineer's house and the Roman Catholic Priest's house because these are already served by existing arrangements.

5. The Sanitary Commissioner suggests that Buddavarampet should be supplied. This is outside the town on the opposite side to Kurnool of the Hindri river. The population may be about 1,000, the cost will be Rs. 9,440. It may be stated that water of very fair quality is obtainable near the above village.

6. The Assistant Sanitary Engineer in reporting on the matter points out that a portion of the town not supplied under the present limits of the scheme is the village of Nawabpet where the police lines are, and that this portion has greater claim for water-supply than any other. The cost of supplying this village will be Rupees 5,100.

7. The total extension proposed therefore amounts to—

	Rs.
Houses of English residents	11,050
Extension to Buddavarampet	9,440
Do. to Nawabpet	5,100
Total	25,590

The Sanitary Commissioner in a recent note to the Sanitary Board also proposes that the supply should be extended to Rozapet. This would cost about another Rupees 5,000.

8. The scheme is based on a supply for 30,000 people. The population of Kurnool, including the villages referred, was, according to the census of 1891, 24,523; the distribution system can therefore be extended at any time. It is not believed that the financial circumstances of Kurnool are such as to allow of these extensions at present.

From C. M. MULLALY, Esq., Collector of Kurnool, to the Chief Secretary to Government, dated Kurnool, 11th May 1896, No. 815-Eng.

With reference to the accompanying copy of letter from the Sanitary Engineer to Government, No. 1363, dated 4th May 1896, I have the honour to state that this morning, for the first time, I have seen the plan of distribution of water in the new water-works scheme and consider it to be very incomplete.

2. On the left of the main channel, the following are omitted :—

(1) The new petta which is very densely populated.
(2) The Police lines.
(3) The new Police hospital.
(4) The new Head-quarter Police office (to be built).
(5) The suburb of Roza.
(6) The travellers' bungalow.
(7) The Mission house and Boarding school.
(8) The Collector's house.
(9) The Club.
(10) The District Forest-officer's house.

All these could be very easily served by a main distributary taking off close to the District Forest-officer's house and proceeding nearly in the inverse order to the above. The Assistant Sanitary Engineer approves, I believe, of this line of pipes and will shortly lay it before the municipal council.

3. On the right of the main distributary, the following are omitted :—

(1) Buduvarapet.
(2) Huzur cutcherry which, when complete, will provide accommodation for both the Head-quarter and Kurnool Deputy Collectors.
(3) Sub-jail which acts as a district jail.
(4) The new combined Tahsildar's cutcherry and Sub-Magistrate's Court (to be built).
(5) The Cotton press.
(6) The Assistant Sanitary Engineer's house (Government property).
(7) The Judge's house.
(8) The Toll-gate.
(9) The District Board's office.

4. The Sanitary Commissioner has all along advocated Roza and Buduvarapet being included in the scheme. The only excuse for omitting the latter from the scheme is that it is cut off from the rest of the town by the river Hindri, but this is not sufficient reason for omitting a populous suburb containing the most important offices in the town and the only jail.

5. As I have had only a cursory look at the plan and have now no records before me, I have no intention of fully discussing the scheme, but merely of bringing to the notice of Government that the scheme is at present very incomplete and of raising the question whether it is advisable and the intention of Government that such important schemes should be submitted without any reference at all to the Collector. Municipal and Public Works budgets pass through the Collector who is invariably consulted in matters of importance and I fail to see why water schemes should form an exception.

Enclosure.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Collector of Kurnool, dated Fort St. George, 4th May 1896, No. 1363.

With reference to your letter No. 815 of 1st May 1896 I have the honour to inform you that it has not been the practice in this department to consult the Collectors of districts in regard to the details of distribution in water-supply schemes. The Chairman of the town concerned is usually consulted.

2. I have, however, requested the Assistant Sanitary Engineer at Kurnool to show you the plans and papers connected with the scheme. The whole question is now before Government.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 24th June 1896, No. 1977.

In forwarding, as requested, the accompanying extract from the proceedings of the municipal council of Kurnool with certain correspondence and an estimate in reference thereto, I have the honour to point out that the first item in Mr. Lockyer's estimate includes a portion of the first and the whole of the last items of the estimate given in my No. 1133 of 14th April 1896. The 10th item is the same as the remaining item in my estimate as above but is less in amount owing to the smaller amount of piping and fountains proposed for that suburb (Bhudavaram or Bhudwar Petta).

2. The other items are small and amount to only some Rs. 7,000—2,681= Rs. 4,319 or allowing for the piping to be removed, say Rs. 4,319—1,080=Rs. 3,239 and there is no objection to these proposals.

3. I have delayed sending in the revised estimate for Kurnool until I could render a final estimate which will be in a week or two after the tenders for pipe-laying have been accepted, but meantime I may say that I have been able to effect large reductions on the cost of the works besides those proposed by Colonel Campbell which will bring down the cost probably below the amount at present sanctioned.

4. Under these circumstances it might be well that a decision regarding extension be delayed until Government have the final estimate before them.

Enclosures.

Extract from the Proceedings of a meeting of the Municipal Councillors, Kurnool, held on the 13th June 1896.

* * * * *

The following business was transacted :—

1. Read the plan of the pipe line of the Kurnool water-works as prepared by the Assistant Sanitary Engineer.

Read also petition from some of the European gentlemen, dated 13th May 1896.

Read also petition from several of the inhabitants of Street No. 11, Fort, dated 16th April 1896.

Resolution.—The council finds that in the plan of the pipe line as prepared by the Assistant Sanitary Engineer several important localities have been left out of consideration and therefore resolves to propose the following alterations and additions to the existing pipe lines and to request the Government to sanction them as being very necessary :—

(1) Kottapeta is a very important suburb attached to Kurnool. The Council understands that it was left out of consideration by the Assistant Sanitary Engineer when preparing the plan of the pipe line because this suburb had not been marked in the plan of the Kurnool town furnished to him. This suburb and these other localities. An extension of the pipe line to these parts is

Kottapeta Police lines, travellers' bungalow, the Mission compound, Collector's bungalow, Forest-officer's bungalow and the Kurnool Club compound.

es should be connected with the pipe line, as otherwise there will be a very great difficulty for

efore very necessary.

(2) *Street No.* 11, t. —The plan as prepared by the Engineer takes the pipe line along the Judge's Court Road (S d Street No. 11, Fort, which is thickly inhabited, is left out of consideration. The pipe line exp the Judge's Court Road may therefore be omitted and the line through Street No. 11, For savestituted therefor.

(3) *The Old Jail.*—A ettlin ch from the main line in Street No. 1, Fort, from the western corner of the Old Jail to Street No. 14, Fort, is necessary This would be of very great use to the people living in that street and in the lanes adjoining it. Otherwise they will have to go a great distance for water.

(4) *The extension to the Water-gate.*—The main pipe line in Street No. 1, Fort, stops at the eastern end of the Old Jail and then turns to the south. It is necessary that the main line should be extended as far as the Water-gate. This short extension is very essential for the use of the people living in Streets Nos. 2 and 5, Fort.

(5) *The Cart-stand.*—This extension to the cart-stand from the main line in Street No. 1 Peta is necessary for the convenience of the public and the cattle at the cart-stand, where it is necessary to have a water trough for cattle. This is necessary also for the use of the inhabitants in Street No. 19 Peta and the adjoining lanes.

(6) *Pinjarwada.*—A branch from the main line in Street No. 1 Peta to the Pinjarwada is necessary for the use of the inhabitants living in Streets Nos. 8, 9 and 12 Peta.

(7) *Street No. 6 Peta.*—In the plan prepared by the Assistant Sanitary Engineer the pipe line stops at the middle of this long Street No. 6 Peta. It is a very thickly populated street and therefore for the convenience of the inhabitants living in that and in the adjoining streets, which are also thickly populated it is necessary to extend this line and connect it with the line in street No. 3 Peta called the Kallur Darwaja road.

(8) *Sonar Gulli and Kumbhar Gulli.*—According to the present plan there is a pipe line from the eastern end of Kumbhar Gulli running towards the south and connected with the line in Street No. 36 Peta, called the Gadthimadugu Darwaja road. The greater portion of this line is not necessary as there are not many houses in that locality. This line should therefore be omitted. Sonar Gulli (Street No. 28 Peta) and Kumbhar Gulli (Street No. 35 Peta), which are thickly populated and where there are at present water channels and reservoirs, have been left out of consideration altogether. A branch from the main line in street No. 1 Peta, running through these streets (Sonar Gulli and Kumbhar Gulli) is therefore very essential.

(9) *Staughter-house.*—The line from the Gadthimadugu gate towards the south Rampart is almost unnecessary as running through a portion of the town which is for the most part ruined. This line may be omitted and the main line in Street No. 1 Peta may be extended from the Nannur Gate as far as the slaughter-house, as it is very necessary that there should be a good supply of water at the slaughter-house to keep the premises clean.

(10) *Budhwarpeta.*—This important suburb has also been omitted from the original plan. The Collector's office is situated in this suburb and some important public offices will also be shortly constructed in this suburb. It is therefore very necessary to supply this suburb with water. The pipe line should therefore be extended to Budhwarpeta. It should be carried over the Hindri bridge from the Vizianagram Maharaja's fountain.

As regards the fountains, the council understands that according to the present scheme there are to be only 30 fountains, 25 of which are to be single-tapped and five double-tapped. This number of fountains is quite insufficient for an extensive town like Kurnool with a population of 24,376. At present there are above 150 cisterns in the town, of which 60 are public. The inhabitants of this town have enjoyed very great convenience for water for the last 30 years and it will be a hardship to them to give them only 30 fountains or 35 taps. The council therefore consider that there should be at least 45 additional fountains, of which 25 should be single-tapped and 20 double-tapped.

When the plan was originally prepared the Municipal Council was not consulted and consequently the council had no idea about the pipe lines and the number of fountains sanctioned. They were not thus in a position to make any representations on the subject earlier. The council therefore resolves to lay the matter before Government, through the Sanitary Engineer, who will be requested to submit the same to Government with his recommendation at an early date. The council learns that there is some savings in the estimate for water-works already sanctioned.

Plan and estimate for the additions and alterations proposed by the council, as prepared by the Assistant Sanitary Engineer, will also be submitted.

* * * * *

Collector who is [illegible] water sol.

From J. E. LOCKYER, Esq., ASSOC. M. INST. C. E., F. I. INST., Assistant Sanitary Engineer, to the Chairman, Municipal Council, Kurnool, dated 15th May 1896, No. 228.

In reply to your No. 57, dated May 1896, I have the honour to forward a tracing with the proposed extensions marked on it, also an approximate estimate of the cost of the same, the total amounting in round figures to Rs. 20,000. It is a lot of money, but the whole of the extensions are necessary, and practically the whole of them urgent.

2. It has been suggested to lay an alternative line to Budhwarpeta, as shown in black dotted lines, but this does not recommend itself. The idea is that by laying the line in this direction, it will cost little more than laying it over the bridge, and that it will serve the house I am living, the two mosques, the toll-gate, the Judge's house and pass through the jail and Collector's cutcherry compound. This is not so—it would be cheaper to lay a separate branch as far as the Judge's house and retain the present route over the bridge. Irrespective of cost, there are

engineering objections to taking this route as it would necessitate a syphon in the river bed, but as it would be probably Rs. 3,000 cheaper to lay a separate branch to the Judge's house, the black line need not be discussed any further.

3. To the lines discussed at the meeting, I have added a short branch to Pinjarwada—this will serve a very large number of people and approval of the council.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 23rd July 1896, No. 2279.

With reference to G.O., Mis. No. 846 M., dated the 15th May 1896, and in continuation of paragraph 3 of my No. 1977, dated 24th June 1896, I have now the honour to forward the revised estimates for Kurnool water-supply, amounting to Rs. 2,37,555, which is less than the amount estimated in my No. 2172 of 6th August 1895 (the present sanction) and this notwithstanding the heavy increases which were expected to result from the acceptance of the only practicable tender for the head works.

2. I forward estimates in detail and also a comparative statement showing how the anticipated cost of the works stood at each stage.

3. It was impossible at the stage which the work had reached on the date of the receipt of the Government Order above quoted to consider the question of omitting any portion of the work, but such proposal would not have been feasible owing to the amount of silt in the water to be purified and supplied and the Sanitary Commissioner is even now doubtful whether sufficient purification will be ensured.

4. But notwithstanding that the works will be carried out in their entirety, it will be satisfactory to Government to find that they can be so without the cost being much increased over the amount mentioned in my No. 2172 of 6th August 1895. The cost indeed would have been under that amount did I not consider that a provision of Rs. 3,000 should be made for quarters for workmen and watchmen huts on the works extending over half a mile in length.

5. Colonel Campbell's proposals would have allowed the reduction of the estimate by Rs. 5,876. By careful consideration of the whole design and amendments in details and by reason that exchange has considerably advanced, I have in addition been able to save no less than Rs. 25,554.

6. The various items are shown in the comparative statement; had there not been unavoidable increases the reduction would have been still more.

7. *Taking the items Seriatim.*—The first item shows a large excess. Mr. Ellis' design showed the water to be drawn from the canal on the same side as the engine-house. This was found impossible owing to the large amount of silt and a resultant sand bank found there. To have retained the inlet on that side would have meant continual blocking. The inlet arrangements had therefore to be arranged for on the opposite side. The inlet main is laid in the same trench as the main to the town and the alteration also assists in a saving in regard to the engine-house itself, so that the excess [illegible] balanced by savings on these items of engine-house and laying and jointing pipes.

8. The reduction [illegible] in against engine and boiler house is due to the above and to baling having been fo[illegible] necessary and to a saving in foundation due to suitable rock being higher than exp[illegible]cted.

9. The next item save[illegible]d on is the pumping main. This was first designed to enter at the side of the settling tank furthest from the engine-house and the outlet for the settling tank was to have been from the opposite side. But as the former is of iron and the latter of stonew[illegible] are, and therefore much cheaper their positions were reversed and the saving thus effected. For the same reason Rs. 85 is saved on laying and jointing pumping main.

10. There is a very large saving on the settling tank. Rock was found nearer the surface than expected and the bottom of the tank was raised 2 feet, there being ample embankment to maintain the tank of the same capacity, a large saving in

excavation results. A further saving is caused by the substitution of dry stone pitching for hammer dressed rubble in soorkie as proposed in the original estimate or in lime as proposed by Colonel Campbell. This was possible because it was found by experiment that the soil in which the tank was excavated was water tight and it is believed that the process of settling will tend to fill in the joints with silt. The central walls is in rubble stone hammer dressed in lime instead of soorkie. The total saving altogether is Rs. 13,602.

11. On the filter beds there is a small saving (Rs. 911) due to the substitution of vertical for sloping walls, the area of the beds remaining the same.

12. On the service reservoir Colonel Campbell proposed a saving of Rs. 1,021 calculated on the basis that the contractor would execute rubble arching at Rs. 40–8–0 for 100 cubic feet. He eventually, however, agreed to do the arching at Rs. 24 per 100 cubit feet, for such portions as were of rubble and Rs. 45 for dressed bond stones. Colonel Campbell's saving was therefore increased by Rs. 2,005 making in all Rs. 3,026.

13. The saving of Rs. 8,094 in supply of pipes, &c., is mainly due to rise in exchange. The exchange on 6th August 1895 was 1*s*. $1\frac{5}{32}d$. at the time the contract for pipes was accepted it was 1*s* $2\frac{29}{32}d$, there are, however, variations in rates between the estimate and accepted tender.

14. *Laying and jointing Main and Branches.*—This work is not yet done. The accepted tender for this work amounts to Rs. 12,220. There are always unforeseen extras and it has been deemed advisable to enter the figure of Rs. 14,500 for this work; this gives a slight increase of Rs. 1,200.

15. *As to Tools and Plant.*—These are difficult to estimate the cost of, but the original figure which was due to $2\frac{1}{2}$ per cent. on the estimate has been reduced from Rs. 5,000 to Rs. 3,200.

16. *Establishment, Office and Contingencies.*—The original figure is due to its being $7\frac{1}{2}$ per cent. on the estimate. Basing the revised figures on past expenditure and supposing that the works will be completed within ten months, the revised figure of Rs. 22,000 has been entered, showing an excess of Rs. 4,000. If the works are completed sooner, as they may be, the figure will be less.

17. The amount of unforeseen contingencies was calculated according to order at 5 per cent. on the amount of estimate. Past expenditure shows that this amount is not likely to be approached and a reduction from Rs. 11,400 to Rs. 5,000 or of Rupees 6,400 has been made.

18. The result as previously stated is a revised estimate of Rs. 2,37,855 against Rs. 2,39,380. But it is advisable as pointed out to add Rs. 3,000 for quarters and watchmen sheds. The total of the estimate then stands at Rs. 2,40,555 or about the same as the present sanction.

19. I trust Government will consider that their orders as to every economy being effected have been attended to as far as consistent with the proper [illegible] of the works.

20. Government have already had reports as to the [illegible] Associations and extensions proposed in the distribution mains by the residents of K[illegible]h Mahal, &c. If Government are prepared to give effect to any of these proposals, [illegible] desirable that very early order should issue, so that pipes, &c., may be got, otherwise [illegible] increases must take place in the cost of establishment, contingencies, &c.

Reference No. 956, dated 15th August 1896.

The Sanitary Engineer will be requested to report at an early date how far the estimate submitted by the Assistant Sanitary Engineer in his letter, No. 228, of 15th May 1896, provides for the extensions proposed by the municipal council in its

resolution of the 13th June last and to send up a plan showing any difference that there may be and the reasons for them. The streets referred to in the resolution should also be marked on the plan.

(By Order)

(Signed) W. W. PHILLIPS,
Ag. Assistant Secretary.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 20th August 1896, No. 2560.

With reference to official memorandum No. 956, dated 15th August 1896, I have the honour to forward herewith a plan showing the proposed lines of piping referred to in Municipal Council's resolution, dated 13th June last, and to state that the plan and estimate submitted by the Assistant Sanitary Engineer, Kurnool, in his letter, No. 228 of 15th May last, provides for all the extensions proposed in the resolution, but for 20 extra fountains only, instead of 45 fountains as asked for by the council.

2. There is already in the sanctioned scheme 30 fountains and if 45 additional taps are now to be sanctioned, this will give one fountain for every 354 people. If only 20 additional fountains are sanctioned, this will give one for every 500 people.

3. I consider 20 additional fountains and six bullock services, together with the number above already sanctioned, as sufficient. We ordinarily estimate for one fountain for every 1,000 people.

4. Mr. Lockyer's estimate included the cost of 20 fountains and six bullock services with a total of Rs. 20,000. The estimate now forwarded includes 45 fountains as well as all the extensions required by the Municipal Council and amounts to Rs. 26,000. If 25 fountains (single and double taps) be omitted, this estimate will be reduced to Rs. 22,650. The reason for the increase over the Assistant Sanitary Engineer's estimate is that it is thought desirable to have 4″ instead of 3″ pipes to Bhudawarampet and to Mission house compound to admit of a future extension to the suburb of Roza, also to provide for 10 double-tap and 10 single-tap fountains instead of 20 single-tap fountains provided for in the Assistant Sanitary Engineer's estimate.

5. The plan shows distinctly the streets for which pipes in the sanctioned scheme are to be omitted (these shown by dotted blue lines) and the extra lines required by the council (these being shown by full red lines).

[illegible]sq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 25th August 1896, No. 2588.

In continuation of [illegible]o. 2560, dated 20th August 1896, I have the honour to state, that, of the extensions proposed by the Municipal Council in its resolution of the 13th June last, the extension to Pinjarwada (*vide* plan forwarded with my No. 1977, dated 24th June 1896) has, by an oversight, not been included in the estimates furnished with my No. 2560 of 20th August 1896.

2. The estimated cost of the line to Pinjarwada (370 feet of 3″ piping) amounts to Rs. 462. The estimate for *all* the extensions proposed by the council including 45 fountains will now amount to Rs. 26,000 + 462 or Rs. 26,462. If 25 fountains (single and double taps) be omitted, the estimate will be reduced to Rs. 23,112.

From M.R.Ry. T. CHIDAMBARA RAO, Chairman, Municipal Council, Kurnool, to the Chief Secretary to Government, dated Kurnool, 25th August 1896, No. 310.

I have the honour to submit herewith a copy of the resolution passed at a special meeting of the Municipal Councillors, Kurnool, held on the 22nd August 1896, for considering the proposals of Mr. W. M. Thorburn (District Judge) as set forth in his letter to the Chief Secretary to Government, dated the 20th August 1896, a copy of which he sent to the municipality.

Enclosure.

Proceedings of a special meeting of the Municipal Councillors, Kurnool, held on the 22nd August 1896, No. 11.

* * * * *

Read letter from Mr. Thorburn, dated 21st August 1896, forwarding a copy of his letter, dated 20th August 1896, addressed to the Chief Secretary to Government, making certain proposals in respect of the Kurnool water-works.

Resolution.—The following resolution was passed :—

The proposals of Mr. Thorburn have the unanimous approval of the council. The council having already (in its Resolution No. 1, dated 13th June 1896, a copy of which was submitted to Government through the Sanitary Engineer on 18th June 1896,) decided about the necessity for a branch pipe line to the north of the main line for serving the northern group of houses in the civil station, it is at present necessary to consider only about the three lines—1,900 feet, 500 feet and 1,100 feet in length—referred to in paragraphs 7 and 8 of Mr. Thorburn's letter for serving the southern group of houses. Of these three lines the council considers the second line, 500 feet long, unnecessary. The total length of the other two lines comes up to about 3,000 feet and the cost of laying them amounts to about Rs. 2,500. If it be possible to make any reductions in the rates as suggested by Mr. Thorburn, it will be not necessary to exceed the estimates already sanctioned and to incur any additional expenditure on account of these branch lines. But even if it be found necessary to incur any additional expenditure, the council does not consider the additional expenditure too much, having regard to the very large amount (over 2½ lakhs of rupees) that is being spent on account of the water works and to the heavy taxes which the owners and occupiers of the buildings to be served by these lines pay to the municipality. By laying these lines the municipality will be in a position to collect from the owners of the southern group of houses a good sum in the shape of water-tax, which it will not be entitled to levy otherwise. If the proposed branch lines be sanctioned, the requirements of all the residents of the civil station will have been attended to and there will then be no ground for complaint that anybody has been shut out from the benefits of the water works so generously sanctioned by Government. The council, therefore, resolves to request Government to sanction these branch lines, even if it be necessary to incur an additional expenditure, which they consider not at all heavy under the circumstances.

The council takes this opportunity to observe that it would not have been necessary either for the council, the Sanitary Engineer's department or the rate-payers to trouble Government with frequent requests for additions or alterations in the water-supply scheme, if the municipality had been given at the outset an opportunity of expressing its views on [illegible] respect of the water-supply scheme.

A copy of this Resolution will be submitted to Government [illegible] assistations and extensions [illegible] Mool, &c. If Governm[illegible] desirable that [illegible] increases [illegible]

Copy also to Mr. Thorburn.

From W. M. THORBURN, Esq., District Judge, [illegible] dated 21st August 1896.

Endorsement No. 1108, dated 25th September 1896.

Transferred to the Public Works Department . . . . with the request that the Chief Engineer will favour Government with his opinion . . . .

(By Order)

(Signed) W. W. PHILLIPS,
Ag. Assistant Secretary.

Note by Col. D. McNEIL CAMPBELL, R.E., Chief Engineer, Public Works Department, dated 5th November 1896.

The chief differences between Mr. Thorburn's proposals and those of the Sanitary Engineer are that the former considers that two pipes—one 1,900′ and the other 1,100′ long—are preferable to the round about 6,000′ line proposed by the latter, also that 2½″ and 2″ pipes would answer as well as the 3″ proposed by Mr. Jones. From an engineering point of view the line proposed by Mr. Jones is preferable to the two shorter lines, as there are objections to "dead" or "loose" ends if they can be avoided; they are a source of impurity and interfere with the free circulation of water. Moreover, with the continuous line, water can be supplied to each fountain from two directions, so that in the event of damage to a pipe, the supply need not be stopped. Of course the two lines proposed by Mr. Thorburn are much cheaper, and if it is thought that sanitary requirements and convenience of supply are not essential in Kurnool, they may be adopted; for my own part, I would go further than Mr. Jones has and making the north line continuous by joining it on to the line shown, as proposed by the Assistant Sanitary Engineer on tracing dated 6th December 1892.

2. As regards the size of pipes, Mr. Thorburn is wrong when he says the diameter is a simple matter of hydraulics, as there are limits to the size of pipes that should be used. I have no means of ascertaining whether the 2½″ and 2″ pipes proposed by Mr. Thorburn would give sufficient discharges as I have no levels; but the supply required being very small, I think there is no doubt that they would.

3. A minimum diameter of 3″ is generally considered sufficient for distribution pipes. Burton, in his book on Water-supply, lays down 5″ as a maximum. Taning suggests 8″. Others lay down that no pipe less than 3″ should be carried further than 400′; but this is again a question of cost, and if it is thought that in Kurnool the rules ordinarily applied to water works need not be adhered to, then 2½″ and 2″ pipes may be used. Altogether from an engineering and sanitary point of view I prefer Mr. Jones' arrangement, though I would go further and make the northern line continuous; from a financial point of view Mr. Thorburn's are undoubtedly the best, they will be much cheaper and will answer in a way though not so satisfactory as the other arrangement. Mr. Thorburn goes into detail as regards the cost of 2″ and 2½″ piping and he complains of the high prices charged by Mr. Jones; but as the latter does not propose to use either 2″ or 2½″ pipes, I do not see how any comparison can be made; however, Mr. Thorburn seems to think that the cost of 3″ pipes as given by the Sanitary Engineer is high, and the following gives a comparison of the charges of different firms, cost of carriage to site of works being added :—

3″ pipes cast iron.

Mr. Jones' price Rs. 1–4–0 per foot, including bends, valves and laying.

	Rs.	A.	P.	
Burns & Co.	1	0	10	pipes only.
Richardson and Cruddas	0	13	0	,,
[illegible]	0	12	9	,,
[illegible]	0	14	8	,,
[illegible]	0	11	8	,,

[illegible] lines selected for the pipes and the nature of the soil, it is not possible [illegible] of laying: Mr. Jones' estimate seems somewhat high, but no doubt he would [illegible] ails explaining the reason.

I can say nothing about the prices charged by Mr. Jones for stand pipes, as there are very many different patterns, the cost of each of which is different.

4. Mr. Thorburn's remarks about myself in the latter part of paragraph 14 will, no doubt, be noticed by the proper authorities, and I need only say that the demi-official referred to by him was forwarded to me by Colonel Drake-Brockman and transferred by me to the Local and Municipal Department in continuation of a memorial from the inhabitants of Kurnool, and I never showed it to Mr. Jones. A reference to the records of the Sanitary Board will prove whether I habitually support Mr. Jones or not.

4

Note by Col. D. McNEIL CAMPBELL, R.E., Chief Engineer, Public Works Department, dated 4th December 1896.

The last sanction in connection with the Kurnool water-supply scheme is that conveyed in G.O., No. 1082 M., dated 9th July 1895, and amounts to Rs. 2,39,380.

2. Subsequently, in consequence of a petition from certain residents of Kurnool, dated 27th February 1896, the municipal council, in its resolutions, dated 13th June 1896 and 22nd August 1896, recommends certain further extensions, the execution of which, the council considers, will render the scheme complete and satisfy the requirements of all the inhabitants of the civil station, leaving no grounds for further complaint.

3. To provide for these extensions, the Sanitary Engineer has submitted for sanction revised estimates as follows:—

		Rs.
(i)	A revised estimate, dated 23rd July 1896, amounting to ..	2,37,555
(ii)	A supplemental estimate, dated 20th August 1896, for Rupees 26,000 corrected in Sanitary Engineer's No. 2588 of 25th August 1896, to	26,462
	Total ..	2,64,017

4. This total apparently does not include a sum of Rs. 3,000, which the Sanitary Engineer in paragraph 18 of his letter, No. 2279, of 23rd July 1896, considers "advisable to provide for quarters and watchmen's sheds;" but this amount may, I think, be omitted; the amount for which sanction is now asked for will be Rs. 2,64,017, being an excess of Rs. 24,637 on the last sanction.

5. I have already given my opinion on the supplemental estimate of Rs. 26,462 in my note, dated 9th November 1896, No. 3980-C, in which I approved of Mr. Jones' lines for and sizes of piping; but I qualified this by stating to the effect that, if the financial position of the Kurnool Municipality be such that they could not afford to carry out a water-supply on the most approved principles, the suggestions of Mr. Thorburn might be accepted, as no doubt, they would answer the purpose in a way.

6. As regards the revision of the original estimates, I have little to say; the rates are fair. The cost of piping, as given by Mr. Jones, is Rs. 118 per ton. This is almost exactly the same as the India Office prices. Burn & Co.'s price would be Rs. 175 delivered in Kurnool, Messrs. Richardson and Cruddas Rs. 148.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Secretary to Government, Local and Municipal Department, dated Fort St. George, 7th December 1896, No. 3409.

I have the honour to invite your attention to correspondence ending with my letter, No. 2588, dated 25th August 1896, with reference to p have been necessary either of Kurnool, and to request that orders may be passed ers to trouble Government possible. My reason for making this request is that it iply scheme, if the municipa- pipes, if they are to be sanctioned, should be laid by the and that delay in sanction will cause staff to be retained and thus increase cost of supervision. ations an anticipated

---

Order—No. 76 M., dated 21st January 1897.

The revised estimate of Rs. 2,40,555 for the water-supply scheme of Kurnool submitted by the Sanitary Engineer, and the extension of the works proposed by the municipal council, which, as slightly modified by Mr. Jones, is estimated to cost Rs. 23,112, are sanctioned. As observed by the Chief Engineer in paragraph 3 of his note, dated 5th November 1896, the rates charged for pipes, including the cost of

laying, in Mr. Jones' estimate appear to be somewhat high. The rates should accordingly be carefully reconsidered and the required pipes procured in the Indian market if they can be had at less cost. The pattern of standpipe which consistently with efficiency is cheapest should also be selected.

2. The total cost of the scheme including the extensions now sanctioned amounts to Rs. 2,63,667 or Rs. 24,287 in excess of the estimate approved in G.O., No. 1082 M., dated 9th July 1895. The Government will be prepared to make a grant of three-fourths of this additional cost and to lend the balance at 4¼ per cent. interest repayable in thirty years. The municipal council will be requested to submit the necessary applications without delay.

3. The Government is surprised to learn from Mr. Mullaly that he saw the plan of distribution of the water works for the first time on the morning of the 11th of May 1896. He has long been Collector of the district and was aware of the general progress of the project; and he might, at any time, have called for the plans and other documents relating to it and kept himself in touch with the discussions regarding it, as it was his duty to do. It is observed that the municipal council has made a similar complaint of not being afforded a sufficient opportunity of indicating its views and requirements in respect of the scheme. The Sanitary Engineer should in all such cases freely consult or acquaint both the local board concerned and the Collector regarding the main lines of the projects in which they are interested.

4. Mr. Thorburn will be informed that the terms and tone of his reference to the Chief Engineer in paragraph 14 of his letter, dated the 21st August 1896, were improper.

(True Extract.)

Secretary to Government.

To the Chairman, Municipal Council, Kurnool.
„ the Collector of Kurnool.
„ the Sanitary Board.
„ the Sanitary Commissioner.
„ the Sanitary Engineer (with plans and estimates).
„ the Public Works Department.
„ W. M. Thorburn, Esq, District Judge, Kurnool.

Exd. C. M. Thumbuswamy.

ers to trouble Government
pply scheme, if the municipa-
ations and
Meol, &c.



LOCAL AND [illegible]PAL DEPA[illegible]

Papers to be read [illegible] Proceedings:—

Again G.O., dated 189 , No

Current No. of 189 , dated from the

P.S Order.

The revised estimate of Rs.240555 for the water supply scheme of Kurnool submitted by the Sanitary Engineer and the extension of the works proposed by the municipal council, which, as slightly modified by Mr. Jones is estimated to cost Rs.23112, are sanctioned.

As observed by the Chief Engineer in para.3 of his note dated 5th November 1896, the rates charged for pipes, including the cost of laying in Mr. Jones estimate appear to be somewhat high. ~~He is therefore requested to explain~~ The rates should accordingly be carefully reconsidered and ~~the basis of this and to procure~~ the required pipes procured in the Indian market if they can be had at ~~cheaper rates~~ less cost. ~~He should also choose~~ the ~~cheapest~~ which patterns of standpipes consistent with efficiency is cheapest shd. be selected

2. The total cost of the scheme including the extension now sanctioned amounts to Rs.2,63,667 or Rs.24,287 in excess of the estimate ~~last~~ approved in G.O.No.1082 M., dated 9th July [illegible]. The Government will be prepared to make a grant of three-fourths of this additional cost and to lend the balance

...r cent interest repayable in ...y years. The municipal council ...l be requested to submit the necessary applications without delay.

3. The Government is surprised to learn from Mr. Mullaly that he saw the plan of distribution of the water works for the first time on the morning of the 11th of May 1896. ~~As~~ He has long been Collector of the district & was aware ~~that~~ the general progress of the ~~scheme~~ project; & he might, at any time, have called for the plans and other documents relating to ~~the project~~ it and kept himself in touch with ~~informed of the progress of~~ the discussions regarding it, as it was his duty to do. ~~either through his Divisional officer or the Municipal Council. This he has apparently neglected to do and has thus failed in his duty in keeping an eye on what the municipal council has been doing.~~ It is observed that the Municipal Council have made a similar complaint of not being ~~fully consulted as to the details of the scheme~~ afforded a sufficient opportunity of indicating ~~their~~ its views & requirements in respect of the scheme. The Sanitary Engineer should in future in such cases freely consult or acquaint both the Local Bd. concerned & the Collector regarding the main lines of the projects in which they are interested.

Mr Thorburn will be informed that the knew & one of his reference ~~made~~ to the Chief Engineer ~~Hon'ble Col. Campbell~~ in para. 14 of his letter dated the 21st August 1896 were improper.

(From Orders)

[signature] 20/1/97

To

The Ch. M. C. Kurnool.

" Collector of Kurnool.

" Sanitary Board.

" Sanitary Commissioner.

" Sanitary Engineer (with plans & estimates)

" Public Works Department.

" W. M. Thorburn Esq., District Judge, Kurnool.

Despd. in ms 21/1/97 + Plans & estimates despd. 25/1/97

Despd. 20/1/97

LOCAL AND MUNICIPAL DEPARTMENT

From

Current No^s 855, 969, 1165, 1425, 18.., 2146, 2387, 2412, 2413, 2448, 3030, 303.., 3262 + 3275 M/96

A

C. No. 855 M

FOR ORDERS.

In February 1896, the European residents of Kurnool petitioned to Government for the extension, to the quarter of the town occupied by them, of the water supply scheme now under execution. They stated that, although they paid a relatively large amount of taxation, they could not under existing arrangements derive any benefit from the water works, the nearest standpipe proposed to be erected being more than half a mile from their houses, and requested that standpipes may be erected at certain places, and that the Superintending Engineer may be asked to report on the probable cost of the proposed extensions and empowered to act upon his own opinion, irrespective of that of either the municipality or the Sanitary Engineering Department. The Sanitary Commissioner to whom the ~~peti~~ petitioners

...oners sent a copy of their peti-
...on not only supported their request,
but pointed out that the scheme should
have been extended to Budavarapet.

2. The Sanitary Engineer, to whom these papers were referred for remarks, stated that the scheme was, owing to financial considerations, limited to supplying only the main bulk of the population and did not therefore embrace the outlying parts of the town and that the villages of Na-wabpet and Rozapet had at least as good a claim for a supply of water as Buda-varapet, mentioned by the Sanitary Commissioner. He estimated the cost of extending the water supply scheme to the European quarters and to the three villages above referred to, at Rs.30,590, with the observation that as the sanctioned scheme provides for a supply of water to a population of 30,000 people the works could be extended at any time.

3. The Collector of Kurnool also pointed out that he saw the plan of the distribution of water for the first time only on the 11th May 1896 and that the scheme was very incomplete, a number of buildings and the new petta (Kothpettah) not being supplied with water, and enquired whether he should not have been consulted in regard to the scheme. As regards this, the Honourable Member has noted as follows:-

"The fact would appear to be that he (the Collector) has simply neglected all this while to utilize his opportunities and to do his duty in keeping an eye on what the municipal council has been doing and he should be ~~to~~ told so"

4. In the meantime the Municipal Council passed a resolution on the June 1896, urging on the necessity of extending the water works to the European quarters and certain other parts of the town not included in the original scheme and of providing for the construction of 45 additional fountains & forwarded plans and estimates for the proposed additions and alterations, prepared by the Assistant Sanitary Engineer.

5. Not long after this, the Sanitary Engineer forwarded the revised estimate for the scheme called ~~from~~ for in G.O., No. 846 M dated 15th May 1896. The cost was putdown at Rs.2,40,555 against Rs.239380, the amount of the estimate last approved, and Mr. Jones stated that when he received the Government order above quoted the work had so for advanced that it was not possible to omit, as suggested by Government, any portion of the scheme, but that, by a careful amendment of the details, he had been able to bring down his former estimate of Rs.2,68,980 to Rs.2,40,555. He also stated that the additions and extensions proposed by the municipal council would cost Rs. 26,462, but that, if only 20 fountains which he considered sufficient, were constructed instead of 45 as recommended by the council, the estimate for these works would stand at Rs.23,112.

6. Mr. Thorburn, the District Judge of Cuddapah who was one of the signatories

to

petition referred to in para.1
a, however, pointed out that the
Sanitary Engineer's estimate of the
cost of carrying out the extensions
was much too high, on account of (1)
the circuitous lines of pipes proposed
to be adopted by him (2) the high
prices to be paid for pipes from
England, which could be procured at
much cheaper rates in India, and (3)
the high cost of the stand pipes, and
also complained of the unsympathetic
way in which the Sanitary Engineer had
treated this question. He (Mr. Thorburn)
thought that the line of pipes pro-
posed by Mr. Jones for extending the
supply on the North of the main line
to the Collector's bungalow &c., was
much longer than it need be, and sug-
gested that instead of a long line ex-
tending southwards to the tollgate and
then turning eastwards and going up to
the Bridge-road pipe, two lines may be
laid, one from the main line straight
south to the Judge's compound and the
other from the Bridge-road pipe westwards
to the compound of the District Board's
Office, and that if necessary a small line
might be laid from the Judge's compound
to the tollgate. Mr. Thorburn requested
that his proposals, which, if approved,
would materially diminish the cost of
the extensions, may be referred to some
competent authority for remarks, but
added that the arbiter in this affair
should not be Col. Campbell, who, he complained,
handed over

over to Mr. Jones a semi-official
letter written by him to Col. Drake-
Brockman and is habitually support-
ing Mr. Jones on the Sanitary Board.
The municipal council to which Mr.
Thorburn sent a copy of his letter, ap-
proved of his suggestions, but observ-
ed that the line from the Judge's
house to the tollgate proposed by him
was unnecessary.

7. In his note dated 17th Septem-
ber 1896, the Hon"ble Mr. Bliss directed
that the revised estimates and the
proposals for extension should be sent
to the Chief Engineer for opinion and
that the former should be carefully
scrutinized especially with reference
to the reasonableness of the prices
for pipes and stand pipes. He consider-
ed the extensions proposed by the
municipal council necessary and approv-
ed of the routes suggested by Mr. Thor-
burn of the proposed extensions to the
Collector's and Judge's houses and
other buildings on the banks of the
Hindri. He remarked that unless the
Chief Engineer sees any objection, the
proposals approved above, should be
carried out and that the Government
will have to give 3/4 of the additional
cost and lend the remainder to the
municipal council.

8. With his letters read above the
Chief Engineer submits his remarks on
the revised estimate, on
the Sanitary Engineer's proposals for
the extension of the water supply
scheme

e and on Mr. Thorburn's suggestions.

The last letter read above is from the anitary Engineer requesting early orders n the subject.

As regards the route of the extension f the works to the Judge's bungalow and other buildings on the banks of the Hindri, the Chief Engineer states that, although the two shorter lines of pipes (3,000 ~~furlongs~~ feet long) suggested by Mr. Thorburn are much cheaper, he would prefer the proposal of Mr. Jones to have a circuitous line of pipes 6,000 feet long, as there are objections to "dead" or loose" ends, which are a source of impurity and interfere with the free circulation of water, and that with the continuous line, water can be supplied to each fountain from two directions, so that in the event of damage to a pipe the supply may not be stopped. He would also go further than Mr. Jones and make the line continuous by connecting the pipes as shown in the Assistant Sanitary Engineer's tracing dated 6th December 1892. He however approves of the supplemental estimate submitted by the Sanitary Engineer, but suggests that if the financial position of the Kurnool municipality be such that it cannot carry out a water supply on the most approved principles, Mr. Thorburn's proposals may be accepted. as they will answer the purpose in a way. The cost of these extensions will not have to be met wholly from municipal funds, the Hon'ble Member having agreed in his note of the 17th September 1896 to make a

grant

grant of three-fouths of the ... Provincial funds and lend the rem... to the Council, and considering the p... manent nature of the works it seems ... to accept Mr. Jones proposals, which are stated to be the best from an Engineering and sanitary point of view.

9. Regarding the size of the pipes to be used in the proposed extension, the Chief Engineer is against the use of the 2" or 2½" pipes suggested by Mr. Thorburn, but prefers Mr. Jones' proposal to use 3" pipes as being better suited from an Engineering and sanitary point of view. With reference to Mr. Thorburn's complaint that the cost of pipes is much higher than it need be in Mr. Jones' estimates, Col. Campbell gives the price charged by the India office and by the Indian firms. Mr. Jones' rates appear to be some what high and it is submitted that he may be called upon to explain why they are so. Col. Campbell however states that the prices of pipes given in the original estimates are not hi... He also points out that he can say nothing in regard to the complaint the cost of stand pipes is excessi... their prices vary — according to t... pattern, nor can he pass any opinio... the cost of laying the pipes, unle... formation is afforded as to the ... selected for the pipes and the n... of the soil.

10. Orders are therefore solici... to which of the two proposals r...

Yes: & procure them in the Indian market if they can be procured cheaper
S.R.

e and on Mr the extensions and size of the last le pipes made by Mr. Jones and Mr. Thorburn, should be approved; if Mr. Jones' proposals are modified, the estimates will have to be returned to him for revision. As regards the standpipes, Mr. Jones may be instructed to choose the cheapest patterns consistently with efficiency. } SR BS

11. As regards Mr. Thorburn's complaint in para. 14 of his letter (C. No. 2448 M) that Col. Campbell handed over to Mr. Jones his D.O. to Col. Drake-Brockman and that he (Col. Campbell) habitually supports Mr. Jones on the Sanitary Board, the Chief Engineer states that he did not show the D.O. to Mr. Jones, and asks for a reference to the records of the Sanitary Board on the other point. Orders are also requested as to whether copies of the estimates of the scheme should be furnished to Mr. Thorburn as requested by him in his D.O. of the 26th August 1896.

J

F

L

SR
1/96

HM.

Mr Thorburn's reference to Col. Campbell is improper: & he shd. be told so. | BS

It is admitted that the two proposed by Mr Thorburn are cheaper" (C.E.'s note of Nov. 96 flag. It is not very clear from his note are. whether the objections there will be further "ends are so material as delay & probable wa

I think we had better simply accept Mr. Jones' proposals as they If we modify them

of money

BS
8/1/97

to warrant our declin[…] sanction Mr Thorburn's schem[e …] one place the C.E. says "ther[e …] "objections to loose or dead end[s] "if they can be avoided: they "are a source of impurity & "interfere with the free circulation "of water"; while farther one his language is stronger when he wd. accept the scheme as being much cheaper "if it is "thought that sanitary require-"ments & convenience of "supply are not essential "in Kurnool".

Perhaps on the whole having regard to the size of Kurnool & financial exigencies the cheaper scheme may be adopted — including the extension to ~~[illegible]~~ Budhwarpet as proposed in the H.ts previous note of 17/8/96.

Mr Jones' scheme is however

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Sanitary

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d as unquestionably the more
complete : & the Withnail
t, with 20 fountains, &
estimated at R23,112 ; while
Mr. Thorburn's scheme will be
much cheaper," but how much
cheaper does not appear: taking however
the main difference to be in the length of piping, the cost should be at least R3500 less.
" Govt. is willing to contribute
3/4ths of the cost & lend the
balance

G.R. 6/1/97

Public Works (1896) Department.

CURRENT No. 10504

Order

From The Lt-Gn Dept.

No. 1326

Dated 17-11-96

Received 19-11-96

Enclosures 38 (4 plans)

Spare copies

SUBJECT.

Returning to the P.Wks Dept.
with remarks papers re-
lating to the water supply
of Kimberley

1/6/97

...e and on...
...he last ...
...anitar...
...on the...
...of ...

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

C. Nos. 855, 969, 1165, 1425, 2357, 2412, 2413, 2... & 3032 &c.

No. 1326 dy 17-11-96

Returned to the Public Works Department with the request that the Chief Engineer's opinion on the revised estimate may be obtained and submitted as desired by the Hon. Mr. Bliss in his note dy 17.9.96.

[illegible]
Secretary to Government.

V.R.
14/11/96
Fort St. Fort
16th Nov. 1896.

To the ...
...lic Works Department
(with four plans)

C.Nos. 855, 969, 1165, 142
2146, 2387, 2412, 2413, & 24

C.S.

No. 1108
25-9-96

Transferred to the Public Works Department, with notes, orders in original, with the request that the Chief Engineer will favour Government with his opinion in accordance with the note of the Hon'ble Mr. Bliss dated 17.9.96

(By order)
W. Wedderburn
A. Asst. Secy.

23.9.96

To
The Public Works Department.
with a plan.

Kirwood Water Supply

LOCAL AND MUNICIPAL DEPT.

Current No. 855, 969, 1165, 1425, 1813, 2146, 2387, 2412, 2413, & 2448.

From

H.W.

A

With troublesome files, please take the plans out & put up separately, after first marking them so that they can be put back into the letters to which they are enclosures. When letter and plans are tied together, it is almost impossible to read the letter & inspect the plans at the same time—

Mr. Thorburn is of course absurd in what he says of Col. Campbell, though I must confess I cannot see why the latter should have shown Mr. Jones Mr. Thorburn's private letter to Col. Drake Brockman—

As the merit of the case, the first thing to do is to send the revised estimates and the proposals for extension & the C.E. pursuant to opinion—I am unable to express an opinion on the revised estimates, but they should receive careful professional scrutiny, especially on the point of the reasonableness of the prices for pipes & standpipes, Mr. Thorburn's remarks

FOR ORDERS.

Please see the notes and orders on the first four of the currents read above.

2. With the fifth current the Sanitary Engineer submitted a resolution of the Municipal Council regarding the extension of the water supply to the European quarter and certain other parts of the town, not included in the original scheme. As it was not clear how far the Assistant Sanitary Engineer's estimate received with this letter, provided for the extensions proposed by the Municipal Council, the Sanitary Engineer was requested to report on the point, and to submit a revised plan showing the differences, if any, between the Municipal Council's proposals, and those referred to in the Assistant Sanitary Engineer's plan and estimate. The seventh and eighth currents contain the Sanitary Engineer's

reply

m these it appears that the
Sanitary Engineer's plan and
e and
ate provide for all the extensions
he last
posed by the Council, but for only 20
Sanit
ountains instead of 45, and that the
on th
ost of carrying out all the proposals of
he Municipal Council will be Rs.26462.
of
The Sanitary Engineer however suggests
that the No. of additional fountains
might be reduced from 45(proposed by
the Council)to 20, and if this is done,
the cost will be Rs.23,112 against the
Assistant Sanitary Engineer's estimate
of Rs.20,000, the increase being due to
his proposals to use 4" instead of 3"
pipes for the extensions to Bhudwarpet
and the Mission Compound, and to erect 10
double-tap and 10 single-tap fountains,
instead of 20 single-tap fountains.
The revised plan submitted by the Sani-
tary Engineer with C.No.2387 M. shows
all the extensions proposed by the Coun-
-cil, except that to Pinjar Wada, which
appears to have been omitted by over-
sight, but which is shown in the Assist-
-ant Sanitary Engineer's plan submitted
with C.No.1813 M.

3. With the sixth current the Sani-
tary Engineer sends up a revised estimate
of the cost of the scheme called for in
G.O.846 M.dated 15th May 1896. The esti-
mate which does not include the cost of
the extensions proposed by the Municipal
Council and by the residents of the Eu-
ropean quarter in C.Nos 1813M and 855M,
respectively, now amounts to Rupees.
2,40,555, against Rs.2,39,380, the amount
of the estimate last sanctioned(in G.O.
No.

B

C

D

E

F

F

No.1082 M.dated 9th July 1895,
first of the G.Os. above referred
Mr.Jones was requested to consider
any saving could be effected in the
cost of the scheme by the omission of
any portion of it; but he now reports
that the order reached him when the
works were so for advanced that it was
not possible to carry out the suggestion
of Government and he states that by means
of careful amendments of details he
has been able to bring down the cost
from the anticipated estimate of Rupees
2,69,980 to Rs.2,40,555. The difference
between this last estimate and the one
sanctioned in G.O.No.1082 M.dated 9th
July 1895 is only Rs.1175, which the Coun
-cil can meet out of its current revenues
The revised estimate however will have
to be approved by the Sanitary board.

4. The last letter read above is fr
Mr.Thorburn, the District Judge of Cudd
pah, who was one of the signatories to
the petition in C.No.855 M. He points ou
that the Sanitary Engineer's estimate
C.No.1165 M. of the cost of carrying o
the extensions asked for in C.No.855
is much too high on account of (1) the
circuitous lines of pipes proposed to
be adopted by him, (2) the high prices to
be paid for pipes from England, which
could be procured at much cheaper rates in
India, (3) the high cost of the stand -
pipes, and he complains of the unsympathet
way in which the Sanitary Engi
treated the question of these
He thinks that the line of pipes
-ed by the Sanitary Engineer

.. 220
.. 29,190
47,390

...r extending the water supply to the north of the main line, to the Collector's compound &c, is much longer than it need be, and with regard to the extensions to the south, Mr. Thorburn suggests that instead of a long line extending southwards to the tollgate and then turning eastwards and going upto the Bridge road pipe, two lines may be laid, one from the ~~laine~~ main line staight south to the Judge's compound, and the other from the bridge-road pipe westwards to the compound of the District Board's office. If necessary, he thinks that a small line may be laid from the Judge's compound to the tollgate. The total length ~~th~~ of these three lines is estimated by him at 3500 feet instead of 6000 ft. the length of the line proposed by the Sanitary Engineer and shown in the plan in the tin case. This course will, if approved, materially diminish the cost of the extensions to these parts. Mr. Thorburn requests that the proposals made by him may be referred to some competent authority for remarks, but adds that they should not be referred to Colonel Campbell ~~should be~~ who he states has been habitually supporting Mr. Jones on the Sanitary Board. He also requests that the extensions asked for by him and other residents of the European quarter may be

respective... ut now while the works are be-

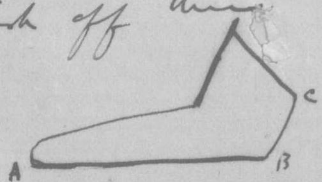
2,40,555, ag... ed, as afterwards it might be

of the e... carried

...h C.No.2413 M. the Chairman

...submits

Effected by not making it finish off there



The return piping A B C seems to me quite unnecessary — The argument as to "loose ends" is not, I imagine, of great importance in a place like Kurnool where the pressure is not very great. But as to this the C.E. will of course advise.

I don't think any further local enquiry or reference to the Sani. Engr. are needed — unless the C.E. seriously objects, I should simply order the San. Engr. to carry out the schemes that are approved of & should summarily set his proposals aside, where they differ therefrom.

These lines are marked in the plan sent with this letter.

(1900 + 1100 + 500)

We shall have to give 3/4 of the addl. cost & to lend the bal. the remdr. —

I don't think there are any other points needing orders. If there are, please point them out when the papers come back from the C.E.

BS
17/9/96

Please see para. 14 of the letter.

B

B

submits the resolution of the Mun... Council on the proposals of Mr. Tho... The Council thinks that the 500 fe... line from the Judge's house to the tol-gate is unnecessary and recommends th... the other two lines should be laid down, i... ~~addition apparently to~~ These lines will take the place of one of the extensions proposed by it in its resolution dated 13th June 1896. i.e. part of No. (1) extension

6. According to the Sanitary Engineer's estimates, the cost of carrying out all the extensions &c proposed by the Council in its resolutions of 13th June 1896 in C.No 1813, and of 22nd August 1896 in C.No. 2413, will amount to ~~about~~ Rs. 26,46... Adding this to the revised estimate for the original scheme submitted by the Sanitary Engineer with C.No. 2146M. the total cost will be Rs 267,017. If the Government contributes threefourths of this amount and lends the balance on the usu... ~~..~~ terms, the Municipal Council will have to provide Rs 3905 approximately towards repayme... of the loan with interest, in addition to Rs 4750 on account of working charge... or Rs. 8655 in all. This the Council can afford to do, as ~~should~~ shown below, if after the amended Municipal Act becomes law the house, land and water taxes are lev...ed at the enhanced ~~..~~ rates ~~that may be fixed~~ allowed in that Act. ~~as follows~~ :-

Receipts.	Rs.
House and land taxes at 8½ %	9,980
Water tax at 8 %	8220
Other receipts	29,190
Total Rs.	47,390

ch...

...me ar...	..	..	Rs. 10060 ✓ ×
...he has ...r r charges	..	..	26720 ✓
Sani...n repayment of debt	..	..	~~4040~~ 3905 ✓
on t...		Total Rs.	~~40820~~ ✓
			40,685

× Present charges Rs 7840 ✓
Deduct Rs. 2530 ✓ being part of the amount now being paid to Provl funds for the existing water supply which will be saved when the new works are completed
Rs. 5310 ✓
Add maintenance charges of the new works
Rs. 4750 ✓
Rs. 10060

V.R.
8/9/96

If Mr. Thorburn's proposals are feasible there will be a saving on the cost of the extensions, as in the South extension alone he saves about 3,000 ft. of pipe. These proposals he wishes referred to some competent authority other than Col. Campbell. There has been a good deal of bungling over this water supply scheme & the estimate has had repeatedly to be raised — & this fact lends additional force to Mr. Thorburn's remarks. In this letter combined with his D.O. in the linked file he hints at, rather than expresses, certain rather serious allegations against Mr. Jones. In order to be able to speak definitely on this point he asks to see the original revised estimates of the scheme. It is submitted for orders as to whether copies may be sent to him —

The other points submitted for orders are
(1) Whether Govt. will give a grant of 3/4 & loan of 1/4 of the latest estimate, provided it is approved by the San. Bd.
(2) Whether the proposed extensions are to be carried out, & their cost met as above. They seem to be very important, and as they ... with the total cost of ... it is submitted that they ... approved.
(3) Whether, if the extensions are sanctioned, the San. Engr's estimates may be accepted or whether Mr. Thorburn's proposals should be considered. If feasible from an engineering point of view Mr. Thorburn's proposed pipe lines to his bungalow & to the Dt Bd's Office seem preferable to that ~~of~~ the San. Engr's line as being much shorter ~~...~~ while serving the same houses. The objection to it is that ~~it~~ they is not continuous, but involves 2 "loose ends".

WWD
10-9-96

There seems to be no use in going into the question of the revised estimate until it has been decided whether the proposed extensions are to be carried out and if they are what action is to be taken on Mr. Thorburn's letter. He is to say the least very eccentric but eccentric people are sometimes right. What he is driving at is pretty evident and as he speaks in the concluding portion of para 14 of his letter of "a quasi judicial investigation" it is to be presumed that he is prepared to advance some justification of his allegations and insinuations. If an ~~...~~ enquiry into matters such as Mr. Thorburn wishes made is considered desirable Col Campbell is evidently in his dual position of President of the Sanitary Board and C.E. to the Govt. the proper person to hold it. Mr. T's objections to his doing this appear to be childish

persons
... the ... ... strict
... a demi-official ^minute^ upon a perfectly trivial matter which had been missent to Bombay before delivery to him, in which he said that he was being watched right and left by those around him and that he believed that with the connivance of the people in my Office the letter had been sent to the Office people in Kurnool who had ~~...~~ got it sent on to Bombay after opening and reading it and had it posted there in order to throw him off the scent. He would not believe that the whole thing was the result of blundering by the Post Office people which is not at all infrequent. He registered his letter to me and asked that anything that I wrote to him might be registered. There are other things which show that he is eccentric in a marked degree. A letter which he wrote about the Municipal Amendment Bill and the proposals that he therein made are another proof of this. His present letter for all that one knows may be another. He will not be silenced except by Govt. telling him that it cannot consider what he says or ordering an Enquiry. Considering however the mess which has been made of this particular scheme all through I cannot resist a feeling that there is perhaps something — his eccentricity notwithstanding — in what Mr. ... says, and that the work might be done more cheaply than it is being and that it is proposed to do it. Meanwhile, if an Enquiry such as Mr. ... asks for

FOR ORDERS.

[G. / 25 A.]
1,000—21-3-96.

DEPARTMENT

C. No.

FOR ORDERS.

is to be held, the completion of a project ~~...~~ regarding which there has ^already^ been inordinate delay will be ^still further^ hung up for an indefinite period.

Hd.
15/9/96.

C.S.

Orders

~~The revised estimates & the~~ proposals ^with the connected plans^ for extending the water supply ^ will be referred to the P.W.D. with the request that the Chief Engineer will examine them & favour Govt. with his opinion thereon, as it is desirable that the estimates should receive careful professional scrutiny, especially with regard to the prices of pipes & stand pipes.

(from orders)

H.W.S.
22-9-96

Office
Note H.M.'s remarks & put the file right
...

FOR ORDERS.

H. M.

Again G.O., dated 189 , No.

Current No. 855 M. of 1896, dated 9th March 1896. from the Public Works.
Current No. 969 M. of 1896, dated 10th March 1896 from the Sanitary Comr.
" " 1165 M. . . . . 14th April 1896 . . . " Engr.
" " 1425 M. . . . . 11th May 1896 . . . Collector of Kurnool

FOR ORDERS.

Note. No plan showing the distribution of water supply has been furnished by the San. Engr., but it has been called for, will be submitted as soon as it is received.

I can't express any opinion as to these extensions until I see the maps. Let them be returned to me. It is really extraordinary that the file should not be in possession of a map of every Municipality. Nothing is constantly delayed by the necessity of calling for maps.

In the meantime, let a statement be prepared of the financial position as it will stand if the Municl Act is amended as proposed.

As to Mr. Mullaly, it is right afound that on May 11, 1896, he showed report that that morning for the first time he had seen the plans of water

The first of the current read above contains a petition from the residents of the European quarter in the town of Kurnool, for the extension to that quarter of the water supply scheme now under execution. They complain that while they pay a relatively large amount of taxation they cannot, under present arrangements derive any benefit from the water supply, as the nearest standpipe proposed to be erected is more than half a mile from their houses. They therefore request that additional standpipes may be erected at certain points and that the Superintending Engineer may be asked to report on the expenditure involved & empowered to act on his own opinion as to the

...spect that the muni-
...y and the Sanitary ...
...ieering Department are not
...ly to favour their proposals.

The second current is from the Sanitary Commissioner to whom the petitioners seem to have sent a copy of their petition. He supports the petitioners and points out that the scheme should have been extended also to Budavarpett.

The Sanitary Engineer to whom these two currents were referred submits his remarks in the third current. He points out that the scope of the scheme was considerably limited by financial considerations & that consequently it did not extend to the outlying portions of the town. He estimates the cost of extending the water supply to the European quarter and to Budavarpett at Rs 11,050, & Rs 9,440 respectively, and to the villages of Nawabpett & Rozapett at Rs 5,100 & Rs 5,000 respectively, making a total of Rs 30,590

of Kurnool for a long time, during which he might at any time have called for the plans & all the documents relating to the water project, the progress of the discussions regarding which should have been periodically reported to him by the Divl. officer. What else is the Divl. officer on the M.C. for but to keep the Collr. informed of what is going on? The fact wd. appear to be that the Collr. ~~has ... Divl. offr. has~~ has simply neglected all this while to utilize his opportunities & to do his duty in keeping an eye on what the M.C. has been doing & he should be told so.

At the same time, no doubt the fact that the Divl. officer ~~...~~ has his Hd. Qrs at Ryapalli must interfere with his paying proper attention to Kurnool Munl. affairs. Why should not Kurnool town form part of the charge of the Hd. Qr. Dy. Collr., who is on the spot? What is that officer's present charge?

W.D.

+ G.O. No. 1541 M
4.11.93

Rs 30,590. The sam...
provides for a supply f...
population of 30,000 people...
the population of Kurnool
~~cluding the parts above me~~
tioned was according to the la...
census only 24,376, the Sanitary Engineer states that the extension of the supply can be made at any time without a...
alterations in the Head works.

The last current is fro...
the Collector. He states that...
plan of distribution of water...
incomplete and that he wa...
not consulted about the wa...
supply scheme as, in his ...
opinion, he ought to have...

The cost of the ...
as originally estimated ...
Rs 2,05,550. Governm...
promised to contribute ...
fourths of this sum a...
lend the balance (Rs. 52...
to the municipal coun...
The estimate was subseq...

Engineer...

...per Rs. 2.22.440 & Govern-
...ly sanctioned an additional
...nt of Rs. 12.670 & a further loan
...Rs. 4.220. Later on it was again
...sed to Rs. 2.39.380. The cost
...is likely to be further enhanced in
...consequence of the original esti-
...mates having been found to be
...too low. It is probable that it
...may come up to Rs. 2.68.980 if
...the Sanitary Engineer should re-
...port that it is not possible to effect
...any saving by omitting any por-
...tion of the scheme. Government
...will in this case, unless it is other-
...wise decided, have to contribute
...for the whole Rs. 201,740 and to
...grant a total loan of Rs. 67240
...to the municipal council.
...The council can cer-
...tainly not afford to meet the
...cost of the extensions proposed by
...the petitioners, the Collector and
...Sanitary Commissioner. They
...petition be carried out only if Govern-
...ment again helps the council

with

× for Rs. 665m / 28.5.94

× for Rs 1082m / 9.7.95 × 1365m / 19.8.95

(a) for Rs 403m / 11.3.96

× Please see for Rs 1640m / 12.10.95 × 866m / 15.5.96

...with a grant of three-
...the amount required for
...pose and a loan of the bala-

Submitted that the q
of extending the water supply
be postponed till the works are
completed, or until it is known
exactly what they will
eventually cost.

S.A. 28.5.96.

Word 1.6.96

According to Dr. Mullaly's account the water supply scheme as it stands is very incomplete. He refers to the new pettah (Kothakotta) which Dr Jones makes no allusion and speaks of it as being "densely populated". Besides this he makes mention of a thing of places many of which should certainly if possible be supplied. In the absence of the plans which have been called for - one can form no idea as regard the feasibility of Dr. Mullaly's proposal to take off a line of pipes from near the P.O. Fresh Water Office. The whole of this scheme seems to have been worked out in a very unsatisfactory way. If the water supply cannot for financial or other reasons be extended to the whole of the town as present it is but fair

specific localities or places
which receive no benefit from
it shall either not pay water
tax or pay a very reduced rate
rate. I have always regarded the
system of making people pay
for what they do not get a
grossly unjust one.

As far as I can recollect Collectors
have never been consulted with
regard to water schemes for municipalities
within their jurisdictions and
have had no chance of having
a say with regard to them. I submit
for consideration the question whether
this state of things should be
allowed to continue. Collectors have
certainly no direct interest in
such matters but it seems desirable
that they should have an
opportunity of expressing an opinion
regarding them.

This particular water scheme has
caused no end of trouble. It is
submitted that if there is any
more bother about it Mr Jones
should be told to go to Kurnool
and stay there until everything
has been worked out by him
personally and settled.

[illegible]
9/6/96.

FOR ORDERS.

But see remarks above —
A.C.W. has full means
of knowing what is going
on & can of course say
what he thinks fit on
such subjects either to
the M.C. or to Govt.

[illegible]
11/6/96

Again G.O., dated 189 , No.

Current No. of 189 , dated from the

Current No. of 189 , dated from the

FOR ORDERS. The following note is put up with reference to H.M.'s note of 11-6-96

In the budget for 1896-97 the ordinary receipts and charges of the Kurnool Municipality are estimated at Rs. 38,000 and Rs. 37,910 respectively. The tax on houses and lands is being levied at the rate of 7½ p.c. on the annual rent value and no water tax has as yet been levied. When the amended Municipal Act becomes law, the former tax can be raised to 10 p.c., and a water and drainage tax can be levied at 6½ p.c. The following table shows the receipts and charges of the Municipality if these taxes are levied according to the rates fixed in the amended Act, and if the water-works are in actual operation: —

more likely 8½
& 8 per cent

Engine[...]

[G. / 25]
1,000—5-11-95

DEPARTMENT

C. No.

Receipts.

	Budget Estimate 1896-97	Probable receipts under Amended Act.
	Rs.	Rs.
1. Tax on buildings and lands	8,810	11,750 (a)
2. Water & drainage tax	---	6,680 (b)
3. Other receipts	29,190	29,190
Total	38000	47620

(a) $\frac{8810 \times 2}{15} \times 10 = \frac{35240}{3} = 11746\frac{2}{3}$ or 11750

(b) House land tax Rs. 11750
Deduct 1/8 th. Rs 1470 on account of houses in parts of the town to which the water supply does not extend.
Rs. 10,280

water & drainage tax at 6½ pc on annual value $= \frac{10280 \times 13}{2 \times 10} = 6682$ or 6680.

Charges.

	Budget Estimate 1896-97.	Probable charges when the water works are in operation
	Rs.	Rs.
Grant I	7,840	10,060 (c)
Other Charges.	26,720	26,720
Repayment of Debt	3,350.	4,070 (d)
Total	37,910	42900

(c) Present charges Rs. 7840
Deduct Rs 2530 being part of the amount now being paid to Prod funds for the existing water supply which will cease when the new works are complete
Rs 5310
Add main. Rs. 4750 charges for the new works.
Rs 10060.

(d) The latest estimate of the cost of the water supply scheme is Rs. 268980. Assuming that Govt contributes ¾ ths of the amount and lends the balance to the Mk. Cl. on the usual terms the Cl. will have to provide a sum of Rs. 4040 ($\frac{268980}{4} \times \frac{5}{100}$ per cent) towards interest & repayment with interest. The San. Eng. has been asked to report whether the cost might be reduced by omitting any portion of the Scheme.

2. There appears to be no necessity to transfer the charge of the Kurnool town to the Head Quarter Deputy Collector, as it has been arranged that the Deputy Collector now in charge shall transfer his head-quarters to Kurnool as soon as the necessary accommodation for his office is provided there.(e) The Hd Quarter Dy Coll. is in charge of the Nandikotkur taluq.(f)

V.R. 20/6/96

3. The plan of distribution of water supply is put up. (in the case)

WWD 24.6.96

(e) Please see fo no 1276 R. dy 20.12.92 in fo no 132 L. dy 10.1.93 & fo no 1559 R dy 24.4.93.

(f) Please see fo no 2308 L. dy 28.11.95

FOR ORDERS.

My belief is that they will be able to append the estimates they want or something like them — but the matter had better stand over until the work now in progress are more advanced & we can see how the money goes.

DS
6/7/96

The figures will be as follows if House land tax is levied at 8½ — water tax at 8 per cent.

House land tax at 7½ % = 8810

= at 8½ % it will be $\frac{8810 \times 17}{15 \times 3} \times \frac{1}{2}$

$= \frac{29954}{3} =$ Rs 9980 approx.

Water tax at 8 % will be

Rs 9980 − $\frac{7}{8}$ 9980 : Rs $\frac{8730 \times 8 \times 1}{17}$

$= \text{Rs } \frac{139680}{17} =$ Rs 8220 approx.

Receipts will then be

House land tax	Rs 9980
Water tax	Rs 8220
Other receipts	Rs 29190
Total	Rs 47,390

while expenditure will be Rs 42,900 as above leaving a balance of Rs 4490

I had the above worked out on the assumption that a change in the apportionment of the proposed increase in

WWD 30-6-96

which has been [illegible]
would be adopted

With reference to H. his remarks regarding maps of Municipalities there are none and never have been. When the survey now in hand is over there will be proper maps. The best that we have ever had has been rough plans - most of them very rough indeed

4/7/96

Extension of Water Supply.

FOR ORDERS.

~~H. E. The Governor.~~

The Hon'ble Mr. H. W. Bliss, C.I.E.

~~The Hon'ble Mr. J. Grose.~~

DWE. 12
10504/96

From

Local and Municipal Depart

Current No.s. 855,969,1165,1425,1813
2146 M.

FOR ORDERS.

Please see the notes and orders on the first four of the currents read above.

2. With the fifth current the Sanitary Engineer submits a resolution of the Municipal Council regarding the extension of the water supply to the European quarter and certain other parts of the town not included in the original scheme, with a plan showing the proposed extensions and an estimate of their cost prepared by the Assistant Sanitary Engineer. The plan and estimate however appear to have been prepared with reference to the extensions contemplated before the Council's resolution above referred to was passed, and have therfore to be altered with reference to that resolution. The Sanitary Engineer approves of the extensions referred to in the Assistant Sanitary

[4.]

Ref 24/7

NOTE FOR THE CHIEF SECRETARY.

Submitted that no orders need be passed on this file pending receipt of the final estimate promised by the San. Engr in C. No. 1813 (put up)

16.7.96

To lie over pending receipt of San Engr's final estimate

22.7.96

Note The plan belonging to this file is in the [illegible] office

22/7

Kurnool Water-Supply

FOR ORDERS.

E

H.M.

6852[?]
10504/56

[G. / 24.]
500—22-4-96.

DEPARTMENT.

Papers to be read in proceedings :—

Again G.O., dated 189 , No.
Again G.O., dated 189 , No.
Current No. of 189 , dated , from
" " " 189 , " , "
" " " 189 , " , "

~~ORDER.~~ N.

Refd. 956 / 15/8/96

The Sanitary Engineer will be requested to report at an early date how far the ~~recommendations of~~ estimate submitted by the Asstt. San. Engr. in his letter No. 228 of 15-5-96 provides for the extensions proposed by the Munl Council in its resolution of the 13th June last & to send up a plan showing any differences that there may be & the reasons for them. The streets referred to in the resolution should also be marked on the plan.

(from orders)

WWS[?]
8-8-96

To
The Sanitary Engineer ✓

copy sent SB[?] 10/8

LWJ[?]/W 15/8/96

Kurnool Water Supply

N.S.

(From orders)

A.

956
15-8-96

~~Refer~~
Supply papers together

St
16/8

Note.
Plan retained at Ooty

3.2.8
8/8/6

OC 23
19 Sept/96

Kurnool
21st August 1896.

To,

The Chief Secretary to
Government, Madras.
(Local & Municipal Department)

Sir,

CHIEF SECRETARY
27 AUG. 1896
GOVERNMENT OF MADRAS

I have the honour to submit the following remarks with reference to the Sanitary Engineer's report on the petition sent in March last by me, on behalf of the residents in the Civil Station of Kurnool. I have to thank you for a copy of that report, and of the accompanying plan. No copy of the "Estimate" having been sent, I must presume that no regular Estimate has been made: the sum of R 11,050, to which that name is applied in the report, being simply the result of a rough guess.

2. The report is in many ways calculated to mislead Government into taking an unfavourable view

...ently just and reasonable
...pt. To begin with, the dotted
...lines on the plan are described
... the "extension proposed by the
...sidents of Vepery." The residents
of Vepery had nothing whatever
to do with these lines. They were not
consulted, though Government pro-
bably ordered that they should
be. If they had been, they would
certainly not have proposed the
line shown on the south side of the
main pipe. The line on the north
needs to be. But the line to the south
is twice as long as the aggregate
of the two lines really required;
and this excess of length has doubt-
-less been made the excuse for a
larger and more costly sort of pipe.

3. A round about line, 6000 feet
in length, has been taken, though
all that is really needed is a
couple of direct lines; one run-
-ning 1900 feet due South from the
main pipe to the Compound of my
house

house, and the other running
due west from the Bridge-pipe
Mr. Prendergast's Compound to
wall of the Compound occupied by
District Board. The former will pass
within 150 feet of the Cotton Press. I
have marked these lines on the plan,
and made sundry necessary correc-
-tions and additions. The ground-
work of it is quite antiquated, copied
apparently from some old map of
the town, now out of print. The
plan did not show the American
Mission-house, nor the house of
the Local Fund Engineer. It described
the house now occupied by the
Assistant Sanitary Engineer as the
Sessions Court, and the house of
the Superintendent of Police as the
Telegraph office. I return it amend-
-ed for the information of
The new line of the main pipe I have guessed as carefully as I can.
Government. (May I suggest that
Government should instruct the
Central Survey office to prepare
a new map of the municipality,
like those of Cuddapah and others
to cost
towns).

4. The excessive length 3 pies.

competent and impartial
report
-der, it may save considerably
future estimates in other towns,
not now in Kurnool. I shall be
very much surprised, if the necessary
Cost be found to exceed R50. Even R30
may be found sufficient. The most
expensive part of the structure, the
spring-push-cock, is advertised at
R 8½ (one-inch) by Messrs. W. Leslie
& Co. of Calcutta. And the Superin-
-tending Engineer tells me that the
Cost of fixing the materials ought
not to exceed R10.

5. I have said that the entire
Cost of laying down a 2 inch pipe
ought not to exceed 11 annas a foot.
I shall now prove the details. —
Messrs. Richardson & Cruddas
advertise 2 inch pipes of wrought
iron at Ro-6-9 in Bombay. In
answer to an enquiry they told me.
that they would deliver 1000 feet
of 2½ inch piping (costing Re. 12.0
a foot) at Kurnool Road Station,
an additional Charge of two
main as a foot. As that sort weighs

50 per Cent more than the
the Charges for the smaller
will probably be only R 0-1-6
But, to be on the safe side, I put
them at Ro-1-9. To this must be
added 1 pie a foot for transport
to Kurnool, 33 miles by road. A cart
will carry 600 feet (1200 lbs) for three
rupees. The Contractor for the works
now in progress informs me that
he would undertake to lay the pipes
(as part of the general system) at
from R 0-1-9 to R 0-1-11 a foot, exclu-
-sive of Charges for digging. These
last would be very small. It is only
necessary to remove the black Cotton
-soil (half a yard deep on the average),
and lay the pipes on the smooth
slate. There is no obstruction of any
kind, and the ground slopes gently & regularly
from the main pipe north and south.
A trench, two feet wide, would be
ample. For each foot of pipe there-
-fore three Cubic feet of earth must
be removed. The regular rate being
8 annas for a hundred feet, the ridge-
for each foot will be only 3 the

...up, the rate of 11 annas
...it includes:-

A.	Cost of pipe at Bombay	Rs-6-9
B.	Rail. charge and all other charges to Kurnool Road Station	0-1-9
C.	Cart hire from the Railway Station to Kurnool, 33 miles	0-0-1
D.	Earth-work	0-0-3
E.	Contract rate for laying pipes (highest Complete)	0-1-11
F.	Contingencies and Miscellaneous Expenses.	0-0-3.
	Total	0-11-0

6. I have now to show how many feet are required. No great objection can be taken to the line proposed by the Sanitary Engineer for serving the northern group of houses. But it may be shortened by about 150 feet. There is no need to take it beyond the wall separating the Mission Compound from that of the Traveller's Bungalow. A standpipe placed in that wall will serve both part of the line ought to be through the Forest Officer's Co... and thence to the wall of the C... stable, before forking into the Mission Compound. Each of the officers ought to have a stand-pipe of his own, but if these be not sanctioned, one may be placed on the roadside at the Collector's gate. The Cost of this line, 2000 feet with three standpipes, will be Rs 1525 (allowing Rs 50 for each standpipe); or Rs 1595 if Rs 110 be really necessary and only two standpipes be sanctioned. The water-rate (at 4 p.c.) levied on the three houses will be Rs 98½: nearly 6½ per cent on the outlay.

7. For supply of my house, the Assistant Sanitary Engineer's, and the Cotton Press in the South-West Corner of the station, I would take a straight line of 1900 feet from a point on the main pipe very near the canal. It would pass close to the Sub Divisional D.P.W. office, between the two buildings on the opposite side of the bridge-road and thence parallel to the

wall of the Cotton-Press enclosure,
at first marked on the northern wall
of my Compound, a little to the west
of the 1st milestone on the Bellary
Road. Considering the heavy rate
which will be paid on my house
(Rs 56) I am fairly entitled to have
a standpipe within the Compound.
One on the other side of the Bellary
Road will serve the Cotton-press
and the other house. The latter is
a public building long unoccupied,
before the Coming of the Assistant
Engineer, for whom it was repaired.
As it is very unhealthy it may not
be occupied again after he has
finished the water-works. If it is
worth while to bring water close to that
building, a branch-pipe may be
taken 500 feet westward to the toll-
-gate. A standpipe there instead of
near the 1st milestone will serve the
Cotton-press equally well. And will
be useful to the adjoining Cart-stand.
The Cost of the 1900 feet with two stand-
-pipes will be R 1406. The water rate
paid on my house and the Cotton
-press will be R 72½, yielding interest
on outlay at a little over 5p.c. The
extension of 500 feet with
and the water-rate on the
at the toll-gate (R 123/4) will
interest thereon at more than
Taking the two lines together,
interest on the total Cost will
very little short of 5p.c.

8. The Cheapest way of supplying
the District Board's office will be
a line 1100 feet from the Bridge-pipe,
passing near the house of the Super-
-intendent of Police, to the wall sepa-
-rating the two Compounds. There
one standpipe will serve both houses.
Both need a special supply. For I
must demur to the Sanitary Engineer's
statement that the dwelling house
is sufficiently provided for under
the original scheme. It is not fair
to reckon to the nearest wall of a
large Compound. The house itself
will be Considerably more than
150 yards from the nearest stand-
-pipe already sanctioned and there-
-fore Cannot fairly be Charged with
water-rate. The Cost of this line
will be R 806 1/4. The water-rate on
the two houses will be R 33 1/4 1
yielding

~~a~~ interest at more than 4 p.c.

Summing up, the following results are brought out.

A. Length of three necessary lines, 5000 feet, Costing R3437 1/4, with six standpipes at Rs50, or five at R110. Total Cost R3737 1/4, or at most R3987 1/4.

B. Adding the branch to Bellary Road toll-gate (500 feet Costing R344), the grand total will be R4081 1/4, or at most R4331 1/4.

C. The water-rates paid on the seven houses served by the three necessary lines will be R204 1/2, and on the house served by the Bellary Road branch line R12 3/4, in all R217 1/4. The interest on outlay will be therefore as follows.

(a) On R3737 1/4, very nearly 5 1/2 p.c

(b) On R. 3987 1/4 more than 5 1/8 p.c

(c) On R 4081 1/4, more than 5 1/4 p.c

(d) On R4331 1/4 almost exactly 5 p.c.

The Municipality will therefore profit by the extension to the extent of 3/4 per Cent. at least: the rate charged on the loan by the Government being only 4 1/4. Government, I believe, permit the levy of water-rate on any house, which does not get water within a reasonable distance: a distance fixed in most cases at 150 yards.

10. We have much reason to complain of the spirit and Contents of para 3 of the report. The Sanitary Engineer (or his Assistant) has clearly taken no pains to find out the number of persons living or working on the premises of the petitioners. He has deliberately left out not only my house, (which he knows to be one of the largest and most populous in the Station), but that of his Assistant, and the Cotton-press adjoining. And his guesses about the others are grossly inadequate. The number of residents is not 47, but thrice as many: which will be seen from the table below. But they are not the only persons to be Considered. In most of the Compounds there are many non-residents who work all day, and need water there as well as in

—to houses.

House	Resi-dents	Day-workers	Total
Mission.	68	-	68
Judge's	31	20	51
Collector's	18	17	35
Forest Officer's	9	16	25
Superintendent of Police	4	12	16.
Assistant Sanitary Engineer	10(?)	5(?)	15
Cotton Press—	3	40	43.
District Board's Office	2.	9	11
Traveller's Bungalow	4	"	4
Bellary Road toll-gate	2	-	2.
	151	119	270.

The rate a head is therefore, not R 110 as stated by the Sanitary Engineer, but only R 25 or R 29 at the most: Even if residents only be counted. If workers also be reckoned the rate goes down to R 14 or R 16½: very little more than the average for the Fort and Petta. The main Estimate as it now stands is R 26.7,000, I believe, for about 20,000 people. Fully 5000 of the residents within Municipal bane been shut out from its because they live in Kottapeta Budanarpetta, Tokarapuram, Roja's Civil Station. Finally, it must be borne in mind by all Concerned, that the average water-rate for the whole population will be less than three Annas a head, while the rate for the 151 inhabitants of the houses named above will be more than twenty-three.

11. Two or three side-issues remain to be dealt with. The Municipality has urged the provision of a line to Roja through the Collector's Compound. This hamlet has about 250 inhabitants, who will pay less than ten rupees in water-rate. As it lies about 1500 feet beyond the northernmost point of the first line, (ie 3000 feet from the main pipe), the Engineer may say that a 2 inch pipe will not suffice. But if a larger one be laid down, clearly the three European houses ought not to—

-posited with the excess of Cost
of the first 1500 feet, the smaller
pipe being enough for them taken
alone. I notice this in case of
any attempt being made to
confuse the main issue. If the
Roja line be sanctioned, the
northern group of European houses
will be served by it, and my
proposition will then concern only
the two lines on the South. To these
I invite the particular attention
of Government. I have gone care-
-fully over the ground. The measure-
-ments given are taken by scale
from the plan in round numbers.
The exact numbers may be less,
but will not be greater.

12. The Sanitary Engineer in
his second paragraph excuses his
omission to provide us with pipe-
-water on "financial Considerations".
This plea of zeal for economy would
Command more respect, if he had
not already raised the original
Estimate by about 24
amount which he now g
to us; and if he had taken
usual trouble to get his mat
in the cheapest market. He ha
raised the Estimate by three sta
from Rs 2,05,000 to R 2,67,000, and
in the same paragraph he goes
on to say that "the scheme, as it
now stands, is likely to cost Consi-
-derably more than Estimated"! Evi-
-dently the "financial Considera-
-tions" are very elastic, but there
is far too much mystery about
these Estimates. It is much to be
desired in the public interest,
that the prices paid for pipes
and other iron in England should be
published, for Comparison with
those of the Indian firms which
might have competed, if the sup-
-ply had been obtained by tenders.
But the only "financial Consider-
-tion" involved in the acceptance of
my estimates is the loan of ab
Rs 4000 to the Municipality, to
will reap a safe profit from the

...rite that it could not
...rise justly levy. The extension
...ll be a distinctly paying trans-
action. If even my highest Estimate
...e found substantially Correct,
Government needs not sink a single
rupee, unless disposed to follow
the precedent of making a present
of three-fourths of the Cost.

13. From what I have set forth,
it must be abundantly clear to
Government, that the Sanitary
Engineer has not tried to find out
the Cheapest way of Complying
with our request; which was doubt-
less what Government intended
him to do, even if it did not give
explicit orders to that effect. He
has been guided to his result by
some other motive. Perhaps his
wastefully long southern pipe
may round off his plan in a way
to please the taste and fancy of
the draughtsman. But Government
Command's assurance, sacrifices us
not alone to

to the mere symmetry of a a
I have heard of some loose
of dislike to "loose ends" of pipe
his system. But he has some in
already, in the middle of the town
And I have the authority of other
Engineers, whom I have Consulted,
for insisting that there is no real
Engineering objection to any of
the lines which I propose. No harm
Can Come from their abrupt ending.
This question, and the question of
diameter, are simple matters of
hydraulics on which any decently
educated Engineer's opinion must
be at least as good as that of
Mr. Jones. The average R. E. or
Cooper's Hill man may not have
all the formulas at his tongue's
end, but he knows where to look for
them, and has a sufficient
grasp of principle to apply
them justly to the facts of this or
any similar Case.

14. In order to get a full and
fair Consideration of my sugges

I must beg that this letter
may be referred to some Officer, or Offi-
-cers, who are not only Competent, but
thoroughly impartial. I cannot
concede that Character to the Sani-
-tary Engineer or his Assistant. Their
misrepresentations of the necessary
Cost of pipes, and of the other Cir-
-cumstances of the Case, fully justify,
I submit, my original want of
Confidence. The reasons for it are
now tenfold stronger. They have
Committed themselves to statements,
in which their departmental esprit
de Corps is involved (if not their
professional Credit) and it is not
in average human nature to be
Candid under such Conditions.
They were nettled in the beginning
by the request of the petitioners,
that the Superintending Engineer
D. P. W. should be instructed to
report and their irritation was
aggravated by the inexcusable
action of Colonel Campbell.

He handed over to Mr. [illegible]
semi-official letter sent
to Colonel Drake-Brockman,
I supposed to be the Chief Engi
Concerned. It Could throw no lig
on the matter for report, but it
gave reasons for asking that
the Sanitary Engineer should not
be the reporter. For this Cause,
and for his habitual Conference
with Mr. Jones on the Sanitary
Board and otherwise, I must
respectfully protest against
Colonel Campbell being re-
-garded as qualified for anything
like an arbiters part in the quasi-
-judicial investigation which I
solicit.

15. Finally, I trust that Govern
-ment will not listen to the insi-
-dious suggestion of postponement
in the last paragraph of the
report. If we are left out in the
desert now, there is not the slight-
-est chance that our cry for water
will ever again get any serious

... The Sanitary Engineer ... be able to find plenty of excuses ... or obstruction, and Governments ... are always slow to reopen questions which have once been put aside. Moreover, laying the pipes by instalments will be much more costly than laying them all together, especially in an out-of-the-way place like this. — Special tools and machines must be brought up for the purpose; and it is not worth the while of good Contractors to do that for so small a job as this. As the work is to begin this month, I hope that Government will issue stringent orders for the investigation and disposal of this Controversy with the utmost possible celerity.

I have the honour to be,
Sir,
Your most obedient Servant,
W. E. Robertson
(District Judge)

E

CHIEF SECRETARY'S OFFICE
27 AUG 1896
GOVERNMENT OF MADRAS

KURNOOL.
August 1896.

Don't print except as to date

To

THE CHIEF SECRETARY
TO GOVERNMENT,
Madras.

(LOCAL AND MUNICIPAL DEPARTMENT.)

SIR,

I have the honour to submit the following remarks with reference to the Sanitary Engineer's report on the petition sent in March last by me, on behalf of the residents in the civil station of Kurnool. I have to thank you for a copy of that report, and of the accompanying plan. No copy of the "Estimate" having been sent, I must presume that no regular estimate has been made: the sum of Rs. 11050, to which that name is applied in the report, being simply the result of a rough guess.

2. The report is in many ways calculated to mislead Government into taking an unfavourable view of our eminently just and reasonable request. To begin with, the dotted red lines on the plan are described as the "extension proposed by the residents of Kurnool." The residents of Kurnool had nothing whatever to do with these lines. They were not consulted, though Government probably ordered that they should be. If they had been, they would certainly not have proposed the line shown on the south side of the main pipe. The line on the north is only slightly longer than it needs to be. But the line to the south is twice as long as the aggregate of the two lines really required; and this excess of length has doubtless been made the excuse for a larger and more costly sort of pipe.

3. A roundabout line, 6000 feet in length, has been taken, though all that is really needed is a couple of direct lines; one running 1900 feet due south from the main pipe to the compound of my house and the other running 1100 feet due west from the Bridge-pipe through Mr. Prendergast's compound to the wall of the compound occupied by the District Board. The former will pass within 150 feet of the Cotton Press. I have marked these lines on the plan, and made sundry necessary corrections and additions. The ground-work of it is quite antiquated, copied apparently from some old map of the town, now out of print. The plan did not show the American Mission—house, nor the house of the Local Fund Engineer. It described the house now occupied by the Assistant Sanitary Engineer as the Sessions Court, and the house of the Superintendent of Police as the Telegraph Office. I return it amended for the information of Government. The new line of the main pipe I have guessed as carefully as I can. (May I suggest that Government should instruct the Central Survey Office to prepare a new map of the Municipality, like those of Cuddapah and other towns).

4. The excessive length and consequent excessive size of piping may account for the enormous Estimate of Rs. 11050, with which the Sanitary Engineer has sought to deter Government from complying with our request. I shall show that the necessary expenditure ought not to be much more than one-third of that mysterious amount. I cannot make out how it was arrived at. The pipes already sanctioned were got from England by private bargain of the Sanitary

Engineer instead of by open tender out here: an unparallelled practice of the Sanitary Department, which has only very recently been stopped by Government. The rates charged seem to be higher than those which might have been secured by open competition of tenders. There are, I believe, at least half-a-dozen firms in India, which can supply such materials. According to the price-list and other information supplied to me by Messrs. Richardson and Cruddas of Bombay, a $2\frac{1}{2}$ inch pipe, which is quite large enough to supply four houses even at a distance of 6000 feet, would cost Rs. 1-0-6 a foot delivered and laid down in Kurnool. I have the authority of more than one Engineer for saying that a 2 inch pipe costing Re. 0-11-0 a foot is ample for a distance of 2150 feet, the length of the northern line. On these scales the cost would be (6187$\frac{1}{2}$+1478=) Rs. 7665$\frac{1}{2}$. The Sanitary Engineer may however have prescribed a 3 inch pipe for the longer line. Such a pipe might cost Re. 1-7 a foot, the price at Bombay being Re 1-2 (against Re 0-12). In that case the total would be (8625+1478=) Rs. 10103: still leaving Rs. 947, which cannot be altogether accounted for by the cost of five standpipes. I am informed that Rs 110 have been charged for each standpipe in the original Estimate. The Superintending Engineer D. P. W, the District Board's Engineer, and other men with a practical knowledge of such matters, tell me that this charge is most excessive. If Government should now order an enquiry by some competent and impartial outsider, it may save considerably on future Estimates in other towns, if not now in Kurnool. I shall be very much surprised, if the necessary cost be found to exceed Rs. 50. Even Rs. 30 may be found sufficient. The most expensive part of the structure, the spring-push-cock, is advertised at Rs. 8$\frac{1}{2}$ (one-inch) by Messrs. W. Leslie & Co. of Calcutta. And the Superintending Engineer tells me that the cost of fixing the materials ought not to exceed Rs. 10.

5. I have said that the entire cost of laying down a 2 inch pipe ought not to exceed 11 Annas a foot. I shall now prove the details. Messrs. Richardson & Cruddas advertise 2 inch pipes of wrought iron at Re. 0--6-9 in Bombay. In answer to an enquiry they told me that they would deliver 1000 feet of 2$\frac{1}{2}$ inch piping (costing Re. 0-12-0 a foot) at Kurnool Road Station, for an additional charge of two Annas a foot. As that sort weighs 50 per cent more than the 2 inch, the charges for the smaller sort will probably be only Re 0-1-6 a foot. But, to be on the safe side, I put them at Re. 0-1-9. To this must be added 1 pie a foot for transport to Kurnool, 33 miles by road. A cart will carry 600 feet (1200lb) for three rupees. The Contractor for the works now in progress informs me that he would undertake to lay the pipes (as part of the general system), at from Re. 0-1-9 to Re. 0-1-11 a foot, exclusive of charges for digging. These last would be very small. It is only necessary to remove the black cotton-soil, (half a yard deep on the average), and lay the pipes on the smooth slate. There is no obstruction of any kind, and the ground slopes gently and regularly from the main pipe north and south. A trench two feet wide would be ample. For each foot of pipe therefore three cubic feet of earth must be removed. The regular rate being 8 annas for a hundred feet, the cost for each foot will be only 3 pies. To sum up, the rate of 11 Annas a foot includes:—

		Re.	A.	P.
A.	Cost of pipe at Bombay	0	6	9
B.	Rail-charge and all other charges to Kurnool Road Station	0	1	9
C.	Cart hire from the Railway Station to Kurnool, 33 miles ...	0	0	1
D.	Earth-work	0	0	3
E.	Contract rate for laying pipes (highest, complete) ...	0	1	11
F.	Contingencies and Miscellaneous expenses	0	0	3
	Total ...	0	11	0

6. I have now to show how many feet are required. No great objection can be taken to the line proposed by the Sanitary Engineer for serving the

northern group of houses. But it may be shortened by about 150 feet. There is no need to take it beyond the wall separating the Mission-compound from that of the Traveller's Bungalow. A standpipe placed in that wall will serve both. The first part of the line ought to be taken through the Forest Officer's compound, and thence to the wall of the Collector's stable, before forking into the Mission-compound. Each of these Officers ought to have a standpipe of his own, but if these be not sanctioned, one may be placed on the roadside at the Collector's gate. The cost of this line, 2000 feet with three standpipes, will be Rs. 1525 (allowing Rs. 50 for each standpipe); or Rs. 1595 if Rs. 110 be really necessary, and only two standpipes be sanctioned. The water-rate (at 4 p. c) levied on the three houses will be Rs. 98$\frac{1}{2}$: nearly 6$\frac{1}{2}$ per cent on the outlay.

7. For supply of my house, the Assistant Sanitary Engineer's, and the Cotton Press in the South-West corner of the Station, I would take a straight line of 1900 feet from a point on the main pipe very near the Canal. It would pass close to the Sub-Divisional D. P. W. Office, between the two buildings on the opposite side of the bridge-road, and thence parallel to the eastern wall of the Cotton-Press-enclosure, to a point marked on the northern wall of my Compound, a little to the west of the 1st milestone on the Bellary Road. Considering the heavy rate which will be paid on my house (Rs. 56), I am fairly entitled to have a standpipe within the compound. One on the other side of the Bellary Road will serve the Cotton-Press and the other house. The latter is a public building, long unoccupied before the coming of the Assistant Engineer, for whom it was repaired. As it is very unhealthy, it may not be occupied again after he has finished the water-works. If it is worth while to bring water close to that building, a branch-pipe may be taken 500 feet westward to the toll-gate. A stand-pipe there instead of near the 1st milestone will serve the Cotton-Press equally well, and will be useful to the adjoining cart-stand. The cost of the 1900 feet with two standpipes will be Rs. 1406. The water-rate paid on my house and the Cotton-Press will be Rs. 72$\frac{1}{2}$: yielding interest on outlay at a little over 5 p. c. The extension of 500 feet will cost Rs. 344, and the water-rate on the house at the toll-gate Rs. 12$\frac{3}{4}$ will yield interest thereon at more than 3$\frac{1}{2}$ p. c. Taking the two lines together, the interest on the total cost will be very little short of 5 p. c.

8. The cheapest way of supplying the District Board's Office will be a line 1100 feet from the Bridge-pipe, passing near the house of the Superintendent of Police, to the wall separating the two compounds. There one stand-pipe will serve both houses. Both need a special supply. For I must demur to the Sanitary Engineer's statement, that the dwelling house is sufficiently provided for under the original scheme. It is not fair to reckon to the nearest wall of a large compound. The house itself will be considerably more than 150 yards from the nearest standpipe already sanctioned, and therefore cannot fairly be charged with water-rate. The cost of this line will be Rs. 806$\frac{1}{4}$. The water-rate on the two houses will be Rs. 33$\frac{1}{4}$, yielding interest at more than 4 p. c.

9. Summing up, the following results are brought out.

A. Length of three necessary lines, 5000 feet, costing Rs. 3437$\frac{1}{4}$, with six standingpipes at Rs. 50, or five at Rs. 110. Total cost Rs. 3737$\frac{1}{4}$, or at most Rs. 3987$\frac{1}{4}$.

B. Adding the branch to Bellary Road toll-gate (500 feet costing Rs. 344), the grand total will be Rs. 4081$\frac{1}{4}$, or at most Rs. 4331$\frac{1}{4}$.

C. The water-rates paid on the seven houses served by three necessary lines will be Rs. 204$\frac{1}{2}$, and on the house served by the Bellary Road branch

line Rs. $12\frac{3}{4}$, in all Rs. $217\frac{1}{4}$. The interest on outlay will be therefore as follows:—

(*a*) On Rs. $3737\frac{1}{4}$, very nearly $5\frac{1}{2}$ p. c.

(*b*) On Rs. $3987\frac{1}{4}$, more than $5\frac{1}{8}$ p. c.

(*c*) On Rs. $4031\frac{1}{4}$, more than $5\frac{1}{4}$ p. c.

(*d*) On Rs. $4331\frac{1}{4}$ almost exactly 5 p. c.

The Municipality will therefore profit by the extension to the extent of $\frac{3}{4}$ per cent at least: the rate charged on the loan by Government being only $4\frac{1}{4}$. Government will not, I believe, permit the levy of water-rate on any house, which does not get water within a reasonable distance : a distance fixed in other cases at 150 yards.

10. We have much reason to complain of the spirit and contents of para 3 of the report. The Sanitary Engineer (or his Assistant) has clearly taken no pains to find out the number of persons living or working on the premises of the petitioners. He has deliberately left out not only my house, (which he knows to be one of the largest and most populous in the Station), but that of his Assistant, and the Cotton-Press adjoining. And his guesses about the others are grossly inadequate. The number of residents is not 47, but thrice as many : which will be seen from the table below. But they are not the only persons to be considered. In most of the compounds there are many non-residents who work all day, and need water there as well as in their own homes.

House.	Residents.	Day-workers.	Total.
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The rate a head is, therefore, not Rs. 110 as stated by the Sanitary Engineer, but only Rs. 25 or 29 at the most : even if residents only be counted. If workers also be reckoned the rate goes down to Rs. 14 or Rs. $16\frac{1}{2}$: very little

more than the average for the Fort and Petta. The main Estimate as it now stands is Rs. 267,000, I believe, for about 20,000 people. Fully 5000 of the residents within Municipal limits have been shut out from its benefits,because they live in Kottapetta, Budavarpetta, Joharapuram, Roja, or the Civil Station. Finally, it must be borne in mind by all concerned, that the average water-rate for the whole population will be less than three Annas a head, while the rate for the 151 inhabitants of the houses named above will be more than *twenty-three*.

11. Two or three side-issues remain to be dealt-with. The Municipality has urged the provision of a line to Roja through the Collector's compound. This hamlet has about 250 inhabitants, who will pay less than ten rupees in water-rate. As it lies about 1500 feet beyond the northernmost point of the first line, (*i. e.*, 3000 feet from the main pipe), the Engineer may say that a 2 inch pipe will not suffice. But if a larger one be laid down, clearly the three European houses ought not to be debited with the excess of cost on the first 1500 feet, the smaller pipe being enough for them taken alone. I notice this in case of any attempt being made to confuse the main issue. If the Roja line be sanctioned, the northern group of European houses will be served by it, and my proposition will then concern only the two lines on the south. To these I invite the particular attention of Government. I have gone carefully over the ground. The measurments given are taken by scale from the plan in round numbers. The exact numbers may be less, but will not be greater.

12. The Sanitary Engineer in his second paragraph excuses his omission to provide us with pipe-water on "financial considerations". This plea of zeal for economy would command more respect, if he had not already raised the original Estimate by about six times the amount which he now grudges to us; and if he had taken the usual trouble to get his materials in the cheapest market. He has raised the Estimate by three stages from Rs. 2,05,000 to Rs. 2,67,000, and in the same paragraph he goes on to say that "the scheme, as it now stands, is likely to cost considerably more than Estimated"! Evidently the "financial considerations" are very elastic, but there is far too much mystery about these Estimates. It is much to be desired in the public interest, that the prices paid for pipes and other iron in England should be published, for comparison with those of the Indian firms which might have competed, if the supply had been obtained by tender. But the only "financial consideration" involved in the acceptance of my Estimates is the loan of about Rs. 4000 to the Municipality; which will reap a safe profit from the water-rate that it could not otherwise justly levy. The extension will be a distinctly paying transaction. If even my highest Estimate be found substantially correct, Government needs not sink a single rupee, unless disposed to follow the precedent of making a present of three-fourths of the cost.

13. From what I have set forth, it must be abundantly clear to Government, that the Sanitary Engineer has not tried to find out the cheapest way of complying with our request; which was doubtless what Government intended him to do, even if it did not give explicit orders to that effect. He has been guided to his result by some other motive. Perhaps his wastefully long southern pipe may round off his plan in a way to please the taste and fancy of the draughtsman. But Government will not, I am sure, sacrifice us to the mere symmetry of a design. I have heard of some loose talk of dislike to "loose ends" of pipes in his system. But he has some in it already, in the middle of the town! And I have the authority of other Engineers, whom I have consulted, for insisting that there is no real Engineering objection to any of the lines which I propose. No harm can come from their abrupt ending. This question, and the question of diameter, are simple matters of hydraulics, on which any decently educated Engineer's opinion must be at least as good as that of Mr. Jones. The average R. E. or Cooper's Hill man may not have all the formulas at his tongue's end, but he knows where to look for them, and has a sufficient grasp of principle to apply them justly to the facts of this or any similar case.

14. In order to get a full and fair consideration of my suggestions I must beg that this letter be referred to some Officer, or Officers, who are not only competent, but thoroughly impartial. I cannot concede that character to the Sanitary Engineer or his Assistant. Their misrepresentations of the *necessary* cost of pipes, and of the other circumstances of the case, fully justify, I submit, my original want of confidence. The reasons for it are now tenfold stronger. They have committed themselves to statements, in which their departmental *esprit de corps* is involved (if not their professional credit) and it is not in average human nature to be candid under such conditions. They were nettled in the beginning by the request of the petitioners, that the Superintending Engineer D. P. W. should be instructed to report and their irritation was aggravated by the inexcusable action of Colonel Campbell. He handed over to Mr. Jones a semi-official letter sent by me to Colonel Drake-Brockman, whom I supposed to be the Chief Engineer concerned. It could throw no light on the matter for report, but it gave reasons for asking that the Sanitary Engineer should not be the reporter. For this cause, and for his habitual concurrence with Mr. Jones on the Sanitary Board and otherwise, I must respectfully protest against Colonel Campbell being regarded as qualified for anything like an arbiter's part in the quasi-judicial investigation which I solicit.

15. Finally, I trust that Government will not listen to the insidious suggestion of postponement in the last paragraph of the report. If we are left out in the desert now, there is not the slightest chance that our cry for water will ever again get any serious attention. The Sanitary Engineer will be able to find plenty of excuses for obstruction, and Governments are always slow to re-open questions which have once been put aside. Moreover, laying the pipes by instalments will be much more costly than laying them all together, especially in an out-of-the-way place like this. Special tools and machines must be brought up for the purpose; and it is not worth the while of good contractors to do that for so small a job as this. As the work is to begin this month, I hope that Government will issue stringent orders for the investigation and disposal of this controversy with the utmost possible celerity.

I have honour to be,

Sir,

Your Most Obedient Servant,

W. M. THORBURN,

(*District Judge.*)

(True Copy).

W. M. Thorburn

:o:

18th Oct 96

20 OCT 1896
GOVERNMENT OF MADRAS

No 1208

To the Chief Secretary to Government.
Local and Municipal Department,

Sir

I beg to remind you that no action has apparently yet been taken on the petition of Kurnool Residents for supply of water to the Civil Station. My letter exposing the misrepresentations of the Sanitary Engineer was sent nearly two months ago. In continuation thereof I have the following facts to lay before Government.

(a) The cost of laying two-inch pipes at Ootacamund was 13 annas a foot. 11 annas must therefore

OWS.30
10502/96

[illegible] & M.
4-8-96.

Local & Munl. (1896) Department

D. O. No. 14

D. O.

No 1208

Transferred to the Public Works Department in Continuation of Endorsement No. 1108 dy 25th September 1896

From

W.M.Thorburn Esqr.
District Judge,
Kurnool.

No.

W.D.Phillips
Ag. Asst. Secretary

Dated 18-10-96
Received 20-10-96
Registered 20-10-96
Enclosures
Spare copies.

V.R
21/10/96
Tat st. seen
22 Oct. 1896

SUBJECT.

Stating that no action has been yet taken on the petition of Kurnool residents for supply of water to the Civil Station & bringing to notice the urgency of the same.

To OWS.34
10502/96
The Public Works Department

21/10.

21/10

BACK PAPERS.

G.O.	No.	Department.	Date.
Enclt	1108	Local	25-7-96

FURTHER PAPERS.

G.O.	No.	Department.	Date.

C 16/9

L. & M. 4-8-96.

Local & Munl. (189) Departm

D. O. No.

D. O.

For orders

Please see note for orders in linked file

BP 17/9/96 15/9/96

From

W. M. Thorburn Esquire
Dt. judge
Kurnool

No.

Dated 2/8
Received 2/9
Registered 2/9
Enclosures /
Spare copies.

SUBJECT.

Re. Kurnool Water Works.

2/8.

BACK PAPERS.

G.O.	No.	Department.	Date.
Current	2448	[illegible]	

FURTHER PAPERS.

G.O.	No.	Department.	Date.

Kurnool Water Works

Proposed additional pipe lines

Item No.	Position	Lineal feet of 3" piping	Ap[illegible] C[illegible] Rs.
1	Police Lines, Kothapetta, Dak Bungalow, Mission Compound, Collector's, Forest Officer's, and Club Compound	6930	8662·5
2	Jail	500	625·0
3	Water gate	620	775·0
4	Cart Stand	1070	1337·5
5	Pinjar Wada	370	462·5
6	Dhobee Wada	700	875·0
7	Sonár Gulli	825	1031·2
8	Kombár Gulli	750	937·5
9	Slaughter House	900	1125·0
10	Bhudwár Petta	3550	4437·5
	Total	16215	19268·6
11, 12	Deduct {Rungaraz G[illegible]lli 1072½ feet; South Rampart 1072½ feet}	2145	2681·2
	Balance Total	14,070	16587·5
13	The existing 3" line can be taken up, cleaned and returned for 5 ans. per foot, so that there will be a saving of 7 ans a foot in cost of pipe. deducting another anna for cutting & contingencies there will be a saving of 6 ans ∴ 2880 feet @ 6 annas =		1080
	Grand Total	14070	15,508

abstract

14070 l. ft 3" pipes and fittings, in place, as above —	15508
+ 20. Single Wall Tap Fountains @ 110/- —	2200
6. Bullock Services @ 150/- each —	900
Total Rs	18,608
Add for market Service & Contingencies	1392
Total Rs	20,000

* @ 1/4/- per l. foot in place including bends, Valves &c (not fountains)

[illegible] Locky[illegible], A.M.I.C.E.

Asst. Sanitary Engineer

Kurnool
27th Feb 184

To

The Secretary to the Government of Madras
P.W.D.

Sir

We, the undersigned residents of the Civil Station of Kurnool, respectfully invite the attention of Government to the extraordinary omission of any provision to supply our houses with water from the new works now in progress. Many of these houses are situated half-a-mile from the nearest stand-pipes, though taxes are to be levied on them at the same rate as if they were in the Town.

2. If any difference is to be made between us and the inhabitants of the Town, we are surely deserving of special consideration, as the principal servants of Government (at whose expense mainly the works are being constructed), as persons of a higher grade of civilisation (who think more of the purity of their water), and as payers of a relatively and absolutely large amount of municipal taxation. The Collector and Judge pay each Rs 100 or more a year to the Municipality in personal taxes, for which they receive hardly any return whatever: the very roads over which they drive to work being kept up mainly at the expense of the District Board. We pay also indirectly the rates levied on our houses, amounting in individual cases to more than the aggregate rates of a hundred houses in the town. The water-rates will raise these by 50 per cent: and it is, we submit, obviously unjust that the water should not be brought

-in reasonable distance of our bathrooms
and kitchens. We ought not to have to send half-a-mile
to places, which may be surrounded by dirty crowds
every morning and evening. The owners of our houses
will of course recoup themselves for the ~~[illegible]~~ water-
-rates by raising our rents or refusing to execute repairs.
And that, under present arrangements, will be the
only result to us, of the vast expenditure of Provincial
revenues on this very small corner of the Presidency.

3. We beg therefore that Government will issue
orders for the provision of stand-pipes at the following
places, the first two being those most urgently required,
as being most remote from the Town.

(A). At the Bellary Toll-gate, near the Judge's house,
the Cotton-press, and the house at present occupied
by the Asst. Sanitary Engineer in charge of the works.

(B). At the gate of the Collector's house, near the Club-
-house, the Forest-officer's house, and the camping-ground.

(C). In or near the compound of the District Board's
office, adjoining the houses of the Superintendent of Police
and the Nawab of Banganpalli.

(D). On the maidan in front of the Church, near the Taluk
Kachri, the L.F. Engineer's house, the R.C. Priest's house,
and the Kolhapur Zemindar's house.

(E). In the compound of the Traveller's Bungalow, which
adjoins that of the American Mission.

We say nothing about the house and office of the Execu-
-tive Engineer D.P.W., they being situated outside Muni-
-cipal limits. The present Surgeon lives in the Town.

4. We have reason to believe that the annual
income, from water-rates to be levied on our houses, would
yield at least 10 per cent, on the capital cost of the additional
pipes necessary to justify the levy of those rates; and we
beg that the Superintending Engineer of the Circle may be de-
-puted to report after personal inspection as to [illegible]
-penditure really involved in the execution of our propo[illegible]
We ~~trust that~~ he will be instructed to consult us about
the placing of the additional stand-pipes, and empowered
to act upon his own opinion, unfettered by that of ei-
-ther the Municipality or the ~~Municipal~~ -works Sanitary Engineering
Department.

5. To save time, we are sending a copy of this petition
directly to the Sanitary Commissioner.

We remain, Sir
Your most obedient servants,

J. E. Prendergast
C. Allnutt
H. Lodge
A. Mackenzie.
A. Mackenzie.
W. M. Thorburn
(Cotton Press) [illegible]
(Zemindar of Kolhapur) G. V. Latchma Row
(Banganapalli Nawab's house.) [illegible] Hd. Clk:

W. CURRENT No. ~~2202~~

Recd: 4.3.96

Transferred to the Joint Secretary, M. & P. Branch
[illegible] Sec 4/3.96

2/3/96

OW5564
10504/96

E. I. Form No. 22—2,000—21-4-93.

GOVT. OF MADRAS. } 1896.

CHIEF ENGINEER FOR IRRIGATION

Madras, 3rd March 1896.

OFFICE NOTE No. 88

Circulation Register.

To	From	Despatch Date.	Receipt Date.
W.	I.		

KEEP-WITH.

No. , dated 189 .

In continuation of the memorial from the residents of [illegible] regarding Water Supply distribution

[illegible]
3/3

Enclos 1

Recd: 4.3.96

Local & Municipal Dept.
85 M

Curs 22026
2200

No 1332 Col 9th March 1896

Transferred to the Local and Municipal Department.

J. McC. Causlette Col. R.E.
Jt. Secy: to Govt

Cum
5.3.96

Government (1897) of Madras.

LOCAL AND MUNICIPAL.

Recd. } 1897. *Enclosures*

Regd. } *[redacted]pare copies*

G.O., No. 76 M., 21st January 1897.

JANUARY.

Water-supply.

Sanctioning, with remarks, the revised estimate of Rs. 2,40,555 submitted by the Sanitary Engineer for the scheme of — for the town of Kurnool and the estimate of Rs. 23,112 prepared by the same officer for the extension of the works proposed by the municipal council.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following papers :—

From the Public Works Department, No. 1332-C., dated 9th March 1896.

ABSTRACT.—Transferring memorial from Mr. Prendergast and others, residents of Kurnool, regarding water-works at Kurnool.

No. 392, dated 25th March 1896.

Referred to the Sanitary Engineer for early remarks.

(By order)

(Signed) W. W. PHILLIPS,
Ag. Assistant Secretary.

From Surgeon-Lieutenant-Colonel W. G. KING, M.B., C.M., D.P.H., Sanitary Commissioner for Madras, to the Secretary to Government, Public Works Department, dated Fort St. George, 10th March 1896, No. 549-S.

I have the honour to inform you that I am in receipt of a copy of a petition from certain inhabitants of Kurnool municipality in which they refer to the absence of provision for the supply of water for houses occupied by Europeans. I agree with the petitioners in thinking that, if it be possible for these to be commanded by the water-works, it is most desirable for sanitary reasons that they should not be neglected.

2. I would also take this opportunity of pointing out that the absence of provision for the supply of the suburb of Budapett is, in my opinion, a serious defect in the original scheme.

No. 1535-C., dated 19th March 1896.

Transferred to the Local and Municipal Department.

(Signed) D. McNEIL CAMPBELL, Col., R.E.,
Joint Secy. to Government, P.W.D.

No. 402, dated 27th March 1896.

Referred to the Sanitary Engineer for remarks in continuation of Government endorsement No. 392, dated 25th March 1896.

(By order)

(Signed) W. W. PHILLIPS,
Ag. Assistant Secretary.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 14th April 1896, No. 1133.

In reply to reference Nos 392 and 402 of 25th and 27th March 1896, respectively, and which are herewith returned along with the petition from certain residents in Kurnool, I have the honour to report as follows :—

2. The scheme for Kurnool, as you are aware, it has been possible to carry out only by very large and extraordinary grants from Government and the scheme was therefore limited to supplying the main bulk of the population and not the outlying portions of the town. Government are also aware that the scheme, even as it now stands, is likely to cost considerably more than estimated. It is quite true, as stated by Mr. Thorburn in his demi-official accompanying the papers noted, that "the Sanitary Engineer's department did all this with their eyes open," simply because of financial considerations. It does not affect this department in any way whether more or less piping is laid down, and if Government can see their way, looking to the circumstance hereafter stated, to extend the supply as required, no doubt, the distribution will be more complete than it now is; the question, however, is: Are the benefits which may accrue worth the additional expense?

3. Taking first the petition from the residents and referring to paragraph 3, I have prepared an estimate which will meet the request for water, items A, B, C and E. The cost of extending pipes to these sites amounts to Rs. 11,050. The population to be served is not known exactly, but may be as follows:—

Collector's house	10	
Forest-officer's house	8	
District Board's office	5	(staff during day).
Travellers' bungalow	4	
American Mission	20	
Total	47	

But suppose the population is 100, then the expenditure will be Rs. 110 per head.

4. I have not included in the above the taluk cutcherry, the Superintendent of Police's house, the house of the Nawab of Banganapalle, the Local Fund Engineer's house and the Roman Catholic Priest's house because these are already served by existing arrangements.

5. The Sanitary Commissioner suggests that Buddavarampet should be supplied. This is outside the town on the opposite side to Kurnool of the Hindri river. The population may be about 1,000, the cost will be Rs. 9,440. It may be stated that water of very fair quality is obtainable near the above village.

6. The Assistant Sanitary Engineer in reporting on the matter points out that a portion of the town not supplied under the present limits of the scheme is the village of Nawabpet where the police lines are, and that this portion has greater claim for water-supply than any other. The cost of supplying this village will be Rupees 5,100.

7. The total extension proposed therefore amounts to—

	Rs.
Houses of English residents	11,050
Extension to Buddavarampet	9,440
Do. to Nawabpet	5,100
Total	25,590

The Sanitary Commissioner in a recent note to the Sanitary Board also proposes that the supply should be carried to Rozapet. This would cost about another Rupees 5,000.

8. The scheme is based on a supply for 30,000 people. The population of Kurnool, including the villages referred, was, according to the census of 1891, 24,523; the distribution system can therefore be extended at any time. It is not believed that the financial circumstances of Kurnool are such as to allow of these extensions at present.

From C. M. MULLALY, Esq., Collector of Kurnool, to the Chief Secretary to Government, dated Kurnool, 11th May 1896, No. 815-Eng.

With reference to the accompanying copy of letter from the Sanitary Engineer to Government, No. 1363, dated 4th May 1896, I have the honour to state that this morning, for the first time, I have seen the plan of distribution of water in the new water-works scheme and consider it to be very incomplete.

2. On the left of the main channel, the following are omitted :—

(1) The new petta which is very densely populated.
(2) The Police lines.
(3) The new Police hospital.
(4) The new Head-quarter Police office (to be built).
(5) The suburb of Roza.
(6) The travellers' bungalow.
(7) The Mission house and Boarding school.
(8) The Collector's house.
(9) The Club.
(10) The District Forest-officer's house.

All these could be very easily served by a main distributary taking off close to the District Forest-officer's house and proceeding nearly in the inverse order to the above. The Assistant Sanitary Engineer approves, I believe, of this line of pipes and will shortly lay it before the municipal council.

3. On the right of the main distributary, the following are omitted :—

(1) Buduvarapet.
(2) Huzur cutcherry which, when complete, will provide accommodation for both the Head-quarter and Kurnool Deputy Collectors.
(3) Sub-jail which acts as a district jail.
(4) The new combined Tahsildar's cutcherry and Sub-Magistrate's Court (to be built).
(5) The Cotton press.
(6) The Assistant Sanitary Engineer's house (Government property).
(7) The Judge's house.
(8) The Toll-gate.
(9) The District Board's office.

4. The Sanitary Commissioner has all along advocated Roza and Buduvarapet being included in the scheme. The only excuse for omitting the latter from the scheme is that it is cut off from the rest of the town by the river Hindri, but this is not sufficient reason for omitting a populous suburb containing the most important offices in the town and the only jail.

5. As I have had only a cursory look at the plan and have now no records before me, I have no intention of fully discussing the scheme, but merely of bringing to the notice of Government that the scheme is at present very incomplete and of raising the question whether it is advisable and the intention of Government that such important schemes should be submitted without any reference at all to the Collector. Municipal and Public Works budgets pass through the Collector who is invariably consulted in matters of importance and I fail to see why water schemes should form an exception.

Enclosure.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Collector of Kurnool, dated Fort St. George, 4th May 1896, No. 1363.

With reference to your letter No. 815 of 1st May 1896 I have the honour to inform you that it has not been the practice in this department to consult the Collectors of districts in regard to the details of distribution in water-supply schemes. The Chairman of the town concerned is usually consulted.

2. I have, however, requested the Assistant Sanitary Engineer at Kurnool to show you the plans and papers connected with the scheme. The whole question is now before Government.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 24th June 1896, No. 1977.

In forwarding, as requested, the accompanying extract from the proceedings of the municipal council of Kurnool with certain correspondence and an estimate in reference thereto, I have the honour to point out that the first item in Mr. Lockyer's estimate includes a portion of the first and the whole of the last items of the estimate given in my No. 1133 of 14th April 1896. The 10th item is the same as the remaining item in my estimate as above but is less in amount owing to the smaller amount of piping and fountains proposed for that suburb (Bhudavaram or Bhudwar Petta).

2. The other items are small and amount to only some Rs. 7,000—2,681= Rs. 4,319 or allowing for the piping to be removed, say Rs. 4,319—1,080=Rs. 3,239 and there is no objection to these proposals.

3. I have delayed sending in the revised estimate for Kurnool until I could render a final estimate which will be in a week or two after the tenders for pipe-laying have been accepted, but meantime I may say that I have been able to effect large reductions on the cost of the works besides those proposed by Colonel Campbell which will bring down the cost probably below the amount at present sanctioned.

4. Under these circumstances it might be well that a decision regarding extension be delayed until Government have the final estimate before them.

Enclosures.

Extract from the Proceedings of a meeting of the Municipal Councillors, Kurnool, held on the 13th June 1896.

* * * * *

The following business was transacted :—

1. Read the plan of the pipe line of the Kurnool water-works as prepared by the Assistant Sanitary Engineer.

Read also petition from some of the European gentlemen, dated 13th May 1896.

Read also petition from seve[illegible] of the inhabitants of Street No. 11, Fort, dated 16th April 1896.

Resolution.—The council fin[illegible] that in the plan of the pipe line as prepared by the Assistant Sanitary Engineer several impor[illegible]t localities have been left out of consideration and therefore resolves to propose the following [illegible]erations and additions to the existing pipe lines and to request the Government to sanction them as being very necessary :—

(1) Kottapeta is a very important suburb attached to Kurnool. The Council understands that it was left out of consideration by the Assistant Sanitary Engineer when preparing the plan of the pipe line because this suburb had not been marked in the plan of the Kurnool town furnished to him. This suburb and these other places should be connected with the pipe line, as otherwise there will be a very great difficulty for water for the inhabitants of these localities. An extension of the pipe line to these parts is therefore very necessary.

Kottapeta Police lines, travellers' bungalow, the Mission compound, Collector's bungalow, Forest-officer's bungalow and the Kurnool Club compound.

(2) *Street No.* 11, *Fort.*—The plan as prepared by the Engineer takes the pipe line along the Judge's Court Road (Street No. 13, Fort), from the Police office. There are no houses along that road. On the other hand Street No. 11, Fort, which is thickly inhabited, is left out of consideration. The pipe line along the Judge's Court Road may therefore be omitted and the line through Street No. 11, Fort, substituted therefor.

(3) *The Old Jail.*—A branch from the main line in Street No. 1, Fort, from the western corner of the Old Jail to Street No. 14, Fort, is necessary. This would be of very great use to the people living in that street and in the lanes adjoining it. Otherwise they will have to go a great distance for water.

(4) *The extension to the Water-gate.*—The main pipe line in Street No. 1, Fort, stops at the eastern end of the Old Jail and then turns to the south. It is necessary that the main line should be extended as far as the Water-gate. This short extension is very essential for the use of the people living in Streets Nos. 2 and 5, Fort.

(5) *The Cart-stand.*—This extension to the cart-stand from the main line in Street No. 1 Peta is necessary for the convenience of the public and the cattle at the cart-stand, where it is necessary to have a water trough for cattle. This is necessary also for the use of the inhabitants in Street No. 19 Peta and the adjoining lanes.

(6) *Pinjarwada.*—A branch from the main line in Street No. 1 Peta to the Pinjarwada is necessary for the use of the inhabitants living in Streets Nos. 8, 9 and 12 Peta.

(7) *Street No. 6 Peta.*—In the plan prepared by the Assistant Sanitary Engineer the pipe line stops at the middle of this long Street No. 6 Peta. It is a very thickly populated street and therefore for the convenience of the inhabitants living in that and in the adjoining streets, which are also thickly populated it is necessary to extend this line and connect it with the line in street No. 3 Peta called the Kallur Darwaja road.

(8) *Sonar Gulli and Kumbhar Gulli.*—According to the present plan there is a pipe line from the eastern end of Kumbhar Gulli running towards the south and connected with the line in Street No. 36 Peta, called the Gadthimadugu Darwaja road. The greater portion of this line is not necessary as there are not many houses in that locality. This line should therefore be omitted. Sonar Gulli (Street No. 28 Peta) and Kumbhar Gulli (Street No. 35 Peta), which are thickly populated and where there are at present water channels and reservoirs, have been left out of consideration altogether. A branch from the main line in street No. 1 Peta, running through these streets (Sonar Gulli and Kumbhar Gulli) is therefore very essential.

(9) *Staughter-house.*—The line from the Gadthimadugu gate towards the south Rampart is almost unnecessary as running through a portion of the town which is for the most part ruined. This line may be omitted and the main line in Street No. 1 Peta may be extended from the Nannur Gate as far as the slaughter-house, as it is very necessary that there should be a good supply of water at the slaughter-house to keep the premises clean.

(10) *Budhwarpeta.*—This important suburb has also been omitted from the original plan. The Collector's office is situated in this suburb and some important public offices will also be shortly constructed in this suburb. It is therefore very necessary to supply this suburb with water. The pipe line should therefore be extended to Budhwarpeta. It should be carried over the Hindri bridge from the Vizianagram Maharaja's fountain.

As regards the fountains, the council understands that according to the present scheme there are to be only 30 fountains, 25 of which are to be single-tapped and five double-tapped. This number of fountains is quite insufficient for an extensive town like Kurnool with a population of 24,376. At present there are above 150 cisterns in the town, of which 60 are public. The inhabitants of this town have enjoyed very great convenience for water for the last 30 years and it will be a hardship to them to give them only 30 fountains or 35 taps. The council therefore consider that there should be at least 45 additional fountains, of which 25 should be single-tapped and 20 double-tapped.

When the plan was originally prepared the Municipal Council was not consulted and consequently the council had no idea about the pipe lines and the number of fountains sanctioned. They were not thus in a position to make any representations on the subject earlier. The council therefore resolves to lay the matter before Government, through the Sanitary Engineer, who will be requested to submit the same to Government with his recommendation at an early date. The council learns that there is some savings in the estimate for water-works already sanctioned.

Plan and estimate for the additions and alterations proposed by the council, as prepared by the Assistant Sanitary Engineer, will also be submitted.

* * * * *

From J. E. LOCKYER, Esq., Assoc. M. Inst. C. E., F. I. Inst., Assistant Sanitary Engineer, to the Chairman, Municipal Council, Kurnool, dated 15th May 1896, No. 228.

In reply to your No. 57, dated May 1896, I have the honour to forward a tracing with the proposed extensions marked on it, also an approximate estimate of the cost of the same, the total amounting in round figures to Rs. 20,000. It is a lot of money, but the whole of the extensions are necessary, and practically the whole of them urgent.

2. It has been suggested to lay an alternative line to Budhwarpeta, as shown in black dotted lines, but this does not recommend itself. The idea is that by laying the line in this direction, it will cost little more than laying it over the bridge, and that it will serve the house I am living, the two mosques, the toll-gate, the Judge's house and pass through the jail and Collector's cutcherry compound. This is not so—it would be cheaper to lay a separate branch as far as the Judge's house and retain the present route over the bridge. Irrespective of cost, there are

engineering objections to taking this route as it would necessitate a syphon in the river bed, but as it would be probably Rs. 3,000 cheaper to lay a separate branch to the Judge's house, the black line need not be discussed any further.

3. To the lines discussed at the meeting, I have added a short branch to Pinjarwada—this will serve a very large number of people and approval of the council.

From J. A. JONES, Esq., Mem. Inst. C.E., F.R.S.E., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 23rd July 1896, No. 2279.

With reference to G.O., Mis. No. 846 M., dated the 15th May 1896, and in continuation of paragraph 3 of my No. 1977, dated 24th June 1896, I have now the honour to forward the revised estimates for Kurnool water-supply, amounting to Rs. 2,37,555, which is less than the amount estimated in my No. 2172 of 6th August 1895 (the present sanction) and this notwithstanding the heavy increases which were expected to result from the acceptance of the only practicable tender for the head works.

2. I forward estimates in detail and also a comparative statement showing how the anticipated cost of the works stood at each stage.

3. It was impossible at the stage which the work had reached on the date of the receipt of the Government Order above quoted to consider the question of omitting any portion of the work, but such proposal would not have been feasible owing to the amount of silt in the water to be purified and supplied and the Sanitary Commissioner is even now doubtful whether sufficient purification will be ensured.

4. But notwithstanding that the works will be carried out in their entirety, it will be satisfactory to Government to find that they can be so without the cost being much increased over the amount mentioned in my No. 2172 of 6th August 1895. The cost indeed would have been under that amount did I not consider that a provision of Rs. 3,000 should be made for quarters for workmen and watchmen huts on the works extending over half a mile in length.

5. Colonel Campbell's proposals would have allowed the reduction of the estimate by Rs. 5,876. By careful consideration of the whole design and amendments in details and by reason that exchange has considerably advanced, I have in addition been able to save no less than Rs. 25,554.

6. The various items are shown in the comparative statement; had there not been unavoidable increases the reduction would have been still more.

7. Taking the items *seriatim*, the first item shows a large excess. Mr. Ellis' design showed the water to be drawn from the canal on the same side as the engine-house. This was found impossible owing to the large amount of silt and a resultant sand bank found there. To have retained the inlet on that side would have meant continual blocking. The inlet arrangements had therefore to be arranged for on the opposite side. The inlet main is laid in the same trench as the main to the town and the alteration also assists in a saving in regard to the engine-house itself, so that the excess is counterbalanced by savings on these items of engine-house and laying and jointing pipes.

8. The reduction shown against engine and boiler house is due to the above and to baling having been found necessary and to a saving in foundation due to suitable rock being higher than expected.

9. The next item saved on is the pumping main. This was first designed to enter at the side of the settling tank furthest from the engine-house and the outlet for the settling tank was to have been from the opposite side. But as the former is of iron and the latter of stoneware and therefore much cheaper their positions were reversed and the saving thus effected. For the same reason Rs. 85 is saved on laying and jointing pumping main.

10. There is a very large saving on the settling tank. Rock was found nearer the surface than expected and the bottom of the tank was raised 2 feet, there being ample embankment to maintain the tank of the same capacity, a large saving in

excavation results. A further saving is caused by the substitution of dry stone pitching for hammer dressed rubble in soorkie as proposed in the original estimate or in lime as proposed by Colonel Campbell. This was possible because it was found by experiment that the soil in which the tank was excavated was water tight and it is believed that the process of settling will tend to fill in the joints with silt. The central walls is in rubble stone hammer dressed in lime instead of soorkie. The total saving altogether is Rs. 13,602.

11. On the filter beds there is a small saving (Rs. 911) due to the substitution of vertical for sloping walls, the area of the beds remaining the same.

12. On the service reservoir Colonel Campbell proposed a saving of Rs. 1,021 calculated on the basis that the contractor would execute rubble arching at Rs. 40–8–0 for 100 cubic feet. He eventually, however, agreed to do the arching at Rs. 24 per 100 cubit feet, for such portions as were of rubble and Rs. 45 for dressed bond stones. Colonel Campbell's saving was therefore increased by Rs. 2,005 making in all Rs. 3,026.

13. The saving of Rs. 8,094 in supply of pipes, &c., is mainly due to rise in exchange. The exchange on 6th August 1895 was 1*s*. $1\frac{5}{32}d$. at the time the contract for pipes was accepted it was 1*s* $2\frac{29}{32}d$, there are, however, variations in rates between the estimate and accepted tender.

14. *Laying and jointing Main and Branches.*—This work is not yet done. The accepted tender for this work amounts to Rs. 12,220. There are always unforeseen extras and it has been deemed advisable to enter the figure of Rs. 14,500 for this work; this gives a slight increase of Rs. 1,200.

15. *As to Tools and Plant.*—These are difficult to estimate the cost of, but the original figure which was due to $2\frac{1}{2}$ per cent. on the estimate has been reduced from Rs. 5,000 to Rs. 3,200.

16. *Establishment, Office and Contingencies.*—The original figure is due to its being $7\frac{1}{2}$ per cent. on the estimate. Basing the revised figures on past expenditure and supposing that the works will be completed within ten months, the revised figure of Rs. 22,000 has been entered, showing an excess of Rs. 4,000. If the works are completed sooner, as they may be, the figure will be less.

17. The amount of unforeseen contingencies was calculated according to order at 5 per cent. on the amount of estimate. Past expenditure shows that this amount is not likely to be approached and a reduction from Rs. 11,400 to Rs. 5,000 or of Rupees 6,400 has been made.

18. The result as previously stated is a revised estimate of Rs. 2,37,855 against Rs. 2,39,380. But it is advisable as pointed out to add Rs. 3,000 for quarters and watchmen sheds. The total of the estimate then stands at Rs. 2,40,555 or about the same as the present sanction.

19. I trust Government will consider that their orders as to every economy being effected have been attended to as far as consistent with the proper execution of the works.

20. Government have already had reports as to the alterations and extensions proposed in the distribution mains by the residents of Kurnool, &c. If Government are prepared to give effect to any of these proposals, it is desirable that very early order should issue, so that pipes, &c., may be got, otherwise increases must take place in the cost of establishment, contingencies, &c.

Reference No. 956, dated 15th August 1896.

The Sanitary Engineer will be requested to report at an early date how far the estimate submitted by the Assistant Sanitary Engineer in his letter, No. 228, of 15th May 1896, provides for the extensions proposed by the municipal council in its

resolution of the 13th June last and to send up a plan showing any difference that there may be and the reasons for them. The streets referred to in the resolution should also be marked on the plan.

(By Order)

(Signed) W. W. PHILLIPS,
Ag. Assistant Secretary.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 20th August 1896, No. 2560.

With reference to official memorandum No. 956, dated 15th August 1896, I have the honour to forward herewith a plan showing the proposed lines of piping referred to in Municipal Council's resolution, dated 13th June last, and to state that the plan and estimate submitted by the Assistant Sanitary Engineer, Kurnool, in his letter, No. 228 of 15th May last, provides for all the extensions proposed in the resolution, but for 20 extra fountains only, instead of 45 fountains as asked for by the council.

2. There is already in the sanctioned scheme 30 fountains and if 45 additional taps are now to be sanctioned, this will give one fountain for every 354 people. If only 20 additional fountains are sanctioned, this will give one for every 500 people.

3. I consider 20 additional fountains and six bullock services, together with the number above already sanctioned, as sufficient. We ordinarily estimate for one fountain for every 1,000 people.

4. Mr. Lockyer's estimate included the cost of 20 fountains and six bullock services with a total of Rs. 20,000. The estimate now forwarded includes 45 fountains as well as all the extensions required by the Municipal Council and amounts to Rs. 26,000. If 25 fountains (single and double taps) be omitted, this estimate will be reduced to Rs. 22,650. The reason for the increase over the Assistant Sanitary Engineer's estimate is that it is thought desirable to have 4″ instead of 3″ pipes to Bhudawarampet and to Mission house compound to admit of a future extension to the suburb of Roza, also to provide for 10 double-tap and 10 single-tap fountains instead of 20 single-tap fountains provided for in the Assistant Sanitary Engineer's estimate.

5. The plan shows distinctly the streets for which pipes in the sanctioned scheme are to be omitted (these shown by dotted blue lines) and the extra lines required by the council (these being shown by full red lines).

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 25th August 1896, No. 2588.

In continuation of my No. 2560, dated 20th August 1896, I have the honour to state, that, of the extensions proposed by the Municipal Council in its resolution of the 13th June last, the extension to Pinjarwada (*vide* plan forwarded with my No. 1977, dated 24th June 1896) has, by an oversight, not been included in the estimates furnished with my No. 2560 of 20th August 1896.

2. The estimated cost of the line to Pinjarwada (370 feet of 3″ piping) amounts to Rs. 462. The estimate for *all* the extensions proposed by the council including 45 fountains will now amount to Rs. 26,000 + 462 or Rs. 26,462. If 25 fountains (single and double taps) be omitted, the estimate will be reduced to Rs. 23,112.

From M.R.Ry. T. CHIDAMBARA RAO, Chairman, Municipal Council, Kurnool, to the Chief Secretary to Government, dated Kurnool, 25th August 1896, No. 310.

I have the honour to submit herewith a copy of the resolution passed at a special meeting of the Municipal Councillors, Kurnool, held on the 22nd August 1896, for considering the proposals of Mr. W. M. Thorburn (District Judge) as set forth in his letter to the Chief Secretary to Government, dated the 20th August 1896, a copy of which he sent to the municipality.

Enclosure.

Proceedings of a special meeting of the Municipal Councillors, Kurnool, held on the 22nd August 1896, No. 11.

* * * * *

Read letter from Mr. Thorburn, dated 21st August 1896, forwarding a copy of his letter, dated 20th August 1896, addressed to the Chief Secretary to Government, making certain proposals in respect of the Kurnool water-works.

Resolution.—The following resolution was passed :—

The proposals of Mr. Thorburn have the unanimous approval of the council. The council having already (in its Resolution No. 1, dated 13th June 1896, a copy of which was submitted to Government through the Sanitary Engineer on 18th June 1896,) decided about the necessity for a branch pipe line to the north of the main line for serving the northern group of houses in the civil station, it is at present necessary to consider only about the three lines—1,900 feet, 500 feet and 1,100 feet in length—referred to in paragraphs 7 and 8 of Mr. Thorburn's letter for serving the southern group of houses. Of these three lines the council considers the second line, 500 feet long, unnecessary. The total length of the other two lines comes up to about 3,000 feet and the cost of laying them amounts to about Rs. 2,500. If it be possible to make any reductions in the rates as suggested by Mr. Thorburn, it will be not necessary to exceed the estimates already sanctioned and to incur any additional expenditure on account of these branch lines. But even if it be found necessary to incur any additional expenditure, the council does not consider the additional expenditure too much, having regard to the very large amount (over 2½ lakhs of rupees) that is being spent on account of the water works and to the heavy taxes which the owners and occupiers of the buildings to be served by these lines pay to the municipality. By laying these lines the municipality will be in a position to collect from the owners of the southern group of houses a good sum in the shape of water-tax, which it will not be entitled to levy otherwise. If the proposed branch lines be sanctioned, the requirements of all the residents of the civil station will have been attended to and there will then be no ground for complaint that anybody has been shut out from the benefits of the water works so generously sanctioned by Government. The council, therefore, resolves to request Government to sanction these branch lines, even if it be necessary to incur an additional expenditure, which they consider not at all heavy under the circumstances.

The council takes this opportunity to observe that it would not have been necessary either for the council, the Sanitary Engineer's department or the rate payers to trouble Government with frequent requests for additions or alterations in the water-supply scheme, if the municipality had been given at the outset an opportunity of expressing its views and requirements in respect of the water-supply scheme.

A copy of this Resolution will be submitted to Government.

Copy also to Mr. Thorburn.

From W. M. THORBURN, Esq., District Judge, Kurnool, dated 21st August 1896.

Endorsement No. 1108, dated 25th September 1896.

Transferred to the Public Works Department . . . . with the request that the Chief Engineer will favour Government with his opinion . . . .

(By Order)

(Signed) W. W. PHILLIPS,
Ag. Assistant Secretary.

Note by Colonel D. McNEIL CAMPBELL, R.E., Chief Engineer, Public Works Department, dated 5th November 1896.

The chief differences between Mr. Thorburn's proposals and those of the Sanitary Engineer are that the former considers that two pipes—one 1,900′ and the other 1,100′ long—are preferable to the round about 6,000′ line proposed by the latter, also that 2½″ and 2″ pipes would answer as well as the 3″ proposed by Mr. Jones. From an engineering point of view the line proposed by Mr. Jones is preferable to the two shorter lines, as there are objections to "dead" or "loose" ends if they can be avoided ; they are a source of impurity and interfere with the free circulation of water. Moreover, with the continuous line, water can be supplied to each fountain from two directions, so that in the event of damage to a pipe, the supply need not be stopped. Of course the two lines proposed by Mr. Thorburn are much cheaper, and if it is thought that sanitary requirements and convenience of supply are not essential in Kurnool, they may be adopted ; for my own part, I would go further than Mr. Jones has and making the north line continuous by joining it on to the line shown, as proposed by the Assistant Sanitary Engineer on tracing dated 6th December 1892.

2. As regards the size of pipes, Mr. Thorburn is wrong when he says the diameter is a simple matter of hydraulics, as there are limits to the size of pipes that should be used. I have no means of ascertaining whether the 2½″ and 2″ pipes proposed by Mr. Thorburn would give sufficient discharges as I have no levels ; but the supply required being very small, I think there is no doubt that they would.

3. A minimum diameter of 3″ is generally considered sufficient for distribution pipes. Burton, in his book on Water-supply, lays down 5″ as a maximum. Taning suggests 8″. Others lay down that no pipe less than 3″ should be carried further than 400′; but this is again a question of cost, and if it is thought that in Kurnool the rules ordinarily applied to water works need not be adhered to, then 2½″ and 2″ pipes may be used. Altogether from an engineering and sanitary point of view I prefer Mr. Jones' arrangement, though I would go further and make the northern line continuous ; from a financial point of view Mr. Thorburn's are undoubtedly the best, they will be much cheaper and will answer in a way though not so satisfactory as the other arrangement. Mr. Thorburn goes into detail as regards the cost of 2″ and 2½″ piping and he complains of the high prices charged by Mr. Jones ; but as the latter does not propose to use either 2″ or 2½″ pipes, I do not see how any comparison can be made ; however, Mr. Thorburn seems to think that the cost of 3″ pipes as given by the Sanitary Engineer is high, and the following gives a comparison of the charges of different firms, cost of carriage to site of works being added :—

3″ pipes cast iron.

Mr. Jones' price Rs. 1–4–0 per foot, including bends, valves and laying.

	Rs.	A.	P.	
Burns & Co.	1	0	10	pipes only.
Richardson and Cruddas	0	13	0	,,
Massey & Co.	0	12	9	,,
Oakes & Co.	0	14	8	,,
India Office	0	11	8	,,

Without knowing the lines selected for the pipes and the nature of the soil, it is not possible to tell the cost of laying : Mr. Jones' estimate seems somewhat high, but no doubt he would give details explaining the reason.

I can say nothing about the prices charged by Mr. Jones for stand pipes, as there are very many different patterns, the cost of each of which is different.

* * * * *

Note by Colonel D. McNEIL CAMPBELL, R.E., Chief Engineer, Public Works Department, dated 4th December 1896.

The last sanction in connection with the Kurnool water-supply scheme is that conveyed in G.O., No. 1082 M., dated 9th July 1895, and amounts to Rs. 2,39,380.

2. Subsequently, in consequence of a petition from certain residents of Kurnool, dated 27th February 1896, the municipal council, in its resolutions, dated 13th June 1896 and 22nd August 1896, recommends certain further extensions, the execution of which, the council considers, will render the scheme complete and satisfy the requirements of all the inhabitants of the civil station, leaving no grounds for further complaint.

3. To provide for these extensions, the Sanitary Engineer has submitted for sanction revised estimates as follows :—

		Rs.
(i)	A revised estimate, dated 23rd July 1896, amounting to ..	2,37,555
(ii)	A supplemental estimate, dated 20th August 1896, for Rupees 26,000 corrected in Sanitary Engineer's No. 2588 of 25th August 1896, to	26,462
	Total ..	2,64,017

4. This total apparently does not include a sum of Rs. 3,000, which the Sanitary Engineer in paragraph 18 of his letter, No. 2279, of 23rd July 1896, considers "advisable to provide for quarters and watchmen's sheds;" but this amount may, I think, be omitted; the amount for which sanction is now asked for will be Rs. 2,64,017, being an excess of Rs. 24,637 on the last sanction.

5. I have already given my opinion on the supplemental estimate of Rs. 26,462 in my note, dated 9th November 1896, No. 3980-C, in which I approved of Mr. Jones' lines for and sizes of piping; but I qualified this by stating to the effect that, if the financial position of the Kurnool Municipality be such that they could not afford to carry out a water-supply on the most approved principles, the suggestions of Mr. Thorburn might be accepted, as no doubt, they would answer the purpose in a way.

6. As regards the revision of the original estimates, I have little to say; the rates are fair. The cost of piping, as given by Mr. Jones, is Rs. 118 per ton. This is almost exactly the same as the India Office prices. Burn & Co.'s price would be Rs. 175 delivered in Kurnool, Messrs. Richardson and Cruddas Rs. 148.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Secretary to Government, Local and Municipal Department, dated Fort St. George, 7th December 1896, No. 3409.

I have the honour to invite your attention to correspondence ending with my letter, No. 2588, dated 25th August 1896, with reference to pipe extensions in the town of Kurnool, and to request that orders may be passed on the subject as early as possible. My reason for making this request is that it is advisable that the extra pipes, if they are to be sanctioned, should be laid by the present water works staff, and that delay in sanction will cause staff to be retained longer than was anticipated and thus increase cost of supervision.

ORDER—No. 76 M., dated 21st January 1897.

The revised estimate of Rs. 2,40,555 for the water-supply scheme of Kurnool submitted by the Sanitary Engineer, and the extension of the works proposed by the municipal council, which, as slightly modified by Mr. Jones, is estimated to cost Rs. 23,112, are sanctioned. As observed by the Chief Engineer in paragraph 3 of his note, dated 5th November 1896, the rates charged for pipes, including the cost of laying, in Mr. Jones' estimate appear to be somewhat high. The rates should accordingly be carefully reconsidered and the required pipes procured in the Indian market if they can be had at less cost. The pattern of standpipe which consistently with efficiency is cheapest should also be selected.

2. The total cost of the scheme including the extensions now sanctioned amounts to Rs. 2,63,667 or Rs. 24,287 in excess of the estimate approved in G.O., No. 1082 M., dated 9th July 1895. The Government will be prepared to make a grant of three-fourths of this additional cost and to lend the balance at 4¼ per cent. interest repayable in thirty years. The municipal council will be requested to submit the necessary applications without delay.

3. The Government is surprised to learn from Mr. Mullaly that he saw the plan of distribution of the water works for the first time on the morning of the 11th of May 1896. He has long been Collector of the district and was aware of the general progress of the project; and he might, at any time, have called for the plans and other documents relating to it and kept himself in touch with the discussions regarding it, as it was his duty to do. It is observed that the municipal council has made a similar complaint of not being afforded a sufficient opportunity of indicating its views and requirements in respect of the scheme. The Sanitary Engineer should in all such cases keep both the local body concerned and the Collector fully informed regarding the main lines of the projects in which they are interested, consulting them freely where necessary.

4. Mr. Thorburn will be informed that the terms and tone of his reference to the Chief Engineer in paragraph 14 of his letter, dated the 21st August 1896, are improper.

(True Extract.)

G. S. FORBES,
Secretary to Government.

To the Chairman, Municipal Council, Kurnool.
„ the Collector of Kurnool.
„ the Sanitary Board.
„ the Sanitary Commissioner.
„ the Sanitary Engineer (with plans and estimates).
„ the Public Works Department.
„ W. M. Thorburn, Esq., District Judge, Kurnool.

Exd. C. M. Thumbuswamy.

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