

L. & M.
2,000-8-8-96

Local & Munl. (1895) Department.

MISCELLANEOUS.

G.O., No. 788 m

DATED 6th May 1895.

[Despatch Abstract.]

Water-supply.

Requesting the Sanitary Engineer to revise the estimates for the scheme of----for Kurnool with reference to the Chief Engineer's remarks and to re-submit them for the sanction of Government.

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.

Read the form
22-8-93-1,000.
No. 928
788

GOVERNMENT OF MADRAS.

OFFICE OF SANITARY ENGINEER,

Fort St. George, 3rd April 1895.

From

J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E.,

SANITARY ENGINEER TO GOVERNMENT,

To

The Chief Engineer
Public Works Department.

SIR,

With reference to your memo no 1383 dated 2nd April 1895 on the Kurnool Water Works plans and estimate I have the honor to forward an explanatory note and also a draft resolution for your initials if you now approve of the scheme.

2. I shall be much obliged if you can express very early approval as I have an Asst Engineer at Kurnool practically doing nothing waiting until sanction is accorded.

I have the honor to be,
 Sir,
 Your most obedt servant.

J. Jones

Sanitary Engineer

Enc 82298 9/7

1895

Encls 2

Recd: 5.4.95

The Sanitary Engineer
to Government

The Chief Engineer
Public Works Department

928

Dated 3rd April 1895
Desp. 4

Encls. 2

Subject

Revised Scheme of Kurnool Water Supply

Forwarding an explanatory
note with a draft resolution for his
initials and early approval.

Explanatory Note by the Sanitary Engineer
to Government.

While Darcy's formula gives a discharge of 365 gallons for a 10" Pipe with a fall of 1.3 in 1000, the formula which is used in this office and on which pipe discharge tables are ordinarily based gives lower results. By formula $V = 140 \sqrt{RS} - 11 \sqrt{R.S}$, if S is 1.3 in 1000, the discharge for a ten inch main will be 324 gallons, and if S is 1.29 in 1000, the discharge will be about 317 gallons. If the pipe is slightly large it is because a 9" would be too small and there will be less lift at pumping station with a pipe slightly larger than actually necessary. The scheme provides for a population of 30,000 people at 15 gallons per head per day of 24 hours or only 315 gallons per minute. The delivery mains to the town from the service reservoir are calculated to pass one-half of the daily supply in 6 hours or the whole supply in 12 hours. This accounts for providing a larger delivery main to town.

The discrepancy
being on the
right side. This
may be accepted

Yes. But without
knowing the fall
of the delivery main
we can not tell that
the diameter (12")
of the delivery
main is correct

town from Service Reservoir than the pumping main.

2. Mr Ellis adopts 315 gallons as the quantity to be pumped, as the fluctuations of maximum and minimum demands are compensated by the settling Reservoir whence it is now proposed to draw water entirely by gravitation. In para 14 of the Sanitary Engineer's letter No. 2774 dated 6th December 1892 the undersigned assumed the maximum supply as the quantity to be pumped, as no Service Reservoir between the Engine and the town was then proposed. There would appear therefore no reason for having the Engine power to the extent originally proposed.

3. The cisterns referred to, are intended for silt traps but are also necessary to avoid Cast Iron Specials for conducting water to the lower level to feed filter beds.

4. Since writing the memorandum No. 1338 C dated 21st March 1893, the Acting Chief Engineer in his subsequent memorandum dated 12 July 1893, embodied in G.C.,

This I do not understand. If 315 gallons per minute are drawn off from the settling Reservoir in 24 hours it must be necessary to pump 630 gallons into the Reservoir in 12 hours. For this purpose a 9 H.P. Engine will, with the altered lift, be required. If they fill the Reservoir with the daily supply before commencing to draw off, a 9 H.P. engine may suit.

They may be passed

crossed

may pass
V. 1114
D. 15. 7. 93

The difference being on the right side their may be passed

It is not clear what he means when he says that he can back for masonry foundations.

No. 1114 h.c., dated 24 August 1893, Local and Municipal, approves of the capacity of the settling tanks to retain sufficient water for a fortnight's consumption, as the cost of larger tanks is beyond the means of the Municipality. There is room for future extension, if it were found necessary.

This course was approved by Government. 5. Though Molesworth gives 1 sq. yard of filter for each 700 gallons in 24 hours as sufficient - this has long been found to be bad practice. In the Bombay Water Works the rate varies when filter is clean from 510 gallons per sq. yard to 322 with filter dirty and the average is only 400 gallons per sq. yard of sand area per 24 hours and this maximum of 400 is not exceeded in London and Sir J. Fowler recommends it should never be so.

6. The concrete backing in place of masonry foundations at Service Reservoir will reduce the estimate by Rs 200 and can be adopted if desirable.

Office of Sanitary Engineer to Govt
10th June, 3rd April 95
Sanitary Engineer to Govt

1895

The Sanitary Engineer
to Government

Dated 3rd April 1895

Revised Scheme of Kurnool Water Supply

Explanatory note on the —

1/1344 mof 95

No. 211

GOVERNMENT OF MADRAS.

OFFICE OF SANITARY ENGINEER,
Fort St. George, 28th January 1895.

From

R. E. ELLIS, Esq., ASSOC. M. INST. C.E.,

ACTING SANITARY ENGINEER TO GOVERNMENT,

To

The Hon'ble Col. J. Sanyerick R. E.
President, Sanitary Board, Madras.

SIR,

With reference to G.O. No. 2380 of date
16th November 1894, Local and Municipal I have
the honor to forward herewith a draft resolution
on the Revised Scheme of Kurnool Water Supply
I should be glad if this matter could be treated
as urgent in order that the work may be proceeded
with at an early date.

I have the honor to be

Sir

Your most obed^t servant

R. E. Ellis

Ag. Sanitary Engineer to Govt

h/ls

1895

The Ag. Sanitary Engineer
to Government

The President, Sanitary Board
Madras.

N^o 211

Dated 28th
Desp^d 29th
Recd 30th } January 1895

Enes. 7^x
Subject (book of plans)

Revised Scheme of Kurnool Water Supply

Forwarding a draft
resolution on the _____

4
1374 mof 45

For examination

Cross
3/95

9/ No.

Local & Municipal Dept.

Government of Madras. CURRENT No. 1374/M

PUBLIC WORKS DEPARTMENT.

MEMORANDUM.

Dated Madras, 1895.

Letter from the Sanitary Engineer N^o 211 dated
28th January 1895.

Note by the Chief Engineer P.W. Dept.
N^o 1383 C dated 2nd April 1895:—

In the absence of details connected with
the original scheme, it is not possible to
compare its advantages with those of the
revised scheme. The latter must therefore
be treated on its merits with the information
available.

I. It is proposed to pump direct into the
Settling Reservoir through a 10 inch pipe with
a fall of 1.3' in 1000 feet. This by Darcy's
formula $v = 109\sqrt{R.S.}$, will give a discharge
of 365 gallons per minute. It is not known
how the Acting Sanitary Engineer arrived
at 315 gallons as a result. Again the
same water that is passed into the
Settling Reservoir through a 10 inch pipe
is eventually passed through a 12 inch
main to the town. The fall of the main
is not stated: therefore the reason for the

increase of diameter is not dear.

II. Mr. Jones in para 14 of his report dated 6th December 1892 - No 2774 - calculated the quantity of water required to be 630 gallons per minute: and to get this discharge he provided a 5 H.P. Engine with a lift of 26.5 feet; but as the lift is now increased to 45.11 feet the horse power will have to be increased to 9 H.P. to give the same supply. Mr. Ellis apparently allows for only 315 gallons. though 630 are required for the population. for the sake of restricting the engine to the 5 H.P. originally provided; it would in the Chief Engineer's opinion be better to adhere to the original quantity and increase the power.

III. The necessity for a cistern at each end of the masonry conduit is not explained. If the cisterns are intended as silt traps, it should have been so stated in the report.

IV. In memorandum No. 1338 C dated 28th March 1893 the Acting Chief Engineer P.W. Dept. expressed his conviction to the effect that the Settling Reservoir should be capable of holding six weeks' supply. It is calculated however that the reservoir according to the design submitted, will not hold more than a supply for a fortnight.

V. The theoretically correct area of the filter beds may be calculated at 5787 square feet. (as shown in the plan, is somewhat excessive. Three filter beds

info 1114
393-

each 44' x 44' giving a total area of 5808 would answer requirements, if formed as follows:-
2 feet 6 inches of fine sand.
6 inches of common sand
6 inches of shelly.
2 feet 6 inches of gravel.
perforated pipes being laid in lowest stratum (vide Moleworth); but the error is on the side of safety.

VI. The Chief Engineer has noticed more than once the still prevalent antipathy to concrete foundations. Here attention is drawn to the large quantity of underground masonry which might, with advantage be replaced by concrete.

Under these circumstances the estimates are returned for revision.

(Sd) John Pennycook - Col R.E.,
Chief Engineer P.W.D.

Letter from the Sanitary Engineer No 928
d/3-April 1895.

Note by the Chief Engineer P.W. Dept.
dated 18th April 1895.

Referring to the Sanitary Engineer's explanatory note dated 3-April 1895

the undersigned is willing to accept Mr. Jones' calculated discharge of 324 gallons since the discrepancy between that and 369 gallons is on the right side. It is observed, however, that there are no means of ascertaining whether the diameter - 12 inches - of the delivery main to the town is correct; for though the Sanitary Engineer explains the necessity for having it larger than the 10 inch pipe, he omits to give its fall, without knowing which it is not possible to tell whether the diameter is suited to the purpose required. The diameter of the delivery main is therefore accepted provisionally only.

2. With reference to para 2 of the explanatory note it is considered that if the reservoir be filled with 14 days supply before commencing to draw off, a 5 H.P. engine may suit. The points alluded to in paras 3, 4 and 5 are conceded.

3. As stated in para 6 of his note No. 1383C dated 2^d April 1895, the Chief Engineer considers that the large quantity of underground masonry might

be replaced by concrete, and the Sanitary Engineer's allusion, in para 6 of his explanatory note regarding the substitution of concrete backing for masonry foundations is not understood.

(S.) John Penney, C.E.
Chief Engineer P.W.D.

No. 33 D of 22nd April 1895

Transferred to the Local & Municipal Department. It is considered in the P.W. Department that, subject to the modifications suggested by the Chief Engineer, the revised estimate may be sanctioned.

John Penney, C.E.
Secretary to Government, P.W.D.

To,
The Local and Municipal Dept.

Draft Resolution

Government of Madras.

SANITARY BOARD OFFICE.

SANITARY ENGINEERING DEPARTMENT.

Mr. J. A. Jones.

PROCEEDINGS of the Board, No. , dated

READ report dated 28th January 1895 No. from
the Ag Sanitary Engineer to Government
on Kurnool Water Supply Scheme together
with revised plans and estimates amount-
ing to Rs 222,440.

Read also note No. 1383C dated 2nd April 1895
by the Chief Engineer, Public Works Department.

Read also explanatory note of the San-
itary Engineer to Government.

Resolved that the above report and
notes with revised plans and revised es-
timates be submitted to Government for
approval and sanction.

(True Extract)

Joint Secretary

To.
The Chief Secretary to Government-
Local and Municipal Departments



CS
100

Order

The Banking Company

has received from the

Government of India

the sum of Rs. 10,00,000

in the name of the

Government of India

for the purpose of

the establishment of

a branch of the

Banking Company

at the place of

the Government of

India.

The sum of Rs. 10,00,000

is hereby advanced

to the Banking Company

for the purpose of

Order

The Banking Company
has received from the
Government of India
the sum of Rs. 10,00,000
in the name of the
Government of India
for the purpose of
the establishment of
a branch of the
Banking Company
at the place of
the Government of
India.

Page 1
2676/95

1374 mof 95

[9-3

LOCAL AND MUNICIPAL DEPARTMENT

Municipal Dept.
CURRENT No. 1374

From

The Public Works Department

E

No. 33 D

Dated 22-4-95

Received 25-4-95

Enclosures

SUBJECT.

Transferring correspondence regarding the revised scheme of Hurmool water supply.

6650 24-5-94
2380 16-11-94
571 24-4-94
15410 21-11-93
N/410 24-8-93

C.S.
Misc.

Order.

The Sanitary Engineer will be requested to revise the estimates with reference to the Chief Engineer's remarks, and to submit them to Government for sanction at an early date.

1.2
29/4/95 C.S.
29-IV-

4/5/95

Note: It is understood that the plans and estimates are now with the Sanitary Engineer.

To The Sanitary Engineer
" P.W. Dept.

(with order)

29/4/95

29/4/95

BACK PAPER, No.

OF 189

READ AGAIN ORDER OF GOVERNMENT, DATED 189, No. , MISCELLANEOUS.

FURTHER PAPER, No.

OF 189

ENCLOSURES.

CURRENT No.

STATEMENT WITH DITTO.

ORDER OF GOVERNMENT

STATEMENT WITH DITTO.

PAPERS NOT FILED UP, BEING MEANT FOR DETACH IN ORIGINAL (not paged).

N.B.—

- A = Copy in full.
- B = Not to be copied.
- P = Copy abstract only.
- Q = Copy heading only.

Copied by

Examined by

INDEXED.

Miscellaneous.

LOCAL AND MUNICIPAL DEPT.

G.O., DATED 8-5-95

No. 788 M.

When given for copying.

[Despatch Abstract.]

Water Supply

Requesting the Santh
Engr. to revise the estimates
for the scheme of — for
Kumool, with reference to
the Chief Engineer's remarks,
and to resubmit them
for the sanction of Govt.

When given for copying
When copied
When examined
When signed

189

READ AGAIN G.O., No.
189

DATED

CURRENT No.

ENCLOSURES TO G. No.

ORDER OF GOVERNMENT

A A A A A A A

LETTER OF GOVERNMENT

STATEMENT WITH DITTO.

PAPERS NOT FILED UP, BEING MEANT FOR DESPATCH
IN ORIGINAL.

N.B.

A = Copy in full.
B = Not to be copied.
P = Copy abstract only.
Q = Copy heading only.