MRO 1—77,006—8-6-37.

(1) Number of pages 1-26

(2) Date of repair

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public works **DEPARTMENT.**

G.O. No. 792 Press / Misr

146-47

Dated 8 4 1870.

Not to be folded or roughly handled

No 146. Read the following letter from the Acting Consulting Engineer for the Madras Irrigation and Canal Company, to the Secretary to Government, Public Works Department, dated Madras, 4th March 1870, No. 143 :—

I HAVE the honour to submit the correspondence as per margin regarding an establishment for the conservancy of the first five sections of the Main Canal, being a length of 72 miles, and "for the working of the Irrigation" under these sections.

From Agent, No 433, 21st Dec 1869
To ,, ,, 290, 18th Jan 1870
From ,, ,, 88, 25th Feb. ,,

2 The establishment proposed by the Chief Engineer and concurred in by the Agent and Manager is —

For the maintenance or conservancy of the length of 72 miles, to be increased hereafter to 92 miles, as regards the Engineer's charge, is —

	Salary	Allowance	Total
1 Engineer	600	150	750
4 Chainmen, at 7 rupees	28	...	28
1 Clerk	100		100
5 Telegraph Signallers, at Rupees 25 and 35	135		135
4 Overseers, 16 miles each, at	75	25	400
1 do. 8 do. ...	50	20	70
18 Gangs of 6 Bankers, 5 at 6 Rupees, 90×6=			540
1 at 7 ,, 18×7=			126
1 Head-Sluice Tindal	20		20
6 Lascars at head-sluice	6	..	36
14 Pairs of Lascars			168
1 Superintendent of Irrigation	150	60	210
8 Peons, at 7 Rupees	56		56
Total monthly			2,639
Or yearly			31,668

The Engineer and his Clerk, in addition to the charge of the Main Canal and the preparation of returns, would be required to attend to all demands for new channels, and to the execution of them. The Overseers would supervise the Bankers engaged on the conservancy of the banks, and would control the Lascars in charge of emptying sluices situated within their ranges The Bankers are estimated in gangs of six for each four miles in length of the Main Canal on the data that one man is capable of keeping in order only three-fourths of a mile, namely, filling gutters caused by rain and cutting down bushes, and that he could keep his portion of three-fourths of a mile in good order by working over its whole length twice in the year, which would occupy nine months, leaving him free for three months for repairing the distribution channels I do not acquiesce in this part of the scheme. I think the conservancy and repair of the distribution channels should be separately provided for by additional Bankers in proportion to the length of channels under each portion of the Main Canal, and that on the Main Canal each gang of six Bankers should have a length of six miles, this would reduce the number of gangs to twelve, and the monthly cost of this item from Rupees 666 to Rupees 444

Similarly four Overseers would suffice, costing Rupees 400 against 470 monthly for five.

The fourteen pairs of Lascars are

For the charge of the emptying sluices in Calingulah No 1
Do. do. " " 9
Do do 23rd mile-wall
Do do. Calingulah No. 13
Do. do. " " 14
Do. do. " " 15
Do do. " " 18
Do do. " " 19
Do. do in 4th Section " " 1
Do. do. " " 2
" " 3 and 4
Total, 14 emptying sluices.

The Chief Engineer admits that one Banker per mile of canal would be sufficient to fill up cracks, cut down bushes, and stop small leaks, but that any settlement of the banks would in such case have to be provided for by special labour, and this appears to me to be the proper course.

The Irrigation Superintendent and Peons are intended to see to the applications for water, and that the notices or complaints of damage from insufficient supply or other cause are promptly attended to.

3. In Order as per margin, Government sanctioned a conservancy establishment for the first 43 miles at a monthly cost of Rupees 545 for one year from the 1st April 1869, which will cease at the end of this month; and, if the establishment now proposed meets with the approval of Government, it should come into operation from the 1st proximo The fourteen pairs of lascars for the emptying sluices would only be necessary in the irrigating season, and should not be retained permanently.

No 2,528, dated 2nd August 1869

From the Agent and Manager of the Madras Irrigation and Canal Company, to the Consulting Engineer, dated Madras, 21st December 1869, No 433

I HAVE the honour to forward copy of the Chief Engineer's letter, No 1,104, dated 10th December 1869, proposing an establishment for the maintenance of the Main Canal, and request you will be good enough to obtain the sanction of Government to the same

2 In discussing this matter with Mr Latham I assumed that the material of this Maintenance Staff would be gradually drafted from the Construction, and, although it is not so expressed in his letter, I have no doubt that that is Mr Latham's meaning

3 The words "a month" in the last paragraph are evidently a clerical error.

From J H. LATHAM, Esq, Chief Engineer, to the Agent and Manager of the Madras Irrigation and Canal Company, dated Kurnool, 10th December 1869, No. 1,104

Maintenance of Canal

IT seems to be high time now to arrange for the maintenance of the canal and distribution in the first five sections, and for the working of the Irrigation

2. I have been carefully collecting data for this from the experience I have already had, but this experience is almost entirely confined to the cost of maintaining the Main Canal

3 It seems pretty certain, and the Divisional Engineers agree independently on the point, that for this portion of the Main Canal a Banker or monthly labourer will on the average keep ¾ mile of canal in order; more strictly, a gang of six men, which all agree is, on the average the best number to have in a gang, will, if properly overlooked, make up and keep clear of bushes three chains a day, (varying between two and six in practice,) *i e*, $3 \times 26 = 78$ chains a month, say a mile. Such a gang would, therefore, be able to go over a length of four miles in four months In the wet season the bushes grow up sufficiently to impede towing in four months, but I do not think that they need go over their length more than twice a year, namely, once between December and March (four months) inclusive, and once between July and November inclusive (five months). This would leave them from April to June inclusive (three months) for repairing all the distributing channels after harvest ready for the next season, and for watching the canal on the admission of water in June They would also have spare time in the remaining five months for paying considerable attention to the distributing channels

4. Where the canal has double banks, those banks are of moderate height, and where there is only one bank, it is always of considerable height, and thus, though in fact the double banks are certainly easiest to keep in order, there is not any very material difference which might not be adjusted by taking the gangs off them rather earlier than from the single banks in order to repair the distributing channels.

5 The emptying sluices need to be watched during the season, and should be in the charge of the Overseers

6 The irrigating sluices never need watching, and should be in the charge of the Irrigation Superintendent

7. The scheme I propose, then, is as follows —

For every four miles of Main Canal—
A gang of six monthly paid Coolies
For every sixteen miles of Main Canal—
1 Overseer.
For every set of emptying sluices—
2 Lascars
For the first five sections of canal—
1 Superintendent of Irrigation
8 Irrigation Peons
The whole to be under
1 Engineer with 4 Chainmen
1 Clerk
5 Telegraph Signallers.

8. The plant necessary will be for each gang of coolies—

6 Mamoties.
3 Pickaxes.
2 Miners Bars
3 Wooden Rammers
2 Hatchets
1 Oil Can.
1 Lantern
1 Hut, Rupees 10

For each emptying sluice, (two Lascars)—

1 Oil Can
1 Lantern.
1 Hat (Rupees 20)
2 Sluice Keys

For each Overseer—

1 Oil Can.
1 Lantern
1 Note Book.

For the 1 Superintendent—

1 Note Book
1 Level Book
1 Survey Book.
8 Peons' Uniform, with Belt and Badge.
2 4 Quires Account Books
1 Dumpy Level.
1 Pair Staves
1 100-feet Chain and Arrows.
1 66-feet Tape.
1 Oil Can
1 Lantern
2 Sluice Keys.

NOTE —It is only the two deep sluices that require keys.

For the Engineer who would supply the Superintendent with all other stationery than the above—

1 Level
2 Level Staves
1 100-feet Chain and 10 Arrows
1 Theodolite
1 66-feet Chain and 10 Arrows
1 66-feet Tape

Furniture and Stationery for Writing, Drawing, and Telegraph.

9 The enclosed statement embodies the above scheme, and I have the honour to recommend it for the sanction of Government

10 The Peons would be used as Charimen, etc , during the dry season

11 The Present staff would be gradually cleared off and re-placed by the permanent one for maintenance, the Store-keepers being the last probably who will be liberated.

12. It may be found well to attach a messenger to each Telegraph station hereafter.

13 It is proposed that the Overseer be stationed at—

	Miles	
Kurnool	1—16	
Poodoor	17—32	
Ulloor	33—44	Junior Overseer
Pugydial	45—60	
Jupad	61—76	

and that the quarters be assigned them in the bungalows at those places which it is proposed to keep in repair

14 I have the honour to ask Government sanction for entertaining a staff, as per enclosed statement, not to exceed Rupees 31,428 a month, and for the expenditure of Rupees 2,500, as per enclosed list of plant for purchase of plant, both to be charged to Revenue

Statement of Staff proposed for maintaining the first five Sections of Canal, to be introduced as rapidly as possible after sanction

No.	Description.	Salary	Allowances	Total.
		RS	RS	RS
1	Engineer (2) horses, 2 bandies, and 2 tents,	600	150	750
4	Chainmen, at Rupees 7	28	...	28
1	Clerk, at ,, 100	100	..	100
5	Signallers, at ,, 25 and 35	135	...	135
1	Superintendent of Irrigation, (1 horse, 1 tent, and 1 bandy)	150	60	210
8	Peons, at Rupees 7	300	80	56
4	Overseers, 16 miles each, at 75 and 25, (1 pony)	50	20	380
1	Overseer, 8 miles, (1 pony)	.. ..	... .	70
18	Gangs of 6 Bankers, 5 at 6, and 1 at 7	. ....	. ....	666
1	Head-Sluice Tindal		. ....	20
6	Do Lascars, at 6	...		36
8	Pairs of Lascars, at Nos 1, 9, 23rd mile-wall, 13, 14, 15, 18, (39th mile, Hindry Division)		. .	96
6	Pairs of Lascars, at Nos 1 to 4 Calingulahs, Kambalapilly and Lockinsula Sluices		..	72
	Or per year			2,639
				31,428

(Signed) J H LATHAM,
Chief Engineer.

Indent of Plant required for eighteen months' use, Maintenance

No	Description	Rate			Amount		
		RS	A	P	RS	A	P
108	Mamoties	2	3	0	236	4	0
54	Pickaxes	3	8	0	189	0	0
36	Miners Bars, 40 lbs	5	3	0	186	12	0
54	Wooden Rammers	0	10	0	33	12	0
36	Hatchets	3	0	0	108	0	0
39	Lanterns	0	15	0	36	9	0
39	Oil Cans, 5 Gallons	2	3	0	85	5	0
14	Lascars' Huts	20	0	0	280	0	0
18	Bankers	10	0	0	180	0	0
2	Levels	150	0	0	300	0	0
2	Pair Staves	35	0	0	70	0	0
2	100-feet Chains	10	0	0	20	0	0
1	66 do	8	0	0	8	0	0
30	Arrows	2	13	0	84	6	0
1	Theodolite	240	0	0	240	0	0
2	Tapes	5	0	0	10	0	0
1	Furniture of Engineer's Office, now Hindry Office, say...	432	0	0	432	0	0
	Total	...	.		2,500	0	0

(Signed) J. H LATHAM,
Chief Engineer

From the Acting Consulting Engineer of the Madras Irrigation and Canal Company, to the Agent and Manager, dated Madras, 18th January 1870, No 290

REFERRING to your No 433 of the 21st December 1869, communicating the Chief Engineer's proposal for a permanent establishment for the conservancy of the first five sections of the Main Canal and of the distribution channels appertaining thereto, I have the honour to request your and Mr Latham's consideration of the following remarks, and that I may be favoured with such explanation as appears necessary and such further expression of opinion as the remarks may elicit, for it is very important that all establishments of this nature should at first be kept as low as possible , and, as a conservancy establishment for the whole line in the proportion now proposed by the Chief Engineer for the first five sections would probably far exceed a lac of rupees a year, I am in great hopes that on further consideration it will be found that a much smaller establishment will suffice, at any rate as an experimental measure

One Clerk on Rupees 100 I beg to be informed what is expected to be the nature of his employment It appears to me that the office work of the Engineer will be of such a simple nature and so limited extent that a Clerk on 30 rupees a month would be ample assistance.

One Superintendent of Irrigation, Rupees 210 —What are expected to be his duties ?
Light Irrigation Peons— Do do

It is proposed to allot a gang of six Bankers to every four miles, and an Overseer to every sixteen miles, but the establishment at present maintained is, I believe, a Banker or Cooly for each mile, and it appeared to me, from the condition in which I found the banks on a recent inspection, that this was an appropriate provision I observe that it is expected that these men would be employed only nine months of the year on the Main Canal, and that the remaining three would suffice for their conservancy of the distribution channels, but I am decidedly of opinion that this would be wrong in principle, and that, whatever number of Bankers may be approved of for the conservancy of the Main Canal, their attention should be confined to that work, separate provision being hereafter made for the care of the distribution channels with reference to their length, for it is quite possible that, if the Bankers' time is divided between the Main Canal and the channels, serious damage might occur, while the men who ought to be watching the banks of the main work were engaged on the channels Mr. Latham's estimate moreover is based on the assumption that bushes grow up sufficiently to impede towing in four months; but, if the Bankers are always present and do a moderate amount of work daily in addition to inspection, the bushes would never grow at all. Under this view a gang of six Coolies would suffice for each length of six miles, in all twelve gangs, and, allowing three lengths or eighteen miles for each Overseer's charge instead of sixteen miles, four Overseers would suffice for the whole length of seventy-two miles, and here I must repeat that these men should not be all paid alike, but would be better graded in three classes, the salaries proposed by Mr Latham being considered as averages

2 For charge of every set of emptying sluices two Lascars are proposed, which I quite concur in, but I see in the statement that eight pairs of Lascars are proposed for walls and six pairs for four calingulahs and two sluices, but I don't understand there to be any necessity for Lascars to watch the walls which would be part of the Bankers' duty The calingulahs, moreover, are so constructed as not to require, special watching or any working, and Lockinsula Sluice would not require to be worked in connection with the 5th Section Main Canal, the surplus water escaping by a natural calingulah.

From J H LATHAM, Esq, Chief Engineer, to the Agent and Manager of the Madras Irrigation and Canal Company, dated Kurnool, 1st February 1870, No 168

Maintenance

I have the honour to acknowledge the receipt of the Consulting Engineer's No 290 of 18th ultimo, with your foot note No. 51 of 21th instant

2 At the foundation of the question of a permanent staff for working and maintaining the canal lie the following, to which I will suggest answers —

(1) What sections of canal will be finally allotted to each Engineer ? or will it be best to have all the Engineers engaged generally on the whole canal ? The Indian mode is generally the former The canal may be divided into two sections, one of ninety-two miles length, and, as at present laid out, about 60,000 acres of irrigation would include the present first six sections The other of ninety-seven miles length and about 80,000 acres irrigation would include the 7th to 10th Sections Until navigation commences, and with a view to economy, I see no objection to trying this mode of dividing the canal

(2) Is a staff to be sanctioned sufficient to work the whole irrigation if the water be taken up or only sufficient for the probable requirements next year ? My impression is that the chief officers should be competent for the former, and that it will be best to sanction a full staff of subordinates limiting their actual appointment to the work that may be required

3 It must be borne in mind that for the first year after opening the management of five sections will probably prove enough for the staff I suggested The arrangement of all returns,

the obtaining previous sanction for every expenditure, the meeting of demands for new channels, etc, will require great care and skill at first

4 The Clerk should certainly be a man competent to manage the office business He would have to see that all applications for water and notices of insufficient supply or of flooding were *promptly* sent to the proper officials when received from Government He would have the calculation of work required and of the estimates, and the keeping of cash ledgers of expenditure on every little channel or work, such as road crossings, which might have expenditure sanctioned on it Perhaps a sufficiently good man would accept a permanent berth at less than Rupees 100, but it would be well that the sanctioned amount should a little exceed his salary

5 The Irrigation Superintendent and Peons see that the applications for water and notices of damage from insufficient supply or other cause are promptly attended to. In some measure they correspond to the Traffic Department on a Railway They see that what is demanded is properly delivered, and that the bill is correctly prepared for the Government They should act under the Agent or Manager of the Company in this country

6 *The Bankers* have hitherto had but a portion of the work to do which they will have hereafter In all sections a great portion of the bank, and in some, like the 2nd and 4th, more than half was under construction, and the final raising of the banks after settlement was not quite completed when water was admitted last year The Bankers seemed barely sufficed to watch the banks, to stop all cracks and gulleys, and partly to remove bushes, though most of the last was done on construction I have no doubt that one man a mile would be sufficient to ram cracks, cut down bushes, and generally to deal with leaks, but in that case settlement must be dealt with by special labour. A good man will hardly do more than two cubic yards a day of digging soil and carrying it up a high bank, but a settlement of half an inch to the foot would give 24 640 cubic yards, to be made up in a mile of *single* bank 36 feet high and 4,224 in an ordinary one of only fifteen feet Such a settlement or waste might have to be made up on the average once in every four or five years at first One man could not do this besides attending to cracks and bushes, etc

7 It would be a very good plan to put the Overseers into grades, and I would suggest that, on one leaving, Rupees 10 or so of the income is given to the man who has proved best, and a fresh arrangement of the total sanctioned income of the Overseers made I think for the first appointments there is advantage in more equality

8 The eight pairs of Lascars are proposed for eight sluices, which are in Calingulah No 1, No 9 in the wall in the 23rd mile, in Calingulahs Nos 13, 14, 15, 18, and 19 The list in my letter is not clearly worded In the 4th Section, two of the Calingulahs, Nos 3 and 4, are so close together, within three-and-a-half miles, that one pair of men, it was thought, might watch them

9 I hope the above explanations will be thought satisfactory

No 88

Copy forwarded to the Consulting Engineer with reference to his No 290 of 18th January 1870

(Signed) C A BADHAM,
Acting Agent and Manager.

MADRAS,
25th February 1870

No 147 ORDER THEREON, 8th April 1870, No 992.

IRRIGATION, No. 15

With his letter recorded in these Proceedings the Acting Consulting Engineer for the Irrigation and Canal Company submits the correspondence which has taken place between himself and the Agent and Manager of the Madras Irrigation and Canal Company on the subject of the proposed conservancy establishment for the first 72 miles or, here-

after, 92 miles of the canal, with the works of distribution thereto appertaining. The Chief Engineer's scale of establishment is as follows —

		Salary	Allowances	Total.
1	Engineer	600	150	750
4	Chainmen	28		28
1	Clerk	100		100
5	Signallers	135		135
1	Superintendent of Irrigation.	150		150
8	Peons	56	60	210
4	Overseers, 16 miles each ..	300		300
1	do. 8 do. ..	50	80	56
18	Gangs of 6 Bankers each, 5 at Rupees 6, and 1 at Rupees 7.		20	380
1	Head-Sluice Tindal			70
6	Lascars	20		666
8	Pairs of Lascars for Sluices	36		20
6	do do			36
				96
				72
	Total per mensem			2,619
	Total per annum			31,428

2 It appears from the correspondence to be intended that the Bankers should maintain the earth-works both of the Main Canal and of the distributing channels, in good order, by working on the former for about nine months, and on the latter for three months in each year. In other words, it is expected that, apart from accidents or considerable injuries to the earth-works, the maintenance of the latter is expected to cost Rupees 666 only a year. The Government do not think that these anticipations are likely to be realized, and they consider that the work of the permanent establishment of this kind will require to be supplemented by the employment of other labour from time to time, and that the annual repairs to these earth-works will, for the most part, have to be carried out on estimate This opinion is strengthened on a comparison of the total cost of the proposed establishment with the area for irrigation stated to be under the Main Canal in the first 92 miles, which is mentioned by the Chief Engineer to be 60,000 acres. It is not at all probable that the expenditure on repairs, exclusive of establishments for supervision only, will, when the Main Canal and its branches are in full working order, be less than 8 annas an acre per annum, or 30,000 rupees, and perhaps this amount will, at least for a time, and until the earth-works have finally settled, be considerably exceeded

3 It will yet be a long time, the Government fear, before the actual acreage under irrigation from the first 92 miles of the canal will approximate to the full area of 60,000 acres It is intended that the proposed establishment shall be paid from Revenue, and this is undoubtedly the proper course, but at present there is apparently no immediate prospect of the revenue derived from the Company's works sufficing to pay for such an establishment as that proposed, and, therefore, much less will it suffice for that establishment added to the outlay on repairs, which latter, equally with the former, will be a charge against Revenue.

4 Under these circumstances it becomes necessary to limit the present sanction for conservancy establishments to the immediate and most pressing require-

ments of the Company's works, and the Government think that reductions may be effected somewhat in the following manner.—

Establishment for 72 miles of Canal.

		Salary.	Allowances.	Total.
1	Engineer	500	150	650
4	Chainmen	7		28
1	Accountant	50		50
1	Clerk	35		35
5	Signallers	135		135
1	Superintendent of Irrigation	90	25	115
3	Overseers, average pay	60	20	240
6	Gangs of Bankers			222
1	Head-Sluice Tindal			20
4	Lascars			24
8	do. for Sluices			48
6	do. do.			36
	Total per mensem ...			1,603

Establishment for 92 miles of Canal.

As above			1,603
Add for	Engineer	100	
,,	Superintendent of Irrigation	20	
,,	One Overseer, 60+20.	80	
,,	Two Gangs of Bankers.	74	
			274
	Total per mensem ...		1,877

Making in the one case 19,236 rupees, and in the other Rupees 22,524 a year. It will save expence to reduce the number of Bankers on monthly pay, and, for the present at least, one Lascar may be placed in charge of each set of sluices, and assistance may be afforded him occasionally, when necessary, by the gang of Bankers in whose beat the sluices may be situated.

5 The Consulting Engineer is requested, therefore, with reference to the remarks which have been made above, to ask the Agent to re-consider, in communication with the Chief Engineer, the scale of the proposed establishments, and the Agent should be informed that the Government consider that the revised scale should be prepared with due regard to the present amount of the Company's revenue, or at least in relation to that which may be expected to be realized within the next year or two. When the revenue shall have been developed the Government will be quite prepared to consider any proposals that may be brought forward for placing the conservancy establishments on a more complete and efficient footing.

(True Extract.)

Colonel, R.E,
Secretary to Government.

To the Consulting Engineer for the Madras Irrigation and Canal Company.
,, Agent and Manager for do. do.

Exd. A. S. Rodgers.

Govt. of {1870} Madras.

PUBLIC WORKS.

To

THE CONSULTING ENGINEER FOR
THE MADRAS IRRIGATION AND
CANAL COMPANY.
&c, &c, &c.

Dated April 8th

Read.

G. O., 8th April 1870, No 992

APRIL
Nos 146-147

Conservancy Establishment (Madras Irrigation and Canal Company)—Passing orders on the letter from the Consulting Engineer on the subject of the proposed conservancy establishment for the first 72 miles or, hereafter, 92 miles of the canal with the works of distribution thereto appertaining.

Consulting Engineer's Office
Irrigation & Canal Company
Madras, 1st March 1870

No 143

From,
Colonel J. Carpendale R.E.
Consulting Engineer for M.I.C.C.

To
The Secretary to Government
Department of Public Works

Sir,

I have the honor to submit the correspondence as per margin regarding an establishment for the conservancy of the first nine Sections of the Main Canal being a length of 72 miles and "for the working of the Irrigation" under these Sections

From Cons. No 433-21 Dec/69
To — " 290-18 January/70
From — " 88-25 Feby/70

2. The establishment proposed by the Chief Engineer and concurred in by the Agent and Manager is:-

For the maintenance or conservancy of the length of 72 miles, to be increased hereafter to 92 miles as regards the Engineers charge, is:-

	Salary	Allowance	Total
1 Engineer	600	150	750
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1 Clerk	100	"	100
5 Telegraph signallers at Rs 25 & 35	135	"	135
4 Overseers 16 miles each at	75	25	400
1 Duffadar & 18 Bankers 5 at 6 Rs 90×6	50	20	70
1 at 7 Rs 18×7			540
1 Headsluice Kindal	20	"	126
6 Peons at Headsluice	6	"	20
			36
			2205

" for water and road the

	Salary	Allowce	Total
14 Pairs of Laveers			2205
1 Superintendent of Irrigation	150	60	210
8 Peons at 7 Rs		56	56
Total monthly Rs			2639
or Yearly			31668

The Overseers and Inspectors, in addition to the charge of the Main Canal and the preparation of returns required & attend to all demands for new channels, and to the execution of them the overseers would supervise the bankers-incharge on the conservancy of the banks, and would control the laveers in charge of Emptying sluices situated within their ranges.—

The Bankers are estimated in cases of Low Each four miles in length of the Main Canal on the data that one man is capable of keeping in order only 3/4ths of a mile - namely filling gutters caused by rain, and cutting down bushes, and that he could keep his portion of 3/4ths of a mile in good order by working over its whole length three times in the year - he has to work nine months, claiming him free for three months for repairing the distribution channels & Dhoolaqueas in this part of the revenue & think the conservancy & repair of the distribution channels should be separately provided for by additional Bankers in proportion to the length of channels under

under each portion of the Main Canal, and that on the Main Canal each gang of six bankers should have a length of four miles - this would reduce the number of gangs to twelve and the monthly cost of this item from Rupees 666 to Rupees 444.—

Similarly four overseers would suffice - costing Rupees 400 against 470 monthly for five -

The 14 pairs of laveers are for the charge of the Emptying sluices in Calingulah No 1

"	23rd mile wall
"	Calingulah No 13
"	" 14
"	" 15
"	" 18
"	" 19
"	In 4th Section 1
"	" 2
"	" 3 & 4
"	Total 14 Emptying sluices

The Chief Engineer admits that one banker per mile of canal would be sufficient to fill up cracks, cut down bushes and stop small leaks - but that any settlement of the banks would in such case have to be provided for by special labor, and this appears to me to be the proper course.—

14 Pairs

The Irrigation Superintendent and peons are intended Dues & the applications for water and that the

the notices or complaints of damage from insufficient supply or other causes are promptly attended to.

2. Address per margin, Government Resolution No. 2528 dated 2nd August 1869 sanctioning a Conservancy Establishment for the first 43 miles at a monthly cost of Rupees 545 for one year from the 1st April 1869 which will cease at the end of this month, and if the Establishment now proposed meets with the approval of Government should come into operation from the 1st proximo. The 14 pairs of bullocks for the emptying channels will only be necessary in the irrigating season and should not be retained permanently.

I have the honor to be
Sir
Your most obedient servant
H. Robertson Collector
& Conservator for Irrigation Company

Collr's Office
Cuddapah 12th March 1870

Endorsement

Endorsements forwarding
Correspondence (with)
Enclosures regarding an Establishment for the Conservancy of the Irrigation Channels of the Pennair Company

Read the 15th March 1870

No. 992

Proceedings of the Madras Government
Revenue dated the 8th April 1870

Read the following

From the Acting Consulting
Irrigation & Canal Company (No. 4 March 1870 - No. 143

With his letter recorded in these Proceedings the Agent Consulting Engineer for the Irrigation and Canal Company submits the correspondence, which has taken place between himself and the Agent and Manager of the Irrigation and Canal Company, on the subject of the proposed Conservancy Establishment for the first 92 miles or thereafter, 92 miles of the Canal with the works of distribution thereto appertaining. The

Chief

I thought G.O. had sanctioned the Establishment of Irrigation? How could it be there? GB

P.W.D. 15 C

Total

Chief Engineer's Scale of Establishment is as follows.

	Salary.	Allowances.	Total.
1 Engineer	600	150	750
4 Chainmen	28	-	28
1 Clerk	100	-	100
5 Signallers	135	-	135
1 Superintendent of Irrigation	150	60	210
8 Peons	56		56
2 Overseers, 16 miles each	300	80	380
1 Do. 8 Do.	50	20	70
18 Gangs of 6 hankies each. 5 at Rs. 6 and 1 at Rs. 7			666
1 Head Sluice Tindal	20	—	20
6 Laccars	36	—	36
8 Pairs of Laccars for Sluices		—	96
6 Do. Do.		—	72

Total per mensem. 2619.

Total per annum 31428.

It appears from the correspondence to be intended that

17c

that the hankers should maintain the earthworks both of the main Canal and of the distributing channels, in good order, by working on the former for about 9 months, and on the latter for 3 months in each year. In other words it is expected that, apart from accidents or considerable injuries to the earthworks, the maintenance of the latter is expected to cost Rs. 666 only a year. The Govt. do not think that these anticipations are likely to be realized, and they consider that the work of the permanent establishment of this kind will require to be supplemented by the employment

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of other labour from time to time, and that the annual repairs to these earthworks will, for the most part, have to be carried out on estimate. This opinion is strengthened on a comparison of the total cost of the proposed establishment with the area for irrigation stated to be under the main canal on the first 92 miles, which is mentioned by the Chief Engineer to be 60,000 acres. It is not at all probable that the expenditure on repairs, exclusive of establishments for supervision only, will, when the main canal and its branches are in full working order, be less than 8 annas an acre per annum, or 30,000 Rs, and perhaps this amount will, at least for a time, and until the earthworks have finally settled, be considerably exceeded.

3. It will yet be a long time, the first year, before the actual acreage under irrigation from the first 92 miles of the Canal will approximate to the full area of 60,000 acres. It is intended that the proposed establishment shall be paid from Revenue and this is undoubtedly the proper source, but at present there is apparently no immediate prospect of

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the Revenue derived from the Company's works sufficing to pay for such an establishment as that proposed, and therefore much less will be suffice for that establishment added to the outlay on repairs, which latter, equally with the former, will be a charge against Revenue.

4. Under these circumstances it becomes necessary to limit the present sanction for Conservancy establishments to the immediate, and most pressing requirements of the Company's works and the Govt. think that reductions may be effected somewhat in the following manner.

Estab.

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Establishment for 72 miles of Canal.

1 Engineer	500 + 150		650
4 Chainmen	7		28
1 Accountant	50		50
1 Clerk	35		35
5 Signallers	135		135
1 Superintendent of irrigation	90	25	115
3 Overseers. Average pay	60	20	240
6 Gangs of bankers			222
1 Head Sluice tindal			20
4 Lascars			24
8 Do for Sluices			48
6 Do Do			36
Total per mensem			1,603

Establishment for 92 miles of Canal.

As above			1603
Add for Engineer			100
" Superintendent of Irrigation			20
" One Overseer. 60 + 20			80
" 2 gangs of bankers			74
			274
Total per mensem			1877

Watkins

making in the one case
19,236 Rs and in the other -
Rs. 22,524 a year. It will
have expence to reduce the
number of hankers on
monthly pay; and for the
present at least, one Laccar
may be placed in charge of
each set of sluices, and assistance
may be afforded him occa-
sionally, when necessary, by
the gang of hankers in whose
beat the sluices may be
situated.

5. The Engineer is re-
quested therefore, with reference
to the remarks which have
been made above, to ask the
Agent to reconsider, in com-
munication with the Chief
Engineer, the scale of the
pro-

proposed establishments, and
he should be informed that
the Govt consider that the
revised scale should be pre-
pared with due regard to the
present amount of the Com-
pany's Revenue, or at least
in relation to that which
may be expected to be
realized within the next
year or two. When the Revenue
shall have been developed the
Govt will be quite prepared
to consider any proposals
that may be brought for-
ward for placing the Con-
servancy establishments
on a more complete and
efficient footing.

To the Engr. Engr. Madras & Agent & Manager — do — do — do — do

Dated 11/4/70.

Ob. W. Lato Leopold d. 23rd June
ex 21st 1870

Ob. W. Lato Leopold d. 23rd
June ex 21st 1870

Further Proof 8th d. 18-3-71
" " " 12th " 15-5-71

ex 12 March 1870 R. 25.