Public Works (1897) Department.

G.O., No. ~~165~~ 166 I

DATED 16. February 1897

17/2/97

[Despatch Abstract.]

Bapatla East and West branch channels: Sanctioning with remarks estimates aggregating Rs. 26,507 for excavating — in the Kistna Western Delta.

100/6

T.C. 16/2/97

[P.W. 26. 1,000—30-11-96]

Indexed 16/2/97

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 {1897} of Madras.

PUBLIC WORKS.

Recd. } 1897. *Enclosures*
Regd. *Spare copies*

G.O., No. 166 I., 16th February 1897.

FEBRUARY.

Bapatla East and West Branch Channels

Sanctioning, with remarks, estimates aggregating Rs. 26,507 for excavating—in the Kistna Western delta.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From the Executive Engineer, Kistna Western Division, to the Superintending Engineer, II Circle, dated 13th June 1896, No. 89 S.

I have the honour to forward herewith plans and estimates for excavating Bapatla tank, east and west branch channels, to irrigate the Bapatla tank bed lands for sanction.

2. The report accompanying explains the necessity for the same.

3. I have made no provision for compensation for land, as I do not know what has been done in connection with the sale of the tank bed.

If compensation has to be given, it will only slightly affect the large returns anticipated.

P.S.—I have since heard that the recent sale of lands in the tank bed has not been confirmed, so the land is Government land.

Enclosures.

Report to accompany estimates for excavating Bápatla east and west branch channels.

The estimates now submitted complete the scheme, the major portion of which was sanctioned in G.O., No. 612 I., dated 12th July 1893, and relate to the two branch channels referred to under (2) in paragraph 12 of the report printed with that Government Order with the exception of items 33 to 35 of the abstract estimate, aggregating Rs. 1,140.

2. Total amount of estimates now submitted, Rs. 26,507.

3. Of the total amount of Rs. 45,900 sanctioned in G.O., No. 612 I., dated 12th July 1893, revised estimates were submitted for items 1 to 5, 12 to 22 and 23 to 32 aggregating Rs. 28,330; the original project provision, aggregating Rs. 17,570, was entered against the remaining items. Deducting Rs. 1,140 for items 33 to 35 not provided for in the estimates now submitted, there remains Rs. 16,430 to meet the current estimates aggregating Rs. 26,507. The difference Rs. 10,077 has to be met from the provision for unforeseen works or other sources.

4. The estimates, aggregating Rs. 28,330, have been completed at a cost of Rs. 26,853, showing a saving of Rs. 1,477; the net excess to be met is, therefore, Rs. 10,077 — 1,477=8,600.

5. This saving is chiefly due to an alteration in the proposals contained in paragraph 18 of the previous report.

An extension of the delta ayacut was sanctioned after the previous estimates were submitted, but before the works were carried out. With this extension it was fairly certain that the east and west branches would be carried out within a reasonable time, so the proposed flood bank was only carried along the Bapatla channel left bank as far as the site for the head sluice of the east branch channel and was stopped there with the intention of carrying it along the left bank of the east branch channel where that channel should be excavated. This gives a much shorter, cheaper and in every way better line for the flood bank, and affords complete protection to the land to be irrigated under the east branch channel.

Provision has been made for this flood bank in the estimates now submitted.

6. In paragraph 3 of the previous report an area of 4,622 acres was proposed under these two channels.

This was a rough approximation.

The revenue survey of this block has been recently completed, and the total area is found to be 3,600 acres, which will be distributed as follows :—

	ACS.
Under the east branch channel	1,100
Under the west branch channel	1,400
Under Bapatla channel left bank (direct)	280
Under Malapalem branch left bank	370
Under Kankatapalem branch right bank	450
Total ...	3,600

This distribution is better adapted to the physical features of the block.

7. All that is necessary to provide for the irrigation of the three last-mentioned areas is to insert a few pipe sluices in the banks of the channels concerned.

8. The east and west branch channels and their distributaries are shown on the enclosed sketch map.

9. The head sluices of the east and west branches will be situated nearly opposite to one another at about 1 mile 4 furlongs on the Bapatla channel. That of the west branch is designed to carry the Bapatla road, the width of roadway being 13 feet. The width of roadway provided over the east branch head sluice is 7 feet, which will suffice for local traffic.

10. The east branch runs parallel to the old tank cova with a minimum distance of 110 feet between the cova and the flood bank or left bank of channel and tails into the Malapalem branch channel just above the Karlapalem channel head sluice. Its left bank is raised to form a flood bank. The old cova is wide and deep and will be utilized to carry part of the Nallamada drainage.

11. The west branch runs along the old tank cova, which has silted up and which will be improved and straightened where necessary, and tails into the natural drainage line.

12. The lowest ground or natural drainage line runs down the centre of each half of the tank. To dispose of the drainage in the east half an aqueduct will be built on the Malapalem branch channel, and the drainage will be passed under that branch and through the tank bund discharging over the fields below.

To dispose of the drainage in the west half a cut will be made through the crest wall of the weir in the tank bund and the drainage will pass into the existing drain below.

13. As the main donkas run parallel to and above both the east and west branches, three bridges are allowed in the first two miles of each branch. These bridges will be placed opposite the cross donkas in the tank bed. Bridges are essential on the east branch owing to the proximity of the flood bank. Traffic in the lower lengths will be accommodated by simple earth slopes, and bridges can be put in afterwards if found necessary.

14. The total area to be irrigated is 3,600 acres, the whole of which was Government waste, but has, it is believed, been lately sold by auction. The land is valuable rich land and will probably bear a high dry assessment. Taking the dry assessment to cover maintenance, &c., charges, a large provision, the water rate of Rs. 5 per acre will be the net return.

3,600 acres at Rs. 5 = Rs. 18,000, which will give a return of 68 per cent. on the proposed outlay of Rs. 26,507.

15. Attached is an abstract estimate to supersede that printed with G.O., No. 612 I., dated 12th July 1893, showing the actuals for completed works and revised provisions for the works now estimated for.

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.
1	2	3	4	5	6
	Capital Expenditure not charged to Revenue. 49. *Irrigation.* Kistna Delta System. Western Delta Section. I Works. Commamur Canal. 3 Distributaries. Bápatla Tank East branch channel.	RS.	RS.	RS.	RS.
3. Works	1. Head sluice	1,020			
	2. Pipe sluice No. 1 at 0 mile 1 furlong ..	110			
	3. Bridge at 0 mile 6 furlongs and 330′ ..	1,270			
	4. Pipe sluice No. 2 at 1 mile 0½ furlong ..	95			
	5. Bridge at 1 mile 3 furlongs and 580′ ..	1,170			
	6. Pipe sluice No. 3 at 1 mile 4½ furlongs ..	95			
	7. Bridge at 1 mile 6 furlongs and 220′ ..	1,210			
	8. Pipe sluice No. 4 at 1 mile 7½ furlongs ..	110			
	9. Spout (cement concrete pipes) at 2 miles 5 furlongs	50			
	10. Spout (cement concrete pipes) at 2 miles 6½ furlongs	50			
	11. Tail drop	400			
			5,580		
4. Earth work ..	12. Excavating branch channel and its distributaries.	7,400			
			7,400		
5. Miscellaneous ..	13. Demarcation stones	470			
			470		
				13,450	

Estimate Form—Abstract—Classified—*cont.*

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
	3 Distributaries—*cont.*	RS.	RS.	RS.	RS.
	Bapatla Tank West branch channel.				
3. Works	14. Head sluice	1,050			
	15. Pipe sluice No. 1 at 0 mile 4 furlongs ..	110			
	16. Bridge at 0 mile 4½ furlongs	1,130			
	17. Pipe sluice No. 2 at 1 mile	80			
	18. Bridge at 1 mile 0 furlong and 290′ ..	1,100			
	19. Pipe sluice No. 3 at 1 mile 3 furlongs ..	95			
	20. Bridge at 1 mile 5 furlongs and 20′ ..	1,070			
	21. Pipe sluice No. 4 at 1 mile 6½ furlongs ..	95			
	22. Do. No. 5 at 2 miles 2½ furlongs ..	115			
	23. Do. No. 6 at 2 miles 7 furlongs ..	95			
	24. Tail drop	400	5,340		
4. Earthwork ..	25. Excavating branch channel and its distributaries	3,900	3,900		
5. Miscellaneous ..	26. Demarcation stones	600	600		
				9,840	
	27. Constructing an iron trough aqueduct over drainage channel in Bapatla tank to carry Malapalem branch channel	3,217	3,217	3,217	
					26,507

(Signed) A. A. G. MALETT,
Ex. Engr., Kistna Western Division.

No. 1108 K.W.

Forwarded to the Chief Engineer for Irrigation for favour of obtaining the sanction of Government to the estimates for excavating Bapatla tank east and west branch channels in the Kistna Western division.

2. The excess of Rs. 8,600 over the revised estimates of Bapatla channel sanctioned in G.O., No. 612 I., dated 12th July 1893, is explained in the report and may be met from the balance of the provision as per item No. 710 of the statement printed with G.O., No. 857 I., dated 11th October 1893.

(Signed) M. LOAM,
for Supg. Engineer, II Circle.

29th July 1896.

Office-note to the Examiner, Public Works Accounts, dated 8th Sept. 1896, No. 296.
„ from „ „ „ „ 17th Sept. 1896, No. 2767-D.
To the Superintending Engineer, II Circle, dated 22nd September 1896, No. 145-K.S.

From W. C. LEWIS, Esq., Executive Engineer, Kistna Western Division, to the Superintending Engineer, II Circle, dated 31st October 1896, No. 319-S.

In returning your endorsement, No. 1790-K.W., dated 3rd October 1896, I have the honour to inform you that the difference of Rs. 565 between the figures given by this office and those of the Examiner of Public Works Accounts is due to this amount having still to be adjusted on account of land compensation against item 1 for which award statements were sent by the Revenue Department for payment at the time when the revised estimate for Bapatla channel works was submitted.

2. The actual outlay on item 1 up to 31st July 1896 was only Rs. 49 against Rs. 615 provided for in the classified abstract with the remark that the item is "nearly completed." The office copy of the classified abstract is herewith sent for your perusal and return.

No. 2149-K.W.

Forwarded to the Chief Engineer for Irrigation with reference to his No. II/145-K.S., dated 22nd September 1896, herewith returned with its enclosures.

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

7th November 1896.

No. 208 I.

Submitted to Government.

2. In the estimate, amounting to Rs. 45,900, for excavating the Bapatla channel and its branches in the Kistna Western delta, sanctioned in G.O., No. 612 I., dated 12th July 1893, lump sums aggregating Rs. 16,430 were provided for the east and west branch channels and for minor channels. Against this provision, the Superintending Engineer, II Circle, has, with his endorsement, No. 1108-K.W., dated 29th July 1896, submitted detailed estimates, amounting to Rs. 26,507, which are approved and recommended for sanction. The total area to be irrigated is 3,600 acres which, it is anticipated, will yield a revenue of Rs. 18,000.

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

To the Superintending Engineer, II Circle, dated 6th December 1896, No. 189-K.S.
From „ „ II „ „ 16th January 1897, No. 2934-K.W.

No. 33 I.

Note by the Chief Engineer for Irrigation.

The further explanation received from the Superintending Engineer, II Circle, regarding the excess of Rs. 10,097* in the estimate for the Bapatla channel and its branches and for the decrease in the estimated area of irrigation from 4,622 acres to 3,600 acres is submitted to Government.

* Net Rs. 8,600.

In G.O., No. 577 I., dated 1st October 1888, lump sum provisions were made for this channel and its branches, amounting to Rs. 71,995. This amount was taken from the papers published with Proceedings of Madras Government, No. 343 I., dated 24th September 1877, which, from paragraph 27 of the note by the Chief Engineer for Irrigation accompanying them, admittedly gave "nothing more than an outline of the arrangements and an approximation to their cost."

In 1893 the Superintending Engineer, II Circle, submitted an abstract of detailed estimates with certain proposals, which reduced the amount required for the channel and its branches to Rs. 45,900. These were approved in G.O., No. 612 I., dated 12th July 1893.

The estimates now submitted make the total cost of work on the Bapatla channel and its branches Rs. 54,500, that is, Rs. 8,600 more than in the estimate of 1893, but Rs. 17,495 less than the original lump sum provisions.

The Superintending Engineer has now submitted a comparative statement of these different sanctions. It would appear that the revision of 1893 was incomplete, as only part of the estimates was revised instead of the whole. No bridges or pipe sluices for the distributaries were provided for, and which are now estimated to cost Rs. 7,530. It is now considered necessary to provide for an aqueduct to carry Malapalem branch channel over a line of drain which was not provided for in the 1893 estimate.

The present estimate is complete, as the small Cherukur branch channel, estimated at Rs. 230, is the only item not revised, and it is not expected that this will require any material alteration.

As regards the area under the channel, the figure 4,622 was only a rough approximation. The present figure of 3,600 is based on the recent revenue survey.

As the purchasers of land have been guaranteed water for this year, the Superintending Engineer was ordered on the 3rd instant to put the work in hand.

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

10th February 1897.

Order—No. 166 I., dated 16th February 1897.

The Government observes that the extra items omitted in the former estimate and now added are necessary parts of the work. The former estimate was not only incomplete, but also erroneous and misleading.

2. The estimates aggregating Rs. 26,507 for excavating Bapatla east and west branch channels in the Kistna Western delta are sanctioned in lieu of the sum of Rs. 16,430 provided for them in the estimate sanctioned in G.O., No. 612 I, dated 12th July 1893, Rs. 1,477 of the excess of Rs. 10,077 being met from savings realized on completed works—*vide* items 1 to 5 and 12 to 32 of the classified abstract estimate printed with the above order—and the balance, viz., Rs. 8,600, from the provision made for item 710 of the statement embodied in Proceedings of Madras Government, No. 857 I., dated 11th October 1893.

3. This sanction is registered as No. 182 I of 1896–97.

(True Extract.)

Under Secretary to Government,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, II Circle, with 57 enclosures.
„ Examiner, Public Works Accounts.

Exd. T. D. Ryan.

1669

Public Works (1897) Department.

CURRENT No. 1544

Order 1669

From

The Chief Engineer
for Irrigation

No. 33 I.

Dated 10-2-97

Received 12-2-97

Enclosures 78 (+ 11 Plans)

Spare copies "

SUBJECT.

Submitting with remarks further explanation regarding the excess of Rs 10,097 in the estimate for the Baptla Chl and branches

BACK PAPERS.

No.	Date.

FURTHER PAPERS.

No.	Date.

1669

Revised Draft from orders for Press

No 166 I of 16-2-97

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH.

Public Works (1897) Department

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Current No: 1544

Recd: 12.2.97

UNDER date the

Enclos: 70 (+11 Plans)

READ the following

Print with Report + Classified abstract estimate

From Supg Engr. II Circle, No. 1108 K.W., d/ 29.7.96.

Office note to C.E.[8] No. 296 d/ 8.9.96.

Do. from C.E.[9] 2767 D.G. d/ 17.9.96

To Supg Engr II[10]. 145 K.S. d/ 22.9.96

From do 2149 K.W. d/ 27.11.96

Invoke

Print

Irrigation Sect

No. 208 I.

Print

Submitted to Govt.

p. 12

2. In the estimate, amtg. to Rs 45,900, for excavating the Bapatla channel & its branches in the Kistna Western Delta, sanctioned in G.O. No. 612 I, d/ 12 July/93, lump sums aggregating Rs 16,430 were provided for the east & west branch channels & for minor channels. Against this provision, the Supg Engr, II Circle, has, with his endorsement, No. 1108 K.W., d/ 29 July/96 submitted detailed estimates, amtg to Rs 26,507, which are approved & recommended for sanction. The total area to be irrigated is 3,600 acres which, it is anticipated,

will yield a revenue of Rs 18,000.

To Supg Engr II Circle, No 189 K.I. d/ 6 Dec /96
from Reptd Printed do . . 293 K.W. d/ 16 Jan /97

Note by the Chief Engr for I.
No 33 I. d/ 10.2.97

The further explanation received from the Supg. Engr., II Circle, regarding the excess of Rs 10,097+ in the estimate for the Bapatla channel & its branches & for the decrease in the estimated area of irrigation from 6,612 acres to 3,600 acres is submitted to Govt.

+ nett Rs 8,600

In G.O. No 5773 I, d/ 1 Oct /88, lump sum provisions were made for this channel & its branches, amtg to Rs 71,995. This amount was taken from the papers published with P.W.G. No 343 I, d/ 21 Sept /77, which, from para 27 of the Note by the Chief Engr for Irrigation accompanying them, admittedly gave "nothing more than an outline

of the arrangements & an approximation to their cost."

In 1893 the Supg Engr, II Circle, submitted an abstract of detailed estimates with certain proposals, which reduced the amount required for the channel & its branches to Rs 45,900. These were approved in G.O. No 612 I, d/ 12 July /93.

The estimates now submitted make the total cost of work on the Bapatla channel & its branches Rs 54,500 that is Rs 8,600 more than in the estimate of 1893, but Rs 17,495 less than the original lump sum provisions.

The Supg Engr has now submitted a comparative statement of these different sanctions. It would appear that the revision of 1893 was incomplete as only part of the estimates was revised instead of the whole. No bridges or pipe sluices for the distributaries were provided for, & which are now estimated to cost Rs 7,530. It is now considered necessary to provide for an aqueduct to carry Malapalem branch channel over a line of drain which was not provided for in the 1893 estimate.

The present estimate is complete as the small Cherukur branch channel estimated at Rs 230 is the only item not revised & it is not expected that this will require any

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P 14

UNDER date the

READ the following

material alteration.

As regards the area under the channel, the figure 4622 was only a rough approximation. The present figure of 3600 is based on the recent revenue survey.

As the purchasers of land have been guaranteed water for this year the Supg Engr was ordered on the 3d inst to put the work in hand.

P 15 Order thereon.

The Govt observes that the extra items omitted in the former estimate & now added are necessary parts of the work. The former estimate was not only incomplete, but also erroneous & misleading.

2. The estimates aggregating Rs 26,507 for excavating Unpatta east & west branch channels, in the Kistna Western Delta, are sanctioned in lieu of the sum of Rs 16430 provided for them in the estimate sanctioned in G.O. No 612 I, d/ 12th July/93, Rs 1477 of the excess of Rs 10,077 being met from savings realized on completed works — vide items 1 to 5 & 12 to 32 of the classified abstract of estimate printed with the above order — & the balance, viz Rs 8600, from the provision made for item 710 of the statement embodied in P.M.G No 857 I, d/ 11 Oct/93.

2. This sanction is registered as No 182 I of 1896-97.

10/2/97

W.H. 10.2.97

Issue.

7.3.9 15/2/97

LCB 16/2/97 & 4/3/97

Recd 16/2/97

To
The Chief Engr for I.
Supg Engr } with 57 enclosures
Exr E W D

LCB 9/2/97 BM

E. I. Form No. 1—500—3-12-96.

Public Works (1897) Department.

CURRENT No. 15KS

Urgent

Order

From

Major W. C. Baddeley R.E.
Supg. Engineer
2nd Circle.

No. 2934 KW

Dated 16 January 1897.
Received 18. 1. 97
Enclosures 61.
Spare copies

SUBJECT.

Excavating Bapatla tank East & west Branch~~es~~ channels - KWDn. - Forwards with remarks Ex: Engrs. letter submitting a comparative statement ~~for~~ —.

BR
18.1.97

BR 19-1-97

BACK PAPERS.

G.O.	No.	Department.	Date.
I	189	Ks	6-12-96

FURTHER PAPERS.

G.O.	No.	Department.	Date.

Letter from W. C. Lewis Esquire, Executive Engineer Kistna Western Dn:, to the Supg: Engineer 2nd Circle, dated 11th Jany: '97 No. 45-8-S.

I have the honour to forward herewith a comparative statement of the cost of the sub works sanctioned in G.O. 577 I of 1.10.1888, 612 I of 12.7.93 and as now proposed.

2. This will show that of the excess of Rs 10,077, the amount Rs 7,530 is due to the provision of bridges and pipe sluices to distributaries - Vide para 13 of Mr. Malet's report.

3. Rs 3,217 for aqueduct to carry Mulapalem branch channel not provided in former estimate.

4. There is a saving of Rs 17,495 shown against the original project Estimate

5. I do not anticipate any considerable revision of the estimate for Cherukur branch Channel.

6. The original acreage of 4,622 was admittedly only approximate and allowed apparently no deduction for village sites, channels, drains and roads. How the figure was arrived at, I am unable to

trace

trace.

CHIEF EN[illegible]
FOR IRRIGATION
15 JAN. 97
No. 15 K.S.

No. 2934 KW
16.1.97

Encls. 61
60 Plans & Estes with a list
1 Comparative Statement
61

Forwarded to the Chief Engineer for Irrigation with reference to his no II/189 K.S. dated 6th December '96 for very early sanction of Government being obtained to the revised Estimates sent with this office no 1108 KW. d/ 29.7.1896.

2. Orders of sanction may be communicated by wire as unless work is started soon water cannot be supplied next season.

3. The Collector has been informed that water can be guaranteed next season for without this guarantee it is expected that the sale price of the lands will be reduced by Rs 90,000.

W C Baddeley
Major R.E.
Supg Engineer
2nd Circle.

M.

P.W. E.2 1544/97

H.E.

Public Works (1896) Department.

CURRENT No. 10541

Order within

This seems a promising and remunerative undertaking, but the excess over the original estimate is enormous, and the ~~amended~~ area to be irrigated is less than that originally stated. This method of putting works before Govt. is thoroughly bad. We should have trustworthy estimates and well established data to enable us to consider all works and schemes.

Before sanctioning this Estimate, I must have some explanation of the excess of estimated cost, and of the decrease of estimated area.

I look to the new Secretary to reform these abuses.

A.H. 28.11.96

From the Chief Engineer for Irrign.

No. 208 I.

Dated 18th November 1896

Received 20.11.96

Enclosures 61 (11 plans)

Spare copies

SUBJECT.

Bapatla East and West branch channels Estimate of Rs 26,507 for excavating the — Recommended with remarks for sanction of Govt.

H.E.21/H.R1/12.

BACK PAPERS.

G.O.	No.	Department.	Date.
G.O.	857 I	P.W.	11-10-93 ✓
"	612 I	"	12-7-93 ✓
"	343 I	"	24-9-97 ✓

Cur. E.65 / 15/4/97

FURTHER PAPERS.

G.O.	No.	Department.	Date.
R	15-Ks	dy	16-1-97

HE

PUBLIC WORKS DEPARTMENT,
IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

Print with Refd. to classified as [illegible] Estimate

~~From~~ Supdg Engr. II Circle. No. 1108 K.W. dy 29.7.96
Office Note to C. No. 296 dy 8.9.96
Do from C. " 2767 D dy 17.9.96
To Supdg Engr. II Circle No. 145 K.S. dy 22.9.96
~~From~~ do. " 2149 K.W. dy 7.4.96

Quote

Print

No. 208. I.

Submitted to Govt.

2. In the estimate, amtg. to Rs 45,900, for excavating the Bapatla channel & its branches, in the Kistna Western Delta, sanctioned in G.O. No. 612 I, dy 12th July/93, lump sums aggregating Rs 16,430 were provided for the east & west branch channels & for minor channels

Against this provision the Supg Engr. II Circle, has, with his endorsement, No 1108 K.W., of 29th July/96, submitted detailed estimates, amtg. to Rs 26,507, which are approved & recommended for sanction. The total area to be irrigated is 3,600 acres which it is anticipated, will yield a revenue of Rs 18,000.

4622 acres was the original estimate of area. ASH

Order thereon

The estimates aggregating Rs 26,507 for excavating Bapatla East & west branch channels, in the Kistna Western Delta, are sanctioned in lieu of the sum of Rs 16,430 provided for them in the estimate sanctioned in G.O. No 612 I, of 12th July/93, Rs 1,477 of the excess of Rs 10,077 being met from the savings realized on completed works – vide items 1 to 5 & 12 to 32 of the classified abstract estimate printed with the above order – & the balance, viz Rs 8,600, from the provision made for item 710 of the statement embodied in P.W.G. No 857 I, of 11th Oct/93.

2. This sanction is registered as No. 3 of 1896-97.

18/11/96

W.H.
18/11

P.W. E. 86 / 1374/97

To
The Chief Engr for I.
Supdg Engr II
Ex. Engr B.W.D.

I.C.S.
17/11

B.R.

E. I. Form No. 1—500—14-5-95

Public Works (1897) Department.

Recept.

~~CURRENT~~ No. 10 RS

Urgent

Order

E.I. forwarded

9/1/97

B.

The S.E. telegraphs [illegible] saying that the sale price [illegible] area of irrigation [illegible] [illegible] [illegible] approaching [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

10.1.97 W.H.

[illegible] [illegible] [illegible]

11/1/97

From Supd Engr
II circle

No. Tele.

Dated 9.1.97

Received 9-1-97

Enclosures

Spare copies

SUBJECT.

Bapatla Tank - East & West Branch channels - Enquiring whether Estes for - can be sanctd provisionally

B.R.
9.1.97

9/1

BACK PAPERS.

No.	Date.
Issue No. II 18 K.S.	d. 6/12/96
Issue No. 208-I	18/12/96 (P.C. 10521)
Receipt No. 235 K.S.	d. 29/12/96

FURTHER PAPERS.

No.	Date.
I. 2 Tele	11-1-97
R 15 Ks	d. 16-1-97

INDIAN TELEGRAPH.

Monthly Local No. 6

Class.	S.
To	[illegible] Triplicane
From Station	[illegible]
Words.	57/4
Day.	9
Hour.	14
Minute.	30
Official Instruction.	R 16 KS
From (Person)	Supdt. Engr. 9/1/97
To (Person)	[illegible] Irrigation Chepauk

1 Cannot estimates for
2 Bapatla tank lifts
3 irrigation be sanctioned
4 provisionally see
5 yours 18 K. S. sixth
6 December 96 sale of
7 lands takes place on
8 nineteenth and Govern-
9 -ment will have about
10 ninety thousand rupees
11 worth of irrigation next
12 year if guaranteed
13 ✗ sales cannot be stopped
14

Rs. 25 / [illegible] 3600 an acre

Recd. from L. N. At Hrs. Mts. By

Sent to L. N. At Hrs. Mts. By

TRIPLICANE 9 JA. 97

Postmaster.

Date here Use 1

RATES OF CHARGE FOR INLAND TELEGRAMS.

The address (including name of Sender, and name and residence of Address as transmitted free.

	First 8 words.	Each additional word.
Deferred Message	... 8 Annas	... 1 Anna.
Ordinary „	... 1 Rupee	... 2 Annas.
Urgent „	... 2 Rupees	... 4 Annas.

A group of 3, or less figures, is reckoned as one word.

No charge for delivery within a distance of 5 Miles.

E.

No. II/189 K.S. Dt 6-12-96

wt papers

Memo

Before sanctioning the estimates amounting to Rs 26507 for excavating Bapatla tank East and West branch channels in the Kistn Western division receiv with endorsement No 1108 K W dated 29th July/96 from the Sup Engr II Circle, the undersigned has the honour to reques that he will be so good as to explain clearly the cause o causes of the exces of Rs 10077 in the estimated cost and of the decrea of 1022 acres in th estimated area of irrigation.^

3 ~~2~~. An early rep to this reference is requested

WH 6/12

^ A Comparative Statement showing the amounts of original and revised estimate for each subwork should be submitted

2. It should be reported whether the estd. for Cherukur Branch (items 33 to 35 of the Classified abstract printed with G.O. No 612 I d/12 July 1893) requires revision. If any considerable revision is necessary the estimate should be included ~~with those submitted~~ with those already prepared so that a third revised estt. may not have to be submitted to Govt.

WH

BR 9-12-96

To the S.E. II Circle

BR 1-12-96

2/12

PWC10531/96

Public Works (1896) Department.

CURRENT No

R 367 KS

Order

From Major W.L.C Baddeley R.E.
Supdg Engineer 2 Circle

No. 2149 I.C.W.

Dated 7th November 1896.
Received 10 November/96
Enclosures 2
Spare copies

SUBJECT.

Excavating the Bapatla East and West Branch Channels. ~~Forwards~~ letter from the Ex Engr. Kistna Wes: Dn explaining the difference in expenditure pointed by the Examiner of P.W. Accounts in connection with the ——

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.
R	15Ko	Ig	16-1-97

Statement showing outlay incurred on the following works to end of July 1896.

Item as per G.O.	Name of Works		Amount of Estimate	Total outlay.		
	Kistna Western Commamur Canal Bapatla channel.					
1	Compensation	②	500	49	-	-
2	Head Sluice	③	2500	2270	1	10
3.	Excavation from Head to 5 furlongs-	④	1960	1800	12	8
4.	Do. from 5 fur. to 2^{m}. + 250 ft.	④	1630	2383	2	9
5	Demarcation stones.	⑤	170	255	5	10
	Mulapalem Branch					
12	Head Sluice	③	1790	1815	13	5
13.	Drop at 2/5 M. and 410 ft.	③	720	704	12	10
14	Excavation	④	5080	4170	6	11
15	No 1. cattle crossing	⑤	910	484	3	3
16	- 2 -	⑤	960	496	11	4
17	- 3 -	⑤	1010	506	8	2
18	Demarcation Stones.	⑤	270	525	15	3
	Minor Branch.					
19	No 1. Sluice at 0-1 + 66 ft.	③	560	589	12	7
20	- 2 - at 1.1 m. + 396 ft	③	590	576	9	10
21	- 3 - at 2-0 m. + 396 ft.	③	620	578	11	7
22	- 4 - at 2.5 M. + 396 ft.	③	650	630	2	2
	Kankatapalem Branch.					
23	Head Sluice	③	1330	1218	12	10
24	Excavation	④	3140	3095	14	7
25	No 1. cattle crossing at 0.m 5½ ft.	⑤	500	527	9	8
26	- 2 - at 1 m/4 fur.	⑤	480	542	1	7
27	- 3 - at 1 m. 4 fur.	⑤	520	561	4	7
28	- 4 - at 2. m. 4½ fur.	⑤	540	580	2	9
	Demarcation Stones	⑤	330	458	4	9
	Minor Branch					
30	No 1. Sluice at 0.2 m.	③	360	300	4	10
31	- 2 - - at 0-6 m.	③	590	566	10	7
32	- 3 - at 1-4½	③	620	599	1	-
	Total.		28330	26288	5	7

Remarks.

26853 ✓
26288 ✓
5.65

SUPG. ENGINEER'S OFFICE
No. 1/1636
28 SEP. 96
P. W. D.
SECOND CIRCLE.

OC/S.E. 60 69
Jeshet/96
1544/97

CHIEF ENGINEER
FOR IRRIGATION.
10 NOV. 96
No. K.367/K

EXECUTIVE ENGINEER'S OFFICE
Regr. No. 1/5418
7 - OCT. 96
GUNTUR.
KISTNA WESTERN DIVISION.

His Excellency the Governor.

Excavating Bapatla tank East and West Branch[?] channels.

by the Chief Engr for Irr.

Note (for H.E. the Governor with reference to his remarks on draft order & note No. 208 I dated 18th Nov. 1896.)

Flag. A

The further explanation received from the Supt. Engr. II Circle regarding ~~H.E. has asked for an explanation for~~ the excess of Rs 10 097 in the estimate for the Bapatla channel & its branches and for the decrease in the estimated area of irrigation from 4622 acres to 3600 acres — is submitted to Govt.

nett Rs 8600.

In G.O. 577 I dated 1st Oct. 1888 lump sum provisions were made for the channel and its branches, amounting to Rs 71995. This amount was taken from the papers published with P.M. G. No. 343 I dated 24th Sept. 1877, which, from para 27 of the note by the Chief Engr for Irrigation accompanying them, admittedly gave "nothing more "than an outline of the "arrangements and an "approximation to their cost."

In 1893 the Supt Engr. II submitted an abstract of detailed estimates with certain proposals, which reduced the amount required for the Channel & its branches to Rs 45900 — These were approved in G.O. 612 I dated 12 July 1893.

The estimates now submitted make the total cost of work on the Bapatla channel & its

The extras omitted in the former estimate and now added are necessary parts of the work. I should say the former estimate was not only incomplete, but also erroneous and misleading.

The work and Estimates are now sanctioned.

A.S.H. 6.2.97

W.H. 10/2

To H.E. I

BR 8.2.97

BR

branches Rs 54500 that is Rs 8600 more than in the estimate of 1893 but Rs 17495 less than the original lump sum provisions —

The Supg Engineer has now submitted a comparative statement of these different sanctions ~~from which~~ It would appear that the revision of 1893 was incomplete as only part of the estimates was revised instead of the whole — No bridges or pipe sluices for the distributaries were provided for, and which are now estimated to cost Rs 7530.

!!

It is now considered necessary to provide for an aqueduct to carry Malapalem branch channel over a line of drain which was not provided for in the 1893 estimate —

The present estimate is complete as the small Cherukur Branch Channel estimated at Rs 230 is the only item not revised and it is not expected that this will require any material alteration —

As regards the area ~~the~~ ~~fig~~ under the channel, the figure 4622 ~~was~~ was, only a rough approximation The present figure of 3600 is based on the recent revenue survey —

Very rough.
A.S.H

As the purchasers of land have been guaranteed water for this year the Supt Eng. was ordered on the 8th inst. to push the work in hand.

14/2/97.

W.H. 4.2.97

P.W. E.1 / 1524/97

Reb o/c H.R. 5/2

Print

[illegible] 10

Letter from W. C. Lewis Esquire, Executive Engineer, Kistna Western Dn, to the Supg Engineer, 2nd Circle, dated 31.10.96, No 319 S.

In returning your endorsement No 1790 K.W. dy 3.10.96, I have the honour to inform you that the difference of Rs 565 between the figures given by this Office and those of the Examiner of P.W. Accounts is due to this amount having still to be adjusted on account of land compensation against Item 1 for which award statements were sent by the Revenue Department for payment at the time when the revised estimate for Bapatla Channel works was submitted.

2. The actual outlay on item 7 up to 31.7.96 was only Rs 49 against Rs 615 provided for in the classified abstract with the remark that the item is "nearly completed". The office copy of the classified abstract is herewith sent for your perusal and return.

Print

No 2149 KW / 7.11.96

Encl: 2.

1 Endt No II / 145 KS

1 Statement.

Forwarded to the Chief Engineer for Irrigation with reference to his No II/145 K.S. dy 22.9.96, herewith returned with its enclosures.

W. C. Baddeley

Major R.E.

Supg Engr II Circle

CHIEF ENGINEER
FOR IRRIGATION
10 ... 96
No. 1167 Ks

E. I. Form No. 22—2,000—8-8-96.

To B.E. ... plan
10/9

10 SEP 1896
ACCOUNTS

GOVT. OF MADRAS. 1896. P. W. DEPT.

CHIEF ENGINEER FOR IRRIGATION.

Madras 8 Septr 1896.

OFFICE NOTE No. 296

Circulation Register.

To	From	Despatch Date.	Receipt Date.
C	D.E.I	9.9.96	
	LD		

KEEP-WITH.

No. , dated 189 .

Items 1 to 5 & 12 to 32
f the classified abstract
stimate printed in
G.O. No. 612 I., d/ 12th
uly/93, are reported
by the Supg Engr. II
ircle, to have been
ompleted at a cost
of Rs 26,853 against
a sanctioned provisio

of Rs 28,330. Please say if the outlay reported by the S.E. is correct.

DE I

CHIEF ENGINEER
FOR IRRIGATION.
10 NOV. 96
No R 367 KS

No. 2767 DA d/ 17.9.96

R 201

To E.I.

According to the books of this office the outlay to 31st. July 1896 – against items 1 to 5 and 12 to 32 of the classified abstract estimate printed in G.O. No. 612 I. of 12th. July 1893 is Rs. 26288, vide statement attached.

C.

17/9

No. II / 145. K.S.

Forwarded in original (to be returned with reply) to the Supdg Engr: II Circle, with reference to his Endorsement No. 1108 K.W. d/ 29 July /96, & with a request that he will be so good as to explain at an early date the cause of the difference between the outlay as reported by the Ex: P.W.D. and as entered in para 4 of the Ex Engr's report on the Estimates for Excavating Bapatla East & West branch channels. Pending the receipt of a reply the submission of the Estimates for the sanction of Govt: will have to be deferred.

/By order/

J. J. Williams

Asst: Chief Engineer
22d Sept. 96 for Irrigation

21/9

Later Case
R 15 KS d/ 16-1-97

Public Works (1896) Department.

CURRENT No. R 235 KS

Order

From The Supdg Engineer 2 Circle.

No. 1108 I.K.W.

Dated 29th July 1896.

Received 31 – 7 – 96.

Enclosures 58.

Spare copies

SUBJECT.

Bapatla East and West branch Channels. Kistna Delta System – Forwards with remarks letter from the Executive Engineer, Kistna Eastern Dn submitting plans & Estimates of Rs 20,507 for excavating –

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.
R	15	Rs	J 16-1-97

23

Enclosure SP 3

6

Report to accompany estimates for Excavating Bapatla East and West Branch channels.

The estimates now submitted complete the scheme the major portion of which was sanctioned in G.O. No. 612 I dated 12.7.93 & relate to the two branch channels referred to under (2) in para 12 of the Report printed with that G.O. with the exception of items 33 to 35 of the abstract estimate aggregating Rs 1140.

2. Total amount of estimates now submitted Rs ~~28.390~~ 26507

3. Of the total amount of Rs 45910 sanctioned in G.O. No. 612 I dated 12.7.93 revised estimates were submitted for items 1 to 5, 12 to 22 & 23 to 32 aggregating Rs 28330 the original Project Provision aggregating Rs 17570 was entered against the remaining items. Deducting Rs 1140 for items 33 to 35 not provided for in the estimates now submitted there remains Rs 16430 to meet the current estimates aggregating Rs ~~26390~~ 26,507. The difference Rs ~~9960~~ 10077 has to be met from the Provision for unforeseen works or other sources.

4. The estimates aggregating Rs 28.330 have been completed at a cost of Rs 26.853 showing a saving of Rs 1477 the net excess to be met is therefore Rs ~~9960~~ 10077 - 1477 = ~~8483~~ 8600.

5. This saving is chiefly due to an alteration in the proposals contained in para 18 of the previous report.

An extension of the Delta ayacut was sanctioned after the ~~of the~~ previous estimates were submitted but before the works were carried out. With this extension it was fairly certain that the East & west branches would be carried out within a reasonable time so the proposed Flood Bank was only carried along the Bapatla channel left bank as far as the site for the head sluice of the East branch channel & was stopped there with the intention of carrying it along the left bank of the East branch channel when that channel should be excavated. This gives a much shorter, cheaper & in every way better line for the Flood Bank & affords complete protection to the land to be irrigated under the East branch channel.

Provision has been made for this Flood Bank in the estimates now submitted.

6. In para 3 of the previous report an area of 4622 acres was proposed under these two channels.

This was a rough approximation.

The Revenue Survey of this block has been recently completed and the total area is found to be 3600 acres which will be distributed as follows.

	acres
Under the East branch channel ———	1100
——" ——— West ——— " ——— " ———	1400
——" Bapatla channel left bank (direct)	280
——"— Mulapalem branch left bank —	370
——"— Karkatapalem —" right —"—	450
	3600

This distribution is better adapted to the physical features of the block.

7. All that is necessary to provide for the irrigation of the three last mentioned areas is to insert a few pipe sluices in the banks of the channels concerned.

8. The East & west branch channels & their distributaries are shown on the enclosed sketch map.

9. The Head Sluices of the East & west branches will be situated nearly opposite to one another at about 1 mile 4 furlongs on the Bapatla channel. That of the West branch is designed to carry the Bapatla road the width of roadway being 13 ft. The width of road way provided over the East branch Head Sluice is 7 ft which will suffice for local traffic.

10. The East branch runs parallal to the old tank cova with a minimum distance of 110 ft between the cova & the Flood Bank or left bank of channel & tails into the Mulapalem Branch channel just above the Kartapalem

chl Head Sluice - Its left bank is raised to form a Flood Bank. The old cova is wide & deep & will be utilized to carry part of the Nallamada Drainage.

11. The west branch runs along the old tank cova which has silted up & which will be improved & straightened where necessary & tails into the natural Drainage line.

12. The lowest ground or natural Drainage line runs down the center of each half of the tank. To dispose of the drainage in the east half an aqueduct will be built on the Mulapalem Branch chl & the Drainage will be passed under that Branch & through the tank bund discharging over the fields below.

To dispose of the Drainage in the west half a cut will be made through the crest wall of the weir in the Tank bund & the drainage will pass into the ~~ex~~ existing Drain below.

13. As the main Donkas run parallel to & above both the East & West Branches 3 Bridges are allowed in the first 2 miles of each branch. These bridges will be placed opposite the cross donkas in the tank bed. Bridges are essential on the ~~estimate~~ east branch owing to the proximity of the Flood Bank. Traffic in the lower lengths will be accommodated by simple earth slopes & bridges can be put in afterwards if found necessary.

14. The total area to be irrigated is 3600 acres the whole of which was Government waste but, it is believed has been lately sold by auction. The land is valuable piece land & will probably bear a high dry assessment. Taking the dry assessment to cover maintenance &c charges, a large provision, the water rate of Rs 5 per acre will be the net return.

3600 acres at Rs 5 = Rs 18000 which will give a return of 68 per cent on the proposed outlay of Rs ~~26390~~ 26507.

15. Attached is an abstract Estimate to supersede that printed with G. O No 612 I dated 12.7.93 showing the actuals for completed works & revised provisions for the works now estimated for.

8.6

Executive Engineer.
Kistna Western Dn

8/5/6.

CHIEF ENGINEER
FOR IRRIGATION
31 JUL. 96
No. 231-Ks/1

CHIEF ENGINEER
FOR IRRIGATION
15 JAN. 97
No. 15 KS/61

SUPG. ENGINEER'S OFFICE
No. 1/2664 K.E.
17 DEC. 96
P. W. D.
SECOND CIRCLE

SUPG. ENGINEER'S OFFICE
No. 1/64
15 JUN. 96
P. W. D.
SECOND CIRCLE

Kistna Western Section

Bapatla Tank East & West branch channels — Report to accompany estimates for excavating —

34
O.W.S.T. to [illegible]
1544/97

6

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					
	49 Irrigation					
	Kistna Delta System					
	Western Delta Section					
	I. Works					
	Commamur Canal					
	3 Distributaries					
	Bapatta Tank East branch channel					
3 Works	1 Head Sluice	1,020 ✓				
	2 Pipe sluice No 1 at 0 m 1 fur	110 ✓				
	3 Bridge at 0 m 6 fur + 330'	1,270 ✓				
	4 Pipe sluice No 2 at 1 m 0½ fur	95 ✓				
	5 Bridge at 1 m 3 fur + 580'	1,170 ✓				
	6 Pipe sluice No 3 at 1 m 4½ fur	95 ✓				
	7 Bridge at 1 m 6 fur + 220'	1,210 ✓				
	8 Pipe sluice No 4 at 1 m 7½ fur	110 ✓				
	9 Spout (cement concrete pipes) at 2 m 5 fur.	50 ✓				
	10 Spout (cement concrete pipes) at 2 m 6½ fur	50 ✓				
	11 Tail drop	400 ✓				
			5,580 ✓			
4 Earthwork	2 Excavating branch channel and its distributaries	7,400 ✓				
			7,400			
	Carried over		12,980 ✓			

10 2 B 2 head

STATION—
Dated—

Executive Engineer.

2,000—15-5-95.

(E. No. 126.)

CIRCLE.

DIVISION— K 235 Kg / 48

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 Works.	Total of Sub-heads.	Total for each Canal or Distributary.	Total of each Main head.	REMARKS.
1	2	3	4	5	6	7
	Bapatta Tank East-branch channel (continued)					
	Brought-forward		12,980			
5 Miscellaneous	13 Demarcation stones	470	470	13,450		
	Bapatta Tank West-branch channel					
3 Works etc.	14 Head sluice	1,050				
	15 Pipe sluice No 1 at 0 m 4 fur	110				
	16 Bridge at 0 m 4½ fur	1,130				
	17 Pipe sluice No 2 at 1 m	80				
	18 Bridge at 1 m 0 fur + 290'	1,100				
	19 Pipe sluice No 3 at 1 m 3 fur	95				
	20 Bridge at 1 m 5 fur + 20'	1,070				
	21 Pipe sluice No 4 at 1 m 6½ fur	95				
	22 Do. No 5 at 2 m 2½ fur	115				
	23 Do. No 6 at 2 m 7 fur	95				
	24 Tail drop	400	5,340			
4 Earthwork	25 Excavating branch channel and its distributaries	3,900	3,900			
5 Miscellaneous	26 Demarcation stones	600	600	9,840		
	27 Constructing an iron trough aqueduct over Drainage channel in Bapatta Tank to carry Mulapalem branch channel	3,217 ~~3,100~~	3,217 ~~3,100~~	3,217 ~~3,100~~	26,507 ~~26,390~~	

Sanctioned in G.O. No. 1662 of 9 6

Transferred do No. 1828 of 1897

W. Baddeley Major R.E.

Superintending Engineer II C

1 0 RH 2 3- 5 5 5 5 8.6

STATION

Dated 13 June 98

Executive Engineer.

2,000—15-5-95.

15

CHIEF ENGINEER
FOR IRRIGATION.
31 JUL. 96
No. $\frac{235 \text{ KS}}{5}$

CHIEF ENGINEER
FOR IRRIGATION.
13 JAN. 97
No. $\frac{15 \text{ KS}}{57}$

(E. No. 126.)

Second CIRCLE.

DIVISION— Kistna Western

DISTRICT Kistna

SUPG. ENGINEER'S OFFICE.
No. 26/Ch.Kw
15 JUN. 96
SECOND CIRCLE.

ESTIMATE FORM—Abstract—Classified.

To accompany the Detailed Estimate No.
of 189 -9 for* Excavating Bapatla Tank East and West branch -channels-

---

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

P.W. E. 31
1524/97

Letter from the Exe: Engineer, Kistna Western Dn. to the Supg. Engineer, 2nd Circle, dy 13th June 96, No. 895.

I have the honour to forward herewith plans and estimates for excavating Bapatla Tank East & West branch Channels, to irrigate the Bapatla Tank bed lands for Sanction.

2. The report accompanying explain the necessity for the Same.

3. I have made no provision for Compensation for land as I do not know what has been done in Connection with the Sale of the tank bed.

If Compensation has to be given, it will only slightly affect the large returns anticipated.

P.S. I have since heard that the recent Sale of lands in the tank bed has not been confirmed, so the land is Gvt: land.

Encls: 58
As per list enclosed

No. $\frac{1108 \text{ KW}}{29 \cdot 7 \cdot 96}$

Forwarded to the Chief Engr. for Irrg: for favour of obtaining the Sanction of Government to the Estimates for excavating Bapatla tank east & West branch Channels in the Kistna Western Dn.

2. The excess of Rs 8600 over the revised Estimate of Bapatla Chl: Sanctioned in G.O. $\frac{612\text{ I}}{12 \cdot 7 \cdot 93}$ is explained in the report and may be met from the balance of the provision as per Item no 710 of the statement printed with G.O. No $\frac{857\text{ I}}{11 \cdot 10 \cdot 93}$.

W. Loam
for Supg. Engr. 2nd Circle
Exe. Engineer

CHIEF ENGINEER
FOR IRRIGATION.
31 JUL. 96
No. 235Ks

From

The Supg Engineer
2nd Circle

To

The Chief Engineer
For Irrign:
Madras.

No 1108 KW
29.7.96
Enls: 58
as per list
enclosed

Bapatla East & West branch Channels - Kistna Delta System - Forwards, with remark letter from the Ex Engr K.W.D. Submitting plans & Ests for Excavating —

~~O.W. E.58~~ 67
~~6052d/96~~
1544/97