M.R.O. 1—77,006—8-6-

(1) Number of pages_____

(2) Date of repair 11-12-

(3) Initials of the Referencer_____

MADRAS RECORD OFFICE

Government of Madras.

P. W. DEPARTMENT.

G.O. No. 1977 Press Mis.

75-83

Dated 3-7— 1867.

Not to be folded or roughly handled

9/15-43

Read the following letters:—

No. 75. From the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Camp, Dowlaishweram, 27th May 1867, No. 58.

In reply to Memorandum No. 98, dated 7th May 1867, I have the honour to inform that Captain Tovey's Earth-work Tables were sent to Captain Darrah, and by him transferred to Mr. Harris, Assistant Engineer, who reports that he derived no advantage from them, as the calculations are in feet, whereas our contractors only understand yard measurements. I intend looking over the tables myself, and then sending them to an Executive Officer.

G. O. No. 3,507, dated 2nd November 1866.

No. 76. From the Superintending Engineer, 2nd Division, to the Secretary to Government, Department Public Works, dated Masulipatam, 27th May 1867, No. 28.

1. With reference to G. O. No. 3,507, dated 2nd November 1866, forwarding a copy of Captain Tovey's Earth-work Tables, and requesting that they might be practically tested, I have the honour to inform you that I desired Mr. Smith, then employed on extensive earth-work calculations, to report on the subject. He states that "Rigorous Earth-work Tables giving the results for heights of $\frac{1}{100}$ths of a "foot would prove useful occasionally, but that he entertains great doubt of their "being of much practical value to the Department."

2. My own view of the question is that, as the contents of embankments are more easily computed by "averaging end areas," than by the prismoidal formula, and as the approximation to truth is sufficient in the former case for estimates, and the measurement of the pits excavated is the only practical method of determining the work done, tables calculated to $\frac{1}{100}$ths of a foot, however neatly and briefly arranged, (and that these are so, must be fully granted,) are rather a labour of supererogation, and I would not recommend that they be supplied to this Department.

No. 77. From the Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 15th June 1867, No. 712.

1. With reference to G. O. No. 3,507, of 22nd November 1866, I have the honour to inform you that I forwarded the copy of Captain Tovey's Earth-work Tables to the Assistant Engineer, Military Buildings, in order to test their usefulness. Mr. Porter has now returned them, saying that he has not had much opportunity for testing them; but, in checking part of the estimate for the new tank near Allipore, he "found differences ranging from 2 to 7 per cent." He considers, however, that the tables are "useful for regular figures, or when the measurements "are in whole numbers; but when decimals occur in the heights, a good deal of "labour is necessary in working them out."

2. I have now sent the tables to Mr. George, the Executive Engineer in charge of the Anantapoor Range, as I think he is more likely to be able to test their utility.

No. 78. From the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 3rd January 1867, No. 3,842.

With reference to G. O. No. 3,507, dated 2nd November 1866, I have the honour to report that I have had Captain Tovey's Earth-work Tables practically tested, and the result is that they are found to be correct in principle and calculation. It is considered that the work will prove useful, and more generally applicable than any others such as Huntingdon's, Bidder's, or McNeil's.

No. 79. From the Superintending Engineer, 5th Division, to the Secretary to Government, Department Public Works, dated Camp, Keenanore Anicut, 29th May 1867, No. 40.

With reference to the Order of Government of the 2nd November 1866, No. 3,507, I have the honour to state, that if copies of Captain Tovey's Earth-work Tables were supplied to the Public Works Department, I do not think they would be much used. By far the greater number of estimates that are made are for repairs to tanks and channels, the measurements for which are always taken in yards, and the calculations would not be facilitated by the tables. In preparing estimates for Railways and long lines of new canal, I have no doubt the tables would be found useful. Some estimates have been prepared from them without difficulty and with a saving of time.

No. 80. From the Acting Superintending Engineer, 6th Division, to the Secretary to Government, Department Public Works, dated Tanjore, 11th May 1867, No. 192.

With reference to Order of Government No. 3,507, dated 2nd November 1866, and the Earth-work Tables by Captain Tovey therewith forwarded, I have the honour to state that in order to test practically the value of the work, it is necessary that the Overseers and Subordinates should, in the first instance, be instructed in the use of the tables, and to that end I would suggest that the work be introduced in the Civil Engineering College, and its use taught there, unless any better one now forms a part of the College course of instruction.

No. 81. From the Superintending Engineer, 7th Division, to the Secretary to Government, Department Public Works, dated Coimbatore, 21st June 1867, No. 57.

With reference to your reminder No. 164 of 13th June, on the subject of G. O. No. 3,507, of 2nd November 1866, I have the honour to report that, so far as Range Officers' opinions have hitherto been given, the impression appears to be that tables of earth-work adapted to the 100 feet chain and giving the results in cubic feet, are not likely to be specially useful in the Madras Department Public Works. In most of the calculations that have ordinarily to be made, tables would not be resorted to at all. Other previous tables are simpler, and accurate enough. And altogether it is hardly worthwhile going to the expense of supplying all Offices with the work, while there would be no objection to allowing its supply to any Office indenting for the same specially.

No. 82. From the Officiating Superintending Engineer, 8th Division, to the Secretary to Government, Department Public Works, dated Andiputty, 15th April 1867, No. 110.

1. With reference to G. O. No. 3,507, of the 2nd November 1866, I have the honour to report that Captain Tovey's Earth-work Tables appear to be ingeniously compiled and mathematically accurate, but besides the disadvantage of the results being in cubic feet, instead of in cubic yards, as our calculations are made: when the measurements of a cutting include decimals of a foot, it is a somewhat tedious operation, to make use of Tables Nos. 2 and 3 as well as No. 1, and it would be difficult to introduce the tables for general use among Estimators and Overseers.

2. There is a simpler book of Earth-work Tables, for heights up to 30 feet, in feet and half feet, by Mr. O'Callaghan of the Bengal Public Works Department, which is priced at Rupees 1-8-0, and opens out into a sheet, measuring 3 feet by 2 feet; but the results in this also are in cubic feet, not yards.

No. 83. ORDER THEREON, 3rd July 1867, No. 1,977.

ESTABLISHMENT, No. 5.

As, with but one exception, the Superintending Engineers are of opinion that Captain Tovey's Earth-work Tables are not likely to be of much practical value to the members of the Public Works Department of this Presidency, the Government are unwilling to purchase a large number of copies of that work for general circulation.

(True Extract.)

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

To the Superintending Engineers.
To Captain Kennedy.
" " J. Tovey, Executive Engineer, Cawnpore.

Exd. S. T. Augustin.

Superintending Engineer's Office,
1st Div. Camp Dowlaiswaram,
27th May 1867.

No. 58

From Captain J. Beckley R.E.
Off. Supdg. Engineer, 1st Div.

To Colonel C. A. Orr R.E.
Secretary to Govt., P.W.D.
Madras.

Sir,

In reply to Mems. No. 98 dated 7th May 1867, I have the honor to inform that Captain Davey's earthwork tables were sent to Captain Darrah and by him transferred to Mr. Harris, Assistant Engineer, who reports that he derived no advantage from them as the calculations are in feet whereas our Contractors only understand yard measurements. I intend looking over the tables myself and then sending them to an Executive Officer.

G. O. No. 3507 dated 2nd November 66.

I have &c.

J. Beckley Capt. R.E.
Off. Superintending Engineer 1st Div.

Supdg. Engrs. Office 2d. Dn.
Masulipatam
No. 28. 27 May 1867

From
Lieut. Col. G. V. Winscom R.E.
Supdg. Engineer 2d. Dn.

To
Col. C. A. Orr R.E.
Secretary to Government
D. P. W.
Madras

Sir,

With reference to G. O. No. 3507 dated 2d. November 1866, forwarding a Copy of Captain Tovey's Earth Work Tables, &c requesting that they might be practically tested, I have the honor to inform you that I desired Mr. Smith, then employed on Extensive Earth Work Calculations, to Report on the Subject. He states that "Rigorous Earth Work Tables giving the results for heights of $\frac{1}{100}$ th of a foot would prove useful occasionally, but that he entertains great doubt of their being of much practical value to the Department"

2. My own view of the question is that as the Contents of Embankments are

more

No 75

R. 26 June 1867 @ R. 27th

G.O. 1867
No. 2997
from
the Supdg. Engineer 2d. Dn.
to the Secy. to Government
D.P.W.
Recd. 27 May 1867
No. 28
No. 58
Report on Captain Tovey's Earthwork Tables.
No. 1977 3rd July 1867

more easily computed by "averaging end areas" than by the prismoidal formula, & is as, the approximation to truth is sufficient in the former case for Estimates, and the measurement of the pits excavated is the only practical method of determining the work done, - tables Calculated to $\frac{1}{100}$ths of a foot, however neatly and briefly arranged, (& that these are so, must be fully granted,) are rather a labour of Supererogation; and I would not recommend that they be supplied to this Department

I have the honor to be,

Sir,

Your most Obed.t Servt.

Wo.t Morrison Lieut.t R.E

Secrety. Engineers D. Dept.

No. 742.

3 Supdg. Engrs. Office
Bellary 15th June 1867.

From
The Superintending Engineer
3rd Division

To
The Secretary to Government
Public Works Depart.

Sir,

With reference to G. O. No. 3507 of 2nd November 1866. I have the honor to inform you that I forwarded the Copy of Capt. Tovey's Earthwork Tables to the Assistant Engineer Military Buildings, in order to test their usefulness. Mr. Porter has now returned them saying that he has not had much opportunity for testing them; but in checking part of the Estimate for the new Tank near Allipore, he "found differ-"ences ranging from 2 to 7 per Cent" he con-"siders however that the Tables are "useful for "regular figures or when the measurements "are in whole numbers; but when decimals "occur in the heights, a good deal of labor is "necessary in working them out"

2. I have now sent the Tables to Mr. George, the Executive Engineer in charge of the Anantapoor Range, as I think he is more likely to be able to test their utility.

I have &ca.
A. S. Allan(?) Major R.E.
Supdg. Engineer 3rd Dn.

P.W.D. No. 2350
From the Supdg Engineer 3rd Dn
to the Secy to Govt P.W.D. Madras
dated 27 May 1867
Recd 1st June 67
No 28
Enclo—
Reports unfavorably on the usefulness of Captn Tovey's Earth work Tables

No 76
e.26 June/67 R.270
No 1977 - 3rd July 1867

No. 3842. Supp. Enquiries' Officials &c.
Bahama, 3° Dec. 1867.

Genl. 17

Colonial Sec. Bn. Bahama Isds.
Supp. Enquiries as to Slave
Trade.

To. Colonial C. G. Gr. Br.
Secretary of Government & M.D.

Sir. With reference to G.O. No. 3537.
dated 2 inst. I have the
honor to report that Chas. Lee
Comm. Officer of Coastguard Cutter Rose
has this day reported to me that
he has carefully tested and examined
the vessels and boats
they are furnished with - He is enclosing
a full and detailed report of
the result thereof, and I have
the honor to state that I am
perfectly satisfied with the
manner in which Chas. Lee has
performed the duty entrusted to him
I have the honor to be
Sir
Your most obedient Servant
[illegible]
Governor

Gen. Govt. No. 2281.

The Supervg. Engr.
30th

2.

The Secretg. to Govt.
P.W.D.

Dated 15th June 67.
Recd.

No. 712. Inform
that Mr. Porter has had no
time to test the practicability
of Capt. Toogood's Table before-
hand, but they were sent to
Mr. George.

No. 77

2. 26th June 1867 R. 27th

No. 1977 - 2nd July 1867

No 240.

From Superintending Engineer
The Superintending Engineer
Fort Pulaski Division.
Savannah Ga. 1st January 1867.

To The Secretary to Government
Georgia Milledgeville Ga.

Sir, With reference to the orders of Government
Letter Number 3507, I have the
Honor to state that copies of Captain Sayers
Report dated December 31st 1866
Will be made as soon as possible, I do not
think it necessary to forward them
with this report as they are very voluminous
and contain many tables of figures which
would be of little interest to the public
generally. The measurements for
the calculations would be furnished if desired
by the Government, I have
also the honor to forward herewith a
sketch showing the lines of survey made by
Capt Sayers and the proposed jetties
No 78 Fort Pulaski. On the sketch I have
also shown, with red ink, the lines of the proposed jetties
as designed by Capt Sayers, I have the honor to be,
Sir, Your obedient Servant,

Genl Superintending Engineer.

Dft. Ltr. of Gov. for Sept
Form A 22
Supt Engineer &c &c
To
The Secty to Govt &c &c

Dated 3
Rec'd 4 Jany 1867
No 3842.

Reporting upon the
results of Capt Sayer's
earth borings &c Tables.

No 78

No 1977 · 3 July 1867

26 June 1867 A. 27

Supt Engr's Office 6th Div
Lanpin 11 May 1867.

No 192

17

From,
Lieut-Colonel P. P. L. O'Connor R.E.
A.A. Genl Supt Engineer 6th Div

To,
Colonel C. A. Orr - R.E.
Secretary to Government
D. P. W.

Sir,

With reference to order of Government No 3507 dated 2nd Nov= ember 1866, and the Earth work Tables by Captain Covey therewith forwarded, I have the honor to state that in Order to test practically the value of the work, it is necessary that the Overseers & Subordinates should in the first instance be instructed in the use of the Tables and to that end I would suggest that the work be introduced in the Civil Engineering College, and it is now taught there unless any better one now forms a part of the College course of instruction.

I have the honor to be
Sir
Your most Obedient
P O'Connor Lieut-Colonel R.E.
AA Superintendent 6th Div
Engineers

11 enclos

Superintending Engineer 6th Division
Lanpin 20th May 1867.

To
Lieut-Colonel P. P. L. O'Connor R.E.
Military Engineer
Lanpin

Sir,

I have the honor to forward
Dated 29th May 1867.
Received 4th June
Enclosure 40.
Agents monthly increase
Captain Covey's Earth
work Tables
with G.O. 3507 of 2nd
November 66

No 179

Encl 1977 - 3 July 1867

2 Encl 6 Encl 16 Encl 17 Encl 18 Encl

No 517.

Dukes Esquires Office
Limbaloe 21st June 1867.

Sir

I have the honor to transmit herewith Mr Walker's A.C.
Duke's Engineer's Division
Duke's Engineer's Office
Limbaloe 21st June 1867.
to Chief Secretary to Government
Colombo.

Sir,

With reference to your
Memorandum No 517 of the 20th inst
requesting to be informed whether
the Authorities have any objection
to Mr Walker's proceeding to
Galle for the purpose of
visiting the Telegraph Office there
I have the honor to state that
I have no objection to Mr Walker
proceeding to Galle for the above
purpose, but I would beg to
call your attention to the fact
that Mr Walker is at present
employed in the Survey of the
Kalutara District, and that
the Surveyors are much in
arrear with their work, and
that I consider it desirable
that Mr Walker should return
to Kalutara as soon as
possible.

I have the honor to be
Sir
Your most obedient
humble Servant
(Signed) C. Walker
Colonel C.E.

Duke's Engineer's Office
Galle 24th June 1867.

No 80

C. 26th June 1867 No. 27th

Ch: of Work for Chelys
Forbes Do 1779.

The Ag Surveyor
G.H.S.

To The Secretary to
Government
&c &c &c

Dated 11th May 67
Recd 14th " "
No 192.

C No. 1977 - 3rd July 1867

Refer to G.O.
No 3507 dated
2nd November 1866 -
on the subject of Earth
work Tables by
Capt Lowry -

C. 26th June 1867 No. 27th

Supt Engrs Office 8th Divn

No 110 Andipuddy 15th April 1867

21—

From

Captain H. L. Prendergast R.E.

Offg Superintending Engineer 8th Divn

To

Colonel C. A. Orr R.E.

Secretary to Government P.W.D.

Sir

With reference to C.O. No 3507 of the 2nd November 1866. I have the honor to report that Captain Tovey's Earth work tables appear to be ingeniously compiled and Mathematically accurate: but besides the disadvantage of the results being in Cubic feet, instead of in Cubic yards, as our calculations are made: when the Measurements of a Cutting include decimals of a foot:

[illegible] by the rules

Works

it is a somewhat tedious operation, to make use of Tables Nos 2 and 3. as well as No 1. and it would be difficult to introduce the tables for General use, among Estimators and Overseers.

2 There is a simpler book of Earth work Tables. for heights up to 30 feet; in feet, and half feet, by Mr O'Callaghan of the Bengal P. W. Department: which is priced at 1½ Rs: and opens out into a sheet. measuring 3 feet by 2 feet: but the results in this also, are in cubic feet, and yards.

Thanking You

Yours Sincerely

Captain R.E.

Offg. Superintending Engineer

8th Division

1871 - 23rd April 1867

Encl. 26th June 1872.

2½

Some
diver
the
book
be
to

owers of the Public
Works

Extract

1977 Public Works Department.

No 1977 25

PROCEEDINGS of the MADRAS GOVERNMENT.

Under date the 3d July 1867

Read the following

From the Supt. Engineer of the 1st Dn.

Report on Captain Lovey's Earthwork Tables (Here enter No. 58 dated 27th May 1867.

From the Supt. Engineer of the 2nd Dn. No. 28 " Dn.

" " 3 Dn. No. 712 " 15th June 1867.

" " 4 Dn. No. 3842 " 3rd Sept. 1867.

" " 5 Dn. No. 40 " 29th May 1867.

" " 6 Dn. No. 192 " 11 "

" " 7 Dn. No. 57 " 21st June 1867.

" " 8 Dn. No. 110 " 15 April 1867.

Read the following Minute by the Hon'ble the Governor.

As, with but one exception, the Superintending Engineers are of opinion that Captain Lovey's Earthwork Tables are not likely to be of much practical value to

Pd. 1897 Rupees Establishment Charges

Ex. Eleven

To Offg. Superintendent Public Buildings &c &c &c No 110

To Lieut. to Govt. Dy. Sec. Offg.

Dated 15th December 1867.

Returned 23rd Dec. 1867.

Returns his opinions regarding Captain Lovey's Earthwork Tables.

No 1977. 3rd July 1867

C. 26 June/67 R. 27 "

Sd

C. 26 June/67 R. 2 "

Works Department of this Presidency, the Government are unwilling to purchase a large number of copies of that work for general circulation.

1907 - 30 June 1907

W.H.D.

To the Supt. Engineers. ✓
4 Captains Kennedy. ✓
Captain J. Lowell Supt. Engr. Cawnpore ✓

Desp. 4/7/07
79

P. W. 1867. Department.

Pros: of Govt. for July
No. 1977

PROCEEDINGS OF GOVERNMENT. of Mad.

Dated 3rd July 1867

Passing orders on certain correspondence relative to the practical value of Captain Tovey's Earth Work Tables to the members of the P. W. Department of this Presidency.

Ls 75 @ 83