Public Works (1896) Department.

G.O., No. 507/508 dl

Dated 12-6-96

[Despatch Abstract.]

Mummanda channel. The estimate of Rs 5,460 for excavating — from 4 miles 7 furlongs and 562 ft. of Cocanada canal, Godavari Eastern delta, sanctioned and a copy of the Proceedings ordered to be forwarded to the Govt of India.

=

Forwarded.

=

[P.W. 28
1,000—23-10-96.]

BACK PAPERS.

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

FURTHER PAPERS.

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

IRRIGATION.
ACCOUNT.

Govt. of {1896} Madras.

PUBLIC WORKS.

Dated June, 12th.

Read.

Encl.

G.O. No. 507 I., 12th June 1896.

JUNE.

Murumanda Channel

The estimate of Rs. 5,460 for excavating — from 4 miles 7 furlongs and 562 feet of Cocanada canal, Gódávari Eastern delta, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 8th May 1894, No. 344 G.D.

I have the honour to submit, herewith, plans and estimates, noted in the margin, amounting to Rs. 7,700, for excavating proposed Murumanda channel from 4 miles 5 furlongs of Bank canal, Eastern delta, and constructing masonry works thereon, and request that you will be good enough to obtain the sanction of Government to the same under "capital" agreeably to volume II, chapter XV, paragraph 156 A (*b*), as introduced by Standing Order No. 261, dated 3rd October 1892.

	Rs.
Excavating Murumanda channel ...	5,570
Constructing head sluice	630
Do. drop at 3 miles 4 furlongs on Murumanda channel ...	270
Constructing under tunnel across Kutchinalu drain to carry Murumanda channel	1,230
Total ...	7,700

2. The necessity for the work has been fully explained by the Executive Engineer in the report which accompanies the estimate.

3. The scrutiny by this office of the estimate sent up by the Executive Engineer has increased its amount from Rs. 7,300 to Rs. 7,700.

4. As regards funds I request that the sum of Rs. 1,024 available for works under capital account—*vide* your memorandum No. 1/42 G.D., dated the 17th April 1894—may be allotted for the work for the present.

ENCLOSURE.

REPORT to accompany estimate for excavating proposed Murumanda channel from 4 miles 7 furlongs and 562 feet of Cocanada canal.

	Rs.
Estimate	4,680

It was originally proposed to have the head of this channel at 4 miles and 5 furlongs, Bank canal, and estimates, amounting to Rs. 7,700, were prepared. These estimates were returned by the Chief Engineer for revision, and it is now proposed to supply the channel from the Cocanada canal in place of from the Bank canal for the following reasons :—

(1) Water will be brought on the land immediately below the head sluice in place of being carried below ground level for $1\frac{1}{2}$ miles.

(2) The cross drainage intercepted by the channel is much less than that intercepted by the line originally proposed.

(3) The line now proposed will do away with the necessity for excavating the proposed Chinnia Bottu channel, for which an estimate was sanctioned.

(4) The acreage being the same (viz., 2,000), the estimated cost of the new line is Rs. 3,020 less than the estimated cost of the original line.

The estimate provides for the following works:—

	Rs.
Head sluice to cost	430
Syphon culvert to cost	520
Pipe drainage sluice	300
Do. sluices for distributaries	300
Terminal escape	130
Excavating channel, 3 miles and 7 furlongs	1,600
Compensation for land	1,300
Demarcating land	100
Total	4,680

The channel will have a bottom width of 6 feet for the first 1½ miles of its course. It will then be reduced to 4½ feet up to 3 miles from head sluice and thence to end it will be 3 feet wide. The bed fall throughout will be ·5 foot per mile and the depth of water 3·5. It is calculated that the channel will discharge 30·0 * cubic feet per second which will suffice for 2,000 acres.

* 30 approximate.

The course of the channel will chiefly lie through puntahs, but it is necessary to acquire some land, and this has been indicated on the survey tracing and provision for compensation has been made in the estimate.

The head sluice will have an area of vent $2\frac{3}{4}' \times 4'$ and with a head of 0·4 foot will be capable of discharging 34·65 cubic feet per second.

(Signed) C. J. USSHER,
Ex. Engr., Eastern Divn., Gódávari.

Classified—Abstract Estimate.

Sub-head.	Names of works.	Amount of estimate for individual works.	Total of sub-heads.	Total for each canal or distributary.	Total of each main head.
1	2	3	4	5	6
	Capital Expenditure not charged to Revenue.	Rs.	Rs.	Rs.	Rs.
	49. *Irrigation.*				
	Gódávari Delta System.				
	Eastern Section.				
	Open Capital Account.				
	Cocanada Canal.				
	3. Distributaries.				
	Murumanda Channel.				
	Remunerative Work.				
	I. Works.				
2. Land ..	1. Compensation for land	1,300			
3. Works ..	2. Head sluice	430	1,300		
	3. Syphon culvert	520			
	4. Pipe drainage sluice	300			
	5. Terminal escape	130			
4. Earth-work ..	6. Excavating channel	1,600	1,380		
5. Miscellaneous.	7. Pipe sluices for distributaries	300	1,600		
	8. Demarcating land	100			
			400		
	II. Establishment	..	..	4,680	
	III. Tools and Plant	..	..	777	
		..	..	3	
	Total ..	..	..	5,460	

No. I/56 G.D.

The undersigned has the honour to return herewith the plans and estimates which accompanied letter No. 344 G.D., dated 8th May 1894, with reference to the following remarks:—

(1) The proposed channel has been designed to discharge 50 cubic feet per second or, taking the area to be irrigated as 2,000 acres, at the rate of 40 acres per cubic foot per second. This duty of water seems low, and the Superintending Engineer is requested to consider whether the duty of water adopted in the Kistna of 90 acres per cubic foot per second cannot be also adopted in the Gódávari. If this is done the duty for this distributary may be increased to 69 acres per cubic foot per second and the discharge of the channel reduced to 30 cubic feet per second.

(2) As designed the channel does not appear to be capable of discharging the required amount and sufficient information is not given to enable the figures to be checked in this office. The Superintending Engineer is therefore requested to forward calculations for the channel discharge for each reach.

(3) The proposed drop at 3 miles 40 chains is apparently liable to a head of 4·7 feet when all the shutters are in position and when the channel below is, in consequence, empty. The bottom width of the wings should be increased to 3 feet 3 inches, as otherwise the work may give way.

(4) The proposed under tunnel seems unnecessarily expensive. The cost may be reduced and the work rendered more effective by taking the channel under the chain and providing ordinary cisterns outside the drain banks.

(5) Provision should be made in the estimate for demarcating the channel and for pipe sluices for distributaries. The land required should, though given free, be taken up under the Act.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
23rd May 1894. Chief Engineer for Irrigation.

To the Superintending Engineer, I Circle.

From W. C. DeMORGAN, Esq., Executive Engineer in charge I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 23rd April 1896, No. 186 G.D.

I have the honour to re-submit the estimate for Murumanda channel, which was returned with your No. I/56 G.D., dated 23rd May 1894. The Executive Engineer designed his channel with side slopes 1 : 1, but calculated the discharge with 1½ : 1 slopes. The calculated discharge was therefore much greater than what the channel could actually carry. By adopting a duty of 69 acres per cubic foot per second, the discharge required for 2,000 acres will be nearly 30 cubic feet per second, and this the channel as designed will supply.

The discharge in the three reaches will then be 29·59, 23·24, and 17·51 cubic feet per second respectively.

I have asked the Executive Engineer whether he can give the number of acres to be irrigated in each reach. He informs me that he cannot, as water is to be pretty evenly distributed all along the channel. The changes in bottom width were adopted to reduce the discharge symmetrically. I have therefore the honour to recommend that sanction be accorded to the estimates.

The cost of the channel will be approximately —

		Rs.
Per acre	Earth-work	·8
	Masonry	·84
Per mile	Earth-work	400
	Masonry	420

No. 115 I.

Submitted to Government.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

1st June 1896.

ORDER—No. 507 I, dated 12th June 1896.

The estimate, amounting to Rs. 5,460, for excavating Murumanda channel from 4 miles 7 furlongs and 562 feet of Cocanada canal, Gódávari Eastern delta, is sanctioned.

2. This sanction is registered as No. 56 I. of 1896–97 and will expire on the 31st March 1898.

3. Ordered that a copy of these proceedings be forwarded to the Government of India for information.

[Here enter No. 508 I., dated 12th June 1896.]

(True Extract.)

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

To the Chief Engineer for Irrigation.
„ Superintending Engineer, I Circle, with thirteen enclosures.
„ Examiner, Public Works Accounts.

Exd. C. M. Thumbuswamy.
Spare Copies

IRRIGATION.
ACCOUNT.

Govt. of {1896} Madras.

PUBLIC WORKS.

Dated June, 12th.

Read. *Encl.*

G.O. Nos. 507, 508 I., 12th June 1896.

JUNE.

Murumanda Channel

Forwarding a copy of the Proceedings sanctioning an estimate of Rs. 5,460 for excavating — from 4 miles 7 furlongs and 562 feet of Cocanada canal, Gódávari Eastern delta.

No. 507 I., 12TH JUNE 1896.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 8th May 1894, No. 344 G.D.

I have the honour to submit, herewith, plans and estimates, noted in the margin, amounting to Rs. 7,700, for excavating proposed Murumanda channel from 4 miles 5 furlongs of Bank canal, Eastern delta, and constructing masonry works thereon, and request that you will be good enough to obtain the sanction of Government to the same under "capital" agreeably to volume II, chapter XV, paragraph 156 A (*b*), as introduced by Standing Order No. 261, dated 3rd October 1892.

		Rs.
Excavating Murumanda channel	...	5,570
Constructing head sluice	... ...	630
Do. drop at 3 miles 4 furlongs on Murumanda channel	...	270
Constructing under tunnel across Kutchinalu drain to carry Murumanda channel	... ...	1,230
Total	...	7,700

2. The necessity for the work has been fully explained by the Executive Engineer in the report which accompanies the estimate.

3. The scrutiny by this office of the estimate sent up by the Executive Engineer has increased its amount from Rs. 7,300 to Rs. 7,700.

4. As regards funds I request that the sum of Rs. 1,024 available for works under capital account—*vide* your memorandum No. 1/42 G.D., dated the 17th April 1894—may be allotted for the work for the present.

ENCLOSURE.

REPORT to accompany estimate for excavating proposed Murumanda channel from 4 miles 7 furlongs and 552 feet of Cocanada canal.

	Rs.
Estimate	4,680

It was originally proposed to have the head of this channel at 4 miles and 5 furlongs, Bank canal, and estimates, amounting to Rs. 7,700, were prepared. These estimates were returned by the Chief Engineer for revision, and it is now proposed to supply the channel from the Cocanada canal in place of from the Bank canal for the following reasons :—

(1) Water will be brought on the land immediately below the head sluice in place of being carried below ground level for $1\frac{1}{2}$ miles.

(2) The cross drainage intercepted by the channel is much less than that intercepted by the line originally proposed.

(3) The line now proposed will do away with the necessity for excavating the proposed Chinnia Bottu channel, for which an estimate was sanctioned.

(4) The acreage being the same (viz., 2,000), the estimated cost of the new line is Rs. 3,020 less than the estimated cost of the original line.

The estimate provides for the following works:—

	Rs.
Head sluice to cost	430
Syphon culvert to cost	520
Pipe drainage sluice	300
Do. sluices for distributaries	300
Terminal escape	130
Excavating channel, 3 miles and 7 furlongs	1,600
Compensation for land	1,300
Demarcating land	100
Total ...	4,680

The channel will have a bottom width of 6 feet for the first $1\frac{1}{2}$ miles of its course. It will then be reduced to $4\frac{1}{2}$ feet up to 3 miles from head sluice and thence to end it will be 3 feet wide. The bed fall throughout will be ·5 foot per mile and the depth of water 3·5. It is calculated that the channel will discharge 30·0 * cubic feet per second which will suffice for 2,000 acres.

* 30 approximate.

The course of the channel will chiefly lie through puntahs, but it is necessary to acquire some land, and this has been indicated on the survey tracing and provision for compensation has been made in the estimate.

The head sluice will have an area of vent $2\frac{3}{4}' \times 4'$ and with a head of 0·4 foot will be capable of discharging 34·65 cubic feet per second.

(Signed) C. J. USSHER,
Ex. Engr., Eastern Divn., Gódávari.

Classified—Abstract Estimate.

Sub-head.	Names of works.	Amount of estimate for individual works.	Total of sub-heads.	Total for each canal or distributary.	Total of each main head.
1	2	3	4	5	6
	Capital Expenditure not charged to Revenue.	Rs.	Rs.	Rs.	Rs.
	49. *Irrigation.*				
	Gódávari Delta System.				
	Eastern Section.				
	Open Capital Account.				
	Cocanada Canal.				
	3. Distributaries.				
	Murumanda Channel.				
	Remunerative Work.				
	I. Works.				
2. Land ..	1. Compensation for land	1,300			
3. Works ..	2. Head sluice	430	1,300		
	3. Syphon culvert	520			
	4. Pipe drainage sluice	300			
	5. Terminal escape	130			
4. Earth-work ..	6. Excavating channel	1,600	1,380		
5. Miscellaneous.	7. Pipe sluices for distributaries	300	1,600		
	8. Demarcating land	100			
			400		
	II. Establishment	..	..	4,680	
	III. Tools and Plant	..	..	777	
		..	..	3	
	Total ..	..	..	5,460	

No. I/56 G.D.

The undersigned has the honour to return herewith the plans and estimates which accompanied letter No. 344 G.D., dated 8th May 1894, with reference to the following remarks:—

(1) The proposed channel has been designed to discharge 50 cubic feet per second or, taking the area to be irrigated as 2,000 acres, at the rate of 40 acres per cubic foot per second. This duty of water seems low, and the Superintending Engineer is requested to consider whether the duty of water adopted in the Kistna of 90 acres per cubic foot per second cannot be also adopted in the Gódávari. If this is done the duty for this distributary may be increased to 69 acres per cubic foot per second and the discharge of the channel reduced to 30 cubic feet per second.

(2) As designed the channel does not appear to be capable of discharging the required amount and sufficient information is not given to enable the figures to be checked in this office. The Superintending Engineer is therefore requested to forward calculations for the channel discharge for each reach.

(3) The proposed drop at 3 miles 40 chains is apparently liable to a head of 4·7 feet when all the shutters are in position and when the channel below is, in consequence, empty. The bottom width of the wings should be increased to 3 feet 3 inches, as otherwise the work may give way.

(4) The proposed under tunnel seems unnecessarily expensive. The cost may be reduced and the work rendered more effective by taking the channel under the chain and providing ordinary cisterns outside the drain banks.

(5) Provision should be made in the estimate for demarcating the channel and for pipe sluices for distributaries. The land required should, though given free, be taken up under the Act.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
23rd May 1894. Chief Engineer for Irrigation.

To the Superintending Engineer, I Circle.

From W. C. DeMORGAN, Esq., Executive Engineer in charge I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 23rd April 1896, No. 186 G.D.

I have the honour to re-submit the estimate for Murumanda channel, which was returned with your No. I/56 G.D., dated 23rd May 1894. The Executive Engineer designed his channel with side slopes 1 : 1, but calculated the discharge with $1\frac{1}{2}$: 1 slopes. The calculated discharge was therefore much greater than what the channel could actually carry. By adopting a duty of 69 acres per cubic foot per second, the discharge required for 2,000 acres will be nearly 30 cubic feet per second, and this the channel as designed will supply.

The discharge in the three reaches will then be 29·59, 23·24, and 17·51 cubic feet per second respectively.

I have asked the Executive Engineer whether he can give the number of acres to be irrigated in each reach. He informs me that he cannot, as water is to be pretty evenly distributed all along the channel. The changes in bottom width were adopted to reduce the discharge symmetrically. I have therefore the honour to recommend that sanction be accorded to the estimates.

The cost of the channel will be approximately —

		Rs.
Per acre	Earth-work	·8
	Masonry	·84
Per mile	Earth-work	400
	Masonry	420

No. 115 I.

Submitted to Government.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

1st June 1896.

ORDER—No. 507 I, dated 12th June 1896.

The estimate, amounting to Rs. 5,460, for excavating Murumanda channel from 4 miles 7 furlongs and 562 feet of Cocanada canal, Gódávari Eastern delta, is sanctioned.

2. This sanction is registered as No. 56 I. of 1896–97 and will expire on the 31st March 1898.

3. Ordered that a copy of these proceedings be forwarded to the Government of India for information.

[Here enter No. 508 I., dated 12th June 1896.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Secretary to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, I Circle, with thirteen enclosures.
„ Examiner, Public Works Accounts.

ENDORSEMENT—No. 508 I., dated 12th June 1896.

Forwarded.

(By order.)

Colonel, R.E.,
Secretary to Govt., P.W.D.,
Irrigation Branch.

To the Secretary to the Government of India,
Public Works Department.

Exd. C. M. Thumbuswamy.
Spare Copies

A

No. 507 I, d 12-June 1896.

PUBLIC WORKS DEPARTMENT,
IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 6th

READ the following

Print with Pl. & Chart in Advance Estimate

From Supdg. 1st Circle, No. 3449 D. dt 8.5.94
to do. " 5669 D dt 23.5.94
From do. " 1869 D dt 23.4.96
No. 115 I dt 1st June 1896.
Submitted to
Govt.
order thereon
The estimate,
amtg. to Rs 5460,
for excavating Muru-
manda channel
from 4 miles, 7 furlongs
& 562 feet of Cocanada
Canal, Godavari
Eastern Delta, is
sanctioned.
2. This sanction
is registered as
No. 56 I of 1896-97
& will expire on the
31st March 1898.

Appd.
A.94
4.6.96

3. Ordered that a copy of these Procs. be forwarded to the Govt of India for information.

No. 508 I dy 12-June 1896.

Endorsement.

Forwarded.

Rueds
4/6

1/6.

E. F. CURRENT No. 5278

Estimate for excavating Muruvanda channel, Cocanada Canal, Godavari Eastern Delta

Encls 18 (3 blue)
Accts: 11.6.96

Issue
Rueds
8 3/6.

7.E.9
12/6

Ccll
1/6

Regd
12/6

DESPATCHED
96

To the Chief Engr for I.
Supdg Engr 1st Circle with 13 encls.
Ex-T.W.R.

Ccll
29/5

E. I. Form No 1—1,000—27-11-95.

Of Bill

Report to accompany Estimate for excavating proposed Muruvanda channel from 4 m. 7 furs. 562 feet of Cocanada Canal. Estimate Rs 4,680.

It was originally proposed to take the head of this channel at 2 m. 5 furs. Bank canal and estimates amounting to Rs 7700 were prepared. These Estimates were returned by the Chief Engr. for revision, and it is now proposed to supply the channel from the Cocanada Canal in place of from the Bank Canal for the following reasons.

(1) Water will be brought on the land immediately below the head sluice in place of being carried below ground level for 1½ miles.

(2) The cross drainage intercepted by the ch. is much less than that intercepted by the line originally proposed.

(3) The line now proposed will do away with the necessity for excavating the proposed — channels both ch. for which an Estimate was sanctioned.

(4) The acreage being the same (viz 2000) the estimated cost of the new line is Rs 3020 less than the estimated cost of the original line.

The Estimate provides for the following works.—

Head sluice to cost	Rs ~~4630~~ 4630
~~Syphon Aqueduct~~ Syphon Aqueduct — do	Rs ~~570~~ 520
Pipe drainage sluice	Rs ~~370~~ 300
—do— sluices for 2 distributaries	Rs 300
Terminal escape	Rs 130
Excavating ch. 3 m. 7 furs	Rs 1,600
Compensation for land Demarcating land	Rs 1300 200
Total	Rs 4,680

The channel will have a bottom width of 6 feet for the first ½ mile of its course. It will then be reduced to 4½ feet up to 3 miles from Head Sluice and thence to end it will be 3 feet wide. The bed fall throughout will be .5 foot per mile and the depth of water 3.5. It is calculated that the channel will discharge 30.0 c. ft. per second which will suffice for 2000 acres. 20 about:

The course of the channel will chiefly lie through pumtahs but it is necessary to acquire some land and this has been indicated on the survey tracing and provision for compensation has been made in the Estimate.

The Head Sluice will have an area of nearly 23/4' x 4' and with a head of 0.4 ft. will be capable of discharging 34.65 Cubic feet per second.

Executive Engineer
Eastern Division.

T.A
2nd

Exc. Engineer's Circle
Dated 23rd April 1896.

SECRETARIAT RECORD
15 1961
10 FEB. 93
FIRST CIRCLE

EASTERN DIVISION
Genl. No.
31 MAR. 93
GODAVARI

SECRETARIAT RECORD
1613
9 APR. 93
FIRST CIRCLE

CHIEF ENGINEER
FOR IRRIGATION.
24 MAR 93

W.R.7
5278 96

Murramanda channel - 4 M, 7 Fur and 562 ft of Hocanada Canal

Report to accompany Pre Estt for excavating proposed —

No. 344 G.D.

FROM

G. D. Wyborn Esq
SUPERINTENDING ENGINEER
FIRST CIRCLE.

1 Pce

Enclosures.

1 Sketch
3 Plans
2 Sheets of Sections
3 os of Survey
1 outline Sheet
1 Report
4 Estimates
1 Specification
1 General abstract
17

TO

THE CHIEF ENGINEER
FOR IRRIGATION.

DOWLAISHWERAM, 8th May 1894.

SIR,

I have the honor to submit herewith plans & estimates noted in the margin a-mounting to Rs 7,700 for excavating proposed Muraman-da channel from 4 M. 7 Fur to 5 of Bank Canal, Eastern Delta, & constructing Masonry works thereon & request that you will be good enough to obtain the sanction of Government to the same under "Capital" agreeably to volume II Chapter XV paragraph 156 A (b) as introduced by standing Order No. 261 dated 3rd October 1892.

	Rs
Excavating Muramanda Channel	5,570
Constructing Head sluice	630
——Do—— Drop at 3-4 M. Fur on Muramanda Channel	270
——Do—— Under Tunnel across Kutchinadu drain to carry Muramanda Channel	1,230
	7,700

2. The necessity for the work has been fully explained by the Executive Engineer

in the report which accompanies the estimate.

3. The scrutiny by this Office of the estimate sent up by the Executive Engineer has increased its amount from Rs 7,300 to Rs 7,700–

4. As regards funds I request that the sum of Rs 1024 available for works under Capital account vide your Memorandum No 1/4294 dated the 17th April 1894 may be allotted for the work for the present.

I have the honor to be,

Sir,

Your most Obedient Sl.

J. D. W. Lyons.

Supt Engr 1st Circle.

ESTIMATE FORM—Abstract—Classified.

Sub-head.	Names of Works.	Amount of Estimate for individual Works.	Total of Sub-heads.	Total for each Canal or Distributary.	Total of each Main head.	Remarks.
1	2	3	4	5	6	7
	Capital Expenditure not charged to Revenue.					
	4 Irrigation					
	Godavari Delta System					
	Eastern Section					
	Ofun Capital Account					
	Cocanada Canal					
	3 Distributaries					
	Murumanda Channel					
	Remunerative Work					
	I Works.					
2. Land	1. Compensation for land	1300 ✓				
			1300 ✓			
3. Works	2. Head Sluice	430 X				
"	3. Syphon Culvert	520 X				
"	4. Pipe drainage Sluices	300 X				
"	5. Terminal Escape	130 X				
			1380 ✓			
4 Earthwork	6. Excavating Channel	1600 X				
			1600 X			
5. Miscellaneous	7. Pipe sluices for distributaries	300 X				
"	8. Demarcating land	100 X				
			400 ✓			
				4680		
	II Establishment –			777 3		
	III Tools & Plant –					
	Total			5460		

Station – Camp

Dated 26 April 96

28-4-96

Executive Engineer in charge
1st Circle

CHIEF ENGINEER
FOR IRRIGATION.
4 MAY 96
No. 2772/96

(E. No. 126.)

First Circle.

Division—Godavari Eastern

District Godavari

ESTIMATE FORM—Abstract—Classified.

To accompany the Detailed Estimate No.
of 1896-97 for* Excavating
Murumanda Channel
Cocanada Canal.

Remunerative work

---

* Here enter the Name and Description of work in full.

E. P. I. 1 500—13-2-92

FROM G. D. Kyburz Esqr.
SUPERINTENDING ENGINEER

FIRST CIRCLE.

TO

THE CHIEF ENGINEER

FOR IRRIGATION

DATED 8th
DESPATCHED 12th } May 1894.
RECEIVED

NO. 344 G.D.

ENCLOSURES 17

SUBJECT.

Excavating proposed Muramanda channel from 4 Dn. 5 furlong Bank Canal Eastern delta - Submits for sanction plans and estimates amounting to Rs 7.700 for -

Rec'd 5/8/94

R25 G.D./94

No 56 I dt 23-5-94

To the Sr 1st circle

40

With the undersigned has the honour to return herewith the plans and estimates which accompanied letter No. 344 GD dated 8/5/94 with reference to the following remarks.

(1) The proposed channel has been designed to discharge 50 c.f.s. or, taking the area to be irrigated as 2000 acres, at the rate of 40 acres per c.f.s. This duty of water seems low & the Sr is requested to consider whether the duty of water adopted in the Cuttack & 90 acres per c.f.s. cannot be also adopted in the Godavari. If this is done the duty for the distributaries may be increased to 60 acres per c.f.s. and the discharge of the channel reduced to 30 c.f.s.

(2) As designed the channel does not appear to be capable of discharging the required amount & the separation

~~In spite~~ sufficient information is not given to enable the figures to be checked with any ease. The EE is, therefore, requested to forward calculations ~~is~~ for the channel discharge for each reach.

(3) The proposed drop at 3m 40ch is apparently liable to a head of 4'6" when all the shutters are in position and when the channel below is, in consequence, empty. The bottom width of the wings should be increased to 3'-3" as otherwise ~~the~~ the work may give way.

(4) The proposed underground seems unnecessarily expensive. The cost may be reduced by ~~the~~ the work rendered more effective by taking the channel under the drain and providing ordinary culverts outside the drain banks.

(5) Provision should be made in the estimate for demarcating the channel and for ~~distributaries~~ pipe sluices for distributaries. The land required should, though given free, be taken up under the Act

Ques 3278/96

W 25/5.

Ques 23/5/96

No. 186 G.D.

FROM W.C. DeMorgan Esq. 5 P

Executive
~~SUPERINTENDING~~ ENGINEER

In charge FIRST CIRCLE.

Enclosures. 25

TO

THE CHIEF ENGINEER

FOR IRRIGATION.

DOWLAISHWERAM, 23rd April 1896.

SIR,

I have the honour to resubmit the Estimate for Muramunda Channel, which was returned with your N° I/56 G.D dated 23.5.1894.

The Executive Engineer designed his Channel with side slopes 1:1, but calculated the discharge with 1½:1 slopes. The calculated discharge was therefore much greater than what the Channel could actually carry. By adopting a duty of 69 acres per cubic foot per second, the discharge required for 2000 acres will be nearly 30 cubic feet per second, and this the Channel as designed will supply.

The discharge in the three reaches will then be 29.59, 23.24, and 17.51 cubic feet per second, respectively.

I have asked the Executive Engineer whether he can give the number of acres to be irrigated in each reach. He informs me that he cannot, as water

water is to be pretty evenly distributed all along the Channel. The changes in bottom width were adopted to reduce the discharge symmetrically. I have therefore the honour to recommend that Sanction be accorded to the Estimates.

The cost of the Channel will be approximately :—

		Rs.
Per acre	Earth work	.8
	Masonry	.84
Per Mile	Earth work	400
	Masonry	420

I have the honour to be,
Sir,
Your most obdt. Servt.

W D Morgan 26/3.
Executive Engineer In charge,
1st. Circle.

EB 25/4

FROM W. C. De Morgan Esq
Executive
~~SUPERINTENDING~~ ENGINEER
In charge FIRST CIRCLE.

TO
THE CHIEF ENGINEER
FOR IRRIGATION

CHIEF ENGINEER
FOR IRRIGATION.
4 MAY 96
No. 7720

DATED 23rd
DESPATCHED 30th } April 1896.
RECEIVED

No. 186 G.D.

ENCLOSURES 25

SUBJECT.

Q 651
8778/96

Muramanda Channel from 4m 5f. Bank Canal, Eastern Delta — Resubmits the plans and Estimates for excavating the proposed — for sanction.