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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.
B.P. No.

966 (2)

Press
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Original

Dated

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-195-

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
14th April 1874.*

No. 129. Read the following letter from J. H. LATHAM, Esq., Chief Engineer and Manager of the Madras Irrigation and Canal Company, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Kurnool, 13th January 1874, No. 4:—

Lower Sections, Estimates for 1874-75.

I HAVE the honour to enclose for sanction an estimate for some works desirable on Capital Account, and another for repairs and supply of 1874-75. To this last I have appended the amount expended on the same head during the current year on account of supply, for which no sum was allowed in last year's sanction (G. O., No. 1,200 of 25th April 1873.)

2. In explanation of the proposed expenditure of Rupees 5,444 on Capital Account, I enclose extract from Mr. Dodson's No. 415 of 11th ultimo. It includes practically three items, viz., (1) the adaptation of the Oopolar bridge approach to pass under it the water of the by-wash it crosses, in preference either to blocking it up, or to passing it over the road; (2) the Beempad bridge already ordered by Government; (3) the adaptation of the calingulahs of the 9th Section so as to dispose of rain water falling into the canal on a similar plan to that adopted in the single banked portions of the canal.

3. The expenditure proposed on distribution on Capital Account will, if sanctioned, supersede former sanctions on this head. As nearly as I can, without further delay, ascertain, it covers all extensions of minor channels; for every channel costing more than £5 is inserted in it. The sluice proposed near Yalloor bungalow is intended to supersede the present plan of taking off the water from below the existing emptying sluices, which is found inconvenient.

4. The proposed expenditure on the main canal is heavier than it would have been had not the wide extent of irrigation, and the number of different villages requiring supply, necessitated the reduction of the bankers employed on the main canal to a number just sufficient to watch the numerous locks and to patrol the banks. It is on this account, and to enable the Engineers to keep their banks and culvert inlets and outlets, etc., in better trim, that I ask for an increased number of bankers in the lower sections. Considering this, and also the numerous aqueducts and siphon culverts, I hope that Rupees 50 per bank, per mile, will not be considered excessive. Mr. Dodson, however, is of opinion that this expenditure might be safely spread over a longer period, though I do not think this advisable; thorough repair being always cheaper than repairs partly deferred.

5. The proposed expenditure on distribution on Revenue Account is for repairs and supply (contract between the Secretary of State and the Company of 3rd June 1863, Section 22). For this important item nothing was allowed last year, owing to your inadvertently overlooking an error in the logic of your paragraphs 6 and 7 in the Memorandum submitting my estimates to Government, printed with G. O., No. 1,200 of 25th April 1873, whereby the error created is made greater than that avoided. The error lies in the argument that my estimate of repairs and renewals "must include extension of field channels" and works on them; that this extension is not a revenue charge; and that therefore the whole estimate must be chargeable to Capital. But, independently of the logic,

I cannot admit that the making of field channels and works upon them, such as little rough stone dams to turn the water hither and thither, and small bridges (called, I believe, in your department *tunnels*) where the villagers desire to take their carts across them, and so forth, can be properly charged to Capital; or that the Capital Account can properly be kept open for such charges. In all estimates of nett canal revenue made by the Governmental Engineers that I can recollect, field distribution has been deducted from the gross receipts as a charge against Revenue. Moreover, it would be wrong in principle to charge to Capital works made on land not the property of the Company, which form no part of any diversion, compromise or substitution meant to remedy inconvenience caused by the Company's works. When Mr. Hope, at the instance of Government, desired me to complete the minor channels of the Kurnool District, in order to be prepared for scarcity of water, I did not scruple to abandon sanctioned channels, where the construction of new ones was cheaper; and the condition required by Mr. Hope, in consultation with the Deputy Collector, was that I should do so; inasmuch as he was prevented, by the objection of the villagers to the obstruction and inconvenience of contour channels, from getting the villagers' assent to any channels at all if the contours were kept up. The small cost of these channels, the largest only 2 feet broad at the bottom, would have been over and over again covered by the Bengal at the same distance from the coast, got enough rain in October to secure fair crops, it was evident that these field channels and village channels would be, up, they *will* be productive. If the field channels are to be so far kept open that water shall be available for dry crops commanded by the canal—not brought to each field, but only brought within reach of the fields so as to make it barely possible to meet demands—that can only be done by a regular allowance of so much an acre to be spent upon them. Unless unforeseen circumstances beyond my control prevent it, I shall before this summer have ascertained accurately the area irrigable from the canal, in the upper sections at least; till then, I can only roughly estimate it. The whole sum in dispute for the whole canal is not half the price of a locomotive engine; and when the Company has, at the suggestion of the Government, already spent on contour channels enough money to provide the whole of the villages with ridge channels, and it has been found that much of this expenditure is lost, it seems to me to be the best policy for Government to allow channels to be made only so far as is required for precaution or demand; such as can be enlarged, multiplied, diverted or abandoned, as experience shall show best to suit the wishes and customs of the single and grouped villages; whose wishes must be met, and opposition and contests avoided as they from time to time arise, if success is to be attained. I suppose that Rupees 10,000 would cover all the items about which there could be any difference of opinion as to whether they theoretically belong to Revenue or Capital. In practice it will hardly be possible to use a dividing line in strict accordance with theory. To give instances of this would occupy too much space. I suggest, however, that channels with banks, with the works upon them, be charged to Capital; and that open channels without banks, be charged to Revenue, with the works upon them.

6. The expenditure incurred in works not included in the sanction of G. O., No. 1,200, seem to be on Capital Account Rupees 3,627, covered by the original sanctions of works of distribution, and on Revenue Account Rupees 2,718 on the main canal, and about Rupees 2,737 on distribution. What the works in the distribution are I do not know, the whole being mixed up in confusion in the account; but I have obtained the Rupees 3,627 by including all new channels of over £5, and all works apparently new or nearly new; and in the Rs. 2,737 all work which is apparently repair, or consists of trifling field works. The former sum is perhaps the least satisfactory expenditure of any on the canal, being much of it, I fear, spent on works which should have been abandoned.

7. I hope that the Government will not object to give me the means of running field channels on the ridges of the country into every village commanded by the canal, so that a sudden demand shall be easily met; and also that in my management of the trunk and main branch channels the Government will permit me to spend money for the best—to cut off and abandon useless branches, when I can do so at less expense than I require to repair them and make them effective; to quit channels so constructed as to dam up the water over many ryots' fields, and collecting it into one spot, pour it with a burst over other ryots' fields, etc., if I can do so at less expense than is required to maintain the objectionable channel; and, in general, will permit me to alter or modify or add to existing channels, bridges, and side-cuts, as shall suit the altered requirements of the villagers; where, by so doing, I can at a trivial expense give them convenience or save them annoyance. The estimates, I submit, are, I believe, sufficient to enable me to do all this.

P.S.—I enclose also a new list of Conservancy Staff for the Lower Sections for sanction, modified to suit the enlarged area ramified by the Company's channels, (Rupees 3,745.)

(Signed) J. H. L.

Extract of a letter from A. J. DODSON, Esq., Conservancy Engineer of the Madras Irrigation and Canal Company, to J. H. LATHAM, Esq., Chief Engineer and Manager, Kurnool, dated Dhoor, 11th December 1873, No. 415.

I HAVE the honour to forward you herewith an estimate of certain "additions to the works of the main canal," which I propose being made for the following reasons.

1st.—Drainage under western approach of Oopalur 2nd class bridge. This is much needed, an old nulla which runs across the end of the approach has cut itself a bed 18 feet wide and 5 feet deep, which, during the wet season, is not even fordable, and completely cuts off the communication of the villagers of Oopalur with their fields to the east of the canal. A calingulah was built by Mr. Browning to allow this nulla to flow over the end of the approach, but as the crest was built about 2 feet higher than the road was 50 feet beyond, the nulla preferred flowing over at that point, and ended in cutting the channel referred to. I propose pulling down this useless calingulah and using its materials in building a bridge of two openings each 8 feet wide, covered with slabs 10 feet x 2 feet x 6 inches thick which can be obtained from the river bed near Rajoly.

2nd.—"Lowering parapet of right side of Vaikalair aqueduct." This I propose as a precautionary work; during storms a large amount of drainage runs into the canal through the four large masonry drains in the 147th mile left bank, and the aqueduct in the 151st mile contracting the channel tends to head up these flood waters sometimes to an alarming extent.

*Proceedings of the Madras Government, Public Works Department,
14th April 1874.*

I propose cutting down the right parapet over the eleven arches only to 1 foot 6 inches below top water line, as is done at the lock calingulahs in the Koondair Division.

4th.—Lowering calingulah in the 162nd mile. This I propose doing in a similar manner and for the same object as described in paragraph 2.

5th.—Second class bridge at Beempaud. This work has been sanctioned and is urgently needed by the ryots of the neighbourhood, who complain that they would cultivate much more paddy if they could convey manure across the canal.

6th.—Lowering calingulah in the 170th mile. This work I propose doing in the same manner and for the same reasons as the two former ones.

No. 130.

No. 72.

Note by the Chief Engineer for Irrigation.

THE Chief Engineer and Manager, Madras Irrigation and Canal Company, has submitted the following estimates for the Lower Sections, 96 to 190 miles, of the Company's Canal for the year 1874-75.

Capital Account.						RS.	A.	P.
Main supply	...	...	...	...	...	5,444	0	0
Distribution	...	...	...	...	...	7,447	9	6
Emergent do. already executed	...	...	...	...	...	3,742	6	6

Revenue Account.						RS.
Main Canal...	...	...	...	...	...	9,975
Distribution	...	...	...	...	...	7,875
Buildings	...	...	...	...	...	1,301
Emergent Repairs—	...	...	...	...	...	
Main Canal	...	...	...	...	...	2,718
Distribution	...	...	...	...	...	2,622
Buildings	...	...	...	...	...	99
						5,430

Conservancy Establishment as per Statement Rupees 3,745, per mensem. 44,940

Total Works .. 24,590

Total Revenue Account... 69,530

2. The items under Capital Account require a few remarks. The lowering of the right parapet of the Vaikalair aqueduct, and the construction of sluices therein for surplusing water is an expedient which has been sometimes adopted; but this aqueduct is a lofty work, and unless Mr. Latham is quite assured that the shaly bed of the river will stand the overfall, it will be better to avoid the risk of damage, and to dispose of surplus elsewhere by special works. The necessity for a bridge over the canal near the village of Beempad has already been recognized,* and it is proposed to construct it in the coming year. The canal in the 9th Section being double banked does not receive much drainage water, but there appears to be no objection to its being arranged to discharge what surplus there is at a lower level than is at present practicable, and the arrangements proposed by the Chief Engineer are, with the one exception above noticed, in which further consideration would appear to be desirable, unobjectionable so far as I am able to judge.

Provision has been made for the construction of a sluice called "Nundial Tank Sluice," which it seems probable is for the supply of that tank, the vent opening allowed is 5 x 2 feet, which may suffice to pass water into the tank faster than all the irrigation sluices can draw off from the tank, and if so it will do.

*Proceedings of the Madras Government, Public Works Department,
14th April 1874.*

3. Under Revenue, the main supply repairs are as given in the detailed estimate for—

	RS.
Earthworks	3,250
Masonry works	7,750
Total...	11,000

but the Chief Engineer and Manager asks for sanction for Rupees 100 per mile for the 95 miles, which with contingencies amounts to Rupees 9,975, which may be passed.

The way in which provision is made for distribution channel maintenance, together with such alterations as may be less expensive than maintaining present lines of channels and minor extensions would be unobjectionable had the area of 120,000 acres, on which an allowance of 1 Anna an acre has been entered, borne any relation to the area for which the channels will carry water. I presume the area has reference to some future possible area of irrigation. The amount provided is Rupees 7,875, and of its propriety I have of course, under the circumstances, no means of judging. In future, channels may with advantage be arranged in classes according to their capacities, and a mileage allowance should be entered for them. Then the only lump sum entry will be for very minor extensions.

4. Some of the emergent repairs of 1873-74 under distribution would seem to have been properly charged against Capital. I see, however, no objection to Mr. Latham's proposition to include very minor channels, costing under 50 Rupees each, in Revenue charges, and it may simplify matters to let this arrangement stand. It must be remarked, however, that this limit was not observed in dealing with the emergent works of the year now drawing to a close.

5. The estimated cost of Conservancy Establishment is Rupees 3,745 a month, against Rupees 3,113 for 1873-74. The difference of Rupees 632 a month is made up of the following items—

	RS.
Engineers	350
4 Amins	80
47 Additional Bankers	282
	712

Deduct—		RS.
Carts	...	30
Contingencies of works	...	50
		80
		632

The necessity for additional bankers has been explained, and no doubt the Amins are required. With regard to the increase of charges under Engineers, this was doubtless due to the expected return of certain Engineers from England. Since the list was submitted, however, the Chief Engineer and Manager has reported that the Board of Directors have promoted two of their Engineers to the 1st class, and this will add materially to the cost of the Conservancy Staff. The papers relating to this subject will shortly be laid before Government, and in the meantime the list, as submitted by Mr. Latham, may be approved. The recommendation that so large an expenditure on establishments should be sanctioned is made for the same reasons as those mentioned in submitting the estimates for the Upper

*Proceedings of the Madras Government, Public Works Department,
14th April 1874.*

Sections, and the Order thereon, No. 440 of the 23rd February 1874 is, on this point, equally applicable to the establishments of the Lower Sections.

VIRDACHELLUM, (Signed) J. MULLINS, Lieut.-Colonel, R.E.,
3rd March 1874. Chief Engineer for Irrigation.

No. 131. ORDER THEREON, 14th April 1874, No. 966.

IRRIGATION, No. 5.

His Excellency the Governor in Council sanctions the estimates of expenditure on the works of the Madras Irrigation and Canal Company, Lower Sections, for the year 1874-75, as submitted, viz. :—

On Capital Account	...	...	...	...	...	RS.
Revenue Account—						16,634
Works	...	...	...	...	...	24,590
Conservancy Establishments	...	...	...	...	...	44,940
						69,530

2. The question of the propriety of surplusing water at the Vaikalair aqueduct should be carefully considered.

3. The attention of the Chief Engineer and Manager is called to the remarks of the Chief Engineer for Irrigation on the way in which provision has been made in the estimates for the maintenance of distribution works, and His Excellency desires that in future the entry on this account may be based upon the mileage of different classes of channels to be maintained. Minor extensions and additions, costing under 50 Rupees each, may be provided for by a lump sum entry of moderate amount.

4. It will be understood that paragraph 2 of G. O., No. 440 of the 23rd February 1874, on the Upper Sections estimates, is equally applicable to the Conservancy Establishments of the Lower Sections.

5. The papers on the subject of the promotion of two of the Engineers to the 1st class by the Board of Directors will be awaited, and until orders thereon are passed the List of establishment, as prepared by Mr. Latham, will regulate the expenditure under this head.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the Chief Engineer for Irrigation. *with 1/2*
,, Chief Engineer and Manager of the Madras Irrigation and Canal Company.

Exd. T. O'Connor.
Spare Copies

MEMORANDUM.

Requested for reference the under-mentioned papers :—

*Original Letter No. 4 & 13 January 1874 from H. Ch. Surgt.
& Manager for Irrigation printed in G.O. No. 966
14 April 1874.*

OFFICE OF THE CHIEF ENGINEER
FOR IRRIGATION,
21-8-1874

Head Clerk.

To

The Registrar of the *Project*

1/4 miles
No.

No. 72.

887

Note by the Chief Engineer for Irrigation.

Exhibit 5-

The Chief Engineer and Manager
Madras Irrigation and Canal Company
has submitted the following estimates
for the Lower section, 96 to 190 miles,
of the Company's Canal for the years
1874 75.

Capital Account.

Main Supply	Rupers	5,444	—	—
Distribution	"	7,447	—	4-6
Emergent — do — already executed	"	3,742	—	6-6
Total Capital Account		16,634	—	—

Revenue Account.

Main Canal	9975
Distribution	7875
Buildings	1301
Emergent repairs	
Main Canal	2718
Distribution	2622
Buildings	29
Total works	21,590
Conservancy Establishment	
as per Statement Rupers	
37 1/2 per Mensem	44,940
Total Revenue Account	69,530

2 The items under Capital Account require a few remarks. The lowering of the right parapet of the Vaikalaia Aqueduct, and the construction of sluices therein for surplusing water, is an expedient which has been sometimes adopted, but this Aqueduct is a lofty work and unless Mr. Latham is quite assured that the shaly bed of the river will stand the overfall, it will be better to avoid the risk of damage, and to dispose of surplus elsewhere by special works. The necessity for a bridge over the canal near the village of Beempad has already been recognized, and it is proposed to construct it in the coming year. The Canal in the 9th Section being double banked does not receive much drainage water, but there appears to be no objection to its being arranged to discharge what surplus there is at a lower level than is at present practicable, and the arrangements proposed by the Chief Engineer are, with the one exception above noticed, in which further consideration would appear to be desirable.

desirable, unobjectionable so far as I am able to judge. Provision has been made for the construction of a sluice called "Kundial Tank Sluice," which it seems probable is for the supply of that Tank, the vent opening allowed is 5x2 feet, which may suffice to pass water into the tank faster than all the irrigation sluices can draw off from the Tank, and if so it will do.

3 Under Revenue, the main supply repairs are as given in the detailed estimate for—

Earth works	Ruppes	3,250
Masonry works	— " —	<u>7,750</u>
		11,000

but the Chief Engineer and Manager asks for sanction for Ruppes 100 per mile for the 95 miles which with contingencies amounts to Ruppes 9,975, which may be passed.

The way in which provision is made for distribution channel maintenance, together with such alterations as may be less expensive than maintaining present

lines of channels and minor extensions would be unobjectionable had the area of 120,000 acres, on which an allowance of 1 anna an acre has been entered, borne any relation to the area for which the Channels will carry water. I presume the area has reference to some future possible area of irrigation. The amount provided is Rupees 7,875 and of its propriety I have of course under the circumstances no means of judging. In future channels may with advantage be arranged in classes according to their capacities, and a mileage allowance should be entered for them. Then the only lump sum entry will be for ^{very} minor extensions.

4 Some of the emergent repairs of 1873-74 under distribution would seem to have been properly charged against capital: I see however no objection to Mr. Latham's proposition to include very minor channels costing

under 50 Rupees each in Revenue charges, and it may simplify matters to let this arrangement stand. It must be remarked however that this limit was not observed in dealing with the emergent works of the year now drawing to a close.

5 The estimated cost of Conservancy establishment is Rupees 3745 a month, against Rupees 3113 for 1873-74. The difference of Rupees 632 a month is made up of the following items—

Engineers	_____	Rupees 350.
4 Amins	_____	" — 80
47 Additional bankers	_____	" — 282
		<u>712</u>
Deduct		
Costs	_____	30
Contingencies of works	_____	50
		<u>80</u>
		<u>632.</u>

The necessity for additional bankers has been explained, and no doubt the Amins are required. With regard to the increase of charges under Engineers this was doubtless due to the expected return of certain Engineers from England.

Since

Since the List was submitted, however, the Chief Engineer and Manager has reported that the Board of Directors have promoted 2 of their Engineers to the 1st Class, and this will add materially to the cost of the Conservancy staff. The papers relating to this subject will shortly be laid before Government, and in the mean time the List as submitted by Mr. Latham may be approved. The recommendation that so large an expenditure on establishments should be sanctioned is made for the same reasons as those mentioned in submitting the estimates for the Upper Sections, and the order thereon No. 140 of the 23rd February 1874 is, on this point, equally applicable to the establishments of the Lower Sections.

Camp at
Vidachellum
3rd March 1874

W. L. Latham

Lieut. Col. R.E.

Chief Engineer for Irrigation

To, The Secretary to Government

12/12/74

Public Works 1874 Sept.
Dep. of Govt. for April
No. 1570.

From
The Chief Engr. for
Irrigation
To The Secretary to
Govt. P.W. &

N-72.

Dated 3rd.
Recd 17th March 1874.

Encl. 5-

+ 16. 8. 1874. Chief Engr. for
Irrigation. 24/7/74

Note on the es-
timate for the lower
sections, 96 to 190 miles,
of the Co. canal for
the year 1874-75.

N-129

N-966-14 April 74.

(in 18 Mar/74 Ch. 2102

966 P.W. Dept

Proceedings of the Madras Government
Read the following

From the Chief Engineer
for Irrigation
H.E. No. 72 of 3 March 74

His Excellency the
Governor in Council sanctions
the estimates of expenditure
on the works of the Madras
Lower Sections,
Irrigation & Canal Comp. for
the year 1874-75 as submit-
ted viz. -

On Capital account Rs. 16,634

Revenue Account
Works - 24,590

Conservancy & Establishments } 44,940 69,530

2 The question of the
propriety of surplus water
at the Vaikalair Aqueduct
should be carefully con-
sidered.

3 The attention of the
Chief

Chief Engineer and Manager
is called to the remarks
of the Chief Engineer for
Irrigation on the way
in which provision has
been made in the estimates
for the maintenance of
distribution works, and
His Excellency desires that
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upon the mileage of
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4 It will be under-
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No. 440 of the 23rd February
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plicable to the Conservancy
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5 The papers on the
subject of the promotion
of 2 of the Engineers to the
1st Class by the Board
of Directors will be
awaited, and until orders
thereon are passed the
List of establishments
as prepared by Mr.
Latham will regulate
the expenditure under
this head. —

W. 4/3/74

G.M.M.

To the Ch. Engineer for Engr with 4 Engrs ✓
" Ch. Engr & Manager of the
M. S. & Canal Comby ✓

S. Copies despatched to both 22/4/74.

28

15701

Govt. of 1874 Madras.

PUBLIC WORKS.

To

The Chief Engineer
for Irrigation

Dated

Recd.

Encl. 1

G. O. 14th April 1874, No. 966.

Nos. 129-131.

Madras Irrigation & Canal Co

The Estimates of ex-
penditure on the works of
the Madras Irrigation &
Canal Company Lower
Sections for the year
1874-75, sanctioned
with remarks -

129-131.

Cir 18 Mar 74 R. 2105