

(1) Number of pages 34(2) Date of repair 14-3-44

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 1215	Press Mis.
141-44	
Dated 9. 5	1870 .

Not to be folded or roughly handled

Read the following papers :—

No. 141. From Major J. F. FISCHER, R. E., Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 30th October 1869, No. 2,846.

ADVERTING to G. O. of the 3rd August 1869, No. 2,541, I have the honour to forward a sketch map, plans, and estimates, amounting to Rupees 1,11,000, for carrying out Captain Ryves' proposal for connecting the salt-pans at Pennuguduru with the Covoar Lock, also for extending this scheme in the manner herein indicated to make it as complete as possible.

- 1 Sketch.
1 Survey.
2 Sections.
1 Plan of Lock B.
1 " of Aqueduct D.
1 " of " A-E.
1 " of " E.
1 " of Girder Bridge C.
1 " of Irrigation Sluice.
1 Abstract Estimate.
1 Specification.

2. Before the receipt of the above

G. O. I had gone into this matter and

directed a survey to be made with levels to see how far it was possible to join the Cocanada and Coringa Canals by one channel and lock from this down to the salt-pans. The result of the survey having established the feasibility of the project by connecting the Covoar and Munjair Locks in the manner shown in the map, the estimates were ordered to be prepared for the entire scheme. The portion of these which relates to the salt-pans will, of course, be chargeable to that department; it remains then only to explain why the extension was taken up.

3. The whole of the traffic on the Coringa, Injarum, and Bank Canals has now to pass out to sea by the Munjair Lock and thence round over the Coringa River Bar to get to the port of Cocanada, a tedious voyage dependent very much on the state of the weather and also on the tides. At that time of the year, when bad weather may be expected, the boats have the only alternative of hauling up stream to get into the Mundapet Canal, and by this into the Cocanada Canal. Either of the above routes will add from fifteen to twenty miles to the length of a voyage, and the sea voyage is, moreover, attended with very considerable risks both to boats and cargo. By adopting the proposed route all these obstacles are easily got over, and one still-water canal, supplied by the waste waters now going to the sea by the Munjair and Covoar Calingulahs, will enable boats to go from all parts of the Ramachendrapuram Talook to the port and market of Cocanada, and a branch from this, with a lock in it, will let the boats, carrying the salt from the pans, pass into the Cocanada Canal and pursue their voyage up or down-stream without incurring the risks and delay of getting over the Cholungy River Bar and coming round into the Cocanada river by sea. The proposed canal also completes the navigation for the entire round of the Eastern Delta Range, so that the officer in charge can proceed in the most expeditious manner all over it, including the inspection of all the main lines of his canals, in one tour.

4. By extending the project in this manner, we can irrigate about 3,000 acres of land; the water-rate for this area, at Rupees 4 per acre, will amount to Rupees 12,000 a year, or 23.6 per cent. on the estimate of Rupees 50,813. I do

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9th May 1870.*

not, of course, include in this the cost for the salt works, amounting to Rupees 60,187, that would have to be incurred under any circumstances; but, taken in connection with the irrigation and navigation scheme, the profits on the larger estimate would be ten per cent., omitting altogether the benefits of the last item, which after all, though the most difficult to estimate, is the chief source of the well-being and prosperity of this district, for without it I believe the Godavery would be little, if at all, better than the districts of Bhundara and Raipore in the Central Provinces, where, with some 16 lacs of acres of irrigated land, the revenue is only about 12 lacs a year.

5. On the sketch map I have marked a line of canal which would most likely connect a series of back-waters from Cocanada with a low-lying drainage channel between Oopadah and Pentacottah, thus extending the means of water communications as far as it is probably feasible to carry it, and joining all these ports with one another. If the Government are pleased to approve of the suggestion, I will have the project taken up for investigation. The idea appears feasible enough, as we have a great command from above the last lock on the junction canal between Cocanada and Samulcottah, and it might then be practicable to open another channel seawards further north to communicate more directly with the shipping in the harbour.

6. The principal masonry work on the scheme is the lock, the chamber to be 110×18 . I have adopted these dimensions to suit the size of the dredges, as it will be necessary to pass these through for dredging the Cholungy river, to let the sea-water flow more readily to the pans. The gates are to have no valves. I consider this arrangement objectionable and dangerous, and the sills can be scoured by means of a small sluice leading into the main culverts. I propose having culverts on either side of the gates to fill and empty the lock chamber more readily, as also to have one available for work should anything happen to the other.

7. There is a masonry aqueduct of seven arches 6 feet span each and 1 foot 6 inches rise: this will afford a waterway of about 150 square feet, the natural being about 130 square feet. This work is provided also with a substantial apron and retaining walls, and it would not matter at all then if the tide-water stood a few inches above the crown of the arches, as there is also a considerable weight of water passing over the aqueduct: the weight of this is only 375 lbs. to the square foot, which is only 1-500 of what a good brick should be able to bear.

8. There are some bridges and sluices to suit the various purposes for which the project was prepared, and these are of the ordinary character.

9. I presume the Salt Department will be prepared to place the necessary funds at our disposal for their portion of the work. The remainder of the work will have to be provided for from the grant for extraordinary works I believe, and I would, therefore, beg to suggest the project be recommended for the early sanction of the Government of India; in the meanwhile, if the Government are pleased to approve of these proposals, I will transfer any funds I can spare from this year's grant for Extraordinary to this work, as the project is a very important one for the range and looked upon with great favour by the mercantile and trading community.

*Proceedings of the Madras Government, Public Works Department,
9th May 1870.*

REFERRED to the Revenue Department with reference to the Order in that Department, No. 2,159, of the 24th July 1869.

FORT ST. GEORGE, (Signed) CHARLES A. ORR, Colonel, R. E.,
11th November 1869. Secretary to Government, P. W. D.

REFERRED to the Board of Revenue for their remarks.

FORT ST. GEORGE, (Signed) R. A. DALYELL,
29th November 1869. Acting Secretary to Government, R. D.

No. 142. Proceedings of the Board of Revenue, dated 2nd February 1870,
No. 751:—

From the Collector of the Godavery District, to the Acting Secretary to the Board of Revenue, dated Cocanada, 4th January 1870, No. 3:—

I HAVE the honour to acknowledge receipt of Board's Proceedings marginally noted, and to report thereon as required.
No. 9,102, of 13th December 1869. 2. The whole scheme was fully
Plans, etc., returned. explained to me by Mr. Sage, the Execu-

tive Engineer in charge of Range No. 1, and I most fully concur in the advisability of the scheme for connecting, by a new junction canal, the Cocanada and Coringa Canals. It will be of the greatest benefit to the internal delta traffic of the district.

3. As to that for a canal from the Samulcottah Canal with Oopadah and Pentacottah, I think it deserves investigation certainly; and, if it prove feasible at a reasonable cost, it would doubtless much benefit the northern part of the district by affording an easy mode of transit of produce of all sorts to the chief port of shipment, Cocanada.

ENCLOSURES Nos. 1 to 10.—Plans.

ENCLOSURE No. 11.—Estimate.

ENCLOSURE No. 12.—Report.

SUBMITTED to Government with reference to their endorsement on a letter from the Superintending Engineer, dated the 30th October 1869, No. 2,846.

2. The Board concur with the Collector and the Superintending Engineer as to the advantageousness of the scheme for connecting the Cocanada and Coringa Canals by a new junction canal.

3. Major Fischer says in paragraph 9 of his letter, "I presume the Salt Department will be prepared to place the necessary funds at our disposal for their portion of the work," and in another place he estimates the cost of this portion at Rupees 60,187. The Board remark that the Salt Department as such possesses no funds which can be assigned to such an object. It certainly does not belong to "Contingencies," and the reduced allotment for "Petty Construction and Repair" is insufficient even for the unimportant works for which it is specially designed.

4. On the other hand the scheme is one which, whether it is regarded as improving the salt revenue, the land revenue, or the communications of the district, is one on which Imperial Funds can be most profitably expended.

*Proceedings of the Madras Government, Public Works Department,
9th May 1870.*

TRANSFERRED to the Public Works Department.

FORT ST. GEORGE,
4th April 1870.

(Signed) H. WELLESLEY,
Acting Under-Secy. to Govt., R. D.

No. 90.

No. 143. NOTE by the Acting Chief Engineer for Irrigation.

THE proposal for a junction canal from the Cocanada Canal above the Covoer Lock to the Coringa Canal above the Munjair Lock originated in the necessity which has been experienced for making access to the Pennuguduru salt-pans more easy than is the case at present. Now the boats get to the salt-pans by the Cholungy river, and the navigation is attended with much difficulty, which could not be removed by deepening the channel over the bar except at a great expense. Doubts are entertained, moreover, whether dredging would secure satisfactory results. The cost of dredging is estimated at Rupees 2,238 per mensem.

2. Captain Ryves in April 1869 proposed, in lieu of attempts to improve the lower part of the Cholungy river, a fresh-water canal from the Cocanada Canal to that river above the salt-pans. The length of canal required is about 6,200 yards, to which must be added 2,600 yards of the upper part of the river which need to be deepened. The cost of this navigation for the accommodation of the salt traffic is, with the lock at the junction of the canal and river and other masonry works, estimated at Rupees 60,187.

3. The papers in this office do not show what extent of salt traffic has to be accommodated; but it would seem from the correspondence to be of considerable importance, and undoubtedly it will be much better and more economical to expend Rupees 60,187 on a canal which can be easily kept in an efficient state than to resort to dredging the river bar at a cost of more than 2,000 rupees a month.

4. The rest of the junction canal, from the Cholungy river to the Coringa Canal, is proposed for the purpose of rendering more complete the network of navigation in the Eastern Delta. By it communication between Coringa and Cocanada would be much facilitated, for at present boats have to get along the coast from the one port to the other, and the circumstances of this coast navigation are by no means as favourable as could be desired. The estimated cost of the extension is Rupees 50,813, and the Superintending Engineer states that, if the canal be cut, 3,000 acres of land, yielding from water-rates Rupees 12,000, will be irrigated from it. I am under the impression, however, that if the junction canal were not carried out, the area referred to would be irrigated from other channels, as there is evidently nothing to prevent this being done. In other words, it would seem that the eastern section of the delta would yield the same revenue whether the extension of the junction canal be cut or not, and that, therefore, no direct returns can be anticipated from the proposed outlay of 50,813 rupees.

5. Under these circumstances I do not think that it will be advisable to add the amount of the estimate for extending the junction canal to the Coringa Canal to the cost of completing the delta canals as agricultural works. This work should, I think, be considered as an addition to the communications of the

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9th May 1870.*

district; and, as the advantages it will confer will be for the most part local, perhaps it will be thought proper to provide for it from Local Funds. The only exception to this would be the five small sluices for irrigation. Should the canal be cut it will probably be more convenient to irrigate from it than from other channels, the supply of which it would intercept. The estimated cost of these sluices is Rupees 1,350, and they may be constructed from the grant for Minor New Works, Agricultural.

6. The other part of the estimate, namely, that for the works connected with the salt-pans will, I presume, be provided for from Imperial Funds out of the ordinary grant under Communications.

7. The dimensions of the proposed canal appear to be suitable. They are, a width at sole of 30 feet, a depth of 6 feet, and a width at water-surface of 48 feet. The sole of the canal is intended to be on a dead level from end to end; but its cross section is so large, compared with the discharge for irrigation, that a surface fall of about half an inch a mile will enable it to carry all the water required.

8. The dimensions of the lock differ slightly from those fixed for the delta generally. The length, 110 feet, is 5 feet more than that allowed for second-class lines of navigation, and the width of the chamber would be 15 feet; but the Superintending Engineer considers that, in order to pass dredges which may be required on the river, it will be advisable to make the width of the chamber 18 feet. In the absence of any statement of traffic I am unable to give an opinion as to whether the dimensions fixed by Major Fischer are preferable to those of a lock for first-class canals which are 150 by 20, and which correspond with those of the new locks on the canals which the junction canal is to unite.

9. The aqueduct over the Muttapolliem river requires modification, there being no proper towing-path. The clear space on the side walls is only 1 foot 8 inches, and the piers on one side should be lengthened so as to carry towing-path arches and to provide a width for the path-way of at least 5 feet. The width of the waterway of this aqueduct is, as designed, 18 feet. It should certainly not be less than 20 feet, and there appears to be no particular reason for allowing less than the bottom width of the canal, which is 30 feet.

10. The towing-path under the Cotapilly Road Bridge should be 5 feet wide in conformity with the rules approved in Government Order, No. 1,676, dated 21st May 1869, and communicated to all Superintending Engineers in Circular No. 14, dated 28th May 1869.

11. The other masonry works require no special notice.

FORT ST. GEORGE,
13th April 1870.

(Signed) J. MULLINS, Major, R. E.,
Acting Chief Engineer for Irrigation.

No. 144.

ORDER THEREON, 9th May 1870, No. 1,215.

CIVIL WORKS, No. 13.

THE Government are not satisfied that any attempt to deepen the entrance of the Cholungy river by dredging, or

to improve the lower part of that river by the same means, with a view of facilitating the access of boats to the salt-pans at Pennuguduru, is likely to be attended with such success as to warrant the large outlay that would be required for carrying on

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9th May 1870.

operations of that expensive nature even for the limited period each year during which it is supposed that they would be necessary. The preferable mode of opening water communication with the pans is clearly, in the opinion of Government, the construction of a canal from Pennuguduru to the Cocanada Canal. This would afford all the desired accommodation to the salt traffic, and would effect an important local improvement. The cost is, however, calculated to be Rupees 60,187, and, as this is a much larger sum than in the present state of the Public Works assignment it is likely will be at the disposal of this Government for some time, His Excellency the Governor in Council regrets that he is not in a position to sanction the execution of the work. The consideration of the project, including the extension from Pennuguduru to the Coringa Canal, as a Local Fund work, must, therefore, be deferred.

(True Extract.)

Colonel, R. E.,
Secretary to Government.

To the Superintending Engineer, 1st Division.
,, Revenue Department.
,, Board of Revenue.
,, Chief Engineer for Irrigation.

Exd. A. S. Rodgers.

SUPERINTENDING ENGINEER'S OFFICE, 1ST DIVISION

DOWLAISHWARUM, 30 October 1869

No. 2846

From,

Major P. F. Fisher R.E.
Acting Superintending Engineer

1st Division

To,

Colonel C. A. Orr R.E.

Secretary to Government D. P. W.

Madras

SIR,

Enclosures 12

1 Sketch

1 Survey

2 Sections

1 Plan of Lock

1 Plan of Aqueduct

1 Do. Do. Do.

1 Do. of Girders

1 Do. of Bridge

1 Abstract

1 Specification

12 *

Inverting to G. O. of the 3 August
No. 2541, I have the honor to forward a
Sketch Map, plans and Estimates, amounting
to Rupees 1,11,000 for carrying out Captain
Ryves' proposal for connecting the salt
pans at Pennuguduru with the Kovoor
Lock, also for extending this scheme in
the manner herein indicated to make it
as complete as possible -

2. Before the receipt of the above
G. O., I had gone into this matter, and
directed a survey to be made with levels,
to see how far it was possible to join the
Cocanada and Coringa Canals by

* by survey

Enc

one Channel and Lock, from this, down
to the Salt pans. The result of the survey
having established the feasibility of the
project by connecting the Koroor and
Munjair Locks in the manner shown
in the Map, the Estimates were ordered
to be prepared for the entire scheme. The
portion of these which relates to the Salt
pans, will of course be chargeable to that
Department, it remains then only to ex-
plain why the extension was taken up.

3. The whole of the traffic on the
Coringa, Pijarum, and Bank Canals
has now to pass out to Sea by the Munjair
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river bar to get to the port of Cocanadah,
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Acres of land, the water rate for this
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I do not of course include in this the
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of irrigated land, the revenue is only
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5. On the Sketch Map, I have
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Government are pleased to approve of the suggestion, I will have the project taken up for investigation, the idea appears feasible enough as we have a great command from above the last Lock on the junction Canal between Cocanadah and Sammelcottah, and it might then be practicable to open another Channel Seawards further North, to communicate more directly with the shipping in the harbour—

6. The principal Masonry work on the scheme is the Lock, the Chamber to be 110×18 . I have adopted these dimensions to suit the size of the dredges, as it will be necessary to pass these thro for dredging the Choolungy river, to let the Sea water flow more readily to the pans. The gates are to have no valves, I consider this arrangement objectionable and dangerous, and the Sills can be scoured by means of

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7. There is a Masonry Aqueduct of 7 Arches 6 feet span each, and 1'-6" rise, this will afford a waterway of about 150 Square feet, the natural being about 130 Square feet. this work is provided also with a Substantial Apron and retaining Walls, and it would not matter at all then if the tide water stood a few inches above the Crown of the Arches, as there is also a considerable weight of water passing over the Aqueduct, the weight of this is only 375 lbs to the square foot which is only 500 of what a good brick should be able to bear.

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to suit the various purposes for which the
project was prepared, and these are of
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for Extraordinary works I believe, and
I would therefore beg to suggest, the project
be recommended for the early sanction of
the Government of India; in the mean-
while, if the Government are pleased to
approve of these proposals, I will transfer
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year's grant, for Extraordinary, to this
work, as the project is a very important
one for the range, and looked upon
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I have the honor to be
Sir

Your Most Obedt. Servant -

Wm. R. Tucker Majist. &c.

Asst. Superintending Engineer
1st Division

No 90

Note by the Acting Chief Engineer for Irrigation

The proposal for a junction canal, from the Co-
canada Canal above the Coim Lock to the
Coringa Canal above the Munjan Lock, origin-
ated in the necessity which has been experienced
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Captain Ryves in April 1869 pro-
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Received
Entered Returns 1 Dec 1869

A. Secretary

1869 No 2547-8

Refered to the

Board of Revenue

for their sanction to

M. S. S. S.

for their sanction to

for their sanction to

for their sanction to

2.27. April 1876

1869 No 2547-8

The Chief Engineer

for the Irrigation

for the Irrigation

for the Irrigation

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196 8
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5. Under these circumstances I do not think that it will be advisable to add the amount of the estimate for extending the junction canal to the Coruiga Canal, to the cost of completing the Delta Canals as agricultural works. This work should, I think, be considered as an additional

addition to the communications of the District,
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7. The dimensions of the proposed canal
appear to be suitable. They are, a width at side
of 30 feet, a depth of 6 feet, and a width at water
surface of 48 feet. The sole of the canal is intended
to be on a dead level from end to end, but its
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the bottom width of the canal which is 30 feet.

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Road bridge should be 5 feet wide, in conformity
with the rules approved in Government Order
No. 1676 dated 21st May 69, and communicated
to all Superintending Engineers in Circular
No. 14 dated 28th May 1869.

11. The other masonry works require
no special notice.

For St. George
13th April 1870
W. H. Mullins
Major R.C.
Acting Chief Engineer for Irrigation

The Secretary to Government
P. W. S.

Sub. Ord. 22 11 11 276

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your Canal

From M/S 70 Dept
 The Acting Chief
 Engrs. for Irrigation

To The Secretary to
 Government P.W.D.

Dated 13th
 Decr 21st } April 70
 Recd 21

No 90
 Enclos: 14

Note on the new junc-
 -tion canal for connect-
 -ing the Cocanada and
 Coringa Canals.

+ 10 Plans + Spec. + 1 Estm.
 Recd 21/5-9 May 70

File 43

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 MEMORANDUM.
 REQUESTED for reference the under-mentioned papers
 Enclosures of letter No. 90 dated
 13 April 1870 from this office
 all papers connected with S.C.
 No. 1338-14, May 1873.
 OFFICE OF THE CHIEF
 ENGR. FOR IRRIGATION,
 P. W. Department,
 22 - 5 - 1873.
 To
 The Registrar of the P.W. Dept
 Head Clerk.

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Set of Plans given to Chief Eng^r Office
 on memo - 2nd May 1873

- 1 Sketch map showing proposed Canal and its extension
- 1 - Survey of proposed Canal from Co Canada Canal
~~just~~ just above Coror Lock to Koringa Canal
 above Munjair Lock
- 1 - Plan and section of an Aqueduct over the Drain C.
 near Chinna Munjair on Coror and
 Munjair Canal
- 1 - Longitudinal and cross sections of Wholling
 river
- 1 - Plan section and Elevations of a Irrigation
 sluice to be built on Coror & Munjair Canal
- 1 - Longitudinal and cross sections of proposed
 Canal from Co Canada Canal just
 above Coror Lock to Koringa Canal
 above Munjair Lock
- 1 - Plan sections and Elevations of a Bridge to be
 built on Coror and Munjair Canal to carry
 Cotapilly Road across
- 1 - Plan sections and Elevations of a Lock to be
 built at the head of Wholling River on
 Coror and Munjair Canal at B
- 1 - Plan sections and Elevations of an Aqueduct over
 Muttapallim River on Coror and
 Munjair Canal
- 1 - Plan and section of an Aqueduct to be built over the
 drain A and for drainage near Munjair Lock
 at C. on the Coror and Munjair Canal

1 - Approximate
 estimate

Civil
No. 12/5/2/5
P. W. Department.
Proceedings of the Madras Government.

Under date the 4 May '70.

Read the following.

From The Ag. Supg. Engineer 1st Div. / H. E. No 2846 of 30th Dec 1869.

Pro: of the Board of Revenue / 751 / 2nd February 1870

From The Ag. Chief Engg for Divⁿ / 20 / 12th April 1870

The Government
are not satisfied that any
attempt to deepen the en-
trance of the Cholishy river
by dredging, or to improve
the lower part of that river
by the same means, with
a view of facilitating the
access of boats to the salt
pens at Pennugoodooras, is
likely to be attended with
such success as to warrant
the large outlay that would
be required for carrying

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on operations of that ex-
pensive nature even for the
limited period each year
during which it is supposed
that they would be necessary.
The preferable mode of
opening water communica-
tion with the pans is
clearly, in the opinion of
Government, the con-
struction of a Canal from
Pernagodooro to the
Locanada Canal. This
would afford all the de-
sired accommodation
to the salt-traffic and
would effect an important
local improvement. The

Cost

Cost is however calculated to
be Rs. 60,187, and as this is a
much larger sum than, in
the present state of the
Public Works Department,
it is likely will be at the
disposal of this Government
for some time, His Ex-
cellency the Governor in
Council regrets that he is
not in a position to sanction
the execution of the work.

The consideration of the
project, including the
extension from Pernu-
godooro to the Loringa
Canal, as a local Grand
work

work must therefore be
deferred.

App

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To the Depot Engineer 1st Div ✓
" Rev. Dept. ✓
" Board of Revenue ✓
" Ch. Engineer for Bangalore ✓

Recd 11/5/70.

C. 27 April 187002 J. W. May

No. 1568-4663/1874

Govt. of 1870 Madras.

PUBLIC WORKS.

To
The Superintending Engineer
at Coimbatore

Dated

Encl.

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Recd.

G. O. May 1870. No. 1215

Nos. 141 (a) 144

Coconada and Coringa
Canals - The existing works
on papers regarding
the project for con-
necting the Salt Pans
at Coimbatore with
the Kooror Lock and
also for extending the
project.