

(1) Number of pages 38
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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 1089	Press Mis.
24-10-2	
Dated 18. 4	1871

Not to be folded or roughly handled

PUBLIC WORKS DEPARTMENT.

No. 11 of 1871.

TO THE RIGHT HONOURABLE

THE SECRETARY OF STATE FOR INDIA.

MY LORD DUKE,—We have the honour to forward, for the information of your

Letter from the Consulting Engineer for Irrigation and Canal Company, No. 131, dated 6th March 1871, recorded in G. O., No. 1,089, dated 18th April 1871.

Letter from Government of India, No. 100-I., dated 22nd March 1871, recorded in G. O., No. 1,035, dated 14th April 1871.

Letter from the Consulting Engineer for Madras Irrigation and Canal Company, No. 13, dated 21st April 1871, recorded in G. O., No. 1,339, dated 15th May 1871.

Grace in Council, the papers marginally noted relating to what is expected to be the condition of the works of the Madras Irrigation and Canal Company on the 30th proximo, the date on which, agreeably to the Supplementary Agreement dated 2nd October 1866, the Main Canal and all its works should be in proper working order, and having reference also

to the position and means of the Company for working the canal after that date.

2. Our Consulting Engineer's report* on the condition of the works generally

* No. 93, dated 17th November 1870.

as he found them on his last tour of inspection, and his opinion that the Main Canal and works as then sanctioned would be completed by the 30th June 1871, was in due course communicated to your Grace, and nothing has since

occurred to disturb the belief that the main works as then in progress would be so completed so far as a work of the kind can be said to be completed before it has been fairly brought into use and fully tested by actual trial as to its fitness for carrying the depth of water for which it had been designed. We have, however,

† No. 1,089, dated 18th April 1871.

since that date received from the Company's Local Agent, an application† for sanction to estimates amounting to Rupees 31,977, exclusive of cost of establishments, for improving certain waste wiers on a portion of the canal between Soonkasa and Cuddapah to adapt them for the safe discharge of flood waters, which the breaches of August 1870 suggested the necessity for, and this application was accompanied by an admission that the balance of Capital was inadequate to meet the charge, and a request that the amount might be advanced by Government to form a charge against Revenue.

3. It appeared to us from a consideration of the general question, that there could be no doubt as to the necessity for improving the surplus water works of the

canal, and that whatever the cost might be the charge was properly debitable to Capital, and we accordingly declined to sanction any advance to aid the Company in completing their canal and works, and putting the surplus wiers in a condition to act efficiently in relieving the canal of flood waters; and, seeing that the estimates referred to relate to a limited length of the canal, and that in our Consulting Engineer's opinion the cost of similarly improving the wiers on the remaining length would amount to about 50,000 Rupees more, and looking to the circumstance that the contract time is now so nearly expired that there is no reasonable hope of the Company being able to carry into effect these improvements in the wiers, even if no doubt existed in regard to available funds, while the balance of capital is confessedly inadequate for the purpose, it seems expedient that we should give your Grace this timely intimation of our opinion, namely, that unless assured by our professional officers that the wiers on the canal have by the 30th proximo been altered so that they may be expected to efficiently relieve the canal of flood waters, we should not consider that the canal and works have been put in proper working order, and that they have been completed in the sense contemplated by the Agreement with the Company.

4. One of the enclosures is a letter from the Government of India, with an expression of opinion by that Government, that the intention and meaning of the Supplementary Agreement, regarding the completion of the works by the 30th June 1871, clearly was, that if the works were not on the date in question in fair operation, and earning a reasonable income from which the Government could look for a re-payment of interest on the loan, if not indeed also to some extent repayment of the interest on Guaranteed Capital, the works could not be fairly said to have been completed in the sense contemplated by the Agreement with the Company, and to be in perfect working order to the satisfaction of the Local Government.

5. This despatch was communicated to our Consulting Engineer, as we were desirous of being furnished with his opinion as to the probability of the works being in working order on the 1st July next in the sense which the Government of India consider that their completeness should be judged, and that officer's reply forms the third enclosure, from which it will be seen that there is no reasonable hope of the revenue in the current year covering half the cost of maintenance, much less is there any prospect of even a small balance being available to go towards the payment of interest on the loan or on the Guaranteed Capital. The Supplementary Agreement requires that our opinion on the condition of the works should be expressed after the 30th June next, and we shall have the honour of further addressing your Grace on the subject immediately after the 1st July. Meanwhile, we deem it expedient to lose no time in inviting your Grace's attention to what is understood to be the Company's utter want of means for carrying on operations after the 30th proximo, as brought to notice in the fifth and following paragraphs of our Consulting Engineer's letter herewith forwarded, and we would beg to suggest to your Grace the propriety of calling on the Board of Directors of the Madras Irrigation and Canal Company for clear and distinct evidence of their ability to defray the cost of the establishment they propose maintaining in England and in India, after the 30th June; and failing therein to require them to give the necessary warning by telegram to the Agent, the Chief Engineer, and all other superior officers, of their intention to dispense with their services, that there may be no further fruitless expenditure of public money than may be absolutely neces-

ary in taking over the works from the Company in the event of circumstances rendering such a course necessary and advisable.

We have the honour to be,

My Lord Duke,

Your Grace's most obedient

and humble servants,

FORT ST. GEORGE,

22nd May 1871.

Ed. E. C. Shunker.

FORT SAINT GEORGE.
PUBLIC WORKS DEPARTMENT.

Letter to the Right Honourable
the Secretary of State for
India.

Dated 22nd May
No. 10 of 1871.

FORWARDING, with remarks, papers relat-
ing to what is expected to be the condition of
the works of the Madras Irrigation and Canal
Company on the 30th June 1871, the date
on which agreeably to the Supplementary
Agreement, dated 2nd October 1866, the Main
Canal and all its works should be in a proper
working order.

Consulting Engineer's office
Irrigation & Canal Company
Madras, 6th March 1871.

N^o 131.
Sir,
Colonel M. Carpendale
Commanding Engineer
The Secretary to Government
Public Works Department.

Have the honor to submit the cor-
respondence as per margin having reference
to G.O. 336-15th March 1871 - plans and estimates for enlarging certain canals
from G.O. 101-2nd March 1871 - plans and estimates for enlarging certain canals
to G.O. 352-28th Feb^y 1871 - plans and estimates for enlarging certain canals
from G.O. 110-7th March 1871 - plans and estimates for enlarging certain canals
5 Estimates
7 Plans
17

expenditure of Rspees 3,19,777 exclusive of Engineer-
ing Establishment, which it is calculated will
require an addition of 25 per cent. I will here-
after describe the works and the principle on
which they are designed, but it will be convenient
first to consider whence the necessary funds are
to be obtained.

1. The Chief Engineer considers the amounts
too large to be incurred on the Capital account
by reason of the existing small balance which is
my own opinion also, and he acts that the amount
may be advanced by Government to form a charge
against the Revenue account, and as arguments in
support of his proposal he observes, that as the can-
-tions

sanctioned plans provided for a surface discharge of only a quarter inch of rain fall throughout, the Company cannot under the Contract be required to alter all the culverts, aqueducts, and calingulaks, to adapt them for the discharge of the extraordinary floods that sometimes occur, and he also considers that as a large portion of the Canal had been put under Conservancy, and water admitted by Government consent for the purpose of realizing revenue, the Revenue account should bear the consequences, and the Company should not be called upon to make good repairs which might never have been needed had the Canal not been in use and nearly full of water when the storm occurred. He also remarks that when sluices were put into Nos 3 and 4 Calingulaks the Government sanctioned a reduction of the length of those works so that the discharge might remain the same as it had been before the alteration, and that as in the case of Railways, where cheap wooden bridges are sometimes replaced by more permanent and consequently more expensive structures the cost being debited to Revenue: so in this Canal, the limited and economical arrangements which were made for the discharge of flood waters having proved expensive, by reason of the repairs required for damage sustained, it is proposed to improve them at a greater expenditure, and the Revenue account should bear

bear the cost.
N^o 66-11 Feb/71. 3. The Agent also remarks, that as the calingulaks were built according to plans approved of by Government, some of them having even been altered in deference to the views of Government, the incidence of so large an additional charge is one deserving much consideration, and he solicits at the hands of Government a careful and liberal consideration of the circumstances of the case.
4. It seems to me that the grounds on which the decision of the matter rests is a very simple question. It is whether the works now proposed are necessary for the completion of the Canal in a proper and safe manner to put it in working condition as required by the Contract, for if so, the charge is undoubtedly a fair one against Capital: or whether the portion of the Canal referred to had been completed according to the Contract, as if so, the charge would appertain to Revenue.

N^o 93 of 17th Nov/70
Res 54 G. O. 18th 2963.
4th Dec/70.

I have recently fully entered into the question of completion and shown that the Canal has not yet been completed, and I need not repeat the arguments here. I will only mention that certain portions of the Main Canal having been used to a limited extent is no argument that they were completed and put in working order in the sense contemplated in the Contract, for Article 11 of the Contract dated 3rd June/63 provides:—

That

"That as soon as any portion of the works shall
"be completed to such an extent as shall be
"sufficient for the purpose the Company shall
"open and employ the same for the supply of
"water for the irrigation of the land"
and accordingly, irrigation commenced in the first
half of 1864, but no one would say that any por-
-tion of the Canal was completed then - while pro-
-vision that repairs to the Canal shall be debited
& Revenue is in the 21st Article and that relates
to repairs after the Canal has been completed and
opened.

Article 11 of the Supplementary Agreement
provides for the Company placing the said Canal
and works in working order to the satisfaction of
the Local Government by the 1st July 1874 and
the Company can scarcely go so far as to say
that the Canal has yet been completed and placed
in working order, seeing that on each occasion
of water being admitted in any considerable
quantity for the purpose for which it was
constructed, it has leaked, and these conditions
will not be fulfilled by the simple repair of
the latest breaches, for unless additional pre-
cautions for safety are taken there will be no
greater security than against other breaches than
there has hitherto been -
In adducing as an argument against incurring any
further

further expenditure from Capital on work that
may be deemed necessary for the safety of the
Canal, the circumstance, that the work has been done on
plans sanctioned by the Government, the Company's
officers seem to lose sight of the fact that with
respect to the 2nd Breach (the nature and construc-
-tion of which causes most anxiety) the Government
in sanctioning the large supplemental estimate
of Rs. 4,10,476, did so on the understanding
that certain precautions would be taken for the
safety of the rivulets and banks, and this aspect
have had occasion to remark before has been
treated as a dead letter, and it was not until
after the floods of August 1870 that the Chief
correspondence with the Govt. referred to the subject, and then he did
G.O. No. 2376. 1st Oct 70
not dispute the necessity for the precautions re-
commended, but merely said it would have been
unsafe to carry out the improvements until the
banks were well consolidated, and even then it
should be done under protest at the risk of
Government while in another communication
in G.O. No. 1274. 23rd Aug 70
in G.O. No. 2376. 1st Oct 70
he remarks that the Canal should be able to
"stand all the water it is intended for" but the
Government and their professional officers
have really acted for nothing more.
5. The Canal has been designed to carry eight
feet of water above the crests of all calin-
-gulahs are at that level therefore, all surplus
water

16 It would appear then that something is still required to be done to make the Canal safe. - Raising all walls and revetments as before often alluded to, and strengthening them where weak, would obtain the object under ordinary circumstances of a rain fall, but the expence would be very great, and even then absolute safety would not be secured as the existing discharge works are unequal for anything like a rain fall of an inch an hour and I was therefore quite prepared to recommend any alternative measure which, while accomplishing that end might be more economical, and I readily acquiesced in the Chief Engineer's idea of remodeling the

8. The proposal now made by the Chief Engineer is a somewhat modified plan, the details of which I will explain hereafter. I will only now mention generally that it is designed the culverts capable of discharging all flood water without the water in the Canal attaining a greater height than 9 feet above bed.

9. The particulars of the Estimate are:-

Reconstructing N. ^o 13 Catiguah at 24 th mile which breached	P.
in August 1870 - separately reported on	6150
Remodeling Catiguah N. ^o 2 in the 52 nd mile	3270
" " " " " 3 in " 56 th	5250
" " " " " 4 in " 59 th	8910
Constructing a new catiguah called N. ^o 3 in the 58 th mile	14540

10. In forwarding these estimates the Chief Engineer remarks that his object is to show the cheapest and best means for attaining security, and the reconstruction is described as follows:-

N^o 13 Calingulah - 24th mile - already reported on - 4th Section. Calingulah N^o 14 47th mile is stated to have ample capacity for discharging all the drainage into the Canal in its neighbourhood.

Calingulah N^o 2 in 52nd mile is proposed to be adapted for the discharge of an additional half million cubic yards an hour - Drawings N^{os} 536 and 539.

It is proposed to lower the crest one foot - making it 7 feet above bed for a length of 280 feet over which the flood waters will pass two feet deep. The area drained is four square miles and 28 bays of 8 feet each will discharge 4,92,800 cubic yards while the remaining portion of the old calingulah crest 8 feet above bed will pass the water running one foot deep 1,68,834 cubic yards - Total 6,61,634 cubic yards. Then there are fifty square miles drained into the Canal between the 52nd and 60th miles for the discharge of the surface drainage of which it is proposed that 14 miles may be provided for above the 3rd Class Bridge at Balanaram 56th mile, and of the remaining 36 square miles at the Van-gadane by cut and the whole quantity of drainage water to be provided for is 4.6 million cubic yards an hour.

Calingulah N^o 3 in the 56th mile - Drawings N^{os} 538

538 and 540 - A portion of the existing calingulah is to have the crest lowered two feet and to be reconstructed in 31 bays of 8 feet length which at flood level - 9 feet above bed - will discharge 5,45,600 cubic yards an hour, while the remainder of the old work with the water one foot deep on crest will pass 87,400 cubic yards - Total 6,33,000 cubic yards.

N^o 4 Calingulah in the 59th mile - Drawings N^{os} 537 and 542 is to be similarly remodelled - 63 bays of 8 feet with the crest 6 feet above bed will discharge 11,08,800 cubic yards with the water in the Canal at flood level and the remaining portion of the existing work will pass 2,14,00 making a total of 11,30,200 cubic yards an hour.

These arrangements the Chief Engineer considers would make the 4th and 5th Sections of the Main Canal very safe, but as an additional precaution he proposes to build a masked or blind calingulah (Drawing N^o 541) - just below the 3rd Class Bridge at the 57th mile the body of which will be 500 feet long and its crest 4' 6" high on which a bank of earth would be raised for maintaining the full depth of water in the Canal when necessary and which being removed on occasions of flood the calingulah would discharge two millions cubic yards an hour.

11. As a further precaution the Chief Engineer proposes to keep all sluices open until after September, water being retained in the Canal by a bank of earth four or five feet high in front of each which would be carried away if the water rises, and he also intends to have the Canal banks lowered at convenient points so that it may breach if an excessive rainfall occurs.

12. The arrangements proposed, ^{relative} it will be observed to the 4th Section only, and the general principle is to render the ordinary calingulaks capable of safely passing a surface discharge of at least ^{Ch. Eng. 12:303-24} one third of an inch of rain an hour & supplement this discharge by masked calingulaks only to be brought into use when necessary in times of flood, when the discharge by them added to that of the ordinary calingulaks would be equivalent to a surface discharge of one inch an hour rainfall and for-
ther as a greater fall than one inch an hour, al-
though hitherto unknown, may possibly occur,
it is proposed to arrange for the Canal breaching
in places where the resulting damage would be least,
and the repairs be afterwards most readily made.

13. On first receiving these papers I noticed the omission of any similar proposals for im-
proving the surplus discharge works of the 1st,
2nd and 3rd Sections, and the Chief Engineer in reply
informs ^{12:336-15 Feb/71}

Agent 12:101-2 March/71, informs me that the necessary investigations have
partly been made, but that it is improbable the
plans and estimates can be completed by the 1st
of July next, and that it would be convenient if
the question generally was discussed on the papers
now submitted for the 4th Section, the further ex-
penditure to be proposed hereafter. I shall expect
to exceed Rupees 50,000.

14. I had intended while supporting the
Chief Engineer's proposals in other respects
to recommend that his remodeling of the calin-
gulaks should be such as would prevent the
water in the Canal at any time rising to a
greater height than 8 feet above bed, with
which object it would be necessary to lower
the crests of the existing works one foot more
than the Chief Engineer proposes, and in the
impression that it would be imprudent to sub-
ject the banks to the pressure due to a greater
depth, but having referred the question to the Chief
Engineer for a decided expression of his opinion, I
learn that he is quite satisfied there is no excep-
tional risk in allowing the water to stand 9 feet
deep in the first three Sections, or that a depth
of 10 feet would be dangerous in the 4th and 5th Sections,
and I will therefore not offer any opposition to
the Chief Engineer's proposal in that respect.

I must however take exception to the proposed
method of placing and fixing the plants as
shown in the drawings, for the beam on which
the men are intended to stand when fixing the
shutters would not remain permanently, and
as it is quite possible necessity may arise
for removing these plants when the Canal is
full, suitable arrangements should be provided
for performing either operation from the tow path.
With this modification I would approve of the
proposed arrangements.

Have the honor to be,
Sir,
Your most obedient servant,
J. G. Gurneale Esq. & Co.
Civil Eng. for S. C. Company.

C. W. M. B.

Q. W. En & Knight chd

22nd May 10-8/71

The Comptroller for A.C.C.

The Secretary of Government
P. W. DePauw

Bar. 6.3 } March 1/91.
Bar. 13.3 }

Box 17.

Surficial correspondence
within mentioned having re-
ferred to plans & estimates
for enlarging certain culverts
in the 4th Section Main Canal
at an expenditure of Rs. 31,977
exclusive of Engineering ests.
- Blighman L. (C)

Ch 211

617 Transfer to Mr. J. W. C.

SPR 1089 2/500 April 1870

CIRCULAR ORDER, No. III. OF 1870.

PROCEEDINGS OF THE BOARD OF REVENUE, dated 10th February 1870, No. 978.

Collectors when issuing puttahs for newly granted dry lands, should see that a clause is inserted in the puttah to the effect that the land is liable to be transferred to the head of "Wet" and assessed accordingly, should the requisite means of irrigation be provided.

(A true Extract.)

(Signed) A. MACGREGOR.

Acting Secretary.

(True Copy.)

(Signed) J. T. MAYNE,

First Assistant.

To all Collectors,

Public Works Department
1889
Proceedings of the Madras Government
Under date the 18th April 1891

Read the following

From The Cons. Engr for L.C.C. H.E. No. 131 of 6th March 1891

The questions referred
for the consideration of
Government in the above
letter from the Consulting
Engineer for the Madras
Irrigation and Canal
Company are, firstly,
whether alterations of
existing surplus works,
and the construction of
additional works of the
same kind should be
charged to Capital or Revenue
secondly, whether the
arrangements proposed
for

N.
A. N.
J. D. S.

for the 4" section of the main Canal are sufficient and convenient.

2. His Excellency the Governor in Council is of opinion that there is no room for doubt as to the propriety of debiting to Capital the cost of altering the surplus weirs, so as to enable them to act efficiently in relieving the Canal of flood waters. It appears to be altogether immaterial that the Consulting Engineer concurred with the Company's officers in considering the capacity of the works as designed and carried out sufficient, and that the Government approved of the estimates. Since the

designs

designs were prepared and approved the data on which they were based have been shown to be erroneous and consequently the Government and the Company's officers are both agreed as to the necessity for making further provision for the discharge of surplus water or, in other words, for doing now what was necessary in the first instance though not then known to be requisite. It appears to be clear that the Company are bound to place the Canal and works in working order to the satisfaction of the Local Government, and that this requirement must

must be determined with reference to the known circumstances of the Canal, and of the country through which it runs so far as these are understood at any time prior to the 1st July 1891. Whatever radical alterations of existing works may be necessary to place the Canal in working order must therefore be deemed a part of the construction, as distinguished from repair and maintenance, and as such must be a charge against Capital.

3. With regard to the particular measures which may be requisite to ensure the safety of any part of the Canal it must be noticed that

that the sufficiency or otherwise of existing surplus works is dependent upon their capacity of discharge with the water in the Canal at a given assumed level more or less in excess of the ordinary full supply level. There are two points requiring to be considered. The first is the level to which the Canal water may be allowed to rise with reference to the actual conditions of the construction, or of the substitutes for ordinary embankments; the second is the level which might reasonably be considered safe if the height of the banks

banking ordinary full
supply level only were taken
into account. His Excellency
in Council believes that
the necessity for providing
additional discharging
power is due mainly, if
not entirely, to the faulty
construction of the embank-
ments or to the omission
to raise certain parts of the
substitutes for ordinary
embankments to a proper
level; while, besides this,
some of the damage sus-
tained last year was due
to the omission to close the
head sluice and to open
the sluices in the waste
weirs. In no part of the
Canal does the water appear
to have risen to a height
which

which would have been
unsafe had the embank-
ments been sound, and
had the core and masonry
walls been efficient and
of a height corresponding,
if not equal, to the bank-
ing. Now it is comparatively
simple to fix the dimen-
sions of surplus works
with reference to the ge-
neral level of the em-
bankments and to the
quantity of water to be
discharged, for were the
former in all respects
efficient it is certain that
a margin of 3 feet at any
rate would be ample. On
the other hand it is ex-
tremely difficult to show
what discharging power
is

is necessary in connection
with the existing state of
the Campana Canal, and
so far as the Government
can judge there is no other
way of determining this
point than by the selection
of a proof level of the kind,
even if not of the exact
extent, suggested by the
Consulting Engineer as far
back as November 1869, and
the arrangement in corres-
pondence with it of the
surplus works as well as
the improvement of faulty
embankments or other works.
It is believed that the
ordinary full supply level
in the first 3 sections is
8 feet above bed, and that
the regular embankments
were

vide G.O. Res. 2876 of Feb 4/70

30
were intended to be 14 feet
above the same level.
Similarly in the 4th section
the ordinary depth of water
was to be 9 feet and the
Canal banks were to vary
from 4 to 6 feet above water
level, depending upon
whether the Canal was in
cutting or altogether in
embankment. If so, the
Chief Engineer's proposals
must be taken to refer
to what he now considers
to be a safe margin for
the banks above main-
-main water level, rather
than to the depth of
water which, with sound
banks it would be proper
to allow. It is manifest
that the Government
cannot

cannot be in a position
to decide upon a point
of this kind, and that
it must rest with the
Consulting Engineer to
settle, in communication
with the Chief Engineer
of the Company, what quantity
of water will have to be
discharged from each part
of the Canal, taking into
account.

I. The area draining into each
part of the Canal.

II. The capacity of the canal,
above bed level and con-
sequently the quantity of
drainage water which can
be absorbed if the supply
from the Deembuctra be cut off.

and then, assuming a certain
maximum safe level for the
Canal

31
Canal water, the surplus
works should be arranged
accordingly. The main
Canal may be considered
to be in working order on
the 1st July 1871 if, it be
found capable.

I. of conveying a full irrigation
supply throughout for 30 days
consecutively.

II. of holding without any material
injury, water to the maximum
depth required in connection
with the surplus arrangements,
for 48 hours consecutively, in
each section into which the
Canal may for the purpose
of proof be divided.

h. The Govt. would
observe, with reference to
para II of the Consulting
Engineer's letter, that the
arrangements therein noticed
might

might be admissible in
the case of an incomplete
canal, but not otherwise.
There can be no real neces-
sity for them, for it is not
required to fix the crest
of the waste weirs at any
particular level above
bed, and their discharging
powers can, without difficulty,
be made fully equal to all
possible requirements if they
be properly regulated.
Movable shutters can be
used to retain water ordi-
narily at the full supply
level, and, on the occurrence
of floods, these can be raised
or lowered as circumstances
may render necessary.
The only objection to such
shutters, is the possible

waste

32
waste of water, and this
might be readily overcome
by providing for the dis-
-minution of leakage into irri-
-gation channels. As the
Government Canals in
the Godavari Delta the
regulation of water has
attained a considerable
degree of completeness and
facility, and the Chief
Engineer for Irrigation
will be able probably
to render considerable
assistance in advising
as to details, should there
be any doubt on the
part of the Chief Engineer
of the Company as to the
arrangements which would
work well in practice.

The

5. The Government
consider that the recon-
-struction of Calingulab
No. 13 in the 3rd mile of the
2nd section of the main
Canal may properly be
charged to Revenue, be-
-cause it appears to have
failed from leakage, which
might have been prevented
by a comparatively small
outlay on maintenance,
and the estimate is sanc-
-tioned accordingly under
that head. The estimates
for remodelling Calingulab
Nos. 2, 3 and 4, and for
constructing a new Caling-
-ulab to be called
No. 3A, are sanctioned
conditionally on their being
found to fulfil the require-
-ments noticed in this
order

order, but it may be
remarked that it would
probably be found more
convenient were the
revised creels placed for
a sufficient length at
3 feet below ordinary full
supply level, and were
shutters in 8 to 10 feet
lengths, sliding on 3ⁱⁿ
angle iron, arranged so
as to be worked by a
simple screw from the
roadway. Probably a
considerable part of the
existing weirs would then
not need alteration. His
Excellency in Council
however desires that it
may be left to the Com-
-pany's officers to decide
how, with reference to the
small

small amount of Capital,
and to the short time
remaining for the com-
-pletion of the Canal and
works, the requisite condi-
-tions of efficiency can best
be secured, and while,
therefore, any assistance
in determining details
should be afforded by the
Consulting Engineer,
he should understand
that any arrangements
which sufficiently meet
these conditions should
not be objected to, though
they may not in his
opinion be the best which
could be adopted.

6. The Government are
not in a position to
advance funds for the
completion

completion of the Company's
contract, and it is evi-
-dent that even had
there been no objection
on principle to the alloca-
-tion of the surplus accu-
-mulated being charged to Revenue,
the small balance avai-
-lable under that head
would have been alto-
-gether inadequate, even
had it not been required
for purposes of maintenance.

AB

To

The Hon. Secy. to Govt.
Agent & Manager of the
Sulphur Mines

Desd 20/6/71

P. W. Smith to length dated 22nd
May 1870

11/11/71
P. W. Smith

370

W. C. Smith 71st - 283
W. C. Smith 71st - 283

1. Maping orders in the Public &
Survey Section for the Land
Office Submission plans
2 containing for each in
various land plans on the
2 Section of the Land
and Survey Department with
reference to the provision
funds for the work