

(1) Number of pages 598(2) Date of repair 15-12-37

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. <u>5874-75</u>	Press Mis.
<u>275-75</u>	
Dated <u>12</u> <u>12</u> 18 <u>68</u> .	

Not to be folded or roughly handled

69

*Proceedings of the Madras Government, Public Works Department,
12th December 1868.*

No. 273. Read the following Endorsement of the Chief Engineer for Irrigation, dated Fort St. George, 24th November 1868, No. 93 :—

Read the following letter from the Superintending Engineer, 4th Division, to the Chief Engineer for Irrigation and Joint Secretary to Government, Public Works Department, dated Madras, 1st October 1868, No. 3,240.

1. Adverting to G. O., No. 29, dated 20th November 1867, I have the honor of resubmitting the documents connected with the project of widening and improving the north branch of the Cheyaur channel, in the North Arcot District, from Nullalam tank to Tettry tank, a distance of nearly eight miles, with the additional information called for.

1 Survey.
1 Section.
4 Plans of Bridges, &c.
1 Detailed Estimate.
1 List of Tanks.
1 Ayacut Statement.

2. It will be observed that this is no *extension* of the Cheyaur anicut system of works, but merely a widening and general improving of channels (the requisite increase being given to bridges and aqueducts) cut on the original estimate, but I am afraid in a very inefficient manner, levels being lost sight of. The survey now forwarded shows the position of the channel in question in relation to the Poorsay branch and tanks connected therewith. The width of the existing channel above where the branch leads off is twenty-four feet, and the greatest depth of water at head of branch four feet.

3. Consequent on the enlargement of the main channel as far as Nullalum, above 140 millions of cubic yards of water, it is stated, passed down during last year's freshes, but the water proceeded only as far as the Helepy tank.

4. The contemplated improvements will, when carried out, allow of water reaching Tettry tank, and furnish a supply to a great many other tanks. Two of these tanks, however, are not in the North Arcot District, and the revenue calculations, furnished by the Collector of that district, do not include them. The capacities of the tanks have not been estimated.

5. The Collector's ayacut statement shows that an increase of revenue of Rupees 4,171 may be looked for, which is about $8\frac{1}{4}$ per cent. on the intended outlay, viz., Rupees 47,000.

6. The estimate provides for repairing and strengthening only those tanks which actually form a portion of the channel. There are three of this kind including the Tettry tank.

7. The estimates prepared for raising and strengthening the Coviloor, Nullalem, and Naikenary tanks have been forwarded to the Government of India, for sanction, *vide* G. O., No. 2,167, dated 8th July 1868.

8. A sum of Rupees 20,000 is provided in the current year's Budget, Item 159, for the project now submitted, and, on Mr. Bevan's urgent solicitations, I permitted him to commence it in anticipation of sanction, as the season was very unfavorable, and it was desirable to give as much work as possible to the poor in the neighbourhood of the channel.

9. You are doubtless aware that the main Cheyaur channel, from the anicut to Mokoor, was first taken up for widening and generally improving, and was

*Proceedings of the Madras Government, Public Works Department,
12th December 1868.*

carried out to the full, that then the Poorsay branch was put in hand, and similarly dealt with; the project now submitted is the third and the last of the same character, and should not be allowed on any account to lie over until a general finishing plan for all Cheyaur works can be submitted, as propounded in your memorandum No. 57, dated 27th July 1868.

10. If this point is insisted on, it will be at the sacrifice of a large revenue

11. I have felt it my duty lately to stop the works, but I most earnestly solicit instructions for their early continuance.

Endorsement of the Superintending Engineer, 4th Division, dated Madras, 13th November 1868, No. 3,974.

From W. G. BEVAN, Esq., Assistant Engineer, Polur Range, to the Superintending Engineer, 4th Division, dated Arnee, 9th November 1868, No. 412.

1. With reference to your endorsement No. 3,643, of the 26th ultimo, on a memorandum of the Chief Engineer for Irrigation, I have the honor to submit herewith revised plans and estimate as per margin, for improving the Tetry branch of the Cheyaur channel.

1 Estimate.
1 Sheet of Survey and Sections.
1 Do of Sketch map.
4 Plans of Bridge.
2 Specification Reports.
1 Urjee.

2. I regret that the the plans, &c., which I first submitted were not correct, but you are aware of the disadvantage I labour under in getting up a project with my very small Office establishment, and without a Draughtsman, which I hope will in some measure excuse me.

3. The longitudinal levels were taken along the bed of the channel, and reduced from the sill of the masonry work at its head.

4. The cross sections were taken wherever there was any perceptible difference in the width of the old channel, and they agree with the longitudinal section.

5. The survey and levels having been made before the Chief Engineer's Memorandum, No. 44 A, was received, I did not take the cross sections at equal intervals, as directed therein.

6. I am also unable to show the profile of the main channel, the length of which, from the head sluice to the head of the Tetry branch, is nineteen miles, five furlongs, and sixty-seven yards, having a total fall of 38.75 feet. Except that the channel has no fall for two miles from the head sluice it is pretty equally distributed.

7. The main head sluice has seven vents, each five feet wide, and when the water stands flush with the crown of the anicut, the head of water at the sluice is seven feet.

8. It is impossible to calculate what the increase of revenue will be, as it all depends upon the number and duration of the floods in the Cheyaur during the year, but the channel will command a greater extent of waste and Punja land than the Cheyaur can supply water for, even if every drop was utilized.

9. I enclose a petition which was forwarded to the Board of Revenue by the Ryots who cultivate under the channel, from which you will see that Rupees 50,000 has been promised if water is supplied.

10. The channel has been carried on the slope of the hills, and cuts all the natural drainage, so that there will be no difficulty in distributing the water to the several tanks.

11. I have been informed that the work was stopped in 1853, owing to want of funds, and that the reason of its not again been taken up was that it became apparent that until the head works, &c., were enlarged, this branch could not be supplied with water.

12. All the figures given in the estimate can be traced to the sections.

*Proceedings of the Madras Government, Public Works Department,
12th December 1868.*

13. The fall between the Nurramampullum and Tetry tank is very great, being 38.61 feet in three miles, four furlongs, and 133 yards, but as the cutting is mostly through rock, I do not think the bed of the channel will scour.

14. I have provided for raising the embankments of the three tanks, which the channel runs through, six feet above the bed of channel, this I think necessary as the tanks receive the drainage of the waste land in the vicinity.

15. I again beg most respectfully to request that you will be pleased to strengthen my office by obtaining sanction for the employment of a Draughtsman to the Range.

2 Surveys.
4 Plans.
1 Detailed Estimate.
1 Ayacut Statement.
2 Reports.

FORWARDED to the Chief Engineer for Irrigation and Joint Secretary to Government, Public Works Department, with reference to his Memorandum, No. 77, dated 17th October 1868.

(Signed) A. J. M. BOILEAU, Colonel, R. E.,
Superintending Engineer, 4th Division.

THE estimates referred to in the foregoing letters were originally submitted in November 1867, but were returned* in consequence of their being wanting

* G. O. No. 29, 20th November 1867.

in various particulars. They were resubmitted by the Superintending Engineer on the 1st October 1868, but still in a defective state, and I had again to return them.

2. The Range Officer has now been at pains to draw up the project in a complete manner; the information he affords is full and satisfactory, and the plans and sections are very much more lucid and detailed than those originally submitted.

3. The project provides for the improvement of the Tetry or northern branch of the Cheyaur anicut channel. A reference to the sections, shows that it has been excavated without any regard to the levels of the ground, to a depth of from one to two yards below the surface. The bed in consequence presents extraordinary irregularities, falling in some places to a depth of seven or eight feet below the level at the head of the branch channel, and rising again to that level, at the distance of four miles from the head. It is thus quite impossible that the tanks beyond should get a supply.

4. The estimates provide for the excavation of the channel to an uniform bottom width of eighteen feet, its present width being variable, but generally from eight to twelve feet, and with a regular fall of nearly two feet per mile (corresponding very closely with that of the main channel higher up) to the Nurramampullum tank, a distance of five miles, for the raising of the embankments of this tank, and for the continuation of the channel through two other tanks, for a distance of three miles further, also for raising the bunds of the tanks. The bed is described as hard, but of various qualities, ranging from clay up to rock. These have been carefully distinguished in the estimates, no less than six different rates, from 2 Annas up to Rupee 1-8-0 per cubic yard, being specified.

4

*Proceedings of the Madras Government, Public Works Department,
12th December 1868.*

5. The estimates further provide for the enlargement of three bridges, and for the construction of two new bridges, and of three irrigation sluices.
6. The Collector estimates the returns at Rupees 4,171, or nearly nine per cent. on the proposed outlay, Rupees 47,600.
7. The works being unquestionably necessary for the proper utilizing of the supply which is drawn off from the Cheyaur by the main channel connected with the anicut, I would recommend the outlay for the sanction of Government.
8. The estimates may be classified under the following heads :—

<i>Main Canals and branches.</i>	
Bridges	Rs. 3,410
Earthwork	„ 30,310
<i>Supply of tanks.</i>	
Masonry works	„ 1,010
Earthwork	„ 12,870

Total Rs. 47,600

(Signed) J. C. ANDERSON, Colonel, R. E.,
Chief Engineer for Irrigation.

No. 274. ORDER THEREON, 12th December 1868, No. 3,874.

IRRIGATION, No. 13.

The Government approve of the estimates submitted with these papers, and authorize the Superintending Engineer of the 4th Division to proceed with the works from the provision made for them in the current year's Budget, pending the settlement of the question raised by the Government of India as to whether their cost should be properly debited to the "Agricultural Extraordinary grant."

Item No. 159.

Ordered that the following letter be sent to the Government of India :—
(Here enter No. 3,875, dated 12th December 1868.)

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To the Superintending Engineer, 4th Division.
„ Controller of Public Works Accounts.
„ Accountant General.
„ Revenue Department.
„ Chief Engineer for Irrigation.

Exd. S. T. Augustín.

Govt. of 1868 Madras.

PUBLIC WORKS.

To

THE SUPERINTENDING ENGINEER,

4th Division.

cc. cc. cc.

Dated December, 12th.

Recd.

Encl.

G. O., 12th December 1868. No. 3,874.

DECEMBER.

Nos. 273-274

Cheyaur Anicut Channel.—Passing orders on the letter from the Superintending Engineer of the 4th Division, submitting estimates, amounting to Rupees 47,600, for the improvement of the northern branch of the Cheyaur anicut channel from the Nullalam to the Tettry tank in the North Arcot District.

PUBLIC WORKS DEPARTMENT,
FORT ST. GEORGE, 12th December 1868.

No. 3,875.

No. 275.

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
PUBLIC WORKS DEPARTMENT.

SIR,

IRRIGATION, No. 14.

1. I am directed by His Excellency the Governor in Council to forward the accompanying plans, with estimates amounting in the aggregate to Rupees 47,600, for the improvement of the northern branch of the Cheyaur anicut channel from the Nullalam to the Tettry tank in the North Arcot District, the length being nearly eight miles.

2. The works proposed to be carried out consist chiefly of deepening and widening the channel so as to give it a uniform slope of about two feet per mile, with a bottom width of 18 feet; of raising and strengthening the banks of the Nurrampullum, Cooroomboor, and Sadayary tanks, which form a portion of the channel, and of enlarging three existing, and constructing two new, bridges. The estimates also provide for the continuation of the channel through the two last named tanks.

3. Owing to the enlargement of the channel up to Nullalam, water passed down as far as the Helepy tank last year, and the contemplated improvements will enable it to reach the Tettry tank, and furnish a supply to a great many other tanks.

4. From the statement furnished by the Collector it appears that an increase of revenue to the extent of Rupees 4,171, or nearly nine per cent. on the proposed outlay of Rupees 47,600, may be expected. Concurring in the opinion of the Chief Engineer for Irrigation that the works included in the estimate are unquestionably necessary for the proper utilization of the supply which is drawn off by the channel by means of the anicut across the Cheyaur, this Government have, in pursuance of the recommendation of the Superintending Engineer of the 4th Division, authorized them to be proceeded with from the provision made for them in the current year's Budget, and I am to request that this proceeding may receive the approval of

Item No. 159.

the Government of India, pending the final settlement of the question raised in your letter of the 1st September 1868, No. 132 A, as to whether the works connected with the Cheyaur anicut, are of a sufficiently remunerative character to admit of their being carried out from Loan Funds.

I have the honor to be,

Sir,

Your most obedient servant,

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

Exd. S. T. Augustin.

Cheyaur Aicut Channel.—Estimate amounting to Rupees 47,600 for the improvement of the northern branch of the Cheyaur aicut channel from the Nullalam to the Tetry tank in the North Arcot District, forwarded to the Government of India with remarks.

[illegible]

LIST of Estimates of Irrigation Works in the District of NORTH ARCOT recommended for the Sanction of the Superintending Engineer.

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Report

North Arcot District
No. 5th or Polur Range

Estimate Rupees (2100) for Constructing two bridges each 3 segmental arches of 10 feet span each, across the road from Congeravur to Mandavach.

1. The bed is of hard Morambas and has a fall of 6 feet.
2. Foundation. Rough stone in Chumam four feet deep resting on hard Morambas.
3. The Centwaters of the pier are to be connected with each other and with the abutments by a retaining wall of Rough stone in Chumam 2 feet deep and the floor under arches of the same material 2 feet in thickness.
4. The pier are to be $2\frac{1}{2}$ feet thick, and the abutments 3 feet raised to a uniform height of 3 feet; the versed sine of the arch to be $2\frac{1}{2}$ feet giving a total height $5\frac{1}{2}$ feet to the soffits and allowing a clear height of $2\frac{1}{2}$ feet above the highest flood.

The Superstructure of the bridge is to be of brick in Chumam plastered with one Coat

6/2307/9

1/2265/18.

Coat of Chumam. Cutwaters of the same material.

Parapets are to have no interior cornices and the roadway over the bridge is to be horizontal as well as the approaches to it over the arch is to have clear width between parapets of 15 feet.

Done
9th November
1868

W. W. W. W.
Assistant Engineer Public
Ranger

Pr. 230/69

[Signature]

Report.

North Street District
No. 5th or Police Range

Patney branch of the Cheyar Rain Channel

1. Widening and deepening the branch of the Cheyar channel, which leads off from the main channel at Melmah to where it crosses the Cojjevennam road at the village of Patney.

2. Estimate Super (47,600) Bridge seven thousand and six hundred and comprising the following items.

97843	Cubic yards of Clay	at 0.20	12230.60
24787	do of Mortar	at 0.30	2647.90
20857	do of Paid Mortar	at 0.40	5214.40
139083	do of Chalk	at 0.60	1396.20
1320	do of Removing Rock	at 0.80	660.00
1396	do of Stone Cement	at 1.00	1396.00
530	do of Blasting Rock	at 0.80	795.00
2826	do of Graveling	at 0.60	797.40
560	do of Retaining	at 0.120	420.00
33408	Square yards of Paving	at 0.06	1064.00
	Masonry work		
	Improving and widening		
3	Bridges over channel	at 1140.00	1140.00

Constructing 2 New Bridges where the Channel
 Cuts the Ceylonian road at 1050 ft each $\text{Rs } 2100000$
 Constructing 3 Sluices in the following tanks
 Viz. Kumbhappullam & Combar at $\text{Rs } 320000$ each.
 Sundries at 5 per cent

Total Estimate Rupees 2289700
4760000

3. The extent of land that ^{could} be irrigated from the branch if sufficient water could be had is about 466 acres
4. Expected increase of revenue on proposed expenditure cannot be ascertained.
5. The proposed Channel is calculated to supply during an average season 8 Million Cubic yards of water or sufficient for 1600 acres of land.
- The country through which the Channel runs is rocky and covered with low jungle. its total length is 8 miles, 7 furlongs & 25 yards and has a fall per mile of 6 feet 4 inches and its average section is 63 feet wide to top 18 feet. average hydraulic mean depth $2\frac{1}{2}$ feet.
6. Although no water hitherto flowed down the Channel owing to its only being partially excavated. the following measuring works have been constructed viz:-

- 1 Headwork
- 3 Bridges

of Distributing sluices with a Calingula
 & sluice combined to fill the tanks
 in the vicinity of Kelumak.

M. S. S. S.

Assistant Engineer P. S. S.

Ames
 9th November
 1868

Constructing 2 New Bridges where the Ch. 1

and
is
is

Mr 230/69

No. 3240.

Sup. Engr's Office 1st Div.
Madras 1st September 1868

From,

Colonel A. J. M. Boileau R. E.
Superintending Engineer 1st Div.

To,

Colonel J. C. Anderson R. E.
Chief Engineer for Irrigation
and Joint Secretary to Government S. M. D.

Will forward
Sir,

Adverting to G. O. No. 29 dated 20th
November 1867 I have the honor of resubmitting the
Enclosures 1 Survey documents connected with the project of widening
1 Section and improving the North branch of the Cheyaur
4 Plans of Bridges Channel in the North Arcot District from Kallalam
1 Detailed estimate Tank to Pory Tank a distance of nearly 8 miles
1 List of tanks with the additional information called for.

2. It will be observed that this is no
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But am afraid in a very inefficient manner,
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relation to the Porsay branch and tanks
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Channel

Channel above where the branch leads off is 24 feet, and the greatest depth of water at head of branch 4 feet.

3 Consequent on the enlargement of the main channel as far as Nallalam, about 140 millions of cubic yards of water, it is stated, passed down during last years freshes, but the water provided only as far as the Tety Tank.

4 The contemplated improvements will when carried out allow of water reaching Tety tank and furnish a supply to a great many other tanks. Two of these tanks, however, are not in the North Arcot District and the revenue calculations furnished by the Collector of that District do not include them. The capacities of the tanks have not been estimated.

5 The Collector's statement shows that an increase of revenue of Rupees 4,71 may be looked for, which is about 0.3 per cent on the intended outlay vizt. Rs. 1,50,000.

6 The estimate provides for repairing and strengthening only those tanks which actually form a portion of the channel. There are 3 of this kind including the Tety tank.

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7 The estimates prepared for raising and strengthening the Cividoor, Nallalam, and Nalkemary tanks have been forwarded to the Government of India for sanction, vide G.O. No. 2167 dated 8th July 1868.

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9 You are doubtless aware that the Main Chejar Channel from the Annicut to Mokoor was first taken up, for widening and generally improving, and was carried out to the full; that, then the Pooray branch was put in hand, and similarly dealt with; the project now submitted, this is the 3rd and the last of the same character, and should not be allowed on any account to lie over until a general finishing plan for all Chejar works can be submitted, as propounded in your

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I have the honor to be

Sir

Your most obedient Servt

A. H. C. (Colonel A. C.)

Supy Engrs & M. J. no

nearly 8 inches with
the additional information
called for

To the Supy Engrs &
On 10. 77. 7 17 Oct 68

12 133

From The Supy Engrs.

To the Chief Engrs.

The Chief Engrs for

Surgintm & Engrs

Secretary & Engrs

P. M. 4596/68

Dated 12

Recd 2nd Oct 1868

Encls. 240.

Transmitting with

Remarks the documents

connected with the Report

of widening and improving

the North branch of the

Chagar Channel in the

North West St from

Kullakinn tank to Setty

Tank a distance of

nearly

N^o 412

North Arcot District
Palm Range Office

Arnee 9th November 1868

From

The Assistant Engineer
Palm Range

To

The Superintending Engineer
4 Division

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to strengthen my office by obtaining
sanction for the employment of a
draughtsman to the Range.

I have the honor to be
Sir

Yours most obt. Servt.
W. W. W. W.
Assistant Engr. Polm Range

35th Nov.

though most
important
it has been
applied for
in vain
W. W. W.

From No. 5, 3, 1.
The Asst. Engineer
Polm Range
To The Engr. Engineer
G. D. D. D.
Dated 9th November/68
Recd 11th Nov 68
No. 412
Enclosures (11)
Submitting Plans &
Estimate for the Channel
from Bullaleme to Satrey.

M. 4596/68.

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyaur Main Channel at Kullaleni to Estrey. Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	No of Section	Measurement				Contents									
			L	B	H	Rate	Clay @ 2-4	Muramba @ 3-4	Hand Muramba @ 4-4	Gravel @ 6-4	Removing Rock @ 8-4	Reckment @ 1-4	Planting Tree @ 1-8	Graveling @ 6-4	Surfing @ 4-4	Metalling @ 2-4

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyau Main Channel at Kullalaw to Estrey. Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	Apportionment	Measurement				Contents									
			L	B	H	Rate	Clay C-1-2-	Morambur C-3--	Badamambur C-4--	Chuttoo C-6--	Removing Stones C-8--	Reclamation C-1--	Planting soil C-1--	Graveling C-6--	Surfacing C-4-16	Retaining C-12--
Widening	Hard Morambur	A + B	348	7	5 5/8	" 4"	.	.	13702 1/2	"	"	"	"	"	"	"
Deepening	"	"	"	18	1/4	" 4"	.	.	1566	"	"	"	"	"	"	"
Widening	"	B + C	750	9 1/2	5 1/4	" 4"	.	.	3740.6 1/4	"	"	"	"	"	"	"
Deepening	Chuttoo	"	"	19	1	" 6"	.	.	14250	"	"	"	"	"	"	"
Removing Stones	"	"	36	10	4	" 8"	"	"	1440	"	"	"	"	"	"	"
Widening	Chuttoo	C + D	900	11 1/2	4 1/2	" 6"	"	"	45562 1/2	✓	"	"	"	"	"	"
Deepening	"	"	"	20 1/8	2 1/8	" 6"	"	"	38487	"	"	"	"	"	"	"
Widening	clay	D + E	780	11 1/2	4 7/8	" 2"	43725 1/4	"	"	"	"	"	"	"	"	"
Deepening	"	"	"	20	2	" 2"	31200	"	"	"	"	"	"	"	"	"
Widening	"	E + F	414	11 3/4	4 1/8	" 2"	20066 1/6	"	"	"	"	"	"	"	"	"
Deepening	"	"	"	20 1/8	2 1/8	" 2"	17704 1/2	"	"	"	"	"	"	"	"	"
Widening	"	F + G	297	12 3/4	2 1/4	" 2"	18520 1/4	"	"	"	"	"	"	"	"	"
Deepening	"	"	"	21	3 3/8	" 2"	121049 1/8	"	"	"	"	"	"	"	"	"
Widening	"	G + H	300	14	2 1/8	" 2"	18925	"	"	"	"	"	"	"	"	"
Deepening	"	"	"	22	4	" 2"	126400	"	"	"	"	"	"	"	"	"
Widening	Hard Morambur	H + I	720	14 1/2	2 1/2	" 4"	"	26100	✓	"	"	"	"	"	"	"
Deepening	"	"	720	22 1/4	3 3/4	" 4"	"	60075	✓	"	"	"	"	"	"	"
Widening	Chuttoo	I + J	396	14 3/4	3	" 6"	"	17523	✓	"	"	"	"	"	"	"
Deepening	"	"	"	21 3/5	3 3/8	" 6"	"	31460	✓	"	"	"	"	"	"	"
Widening	"	J + K	1200	16	3 1/2	" 6"	"	67200	✓	"	"	"	"	"	"	"
Deepening	"	"	"	22 3/4	4 1/4	" 6"	"	116025	✓	"	"	"	"	"	"	"
Widening	Hard Morambur	K + L	390	18 3/4	2 3/4	" 4"	"	20109 3/8	✓	"	"	"	"	"	"	"
Deepening	"	"	"	22 7/8	4 7/8	" 4"	"	43491	✓	"	"	"	"	"	"	"
Widening	Morambur	L + M	441	16 3/4	3 1/4	" 3"	"	24007	✓	"	"	"	"	"	"	"
Deepening	"	"	"	22 1/8	4 1/8	" 3"	"	40248	✓	"	"	"	"	"	"	"
Widening	"	M + N	420	14 3/4	4 5/8	" 3"	"	28652	✓	"	"	"	"	"	"	"
Deepening	"	"	"	21 3/8	3 3/8	" 3"	"	30299	✓	"	"	"	"	"	"	"

Detailed Estimate No 27 of 1868/69
District North Arcot, Taluk Wandanah
Branch from Cheyaur Main Channel

Revenue

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyaur Main Channel at Kullakudi to Satey. Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	No of Section	Measurement				Rate	Contents											
			L	B	H			Clay @ 2-1	Morambur @ 3-1	Hard Morambur @ 4-1	Chuttas @ 6-1	Removing Rocks @ 8-1	Reclamation @ 1-1	Planting @ 1-8	Graveling @ 6-1	Surfing @ 4-1	Metalling @ 12-1		
Widening	Chuttas	P ± D	420	14 3/4	4 3/4		6	17759 5/8	123206	202450	330579 1/2	1448							
Deepening	"	"		21 1/8	3 1/8		6				29426 1/2								
Widening	"	D ± R	330	16 3/4	4 1/2		6				2473 1/4								
Deepening	"	"		22 1/8	4 3/8		6				31943 1/8								
Widening	"	R ± S	447	17 1/2	3 1/8		6				24445								
Deepening	"	"		23	5		6				51505								
Widening	"	S ± T	216	14 3/4	2 3/8		6				7566 1/2								
Deepening	"	"		21 1/8	3 1/8		6				15309								
Widening	"	T ± U	399	15 1/4	3 1/4		6				19775								
Deepening	"	"		22 1/8	4 1/8		6				36415								
Widening	Clay	U ± V	399	14 3/4	3 3/8		2	19862											
Deepening	"	"		22 1/8	4 1/8		2	36415											
Widening	"	V ± W	432	11	3 1/4		2	15444											
Deepening	"	"		21	3		2	27216											
Widening	"	W ± X	309	8 1/4	3 1/2		2	8922 1/2											
Deepening	"	"		19 5/8	3 3/8		2	22235											
Widening	"	X ± Y	471	7 1/4	4 3/4		2	16220											
Deepening	"	"		10 3/4	5/8		2	3164 1/2											
Widening	"	Y ± Z	489	7 1/4	3 3/8		2	12999 1/2											
Deepening	"	"		10 1/4	3 1/8		2	1877 1/2											
Removing Stones	"	"		50	12	3	8												
Widening	Chuttas	Z ± A	699	9	4		6				25164								
Deepening	"	"		19	1		6				10281								
Widening	Hard Morambur	A ± B	252	12 1/2	4 7/8		4				15356 1/4								
Deepening	"	"		20 1/4	2 3/4		4				14379 1/4								
Embankment	Clay	C	792	12	4		2	38316											
Widening	Morambur	D ± E	852	8	4 1/2		3				30780								
Deepening	"	"		19	1/2		3				8122 1/2								
Widening	"	E ± F	399	8	4 1/4		3				13566								
Deepening	"	"		18 1/2	1/4		3				1845 1/2								

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyaur Main Channel at Kullalund to Estrey Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	No of Section	Measurement				Contents											
			C	B	H	Rate	Clay @ 1-2	Gravel @ 3-4	Bricks @ 5-6	Removal of Soil @ 7-8	Reinforcement @ 9-10	Blasting rock @ 11-12	Graveling @ 13-14	Surfing @ 15-16	Metalling @ 17-18			
							3799 68 1/2	1775 19 1/2	2328 86 1/2	6409 39 1/2	3240							22
Widening	Clay	f ± g	252	7 3/4	4 1/4	2	835 1/2											
Deepening	"	"	"	18 1/2	1/2	2	233 1/2											
Widening	"	g ± h	699	10 1/2	4 1/4	2	3119 3/4											
Deepening	"	"	"	20	2	2	279 60 1/2											
Widening	"	h ± k	555	11 1/4	4 1/4	2	2653 1/2											
Deepening	"	"	"	21	2 1/2	2	233 10											
Widening	"	k ± l	978	11 1/4	4 3/4	2	522 6 1/2											
Deepening	"	"	"	22 1/4	2 1/4	2	487 6 1/2	2650 5										
Widening	Gravel	l ± m	465	12	4 3/4	3	237 15											
Deepening	"	"	"	21	3	3	2929 5											
Widening	"	m ± n	498	11 3/4	4 3/4	3	2779 4 7/8											
Deepening	"	"	"	20	2	3	19920 1/2											
Widening	"	n ± o	396	13 1/2	4 3/4	3	2539 3 1/2											
Deepening	"	"	"	20 1/2	2 1/2	3	2029 5 1/2											
Widening	"	o ± p	210	14	4 1/2	3	13230 1/2											
Deepening	"	"	"	21 1/2	3 1/2	3	1580 1/2											
Widening	"	p ± q	480	18 1/2	3 3/4	3	3330 1/2											
Deepening	"	"	"	23	5	3	55200 1/2											
Widening	"	q ± r	201	20 1/2	3 1/2	3	1442 1/2											
Deepening	"	"	"	24 1/2	6 1/2	3	3200 9 1/2											
Widening	"	r ± s	519	14	3 1/2	3	2543 1/2											
Deepening	"	"	"	21 3/4	3 3/4	3	4233 1/2											
Widening	"	s ± t	381	10 1/2	3 1/4	3	1300 15 1/2											
Deepening	"	"	"	19 1/2	1 1/2	8	1114 4 1/2											
Blasting rock			3	3 1/2	3 1/2	1	8						36 1/4					
Gravel			3	2 1/2	2	1	8						15 1/2					

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyur Main Channel at Kullakudi to Satey. Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	Prof. Section	Measurement				Contents									
			C	B	H	Rate	Clay @ 2-1	Murumbos @ 3-1	Handy Murumbos @ 4-1	Gruttes @ 6-1	Ploughing @ 8-1	Reckment @ 1-1	Blasting rock @ 1-1	Graveling @ 6-1	Surfing @ 4-1	Metalling @ 2-1
							60821 1/4	57980 1/4	23218 1/4	64093 3/4	3240		51 1/4			
Widening	Murumbos	$\frac{1}{2} u$	579	10 1/4	3 1/2	3		20771 1/2								
Deepening	"	"		19 3/4	1 3/4	3		25711 1/2								
Widening	Gruttes	$\frac{u + v}{2}$	381	13	4 1/2	6				22288						
Deepening	"	"		21 1/2	3 1/2	6				28670 1/4						
Widening	"	$\frac{u + w}{2}$	399	15 1/4	5	6				30423 3/4						
Deepening	"	"		22 3/4	4 3/4	6				43117 1/2						
Widening	"	$\frac{u + x}{2}$	285	15 1/4	4	6				17385						
Deepening	"	"		23	5	6				32776						
Widening	"	$\frac{x + y}{2}$	681	11 3/4	2 1/2	6				20774						
Deepening	"	"		21 1/2	3 1/2	6				51245						
Widening	"	$\frac{y + z}{2}$	315	6 1/4	2	6				3937						
Deepening	"	"		18 1/2	3/4	6				4370 1/2						
Blasting rock			7	2	2	1 8							28			
Widening	Gruttes	$\frac{3}{2} Ba$	570	6 1/4	2	6				6375						
Deepening	"	"		18 1/4	1/2	6				4653 1/2						
Blasting rock			3	3	2	1 8							18			
Gr. Gr.			12	3	3	1 8							108			
Gr. Gr.			9	3	3	1 8							81			
Widening	Gruttes	$\frac{Ba + Ba}{2}$	324	5 1/2	2	6				3564						
Blasting rock			80	15	5	1 8							600			
Raising the Embankment of Kurnipullam (Lank)	Clay	$\frac{1}{2} z$	500	17	3 3/4	2	3187 1/2						7200			
Widening	"	"		19 1/2	7 1/2	2	7312 1/2									
Reckment				3	1 1/2	1					2250					
Surfing				40												
Raising	Clay	$\frac{2}{2} z$	500	17	4 1/2	2	3825									
Widening	"	"														

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Detailed Estimate No 27 of 1868/69
District North West. Soling Mandanaoh
Branch from Cheyaur Main Channel

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyaur Main Channel at Kullakend to Estrey. Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	Prof. Section	Measurement				Contents											
			C	B	H	Rate	Clay @ 1-2	Gravel @ 3-4	Hard Gravel @ 5-6	Gravel @ 7-8	Removal of Soil @ 9-10	Reinforcement @ 11-12	Blasting with gun @ 13-14	Graveling @ 15-16	Surfing @ 17-18	Graveling @ 19-20		
Reinforcement	clay	3 + 4	500	3	1 1/2	1	827796 1/2	620583 1/2	232186 1/2	909747 1/2	3240	2250	7486 3/4		20000	v		
Surfing												2250						
Raising				43			6								21500			
Widening				17 1/2	3 3/4	2	32812 1/2											
Reinforcement	clay	4 + 5	500	18 3/4	9	2	84375									Lark		
Surfing				3	1 1/2	1						2250						
Raising				43		6								21500				
Widening				18 1/2	4	2	36570											
Reinforcement	Hard Gravel	Pa + Pa		20 1/2	7 1/2	2	71750									Ch		
Surfing				3	7 1/2	1						2250						
Widening				41	2 1/2	6								20500				
Deepening				11	2 1/2	3		7920										
Widening	Hard Gravel	Pa + Pa		19	1 1/2	3		5472										
Deepening				14 1/2	3	3		19314										
Widening				18	2	3		15984										
Deepening				18 1/4	2 1/2	4		15932 1/2										
Widening	Hard Gravel	Pa + Pa		21 1/2	2 1/2	4		15641 1/2										
Deepening				20	3 1/4	4		8775										
Widening				22 3/4	3 3/4	4		11517 3/4										
Deepening				19 1/2	3 1/2	4		21089 1/2										
Widening	Hard Gravel	Pa + Pa		22 3/4	4 3/4	4		3339 1/2										
Deepening				15 1/4	3 3/4	4		18527 1/2										
Widening				20 1/2	2 3/4	4		18265 1/2										
Blasting rock				504	11	3	4		16632									
Do			150	12	3	1												
Do			8	6	3	1							5400					
Do			4	2	3	1							144					
Do			4	2	3	1							24					
Do			5	4	3	1							24					
													60					

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Channel North West, Inlet Mandanah
Branch from Greyar Main Channel

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyaur Main Channel at Kullakur to Estrey. Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	No of Section	Measurement				Contents										Total	
			L	B	H	Rate	Clay @ 2-1	Gravel @ 3-1	Hard Gravel @ 4-1	Cruttes @ 6-1	Remaining Rock @ 8-1	Reinforcement @ 1-1	Blasting @ 1-8	Graveling @ 6-1	Surfing @ 4-1	Metalling @ 2-1		
Surfing	Shutter	No 2	675	38	"	"	16165941	667233	57473376	9097578	35640	21150	134267	"	161625		Tand	
Blasting rock			30	9	5	1 8	"	"	"	"	"	"	"	"	25650			
Graveling			6	4	3	1 8	"	"	"	"	"	1050	"	"	"	"		
Reinforcement			423	25	3 1/2	" 6	"	"	"	"	"	720	"	"	"	"		
Graveling	"	No 3 1/2	471	21	3	" 6	"	"	"	37012	"	"	"	"	"	"	Tand	
Blasting rock	"	No 4 1/2	558	22 1/2	2	" 6	"	"	"	29673	"	"	"	"	"	"		
Graveling	"	"	33	9	3	1 8	"	"	"	2453	"	"	"	"	"	"		
Reinforcement	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
Graveling	Clay	No 1 1/2	840	25 1/2	3	" 2	64260	"	"	"	"	"	"	"	"	"	Tand	
Reinforcement			"	"	15	10	" 2	126000	"	"	"	"	"	"	"	"		"
Graveling			"	"	3	1 1/2	1	"	"	"	"	"	"	"	"	"		"
Surfing			"	"	18	1/4	" 6	"	"	"	"	3780	"	"	"	"		"
Reinforcement	Clay	No 2 1/2	840	25 1/2	3	" 2	64260	"	"	"	"	"	"	"	"	"	Tand	
Graveling			"	"	15	10 1/2	" 2	170100	"	"	"	"	"	"	"	"		"
Surfing			"	"	3	1 1/2	1	"	"	"	"	"	"	"	"	"		"
Reinforcement			"	"	18	1/4	" 6	"	"	"	"	3780	"	"	"	"		"
Graveling	Clay	No 3 1/2	840	25 1/2	3	" 2	64260	"	"	"	"	"	"	"	"	"	Tand	
Reinforcement			"	"	15	10 1/2	" 2	170100	"	"	"	"	"	"	"	"		"
Graveling			"	"	3	1 1/2	1	"	"	"	"	"	"	"	"	"		"
Surfing			"	"	18	1/4	" 6	"	"	"	"	3780	"	"	"	"		"
Reinforcement	Clay	No 4 1/2	840	25 1/2	3	" 2	64260	"	"	"	"	"	"	"	"	"	Tand	
Graveling			"	"	15	10 1/2	" 2	170100	"	"	"	"	"	"	"	"		"
Surfing			"	"	3	1 1/2	1	"	"	"	"	"	"	"	"	"		"
Reinforcement			"	"	18	1/4	" 6	"	"	"	"	3780	"	"	"	"		"

Detailed Estimate No. 27 of 1868/69
District North Arcot. Taluk Mandanah
Branch from Cheyur Main Channel

Revised

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyur Main Channel at Kullakudi to Estuary. Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	No of Section	Measurement				Contents										
			L	B	H	Rate	blay @ 2-1	Moramb @ 3-1	Hard Moramb @ 4-1	Crutts @ 6-1	Removing Rock @ 8-1	Reinment @ 1-1	Blasting work @ 1-8	Graveling @ 6-1	Surfing @ 4-1	Metalling @ 12-1	
Graveling								268984	669273	524733	1001264	35640	37692	143177	11340	274635	Tank
Surfing			840	18	1/4	6	"	"	"	"	"	"	"	"	3780	"	
Raising Channel			"	31	"	6	"	"	"	"	"	"	"	"	"	"	
Embankment	blay	46 1/2	2400	12	6	2	172877	"	"	"	"	"	"	"	"	26040	
New Cutting	Hard																Tank
Metalling for Ladayary	Moramb	129	1770	22	1 1/2	4	"	"	58410	"	"	"	"	"	"	"	
Subk			3360	12	3/8	12	"	"	"	"	"	"	"	"	"	"	
Graveling to the Corom.																15120	
Door Chik bund			2700	12	3/4	6	"	"	"	"	"	"	"	"	24900	"	Tank
Gr. & to Kurmapullu																	
tank bund			2000	12	3/4	6	"	"	"	"	"	"	"	18000	"	"	
								2641784	669273	563143	1001264	35640	37692	14317	57420	300675	15120
								24478618	24784	20857	37083	1320	1396	530	2126	32238	560
								97843	21169	21169	37083			475 1/2	2126 1/2	33353	

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyur main Channel at Kullakudi to Estrey Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	No of Section	Measurement			Rate	Contents									
			L	B	H		Colony @ 2 -	Numbers @ 3 -	Dimensions @ 4 -	Bricks @ 5 -	Removing Rock @ 6 -	Plasterment @ 7 -	Blasting @ 8 -	Graveling @ 9 -	Surfing @ 10 -	Graveling @ 11 -

Work. Enlarging the ^{Top} Bridge of 1 Vent. 12 feet span into 2 Vents.

Estimate for Removing the ^{Top} Bridge & Constructing a Tunnel of 3 Vents 6 feet span near Columday.

Particulars of works	No	Measurement			Rate	Per	Amount
		L	B	H			
Foundation to Abutments	1	17	4	3	204	✓	
Abutment to do	1	14 1/2	3	3	130 1/2	✓	
Backing to do	1	13	2 1/2	1	32 1/2	✓	
Foundation to Wings	2	16	3	3	288	✓	
Abutment to do	2	16	2	7 1/2	480	✓	
Chandelils & Caps of Cutwater	2	13	4	3/4	78	✓	
Face walls	2	24	2	1	96	✓	
Blocking Course	2	40	2	1	160	✓	
Parapet walls	2	40	1 1/2	2 1/2	300	✓	
Total Cft of Brick in mortar with Plastering		16	13	1 1/2	312	✓	
Arch	1	16	13	1 1/2	312	✓	
Total Cft of Brick in mortar with Plastering		16	13	1 1/2	312	✓	
Removing old work						✓	
Parapet wall	2	25	1 1/2	2 1/4	160 1/4	✓	
Blocking Course	2	25	2	2 1/2	50	✓	
Face walls	2	12	2	1	48	✓	
Wings above foundation	2	16	2	7 1/2	480	✓	
Total Cft					746 1/4	✓	
Removing the bund		16	8	2 1/2	320	✓	
Total Cft of Earth work					320	✓	
Excavating foundation						✓	
Abutment	1	6	2	1	12	✓	
Wings	2	6	1 1/2	1	18	✓	
Total Cft of Earth work					30	✓	
Cundies & inner stones						✓	
Total Estimate Rupees							340

Particular of works	No	Measurement			Rate	Per	Amount
		L	B	H			
Foundation	1						
Abutment	2	22	4	2 1/2	440	✓	
Pier	2	22	3	2 1/2	330	✓	
Wings	4	6	4	2 1/2	240	✓	
Abutment above	2	19	3	6	684	✓	
Chandelils	2	19	1 1/2	1 1/4	7 1/4	✓	
Wings	4	6	2 1/2	6 1/2	390	✓	
Total Cft of Rough stone in mortar					2183 1/4	✓	
Superstructure						✓	
Pier	2	19	2	6	456	✓	
Parapet walls	2	40	1 1/2	1	120	✓	
Total Cft of Brick in mortar with Plastering		2	40	1	80	✓	
Covering stones	5 1/2					✓	
Excavating foundation	2	8	2	1	32	✓	
Removing old work	2	8	1 1/2	1	24	✓	
Total Cft of Earth work		4	3	1 1/2	18	✓	
Excavating foundation						✓	
Removing old work						✓	
Cundies & inner stones						✓	
Total Estimate Rupees							550

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyaur Main Channel at Kullalend to Estrey. Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	Application	Measurement				Rate	Clay @ 2-1
			L	B	H			

Contents											
Number @ 3-1	Bedding @ 4-1	Grout @ 6-1	Removal of Soil @ 8-1	Reinforcement @ 1-1	Blowing of Soil @ 1-1	Graveling @ 6-1	Surfing @ 4-1	Metalling @ 2-1			

Work. Enlarging a Bridge of 1 Bent 10 feet Span into 2 Bents near Kerambackum

Particulars of Works	No	Measurement			Rate	Per	Amount
		L	B	H			
Foundation to Abutment		17	3	3	153		
Do to Wings	2	15	3	3	270		
Total Cft. Rough stone in mortar					423	14 cft	35 4
Abutment above		15	2	2 1/2	75		
Wings	2	15	2	6 1/2	390		
Quashion		13	2	1/2	13		
Spandril		13	4	1/2	26		
Face walls		13	2	1/2	13		
Blocking Course	2	20	2	1	80		
Parapet walls	2	35	2	1/2	140		
Total Cft. Brick in mortar	2	35	1 1/2	2	210		
Arch		13	13	1 1/2	253 1/2	2	118 6
Total Cft. Brick in mortar with Plastering					253 1/2	3	47 8
Excavating foundations							
Abutment		6	1 1/2	1	9		
Wings	2	6	1 1/2	1	18		
Total Cft. of Earth work					27	4	6 1/2
Removing old work							
Wings	2	15	2	6 1/2	390		
Do	2	7	3	3	126		
Blocking Course	2	16	2	1 1/2	96		
Parapet walls	2	16	1 1/2	2	96		
Total Cubic feet					708 1/2	3	11 1
Filling Approaches to Estrey		15	7 1/2	1	112 1/2		
Do to Chetpet		20	7 1/2	1	150		
Total Cft. Earth work					262 1/2	2	32 13
Quashion & Renewal Stone							
Total Estimate Rupees							8 3

Work. Constructing a Bridge of 3 arches 10 feet Span across the Conjevaram Road near Estrey.

Particulars of Works	No	Measurement			Rate	Per	Amount
		L	B	H			
Foundation to Abutments	2	22	4 1/2	4	792		
Do to Piers	2	22	4	4	704		
Do to Wings	4	11	4	4	704		
Retaining walls		54	1	2	108		
Total Cft. Rough Stone in mortar					2308	14 cft	192 5 1/4
Abutment above	2	19	3	3	342		
Piers	2	18 1/2	2 1/2	3	277 1/2		
Wings	4	12	2	7	672		
Quashion	2	18	2 1/2	1/2	45		
Do above Abutments	2	18	2 1/2	1	90		
Spandril	2	18	4	1	144		
Do above Abutments	2	18	4	1/2	72		
Face walls	2	41	2	2	328		
Blocking Course	2	64	2	3/4	192		
Parapet walls	2	64	1 1/2	3	576		
Total Cft. Brick in mortar with Plastering					2938 1/2	2	342 5
Arch	3	13	18	1 1/2	1053		
Total Cft. with Brick in mortar & Plastering					1053	3	197 7
Flooring under arches		27	16	2	864		
Total Cubic feet or					864		
Cy of Rough stone work					32	12	24
Excavating foundations		15	2	1 1/3	40		
Abutments		15	1 1/2	1 1/3	30		
Wings		13	1 1/2	1 1/3	26		
Piers		18	3	2 1/3	36		
Retaining wall & flooring					132	4	33
Total Cy of Earth work					80		
Filling in between wings		8	5	2	80		
over arches		14	5	1/2	35		
Total Cubic Cy					115	16	10 12 1/2
North and South Approaches		100	6 1/2	1	650		
Total Cubic Cy					650	2	82 4

Detailed Estimate No. 27 of 1868/69
District North Arcot. Taluk Mandanah
Branch from Cheyur main Channel

Revenue

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyur main Channel at Kullakudi to Estrey. Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	No of Section	Measurement				Rate	Total	Contents											
			C	B	H				Clay @ 2	Gravel @ 3	Bricks @ 4	Bricks @ 6	Removing Bricks @ 8	Reinforcement @ 1	Blowing @ 1-8	Graveling @ 6	Surfing @ 4-16	Metalling @ 2-2		
Surfing the North & South Approaches		100	4					400												
Total Cyd								400												
Metalling & Graveling North and South Approaches		100	3	1/2				50												
Over Bridge		22	3	1/2				11												
Total Cubic Yds								61												
Guard Stones		4					1													
Centering for Arches		3					20													
Working																				
Quandies of dimension stone																				
Total Rupees																				
The same as above to be built along the Road here																				
Chakmah																				
Total																				

Estimate for Constructing a sluice of 18 yard length to Kullakudi tank

Particulars of Works	Measurement				Rate	Per	Amount
	C	B	H	Cubic Feet			
Foundation to Tunnel	54	5	6	1-6	445-6		
Side walls to Is	708	1	6	2	324		
Arch	54	5	1	6	405		
Coping	54	7	1	1/2	47-3		
Foundation to head including retaining wall	7	6	7	6	2-3	126-7	
Pyls above	7	6	6	3	135		
Is	4	6	6	1	6	40-6	
Retaining wall	7	6	1	6	3	33-9	
Foundation to Cistern	10	10	1	9	175		
Walls above	28	2	3	7	441		
Total Cubic feet					2173-7		
Deduct for Sink					28-6		
Total Cyd Bricks in mortar					2145-1	2	Cy 265-2
Constructing foundation to Tunnel	20	3	1/2		30		
Is to head	3	3	3/4		6 3/4		
Is to Cistern	4	4	2/3		10 2/3		
Total Cyd Earth work					47 1/2	2	5 14 10
Removing & Reforming Embankment	10	6	3		180		
Is	18	4	1/2		36		
Total Cyd Earth work					216	1 6	20 4
cut stones	3					1 8	4 8
Is	3					2 8	7 8
Quandies of dimension stone							13 1/2
Total Rupees							320
1 to Kullakudi tank							320
1 to Kullakudi tank							320
Total							960

Revenue Department

Detailed Estimate No. 27 of 1868/69

Revenue

District North Arcot. Taluk Mandanah
Branch from Cheyur Main Channel

Estimate for Widening Deepening and Improving the Branch Channel from the Cheyur Main Channel at Kullakudi to Estrey. Length Miles 8. Furlong 1.8 Yards 25.

Particulars	Nature of Soil	No of Section	Measurement				Contents											
			C	B	H	Rate	Clay @ 2	Murambo @ 3	Hard Murambo @ 4	Chuttos @ 6	Removing Rock @ 8	Reinforcement @ 1	Blasting with @ 1-6	Graveling @ 6	Surfing @ 1-6	Metalling @ 1-2		

Abstract

Quantity	Description of Charges	Rate	Per	Amount	Total
Channel					
9784 3/4	Excavation of clay @	2	Cy	12230 7/6	
2478 7/8	do of Murambo @	3		4667 1/9	
2085 7/8	do of Hard Murambo @	4		325 1/3	
37080 1/4	do of Chuttos @	6		6214 4/11	
1320 1/2	do of Removing Rock @	8		1390 5/2	
1396 1/2	do of Stone Reinforcement @	1		660	
530 1/2	do of Blasting rock @	7		1396	
2126 1/2	do of Graveling @	6		795 1/4	
560 1/2	do of Surfing @	12		797 1/4	
33408	Excavation of Metalling @	12		420	
1	Bridge of 1 Vent 12 feet span en- larging into 2 Vents No 1	340	each	340	41110 9/11
1	Do 3 Vent 6 feet span No 2	550	"	550	
1	Bridge of 1 Vent 10 feet span en- larging into 2 Vents No 3	250	"	250	
2	Bridges of 3 Arches 10 feet span No 4	2100	"	2100	
3	Sanke Eluvies No 5	960	"	960	4280
	Provision at 5 per Cent				2289 7/11
Total Estimate Rupees					47600

and Joint Secretary to Government
Public Works Dept.

Assn
November
1868

W. H. M. S.
Assistant Engr. P. M. Range

15

Widening and improving the Elty branch of the Chegar
Channel.

No. 3974.

Enclosures
2 Surveys
4 Plans
1 Detailed estimate
1 Report

Forwarded to the Chief Engineer
for Irrigation and Joint Secretary to Government
Public Works Department with reference to his
Memo. No. 77 dated 17th October 1868.

Arleau Col. R.E.
Sup. J. Engr. H. D. D.
Sup. J. Engr. Office H. D. D.
Madras 13th November 1868

Presented To, Colonel J. C. Anderson R.E.
Chief Engineer for Irrigation
and Joint Secretary to Government
Public Works Dept.

Mem. 11. 27
The Superintendent of
H. S. Division

The Chief Engineer for
Navigation & Canal
Secretary to General
Council. D. C. 11. 27
Dated 13
Received 17th November 1888
M. J. 11. 27

Enclosed regarding the
residence and improving
the City Branch of the
Cheyenne Channel with
reference to. November 17
dated 17th October 1888.

W. J. 11. 27. 11. 27. 11. 27.

J. W. Frost, 12th Decr/68 Lm 4273

places is a depth of 7 or 8 feet below the
the head of the branch channel, and rising

ms

1867

No 3595 of 1867

From Rainasamy
Museli to the
Vandavasi Taluk in
the District of Arcot

Recd by S 10 Dec 76

Bringing notice
the loss they have sustained
in their cultivation from
want of sufficient supply
for their tanks, pray for
orders to the Engineer, that
the channels from the river
Seyar to Anappattur may
be widened and extended
to the within mentioned
villages. 30/1/68

[Faint, mostly illegible handwritten text, possibly bleed-through from the reverse side of the page.]

No. 4935.

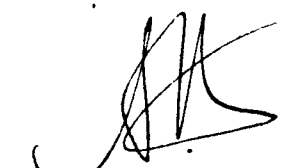
Forwarded to Assistant Engineer Polson Range
North Arcot District for report. —

Supr. Engr. Office S. D. J.
Madras 1st Feb. 1868
S.D.

J. K. L. K. L.
Engr. S. D. J.

Transferred to the
Superintending Engineer
4th Division.

By Order,

 J. G. Gole
Rev. B^d Officer, Subsect.
Chepauk.

27th Jan 1868

P.W. 4596/68

Dec 12th Dec 2/68 due Dec 27/3.

9th Jan 29
1867

No 98

45

The estimates referred to in the foregoing
letters were originally submitted in November 1867,
but were returned & in consequence of their being
wanting in various particulars. They were resub-
mitted by the Superintending Engineer on the
1st October 1868, but still in a defective state,
and I had again to return them.

2. The Range Officer has now been at
 pains to draw up the project in a complete
manner; the information he affords is full and
satisfactory, and the plans and sections are very
much more lucid and detailed than those originally
submitted.

3. The project provides for the improvement
of the Tetra or northern branch of the Cheyur
Ancient Channel. A reference to the sections shows
that it has been excavated without any regard to the
levels of the ground, to a depth of from one to two
yards below the surface. The bed in consequence
presents extraordinary irregularities, falling in some
places to a depth of 7 or 8 feet below the level at
the head of the branch channel, and rising again to

to that level, at the distance of 10 miles from the head. It is thus quite impossible that the Tanks beyond should get a supply.

The estimate provides for the excavation of the Channel to a uniform bottom width of 18 feet - its present width being variable - but generally from 8 to 12 feet - and with a regular fall of nearly two feet per mile (corresponding very closely with that of the Main Channel higher up) to the Nurri-mampullun Tank - a distance of 5 miles - for the raising of the embankments of this Tank, and for the continuation of the Channel - through two other tanks, for a distance of three miles further - also for raising the bunds of the tanks. The bed is described as hard, but of various qualities, ranging from clay up to rock. These have been carefully distinguished in the estimates, no less than 6 different rates - from 2 annas up to Rs 1.8 per cubic yard - being specified.

The estimate further provides for the enlargement of three Bridges, and for the construction of two new Bridges, and of 3 irrigation sluices.

The Collector estimates the returns at Rs 4177 or nearly 9 per cent on the proposed outlay Rs 47,600. The

7 The work being unquestionably necessary for the proper utilizing of the supply which is drawn off from the Cheyaur by the Main Channel connected with the Aicut. I would recommend the outlay for the sanction of Government.

8 The estimate may be classified under the following heads.

Main Canals & branches	3,410
Bridges	30,310
Earthwork	
Supply of Tanks	1010
Masonry work	12,870
Earthwork	
Total Rs	47,600

Fort St George
24 November 1868.

W Anderson Colonel R E
Chief Engineer for Irrigation

To

The Secretary to Government
Public Works Department

Public Works Department
 No 3874
 Proceedings of the Madras Government
 Under date the 12th Decr 1868
 Read the following

From The Chief Engineer for Irrigation H.E. No 98 dated 24th Novr/68

The Govt approved of the estimates submitted with these papers, and authorize the Superintending Engineer of the ~~to~~ ^{to} to proceed with the works from the provision made for them in the current year's Budget pending the settlement of the question raised by

Item No 159

From The Chief Engineer for Irrigation

To The Secretary to Government

Dated 24th Novr 1868

No 98

Recommendations for works estimated amounting to Rs 47,000 for widening and improving the north branch of the Chayam Channel from Vallam to the bank in the North end

which

4 Novr 1868 - D. 11/2

by the Govt of India
as to whether their cost
should be properly
debited to the Agricultural
Extraordinary Grant

Ordered that the following letter be sent
to the Govt of India

H. E. to
The Secretary to
the Govt of India

Sir, I am directed by
his Excellency the Govt
in Council to forward
the accompanying plans,
with

1. The Supply Eng^g 4
2. Controlling
3. Accounts & Gr^{ds}
21. Rev^d Dept
3. Chief Eng^g for Brig^d

Resd 22/10/88

with estimates amounting
in the aggregate to
Rs 47,600 for the improve-
ment of the northern
branch of the Cheyann
ancient channel from
the Kullalam to the
Tetry tanks in the
North Arcot District,
the length being nearly
eight miles.

The works pro-
posed to be carried
out consist chiefly
of deepening and wi-
dening the channel
so as to give it a
uniform

uniform slopes of about
2 feet per mile, with a
bottom width of 18 feet,
of raising and strength-
ening the banks of the
Murrampullum,
Coorombar and Lada-
yary tanks, which
form a portion
of the channel, and
of enlarging three existing
and constructing two
new bridges. The esti-
mates also provide
for the continuation
of the channel thro'
the

the two ^{all} last named tanks.
Owing to the enlarge-
ment of the channel up
to Kullalam, ~~it is~~
~~stated that~~, during
last year, water passed
down as far as the Helepy
tank, ^{last year} and the contem-
-plated improvements
will enable it to reach
the Tetry tank, and
furnish a supply to
as great many other
tanks.
From the state-
ment furnished by
the collector, it appears
that an increase of
revenue

— revenue to the extent
of Rs. 4,171, or nearly 9 per
Cent on the proposed
outlay of Rs. 47,600, may
be expected. Concurring
in the opinion of the Chief
Engineer for irrigation
that the works included
in the estimate are
unquestionably necessary
for the proper utilization
of the supply which is
drawn off by the channel
by means of the anicut
across the Cheyaur, this
Government have, in
pursuance of the recom-
— mendation

Item No 159

By order of the
Secretary to the Government
of India
14th Sept 1868

^{US}
— recommendation of the super-
— intending Engineer of the
4th Divⁿ, authorized, them
to be proceeded with from
the provision made for
them in the current year's
Budget, and I am to request
that this proceeding may
receive the approval of
the Government of India,
pending the final set-
tlement of the question
raised in your letter
of the 1st September/68.
No 132 A, as to whether
the works connected
with the Cheyaur Anicut,
are of a sufficiently
remunerative

(16)

10101

7

Recd 22/12/68 with six
plans one estimate, ^{two} reports,
one report shall copy of
Lg 3874 of 1868

H. C. Sullivan

&c, &c, &c.

Dated

Recd

Enc. 2
Hans 6

G. O. 12 Dec 1868, No. 387483/5

Nos. 273-274 & 275

Amounting to Rs 47,600 for the
improvement of the northern
branch of the Chayam Ancient
Channel from the Nullah to
the Stry tank in the district
of Arcot St, forwarded to the
of India with remarks.

Chayam Ancient Channel Paper
orders on the letter from the
Super of the to the submitting
amounting to Rs 47,600 for
the improvement of the northern
branch of the Chayam Ancient chan-
nel from the Nullah to the Stry
tank in the Arcot St.

Chayam Ancient Channel Estimate
Amount