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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	828	(9)	Press
B.P. No.			Mis.
Dated	24-3-	187	

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
24th March 1875.*

No 586. Read the following endorsement of the Chief Engineer for Irrigation, dated Camp at Nannur, 17th February 1875, No. 9 —
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 and Joint Secretary to Government, dated Kurnool, 1st January 1875, No. 1.

I have the honor to ask you to obtain the sanction of Government for the expenditure on Revenue Account of the following sums for the maintenance of the Canal between 1st April 1875 and 1st April 1876:—

<i>I.—Permanent Staff.</i>		RS.
Engineers, Surveyors, and Office	...	48,384
Bankers and Overseers	...	35,976
Contingencies	...	640
		85,000
<i>II.—Special Repairs</i>		
<i>Main Canal</i> —Upper Division	...	21,050
Lower	...	16,970
		38,020
<i>Distribution</i> —Upper	...	5,000
Lower	...	5,000
		10,000
<i>Buildings</i> —Upper	...	1,200
Lower	...	2,800
		4,000
Contingencies	...	5,220
		57,220
Total		1,42,220

2. The following items of capital expenditure also need sanction:—

	RS.
<i>Main Canal</i> —Bridge over Kanbalapally sluice outlet	1,400
Two Calingulaks in 109th mile	1,670
<i>Distribution</i> —Sluice in 76th mile	350
<i>Buildings</i> —Four Overseers' houses, Lower Division	1,000
Contingencies	440
Total	4,860

3. The allowance for the repairs of the current year (1874-75) are being spent almost entirely on the maintenance of the irrigating portion of the canal and channels, and I am glad to report that this portion has far advanced towards a permanent and thoroughly consolidated condition, and by the end of the year there is expected to be no part of the banks requiring more raising than the bankers can do.

4. During the next year (1875-76) it is proposed to turn the attention of the staff to the portion of the works affecting navigation, including the making up of settlement of the banks between locks above 60 miles of double banked canal, the examination and thorough repair of the locks and gates, replacing all jungle-wood with teak, and to make all desirable progress towards a well-metalled tow-path, an important work which cannot wisely be done till after complete consolidation of the banks.

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21st March 1875.

There is also required a good deal of scattered work in the annual clearing out of silt from the canal and its subways, and in setting to right the catchwater channels, and so forth. The making of a good fence of alms along the boundary of the Company's property must be postponed till that boundary shall have been finally revised, the revision being now in progress.

5. *Capital Account.*—During the current year nine new irrigating sluices have been completed or built, five in the Upper Division and four in the Lower Division; also seven Overseers' houses have been completed, five in the Upper and two in the Lower Division; and the distribution has been extended with advantage, especially in the Prodatar Taluk.

6. It is proposed to build Ullur and Kumbalapur bridges, to bridge the outlet of the Kumbalapur regulating sluices, and to add three culverts in the 7th section where flood-water is liable to be diverted upon the canal by existing works of irrigation. Two more Overseers' houses and the completion of the Kurnool machine shop are also contemplated.

7. The executive staff,* it will be seen, amounts to 11.5 per cent. upon the anticipated expenditure in works and labour† and its immediate supervision. but if we consider that the same staff is engaged a full proportion of its time in supplying, surveying, and recording the cultivation, returning a revenue of some Rupees 75,000, work not represented in the above outlay, the executive establishment will seem fairly described as about 53 per cent. on the value of work superintended. For my part, I have practically and specially looked into every part of the expenditure on works and staff, and I can honestly say that I feel perfectly certain that the works, whose original cost has been about £1,000,000, have been efficiently maintained, and are likely to be efficiently maintained until there be a large increase of irrigation for the current and proposed annual expenditure of about 1 per cent. upon works and staff, and I am certain that the Government cannot pursue a more economical course than to leave these valuable works, exposed as they are exceptionally to the hazards of tropical climate, under their present executive staff. Strictly speaking, the works are being not only maintained but sensibly improved by the present annual expenditure. To bring the planning knife and try to pare down an expenditure of under 1 per cent. (Rupees 1,10,000) where that has proved efficient in ordinary years to maintain these works in order, would not be found in the end a successful financial operation I am persuaded.

8. The canal as at present maintained is capable at the shortest notice of conveying 400,000 cubic yards an hour in the first five sections, and of conveying and distributing 15,000 cubic yards an hour in the 6th, 100,000 in the 7th and 8th, 50,000 in the 9th, and 10,000 in the 10th; the total distribution at present provided is about 280,000 cubic yards of water an hour—probably enough to irrigate 100,000 acres at an average of Rupees 5 for the first crop, and Rupees 4 for the second, giving a revenue of £110,000, but capable of being improved by a regular progressive maintenance, such as last harvest practised, to distribute the whole 400,000 cubic yards an hour.

* Engineers, Surveyors, and Office, Rs. 42,821.	
† Repairs	Rs.
New work	57,223
Bankers and Overseers	21,203
	21,016
Total	1,13,041

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21st March 1875.

That the constant efficiency of the canal and of all its scattered channels is of great financial importance I am also persuaded. There is no knowing how extensive or sudden the call upon it may be; and it is needless to do more than allude to the revenue and public benefit, which would then depend upon the canal and the staff stationed upon it as extensively and as suddenly answering the call. The present revenue is no measure of the supervision necessary to do this. The value of the works forms the best guide to the supervision necessary to keep them in working order.

9. Meantime steps are being taken to reduce all expenses which can be reduced without danger to the interests of the Government and Company. The Board are parting with their Chief Accountant. Another reduction of the Engineering staff seems also imminent; and, under any circumstances, there seems no reason to doubt that the wishes of Government for all practicable economy will be safely and considerably gratified without any violent change.

10. I append details of the capital expenditure needing the approval of Government.

MADRAS IRRIGATION AND CANAL COMPANY.

Details of Capital Expenditure requiring sanction of Government.

Mile and chains.	Description of Work	Cable yards.	Rate	Amount of each item	Amount of each work
	<i>Bridge over the outlet of Kumbalapur regulating sluices</i>		Rs. A. P.	Rs. A. P.	Rs. A. P.
	Excavation for foundations	177	0 2 0	19 10 0	
	Rubble masonry	2063	3 8 0	790 10 0	
	Arch work	72	6 0 0	432 0 0	
	Cut stone	2	8 0 0	17 5 4	
	Running feet Coping	268	0 1 0	16 12 0	
	Centring			10 0 0	
	Balling			15 0 0	
	Approaches	218	1 0 0	21 8 0	
	Metalling	117	0 6 0	43 14 0	
	Guard stones	No 4	3 8 0	10 0 0	
	Contingencies at about 5 per cent			67 1 4	
103 72	<i>Culverts to pass floodwaters through the Canal</i>				1,400 0 0
	<i>East Side of Canal</i>				
	Rubble Masonry	116	4 0 0	464 0 0	
	Coping to crest	70 ft. run	0 6 0	26 4 0	
	Earthwork in foundations and banks	250	10 yards	53 0 0	
103 72	<i>West Side of Canal</i>				528 4 0
	Rubble Masonry	173	4 0 0	698 0 0	
	Arch work for four bays	112	6 8 0	774 12 0	
	Water on lion stone on edge	80	4 0 0	278 0 0	
	Coping to crest	80 ft. run	0 12 0	60 4 0	
	Excavation for foundations, &c	505	10 yards	50 8 0	
	Do. for outlet	505	12 "	72 1 3	
76 0	<i>Irrigating Sluices</i>				1,143 5 8
	Same as sluice sanctioned in G. O. No 430, of 23rd February 1874.				350 0 0
	4 Overseers' houses for Lower Division same as Overseers' houses sanctioned in G. O. No 430, of 23rd Feb 1874				1,000 0 0
	Contingencies				431 4 4
	Grand Total				4,860 0 0

Kurnool,
1st January 1875

(Signed) J. H. LATHAM,
Chief Engineer and Manager.

*Proceedings of the Madras Government, Public Works Department,
24th March 1875.*

Submitted to Government.

The Chief Engineer and Manager applies for sanction for the Revenue expenditure required in 1875-76 on the canal. On this occasion the estimates for the Upper and Lower Sections have been sent up together, which is an improvement.

The items are—

Conservancy Establishment	Rs.
Repairs	57,000
	57,220

The conservancy establishment is that detailed and sanctioned in Proceedings, Madras Government, No. 3,327, of the 23th November 1874, with the addition of Rupees 640 for contingencies.

In the covering letter the repairs are termed special repairs, but this would seem to mean only such repairs as cannot be executed by the Conservancy Establishment or Bankers.

The sanction on this account for 1874-75 was—

G. O., 23rd February 1874, No. 410	Upper Sections	Rs.
" 14th April " " 902	Lower do.	12,000
		21,500
		37,490

Also a further sum of Rupees 8,500 was sanctioned in G. O., 17th September 1874, No. 2,644.

On looking into particulars the following differences will be noticed in the estimates for the two years—

	1874-75	1875-76
Main Canal ... { Upper Sections	Rs.	Rs.
	5,000	21,010
	12,003	16,970
Distribution ... { Upper do.	5,210	5,000
	10,477	5,000
Buildings ... { Upper do.	2,650	1,200
	1,400	2,800
Contingencies		5,200
	37,490	57,220

Mr. Latham in paragraphs 3 and 4 of his letter explains the difference between the work done in 1874-75 and that to be done in the following year. It may, it is thought, be taken for granted that much of the increased expenditure proposed upon the main canal is for making it efficient in connection with navigation. Expenditure on maintenance has been kept as low as possible, as the demand for irrigation required but a small depth to be maintained. With an increase of depth some extra expenditure is sure to be necessitated.

The entry for contingencies, a considerable item, has been made to meet a want which has been experienced.

2. Sanction is also asked for to certain estimates to be carried out from Capital.

*Proceedings of the Madras Government, Public Works Department,
24th March 1875.*

These are—

Main Canal — Bridge over Kumbalapilly sluice outlet	Rs.
Two Calingulaks in 109th mile	1,400
Distribution — Sluice in 76th mile	1,670
Buildings — Four Overseers' houses, Lower Section	350
Contingencies	1,000
	440

These estimates may be sanctioned. The capital outlay of the year will be considerably greater,* but some of the works to be carried out have been

* Budget provision, Rupees 59,820. already sanctioned. The Boempad bridge was to have been built in 1871-75, and is now† mentioned for construction in 1875-76. It should be built before the canal is filled for the next season's irrigation. Similarly the Ullur bridge†

should be built at once, the crossing under the aqueduct having been always most difficult and generally impracticable. A temporary ford has been made use of, but this is also liable to be impassable. It is certain that several additional bridges will have to be constructed, and those which have been already sanctioned should be completed as early as possible.

(Signed) JOHN MULLINS, Lieut.-Colonel, R.E.,
Chief Engineer for Irrigation.

No. 587.

ORDER THEREON, 24th March 1875, No. 828.

IRRIGATION, No. 40.

The estimates, amounting to Rupees 1,42,220, of Revenue expenditure in 1875-76, on the Madras Irrigation and Canal Company's Canal, are sanctioned.

2. The new estimates for execution under Capital, as detailed in paragraph 2 of the endorsement of the Chief Engineer for Irrigation, are likewise sanctioned.

3. The Government attach very great importance to the provision at the earliest possible moment of the additional or improved bridges already determined to be necessary, and the Chief Engineer and Manager will be requested to take early measures for their completion, and to report when each of those already sanctioned is likely to be opened for traffic. His Excellency the Governor in Council has learnt with regret that the Ullur and Boempad bridges have yet to be commenced.

(True Extract.)

Colonel, R.E.,

Secretary to Government.

To the Chief Engineer and Manager, Madras Irrigation and Canal Company.

.. Chief Engineer for Irrigation, with two Plans.

.. Government Examiner of Accounts.

Exd S. T. Austin.

Spare Copies

N^o 9.

Enclosure.

Submitted to Government.

R N^o 191 January
178 with 3 Enclosures

The Chief Engineer and Manager
applies for sanction for the Revenue ex-
penditure required in 1875-76 on the canal.
On this occasion the estimates for the
Upper and Lower sections have been sent
up together, which is an improvement.

The items are

Conservancy Establishment Rs 85,000

Repairs ————— 57,220

The Conservancy establishment is that
detailed and sanctioned in Provisional
Madras Government, No. 3327 of the 25th
November 1871, with the addition of
Rs 640 for contingencies.

In the covering letter the repairs are
termed special repairs, but this would
seem to mean only such repairs as
cannot be executed by the Conservancy
Establishment or Bankers.

The sanction on this account for 1874-75 was,-

Upper sections	Ruppes 12,900	By G.O. 23 February 1874 No 2,40
Lower do	" 24,590	do 11 April 1874 No 966
	<u>37,490</u>	

Also a further sum of Ruppes 8,500 was sanctioned in G.O. 17th September 1874. No 2664.

On looking into particulars the following differences will be noticed in the estimates for the 2 years

	1874-75	1875-76
Main Canal	Upper sections — 5,000	21,050
	Lower — do — 12,575	16,970
Distribution	Upper — do — 5,250	5,000
	Lower — do — 10,477	5,000
Buildings	Upper — do — 2,500	1,200
	Lower — do — 14,000	2,800
Contingencies	—	5,200
	<u>37,190</u>	<u>57,220</u>

Mr. Latham in paras 3 and 4 of his letter explains the difference between the work done in 1874-75 and that to be done in

the following year. It may be thought he has been too granted that much of the increased expenditure proposed upon the main canal is for making it efficient in connection with navigation. Expenditure on maintenance has been kept as low as possible as the demand for irrigation required but a small depth to be maintained. With an increase of depth some extra expenditure is sure to be necessary.

The entry for contingencies, a considerable item, has been made to meet a want which has been experienced.

Sanction is also asked for to certain estimates to be carried out from Capital.

These are:

Main Canal Bridge over Kambala fully above

Outlet — Ruppes 14,000

2 Calingulabs in 109 mile — 1670

Distribution. Shives in 76 mile — 350

Buildings. 4 Quasars houses Lower sections — 1000

Contingencies —

These estimates may be sanctioned.

The Capital outlay of this year will be considerably greater; but some of the works to be carried out have been already sanctioned.

* Budget provision
Rupees-57,820

The Broomfield bridge was to have been built in 1874-75 and is now mentioned for construction in 1875-76. It should be built before the canal is filled for the next season's irrigation.

* Para: 6

Similarly the Ullur bridge should be built at once, the crossing under the aqueduct having been always most difficult and generally impracticable. A temporary ford has been made use of, but this is also liable to be impracticable. It is certain that several additional bridges will have to be constructed, and those which have been already sanctioned should be completed as early as possible.

* 3rd Section

[Handwritten notes and signatures in the right margin, including "J. H. ...", "J. H. ...", and "J. H. ..."]

Approved by
17th February
1875
Lieut. Col. P. H.
Chief Engineer for Irrigation.

Gd 23rd Feb'y/74 N^o 434-435.
 " 14th April - 129-131.
 " 17th Sept. - 353-354
 " 25th Nov - 436-437.

P. M. 1875 Sept.
 From No: 1256

The Chief Engineer
 for Irrigation

To
 The Secretary to Govt
 P. M.

Dated 17th February 1875
 Recd 25th February 1875
 Enclosure 1.

Submits for sanction
 letter from the Chief Eng.
 & Manager of S. & C. Co.
 applying for advance
 expenditure required
 for maintenance
 of the Upper and Lower
 Sections of the Canal
 during 1875/76.
 G.O. No. 828. 24.3.75.

12556

626-2-75

S.W.L.
 Proceedings of the Madras Govt.
 Read the following
 from the Chief Eng.
 for Irrigation (H. E. Secy 9th 17th Feb'y/75)

The estimates amounting
 to Rupees 142,220 of Revenue
 expenditure in 1875-76 on the
 M. S. & Canal Company's Canal
 are sanctioned.

2 The new estimates for
 execution under Capital as
 detailed in para 2 of the
 endorsement of the Chief
 Engineer for Irrigation are
 likewise sanctioned.

3 The Government attach
 very great importance to the
 provision at the earliest
 possible moment of the ad-
 ditional or improved bridges
 already determined to be
 necessary, and the Chief
 Engineer

Engineer and Manager will
be requested to take early
measures for their comple-
tion, and to report when
each of those already un-
der-taken is likely to be opened
for traffic. His Excellency
the Governor in Council has
learned with regret that the
Ulster and Beempad bridges
have yet to be commenced.

W.M.

To The Chief Engineer & Manager
in S. & C. Co.
Chief Engineer for Irrigation
Govt. Department
Accounts

1250

Court of 1875
PUBLIC MONS.

Chief Engineer
Madras S. C. Co.

Part

Head

Foot

0.2 1/2 inch 828

100 500 250

100 500 250

The estimates amounting
to Rs 142220 of Revenue ex-
penditure in 1875-76 on the
— and the new estimates
for execution under Capital
expenditure with remarks