M.R.O. 1—10,006—28-2-50.

(1) Number of pages_____

(2) Date of repair_____

(3) Initials of the Referencer_____

MADRAS RECORD OFFICE

Government of Madras

Pub. Works DEPARTMENT

G.O. No.	3342	Press
~~R.P. No.~~ 468, 69		~~Mis.~~
Dated	26. 11. 1874	~~195~~ .

Not to be folded or roughly handled

Read the following papers :—

No. 463. From Major J. O. HASTED, R.E., Officiating Superintending Engineer, 1st Division, Kistna, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Masulipatam, 15th September 1874, No. 64.

1 Comparative Statement.
1 Supplemental Estimate.
1 Range Officer's explanatory letter, No. 188, of 2nd September 1874, in original.

3 Total. Return requested when sanctioned.

WITH reference to your memorandum, No. 545, dated 28th July 1874, I have the honor to forward a revised comparative statement and estimate for the head sluice of Ryves' Canal, Eastern Delta, together with an explanatory letter by Mr. Peters, Assistant Engineer, to whom I was obliged to refer the matter as the work had been carried out before my arrival.

2. Mr. Peters has clearly explained the points noticed in your memorandum, and I can only add, in explanation of increased rates for masonry, that it seems to me an attempt was made on this work to introduce a better style of workmanship than usual in the district, and the rates became heavy because the men were doing what to them was unusual work.

3. The rate for angle iron has been reduced, but I may remark that the old materials in the workshop are standing, as I found, at very high prices.

4. The shutters which were originally made have been broken up and the materials used for other works. Mr. Peters shows the loss on the sale.

5. Mr. Peters shows from measurement the probable saving that will be made on the earthwork of the new [illegible] Canal, and I think there is no doubt that there will be a conside[illegible], but I have great hesitation in accepting calculations of savings of [illegible] sort. The work is liable to damage from heavy rains at any time; the lower portion is sure to be very difficult to excavate, and provision has yet to be made for proper sectioning to the banks and providing drainage outlets for rain water on the banks, lunkas, and slopes. Even after providing for these matters I believe however there will be a more than sufficient saving to cover the excess on the head sluice.

6. The head sluice work is now stopped, owing to the quantity of water that has leaked from the canal into the space below the bridge; on the subsidence of water in the canal, the work will be completed as speedily as possible.

7. The following Officers have been in charge of work :—

—	From	To	Amount of Expenditure.
			Rs.
Lieutenant A. R. Edgcome, R.E.	August 1868 ...	18th Jan. 1870...	8,249
Major H. Smalley, R.E.	January 1870 ...	18th May ,, ...	2,922
C. J. Peters, Esq., as Range Officer ...	18th May ,, ...	1st April 1871...	1,747
Do. as Sub-divisional Officer under Major H. Smalley, R.E.	1st April 1871 ...	8th Dec. 1872 ...	121
and Lieutenant D. McNeil Campbell, R.E.	8th Dec. 1872 ...	1st Aug. 1873 ...	4,025
C. J. Peters, Esq., again as Range Officer...	1st August 1873.	Up to date ...	794
			17,858

Mr. Peters states that credit is due to Mr. J. Pierce, 1st Class Delta Superintendent, and G. Vencataram, late Anicut Superintendent, for carrying out the canal excavation economically, and I may add that Mr. Peters himself has paid a great deal of attention to the work, and is also deserving of credit for his management of it.

From C. J. PETERS, Esq., Officer in charge 6th Range, Kistna District, to Major J. O. HASTED, R.E., Superintending Engineer, 1st Division, Kistna District, dated Bezwadah, 2nd September 1874, No. 188.

With reference to memorandum by Chief Engineer for Irrigation, forwarded with your No. 767 of 6th ultimo, regarding comparative statement of Ryves' head sluice, I have the honor to make the following replies to the observations therein contained.

2. A fresh statement is enclosed comparing the actual expenditure incurred and still required with the original estimate Rupees 13,000, instead of the original with the additional estimate for screw gearing, as required in paragraph 2 of the above memorandum.

3. The items mentioned in paragraph 3, as those due to the substitution of screw gearing for needles, are not quite correct. The following may be put down as a just estimate of the additional expense entailed on that account :—

	RS.	A.	P.
Rough stone in chunam	52	4	0
Brick	29	11	4
Wood-work	282	5	11
Iron-work	731	4	5
Cut-stone	408	14	3
Tin covers for screws	285	0	0
Sundries on the above	89	8	1
Madras bill for screw gearing	3,100	0	0
	4,979	0	0

The iron-work includes the amount due to substitution of < iron at the reduced rate of 3 Annas instead of 4 Annas.

4. The estimate for screw gearing was made at Bezwada at what were considered reasonable rates, amounting to Rupees 1,872-5-1. No allowance, however, was made for shipping charges; I presume it was then intended to get the work from Dowlaishweram, the charges for conveyance from which place would have been trifling. The bills from the Madras Workshop amount to Rupees 3,100 including shipping. I am unable to account further for the excess under this head. Rupees 346, the amount of another bill from the Madras Workshop just received, has been added to the amount (Rupees 2,754) entered in former comparative statement, making the total Rupees 3,100 as above.

5. With regard to the cost of the angle iron, 4 Annas per lb., this may perhaps be reduced to 3 Annas; the cost of angle iron at present delivered at Bezwadah is Rupees 0-2-4 per pound, and 8 Pies more, amounting to 120 or Rupees 8 for each vent, does not appear to be too much for cutting the corners of the grooves carefully to fit the < iron, bending the angle iron, and fitting it and for the bolts for fastening it, etc.

6. I give the following data for packed stone for apron and metalling :—

	RS.	A.	P.
Rough stone in quarry	0	10	0
Loading	0	0	9
Carting	0	2	6
Packing	0	4	0
Sundries	0	0	9
Packed stone...	1	2	0 per Cubic yard

	RS.	A.	P.
Stone quarried and broken	0	14	0
Loading	0	0	9
Carting	0	2	6
Spreading	0	1	0
Sundries	0	0	9
Broken stone...	1	3	0 per Cubic yard

The estimated rate for the latter Rupees 1-8-0 therefore is a little too great, and for the former Rupees 1-0-0 rather too small, the estimate is altered accordingly.

7. With regard to the observations in paragraph 4, the iron and wood used in making the needle shutters were afterwards used for other works, and their value recovered and deducted in the supplemental estimate as follows :—

	Amount paid to Workshop for needle shutters.	Amount recovered and deducted from estimate for screw shutters.	Loss.
	RS.	RS. A. P.	RS. A. P.
Wood	876	648 10 11	.....
Iron	450	341 11 1	.....
Total...	1,326	990 6 0	335 10 0

8. The following shows the actual cost and recovery on the centrings.

	Outlay.	Recovery.	Balance as shown in Comparative Statement.
	RS. A. P.	RS. A. P.	RS. A. P.
394 7 7 Cubic feet of teakwood, at Rs. 2 4 0...	887 14 9	268 0 0 C. feet... 605 1 1	.....
27 2 8 do. at ,, 2 0 0...	54 7 1	250 8 0 do. ... 501 6 11	.....
168 10 1 do. at ,, 1 8 0...	253 4 2	16 1 2 do. ... 20 1 11	.....
590 8 4	1,195 10 0	1,126 9 11	.....
Workshop centage	119 9 0	112 10 8	.....
Total, Timber...	1,315 3 0	1,239 4 7	75 14 5
Iron	380 13 8	375 7 11	5 5 9
Mortar	1 14 0	.....	1 14 0
Bricklayers	64 3 0	.....	64 3 0
All labor	707 6 11	.....	707 6 11
Stone	9 6 0	.....	9 6 0
Sundries	51 4 3	.....	51 4 3
Total Outlay...	2,530 2 10	Total Recovery... 1,614 12 6	915 6 4

It will be seen by the above that all the recovery possible was made; in fact I fear it was rather more than it should have been, and that the workshop must have suffered rather from it.

9. With regard to the parapet wall, the rate Rupees 8-7-2 is certainly very high; this is partly owing to my having pulled down some of the wall while it was being built, owing to bad work, and rebuilding it.

10. From a comparison of the pit books with the sections of Ryves' new cut, it appears, calculating roughly (it cannot be estimated very accurately without taking levels), that there remained to be done at the end of July—

	C. yds.
In the 3rd yard	28,000
4th ,, ...	71,000
5th ,, ...	85,000
6th ,, ...	23,000
7th ,, ...	32,000
8th ,, ...	2,000
	241,000
	Rs.
At an average rate of Annas 2½ this will cost about	37,500
To this should be added for silting up of the pits 10 per cent. ...	3,750
Sectioning bunds at Rupees 40 per 100 yards	4,928
Sundries	1,000
	47,178
The total expenditure up to end of July was	1,90,172
Probable expenditure required to complete the work	47,178
Total...	2,37,350

Total new cut.—Estimate 2,79,880. Balance 42,530.

11. I believe Lieutenant Edgcome was Range Officer up to the time the arches were commenced, I have been in charge from that time as Range Officer and Sub-divisional Officer under Captain Smalley and Lieutenant Campbell. The work has always been under my superintendence since the commencement of the arches. Lieutenant Edgcome also commenced the work on the new cut, and I believe the 3rd yard was going on when I arrived. Credit is due to Mr. J. Pierce and G. Venkat Row who carried out most of the work from the commencement. The marginallly noted papers are herewith returned.

1 Chief Engineer's Memorandum, No. 545 of 28th July 1874.
2 Comparative Statement and Estimate.
1 Bill for Rupees 346 from Madras Workshop.

No. 864.

No. 468A. *Note by the Chief Engineer for Irrigation.*

In July last the Superintending Engineer, Kistna, transmitted, with reference to G. O., 10th March 1874, No. 627, a comparative statement showing the increased cost of the head sluice of Ryves' Canal, but the explanations referred only to the differences between the then estimated total and the sanction which had been accorded by a previous Superintending Engineer, and not to those between the former and the original sanction of Rupees 13,000. Instructions were therefore sent to Major Hasted, and he has now transmitted a statement showing that the head sluice will cost Rupees 19,260, or nearly 50 per cent. more than was at first supposed.

No. 545 of the 28th July.

2. The explanations required are given in the Superintending Engineer's letter No. 64 of the 15th September, and in that* from the Range Officer, and they are fairly complete. There appears to be a mistake however in the estimate

* No. 188, 2nd September.

as exhibited in the comparative statement, for, under iron-work, the estimate if work to be executed has been altered by reduction of rate, but it is not clear how this could affect the amount already paid. Of the Rupees 6,260 excess, Rupees 4,979 are shown to appertain to the substitution of efficient means of regulating the head sluice for the needle shutters of the original estimate. Some of this cost would seem to have been avoidable, for under ordinary circumstances it would not have entailed any increase on the cost of masonry, on which account some 490 Rupees are included. The other items of excess have been satisfactorily explained, and they are together less than 10 per cent. on the original estimate.

3. Though a very unimportant item in the cost of this work, it may be noticed that the data for road metalling given in paragraph 6 of the Range Officer's letter appear to be open to objection. Annas 14 a cubic yard for broken stone would appear to be excessive, for at all quarries in getting out building stone there is usually a large amount of small material, the rate for which should, it is thought, be very much lower than that at which building stone can be supplied.

4. It will be seen that the additional cost of the head sluice is not likely to entail any excess on the sanction* for the canal, of which it is a component part, but that rather a material saving is anticipated.

* Rupees 4,14,193.

CAMP, NAZARETH, 26th *October* 1874. (Signed) JOHN MULLINS, Lieut.-Colonel, R.E., *Chief Engineer for Irrigation.*

No. 469. ORDER THEREON, 26th November 1874, No. 3,342.

IRRIGATION, No. 54.

UNDER the explanations afforded in the papers submitted by the Chief Engineer for Irrigation, the Controller of Public Works Accounts will be authorized to pass the excess expenditure on the head sluice of Ryves' Canal, the cost of which is now estimated at Rs. 19,260 against Rupees 13,000 allowed for it in the original sanction of Rupees 4,14,193 for the canal, which total amount, it is observed, is not likely to be exceeded.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the Superintending Engineer, Kistna.
,, Chief Engineer for Irrigation.
,, Controller of Public Works Accounts.

Exd. S. T. Austin.
Spare Copies

No 188

Robor Bazaar Range Office
2nd September 1874

7A

From

E. H. Peters Esqr
Officer in charge Robor Range &c &c

To

Major J. C. Haslett R.E.
Superintending Engr 1st Division Krishna Dist

Sir

With reference to memorandum by Chief Engr for Irrigation forwarded with your No 767 of 6th ultimo, regarding comparative statement of Repairs Head Sluices, I have the honor to make the following replies to the observations therein contained -

2. A fresh statement is enclosed comparing the actual expenditure incurred and shall be required to the the original Estimate Rs. 13000 instead of the original with the additional Estimate for screw gearing, as required in Para 2 of the above memo

3. The items mentioned in Para 3 as those due to the substitution of screw gearing for the lev are not quite correct. The following may be put down as fresh Estimates of the additional expense entailed on that account

Rough stone in chunam	52-4-0
Brick	29-11-4
Wood work	282-5-11
Iron work	731-4-5
Cut stone	408-14-3
Iron covers for screws	285-0-0

Sundries on the above Rs 89-0-1

Madras bill for screw spring 3100-0-0

4979-0-0

The iron work including the amount due to substitution of < iron at the reduced rate of 3 Annas instead of 4 Annas. The Estimate for screw spring was made at Bezwada at what were considered reasonable rates amounting to Rs 1072-5-1 No allowance however was made for shipping charges, as it was then intended to get the work from Bombay and the Charges for conveyance from which place would have been trifling - The bills from the Madras Workshop amount to Rs 3100 including shipping, Mr Jenkins account further for the excess under this head - Rs 346 the amount of another bill from the Madras Workshop not previously included has been added to the Amount (Rs 2754) entered in Mr Jenkins statement making the total Rs 3100 as above

5. With regard to the cost of the angle iron Mr Jenkins states that they may perhaps be reduced to 3 Annas - the cost of angle iron at present delivered at Bezwada is Rs 0-2-4 per lb and 8 pie more amounting to 0-0-11 Rs 8 for each bend does not appear to be too much for cutting the corners of the grooves carefully to fit the < iron, bending the Angle iron and fitting it and for the bolts for fastening it &c

6. I give the following data for packed

9A

Stone for stone and metalling -

Rough stone in quarry	0	10	0
Quarrying	0	0	9
Cutting	0	2	6
Packing	0	1	0
Conveyance	0	0	9
Packed stone per Cft	1	2	0
Stone quarried & broken	0	11	0
Quarrying	0	0	9
Cutting	0	2	6
Conveyance	0	1	0
Broken stone	0	0	9
	1	3	0 per Cft

The Estimate rate for the Cutter Rupee 1-0-0 therefore is a little too great and for the former Rs 1-0 a further deduction, the Estimate is allowed accordingly -

7. With regard to the observations in para 4. the iron and wood used in making the needle shutters was afterwards used for other works and their value recovered and deducted in the Supplemental Estimate as follows

	Amount paid for purchase of needle shutters	Amount recovered and deducted from Estimate for needle shutters	
Wood	876-0-0	648-10-11	
Iron	450-0-0	341-11-1	
Rs	1326-0-0	990-6-0	Rs 335-10-0

8. The following shows the actual cost & recovery on the embankment —

	Outlay	Recovery	Balance as shown in Comparative Statement
391-7-7 Cft. of Brick work @ 2-4-0 =	887-14-9	268 Cft. @ 1-12-0 = 605-1-1	
27-2-8 Do. @ 2-0-0 =	54-7-1	250-8-0 = 501-6-11	
168-10-1 Do. @ 1-8-0 =	253-4-2	16-1-2 = 20-1-11	
590-8-4	1195-10-0	1126-9-11	
Workshop (Outlay)	119-9-0	112-10-8	
Total Timber	1315-3-0	1239-4-7	75-14-5
	380-13-8	375-7-11	5-5-9
Iron	1-14-0		1-14-0
Mortar	64-0-0		64-0-0
Bricklayers	707-6-11		707-6-11
All Labor	9-6-0		9-6-0
Stone	51-4-3		51-4-3
Sundries			
Total Outlay	2530-2-10	Total recovery 1114-12-6	915-6-4

It will be seen by the above that all the recovery possible was made in fact I fear it was rather more than it should have been and that the Embankment must have suffered rather severely

9. With regard to the parapet wall the ratio 8-7-2 is certainly very high, this is partly owing to my having pulled down some of the wall while the work was being built owing to bad work & rebuilding it —

10. From a comparison of the pit-book with the sections of Rupees now cut it appears calculating roughly (it cannot be estimated very accurately without taking levels) that there remained to be done at the end of July

in the 3d Yard	Cft.	20000
4th "	"	71000
5th Yard	Cft.	85000
6th Do.	"	23000
7th Do.	"	32000
8th Do.	"	2000
		261000

At an average rate of Annas 2½ the work to be done should be " " Rs 37500

To this should be added for selling

the soil to be cut — 3750

Re-laying bank of Cft. for 100 42692 8

Timber " 4000

47750

The total Expenditure upon the work of July to Nov Rupees. — — — 190172

Probable Expenditure required to complete the work Rs. 47,178

Total 237350

Total Amount Estimate 279800 — Balance 42580

11. Mr Lieut Vint Edgeome was Engineer Officer up to the time the works were commenced I have been in charge from that time as Engineer Officer and Sub Divisional Officer under Captain Smalley & Lieut Comptell The work has always been under my superintendence since the commencement of the works Lieut Edgeome also commenced the work on the New Cut and I believe the 3d yard was going on when I arrived, Credit is due to Lieut J Pierce & G Venkatasawmy who carried on most of the work

from the Commencement

The Marginally noted papers are herewith returned

1 Chief Engr's Memo
1845 of 28th July /46
2 Comparative
statement & Estimate
1 Bill for Rs 324
from Madras Dock Co.

I have the honor &c
Sir
Your Most Obedt Servt

J Pitts
Officiating Chief Engr RE

Jno. Acting Major RE
Superintg Engr 1st Div Madras

No 1

No 64

Kristna District Engineers
Office Masulipatam 15A
15th September 1874

From

Major J. O. Hasted R.E.
Offg. Supg. Engr. 1st Divn. Kristna

To

Lieut. Col. J. Mullins R.E.
Chief Engineer for Irrigation

Sir,

With reference to your memorandum No. 545 dated 28th July 1874 I have the honor to forward a revised Comparative Statement and Estimate for the head Sluice of Rynes Canal Eastern Delta, together with an explanatory letter by Mr. Peters, Assistant Engineer to whom I was obliged to refer the matter as the work had been carried out before my arrival.

2 Mr. Peters has clearly explained the points noticed in your memorandum and I can only add in explanation of increased rates for Masonry, that it seems to me an attempt was made on this work to introduce a better style of workmanship

Enclosures 3.
1 Comparative Statement & Supplimentary Estimate
1 Range Offg. explanatory letter No. 188 of 12th Sept. 74 in original.
3 Sctt. Returns regarding when sanctioned.

Copy forwarded to the Secretary to Govt. P.W.D. Madras for information.

Copy forwarded to the Superintending Engr. 1st Div. Kristna for information.

Copy forwarded to the Executive Engr. 1st Div. Kristna for information.

Copy forwarded to the Executive Engr. 2nd Div. Kristna for information.

Copy forwarded to the Executive Engr. Eastern Delta for information.

P.W.D. No. 6894/74
2
Revised Estimate for Completing the Masulipatam and Eluru Branches of Rynes Canal from 10 to 14 Miles and the Head Sluice at the Regulating Channel Cut of Rynes Canal Eastern Delta Kristna District.

P.S. D 26 Nov 74
Dec. 13 Nov 74

Irrigation Circuit Engr. Office
Deniliquin 11th July 1874

Major P. O. Wardell R.E.
Divisional Engineer Murray

Sir,

I have the honor to forward for your information a copy of a letter No 1754 of this date from the Chief Engineer for Irrigation, with reference to the Head Sluice of Major Creek Channel, and to request that you will be good enough to furnish me with your opinion as to the necessity of the proposed Sluice, and the probable cost of its construction.

I have &c

Wm. Hall
Irrigation Circuit Engr.

Irrigation Circuit Engr. Office
Deniliquin 15th July 1874

To
The Chief Engineer for Irrigation
Sydney

Sir,

I have the honor to forward for your information a copy of a letter from the Head Sluice Contractor, Major Creek Channel, with reference to the necessity for the proposed Sluice, and the probable cost of its construction.

I have &c

Wm. Hall
Irrigation Circuit Engr.

Irrigation 1874-26
Rec'd 7 Aug

468

From
The Supt Engineer
Murray District

To
The Chief Engineer
for Irrigation

Dated 15th September 1874
Received 21st

Rec'd No 64.
Enclosures 3.

Forwards Revised Estimate & Comparative Statement, together with Ranger Officers explanatory letter, for the Head sluice of Major's canal, and begs certain explanation.

P. W. 28/94/74

higher rate than allowed in the estimate, with the rest of the work except metalling roadway I had nothing to do.

3. Setting aside the increase in cost of screw gearing sent off from the Workshops in Madras, the percentage of increase above sanctioned estimate is about 9-7-0; this is to be accounted for principally by the rate of cubstone being higher than estimated and the cost of centering being in excess of the sum allowed, as regards the first point the work is fuller than any hitherto carried out at Bezoarah and I think could not possibly be done at the estimated rate, on the second point I can only say I agree with Mr Peters.

4. The small increases in brick-work and pointing should have been avoided, but it is to be noticed that the bricklayers at Bezoarah, have had no experience in pointing brick work and that the cost has been increased in all probability chiefly by the work having to be done over and over again.

5. A further small increase is caused by the prices of iron and wood having been raised since the estimate was framed.

6. I feel confident that the excess on this work can be met from savings on the excavation of new Head to Ryves channel but I am not prepared at present to give a distinct promise to this effect.

7. The Head Sluice work has progressed very slowly since I have been in the District for this season. There was a pressure of other work, and as the Head sluice could not be of use until the new cut was completed labor was employed on it only occasionally & it will be completed before the commencement of next working season by which time it is hoped that the new cut will be ready to be opened.

8. The submission of this statement has been delayed, firstly on account of the screw gearings not having reached Bezoarah and secondly by the Range Officers having had his time very fully occupied.

I have the honor to be
Sir
Your most obedt Servant
J.H. Arbuthnot Major R.E
District Engineer
Kistna

To D.C. Kildare No 5457
28th July 1874.

No 1035
No G. No 1286.
From The Chief Secretary
Dublin Castle
P. No 6894/74
To The Chief Secretary
for Ireland
Ph. D. 26 Nov. 74
Date 11 July 1874
Received 16 " 23/9/74
Enclosure 3
Forward for Consideration
& Report
Lord Lieutenant
Lord Chancellor
Right Hon. Chief Secretary
Attorney & Solicitor General
Solicitor of Inland Revenue
Solicitor to Post Office
Registrar of Petty Sessions Clerks
Registrar of Records
Registrar of Judgments
Registrar of Deeds
Registrar of Titles
Remarks if Any
with Certificate

estimator was not aware of the amount of labor it would cost and I have no doubt that sufficient allowance was not made for scaffolding and labor required to lift large stones on to a work of this sort.

The increase of Rs 100 on the other item of cut stone called time brought forward is I think attributable to same cause.

5. The cost of Centrings exceeded the estimate by Rs 415. a lump sum of Rs 500 only was provided. The 3 arches of 40 feet span were built on 2 centrings which were designed by Lieutenant Edgcome on correct & recognised principles, and were made of Teak they were supported on sand boxes and resting on brick in mud pillars. I do not think Rs 915 can be regarded as an excessive expenditure on this head. They should no doubt have been estimated for in detail.

6. The next largest item is Rs 318 excess in excavating foundations. The amount allowed in the estimate was a lump sum of Rs 200. Rs 513 is not a large sum for the size of the pit excavated and any excess in the quantity excavated is a saving to the excavation of the Canal, the item therefore is not of much consequence.

7 The excess of Rs 233 in iron work is due to the substitution of angle iron for iron plate in the grooves for the shutters to work on.

8 Teak wood timber for shutters, the original estimate provided Rs 375 for the four needle shutters,

the supplemental estimate Col 2 provided for Screw shutters & Yapee he and also for the loss incurred by the needle shutter having been already made in the Workshop. The rates then were Rs 3 for teak & Rs 1-12 Yapee. The rates of the present estimate are Rs 3-8 & Rs 2-0 causing an increase of Rs 124-5-1 on this item.

9. The teak & Yapee are shown seperately in the supplemental estimate herewith forwarded in the Comparative Statement. They are both included in one item in the Colombo Work to be executed.

10. The excess of Rs 1178 & Rs 125 on Brick & in Chunam Pointing I am unable fully to explain bricks were expensive owing to the high price of firewood (Rs 2 per candy) but the work on both items is bad.

11. The excess on Concrete Rs 108 appears to have been caused by increase both in quantity & rate.

I have the honor to be
Sir
Your most obdt Servant
Signed/ C. J. Peters.

"True Copy"

Asst Engr Mich Br Canal

Lt Asstt Major RE

Chas Lewis

District Engineer Kurnool

Esqr

Enclosure 2

1- Comparative statement

1- statement of abstract etc

2 -

Chs 3/1286/74

To accompany letter

No 35 of 11th July 1874

from the Superintending Engineer Ch

Dr Krishna to the

Chief Engineer for

Irrigation.

P. W. 6894/74

P.G. dt 26 Nov/74

Ser B No 468 A

Turfing taken upon ——— 282.3.8
Trackwork ——— 911.415

Grass topping ——— 2754.

Tie Cuttings ——— 286.

Total Rubes ——— 4427.1537

The cutting which was mentioned in the P.W. Workshops at Madras Cost Rubes 1280 was that of the estimate of Rubes 1474 and Messrs Spaldings Mr. Hackett states that by omitting the substitution of Application for plate rim in the frames and this by adding to the weight of each sluice, but the balance of work remaining to be done is about 1/3 of the whole and will cost about Rubes 1000 to complete it, bringing the cost up to £56 a ton an altogether exorbitant price. The small amount of work required to fit the angle iron for the frames would make but trifling addition to the rate both and the exception of iron is not ordinarily taken into consideration in estimates of this nature.

Similar rates for masonry, stone, above Rubes 1 per acre for road metalling, 1st Rubes are, the same as those of the original estimate, although much below, the work being about 3/4 of a mile further distant.

With regard to the sluices, it is reported that the needle sluices had been made while further sluices were decided upon. The former require a much larger quantity of work, and it should have been so stated when the Commission

1 [illegible] at a comparatively small cost [illegible] and the whole cost the Madras Irrigation [illegible] charged to this estimate [illegible] [illegible] [illegible]

from Ch Kistna Div Sch/74
R 4th 1874

1286

No. 545.

To,

D. E. Kistna

Dated 28th July 1874
Dept. Pub. Works

Enc. 2

P. W. 6894/74.

Returns with Remarks
Comparative Statement
and Estimate for new
Head sluice to Pynes
channel.

G-0-3342-26-11-74
In B N° 468 A.

Kistna Irrigation and Navigation Division No. 1

Vijayawada, the 25th July 1874.

From

The Executive Engineer,

To

The Superintending Engineer,

Godavery Circle.

Sir,

I have the honor to submit herewith returns with remarks, comparative statement and estimate for the new head sluice to Pynes channel.

2. The old head sluice to Pynes channel is situated on the left bank of the Kistna river, about 7 miles above Vijayawada. It was built in the year 1855 and has been in use ever since. It has a waterway of 4 openings of 5 feet each and is provided with 4 sets of shutters. The sluice is in a very dilapidated condition and the shutters are in a very bad state of repair. The sluice is also silted up to a considerable extent. The silt has to be removed every year at a heavy cost. The sluice is also not in a position to command sufficient supply of water in the channel during the months of January, February and March. The channel has to be closed during these months for want of sufficient supply of water in the river. The channel irrigates about 1000 acres of wet land in the Gudivada taluk.

3. The new sluice is proposed to be constructed about 1000 feet above the old sluice. It will have a waterway of 5 openings of 5 feet each. The sill of the sluice will be laid at a level of 2 feet below the sill of the old sluice. The sluice will be provided with 5 sets of shutters. The new sluice will command sufficient supply of water in the river during the months mentioned above. The channel will be kept open throughout the year. The new sluice will also command about 1500 acres of wet land in addition to the present ayacut.

4. The estimate for the new sluice is Rs. 25,000. The work will be completed in one year.

Papers

G.O. 627, 10th Sept 74
Rep. 1286 - 11th Sept 74 & 3 encls
G.O. 2543/30th Sept 74

№ 864.

Note by the Chief Engineer for Irrigation
in July last the Superintend-
ing Engineer, Multan, transmitted,
Enclosure 7. with reference to G.O. 10 March
1874, № 627, a Comparative state-
ment showing the increased
cost of the head sluice of
Ryves Canal, but the explana-
tions referred only to the dif-
ferences between the then esti-
mated total, and the sanc-
tion which had been accord-
ed by a previous Superintend-
ing Engineer, and not to
those between the former &
the original sanction of
Rupees 13,000- Instructions
№ 545 of the were therefore sent to hasten
28 July. hasted, and he has now
transmitted a statement show-
ing that the head sluice
will cost Rupees 19,260 or near-
ly 50 per cent more than was

at first supposed.

2. The explanations required are given in the Superintending Engineer's letter № 64 of the 15th September, and in that from the Revenue Officer, dated 18th September, and they are fairly complete. There appears to be a mistake however in the estimate as exhibited in the Comparative statement for, under ironwork, the estimate of work to be executed has been altered by reduction of rate, but it is not clear how this could affect the amount already paid. Of the Rupees 6260 excess, Rupees 4979 are shown to appertain to the substitution of efficient means of regulating the head sluice for the needle shutters of the original estimate. Some of this cost would seem to have been

avoidable, for under ordinary circumstances it would not have entailed any increase on the cost of masonry, on which account some 490 Rupees are included. The other items of excess have been satisfactorily explained, and they are together less than 10 per cent on the original estimate

3. Though a very unimportant item in the cost of this work, it may be noticed that the data for road metalling given in para. 6 of the Revenue officer's letter appear to be open to objection. Annas 14 a cubic yard for broken stone would appear to be excessive, for at all quarries in getting out building stone there is usually a large amount of small material, the rate for which should it is thought, be very much

lower

lower than that at which build-
ing stone can be supplied. 1759.

4. It will be seen that
the additional cost of the
head sluice is not likely
to entail any excess on the
sanction for the Canal of which Rupees 4,14,193
it is a component part, but
that rather a material sa-
ving is anticipated.

Camp at
Nazareth
26 October 1874

Lt Colonel Cummins
Chief Engineer for Irrigation

To
The Secretary to Govt P.W.D.

97 x 98

Pub. Works 1874 Dept.
No. 864 Dated 26 Oct 1874.
W-864

From
The Chief Engr. for
Irrigation

To The Secretary to
Government
P.W.D.

Dated 26 October,
Recd 4 Nov. 1874

Madras.

E.O. No: 3342. 26-11-74.
Note on revised
Estimate & Comparative Statement
for Head Sluices of
Ryves Canal
Tiruttani Distt.

No. 468 A

Dept to Acts 4 Nov 74

Pub. Works 1874 Dept.
No. 864 Dated 26 Oct 1874.
Recd 4 Nov.

Proceedings of the Madras Government
From the Chief Engr.
Read the following
for Irrigation, dated 26 Oct 1874)

3342

Under the explanations afforded in the papers submitted by the Chief Engineer for Irrigation, the Controller of P.W. accounts will be authorized to pass the excess expenditure on the head sluices of Ryves' Canal, the cost of which is now estimated at Rupees 19,260 against Rupees 13,000 allowed for

for it in the original sanction of Rupees 4.14.193 for the Canal, which total amount, it is observed, is not likely to be exceeded.

Lig. 26/10/74

Genl

1959

To The S.E. Kurtua with 2 Envelopes
— · — Chf Engr for Info.
— · — Controller P.W. Accts with Ab. Estimate

Despd 27/11/74.

468-469

Cir 12/11/74
Despatched 4 Nov/74 Cir

6894

Govt. of 1874 Madras.

PUBLIC WORKS.

To

The Supg: Engr.

Kistna.

Dated

Recd.

Encl. 5

G. O., 26 Nov 1874, No. 3342

Nos. 2687-2697.

31

Head Sluice of Ryves Canal Kistna Dt.

~~The Collector of Dt. Accounts authorized to pass the excess expenditure on the ——~~

The excess expenditure on the —— authorized to be passed ——