M.R.O. 1—77,006—8-6-37.

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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 916 Press ~~Misc~~

53-55

Dated 2—5— 1862.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 2nd May 1862.

No. 53. Read the following letter from Lieutenant-Colonel J. OUCHTERLONY, Acting Deputy Chief Engineer, Northern Circle, to Lieutenant-Colonel W. H. HORSLEY, Secretary to Government, Public Work Department, dated Chepauk, 1st March 1862, No. 181:—

SIR,

1. I have the honor to lay before Government the project so often brought under discussion in previous years, for connecting the Chilka lake with the Ganjam river, close to the Port of that name.

1 Letter from Collector No. 22, dated 12th February 1862,
1 Do. from District Engineer No. 363, dated 10th February 1862.
1 Abstract estimate Rupees 90,000.
1 Report.
1 Survey of levels.
1 Sketch map.

2. The estimate now submitted amounts, for the simple operation of excavating the Canal designed for this purpose, to Rupees 90,000.

3. The correspondence and documents connected with this project are so voluminous, and extend over so considerable a period of time, that reference to their contents would entail a very great sacrifice of time; therefore, while I enclose them entire that they may serve such a purpose, it is necessary that I should summarize the information they convey in order that Government may be in a position to judge of the scheme according to its true merits.

4. The Chilka lake or backwater, is an extensive inlet or lagoon in the province of Ganjam, opening to the sea by a narrow outlet or creek, and hence, though constituting a basin of drainage for a considerable extent of country, receiving an influence from the Bay of Bengal, which renders its waters more or less brackish, its northern and western shores border a richly producing country, from which vast supplies of grain, oilseeds, and other staple articles of Indian commerce are continuously exported in boats towards the considerable market of Ganjam; which, however, they are only able to reach under the grave disadvantage of having to be landed at the port of Rumbah at the southern extremity of the lake, and conveyed thence by carts over an intervening space of 9 miles of land carriage.

5. This obvious drawback to the free-spread and elasticity of trade it is proposed to remove by cutting a Canal which shall run from tide-water to tide-water in the lake and in the river of Ganjam; and which will pass along a line of country peculiarly well suited for the economical construction of such a work, inasmuch as its soil is alluvial throughout, and the greatest depth of cutting which its configuration will entail will be only 13 feet 11 inches.

6. I have remarked upon the beneficial effects which this measure can scarcely fail to produce upon trade, and consequently upon the prosperity not only of Ganjam but of the adjoining Bengal province of Cuttack; and I may also add that the result of its operation will be calculated to repay Government in a still more direct manner for whatever reasonable outlay it may involve them in. The Ganjam Salt pans produce a description of article which is peculiarly popular inland; at present as the cost of transport by carts is more than 120 per cent. in excess of that by water the quantity conveyed by return bandies to the Port of Rumbah for shipment on board the produce boats, is of necessity comparatively small, as the cart owners seek a more remunerative traffic inland. But if the cargo boats of the Chilka lake were enabled to discharge their goods in the Ganjam river they would almost invariably load back wholly or in great part with an article which pays their owners so good a freight as Salt: and the profit to Government by its augmented sale would be great and immediate.

7. The consequence of increased facility and economy in the mode of transit to a market could not fail to enhance the demand for all articles of consumption and of export. English manufactured goods and luxuries would find their way more readily into the interior, and the general development of the resources of the District would be greatly stimulated.

8. The amount of the estimate may appear considerable, showing as it does a probable cost of Rupees 9,500 per mile of canal excavated. But it must be borne in mind that compensation for land which it will occupy, forms a large item in the gross charge. The cost of labor also has very much increased in Ganjam of late years; and I have further thought it necessary to enter in the estimate a larger sum than usual for contingencies, under the apprehension of drifts of unfavorable soil being met with in the line of excavation.

9. I trust, however, Government will not consider the total amount as at all incommensurate with the great advantages which the scheme promises, and which the Collector, the District Engineer, and every individual (even to writers in the journals of London in 1859) who has been in any way connected with it since 1856 when it for the first time assumed a practical form, all concur in extolling.

10. The Canal is planned so as to carry at the lowest level of ordinary tides a depth of three feet of water, sufficient to float the craft now employed in the navigation of the Chilka lake, and which would therefore at once be available to traverse the new projected line of communication.

11. The only point upon which a question can be in any way raised is as to the necessity of placing locks at either end of the Canal. It certainly is not desirable to introduce such an impediment to free and unrestrained traffic; and I am induced to believe that Government will consider the presumption fair that no necessity for such constraint is, according to existing lights, apparent.

12. The Collector apprehends that the stream of the Ganjam river which manifests a yearly increasing tendency to push its embouchure more and more towards the north, may, profiting by a temporary superiority of head during the southerly monsoon, the winds of which have a tendency to lower the level of the Chilka waters, usurp the line of outlet offered by the Canal, and empty itself into the lake; submerging, as Mr. Forbes augurs, considerable tracts of circumjacent land in its course.

13. In this apprehension however I do not share. A simple groyne placed near the head of the Canal would sufficiently divert the stream to prevent any thing beyond a mere flow being perceptible along its Channel; and the reaction produced by the confinement of its volume in the contracted space of the Canal, would assist the natural tendency to disgorge itself by the ordinary outlet.

14. Moreover a project is now under investigation to rectify the Channel, which the river in question has of late years assumed, by carrying groynes or stone jetties across the space now occupied as the elbow of the stream; and cutting an artificial opening, or rather re-establishing the ancient opening, for the river's disemboguement. The position of these training revetments I have roughly noted on the plan of the locality. I am by no means sanguine as to the general result of the project, which originates with the Acting District Engineer to whom I have had to remit it for alterations; but I anticipate that its effect will certainly be to arrest the apprehended tendency of the river to invade the position assigned to the head of the projected Canal.

15. That the Ganjam river may eventually resume a northerly set is, I fear, not improbable; but I am disposed to think its encroachment in that direction will not be appreciable until the line of the coast shall have advanced to adapt itself to the new configuration, which may be as it were, forced upon it; and the backwater, which the old Channel will then constitute; will I anticipate rest undisturbed.

16. At all events I consider that the Canal may be safely excavated as a low-tide cut according to the design and specification of the District Engineer; leaving, as I think we may do without apprehension of ill results, the future to decide as to the necessity of providing it with locks; and feeling no apprehension as to their efficiency if added at an after stage of operations, when, and if, that necessity shall have been established.

17. Should Government see fit to sanction this project the amount of the estimate could be appropriated out of the Reserve Fund of the ensuing Budget, or out of the 1 per cent. Income Tax Fund, Rupees 6,000 being allotted for expenditure during the current year, and Rupees 30,000 for 1862-63.

18. The District Engineer proposes to expend Rupees 9,000 before the close of the current year, but by the time sanction, if accorded, is conveyed to him, time will not I expect admit of this.

Proceedings of the Madras Government, Public Works Department, 2nd May 1862.

No. 54. MINUTE BY THE HONORABLE THE PRESIDENT.

1. The project for connecting the Chilka lake with the Port of Ganjam has been often discussed, and I have gone over the various recommendations with relation to this work, most of which, however, I regret to observe, adopt the form of vague general statements: that the work is sure to pay; that the cost is trifling, the return sure to be large from the large amount of land, the produce of which will certainly seek an outlet by the Port of Ganjam were this Canal once made. These, however, are not the sort of statements upon which the Government could venture to expend large sums of money, and the first thing with which we ought to be furnished is a decent estimate of the quantity of produce likely to seek an outlet by way of the Canal. The District Engineer puts this at 14,300 tons, and at the rate proposed by the Chief Engineer, viz., 4 Annas per ton, the return would be 3,570 Rupees; and as the estimate amounts to 90,000 Rupees the return as interest on capital is not 4 per cent. This, I may remark, is the gross *direct* return according to the data furnished, and there would of course be many deductions for the cost of collection, the repairs which would be required on nine miles of Canal, &c. It may be said that there will be an indirect return in consequence of the extension of the trade in Salt, and this may very probably be the case; but something in the shape of an estimate should be sent in of the probable increase.

2. With reference to the character of the work, I agree with the Chief Engineer that locks cannot be dispensed with when the level of the water at the two ends of a short Canal is so variable as is reported. It would seem that during the monsoon the Chilka lake is about 1′ 6″ above the high-water mark in the Ganjam river, or 6′ above the low-water mark. Again, the low water level of the Chilka lake is 2′ below *low* water in the river or 6′ 6″ below high water, so that at different seasons there would be a fall of 9 inches per mile, or thereabouts, in the Canal, sometimes towards the river, sometimes towards the lake.

3. I think that the surface of the Canal might be kept at that of the high-water neap tides; the depth may be 5 feet, as the first class boats draw 4 feet water when loaded. The locks need not be larger than sufficient to pass such boats, say, 55 or 60 feet long, by 10 feet wide. The estimate, when revised, may exhibit an amount which would justify the Government in commencing the work; at present it appears unlikely to pay.

4. I am by no means certain that it would not be better worth our while to undertake the general scheme alluded to by Colonel Cotton, and to make the Chilka lake a fresh water Basin. But I have such a well-founded distrust of these vague propositions that I should wish the subject to be more fully reported on. In the meantime I am of opinion that the Government would not be justified in expending 90,000 Rupees upon a work the returns from which appear to be so scanty and uncertain.

(Signed) W. T. DENISON.

No. 55. ORDER THEREON, 2nd May 1862, No. 916.

1. With the above letter the Deputy Chief Engineer, Northern Circle, submits a project for a Canal to connect the Chilka lake with the Ganjam river at an estimated cost of Rupees 90,000. This work has been for some years before the notice of Government, but the consideration of it has, for financial reasons, been hitherto postponed. Along the Chilka lake a large traffic is carried on by boats which are now obliged to unload their cargoes at the village of Rumbah, from whence they are conveyed by bandies for a distance of nine miles to the port of Ganjam.

2. The present project is for the purpose of obviating this inconvenience and enabling the boats to proceed the whole way to Ganjam.

3. The Canal has from the first been warmly advocated by all the Revenue and Engineer Officers who have been connected with the Ganjam District; but a difference of opinion exists as to the mode in which it should be carried out.

4. The local Officers and the present Deputy Chief Engineer advocate an open Canal without locks. This proceeding necessitates the excavations being made much deeper, while, from the fluctuating level of the waters of the lake and the tide at Ganjam, there will be always a current either one way or the other through the Canal.

5. By the construction of locks on the other hand, it is argued that, the depth of excavation may be reduced one yard, that yard being below low-water mark the most troublesome and expensive.

6. The Collector is apprehensive that if the Canal is left open, the embouchure of the Ganjam river may be shifted still further north and be more difficult to control than even at present. The Governor in Council is not disposed to consider the latter objection of much weight, but he questions the desirability of leaving the Canal open to the irruptions of the river on the one side and the flood waters of the lake on the other. The expense of constructing locks and of excavating the open Canal to the requisite level below low-water, the Chief Engineer shows, will be about the same, while the labor of the latter will be unquestionably greater.

7. The aggregate outlay being considerable, and the benefit of the Canal being confined exclusively to navigation, the Government consider that a return should be obtained for those benefits by means of a toll.

8. The late District Engineer states, it is observed, that the cost of the land carriage varies from 1 Anna to Annas 2, Pice 8 per bag, or from 14 Annas to Rupees 2-6-0 per ton. The toll proposed by the District Engineer, viz., 1 Anna per bag, would be too high. The Government consider that 4 Annas per ton, the same as charged on the Eastern Coast Canal, would be sufficient, especially if the Canal is of such great importance as represented, as the traffic should soon be much more than that mentioned by the District Engineer, viz., 2 lacs of bags, which amount to only 14,300 tons per annum. Neither the Collector nor the Deputy Chief Engineer advert to the subject of the toll, and the latter appears to look for the returns in increased sales of Salt. After a consideration of all the correspondence on the subject His Excellency the Governor in Council cannot but observe that the remunerative character of the work is based only on vague and general statements. Before entertaining so large an expenditure as now proposed, Rupees 90,000, it is necessary that the Government should be furnished with some reliable estimate of the quantity of produce likely to seek an outlet by way of the Canal. At the quantity given by the District Engineer, 2 lacs of bags, or 14,300 tons, and at the rate of toll above proposed, viz., 4 Annas per ton, the direct return would be Rupees 3,575, or under 4 per cent., and from this, deductions would have to be made for expense of collection, repair, &c.

9. The anticipated indirect returns from increased sales of Salt are doubtless probable, but an estimate of the possible amount should be given.

10. The Governor in Council agrees with the Chief Engineer in considering that the locks cannot be dispensed with when there is so much variation in the levels of the water at either end of so short a Canal, and he is of opinion that the surface of the Canal may be kept at that of high water neap tides with a maximum depth of 5 feet. The size of the locks, however, may be reduced to 60 feet in length by 10 feet in width.

11. After the estimate has been revised according to the above directions, it should be submitted for the re-consideration of Government accompanied by some reliable estimates as to the probable amount of traffic and increase in the Salt Revenue.

12. The District Engineer's attention will be directed to the discrepancy between the measurements and tonnage of the boats, as given in paragraph 6 of his letter: a boat 48 feet long by 8 feet broad and drawing 4 feet of water will carry probably 38 tons and not 10½ as stated by him and the smaller boats in proportion.

(Signed) W. H. HORSLEY, Lieut.-Colonel,
Secretary to Government.

Central Office of Public Works
Chepauk 1st March, 2 1862.

No 181-

From,

Lieutenant Colonel J. Ouchterlony
Acting Deputy Chief Engineer N. C.

To,

Lieutenant Colonel W. H. Horsley
Secretary to Government D. P. W.
Fort Saint George.

Public)

Sir,

I have the honor to lay
6. before Government the project or plan
brought under discussion in previous
years, for connecting the Chilka Lake
with the Ganjam river, close to the
Port of that name.

2. The Estimate now submitted
amounts, for the simple operation of excava-
-vating the canal designed for this pur-
-pose, to——— Rupees 90,000:—

3. The correspondence and
documents connected with this project
are so voluminous and extend over so
considerable a period of time that
reference

reference to their contents would entail a very great sacrifice of time; therefore, while I enclose them entire that they may serve such a purpose, it is necessary that I should summarize the information they convey in order that Government may be in a position to judge of the scheme according to its true merits.

4. The Chilka Lake or back-water, is an extensive inlet or lagoon in the province of Ganjam, opening to the sea by a narrow outlet or creek, and hence, though constituting a basin of drainage for a considerable extent of country, & receiving an influence from the Bay of Bengal which renders its waters more or less brackish. Its Northern and Western shores border a richly producing country, from which vast supplies of grain, oilseeds, and other staple articles of Indian Commerce are continuously exported in boats towards the considerable market of Ganjam; which however they are only able to reach under the grave disadvantage of having to be landed at the

the port of Rumbak at the Southern extremity of the Lake, and conveyed thence by carts over an intervening space of 9 miles of land carriage.

5. This obvious drawback to the free spread and elasticity of trade it is proposed to remove by cutting a canal which shall run from tide water to tide water in the Lake and in the river of Ganjam; and which will pass along a line of country peculiarly well suited for the economical construction of such a work, inasmuch as its soil is alluvial throughout, and the greatest depth of cutting which its configuration will entail will be only 13 feet: 11 inches.

6. I have remarked upon the beneficial effects which this measure can scarcely fail to produce upon trade, and consequently upon the prosperity not only of Ganjam but of the adjoining Bengal province of Cuttack; and I may also add that the result of its operation will be calculated to repay Government in a still more direct manner for whatever reasonable

reasonable outlay it may involve them in.

The Ganjam salt pans produce a description of article which is peculiarly popular inland; at present as the cost of transport by carts is more than 120 per Cent in excess of that by water the quantity conveyed by return bandies to the Port of Rumbah for shipment on board the produce boats, is of necessity comparatively small, as the cart owners seek a more remunerative traffic inland. But if the cargo boats of the Chilka Lake were enabled to discharge their goods in the Ganjam river they would almost invariably load back wholly or in great part with an article which pays their owners so good a freight as salt: and the profit to Government by its augmented sale would be great and immediate.

7. The consequence of increased facility and economy in the mode of transit to a market could not fail to enhance the demand for all articles of consumption and of export. English manufactures goods

goods and luxuries would find their way more readily into the interior, and the general development of the resources of the district would be greatly stimulated.

8. The amount of the Estimate may appear considerable, shewing as it does a probable cost of ——— Rl 9,500.— per mile of canal excavated. But it must be borne in mind that compensation for land which it will occupy, forms a large item in the gross charge. The cost of labor also has very much increased in Ganjam of late years; and I have further thought it necessary to enter in the Estimate a larger sum than usual for contingencies, under the apprehension of drifts of unfavorable soil being met with in the line of excavation.

9. I trust however Government will not consider the total amount as at all incommensurate with the great advantages which the scheme promises, and which the Collector, the District Engineer and every individual (even to writers in the journals of London in 1859) who

who has been in any way connected with it since 1856 when it for the first time assumed a practical form, all concur in extolling.

10. The canal is planned so as to carry at the lowest level of ordinary tides a depth of 3 feet of water, sufficient to float the craft now employed in the navigation of the Chilka Lake, and which would therefore at once be available ~~without any adaptation~~ to traverse the new projected line of communication.

11. The only point upon which a question can be in any way raised is as to the necessity of placing Locks at either end of the canal. It certainly is not desirable to introduce such an impediment to free and unrestrained traffic; and I am induced to believe that Government will consider the presumption fair that no necessity for such constraint is, according to existing lights, apparent.

12. The Collector apprehends that the stream of the Ganjam river which manifests a yearly increasing tendency to push its embouchure more and more towards the North, may, profiting by a temporary superiority of head during the Southerly Monsoon, the winds of which have a tendency to lower the level of the Chilka waters, usurp the line of outlet offered by the canal, and empty itself into the Lake, submerging, as Mr. Forbes augurs, considerable tracts of circumjacent land in its course.

13. In this apprehension however I do not share. A simple groyne placed near the head of the canal would sufficiently divert the stream to prevent any thing beyond a mere flow being perceptible along its channel; and the reaction produced by the confinement of its volume in the contracted space of the canal, would assist the natural tendency to disgorge itself by the ordinary outlet.

14. Moreover a project is now under investigation to rectify the channel which the river in question has

has of late years assumed, by carrying groynes or stone jetties across the space now occupied as the elbow of the stream; and cutting an artificial opening, or rather re-establishing the ancient opening, for the river's disembouchement. The position of these training revetments I have roughly noted on the Plan of the locality. I am by no means sanguine as to the general result of the project, which originates with the Acting District Engineer, to whom I have had to remit it for alteration; but I anticipate that its effect will certainly be to arrest the apprehended tendency of the river to invade the position assigned to the head of the projected canal.

15. That the Ganjam river may eventually resume a Northerly set is I fear not improbable, but I am disposed to think its encroachment in that direction will not be appreciable until the line of the coast shall

advanced

advanced to adapt itself to the new configuration, which may be as it were, forced upon it; and the backwater which the old channel will then constitute will I anticipate rest undisturbed.

16. At all events I consider that the canal may be safely excavated as a low tide cut according to the design and specification of the District Engineer; leaving, as I think we may do without apprehension of ill results, the future to decide as to the necessity of providing it with locks; and feeling no apprehension as to their efficiency if added at an after stage of operations, when, and if, that necessity shall have been established.

17. Should Government see fit to sanction this project the amount of the Estimate could be appropriated out of the reserve fund of the ensuing Budget, or out of the 1% Income tax fund, Rupees 6,000 being

th being allotted for expenditure during
g the current year, and Rupees 30,000
n for 1862/63.

d. 18. The District Engineer
g proposes to expend Rupees 9,000
t before the close of the current year
e but by the time sanction, if accorded,
t is conveyed to him, time will not, I
respect admit of this.

I have the honor to be
Sir,
Your Most Obedient Servant

Central Office of N.
Chepauk
1st March 1862.

F. Auchterlony Lieut.t Col.e
Ag.t D.y Chief Engr.s N.C.

To.
Lieutenant Colonel H. H. Harris
Secretary to Government D. O. W.
Fort Saint George.

Rec'd from the Chittoor Collector with the Estimate for a Canal from Chilka Lake to the Ganjam River

Dated 1st March 1862
Rec'd [illegible]
No 181.
Encl'd returned.
Submits Estimate amounting to Rs 90,000 for a Canal from Chilka Lake to the Ganjam River.

No 58.

P. W. D. 1862 Depart.
Rec'd 1st May
No 1008.

From,
Lt Colo J. Cuchterlony
Offg Dy Chief Engr & H. C.

To,
Lieut Colo W. H. Horsley
Secy to Govt P.W.D.
Fort St George.

Dated 1st March 1862
Rec'd [illegible]
No 181.
Encl'd returned.
Submits Estimate amounting to Rs 90,000 for a Canal from Chilka Lake to the Ganjam River.

No 58.

Rec'd 14th April 1862

No 916. 2d May.

C14 Upper Chilka

No 916 2nd copy

And I may remark in the Post direct return according to the data furnished and there would of course be many deductions for the cost of collection - this repairs that would be required on Jhinkey Canal &c I may be said that there will be an indirect return in consequence this extension of the Railway Line and this may very probably be the case but something in the shape of an Estimate should be known of this probable increase -

With reference to the character of the work I agree with the Chief Engr that locks cannot be dispensed with when the level of the Canal at the two ends of a short Canal is to be available as navigation - it would seem that during the monsoon the Chilka Lake is about 1/6 above the high water mark in the Jangam River or 6/6 above the low water mark against the low water level of the Chilka Lake is 2/6 below low water mark in the River or 6/6 below high water - so that at different seasons there would be a fall of 6 inches per mile or thereabouts in the Canal sometimes towards the River sometimes towards the Lake -

I think that the Line of the Canal may be the deep water of the high water deep Lake - the depth may be 5 feet at the most dark boat drawing 4 feet water when loaded - for locks need not be larger than sufficient for pair Canal Boats - say 55 or 60 feet long & 10 feet wide - the Estimate when revised may exhibit an amount which would justify the Govt in commencing the work - at present the work - at present appears unlikely to pay -

I am by no means certain that it would not be better work on which to undertake the general scheme - attended by the Chilka Lake a fresh water Basin - but I have only a well founded distrust of these vague propositions that I should wish the subject

I had I may remark in the Rough direct return according to the data furnished and there would of course be many deductions for the cooly collection - this repairs that would be required on a finished Canal &c. I imagine said that there will be an indirect return in consequence of the extension of the Railway Canal and the many probably better cattle - Something in the shape of an Estimate should be Sent in of the probable increase -

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I think that the Surface of the Canal might be kept at that of the high water deep Level - the depth maybe 5 feet as the finest class Boats draw 4 feet water when loaded - the docks need not be larger than sufficient to float small Boats - say 55 or 60 feet long & 10 feet wide - the Estimate when received may exhibit an amount which would justify the Govt in commencing the work - at present the work - at present appears unlikely to pay -

I am by no means certain that it would not be better work out which is undertaken by the Government - altered by scheme - & attended by Col Cotton & to make the Chilka Lake a fresh water Basin - but I have only a well founded distrust of these vague propositions that I should wish the subject

be more fully upheld
in this meantime
Lam of opinion that
the Lords would not
be justified in expend-
ing 90000 l. upon
a work the returns from
which appear to be
so very uncertain

Wd

P.W.R. No. 608 of 62.

Mem

On looking over this
Project it appears to me that
it will be necessary to have
the Canal plan to the West
of the existing Culvert which
takes that in the Culvert
ajac Gargian Pier -
From the Sketch it appears
that the Waters landed
that the Levels is 8' high than
in the month of January
at which time the making
the Lake stood as shewn
with the Brook and
the Gargian River, Area
there would be a rush at
any [illegible] the
Canal due to this level
and when the Lake fills
current will run the other
way arising from the Tide

J. Office Board this

Public Works 1862 Dept.

No. 1055.

Minute by the Hon. the President.

Dated 5th April /62
Received 9th "

No. 916 — Pelly.

After commenting on the project for conducting the Shubra Lake with the Port of Gargian, requires a further and fuller Report on the same before he shall sanction it.

No. 54.

C. 14 April 1862

I fear that the Canal if unprotected will be liable to have its banks much worn at one time, and its bed irregularly acted upon at another. Whereas if the guard Locks are constructed all fear of damage may be averted.

I do not consider the Locks will afford any obstruction, at all events not more than would be felt by the current which will otherwise be experienced by the ebb and flood tide.

I do not think the Collectors apprehensions as to the shifting of the mouth of the Gaigam River need have much weight in the question of an open Canal, if it should be adopted.

If the Locks are constructed the excavation of the Canal will be considerably reduced, as then it may always be kept at the level of High Tide, and instead of excavating to 5 feet below low water mark which I am sure will be found a very troublesome and expensive operation, it will not be necessary to excavate to more than 1 foot below that level - 4 feet of the most expensive digging will thus be saved, which ought to reduce the average rate for Earthwork considerably; but even supposing the same rate to be maintained, the cost of the Locks will be met by the reduction in cost of excavation, so that for the same expenditure we should avoid all risk of injury to the Canal and have at the same time a tide water Canal.

I think also that a Toll should be levied upon it from the first as the proposed outlay is

as considerable—

D.P.W.D.

Chief Engineer

14 April 817

No. 916. P.W.D. Dec. 14

Proceedings of the Madras Govt.

Under date the 2nd May 1862.

Read the following Papers

From the Dy Supdg Chief Engr
Northern Circle

Submits estimate amounting to Rs 90,000 for a Canal from Chilka Lake to the Ganjam River — M.E. 12th March 1862 No 181 /

Minute by the Hon'ble the President — 8th April 1862 — /

With the above letter the Deputy Chief Engr Northern Circle submits a project for a canal to connect the Chilka Lake with the Ganjam River at an estimated cost of Rupees 90,000. This work has been for some years before the notice of Government but

but the consideration of it has, for financial reasons been hitherto postponed. Along the Chilka Lake a large traffic is carried on by Boats which are now obliged to unload their cargoes at the village of Rumbah, from whence they are conveyed by Bandies ~~for a distance~~ for a distance of 7 miles to the Port of Ganjam.

2 The present project is for the purpose of obviating this inconvenience and enabling the boats to proceed the whole way to Ganjam.

3 The Canal has from the first been warmly

warmly advocated by all the Revenue and Engineer Officers who have been connected with the Ganjam District; but a difference of opinion exists as to the mode in which it should be carried out.

4 The local Officers and the present Deputy Chief Engineer advocate an open Canal without Locks. This proceeding precipitates the excavation being made much deeper, while, from the fluctuating level of the waters of the Lake and the Tide at Ganjam, there will be always a current either one way

The aggregate outlay being considerable and the benefit of the Canal being confined exclusively to navigation, the Govt. consider that a return should be obtained for those benefits by means of a Toll.

The late District Engineer states, it is observed, that the cost of the land carriage varies from 1 anna to 2-8 per bag or from 14 as to Rs 2-12 6-0 per Ton. The toll proposed by the District Engineer, viz 1 anna per bag, would be too high. The Govt. consider that

that 1/4 annas per ton the same as charged on the Eastern Boast Canal, would be sufficient especially if the canal is of such great importance as represented, as the traffic should soon be much more than that mentioned by the District Engineer viz 2 lacs of bags, which amount to only Rs 300 Tons per annum. Neither the Collector nor the Deputy Chief Engineer advert to the subject of the Toll, and the latter appears to look for the Returns in increased sales of salt. After a consideration of all the correspondence on

on the subject. His Excellency the Governor in Council cannot but observe that the remunerative character of the work is based only on vague and general statements. Before entertaining so large an expenditure as now proposed, Rupees 90,000, it is necessary that the Govt should be furnished with some reliable Estimate of the Quantity of produce likely to seek an outlet by way of the Canal. At the quantity given by the District Engineer, 2 lacs of bags, or 14,300 Tons, and

and at the rate of above Toll proposed by the Chief Engineer, viz 4 Annas per Ton, the direct Return would be Rs 35,75, or under 4 per cent, and from this, deductions would have to be made for expense of Collection, Repair &c.

The anticipated indirect Returns from increased sales of salt are doubtless probable, but an Estimate of the possible amount should be given.

The Governor in Council agrees with the Chief Engineer in considering that the Locks cannot be dispensed with when there

there is so much va-
-riation in the levels of
the water at either end
of so short a Canal, and
he is of opinion that
the surface of the canal
may be kept at that
of H. W. Neaps tides with
a maximum depth of 5 feet.
11. After the estimate
has been revised ac-
-cording to the above
directions it should be sub-
-mitted for the consid-
-eration of Government
accompanied by some
reliable estimates as to
the probable amount
of Traffic and increase
in the salt Revenue.

The District Engineers
attention will be directed

The size of the Locks how-
-ever may be reduced to 60 feet
in length by 10 feet in width-

to the discrepancy be-
tween the measurements
and Tonnage of the Boats
as given in Para 6 of
his letter. A Boat 48 feet
long by 8 feet broad and
drawing 4 feet of water
will carry probably 38
Tons and not 10 1/2 as
stated by him and the
smaller Boats in pro-

£979.18.

13 Copies
To Mil. Asst. Dy. Chief Engr. & N. Circuit & Encls. Disp.
7 " " Chief Engineer
13 " " Boards of Revenue
7 " " Revenue Departments
" " Collr.

Regarding the Project for
connecting the Chilka Lake
with the Ganjam River-

Public Works 1862 Dep.tt
Pro: of Govt. for May

No. 916.

Pro: of the Madras Govt.
dated 2d. May 62.

Recd. from the Eg. Ch. Engr. by
20 Sept.r 62 Ass 2883

&c

Letter from Dy. Chief
Engineer Northern Circle &c
submitting a Project for
connecting Chilka Lake with
the Ganjam River with
plan thereon -

The first four enclos: together with
a letter from the D.E. No. 173 dated 11-7-62
sent to T.B. Harris Esq. Exec: Engr. Ganjam
Division - vide C. No. 586 of 62

5 Enclosed Plans
No. 1 to 5 17.6.62

No. 30 to 33

14th April 817