Public Works (1896.) Department.

G.O., No. 3599

DATED 24/4/96

[Despatch Abstract.]

Masulipatam Canal
Estimates for widening
Clearing silt in the
sanctioned

[P.W. 36.
1,000—25-10-[illegible]]

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

No. 359 I., 24th April 1896.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From the Executive Engineer, Kistna Eastern Division, to the Superintending Engineer, II Circle, dated 28th October 1895, No. 3372.

I have the honour to bring to your notice that against the estimates for Rupees 1,05,200 and Rs. 34,200, sanctioned in G.Os. Nos. 562 I., dated 7th October 1890, and 356 I., dated 22nd April 1893, for widening Masulipatam canal, the total expenditure up to date is Rs. 1,02,216, leaving a balance of Rs. 37,184. Of this amount Rs. 24,362 is saving on the original estimate and Rs. 12,822 is saving on the estimate for Rs. 34,200.

2. This latter saving is due to the widening work being stopped at about 1½ feet above proper bed-level.

3. This was partly owing to want of time to complete the work, and partly because there was about 1½ feet depth of silt in the reach which was ordered not to be cleared, and there was therefore no use in taking the widening down below the silt level.

4. Every year it is becoming more difficult, during transplantation time and during periods of short rainfall, to send down sufficient water even with the canals at their fullest, and it will undoubtedly be necessary to increase their capacity.

5. The experience of the last three years has shown that the silt has practically not increased in the Bunder canal below the first mile, and I therefore think it will be worth while clearing it right out to bed-level next working season and completing the widening to that level.

6. It is probable that, with the velocity now maintained during the transplantation season when the water is most heavily charged with silt, there will even then be no great deposit of silt, and the discharge of the canal will be materially increased. In addition to this, it is possible without undue interference with the existing berms to increase the bottom width from 75 feet to 85 feet throughout.

7. This will cost about Rs. 20,000 (as calculated from sections) which will be covered by the saving of Rs. 24,302 on the original estimate. It will be difficult to distinguish between the silt and the widening work, and I would therefore propose that the savings on the present estimates be utilized as far as they will go and the excess, if there be any, charged to maintenance and repairs as silt clearance. If it is considered necessary to prepare a fresh estimate, I can of course do so.

8. The present bottom width of the canal from its head to the bank canal head sluice at 4–4 is from 80 to 85 feet, and from then to Kunkipad lock 75 feet, as recently widened, and if the bottom width be increased to 85 feet throughout, it will increase the theoretical discharge by about 250 cubic feet per second.

9. The canal with its present bottom width of 75 feet, a depth of 10 feet at head and surface fall of 0·46 feet per mile, is calculated to discharge 1,619 cubic feet per second, and with 85 feet bottom width the discharge will be 1,871 cubic feet per second.

10. Of this the Bunder canal ultimate irrigation, amounting to 66,830 acres (including 10,000 acres of extension under the proposed Munginapudi canal), will require 743 cubic feet per second leaving 1,128 cubic feet per second; and as at present, during transplantation, I am at times supplying as much as 1,000 cubic feet per second through Pulléru, it is obvious that, even with the increased bottom width, all this available water can be utilized. It is also cheaper to widen Bunder canal than Ryves' canal, although there is no doubt that the latter will also have to be carried out before long.

11. The favour of early orders is requested to enable arrangements to be made for carrying out the work next closure.

No. 57 C.

Forwarded to the Chief Engineer for Irrigation for favour of early orders and for sanction of the proposals made by the Executive Engineer, Kistna Eastern division (*vide* paragraph 4, Chapter IX, Volume I of Government of India Code).

11th November 1895. (Signed) A. S. RUSSELL,
Offg. Suptg. Engineer, II Circle.

Memo. No. II/190 K.S.

With reference to endorsement No. 57 C., dated 11th November 1895, the undersigned has the honour to remark that it is probable that the quantity of silt in the Bunder canal has not increased, because the bed has assumed a permanent régime. If the canal were cleared to the original bed-level, it is probable that it would silt up again directly water is admitted. The Chief Engineer will, however, approve of the canal being deepened and widened as proposed by the Executive Engineer, provided that an estimate of the cost is submitted distinguishing between silt clearance and improvements, and that arrangements are made to take sections of the canal and to place on record the results obtained by clearing silt to the original bed-level.

2. The Chief Engineer has no power to sanction improvements costing more than Rs. 1,000 being charged to working expenses, and therefore the proposed widening must be a charge against Capital.

18th Nov. 1895. (Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

To the Superintending Engineer, II Circle.

From the Executive Engineer, Kistna Eastern Division, to the Superintending Engineer, II Circle, dated 18th February 1896, No. 4858.

[Ref. No. 1824 K S., dated 25th November 1895.]

I have the honour to forward alteration estimates for widening and clearing silt in 1st Reach of Bunder canal :—

	RS.
A_1 Widening ...	26,750
A_2 Clearing silt ...	64,380
B_1 Widening ...	23,700
B_2 Clearing silt ...	44,950
B_3 Do. ...	5,700

The sanctioned estimate amounting to Rs. 34,200 for widening, provided for a bottom width of 75 feet and a uniform bed-fall of 0·33 foot per mile throughout the reach.

This made the bed-level above Kankipad lock + 37·03, the level of lock upper sill being + 38·43, and of new Pulleru head sluice + 38·43.

Estimates A_1 and A_2 provide for widening and clearing silt to a bottom width of 85 feet throughout and the same bed-fall as in the sanctioned estimate, *i.e.*, 0·33 foot per mile. On finding that estimates A_1 and A_2 worked out to such large amounts, I had B_1 and B_2 prepared which allow for a bottom width of 85 feet and a uniform bed-fall from the head of the canal to the upper sill of the lock, *i.e.*, 0·21 foot per mile.

Taking into consideration the level of the sill of new Pulleru head sluice, it is doubtful if any advantage would be gained by lowering the canal bed below the sluice sill and I think, therefore, that estimates A_1 and A_2 should be rejected, and as estimate B_2 is too large to be provided for from the ordinary maintenance grant and it is moreover questionable if it is worth while to carry out the clearance at such a heavy cost, I now recommend that only estimat~~es B_1~~ and B_3 are sent on for sanction.

As the Chief Engineer in his memo. No. II/190 K.S., dated 18th November 1895, has already expressed his willingness to sanction the widening, I am making arrangements with contractors to put this work in hand in anticipation of sanction of the estimate and request the favour of your approval for my action.

No. 2592 K.S.

Forwarded to the Chief Engineer for Irrigation with reference to his No. II/190 K.S., dated 18th November 1895.

2. Two estimates amounting to Rs. 23,700 and Rs. 5,700, distinguishing between silt clearance and widening the Masulipatam canal, have been prepared and are sent herewith for sanction of Government being obtained from the savings of Rs. 37,184 against the estimates sanctioned in G.Os., Nos. 562 I. and 356 I., dated 7th October 1890 and 22nd April 1893, respectively.

3. The Executive Engineer has been authorized to proceed with the work in anticipation of sanction to the estimates.

8th March 1896. (Signed) W. L. C. BADDELEY, Major, R.E.,
Superintending Engineer, II Circle.

No. 83 I.

Submitted to Government with a recommendation that the estimates forwarded by the Superintending Engineer, II Circle, be sanctioned.

9th April 1896. (Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

Order—No. 359 I., dated 24th April 1896.

The following estimates are sanctioned, the proposed outlay on widening the Masulipatam canal being met from the provision made for item 5 of the comparative statement printed in Proceedings of Madras Government, No. 857 I., dated 11th October 1893 :—

Capital expenditure not charged to Revenue.
49. Irrigation.
Kistna Delta System.
Eastern Section.
I. Works.
Masulipatam Canal.
2. Main Canals and Branches.
12. Earthwork.
(1) Widening first reach of Canal.

	RS.
Estimate ...	23,700

Irrigation.
42. Major Works (Working Expenses).
Kistna Delta System.
Maintenance and Repairs.
2. Main Canals and Branches.
11. Earthwork.
(2) Masulipatam Canal, first reach, clearing silt.

	RS.
Estimate ...	5,700

2. This sanction is registered as No. 19 I. of 1896–97.

(True Extract.)

Under Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, II Circle, with ~~seven~~ enclosures.
,, Examiner, Public Works Accounts.
,, Revenue Department.

Exd. T. K. Narayana Aiyangar.

Spare Copies

IRRIGATION.
ACCOUNT.

Govt. of {1896} Madras.

PUBLIC WORKS.

Dated April, 24th.

Recd. Encl.

G.O. No. 359 I., 24th April 1896.

APRIL.

Masulipatam Canal

Estimates aggregating Rs. 29,400 for widening and clearing silt in the —, 1st Reach, Kistna Eastern delta, sanctioned with remarks.

A

No. 359 I. d/24 April 96

PUBLIC WORKS DEPARTMENT,
IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

From Supg Engr II Circle, No. 57 C., d/11.11.95
To do , 190 K.L., d/18.11.95
From do. , 2592 K.L., d/8.3.96
No 83 I d/9.4.96

Submitted to Govt with a recommendation that the estimates forwarded by the Supg Engr II Circle, be sanctioned.

Order thereon.

A.S.H.
20.4.96

The following estimates are sanctioned, the proposed outlay on widening the Masulipatam Canal being met from the provision made for item 5 of the comparative state-

ment printed in P.W.D. G.O.
No. 857 I., d/ 4th Oct/93.—
Capital Expenditure not
charged to Rev.
49. Irrigation.
Kistna Delta System
Eastern Section
I Works.
Masulipatam Canal.
2. Main Canals & Branches
12. Earthwork.
(1) Widening 1st reach of
canal. Estimate Rs 2370.
Irrigation
42. Major works (Working
Expenses)
Kistna Delta System.
Maintenance & Repair
2. Main Canals & Branches
11 Earthwork.
(2) Masulipatam Canal
1st reach. Clearing
silt. Estimate Rs 570
2. This sanction
is registered as No.
193 of 1896-97
//

Passed
9/4

DESPATCHED
8 MAY. 96

To
The Chief Engr for I.
Supdg Engr IInd Circle with enclos.
P.W. & Rev.
Dept.

G.O. No 857 dt 11-10-93.
(of 2 plans)

E. I. Form No. 1—500—14-5-95

P. W. CURRENT No. 3555

Estimates for widening & clearing silt in Masulipatam Canal 1st reach, Kistna Eastern Delta

Encls 9 (2 plans)
Recd: 10-4-96

Issue
23/4

F.E.J.
24/4

Regd
24/4

Rs 21/-

Letter from the Executive Engineer, Kistna Eastern Division, to the Superintending Engineer, II Circle, No. 3,372, dated 28th October, 1895.

—

I have the honor to bring to your notice that against the estimates for Rs 1,05,200 and Rs 34,200, sanctioned in G.O. Nos 562 I, dated 7th October, 1890, and 356 I, dated 22nd April, 1893, for widening Masulipatam Canal, the total Expenditure up to date is Rs 1,02,216 leaving a balance of Rs 37,184. Of this amount Rs 24,362 is saving on the original estimate and Rs 12,822 is saving on the estimate for Rs 34,200.

2. This latter saving is due to the widening work being stopped at about 1 1/2 ft above proper bed-level.

3. This was partly owing to want of time to complete the work, and partly because there was about 1 1/2 ft depth of silt in the reach which was ordered

not

5.0.

not to be cleared, and there was therefore no use in taking the widening down below the Silt level.

4. Every year it is becoming more difficult during transplantation time, and during periods of short rain-fall, to send down sufficient water, even with the Canals at their fullest, and it will undoubtedly be necessary to increase their capacity.

5. The Experience of the last three years has shown that the Silt has practically not increased in the Bander Canal below the 18th mile, and I therefore think it will be worthwhile clearing it right out to bed-level, next working Season and completing the widening to that level.

6. It is probable that with the velocity now maintained during the transplantation Season when the water is most heavily charged with

Silt

7 Pec

Silt, there will even then be no great deposit of Silt, and the discharge of the canal will be materially increased. In addition to this, it is possible without undue interference with the Existing berms to increase the bottom width from 75 ft to 85 ft throughout.

7. This will cost about Rs 20,000/. (as calculated from Sections) which will be covered by the Saving of Rs 24,302 on the original estimate. It will be difficult to distinguish between the Silt and the widening work, and I would therefore propose that the Savings on the present estimates be utilized as far as they will go and the Excess, if there be any, charged to Maintenance and Repairs as Silt clearance. If it is Considered necessary to prepare a fresh estimate, I can of course do so.

8. The present bottom width of the Canal from its head to the Bank Canal Head Sluice at 4-4 is from 80 to 85 ft, and from thence to Kankipar

Lock

Lock 75 ft, as recently widened, and if the bottom width be increased to 85 ft throughout, it will increase the theoritical discharge by about 250 c. f. s.

9. The canal with its present bottom width of 75 ft, a depth of 10 ft at head, and surface fall of 0.46 ft per mile is calculated to discharge 1619 c.f.s. and with 85 ft bottom width, the discharge will be 1,871 c.f.s.

10. Of this the Bunder Canal ultimate irrigation, amounting to [illegible] 66,830 acres (including 10,000 acres of extension under the proposed Manginapudy Canal) will require 743 c. f.s, leaving 1128 c.f. s, and as at present during transplantation I am at times supplying as much as 1,000 c.f.s through Pulleru, it is obvious that, even with the increased bottom width, all this available water can be utilized. It is also cheaper to widen Bunder Canal than Rymes Canal, although there is no doubt that the latter will also have to be carried out before long.

11. The favour of early orders is requested to enable arrangements to be made for carrying out the work next closure.

No. 57 C.
11-11-95

Forwarded to the Chief Engineer, for Irrigation for favour of early orders and for sanction of the proposals made by the Executive Engineer, Kistna Eastern Division, vide para 4, chapter IX Volume I of Govt. of India code.

A. Russell
Offg Supdg Engineer,
1st Circle.

5.

CHIEF ENGINEER
FOR IRRIGATION
12 NOV. 95
No. 225 Ks

From

The Deputy Engineer,
4th Circle.

To

The Chief Engineer,
For Irrigation.

No. 57.C. d/ 11th Nov/95.

—

Bunder Canal widening
Kistna Eastern Dn. Ex. Engrs.
letter explaining the cause
of saving on the estimate
for — Forwards a copy of —
with remarks.

3555

What reaches

The first reach from the
head to Kankepad lock

BR.
19.3.96

II
No 190 K.S. d/18.11.95

4P

Letter 32-2nd circle

With reference to endorsement No. 57C 11/11/95 the undersigned has the honour ~~to pass~~ to remark that it is probable that the quantity of silt in the Bunder canal has not increased because the bed has assumed a permanent regime. If the canal were cleared to the original bed level it is probable that it would ~~up~~ ~~[illegible]~~ silt up again directly water is admitted. The Chief Engineer will however approve ~~has however, no objection~~ to the canal being deepened & widened ~~as~~ as proposed by the E.E. provided that an ~~approximate~~ estimate of the cost is submitted distinguishing between silt clearance & improvements and that arrangements are made to ~~[illegible]~~ take sections of the canal & to place on record

&

the results obtained by clearing silt to the original bed level.

(2) The Chief Engineer has no power to sanction improvements costing more than Rs 100 being charged to working expenses & therefore the proposed widening must be a charge against capital

W3
15/11

Rueds
18/11

Ow8·6
3855/86

Letter from the Exe: Engineer, Kistna Eastern Dn, to the Supg Engineer, II Circle, dy 18th Feby 1896, No 4858.

5-P

Ref: No 1824 K.S. dy 25.11.95.

I have the honour to forward attendtn estimates for widening and clearing silt in 1st Reach of Bundar Canal

A_1	Widening	Rs 26750
A_2	Clearing silt	64380
B_1	Widening	23,700
B_2	Clearing silt	44,950
B_3	do	5,700

The sanctioned estimate amounting to Rs 34,200 for widening provided for a bottom width of 75 feet and a uniform bed fall of 0.33 feet per mile through out the reach.

This made the bed level above Kankipad lock +37.03, the level of Lock upper sill being +38.43 and of New Pulleru Head Sluice +38.43.

Estimates A_1 & A_2 provide for widening and clearing silt to a bottom width of 85 feet throughout and the same bed fall as in the sanctioned estimate i.e. 0.33 ft per mile. On finding that estimates A_1 and A_2 worked out to such large amounts I had B_1 and B_2 prepared which allow for a bottom width of 85 ft and a uniform bed fall from the head of the Canal to the upper sill of of the lock i.e. 0.21 ft. per mile.

Taking into consideration the level of the sill of New Pulleru Head Sluice it is doubtful if any advantage would be gained by lowering the Canal bed below the Sluice sill and I think therefore, that estimates A_1 and A_2 should be rejected and as estimate B_2 is too large to be provided for from the ordinary maintenance grant and it is moreover questionable if it is worth while to carry out the clearance at such a heavy cost. I now recommend that only estimates B_1 & B_3 are sent on for sanction.

As the Chief Engineer in his Memo No. II/190 K.S. d/ 18.11.1895 has already expressed his willingness to sanction the widening, I am making arrangements with contractors to put this work in hand in anticipation of sanction of the estimate and request the favour of your approval for my action.

No. $\frac{2592 \text{ K.S.}}{8 \cdot 3 \cdot 96}$ —

Enclos 4
× 2 Sheets of Section (Tracings)
2 Estimates

Forwarded to the Chief Engineer for Irrigation with reference to his No. II/190 K.S. d/ 18.11.1895.

× Sent separately

2. Two estimates amounting to Rs 23,700 and Rs 5700, distinguishing between sill clearance & widening the Masulipatam Canal have been prepared and are sent herewith for sanction of Government being obtained from the savings of Rs 37,184 against the estimates sanctioned in G.O. nos: 562 I & 356 I d/ 7th Octr 90 and 22nd April 1893 respectively.

3. The Exe: Engineer has been authorised to proceed with the work in anticipation of sanction to the estimates.

Major R.E.
Supg Engr. II Circle

CHIEF ENGINEER
FOR IRRIGATION.
10 MAR. 96
No. 75K

From

The Supg Engr
II Circle.

To

The Chief Engr
for Irrign:
Madras.

No 2592 KS
8.3.96

Encl 4

Widening the Bundar Canal – 1st Reach.
Forwards for Sanction
Est: & plans for —.

PWE.1
3555/56