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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No. / B.P. No.	1339	Press / Mis.	Original
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Not to be folded or roughly handled

No. 405. Read the following endorsement of the Chief Engineer for Irrigation, dated Camp at Chepauk, South Arcot, 26th February 1874, No. 184 :—

From Major J. BEATTY, R.E., District Engineer, Vizagapatam, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Camp at Yellamunchelly, 8th February 1874, No. 290-A.

I HAVE the honour to submit, herewith, the approximate estimate called for in paragraph 20 of your memorandum printed with G. O., No. 2,994, of 12th December 1873. Its preparation has been delayed by the severe illness of the Range Officer, which occurred immediately after your visit to the range; and the present weak state of the Range Establishment has prevented me collecting necessary information as quickly as I had hoped to do.

2. The estimate is based on a rough survey* of the channel, made since your visit by one of the two Overseers attached to the range, in the intervals of other work; and there has not been time to have it carefully checked, but I think it fairly correct. Such a survey was needed in order to arrive at any approximately correct conclusion as to the extent of additional land for which compensation will have to be paid, and this is a heavy item in the proposed expenditure.

* On a scale of 60 feet to an inch, with longitudinal and cross sections.

3. The primary object proposed to be attained by the works now estimated for is to recover and secure to the Government ryots of Aripalem, etc., their fair share of the supply of water drawn from the Saradanuddy by means of the head works of the Kristamraz channel.

4. These works were erected, and have been maintained, at the joint expense of Government and the proprietors of Ankapilly and Cassimkotta; but the rights of Government have been so systematically invaded, in every possible manner, by the proprietors' people, that Government now derive little or no benefit from their share of the outlay. At the beginning of the season, when the supply of water is scanty, the proprietors' ryots, by means of their cross dams in the Kristamraz channel, take very nearly the whole of it for their own lands, and when the river is in flood, and the Ava could get a good supply, the proprietors' ryots of Munagapaka require the head sluices shut to prevent their lands being flooded, owing to the want of a proper escape for the surplus water of the Ankapilly proprietors' river channels near that village. Those channels are entirely in the hands of that proprietor; he is therefore responsible for any flooding that ever occurs in his own lands of Munagapaka, and he should bear the cost of remedying it.

5. The Government ryots have long complained of these abuses; and early in last year the Collector applied to me to know what could be done to improve the supply of water to the Ava by the Kristamraz channel. I at once pointed out that the first thing necessary, the root of all improvement, was to dispose in a proper manner of the Munagapaka drainage; and that the best way of doing this was by passing it under the Kristamraz channel instead of over it. The Collector then, I understand, put himself in communication with the Ankapilly proprietor, whose interest it is to keep things as they are. The proposed improvements would not injure any one, while they would place the proprietors in a better

position than they now are with regard to water-supply; but, on the other hand, they may fairly be called upon to pay a share of the cost of the improvements; secondly, the improved state of the channel would put a stop to the illegal practices now pursued, and highly valued by their ryots; and, thirdly, some land must be purchased for the new works, and for that no amount of compensation would satisfy them. Consequently, notwithstanding the repeated complaints of the Government ryots, the proprietors' people have hitherto managed to have their own way by threats; and doubtless other means, even more objectionable, would be resorted to either subsequently or simultaneously.

6. As to threats, we have now an instance on record in the correspondence enclosed. That every possible native device has been freely used may fairly be inferred, as otherwise such a disgraceful state of things would not have been allowed to continue so long unchecked. As regards the two Government Departments responsible, the Revenue Officers were, of course, dependent on the Public Works Officers for advice; and the subordinates in charge of the range, until lately, were scarcely competent to suggest the best remedy. In the matter of the cross dam of the Kristamraz channel, the Range Officers have often urged their removal, but the Revenue Officers have refrained from insisting upon it, apparently awed by the proprietors' threats; and in consequence the people of Munagapaka, emboldened in lawlessness, now claim as a right what is a positive wrong to the villages under the Ava.

Vide accompaniments marked A, B, C, and D.

7. The Government ryots are fairly entitled to have their grievance redressed, as they have to pay a high rate of assessment, Rupees 8 an acre. On the other hand, the proprietors exact Rupees 8-8-0 per acre from their ryots, who consequently seize on every drop of water they can get by any and every means.

8. But the proposed improvements of the Kristamraz channel will not only have the effect of giving the Government villages under the Ava their fair share of the water, but the improved state of that channel will render it possible to construct subsidiary works to the Kristamraz channel, and to the Ava, that will bring the anicut works to bear on a large additional area of Government land which now derives a precarious supply by river channels.

9. The accompanying statement marked L, and framed from information given by the Revenue Inspector and the heads of villages (but not checked by the Revenue Department), shows that the area now under the Kristamraz channel is 2,600 acres; that the area under the Ava is 2,442 acres, while on the left bank of the Saradanuddy, commanded by the Godari anicut, but supplied by river channels, there are 10,627 acres of wet cultivation in Government villages, the whole of which may be most advantageously brought* under the anicut, as well as probably any further area of dry land for which there may be water.

* By means of the Kristamraz channel and the Ava.

10. The sketch map shows roughly how the villages mentioned in the statement are situated. It is a mere enlargement of the Trigonometrical Survey, but it is the best map that can be furnished at present, as no surveys on a large scale exist.

Proceedings of the Madras Government, Public Works Department,
20th May 1874.

11. The land for which compensation must be paid is all proprietary, and it will probably be valued at twenty times the present rent of wet land in the neighbourhood under that proprietor, which is 15 Rupees an acre. I have accordingly provided 300 Rupees an acre for compensation. I am however of opinion, from inquiries made, that the rate should not exceed 80 Rupees for dry land and waste, and 200 Rupees for wet land now under cultivation. I shall, therefore, if higher rates be proposed, request the Collector to take up the land under Act VI. of 1857.

12. I would specially point out, in regard to the Kristamraz channel improvements, that the first step is to build the aqueduct and the bridge at Munagapaka, and embank the channel at that place. If this alone were done, it would have the most beneficial effect on the supply of water to the Ava. I beg to recommend that the bridge be sanctioned for immediate execution in the present dry season, and that funds be provided for proceeding with the aqueduct and embankments near Munagapaka on the 15th December next, the date up to which the Ava, by existing arrangements, may receive a supply by the channel. We should then have the whole of next dry season to carry out the works in a satisfactory manner.

13. As regards the extension of cultivation under the Ava, a most important point is to ascertain what land belongs to the Ava and what to the proprietor, *i.e.*, what is the correct high water level. Mr. Fane fixed this, in 1860, by the evidence of the villagers concerned, but the bench-marks then erected have been destroyed, and it is supposed that this was done by the Ankapilly Proprietor's villagers of Munagapaka and Wadrapilly, as they are the parties most interested in having the high water level reduced.

14. I send you herewith copies of all the papers* I have been able to obtain on the subject of the Ava high water level. It is evident, 1*st*, that Captain Blagrave's intention was to make the level of the crest of the old and that of the new calingulah 3 inches below the bench-mark on the Jodu Dibbalu; 2*ndly*, that if this had been done the proprietors' ryots would have had no object in destroying the bench-mark and cutting down the mounds; and 3*rdly*, that there would have been no occasion for dam stones in the body wall. I think it highly probable, therefore, that your opinion is correct, and that the proper high water level is one foot† above the crest of the present calingulahs.

* *Vide* accompaniments marked E. to K.

† At least, but possibly more.

15. This matter of the high water level is most important, because the extension of irrigation under the Ava will, in a great measure, be limited by it. The north-east monsoon here fails about once in three years; it failed in 1868 and again in 1871. Consequently, it will not be safe to encourage irrigation under the Ava beyond the area for which there would be a two months' supply on 15th September, the date on which, in seasons of drought, the supply from the river, as well as by local drainage, entirely fails.

16. And I think it very desirable that all cultivation in the bed of the Ava should be forbidden, as until this is done it will be next to impossible to prevent fraudulent waste of water. I shall of course bring this specially to the Collector's

notice when he proceeds to determine what are the Government rights in connection with the Ava, and how it is to be treated in future. I understand that the whole subject is now before him, under a reference from the Board of Revenue.

17. The approximate estimate now submitted amounts to Rupees 25,280. The area of wet cultivation directly affected is said to be 5,042 acres, paying an assessment of Rupees 41,795. As to the way in which the cost of the proposed works should be met, my opinion is that, considering how largely the proprietors must have benefited for many years by their illegal proceedings, it would not be unfair to make them bear the whole expense. Under any circumstances, the Ankapilly Proprietor should, I think, pay for the drainage works at Munagapaka, as the flooding at that place is caused by his irrigation above it; and as to the remaining works, possibly it may be decided to share the cost between Government and the proprietors in proportion to the amount of wet cultivation belonging to them now supplied by the channel and Ava.

	RS.
Proprietary 2,878, at 8½ Rupees ...	24,483
Government 2,164, at 8 ,, ...	17,312
Total...	41,795

18. The following papers are sent herewith:—

10 Accompaniments of this letter, marked A to K.
1 Approximate Estimate.
1 Report by the Assistant Engineer.
1 Sketch Map.
1 List of Irrigation commanded by the Godari Anicut, marked L.
1 Statement showing the discharge of Kristamraz channel when improved.

15

A

From Major J. BEATTY, R.E., District Engineer, Vizagapatam, to J. R. DANIEL, Esq., Acting Collector of Vizagapatam, dated Camp at Nuckapilly, 11th October 1873, No. 1,284.

"In 1860, the then Collector of Vizagapatam proceeded to Kondakirla in order to settle the long-pending water dispute, and entered into arrangements by which the water level was fixed, and the supply in the Ava was to be retained at the full level until 15th December, and then it was to be drawn off *as required for cultivation below the calingulah*, thus allowing a dalwa, or late cold weather crop, to be cultivated in the tank bed."

2. My interpretation of that agreement is that the water was to be drawn off after 15th December only for purposes of cultivation under the Ava, and not that the Ava should then be suddenly emptied for the benefit of parties who wish to cultivate in its bed.

3. Instead of the gradual discharge of the water, *as required for cultivation*, a practice appears to have sprung up, of late years, of opening the sluices on the 15th December and emptying the Ava as quickly as possible, thus wasting much valuable water, which should be most carefully stored for the use of the Government villages under the Ava; some of which are, it would seem, entitled to a supply of water for a second wet crop.

4. If this practice, which I regard as an encroachment by the neighbouring proprietors on the rights of Government, meets with your approval, I shall be obliged by your giving me your reasons for it, to enable me, if necessary, to refer the matter for the orders of Government.

B

From J. R. DANIEL, Esq., Acting Collector of Vizagapatam, to the District Engineer, Waltair, dated Vizagapatam, 27th October 1873, No. 1,616.

In reply to your letter No. 1,284 of the 11th instant, I have the honour to state that I was not aware of the practice to which you refer, and have certainly never given it my approval.

2. The practice of drawing off the water to waste, simply for the purpose of cultivating the bed, ought most certainly not to be allowed; the arrangement made by the Collector in 1860 certainly does not warrant it, and if the ryots have been doing so, it must have been done surreptitiously; at least I* am at present unaware of anything which can justify them.

* It has since been ascertained that the practice was authorized by two Principal Assistant Collectors, Messrs. Boswell and Hutchins.—J. B.

3. The management of the sluices is in your hand, and I hope therefore you will not allow the water to be drawn off after December 15th, except for cultivation purposes.

C.

From G. L. NARSING ROW, dated Vizagapatam, 9th December 1873.

I RECEIVED an emergent letter yesterday from my Amin at Ankapilly, and the emergency is so great that he has followed it up by coming down himself. The extraordinary and unreasonable torrents of rain we have had lately in the country have of course swollen the Kondakirla Ava to such a degree that the crops on my lands of Wadrapilly and Munagapaka are almost all completely swamped, and threaten me with a loss not under 15,000 Rupees. The remedy is in the hands of Mr. Brickwell, but being a stranger and unacquainted with the usage on such emergent occasions, it appears he declines to use it.

2. The original understanding was that the water should not exceed the bench-mark or Jodu Dibbalu, and a calingulah was built accordingly. Now it does, affecting our crops *to the amount of* 15,000 *Rupees*. The understanding for opening the valves after the 15th December is merely to get my lands under the lake cultivable for the cold weather crops, and not to prevent swamping the paddy fields under high cultivation. Most right. Now Mr. Brickwell seems to confound one with the other. You are an experienced officer, and I have every hope that you will see things done amicably without the the necessity of my seeking* redress elsewhere.

* Meaning that he would bring an action in the Civil Court, with damages laid at 15,000 Rupees.—J. B.

3. Surely if the village of Munagapaka were submerged by excessive rains, a contingency which would not be provided against in an ordinary arrangement, the practice usually obtaining could never override the consideration for the safety of the lives and property of the village. In the present case not lives but the loss of property is certainly at stake, and I beg you will kindly issue peremptory instructions to the Assistant Engineer to open the sluices at once, and prevent damage to my property, which otherwise would be inevitable.

(True Copy.)
(Signed) J. BEATTY, Major, R.E.,
District Engineer, Vizagapatam.

NOTE.—Mr. Narsing Row was informed that the District Engineer saw no reason to interfere; he thereupon proceeded to threaten the Principal Assistant Collector.

(Initialed) J. B.

D.

Endorsement on the Petition of the Proprietor of Ankapilly.

THE petitioner represents that his villages Munagapaka, Wadrapilly, Mallavaram, Kakarapilly and Nagavaram cannot be cultivated unless the "excess water" in the Kondakirla Ava be taken off, and requests that Mr. Brickwell, the Assistant Engineer, be directed to open the shutters of the calingulah, and the proprietor hints that if this be not done he may go to a Civil Court for damages.

The petitioner is informed that it is an abuse of language to speak of "excess water." That which is in excess is his cultivation which is found to be in the bed of the tank.

The orders of Mr. Boswell, dated 21st May 1866, No. 126, and of Mr. Hutchins, dated 12th September 1868, No. 114, are clearly superseded by the Acting Collector's letter to the District Engineer, dated October 27th, 1873, No. 1,616, in which occurs the following passage, (paragraph 3):—

"The management of the sluices is in your hand, and I hope therefore you will not allow the water to be drawn off after December 15th, except for cultivation purposes."

The petitioner is reminded that it is indecent of him to threaten the Covenanted servants of Government with Civil Suits if they do not comply with his unreasonable requests.

From paragraph 8 of Mr. Minchin's letter, dated 12th May 1869, No. 240, to the Board of Revenue, it is clearly stated that "the cultivation of the waterspread of the reservoir, expressly excluded from the estate assets in the Permanent Settlement Accounts, is an illegal encroachment." Again, in paragraph 3 of the postscript to the same letter, it is found that "the bed of the tank is not included in the assets on which the peishcush is charged, and its cultivation, though a long-sanctioned abuse, can properly be put an end to for such time as the Government may be able to keep water in the reservoir."

The Board in their Proceedings of the 14th June 1869, No. 4,246, say they "are not prepared to acquiesce in the Ankapilly claims to cultivate a portion of the waterspread in spite of their having been recognised by subordinates, and if the claims are allowed, the Board believe that additional peishcush might legally be imposed as these lands were not assessed to the Permanent Settlement." Read also to the same effect paragraph 7 as to the cultivation of the waterspread.

There is yet another alternative, to take the land up under the Act.

The petitioner is also reminded that no prescription bars the Crown.

Under all these circumstances, petitioner is advised not to threaten the servants of the Crown, and for his own sake to remain as quietly as possible.

CAMP AT WALTAIR,
January 1874.

(Signed) J. F. SNAITH,
Acting Principal Assistant Collector.

FORWARDED to the District Engineer, Vizagapatam, for information.

(True Copy.)

(Signed) J. BEATTY, Major, R.E.,
District Engineer, Vizagapatam.

E.

From Captain E. BLAGRAVE, District Engineer, to Conductor W. G. BEVAN, Supervisor, Public Works Department, dated Waltair, 20th October 1860, No. 762.

FORWARDED Collector's* letter, No. 1,103 of 17th instant, regarding Kondakirla affair, to Mr. Bevan, for his information, etc., with instructions to have the pillar on the Jodu Dibbalu put up at once; also a corresponding permanent bench-mark made on the pier of the sluice, and to frame an estimate for an additional calingulah 21 feet in length on the north side of the sluice, the body of the present and of the new calingulah to be on a level 3 inches below bench-mark.

* To be returned.

NOTE.—It will be observed by these papers that Captain Blagrave proposed to build a calingulah 21 feet long, with its crest 3 inches below the bench-mark, while Mr. Bevan submitted an estimate for a calingulah 30 feet long with its crest 6 inches below the bench-mark.

(Initialed) J. B.

F.

From Conductor W. G. BEVAN, Supervisor, Public Works Department, to Captain J. H. M. SHAW-STEWART, R.E., Acting District Engineer, Vizagapatam, dated 14th March 1861, No. 275.

I HEREWITH beg to submit a plan* and estimate for the improvements proposed to be made to the Kondakirla Ava calingulah; the crown is to be 6 inches below the bench-mark laid down by the Collector and Captain Blagrave at the Jodu Dibbalu.

* The plan cannot be found.—J. B.

Proceedings of the Madras Government, Public Works Department, 20th May 1874.

G.

Estimate of the probable expenses of the addition and improvement proposed to be made to the Kondakirla Ava Calingulah in Survasiddy Taluq in Vizagapatam District for the year 1860-61.

Number.	Measurement. Length.	Breadth.	Depth.	Superficial contents.	Cubical contents.	Description.	Rate.	Per Item.	Amount.	Total.
						Additional Calingulah.	RS. A. P.		RS. A. P.	RS. A. P.
1	29	6	5	...	870	Foundation to Calingulah ...	...	...	...	...
1	22	3	4	...	264	Do. to wing wall between the head sluice, etc., the calingulah.	...	...	...	...
					153	Do. to front wing wall ...	...	...	...	...
1	8½	4	4½	...	72	Do. to do. ...	...	...	...	...
1	4	4	4½	...	99	Do. to rear wing wall ...	...	...	...	...
1	5½	4	4½	...	342	Do. to end wall	...	...	...	...
1	19	4	4½	...	882½	Do. to retaining wall ...	...	...	...	...
1	84	2½	4½	...	180	Calingulah above	...	...	...	...
1	80	4	1½	...	264	Wing wall above between the head sluice and the additional Calingulah.	...	...	...	...
1	22	2	6	...						
					150	Front wing wall above ...	...	...	...	...
1	8	2½	7½	...	65⅝	Do.	...	...	...	...
1	8½	2½	7½	...	62½	Rear do.	...	...	...	...
1	5	2½	5	...	75	End wall above	...	...	...	...
1	4	2½	7½	...	234⅜	Do.	...	...	...	...
1	15	2½	6½	...	528	.....	...	...	...	...
1	82	11	1½	...						
					3,742	or 138·16 cubic yards of rough stone-in-chunam.	1 8 0	Cubic yards.	207 14 8	...
				1 20	...	Calingulah	...	...	...	...
1	30	4	...	4 48	...	Apron	...	...	...	...
1	32	14	...							
				5 68	...	Squares of Cutstone-in-chunam ...	10 0 0	Squares.	56 12 9	...
				1 50	...	Calingulah	...	...	...	...
1	30	5	...	2 80	...	Wing wall between the head sluice and the additional Calingulah.				
1	20	14	...							
				1 80	...	Front wing wall	...	...	...	...
1	13	10	...	0 42	...	Rear do.	...	...	...	...
1	6	7	...	0 30	...	End wall	...	...	...	...
1	4	7½	...	1 23¾	...	Do.	...	...	...	...
1	15	8½	...							
				7 55¾	...	Squares of plastering-in-chunam ...	...	...	...	...
...	...	...	...							
				...	...	Guard stones	2 8 0	each.	20 0 0	...
8	...	...	...	...	...	Excavating foundation and filling in.	...	...	25 0 0	...
...	...	...	...							
						Improvements to old Calingulah.				
1	51	4	1	...	204	or 7·15 cubic yards of rough stone-in-chunam for raising the calingulah.	1 8 0	Cubic yards.	11 5 4	...
				8 25	...	Squares of plastering-in-chunam the calingulah and wing walls.	1 8 0	Squares.	12 6 0	...
...	...	...	...			Guards stones	2 8 0	each.	85 0 0	...
...	...	...	...	...	...	Extra Establishment and Sundries	5 0 0	Per-cent	20 4 4	...
...	...	...	...							
						Total...	...		...	400 0 0

NURSIPATAM,
14*th March* 1861.

(Signed) W. G. BEVAN, Acting Conductor,
Supervisor, D. P. W., G. Range.

FORM No. 5.

Estimate Rupees 400 for the addition and improvement proposed to be made to the Kondakirla Ava calingulah in the Survasiddy Taluq in Vizagapatam District.

1*st*.—Length of the additional calingulah 30 feet.

2nd.—Calingulah to be built of rough stone-in-chunam. Breadth of foundation 6 feet and depth 5 feet, and the calingulah is to be raised 1½ feet above foundation. Nature of soil, black earth.

3rd.—The calingulah is to be crowned with cut-stone with an apron in rear of the same material built on a foundation of rough stone-in-chunam 1½ feet deep.

4th.—The retaining wall will be sunk 4½ feet, and have a breadth of 2½ feet. Material rough stone-in-chunam.

5th.— The old calingulah is to be raised 1 foot with rough stone-in-chunam.

NURSIPATAM,
14th March 1874.

(Signed) W. G. BEVAN, Acting Conductor,
Supervisor, D. P. W.

H.

From Captain J. H. M. SHAW-STEWART, R.E., Acting District Engineer, Vizagapatam, to the Collector of Vizagapatam, dated Cassimkotta, 6th April 1861, No. 1,464.

WITH reference to your letter to Captain Blagrave, dated the 17th October last, No. 1,103, I have the honour to forward herewith a plan and estimate for raising and lengthening the calingulah of the Kondakirla Ava, which have been prepared agreeably to Captain Blagrave's instructions.

2. You know the circumstances of the case far better than I do, and I need not, therefore, make any remarks upon the necessity or the object of the work.

3. The estimate amounts to Rupees 400, and as it is not strictly a repair, it must be sanctioned by the Chief Engineer. I request, therefore, that you will be so good as to return it with your countersignature.

4. With reference to paragraph 5 of your letter above alluded to, it seems to me that Mrs. Sooriah may fairly be called on to pay her share of the expense. This, of course, is for you to arrange.

I.

MEMORANDUM.

No. 1,571.

MR. BEVAN is authorized to commence the work of raising and lengthening the Kondakirla Ava calingulah, charging one-half of the expenditure to Government and the other half to the Ankapilly Proprietrix. The sum of Rupees 200, being the half of the estimate, will be sent to Mr. Bevan when received from Mrs. Sooriah Pracasarow.

WALTAIR,
29th April 1861.

(Signed) J. SHAW-STEWART, Captain, R.E.,
Acting District Engineer

K.

Extract from a letter from Assistant Engineer Lieutenant Bevan, dated Arnee, 25th November 1873.

* * * *

I NOW find that the only reference to the work that my old diary contains is merely that I marked a bench-mark on the old sluice wing wall 3 inches below the top of the Jodu Dibbalu. And the other entries are simply records of inspections made while the calingulah was in progress. Captain Blagrave and Mr. Fane came to the decision about the height the water in the

Ava was to be retained, not from levels, but from inquiries made of the parties concerned. An Overseer named *J. Iyapah Naidoo** was employed on the work, and, if he could be found, would be able, I think, to give the information about the Jodu Dibbalu, as he knows all the bench-marks connected with the Ava, and those on the wing of the Kondakirla sluice. Iyapah Naidoo lost his appointment in the department on its organization in 1863, and was shortly afterwards (at my recommendation) appointed to a post in the Revenue Department, either as Sheristadar or Revenue Inspector of the Survasiddy Taluq.

* I am told that Iyapah Naidoo has since died.—J. B.

* * * *

(Signed) W. G. BEVAN.

From T. BRICKWELL, Esq., C.E., Assistant Engineer, in charge of No. 1 Range, to Major J. BEATTY, R.E., District Engineer, Vizagapatam, dated Ellamunchilly, 7th February 1874, No. 1,277.

I HAVE the honour to submit a report on the approximate estimate for improving the Kristamraz channel, which is the supply-channel of the Kondakirla Ava and derives its supply from the Godari anicut across the Saradanuddy near Cassimkotta in the Survasiddy Taluq.

One Estimate.

2. The Chief Engineer for Irrigation, in his memorandum No. 716 B., dated Nursipatam, 8th October 1873, paragraph 20, directed this approximate estimate to be submitted to admit of provision being made for the work in the Budget of 1874-75.

3. In the same memorandum, paragraphs 6, 7, 8, 12, 14, etc., the Chief Engineer has fully reviewed the necessary works required for improving the Kristamraz channel, and which have been provided for in the approximate estimate and the object and advantages to be obtained by them.

4. The estimated amount is as close an approximation to the actual cost of the work as the investigations already completed would allow of being framed, and, provided that the cost of land is not greater than Rupees 300 per acre entered in the estimate, I feel sure the work may be completed within the amount estimated, Rupees 25,280.

5. The first item for "earthwork," Rupees 6,985, needs no comment, except that the cross sections when plotted led me to estimate for providing embankments on the western side for about 1⅞ miles above the Munagapaka aqueduct and on the eastern side about 1 mile above it, towards the head sluice, *vide* Chief Engineer's memorandum, paragraph 12. (The Munagapaka aqueduct is 2¾ miles from the head sluice.) Part of this work consists of removing and reconstructing old banks.

6. The second item, compensation for land, is open to doubt. The annual rental paid by the ryots to the Zemindars whose land lies adjacent to the channel is on an average Rupees 15 per acre, which at 20 years' purchase amounts to Rupees 300 per acre as the present value, and this should be sufficient. Beyond this the only criterion we have is the price paid for compensation for land taken up for the Poodimadaka road, which was fixed at Rupees 300 per acre on the average. At the same time the proximity of the land now required to the Kristamraz channel, and the fact that some of it is garden land, may lead to higher rates being demanded. The Zemindars concerned will undoubtedly derive much benefit to their lands under command of the channel by the proposed improvements which, besides providing an additional supply of water, also provide for head sluices to their branch channels, and they will probably contribute some portion of the cost of the works. It has been impossible to settle the amount of their contributions in time to enter them in the estimate, but the amount may be taken as a set off, approximately, against any enhanced value of land.

7. *Item No.* 3, *Aqueduct at Munagapaka.*—This work is designed to pass under it the drainage from the Ankapilly Ava, which now flows through the present channel on the same level

and escapes over two calingulahs, Pippecolum and Chintaman, built in the western bank of the Kristamraz channel. (The Kristamraz channel flows from north to south nearly, the Ankapilly drain from east to west nearly,) and which, as noticed in Colonel Mullins' memorandum,* cause the chief of the mischief which it is now desired to remedy. The design has been prepared from instructions and sketches given by the Chief Engineer for Irrigation. A suggestion of Colonel Mullins, that four arches of 9 feet instead of 3 of 10 feet span, his original plan, has been adopted, as it is proposed to provide for a considerable portion of the cross drainage intercepted by the embankments of the channel, by turning it into the Ankapilly Ava drainage channel through the spoil cuttings it will be necessary to excavate outside the channel banks and so under the aqueduct, hence a further width of opening of 6 feet has been adopted. There will be a considerable fall of the drainage water immediately in front of the aqueduct, which has been provided for by a drop wall and floorings of stone-in-chunam. It will be, I think, a matter for after-consideration whether the drop wall is not too close to the aqueduct. There is no doubt, I think, that if any alteration is made the sum entered in the estimate (Rupees 5,730) will meet the cost. This sum provides also for retaining walls connecting the aqueduct with the piers of the old bridge, which carries the Poodimadaka road over the Kristamraz channel at this place.

* No. 716-B., dated Nursipatam, 8th October 1873

8. *Bridge of one arch of* 30 *feet span to carry the Poodimadaka road over the new drainage line.*—The wings of this bridge are to be connected with the wings of the old bridge referred to in the above paragraph. The cost of it, including aprons, etc., is Rupees 2,340.

9. The sum entered for additional head sluices to the various branch channels is Rupees 1,700.

10. The cost of the alterations directed* to be made in the head sluice of the Kristamraz channel is Rupees 55, which sum will, I think, be ample.

* Chief Engineer's Memorandum, No. 716-B, dated Nursipatam, 8th October 1873, paragraph 21.

11. *Regulating masonry dam at the site of the Peta Cattu.*—The Peta Cattu is referred to in the Chief Engineer's Memorandum, No. 716-B, dated 8th October 1873, paragraph 6, in which it is shown to be another of the causes of the present inefficient state of the Kristamraz channel. The estimate provides for an entirely new structure of masonry. The crest is to be at the same height as the former one, and below it the channel bed is to be dropped about 4 feet 6 inches, and to have a regular fall from thence to the cill of the Ava calingulah sluice. The total cost of the new dam will be Rupees 400.

12. *Regulating dam in the drainage channel.*—The fall in the bed of the Ankapilly drainage channel, represented hitherto by the height of overfall of the Chintaman and Pippecolum calingulahs, has been regulated by a drop wall or dam about 30 feet in front of the aqueduct. This work with flooring revetment, etc., is estimated to cost Rupees 870. As mentioned above* I think it will be a matter for after-consideration as to whether, in its present position, it is not too near the piers of the aqueduct, and whether there is not a possibility of the aqueduct foundations being shaken by the too great proximity of the overfall and broken water caused by the dam. Extensive floorings and revetments have been provided, and I believe the cost of them would be about the same as any other arrangement which could be adopted.

* Paragraph 7.

13. In conclusion, I have the honour to state that I have in this report dwelt chiefly upon the sufficiency or otherwise of the various items entered in the estimate which does not profess to be more than an approximation, but which, on the whole, I believe will be found more than sufficient to carry out the work. The estimate has been framed upon actual surveys and levels taken in the field from time to time as opportunity offered, some of which observations are undoubtedly inaccurate, but moderately complete as far as they go. I hope shortly, as soon as the Surveyors, whose entertainment was sanctioned in G. O., No. 2,994, dated 12th December 1873, can be procured, to push on with the preparation of the field work required for framing

[illegible] to the decision about the height the water in the

Proceedings of the Madras Government, Public Works Department,
20th May 1874.

an estimate for the Ava Project, of which the improvements of the channel now estimated for are but a preliminary step. I should, in fact, have taken the levelling for this channel in hand myself ere this but for several untoward events, one of which has been, at least as far as the preparation of levels and surveys are concerned, the heavy downpour of rain in December, which has prevented the prompt execution of Repairs Agricultural, and has called my attention elsewhere, more especially to the Golgonda Taluq. Had it not been for the help of your Office Draughtsman, whose services you kindly devoted to the preparation of the plans and estimate for a time, those papers would not have been in their present state of forwardness towards completion.

14. I should perhaps add what amount I consider may be spent in the current official year, providing the regular estimate is sanctioned. As this may not be expected until after the monsoon is over, I consider that—

		Rs.
1.	The aqueduct	5,730
2.	The Bridge	2,340
3.	Pata Cattu Dam	400
4.	Dam in Drainage channel	870
5.	Compensation...	7,200
6.	Earthwork	3,460
	Total...	20,000

is as much as can conveniently be completed by the end of the current official year, leaving the rest of the earthwork, etc., to be completed before the monsoon of 1875.

Statement showing the extent of existing Wet Cultivation.

No.	Source of Supply.	Description of Land.	Names of Villages.	EXTENT OF WET						LAND, ETC.				Rate per Acre.	TOTAL.		Remarks.
				JEROYETTE.						INAM.							
				Extent.		Assessment.				Extent.		Assessment.			Extent.	Assessment.	
						RS.	A.	P.				RS.	A. P.	RS. A. P.		RS. A. P.	
1	Kristamraz Channel.	Government	Peddapaudu	39	39	387	15	10		52	0	391	4 0	... .	91 09	779 3 10	The whole of the wet cultivation shown in this statement is situated on the left bank of the Sarada river, and commanded by the Godari Anicut.
			Timmarazupettah ...	3	62	50	9	6		64	75	577	5 0	.....	68 37	627 14 6	
				42	71	438	9	4		116	75	968	9 0	8 13 2	159 46	1,407 2 4	
		Cassimkotta Proprietor.	Cassimkotta	846	0	6,102	10	0		...	...	.....		.....	846 0	6,102 10 0	
			Aravapallem	464	0	2,074	4	0		...	...	.....		.....	464 0	2,074 4 0	
				1,310	0	8,176	14	0		...	...	.....		.....	1,310 0	8,176 14 0	
		Ankapilly Proprietor.	Munagapaka	876	72	9,679	5	2		...	...	.....		.....	876 12	9,679 5 2	
			Timmarazupetta ...	253	45	2,987	14	7		...	...	.....		.....	253 45	2,987 14 7	
			Wadrapilly	...	...	.....				...	...	.....		.....	.....	.....	
				1,130	17	12,667	3	9		...	...	.....		.....	1,130 17	12,667 3 9	
2	Kondakirla Ava ...	Government.	Kondakirla -	205	62	1,731	5	5		50	50	370	14 0	.....	256 12	2,102 3 5	
			Yerravarum	218	68	1,511	9	10		61	50	350	10 0	.....	280 18	1,862 3 10	
			Kurripalem	258	25	2,614	0	0		87	0	875	0 0	.....	345 25	3,489 0 0	
			Jaggannapetta	257	87	2,190	11	10		130	25	840	6 0	.....	388 12	3,031 1 10	
			Appanapalem	75	56	384	6	0		2	0	12	0 0	.....	77 56	396 6 0	
			Undalapilly	105	25	512	4	0		27	50	135	4 0	.....	132 75	647 8 0	
			Peddapaudu	22	04	203	3	0		71	21	534	0 0	.....	93 25	737 3 0	
			Khajepalem	53	0	572	0	6		35	50	267	10 0	.....	88 50	839 10 6	
			Timmarazupetta ...	127	59	1,752	12	4		75	12	612	6 0	.....	202 71	2,365 2 4	
			Oopavarum	48	0	226	8	0		35	0	145	9 0	.....	83 0	372 1 0	
			Mullavarum	24	25	97	5	0		6	0	15	0 0	.....	30 25	112 5 0	
			Seemalapilly	7	0	50	6	6		...	...	.....		.....	7 0	50 6 6	
			Somaveram	10	0	20	0	0		...	...	.....		.....	10 0	20 0 0	
			Razam	9	0	20	0	0		...	...	.....		.....	9 0	20 0 0	
				1,422	11	11,886	8	5		581	58	4,158	11 0	8 0 1	2,003 69	16,045 3 5	
		Ankapilly Proprietor.	Munagapaka	159	87½	831	9	11		...	...	.....		.....	159 87½	831 9 11	
			Timmarazupetta ...	89	0	881	13	0		...	...	.....		.....	89 0	881 13 0	
			Wadrapilly	189	25	1,632	1	0		...	...	.....		.....	189 25	1,632 1 0	
				438	12½	3,345	7	11		...	...	.....		.....	438 12½	3,345 7 11	
3	Now under the river Kassimodum Kattu, but proposed to be supplied direct from Kristamraz channel.	Government.	Peddapaud	262	0	.....				...	...	.....		.....	262 0	2,124 0 0	The Kassimodum Kattu is a rough-stone dam in the Saradanuddy near Cassimkota.
			Kazeepalem	143	0	.....				...	...	.....		.....	143 0	1,212 0 0	
				405	0	.....				...	...	.....		.....	405 0	3,336 0 0	
		Cassimkotta Proprietor.	Cassimkotta	191	0	1,468	0	0		...	...	.....		.....	191 0	1,468 0 0	
			Byyavarum	192	0	1,210	0	0		...	...	.....		.....	192 0	1,210 0 0	
			Veddurupurty	629	0	3,967	8	0		...	...	.....		.....	629 0	3,967 8 0	
				1,012	0	6,645	8	0		...	...	.....		.....	1,012 0	6,645 8 0	
4	Now under other river channels, but proposed to be supplied by a new channel from the Ava.	Government.	Tatiyakulapalem ...	834	62	.....				106	50	.....		.....	941 12	3,113 14 0	
			Muracuda	322	34	.....				221	50	.....		.....	543 84	2,060 7 5	
			Murripalem	190	20	.....				118	91	.....		.....	309 11	.....	
			Agraharum	1,042	81	4,305	13	4		...	...	.....		.....	1,042 81	4,305 13 4	
			Kottooru	143	0	.....				181	50	.....		.....	342 50	.....	
			Kottaliyellamunchelly ...	300	50	.....				106	50	.....		.....	407 0	.....	

that may be supplied by works subsidiary to the Godari Anicut.

Statement showing the extent of existing Wet Cultivation that may be supplied by works subsidiary to the Godari Anicut.—(Concluded.)

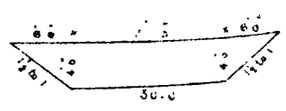
No.	Source of Supply.	Description of Land.	Names of Villages.	EXTENT OF WET LAND, ETC. — Jeroyette. Extent.	Jeroyette. Assessment. Rs. A. P.	Inam. Extent.	Inam. Assessment. Rs. A. P.	Rate per Acre. Rs. A. P.	Total. Extent.	Total. Assessment. Rs. A. P.	Remarks.
4	Now under other river channels, but proposed to be supplied by a new channel from the Ava.	Government.	Gokivada	73 69	.....	81 0	.....	.....	154 69	.....	
			Dimilee half share ...	314 17	.....	465 81	.....	.....	779 98	.....	
			Tamaracherla	332 73	.....	381 25	.....	.....	713 98	.....	
			Teruvupilly	417 75	.....	529 56	.....	.....	947 31	.....	
			Kattubolu	126 63	.....	505 25	.....	.....	631 88	.....	
			Rajala	677 12	.....	252 50	.....	.....	929 62	.....	
			Kummarapilly	343 75	.....	114 50	.....	.....	458 25	.....	
			Veluchooru	401 97	.....	155 3	.....	.....	557 0	.....	
			Kalavalapilly	299 0	.....	152 50	.....	.....	451 50	.....	
				5,820 28	.....	3,372 31	.....	.....	9,210 59	.....	
5	Other cultivation under river channels not proposed to be brought under the anicut.	Maharajah of Vizianagram.	Punchadarla	853 2	3,514 3 2	.....	.....	.....	853 2	3,514 3 2	
			Voogynypalem	350 0	2,090 0 0	.....	.....	.....	350 0	2,090 0 0	
			Tagada	63 0	264 0 0	.....	.....	.....	63 0	264 0 0	
			Anundapuram	220 0	2,300 0 0	.....	.....	.....	220 0	2,300 0 0	
			Yellamunchelly	1,262 0	8,697 0 0	.....	.....	.....	1,262 0	8,697 0 0	
				2,748 2	16,865 3 2	.....	.....	.....	2,748 2	16,865 3 2	
		Cassimkotta Proprietor.	Purushottapollem ...	98 0	774 12 0	.....	.....	.....	98 0	774 12 0	
			Guntavampalem ...	531 0	3,700 12 3	.....	.....	.....	531 0	3,700 12 3	
			Cottapilly	109 0	983 4 0	.....	.....	.....	109 0	983 4 0	
			Paruntalapallem ...	198 0	775 2 9	.....	.....	.....	198 0	775 2 9	
			Milupaka	1,338 0	6,459 12 4	.....	.....	.....	1,338 0	6,459 12 4	
			Jagamadapuram ...	788 0	3,726 8 0	.....	.....	.....	788 0	3,726 8 0	
			Chummarapuram ...	203 0	1,103 5 0	.....	.....	.....	203 0	1,103 5 0	
			Ganapurty	378 0	1,941 14 6	.....	.....	.....	378 0	1,941 14 6	
			Chellamalla	92 0	478 14 6	.....	.....	.....	92 0	478 14 6	
			Choochiconda	101 0	596 4 0	.....	.....	.....	101 0	596 4 0	
			Mulajumpah	261 0	971 13 0	.....	.....	.....	261 0	971 13 0	
			Somalingapalem ...	474 0	1,805 2 6	.....	.....	.....	474 0	1,805 2 6	
			Jumpapalem	281 0	1,061 15 0	.....	.....	.....	281 0	1,061 15 0	
			Somavarum	251 0	1,274 14 0	.....	.....	.....	251 0	1,274 14 0	
			Yanuga Tooni	347 0	2,150 10 0	.....	.....	.....	347 0	2,150 10 0	
			Gollagoonta	261 0	991 15 0	.....	.....	.....	261 0	991 15 0	
			Narsingapilly	99 0	540 12 0	.....	.....	.....	99 0	540 12 0	
			Amin Sayabupata ...	87 0	553 13 4	.....	.....	.....	87 0	553 13 4	
				5,897 0	29,891 8 2	.....	.....	.....	5,897 0	29,891 8 2	

(Signed) J. BEATTY, Major, R.E.,
District Engineer, Vizagapatam.

Statement showing the discharge of Kristamraz Channel when improved.

Formula $D = A \times 92 \sqrt{zf} \times \frac{a}{b}$

Depths on bed of channel.	Area of Section.	Perimeter.	Hydraulic mean depth.	Fall per mile.	Mean velocity per second.	Discharge per second in cubic feet.	Discharge per hour in cubic yards.	Discharge per day in cubic yards.	Remarks.
F. In.	S. Ft.	FEET.	FEET.	FEET.	FEET.				Section of channels.
0 6	15·37	31·80	0·48		1·29	19·07	2,642	63,408	
1 0	31·50	33·60	0·93		1·97	57·01	7,600	1,82,4·0	
1 6	48·37	35·40	1·36		2·19	105·91	14,121	3,38,904	
2 0	66	37·20	1·77	2·10	2·50	165 15	22,020	5,28,480	
2 6	84·37	39·00	2·16		2·76	232 86	31,048	7,45,152	
3 0	103·50	40·80	2·53		2·99	309·46	41,261	9,90,264	
3 6	123·37	42·60	2·87		3·19	393·55	52,473	12,59,352	
4 0	144	44·42	3·24		3·38	486·72	64,896	15,57,504	



CAMP AT YELLAMUNCHELLY,
8th February 1874.

(Signed) J. BEATTY, Major, R.E.,
District Engineer, Vizagapatam.

SUBMITTED to Government with reference to G. O., No. 2,994, of the 12th December 1873. The approximate estimate, amounting to Rupees 25,280, for the improvement of the Kristamraz channel which supplies the Kondakirla Ava has from unavoidable circumstances been delayed until too late for entry in the Budget of 1874-75, but I beg to recommend that the District Engineer's proposals (paragraph 12) to commence the construction of the bridge on the Poodimadaka road in the present dry season, and the aqueduct which is to pass the Ankapilly Ava drainage under the Kristamraz channel as soon as possible after the 15th December next, be sanctioned, and that he be authorized to incur expenditure, in the first instance, from the grant for Minor New Works, so that materials may be prepared. Additional funds can be placed at his disposal so soon as the requirements of incomplete works of 1873-74 have been provided for.

From District Engineer, Vizagapatam, No. 290A, dated 8th February 1874.

2. In the meantime the longitudinal and cross sections of the channel and the plans of the masonry works should be sent to this office as soon as may be convenient, in order that all the important details may be finally approved before any constructive work is commenced.

3. The papers transmitted by the District Engineer, marked A to K, are of considerable interest.

4. The proportion in which the cost of the improvements included in the approximate estimate should be borne by Government and the proprietors, respectively, will, it is supposed, be determined ultimately in the Revenue Department.

(Signed) J. MULLINS, Lieut.-Colonel, R.E.,
Chief Engineer for Irrigation.

Proceedings of the Madras Government, Public Works Department,
20th May 1874.

No. 406. ORDER THEREON, 20th May 1874, No. 1,339.

IRRIGATION, No. 31.

THE Governor in Council regrets that, as the approximate estimate for the Kristamraz channel was not received in time to allow of any provision being made for the work in the Budget, and as the funds under Ordinary Agricultural at the disposal of Government are altogether inadequate to admit of an allotment being made therefrom, it is necessary to postpone the commencement of the improvements until next year. In the meantime the regular estimate with the plans of the masonry works should be submitted through the Chief Engineer for Irrigation for entry in the Budget of 1875-76. His Excellency has noticed with satisfaction the careful attention which has been given to this project, which appears likely to be really useful and beneficial both to the Government and proprietary lands under the channel.

2. These Proceedings will be communicated to the Revenue Department in continuation of G. O., No. 2,994, of the 12th December 1873, with a request that consideration may be given as to the incidence of the expenditure which may be requisite to render the Kristamraz channel efficient and capable of meeting the requirements of all the cultivation under it, and that as reliable an estimate as possible may be framed of the amount of land compensation which will have to be paid. The statements of wet cultivation, though compiled from revenue sources, have not, it will be noticed, been checked by the Collector of Vizagapatam.

(True Extract.)

Lieut.-Colonel, R.E.,
Joint-Secretary to Government.

To the Chief Engineer for Irrigation.
,, District Engineer, Vizagapatam.
,, Officiating Controller of Public Works Accounts.
,, ~~Military~~ Department.

Rev.

Exd. E. C. Shunker.
Spare Copies

No 290/A

District Engineer's Office
Camp Yellamunchelly
8th February 1874

From

The District Engineer
Vizagapatam

To

The Chief Engineer for Irrigation
Madras

Sir

I have the honor to submit herewith the approximate estimate called for in para 20 of your Memorandum printed with G.O. No. 2994 of 12th December 1873. Its preparation has been delayed by the severe illness of the Range Officer, which occurred immediately after your visit to the Range, and the present weak state of the Range establishment has prevented me collecting necessary information as quickly as I had hoped to do.

2. The estimate is based on a rough survey* of the channel, made since your visit by one of the two Overseers attached to the Range, in the intervals of other work; and there has not been time

* On a scale of 60 feet to an inch with longitudinal and cross sections

been time to have it carefully checked, but I think it fairly correct. Such a survey was needed in order to arrive at any approximately correct conclusion as to the extent of additional land for which compensation will have to be paid; and this is a heavy item in the proposed expenditure.

3. The primary object proposed to be attained, by the works now estimated for, is to recover and secure to the Government ryots of Tripalem their fair share of the supply of water drawn from the Saradanuddy by means of the Head works of the Kristamraz Channel.

4. These works were erected, and have been maintained, at the joint expense of Government, and the Proprietors of Ankapilly and Cassimkotta; but the rights of Government have been so systematically invaded, in every possible manner, by the Proprietors' people; that Government now derive little or no benefit from their Share of the outlay. At the beginning of the season, when the supply of water is scanty, the proprietors' ryots, by means of their cross dams in the Kristamraz Channel, take very nearly the whole of it for their own lands; and when the river is in flood, and the Ava could get a good supply, the Proprietors' ryots of Munagapaka require the Head Sluices shut to prevent their lands being flooded; owing to the want of a proper escape for the surplus water of the Ankapilly Proprietors' river channels near that village. Those channels are entirely in the hands of that proprietor; he is therefore responsible for any flooding that ever occurs in his own lands of Munagapaka, and he should bear the cost of remedying it.

5. The Government ryots have long complained of these abuses; and early in last year the Collector applied to me to know what could be done to improve the supply of water to the Ava by the Kristamraz Channel. I at once pointed out that the first thing necessary, the root of all improvement, was to dispose in a proper manner of the Munagapaka drainage; and that the best way of doing this was by passing it under the Kristamraz Channel instead of over it. The Collector then, I understand, put himself in communication with the Ankapilly proprietor, whose interest it is to keep things as they are. The proposed improvements would not injure any one, while they would place the proprietors in a better

better position than they now are with regard to water supply: but, on the other hand, they may fairly be called upon to pay a share of the cost of the improvements; secondly, the improved state of the channel would put a stop to the illegal practices now pursued, and highly valued by their ryots; and thirdly, some land must be purchased for the new works, and for that no amount of compensation would satisfy them. Consequently, notwithstanding the repeated complaints of the Government ryots, the proprietor's people have hitherto managed to have their own way by threats; and doubtless other means, even more objectionable, would be resorted to, either subsequently or simultaneously.

6. As to threats, we have now an instance on record in the correspondence enclosed. That every possible native device has been freely used may fairly be inferred, as otherwise such a disgraceful state of things would not have been allowed to continue so long unchecked. As regards the two Government Departments responsible, the Revenue Officers were of course dependent on the P.W. Officers for advice; and the

Vide accompaniments, marked **A, B, C, D**

the subordinates in charge of the Range until lately, were scarcely competent to suggest the best remedy. In the matter of the cross dams of the Kristamraz channel, the Range Officers have often urged their removal, but the Revenue Officers have refrained from insisting upon it, apparently awed by the Proprietor's threats; and in consequence the people of Munagapaka, emboldened in lawlessness, now claim as a right what is a positive wrong to the villages under the Ava.

7. The Government ryots are fairly entitled to have their grievance redressed as they have to pay a high rate of assessment, Rs. 8 an acre. On the other hand the proprietors exact Rs. 8½ per acre, from their ryots, who consequently seize on every drop of water they can get, by any and every means.

8. But the proposed improvements of the Kristamraz Channel will not only have the effect of giving the Government Villages under the Ava their fair share of the water, but the improved state of that channel will render it possible to construct subsidiary works to the Kristamraz Channel, and to the Ava, that will bring

bring the annicut works to bear on a large additional area of Government land which now derives a precarious supply by river channels.

9. The accompanying statement, marked L, and framed from information given by the Revenue Inspector and the Heads of villages, (but not checked by the Revenue Department) shows that the area now under the Kristamraz Channel is 2,600 acres, that the area under the Ava is 2,442 acres, while on the left bank of the Saradamuddy, commanded by the Godavari annicut, but supplied by river channels, there are 10,627 acres of wet cultivation, in Government Villages, the whole of which may be most advantageously brought under the annicut; as well as, probably, any further area of dry land for which there may be water.

× by means of the Kristamraz channel

10. The Sketch Map shows roughly how the villages mentioned in the statement are situated. It is a mere enlargement of the Trigonometrical Survey, but it is the best map that can be furnished at present, as no surveys on a large scale exist.

11. The land for which compensation must be paid is all proprietary, and it will probably be valued at 20 times the present rent of wet land in the neighbourhood under that proprietor, which is 15 Rupees an acre. I have, accordingly, provided 300 Rupees an acre for compensation. I am, however, of opinion, from enquiries made, that the rate should not exceed 80 Rupees for dry land and waste, and 200 Rupees for wet land now under cultivation. I shall, therefore, if higher rates be proposed request the Collector to take up the land under Act VI of 1857.

12. I would specially point out, in regard to the Kristamraz Channel improvements, that the first step is to build the aqueduct, and the bridge, at Munagapaka; and embank the channel at that place. If this alone were done it would have the most beneficial effect on the supply of water to the Ava. I beg to recommend that the bridge be sanctioned for immediate execution in the present dry season, and that funds be provided for proceeding with the aqueduct and embankments near Munagapaka

Kumagapaha on the 15th December next; the date up to which the Ava, by existing arrangements, may receive a supply by the Channel. We should then have the whole of next dry season to carry out the works in a satisfactory manner.

13. As regards the extension of cultivation under the Ava, a most important point is to ascertain what land belongs to the Ava, and what to the proprietor; i.e, what is the correct high water level. Mr. Lane fixed this, in 1860, by the evidence of the villagers concerned: but the bench marks then erected have been destroyed, and it is supposed that this was done by the Ankapilly proprietors — villagers of Kumagapaha and Wadrapilly as they are the parties most interested in having the high water level reduced.

14. I send you herewith copies of all the papers I have been able to obtain on the subject of the Ava high water level. It is evident, first, that Captain Blagraves' intention was to make the level of the crest of the old, and that of the new calingulah 3 inches below the bench mark on the Jodu Dibbalu; secondly, that if this had been done the proprietors' ryots would have had no object in destroying the bench mark and cutting down the mounds; and thirdly, that there would have been no occasion for dam stones in the body wall. I think it highly probable therefore, that your opinion is correct and that the proper high water level is one foot above the crest of the present calingulahs.

8 vide accompanying E to K

+ at least, but possibly more

15. This matter of the High water level is most important because the extension of Irrigation under the Ava will, in a great measure, be limited by it. The North-east monsoon here fails about once in three years; it failed in 1868 and again in 1871. Consequently, it will not be safe to encourage irrigation under the Ava beyond the area for which there would be a two months supply on 15th September; the date on which, in seasons of drought, the supply from the river, as well as by local drainage, entirely fails.

16. And I think it very desirable that all cultivation in the bed of the Ava should be forbidden, as until this is done it will be next to impossible to prevent fraudulent waste of water.

I shall of course bring this specially to the Collectors notice when he proceeds to determine what are the Government rights in connection with the Ava, and how it is to be treated in future. I understand that the whole subject is now before him, under a reference from the Board of Revenue.

17. The approximate estimate now submitted amounts to Rs. 25,280. The area of wet cultivation directly affected is said to be 5,042 acres, paying an assessment of Rs. 41,795.

As to the way in which the cost of the proposed works should be met, my opinion is that, considering how largely the proprietors must have benefitted for many years by their illegal proceedings, it would not be unfair to make them bear the whole expenses. Under any circumstances, the Ankapilly proprietor should, I think, pay for the drainage works at Munagapaka, as the flooding at that place is caused by his irrigation above it; and as to the remaining works, possibly it may be decided to share the cost between Government and the proprietors in proportion to the amount of wet cultivation belonging to them now supplied

Proprietary	2878 at 8½ Rs.	= 24483
Government	2164 at 8 Rs.	= 17312
Total		= 41795

supplied by the channel and Ava.

18 The following papers are sent herewith:-

10.	Accompaniments of this letter marked A to K
1.	Approximate estimate
1.	Report by the Assistant Engineer
1.	Sketch map
1.	List of irrigation commanded by the Godari Annicut marked L
1.	Statement showing the discharge of Kristamraz Channel when improved
Total	15

I have the honor to be
Sir
Your most obdt. Servant

G. Beatty. Major R.E.
District Engineer, Vizagapatam

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√1.	Approximate estimate
√1.	Report by the Assistant Engineer
√1.	Sketch map
√1.	List of irrigation commanded by the Godari Annicut marked L
√1.	Statement showing the discharge of Kristamraz Channel when improved
Total	15

I have the honor to be
Sir
Your most obdt. Servant

G. Beatty. Major R.E.
District Engineer, Vizagapatam

B

N: 1616 Vizagapatam. October 27th 1873

To The District Engineer
Waltair

Sir,

In reply to your letter N: 1284 of the 11th instant, I have the honor to state that I was not aware of the practice to which you refer, and have certainly never given it my approval.

2. The practice of drawing off the water to waste, simply for the purpose of cultivating the bed ought most certainly not to be allowed; the arrangement made by the Collector in 1860 certainly does not warrant it, and if the ryots have been doing so, it must have been done surreptitiously; at least I am at present unaware of anything which can justify them.

3. The management of the sluices is in your hand, and I hope therefore you will not allow the water to be drawn off after December 15th except for cultivation purposes.

I have &c
(Sd) J. R. Daniel
Ag. Collector

(True

※ It has since been ascertained that the practice was authorized by two Principal Assistant Collectors, Messrs. Boswell and Hutchins- J.R.D.

From
The District Engineer
Chicacole

To
The Chief Secretary to Government
Madras

Dated 8th
Rec'd 16th February 1874

No 290
A
Encls. 15
R.S. 20th Feby 1874
Submitting the approximate estimate for improving the Kuttanvar Channel.

P.W. 1289/74

(True Copy)

R. Beatty. Major R.E
District Engineer

Vizagapatam 9th December 1873

My dear Sir,

I received an emergent letter yesterday from my Ameen at Antapilly, and the emergency is so great that he has followed it up by coming down himself. The extraordinary and unreasonable torrents of rain we have had lately in the country have of course swollen the Kondakerla Ava to such a degree that the crops on my lands of Wadrapilly and Moonagapaka are almost all completely swamped, and threaten me with a loss not under 15000 Rupees. The remedy is in the hands of Mr Brickwell; but being a stranger and unacquainted with the usage on such emergent occasions, it appears he declines to use it.

The original understanding was that the water should not exceed the bench mark or Todu dibbalu, & a Calingala was built accordingly. Now it does, affecting our crops to the amount of 15000 Rs. The understanding for opening the valves after the 15th December is merely to get my lands under the lake cultivable for the cold-weather crops, and not to prevent swamping the paddy fields under high cultivation. Not right. Now Mr Brickwell seems to confound

Col. 2/335/74
P.W. 1289/74
Dec 11th 1873
Lt. Col. Beatty
Vizagapatam

C

confound one with the other. You are an experienced officer, and I have every hope that you will see things done amicably without the necessity of my seeking redress × elsewhere.

Surely if the village of Monagapaka were submerged by excessive rains, a contingency which would not be provided against in an ordinary arrangement, the practice usually obtaining could never override the consideration for the safety of the lives & property of the village. In the present case not lives but the loss of property is certainly at stake, and I beg you will kindly issue peremptory instructions to the Assistant Engineer to open the sluices at once, and prevent damage to my property, which otherwise would be inevitable.

Yours Sincerely
(Sd) G. L. Narsinga Row

(True Copy)
L. Beatty. Major R.E. District

Note. Mr. Narsing Row was informed that the District Engineer saw no reason to interfere; he thereupon proceeded to threaten the Principal Asst. Collector.
L.B.

× meaning that he would bring an action in the Civil Court, with damages laid at 15000 Rupees. L.B.

P.S. I wrote to Mr. Brickwell on the 12th Instt. to open the sluices.
Coll's Cons. 9 May 1874.

D

Endorsement on the petition of the proprietor of Anakapalli.

The petitioner represents that his villages Munagapaka, Vadrapalli, Mallavaram, Kakarapalli and Nagavaram cannot be cultivated unless the "excess water" in the Kondakerla ava be taken off: and requests that Mr Brickwell, the Assistant Engineer be directed to open the shutters of the Calingula, and the proprietor hints that if this be not done he may go to a Civil Court for damages.

The petitioner is informed that it is an abuse of language to speak of "excess water." That which is in excess is his cultivation which is found to be in the bed of the tank.

The orders of Mr Boswell dated 21st May 1866 No. 126 and of Mr Hutchins dated 12th September 1868 No. 114 are clearly superseded by the Ag Collector's letter to the District Engineer dated October 27th 1873 No. 1616, in which occurs the following passage (Para 3.)

"The management of the sluices is in your hand, and I hope therefore you will not allow the water to be drawn off after December

December 15th except for cultivation purposes."

The petitioner is reminded that it is indecent of him to threaten the Covenanted Servants of Government with Civil Suits if they do not comply with his unreasonable requests.

From Para 8 of Mr. Minchin's Letter dated 12th May 1869 No. 240 to the Board of Revenue it is clearly stated that "the "cultivation of the waterspread of the reservoir, "expressly excluded from the estate assets" "in the Permanent Settlement accounts, is" "an illegal encroachment." Again, in Para 3 of the Post-script to the same letter, it is found that "the bed of the tank is not included in the assets on which the peishcush is charged, and its cultivation, though a long-sanctioned abuse, can properly be put an end to for such time as the Government may be able to keep water in the reservoir."

The Board in their Proceedings of the 14th June 1869 No. 4246 say they "are not prepared to acquiesce in the extraordinary claims to cultivate a portion of the waterspread in spite of their having been recognised by subordinates, and if the claims are allowed the Board believe that additional peishcush might legally be

be imposed as these Lands were not assessed to the Permanent Settlement." Read also to the same effect Paras as to the cultivation of the waterspread.

There is yet another alternative, to take the Land up under the act.

The petitioner is also reminded that no prescription Lays the Crown.

Under all these circumstances petitioner is advised not to threaten the servants of the crown, and for his own sake to remain as quietly as possible.

Principal Asst Collectors office
Camp Waltair January 1874

(Signed) D. G. Smith
Ag Dl Asst Collector

(True Copy)

(Signed) D. G. Smith
Ag Princl Asst Collector

Forwarded to the District Engineer, Vizagapatam for information.

(True Copy)

R. Beatty Major R.E
District Engineer

District Engineer's Office

No. 1284. Camp Nuckapilly

11th October 1873.

From

The District Engineer, Vizagapatam

To

The Collector of Vizagapatam

Sir,

"In 1860, the then Collector of Vizaga-patam proceeded to Kondakerla in order to settle the Cong pending water dispute, and entered into arrangements by which the water level was fixed, and the supply in the ava was to be retained at the full level until 15th December, and then it was to be drawn off— as required for cultivation below the Calingulah, thus allowing a Paliva, or late cold weather crop, to be cultiva-ted in the tank bed."

2. My interpretation of that agreement is that the water was to be drawn off after 15th December, only for purposes of cultivation under the ava, and not that the ava should then be suddenly emptied for the benefit of parties who wish to cultivate in its bed.

3. Instead of the gradual discharge of the water, as required for cultivation, a practice appears to have sprung up, of

Copy of the
D.O. No. 1284 dated 11th
Oct. 1873.
to the Collr. of Vizag.
Re. Water supply
to Kondakerla Ava.

of late years, of opening the sluices on the 15th December and emptying the Ava as quickly as possible, thus wasting much valuable water, which should be most carefully stored for the use of the Government Villages under the Ava; some of which are, it would seem, entitled to a supply of water for a second wet crop.

4. If this practice, which I regard as an encroachment by the neighbouring proprietors on the rights of Government, meets with your approval, I shall be obliged by your giving me your reasons for it; to enable me, if necessary, to refer the matter for the orders of Government.

I have &c
(Sd) J. Beatty. Major R.E
District Engineer
Vizagapatam.

(True Copy)

J. Beatty. Major R.E
District Engineer

Ch. 1/3571/74
P.W. 1289/74. 21 Nov 1874

E

No. 762 Waltair 20th October 1860

To

Mr W. G. Bevan

* to be returned

Forwarded* Collector's letter No. 1103, of 17th instant, regarding Kondakirla affair, to Mr Bevan, for his information &c; with instructions to have the Pillar on the Jodu Dibbaloo put up at once; also a corresponding permanent bench mark made on the pier of the sluice; and to frame an Estimate for an additional Calingulah 21 feet in length on the north side of the sluice, the body of the present and of the new Calingulah to be on a level 3 inches below Bench mark.

(Signed) E. Blagrave Captain
District Engineer

(True Copy)

J. Beatty. Major R.E.
District Engineer, Vizagapatam

Note. It will be observed by these papers that Capt. Blagrave proposed to build a Calingulah 21 ft long, with its crest 3 inches below the Bench mark, while Mr. Bevan submitted an estimate for a calingulah 30 feet long with its crest 6 inches below the Bench mark.

L.B.

F

No. 275. 14th March 1861

To

Captain Shaw Stewart

Acting District Engineer

Viragapatam

Sir,

I herewith beg to submit a plan× and Estimate for the improvements proposed to be made to the Kondakirlah & Iva Calingulah; the crown is to be 6 inches below the bench mark laid down by the Collector and Captain Blagrave at the Jo-du Dibbaloo.

I beg to remain

Sir

Your most Obdt. Servant

(Signed) W. G. Bevan Conductor

Supervisor D. C. W.

(True Copy)

L. Beatty. Major R.E.

District Engineer Viragapatam

× The plan cannot be found - L.B.

Collector's Office

Rec'd 12 April 1861

No. 1289

Ex. Engr. Vizagapatam

Ex. Engr. Rajahmundry

C. Estimate of the probable expenses of the addition and improvement proposed to be made to the Kondakirlah Ava Kalingulah in Srwasiddy Taluq in Vizagapatam District for the year 1860-61.

No.	Measurement L	B	D	Suppl. Contents	Cubical Contents	Description	Rate	Per Item	Amount	Total
						Additional Culinaulah				
1	29	6	5		870	Foundation to Calingulah				
1	22	3	4		264	Do to wing wall between the head Sluice & the Kalingulah				
1	8½	4	4½		153	Do to front wing wall				
1	4	4	4½		72	Do to Do				
1	5½	4	4½		99	Do to rear wing wall				
1	19	4	4½		342	Do to end wall				
1	34	2½	4½		382½	Do to retaining wall				
1	30	4	1½		180	Kalingulah above				
1	22	2	6		264	Wing wall above between the head sluice and the additional Calingulah				
1	8	2½	7½		150	Front wing wall above				
1	3½	2½	7½		65 5/8	Do				
1	5	2½	5		62½	Rear Do Do				
1	4	2½	7½		75	End wall above				
1	15	2½	6¼		234 3/8	Do				
1	32	11	1½		528					
					3742	or 138.16 Cyds. of Rough stone in chunam		1 8	Cyds.	207 14 3
1	30	4		1 20		Kalingulah				
1	32	14		4 48		Apron				
				5 68		Sqrs. of Cutstone in chunam		10	Sqr.	56 12 9
1	30	5		1 50		Kalingulah				
1	20	14		2 80		Wing wall between the head sluice and the additional Kalingulah				
1	13	10		1 30		Front wing wall				
1	6	7		42		Rear Do				
1	4	7½		30		End wall				
1	15	8¼		1 23¾		Do				
				7 55¾		Sqrs. Plastering in chunam				

Ellis
6/3061.
P.W. 1289/74
Plan & Abstract
Estimate

8			Guard stones	2	8 . each	20 . .
			Excavating foundation and filling in			25 . .
			Improvements to old Calingulah			
1	51	4 1	204 or 7.15 Cyds. of Rough Stone in Chunam for raising the Calingulah	1	8 . Cyb.	11 5 4
		8 25	Sqrs of Plastering in Chunam the Calingulah and wing walls	1	8 . Sqrs	12 6 .
			Guard Stones	2	8 . each	35 . .
			Extra Establishment & Sundries	5	. . Pct.	20 4 4
					Total Rupees	400

Nursipatam
14th March 1861

Jg Conductor
Supervisor D. P. W. Camp

Form No 5.

Estimate Rs. (400 - - - -) four hundred for the addition and improvement proposed to be made to the Kondakirla Ava Calingulah in the Surrvasiddy Talug in Vizagapatam District.

1st Length of the additional Calingulah 30 feet

2nd Calingulah to be built of Rough stone in Chunam Breadth of foundation 6 feet and depth 5 feet and the Calingulah is to be raised 1½ feet above foundation Nature of soil black earth.

3rd The Calingulah is to be crowned with cutstone with an apron in rear of the same material built on a foundation of rough stone in Chunam 1½ feet deep.

4th The retaining wall will be sunk 4½ feet and have a breadth of 2½ feet material rough stone in Chunam.

5th The old Calingulah is to be raised 1 foot with rough stone in Chunam.

Nursipatam
14th March 1861

/True Copy/ W. G. Bevan Jg Conductor
Supervisor D. P. W.

L. Beatty Major R.E.
District Engineer Vizagapatam

II

No 1464

District Engineer's Office Camp
Kassimkotta 6th April 1861

To

The Collector of Vizagapatam

Sir,

With reference to your letter to Captain Blagrave dated the 17th October last No 1103 I have the honor to forward herewith a plan and estimate for raising and lengthening the Calingulah of the Kondakirla Ava, which have been prepared agreeably to Captain Blagrave's instructions.

2. You know the circumstances of the case far better than I do, and I need not, therefore, make any remarks upon the necessity, or the object of the work.

3. The estimate amounts to Rs. 400 and as it is not strictly a repair, it must be sanctioned by the Chief Engineer. I request therefore that you will be so good as to return it with your countersignature.

4. With reference to para 5 of your letter above alluded to, it seems to me that Mr Sooriah may fairly be called on to pay her share of the expense. This of course, is for you to arrange

I have &c

/True Copy/ /Signed/ J. H. M. Shaw Stewart Capt
Ag. District Engineer

L. Beatty Major R.E.
District Engineer Vizagapatam

Encl 8 to Letter
No. 1284 dated
29th April 1861
Lt. Col. Dunlop
Chief Engr. &c. &c.
Madras

I

No. 1571 Waltair 29th April 1861

Memo

Mr. Bevan is authorized to commence the work of raising and lengthening the Kondakirla Eva Calingulah, charging one half of the expenditure to Government and the other half to the Ankapilly proprietrix. The sum of Rs. 200, being the half of the Estimate, will be sent to Mr. Bevan when received from Mr. Looria Pracasarow.

/Signed/ S. Stewart Capt.
Ag. District Engineer

/True Copy/

L. Beatty Major &c.
District Engineer Viragapatam

Ch. Assistt
P.W. 1288/74
12th
Dno Ldy
Ist Nov 74
40 Sh

K

Extract from a letter from Assistant Engineer Lieutenant Bevan dated Arnee 25th November 1873.

× × × ×

I now find that the only reference to the work that my old Diary contains is merely that I marked a bench mark on the old Sluice wing wall, 3 inches below the top of the Jodu Dibbaloo. And the other entries are simply records of inspections made while the Calingulah was in progress. Captain Blagrave and Mr Jane came to the decision about the height the water in the Ava was to be retained, not from Levels Cut, from enquiries made of the parties concerned. An Overseer named Iyapah Naidoo* was employed on the work and if he could be found, would be able, I think, to give the information about the Jodu Dibbaloo, as he knows all the bench marks connected with the Ava and those on the wing of the Kondakirla Sluice.

Iyapah Naidoo left his appointment in the Department on its organization in 1863, and was shortly afterwards (at my recommendation) appointed to a post in the Revenue Department, either as Sheristadar or Revenue Inspector of the Surrasiddy Taluq.

× × × ×

signed

* I am told that Iyapah Naidu has since died. L.B.

/signed/ W.G. Bevan.

/ True Copy /

L. Beatty. Major R.E.

District Engineer Vizagapatam

Ex. Estimate.

No. 2894 dated 11th Dec. 1873.

DEPARTMENT P.W. NEW WORK.

Abstract Estimate No.

TALUQ Anhapilly

DISTRICT Vizagapatam

WORK Approximate Estimate of the cost of reforming the Kristamraz Channel called for in Chief Engineers Memorandum printed with G.O. No. 2994 dated 12th December 1873.

Quantity or Number.	Description of Work.	Rate.	Per Item.	Amount.	Total.
	I				
101606	Cyds. of Earthwork for raising the banks and widening the Channel	1 .	Cyd.	6350 6 .	
	Contingencies and Superintendence	10 .	Pct	634 10 .	
			Total		6985 . .
	II				
24	Acres of Land to be taken up for the proposed improvements	300 . .	Acre	7200 . .	
			Total		7200 . .
	III				
	Aqueduct				
549 11/54	Cyds. of Concrete work	1 12 .	Cyd.	961 1 1	
1047 7/9	Do of Rubble masonry in Chunam	1 12 .	Do	1833 9 9	
30 1/8	Do of Brickwork in Do	2 12 .	Do	83 3 .	
108 31/54	Do of Brick arch work in Do	14 12 .	Do	515 11 7	
3.20 1/4	Do of Cutstone work to Cutwaters	15 . .	Do	56 4 .	
60.35 1/2	Sqrs. of plastering with 3 Coats of Chunam	3 5 .	Sq.	199 14 10	
19.95	Sqrs. of Asphalte 3/4 inch thick laid over Arch work & sides of parapets	27 . .	Do	538 10 .	
	Baling water	. . .	.	50 . .	
	Excavating foundation & filling in	. . .	.	150 . .	
				4388 6 7	
					14573 6 7

					4388	6	7
	Contingencies and Superintendence	10	.	Pct.	436	9	5
	Connecting walls between the aqueduct and old Bridge				4825	.	.
110 2/9	Cyds of Concrete work	1	12	Cyd.	192	14	2
235 17/54	Do of Rubble masonry in Chunam	1	12	Cyd.	411	12	9
226 8/9	Do of rough stone revetment laid dry	.	12	Do	170	2	8
	Excavating foundation & baling water	.	.	.	50	.	.
					824	13	7
	Contingencies & Superintendence	10	.	Pct.	80	2	5
I.					905	.	.
	Total Cs for aqueduct & Connecting walls						5730 .
846 7/27	Cyds. of rubble masonry in Chunam	1	12	Cyd.	1480	15	3
41 1/9	Do of Brick arch work in Do	4	13	Do	197	13	7
13 20/27	Do of Concrete work	1	12	Do	24	1	.
59.64	Sqrs of Plastering with 3 Coats of Chunam	3	4	Sq.r	193	13	3
212	Rft. of Cornice work	.	2	Rft.	26	8	.
8	Guard Stones	2	.	Each	16	.	.
1	Centring	80	.	Do	80	.	.
	Baling water	.	.	.	140	.	.
66 2/3	Excavating foundation & filling approaches	.	.	.	33	.	.
	Cyds of Loose stone apron	.	8	Cyd.	33	5	4
					2125	8	5
	Contingencies and Superintendence	10	.	Pct.	214	7	5
V.					Total		2340 .
2	Irrigating Sluices with rectangular openings and wooden shutters to supply ⊛455 acres & *330 acres respectively	150	.	each	300	.	.

⊛ One vent 12" broad by 9" inches deep
* One vent of 9" by 9" inches

22255 .

							00 .
							22255 .
							300 . .
	Irrigating Sluices with circular plugged vents four of them varying from 6⅞ to 2¾ inches in diameter to supply 237, 119, 26, & 17 acres respectively and six extra Sluices	140	.	each			1400 . .
VI.					Total Cs for additional Sluices		1700 . .
	Removing the lower cross stones replacing them at 4½ feet in advance of 2¼ feet above the sill level and blocking up the part of the vent above and also inserting iron bars 2½ inches diameter at 2¼ ft. above sill level						55 . .
VII.					Total Cs for alterations		55 . .
	Cyds. of Concrete work below foundation	1	12	Cyd.	81	.	.
	Do of rubble masonry in Chunam	1	12	Do	132	.	.
	Cft. of cut stone covering to top of	.	8	Do	11	.	.
	body wall pinned together with iron						
	Sqrs. of Plastering with 3 coats of Chunam to the rubble masonry	3	5	Sqr.	56	10	.
	Excavating foundation & baling water	.	.	.	37	11	6
					317	9	6
	Contingencies and Superintendence	10	.	Pct.	31	14	1
VIII.					Total Cs for regulating Sluices		400 . .
	Cyds. of Concrete work	1	12	Cyd.	131	12	8
	Do of rubble masonry in Chunam	1	12	Do	378	10	.
	Cft. of cut stone covering to top of body wall pinned together with iron	.	12	Cft.	180	.	.

								24410
630	Sqrs. of Plastering with 3 Coats of Chunam to Lower side of the body wall					791	3	4
	Excavating foundation & baling water	3	5	-	Sq^{r}	20	13	10
						60	-	-
						791	3	4
	Contingencies and Superintendence	10	-	-	Pct.	78	12	8
	Total Rs. for regulating dam in the Drainage Channel							870
	Grand Total Rupees							25280

No. 1 Range Office
No. 1277 Sheet 1 of 1

No. 10 Golgondah
Range office
Yellamunchilly
7th February 1874.

J. Buckwell
Assistant Engineer
in Charge of No. 1 Range

L. Beatty Major R.E.
Protinct Engineer Vizagapatam

Clés 11/350/74
P.W. 1289/74
12

P.G. 920 th May 74
En 1811 : 1605

Approximate Estimate
of the cost of reforming
the Kristamkaz Channel
called for in Chief Engineers
Memorandum printed
with G.O. № 2994 dated
12th December 1873.

№ 1 Range Office
Ellamanchilly
7 February 1874.

№ 1277

From

The Officer in Charge
№ 1 Range.

To

The District Engineer
Vizagapatam District
Waltair

Encls 1
Estimate

Sir,

1 I have the honor to submit a re-
port on the Approximate estimate for Im-
proving the Kristumkaz Channel which is
the supply Channel of the Kondakerla Ava
and derives its supply from the Godary
Annicut across the Saradamudi near Co-
cinocottah in the Surwasiddy Taluq.

2 The Chief Engineer for Irrigation in
his Memo № 716 B, dated Narsipatam 8th
October 1873. para 20 directed this approxi-
mate estimate to be submitted to admit
of provision being made for the work in
the Budget of 1874-75.

3 In the same Memo paras 6-7-8-12

14 & the Chief Engineer has fully reviewed the necessary works required for Improving the Kristam Raz channel and which have been provided for in the approximate Estimate and the object and advantages to be, obtained by them.

4. The estimated amount is as close an approximation to the actual cost of the work as the investigations already completed would allow of being framed, and provided that the cost of land is not greater than Rs 300 per acre entered in the estimate. I feel sure the work may be completed within the amount estimated Rs 25,280 Twenty five thousand two hundred and eighty.

5. The first item for "earthwork" Rs 6985 needs no comment except that the cross Sections when plotted, led me to estimate for providing embankments on the western side for about 1 3/8 miles above the Munagapaka aqueduct and on the eastern side, about 1 mile above it, towards the Head

the Head Sluice vide Chief Engineers Memo para 12 (The Munagapaka aqueduct is 2 3/4 miles from the head sluice.) Part of this work consists of removing and reconstructing old banks.

6. The second item compensation for Land is open to doubt. The annual rental paid by the ryots to the Zemindars whose land lies adjacent to the Channel is on an average Rs 15 per acre which at 20 years purchase amounts to Rs 300 per acre as the present value and this should be sufficient. Beyond this the only criterion we have is the price paid for compensation for land taken up for the Poodimadaka Road which was fixed at Rs. 300 per acre, on the average. At the same time the proximity of the land now required to the Kristam Raz Channel, and the fact that some of it is garden land may lead to higher rates being demanded. The Zemindars concerned will undoubtedly derive much benefit to their lands under command of the channel

nel by the proposed improvements which besides providing an additional supply of water also provide for head sluices to their branch channels and they will probably contribute some portion of the cost of the works. It has been impossible to settle the amount of their contributions in time to enter them in the estimate but the amount may be taken as a set off approximately against any enhanced value of land.

7. Item No. 3 aqueduct at Irunagapaka. This work is designed to pass under it the drainage from the Ankapilly Ava, which now flows through the present channel on the same level and escapes over two Calingalas. Pippecolum and chinnaman built in the western bank of the Kristam Raz channel. The Kristam Raz channel flows from north to south nearly the Ankapilly drain from east to west nearly) and which as noticed in Colonel Mullins Memorandum[x] cause the chief of the mischief which it is now desired to remedy.

[x] No. 716B dated Nursipatam 8th October/73

The design has been prepared from instructions and sketches given by the Chief Engineer for Irrigation. A suggestion of Colonel Mullins that 4 arches of 9 feet instead of 3 of 12 feet span, his original plan, has been adopted as it is proposed to provide for a considerable portion of the cross drainage intercepted by the embankments of the channel by turning it into the Ankapilly Ava drainage channel through the spoil cuttings it will be necessary to excavate outside the channel banks, and so under the aqueduct hence a further width of opening of 6 feet has been adopted. There will be a considerable fall of the drainage water immediately in front of the aqueduct which has been provided for by a drop wall and floorings of stone in chunam. It will be, I think, a matter for after consideration, whether the drop wall is not too close to the aqueduct. There is no doubt I think that if any

alteration

alteration is made the sum entered in the estimate (Rs 5.730.) will meet the cost. This sum provides also for retaining walls connecting the aqueduct with the piers of the old bridge which carries the Poodi. madaka Road over the Kristian Raz chan. nel at this place.

8. Bridge of one arch of 30 feet span to carry the Poodimadaka Road over the new Drainage Line. The wings of this bridge are to be connected with the wings of the old bridge referred to in the above para. graph. The cost of it including approaches is Rs 2,340.

9. The sum entered for additional head sluices to the various branch chan. nels is Rs 1,700.

10. The cost of the alteration directed to be made in the head sluice of the Kris. tam Raz channel is Rs 55 which sum will I think be ample.

11. Regulating Masonry Dam at the side of the Pela Cattu. The Pela Cattu is re. ferred to in the Chief Engineers memo No: 716B dated

*Chief Engineers memo No: 716B dated 8th Oct 1873 para 21

dated 8th Oct 1873 para 6 in which it is shewn to be another of the causes of the present inefficient state of the Kristam Raz chan nel. The estimate provides for an entirely new structure, of masonry. The crest is to be at the same height as the former one and below it the channel bed is to be dropped about 4. 6. and to have a regular fall from thence to the sill of the Ava Ca. lingala sluice. The total cost of the new Dam will be Rupees 400.

12. Regulating Dam in the Drainage channel. The fall in the bed of the Anka. pilly Drainage Channel, represented hither. to by the height of overfall of the Chinta. man and Lippe column Calingalas has been regulated by a drop wall or dam about 30 feet in front of the aqueduct. This work with flooring revetment &c is estimated to cost Rs 870- as mentioned above I think it will be a matter for after consideration as to whether, in its present position, it is not too near the piers of the aqueduct and whether there is not a possibility of the

aqueduct

x para 7

aqueduct foundations being shaken by the too great proximity of the overfall and broken water caused by the Dam. Extensive floorings and revetments have been provided and I believe the cost of them would be about the same as any other arrangement which could be adopted.

13. In conclusion I have the honor to state that I have in this report, dwelt chiefly upon the sufficiency or otherwise of the various items entered in the estimate — which does not profess to be more than an approximation but which, on the whole I believe will be found more than sufficient to carry out the work. The estimate has been framed upon actual surveys and levels taken in the field from time to time as opportunity offered some of which observations are undoubtedly inaccurate but moderately complete as far as they go. I hope shortly as soon as the surveyors whose entertainment was sanctioned in G.O. No 2994 dated 12th Dec 1873, can be procured to push on with the preparation of the field work required for framing an estimate for the 2nd Project of which the improvements of the Channel now estimated for are but a preliminary step. I should in fact have taken the Level-ling for this Channel in hand myself ere this but for several untoward events, one of which has been, at least as far as the preparation of levels and surveys are concerned, the heavy down pour of rain in December which has prevented the prompt execution of repairs Agricultural and has called my attention elsewhere, more especially to the Golgonda Valley. Had it not been for the help of your office Draughtsman whose services you kindly devoted to the preparation of the Plans and estimate for a time, those papers would not have been in their present state of forwardness towards completion.

14. I should perhaps add what amount I consider may be spent in the current official year providing the regular estimate is sanctioned, as this may not be

be expected until after the monsoon is over I consider that

1. The aqueduct Rs 5,730
2. The Bridge 2340
3. Pàla Cattu Dam 400
4. Dam in Drainage Channel 870
5. Compensation 1,200
6. Earth work 3460

Total Rs 20.000

is as much as can conveniently be, Completed by the end of the current official year, leaving the rest of the earthwork &c to be completed before the monsoon of 1875.

I have the Honor to be
Sir,
Your most Obedient Servt
J Bicknell C.E.
Assistant Engineer.

L. Beatty Major R.E.
District Engineer Vizagapatam

No. 1277 No. 1 Range office
Ellamanchilly

From

The Officer in Charge
No. 1 Range

To

The District Engineer
Vizagapatam Distt
Waltair

Dated 7.
Rec'd } February 1874.

Encls. 1
2 & 12 May 1874

In P.W. 465

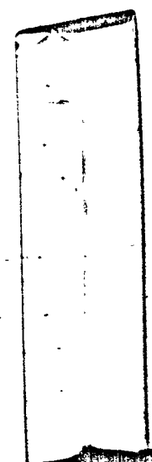
Submitting a report on the approximate Estimate for improving the Kristam Raz Channel of the Kondakerla Ava.

Clr 12/350/74.

P.W. 1289/74
13/4

Vadaiyapilly	105	25	512	4	27	50	135	4	132	75	647	8
Pedrapadapy	22	64	238	8	71	21	531	4	98	25	767	8
Velapadapy	52	.	252	6	35	50	267	10	88	50	839	10 6
Vannarapullai	157	50	952	12 4	75	12	612	6	202	71	2865	2 4
Vannarapullai	47	50	238	8	35	.	145	9	83	.	372	1 .
Vepamaram	23	.	94	5	6	.	15	.	30	25	112	5 .
Pullavaram	21	25	71	6 6	.	.	.	.	7	.	50	6 6
Vannarapilly	.	.	50	6 6	.	.	.	.	10	.	20	. .
Vannarapan	10	.	20	. .	.	.	.	.	9	.	20	. .
Pallavan	9	.	20	. .								
	1322	11	4838	3 5	581	58	4158	11 . 8 . 1	2003	69	16045	3 5

Ambapilly & Periatalor	Mannaga Kattu	180	87½	831	9 11	.	.	.	159	87½	831	9 11
	Vannarapullai	89	.	831	18 .	.	.	.	89	.	831	18 .
	Vadapilly	89	25	1632	1 .	.	.	.	189	25	1632	1 .
		438	12½	3345	7 11	.	.	.	438	12½	3345	7 11



The Kassimodum Kattu is a rough stone dam in the Saradanuddy near Cassimkota



L. Beatty — Major R.E.
District Engineer Vizagapatam

Co. 14/350/74.

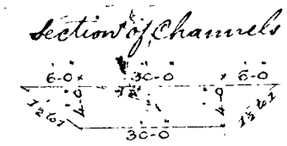
P.W. 1289/2"
1871

Statement showing the discharge of Kristamnaz Channel when improved.

Formula $D = A \times .92 \sqrt{2f \times \frac{A}{B}}$

Depths on bed of Channel	Area of Section	Perimeter	Hydraulic Mean depth	Fall per Mile	Mean velocity per second	Discharge per second in Cft.	Discharge per hour in Cyds.	Discharge per day in Cubic yards	Remarks.
feet.	Sft.	feet	feet	feet	feet				
0-6"	15.37	31.80	0.48		1.29	19.07	2642	63.408.	
1-0"	31.50	33.60	0.93		1.97	57.01	7600	182,400	
1-6"	48.37	35.40	1.36		2.19	105.91	14121	338.904	
2-0"	66	37.20	1.77	2.10	2.50	165.15	22020	528.480	
2-6"	84.37	39.00	2.16		2.76	232.86	31048	745152	
3-0"	103.50	40.80	2.53		2.99	309.46	41261	990264	
3-6"	123.37	42.60	2.87		3.19	393.55	52473	1259352	
4-0"	144	44.42	3.24		3.38	486.72	64896	1557.504	

Sections of Channels



District Engineers Office
Camp. Vyellammanchelly
8th February 1874

C. V. Beatty - Major R.E.
District Engineer Vizagapatam

Cl. 13/358/74.

P.W. 1289/74

16

Statement showing the details of estimates, planned when surveyed.

Pz. 2) to ff Pneu/74

L Bdle. 165

Vizagapatam District

Estimate of Cost of Temporary Establishment required for maturing Irrigation Schemes connected with Kondakirla Ava in No. I or Golugondah Range

Particulars of Items	Amount of Salary per month	Total amount for Six months	Remarks
1. Surveyor at 60 Rs. and Rs. 30 travelling allowance	90	540	
1. — Do — at 20 Rs. and Rs. 5 travelling allowance	25	150	
1. Draughtsman at Rs. 40 and Rs. 10 travelling allowance	50	50	
9. Lascars. 3 on Rs 6, 2 on Rs. 5 and 4 on Rs. 4½	46	276	
	211	1266	
Contingencies	5 8.	33	
Total Rupees	216 8.	1299	

District Engineer's Office
Camp Salur
28th February 1873

(Signed) F. Brickwell
Assistant Engineer

G. Beatty Major R.E.
District Engineer Vizagapatam

Report to accompany an estimate of the probable cost of the Surveys and levels required in maturing the Kondakula Ava project.

I have included in the estimate the cost of investigating the scheme afresh from beginning to end, in accordance with your instructions in Memo No 351 dated 8th February 1873.

Should Mr Turner be able to furnish information, such as field and level books, by the aid of which his unfinished plan may be made available, the probable cost will be less, proportionate with the information furnished.

I propose that in the first instance the Surveyor should be employed in contouring the the Ava at every yard accurately up to a height of 3 yards above present Calingulah crest and shewing the quantity of land which would be submerged by raising the water level.

Meanwhile the Surveyor on Rs. 25 should be employed in making an accurate survey of the whole of the Ayacut of the Tank, lying between

Rs. 20 Mr Mayne
Rs. 15 Sub. Insp.
Rs. 10 Surveyor
2/10/73
No. 1289/74
1873

Rs. 15/-
2/10/73

-ween Cassimcota Melupaka and Kondakirla, shewing the boundaries of the various estates, the different existing irrigation lines, and the land under them respectively.

I then propose that this should be roughly contoured, so as to shew how the existing channels from the Ava itself, which are very defective, may be rectified; and also how the extra water stored in the Ava may be made, in a dry season, to suppliment the supply now taken direct from the River by various small chamels; next I propose an accurate survey and section with cross sections of the channel which supplies the Tank itself.

Lastly, if the contents of the Ava are found sufficient a survey and coutour of the Government land lying between Kondakirla and Pudimadaka is required, and Section of a proposed line of channel to convey water from the Ava to the same.

The boundaries of the various estates must be accurately surveyed, as there are many petty Zemindaries, and information will be required as to the area of them in order to compute the share of the cost of the

works, they should be called upon to pay if any portion of their estates should be benefited by the Scheme.

I propose to superintend the whole work myself as the Range duties are light at present.

/Signed/ F. Brickwell C.E.
Assistant Engineer

C. Beatty Major R.E.
District Engineer
Vizagapatam

No. 504.

District Engineers Office
Camp Salur 28th February 1873

From

The District-Engineer
Vizagapatam

To

The Secretary to Government F.S.W.
Madras

Sir

As directed in G.O. No. 183 of 20th ultimo, I have the honor to forward herewith an estimate and report on the cost of maturing a project for improving the Kondakirla Ava.

2. With the assistance of the present Canals officer at Yellamunchelly I do not anticipate any difficulty in completing the plans and estimate required.

3. Mr. Brickwell will supervise the work and check it. There are no Surveyors now available in the District, but it may be possible to get experienced men from other Districts for this and other survey work in prospect. Meantime if the funds now applied for be sanctioned, Mr. Brickwell will commence operations from 1st April

Rs. 1,20,000

Rs. 1,20,000

Rs. 1,20,000

April with the best qualified person he can find among his subordinates, if necessary teaching him the use of the instruments

4. Mr G. J. Turner and Temporary Surveyor Fletcher were employed on this project for some months in last year; but Mr. Fletcher resigned in October, and Mr Turner having suddenly left the District in November without handing over charge, the whole work must be begun afresh

5. The only definite results arrived at by Mr. Turner, so far as I am at present informed, were as follows:—

(1) That the proposal to store more water in the Ava by improving the existing works is quite feasible;

(2) That there is an abundant supply in the river for this purpose in the worst years;

(3) That it would be possible not only to secure existing irrigation, but also to bring more land under cultivation;

(4) That a careful Survey and levels must be made of the whole of the land affected by the proposed new works; because some valuable land must be flooded above the Ava, and because the area commanded by the Ava includes a good deal of Zemindary land.

6. Mr Turner was, I believe, also satisfied that the surveys and levels furnished by Mr Laskey were so incorrect as to be of no value, and that every part of the project must be carefully reexamined

7. The only records of Mr Turners work that have since turned up are some pencil notes, apparently by the Surveyor, and the first outlines of a Plan in such an early stage of preparation as to be almost unintelligible, as it is unaccompanied by survey or level books. Owing to Mr Turners sudden departure I had no opportunity of getting these explained, and I have not yet received the Memorandum he was directed to furnish.

X G.O. No 157 of 17th January 1873, para 2

8. Registers were kept at the head sluices near the anicut, in 1871-72 and 1872-73, of the rise and fall of the River; but these are very imperfect, and the Range Officer must give special attention to this from the first rise of the river in the present year.

9. Carefully prepared Surveys are wanted of the whole tract of country to be affected by the improvements showing,

(1) The position of the existing and proposed works.

works;

(2) The present water-spread of the Ava in the dry season, and when full;

(3) What lands must be flooded if the Calin-gulah be raised, and to what extent this may be avoided by embankments and drainage works;

(4) The extent of land now irrigated from the Ava under Government, and under each of the Zemindars;

(5) The additional area that may be command-ed and supplied with water if the Calingulah be raised three feet, and how much more if it be raised six feet.

10. The report to accompany the plans and estimates for improving the Ava will afford,

(1) All the information procurable on the dis-charge of the river in favorable and unfavorable years;

(2) The proportion of that supply that may be drawn off into the Ava when enlarged to receive it; for it will be understood that at present it is necessary to keep the head sluices closed a great part of the season when they might be filling the Ava.

(3) The probable amount of compensation re-quired for flooding certain lands on the b-ders of the Ava;

(4) The amount of revenue that will be s-cured, and the other advantages resultin-from the proposed expenditure on new work

11. As some expenditure was incurre-on these Surveys under Mr Turner, of whi-a Bill will be submitted in a few day-an appropriation of funds to that extent is-needed, now that the official year is nea-ly at an end.

I have the honor to

Sir

Your most obdt: Servt

H. Beatty. Major R-

District Engineer

Vizagapatam

pieced

No 184.

Enclosures 24. Submitted to Government in original

Ans Civil Sys: Vizagapatam Letters Received 12 Dec 73 A 87 25 '74

Reference to G. O. No 2994 of the 12th December 1873. The estimate submitted with the above-mentioned letter from the Executive Engineer, Vizagapatam, for improvements of the Kondakarla Anicut, which has been declared unsafe, has been referred to the Chief Engineer for his opinion and report.

2. The improvements of the Kondakarla Anicut are urgently required, and the estimate submitted with the above-mentioned letter from the Executive Engineer, Vizagapatam, for Rupees 22,280 for the circumstances been delayed until the late for entry in the Budget of 1874-75, but they are recommended that the Sanction of the Government may be accorded to the proposals contained in the letter from the District Engineer, dated 28th ultimo, for the execution of the works in question, as the Kondakarla Anicut is the principal source of irrigation to the people of Vizagapatam, and the Chief Engineer has reported that the Anicut is in a dangerous condition, and requires immediate repairs.

3. The Chief Engineer has also been requested to submit a report on the practicability of constructing a new Anicut across the River Varaha, so as to obviate the necessity for annual repairs to the present Anicut, and to ensure a supply of water for irrigation throughout the year. The Government trust that the Chief Engineer will be able to submit his report on this subject at an early date.

4. The Government are pleased to sanction the proposals contained in the above-mentioned letter from the Executive Engineer, Vizagapatam, dated 28th ultimo, for the execution of the works in question, as the Kondakarla Anicut is the principal source of irrigation to the people of Vizagapatam, and the Chief Engineer has reported that the Anicut is in a dangerous condition, and requires immediate repairs.

5. The Government are pleased to sanction the proposals contained in the above-mentioned letter from the Executive Engineer, Vizagapatam, dated 28th ultimo, for the execution of the works in question, as the Kondakarla Anicut is the principal source of irrigation to the people of Vizagapatam, and the Chief Engineer has reported that the Anicut is in a dangerous condition, and requires immediate repairs.

P W 1873 Despatch

From No. 1575

The District Engineer

Vizagapatam

To No. 607

The Secretary to Govt: P.W.

Dated 20th May 74

Rec'd 28 } February 1873

Desp'd 8 } March

No. 504.

Forwards estimate of the Cost of maturing the Kondakarla Ava project and reports how he proposes to supervise the work, as directed in G.O. No. 183 of 20th ultimo.

To the D.L. Despatch No. 189 dated 18-3-74.

P. W. 7289/74

Madras

17

Rec'd 15.4.74

placed at his disposal so soon as the requirements of incomplete works of 1873-74 have been provided for.

2 In the mean time the longitudinal and cross sections of the Channel and the plans of the masonry works should be sent to this Office as soon as may be convenient, in order that all the important details may be finally approved before any constructive work is commenced.—

3. The papers transmitted by the District Engineer, marked A to K, are of considerable interest.—

4 The proportion in which the cost of the improvements included in the approximate estimate should be borne by Government and the Proprietors, respectively, will, it is supposed, be determined ultimately in the Revenue Department.—

Camp at Chepauk
South Arcot
26th February
1874.

Lieutt Colo R.E.
Chief Engineer for Irrigation

To,
The Secretary to Government,

Public Works Department

1335

Proceedings of the Madras Government

Read the following

From The Chief Engineer for Irrigation } H.E. No: 184 / 26th Feby / 74 /

The Governor in Council regrets that as the approximate estimate for the Kistna Anicut channel was not received in time to allow of any provision being made for the work in the Budget and as the funds under Ordinary Agricultural at the disposal of Govt. are altogether inadequate to admit of an allotment being

P. R. Feby 28th 1874 Pd. 1289
From The Chief Engr. for Irrigation
To The Secretary to Govt. P.W.D.

Dated 26. Feb
Recd 4th March 1874
Read 2 Papers

Submits approximate estimate for 2 Anicut channels for Kistnaram & Pulicat Lakes

Requests that Govt. Order may be passed

Q. Regarding Q. No: 179. 20-5-74.

Ordered - 28.2.74
Lr. 17 Mad. 362. 20

heavy grade therefrom it is necessary to postpone the commencement of the improvements until next year. In the meantime the regular estimate with the plans of the masonry works should be submitted through the Chief Engineer for Irrigation for entry in the Budget of 1875-76. His Excellency has noticed with satisfaction the careful attention which has been given to this Project, which appears likely to be really useful and beneficial both to

to the Government and Proprietary lands under the channel.

These Proceedings will be communicated to the Revenue Department for continuation of G.O. No 2994 of the 12th December 1873, with a request that consideration may be given as to the incidence of the expenditure which may be required to render the Nestannagar channel efficient and capable of meeting the requirements of all the cultivation under it, and that as reliable an estimate as possible may be framed of

P.W. Dept

Proceedings of the Madras Government

Dated the following

From the Chief Engr. for Irrigation / No. 181 d/26th Feby 1875.

The Governor in Council is pleased to approve of the preparation of materials for a Bridge on the Pudimadaka Road, and for an Aqueduct to pass the drainages from the Ankapilly Cheruvu under the Kistamraz Channel, the expenditure being met from the grant for Minor new Works Agricultural, which will be supplemented early in 1874-75 on a report from the District Engineer of the amount required.

2 The plans of the masonry works and the arrangements of the Channel should,

Under Rule circumstances the Govt. might suggest that the Bridge be built for L.F. if deemed necessary and the Coll. Para might send Mr. Dept. sketches & Estimates as

If the amount of land compensation which will have to be paid. The statements of wet cultivation, though compiled from Revenue sources, have not, it will be noticed, been checked by the Collector of Vizagapatam.

No. 104/74

Govt.

32
4

405-406.

To The Chief Engr. for Irrgn. "
" Dt. Engr. Vizagapatam "
" Controller of Civil Accounts "
" Revenue Despatch "
" Copies despatched 6/6/74.

Cir. 11/4/74

should, together with the regular estimate, be submitted to the Chief Engineer for Irrigation at an early date, and after their approval the construction of the works most urgently required will be authorized.

3 These Proceedings will be communicated to the Revenue Department, in continuation of G.O. No. 2994 of the 12th December 1873, with a request that consideration may be given as to the incidence of the expenditure which may be requisite to render the Nuisances Channel efficient and capable of meeting the requirements of all the cultivation under it; and that as reliable an estimate as possible may be formed of the amount

Drafted - but the G.O. should be issued by the Revenue Department - the proposed appropriation will be an charge against Irrigation Works

I do not think the charge of Rs 1,000 for a road bridge should fall on Irrigation Works. The proposed appropriation will be an charge against Irrigation Works

I do not think the charge of Rs 1,000 for a road bridge should fall on Irrigation Works. The proposed appropriation will be an charge against Irrigation Works

L. F. Ward to buy for the bridge - If he cut a channel across a road, he should construct the bridge to render it necessary -

L.D.S.
21.3.

To The Chief Engineer for Irrigation
" District Engineer Vizagapatam
" Controller of P.W. Accounts

amount of land compensation which will have to be paid. The statements of wet cultivation, though compiled from Revenue sources, have not, it will be noticed, been checked by the Collector of Vizagapatam.

Wy. 27/2/74

next year's Budget
the G.O. ~~cancelling~~ requiring approval of
the ~~contemplated~~ allotment -
that it will be entered
for in the Budget for 1875
Estimate to be made
be in full before the
decided in time for the next
Mar 1875

1289 J

Govt. of 1874 Madras.

PUBLIC WORKS.

☆

Re C. Engr. for Irrigation

Read. Encl. 1 & 2

G. O. 20 May 1874, No. 1339

Nos. 405-406.

[illegible]istamraz Channel

[illegible]ing orders on the
[illegible]e by the Chief Engr.
Irrigation submitting
approximate Estimate
improvements to
the Channel in the
[illegible]agapatam District

1289