M.R.O. 1—77,006—8-6-37.

(1) Number of pages 1—10

(2) Date of repair

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 343 Press ~~Mis.~~
182-783
Dated 31—1— 1866.

Not to be folded or roughly handled

No. 782. Read the following letter from Captain J. T. TOVEY, Executive Engineer, Cawnpore, to the Secretary to the Government of Madras, Public Works Department, dated Cawnpore, 22nd December 1865:—

1. I have compiled an Earthwork table for the 100 feet chain, the results of the calculations being furnished in cubic feet. I have also added to the tables two extra tables of proportional parts, similar to the proportional parts of Logarithm tables, but separately tabulated. From the tables of proportional parts the equivalent for decimals of feet in height can be extracted and added to the equivalent for the whole numbers of feet in height in the general table, when the heights consist of feet and decimals of feet. The sum of the two furnishes a result rigorously exact for $\frac{1}{100}$ths of feet in height. The result is so exact that for a prismoid of such heights as 25·39 and 35·84 the contents extracted prove the tables will be the same up to three places of decimals, as if the calculation for that prismoid had been calculated by the prismoidal formula. The tables are so arranged that the equivalent for decimals of feet in height can be added or not at pleasure. It is a little shorter not to add it so that, when time is an object, as in rough comparisons, &c., the proportional parts can be omitted. The tables are equally applicable to side cuttings in hilly ground, or to any irregular work whatever as to straightforward cutting and embankment.

2. I have submitted the tables to the Secretary to the Government of India, and Colonel Dickens wrote, "These tables are calculated for feet, and not as is usual in those prepared in England for a Gunter's link and yards. They would be exceedingly useful for the computation of earthwork, and the calculation can be made by direct extract when the base of the cutting or embankment is not more than 60 feet, above that number the calculation is a little more troublesome, but it is always simple even when the base is large and is besides extremely accurate."

3. The Public Works Code requires all calculations of earthwork to be made in cubic feet, and as the 100 feet chain is used in the Public Works Department the Earthwork Tables published in England are not adapted for the use of the Public Works Department.

4. These tables have been approved of, and copies have been subscribed for by Government for the Public Works Offices here. I therefore request that you will be so good as to submit this application to the Government of Madras, that copies of the tables may be taken for the Public Works Offices in the Madras Presidency. The book is now in the Press and will shortly be issued, the price to subscribers will be Rupees 10 a copy; but more copies than are subscribed for will not be printed.

No. 783. ORDER THEREON, 31st January 1866, No. 373.

ESTABLISHMENT, No. 71.

As the calculations of earthwork in this Presidency are invariably made in cubic yards, it is by no means certain that Captain Tovey's tables, in which the results are given in cubic feet, will prove generally useful. The Government are therefore unwilling to pledge themselves to take a large number of copies of the work; but, with a view to having its usefulness practically tested, they will be glad to receive twelve copies from Captain Tovey.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To Captain J. Tovey Executive Engineer, Cawnpore.

Exd. S. T. Augustin.

number of copies of the work.

Campore
22 Dec 1845

I have completed the last
Table for two feet change, the
Results of the Calculations being first
published in cubic feet. I have also ad-
ded to the Tables, two to the Tables
for proportional parts. Similar to the
two previous pages of Logarithms
Tables, but separately calculated.
From the Tables of proportional parts
the equivalent of decimals of feet
height can be easily added and added
to the equivalent for the whole number
of feet in height. In all cases of Tables
when the height consists of feet and dec-
imals of feet. The sum of the two pro-
duces a result approximately equal to
the of future height. The result is to
great. That for a presumed of small
height as 25.33 and 35.04 the

extracted from the tables and
same up to three places of decimals
as if the calculation for that pressure
had been calculated by the previous
formula. The tables are so arranged
that the equivalent for
future height can be added or
subtracted with
objection as in Compressors
the proportional parts can be
The tables are equally applicable
any required work whether
straight forward cutting
ment
have submitted the tables to the
the Govt of Madras and Col Robert
These tables are calculated for
and not as usual in those prepared
in England for a Gunlis Link
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useful for the computation of
work and the calculations can be
decimal - when the

ing or entrance end - to not more
before that quantity the
clearance is a little more troublesome
it is always dumped, when there
is a large amount of
Public Works Code requires all cal
culations & workings to be made in
ed with P.W.D. the earthwork tables
ducted in England are not adapted
use of the Public Works Dept -
tables have been approved of
Copies have been submitted for
Government - for the Public Works
Dept here - It is therefore requested that
the Govt may be pleased to submit - this
application to the Government of
Madras. that - Copies of the tables
may be taken for the Public Works
Dept in the Madras Presidency
The book to print with Plans and
will shortly be issued the price
Subscribers name to R 10/- a copy

P W 1866 Depts
(5)
Rmi No. 248
Plans of Gun Batteries
Capt Cooper
Lt Engrs
Cawnpore

Dft 20th Decr/65
Rec. 19 Jany/66.

Encl 12 Rupees
10 Blue Prints
Mem. Lt. Col.
No 350 dd 29
Jany 66

Requesting
to be informed
if the Madras
Govt will take
copies of this
Earthwork Tables
at 10 Rs per cop

No 782

No 373 - 31st Jany 1866

c. 22nd Jany 1866 - R 26 Jany

Public Works Dept

No 373

Proceedings of the Madras Government

Under date the 31st January 1866.

Read the following

From Captain Tovey
Executive Engineer Cawnpore
Requesting to be informed
if the Madras Govt will take
Copies of his Earthwork Tables
at 10 Rupees a Copy.

Dated Cawnpore 20 December 1865

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from Captain Lovey

Captain J. Lovey
Com. Eng. Canton
Dec. 1st February

Dupo 1806 Depo
Dupo. to Gov.r for Jany
No 373
Dupo. to the Govr
Dupo 31 Jany 1806.

Captain Bovey's Earth-
work table for the 100 feet Chain
Twelve Copies of — ordered.

No. 782. 788