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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

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Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
26th April 1871.*

No. 429. Read the following letter from the Consulting Engineer for Irrigation and Canal Company, to the Secretary to Government, Public Works Department, dated Madras, 4th April 1871, No. 1:—

I HAVE the honour to submit plans, estimates, and all usual documents as noted in the margin, relating to the distribution works in the 1st Range of the 9th Section, Main Canal, and accompanied by the Agent's letter, No. 142, of 28th March 1871, and a memorandum descriptive of the project by Mr. Gordon, Deputy Chief Engineer, dated 21st January 1871.

7 General Plans.
2 Masonry do.
1 Sketch Map.
1 Detailed Estimate.
1 Tabular Statement.
1 Abstract Estimate.
1 General Abstract.
1 Memorandum by Deputy Chief Engineer.
1 Letter from Agent, No. 142, 28th March 1871.

2. The area proposed to be irrigated consists of 8,600 acres to the west of the main canal, from the 152nd to the 165th mile, and is bounded on the other side by the Koondaur river. The irrigation is directly from nine channels which are taken off the main canal, and whose course is clearly shown in the sketch map, Drawing No. 600.

3. These are all ridge channels, and are designated by the names of the villages whose lands they are intended to water:—

		Length.	
		M. CH.	M. CH.
No. 1.	Canagoodoor off Main Canal at	152 58	37
„ 2.	Jillala A	154 26	64
„ 3.	Jillala B	154 56	75
„ 4.	Yacopully	157 1	1.12
„ 5.	Dhoor	159 46	1.23
„ 6.	Nalatoor	161 15	2.40
„ 7.	Comanoor	162 60	2.76
„ 8.	Cheypaud	164 60	2.27
„ 9.	Patha Mettapully	165 25	2.26

14.60

They are all simple in design and easy of construction; no drainage or existing irrigation channels are interfered with except on Yacopully channel, where a small channel from a well is met with, the supply from which will cross the Company's channel by a spout.

4. The Chief Engineer reports that the road traffic is sufficiently provided with crossings, and so it would appear from the maps, except that the Jillala villagers may object to the diversion of their road, which now leads direct from the village to the 2nd-class bridge on the main canal, in which case they must be provided with a crossing over Jillala channel B; and it is not improbable that a similar provision may be needed over the Yacopully channel, where a village road is now shown as stopped.

5. The masonry works are nine irrigation sluices in the main canal, two 1st-class bridges for the main road from Kurnool to Cuddapah, seven 2nd-class bridges for village roads, and fifty-two masonry falls for lowering the water from

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26th April 1871.*

the level of one reach of a channel to the next. The sluices and bridges are shown on Drawings Nos. 598 and 599. The masonry falls do not require description or illustration, and the position of each is left an open question, to be regulated by the locality of beds of kunkur as found when excavating the channels.

The rates are :—

Excavation in kunkur and black cotton soil, 8 to 10 cubic yards per rupee.

Rubble masonry 4 Rupees per cubic yard.

Archwork 6 do. do.

which are ordinary, and as low as the Deputy Chief Engineer considers safe.

6. The particulars of the estimate, in which 2 per cent. for tools and contingencies is included, are :—

	Rs.
9 Sluices in Main Canal	3,600
9 Channels earthwork	4,961
Do. minor masonry works	1,654
Subsidiary channels for the immediate delivery of water to the fields at 6 Annas per acre	3,225

Total 13,440

for the irrigation of 8,600 acres, being an average of Rupees 1-9-0 an acre, which is very moderate.

7. The carrying capacity of the channels ranges from $3\frac{1}{2}$ to 8 cubic yards per hour per acre, in accordance with the principles approved of by Government on former occasions. The project appears to have been thoroughly investigated and carefully and economically arranged, and I recommend the estimate for sanction as a charge against Capital.

8. The previous sanction for the distribution works of the 9th Section, as given in Government Order No. 2,786, of the 10th September 1867, is Rupees 15,125 for sluices, from the total of the estimate now submitted the amount entered therein for sluices, namely, Rupees 3,600, should be deducted, and so the amount now requiring sanction is Rupees 9,840.

From the Agent and Manager of the Madras Irrigation and Canal Company, to the Consulting Engineer for the Madras Irrigation and Canal Company, dated Madras, 28th March 1871, No. 142.

I HAVE the honour to forward copy of Mr. Gordon's Memorandum, dated 21st January 1871, with the Chief Engineer's Endorsement, No. 400, of the 20th March 1871, together with plans and estimates of the Upper District of the Dhoor Division, and to request sanction for Rupees 13,440.

2. The plans and estimates, as enumerated below, go forward endorsed.

MEMORANDUM.

Drawings.	Estimates.
7 General Plans.	1 Detailed Estimate.
2 Masonry do.	1 Tabular Statement.
1 Sketch Map.	1 Abstract.
	1 General Abstract.

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26th April 1871.*

Memorandum to accompany the Plans and Estimates of the Upper District of the Dhoor Distribution.

THIS district, as shown on the general sketch plan accompanying, is bounded by the main canal and the Koondaur river, and extends for a distance of about $13\frac{1}{2}$ miles along the canal, being bounded on the south by the Bynapully stream. There remains between this district and the Yaitoor district a piece of land between the Bynapully and Peechapad streams, which it is not at present proposed to supply. It is already partly provided with wet cultivation by the Peechapad tank, and a channel to supply the rest would be an expensive one.

2. The land in the upper part of the district under report is chiefly red soil, though mixed with black cotton and kunkur, and is well suited for irrigation, and in some places there is already a demand. In the lower part there is more black cotton soil. The fall of the country is very considerable, so that only few of the channels can have a regular fall. But in the case of the four upper channels, Canagoodoor to Yacopully inclusive, so many beds of kunkur are met with that masonry falls will not be needed, but the excess of the fall of the ground over that given to the channel bed will be provided for by having rapids over these beds of kunkur.

The falls are not shown on the plans as they will be put in as found to be most convenient in the course of execution.

3. The following is a table of the falls of the channels :—

(1). *Canagoodoor*.—The ground falls 7 feet in 2,700, of which about $3\frac{1}{2}$ feet is met for by the fall in the bed and $3\frac{1}{2}$ by rapids.

(2). *Jillala A.*—The ground falls 8 feet in 4,225, requiring 4 feet to be overcome means of rapids.

(3). *Jillala B.*—Ground falls 11 feet in 4,200, of which $6\frac{1}{2}$ is overcome by the fall of the bed and by rapids.

(4). *Yacopully*.—The fall is 10 feet in 5,400 feet, and the fall in the bed overcomes about $6\frac{1}{2}$ feet, $3\frac{1}{2}$ being allowed for in rapids.

(5). In the *Dhoor* channel, although we may find suitable places for rapids, it is not yet certain, and therefore nine over-falls of 9 inches each are allowed for in the estimates which, together with about 5 feet in the channel, makes up the total fall of 12 feet in 6,800.

(6). The *Nalatoor* channel has less falls per mile than those above; eight 13 over-falls of 1 foot each are required to make up the 18 feet which it falls in 11,000 feet.

(7). The *Comanoor* falls $23\frac{1}{2}$ feet in 20,240 feet, of which the slope overcomes about 11 feet, rendering 12 falls of 1 foot necessary.

(8). The *Cheypaud* channel falls altogether about $8\frac{1}{2}$ in about $8\frac{1}{2}$ in 12,000 feet and does not need any artificial falls.

(9). The *Patha Meelapully* channel, on the other hand, has a great fall, $27\frac{1}{2}$ in 12,000, namely, 9 feet in the channel and 18 over-falls of a foot, which will probably be modified into twelve of 18 inches if suitable places occur.

The over-falls in the channels from Dhoor downwards are allowed for in the estimate.

4. All the channels, except the Cheypaud channels, may be called ridge channels, as they get on to the ridge of the land they are intended to irrigate as soon as the level at which they are taken of commands it. The Cheypaud channel is a falling contour.

5. No drainage or irrigation channels are intercepted. (The scheme apparently interferes with no irrigation.) On the Dhoor channel a small nullah has to be diverted, and on the Yacopully channel a small channel from a well will be carried over the channel in a spout.

6. I think the road traffic is sufficiently allowed for, see the general plan.

7. I have proposed to put in the self-regulating sluice near Dhoor bridge, but as it will only irrigate about 12 acres, I have not thought it necessary to send in a plan for a channel; the cost of the channel is included in the authorized rate for minor channels (6 Annas per acre) which in this district is probably sufficient, as the areas commanded by each channel are small, and the channels long in proportion. The total length of the channel is 1,180 chains, and the acreage being 8,600 acres the average width of the land would be 73 chains, and generally this would be divided by the channel in the middle.

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8. The water in the channels will, on an average, be about ground level, cross sections are unnecessary; all the particulars being given in the tabular statement.

9. The rates in the estimate are as low as I think safe; indeed, I think for the sluices in the upper part the rate is too low, but I do not wish to raise it on account of the difficulty of getting a contractor to take up anything at all *under* the estimated rates.

10. The estimate, including 10 per cent. for use of tools and contingencies, amounts to Rupees 13,440, or Rupees 1-9-0 per acre.

11. Accompanying the report there are six masonry drawings, seven land plans, and a general plan, (the over-falls are supposed to be like those in the lower districts) ; also one tabular statement of channels, and one schedule of land required, detail estimates, and a recapitulation of the same.

CAMP AT DUGGE,
21st January 1871

(Signed) G. GORDON,
Deputy Chief Engineer.

No. 400

FORWARDED to the Agent and Manager with my recommendation that the scheme and expenditure be sanctioned.

CONFIDENTIAL. (Signed) J. H. LATFAM.
16th Mar., 1871.

No. ORDER THEREON, 26th April 1871, No. 1,174. *

IRRIGATION, No. 28.

IRRIGATION, No. 28.

The Government sanction the sum of Rupees 9,840 for the distribution works in the 1st Range of the 9th Section of the Madras Irrigation and Canal Company's Main Canal, the charge being debited to Capital.

(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. S. T. Augustin.

Consulting Engineers' office
Irrigation Canal Company
Madras, 4 April /71.

Colonel W. Carpendale
Consul for A. C. Co.
Secretary of Government
Public Works Department.

Have the honor to submit plans, estimates, and all usual documents as noted in the margin relating to the distribution works in the fixed range of the 9th Section Main Canal and accompanied by the D. R. S. Letter No. 142 of 28th March 1891 and a memorandum descriptive of the project by Mr. Gordon Deputy Chief Engineer dated 28th January 1891.

2. The area proposed to be irrigated consists of 8600 acres to the west of the Main Canal from the 152nd to the 165th mile and is bounded on the other side by the Kundar River - The irrigation is directly from 9 channels which are taken off the Main Canal and whose course is clearly shown in the sketch map - Drawing N^o 600 -

3. These are all ridge channels and are designated by the names of the villages whose lands they are intended to water. —

Be

	to ch.	Length in ch.
No. 1. Cana go down off Main Canal at 152.50		37
" 2. Sillala A	154.26	64
" 3. Sillala B	154.56	75
" 4. Yacopully	157.1	1.12
" 5. Dhoo	159.46	1.23
" 6. Malabon	161.18	2.40
" 7. Comanor	162.60	2.76
" 8. Cheyprao	164.60	2.27
" 9. Patka Mettapully	165.25	2.26
		<u>14.60</u>

They are all simple in design and easy of construction; no drainage or existing irrigation channels are interfered with except on Yacopully channel where a small channel from a well is met with the supply from which will cross the Company's channel by a spout.

The Chief Engineer reports that the road traffic is sufficiently provided with crossings and so it would appear from the map, except that the Sillala villagers may object to the diversion of their road which now leads direct from the village to the 2nd class bridge on the Main Canal in which case they must be provided with crossing over Sillala channel B; and it is not improbable that a similar provision may be needed over the Yacopully channel where a village road is now shown as stopped.

The masonry works are 9 irrigation sluices on the Main Canal, 2 first class bridges for the main road from Turnool to Cuddapah, 7 second class

class bridges for village roads, and 52 masonry falls for lowering the water from the level of one reach of a channel to the next. The sluices and bridges are shown on drawings Nos. 598 and 599. The masonry falls do not require description or illustration, and the position of each is left an open question to be regulated by the locality of beds of tunkur as found when excavating the channels.

The rates are:

Excavation in tunkur and black cotton soil 80 to 100 c. yds. per ft. depth
Rubble masonry 4 ft. per c. yard
Brickwork 6 " do.

which are ordinary and as low as the Deputy Chief Engineer considers safe.

The particulars of the estimate, in which two per cent for tools and contingencies is included, are:

9 sluices on Main Canal	Rs. 5,600
9 channels earthwork	4,960
Do minor masonry works	1,654
Embodiary channels for the immediate delivery of water to the fields at 6 annas per acre	3,225
	<u>Total 13,439</u>

for the irrigation of 8,600 acres being an average of 1 1/4 ft. an acre which is very moderate.

The carrying capacity of the channels ranges from 3 1/4 to 8 cubic yards per hour per acre in accordance with the principles approved

of

of by Government on former occasions. The
Project appears to have been thoroughly in-
vestigated and carefully and economically
arranged and I recommend the estimate for
sanction as a charge against Capital.

The previous sanction for the distribution
works of the G. Section as given in Government
Order N^o 2786 of the 10th September 1867 is Ru-
pees 15,125 for sluices from the total of the
estimate now submitted the amount entered
therein for sluices viz. Rupees 3,600 should be
deducted and so the amount now requiring
sanction is Rupees 9,040.

Have the honor to be,
Sir,
Your most obedient servant,
J. H. M. D. L. 1868.
Care of J. & C. Company.

C. M. B.

P. W. 1871 Sept 24

From No 1614
The Com for S. C. Co.
to The Secretary & Gov. S. C. Co.

Re: 4" } April 71
Re: 8" }

Enc: 10.

Submits for sanction
plans & estimates &c. relating
to the distribution of the
first range of 9" section
Main Canal amounting to
Rs. 9840-0-0.

No 1174-26 April 71

With an order

The Government sanction the same &
Rs. 9840 for the distribution works in the first range
of the main section of the Madras Irrigation &
Canal Company's main Canal, the charge being
debited to Capital.

To The Secretary & Gov. S. C. Co.
of the Madras Irrigation & Canal Company

Dated 27/4/71.

W. B.

W. B. 11/7/71

Govt. of 1874 Order 3.

PUBLIC WORKS.

To The Committee in charge
the Madras Irrigation
and Canal Company

26th April 1874.

Nos. 424-430

Distribution Works.

For the distribution
works in the lower part
of the 4th Section of the
Canal. It is main
canal sanctioned. The
change being required