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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 1843	Press
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Dated 20 - 6.	1867.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
20th June 1867.*

No. 438. Read the following letter from the Consulting Engineer for Irrigation and Canal Company, to the Secretary to Government, Department Public Works, dated Madras, 6th June 1867, No. 23 :—

1. I have the honour to report that I have, in accordance with the instructions conveyed in paragraph 3 of the Order of Government No. 1,582, of the 25th ultimo, requested the Agent and Manager, Madras Irrigation and Canal Company, to hasten, as far as may be practicable, the submission of revised estimates for those sections of the Company's canal for which additional sanction will be required

2. From the Despatch, which with its enclosure was communicated with the order referred to above, it would appear that the Secretary of State is at least not sure that the manner, in which the control over the Company's operations in this country has been exercised, has not occasioned unnecessary delay and inconvenience, and as the opinion or suspicion has probably been based upon the representations made to him by the Company, through their Secretary, it may not be superfluous perhaps for me to show, as I think I can clearly do, that the allegations made in the letter of the Secretary, Madras Irrigation and Canal Company, dated 11th March, No. 9, not only convey an erroneous impression, but are altogether unfounded on fact.

3. Commencing with paragraph 4 of the Secretary's letter, it will be observed that the Board affirm that prior to the date of the supplementary arrangement, the execution of the works had been carried on not only in accordance with plans and estimates most carefully examined, amended and settled by the Consulting Engineer to the Madras Government, and approved by that Government itself, but under a direct control and minute supervision over details exercised on behalf of the latter authority. It is not necessary to go further than the works, to which the Board afterwards refer in this letter, to show that the works had not been carried out in accordance with the sanction given, but that in very numerous instances the particulars of the sanction had been entirely disregarded. Had the works indeed been carried on in accordance with the plans and estimates, there could have been no occasion for revised estimates and supplemental sanction, except in the event of its being deemed desirable to modify the arrangements, and the Officers of the Company would have been free to carry on the works to completion without any interference whatever.

4. The Board would, from paragraph 5 of their Secretary's letter, apparently wish the Secretary of State to consider that the reasons, which induced Government to withhold sanction to the revised estimates of the 2nd and 3rd Sections, are to be gathered from the part of a sentence : " It is requisite that whatever mistakes and " errors have been committed in the past management of the section should be " ascertained," which he quotes from paragraph 5 of my report to Government on the 2nd Section estimates. The Board would wish it, it is fair to suppose, to be understood that the detection of past mistakes and errors was the end for which the rejection of the estimates, pending that detection, was recommended ; for otherwise, however much they might fail to comprehend the bearing of the facts noticed in that paragraph 5 just referred to, they would not have wilfully ignored the circumstance that the very same

Proceedings Madras Government, 17th November 1866, No 3,671.

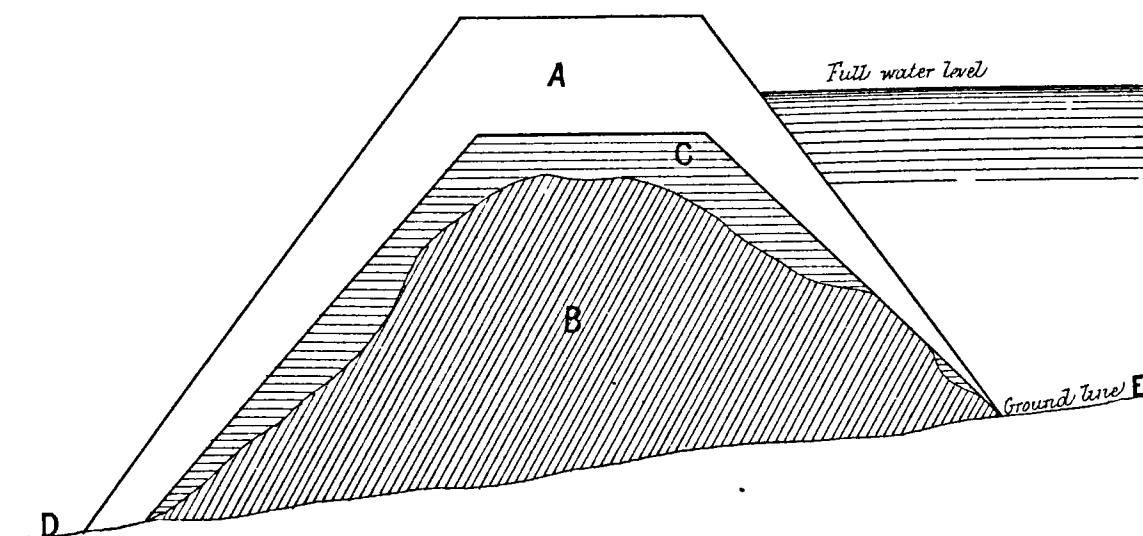
sentence gave an intimation of the object for which the detection of past errors was advisable, viz., in order that while the Engineer, in charge for the future, might be held responsible for his own proceedings, he might not have to answer for the errors of his predecessors. The earlier part of the very same sentence pointed out, moreover, that such examination of past work was necessary, in order to prevent the work remaining to be done being conducted without the possibility of sufficient check and control, and I may add that I did not simply allude here to the control exercised by the Government, but to the Chief Engineer's control, and to that of the Executive Engineer in charge of the section over his subordinates and work-people. Here then was a weighty reason for delaying sanction.

5. The same paragraph pointed out again that the estimate did not provide for completing the section as it professed to do, and that, without other work, the expenditure would be useless. This extra work for making the embankments water-tight must necessarily be executed before much of that further work which had been included in the estimates, and it was only right and proper that this new work, the absolute necessity for which had been finally demonstrated subsequently to the preparation of the revised estimates, should be taken into account in arranging for, and calculating the expense of, the completion of the section.

6. Again, the estimates themselves were entirely unreliable. The Government were really asked to sanction a large sum of money, Rupees 4,20,950, because the Chief Engineer had attached his name to certain papers called estimates, but which were, as far as the earth-works at any rate were concerned, nothing better

than guesses. The Chief Engineer himself expected,* as any one else in his place would have done, that the estimates would have been based on cross

sections, and he had instructed the Executive Engineer to prepare a series of these, and he supposed that his instructions had been carried out until he found that the estimates were not supported by such sections. The Chief Engineer was thus unable to say how much work had been done, and if he has now ascertained this fact, he has done so only very recently, and it was virtually impossible for him to state, with even a fair amount of precision, what work was necessary to complete, i.e., the work entered in his estimates, without cross sections and these, without any further trouble, would have enabled him at the same time to show what work had been done. I know that, at the time of my visit to the canal in September last, it would have been a most difficult thing to ascertain anything accurately regarding the state of the banks, owing to the irregular state in which they had been left. I will illustrate this by a diagram, as it is of some importance that it should be clearly understood how entirely unobstructive the order of Government was.



D. E. represents the ground line, A. the section of the embankment as intended to be when finished, B. the mass of earth-work already done. Now B. being unmeasurable, except at a great expenditure of labour and a useless waste of time, and the work required to complete being manifestly A. B., the Government sanctioned an advance for the purpose of making up the bank, in the first instance, somewhat to the form C., that is, the form which would admit of the ascertainment of the quantity of past work, and of work required to complete, without difficulty. It might have been supposed that every exertion would have been made to convert B. as rapidly as possible into the form C., seeing that not an atom of useless work was needed for the purpose, but that every yard executed would have been so much towards the completion of the embankment. The Government Order is dated the 17th November, and it placed at the disposal of the Com-

Advance	Rs. 2,00,000
Already over-spent	1,27,313
	72,697

pany's Officers Rupees 72,697 for going on with this work. The Company complain, in the Secretary's letter dated the 11th of March, of the obstructive action

of the controlling authorities in India, but the following information, extracted from the progress reports received from the Agent, shows the expenditure incurred on the 2nd Section from November to March :—

	On work.			Special superintendence and sundries.			Total.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
November	1,101	15	1	333	2	11	1,434	17	12
December	12	4	1	437	4	7	449	8	8
January	2,035	7	10	388	12	8	2,423	19	18
February	2	7	6	140	19	8	142	26	14
March	16	9	3	125	2	8	141	11	11
Total	3,168	11	9	1,458	1	6	4,626	13	3

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Thus, so far from the action of the Government having caused delay, the facts show that the Company were either not prepared to carry on the works which they had undertaken to execute, or that there were impediments, entirely irrespective of State control, which interfered with the progress of the works.

7. The reasonableness of the requirements of the Government, as a condition of the accordance of further sanction, may be shown, and this too without looking elsewhere than to that same paragraph 5 from which the Secretary to the Company extracted a fraction of a sentence. For one description of work alone, earth-work, nearly 19,000£ additional were asked for by the Chief Engineer; of this £ 7,000 were represented as required owing to increase of rates, but there was no evidence whatever to show why the extra quantities of earth, represented by the remaining £ 12,000, were needed, seeing that no change in the arrangements to absorb this soil had been even proposed. In the 4th Section of the canal very large sums had been confessedly paid away nominally for work done, but really without there being such work to be found: it was possible that something similar had occurred here, and it behoved the Chief Engineer to cause such investigations to be made as would enable him fully to explain the discrepancies. It is difficult to understand what could be deemed reasonable control, if the Government were to be considered unreasonable for objecting to the sanction of quantities of work far in excess of those which the arrangements made by the Company's own officers required, and to account for the insertion of which in the estimates no definite explanations had been tendered.

8. The Secretary in paragraph 5 of his letter quotes from a communication from the Chief Engineer to the Company's Manager in India. The date of this communication is not given, and I do not, therefore, know whether it was written before the Order of Government of the 19th January last, No. 172, was received. However that may be, it contains statements which are quite contrary to fact.

First.—The Chief Engineer appears to have written, referring to the revised estimates for the 4th Section, Masonry; 7th Section, Earth-works; and for the 2nd and 3rd Sections, "All these have been rejected without any tangible suspicion of their correctness being expressed, until all the old work shall have been measured up again." There is here, to say the very least, a *suppressio veri*. The Chief Engineer may mean that the calculations of the work remaining to be done could not be disputed, and that must in every case be self-evident, unless the Government chose to send an officer to check those calculations, but the Chief Engineer knows perfectly well that the work remaining to be done, added to that paid for, was in many cases very much in excess of the quantities which the works would contain when completed, and he was, as I am sure the Government will consider, properly called upon for explanations of the discrepancies. The Government have never desired that works should be re-measured unless there were clear reasons for supposing that the measurements on which payment had been made were incorrect; but, where these reasons existed, it was right that investigations should be made, and it would then be for the controlling authority to decide whether the facts had received such explanations as would warrant the passing of past expenditure and the accordance of additional sanction. The 7th Section estimates have not yet been submitted to Government, because the Chief Engineer has not yet furnished explanations

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regarding some of the miles in which the discrepancies were very great. It would take too long to show here what explanations were required, but it may be mentioned that a comparative Statement, attached to the Agent's No. 210 of the 31st August last, shows that cubic yards 270,000 of earth-work, included in the revised estimate, remained unaccounted for after allowance had been made for departures from the sanctioned arrangements, and that in some miles the differences were altogether too great to be ignored, thus.—

	Quantities	
	Original Estimate	Unaccounted for
92nd mile	1,04,879, C Yds	38,872
93rd "	72,517 "	33,428
94th "	45,822 "	15,769
96th "	51,822 "	29,473
98th "	49,060 "	37,768
101st "	74,784 "	20,661
102nd "	52,550 "	17,769

The quantities of the original estimate are those which were represented by the Company's Chief Engineer at the time to be sufficient for the construction of the canal, and it will be seen what a large proportion of those quantities is represented by work which has been paid for, but which has not as yet been traced.

Again—"The most accessible records of the measurements and payments of past work by the Company's Engineers are declined by Government, as not satisfactory and trustworthy enough for their object" is not a statement of facts, for the Government have not had the opportunity of declining such information, the comparative Statement received with the estimates of the 2nd and 3rd Sections having been a blank in respect of quantities of work performed. The Chief Engineer must have been well aware that these measurements had not been furnished or entered in the documents he had submitted, for in paragraph 7 of my letter

No 79* to the Agent, which was dated the 18th July, the omission was pointed out. It was quite immaterial to the Government by what arrangements the

* The Chief Engineer received a copy of this letter, as appears from his No 341 of the 7th August to the Agent

requisite information might be supplied, and if that information were trustworthy, it would either be so *prima facie*, or discrepancies could be easily reconciled. In paragraph 8 of the letter which has just been referred to, it was also said that where the quantities of work done and paid for, added to those remaining to be done, did not differ more than five per cent. from the sanctioned estimate, they would be accepted without further investigation, but whereas in the portion of the 18th mile the expenditure on earth-work exceeded by nearly 33 per cent. the estimate sanctioned so recently as 25th August 1865, there could be no question as to the absolute necessity for a careful ascertainment of the quantity of work actually done. I must add here, too, that so far from the Chief Engineer being justified in asserting "there is no prospect of our being permitted to start," he was well aware both from the Order of Government of the 17th November, and also at a much earlier date from paragraphs 7 and 8 of my letter No. 79, that no stoppage of the work had ever been contemplated, but that, on the contrary, its continuation was pre-supposed; the measurements of past work were to be postponed until "in the

"course of work and without extra expense the banks are, for at any rate lengths of one or two chains, pretty level and in section, and then by means of the original levels the quantities can readily be ascertained," and the Government provided funds wherewith to carry on the works.

9. Again, the Chief Engineer is quoted as saying "It is a simple and safe matter to measure up for estimates of completion." It may be so in some cases, but it was not a simple thing in the case of the earth-works of the 2nd and 3rd Sections, and the course which the Chief Engineer adopted of proposing the acceptance of estimates founded on guesses, although he knew that nothing but a series of cross sections could enable an estimate to be prepared was eminently unsafe, and to attempt to let contracts on such data would have been anything but wise; for what contractor, with any means, would dream of contracting for an altogether indefinite quantity of work, unless at a price which would more than suffice to cover all possible under-estimating.

10. The Proceedings of Government of the 19th January 1867, No. 172, may not have been, though they probably were, before the Directors of the Company when their Secretary's letter was written on the 11th March. That order clearly shows that Government did not wish to delay or contemplate the stoppage of works any where along the line of canal.

11. In paragraph 6 of their Secretary's letter, the Board complain of the time of the Company's Engineers being occupied by unnecessary and vexatious matters of account and inquiry, and allusion is made to the special, voluminous, accounts and progress returns, elaborately sub-divided under numerous headings, all necessary to supply the requirements of the Government. In the first place it may be replied that the Government desire no information to be exhibited in the accounts but such as any Company, whether working under guarantee or not, would have to record; 2ndly, that the scheme of accounts sanctioned in Proceedings Madras Government, No. 753, dated 12th April 1862, was accepted by the Company, and the latter had the opportunity of suggesting any improvements that might appear advisable; 3rdly, that the records of the expenditure, prior to the Government Officers providing the Company with a system of accounts, were such a muddle that their Agent has ever since been trying to get them into order; 4thly, that the Government have willingly acceded to requests made by the Agent for the substitution of quarterly for monthly accounts; that this Office has suggested or sanctioned several modifications of the

Vide Proceedings Madras Government, No. 2,974, dated 14th October 1863

accounts with a view to reduce their volume, or to dispense with information which it was thought might be omitted without decreasing the value of the accounts.

The Board make the general assertion that the accounts are so arranged as to make them difficult to keep, but they would have done far better had they suggested alterations, and shown that they understood accounts, and could devise a better system, which would still enable their own Officers to control expenditure, and afford the Government the information which is needful to show that that expenditure is being incurred in accordance with the sanctions from time to time given.

12. I have no doubt the time of the Engineers has been much occupied with accounts. This has, however, been in no respect due to the requirements of the

Government, but to the inefficiency of the arrangements made by the Board. The Board knew, or ought to have known, that the duties of Engineers in England are very different to those which they have to perform in India; that whereas in the former country an Engineer, when the designs of works have been settled, has only to see that the materials furnished by Contractors are good, and that those materials are made use of in the works in accordance with the plans and specifications; in India, on the other hand, there are none but petty contractors, materials have to be obtained by detailed arrangements, and often the Engineer has to be brick-maker, lime-burner, stone-cutter, smith, carpenter and every thing else, *i e*, he has himself to take the place of a foreman. He has also to pay for all the detailed work thus done, and it is evident that all these multifarious disbursements require not only careful record, but, in the case of untrained officers, simple and sufficient instructions are needful, so that every officer from the time he is called upon to disburse the first rupee on account of his works may know where and how the record is to be made. Now, until the present Agent and Manager and the Chief Accountant entered the Company's service, the system appears, to have been to allow every officer to make as many blunders in his accounts as he pleased, and which he could hardly avoid in the absence of detailed instructions; then to leave the blunders unnoticed for long periods—very frequently until the change of the division had changed hands once, or perhaps more frequently, and lastly, to endeavour by correspondence, often with those totally ignorant of the circumstances, to obtain such information as would enable the mistakes to be rectified. It will be remembered that two and a half years ago the accounts were greatly in arrear, and it is only quite recently that the great mass of the errors which the old accounts contained have been put right. The Board may deem it of little importance whether a bridge, a tank, an aqueduct or a channel is debited with the expenditure belonging to it. They may think that when stores are issued for use on a work it can matter but little whether the records are so kept as to admit of its being shown what became of them; but, should these be their views, perhaps they will be good enough to intimate how they would manage to know anything at all of what had become of the money intended for the works. There have been too many Companies which have been ruined because none of those responsible would take the trouble or, perhaps, thought it necessary, to see that the money entrusted to their care was being properly expended, to make it right that the Government should countenance similar slackness in the management of any Company, in regard to which an agreement with the State affords the means of enforcing the obligation of accounting for monies, at least to the extent of requiring the accounts furnished to be in such a form as to make it probable that expenditure will have to be duly recorded.

13. I have not, in the former part of this letter, answered the Board's remark on the subject of the decision of Government with respect to the estimates for the upper part of the 6th Section. The Government Order is dated the 14th November 1866, No. 3,624. The Board think the modification of the Chief Engineer's estimates an unnecessary interference, yet such power is expressly reserved to the Government in the contract, and reasons were adduced for every alteration made. It may be added that a canal, estimated by the Company's officers to cost Rupees 7,566 a mile, was re-estimated by their officers to require Rupees 23,920 a mile;

that the canal here, being of small capacity, viz, 45,000 cubic yards to 50,000 cubic yards an hour, this latter rate of cost, if applied to the canal in the upper sections, would have represented, for the 4,00,000 cubic yards there to be conveyed, no less than £19,000 to £21,000 a mile; that the country through which the small canal was to be carried presents no difficulties, and has no heavy masonry works, and consequently it was not unreasonable that the Government should wish the cost if possible to be reduced.

14. The Board seem to think that this office should simply correct mistakes in the Chief Engineer's arithmetic, and leave his estimates untouched, however good reason there may appear to be for modifying them. The Government have very generally abstained from any interference with the Chief Engineer's designs, even where they have been disposed to think that they were capable of improvement, and it is very advisable that such changes should be but seldom made; but it might have been thought that the Board, with no other light to guide them than the papers printed with the Government Order, showing as these papers do how scanty was the report furnished in support or explanation of such an enormous increase in the estimated cost of the works, would have seen that there had been no arbitrary exercise of controlling authority.

15 With regard to the question of the manner of exercising control for the future, and to the extent to which it is to be exercised, I should be glad of more specific instructions than can be gathered either from the present or a previous Despatch* from the Secretary of State.

* No. 19, dated 25th October 1856.
Proceedings Madras Government, No. 3,960, dated 15th December 1856.

I have endeavoured to show that the controlling power has hitherto been used reasonably, and that the cases which the Company adduced as instances to the contrary will not bear examination. I believe that the check which has been exercised over the expenditure and proceedings of the Company has had a beneficial effect; that many reforms have been effected as a consequence of the notice taken of irregularities; and that the knowledge, that the absence of care and attention in the conduct of the works would certainly be brought to light, has been of some use in convincing the officers of the Company that their responsibilities are not purely nominal. At the same time it cannot be denied that the action of the controlling authority is generally and necessarily brought to bear too late, for it is only when mistakes have occurred, when money has been wasted, when works have been proved of little or no use without further heavy expenditure, when, in short the mischief has been done, that the Government can interfere even to the extent of expressing disapproval. The contract provides, no doubt, that all expenditure must be incurred in accordance with the sanction given, and under this rule the Chief Engineer ought not to allow his Executive officers to do more work, or to pay a higher rate for that work, than the sanctioned estimates provide. Of course if estimates be correct, and Engineers thoroughly efficient, such a conformity to the contract would have been practicable, without prejudicially affecting the progress of the works, but as the circumstances of the case have in practice been found, a rigid enforcement of the obligations entailed on the Company by the agreement would have brought everything to a stand still over and over again.

16. What is wanted in every agreement with a Company under which the State agrees to make certain concessions, in diminution or prevention of the risk which those who subscribe the capital would otherwise have to take entirely upon themselves, is that instead of the Government attempting to control the proceedings of officers who are in no respect under their authority, the State interests should be protected by making the advantages offered in the way of concessions contingent upon the proper, diligent, and successful prosecution of the works. The Contract with the Madras Irrigation and Canal Company provides for the approval by Government of all the plans and estimates of the works, and for the examination of the expenditure thereupon incurred, but the Agreement makes no provision for the protection of State interests in the event of the Company ignoring the conditions on which alone their expenditure becomes outlay under the Contract.

17. It has been and it must be very difficult to carry out under such circumstances the object which the Secretary of State had in view, when agreeing to grant concessions to the Company. The Government wished the Company to succeed in the enterprise they had undertaken, not only because of the importance of relieving the revenues of the large charge for guaranteed interest on capital, but because the success of the Company would have meant wealth and prosperity to large numbers of the villagers of several districts. The Company have hitherto been eminently unsuccessful, and the Government have had to watch their proceedings, convinced that such courses could not lead to success, but unable to do more than express disapproval and to recommend them to amend their ways. The Company, on the other hand, could only recognize the fact that the Government had constantly to pass orders condemnatory of the management of the Company's affairs and they naturally passed from a disbelief in the necessity for those orders to the conviction that the only drawback to their success was the existence of an authority which could criticise their proceedings. It is difficult to convince an individual that his own shortcomings are the probable cause of his want of success, and it may be doubted whether it is possible to bring home any such conviction to a Company; but, if this be the case, it would be much better that the State should leave a Company to its own devices after the designs of the works had been approved, and, where any concessions are given, that the actual donation of these concessions should depend upon the successful execution of the works. What is in fact generally termed payment for results.

18. If the Company would prefer getting rid of continuous State supervision by making themselves responsible for the efficient execution and completion of the works down to Cuddapah, and should the Government and the Secretary of State be disposed to approve of such an arrangement, I think it might easily be effected as follows:—

First.—The original guaranteed capital of one million would remain on the footing given to it by the original contract.

Second.—With regard to expenditure in excess of the million, the Company, within one year, should submit plans and estimates of all works required to com-

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plete the main canal and its distribution works as far as Cuddapah, and should undertake to complete those works for the amount shown in the estimates.

Third.—That if, on the 1st July 1871, the canal be not fully completed, the State should purchase the works by issuing 5 per cent. Government stock for a sum equivalent to one million added to the amount of the completion estimates, deducting the value of the work remaining to be done at the rates entered in those estimates.

Fourth.—That no alteration should be made in the design of any works, after their approval by Government, without the assent of the Government, and all unauthorized alterations or deviations to be rectified, if deemed advisable by Government, or, failing, that the estimated cost of such works to be struck out of the total of the estimates in fixing the value of the works.

• Having reference to construction.

Fifth.—A progress report would be the only account* required from the

Company, and it would show the quantity of work done and the expenditure incurred on each description of, and individual work in each mile, and be totalled for each estimate separately sanctioned.

19. Unless some such alternative arrangement be made, I do not see how any control, even of the slightly effective nature of that hitherto brought to bear, can be exercised, except very much in the way that the supervision of the Company's operations has been carried on. For instance, suppose the Agent to report to me that certain advances are irrecoverable, and that consequently their arbitrary adjustment is necessary. If the sum be considerable, and if the explanations are insufficient to enable me to report to Government, basing my recommendation, as to the manner in which the loss should be dealt with, on facts, I must either point out to the Agent what additional information is necessary, in which case there will very probably ensue much correspondence between the various officers of the Company, which the Board would term vexatious and unnecessary, though practically the Government would want no information but that which the Board ought to require for their own satisfaction; or my report must be made before, what may seem to be, a sufficient investigation into the circumstances had been made. In the latter case the request for sanction would be a mere form, in the former though, as has too often proved the case, the circumstances might not be brought to notice until the responsibility of the proper officer could not be enforced, nevertheless some good would be done by preventing the adjustment of irregular and perhaps culpable expenditure without question. It is much the easiest plan to ignore irregularities, and to pass all expenditure, whether rightly or wrongly incurred, but it is not a safe arrangement, were it even a right one, to place the careful and conscientious discharge of duties on the same footing as carelessness and disregard of the interests both of the Company and of the Government; the very least that would seem necessary is to express disapproval of the latter, and not even this can be done without ascertaining what are the facts on which the opinion of their character has to be formed.

Proceedings of the Madras Government, Public Works Department.
20th June 1867.

No. 439. * ORDER THEREON, 20th June 1867, No. 1,843.

IRRIGATION, No. 20.

Ordered that a copy of this letter be forwarded to the Right Honourable the Secretary of State for India, with reference to his Despatch of the 8th April 1867, No. 12.

(True Extract.)

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

To the Consulting Engineer for Irrigation and Canal Company.
.. Manager for do. do.

Ed. S. T. Augustin.

Consulting Engineer's Office
Irrigation Canal Company
Madras, 6 June 1867.

N^o 23

13

From,

Captain, John Mullins, R.E.

Consulting Engineer for I.C. Co.

To,
The Secretary to Government
Department of Pub. Works

Sir,

I have the honor to report that I have, in accordance with the instructions, conveyed in para 3 of the order of Government, N^o 1582 of the 25th ultimo, requested the Agent and Manager Madras Irrigation and Canal Company to hasten, as far as may be practicable, the submission of revised Estimates for those Sections of the Company's Canal for which additional sanction will be required.

2. From the despatch which, with its enclosure, was communicated with the order referred to above, it would appear that the Secretary of State is at least not sure that the manner, in which the control over the Company's operations in this country has been exercised, has not occasioned unnecessary delay and inconvenience, and as the opinion or suspicion has probably been based upon the representations made to him by the Company through their Secretary, it may not be superfluous perhaps for me to shew, as I think I can clearly do, that the allegations made

made in the letter of the Secretary, Madras Irriga-
tion and Canal Company dated 11th March 1891, and
only convey an erroneous impression, but are ab-
solutely unfounded on fact.

3 Commencing with para. 4 of the Secretary's
letter, it will be observed that the Board affirm that
prior to the date of the Supplementary arrangement,
the execution of the works had been carried on -
not only in accordance with plans and estimates
most carefully examined, amended and settled by
the Consulting Engineer to the Madras Government,
and approved by that Government itself, but
under a direct control and minute supervision
over details exercised on behalf of the latter
authority. - It is not necessary to go further
than the works to which the Board afterwards
refer in this letter to show that the works had
not been carried out in accordance with the sanc-
tion given, but that in very numerous instances
the particulars of the sanction had been en-
tirely disregarded. - Had the works indeed been
carried on in accordance with the plans and
estimates, there could have been no occasion
for revised estimates and supplementary
sanction, except in the event of its being deemed
desirable to modify the arrangements, and

the officers of the Company would have been free to
carry on the works to completion without any inter-
ference whatever -

4 The Board would from para. 5 of their Secretary's
letter apparently wish the Secretary of State to
consider that the reasons, which induced Go-
vernment to withhold sanction to the revised
estimates of the 2nd and 3rd Sections, are to be
gathered from the part of a sentence - "It is
 requisite that whatever mistakes and errors
"have been committed in the past manage-
"ment of the Section should be ascertained" -
which he quotes from para. 5 of my report to

27th 17 Nov 1891/661/3671 Government on the 2nd Section estimates. - The
Board would wish it, it is fair to suppose,
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mistakes and errors was the end for which the
repetition of the estimates, pending that detec-
tion, was recommended; for otherwise, however
much they might fail to comprehend the bear-
ing of the facts noticed in that paragraph 5
just referred to, they would not have wilfully
ignored the circumstance that the very same
sentence gave an intimation of the object for
which the detection of past errors was advisable,
viz. in order that while the Engineer, in charge for the
future, might be held responsible for his own proceed-
he

he might not have to answer for the errors of his predecessors. - The earlier part of the very same sentence pointed out moreover that such re-amination of past work was necessary in order to prevent the work remaining to be done being conducted without the possibility of efficient checks and control, and I may add that I did not simply allude here to the control exercised by the Government, but to the Chief Engineer's control, and to that of the Executive Engineer in charge of the Section over his subordinates and work people. - Here there was a mighty reason for delaying sanction.

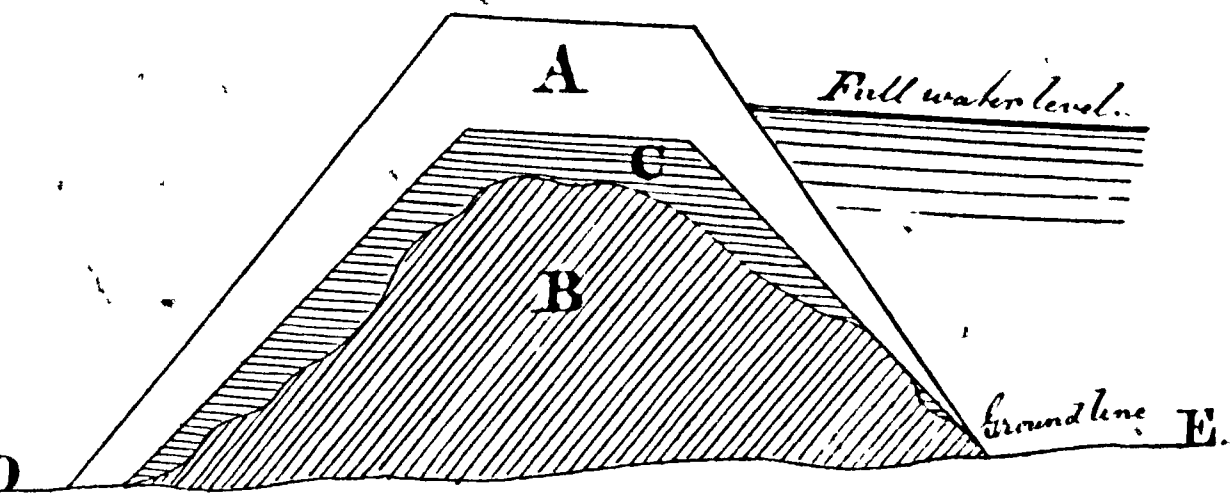
The same paragraph pointed out again that the estimate did not provide for completing the Section as it proposed to do, and that, without other work, the expenditure would be useless. - This extra work for making the embankments watertight must necessarily be executed before much of that further work which had been included in the estimates, and I was only right and proper that this new work, the absolute necessity for which had been finally demonstrated subsequently to the preparation of the revised estimates, should be taken into account in arranging for, and calculating the expense of, the completion of the Section. -

Again the estimates themselves

vide para 16 of
Memorandum dated 21 June
1886 attached to
Agent's letter No 104
18 July -

unreliable. - The Government were really asked to sanction a large sum of money, Rs 4,20,950, because the Chief Engineer had attached his name to certain papers called estimates, but which were, as far as the earthworks at any rate were concerned, nothing better than guesses. The Chief Engineer himself expected, as any one else in his place would have done, that the estimates would have been based on cross sections, and he had instructed the Executive Engineer to prepare a series of these, and he supposed that his instructions had been carried out until he found that the estimates were not supported by such sections. - The Chief Engineer was thus unable to say how much work had been done and if he has now ascertained this fact he has done so only very recently, and it was virtually impossible for him to state, with even a fair amount of precision, what work was necessary to complete i.e. the work entered in his estimates - without cross sections, and there, without any further trouble, ~~as~~ would have enabled him at the same time to show what work had been done. - I know that at the time of my visit to the Canal in September last,

last, it would have been a most difficult thing to ascertain anything accurately regarding the state of the banks, owing to the irregular state in which they had been left. - I will illustrate this by a diagram, as it is of some importance that it should be clearly understood how entirely unobstructive the Order of Government was.



D. E represents the ground line, A the section of the Embankment as intended to be when finished, the mass of earthwork already done. Now B being unmeasurable except at a great expenditure of labor and a useless waste of time, and the work required to complete being manifestly A-B, the Government sanctioned an advance for the purpose of making up the bank in the first instance, somewhat to the form C, that is, the form which would admit of the ascertainment of the quantity of part work, and of work required to complete, without difficulty. - It might have been supposed that every exertion would have been made to convert B as far as possible

possible into the form C, seeing that not an atom of useless work was needed for the purpose, but that every yard executed would have been so much towards the completion of the embankment. The Government Order is dated the 17th November, and it placed at the disposal of the Company's

Advance — 2,04,400
Already over spent 1,27,303
72,697

Officers Rupees 72,697 for going on with this work. - The Company complain, in the Secretary's letter dated the 11th of March, of the obstructive action of the controlling Authorities in India, but the following information, extracted from the Progress Reports received from the Agent, shows the expenditure incurred on the 2nd Section from November to March.

	On works.		Special Superintendence.		Total.
November	1101	151	366	211	1468 2
December	12	41	437	47	449 80
January	2035	710	308	128	2424 46
February	2	76	140	108	143 22
March	16	93	125	28	141 111
	3168	119	1458	16	4626 133

Thus so far from the action of the Government having caused delay, the facts show that the Company were either not prepared to carry on the works which they had undertaken to execute, or that there were impediments, entirely irrespective of State control, which interfered with

with the progress of the works.--

7. The reasonableness of the requirements of the Government, as a condition of the accordance of further sanction, may be shown, and thus too without looking elsewhere than to that same paragraph 5 from which the Secretary to the Company extracted a fraction of a sentence.-- For one description of work alone-- earthwork-- nearly 19,000 Rs additional were asked for by the Chief Engineer; of this, £ 7,000 were represented as required owing to increase of rates, but there was no evidence whatever to show why the extra quantities of earth represented by the remaining £ 12,000 were needed, seeing that no change in the arrangements to absorb this cost had been even proposed.-- In the 1st Section of the Canal very large sums had been confessedly paid away nominally for work done, but really without there being such work to be found: it was possible that something similar had occurred here, and it behoved the Chief Engineer to cause such investigations to be made as would enable him fully to explain the discrepancies.-- It is difficult to understand what could be deemed reasonable control, if the Government were to be considered unreasonable for

objecting to the sanction of quantities of work far in excess of those which the arrangements made by the Company's own officers required, and to account for the insertion of which in the estimates no definite explanations had been tendered.--

8. The Secretary in para. 5 of his letter quotes from a communication from the Chief Engineer to the Company's Manager in India. The date of this communication is not given, and I do not therefore know whether it was written before the Order of Government of the 19th January last No. 172 was received.-- However that may be, it contains statements which are quite contrary to fact.-- First-- The Chief Engineer appears to have written, referring to the Revised Estimates for the 1st Section Masonry, 7th Section Earthworks and for the 2nd and 3rd Sections "All these have been rejected without any tangible suspicion of their correctness being expressed, until all the old work shall have been measured up again"-- There is here to say the least a suppression of truth.-- The Chief Engineer may mean that the calculations of the work remaining to be done could not be disputed, and that must in every case be self-evident, unless the Government chose to send an officer to check those calculations, but the

the Chief Engineer knows perfectly well that the
 work remaining to be done added to that paid for
 was in many cases very much in excess of the quan-
 tities which the works would contain when com-
 pleted, and he was, as I am sure the Government
 will consider, properly called upon for explanations
 of the discrepancies. The Government have never
 desired that works should be remeasured unless there
 were clear reasons for supposing that the measurements
 in which payment had been made were incorrect, but,
 where these reasons existed, it was right that investiga-
 tions should be made, and it would then be for the Con-
 trolling Authority to decide whether the facts had required
 such explanations as would warrant the passing of past
 expenditure, and the accordence of additional sanction.
 The 7th Section Estimates have not yet been submitted
 to Government because the Chief Engineer has not yet
 furnished explanations regarding some of the miles
 where the discrepancies were very great. I should
 take too long to show here what explanations
 were required, but it may be mentioned that a
 Comparative Statement attached to the Agent's
 No. 210 of the 31st August last shows that cubic
 yards 270,000 of earthwork, included in the revised
 estimate, remained unaccounted for after allowance
 had been made for departures from the sanctioned
 arrangements, and that in some miles the differences

were altogether too great to be ignored, thus:
 Quantities: }
 Orig. Est^{ts} } unaccounted for }
 92nd mile ----- 104,879 Cubic Yds ----- 32,872
 93rd ----- 72,517 ----- 33,428
 94th ----- 45,822 ----- 15,769
 96th ----- 51,822 ----- 29,473
 98th ----- 49,060 ----- 37,768
 101st ----- 74,784 ----- 20,661
 102nd ----- 52,550 ----- 17,769
 The quantities of the original estimate are those
 which were represented by the Company's Chief
 Engineer at the time to be sufficient for the con-
 struction of the Canal, and it will be seen what a large
 proportion of those quantities is represented by work
 which ~~is~~ ~~has~~ been paid for, but which
 has not as yet been traced.
 Again - The most accessible records of the measurements
 and payments of past work by the Company's Engineers
 are declined by Government, as not satisfactory and
 "not trustworthy enough for their object" is not a state-
 ment of facts, for the Government have not had the
 opportunity of declining such information, the
 Comparative Statement received with the Estimates
 of the 2nd and 3rd Sections having been a blank in
 respect of quantities of work performed. The
 Chief Engineer must have been well aware that
 these measurements had not been furnished or in-
 serted in the documents he had submitted for in-
 consideration.

*The Chief Engineer
 received a copy of this
 letter as appears from para. 7 of my letter No. 79 to the Agent which was
 No. 210 of the 31st Augt
 to the Agent.

Dated the 18th July, the omission was pointed out. It was quite immaterial to the Government by what arrangements the requisite information might be supplied, and if that information were trustworthy, it would either be *ex prima facie*, or discrepancies could be easily reconciled. In para. 8 of the letter which has just been referred to it was also said that where the quantities of work done and paid for added to those remaining to be done did not differ more than 5 per cent from the sanctioned estimate, they would be accepted without further investigation, but whereas in the portion of the 18th mile the expenditure on earthwork exceeded by nearly 33 per cent the estimate sanctioned as recent. By a 25th August 1865, there could be no question as to the absolute necessity for a careful ascertainment of the quantity of work actually done. I must add here too that so far from the Chief Engineer being justified in asserting "there is no prospect of our being permitted to start" he was well aware both from the order of Government of the 17th November, and also at a much earlier date from para. 7 and 8 of my letter N^o 79, that no stoppage of the work had ever been contemplated, but that on the contrary its continuation was presupposed; the measurements of past work were to be postponed until

until in the course of work and without extra expense the banks are, for at any rate lengths of 1 or 2 chains pretty level and in section and then by means of the original levels the quantities can readily be ascertained; and the Government provided funds wherein to carry on the works. 9. Again the Chief Engineer is quoted as saying "It is a simple and safe matter to measure up for estimates of completion." It may be so in some cases, but it was not a simple thing in the case of the earthworks of the 2nd and 3rd Sections, and the course which the Chief Engineer adopted of proposing the acceptance of estimates founded on guesses, although he knew that nothing but a series of cross sections could enable an estimate to be prepared was eminently unsafe, and to attempt to let contracts on such data would have been anything but wise; for what contractor, or, with any means, would dream of contracting for an altogether indefinite quantity of work, unless at a price which would more than suffice to cover all possible under-estimating. 10. The Proceedings of Government of the 19th January 1867 N^o 172 may not have been, though they probably were, before the Directors of the Company when their Secretary's letter was written on the

to 11th March. - That order clearly shows that Government did not wish to delay or contemplate the stoppage of works any where along the line of canal. -

In para. 6 of their Secretary's letter, the Board complain of the time of the Company's Engineers being occupied by unnecessary and vexatious matters of account and enquiry, and allusion is made to the special, voluminous accounts and progress returns, elaborately subdivided under numerous headings, all necessary to supply the requirements of the Government. - In the first place it may be replied, that the Government desire no information to be exhibited in the accounts but such as any Company, whether working under guarantee or not, would have to record, 2^{ndly} that the scheme of accounts sanctioned in Proceedings Madras Government No 753 dated 12th April 1862 was accepted by the Company and the latter had the opportunity of suggesting any improvements that might appear advisable; 3^{rdly} that the records of expenditure prior to the Government Officers providing the Company with a system of accounts were such a muddle that their Agent has ever since been trying to get them into order; 4^{thly} that the Government have willingly acceded to requests made by the Agent for the substitution of Quarterly for

vide P.M. 54-2974-14th 2/63 -

monthly accounts; that this office has suggested or sanctioned several modifications of the accounts with a view to reduce their volume or to dispense with information, which it was thought might be omitted without decreasing the value of the accounts. -

The Board make the general assertion that the accounts are so arranged as to make them difficult to keep but they would have done far better had they suggested alterations, and shown that they understood accounts and could devise a better system, which would still enable their own officers to control expenditure, and afford the Government the information which is needful to show that that expenditure is being incurred in accordance with the sanctions from time to time given. -

12. There is no doubt the time of the Engineers has been much occupied with accounts. This has however been in no respect due to the requirements of the Government, but to the inefficiency of the arrangements made by the Board. - The Board knew, or ought to have known, that the duties of Engineers in England are very different to those which they have to perform in India; that whereas in the former country an Engineer, when the designs of works have been settled, has only

To see that the materials furnished by Contractors are good, and that those materials are made use of in the works in accordance with the plans and specifications; in India on the other hand there are none but petty contractors, materials have to be obtained by detailed arrangements and often the Engineer has to be brick-maker, lime-burner, stone-cutter, smith, carpenter and every thing else, or he has ^{himself} to take the place of a foreman. He has also to pay for all the detailed work thus done, and it is evident that all these multifarious disbursements require not only careful record but in the case of untrained officers, simple and sufficient instructions are needful, so that every officer from the time he is called upon to disburse the first rupee on account of his works may know where and how the record is to be made. - Now until the present Agent and Manager and the Chief Accountant entered the Company's service the system appears to have been to allow every officer to make as many blunders in his accounts as he pleased, and which he could hardly avoid in the absence of detailed instructions, then to leave the blunders unnoticed for long periods - very frequently until the change of the Division had changed hands once, perhaps more frequently, and lastly to endeavour by correspondence, often with those totally ignorant of the circumstances, to obtain such information as would enable the mistakes to be rectified. - it

will be remembered that 22 years ago the accounts were greatly in arrears, and it is only quite recently that the great mass of ^{the} errors which the old accounts contained have been put right. - The Board may deem it of little importance whether a bridge, a bank, an aqueduct or a channel is debited with the expenditure belonging to it. - they may think that when Stores are issued for use on a work it can matter but little whether the records are so kept as to admit of its being shown what became of them; but, should there be their views, perhaps they will be good enough to intimate how they would manage to know anything at all of what had become of the money intended for the works. - There have been too many Companies which have been ruined because none of those responsible would take the trouble or, perhaps, thought it necessary, to see that the money entrusted to their care was being properly expended, to make it right that the Government should continue similar strictness in the management of any Company, in regard to which an Agreement with the State affords the means of enforcing the obligation of accounting for monies, at least to the extent of requiring the accounts furnished to be in such a form as to make it probable that expenditure will have to be duly recorded. -

I have not in the former part of this letter answered the Board's remarks on the subject of the decision of Government with respect to the estimates for the upper part of the 6th Section. - The Government Order is dated the 14th November 1866 N^o 3624. - The Board think the modification of the Chief Engineer's estimates an unnecessary interference, yet such power is expressly reserved to the Government in the Contract, and reasons were adduced for every alteration made. - It may be added that a canal, estimated by the Company's officers to cost Rupees 7566 $\frac{2}{3}$ a mile, was re-estimated by their officers to require Rupees 23,920 a mile; that the Canal here, being of small capacity, viz 45,000 cubic yards to 50,000 cubic yards an hour, this latter rate of cost, if applied to the canal in the upper Sections, would have represented, for the 4,00,000 cubic yards there to be conveyed, not less than £ 19,000 to £ 21,000 a mile; that the country through which the small canal was to be carried presents no difficulties, and has no heavy masonry works, and consequently it was not unreasonable that the Government should wish the cost if possible to be reduced. -

14. The Board seem to think that this office should simply correct mistakes in the Chief Engineer's arithmetic, and leave his estimates untouched, - however good reason there may appear to be for

modifying them. - The Government have very generally abstained from any interference with the Chief Engineer's designs, even where they have been disposed to think that they were capable of improvement, and it is very advisable that such changes should be but seldom made; but it might have been thought that the Board, with no other light to guide them than the papers printed with the Government Order, showing as these papers do how scanty was the report furnished in support or explanation of such an enormous increase in the estimated cost of the works, would have seen that there had been no arbitrary exercise of controlling authority. -

15. With regard to the question of the manner of exercising control for the future, ^{and} to the extent to which it is to be exercised, I should be glad of more specific instructions than can be gathered either from the present or a previous despatch from the Secretary of State. - I have endeavoured to show that the Controlling power has hitherto been used reasonably, and that the cases which the Company adduced as instances to the contrary will not bear examination. I believe that the check which has been exercised over the expenditure and proceedings of the Company has had a beneficial effect; that many reforms have been effected as a consequence of

N^o 19705 6th/66.
P.M.S. N^o 39607/15 Dec. 7/66.

of the notice taken of irregularities, and that the knowledge, that the absence of care and attention in the conduct of the works would certainly be brought to light, has been of some use in convincing the officers of the Company that their responsibilities are not purely nominal. - At the same time it cannot be denied that the action of the Controlling authority is generally and necessarily brought to bear too late, for it is only when mistakes have occurred, when money has been wasted, when works have been proved of little or no use without further heavy expenditure, when in short the mischief has been done, that the Government can interfere even to the extent of expressing disapproval. - The contract provides no doubt that all expenditure must be incurred in accordance with the sanction given, and under this rule the Chief Engineer ought not to allow his Executive Officers to do more work, or to pay a higher rate for that work, than the sanctioned estimates provide. - Of course if estimates be correct, and Engineers thoroughly efficient such a conformity to the contract would have been practicable without prejudicially affecting the progress of the works, but as the circumstances of the case have in practice been found, a rigid enforcement of the obligations entailed on the Company by the agreement would have brought every thing to a standstill over and over again. -

16 What is wanted in every Agreement with a Company under which the State agrees to make certain concessions, in diminution or prevention of the risks which those who subscribe the Capital would otherwise have to

11 take entirely upon themselves, is that instead of the Government attempting to control the proceedings of officers who are in no respect under their authority, the State interests should be protected by making the advantages offered in the way of concessions contingent upon the proper, diligent, and successful prosecution of the works. The Contract with the Madras Irrigation and Canal Company provides for the approval by Government of all the plans and estimates of the works, and for the examination of the expenditure thereupon incurred, but the Agreement makes no provision for the protection of State interests in the event of the Company ignoring the conditions on which alone their expenditure becomes outlay under the Contract. -

17 It has been and it must be very difficult to carry out under such circumstances the object which the Secretary of State had in view when agreeing to grant concessions to the Company. - The Government wished the Company to succeed in the enterprise they had undertaken, not only because of the importance of relieving the Revenues of the large charge for guaranteed interest on Capital, but because the success of the Company would have meant wealth and prosperity

of prosperity to large numbers of the villagers of several districts. The Company have hitherto been eminently unsuccessful, and the Government have had to watch their proceedings, convinced that ^{such} courses could not lead to success, but unable to do more than express disapproval and to recommend them to amend their ways. The Company on the other hand could only recognize the fact that the Government had constantly to pass orders, condemnatory of the management of the Company's affairs, and they naturally passed from a disbelief in the necessity for those orders to the conviction that the only drawback to their success was the existence of an authority which could criticize their proceedings. - It is difficult to convince an individual that his own shortcomings are the probable cause of his want of success, and it may be doubted whether it is possible to bring home any such conviction to a Company; but, if this be the case, it would be much better that the State should leave a Company to its own devices after the designs of the works had been approved and, where any concessions are given, that the actual donation of these concessions should depend upon the successful execution of the works. - What is in fact generally termed payment for results. -

18. If the Company would prefer getting rid of

12
continuous State supervision by making themselves responsible for the efficient execution and completion of the works down to Cuddapah, and should the Government and the Secretary of State be disposed to approve of such an arrangement, I think it might easily be effected as follows:

1st. The original guaranteed capital of 1 million would remain on the footing given to it by the original Contract.

2nd. With regard to expenditure in excess of the million, the Company, within one year, should submit plans and estimates of all works required to complete the Main Canal and its distribution works as far as Cuddapah, and should undertake to complete those works for the amount shown in the estimates. -

3rd. That if on the 1st July 1871 the Canal be not fully completed, the State should purchase the works by issuing 5 per. cent Government stock for a sum equivalent to 1 million added to the amount of the completion estimates, deducting the value of the work remaining to be done at the rates entered in those estimates. -

4th. That no alteration should be made in the design of any works, after their approval by Government, without the assent of the Government, and

and all unauthorized alterations or deviations to be rectified, if deemed advisable by Government, or, failing, that the estimated cost of such works to be struck out of the total of the estimates in fixing the value of the works.--

5th. A progress report would be the only account ^{Having reference to Construction.} required from the Company, and it would show the quantity of work done and the expenditure incurred on each description of, and individual work in each mile, and be totalled for each estimate separately sanctioned.

19. Unless some such alternative arrangement be made, I do not see how any control, even of the slightly effective nature of that hitherto brought to bear, can be exercised, except very much in the way that the supervision of the Company's operations has been carried on.-- For instance, suppose the Agent to report to me that certain advances are irrecoverable and that consequently their arbitrary adjustment is necessary.-- If the sum be considerable, and if the explanations are insufficient to enable me to report to Government, basing my recommendation, as to the manner in which the loss should be dealt with, on facts, I must either point out to the Agent what additional information is necessary, in which case there will very probably ensue much correspondence

between the various officers of the Company, which the Board would term vexatious and unnecessary, though practically the Government would want no information but that which the Board ought to require for their own satisfaction; or my report must be made, before, what may seem to be, a sufficient investigation into the circumstances had been made.-- In the latter case the request for sanction would be a mere form, in the former though, as has too often proved the case, the circumstances might not be brought to notice until the responsibility of the proper officer could not be enforced, unless some good would be done by preventing the adjournment of irregular and perhaps culpable expenditure without question.-- It is much the easiest plan to ignore irregularities and to pass all expenditure, whether rightly or wrongly incurred, but it is not a safe arrangement, were it even a right one, to place the careful and conscientious discharge of duties on the same footing as carelessness and disregard of the interests both of the Company and of the Government; the very least that would seem necessary is to express disapproval of the latter, and not even this can be done without ascertaining what are the facts on which the opinion of

I have the honor to be,
 Sir,
 Your most obedient servant,
 John D. Sullivan Captain, A.C.
 Concord, N.H. 1st Co. 1st Regt. N.H. Inf.

39

Under date the 20th June 1867

From the Cons: Engl (Here enter No. 23 dated 6th June/07
J. & Co. Co.

Ordered that a
copy of this letter be
forwarded to the Right
Honorable the Secretary
of State for India,
with reference to his
Despatch of the 8th
April 1867. A.C. 12.

The Congress Record
(Manager). W

Rec'd 26/6/67



Copy in a letter to Eugene S
of 25. June 1867 p 28

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To the Town Clerk &c
The Secretary to Council

Patrick }
 Geo W }
 June 1867

Reports that he has in accordance with the instructions conveyed to him by the order of your Hon. Body of the 25th is requested to report on the subject as far as may be practicable. The submission of the said report for the session of the 18th instant for which notice has been given, will be in my opinion certain advantage with reference to the instructions made by the Hon. Body, to the Secretary of State.

11/15 June/67 Ad. 17 $\frac{1}{2}$

1004

Copy in a Letter to England
of 28 June 1867 No. 28

P. W. 1867. Department.

Pro. of Govt. for India
No. 1843

PROCEEDINGS OF GOVERNMENT of Madras

Dated 20th June 1867

Communicating to the
Home Government Letter
from the Consulting Engineer,
reporting that he has called
for all estimates for the
Madras Irrigation Canal
Company's works which
require additional sanction,
and offering certain remarks
on the subject of the alleged
obstructions to the prosecution
of those works.

(No. 38-439)