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MADRAS RECORD OFFICE.

Government of Madras.

P. W. DEPARTMENT.

G.O. No. <i>4057.</i>	Press Mis.
<i>494-495</i>	
Dated	18 <i>66</i>

Not to be folded or roughly handled

[Signature]

*Proceedings of the Madras Government, Public Works Department,
22nd December 1866.*

No. 494. Read the following letter from the Sanitary Commissioner, Madras, on Special duty, to the Chief Secretary to Government, Fort Saint George, dated Madras, 6th December 1866, No. 313 :—

1. In accordance with the orders passed by the Government, Public Works Department, dated 25th September 1866, No. 3,066, Major Moberly, Superintending Engineer, 3rd Division, laid before me the modification (proposed by Mr. Porter, Assistant Engineer,) of Captain Fischer's plans for the supply of water to the Cantonment of Bellary.

I carefully read all the papers connected with the project, and visited, in company with Major Moberly, the Collector Mr. Wedderburn, and Mr. Porter, the line of channel and the site of the reservoir tank, which are the most important parts of Mr. Porter's project.

2. The whole question of the Bellary water supply was carefully discussed with these Officers, and I availed myself of Mr. Gordon's (Madras Irrigation Company) presence at Bellary to consult that gentleman.

He is an Engineer of known ability and experience, and is well acquainted with the country in the neighbourhood of Bellary, through which it is proposed that the Toongabudra channel ("Upper Bellary project") should pass.

3. The project originally known as Captain Fischer's, and modified by Mr. Assistant Engineer Porter, was estimated by Mr. Porter to cost 46,000 Rupees.

Having this estimate before them, the Government in their Order No. 2,201, dated 23rd August 1866, sanctioned the immediate commencement of the work.

4. The Government, in arriving at this conclusion, were influenced by the importance of securing, at moderate cost, a good supply of water for the troops at Bellary, and especially by the state of distress in which the Bellary District was placed, which might be relieved by starting a large public work in the immediate neighbourhood of the Town of Bellary, to which the poor were flocking.

5. On my arrival at Bellary, early in October, very little progress had been made in the work, and there was abundant other work available to relieve the able-bodied poor.

At the same time it appeared very doubtful whether the object of the work proposed by Mr. Porter could be secured at the estimated cost.

Further examination of the project resulted in Mr. Porter furnishing a more complete estimate, raising the cost of the project to Rupees 68,000, and this is, in the opinion of the Superintending Engineer, an approximately exact estimate.

6. But this amount is greatly in excess of the sum sanctioned by Government. Works suitable for unskilled labor have been for some time in progress in the Town of Bellary and throughout the district, and the great pressure of distress has passed away for the present.

7. Under these circumstances, I trust that the Government will approve of the work having been at my suggestion delayed until a complete scheme, accompanied by accurate plans and estimates, can be laid before Government.

Mr. Porter has been directed to stop the small portion of work already commenced as soon as he shall have completed a channel about two miles long, and which will cost Rupees 6,500.

8. This part of his project had been commenced when I arrived at Bellary in October, and as its effect will be to improve the supply of Captain Fischer's tank, I thought that this portion of the work had better be completed, and in this opinion Mr. Wedderburn, the Collector, and Major Moberly, the Superintending Engineer, concurred.

9. I am not competent to give any opinion as to the actual results to be obtained from Mr. Porter's project, or to their value in proportion to the proposed outlay; but Major Moberly, the Superintending Engineer, is addressing the Head of his department on Mr. Porter's project, now that the plans and estimates are completed.

10. Although I have not ventured to pronounce any opinion on Mr. Porter's project, I think it very desirable that the scheme of supplying Bellary with water should comprehend the supply of water both to the Civil and Military population. Mr. Porter's project, so far as I am able to judge, will amply supply the troops and probably the Cowle bazaar, but it may be doubted whether his scheme, without further extension and increased expense, will supply the remaining portions of Bellary with water.

11. It should be remembered that if the Upper Bellary project is shortly commenced, a great part of Mr. Porter's project, in fact all, except the tank reservoir (and this when the water of the Toongabudra reaches Bellary is useless) will be unnecessary. There is a similarity or rather identity of both schemes, except that Mr. Porter proposes, at a smaller cost, and depending only on a portion of the drainage of the surrounding country, (which drainage is itself dependent on the more or less propitious season,) to supply a part of Bellary and the Military population, with water, whereas the "Upper Bellary project" proposes, at an increased cost, but it is part of a great work, to achieve the supply of the whole of Bellary from a source, the Toongabudra river, which is unfailing.

12. Under these circumstances it may appear to Government worthy of consideration whether it will not be better to abandon both the Fischer and Porter projects, and to request the Madras Irrigation Company to commence their channel at the nullah which crosses the Dharwar road at the 8th mile stone (*vide* paragraphs 6 and 4 of Superintending Engineer's letters, Nos. 1,150 and 1,587 of 28th July and 1st September 1866, respectively, and Appendix A, Mr. Gordon's Memorandum, herewith enclosed), which will secure a large amount of drainage, and render safe the actual necessary water supply of Bellary.

13. This will be all part of the "Upper Bellary project," and although the water supply of Bellary cannot be held to be complete until the water of the Toongabudra flows into Bellary, the abovementioned channel will greatly relieve the pressure in the Town of Bellary, and an unnecessary work will not have been constructed.

14. The recommendation I have ventured to submit to Government is based on the supposition that the crisis through which the District of Bellary has passed, will render immediate the commencement of the "Upper Bellary project."

15. I beg to append some rough notes kindly furnished me by Mr. Gordon, showing the probable cost of Rupees 2,09,450 for the channel, which will, until the

Toongabudra project extends to Bellary, fulfil most of the conditions of Mr. Porter's project, and remain of permanent utility as a part of the general scheme both for the irrigation of the district and for the water supply of the Military and Civil population of Bellary.

ENCLOSURES.

Appendix A.—Abstract estimate of cost of last portion of "Upper Bellary Project," by Mr. Gordon.

Appendix B.—Rough notes by Mr. Gordon.

Transferred to the Public Works Department.

(Signed) A. J. ARBUTHNOT,

Chief Secretary.

8th December 1866.

No. 495. ORDER THEREON, 22nd December 1866, No. 4,057.

MILITARY WORKS, No. 30.

* See also Superintending Engineer's letter recorded in G. O. No. 3,872 of 1866.

Ordered to lie over, pending the receipt of Mr. Porter's revised estimate of Rupees 68,000* referred to in paragraph 5.

(True Extract.)

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

To the Sanitary Commissioner.

.. Superintending Engineer, 3rd Division.

Exd. S. T. Augustin.

Appendix A

Arbitrarily Estimate of Cost of last
portion of Upper Bellary Project viz:
from the 8 mile Stream to the Cantonment.

Earthwork including ramming, facing with skingle or pitching when required	Rs. 132,520 - 0 - 0
900 quads waste weir at Rs. 50 per running quad	45,000 - 0 - 0
2 Bridges	5,090 - 0 - 0
Sluice at end	840 - 0 - 0
Diverting & raising Roads & other extra works	16,000 - 0 - 0
Superintendence &c	10,000 - 0 - 0
	<u>Rs. 2,09,450 0 - 0</u>

Notes. The above is for the work as designed
for irrigation with a full supply from the
River. But if the Canal is not supplied
from the River a much smaller capacity
of discharge by waste weirs would suffice
and a corresponding reduction of the height
of the Bank (6 ft.) above the water level might
be allowed. This would save in weirs
probably Rs. 25,000 and in the earth work about
Rs. 1,750. or reducing the above estimate to
Rs. 1,82,700. for a water supply Channel.

over

experience

This length of Canal would, in any year in which the Rainfall amounted to 10 inches of available fall, that is reckoning showers which are entirely absorbed, give a quantity of drainage water collected equal to about 10 Million C. Gals (taking 6 inches of the 10 as running off, which, considering the hard nature of a large part of the drainage area & the exclusion of all but the heavy rains, is I think a moderate estimate)

The storage Capacity of the Canal, deducting the quantity at the Croppings of Streams which is below the bed of the Canal will amount to about $3\frac{1}{2}$ Millions ^{C. Gals} when full. The amount of loss by evaporation cannot be closely estimated as it would depend on the varying rate at which the water might be drawn off. This would influence the level of the water & consequently the area exposed to evaporation.

Taking the population roughly at 42,000 & the consumption for all purposes at 40 gallons per head per day, the annual consumption would amount to about 613 Millions of gallons or rather more than $3\frac{1}{2}$ Millions of

C. Gals. There would probably be needed to compensate for evaporation, if all this quantity could be stored, about $4\frac{1}{2}$ Millions of C. Gals. independently of the loss by evaporation from the Canal itself. The 10 Millions of water collected would then allow a margin of 2 Millions of C. Gals. for the lost mentioned & other sources of waste. The above estimate does not include distribution in the Town or Cantonment.

Bellary
13 October 1866.

G. J. J. J.

No. 3/3.

OFFICE OF SANITARY COMMISSION
Madras, 6th December 1866.

From

The Honorable R. J. Ellis Esq
Sanitary Commissioner Madras,
on Special duty

To

The Honorable A. J. Abbott
Chief Secretary to Government
Fort Saint George.

SIR,

In accordance with the orders passed by the Government Public Works Department dated 25th September 1866 No 3066, Major Moberly, Superintending Engineer, 3rd Division, laid before me the modification (proposed by Mr. Porter, Assistant Engineer) of Captain Fischer's plans for the supply of water to the Cantonment of Bellary.

I carefully read all the papers connected with the project and visited, in company with Major Hoberly, the Collector Mr. Wedderburn, and Mr. Porter, the line of channel and the site of the reservoir tank which are the most important parts of Mr. Porter's project.

2. The whole question of the Bellary water supply was carefully discussed with these officers, and I availed myself of Mr Gordon's (Madras Irrigation Company) presence at Bellary to consult that gentleman.

He is an Engineer of known ability and experience

Notes on the lower
part of the
Upper Bellary Series
as a water supply
for Bellary.

Thos: 22 Dec: 8. / 1868 Aud: H: 9: 11

experience and is well acquainted with the country in the neighbourhood of Bellary, through which it is proposed that the Toongabudla channel, (upper Bellary project) should pass.

3 The project originally known as Captain Fischer's and modified by Mr. Assistant Engineer Porter, was estimated by Mr. Porter to cost Rs. 46,000.

Having this estimate before them. The Government in their order No. 2201 dated 23rd August/86 sanctioned the immediate commencement of the work.

4 The Government in arriving at this conclusion were influenced by the importance of securing at moderate cost a good supply of water for the troops at Bellary and especially by the state of distress in which the Bellary district was placed, which might be relieved by starting a large public work in the immediate neighbourhood of the Town of Bellary, to which the poor were flocking.

5 On my arrival at Bellary, early in October very little progress had been made in the work and there was abundant other work available to relieve the able bodied poor.

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of the "Upper Bellary project."

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I have the honor to be

Yours most obedient servant

R. J. Ellis
Sanitary Commissioner.
on special duty.

Appendix A. Abstract estimate of cost of last portion of "Upper Bellary project" by Mr. Gordon.

Appendix B. Rough notes by Mr. Gordon.

