

Public Works (1896) Department.

G.O., No. 496

DATED 12-6-96

[Despatch Abstract.]

Maulipatane Canal: The revised estimates amounting to Rs 61,300 for widening the second reach of — and excavating distributaries in the third and fourth reaches, sanctioned with remark.

BACK PAPERS.

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

FURTHER PAPERS.

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

No. 496 I., 12TH JUNE 1896.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From the Executive Engineer, Kistna Eastern Division, to the Superintending Engineer, II Circle, dated 22nd December 1895, No. 4168.

I have the honour to forward revised estimates for the completion of the irrigation under the third and fourth reaches of Bunder canal.

2. I have to express my regret that it should have been thought necessary to pass such severe remarks on the way in which the original estimates were sent in. I was quite aware that they were in many ways incomplete, and had I not been anxious to get sanction for the execution of some of the more urgent works, I should not have sent them in at all and had no intention of putting all the works in hand without further investigation on doubtful points.

3. During the past year I have taken the opportunity of inspecting the working of the existing arrangements and had them further investigated, and in consequence I have proposed some modifications, the nature of which will, I trust, be found sufficiently clear from the report and the sketch-map.

4. I had hoped to have sent in these revised proposals some time ago, but the investigations were first delayed by the extra work thrown on the subordinates by the water agitation, and later on my own inspection was delayed by the floods.

5. As there is no balance under unforeseen works, I have to request that the amount now required may be provided from the savings under item No. 76—G.O., No. 857 I., dated 11th October 1893.

6. I have further to state that the head sluices for Urutur, Duggumilly and Mal-lavole channels were built during the last working season in accordance with the revised proposals now sent as approved in your No. 534 K.S., dated 2nd June 1895.

7. I have to request that very early sanction may be given to the present estimates to enable materials to be collected before closure of canals for as many of the works as possible.

ENCLOSURE.

REPORT on revised proposals for west side channel distributaries, Bunder canal.

The proposals to which a partial sanction has been given in G.O. No. 208 I. of 4th March 1895 were to supply Medur and Bhumanadi channels from the west side channel taking off above Kankipad, and to supply all the rest of the distributaries by direct offtakes from the Bunder canal.

The reasons for supplying the first two channels from west side channel were—

(1) In order to utilize the first reach of this channel, because it is necessary to maintain it in order to supply the existing direct cultivation from it.

(2) Because it was found cheaper by Rs. 5,660 to carry the water by west side channel than by the second reach on account of the widening involved in the latter.

(3) Because this first reach of west side channel would be available as a surplus channel when required.

These proposals were not made without due consideration, but one fact was overlooked, which has since been brought prominently to notice by the inspection of the Gudiváda channel.

This is, that the velocity due to the surface fall proposed is likely to cause scour, and to eventually result in the same difficulty in supplying the direct irrigation as has been experienced in Gudiváda channel, and which has had to be rectified by the construction of an expensive regulator.

On this consideration alone, therefore, it is now thought better to adhere to the previously sanctioned arrangement and supply Medur and Bhumanadi channels direct from the second reach by head sluices at 22 M and 24/3 M, respectively, and the necessary provision for widening the canal has been made in the estimate now submitted.

The existing Tambogi vent in the Vuranki lock weir has this year been provided with screw-gearing which will enable it to be freely worked and will admit of the required discharge being passed into the third reach.

3rd Reach.—The only work required to enable this reach to carry the increased discharge will consist in raising and strengthening the banks in places.

As there is silt clearance required in this reach during the coming closure, the silt will be used to repair the banks and the provision for this work in the capital estimate already sanctioned is now omitted.

Two distributaries have already been sanctioned in G.O. No. 208 I., namely Urutur and Duggumilly channels, but on going thoroughly into the details of these channels, it has been considered advisable to slightly modify the sanctioned proposals as follows:—

Urutur Main channel.—The sanctioned estimate provides for a head sluice at 28/4 with two vents for a main and a left side channel.

The former was to follow the existing Jagadaladoddi channel which was to be acquired by Government and in it a drop was provided just below the head to hold up water for the supply of about 500 acres of high land situated on the right of the channel between it and the Inampudi drain.

It is now proposed to build the head sluice at 28/2, so that these lands will come under the left side channel which is on a higher level, and to excavate a completely new channel running for a short distance close to the left side of the Inampudi drain and afterwards along the right bank of the Jagadaladoddi channel.

The reasons for this change are—

The existing Jagadaladoddi zemindari channel is on a low level and at present catches a good deal of field drainage from its left side, and if it is converted as proposed in the sanctioned estimate, numerous openings will have to be left for this drainage which will interfere with its efficiency as an irrigation channel.

It will therefore be more satisfactory to retain the existing channel as a drain and excavate a completely new channel for the irrigation.

Urutur left side channel.—Instead of locating this on the right berm of west side channel as proposed in the sanctioned estimate, it is proposed to utilize the existing west side channel as it is, all that is necessary being to repair the right bank and to put up typical sections at each half furlong as it is found from experience that the berms will rapidly silt up to the F.S.L. of the channel.

This arrangement will cost less and will in the end be more satisfactory.

Duggumilly channel.—After further inspection of the lands and their means of supply it is thought that it will be quite sufficient to excavate a new channel from the head sluice down to the drop at 0/5 M where the existing main bothies branch off.

There does not appear to be any necessity to provide the new channels Nos. 1 and 2 below this point and they have therefore been omitted and the sanctioned estimate revised accordingly.

In the sanctioned estimate the Duggumilly left side channel is only provided for a length of two miles, but it is now proposed to carry it for a further distance of one and a quarter miles, so as to supply the existing Nibhanpudi channel which was first intended to be supplied by Manager codu right side channel.

The reasons for this are—

(1) The advisability of changing the position of Manager codu head sluice from 36.1 to 36.7½ which will be explained hereafter.

(2) The existing west side channel will require very little work to adopt it to carry the discharge now proposed for it.

(3) There will be one vent less to regulate and a consequent saving in cost of Manager codu head sluice.

Duggumilly left side channel.—The Duggumilly left side channel, as now proposed, will therefore end at 35/1 at which point the existing Nibhanpudi Government channel takes off and for which a head sluice will be provided.

This channel will be re-modelled and extended in two directions.

The right hand branch will tail into and supply a channel excavated by the Tsallapally Zemindar a few years ago for the supply of the lands of Chinnamuthevi and Pedamuthevi, and it may be advisable to eventually acquire and improve this channel, but this need not be done at present.

The left hand branch will be extended up to the Iylur road and supply the lands now under the Guntamraz codu. It will probably be desirable eventually to retain the latter as a drainage channel and connect it with the Inampudi drain, but it is not thought necessary to provide for this at present.

If the Guntamraz codu is converted into a drain, it will be necessary to extend the Nibhanpudi left branch across the road as marked in sketch plan by a dotted red line.

Estimates for these channels have since been included in the estimate herewith sent amounting to	Rs. 6,130	Separate estimates for the work proposed to Nibhanpudi channels have been sent in under extension and improvements and maintenance and repairs.
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Disposal of drainage from the lands under Urutur and Duggumilly channels.—At present most of this drainage collects in the low ground near Chinnamuthevi village at the tail end of these channels for want of a proper connection with the Inampudi drain.

The Jagadaladoddi channel is already connected with the old Inampudi drain which discharges into the Gathila codu.

It is therefore only necessary to connect the latter with the Inampudi drain, and a cut has been estimated for with a tentative bottom width of fifteen feet, sufficient land being acquired to widen it hereafter if found necessary.

Manager Codu channels.—This is the third distributary proposed for the third reach and the details have now been thoroughly worked out.

It is proposed to place the head sluice at 36 miles 7½ furlongs, i.e., as near the Nidu-mole lock as possible, in order to prevent the accumulation of silt which always takes place in the last mile above the lock and which costs a large sum to clear every year. This head sluice is intended to replace the existing Nimmakur sluice at 36/1 and will consist of two vents to supply a main and left side channel.

Main channel.—This will be entirely independent of the existing Manager codu channel and will merely cross it at the point where the old Aga codu crosses it at 2 miles $3\frac{1}{2}$ furlongs below the head and will then take a new line through the lands of Kaza village.

This part of the channel runs along the highest ground and will irrigate lands on both sides, those on the right draining into the Inampudi drain and those on the left into Uppa codu.

The old Aga codu mentioned above is called the Uppa codu after it crosses the Manager codu and serves the double purpose at present of an irrigation channel and a drain and finally tails into the Inampudi drain at Yendakuduru some miles further down.

It is hoped that eventually it will be possible, by the better supply maintained by the new distributaries, to stop all the irrigation now carried out from Uppa codu by means of cross bunds and allow it to work freely as a drain.

Manager codu right side channel.—As explained above under Duggumilly channel it is proposed to do away with the right side channel altogether and supply the lands by the Duggumilly left side channel.

Manager codu left side channel.—It is proposed to carry this down to 42.4 of Bunder canal and to abandon the sanctioned Mullavole right side channel as it is thought that it will be much easier to maintain the required F.S.L. for the supply of Rayavaram channel at 4 $\frac{1}{4}$ by this means than by the Mullavole right side channel as sanctioned.

The existing west side channel is in very fair order and merely requires slight repairs and provision of typical sections in places.

Fourth Reach—Mullavole channel—Main channel.—After further investigation of the details of supply to Mullavole lands, it has been found advisable to arrange for the supply of certain high lands to the right of Mullavole village by extending Kancha codu channel about one mile so as to supply water to an existing ryot's bothi running along the boundary between Aidugullapally and Mullavole village.

In the sanctioned estimate for Mullavole main channel these lands were provided for by means of a drop at 1 mile 7 furlongs, but from enquiries made it is found that there is usually a dispute between the ryots owning the high lands and those owning the low lands below the village.

The present proposals for the main channel will enable the low lands to be supplied independently of the high lands and allow them to start cultivation as soon as water is let into the canals.

It will only be necessary to throw out of cultivation some 20 acres of high land on left side in the first half mile as it is not desirable to maintain an increased F.S.L. for the sake of this small area.

Mullavole left side channel.—In order to supply about 100 acres of high land in Aukumurru Agraharam, it will be necessary to convert the existing road culvert opposite the lock into a drop. The necessity for this was overlooked when framing the sanctioned estimate, but the cost is trifling. The channel below the culvert is according to sanctioned estimate.

Right side channel.—As pointed out above this channel is unnecessary as the lands under it will now come under Manager codu left side channel.

Plans and estimates have been prepared for all the necessary masonry works and the proposals now made and shown on attached sketch-map include, it is believed, all works required to complete the irrigation under the third and fourth reaches of Bunder canal except the Manganapudi canal which is still under investigation.

The Medur and Bhumanadi channels already sanctioned will complete the irrigation under the second reach and under the fifth reach there is only one block of about 900 acres available for which separate estimate will be submitted hereafter under extensions and improvements.

(Signed) C. A. SMITH,
Ex. Engr., Kistna Eastern Division.

22nd December 1895.

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.	RS.	RS.	RS.	RS.
	49. Irrigation.				
	Kistna Delta System.				
	Eastern Section.				
	I. Works.				
	Masulipatam.				
	(2) Main Canal and Branches.				
	II. Reach.				
9. Navigation ..	1. Alterations to Veeranki lock weir ..	500	500		
11. Earthwork ..	2. Widening ..	15,750	15,750		
	III. Reach.				
9. Navigation ..	3. Alterations to Nidumale lock weir ..	500	500	16,750	
	(3) Distributaries.				16,750
	Urutur Main Channel.				
2. Land ..	4. Compensation ..	2,450	2,450		
3. Works ..	5. Head sluice ..	2,050			
Do. ..	6. Tail escape ..	120	2,170		
4. Earthwork ..	7. Excavation ..	2,480			
Do. ..	8. Earthenware pipes ..	180	2,660		
5. Miscellaneous ..	9. Demarcation stones ..	175	175	7,455	
	Urutur Left Side Channel.				
3. Works ..	10. Road culvert ..	310			
Do. ..	11. Tail escape ..	90	400		
4. Earthwork ..	12. Strengthening banks ..	470			
Do. ..	13. Earthenware pipes ..	190	660		
5. Miscellaneous ..	14. Demarcation stones ..	90	90	1,150	
	Duggumilly Main Channel.				
2. Land ..	15. Compensation ..	430	430		
3. Works ..	16. Head sluice ..	1,950			
Do. ..	17. Drop ..	250	2,200		
4. Earthwork ..	18. Excavation ..	490			
Do. ..	19. Earthenware pipes ..	50	540		
5. Miscellaneous ..	20. Demarcation stones ..	40	40	3,210	
	Duggumilly Left Side Channel.				
4. Earthwork ..	21. Excavation ..	770			
Do. ..	22. Earthenware pipes ..	120	890		
5. Miscellaneous ..	23. Demarcation stones ..	130	130		
	Nibhanpudi Main Channel.				
	Branch of Duggumilly Left Side Channel.				
2. Land ..	24. Compensation ..	350	350		
3. Works ..	25. Head sluice ..	310	310		
4. Earthwork ..	26. Excavation ..	960			
Do. ..	27. Earthenware pipes ..	120	1,080		
5. Miscellaneous ..	28. Demarcation stones ..	110	110		
	Nibhanpudi Left Side Channel.				
	Branch of Duggumilly Left Side Channel.				
3. Works ..	29. Head sluice ..	260	260		
4. Earthwork ..	30. Excavation ..	490			
Do. ..	31. Earthenware pipes ..	100	590		
5. Miscellaneous ..	32. Demarcation stones ..	60	60	3,780	
	Manager Codu Main Channel.				
2. Land ..	33. Compensation ..	4,200	4,200		
3. Works ..	34. Head sluice for main and west side channel ..	2,460			
Do. ..	35. Road culvert ..	1,680			
Do. ..	36. Tail escape ..	140	4,280		
4. Earthwork ..	37. Excavation ..	5,640			
Do. ..	38. Earthenware pipes ..	200	5,840		
5. Miscellaneous ..	39. Demarcation stones ..	300	300		
	Avurudoddi Right Side bodi, Branch of Manager Codu Main Channel.				
3. Works ..	40. Head sluice ..	290	290		

No. 496 I., 12TH JUNE 1896.

2. Estimates for a portion of the work, amounting to Rs. 29,890, were sanctioned in the order quoted above, and the difference of Rs. 31,410 may be sanctioned from the balance available for unforeseen works of the Kistna delta system.

To the Superintending Engineer, II Circle, dated 9th April 1896, No. 54 K.S.
From the " " II " " 11th May " No. 364 K.E.

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

ORDER—No. 496 I., dated 12th June 1896.

The revised estimates, amounting to Rs. 61,300, for widening Masulipatam canal, second reach, and excavating distributaries in the third and fourth reaches, are sanctioned in lieu of the partial sanction of Rs. 29,890 accorded in G.O. No. 208 I., dated 4th March 1895, the excess of Rs. 31,410 being met from the following sources:—

Item	Rs.
5	662
6	12,822
66	17,926
Total	31,410

2. This sanction is registered as No. 6 I. of 1896-97.

(True Extract.)

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

To the Chief Engineer for Irrigation.
 " Superintending Engineer, II Circle, with twenty-four enclosures.
 " Examiner, Public Works Accounts.
 " Revenue Department.

Exd. C. M. Brisson.
Spare Copies

Govt. of {1896} Madras.
PUBLIC WORKS.

Dated June, 12th.

Recd.

Encl.

G.O. No. 496 I., 12th June 1896.

JUNE.

Masulipatam Canal

The revised estimates amounting to Rs. 61,300 for widening the second reach of — and excavating distributaries in the third and fourth reaches, sanctioned with remark.

X No 4962, d. 12-june 1896

PUBLIC WORKS DEPARTMENT,
IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

To
From

200/148

63

54 K. S. 9. 9. 4. 96

From 2 1580

ds

364 Key 11. 5. 96

No 114 J. d/ 25th May 1896

Submitted to

Govt with a recom-
mendation that the
revised estimates
forwarded by the
Supg Engr, D. C. Wick,
be sanctioned.

Order thereon

The revised
estimate, amounting to
Rs 61,300 for widening
Masulipatam Canal,
2nd reach & excavating
distributaries in
the 3rd & 4th reaches,
are sanctioned in

Д. 100.
Д. 100
4. 6. 96

item of the partial
 sanction of Rs 29,890
 accorded in L.O.
 No. 208. J., of 4 March 95,
 the excess of Rs 31,410
 being met from the
 following sources: -

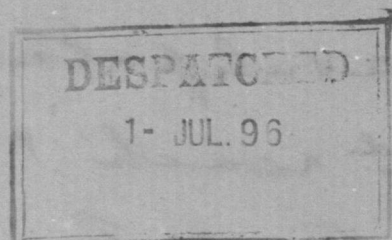
Statement printed
 in D.M.G. No. 857.9,
 of 11 Oct 195.

	Rs
Item 5	662
" 6	12,822
" 66	17,926
	<u>31,410</u>

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

H
 18/5

Recd
 25/5
 26



To
 The Chief Secy for J.
 Supp Secy to Chief with 24 enclos.
 Sd/-
 Secy to Govt.
 16/5 1896.

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 Sd/-
 Secy to Govt.
 16/5 1896.

3599 of 24-4-96.
 2089 of 4-3-95
 8843 of 11-11-93
 5623 of 7-10-90
 3563 of 22-4-93
 5759 of 1-7-85
 3528 of 22-12-76
 5773 of 1-11-88

W. CURRENT No. 5276

Estimates for widening
 Masulipatam Canal,
 2nd reach & excavating
 distributaries in the
 3 & 4 reaches. — Kishu
 Eastern Delta

Ests 29 (1 vol of plans)
 Accts: 10.6.96

Note: Plans & documents
 in a tin case

Issue

Recd
 J. 5/6

7.5.9/6

Recd
 12/6

Regd
 12/6

Letter from the Executive Engineer,
 Kishu Eastern D., to the Superintending
 Engr, dated 22nd Decr 1895
 No 4168.

I have the honor to forward
 revised estimates for the completion
 of the irrigation under the 3rd and
 4th Reaches of Pundar Canal.
 2. I have to express my regret
 that it should have been thought
 necessary to pass such severe re-
 marks on the way in which the
 original estimates were sent in.
 I was quite aware that they
 were in many ways incomplete
 and had I not been anxious
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 I should not have sent them in
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I trust he found sufficiently clear from the report and the sketch map.

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7. As there is no balance under unforeseen works I have to request that the amount now required may be provided from the Savings under Item No 76, G.O. No 857 d d 11.10.93

8. I have further to state that the head sluices for Muntur, Duggumully and Mallavott Channels were built during the last working season, in accordance with the revised proposals now sent as approved in your No 534 K.S. d d 2.6.1895.

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as

as many of the works as possible.

No 2545 K.S. 3-3-96

2. Jan

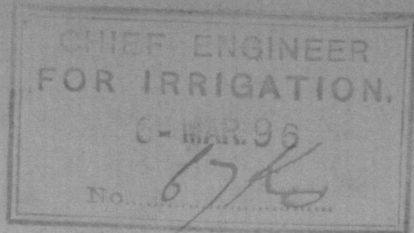
Submitted to the Chief Engineer for Dirgr. with reference to his note printed with G.O. No 208 d d 4. March 1895 for list. for favour of obtaining the sanction of Government to the revised estimate and Comparative statement amounting to Rs 61,300 for widening Prasuli, Pakam Canal, 2nd reach, and excavating distributaries in the 3rd and 4th reaches.

2. Estimates for a portion of the work amounting to Rs 29,890 were sanctioned in the order quoted above, and the difference of Rs 31,410 may be sanctioned from the balance available for unforeseen works of the Krishna Delta System.

W. Baddley

Major R.C.

Supg Engineer, II Civil



From

The Supg Engineer,
Dud. Circle.

To

The Chief Engineer,
For Irrig.
Maddur.

No 254568

Dated 3rd ^{March} Febry 1896.

Enclure (Lent. Appendix)

Masripatam Canal,

3rd & 4th Reaches -

Forward revised am.

re for completion

of the irrig. under the -

On 5.3
5/26/96

Enclosure 388
Report on revised proposals for West Side
Channel distributaries Bunder Canal.

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2. Because it was found cheaper by Rs. 5660 to
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On this consideration alone, therefore, it is now thought better to adhere to the previously sanctioned arrangement and supply Medur and Bhemanadi Channels direct from the 2nd Reach by head sluices at 22 M and 24/3 M respectively and the necessary provision for widening the Canal has been made in the estimate now submitted.

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3rd Reach

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The former was to follow the existing Jagadadoddi Channel which was to be acquired by Government and in it a drop was provided just below the head to hold up water for the supply of about 500 acres of high land situated on the right of the channel between it and the Namrudli Drain.

It is now proposed to build the Head Sluice at 28/2 so that these lands will come under the left side channel which is on a higher level, and to excavate a completely new channel running for a short distance close to the left side of the Namrudli Drain and afterwards along the right bank of the Jagadadoddi Channel.

The reasons for this change are,

The existing Jagadadoddi Secondary Channel is on a low level and at present catches a good

deal of field drainage from its left side and if it is converted as proposed in the sanctioned estimate numerous openings will have to be left for this drainage which will interfere with its efficiency as an irrigation channel.

It will therefore be more satisfactory to retain the existing channel as a drain and excavate a completely new channel for the irrigation.

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Instead of locating this on the right bank of west side channel as proposed in the sanctioned estimate it is proposed to utilize the existing west side channel as it is, all that is necessary being to repair the right bank and to put up typical sections at each half furlong as it is found from experience that the banks will rapidly silt up to the F.S.L. of the Channel.

This arrangement will cost less and will in the end be more satisfactory.

Daggumilly Channel

After further inspection of the lands and their means of supply it is thought that it will be quite sufficient to excavate a new channel from the head sluice down to the drop at $\frac{2}{5}$ M where the existing main botties

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58P

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- (2) The existing west side channel will require very little work to adapt it to carry the discharge now proposed for it.
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Daggumilly Left Side Channel

The Daggumilly Left side channel as now proposed will therefore end at 35 at which point the existing Nibhanpudi Government Channel takes off and for which a head sluice will be provided.

This channel will be remodelled and extended in two directions.

The

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supply of the lands of Chinamuttavi and Peda-
muttavi, and it may be advisable to eventually
acquire and improve this Channel, but this
need not be done at present.

The left hand branch will be extended upto
the Siler Road and supply the lands now
under the Gantamaru Codu. It will probably
be desirable eventually to retain the latter as
a drainage Channel and connect it with
the Inampudi drain but it is not thought neces-
sary to provide for this at present.

If the Gantamaru Codu is converted into a
drain it will be necessary to extend the Nibhanpudi
left branch across the road as marked in
sketch plan by a dotted red line.

Separate Estimates for the work proposed to Ni-
bhanpudi Channels have been sent in under
extension and Improvements and Maintenance
and Repairs.

Estimates for these
channels have since
been included in the
estimate herewith
sent amounting to Rs 61,30.

Disposal of drainage from the lands
under Urutur and Daggumilly Channels.

At present most of this drainage collects
in the low ground near Chinnamuttavi village
at the tail end of these channels for want
of a proper connection with the Inampudi
Drain.

The Jagaduladoddi Channel is already

connected with the old Inampudi Drain
which discharges into the Gathila Codu.

It is therefore only necessary to connect
the latter with the Inampudi drain, and a
cut has been estimated for with a tentative
bottom width of 15 ft. sufficient land being
acquired to widen it hereafter if found
necessary.

Manager's Codu Channels.

This is the third distributary proposed
for the 3rd Reach and the details have now
been thoroughly worked out.

It is proposed to place the Head Sluice
at $36 - 7\frac{1}{2}$ i.e. as near the Nidumole Lock
as possible in order to prevent the accumu-
lation of silt which always takes place in the
last mile above the Lock and which costs
a large sum to clear every year.

This Head Sluice is intended to replace
the existing Nimmakur Sluice at 36 and will
consist of two vents to supply a main and
left side Channel.

Main Channel

This will be entirely independent of the existing
Manager's Codu Channel and will merely cross it
at the point where the old Aga Codu crosses
it at $2 - 3\frac{1}{2}$ below the head and will then
take a new line through the lands of Kaga village.

This part of the channel runs along the highest ground & will irrigate lands on both sides, those on the right draining into the Inampudi drain and those on the left into Uppa Codu.

The old Agacodu mentioned above is called the Uppa Codu after it crosses the Manager Codu and serves the double purpose at present of an irrigation channel and a drain and finally falls into the Inampudi Drain at Nenda Kuduvu some miles further down.

It is hoped that eventually it will be possible by the better supply maintained by the new distributaries to stop all the irrigation now carried out from Uppa Codu by means of cross bounds & allow it to work freely as a drain.

Manager Codu right side Channel

As explained above under Daggunilly Channel it is proposed to do away with the right side channel altogether and supply the lands by the Daggunilly left side channel.

Manager Codu left side channel

It is proposed to carry this down to 42.4 of Bander Canal and to abandon the sanctioned Mullavole Right side channel as it is thought that it will be much easier to maintain the required

required F. S. C. for the supply of Rayavaram channel at 4.4 by this means than by the Mullavole Right side channel as sanctioned.

The existing West side channel is in very fair order and merely requires slight repairs and provision of typical sections in places.

4th Reach.

Mullavole Channel

Main Channel

After further investigation of the details of supply to Mullavole lands, it has been found advisable to arrange for the supply of certain high lands to the right of Mullavole village by extending Kancha Codu channel about 1 mile so as to supply water to an existing ryots both running along the boundary between Adugulla pally and Mullavole village.

In the sanctioned estimate for Mullavole Main Channel - these lands were provided for by means of a drop at 1.7 but from enquiries made it is found that there is usually a dispute between the ryots owning the high lands and those owning the low lands below the village.

The present proposals for the main channel will enable the low lands to be supplied independently of the high lands and allow them to start cultivation as soon as water is let into the Canals.

It will only be necessary to throw out of cultivation some 20 acres of high land on left side in the first half mile as it is not desirable to

maintain an increased F. S. C. for the sake
of this small area

9 Mullavole Left side Channel

0 In order to supply about 100 Acres of high land
a in Subhummur & Agalaharam, it will be neces-
sary to convert the existing road culvert op-
i posite the Lock into a drop. The necessity
2 for this was overlooked when framing the sanctioned
estimate but the cost is trifling. The channel
below the culvert is according to sanctioned
estimate.

3 Right Side Channel

4 As pointed out above this channel is
unnecessary as the lands under it will now
come under Manager Poodu Left side Channel.

5 Plans and estimates have been prepared for
all the necessary masonry works and the proposals
now made and shown on attached sketch maps
include, it is believed, all works required to
complete the irrigation under the 3rd & 4th Reaches
of Bunder Canal except the Mangalapudi Canal
which is still under investigation.

The Medur and Pheemanaiddis Channels - al-
ready sanctioned will complete the irrigation under
the 12th Reach and under the 5th Reach there is
only one block of about 900 acres available for which
separate estimate will be submitted hereafter under
extensions and Improvements.

(Signed) C. A. Smith

22/12.
En. Engr. Krishna Rao

W. B. Smith (True Copy)
Major R. E.
Superintending Engineer 2nd Circle

CHITTE
FOR INDICATION.

6-11-1898

67^{ks}
2

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 #9 Irrigation Kistna & Delta System Kopastern Section I Works Masulipatam Canal					8
	12/ Main Canal & Branches					
	II Reach					
9. Navigation	Alterations to Veeranki Lock Weir	500	500			
11. Earthwork	2 Widening	15,750	15,750			
	III Reach					
9. Navigation	Alterations to Kidumale Lock Weir	500	500	16,750	16,750	
	13/ Distributaries					
	Urutur main channel					
2. Land	4 Compensation	2,450	2,450			
3. Works	5 Head sluice	2,050				
— " —	6 Tail Escape	120	2,170			
9	Carry over		4,620		16,750	

STATION

Dated
2,000—15-5-95.

Executive Engineer.

Order
5/27/98

Masulipatam Canal.
Report received from
for West side channel
distributaries of 3rd & 4th
Reaches of —

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 Works.	Total of Sub-heads.	Total for each Canal or Distributary.	Total of each Main head.	REMARKS.
1	2	3	4	5	6	7
	<i>B. forward</i>					
4. Earthwork	7 Excavation	2,480	✓ 4,620		16,750	
"	8 Earthenware pipes	180	✓ 2,660			
5. Miscellaneous	9 Demarcation stones	175	✓ 175	✓ 7,450		9
	<i>Wintur Left side channel</i>					
3. Works	10 Road Culvert	310	✓			
"	11 Tail Race	90	✓ 400	✓		
4. Earthwork	12 Strengthening Banks	470	✓			
"	13 Earthenware pipes	190	✓ 660	✓		
5. Miscellaneous	14 Demarcation stones	90	✓ 90	✓ 1,150		
	<i>Waggumilly Main Channel</i>					
2. Land	15 Compensation	430	✓ 430			
3. Works	16 Head sluice	1,950	✓			
"	17 Drop	250	✓ 2,200	✓		
4. Earthwork	18 Excavation	490	✓			
"	19 Earthenware pipes	50	✓ 540	✓		
5. Miscellaneous	20 Demarcation stones	40	✓ 40	✓ 3,210		
	<i>Waggumilly Left Side chl.</i>					
4. Earthwork	21 Excavation	770	✓			
"	22 Earthenware pipes	120	✓ 890	✓		
5. Miscellaneous	23 Demarcation stones	130	✓ 130	✓		
	<i>Nibhanprudi Main chl. Branch of Waggumilly L.S. chl.</i>					
2. Land	24 Compensation	350	✓ 350	✓		
3. Works	25 Head sluice	310	✓ 310	✓		
	<i>Carry over</i>					
			1680	11,815	16,750	

STATION—

Dated _____
2,000—15-5-25.

Executive Engineer.

(E. No. 126.)

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 Works.	Total of Sub-heads.	Total for each Canal or Distributary.	Total of each Main head.	REMARKS.
1	2	3	4	5	6	7
	<i>17. forward</i>		<i>1,680</i>	<i>11,815</i>	<i>16,750</i>	
4. Earthwork	26 Excavation	960				
"	27 Earthenware pipes	120	<i>1,080</i>			
5. Miscellaneous	28 Demarcation Stones	110	<i>110</i>		<i>10</i>	
	<i>Nibhanpudi Left Side Chl. Branch of Daggametty M.S. chl.</i>					
3. Works	29 Head Sluice	260	<i>260</i>			
4. Earthwork	30 Excavation	490				
"	31 Earthenware pipes	100	<i>590</i>			
5. Miscellaneous	32 Demarcation Stones	60	<i>60</i>	<i>3,780</i>		
	<i>Manager Codur Main chl.</i>					
2. Land	33 Compensation	4,200	<i>4,200</i>			
3. Works	34 Head Sluice for main & West Side Channel	2460				
"	35 Road Culvert	1680				
"	36 Tail Escape	140	<i>4,280</i>			
4. Earthwork	37 Excavation	5,640				
"	38 Earthenware pipes	200	<i>5,840</i>			
5. Miscellaneous	39 Demarcation Stones	300	<i>300</i>			
	<i>Arurudoddi Right side bodi, Branch of Manager Codur main channel</i>					
3. Works	40 Head Sluice	290	<i>290</i>			
	<i>Arurudoddi Left Side bodi, Branch of Manager Codur main Chl. Carry over</i>					
			<i>14,910</i>	<i>15,595</i>	<i>16,750</i>	

STATION

Dated
2,000-15-5-25.

Executive Engineer.

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 Works.	Total of Sub-heads.	Total for each Canal or Distributary.	Total of each Main head.	REMARKS.
1	2	3	4	5	6	7
	<i>3- Works 41 Head sluice</i>	<i>290</i>	<i>290</i>	<i>14,910</i>	<i>15,595</i>	<i>16,750</i>
	<i>Nonabathula pond Channel</i> <i>Branch of Manager Coder</i> <i>Main Channel</i>					<i>11</i>
	<i>3- Works 42 Head sluice</i>	<i>290</i>	<i>290</i>	<i>15,490</i>		
	<i>Manager Coder Left Side chl.</i>					
	<i>3- Works 43 Tail Escape</i>	<i>110</i>				
	<i>" 44 Road Culvert</i>	<i>1,140</i>				
	<i>" 45 Sluice at 37m. 2 1/2 Ins.</i>	<i>230</i>				
	<i>" 46 Sluice at 37m 7 Ins.</i>	<i>230</i>		<i>1,710</i>		
	<i>4- Earthwork 47 Excavation</i>	<i>300</i>				
	<i>" 48 Earthenware pipes</i>	<i>130</i>		<i>430</i>		
	<i>5- Miscellaneous 49 Demarcation sluice</i>	<i>150</i>		<i>150</i>		
	<i>Extending Pancha-coder chl.</i> <i>Branch of Manager Coder</i> <i>Left Side Channel.</i>					
	<i>2- Land 50 Compensation</i>	<i>700</i>		<i>700</i>		
	<i>3- Works 51 Head sluice</i>	<i>270</i>		<i>270</i>		
	<i>4- Earthwork 52 Excavation</i>	<i>660</i>				
	<i>" 53 Earthenware pipes</i>	<i>50</i>		<i>710</i>		
	<i>5- Miscellaneous 54 Demarcation sluice</i>	<i>60</i>		<i>60</i>		
	<i>Maddipalla Channel</i> <i>Branch of Manager Coder L.S. chl.</i>					
<i>9</i>	<i>Carry over</i>			<i>4,030</i>	<i>31,085</i>	<i>16,750</i>

STATION—

Dated _____
2,000-15-5-95.

Executive Engineer.

(E. No. 126.)

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 Works.	Total of Sub-heads.	Total for each Canal or Distribu- tary.	Total of each Main head.	REMARKS.
1	2	3	4	5	6	7
	<i>B. forward</i>		<i>4,085</i>	<i>31,085</i>	<i>16,750</i>	
<i>3- Works</i>	<i>55 Head sluice</i>	<i>230</i>	<i>230</i>	<i>4,260</i>		
	<i>IV Ranch</i> <i>Mallavale main channel</i>					
<i>2- Canal</i>	<i>56 Compensation</i>	<i>850</i>	<i>850</i>			
<i>3- Works</i>	<i>57 Head sluice</i>	<i>1,740</i>				<i>12</i>
	<i>58 Tail Escape</i>	<i>120</i>	<i>1,860</i>			
<i>4- Earthwork</i>	<i>59 Excavation</i>	<i>2,540</i>				
	<i>60 Earthen ware pipes</i>	<i>100</i>	<i>2,640</i>			
<i>5- Miscellaneous</i>	<i>61 Demarcation sluice</i>	<i>170</i>	<i>170</i>			
	<i>Polimero Codu, branch of</i> <i>Mallavale main channel</i>					
<i>3- Works</i>	<i>62 Head sluice</i>	<i>220</i>	<i>220</i>			
	<i>Ipska Codu, branch</i> <i>of Mallavale main chb,</i>					
<i>3- Works</i>	<i>63 Head sluice</i>	<i>230</i>	<i>230</i>			
	<i>Polimeraku Codu at</i> <i>2 mi 5 f, branch of Mallavale</i> <i>main channel</i>					
<i>3- Works</i>	<i>64 Head sluice</i>	<i>260</i>	<i>260</i>			
	<i>Dressor's Codu, Branch of</i> <i>Mallavale main channel</i>					
<i>3- Works</i>	<i>65 Head sluice</i>	<i>260</i>	<i>260</i>	<i>6,490</i>		
	<i>Carry over</i>			<i>41,835</i>	<i>16,750</i>	

STATION—

Dated
2,000-15-5-95.

Executive Engineer.

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.

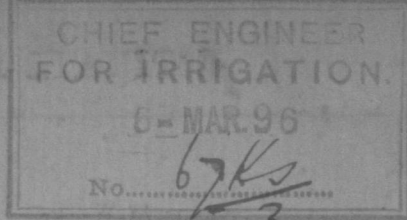
Sub-head.	Names of Works.	Amount of Estimate for individual Works.	Total of Sub-heads.	Total for each Canal or Distribu- tary.	Total of each Main head.	REMARKS.
1	2	3	4	5	6	7
	P. Funnus 10			✓	✓	
	Mallawale Left Side Channel			4,885	16,750	
3. Works	66 Tail Escape	✓ 145				
"	67 Improvements to Road	✓ 100	245			
	Culvert					
4. Earthwork	68 Excavation	✓ 980				
"	69 Earthenware pipes	✓ 80	1,060	1305	43,140	
	141 Drainage & Protective works					
	Excavating drain from Shur road near China Muttavi to Inampundi drain					
2. Land	70 Compensation	✓ 550	550			
4. Earthwork	71 Excavation	✓ 800	800			
5. Miscellaneous	72 Demarcation stones	✓ 60	60	1410	1410	
					61,300	

STATION

Dated _____
2,000-15-5-95.

Executive Engineer

II Circle



(E. No. 126.)

Second CIRCLE.

DIVISION—

Eastern

DISTRICT

I. Listna

ESTIMATE FORM—Abstract—Classified.

To accompany the Detailed Estimate No.
of 189 -9 for Masulipatam
Canal—widening II
and excavating distributaries
in the III & IV Reaches of—

Revised

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

0.5.5
5276/56

Vide R. 67 Rs/96

Memorandum

No 54 Rs 49-9

In acknowledging
the receipt of indor-
ment, No. 2545 Rs.
of 3rd set, of the
Supp. Inf. D. C. C. C.
forwarding a revised
estimate, amount to
Rs 61300, for widening
the Masulipatam
Canal, 2nd reach,
& excavating distri-
butaries in the 3rd
& 4th reaches, the
undersigned has the
honor to observe that
there is no balance
available for unfore-
seen works of the
Kistna Delta System
from which the
sums of Rs 31410
may be provided.
2. From the saving
of Rs 37,184 referred

26.7.1896

Superintending Engineer's Office,

No. 364 NE

II CIRCLE,

Dated 11 May 1896.

From,

Major W. L. C. Baddeley Esquire, R.E.

Superintending Engineer,

II Circle.

To,

The Chief Engineer
for Irrigation
Madras.

Sir,

With reference to your Memo No. II KS
dated 9th April/96, I have the honour ⁵⁴ to
request that you will be so good as to
sanction the balance of the excess of Rs 17,926
referred to therein from the provision of item
No. 66 of the statement printed with G. O.
No. 857 dated 11th October/93.—

I have the honour to be,

Sir,

Your most obedient servant

W. L. C. Baddeley Major R.E.

Superintending Engineer
II Circle.

26.5.96.

No. 5.2
5276/96

CHIEF ENGINEER
FOR IRRIGATION.
13 MAY. 98

1536

From

The Supg Engineer
Second Circle

From,

The Superintending Engineer,

II Circle.

To,

The

To The Chief Engineer
For Irrigation.

Dated

Received

18

Dated 11 May 1896

No 364 H.E.

Enclosures.

NO.

SUBJECT.

Widening the Masuli
plan Canal 2nd reach & excavating dis-
tributaries in 3rd & 4th reaches.

Reporting the source
from which the revised
estimate for may be met
with.

4969