

(1) Number of pages _____

(2) Date of repair 1-8/12

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

glt
Government of Madras.

Public Works **DEPARTMENT.**

G.O. No.	3684	Press -Mis-
526-27		
Dated	24-11-	1868.

Not to be folded or roughly handled

18/12/12

*Proceedings of the Madras Government, Public Works Department,
24th November 1868.*

Read the following papers —

No 526 From the Superintending Engineer, 5th Division, to the Chief Engineer for Irrigation, dated Salem, 12th August 1868, No 83

1. I have the honor to forward, for the sanction of Government, an estimate of Rupees 54,800, accompanied by plans and specification, for constructing an anicut across the Manimuthanuddy, and cutting channels therefrom for the better supply of certain tanks in the Vindachellam talook of South Arcot.
- | | |
|------------------------|--|
| 1 Survey. | |
| 4 Sections | |
| 2 Detailed Estimates | |
| 2 Abstract do | |
| 1 General Abstract. | |
| 1 Statement of Revenue | |
| 1 Specification | |
| 4 Plans | |

2. An anicut at Mahmathur has been under consideration for a long time. When I took charge of the district in 1855, an estimate had been prepared for an anicut, with channels, on both banks of the river. One of the channels on the south bank was to follow much the same course as that now estimated for, and shown in the accompanying survey. There was also to be a channel due south, (also shown in the survey.) and one along the north bank. I ascertained that one of the tanks to be supplied by the former was on too high a level, and that the latter would have to be cut through difficult country, for about twelve miles, before any tanks could be supplied by it. I, therefore, recommended that the project should lie over, and that the tanks on the north bank, already supplied by a river channel, should have their supply rendered more certain, by an anicut to be built at Comaramangalam, lower down the river. This is the anicut, the completion of which I have recently reported. I however stated at the time that there were tanks on the south bank, the supply of which could be greatly increased by an anicut to be built a few miles above Virdachellam, and that the site selected for the anicut was as good a one as could be found.

3. Mr R E Norfor, Assistant Engineer of the Range, was deputed last year to prepare fresh plans and estimates for the Mahmathur anicut, but the estimate at first received from him amounted to no less than Rupees, 1,04,635, as it included the cost of a channel to be taken due south, and the formation of a new tank, also the repair of all the other tanks. The expected return was very small compared with the outlay. As the utility of the south channel is doubtful, and the repairs and improvements of the tanks should be carried out, whether the anicut is built or not, these items have been struck out of the estimate, which now amounts to Rupees 54,800.

4. It is proposed to build an anicut at Mahmathur, with a head-slucce connected with it, for the channel on the south bank. These masonry works will be very similar to those just completed at Comaramangalam. The main channel is to be taken to the Cusbah Virdachellam tank, and there are to be branches to the tanks of Paravalore, Thoravalore, Sathakoodal, Comangalam, Manavalanellore, Alachagoody, and Yelamangalam.

5. There is no doubt about the feasibility of this scheme. The tanks are at present supplied but very inadequately by an old and crooked channel, which it is proposed to abandon. A considerable saving would be effected if the old channel could be used, but, besides being too near the river, it is too narrow, and the

banks are overgrown with prickly-pear. The necessary improvements to the channel would cost quite as much as a new channel

6. There may be a fresh in the river in any month from March to December. This year there was one at the end of January. The tanks are, therefore likely to be filled twice or three times in the year, and there is not much doubt of the expected increase of revenue entered in the Tahsildar's statement, viz, Rupees 11,420

7. There is a sum of Rupees 10,000 allowed for this work in the current year's Budget (Item 163), and the work can be put in hand as soon as the estimate is sanctioned

From the Superintending Engineer, 5th Division, to the Chief Engineer for Irrigation, dated Salem, 17th October 1863, No 126

1. I have the honor to re-forward the plans and estimates connected with the project for an Anicut at Malmatur, together with a letter from the Executive Engineer, containing the additional particulars called for in your Memorandum No. 63, of the 5th of September.

- 8 Plans
- 1 Plan of Anicut
- 2 Sketches and Cross Sections
- 1 General Abstract
- 1 Abstract Estimate, and
- 1 Detailed Estimate
- 1 Abstract Estimate, and
- 1 Detailed Estimate
- 1 Specification
- 1 Revenue Statement (revised)
- 2 Copies of letters

2. A sketch of the river basin accompanies the plans. The defective supply to the tanks is not in any way due to the want of water in the river,

but to the position and condition of the channel, and to there being no permanent dam across the river. The bank that is thrown across from time to time is often washed away as soon as completed.

3. Calculations of the quantity of water that will be available must, in a case like this, be somewhat fallacious. For though the average number of days in the year during which the river is in flood is known, yet the quantity of water that can be utilized will depend not only on the duration of, but intervals between, the freshes. A fresh coming down at the time the tanks are all full will be of little or no use. There is, however, no doubt of the frequent recurrence of floods in this river, or of the quantity of land that may be irrigated. It will be seen from the Sub-Collector's letter, that there are about 2,000 Cawnies of land on which wet crops can be raised, and there may be a fresh in the river in any month, except January and February.

4. The section of the anicut is the same as that of the anicut lately built a few miles lower down the river, and several anicuts of the same kind have been built in similar situations in the district during the last few years. The depth of foundation and the breadth and thickness of the apron will be found sufficient to secure this anicut from the effects of any flood. I would prefer retaining the centre sluice of the anicut, as it will be found useful in keeping the river bed free from silt, and in other ways, but there will be no objection to placing the other sluices nearer the ends of the anicut.

5. The channel for the first mile and a half will be cut through hard soil, which will not be much affected by the current, but the fall can be reduced without difficulty.

From the Executive Engineer No 4 Range, South Arcot, to the Superintending Engineer, 5th Division, dated Pannacurchi, 1st October 1868, No 561.

- 1 Survey Plan
- 1 Sketch of the Manimuthanuddy basin
- 1 Cross Section of the river
- 4 Sections of channels
- 3 Plans
- 1 Revenue Statement
- 1 Copy of Sub Collector's letter

1. I have the honor to acknowledge the receipt of your Nos 464 and 474, of the 14th and 21st September respectively, together with a copy of Memorandum No 63, of the 5th idem, from the Chief Engineer for Irrigation

2. I am sorry that owing to the hurried manner in which the report which accompanied the plans and estimate was got up, some of the information now called for was not embodied therein, although all the necessary calculations had been carefully worked out. My report No 493, of the 11th December 1867, however does not appear to have been submitted with the papers connected with the project in question

3. With reference to paragraph 2 of the Memorandum under reply, I have the honor to forward, herewith, a general sketch plan of the Manimuthanuddy basin, by which it will be seen that this stream rises in the Salem District receiving its supply from the drainage of the eastern face of the Coleroy Hills, it is subject to freshes in the north-west (south-west?) monsoon, as well as north-east

4. I have been in this Range for some years, and no year passes without several freshes in the Manimuthanuddy. The insufficient supply of the existing tanks is owing, not only to the defective condition of the supply channels, but also to the abortive attempts made every year to raise the water into the irrigating channel, by throwing a mud dam across the river, which temporary structure serves perhaps for a few hours, and is carried away when the flood increases in depth and velocity. It is therefore, in order to command a more certain as well as an increased supply, that a masonry weir is proposed to be constructed a little way above the site of the temporary dam. Thus, much loss to Government, by deficiency of rain in season of drought, and much distress amongst the Ryots, through scarcity, will be avoided

5. I now forward a cross section of the river at the site of the proposed anicut, in which I have marked the natural bed of the river, the heights of ordinary and extraordinary floods, and the level of the floor of the anicut and head-sluice. The floor of the under-sluices in the anicut is intended to be on a level with the bed of the river, i.e., the floor of the anicut. The sectional area of the river at the site of the anicut is 2,475 square-feet, the border, or wetted perimeter, is equal to 436 feet, the fall, as ascertained by levels, four feet per mile, the hydraulic mean depth in ordinary floods will be equal to sixty-eight inches, giving a mean velocity of 73.93 inches per second, the discharge of the river is, therefore, equivalent to 45,744,150 cubic yards per day. By a register kept during the last season, the river was in flood forty-seven days, between May and January, therefore $45,744,150 \times 47 = 2,149,975,050$ cubic yards may be said to be the quantity of water available, which is far in excess of what is required to be drawn off

6. The revenue statement which accompanies this report shows—

Present irrigation	.. Cawnies 412
Expected increase	.. „ 2,338

Total area, Cawnies 2,750

Assuming, therefore, that each cawny will require 11,520* cubic yards in the season, the quantity required will be 31,680,000 cubic yards for the whole area, and this is to be drawn off in forty-seven days. All the tanks are in fair order, and the ordinary repair expenditure in the next and ensuing years will be sufficient to make them capable of resisting the extra pressure on the bunds

7. The irrigating channel has a fall of four feet per mile, the sectional area is = 67.5 the border is = 24 feet. Hydraulic mean depth = 2 feet 10 inches, or 34 inches, and mean velocity = 51.97 inches per second. The discharge when the water is on a level with the crest of the anicut

*Proceedings of the Madras Government, Public Works Department,
21th November 1868.*

will be equal to 876,993 75 cubic yards per day, or, in round numbers, say 877,000 cubic yards, and in the forty-seven days we may safely calculate that the channel is capable of draining off $877,000 \times 47 = 41,219,000$ cubic yards, or 9,539,000 cubic yards in excess of what is required for the irrigation of 2,750 cawnies, as previously shown, this excess will suffice to cover waste from evaporation, &c., and will in a measure guard against any deficiency in bad seasons. The head sluice shutters can always be put in when sufficient water has been stored, and extraordinary floods come down the river. In fact the supply can be regulated according to requirements.

8. It is true that the fall of the main channel is great, viz., four feet per mile, but as the sub-soil, as far as Station 30, is Morumboo, or decomposed rock, I do not think that the bottom of the channel will suffer from erosion, and for the same reason, viz., the firm nature of the soil, there will be no fear of the sides falling in and choking off the supply. The width of the channel, below Station 30, being very much greater, the depth and velocity will be considerably diminished.

9. The main line of levels has been continued to the Virdachellam Tank calingulah, and the height of water and bank shown in the sheet of sections, but I regret I cannot supply the same information with regard to the other tanks, as the points at which the levels were discontinued cannot now be traced.

10. The irrigation area under the present project, as shown by the Sub-Collector, is 2,750 cawnies, the expenditure now contemplated would secure a revenue of Rupees 15,630 per annum, i.e., twenty-nine per cent. nearly on the outlay. A copy of the Sub-Collector's letter, which accompanied the Revenue statement, is attached to this report.

11. Rupees 10,000 have been allotted in the current year's Budget (Item No. 163), and pending the formal sanction of the Government of India to the scheme, I request permission to spend a portion of the money in collection of materials, &c., so that the working season between December and March may not be lost.

From the Sub Collector of South Arcot, to the Executive Engineer, No 4 Range, South Arcot, dated Virdachellam, 30th September 1868, No 350.

In answer to your letter No 543, of the 29th instant, I have the honor to state that accounts, showing the average cultivation during the last ten years under the tanks mentioned, have been sent to you. Nearly all the land from which there will be increased revenue by the increased amount of water is Punjab land already under cultivation, so that if water is available for wet cultivation in such land, an increased charge of 5 Rupees a cawny is made. Besides this, which may be estimated roughly at 2,000 cawnies, there is a small amount of waste Punjab land (about 160 cawnies) which will be newly brought into cultivation, so that for this, besides the water rate of 5 Rupees a cawny, there will also be the Punjab assessment to be computed as profit, and this averages about 3 Rupees a cawny. For land that is already held there is, therefore, an increase of 5 Rupees, and for waste land of 8 Rupees a cawny.

MEMORANDUM.

No. 81.

1. The estimates referred to in the above letters were originally submitted by the Superintending Engineer, 5th Division, on the 12th August 1868, but the reports accompanying them appearing to me to be insufficiently clear in some respects, I had to return them to the Superintending Engineer. They are now re-submitted, along with a report from the Range Officer, and a letter from the Sub-Collector, explaining the nature and extent of the returns which may be anticipated.
2. The project is exactly similar to several others which have been carried out with highly beneficial results in South Arcot. It is of a simple character,

*Proceedings of the Madras Government, Public Works Department,
24th November 1868.*

comprising the construction of an anicut across the Manimuthanuddy, a stream which rises in the Coleroy Hills, (east of the Sherveroy Hills,) and which drains an area of upwards of 1,000 square-miles; and a channel, with branches, for the supply of eight tanks.

3. At present the water is drawn from the river by means of a tortuous and badly arranged native channel, with the aid of corumboos, or temporary dams, thrown across the sandy bed of the stream, and which of course are liable to be frequently destroyed.

4. The proposed anicut is on the same pattern as another which has lately been completed on the same river, several miles lower down, and termed the Virdachellam anicut. It is to be 400 feet long, or nearly equal to the width of the river, and five feet high. The foundations are to be six feet deep, resting on rock, and the cut-stone flooring is to be thirty feet wide. Three sets of under-sluices are allowed, each of three vents, four feet wide, the head-sluice has also a width of twelve feet. The Superintending Engineer is desirous of retaining the central set of under-sluices, though it appeared to me preferable to have two sets of six vents at the flanks.

5. The estimate for the anicut and head sluice amounts to Rupees 26,930, and that for the small masonry works which are required for the distribution of the water, and for a road tunnel, to Rupees 1,200. The principal channel is designed to have a bottom width of only six feet, which, according to the calculation of the Range Officer, will suffice for the delivery of the required quantity of water, if the surface level of the river is sufficient to give a depth of five feet of water for forty days in the season, but as the cutting for the first three miles is considerable—twelve to fifteen feet—there must be some washing down of earth from the slopes, even though the soil is hard, and I have, therefore, increased the width to nine feet, which adds only 1,000 Rupees to the estimate. The total probable cost of the earthwork will then amount to Rupees 27,680, and that of the whole project to Rupees 55,800.

6. The returns from the project are estimated by the Collector at upwards of 11,000 Rupees, or at nearly twenty per cent. on the proposed outlay.

7. The project has been carefully considered and well drawn up by the Range Officer Mr Norfor, Executive Engineer, and I would beg to recommend it for sanction.

FORT ST. GEORGE,
27th October 1868.

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

No 527. ORDER THEREON, 24th November 1868, No 3,684.

IRRIGATION, No 24

1. With his Memorandum above recorded the Chief Engineer for Irrigation submits a project, estimated to cost Rupees 55,800, for constructing an anicut across the Manimuthanuddy near Mahmathur in the South Arcot District, and for taking off a channel from it, with

branches, for the better supply of eight tanks in the neighbourhood of Virdachel-
lam, which are stated to be at present very imperfectly supplied by an old and
tortuous channel, aided by temporary dams thrown across the stream.

2. The proposed anicut will be 400 feet in length and 5 feet in height,
and the main channel will have a fall of 4 feet per mile with a bottom width of
9 feet. In all other respects the project will be very similar to those of the same
character which have in former years been successfully carried out in the South
Arcot District with much benefit to the district.

3 From the report of the Sub-Collector it appears that a return of upwards
of 11,000 Rupees, or about twenty per cent upon the proposed outlay, is expected
to be derived by the irrigation of about 2,000 cawnies of land which will be brought
under wet cultivation by the anicut, and, as the freshes in the river are of frequent
occurrence, the Superintending Engineer is satisfied that there will be no deficiency
of water.

4 As the project offers fair promise of being abundantly remunerative, the
Government sanction the estimate of Rupees 55,800, and authorize the work to be
proceeded with from the sum of 10,000 Rupees which has been provided for it in
the Budget of the current official year

(True Extract)

Colonel, R. E.,
Secretary to Government.

To the Chief Engineer for Irrigation
.. Superintending Engineer, 5th Division
.. Controller of Public Works Accounts
.. Accountant General
.. Revenue Department

Encl. S. T. August 1866.

Supy Engg's Office 5th Div.
No. 126. Salem 17th October 1868-

From The Superintending Engineer
5th Division.

To The Chief Engineer for
Irrigation.
Sir,

I have the honor to reforward
the plans and estimates, connected with the
project for an Anicut at Virdachellam,
together with a letter from the Executive
Engineer containing the additional par-
ticulars called for in your Memo. No. 63
of the 5th of September.
A Sketch of the river basin accom-
panies the plans. The defective supply to
the tanks is not, in any way, due to the
position and condition of the channel,
and to there being no permanent dam
across the river. The dam that is thrown

across

across from time to time is often washed away as soon as completed.

3. Calculations of the quantity of water that will be available must, in a case like this, be somewhat fallacious. For though the average number of days in the year, during which the river is in flood, is known, yet the quantity of water that can be utilized will depend, not only on the duration of, but intervals between, the freshes. A fresh coming down at the time the tanks are all full will be of little or no use. There is however no doubt of the frequent recurrence of floods in this river, or of the quantity of land that may be irrigated. It will be seen from the Sub Collector's letter, that there are about 2000 Canals of land, on which wet-crops can be raised, and there may be a fresh in this river in any month, except January and February.

4. The section of the canals is the same as that of the canals lately built,

9
a few miles lower down the river, and several canals, of the same kind, have been built, in similar situations in the district, during the last ten years. The depth of foundation and the breadth ~~and~~ thickness of the apron will be found sufficient, to secure this canal from the effects of any flood. I would prefer retaining the centre sluice of the canal, as it will be found useful in keeping the river bed free from silt, and in other ways, but there will be no objection to placing the other sluices, nearer the ends of the canal.

5. The channel for the first mile and a half will be cut through hard soil, which will not be much affected by the current, but the fall can be reduced without difficulty.

I have the honor to be,
Sir,
Your most obedient servant -
Edwrd Scott Coll R.E.
Superintg Engr & S. Division

N^o 561

N^o 4 Range Office, S. & T.
Pariacurichi, 1st October 1868.

From

The Executive Engineer,

N^o 4 Range, S. & T. street.

To

The Superintending Engineer,
5th Division.

Sir,

Enclosures 12

1 Survey Plan. the receipt of your N^{os} 464 and 474
1 Sketch of the of the 14th and 21st September respec-
Manimuthan Nuddy tively, together with a copy of Memoran-
1 Cross Section of the dum N^o 63 of the 5th idem from the
River. 4 sections of Channels Chief Engineer for Irrigation.

3 Plans. 2. I am sorry that owing
1 Resume Statement. to the hurried manner in which the
1 Copy of Sub collector's letter report which accompanied the
plans and estimate was got up,
some of the information, now called
for, was not embodied therein,
altho' all the necessary calcu-
lations had been carefully worked
out. My report N^o 493 of the
11th December 1867 however does
not appear to have been submitted
with the papers connected with the

From

The Deputy Engineer

5th Division

To the Chief Engineer

for Irrigation.

Dated 19th Oct. 1868.

N^o 126.

Enclosures 20.
N^{os} 463/68.
Recommending for
sanction the plan &
estimate for an channel
at Kadamattur for the
better supply of water
to the in the Pudukkottai
Taluk, South Arcot.

project in question.

3 With reference to para 2 of the Memorandum under reply, I have the honor to forward herewith a general sketch plan of the Mannimathan Muddy Basin, by which it will be seen, that this stream rises in the Salem District, receiving its supply from the drainage of the Eastern face of the Coleroy Hills; it is subject to freshes in the North-west monsoon, as well as North east.

4 I have been in this Range for some years, and no year passes without several freshes in the Mannimathan Muddy. The insufficient supply of the existing tanks is owing, not only to the defective condition of the supply channels, but also to the abortive attempts, made every year, to raise the water into the irrigating channel, by throwing a mud dam across the river, which temporary structure serves perhaps for a few

13 hours, and is carried away when the flood increases in depth and velocity. It is therefore, in order to command a more certain as well as an increased supply, that a masonry weir is proposed to be constructed, a little way above the site of the temporary dam. Thus, much loss to Government by deficiency of rain in season of draught, and much distress amongst the ryots thro' scarcity will be avoided.

5 I now forward a cross section of the river, at the site of the proposed Anicut, in which I have marked, the natural bed of the river, the heights of ordinary and extraordinary floods, and the level of the floor of the anicut and Head Sluice. The floor of the under sluices in the Anicut is intended to be on a level with the bed of the river, i.e. the floor of the anicut. The sectional area of the river at the site of the anicut is 2,475 sq. feet, the border, or wetted perimeter, is equal to

to 436 feet: the fall, as ascertained by levels, 4 feet per mile, the Hydraulic mean depth in ordinary floods will be equal to 68 inches, giving a mean velocity of 73.93 inches per second: the discharge of the river is therefore equivalent to 4,574,475 cubic yards per day - By a Register kept during the East season, the River was in flood 47 days, between May and January, therefore $4,574,475 \times 47 = 214,997,050$ - cubic yards may be said to be the quantity of water available which is far in excess of what is required to be drawn off.

The Revenue Statement which accompanies this report shews,

Present irrigation Cawnies 412.
Expected increase — " — 2338

Total area: 2750

assuming therefore that each cawni will require 11,520 Cycles in the season, the quantity required will be 31,680,000 Cycles for the whole area

+ 120 days or 12 months
at 4 cycles per hour
per Cawni.

area, and this is to be drawn off in 47 days. All the tanks are in fair order, and the ordinary repair expenditure in the next and ensuing years will be sufficient to make them capable of resisting the extra pressure on the Bunds.

The irrigating channel has a fall of 4 feet per mile; the sectional area is 67.5, the border is 24, Hyd. mean depth 2-10" or 34 inches, and mean velocity 51.97 inches per second. The discharge when the water is on a level with the crest of the annicut will be equal to 8,76,993.75 Cycles per day, or in round numbers say 8,77,000 Cycles, and in the 47 days we may safely calculate that the channel is capable of draining off $8,77,000 \times 47 = 4,12,19,000$ Cubic yds or 95,39,000 cubic yards in excess of what is required for the irrigation of 2750 cawnies as previously shewn. — This excess will suffice to cover waste from evaporation &c and will in

= 274 Cycles per hour

a measure guard against any deficiency in bad seasons. The Head Sluice shutters can always be put on when sufficient water has been stored and extraordinary floods come down the River. In fact the supply can be regulated according to requirements.

8. It is true that the fall of the main channel is great, viz. 4 feet per mile - but as the soil as far as station 30 is - Morumbod, or decomposed rock I do not think that the bottom of the channel will suffer from erosion, and for the same reason, viz. the firm nature of the soil, there will be no fear of the sides falling in and choking off the supply. The width of the channel, below station 30, being very much greater, the depth and velocity will be considerably diminished.

9. The main line of levels has been continued to the Verdachillane Tank

2
Tank Calingulak, and the height of water and bank shewn in the sheet of sections, but I regret I cannot supply the same information with regard to the other tanks as the points at which the levels were discontinued cannot now be traced.

10. The irrigation area under the present project as shewn by the Sub-Collector is 2,750 Cawmes, the expenditure now contemplated would secure a Revenue of Rupees 15,630 per annum, i.e. 29 per cent nearly on the outlay. A copy of the Sub-Collector's letter which accompanied the Revenue Statement is attached to this report.

11. Rupees 10,000 have been allotted in the current year's Budget (item N^o 163) and pending the formal sanction of the Government of India to the scheme I request permission to

to spend a portion of the money in
collection of materials for so that
the working season between Decem-
ber and March may not be lost.

I have for
/Sgd/ R. E. Torpor
Executive Engineer
No 4 Range Set

(True Copy)

GA Dmd Lt Colonel R.E.,
Superintg. Engineer 5th Bn.

Enclosure in letter
No 126 dated 17th
Oct/18 from Dy Sgnt.
S. M. to the Chief
Engineer for irrigation.

R. E. Torpor
4203/180

South Street Sub Collectors Office
Kerdachellam, 30th September/18

No 350

From W. F. Hathaway Esqre
Sub Collector of South Street
To R. E. Torpor Esquire,
Executive Engineer, No 4 Range,
South Street.

Sir,

In answer to your letter No 543
of the 29th Instant, I have the honor
to state that accounts shewing the
average cultivation during the last
10 years under the tanks mentioned
have been sent to you. Nearly all
the land from which there will be
increased revenue by the increased
amount of water is Punjab land,
already under cultivation; so that
if water is available for wet cultiva-
tion in such land, an increased
charge of 5 Papes a Cawn is made.
Beside this, which may be estimated
roughly at 2000 Cawnies, there is a
small amount of waste Punjab land
(about 160 Cawnies) which will be
newly brought into cultivation, so
that for this, besides the water rate
of

5 x 2000 = 10000
8 x 160 = 1280
11280

of 5 Rupees a Cawni, there will also
be the Punjab assessment to be
computed as profit, and this
averages about 3 Rupees a Cawni.
For land that is already held there
is therefore an increase of 5 Rupees,
and for waste land of 8 Rupees a
Cawni.

I have seen
/sgd/ W. F. Hathaway,
Sub-collector of District

/True Copy/

Edmond St. George, R.E.,
Superintendent, S. P. B.

Agricultural. Fifth Division DP W. Original.
South Arcot District. No 4 Range. Vidachallum Taluq.
Masonry Works.
Main Canals and Branches. 21/
Detailed Estimate of 1868 69.

Works Constructing an Anicut across the Manumutha Nuddy in the Vidachallum Taluq and Subsidiary works over the main and branch channels.

Particulars of work	Number	Measurements			Contents or Area.
		Length	Breadth	Depth	
<u>Anicut.</u>					
Foundations to Anicut	"	310	7	8	13020
do to 3 Sluices in do	"	90	12	9 5	5737 1/2
Retaining walls in rear and front of Anicut	"	778	3	8 5	13815
Flooring to Rear Apron	"	430	28	1 8	18060
do to Projections of Sluices in rear	"	150	13	1 6	2925
do to do do in front	"	150	7	1 6	1575
Foundations to Wings of Anicut	"	200	8	6	9600
do to Buttresses for Steps	"	4	4	6	96
Anicut above foundation	"	310	4	4	4960
Piers for Sluices	"	103 8	4	4	1658
Wings above for Anicut	"	200	4	5	4000
do do	"	200	2	8 7	3500
Buttresses above for Steps	"	20	1	8 7	210
Total Cubft of brick work in chunam					78954
<u>Cut Stone work.</u>					
Cut Stone for Apron in rear	"	425	15	1	6375
do for do in do	"	150	15	1	2250
do for do in front	"	150	10	1	1500
Carried forward					10125

1999.11.20.03/187

Structure in rear
 No 126 dated 17-12-1868
 from Supy of Engrs. S. A.
 to the Chief Engineer
 for inspection.

Particulars of Work	Number	Measurement			Contents or Area
		Length	Breadth	Depth	
Brought forward					10125
Cut Stone for Sluces over the Anicut	310	40	4	1	1540
do for Piers of the Anicut Sluce	90	40	4	1	1240
do for over Pier of do	79	8	4	8	357 3/4
do for facing Pier do	249	5		9	933 3/4
Total Cubft of cut Stone work					13016 1/2
Cut Stone Apron (Rough) in rear of Anicut	460	15	1		6900
Total Cubft of rough cut Stone work					6900
Rough cut Stone work for apron in rear of Anicut	550	9	4		19800
do do in front do	566	4	4		9056
Total Cubft or					28356
Total Cub yds of rough Stone work					1069
Teak wood Shutters for Anicut Sluces	45	4	8	4	67 1/2
Total Cubft of teak wood wrought and put up					67 1/2
Cross Stones ground	36	5	1	3/4	36
Excavating foundation &					
Baling water and Temporary dam					
Scaffolding					
Constructing a Head Sluce.					
Foundation to Head Sluce	83	8	6		2008
do do	17	9	5	5	443 3/4
do do	17	9	3	5	266 1/4
do to Wings of Head Sluce	30	7	6		1260
do do do	30	6	6		1080
Retaining wall	25	9	8	6	463 1/2
Flooring to Head Sluce	20	17	1	8	510
Carried forward					7031 1/2

Particulars of Work	Number	Measurement			Contents or Area
		Length	Breadth	Depth	
Brought forward					7031 1/2
Flooring to Head Sluce	24	15	2	8	900
do do do	28	13	2	8	910
Wings above	80	8	4	5	1610
do	80	8	2	8	1408 3/4
do	30	3	3	5	487 1/2
do	30	2	6	3	180
do	30	2	6	5	375
do	30	1	8	3	135
Pier for Head Sluce	18	4	9	8	684
Parapet wall over the Head Sluce	20	1	8	1	45
Total Cubft of brick work in Chumam					1476 1/2
Cut Stone for flooring of the Head Sluce	20	17	1		340
Deduct for piers					72
Total Cubft of cut Stone work					268
Teak wood Shutters	37	4	8	4	65 1/2
Total Cubft of teak wood wrought & put up					55 1/2
Cross Stones ground	30	6 1/2	1	3/4	30
Excavating foundation &					
Baling water and Temporary dam					
Scaffolding					
Constructing a Tunnel of 1 foot of 6 ft span in 40 th Mile of the Salim frontier Road over the Viridachallam main channel from the Anicut.					
Foundation to side walls	42	2	6	3	315
do to wing	21	2	6	3	157
Carried forward					472

Particulars of Work	Number	Measurements			Contents or Area
		Length	Breadth	Depth	
Brought forward					472-6
Flooring	2	5	7	8	159-6
do	10	6	6	1-6	102-4
Retaining walls	16	1	6	1-6	36-
Side walls above	42	1	6	3-	159-
Wings above	21	1	6	4-4	137-9
Arch	31	7	1	6	220-6
Face walls including blocking course	13	1	10	1-9	59-12
Parapets	18	1	6	1-4	48-6

Total Cub. ft. of brick in chumam
including plastering

1415-3

Cutting Road, excavating foundation and
filling approaches &

Constructing a Dam and Sluice across the
Virdachallim main channel at the
head of Paravalore branch channel.

Foundation to Body wall	4-9 2-9 4	52-3
do to wings of dam & Sluice in front	38-3 4-3 4	565-3
do to do do	21-3 1-6	94-6
do to wings in side	19-4 4	304-
do to do do	7-4 1-6	42-
do to do do in rear	27-3 3-9 4	412-
do to do do do	13-9 3 1-6	61-10
Retaining walls	10 2-3 4	90
Apron	5-6 5-9 1-6	47-5

Carried forward

Particulars of Work	88/	Number	Measurements			Content or Area	
			Length	Breadth	Depth		
Brought forward						156 - 3	
Flooring in front of Sluice		6	3	1	6	27	
do under the Arch		3	4	1	6	18	
do do in rear		6	3	1	6	31 - 6	
Wings above in front		21	6	2	3	6 - 6	314 - 5 1/2
do in side		12	2	1 1/2	5	6	133 - 10 1/2
do do		10	2	1 1/2	4	9	100 - 11 1/2
do in rear		13	2	4			104
do in rear of Sluice		13	2	3			78
Side walls above in Sluice		8	3	3	6		84
Arch		4	4		9		12
Face walls including blocking Course		18		9	1		13 - 6
Parapet walls		18		6	6		4 - 6

Total Cub. ft. of brick in chumam
including plastering

2591-6

Cut Stones

6

Shutters

Excavating foundation and filling approaches.

Making Alterations in the 12 ft. Bridge
built in the 42^d Mile of the Salem frontier

Road over the Sathakoodal old channel

Foundation to diversion wall	32	2	3	0	192	
do to Cross wall	12	2	3	0	72	
Diversion wall above	31	6	1	6	3	141-9
Pen above	4	1	6	3	0	18
Wall over the vents to the <u>introdas</u> of arch	12	1	3	2	0	30

Total Cub. ft. of brick in chumam including
plastering

453-9

Particulars of Work

Measurement Contents
or
Area

Cut Stones

Shutters

Excavating foundation

Constructing a Dam across the Verdachallum
Main Channel at the Head of Manavalanallure
branch Channel

Foundation to Body wall

do to Wings in front

do to do in sides

do to do in rear

Retaining walls

Apron

Wings above

do in sides

do in rear

Total Cubft of brick in chumam including
plastering

Cut Stones

Shutters

Excavating foundation and filling approaches

Constructing a Tunnel of 1 Vent of 3ft span
on the Salem frontier Road over the
Manavalanallure branch channel

Flooring

do

Retaining walls

Carried forward

Particulars of Work

Measurement Contents
or
Area

Brought forward 403-6

Side walls above 42-1-6 4-252-

Wings above 26-1-6 5 4 209-9 1/2

Arch 21-4-6 1-6 141-9

Face walls including blocking course 12-1-9 1-3 26-3

Parapet walls 12-1-8 1-8 27-

Total Cubft of Brick in chumam including
plastering 1060-1 1/2

Cut Stones 3

Shutters

Cutting road, excavating foundation & filling
approaches

Constructing a Dam and Sluice at the
Head of Machigoody and Yelamangalam
Branch Channel.

Foundation to Body walls 4-9 2-9 4-52-3

do to Wings of Dam and Sluice

in front 33-3 4-3 4-565-3

do in sides 19-4-4-304-

do in rear 27-6 3-9 4-412-6

Retaining walls 10-2-3 4-90-

Apron 5-6 5-9 1-6 47-5 1/2

Flooring in front of Sluice 6-3-1-6 27-

do under the Arch 3-4-1-6 18-

do in rear of Sluice 4-6 3-6 1-6 23-7 1/2

Wings above in front 21-6 2-8 6-290-3

do in sides 22-2-1 1/2 5-233-9

do in rear 26-2-4-208-1 1/2

Carried forward 2272-3 1/4

Particulars of Work	Number	Measurements			Content or Area
		Length	Breadth	Depth	

Brought forward					2275.7
-----------------	--	--	--	--	--------

Sides walls above in Stucco	8	3	3-6		84.0
-----------------------------	---	---	-----	--	------

Arch	4	4	11-9		12.0
------	---	---	------	--	------

Face walls including blocking course	18	9	1-3		16.2
--------------------------------------	----	---	-----	--	------

Parapet walls	18	3	9		6.9
---------------	----	---	---	--	-----

Total Cub ft of brick in Chumam including plastering					2392.0
--	--	--	--	--	--------

Cut Stones					8.0
------------	--	--	--	--	-----

Shutters					1.0
----------	--	--	--	--	-----

Excavating foundation & filling approaches					1.0
--	--	--	--	--	-----

29

Superintending Engineer's Office
Salem 12th August 1868

Edw. M. Smith
Superintending Engineer

1868

Fifth Division D. W.

South West District

1880

Masonry Works

Main Canals and branches.

Detailed Estimate for constructing
an Aqueduct across the Manu
the Muddy in the Tirdachallum
Taling and Subsidiary works
over the Main and branch
channels.

Amount of Estimate Rs. 28120

29/8/84 U. C.

Memo Showing the Increase of Cultivation in the Villages which will be supplied by the channel from the proposed Anicut across the Mammotha Muddy near Mamalthor. Virdachallam Taluq.

33

No	Names of Villages	Present Kungah				Ten years average				Kungah waste land	Increase Revenue				Kungah into Kungah	Total Increase				Remarks
		Cannus	Assessment	Cannus	Assessment	Cannus	Assessment	Cannus	Assessment		Cannus	Assessment	Water Cfs			Cannus	Assessment	Water Cfs		
1	Virdachallam	12	73	101	1510	4	82	32	5							250	1250			
2	Sithallor	4	15	28	14	4	13	27	6		62	180	6	310		50	250		112	740
3	Paravallor	41	133	40	38	31	132	314	98							200	1000		200	1000
4	Thoravallor	58	101	485	138	58	62	484	13							200	1000		200	1000
5	Manalore															250	1250		250	1250
6	Manavalanellor	58	101	392	87	54	101	372	87							60	300		60	300
7	Pontheottam	7	13	44	61	6	3	38	123							100	500		100	500
8	Comangalam	13	21	137	39	12	151	135	16							350	1750		350	1750
9	Sathakudal	168	63	1450	84	147	51	1448	58		100	350		500		100	500		200	1350
10	Allichudy	36	23	221	75	25	5	156	1							100	500		100	500
11	Enamangalam	16	73	136	63	15	53	81	6							20	100		20	100
12	Enalthimodes															196	980		196	980
13	Karkoodal x															100	500		100	500
14	Karmankodu x																			
Total		412	161	3408	144						162	530	6	810		2176	10880		2338	12220

xx The Kungah lands of these 12 Villages cannot be supplied by the present channel.
 xxx Under the Virdachallam Taluq.

Virdachallam
 30th September
 1868

W. J. Mathaway
 Sub Collector

(Signed) Appasammy Pillay
 Tahsildar

(Signed) W. J. Mathaway
 Sub Collector

seems showing the success
 of cuttings in the village
 which will be supplied by the
 channel from the proposed
 channel across the channels
 already near channel
 Verdachallum village

P. H. 4215/63

Agricultural Fifth Division D.P.W. Original.
South West District. No. 4 Range. Verdachallum Taluq.
Earth Work

Main Canals and branches

Detailed Estimate of 1868-69

Works: Cutting Main and branch channels from the Ancient
across the Manumutha Muddy.

Particulars of Work	Number	Measurement			Content or Area
		Length	Breadth	Depth	
<u>Cutting a Main Channel to Verdachallum Tank</u>					
Cutting from Station 1 to 3	11715	34-6	15	15	857512.6
do do do 3 to 18	9000	25-10 1/2	13	8	3085593.4
do do do 18 to 30	13255	3-13-3	35	7	557755
do do do 30 to 44	8106	11-3/4	3	4 1/2	702859.3
do do do 44 to 52	4800	15-9	6	8	302645
do do do 52 to 62	6000	8-9 1/4	1	10 1/2	491400
Total Cub ft of cutting channel					5567151.4
or Cub yds					206190.79
<u>Embankment on both sides of the channel</u>					
From Station 30 to 44	8106	12-9	5	6	1136866.6
do 52 to 62	6000	15	7	12	1260000
do 62 to 67	3000	18	9	1	972000
					3368866.6
<u>Deduct the Earth available for embankment from cutting channel at the places where embankments are to be thrown</u>					
					401785.7
Balance Cub ft of embankment					2967080.9
or Cub yds					109891.84

Particulars of Work

Cutting a branch channel to Paravalore Tank
from Station 18 of Verdachallum Main channel

Particulars of Work	Number	Length	Breadth	Depth	Contents or Area
Cutting from 1 to 6 a	5250	7-9	4-9		191425
do do 6 a to 9	1515	5-9	2-9		28955-11/2
Total Cub ft. of Earth work					215380-11/2
or Cub yds					7977
Clearing prickly pears &					

Cutting a branch channel to Comangalam
from the 12 ft Bridge built in 42nd mile of the
Salem frontier Road.

Cutting from Station 1 to 5	2680	5-9	2-9		42377-6
Total Cub ft. of Earth work of cutting					42377-6
or Cub yds					1569-11/2
Clearing prickly pears &					

Cutting a branch channel to Manavala-
mehore Tank from Station 49 of the Verda-
challum Main channel.

Cutting	4210	7-3	4-3		129720-7/2
Total Cub ft. of Earth work of cutting					129720-7/2
or Cub yds					4804-11/2
Clearing prickly pears &					

Particulars of Work

Cutting branch channels to Machigoody
and Melamangalam Tanks from Station
56 of the Verdachallum Main channel

Particulars of Work	Number	Length	Breadth	Depth	Contents or Area
Cutting from Station 1 to 5	4200	6-6	3-6		95550
do do 5 to 8 a	2600	4	1		10400
Total Cub ft. of earth work of cutting					105950
or Cub yds					3924
Clearing prickly pears &					

Embankment (from 5 to 8) on both sides	2	2600	5-3	2-3	61425
do (do 8 to 13)	2	3625	8	5	291600
do (do 16 to 17)	2	800	7	4	44800
(See Survey to channel leading to Machigoody Tank)					
					397825
Deduct the earth available from cutting					10400
Total Cub ft. of earth work of Embankt.					387425
or Cub yds					14349

Superintending Engineer's Office
Salem 12th August 1868.

Edwrd Smith Col R.E.
Superintending Engineer's Office

Annex to Estimate No. 20680

Manimutta Shady

from the Anicut across the

main and branch channels

Detailed Estimate for cutting

of main Canals and branches

Earth Works

1097.4.20.3/682

South West District

Fifth Division DP W.

Archaeological.

South West District

Fifth Division DP W.

Original

No 4 Range

Vardachallum Taluq.

Masonry Works

Main Canals and branches

Abstract Estimate of 1868-69.

for Constructing an Anicut across the Manimutta Shady in the Vardachallum Taluq. and Subsidiary works over the main and branch channels.

Quantities	Description of Work	Rate	Per	Amount Total
<u>Anicut.</u>				
954	Cub ft of Brick in Chumam work including plastering—	16 Cft	74015.	✓
1016	Cub ft of cut Stone work—	7	do 56948.	✓
900	Cub ft of rough cut Stone work—	6	do 25878.	✓
269	Cub yds of rough Stone work—	4	C yd 4276.	✓
67½	Cub ft of Teak for Shuttles wrought and put up—	4	C ft 270.	✓
36	Crops Stones ground (5×1×¾)—	6	Each 216	✓
	Excavating foundation &—		340	✓
	Baling water and Temporary dam &—		1200	✓
	Scaffolding &—		150	✓
	Add Petty establishment, Sundries and Contingent Charges—	at 10	Cent 22141.	✓
	Total—			24340. ✓
<u>Constructing Head Sluice</u>				
476	Cub ft of Brick in Chumam work including plastering—	16 Cft	13846-10	✓
18	Cub ft of Cut Stone work—	7	do 11712.	✓
	Carried forward—		15022	24340.

Quantities

Description of Work

Rate Per Amount Total

Quantities

Brought forward

1502 2 10 24340

55 1/2 Cub ft of Teak wood for Shuttles

wrought and put up

4 . . Cft 222 . .

30 Cub Stones grained (6 1/2 x 1 x 3/4)

7 . . each 210 . .

Excavating foundation &

60 . .

Baling water and Temporary dam &

300 . .

Scaffolding &

50 . .

Add Petty establishment, Sundries

and Contingent Charges

at 10 . . Cent 235 10 2 2580

Constructing a Tunnel of 1 Vent of 6 ft

Span in 40th Mile of the Salem frontier

Road over the Virdachallum Main

channel from the Source.

14 15 1/4 Cub ft of Brick in chunam work

including plastering

1 6 Cft 132 10 10

Cutting Road and Excavating founda

tion and filling approaches &

22 5 2

Petty Establishment, Sundries and

Contingent Charges

at 8 . . Cent 13 . . 168

Constructing a Dam and Sluice

across the Virdachallum Main chnl

at the Head of Paravalore Branch chnl.

259 1/2 Cub ft of brick in chunam work

including plastering

1 6 Cft 242 15 3

6 Cub Stones

5 . . each 30 . .

Shuttles

12 . .

Excavating foundation & filling approaches

15 . .

Petty establishment, Sundries and

Contingent Charges

at 8 . . Cent 24 . . 324

Description of Work

Rate

Per

Amount

Total

Brought forward

323 15 3 27412

Making Alterations in the 12 ft

Bridge built in the 42nd Mile of the

Salem frontier Road over the

Sathahoodal old channel.

453 3/4 Cub ft of Brick in chunam work

including plastering

1 6 Cft 42 8 7

8 Cub Stones

5 . . each 40 . .

Shuttles

12 . .

Excavating foundation &

5 7 5

Petty establishment, Sundries and

Contingent Charges

at 8 . . Cent 8 . . 108

Constructing a Dam across the

Virdachallum Main channel at the

Head of Manavalanellor branch

channel.

1324 Cub ft of Brick in chunam work

including plastering

1 6 Cft 124 2 .

3 Cub Stones

4 . . each 12 . .

Shuttles

3 . .

Excavating foundation & filling approaches

10 14 .

Petty establishment, Sundries and

Contingent Charges

at 8 . . Cent 12 . . 162

Constructing a Tunnel of 1 Vent of

3 ft Span on the Salem frontier

Road over the Manavalanellor

Branch channel.

1060 Cub ft of Brick in chunam work

including plastering

1 6 Cft 99 6 .

Carried forward

99 6 27682

Qⁿ Quantities

Description of work. Rate per Amount Total

	Brought forward		996	27682
3	Cut Stones	5 . . each	15	75
	Shuttles		3	15
	Cutting road, excavating foundation and filling approaches &		<u>12</u>	<u>120</u>
	Petty establishment, Sundries and Contingent Charges	at 8 . . Cont	10	140
	Constructing a Dam and Sluice at the Head of Marhegoody and Yelamangalam Branch Channel			
2392	Cut ft of Brick in chunam work including plastering		16 Cft	224 42
1 6	Cut Stones	1 . . each	24	24
	Shuttles		10	10
	Excavating foundation & filling approaches		<u>16</u>	<u>160</u>
	Petty establishment, Sundries & Contingent Charges	at 8 . . Cont	23	298
	Total of Masonry Works			<u>28120</u>

43

Superintending Engineer's Office
Salem 12th August 1868.

Edwrd Smith Esq
Superintending Engineer

Fifth Division D. W.
South Arcot District.

P. N. 1, 203/68.

Masonry Works
Main Canals and branches.
Abstract Estimate for construct-
ing an Anicut across the
Manimutta Nuddy in the
Tirdachellam Taluq & Sub
sidary works over the main
and branch channels.
Amount of Estimate Rs. 28120

N^o 83.

From

45
Lt Colonel E. A. Ford R.E.,
Superintending Engineer, 5th Div.

To

Colonel J. C. Anderson R.E.,
Chief Engineer for Irrigation,
P. N. 1, 203/68

Enclosures. 16. Sir,

- 1 Survey.
- 4 Sections.
- 2 Detailed Estimates.
- 2 Abstract - Do.
- 1 General Abstract.
- 1 Statement of Revenue.
- 1 Specification.
- 4 Plans.

I have the honor to forward
for the sanction of Government, an
estimate of Rupees 54,800, accompanied
by plans and specifications, for constructing
an anicut across the Manimutta
Nuddy, and cutting channels therefrom,
for the better supply of certain tanks, in the
Tirdachellam taluq of South Arcot.

2. An anicut at Mahmathur
has been under consideration for a long
time. When I took charge of the district
in 1855, an estimate had been prepared
for an anicut, with channels on both
banks of the river. One of the channels
on the south bank was to follow much the
same course as that now estimated for,
and shown in the accompanying survey.
There was also to be a channel due South
(also

(also shewn in the Survey) and one along the North bank. I ascertained that one of the tanks to be supplied by the former, was on too high a level, and that the latter would have to be cut through a difficult country, for about twelve miles, before any tanks could be supplied by it. I therefore recommended that the project should be over, and that the tanks on the North bank, already supplied by a river channel, should have their supply rendered more certain, by an annicut to be built at Comaramangalam, lower down the river. This is the annicut the completion of which I have recently reported. I however stated, at the time, that there were tanks, on the South bank, the supply of which could be greatly increased by an annicut, to be built a few miles above Verdachellam, and that the site selected for the annicut, was as good a one as could be found.

3. Mr. R. E. Norfor, Assistant Engineer of the Range, was deputed last year to prepare fresh plans and estimates for the Mahmathur Annicut; but the estimate at first received from him amounted to no less than 1,04,635 rupees, as

17
as it included the cost of a channel to be taken due South, and the formation of a new tank, also the repair of all the other tanks. The expected return was very small, compared with the outlay. As the utility of the South channel is doubtful, and the repairs and improvement of the tanks should be carried out, whether the annicut is built or not, these items have been struck out of the estimate which now amounts to Rupees 54,500.

4. It is proposed to build an Annicut at Mahmathur, with a head sluice connected with it, for the channel on the South bank. These masonry works will be very similar to those just completed at Comaramangalam. The main channel is to be taken to the Bustah Verdachellam tank, and there are to be branches to the tanks of Paravalore, Thoravalore, Sathakoodal, Comangalam, Manavalanellor, Alachagoody and Yelamangalam.

5. There is no doubt about the feasibility of this scheme. The tanks are at present supplied, but very inadequately, by an old

old and crooked channel, which it is
proposed to abandon. A considerable
saving would be effected, if the old channel
could be used, but besides being too
near the river, it is too narrow, and the
banks are overgrown with prickly pear.
The necessary improvements to the channel
would cost quite as much as a new
channel.

There may be a fresh in the river
in any month from March to December.
At this year there was one at the end of January.
The tanks are therefore likely to be filled
of twice, or three times, in the year, and there is not
much doubt of the expected increase
of revenue, entered in the Tahsildar's
statement. viz: Rupees. 11,420.

There is a sum of Rupees 10,000
allowed for this work, in the current year's
budget, (item 163) and the work can
be put in hand as soon as the estimate
is sanctioned.

I have the honor to be
Sir

Your most obedt. servant
E A Mord Lt. Col. R.E.,
Superintending Engineer, 5th Div.

P. 9. 4203/82

Agricultural.

Fifth Division D.P.W.

Original.

South Arcot District.

No. 4 Range

Virdachellam Taluq.

Earth Works

Main Canals and branches

Abstract Estimate of 1868-69.

Work Cutting a Main and branch Channels from the Anicut
across the Mannutha Muddy

Quantities

Description of Work

Rate Per Amount Total

Cutting a Main Channel to Virda-
chellam Tank.

206190 7/8	Cut yds of earth work of cutting		
	ad. l. Channel	12 C. 1/2	15034 11 10
13250	Petty establishment, Sundries and	12	965 2 4
	Contingent charges	at 6 Cent	925 4 2 15960
109891 8/9	Cut yds of earth work of embanking		
	on both sides of channel	12 C. 1/2	8012 15 14
	Petty establishment, Sundries and		
	Contingent charges	at 6 Cent	487 11 8500
	Total of Main channel		24460

Cutting a branch Channel to Paravar-
low Tank from Station 18 of Virda-
chellam Main Channel.

7977	Cut yds of earth work of cutting	1 C. 1/2	498 9
	Clearing prickly pears &c		31 7
	Petty establishment, Sundries and		580
	Contingent charges	at 6 Cent	31 561

To The Supy Engr. 5th Div.
10-63-27-5-1888

From
The Supy Engineer,
5th Div.

To
The Chief Engineer for
Irrigation.

Dated 12th 3 August/88
Recd 14th 3 August/88

No. 83.

Enclosures. 16.

P.P. 4213/68.

Forwarding for sanction
an estimate of Rs. 54,800
for an anicut at Mah-
matham for the better supply
of certain tanks in the
Virdachellam taluq,
South Arcot.

Quantities

Description of work Rate Per Amount Total

Brought forward 25121

Cutting a branch channel to
Comangalam Tank from the
12 ft. Bridge built in 42nd Mile
of the Salem frontier Road.

1570¹/₂ Cub yds of cutting channel — 1 Cyp. 98 2
Clearing prickly pears & — 11 14
Petty establishment, Sundries &
Contingent charges — at 6 Cent 6 116

Cutting a branch channel to
Manavalanallur Tank from 49th
Station of the Vidadachallum
Main channel.

4804¹/₂ Cub yds of cutting channel — 1 Cyp. 300 4
Clearing prickly pears & — 4 12
Petty establishment, Sundries and
Contingent charges — at 6 Cent 18 323

Cutting a Branch Channel to
Machigoody and Uplamangalam
Tanks from 56th Station of the
Vidadachallum Main channel.

3924¹/₂ Cub yds of cutting channel — 1 Cyp. 245 4
Clearing prickly pears — 7 15
Petty establishment, Sundries &
Contingent charges — at 6 Cent 16 15 278
Carried forward 25730

53

Quantities

Description of work Rate Per Amount Total

Brought forward 25730

14349¹/₂ Cub yds of earth work for
embanking — 1 Cyp. 896 13

Petty establishment, Sundries
and Contingent charges — at 6 Cent 53 3 950

Total of earth work 26680
1000
27680

Superintending Engineers Office
Salem 12th August 1868

EA Mrd South Col. Rt
Superintending Engineers' Dn

- 5
- Specification Report to accompany
the Plans and Estimate for the construction
of an Aqueduct across the Mammuthan
Anddy River, near Mammuthan, in the
Vandachellum Taluk, together with the
Mammul Branch channels, for the
better supply of irrigation tanks in the
neighbourhood of Vandachellum.—
1. The amount of Estimate for the whole
project is Rupees (54800) Fifty four
thousand and Eight hundred only.—
 2. The breadth of the River at the site
of the proposed Aqueduct is 1,00 feet.
 3. The Aqueduct is to be built partly
of Stone, and partly of Brick masonry
(see Plan) 1,00 ft. long, and raised 5 feet
above the foundations, which are to be
about 6 feet
 4. Rock being found 5 feet below the
River bed, the foundations are to be
built solid.
 5. The cut-stone Spinn is to be 30 feet
broad, and $2\frac{1}{2}$ feet thick, supported
in

Left Division 28th
South West District

10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

Earth Works

Mamm Canal and branches

Abstract Estimate for

cutting a dam and dam

channels from the dam

across the Mammuthan Pass,

Amount of Estimate Rs 2688

in rear by a Retaining wall sunk 6 feet deep
The rear of the cut stone Apron is to be one
of Rough Stone 4 feet thick, both aprons to
extend the whole length of the work

6 There are to be 3 sets of undersluices in
the body of the weir, each to contain
3 vents, 4 feet broad, by 5 feet high.

7 A Head Sluice of 3 vents of 4 feet square
is to be built on the South bank of the River
and in connection with the wing of the
weir (See Plan)

8 The foundations of the Head Sluice
are to be sunk 4 feet (same as the weir)
for thickness of walls, height of Piers &c,
See Plan and sections

9 The floor of the Head Sluice is to be
on a level with the floor of the weir.

10 One Main channel is to be cut from
the Head Sluice on the South bank of the
River as far as the Anupale Tada:
Chellam Tank, as shown in the
Survey, the cuttings and embankments
in this main channel are drawn

in

in the sections accompanying the Plans
and Survey

11 The first branch channel from
the main will be that which is to
supply the Paravalar and Thoravale
Tanks - the cuttings in this channel are
shown in the sheet of sections - it will
be supplied with a sluice at its
head, together with a Dam across the
main channel, see plan of Head Sluice
and Dam (plan B. in sheet No. 1.) The
Thoravale Tank will be supplied
by the existing old channel, the supply
being improved by the new branch
channel to the Paravalar Tank.

12 The next branch channel is to the
Sathakodai Tank - the old channel
will be used in this case, but the
bridge on the Salem frontier Road
will be altered as shown in Plan D
Sheet No. 2.

13. The third is a small branch
channel to supply the Corungalam
Tank, this branches off (as soon as
it

it passes the above said Bridge) from
the southern branch channel - for
cuttings & see sections

14. The next channel is the main
main channel branch, for Plan of Canal
and Dam see Plan A sheet No. 2.
a Tunnel will be required, where this
channel crosses the road for Plan and
sections, see E sheet No. 2.

15. The fifth branch channel
is the one to supply the Wachagoodly
and Yalamungulum Tanks, for Plan
and sections of Canal and Dam
see E sheet No. 1. This is the last
branch channel, after which the
main runs direct to the Caspahan
Vadachellam Tank.

N. 1, Range Officer's Office
(Kuttur, 1, April 1868.)

W. H. P.

Asst. Executive Engineer

N. 1, Range S. S.

Charles H. H. H.

Collector of South Arcot

Ed. M. L. Smith Col. R. E.
Superintending Engineer S. D. M.

The estimates referred to in the above letters were originally submitted by the Superintending Engineer 5th Division on the 12th August 1868, but the reports accompanying them, appearing to me to be insufficiently clear in some respects, I had to return them to the Superintending Engineer. They are now resubmitted, along with a report from the Range Officer, and a letter from the Collector explaining the nature and extent of the returns which may be anticipated.

2. The project is exactly similar to several others which have been carried out with highly beneficial results in South India. It is of a simple character, comprising the construction of an ancient across the Marimittan Kund, a stream which rises in the Koleroy Hills, (east of the Shervary Hills), and which drains an area of upwards of 1000 square miles; and a channel, with branches for the supply of 8 Tanks.

3. At present the water is drawn from the River by means of a tortuous and badly arranged native channel, with the aid of corumbos or temporary dams thrown across the sandy bed of the stream, and which of course are liable to be frequently destroyed.

Supdt. Engineer 5th Div.

South. Ind. Dist.

P. N. 4213/68.

Specimen Report to accompany the plans and estimate for the construction of a canal across the Marimittan Kund, to supply water to the Marimittan Kund, for the supply of irrigation tanks in the neighbourhood of Kolleroy Hills.

destroyed.

14 The proposed ancient is on the same pattern, as another which lately been completed on the same river, several miles lower down and termed the Virdachellaw ancient. It is to be 100 feet long, nearly equal to the width of the river, and 5 feet high. The foundations are to be 6 feet deep resting on rocks, and the cutstone flooring is to be 30 feet wide. Three sets of under sluices are allowed, each of 3 vents, 4 feet wide; the head sluice has also a width of 12 feet. The Superintending Engineer is desirous of retaining the central set of under sluices, though it appeared to me preferable to have two sets of 6 vents at the flanks.

5 The estimate for the ancient and head sluice amounts to Rupees 26,930; and that for the small masonry works which are required for the distribution of the water, and for a road tunnel, to Rupees 1,200. The principal channel is designed to have a bottom width of only 6 feet, which according to the calculation of the Range Officer, will suffice for the delivery of the required quantity of water, if the surface level of the river is sufficient to give a depth of 5 feet of water for 40 days in the season; but as the cutting for the first 3 miles is considerable - 12 to 15 feet - there must be some washing down

5

of earth from the slopes, even though the soil is hard, and I have therefore increased the width to 9 feet, which adds only 1,000 Rupees to the estimate. The total probable cost of the earthworks will then amount to Rupees 27,680 and that of the whole project to Rupees 55,800.

6 The returns from the project are estimated by the Collector at upwards of 11,000 Rupees or at nearly 20 per cent on the proposed outlay.

7 The project has been carefully considered and well drawn up by the Range Officer Mr. Morfor, Executive Engineer; and I would beg to recommend it for sanction.

Fort St George
27 October 1868

J. A. Anderson Esq. R. S. C.
Chief Engineer for Irrigation

To
The Secretary to Government
P. W. Dep.

59

Mr J. P. Smith
Secretary
U. S. Navy
Washington

Also Chief Engineer
for frigates

also Secretary

to Government

October 28
October 1868

No 81

✓ Frederick
✓ United States
✓ Secretary
✓ for the
✓ Sanction of Government
✓ are estimated at \$100,000
✓ for the service
✓ at present and for the
✓ about 100,000

Aug 26 84 - 24 2 1/2 hours / 18

At 576

2. 3. 2 hours / 18 2 1/2

South West District.

Abstract of Estimates submitted by the Superintending Engineer, Jm.
Irrigation System.

Section of Inigation

Constructing an American
identity in the border-
lands of the American West
Chakraborty, Jyoti and
Sutcliffe, Sharon and
Sánchez-Chamard.

Supplementing Engmann's Office
 da. km 12: August 1868.

28720
26680
57800

| Particulars | Amount | Remarks |
|--|--------|------------------------------------|
| to maintain & regulate supply | | Temporary work |
| Main Canal and branches | | Cost of land |
| Distributing channels | | Drainage supply |
| Dams & regulating works | 26920 | Distributing Main Canal & branches |
| Falls and weirs | | |
| Irrigation & water & land or from drainage or crop canal | | |
| Cooper. | | |
| Head & dams and regulating works | 784 | |
| Falls and weirs | | |
| Irrigation | | |
| to repair damage of land caused by channels | | |
| Including water run, into & of dams. | | |
| Main canal and branches. | 416 | |
| Distributing channels | | |
| Work, mainly a constantly deepened for navigation | | |
| Mills & | | |
| for open, attachment, steel, and masts | 24860 | |
| Excavation of bed | 25140 | |
| Entertainment, protection of banks. | | |
| Excavation of drainage | | |
| Catch channels | | |
| Excavation | | |
| Entertainment | 2220 | |
| to supply drainage | | |
| Entertainment of Rivers | | |
| Channels of crops or supply | | |
| Channel, a necessity for navigation. | | |
| Channels for such work | | |
| Channels | | |
| Boats | | |
| Steel rollers, plant | | |
| Machinery for mills | | |
| Temporary work | | |
| Cost of land | | |
| Masonry work | | |
| Cost work | | |
| Machinery plant | | |
| Machinery for Mills. | | |

EA Prod. Unit 62 R2
 Superconducting magnet 500-
 60-

28/120 28/120

123684

3504

Public Works Dept

62

Proceedings of the Madras Government
November 1868
Under date the 24th October 1868
Read the following

From the Chief Engineer
for Irrigation

(Here enter No 1774 October 1868)

With his memorandum
above recorded the Chief
Engineer for Irrigation
submits a project, estimated
to cost Rs 55,800, for con-
structing an Arment across
the Aranimoothe Kuddie near
Tirahmatoor in the South
Arcot District, and for
taking off a Channel
from it, with Branches,
for the better supply of

N.
W.
M.A.

17th Division, P.P. W.

South Arcot District,

17th 4203/68.
Amount Rs 55,800.

General Method of Estimate
for Constructing an Arment
across the Aranimoothe Kuddie
in the Tirahmatoor Taluq
cutting drain and branch
channels.
Amount of Estimate Rs 55,800

eight tanks in the neighbourhood of Viradachellam, which are stated to be at present very imperfectly supplied by an old and tortuous Channel, aided by temporary dams thrown across the stream.

The proposed Anicut will be 400 feet in length and 5 feet in height, and the main Channel will have a fall of 11 feet per mile with a bottom width of 9 feet. In all other respects, the project will be very similar to those of the same character which have in former years been

✓
successfully carried out in the South Arcot District with much benefit to the District.

From the report of the Sub Collector it appears that a return of upwards of 11,000 Rs. or about 20 per Cent upon the proposed outlay, is expected to be derived by the irrigation of about 2000 Cawnies of land which will be brought under wet cultivation by the Anicut, and, as the freshes in the river are of frequent occurrence, the Supy Engr is satisfied that there will be no deficiency of water.

4

As the project offers
fair promise of being abund-
antly remunerative, the
Government sanction the
estimate of Rs 55,000, and
authorize the work to be
proceed with from the
sum of 10,000 Rs which
has been provided for it in
the Budget of the current
official year.

Required for the
enclos. to Col. under
Sons Memo No 81

27-27 Oct 68

Mr. Secy. Govt.
to Secy. Govt.

[Signature]

- To
- 3 The Chief Engr for Irrigation
- 1 " Supy Engr & Dr.
- 1 " Controller
- 1 " Asst. Genl.
- 1 " Rev. Secy. / Dept. 25/10/68

2-20 Nov 1868 No. 135

11-10-30 1868
L. 2-33 II

[Signature]

Cue 4203
Govt. of 1868 Madras.

PUBLIC WORKS.

PUBLIC WORKS.

de, de

Dated

th

Recd

Vol 22

G O 24 to No. 68 No 36821

No. 526-527

Amount Estimate of Rs 55,800 for
an Aqueduct across the main-
stream a muddlee near Mah-
abaleswari, on the South Arch,
D. Sanctioned.

