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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

Cons. 26 Dec. 57

G.O. No.	57	Press Mis.
58-57 Dated	26-3-	1857.

Not to be folded or roughly handled

17.6.37

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Fort Saint George, Public Works Consultation of 24th March 1857.

No. 88. Read the following Extract from the Proceedings of the Chief Engineer, D. P. W., dated 7th March 1857, No. 10757.

Read the following letter from Mr. Covenanted Civil Engineer FRASER, reporting the progress made in the Survey of a site for Reservoir No. 7, in the valley of the Bhowani.

(Here enter dated 25th February 1857.)

Resolved with reference to Extract Minutes of Consultation No. 1932, dated 21st October 1856, to forward to Government copy of the foregoing letter, reporting the extent and nature of progress made by Mr. Fraser in completing the Survey called for; and to intimate, that the earlier submission of such an interesting and detailed paper could not be made, owing to the great difficulties which Mr. Fraser has had to encounter in the prosecution of his very arduous labors, and which have for a considerable period retarded the completion of his preliminary operations.

(Signed) C. E. FABER, Colonel,
Chief Engineer.

No. 89. ORDER THEREON, No. 538; dated 24th March 1857.

Ordered that the foregoing Extract be recorded.

(Signed) H. FORBES,
Acting Secretary to Government.

Official Memorandum of the Progress made by William Fraser Civil Engineer, in the Survey of a Site for Reservoir N.o 7 at Pallaoor, in the Valley of the Bhowani.

In reply to a letter from Lieutenant O'Connell dated the 11.th Instant, and which came to hand only yesterday, calling for a Report on the progress made in the preparation of the Survey and Estimate called "for by Government in Corr: from the Minis: of Comm: N.o 1932". I have the honor to state, that very considerable progress has been made in the Survey, and I hope to have the field work completed by the end of next month.

As this general Statement will probably convey but little information, I beg to offer the following explanation of the nature of a Survey of this kind, and I am the more desirous to do so, because, so far as I am aware, no similar Surveys have been hitherto undertaken in this Country; and it is necessary that the Chief Engineer should thoroughly understand what we are about,

that

that he may control our operations should he think we are going too much into detail.

The site we are now engaged on is No 7 in my preliminary report a reference to sheet 61. of the Trigonometrical Survey will render my explanation more intelligible.

The site is partly in the unsurveyed tract."

The site of the Proposed Embankment across the Bhowani, is below the Village of Pallaoor and, on close examination, I found it necessary to level four different lines to enable me to decide on the best. They are all within a distance of 3/4 of a mile down from Pallaoor.

The Basin will consist of about 5 Miles of the Valley of the Bhowani up from Pallaoor; about the same length probably more, of the Sirroovani, up towards Hugly; and about the same length of the valley of the Kodanghery River up to and beyond Kopanairy.

To these valleys there are numerous tributary Streams, and the whole site is broken up into hundreds of Ravines detached Hills &c &c and the whole area, except the Mountain Slopes, is covered with dense Jungle.

5 R

It is necessary that I should be able to show the height of Embankment required to store a certain number of Cubic Yards of Water in this Basin; and to accomplish this, I must be able to lay down contour lines round the whole site, the planes varying in height by say 10 feet; for the only correct way of computing the capacity of a Basin is, to take mean areas of contoured planes by the height; and the nearer these planes are to each other, the greater will be the degree of accuracy attained.

In a country such as we are now working in, and where we have such large quantities to deal with, absolute accuracy is neither to be hoped for, nor necessary; for it could not be attained except at an expense far beyond its value, but a tolerably near approximation to the truth is requisite to enable me to prepare the necessary designs, and to have confidence in their efficiency.

In an open country, contour lines can, with the aid of a Levelling Instrument, be at once marked upon the ground, then surveyed, and plotted; and those obtained in this way, are

are of course, correct: but such a mode of operating is hardly practicable in a close country like this, and we must resort to the use of numerous sections acrofs the valleys.

Upon those sections, when laid down in position upon the Plan, points of equal height can be marked, and lines connecting these points will present a sort of general contour whose measure of accuracy will be in proportion to the closenefs of the crofs sections.

If the Plan be now taken to the ground, and the contour lines corrected by the eye, an approximation to truth sufficiently close for our purposes, will be attained.

This is the plan I am following in making these Surveys.

The first thing done is to get a line cleared along a side of each main valley, this must be both Levelled and Surveyed, and Bench Marks left at the points where the transverse sections crofs. The position of these sections are marked on that line - close - or far apart, as the nature of the ground may require, so that a good average may be attained with the least number of lines, and they are then

then laid out straight acrofs the valley, and up to the mountain slope as far as it may be necefsary to go.

A similar procefs must be gone through with the valley of every tributary, and every ravine important enough to require transverse sections.

Before these lines are Levelled or Surveyed, they must be cleared of Jungle.

In the main valleys of this site, the number of lines average about 5 in a mile; but the best idea of the quantity of work to be done will be attained from the fact that the aggregate length of all the lines that must be surveyed and levelled is about 200 Miles. Of this distance 2/3 are marked out and about 1/2 laid out and cleared, and about 15 Miles levelled and surveyed.

The marking out of the lines of section is a most laborious operation, and up to the present time the whole of it devolved on Mr. Brosnahan and myself, for 8 to 10 hours a day we have had to tear our way through dense tangled Jungle, seldom able to stand erect, and subject to all the annoyances which those acquainted with Jungle life can well understand.

I

I have tried dozens of Cooly Mais-
-tries and others of a Superior Class, but not one of
them have I found able to lay out a straight line
through the Jungle. When I have entrusted this
duty to them, they have laid out lines so crooked,
that to avoid the trouble and loss of time of re-
Surveying such, we had to abandon them, and
mark out fresh lines ourselves.

I was in hopes that the two Surveyors
sent me by the Chief Engineer would have taken
this duty off our hands; but as yet they have
been able to do almost nothing to assist me.-
They joined me here on the 16th of last month,-
on the 17th Mr Conroy was taken ill with Fever,
and on the 20th I had to send him to the Hospital
at Coimbatore. He returned on the 11th instant,
but was too weak to do anything until the 14th,
since then he has been engaged levelling, but
yesterday he was ill again with Fever, and
if he is not better tomorrow I must send him
away again.

Mr Rouwen had laid out one line
and a part of two others when he too got Fever,
and I had to send him to the Hospital on the
22d of last month. He returned on the 11th instant,
On the 12th I took him out with myself to show

him

him what I wanted him to do, but on that day
he became ill again, and I had to send him
back to the Hospital on the 13th instant.

My Maistry who was of consider-
-able use to me, in getting the lines cleared had
to go into Hospital on the 11th instant, and has
not yet returned.

I have now got one man, whom
I have trained to mark out the lines, and to
get them cleared tolerably straight, when the
right direction is given to them, so that Mr
Brosnahan and I can now proceed with the
levelling and Surveying without much inter-
-ruption.

I have already informed the
Chief Engineer, that when I was ordered
to meet Colonel Cotton at Coimbatore, I left
Mr Brosnahan to complete the detailed
Survey (in the manner described above)
of three large sites in the valley of the Noy-
-yaur, one of them being that proposed by
Captain Ludlow, near Gajelhutty, the other
two lying higher up the valley. One of the sites
(I cannot yet say which until the Office Work is
completed) will afford a valuable Basin,
and quite ample for the conservation of the

Surplus

Public Works Department

Coimbatore

surplus Water of that River.

I expected to have with the Chief Engineer before this, a preliminary Report on these three sites, but I have really not had time to complete the Office work necessary to enable me to prepare a Satisfactory report.

I trust the Chief Engineer will not attribute this to any negligence on my part, or unwillingness to afford the fullest information it is in my power to give, but to its true cause, an unwillingness to occupy, in writing what must necessarily be imperfect reports, time, which, at the present season, and under present circumstances, I consider much more valuable when devoted to work in the field.

Every day the Jungle in which we are now engaged is becoming more and more unhealthy. My Maistry. Gomastah, and three Lascars are now in Fever. Many of the Coolies are also in Fever, and by and by we shall not be able to induce a single cooly to come here, besides which, one shower of rain would deprive us of nearly every cooly we have; as they would go to till their lands. This Knowledge has made me push on vigorously the field work to the exclusion of every thing else.

I have stated before that I hope to have all the field works completed here by the end of next month. To accomplish this will however require incessant and very hard work, and be contingent on a sufficient number of Coolies remaining with us, on my health being spared, and that of Mr. Brosnahan, for I do not calculate on receiving much assistance from any one else.

Camp at Kodaputty
near Kopanairy
25th February 1857.

[Signed] William Fraser
Civil Engineer

(True Copy)
M. Taber Colonel
Chief Engineer

Camp Shevaroy

The Secretary to Government
Public Works Department

Camp Shevaroy

N.1075/7

13R

Extract from the Proceedings of the Chief Engineer in the Department of Public Works.

Under date the 7 March 1857

Read the following letter from Mr. Covenanted Civil Engineer Fraser, reporting the progress made in the survey of a site for Reservoir No. 7 in the valley of the Bhowanee.

(Here Enter dated February 25th 1857)

Resolved with reference to Extract Minutes of Consultation No. 1932 dated 21st October 1856, to forward to Government copy of the foregoing letter, reporting the extent of progress and results made by Mr. Fraser in completing the Survey called for; and to intimate, that the earlier submission of such an interesting and detailed paper could not be made, owing to the great difficulties which Mr. Fraser has had to encounter in the prosecution of his very arduous labors, and which have for a considerable period retarded the completion of his preliminary operations.

(True Extract)

A.R. Fraser Colonel

Chief Engineer.

To,

The Secretary to Government
Public Works Department

Compd Mary

Circular No. (Extra)
Copy of the Chief Engr's
letter No. 9 dated 7th March 1857
Dated Dr. Secretary's
Office 10th
Forwarded for information
Copy of Extract from the Proceedings of the Chief Engineer in the Department of Public Works under date the 7th March 1857 reporting the progress made in the survey of a site for Reservoir No. 7 in the valley of the Bhowanee.
Copy of Letter from Mr. Fraser dated 25th February 1857 reporting the progress made in the survey of a site for Reservoir No. 7 in the valley of the Bhowanee.
Fort St. George the 10th
day of March 1857

Cons.ⁿ 21st Oct.r/55. No. 112. & 113.

Public Works 1857/Despatch
Cons.ⁿ 24th March/57.

No. 538

Recorded

Fort St. George 24th March/57

No 1470

Extract from the Proceedings
of the Chief Engineer
to the Secy. to Govt. dated
Sales 7th
Recd 10th March 1857.
4th Ditto 18/3/57.

Submits with reference
to Govt. Lr. No. 1932 dated 21st
October last Copy of Letter from
Mr. Lieutenant Civil Engineer
Fraser reporting the extent
of progress made by him in
Completing the Survey of the
Site of Reservoir &c
at Pallavaram &c. &c.

No 88 & 89.

Recd. 12th March 1857