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MADRAS RECORD OFFICE.

Government of Madras.

P. W. DEPARTMENT.

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Mis.

Dated 3-9-1874

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
3rd September 1874.*

No. 53. Read the following letter from Colonel J. CROFTON, R.E., Deputy Secretary to the Government of India, Public Works Department, (Irrigation,) to Colonel G. W. WALKER, R.E., Secretary to the Government of Madras, Public Works Department, dated Fort William, 18th May 1874, No. 296-I:—

I AM directed to acknowledge the receipt of your letter, No. 760, dated the 19th March last, forwarding, for consideration, a Note by the Chief Engineer for Irrigation, in which the several points raised in a memorandum by the Officiating Accountant-General, Public Works Department, dated the 30th September 1873, regarding the financial prospects of the Sungum Project are discussed, and, in reply, to transmit copy of a Note by the Accountant-General replying to Colonel Mullins' remarks, and to request that the Government of India may be informed how far the Local Government is satisfied of the correctness of Colonel Innes' views.

2. With reference to paragraph 9 of Colonel Mullins' Note, I am to inquire whether there is any ground for expecting that further advantages will be eventually obtained from the project, in the shape of savings on remissions of land revenue and the like, and to inquire also the circumstances under which Inamdars are exempt from paying a water-rate.

No. 51. ORDER THEREON, 3rd September 1874, No. 2,492.

IRRIGATION, No. 9.

His Excellency the Governor in Council observes that the difference between the views of the Accountant-General, Public Works Department, and those of the Chief Engineer for Irrigation is mainly due to the circumstance that the latter officer considers that the direct charges only on account of any project should be taken into consideration in determining whether it is financially desirable to carry it out, while the Accountant-General would add indirect charges, of which the principal are a share of the general Public Works Establishment, in addition to the special

Establishment provided for in the estimates* already submitted to the Government of India, and a share of the cost of land revenue collections, as an addition to maintenance expenses, against the gross revenue derived from the project.

2. After careful consideration of the question, and of the arguments which have been adduced, His Excellency is of opinion that both these charges, the one enhancing the cost of the project, and the other diminishing the net receipts, should be taken into account, on the ground that it is right to distribute the whole cost of Public Works Establishments chargeable to irrigation against the entire number of works with which they have to deal, and that similarly the cost of Revenue Establishments is fairly debitable to the whole irrigation revenue.

3. The result of this decision on the financial aspect of the Sungum Project will now be considered. First, the addition to be made to the estimates on account of establishments will be, not the sum of Rupees 6,38,406 given in the first

*Proceedings of the Madras Government, Public Works Department,
3rd September 1874.*

paragraph of the Accountant-General's Note, printed in Proceedings, Madras Government of the 19th March 1874, but 25 per cent. on the following amount:—

Estimates submitted by Mr. R. Smith	RS.
Deduct special establishment included in the above estimates	28,72,825
Deduct on account of work struck out of the estimates	3,19,200
70,000	
	3,89,200
25 per cent. on this amount	24,83,625
Amount included in estimates submitted to Government of India...	6,20,906
	2,73,000
Difference to be added...	3,47,906
Say...	3,47,900

4. It is necessary to notice here that the value of the land in the beds of certain tanks which will be abandoned must be treated as an asset in some form or another, and the simplest way appears to be to credit it against capital expenditure. It may be necessary to reconsider the question of the amount of revenue which will be lost by taking up land for the project, and possibly to make some addition to the estimates on this account; the District Engineer, Nellore, will accordingly be instructed to report on the area of lands required to be taken up, and their assessment, distinguishing between that which is derived from lands in the occupation of ryots, and assessed waste from which no revenue has been derived. With regard also to the sum of Rupees 70,000 deducted from the estimates by the Chief Engineer for Irrigation, but objected to by the Accountant-General, it is quite clear that, as the work represented by this sum is not to be carried out, the deduction is perfectly correct.

5. The Government observe that the Accountant-General and the Chief Engineer for Irrigation are really of one opinion as to the inclusion of the preliminary expenses in the total cost of the project.

6. The proper total of the estimates therefore, exclusive of any sum which may have to be added on account of capitalized value of assessment on land taken up, will be—

Amount as submitted	RS.
Additional for establishments	25,83,800
Preliminary expenses	3,47,900
Share of direction and account	48,897
	2,233
	51,130
	29,82,830

7. Turning to the estimate of Revenue, the Accountant-General assumes the gross revenue to amount to Rupees 1,73,896, being at the rate of 4 Rupees an acre on the difference between the supposed future and present area of irrigation, but this, as will be seen from Proceedings, Madras Government of the 18th March 1871, No. 818, is not the correct sum. It is there shown that the Revenue Settlement Department estimated the revenue at Rupees 2,51,516, including

*Proceedings of the Madras Government, Public Works Department,
3rd September 1874.*

Rupees 68,929 anticipated cessation of remissions heretofore necessary, while the amount adopted by Government, on the recommendation of the Board of Revenue, was Rupees 2,38,000. The water-rate adopted by the Accountant-General is not applicable to the tract of country to be irrigated, in which the assessment is consolidated. The net revenue will, therefore, be as follows:—

	RS.
Gross Revenue	2,38,000
Deduct—	
Maintenance expenses	34,200
Share of Revenue collection at 9½ per cent. on	
* 68,929 2,38,000 — 69,000*	16,055
	50,255
Net Revenue...	1,87,745

or 6·3 per cent. on Rupees 29,82,830.

8. With regard to the question of assessing Inam lands classed as wet, but hitherto either not so cultivated, or capable of being irrigated only in exceptionally good years, His Excellency the Governor in Council resolves to remit this subject to the Revenue Department for re-consideration, as it appears to be not altogether reasonable that advantages, which the Inamdars will certainly not obtain if this project be not carried out, should be conferred upon them free of all charge in the event of its being sanctioned. It is observed that the area of Inam lands which may be newly irrigated, or more fully supplied, is 8,854 acres.

9. It is noticed in paragraph 18 of Colonel Innes' Note of the 23rd April 1874, that the estimates contain no provision for tools and plant or for pension and leave allowances. The amount to be added on account of the former omission, which until recently it was not usual to include in estimates, will be reported by the District Engineer, Nellore, who will be informed that, in the case of the Godavery works, a provision of 8 per cent. on the work estimates has been allowed. Pension and leave allowances have, for the first time, been mentioned in this Note of the Accountant-General, and His Excellency observes that no instructions on the subject have been received from the Government of India.

(Here enter No. 2,493, dated 3rd September 1874.)

(True Extract.)

Lieut.-Colonel, R.E.,

Joint Secretary to Government.

To the District Engineer, Nellore.
 „ Chief Engineer for Irrigation.
 „ Officiating Controller of Public Works Accounts.
 „ Revenue Department.

Exd. S. T. Austin.

Spare Copies

No. 55.

No. 2,493.

FROM

LIEUTENANT-COLONEL J. MULLINS, R.E.,

Joint Secretary to the Government of Madras,

Public Works Department,

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA,

Public Works Department.

IRRIGATION, No. 10.

SIR,—I am directed to acknowledge the receipt of your letter of the 18th May 1874, No. 296-I., transmitting for consideration copy of a Note by the Accountant-General, Public Works Department, on the subject of the financial prospects of the Sungum Project, and, in reply, I am to forward copy of Proceedings No. 2,492, dated 3rd September 1874, in which the views of His Excellency the Governor in Council in respect to the several items making up the estimate for the work are recorded.

2. After careful consideration of the arguments adduced, both by the Chief Engineer for Irrigation of this Presidency and the Accountant-General, Public Works Department, His Excellency in Council has, it will be observed, arrived at the conclusion that the estimated cost of the project may be modified as shown below:—

	RS.
Amount as submitted	25,83,800
Additional for Establishments	3,47,900
Preliminary expenses	48,897
Share of direction and account	2,233
	<u>51,130</u>
Total...	29,82,830

3. Assuming the gross expenditure to be Rupees 29,82,830, the net return to be derived from the project is shown to amount to Rupees 1,87,745, or 6.3 per cent. on the anticipated outlay.

4. I am to add that the information required in paragraph 2 of the letter under reply has been called for from the proper authorities, and will be submitted in due course.

I have the honor to be,

Sir,

Your most obedient servant,

Lieut.-Colonel, R.E.,

Joint Secretary to Government.

Exd. S. T. Austin.

Spare Copies

Note by the Accountant General, Public Works Department, on the revised Estimate of the Sungum Irrigation Project for 1874-75.

The question at issue in this case is this:—

The Madras Officers made out the estimate for the Sungum project as amounting to ...	Rs. 25,83,800
--	------------------

In a note by Colonel O'Connell, late Officiating Accountant General, Public Works Department, it was said that the work was likely to cost ...	Rs. 32,38,729
--	------------------

Difference in excess ...	Rs. 6,54,929
--------------------------	-----------------

While, on the other hand, the Madras Officers made out the estimate of probable net revenue per annum at ...	Rs. 2,03,800
--	-----------------

In the Accountant General's Note it was made out at ...	Rs. 1,87,280
---	-----------------

Leaving a difference less of ...	Rs. 16,520
----------------------------------	---------------

2. The remunerative character of the project depends upon which of the sums is correct. If the amounts given by the Madras Authorities are correct, then the project will be fairly remunerative. If the figures given by the late Officiating Accountant General are correct, then the project might realize $4\frac{1}{2}$ per cent. net according to one calculation, and scarcely 4 per cent. according to another. The largeness of the amount involved justifies a very detailed examination being given to the arguments by which Colonel Mullins, the Chief Engineer of Irrigation, justifies the accuracy of the Madras estimate.

3. The items comprising the difference of Rs. 6,54,929 under expenditure consist of—

I.—Establishment ...	Rs. 3,65,406
II.—Value of land in the beds of certain rivers to be abandoned ...	Rs. 1,72,825
III.—Preliminary expenses ...	Rs. 46,698
IV.—Estimated saving in execution of work ...	Rs. 70,000
	Rs. 6,54,929

4. Under the head Establishment, the provision made in the estimate as revised by Colonel Mullins was Rs. 2,73,000, or about 10 per cent. of the outlay on Works. The Officiating Accountant General, Colonel O'Connell, said that this rate was insufficient; that it included no provision for Direction and Account, or for travelling allowances and contingencies; and that the difficulty in procuring labour in the District would cause slow progress in the execution of the work and consequent increase in the Establishment charges, and that it would, therefore, be necessary to increase the provision for Establishment to 25 per cent., or to Rs. 6,38,406. It may be added in passing, that the Madras Establishment costs from 26 to 30 per cent. of the outlay on Works.

5. Colonel Mullins' reply to this is, that the estimate provides for the special establishments to be employed on the work, "and not for a share of the establishments, which, whether the project be carried out, or not, will have to be paid for". Colonel Mullins goes on to say that, according to his view, it is "clearly incorrect to charge, to a project expenses which are not connected with it, at least in considering its financial merits. Such a course must evidently be misleading. It is one thing to say that Public Works Establishments cost about one-fourth of the outlay on Works, and another to suppose that the cost of a particular project should be enhanced by one-fourth of the amount of its estimates for works, when, as is certainly the case, a large part of this Establishment outlay is connected with the general administration of the Department, and is independent of the project under consideration. The difference between the estimate provision and the sum considered by the Accountant General as necessary will not remain in the Treasury if the project be abandoned, and it should not affect the question whether, on financial grounds, the scheme is one which may properly be carried out."

6. In dealing with these projects, the question should be looked upon in the same light as a Company would look upon it. They would probably have a separate Chief Engineer, a distinct Account Office and other supervising staff, the whole cost of which would be debited to the project. In the case of Government, which has several works in hand, there is only one general supervising and directing staff, the cost of which is, for convenience of accounting, debited to a general head. In

endeavouring to ascertain the entire cost of any particular work especially when of a remunerative character, its proper proportion of the outlay on that general head has now, by rule and practice to be debited to it. The reasons are obvious and too well known to need repetition. It is quite possible as Colonel Mullins contends, that, if the project were not undertaken, the proportion of the general charges due to it would not remain in the Treasury. But that argument is not valid. It is as applicable to all the works as to this one work, and it cannot be said that if there were no works at all, the Establishment would still be there. As it happens, it is peculiarly inapplicable to these works.

7. It is in consequence of the undertaking of such works as these that the Government has to incur the expense of having a Chief Engineer. But for them, the Chief Engineer's salary might, perhaps, be saved; consequently, as the works occasion the expense of having a Chief Engineer, they should certainly be debited with a proportion of his pay. It might be argued that they should be debited with the whole of it. To single out one work and to say that that work is not to be debited with a portion of his salary, would be to make other works bear an undue proportion of the cost. As it is, the Chief Engineer has spent a great deal of his time in investigating this project. That time has a certain value, and it would be misleading in accounts if that value were not treated as a portion of the cost of the work.

Even admitting the force of Colonel Mullins' argument, that no portion of the general expenses should be debited to the work, such expenses would amount to 5 per cent. of the provision for works, or about Rs. 1½ lakhs. The financial effect of not debiting the project with this amount will be shown in the sequel of this Note.

8. As regards the value of land in the beds of certain rivers to be abandoned, viz. Rs. 1,72,825, Colonel Mullins does not contend that the amount of the item should be deducted from the estimate, so that it is presumed he agrees in the view held by the late Officiating Accountant General that it may be considered a set off to the loss likely to arise from the cessation of revenue on the lands taken up for the work.

9. In respect to preliminary expenses, (Rs. 46,698) Colonel Mullins uses the same argument as he uses in the case of

Establishment. He says that the "amount may properly, as regards the actual outlay, be deemed a part of the total cost of the project, but the money has been spent, and in deciding whether the scheme should be carried out, this past outlay is not one which can be considered to influence the propriety of future expenditure."

10. This argument seems to be quite out of the question. To what is the past outlay chargeable, if not to the work, and, if to the work, why should it be excluded. It is quite sufficient to consider what would be said if it was supposed that in proclaiming the amount of the cost of a work, all its initial expenses had been omitted.

11. With reference to the estimated saving Rs. 70,000 in execution of work, the Chief Engineer says that the amount should be taken off the estimate.

12. Will the amount be saved? The reply may be implied from the Chief Engineer's opinion given in the concluding portion of his Note, which is as follows:—

"I have already expressed the opinion that the work estimates are ample, and that some material reductions are feasible. With an efficient executive establishment, the results will, I think, be better than have been suggested, but it would be useless to attempt to estimate with accuracy the outlay without knowing whether the Officer in charge will be an able, or merely an ordinary, Executive Engineer. I should certainly estimate the difference of cost in the two cases at 15 to 20 per cent., and that alone would make such a material difference in results as to make the project profitable in the one case, and a losing investment in the other."

Thus there is an element of great uncertainty at once introduced into the estimate of probable cost. What guarantee is there that an able Officer who will work up to the estimate, instead of an Officer who will exceed the estimate by 15 or 20 per cent., will be appointed to the post?

It may be further said, I should suppose, that it will not unlikely rest in a great measure with Colonel Mullins himself that the Officer placed in charge of the works shall be fit for the duties.

On the whole, it is submitted that the Rs. 70,000 should not be taken off the amount of the estimate.

13. Under Revenue, the difference is Rs. 16,520, which represents the cost of collection charges in the Civil Department.

Colonel Mullins contends that, "if there be the slightest grounds for supposing that the execution of this project will add to the cost of the Revenue establishments of the Nellore District, the deduction of that increase from the estimated enhancement of the revenue would be proper enough, but to imagine that an addition thereto of Rs. 1,377 monthly will be necessitated by the work, would certainly be incorrect."

14. The argument used is the same as that used in the general question of debiting Capital with a proportion of the charges for Direction and Account. If the Financial Department will agree to these canals not being debited with a cost of the Civil Collection Establishment, nothing need be said in the matter. But until such consent can be obtained, there is no alternative but to assume that the Revenue establishments will cost a certain sum. Colonel Mullins does not show how the amount assumed by Colonel O'Connell as the cost of these Establishments is incorrect. The Accountant General gave reasons for assuming that the establishments would cost Rs. 16,520 per annum. Those reasons were that the cost of collection amounts to 9½ per cent. of the revenue. Is it, or is it not, so? If it is not so, then the Accountant General's figures would have to be modified. But if it is so, then the figures would have to stand.

15. On the whole, then, it is submitted that the Note by the late Officiating Accountant General is substantially accurate.

16. The results are—	Rs.
Capital outlay	32,33,729
Net revenue	1,87,280
Proportion	5½
But if accumulated simple interest were added to Capital outlay, the net revenue would amount only to	40 per cent.

That is one kind of calculation. But in another calculation of gross revenue given in the Accountant General's note—

	Rs.
The net revenue is reduced to	1,23,176
Capital outlay	32,33,729
Return	38
Or, if simple interest was taken into account and added to Capital outlay, the return would be	32

If 1½ lakhs were taken off for Establishment charges on account of proportion of charges for Direction and Account the result would be—

	Rs.
Capital outlay	31,13,729
Net revenue	1,23,176
Percentage	3.9
Or, if simple interest was added to Capital outlay, the return would be	3.3

17. Colonel O'Connell in his Note said that, "if the estimate for the project" is not exceeded, the return might amount to about 4½ per cent., "but I am inclined to doubt even if this percentage will be realized."

18. It should be noted here that no provision appears to have been made in the estimate for Tools and Plant, or for the 25 per cent. on Establishment for Pension and Leave allowances. If this were added, the results would be—

	Rs.
Estimate of Capital outlay ...	32,38,729
Add for Tools and Plant at 2 per cent.	64,000
Ditto for Pension and Leave allowances	1,50,000
	<hr/>
	34,52,729
	<hr/>
	Rs.
Revenue	1,23,176
Less for Pension and Leave allowances ...	4,000
	<hr/>
	1,19,176
	<hr/>
Percentage	3.4

19. The real state of the case must not be shirked. On the whole, the points of view from which such a project have to be considered are two—*first*, the actual material benefit it confers on the country; *second*, its financial aspect. It is fairly within the province of the Accounts Department to deal with its strict financial aspect. It is for the Irrigation Branch to consider its material advantages, and the comparison of those positive advantages with any possible or probable financial loss or drawback.

But the Accounts Department, in dealing with the pure financial aspect, must be careful that the calculations are as full and exhaustive as possible, and the results as much as possible likely to be near the truth.

20. Colonel O'Connell's figures seem perfectly sound. And more than this, I venture to warn Government that, if we are to be guided by experience, these estimates, however full, and honest, and exhaustive they may appear, are almost certain to err in the direction of insufficiency in respect of cost, and excess in respect of revenue.

J. J. McL. I.

Acctt. Genl., P. W. D.

CALCUTTA, }
23rd April, 1874. }

No 105

Supg Engineer's Office
2nd Division Beguarak
10th October 1872

From

R. Smith Esquire.

Offg. Superintending Engineer
2nd Division

To

Major R. T. Oakes R.E.
Acting Chief Engineer
for Irrigation.

Sir,

As we have
the estimate
in connection
with the
an estimate
available
to the
17-10-72

With reference to G.O. No 1511,
of 19th June 1872, directing me to report
what saving may be effected, in the
estimate for the Sangam Project, by
the introduction of the modifications,
in the plans of the works, suggested
by the Inspector General of Irrigation,
and dictated upon by the Acting
Chief Engineer for Irrigation,
I have the honor to submit the
following observations -

Anicut

2. The Inspector
General and

Colonel Mullins considers the under sluices designed, for the Southern flank of the Aicut, unnecessary. If they are omitted there will, probably be, a considerable alteration in the bed of the river, in the vicinity of the Aicut, and, at particular stages of a fresh, there may be a strong current running parallel to the weir, which is certainly not desirable, and in the event of a sand bank forming below the weir, close to the south bank, and extending towards the north bank of the Penair, the deep bed of the river, in low floods, might possibly hug, and undermine, the Northern bank - a contingency which, in my opinion, should be

In paragraph
2 of the note
dated 28th May
1872.

avoided - Before this point is finally decided, I trust it will be re-considered, and particularly so, as the Acting Chief Engineer for Irrigation states "it would not be advisable to place all the sluices in one flank".

The Inspector General, and the Acting Chief Engineer for Irrigation, consider the under sluices planned, for the Northern flank of the Aicut, not sufficiently powerful to keep up the required scour, as they are few in number, in comparison with the vents of the adjoining Head Sluice. In fixing the capacity of the under sluices it seems but reasonable to be guided by what is apparent, on this same river, a few miles lower down. I allude to the works connected with the Tellore Aicut. There, it is evident that, a very little scour

supplies to keep the head of the
main Channel clear, and to
maintain a Channel, from it, to
the deep bed of the Permain
throughout the year. The Sangam
Head Sluice, it is true, is larger
than the Nellore Head Sluice,
but this circumstance, considering
the scanty supply of water we
have to deal with, seems to me,
to warrant the construction of
an under sluice of moderate
Capacity, for the latter will really
never have to act, as a scouring
sluice, ^{until the head sluice} has been closed, or partially
so. The great discharge, through
the Head sluice, will prevent any
sitting in front of it, and, my
opinion is that, this work will
act as an auxiliary, to the
under sluice, in preserving a
deep Channel, in the vicinity
of the regulating works, at the

* Dated 12th
May 1870.

Northern flank of the Sangam Anicut.
With reference to reducing the height
of the wing walls, this will be done
if insisted on, but I would venture
to suggest that it would be advisable
to build these appendages as planned,
for it is by no means certain what
the discharge of the Permain is, in
extreme floods, or what effect the
obstruction of so much of the natural
waterway will have on them. From
Lieutenant Colonel Mullins' remarks,
in paragraph 13. of his note, it will
be gathered that he considers a margin,
of several feet, desirable between the
calculated waterway and the crest
of the Head Sluice.

Hard laterite is not procurable in the vicinity
of Sangam, but a durable stone
will be used for the apron of
the Anicut, etc.

Main Feeder
to the Kanegiri
Reservoir

3. In designing the
Main Feeder, to the
Reservoir, all points

were very carefully considered, and
after working out six different arrangements,
(If I remember rightly) the present
alignment was adopted. The fall
alluded to, by the Inspector General,
is absolutely necessary as the soil is
very sandy, and would not stand
a higher velocity than has been allowed,
and I may safely assert that the
cost of this Feeder cannot, advantageously,
be reduced. Alluding to Colonel
Rundall's remark that it would
seem practicable to adopt a slope
of 2.25 feet per mile, for the Main
Feeder, as this inclination has
been given to portions of the
Eastern Main Canal, I would
observe that, with this great fall,
the velocity, in the reach referred to,

* Dated 38th
May 1872.

will not exceed 3.03 feet per second.
The rock, noticed, in the Acting
Chief Engineer's note, is not within the
limits of the Main Feeder from the
Sangan Sicut. It is near the
site of the Head Sluice, proposed for
construction ^{in connection} with the River wall,
designed for the original scheme.

Canal Falls

4. By altering the
designs for the Canal
Falls, a saving of masonry would
certainly be effected, but it is equally
certain that the Modification proposed
would increase the cost of repairs
annually; and if the question is
considered financially, it will,
I think, be conceded that a
moderate addition, to the cost
of construction, is more desirable
than, comparatively, large
maintenance estimates. Should
it, however, be decided that
the

the cisterns are unnecessary
a probable saving of Rs. 32,000
would be the result.

Masonry
distribution
works

5. The Inspector
General and the Chief
Engineer for Irrigation
consider that too great a margin
has been allowed, in the height
of the masonry works above full
supply level; but I most
respectfully beg to point
out that any material
alteration, in this respect,
would prevent our being
able to increase the depth
of water, during floods in bad
seasons. An arrangement,
which, I believe, to be
essentially necessary to the
success of the Project;
for it must be

12
remembered that the supply
of water in the Pennair is very
precarious; that the N. Moore
Aicut and its system of
Channels have a prior claim
to the water of that river; and
that if no provision is made,
for discharging an extra volume
of water when required, large
remissions will have to be given
and much discontent will prevail
during the unfavorable years
that periodically occur. There
is also another point to be taken
into consideration, and that is,
the possibility of the Pennair
being able to irrigate a greater
area than I have assumed.
In the event of this contingency
occurring, it would be a decided advantage
to have the masonry works

capable of immediately discharging the extra volume of water - The Canals could, of course, be easily enlarged, but a deal of extra expense would be the result if the Falls, etc, had to be altered.

6. If the alignment of the Main Feeder could be altered, as suggested by the Inspector General, two Lakhs might safely be deducted from the estimated cost* of the undertaking; but as no reduction can be made, on that line, the actual saving will fall far short of the sum assumed, and, I think it right to state that, if a mistake has been made, in planning the Main Feeder, it is that the velocity, the

* Rs 25,83,000

13
the soil will stand, has been over, rather than under, estimated.
7. The estimate submitted does not, as pointed out by the Inspector General, provide for accumulating interest, and I have to bring to notice that another item - Maintenance during construction - was also overlooked. As the sums required to meet these heads of expenditure must be included in the cost of the scheme, it would not, I think, be prudent to assume that the original estimate could be reduced, by the modifications that are possible, below the amount solicited, viz Rupees 25,83,000. Every endeavour will, however, be made to do so, and I beg

to assure Government that the most scrupulous attention shall be paid, in the preparation of the working drawings, to the suggestions made, by the Inspector General; by Lieutenant Colonel Mullins; and by Major Oakes.

8. The section of the Ancient will be reduced to correspond with what has been found to answer at Arissa, but I think it proper to mention that the Tellore Ancient, which has a slope of 1 in 15, was very considerably damaged, by a recent flood in the Permain; and with reference to the quantity of material

allowed, by me for the Sangam Ancient, seeming excessive, when compared with the section of the existing Tellore Ancient, I beg to observe that this structure is the third weir that was built, on that site, and its stability must be greatly increased by the enormous mass of stone, and debris; in the bed of the river there.

9. In distributing the quarry refuse, on the upstream side of the Sangam Ancient, I was guided by what I noticed, at the Godavery many years ago, and by what I observed in 1866 (I think) at the Tellore Ancient. Quarry refuse, if

if properly laid, materially
check percolation and this it
is advisable to do, in my
opinion, for some distance, in
front of all weirs, where the
bed of the river is sand or gravel.

10. If the alterations proposed,
by the Inspector General, and
by the Acting Chief Engineer for
Irrigation, are carried out a
total saving of Rupees 1,06,000 may
be expected. This is an approximate
estimate, but I believe it to be
sufficiently accurate for the
present investigation.

11. In conclusion I have to
solicit permission to expend a
portion of the allotment, provided ^{Rs} 50,000
in the Budget for the current

15
year, in opening quarries - in
collecting materials - and in other
preliminary operations. This
will, I trust, be considered a
reasonable request as the scheme
has been generally approved of
by the Local Government and
by the Government of India, and
will, doubtless, be sanctioned by
the Secretary of State - If sanction
is withheld, until the designs
have been modified and the estimates
have been revised in detail, more
valuable time will be lost and
Contractors, who have been waiting
for some two years to begin work,
will probably think further delay
means an indefinite postponement
of active operations, and will act
accordingly.

I have the honor to be,
Your most obedient servant

G. M. T.

Offg Chief Engineer

*Niles 2583,800

→ Copy the scheme, and mark

a share of the gross revenue collections,
as an addition to maintenance expenses,
against the prop revenue division budget

Thyridia goudotii

2. After careful consideration of the question and

7-2-68 AC
7-2-68 AC is of opinion that both these

Shirley, I hope to see you this week.

o I think be taken into account on the ground

Plw Enobrychium Chrysanthemifolium

It has to deal, and that similarly the

6# 100 lbs. 100 lbs. 100 lbs. 100 lbs.

2. The result of this work will be

Considered. First the addition to made a

3300-81 seeds 72.

100

22-10-43.

Wm. B. Smith
2nd Vice

John Deering Chicago

Joe Dickinson
Hudson

Noted 16 October 1872
Received 17 — — —

20105

De la nuit celle de la nuit

is alternation and parallelism

And the reason why

by the end of the

General of Engineers

United Tech Corp

Laurey, the

accident for the
insurance for it.

Establish the estimate, on account of establish-
ments will be up the sum of Rupees 638,406
In the first part of the account and
General's note printed in P.M. of the 19 March
1874 but of 25 per cent on the following
amount

Estimate as submitted by
Mr R. Smith
Rupees 287,282-5
Value of lands of the
Thakur to be established 172,525
Deduct Special Estimate included in
in the above estimate 200 492,025
Deduct on account of work
struction of the estimate 70,000 21,000
25 per cent on this amount 389,200
Amount included in estimate
submitted to Govt. 24,83,625
Differences to be added Rupees 620,906
347,900

4- It is necessary to notice here that the value
of the land in the hands of cut and tanks which
will be abandoned must be treated as one aspect
in some form or another, and the similar way
appears to be to consider credit it against Capital
Expenditure. It may be necessary to reconsider
the question of the amount of revenue which
will be lost by the taking up of land for the project,
and possibly to make some addition to the

Estimate on this account: the District Engineer,
will accordingly be instructed to report on the
amount of land proposed to be taken up, their approximate
distinctions between that which is derived
from lands in the occupation of ryots, and that
which is only a paper waste from which no revenue
is derived. With regard also to the sum
of Rupees 70,000 deducted from the estimate
by the Chief Engineer for irrigation and which
deduction has been objected to by the Acct.
General, it is quite clear that the work re-
ferred to by this sum is not to be carried out,
and that consequently the deduction is properly
correct.

6- The balance total of the estimate is therefore,
exclusive of any sum which may be
taken into account on account of Capitalized
value of the amount already taken up will be
Amount as submitted 25,83,800
Additional for establishment 347,900
Preliminary expenses 4,887
Sum of District Account 2233 29,82,030

5- The Government observe that the Accountant
General & the Chief Engineer are really of
one opinion as to the inclusion of the Preliminary
expenses in the total cost of the project.

and that the difference in their treatment of this sum was due only to the view of the latter officer that its ordinary ^{made} ~~could~~ could not affect the question of the propriety of its further expenditure. Indeed if it could affect it all its influence would rather be in favor of proceeding with the scheme, so that this expenditure might not be entirely unproductive.

7. Turning to the estimate of Gen Revenue the Accountant General appears to add the prop Revenue to amount to Rs. 175,576 being Rs. 125,576 and Rs. 50,000 the difference between the supposed future irrigation and irrigation but this, as will be seen from Plan of the

18 March 1871 - Rs. 548, is clearly not the correct sum - It is there shown that the Revenue Settlement Dept. estimated the Revenue at Rs. 257,576 including Rs. 68,929 anticipated expenditure of irrigation for irrigation, while the amount adopted by Gov. on the recommendation of the Board of Revenue was Rs. 238,000 - The rate adopted by the Accountant General is one which is not applicable to the contract of country to be irrigated, in which the apportionment is consolidated. The net Revenue will therefore be as follows

Gen Revenue	Rs. 238,000
deduct	
Maintenance of <u>irrigation</u>	34,200
Net Revenue Collection at 9 per cent on 238,000	69,000
	16,833
	50,253
	18,714

or 6.3 per cent on Rs. 29,82,830

8. With regard to the question of affording irrigation lands clapnet as well, but irrigation either not so cultivated or capable of cultivation being irrigated only in irrigation for years, His Excellency the Governor in Council resolves to remit this subject to the Revenue Department for reconsideration, as it appears to be not altogether reasonable that advantages, which the irrigation will certainly not obtain should this project not be carried out, should be conferred upon them ^{change} ~~if~~ if it should be sanctioned. It is observed that the area of irrigation which may be irrigated is 8,854 acres.

9. It is noticed in para 18 of Colonel Duns' note of the 23 April 1874, that the estimates contain no provision for tools and plant or for Pension and leave allowances - The provision ^{amount to be made} provision, which until recently it was not usual to include in estimates, will be supplied by the District Engineer, who will be informed ^{that} ~~with the same intention~~ that, in the case of the irrigation works, a provision of 5 per cent on the work estimates has been allowed. Pension & leave allowances have not been mentioned in this note, the Accountant General, and His Excellency observe that no instructions on the subject have been received from the Government.

20/2/74

P. W. D.

Proceedings of the Madras Government,

Under date the

187

Read the following:-

From,

The Govt. of India - (H. E. No. 296 of 18 May/14)

See note
10/11/14

His Excellency the
Governor in Council
observes that the
principal difference
between the views of the
Accountant General
Public Works Department
and those of the Chief
Engineer for Irrigation
is due to the circum-
stances that the latter
officer considers that
the direct charges
only

only on account of any
project should be taken
into consideration
in determining whether
it is financially desi-
-rable to carry it out,
while the Accountant
General would add
in direct charges of *
all descriptions ascer-
tainable or estimable.
His Excellency has
already informed the
Govt of India in the

as per margin
that it is considered
by this Government
better that only the
actual direct cost of
any particular project

Firstly the direct revenues
which it is estimated
to require the expenditure
regarding the carrying
out of the project from
the Ordinary Grant

which is filled in which
case Govt have 24
thousand which will
be more than 100 of the
limited budget will do
it.

should be looked to in
deciding whether it
should be undertaken
or not; but, at least
as regards works to be
carried out from
Local Funds, the ul-
-timate settlement
of the principle to be
adopted must be
made by the Govt
of India. It may
nevertheless be noticed
that the maintenance
of the General Public
Works establishment
is a matter of policy,
closely connected with
the general welfare
of the country, and,
as

as regards that part
of these establishments
-ments which may
be deemed associated
with irrigation works,
the maintenance would
be essential to the com-
-pletion and duration
of these administrative
-tive improvements
which have been in-
-troduced since the
importance of the
subject obtained due
attention. There indeed
no new projects have
carried out in the fu-
-ture, it appears to be
probable that as time
goes on its cost will
be likely to increase

21
rather than diminish.
partly because the
work has been done in
connection with ex-
-isting works is very
great and partly be-
cause the system
of management en-
-tailed a far larger
amount of detailed
supervision than
was the case formerly.
It may be added that
the general results so
far as they have been
ascertained appear to
warrant the belief
that while the condi-
-tion of the country
will be materially

a
of improved the Revenue
will be so far secured
and increased as to
directly benefit the
Treasury.
2. The questions raised
however, so far as they
relate to the Lunenburg
project, appear to be
of great importance
only in connection
with the original
proposition to execute
the work from Loan
Funds, and should the
Board of such consider
it proper to include
in the estimate cost a share
of general establishment
expenses, and charges for
Revenue collections, &c.,
in

para 10.

shows the financial aspect,
the project demands insufficiently
from the public treasury
from loan funds. The scheme
should be carried out from
the Ordinary Grant

22
in no way directly dependent
upon its execution, thus
reducing the estimated re-
turns below the percentage
which may be deemed to
justify the appropriation
of Loan Funds on its
account. His Excellency
in Council considers
that the project should
be sanctioned for execu-
tion from the Ordinary
grant, because it appears
to be clear from the ex-
haustive manner in
which the scheme has
been investigated
that radical improve-
ment of the conditions of
the existing irrigation are
urgently needed.
and that water is available
for such improvement and
for a material extension
of the irrigated area.

21
a. ^{2ndly} that in any case a
very considerable outlay
of must be incurred and that
no better way of utilizing
the water available and of
comprehensively providing
for the wants of the tract
of country concerned can
be suggested.

3. The Government believe
that a better way of dealing
with this project can be
proposed than the assign-
ment of about 2 to 2½
lakhs yearly under Ordinary
for the leisurely carrying
out of the improvements
contemplated and they hope
that this arrangement will
be approved.

It is unnecessary to
remark in detail on the
several points noticed by
the

23
the Accountant General, but
it must be observed that
the view that the sum to be
realized by the sale of the
beds of abandoned tanks
(not rivers) should be
taken as a set off to the
loss likely to arise from
the cessation of revenue
on lands taken up for
the work appears to have
been based on no facts
and the objection of that
officer (para 11) to the de-
duction of Rs 40,000 is
altogether untenable, seeing
that the estimates as revised
by the Chief Engineer for
Irrigation are intended not
to include any of the work
represented by that sum.
5. With regard to para 2
of the letter from the Govt
of India above recorded,
it

It is to be noticed that
 savings and remissions
 of land revenue have
 already been taken into
 account, and that the
 circumstances regarding
 the supply of Islands
 free of charge will be
 found explained in the
 Proceedings of Government
 Revenue Department
 No. 119 of the 29th January
 1873 -

6. Ordered that the follow-
 -ing letter be sent -

13/6/74

G.M.R.

note

MINUTE BY THE HONORABLE J. D. SIM, C.S.I.

THE Sungum Project is to be constructed entirely by means of a loan. The

Total estimate	...	...	...	Rs. 25,83,000
Interest	...	...	...	2,80,219
Preliminary outlay	...	...	...	46,698
				29,09,917
Saving	...	...	...	70,000
				28,39,917

question, therefore, is how much must we borrow. This I gather to be Rupees 28,40,000. The expected revenue is Rupees 2,03,000, or rather better than 7 per cent. ~~It is now for the Government of India to decide whether they will sanction the work or not.~~

ital.

would

2. On the question whether any charge shall be debited against the work for ordinary Public Works and Revenue Establishments, I share Colonel Mullins' views that such charge should not be made, because it is not incurred on account of, or in consequence of the work, and cannot be reduced if the work be abandoned. Suppose a man has an acre of land on which for domestic or other reasons he keeps a cow; he discovers that on that acre, without incurring the additional expenditure of a farthing, he can also keep a sheep. Surely that sheep is all pure gain. Colonels O'Connell and Innes say "No;" they would have the man say, I must debit this sheep with a share of the pasture (which otherwise will be wasted) and of the wages of the dairymaid (whom I must keep anyhow), and so I am richer with my cow only than I shall be with my cow and a sheep! Of course if by not keeping the sheep he could reduce the cost of his cow, it might be otherwise. So here, if we could reduce our establishment by not undertaking this work, the amount of such possible reduction should be charged to it, but the reverse is the case. We can only inform the Government of India what the cost of Department Public Works and collecting establishment averages, and leave them to determine whether it shall be included or not. At the same time it should be pointed out that, whether the Sungum Project be undertaken or abandoned, the existing Public Works and Revenue Establishment cannot be reduced or dispensed with.

directed to.

X

3. I do not understand the 2nd item. The estimate, I conclude, includes the value of land required for the work; if not, such value should be ascertained and entered, as it is clearly a fair charge against the work. Some land may be thrown out of irrigation by them, but I imagine nothing like the sum set down here, Rupees 1,72,825.

4. The 3rd item, preliminary expenses, Rupees 46,698, seems to me legitimate, if it be not already in the estimate, which, I should imagine, includes every thing *ab initio*.

5. The 4th item, estimated saving in execution of work, Rupees 70,000, is a *bona fide* saving, as the work represented by it in the original estimate is struck out altogether as unnecessary.

6. ~~We must, of course, reply to the queries of the Supreme Government as to additional revenue that may be received in the form of savings on remissions.~~

7. As to Inamdars of "wet" land being entitled to irrigation free, the papers in the Revenue Department had better be circulated. The question arose, I think, in the Godavery and Kistna Districts, and the settlement there made received, I believe, the confirmation of the Home Government. The price placed on wet waste in Tinnevely was devoted to the minor village channels, but so long as the resident ryots have the privilege of pre-emption, Government can of course apply the money to any purpose they please.

(Signed) J. D. SIM

22nd June 1874.

Exd. S. T. Austin.

It is the very opinion, an unnecessary liberal concession. The Native people have protested the Inams never contemplated to such works.

as to the form of if they had undertaken such works will certainly have made the Inams an entire waste of money or labor.

31/7/75

[Faint handwritten notes, possibly "The minute book"]

[Faint handwritten notes, possibly "The minute book"]

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*Mr. Linn's Minute to be printed and
copies attached to G.O. No 128 of
5th May 1875
24/7/75*

3/6/75 21-876

The first really
 seems to be how
 "lets do it"!
 Sundum Report
 of the committee

function is to be
 constructed in
 - truly by means
 of a loan. The
 financing the fund
 is how much must
 be borrowed. This

Further to the
 R. 20.00.000. The
 expected revenue
 is 20.000.000 and
 further the committee
 for the bank to be

Total Est.	25.83.000.
Interest	2.80.219
Preliminary outlay -	46.690
	<hr/>
	29.09.917
Saving	70.000
	<hr/>
	28.39.917

know for the part
of his side is better
they will sanction
the work or not.

It seems to
be ~~unavoidable~~ to
impose the question
whether any change
shall be admitted
of work to the work
for ordinary duties
which is to be done
in relation to work to do

white, & I have said
that the views that
are this subject is
a man
has an account
of land on which
for domestic & other

views that
not the work to
concern of the work to
work - and cannot be
reduced if the work be

keeps a
leaves to the work to
cow - the work to
that is the work to
for the work to
the additional work to
handiwork of a far
thing he can also
keep a sheep - the work to
that is the work to
more the work to
well to the work to
they will the work to
man say - I must
do it - the work to
a share of the work to
which the work to
to be the work to
the wages of the work to
must the work to
keep any the work to

I am ~~frustrated~~ ^{frustrated} with
my ~~own~~ ^{own} only ~~them~~ ^{them}
I shall be in the
my ~~own~~ ^{own} to a sheep!
I should inform
the ~~fact~~ ^{fact} of ~~her~~ ^{her}
that the cost of
ATW Retainment
I Collecting Retention
that ~~are~~ ^{are} ~~not~~ ^{not}
leave them to ~~be~~ ^{be}
checked it or not
anything of the ~~in~~ ⁱⁿ
place at the same
time it should be
printed out that
like the the ~~same~~ ^{same}
project he ~~under~~ ^{under}
taken or a ~~band~~ ^{band}

of course if by not
 raising the sheep
 he could reduce the
 cost of his wool, it
 might be a little
 better, if we could
 reduce our total
 cost by not paying
 for the wool. The
total cost of the
 wool is the reduction
 he should be able to
 the wool is the cost

of not such a
solid shell to be
admitted & entered
as it is clearly a
fine thing apart
the work

^ Preliminary to
Print. P. 46 by

2/ Not a man of these
get other men into can
be in pen sent in the
I do not consider.
Stand the 2^d
item. The estimate
I can conclude in.
cludes the value
of land to be paid
for the work. Some
land may be thrown
out of circulation by
them but as they
like the same set
down here \$1,282.50
The 3^d item, seems
to me legitimate,
if it be not already

Stand the 2^d
item. The statement
I conclude in.

Charles the value
 of land is paid
 for the work. Some
 land may be thrown

out of circulation by
them but as they
like the the same set
- down here - 1/2, 82.

The 3^d item, however,
 being legitimate,
 if it be not already

✓ in the estimate
 which I should
 imagine, in order
 to every thing at once.
 The 4th item is a
 brief field survey
 on the work originally
 represented by it
 is struck out alto-
 gether. The revised
 estimate in fact
 is so much less
 than the original
 one.

The result of course
 applies to the price
 of the balance put
 to, as to additional
 revenue that may

Estimated salary
 in connection of work
 Rs 70000

received in the
 form of savings or
 remissions.

As to the number
 of "net" land being
 entitled to irrigation
 fees, the books in
 the Govt. Dept. have
 been cancelled.
 The question
 arose. I think, in
 the foregoing & this time
 distinct & the
 latter amount there
 made received.
 I believe, the com-
 position of the
 Govt. Home Dept.

The price placed
 on that water in

Minerally was de-
stined to the minor
village channels.
Not then so long as
the residents ought
have the privilege
of free transport. but
can of course apply
the money to any
purpose they please.

I O P

22.6.

My previous note
has not intended
as a formal min-
ute. but it had
little
was he was brought
on the bench as the
Lords had attended
to it. in his min-
ute.

The question
whether a pro rata
change for the existing
P. W. ^{& Rail} Estab^{ts} & elements
should be made a-
gainst the Survey
Project or not, is one
of vital importance
for if such a change
is to be made, the
work

work will not yield
the percentage of
net revenue on ex-
penditure, prescribed
by the Supreme Court
and must be given
up - at least as a
Loan Work.

Now suppose the
change is made - what
will be the result?
The public will still
have to pay that
charge - for our ex-
traordinary expenditure
must cannot be
reduced - and it
will lose the surplus
of the net revenue

R. 365,400.

R. 89,000.

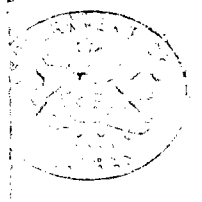
32
on which the work
will be yielded, - over
above the interest
on the loan - and
the public will be
lose also the profit
which the Execu-
tion of the work
will afford them.

Again, if the
change is a transfer
one, the amount
must be included
in the loan & in-
terest paid on
it - the Debt of the
State - the Treasury
will receive the
money - while another
that of H. Walker or

Rest will be an
usually paying
interest on it to
the public creditor.

The real point
at issue ^{is} whether
it will pay the
pvt. and the country
to utilise to the
fullest ^{extent} ~~on~~ Est. Mil.
which circumstances
can be it to ~~pay~~
Reck on, by paying
it for the ~~own~~ ^{own} ~~pay~~
ment. The estimate
includes the cost
of all the additional
agency & Est. Mil.
ment & price ~~of~~ ^{for}
the

R. 273.000.



33
2/ the work. If the
principles of the
P. W. Act. kept
he correct, we ought
to pay for the work
done the work with
a share of the cost
of the pvt. of the
performance pvt. work
of the home pvt. all
which have been
done here & nothing
to do with the work.

The P. W. Est. Mil.
ment was fixed at
its present strength
in the ~~reference~~ ^{reference} to
the ordinary ~~re~~
financement of the
country - and was

was not any wanted
in expectation of
such works as these
and consequently
cannot be reduced
in consequence of
them not being con-
sidered. It
is in fact an ex-
pense established.
want - but the only
way of reducing
its relative cost
is by utilizing it
to the fullest ex-
tent ~~practicable~~ ^{practicable}.
Whether the Survey can
profit be under-
taken or abandoned

The District must
have its Col. &
its Engineer - its
Range Officer - its
Hildars - their
wages & their
pay cannot be
reduced - and
this being the case
it seems to me
wise & sound policy
to give them as
much as they want to do,
as they can ac-
complish. The plan
of comparing the
cost of an P. W. Ex-
tender with the
the money it actually
expends is erroneous, for

it leaves out of
account the
value of transportation
to consider an egg which
is not followed by
actual ~~to~~ been ~~to~~ time,
but which, in the
our numerous tanks
and works of im-
provement is very heavy
and cannot be
disputed in the.

If it can be
shown that if the
Sung can be perfect
be abandoned, any
reduction of existing
Establishment is
further than the

3/

34
work must be
deducted in the
the cost of such
further reduction,
as well as of all
additional agency
necessitated by
it. But here, I
mean to say the
should be. The
large the area
of remuneration,
works are which
we can spread
the inevitable
undiminishing
cost of our establishment.

ment, the less does
that cost he come
because he gets
a larger return
from it. If miners
work otherwise in
mines they are
objected, because
the addition of
this nominal charge
swallows up all
the profit, the loss
to the State & the
country will be
great, and the
cheapening of our
P. W. Agency be im-
possible.

J. D. Lewis Esq.

I know no objection
of course to the
proposed change,
as a matter of ac-
count only. My
objection to its in-
clusion in the Es-
timate is as if it
were an actual
money disburse-
ment necessitated
by the project - &
avoidable or re-
ducible if the
project be abandoned.
- Done.

Sungum Shapir
Ch's C. Choing. Irrigation

Recd. 0292 - 3 Sep 74

The Hon. the Governor remarks as follows.

Extract from draft order. *Rebille the Governor's remark.*

The first and third points have been finally decided in G.O. R.D. 7th April 1875 N^o 550 in which it has been ruled after full consideration that *recorded a Minute against this resolution* *(probably in the Rev. Dept)* *lands clasped as irrigated* *Has this been communicated to the D.P.W. and has it appeared on the Prov. D.P.W. sent to Govt of India.* *only in those cases in which* *water for a second crop may* *be taken for single crop lands.*

Enquiry will be made in the Rev. Dept at as and search to be made in the Madras office for the Minute referred to.

R. J. 10/11/74
P.T.O.

These documents
do not appear to have
been properly
classified and
indexed. Perhaps it
will be better to
G.O. 2492 dated 3/11/74

Enquiry has since been made in the Rev.
Dept. at Coly, but the Minute is not at hand.
Please enquire in Madras office.

R. A.

Submitted to the Secretary. Mr.
Cardozo refers to the arrangement under
which Minutes were not printed with
D.P.M. Pro. This was noticed by the
Members of Govt., and it was decided
that they were thence forward to be printed.

Ent to Govt 13.7.75-R23-7-75
2.11.75

Q. No 2492 dated 3rd 11/12
1875 regarding the...

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My dear Mr. Robinson

See former Surgeon
Project papers have been
sent from Madras & I

have marked in the white
tape the ~~former~~ place in
your Minute of the 16 June

referring to changes in names

Yours sincerely
16 July 75- Colclough

List of Plans, Estimates & Specifications

Main line or Divisions	Works	Number of Drawings	Number of Estimates	Number of Specifications	Remarks
New Works	Main Res. & sluice	1	1	1	Chief Engineer
	Section of Dams	2			
	Plan of River & Wall	3	1	1	
	Transverse Section of —	4			
Main Reservoir	Transverse Section of the 1st Mile to the Main Reservoir	5			Chief Engineer
	Regulating Sluice at the head of Kanigiri Reservoir Channel	6	1	1	
	Curves of the Main Reservoir, Ghorra & Kanigiri Reservoirs	7			
	Longitudinal & Transverse Sections of the Main Reservoir from end of the 1st mile	8	1	1	
Kanigiri Reservoir	Plan of Girder Bridge	9	1		2 nd Engineer in Charge
	Longitudinal & Transverse Sections of the Kanigiri Reservoir Embankment from A to B	10			
	Do Do from B to C	11			
	Plan of Surplus Weir	12	1		

108 and 109 - Channel

Sections of the and the last May 14

Longitudinal & Transverse Sections
of the Davouria Reservoir

Regulating Chain at - 16

Bridge in the 2nd mile or so. 17

Port Channel Auxiliary
Feeder Head Race 18

Plan of Drainage Aqueducts in the 1st mile 19.

Drift in the 1st mile _____ 20

Unleaked of salmon in the
4th mile of the Kanigini
Reservoir Channel } 21

Curves, Longitudinal and
Transverse Sections of the
Bank Channel

Don K'Chennel Neas Sluice 23

Occupation Bridge in the
4th mile of the Rock
Channel

Invested 1/2 lb in the 5th Milegr.
the Bank Channel

Fallen to 6th mile of Old Rte. Kcl. 26

[illegible]

Further Channel

Longitudinal of transverse
Section of the teeth from
Kangaroo Perceps —

W. H. & Co. _____ 2

2.8 rise in the 1st mile _____ 2

Drainage Culvert in the 1 st mile	3
do in the 2 nd mile	3

Prize over Davran Haingech

Turney Longitudinal &
transverse sections of the ~ 3

Northern Channel from 1st to 8th mile

from 9th to 10th mile } 3

From 1745 to 1750

Regulating Choice st

the head of _____ No. _____
 Niagara Culvert in the _____

Stainage. Carried in the
1st mile

Occupation (Singles)
in the 2nd & 3rd Div

Drainage Culvert in the

Trail in two $5\frac{1}{2}$ mile

So. 9th Mile -
Democrat: The 8th Mile

Expected in the 7th mile
Bridge in the 11th mile

Spent over the Auxiliary

Received from Pennine

[illegible]

Upper Hermit

Central Channel

Northern Channel

Northern Channel (Continued)

Wall in the 11 th mile	45	+	+	✓
14 th mile	46	+	+	✓
Regulating Sluice & Bridge Combines in the 17 th mile	47	+	1	✓
Wall in the 1 st mile of the Rahana Drainage	48	+	+	✓
Wall in the 3 rd mile of the Margunda Drainage Channel	49	+	+	✓
Harney, Longitudinal & Transverse Sections of the Central Channel	50	+	1	✓
Wall in the 1 st mile	51	+	+	✓
Wall in the 4 th mile	52	+	+	✓
Aperture in the 6 th mile	53	+	+	✓
Wall in the 8 th mile	54	+	+	✓
Wall in the 3 rd & 5 th miles of the Chellayazay - Salem Drainage Channel	55	+	+	✓
Bridge in the 4 th mile of	56	+	1	✓
Harney, Longitudinal and Transverse sections of the Northern Channel from 1 st to 8 th mile	57	+	1	✓
do do from 9 th to 11 th miles	58	+	1	✓

Engineer

Superintending

Through

or measures

2

Con (Continued)

Harney, Longitudinal and Transverse Sections of the Northern Channel from 17 th to 24 th mile	59	+	1	✓
do do from 25 th to the end	60	+	+	✓
near Sluice	61	+	+	✓
Drainage Culvert in the 1 st mile	62	+	+	✓
Bridge in the 2 nd mile	63	+	+	✓
Drainage Culvert in the 3 rd mile	64	+	+	✓
Regulating Sluice in the 4 th mile	65	+	+	✓
Drainage Culvert in the 5 th mile	66	+	+	✓
do in the 7 th mile	67	+	+	✓
do in the 9 th mile	68	+	+	✓
do in the 10 th & 12 th miles	69	+	+	✓
Bridge in the 11 th , 12 th & 13 th miles	70	+	+	✓
Drainage Culvert in the 15 th mile	71	+	+	✓
Wier for Lyphon across the River of	72	+	+	✓
Drainage Culverts in the 17 th , 18 th & 20 th miles	73	+	+	✓
Drainage Culverts in the 21 st , 23 rd , 24 th , 25 th , 26 th , 28 th , 31 st & 32 nd miles	74	+	+	✓
Bridge in the 25 th mile	75	+	+	✓
Drainage Culvert in the 27 th mile	76	+	+	✓
Bridges North of Pyram	77	+	+	✓

Engineer

Superintending

Through

or measures

2

[illegible]

Auxiliary

Regulating sluice at the head of the Yallaya branch (Channel)	95	+	✓	
Drainage Culverts in the 1 st & 2 nd miles	96	+	+	✓
Drop in the 2 nd mile	97	+	+	✓
Plan of Surplus Weir in the Varini — Vank	98	+	+	✓
Regulating sluice at the head of the Varini Branch (Ch.)	99	+	✓	Engineer
Survey, longitudinal and transverse section of the Auxiliary Weir from Pennair	100	+	✓	Superintending
from 1 st to 5 th mile		+	✓	
Do. Do.	101	+	✓	through
from 9 th to the end		+	✓	
Weir sluice	102	+	✓	owner
Bridge in the 1 st mile	103	+	✓	
Drainage Inlet in the 1 st mile	104	+	✓	+ 1
Do. in the 2 nd mile	105	+	✓	
Sluice at the head of the Vengad. Vank Sahbly met	106	+	✓	

Auxiliary Dues from Revenue (Continued)

At Nam T Branch Channel

Bridge in the 5 th mile	107	+	+	✓
Surplus Weir in the 7 th mile	108	+	+	✓
Unweir by Khon Aeoos		+	+	✓
the River Malaceni	109	+	+	✓
Drainage Culvert in the		+	+	✓
10 th Mile	110	+	+	✓
Bridge in the 11 th mile	111	+	+	✓
Surplus sluice in the		+	+	✓
12 th mile	112	+	+	✓
Self-acting Regulator		+	+	✓
Valley of the Chlam	113	+	+	✓
North Supply Channel	114	+	+	✓
Valley of the Tannalasinne		+	+	✓
and Belau Polla Branches	115	+	+	✓
Longitudinal & Transverse		+	+	✓
Sections of the Chlam		+	+	✓
Channel & its tributaries	116	+	+	✓
Branches		+	+	✓
Head sluice to supply		+	+	✓
the Chlam Tank	117	+	+	✓
Regulating sluice &		+	+	✓
Bridge combines in the		+	+	✓
5 th mile	118	+	+	✓
Regulating sluice		+	+	✓
in the Gogalapalle		+	+	✓
Branch Channel	119	+	+	✓

Engineer
Superintending
Through
Nam T Branch Channel

At C u n Branch Channel (Continued)

Regulating sluice at the		+	+	✓
Head of the Tannalasinne	120	+	+	✓
Branch Channel		+	+	✓
Head sluice in the 1 st mile		+	+	✓
43 rd miles of the Tannalasinne	121	+	+	✓
Branch Channel		+	+	✓
Regulating sluice at the		+	+	✓
Head of the Namannah	122	+	+	✓
North Supply Channel		+	+	✓
Bridge in the 12 th mile of	123	+	+	✓
Channel in the line of the		+	+	✓
Namannah, Head		+	+	✓
over the Belau Polla	124	+	+	✓
Branch Channel		+	+	✓
Unweir by Khon in the		+	+	✓
Belau Polla Branch	125	+	+	✓
Channel		+	+	✓
Self-acting Regulator		+	+	✓
in the South Bar K of	126	+	+	✓
Chiphaleu near		+	+	✓
Tannalasinne		+	+	✓
Valley of the Minor	127	+	+	✓
Divisions		+	+	✓
Longitudinal Trans-		+	+	✓
verse Sections of the	128	+	+	✓
River Emban Kneit		+	+	✓
do	129	+	+	✓

Engineer
Superintending
Through
Nam T Branch Channel

Longitudinal & Transverse Sections of the Drainage Channel	130	5	✓	Engineer
Plan & Elevation of Dipping Waggon	131	.	✓	
Irrigation sluice to discharge from 1 to 5 feet per second	132	1	✓	
Irrigation sluice to discharge from 5 to 22 ft per second	133	1	✓	
Irrigation sluice to discharge from 23 to 50 ft per second	134	1	✓	
Sketch map of the Northern Delta of the Rennais	1	+	✓	
Estimate for Irrigation		1	✓	
	135	129	73	+

These allowed to Mr. Smith
with appropriate receipt of the
C. - 18/1/70

Special Executive Engineer
Office
30th October
1861

Smith
Executive Engineer
on Special Duty

Compd by A.P.
A.P.

General Abstract Estimate of the
Sum required for the irrigation and drainage
of the Northern Delta of the River, and
for embanking the left bank of this River
from Tangam to near the sea.

Number	Work	Amount	Total
1	Main Head Cut	76,000	
2	River Wall	271,000	
3	Kanigiri Reservoir Channel	728,600	
4	Kanigiri Reservoir Embankment	376,000	
5	Durran Reservoir Channel	82,000	
6	Durran Reservoir Channel	83,200	
7	Field from Kanigiri Reservoir	67,800	
8	Southern Channel	239,000	
9	Central Channel	127,400	
10	Northern Channel	524,000	
11	Eastern Main Channel	238,000	
	Carried Over	2763,000	

Brought forward		27,630.90	
12	Auxiliary		
	from the		
	main	374.00	
13	Main Branch		
	Channel	180.10	
14	River Embankment	47.40	3,304.50
Tramway and Rolling Stock		75.60	75.60
Field and Office Establishments		383.04	383.04
Temporary Buildings			
Contingent Charges			368.60
Grand Total			3,800.00

Special Executive Engineer
Kottore Office
30th October 1869
on Special Duty
Lieut. Colonel R.C.
Superintending Engineer
Collector of Kottore
Comdant by
Res

[Faint, mostly illegible handwritten notes and signatures in the right margin.]

No 57. 47 Special Executive Engineer
Tellore Office
30th October 1869.

From

The Executive Engineer
on Special Duty
Tellore District

To

The Chief Engineer
for Irrigation
Madras.

Sir,

Agreeably to instructions received, from the Superintending Engineer of this Division, I have the honor to submit ^A 135 Drawings, and the Report on the scheme for the irrigation and drainage of the Northern Delta of the Pennair; the documents counter-^B signed, by Colonel O. H. O. on his recent tour of inspection, are also enclosed; the others are being despatched to him for transmission to yourself.

^B 1/2 Specifications
1 Details and
15 Abstract
Estimates

1 General Abstract
Estimate

61 Specifications

14 Details and
Abstract Estimates.

The Special
Executive Engineer
Tellore District
The Superintending
Engineer and
Tellore District
30th October 1869.
Received
General Abstract
of the sum required for
the irrigation and drainage
of the Northern Delta
of the Pennair and for
enclosing the left bank
of this River from
Longam to near the sea.

2. A list of the Plans and
Estimates, connected with the
Project under notice, accompanies
this communication.

I have the honor to be
Sir

Your Most Obedient servant
Apmitt
Chief Engineer
on Special duty

Longman & Co. New York

17-14. Memorandum
 The undersigned has the honor to return
 to Mr. N. Smith, the Plans, Estimates
 & Specifications Committee with the
 Surveyor's report, in order that the
 modifications of the scheme, which
 have been decided the undersigned
 has considered to be advisable, may be
 carried out therein.

2. The principal alterations to be made
 are
 1st. the substitution of an Aqueduct
 at Lurgan for the arrangement of land
 works originally designed.
 2nd. The alteration of the main channel
 to a maximum of 4500 C.F.
 a second, with a velocity of about 3
 feet a second.
 3rd. the opening of a back channel from
 the main canal to the junction with
 the feeder from the Kinnegbeg Tank.

To Mr. N. Smith Esq
 Knight St. 14 of 18 January
 1904

14th Jan 1904
 The Chief Engineer
 for Lurgan
 Mr. N. Smith Esq

Also 30th October 1903.
 Re Lurgan 27th November 1903
 Received 4th - 11 - 04
 Subject Lurgan
 Re Lurgan the Re Lurgan
 and Drainage Committee
 the scheme for the irrigation
 and drainage of the
 Northern & Western
 Fenland

4th The raising of the water level of the
canal from tank to 3 ft below the
level intended in the original project

5th The alteration of the arrangements
for the supply of the ~~Deer~~ Tank
so as to allow of the existing channels
being utilized

6th The uniformity of the northern channel,
the cost of which has been found to be
somewhat out of proportion to the area
to be supplied.

7th The enlargement of the principal
channel from the tank,
& the uniformity of the subsidiary canal
from the Aqueduct at below

8th The carrying of the drainage of the
Southern part of the country affected
into the River, instead of ~~to~~ the
exclusion of all such drainage &
its diversion to the Eastward & Northward.

as was contemplated by Mr Smith.

3. It is understood that with these modifications
it is probable that the cost of the works required
to water 94,000 acres will amount to not
much more than 26 lacs of Rupees,
^{the estimate} against 38 lacs, for an area of 80,000 acres.
The principal cause of difference in the
two projects is that ~~in~~ that proposed by
Mr Smith was based upon the water supply
of the worst year of the series of ^{the} 8 years for which
reliable data are in existence, while in
the modified scheme the average water supply
for the whole period ~~is~~ taken.

4. On further consideration & after consulta-
tion with Colonel Orr, it has been thought
advisable not to reduce the length of the
Aqueduct proposed to be built at Longman,
& this work should therefore be designed
for the full breadth of the river.

Yours N. Smith

Special Executive Engineer
Copy to the Saffaya 2nd Div

Dec. 18/1/70

As it would appear
 from the Cos. Contract
 that the interests of
 all the land are
 secured, and it
 is necessary to show
 what interest such
 a case with the
 Bureau of Hygiene
 to the land and
 other.

I have &
 O.D.
 M. Under long & long
 M.D.

This letter to be
 accompanied by the
 necessary papers
 relating to the
 project and to be
 sent to the
 Bureau of Hygiene

Papers annotated
 Rhs 643-20th 105-10 Oct-72
 H.S. 116-9 Jan 73.
 Rhs 430-80 11-1511-19 June 72
 Dis 211-6 April 73. with
 Rhs 573-1st of series 11-235-2
 15 March 73.
 Rhs 572-Rec. 1st. 80 11-119-29
 Jan 73.
 4
 11-665-23 Apr 73

Reminder N. 21. 4. 1/2
Rev. D. S. Sullivan Rev. 6/5
23 Apr 73.

N^o 338.

From O. E. Sullivan 17 May 73
R. N. 783.
To D. S. Sullivan 18 May 73.
18 May 73.

The D. S. Sullivan
N. 338.

Dated 31st Dec 72
18th 4th Jan 73.

Forwarded copy
of despatch from
Secretary of State
regarding Punjab
Project requests
in view of the
urgency.

Project
Main Project of Punjab

The question at issue
is whether the Punjab
Project will yield such
a return in net revenue
as would justify the
execution of the work.

In order to decide
this question, we must
of course first arrive
at a reasonable estimate
(1) of the Capital outlay
(2) of the net revenue.

As regards the Capital
outlay, we have to choose
between the estimate of
the Bengal officers and
that of our Chief
Engineers.

Engineers for Irrigation.
it appears to me
And I confess that
the Estimate of the
Bengal Officers, so far
at least as the most
important item of
Expenditure — that of
"Establishment" — is con-
sidered ~~the~~ must be
preferred to our own.

I think that in the
estimated cost of
any new work, a
"pro rata" share in
the cost of the ^{existing} ~~whole~~
Public Works Establishment
ought certainly to be
included. It is evident
either (a) that there

54
will be no increase of the
Establishment in respect
of the "proposed" new
work, in which case
the Establishment is
larger and more costly
than is needed, and in-
ought to be proportionately
reduced, or (b) that
the Establishment will
be increased for the
purposes of the new
work, in which case
the new work must
of course be charged
with the cost of the
increase. My Honble
Colleague (Mr. Sim's)
illustration does not

appear to me to
support his view of
the case. He argues that
if a man has a field
in which he feeds a
cow, but finds that
"without the additional
expense of a farthing
he can also keep a
sheep on it" and does
so accordingly, it would
be unreasonable to
throw the cost of main-
-taining the sheep as
any part of the
expense of the field.
I answer that to
say that he could
keep a sheep on it
without

without additional expenditure
is to say that the
field was ~~the same~~
need for the support of the
cow alone. Either therefore
he must sell a portion
of the field, or ~~that~~
its cost must appear in
his books, as unprofitable
expenditure (i.e. as loss).
- He must debit
what it costs
to the maintenance
of the sheep. An analogous
case is now before us.
The Govt. of India must
either diminish its
expenditure or of Public Works
Establishment in that
Presidency by a certain
amount, or it must
show

should be charged to

unprofitable expenditure is

(i.e. a loss) to the

amount; or it must

charge to the proposed

work a proportionate

share of the expense of

this general establishment.

Now

it appeared that

the cost of the general

establishment of Public

works in this Presidency

is 25 or 26 per cent of

the outlay on work.

I

think therefore that

the Bengal Officers may

fairly hold that this

is about the proportion

in which 'Establishment'

should

should be charged to

(their capital and interest)

Singapore Project, and

therefore that their

figures, ^{in this respect} may properly

be accepted, strictly

speaking, indeed, it

would seem that there

ought to be some though

no very considerable

diminution of percentage

charged

for the case of each

new work proposed.

Given a Public Works

establishment, the

expense of it can

scarcely be said to

increase pari passu

with the execution

of

of resources of the
Establishment (for instance)
which may be needed
for the execution of
the works, as compared
with that needed for
the execution of the works,
will be more expensive
absolutely, but less
in proportion to
the number of the works.
But it is so
desirable in framing
such estimates as that
now in question, to
be on the safer side,
that I should hesitate
to advocate a diminution
(which

(which in any case could
not be large) of estimate
on this account.
and with respect to
the second head of difference
as between our estimate
and that of Bengal,
(Rs 1,72,825 on account
of value of land
to be sold) no facts
have been adduced
in support of the
objection to the deduction

The objection
is that there
will be land which
is taken up in
the course of the work
and that this must
be set off against
the Rs 1,72,825 for
land in the bed of tanks
to be sold. But I
presume we may accept

(made in Colonel Mullins'
estimate) of this sum
from the cost of outlay,
and it would seem that
we may
adhere to this
estimate in this
respect.)
The

the difference, (Rs 70,000) for estimated saving in expenditure of work. It has been inserted under a misconception as will be seen from Col. Mullins' explanation.

With respect to

2. ~~As regards Revenue,~~

there is a difference between the two

Estimates, of Rs 16,529,

on account of cost

of collection. This

sum, which amounts

to $9\frac{1}{2}$ per cent on

(as I understand him)
he no expense - a no
considerable expense -
will be incurred ~~in~~
~~cost of land~~
~~to take up~~ such an
account as not suggested

the estimated gross
revenue, is deducted
in the Bengal Estimate
from the net revenue, as
estimated in our own,
that being the percentage,
as regards cost of
collection, upon the
general revenue of
the Presidency. Colonel
Mullins contests this
deduction, on grounds
the same in principle
as those which he
gave against the addition
of the charges for general
establishment to cost
of outlay: and (as I have
explained) it does not
appear

appear to me that
these grounds are
tenable

On the whole
I think that the

Estimate of Capital
and Net Revenue given

in the 1st part of
para 16 of Colonel
Jones' note may
properly be accepted,

if the cost of outlay
there estimated be
reduced by Rs 1,28,25

to which reduction
(as above stated)
no valid
objection

has been shown

and by Rs 20,000 ~~which~~
in account of work until it
~~is~~ has proposed should not
be done. The

estimate thus modified
shows a return of
6 3/4 per cent on the

Rs 32,38,724

Deduct
Rs
172,825
72,000
242,825

Net Rs 29,95,904

Revenue Rs 18,72,800

work unless accumulated
interest
be added, which would
reduce the return
to nearly 5 1/4 per cent.

I think however
that we may fairly
take 6 per cent
as the probable

return from a Colonial
mill as shown
in para 8 of his
note of 20th January 1894
good

good reason for believing
that the accumulating
interest will be
covered by the, at
the least in great
part, the additional
revenue realized
during the progress
of the work.

~~It is that the~~
~~of 6 per cent can~~
~~be considered by the~~
~~Govt of India and~~
~~the Secy of State as~~

~~insufficient to justify~~
~~the execution of the~~
~~work.~~
To the first

question asked in
the last para. of the
letter of the Govt of India
the answer seems to be
that in Colonel Mullins'
estimate account was
taken of Rs. 50,000 for
probable savings and
remissions of revenue.
The second question
must be very carefully
answered. The equity
of the case seems
to me to be
doubtful, and
probably some further
reference to the
Board.

Board of Directors

will be distributed
and the same will be
at the discretion of the

Board of Directors

will be distributed in
July 15/74

and the same will be

at the discretion of the

Board of Directors

will be distributed in

July 15/74

and the same will be

at the discretion of the

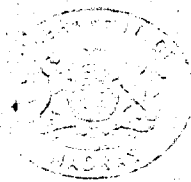
Board of Directors

will be distributed in

July 15/74

and the same will be

at the discretion of the



61
I think that the
agreements of the financial
families on the financial
basis of the property
it has before the
is perfectly sound
thought and it must
be accepted with the
living manner of the
agreements and the
of the estate the estate
are not sufficient for
proceeding in the
the long run. I think
the change
proposed to be debited
are so debitable under
any proper system of
account and I think
that

that conclusive reasons
are given for not including
the sum of Rs. 70000 of
expected savings on
the estimate under
the above mentioned
which altogether is Rs.
If this sum is to be
saved by the proper
way would be to revise
the estimate and cut
Rs. 70000 to eliminate
the works which are
considered unnecessary.
But I do not advise
this course. The margin
is to be made then after
and the works which
are of a similar
nature which have
occurred in respect
to the Madras water
works.

The only other point
open for remark is the
inclusion

inclusion of the terminal
amount Rs. 16000 and the
amount of Rs. 10000 of collection
of the water revenue to be
deducted from the project
as a matter of fact
no additional work
whatever will be
incurred. The existing
Village, Taluk & Collector's
Establishments will
effect the whole demand
without encroaching on
the additional revenue
with proportion reduce
the gross average cost
of collection which is
taken by the Accountant
General at 9 1/2 per cent.
But revenue is always
estimated with ease.
I would refer the
point to the Financial
Department for reference
to

to the Board of Revenue
top the 1st in the Para 2
of the letter of the Governor
of India's said in the
Circular letter, for it
thinks that the average
charge shown (9 1/2 paise)
may include the
items besides those
which are debitable to
this account, and
there are the matters
which deserve consideration
in that department
and for the same
reasons are concerned
I am satisfied that
we must lay down
for the full outlay
named - if not more
and as it now stands
the project lies under
the ban of being proved
to be an unprofitable
expenditure of public
money

I read the above
the 11th May 1873

63
many objections should
be put forward and I think
the project to be
to be a work of some
to be a large sum of
in the public or private
fund for many years
to come. If the
the project is not to
be a waste of money
it is not to be
in the hands of the
Revenue Department
I think that as regards
the account of the
D.P.W. there is no
for the same in respect
of the same. - and
the first place
I do not share the
views of the
G.O. 29. Jan. 1873 No. 179
in regard to the supply
of water from New York
to Suva. I am
of cost - in so far as
the

the new supply facilities
for the cultivation of
valuable wet crops of
land. There are in fact
for want of water in
a preceding chapter
of requirements supply
the new supply facilities
in the country of
no validity in the face
of agricultural facts
which are easily seen
in the country. Where
grain land is kept
out of cultivation
because the ancient
tank - which the
Government may be
bound to repair - is
out of order, the drying
the same claim for
supply from the repaired
tank, or where new
works cross or obliterate
old ones on which
drainage

64
the land is dependent
there is a claim to be
placed State and not
none to be made of
of irrigation - and it is
but when a new work
constructed at great
cost to the country, such
the requirements of
cultivation are by
assured regularly, and
from an intention to
annual cultivation or
the like - of any land
- State or State - whatever
the claim for water for
acquire and should
be State or State -
in the interest of the
country and of the
people
These drains are
ancient holdings on
which the public demand
has been wholly or in part
remitted

permitted when the
by private gifts devolved
of land for conservation
of land if any are granted
by this Government but
that Conservation can
only be of the conditions
which obtain at the
devolution. There
certainly were not
as general better than
they now are as respects
water. I do not therefore
think that there is
any claim on the
part of the heirs of the
Swampers in equity
or sound policy to be
placed in a better
position than they
ever were and I
believe that the State
is bound to account
very strictly with this
class of landholders
and

and to take care
that they do not become
a further burden on
the public funds being
of the country. Managers
must be required to take
their full share of the
cost of improving the
country and condition
of their neighbours and
should be required,
I submit, to pay strictly
for all advantages
they derive from public
expenditure. I would
revise the Swamp holdings
under every description
project as a part of
the financial bearing
of the thing as to those
under the Swamp project
of a beginning

Next we have
recently recognized - in
respect

respect to the Shrivastava
project - the principle
of requiring a fee or
price for the right of
occupancy of waste land
which I would apply
here & call on the collector
to report what may be
decided from this
source. I consider
that the principle
of applying the waste
of the country to effect
its improvement (the
principle on which great
works are constructed
in America) is one
which is most worthy
of introduction into
the country.

16/10/1864

2493

Public Works department

Proceedings of the Madras Government

Read the following:-

From the Govt of India - (H. E. No. 296 of 18 May 1904)

His Excellency the Governor in Council observes that the principal difference between the views of the Accountant General Public Works department and those of the Chief Engineer for Irrigation is due to the circumstance that the latter officer considers that the direct charges only on account of any project should be taken into consideration in

12/8

MD 2577 Para

Seen 1/6/8 S.S.

in determining whether
it is financially desirable
to carry it out, while the
Accountant General
would add indirect
charges, of which the
principal are a share
of the General Public
Works Establishment,
in addition to the special
establishment provided
for in the estimate
already submitted to
the Government of India,
[as regards cost of the
scheme] and *and*
a share of the cost of
land revenue collections,
as an addition to main-
tenance expenses, against
the gross revenue derived
from

+ Rs 20,83,800

from the project.
3. After careful con-
sideration of the question,
and of the arguments
which have been adduced,
His Excellency is of opinion
that both these charges,
the one enhancing the
cost of the project, and
the other diminishing
the net receipts, should
be taken into account,
on the ground that it
is right to distribute
the whole cost of Public
Works Establishments
chargeable to irrigation
against the entire num-
ber of works with which
they have to deal, and
that similarly the
cost

cost of Revenue estate
-ishments is fairly
-debitable to the whole
-irrigation revenue

3. The result of this
decision on the finan-
-cial aspect of the
-Sungum Project will
-now be considered.

First the addition to be
made to the estimates
on account of estate-
-ishments will be not

the sum of Rs 6,38,406
given in the first
para of the Accountant
General's note printed

in Proceedings Madras
of the 19th March 1874, but
25 per cent on the
following

following amount.

Estimates as submitted by Mr. R. Smith Rs 28,42,825
Deduct special establishment included in the above estimates. 3,19,200
Deduct on account of work struck out of the estimates. 40,000 3,89,200
24,83,625

25 per cent on this amount. 6,20,906
amount included in estimates submitted to Govt. of India. 2,43,000
Difference to be added Rs 3,47,906
say 3,47,900

It is necessary to
notice here that the
value of the land in
the beds of certain tanks
which will be abandoned
must be treated as an
asset in some form
or another, and the
simplest

simplest way appears
to be credit it against
Capital expenditure.
It may be necessary
to reconsider the question
of the amount of revenue
which will be lost
by taking up
lands for the project
and possibly to make
some addition to the
estimates on this account.
The District Engineer
at Nellore will accordingly
be instructed to report
on the area of lands
required to be taken up
in their assessment, dis-
tinguishing between
that which is derived
from

from lands in the
occupation of Ryots
and that which is only
assessed waste from
which no revenue
has been derived. With
regard also to the sum
of Rs 40,000 deducted
from the estimate by
the Chief Engineer for
Irrigation, ^{but} ~~which is~~
~~not to be taken~~ ~~has been ob-~~
jected to by the Account-
ant General, it is
quite clear that ^{as} the
work represented by
this sum is not being
carried out ~~and that~~
~~consequently~~ the
deduction

deduction is perfectly correct.

5. The Government observe that the Accountant General and the Chief Engineer for Irrigation are really of one opinion as to the inclusion of the Preliminary expenses in the total cost of the project; and that the difference in their treatment of this sum was due only to the view of the latter officers that outlay already made could not affect the question of the propriety

not

yes

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propriety of incurring further expenditure. Indeed if it could affect it at all its influence would rather be in favour of proceeding with the scheme, so that this expenditure might not be entirely unproductive.

6. The proper total of the estimates therefore, exclusive of any sum which may have to be added on account of Capitalized value of assessment on lands taken up, will

it will be

Amount as submitted	25,83,800
Additional for establishments	3,47,900
Preliminary expenses	48,877
Share of direction and account	2,233
	51,130
Total Rs	<u>29,82,830</u>

In turning to the estimate of Revenue, the Accountant General assumed the gross Revenue to amount to Rs 1,43,896 at the rate of being Rs Rupees an acre and the difference between the supposed future and present area of irrigation, but this, as will be seen from Proceedings Madras Govt of the 18th March 1871 No 818, is clearly not the

the correct sum. It is there shown that the Revenue settlement department estimated the Revenue at Rs 2,54,516 including Rs 68,929 anticipated cessation of remissions heretofore necessary, while the amount adopted by Government on the recommendation of the Board of Revenue was Rs 2,38,000. The water rate adopted by the Accountant General is one which is not applicable to the tract of country the irrigated in

iv. which the assessment
consolidated. The
net Revenue will
therefore be as follows

Gross Revenue	Rs 2,38,000
deduct Estimated expenses	34,200
Share of Revenue Collection	
at 9 1/2 per cent on 2,38,000 = 69,000	16,065
	<u>50,255</u>
or 6.3 per cent on Rs 27,82,830.	Net Revenue 1,87,745

*68929

8. With regard to the
question of assessing
Swam lands classed
as wet, but hitherto
either not so cultivated,
or capable of being
irrigated only in
exceptionally good
years, His Excellency
the Governor in Council
resolves to remit this
subject

subject to the Revenue
Department for recon-
sideration, as it ap-
pears to be not alto-
gether reasonable
that advantages which
the Swamidas will
certainly not obtain
should this project be
carried out should
be conferred upon them
free of all charge in
the event of its being
sanctioned.
It is observed that the
area of Swam lands
which may be newly
irrigated or more fully
supplied is 8,850 acres.
9. It is noticed in
para 18 of Colonel Dunes
note

Notes of the 23rd April
1874, that the estimates
contain no provision
for Tools and Plant
or for Pension and
Leave allowances.

The amount to be added
on account of the former
omission, which until
recently it was not
usual to include in
estimates will be
~~reported~~ by the Dis-
tict Engineer, Bellary,
who will be informed
that, in the case of the
Madhavi works, a
provision of 8 per cent
on the work estimates
has

74
has been allowed. Pension
and leave allowances
have for the first time
been mentioned in the
Notes of the Accountant
General, and his Sub-
-leary observes that
no instructions on
the subject have
been received from
the Govt of India.

10- [Should the finan-
-cial aspect of the pro-
-ject be deemed in-
sufficiently good to
justify its execution
from Loan Funds,
the scheme should be
carried out from the
Ordinary
At present the Presidency

Ordinary grant, because it appears to be clear from the exhaustive manner in which the scheme has been investigated.

1st that radical improvement of the existing irrigation are urgently needed.

2nd that water is available for such improvement and for a material extension of the irrigated area.

3rd that in any case a very considerable outlay must be incurred, and that no better way of utilizing the water available and of comprehensively providing for the wants of the tract of country concerned can be suggested.

does not get anything like as much under Ordinary for new works. Major & minor civil works to be done and it is intended to bring forward proposals for restoring the grant to a reasonable amount.

I am unable to assent to this alternative. Para. 1 is laying the case before the Govt. for consideration as a loan work. The para is therefore quite out of place & operates to commit the Govt. in an uncalled for manner.

I agree. Para. 1 should be omitted.

The Government believe that no better way of dealing with this project can be proposed than the assignment of about 2 to 2½ lakhs yearly under Ordinary for the leisurely carrying out of the improvements contemplated.

24/7/24

C.M.W.

To the D. C. Bellare with note
to Chief Secy. for Govt. with note
to Controller
to Revenue Dept
S. Copies despatched to 26/9/74.

Surgeon Project

Surgeon of
Remick Druggs

~~Hon. A. Robinson~~

~~Hon. A. Robinson~~

H. E. the General

C. No 3197

76. 8/8/4
S. H. Departt

2493

To, The Secy. to the Govt.
of India, S. H. D.

Sir, I am directed to
acknowledge the
receipt of your letter
of the 18th May 1874
No. 2968, transmitting
for consideration
copy of a note by the
Accountant General,
Public Works Departt.,
on the subject of the
financial prospects
of the Surgeon Project,

and

53-55.

16th 18/8/4

and in reply I am to
forward copy of Pro-
ceedings &c dated

in which the
views of His Excellency
the Governor in Council
in respect to the ^{weight} validity
of the items making
up the estimate for
the work are recorded.

2. After careful con-
sideration of the ar-
guments adduced both
by the Chief Engineer
for Irrigation of this
Presidency and the
Accountant General
Public Works department,
His Excellency in Council
has, it will be observed,
arrived

arrived at the conclu-
sion that the estima-
ted cost of the project
may be modified as
shown below:-

Amount as submitted	Rs 25,83,800
Additional for Establishments	3,44,900
Preliminary expenses	48,897
Share of Direction and account	2233
	51,130
Total	Rs 29,82,830

3. Assuming the
gross expenditure to
be Rs. 29,82,830 the
net return to be
derived from the
Project is shown to
amount to Rs 1,87,445
or 6.3 per cent on the
anticipated outlay.

and I am to state that
in the event of the Govt.
of India considering
these returns to be too
small to justify the
cost of the work being
sent from Govt. funds
His Excellency the
Governor in Council
is of opinion that
sufficient reason
is shown to make
it highly desirable
to sanction its pro-
-cution from the
Ordinary Agricultural
grant of the Presidency.
I am to add that
the information required
in

78 14
in para 2 of the letter
under reply has been
called for from the
proper Authorities
and will be submitted
~~as receipts~~ in due
course
18/8/74
G.N.W.

25 Copies of Premiums proceeding
and 6 St. Copies despatched 19/8/74.

The previous paper
sent attached
to Govt.

3197
 Govt. of Madras.
 PUBLIC WORKS.

The Dist. Engineer
 Secy. to Govt. of Madras

Dated

Recd.

G. O.

Sept

No.

2492
 2493

Nos. 53-55.

Gun Project - Nellore D.

Passing orders on the
 its raised by the
 Government of India is
 due to the financial
 prospects of the Project.

Forwarding copy of
 Proceedings containing
 the views of the Govt.
 on the subject of the
 financial prospects
 of the Gun Project
 in the Nellore D.