

10 1300 W. of 2nd May 1888

Communicated to
the Suptg Engrs. V
Circle in continuation
of G. O. 969 W. of 24th
March 1888.

1st of 10th
W.

Govt. of (1888) Madras.
MILITARY.

To
THE QUARTER MASTER GENERAL,
&c., &c., &c.

Dated April,

Issued

Recd.

Encl.

G.O., 25 April 1888, No. 2787

10 1300 W. of 2nd May 1888

APRIL.
Nos.

Medical Department—
Establishments.

Erskine, Miss, Nursing Sister.—Telegram from the Government of India to the Government of Bombay requesting that—who left Gravesend on 1st March last per P. and O. Steamer may be directed to proceed to Bangalore for duty under Miss Oxley, communicated to His Excellency the Commander-in-Chief and departments concerned.

L. E. V. Circle
Engrs. P. W. A.

MILITARY DEPARTMENT, APRIL 1888, No.

GOVERNMENT OF MADRAS.
MILITARY DEPARTMENT.

Medical Department—Establishments.

Read the following:—

No. Copy of a telegram from the Secretary to the Government of India, Military Department, Simla, to the Secretary to the Government of Bombay, Military Department, Bombay; dated 4th April 1888, No. 1156-D.

Please direct Miss Erskine, Nursing Sister, who left Gravesend on 1st March per P. & O. Steamer, to proceed to Bangalore for duty under Miss Oxley.

No. 1156-D.

Medical Department.

Copy forwarded to the Secretary to the Government of Madras, Military Department, in continuation of Military Department No. 724-C, dated 9th March 1888, for the information of the Governor in Council.

(By Order.)

SIMLA,
4th April 1888.

(Signed) A. C. TOKER,
Depy. Secy. to the Govt. of India.

No. ORDER THEREON, 25 April 1888, No. 2787.

Communicated for the information of His Excellency the Commander-in-Chief and departments concerned, in continuation of Proceedings of Government, No. 1937, dated 19th March 1888.

(True Extract.)

(Signed) A. KENNEY-HERBERT, Brigdr.-Genl.,
Secretary to Government.

To the Quarter Master General.
" Adjutant-General.
" Surgeon-General, Her Majesty's Forces, Madras.
" Controller of Military Accounts.
" Public Works Department.

Exd. E. C. Shunker.

GOVERNMENT OF MADRAS.

MILITARY DEPARTMENT.

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Medical Department.

Copy forwarded to the Secretary to the Government of Madras, Military
Department, in continuation of Military Department No. 724-C, dated 9th March
1888, for the information of the Governor in Council.

(By Order.)

SIMLA,
4th April 1888.

(Signed) A. C. TOKER,
Depty. Secy. to the Govt. of India.

No. ORDER THEREON, 25th April 1888, No. 2783.

Communicated for the information of His Excellency the Commander-in-Chief
and departments concerned, in continuation of Proceedings of Government, No. 1937,
dated 19th March 1888.

(True Extract.)

(Signed) A. KENNEY-HERBERT, Brigdr.-Genl.,
Secretary to Government.

To the Quarter Master General.

„ Adjutant-General.
„ Surgeon-General, Her Majesty's Forces, Madras.
„ Controller of Military Accounts.
„ Public Works Department.

Exd. E. C. Shunker.

No 1300 W. d. 24th March 1888

Communicated to
the Suptg. Engrs & Circle
in continuation of G.O
969 W. d. 24th March 1888

Edw. J. O. S.
W.

Gobt. of (1888) Madras.
MILITARY.

To
THE QUARTER MASTER GENERAL,
&c., &c., &c.

Dated April,

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G.O., 25th April 1888, No. 2787

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departments concerned.

With order

Lt. V. Circle
Engr. P. W. A.

16TH APRIL 1888, No. 355 M., LOCAL AND MUNICIPAL.

GOVERNMENT OF MADRAS.
LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following papers :—

From M. W. ELLIOT, Esq., Chairman, Municipal Council, Cuddapah, to the
Chief Secretary to Government (through the Collector of Cuddapah), dated
Cuddapah, 24th February 1888, No. 157.

In compliance with the request of the Municipal Council contained in their resolu-
tion,* dated 24th February 1888, I have
the honor to submit, for the favorable
consideration and orders of Government,
letter, No. 7,† dated 23rd instant, from the

* Copy enclosed.
† With its enclosures (5).

Executive Engineer in charge of the Cuddapah Water-works, making certain proposals
modifying Colonel Drake-Brockman's scheme for supplying the town of Cuddapah with
water from the Bugga springs.

ENCLOSURE.

From J. C. JOHNSTON, Esq., Executive Engineer, Cuddapah Division, to the Chairman,
Municipal Council, Cuddapah, dated 23rd February 1888, No. 7.

With reference to inspection notes of the Superintending Engineer, III Circle, on the
Cuddapah Water-supply Project, with remarks
thereon by the Chief Engineer, Public Works
Department—copies given to you personally—
I have the honor to lay before the Council
an alternative scheme to that of Major Brock-
man's in respect to the conduit and main pipe
only. I do not propose to make any alteration in the details of supply in the town whatever.

2. The alterations proposed are tabulated in the accompanying statement for ready reference,
but I will here go over the main points of difference.

3. Major Brockman left out all supply to the railway, and his service reservoir he proposed
to construct near the Dongalcheruvu tank, below the level of the railway compound, with a
conduit and an 8" pipe leading to it from the lifting well on the right bank of the Bugga river ;
from the service reservoir an 11" main led to the town distributaries.

4. In order to supply the railway, or rather to enable the municipality to supply it at a
minimum cost when necessary, I propose to have the service reservoir near the lifting well on
the bank of the river, and an 8" pipe taking a line above the Buswareddy tank and passing close
to the railway premises and on past Dongalcheruvu, ending at the commencement of the town
distributaries. This 8" pipe will be 18,726 feet long against—

a length of conduit	..	..	..	..	..	..	..	8,840
a length of 8" pipe	..	..	..	..	..	..	..	2,150
a length of 11" pipe	..	..	..	..	..	..	..	7,370

Total .. 18,360 feet long

proposed by Major Brockman. The saving in round numbers by my alterations will be Rs. 7,800.

5. I enclose longitudinal section of my alternative line, and a tracing of the survey as far as
the Dongalcheruvu tank, showing Major Brockman's and my lines. It was not necessary to carry
the tracing of the survey further, as beyond this point I propose no alteration in the direction.

6. Pending orders of Government on this proposal, I request you will ask Messrs. Massey
and Co. not to cast any pipes but the straight 8" ones for the present. For the alteration will
entail a little remodelling of the plans for the special castings.

7. I shall be obliged if you will use your best endeavour to obtain Government orders as
speedily as possible.

8. Pending such orders, the work of constructing the infiltration gallery and lifting well
will progress.

9. Another objection to Major Brockman's site for the service reservoir near Dongalcheruvu tank is that a *very long* channel will be necessary to enable the scour pipe to do its duty. Whereas, were the reservoir near the bank of the river, this scour channel need not be a very long one.

No. 1697.

Forwarded. Mr. Johnston proposes to substitute an 8" main for the open masonry conduit of Major Drake-Brockman's scheme, and by slightly diverting the line to the east, he proposes to supply the railway station. By the change he estimates there will be a saving of Rs. 7,800.

2. Cuddapah being a large station, a very large number of railway employes live in the railway houses quite close to the station, and the omission to take the water to the station was always regarded as a blot on the original scheme. It is by no means the least important part of the present proposal that it meets this requirement.

3. The early orders of Government are sought.

26th February 1888.

(Signed) G. STOKES,
Acting Collector.

No. 224.

Referred to the Public Works Department for early remarks.

(By order.)

MADRAS,
7th March 1888.

(Signed) W. S. MEYER,
Asst. Secy. to Govt.

To the Public Works Department, with seven enclosures.

No. 13-D.

Note by the Chief Engineer, Public Works Department, on endorsement in the Local and Municipal Department, No. 224, dated 7th March 1888, referring, for remarks, proposals of the Cuddapah Municipal Council for modifying the Cuddapah Water-supply Project.

Cuddapah Water Supply.

*The original project was passed in G.O., No. 248 M., dated 6th July 1885.

2. Major Brockman proposed to pass 280 gallons a minute for the supply of the town, through a conduit (ending with a short length of pipe) 10,960 feet in length, to a service reservoir, and from thence by an 11-inch pipe 7,370 feet long; from the end of this pipe the sub-mains were to be taken.

3. Mr. Johnston proposes to build the service reservoir close to the pumping station at the river edge, and carry the water the whole way to the sub-mains in an iron pipe. He states that an iron pipe 8 inches in diameter is sufficient, and shows in his estimate a saving of Rs. 7,820 will be effected.

4. The quantity required for the town is 280 gallons a minute, the length of the pipe is 18,700 feet, the head available is 58 feet.

5. The theoretical supply through an 8-inch pipe according to Hawksley formula—

$$V = 48 \sqrt{\frac{d h}{L + 54 d}}$$

and rejecting the small item $54 d$ which practically makes no difference making—

$$V = 48 \sqrt{S d}$$

$$S = \frac{58}{18,700} = \frac{1}{322} \text{ say } = \frac{3}{1,000}$$

$$d = 8" = .66 \text{ feet.}$$

$$V = 2.11 \text{ feet per 1"}$$

$$\text{Quantity} = 273 \text{ gallons per minute.}$$

According to Neville formula—

$$V = 140 \sqrt{R.S.} - 11 \sqrt[3]{R.S.}$$

$$= 70 \sqrt{S.D.} - 6.9 \sqrt[3]{Sd.}$$

$$V = 2.25.$$

$$\text{Quantity} = 292 \text{ gallons per 1"}$$

6. Theoretically the 8-inch pipe is sufficient, provided it is laid quite straight and kept clean, but it is considered the pipe should be at least 9 inches diameter, the theoretical discharge of which is 360 gallons per 1" according to Hawksley, and 398 gallons per 1" according to Neville.

7. There is, however, the supply to the railway station to be taken into account, and there is nothing to show how much this will be, but it will require an increase in the dimension of the pipe, and therefore it may be said that a 10-inch pipe will be necessary.

8. It is considered that Mr. Johnston's proposals are advantageous, and that it is better the water should be carried in an iron pipe, than in a masonry conduit; but it seems doubtful if piping of the requisite dimensions can be provided without increasing the amount of the estimate.

(Signed) J. O. HASTED, Col., R.E.,
Chief Engineer, P.W.D.

No. 14-D.

Transferred to the Local and Municipal Department, and the original papers returned.

MADRAS,
6th April 1888.

(Signed) J. O. HASTED, Col., R.E.,
Secy. to Govt., P.W.D.

To the Local and Municipal Department, with papers.

ORDER—dated 16th April 1888, No. 355 M., Local and Municipal.

The modifications in the original scheme now proposed by Mr. Johnston are approved subject to the Chief Engineer's remarks, which will be communicated to the Collector and the Chairman. The amount of the estimate as thus revised should be reported, and the work should be put in hand with as little delay as possible.

(True Extract.)

H. E. STOKES,
Chief Secretary.

To the Chairman, Municipal Council, Cuddapah,
through the Collector,
Collector of Cuddapah, with 5 enclosures.
Public Works Department.
Sanitary Commissioner for Madras.

Exd. A. Raitt.

Gobt. of {1888} Madras.

LOCAL AND MUNICIPAL.

Issued

Recd.

Encl.

G.O., 16th April 1888, No. 355 M.

APRIL.

Water-supply Project.

Approving, subject to Chief Engineer's remarks,
the modifications proposed in the Cuddapah —.