M.R.O. 1—77,006—8-6-37.

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(2) Date of repair 15. 3 03

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public works **DEPARTMENT.**

G.O. No. 223 — Press / Mis.

452-54

Dated 23. 1 1867.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department,
23rd January 1867.

Read the following papers:—

No. 452. From the Superintending Engineer, 5th Division, to the Secretary to Government, Department Public Works, dated Cuddalore, 26th December 1866, No. 157.

1. I have the honor to forward, for sanction, an Indent received from the Executive Engineer, Bangalore, for a five-horse power Wind Engine with pumps.

1 Indent in triplicate.

2. The engine is intended to be erected at the foot of the Ulsoor rock to pump water from the tank into the filtering reservoir. In the original scheme of Water Works, the water was to be pumped into a filtering reservoir on the top of the rock, whence it was to flow to the different barracks; but it having afterwards been found that one of the barracks would not be commanded by this reservoir, it was determined to have the pure water reservoir at the foot of the rock, and to obtain the requisite command over all the barracks by means of a stand pipe fifty feet high. This will necessitate a second pump to be worked by the steam engine, and the wind engine and pump now indented for is intended to be used at times in lieu of the second pump, which is to be attached to the steam engine. As the wind blows very steadily at the Ulsoor rock, for several months in the year, the engine is likely to be very useful then.

No. 453. Memorandum from the Secretary to Government in the Public Works Department.

(Here enter 18th January 1867.)

No. 454. ORDER THEREON, 23rd January 1867, No. 223.

MILITARY WORKS, No. 31.

1. In paragraph 4 of the Proceedings of Government in this Department under date the 2nd May 1865, No. 1,175, the Superintending Engineer of the 5th Division was directed to take care that the ample power of the engine which had been supplied for the use of the Ulsoor Water Works should be arranged to do all the work of pumping that might be required to ensure the free flow of water by gravitation to all the points where it is required to be delivered, but, notwithstanding those directions, he now submits an indent for a Wind Engine as a supplementary power.

2. The Government consider such a mode of overcoming the difficulty which has arisen from its having been found necessary to lift the water, first into a filtering cistern, and again from a lower reservoir to the summit of the rock or stand pipe, would be found unreliable and ineffective. They are assured that a simple arrangement for connecting the pumps, on their suction side, with the tank on the one hand and with the filtered water reservoir on the other by means of double branch pipes provided with stop valves, will admit of the engine being used to pump unfiltered or filtered water at pleasure, and that a similar arrangement on the delivery side of the pumps will also allow the water to be forced alternately in the direction of the filtering cistern, or driven to the summit elevation of the top of the stand pipe, according as unfiltered or filtered water is admitted to the pumps.

3. Under these circumstances the Indent received with Colonel Foord's letter above recorded will be returned, and he will be requested to instruct Captain Tulloch to furnish the General Superintendent of the Public Works Workshops at Madras with patterns for two double branch pipes, with a view to their being cast and despatched to Bangalore by the time the pipes expected by the "Derwentwater" are received.

(True Extract.)

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

To the Superintending Engineer, 5th Division, with Indent.
" General Superintendent of Public Works Stores and Workshops.

Exd. S. T. Augustin.

3.

Memorandum

Having proceeded to Bangalore, as desired by Government, the undersigned, with reference to Captain Tulloch's application for a Wind Engine to supplement the steam power which he has at his disposal for supplying the Cantonment of Bangalore with water from the Ulsoor Tank, carefully inspected the arrangements made for carrying out that project.

2. Originally, these arrangements were to pump water directly from the tank to a filtering cistern on the summit of the rock, from which the water would descend by filtration into a

over

a second reservoir on a lower level,
but still high enough, it was
supposed, to command all the points
at which its delivery was desired.
Subsequently it was ascertained that
some parts of the Military station
were too elevated to be thus supplied,
and Captain Tulloch found that
it would be necessary, first to
pump the water into a filtering
system, and, after its filtration
into a lower one, to repump it from
the latter, not only to the summit
of the rock, but considerably higher
through a closed pipe, sufficiently
lofty to give command of all
the desired points of delivery by
gravitation.

3 The Engine and pumps have
been arranged to pump from the
lowest

lowest, or filtered water reservoir,
directly to the top of the rock,
but not to the filtering system.
It is therefore necessary to provide
for the supply of that system from
the tank, and Captain Tulloch
proposes to do it by means of an
auxilliary Wind Engine with
pumps acting quite independently
of the steam Engine. This it is
needless to say, will be a clumsy
and unsatisfactory mode of
accomplishing the double lift,
and its adoption is altogether un-
necessary. A simple arrange-
ment for connecting the steam
driven pumps on the suction side
with the tank on the one hand,
and with the filtered water Reservoir
on the other by means of
double branch pipes provided with
stop valves, will admit of the Engine
being
over

being used to pump unfiltered or filtered water at pleasure. A similar arrangement on the delivery side of the pumps will also allow the water to be forced alternately in the direction of the filtering Cistern, or driven to the summit elevation of the top of the stand pipe, according as unfiltered or filtered water is admitted to the pumps.

4 This arrangement, in the opinion of the undersigned, will be quite effective, or an additional set of pumps for the supply of the filtering reservoir may be worked from a prolongation of the crank shaft of the Engine; but both Captain Tulloch and the undersigned give the preference to the former arrangement, and

Captain

Captain Tulloch will send down patterns for the two double branch pipes, which are all the additional articles he requires to give it effect. The undersigned would therefore suggest that the Indent for the Pond Engine be returned with an order, the draft of which is herewith circulated for the approval of Government.

Fort St. George
18th January 1867

Colonel R.E.
Secretary to Govt. P.W.D.

Superint.g Engrs Office 5th Division
No 157. Cuddalore 26th December 1866.

From,
The Superintending Engineer
5th Division.

To,
The Secretary to Government
P.W.D.

Sir,

I have the honor to forward for sanction an Indent received from the Executive Engineer Bangalore for a five horse power Wind Engine with Pumps

2. The Engine is intended to be erected at the foot of the Ulsoor rock to pump water from the Tank into the filtering reservoir. In the original scheme of water works, the water was to be pumped into a filtering reservoir on the top of the rock whence it was to flow to the different barracks, but it having afterwards been found that one of the barracks would not be commanded by this reservoir, it was determined to have the pure water reservoir at the foot of the rock, and to obtain the requisite Command

over

Enclosure Indent triplicate.

No 153

Colvin Baker
Supdg Engineer

No 223 - 23 Jany 1867

C. 1st Jany 1867. R. 7th

over all the barracks by means of a Stand pipe 50 feet high. This will necessitate a second pump to be worked by the Steam Engine, and the Wind Engine and pump now indented for is intended to be used at times in lieu of the second pump, which is to be attached to the Steam Engine.

As the wind blows very steadily at the Ulsoor rock, for several months in the year, the engine is likely to be very useful there.

I have the honor to be
Sir,
Your most obdt. Servt.

E A Ford Lt. Col. R.E.
Superintg. Engineer.
5th Division.

Daily Notes

15

Public Work Department

No. 223

223

Proceedings of the Madras Government

Under date the 23rd January 1867

Read the following

From the Supg: Engineer of
the 5th Division - (H. S. No. 157 dated 26th Decr 1866)

Memo: by the Secretary to
Government P. W. D - (H. S. dated 18th January 1867)

In para. 4 of the Proceedings of Government in this Department under date the 2nd May 1865, No. 1175, the Superintending Engineer of the 5th Division was directed to take care that the ample power of the Engine which had been supplied for the use of the Ulsoor Water Works should be arranged to do all the work of pumping that might be

V. G.

Work

Read 25th December 1866,
Rec'd 4th Do. Do.
No 157,
Enclosures 3.

Forwarding for sanction an Estimate for a fine tone for Ulsoor Engine, with Remarks for the Ulsoor Water Supply at Bangalore -

No 452

Rec'd 28th Dec. 1866 R. 4th Jan 1867

No. 223 - 23rd January 1867

be required to ensure the free flow of water by gravitation to all the points where it is required to be delivered, but notwithstanding those directions, he now submits an indent for a Wind Engine as a supplementary power.

2. The Government consider such a mode of overcoming the difficulty which has arisen from its having been found necessary to lift the water, first into a filtering cistern, and again from a lower reservoir to the summit

summit of the rock or stand pipe, would be found unreliable and ineffective. They are assured that a simple arrangement for connecting the pumps, on their suction side, with the tank on the one hand & with the filtered water reservoir on the other by means of double branch pipes provided with stop valves, will admit of the Engine being used to pump unfiltered or filtered water at pleasure, and that a similar arrangement on

on the delivery side of the pumps will also allow the water to be forced alternately in the direction of the filtering cisterns, or driven to the summit elevation of the top of the stand pipe, according as unfiltered or filtered water is admitted to the pumps.

3.. Under these circumstances the Student received with Colonel Foord's letter above recorded will be returned, and he will be requested to instruct Captain Tulloch to furnish the General Superintendent of the Public Works Workshops at Madras with patterns for two double branch pipes, with a view to their being cast and despatched to Bangalore by the time the pipes expected by the "Dermantwater" are received.

19

Supt Engr, 5 "Dr with Indent in triplicate
Genl Supt of P. W. Stores
& workshops. 5
Military Deptt 5

Desp: 24: Jan[y] 67
" 21/2/67

Pub: Works 1867 Department

Pro: of Govt. for January

No. 223

Pro: of the Madras Govt.

Dt 23rd January 1867

Passing orders on certain papers relative to the Indent submitted by the Supg. Engr. of the 5th Divn. for a 5 horse power Wind Engine with pumps for Vellore Water Works.

No 4528 & 454

R. 19th Jany 1867 Ca. 19th