Public Works (1892) Department.

G.O., No. 509

DATED 19 January 1895

[Despatch Abstract.]

Tungabhadra Side Channel.—Revised Estimate of Rs. 1,07,300 for excavating the — Commander Canal Kistna Western Delta, sanctioned.

P.W. 28.
1,600—30-11-90.

Indexed

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.

Government {1898} of Madras.

PUBLIC WORKS.

Recd. } 1898. *Enclosures*

Regd. *Spare copies*

G.O., No. 50 I., 19th January 1898.

JANUARY.

Tungabhadra Side Channel

Revised estimate of Rs. 1,07,300 for excavating the —, Commamur canal, Kistna Western delta, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers:—

From W. C. LEWIS, Esq., Executive Engineer, Kistna Western division, to the Superintending Engineer, II Circle, dated 1st October 1897, No. 231 S.

I have the honour to forward herewith revised estimates, amounting to Rupees 1,07,300, for the Tungabhadra side channel.

2. The block levels for new distributaries not yet having been taken, the details for them cannot be worked out and a rough sum of Rs. 3 per acre has been given.

3. For two reasons it is urgently necessary that the new channel should be put in hand at once:

(*a*) That the railway bridges over the Aremanda and Alavala channels are only temporary wooden ones, the permanent bridge having been built on the new alignment.

(*b*) The masonry works at the existing head of the Aremanda and Alavala channels are in an exceedingly shaky condition and past repair without rebuilding and in danger of being carried away at any time. I have a large supply of rough stone available for emergencies, but in case of a failure before the new channel is ready, there may be a very extensive loss of crops. I would therefore request that sanction may be obtained at an early date, that the new supply channel may be made ready, at any rate before the irrigation season of 1899. I hardly dare to hope the existing dams will last as long as that.

4. There has been a great deal of correspondence about the proper alignment of this channel in Mr. Hannan's and Mr. Martin's time, but I can find no final orders in writing from any Superintending Engineer to adopt the present alignment. Mr. Malet says he got your verbal approval before marking out the new line and putting the estimate in hand on that alignment. The railway bridge has now been built on the proposed alignment, so it is necessary to adhere to that.

ENCLOSURES.

REPORT to accompany estimate for Tungabhadra side channel.

	Rs.
Estimate	1,07,300

The Tungabhadra is an old spill channel of the Kistna which was made use of on the construction of the anicut for the easy distribution of water without delay.

2. The chief branches are the Aremanda and Alavala channels which take off from masonry heads at a dam across the Tungabhadra, which is now in a very shaky condition.

3. The Tungabhadra has now been worked into the Commamur canal as far as Jagerlamudi, 8 miles 1½ furlongs of the canal, at which place two under-tunnels pass the Guntur nallah under the canal, into the Tungabhadra, where surplus vents allow irrigation water to pass into the Tungabhadra.

4. The project completion estimates proposed to make a new channel close along the bank of the Tungabhadra to take up the irrigation of the Alavala and Aremanda channels and use the Tungabhadra for drainage purposes only from the Commamur canal to the sea, as it is, at present, below Aremanda dam 12 miles down.

5. The course of the Tungabhadra is so extremely sinuous, and it would interfere so much with the natural drainage of the country, that it was thought better to adopt a new line, leading along high ground, which would enable a considerable extension of irrigation to be obtained, which has been provided for in the proposed anticipated duty of 90 acres per cubic foot per second.

6. The new line cuts the Aremanda and Alavala channels some little way below their existing heads, and a dividing sluice will be provided at the point where they separate. A permanent bridge of three spans of 12 feet has been built for the Bezwada-Madras Railway line where it crosses the proposed line at 7 miles.

Temporary wooden bridges have been provided where the line crosses the two existing channels which will be filled in when the channels are diverted.

7. The chief masonry works provided are—

	Rs.
Head sluice in Commamur canal	1,950
Kopalli drain under-tunnel at about 2 furlongs to pass the drain of 3 square miles into the Tungabhadra	3,620
Combined road culvert and under-tunnel at 1 mile 5 furlongs to carry the Guntur-Tenali road and pass the road side drain under the channel	8,000
An aqueduct at 3 miles to carry the channel over a natural dip which carries drainage for 3 square miles	5,600
Two drops, one of which will carry a bridge for a village road.	690
A head sluice for the existing Bodapad channel at 11 miles 2 furlongs.	2,790
Aremanda and Alavala regulator	

Cattle-crossings have been provided at all important donkas or village pathways.

8. The area at present irrigated is 11,800 acres. An increase of 13,400 acres is anticipated, partly under the minor distributaries to be excavated in the high ground, and partly land that can be cultivated by improved supply in the existing channels. The details for the proposed branch channels have not been worked out, as block levels have to be taken first, but a sum of Rs. 3 per acre is allowed for them. They will be approximately as follows.

At 1 furlong from head a branch will take off on each side to take up existing irrigation under spouts from Commamur canal which are a source of danger and waste.

At 3½ furlongs—one on right side to irrigate lands between the Kopalli drain and road side drain—beyond the Tenali road a branch on each side will take up irrigation between the road side drain and the low ground.

Two branches will take off above each drop and one on left at 7 miles below the railway bridge.

9. The provision in the sanctioned project estimates is as follows:—

	Sanctioned. Rs.	Proposed. Rs.
Head sluice	1,360	1,950
Road bridge	9,150	8,000
Aqueduct	5,000	5,600
Aremanda sluice	550 } 1,500 }	2,790
Alavala sluice	8,660	22,340
Tungabhadra side channel earthwork	2,000 } 4,100 }	40,200
Minor channels work	7,000	5,160
Earthwork	530	13,700
Cattle-crossings	...	3,250
Compensation	...	690
Drops	...	3,620
Dodapad sluice	...	
Under-tunnel at 2 furlongs		

The important excesses are in earthwork and distributaries, which are chiefly due to the proposals to extend irrigation; and in land, which is due to the alteration of alignment as the old line passed along Government waste at the edge of the drain.

10. I have not yet got a valuation of the land from the Revenue Department, but I consider the sum of Rs. 100 per acre an ample allowance, as much of the land is dry at present.

11. The total cost of the proposal will figure out as follows:—

	Rs.
Main channel	67,100
Branches at Rs. 3 per acre	40,200
	1,07,300
Capitalized abatement of land revenue	13,050
Tools and plant and establishment, 21½ per cent.	22,883
	1,43,033
The anticipated additional revenue will be 13,400 acres at Rs. 4 per acre	53,600

The ultimate return on the proposed outlay will be 37·0 per cent.

12. The dimensions of all these works are calculated on the duty of 90 acres per cubic foot per second as laid down by Chief Engineer in his No. II/154 K.S., dated 12th September 1893, and it is not likely that this duty will be obtained for many years, seeing that 50 acres is about the average duty for the season at present, or 44 acres per cubic foot per second, maximum discharge. The proposed distributaries should, consequently, be taken up gradually as the duty is improved.

13. It is possible, also, that much of the ground being high, there may be a good deal of dry crops watered, which is much to be wished for and encouraged, as by large extensions of this method of cultivation instead of the present wasteful system of flooding rice, the usefulness of these canals may be indefinitely extended.

14. The estimates are recommended for sanction from the sum of Rs. 39,850 provided for under item Nos. 611, 617 to 622, 650, 651 and 666 of the project statement printed with G.O., No. 857 I., dated 11th October 1893, and the excess of Rs. 67,450 from the balance of the provision under item No. 710 of the same statement.

Estimate Form—Abstract—Classified.

Sub-head.	Names of works.	Amount of estimate for individual work.	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.				
	Kistna Delta System.				
	Western Section.				
	I. Works.				
	Commamur Canal.				
	3. Distributaries.				
	Excavating the Tungabhadra side channel.				
2. Land	Compensation for land	13,700			
			13,700		
3. Works	Head sluice	1,950			
	Under-tunnel about 0 mile 2 furlongs	3,620			
	Road culvert and under-tunnel at 1 mile 5 furlongs.	8,000			
	Aqueduct at 3 miles	5,600			
	Drop at 3 miles 1 furlong	1,310			
	Bridge at 5 miles	1,940			
	Head sluice to Tungabhadra-Bodapad channel at 11 miles 2 furlongs	690			
	Regulators for Aremanda and Alavala channels at 11 miles 7 furlongs	2,790			
			25,900		
			39,600		
4. Earthwork ..	Excavating Tungabhadra side channel	22,340			
			22,340		
5. Miscellaneous ..	Cattle-crossing No. 1 at 2 miles 200 feet ..	350			
	Do. ,, 2 at 3 miles 6 furlongs 100 ft.	380			
	Do. ,, 3 at 4 miles 1 furlong 540 ft.	380			
	Do. ,, 4 at 7 miles 4½ furlongs ..	515			
	Do. ,, 5 at 7 miles 7 furlongs 200 ft.	525			
	Do. ,, 6 at 8 miles 1 furlong 150 ft.	530			
	Do. ,, 7 at 9 miles 5 furlongs ..	600			
	Do. ,, 8 at 10 miles 1 furlong 80 ft. ..	610			
	Do. ,, 9 at 10 miles 6 furlongs 550 ft.	620			
	Demarcation stones	650			
			5,160		
				67,100	
	Distributaries to irrigate 13,400 acres at Rs. 3 per acre	..	..	40,200	
					1,07,300

No. 2341 K.W.

Forwarded to the Chief Engineer for Irrigation for favour of sanction of Government being obtained to the estimate, amounting to Rs. 1,07,100, for excavating Tungabhadra side channel, Kistna Western division.

2. The report accompanying the estimate explains the necessity for the work.

3. The amount of the estimate may be met from the provision pointed out by the Executive Engineer in his paragraph 14 of the report accompanying the estimate.

(Signed) W. C. DeMORGAN,
Supg. Engineer, II Circle.

24th November 1897.

No. 4 I.

Note by the Chief Engineer for Irrigation.

In the original estimate sanctioned for the completion of the Commamur canal, Western delta, Kistna delta system, provision was made for excavating a new channel along the bank of the Tungabhadra—an old spill channel of the Kistna originally used for the distribution of water—to take up the irrigation of the Alavala and Aremanda channels, the principal branches of the Tungabhadra, and use the latter for drainage purposes only. As the course of the Tungabhadra is very sinuous and may interfere with the natural drainage of the country, it is proposed to adopt a new line for the channel leading along high ground, which would increase the present area of irrigation from 11,800 to 25,200 acres. The additional revenue anticipated on the extension of 13,400 acres is Rs. 53,600.

2. The accompanying estimate which provides for excavating the channel and constructing the necessary masonry works, &c., amounts to Rs. 1,07,300, as altered in this office, no provision having been made therein by the Superintending Engineer for foundation for the revetment to the cattle-crossings. The revised estimate involves an excess of Rs. 67,450 over the existing sanction for these works, Rs. 13,700 thereof being for land compensation and the rest for distributaries and earthwork. The revised estimate may be sanctioned as the excess is chiefly due to the proposed extension of irrigation.

(Signed) W. HUGHES,
Chief Engineer for Irrigation.

5th January 1898.

Order—No. 50 I., dated 19th January 1898.

The following revised estimate amounting to Rs. 1,07,300 for excavating the Tungabhadra side channel, Commamur canal, Western section, Kistna delta system, is sanctioned in lieu of the existing sanctioned provision aggregating Rs. 39,850 for items 611, 617 to 622, 650, 651 and 666 of the statement printed in Proceedings of Madras Government, No. 857 I., dated 11th October 1893, the excess Rs. 67,450 being met from the balance of the provision made for item 710 of the same statement.

2. This sanction is registered as No. 155 I. of 1897–98.

(True Extract.)

Under Secretary to Government,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, II Circle, with fifty-six enclosures.
,, Examiner, Public Works Accounts.

Exd. T. K. Narayana Aiyangar.

Public Works (1898) Department.

509

CURRENT No. 422

Order

From Chief Engineer for Irrigation

No. 4 I

Dated 5 January 1898

Received 18 — — —

Enclosures 62 x (11 plans)

Spare copies

SUBJECT.

Jungalkadra Side Channel.
Commamur Canal Western Section
Kistna Delta System. Revised
Estimate of Rs. 107 300 for excavating
the — Note recommending for sanction
the —

BACK PAPERS.

No.	Date.

FURTHER PAPERS.

No.	Date.

His Excellency the Governor

A

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Revised Estimate of Rs 107300 for excavating the Tungabhadra Side Channel.

Printed 33 Report Classified

UNDER date the

READ the following

From the Superintending Engineer, Second Circle } (H E No 2341 KW dt 24th Nov 1897)

Note by the Chief Engineer for Irrigation } (H E No 4. I — dt 5th January 1898)

In the original estimate sanctioned for the completion of the Commamur Canal, Western delta, Kistna Delta System, provision was made for excavating a new channel along the bank of the Tungabhadra, — an old spill channel of the Kistna originally used for the distribution of water, — to take up the irrigation of the Alavala and Aremanda channels the principal branches of the Tungabhadra, and use the latter for drainage purposes only. As the course of the Tungabhadra is very sinuous and may interfere with the natural drainage of the country, it is proposed to adopt a new line

Issue

D. I

15/1/98

Secs

10/1/98

line for the channel leading along high ground, which would increase the present area of irrigation from 11,800 to 25,200 acres. The additional revenue anticipated on the extension of 13,400 acres is Rs 53,600.

2. The accompanying estimate which provides for excavating the channel and constructing the necessary masonry works &c amounts to Rs 1,07,300, as altered in this office, no provision having been made therein by the Superintending Engineer for foundation for the revetment to the cattle crossings. The revised Estimate involves an excess of Rs 67,450 over the existing sanction for these works. Rs 13,700 thereof being for land compensation and the rest for distributaries and earthwork. The revised Estimate may be sanctioned as the excess is chiefly due to the proposed extension of irrigation.

Vide estimate with S.Es endorsement flagged L

A.S.H

Same. A.S.H

Irrigation Act.

Order thereon. No 50 Dy 19.1.98

The following revised Estimate amounting to Rs 1,07,300 for excavating the Tungabhadra side)

A.S.H 5.1.98

flagged O

side channel, Cauvery Canal. Western section, Kistna delta System, is sanctioned in lieu of the existing sanctioned provision aggregating Rs 39,850 for items 611, 617 to 622, 650, 651 and 666 of the statement printed in P. Mg No 857 I dated 11th October 1893, the excess Rs 67,450 being met from the balance of the provision made for item 710 of the same statement.

2. This sanction is registered as No 155 I of 1897-98

W.H. 5.1.98

7.E.I 18.1.98

To

The Chief Engineer for Irrign
" Supdg Engineer, 2nd Circle with 59 Estimates.
" Examiner, P.W. Accounts.

I 8/2/98

Public Works (189/) Department.

CURRENT No. 363 K.S.

rder

From The Superintending Engr.
Second Circle

No. 2341 W

Dated 24th November 1897

Received 26th — do —

Enclosures 37

Spare copies

SUBJECT.

Jungabhadra Side Channel.
Submitting revised estimates
for two — for sanction of
Government

E. I. Form No. 1 (a)—250—1-11-97.

H.E. 6.1.98 Rcd 1.98

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Ces Memo 2032	G. 28. 7. 94
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FURTHER PAPERS.

No.	Date.

Dec 91

Letter from W. C. Lewis Esquire, Executive Engineer, Kistna Western Division, to the Superintending Engr., 2nd Circle, No. 2318, dated 1-10-97.

—

I have the honor to forward herewith revised estimate, amounting to Rs 107,300/- for the Tungabhadra side channel.

2. The block levels for new distributaries not having been taken the details for them cannot be worked out and a rough sum of Rs 3/- per acre has been given.

3. For two reasons it is urgently necessary that the new channel should be put in hand at once.

(a) That the railway bridges over the Aremanda and Alavala channels are only temporary wooden ones, the permanent bridges having been built on the new alignment.

(b) The masonry works at the existing head of the Aremanda and Alavala channel are in an exceedingly shaky condition and past repair without rebuilding

rebuilding & in danger of being carried away at any time. I have a large supply of rough stone available for emergencies, but in case of a failure before the new channel is ready, there may be a very extensive loss of crops. I would, therefore, request that sanction may be obtained at an early date, that the new supply channel may be made ready at any rate before the irriga-tion season of 1899. I hardly dare to hope the existing dams will last as long as that.

4. There has been a great deal of correspondence about the proper alignment of this channel in Mr. Hannan's and Mr. Martin's time, but I can find no final orders in writing from any Superintending Engineer to adopt the present alignment. Mr. Malet says he got your verbal approval before marking out the new line and

Olea 2

putting the estimate in hand on that alignment. The Railway bridge has now been built on the proposed alignment, so it is necessary to adhere to that.

Enclos: 37 as per List enclosed sent in 2 packets

No. 2341/KW
24.11.97

Forwarded to the Chief Engr. for Irrigation for favor of sanction of Government being obtained to the estimate amounting to Rs. 1,07,100/ for excavating Tungabhadra Side Channel, Kistna Western division.

2. The report accompanying the estimate explains the necessity for the work.

3. The amount of the estimate may be met from the provision pointed out by the Executive Engineer in his para 14 of the report accompanying the estimate.

W Dillon 23/11

Superintending Engineer
II Circle

CHIEF ENGINEER
FOR IRRIGATION.
26 NOV 1897
No. 3623

ENGINEER OF
No. 12/2118
7 OCT. 97
P. W. D.
SECOND CIRCLE

403

Report to accompany estimate for Tungabhadra side channel. 107,300 / 107,300

Rs 107,300.

1. The Tungabhadra is an old spill channel of the Kistna which was made use of on the Construction of the Anicut for the easy distribution of water without delay.

2. The chief branches are the Aremanda and Alavala channels which take off from masonry heads at a dam across the Tungabhadra, which is now in a very shaky condition.

3. The Tungabhadra has now been worked into the Commanuer Canal as far as Jagerlamudi, 8 miles 1½ furlongs of the canal, at which place two under tunnels pass the Gunturu Nallah under the canal, into the Tungabhadra, where surplus vent allow irrigation water to pass into the Tungabhadra.

4. The project completion Estimates proposed to make a new channel close along the bank of the Tungabhadra to take up the irrigation of the Alavala & Aremanda Channels & use the Tungabhadra for drainage purposes only, from the Commanuer canal to the sea, as it is at present, below Aremanda dam 12 miles down.

5. The course of the Tungabhadra is so extremely sinuous, & it would interfere so much with the natural drainage of the country, that it was thought better to adopt a new line, leading along high grounds, which would enable

a considerable extension of irrigation to be obtained; which has been provided for in the proposed anticipated duty of 90 acres per cft. per second.

6. The new line cuts the Aremanda & Alavala channels some little way below their existing heads, and a dividing sluice will be provided at the point where they separate. A permanent Bridge of 3 spans of 12' has been built for the Bezwada Madras Railway line where it crosses the proposed line at 7 miles.

Temporary wooden bridges have been provided where the line crosses the two existing channels which will be filled in when the channels are diverted.

7. The chief masonry works provided are

Head sluice in Commamuru canal — Rs 1950.

Kopalli Drain Under Tunnel at about 2 furlongs to pass the drain of 3 Sq M. into the Tungabadra Rs 3620.

Combined road culvert & under Tunnel at 1 mile 5 furs. to carry the Guntur Tenali road & pass the road side drain under the channel — Rs 8000.

An Aqueduct at 3 miles to carry the channel over a natural dip which carries drainage for 3 Sq M. Rs 5600

Two drops one of which will carry a bridge for a Village road.

A Head Sluice for the Existing Bodapad channel at 11 miles 2 furlongs — Rs 710. 690

Aremanda & Alavala regulator — Rs 2850. 2790

Cattle crossings have been provided at all important donkas or Village pathways.

8. The area at present irrigated is 11800 acres, an increase of 13400 acres is anticipated, partly under the minor distributaries to be excavated in the high ground, & partly land that can be cultivated by improved supply in the existing channels. The details for the proposed Branch channels have not been worked out, as block levels have to be taken first, but a sum of Rs 3 per acre is allowed for them. They will be approximately as follows.

At 1 furlong from head a branch will be take off on each side to take up existing irrigation under sprouts from Commamuru Canal which are a source of danger & waste.

At 3½ furlongs. one on right side to irrigate lands between the Kopalli Drain and road side drain. Beyond the Tenali road a branch on each side will take up irrigation between the road side drain and the low ground.

Two branches will take off above each drop and one on left at 7 miles below the Railway Bridge.

9. The Provision in the Sanctioned Project Estimates is as follows.

	Sanctioned —	Proposed.
Head Sluice —	Rs 1360	1950
Road Bridge —	9150	8000.
Aqueduct —	5000	5600
	15510	15550

Aremanda sluice	550	2790
Alavala sluice	1500	2850
Tungabhadra side channel Earth work	8660	22460
Minor channels work	2000	40,200
Earth work	4100	
Cattle crossings	7000	4960
Compensation	530	13700
Drops		3250
Bodapad sluice		710
Under tunnel at 2 furlongs		3620

The important excesses are, in earth work 3 distributaries, which are chiefly due to the proposals to extend irrigation; and in land, which is due to the alteration of alignment as the old line passed along Government waste at the edge of the drain.

10 I have not yet got a valuation of the land from the Revenue Department but I consider the sum of Rs 100 per acre an ample allowance as much of the land is dry at present.

11 The total cost of the proposal will figure out as follows.

Main Channel	Rs 67,100
Branches at Rs 3 per acre	Rs 40,200
	107,300
Capitalized abatement of Land Revenue	13,050
Tools & Plant & Establishment 24½ per cent	25215
	145565

The anticipated additional Revenue will be 13400 acres at Rs 4 per acre = 53,600

The ultimate return on the proposed outlay will be 37·0 per cent.

12 The dimensions of all these works are calculated on the duty of 90 acres per cubic feet per second as laid down by Chief Engineer in his No. III 12·9·93, and it is not likely that this duty will be obtained for many years, seeing that 50 acres is about the average duty for the season at present, or 44 acres per cft per second maximum discharge. The proposed distributaries should consequently be taken up gradually, as the duty is improved.

13 It is possible also that much of the ground being high there may be a good deal of dry crops watered, which is much to be wished for & encouraged, as by large extensions of this method of cultivation instead of the present wasteful system of flooding price, the usefulness of these canals may be indefinitely extended.

14 The Estimate are recommended for sanction from the sum of Rs 39,850 provided for under item Nos 611, 617, to 622, 650, 651, & 666 of the Project statement printed with G. O. No. 857 I 11·10·93 & the Excess of Rs 67,450 from the balance of the provision under item No. 710 of the same statement.

M Devis

23/9/97

Executive Engineer
Kistna Western Do.

ESTIMATE FORM—ABSTRACT—CLASSIFIED.

Sub-head.	Names of Works.	Amount of Estimate for individual Work.	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					
	Kirinda Delta System					
	Western Section					
	I Works					
	Commanded Canal					
	3 Distributaries					
excavating the	Tunga Khadra Lede channel					
Land	Compensation for Land	13700				
			13,700 ✓			
Works.	Head Sluice	1,950 ✓				
	Undertunnel about 0m 2f	3,620 ✓				
	Road Culvert and under-					
	tunnel at 1m 5 Furr	8,000 ✓				
	Aqueduct at 3m 0f	5,600 ✓				
	Drop at 3 m 1f	1,310 ✓				
	Bridge at 5m 0f	1,940 ✓				
	Head Sluice to Tungatha-					
	da Bodapad channel					
	at 11m 2f	710 ✓				
	Regulators for Aremanda	2790 ✓				
	& Alawala channels at 1m	2850				
	7f					
			25,900			
			25,980 ✓			
			39600			
			39,680 ✓			
Earthwork	Excavating Tungatha da	22340				
	Lede channel	22460	22,340			
			22460			
			22340			
			22460			
	C. O.		61940 ✓			

STATION

Dated 189 .

Executive Engineer.

363 Kb 1/26
26 NOV 1897
P.W.S. 1
423/98

REFERENCE TO MADRAS P. W. D. CODE.

PARAS. 1074 AND 1075.

P. W. D. MADRAS.
No M 210.

_____ CIRCLE.

DIVISION—

DISTRICT—

ESTIMATE FORM—ABSTRACT—CLASSIFIED.

To accompany the Detailed Estimate No.

of 189 -9 for*

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

ESTIMATE FORM—ABSTRACT—CLASSIFIED.

Sub-head.	Names of Works.	Amount of Estimate for individual Work.	Total of Sub-heads.	Total for each Canal or Distributary.	Total of each Main head.	Remarks.
1	2	3	4	5	6	7
	Brought Forward		61940			
Miscellaneous	Cattle crossing No 1 at 2m 200'	350	340			
do	No 2 at 3m 6 f wide	380	370			
do	No 3 at 4m 1 f 520	380	370			
do	No 4 at 7m 4½ f	515	490			
do	No 5 at 5m 1 f 200	525	500			
do	No 6 at 8m 1 f 150	530	500			
do	No 7 at 9m 5 f	600	560			
do	No 8 at 10m 1 f 80	610	580			
do	No 9 at 10m 6 f 50	620	600			
	Demarcation Stones		650			
				5180		
			4960			
				67100		
				66900		
				67100		
	Distributaries to irrigate 13400 Acres at 3 Rupees per Acre.			40200		
					107300	
					107100	
					67300	

Kanakamedu Reservoir

Superintending Engineer
2nd Circle.

Major R.E.

STATION

Dated 189 .

24/9/97

Executive Engineer.
Kistna Western Division

REFERENCE TO MADRAS P. W. D. CODE.
PARAS. 1074 AND 1075.

SUPG. ENGINEER'S OFFICE
No 15/211
7 OCT 97
P. W. D.
SECOND CIRCLE

P. W. D. Mad
No M 210

Second CIRCLE.

SUPG. ENGINEER'S OFFICE
No 363 Ks
22

DIVISION— Kistna Western

DISTRICT— Kistna

ESTIMATE FORM—ABSTRACT—CLASSIFIED.

To accompany the Detailed Estimate No.
of 189 -9 for* Excavating Jungd-
-Khadra side Channel
at 6 miles 2 furlongs of
Commamant Canal—

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

S.W.S.
422/98