Print soon

Public Works (1897) Department.

G.O., No. 768 I

DATED 23rd August 97

24/8/97

[Despatch Abstract.]

Bogamdani tank: Estimate of Rs. 1,75,000 for restoring the —, Godavari Eastern Dn, sanctioned for execution if absolutely required for famine relief purposes.

I.C.
23/8

110/6

P.W. 26.
500—30-11-96.

Indexed 24/8

BACK PAPERS.

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

FURTHER PAPERS.

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

IRRIGATION.
ACCOUNT.

Government {1897} of Madras.

PUBLIC WORKS.

Recd. } 1897. *Enclosures*
Regd. } *Spare copies*

G.O., No. 768 I., 21st August 1897.

AUGUST.

Bogamdani Tank

Estimate of Rs. 1,75,000 for restoring the —, Gódávari Eastern division, sanctioned for execution if absolutely required for famine relief purposes.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

Inspection notes of J. C. LARMINIE, Esq., M.I.C.E., Superintending Engineer, I Circle, for November 1896.

20th and 21st November, Bogamdani tank.—Situated some 7 miles north of Prathipad at mile 35 of the main trunk road from Rajahmundry northwards. It is probably over 100 years since the old native constructed bund breached, owing no doubt to there being no weir or byewash.

2. The bund, a short one (1,800 * feet) was formed across a stream draining some 45 square miles of a steep narrow valley above the village of Gokaram, some two miles north of the more considerable villages of Pedda Shunkerlapudi and Outrakunchi.

3. *Question of Restoration.*—The question of restoring the tank arose from a reference from the Gódávari Deputy Collector's No. 149 of 20th June 1891. An estimate for the requisite surveys being sanctioned in Proceedings of the Board of Revenue, Land Revenue, Agriculture Mis. No. 7384 of 17th December 1891, received from the Chief Engineer for Irrigation with his No. I/7 G.D. of 7th January 1892. And further reference to the scheme will be found (regarding land to be submerged) in Board's Proceedings forwarded with Irrigation Chief Engineer's No. I/61 G.D. of 9th May 1892.

4. *Investigations made.*—The outcome has been a very complete survey with levels of the tank site and a survey with levels of the country to be irrigated from the reservoir including all the villages and tanks in that area.

5. *Probable cost.*—The scheme is included in the Collector's programme of famine works, printed with Board's Proceedings, No. 134 of 16th June 1896, at an estimate of Rs. 30,000 ! But I am quite satisfied that the cost would amount to Rs. 1,72,000, if not two lakhs. Of this amount, the embankment and byewash (the latter chiefly excavation) would absorb about Rs. 1,35,000 and so the project would be well adapted as a famine work.

6. *Area commanded.*—The area commanded includes 2,400 acres belonging to six † villages now cultivated wet and which, in an ordinary season form unusually pretty sketches of cultivation under the various tanks formed between hills, have now quite a desolate appearance being so much withered paddy straw.

7. *Project as a relief work.*—Distress is already being felt. The villagers seemed most anxious that work should be started, and only as a famine or at best, as a protective work can the project be considered.

8. *Additional cultivation.*—In addition to 2,450 acres + 250 acres zemindari, or, in all 2,700 acres now cultivated wet, there are 3,000 acres of dry and waste which could be commanded, but in ordinary years it is improbable that water would be available for more than 1,700 acres.

---

* As now proposed.

† Outrakunchi.
Lampakalava.
Pedda Shunkerlapudi.
Elloree.
Thathavarthi Rayaram.
Jagapatinagaram.

9. *Return to be expected*—

	RS.
1,700 acres at Rs. 4	6,800
Average remissions	490
Total ...	7,290

or, about $3\frac{1}{2}$ per cent. on the capital cost (most probably however the assessment could be revised). But it cannot be doubted that the indirect benefit would be great. Water now frittered away in a number of petty channels and shallow ponds would be stored in a deep reservoir, of very small superficial area, whence the distribution could be exactly regulated.

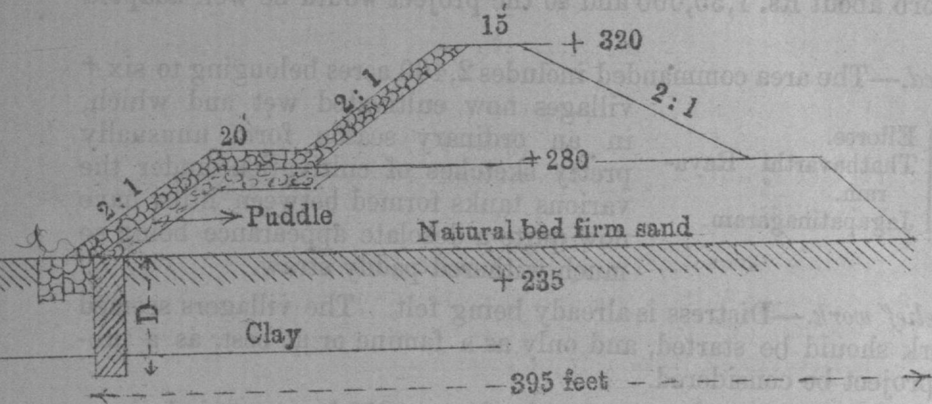
10. At the end of an ordinary season sufficient water would be stored up to tide over a bad year like the present, as is now being exemplified in Ganjám, where the Rushikulya reservoir has saved many thousand more acres of crop than theoretically it was supposed capable of supplying.

11. *Engineering Details.*—The old embankment most probably failed owing to the absence of a weir or byewash. A good site for one is available ; but to utilize it, as well as to secure a fair amount of storage, it will be necessary to hold up water (F.T.L.) to 73 feet above the river bed at site of dam. This is a very considerable depth and will involve special precautions in the construction of the bund at this point. But the length of bund at this depth is very inconsiderable only 60 feet. The stream flows through a narrow deep cut, with nearly vertical sides rising 45 feet on the right and 22 on the left above the bed, so that for the remainder of its length, some 1,740 feet, the embankment will average only 50 to 60 feet in height. The proposed levels are as under :—

Bed of stream lowest point		+ 235·0
* F.T.L.		+ 308·0
M.W.L.		+ 312·0
Top of embankment		+ 320·0
Sluice sill		+ 260·0
Average level of ground above river along which bund would run.	Right	+ 280·0
	Left	+ 257·0

* Old original F.T.L. probably + 280·0

12. Probably at crossing of river, the best plan would be to fill in the bed up to ground level to a width sufficient to allow for forming the upper height of bund, to its full section † + a berm 20 feet wide beyond each slope. This would provide a base 395 feet wide at the crossing of the deep bed. Keeping in view the precedent of the Jeypore waterworks embankment (Vol. 115, Prodgs., Inst. C.E.), I would not carry down the whole of the base of the bund to clay level (through 9 feet of sand), but only a puddle wall in front and rear as sketched. The soil available is firm red earth and for the upper part of the embankment, only the usual precautions need be followed.



---

† Top width 15 feet.
Front slope $2\frac{1}{2}$: 1.
Rear do. 2 : 1.

13. *Capacity of Tank.*—The available capacity (sluice sill level to F.T.L.) will be about 450 M.C.F. Waterspread area at F.T.L. 0·60 of a square mile.

14. *Rainfall.*—The average rainfall at Orathipad on the trunk road, some seven miles away from the hills, is stated to be 32·5 inches. If only 12 * per cent. of this be run off, the catchment area of 45 square miles, the resultant quantity will be 405 M.C.F., a minimum quantity which all ordinary north-east monsoons alone would bring into the reservoir, to be carried over to the next season's crop.

15. *Comparison of catchment basin with that of the adjacent Timmarazu Tank.*—The catchment basin adjoins that of the Timmarazu tank of Lingamparthy, the finest in the district. A portion of the eastern water-shed of the latter being common to both catchments. The area of Timmarazu catchment is a little less—42 square miles—and it irrigates 3,300 acres. Its capacity is probably about the same, as that now proposed for Bogamdani reservoir, but on a much greater waterspread. It may, however, also be noted that Timmarazu tank is now quite empty and the crop under it a complete failure.

16. *Land submerged by the reservoir.*—The land comprised within the reservoir site belongs to the Pittapur Estate; but, from the Proceedings of the Board, Mis. No. 4069 of 4th May 1892, it would appear that there will be no difficulty in acquiring it.

17. *Conclusion.*—I believe that the tank if restored would prove most beneficial to the stretch of country to be commanded by it, as already noted (paragraph 9 *supra*). No great return can now be calculated on, though one influential ryot expresses his willingness to pay an assessment of Rs. 10 per acre were the tank restored and no doubt the value of the land would be increased. As a famine work, it would be most suitable. Work could be started at once. The sluice alone has to be designed and a detailed estimate could very quickly be framed.

No. C./342.

Copy forwarded to the Chief Engineer for Irrigation for favours of early orders.

24th November 1896. (Signed) J. C. LARMINIE,
Suptg. Engineer, I Circle.

To the Superintending Engineer, I Circle, dated 4th Dec. 1896, No. I/127 G.D.

With reference to the Superintending Engineer's inspection note No. C./342 of 24th November 1896 on the proposed Bogamdani tank, it is clear that the project would not be remunerative and could only be recommended as a famine relief work for which it would be very suitable.

2. In estimating the possible revenue it appears correct to take about the same number of acres irrigable per square mile of catchment as is actually cultivated under the Timmarazu tank. The catchment areas appear to have been taken out only on the ordnance map but should be ascertained from a large scale map.

3. As so much has been done the estimate should be prepared in a sufficiently complete manner to allow of its being sanctioned at once on the occurrence of famine.

(Signed) W. HUGHES,
Chief Engineer for Irrigation.

---

* 3·9 inches of rain.

From J. C. LARMINIE, Esq., M.I.C.E., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Camp, Dowlaishweram, 31st July 1897, No. C./365.

With reference to your memo No. I./127 G.D. of 4th December 1896, I have the honour to submit, for sanction as a famine relief work, an estimate amounting to Rs. 1,75,000 for the restoration of the Bogamdani tank.

2. No report accompanies the estimate as my inspection notes No. C./342 of 24th November 1896, give all available information. The estimate has been prepared allowing embankment slopes 2 : 1, top width for the 400 feet across the river, 15 feet, elsewhere, 12 feet. At the crossing of the river the section will be as proposed in my inspection notes, while provision is made to paddle the front slope for a length of 420 feet, 3 feet thick. To facilitate the formation of a puddle wall in front, provision has been made for twelve brick wells in cement 6 feet square, in side, to be sunk to a depth of 15 feet and filled with puddle.

3. A detailed plan and estimate for a 600-foot byewash has been made amounting to Rs. 17,000. Rupees 20,000 have however been entered in the estimate to admit of subsequent modification. The other lump entries will probably be near approximations.

4. The Collector has warned the Executive Engineer to be ready to start the work at a day's notice. But so extensive an undertaking should not, I consider, be started until it is absolutely certain, that relief work on an extended scale for the next twelve or sixteen months will be required in the Peddapur taluk.

5. Further—it will be quite impossible to start such a work without a skilled and reliable staff of one experienced Assistant or Sub-Engineer and one good Overseer with the usual staff of writers and lascars. I cannot provide any of the above by transfers within the Circle.

No. 159 I.

NOTE BY THE CHIEF ENGINEER FOR IRRIGATION.

Bogamdani Tank Estimate.

The Superintending Engineer has submitted the estimate without plans, as the Collector has warned the Executive Engineer to be ready to start the work at a day's notice.

2. The Superintending Engineer's inspection notes give very full details of the project which is well designed as far as it has been worked out in detail, but cannot possibly bring in more than a very small percentage on the outlay. The area which is likely to be irrigated can only be judged from that under the neighbouring Timmarazu tank which has the remarkably large irrigated area of about 80 acres per square mile of catchment or 3,300 acres supplied from 42 square miles. The catchment of the proposed tank is about the same, and it may be expected that the area irrigated will not exceed 3,300 acres. But there are already 2,700 acres irrigated from the stream and its tributaries, so that the new irrigation is not likely to much exceed 600 acres which, at Rs. 4 per acre, will bring in Rs. 2,400. The cost of maintenance will not be more than that of the existing tanks which, if I remember the map correctly, may be abolished and their beds cultivated.

3. As pointed out by the Superintending Engineer, it would be very inadvisable to put this work in hand unless famine relief is likely to be required on a large scale and for a considerable time.

14th August 1897. (Signed) W. HUGHES,
Chief Engineer for Irrigation.

Order—No. 768 I., dated 21st August 1897.

The following estimate is sanctioned for execution if absolutely required for famine relief purposes :—

Irrigation.
33. Famine Relief.
Minor Works and Navigation.
Minor Works for which Capital and Revenue Accounts are kept.
Gódávari Eastern division.
Bogamdani Tank System.
Capital Account.
I. Works.

		RS.	RS.
1. Head works—			
3. Masonry works—	(1) Constructing head sluice.	30,000	
			30,000
2. Main canals and branches—			
1. Preliminary expenses—	(2) Clearing jungle, &c. ...	400	
2. Land—	(3) Land compensation ...	10,000	
3. Masonry works—	(4) Constructing byewash...	20,000	
6. Earthwork—	(5) Constructing bund ...	1,04,600	
			1,35,000
3. Distributaries—	(6) Excavation	10,000	
			10,000
	Total, Estimate ...		1,75,000

2. This sanction is registered as No. 73 I. of 1897-98.

(True Extract.)

Under Secretary to Government,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle, with five enclosures.
" Examiner, Public Works Accounts.

Exd. P. Seetharam.

Famine Relief

~~His Excellency the Governor~~
~~Hon'ble Sir H. Bliss~~
~~Hon'ble Mr J.~~
~~No. 768 I dated~~ 21 August/97

Public Works Department,
Irrigation Branch.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Estimate for restoration of the Bogamdani Tank - Godavari District

Under date the

Irrigation Ack N

10 P

Read the following

From the Supg. Engineer, First Circle, (H.E. No. C/342 dated 24-11-96).
To — do — do — (H.E. No. I/127-G.D. — do — 4-12-96).
From — do — do — (H.E. No. C/365 — do — 31-7-97).

No. 159 I

Print

Note by the Chief Engineer for Irrigation

Bogamdani Tank Estimate.

Issue
W.H.
16-8-97

The Superintending Engineer has submitted the estimate without plans as the Collector has warned the Executive Engineer to be ready to start the work at a day's notice.

2. The Superintending Engineer's inspection notes give very full details of the project which is well designed as far as it has been worked out in detail but cannot possibly bring in more than a very small percentage on the outlay. The area which

is likely to be irrigated can only be judged from that under the neighbouring Timmarazu tank which has the remarkably large irrigated area of about 80 acres per square mile of catchment or 3,300 acres supplied from 42 square miles. The Catchment of the proposed tank is about the same and it may be expected that the area irrigated will not exceed 3,300 acres. But there are already 2,700 acres irrigated from the stream and its tributaries so that the new irrigation is not likely to much exceed 600 acres which at Rs. 4 per acre will bring in Rs. 2,400. The cost of maintenance will not be more than that of the existing tanks which, if I remember the map correctly, may be abolished and their beds cultivated.

3. As pointed out by the Superintending Engineer, it would be very inadvisable to put this work in hand unless famine relief is likely to be required on a large scale and for a considerable time.

A.S.H.
15.8.97

16/8/97

16/8/97

Order thereon.

The following estimate is sanctioned for execution if absolutely required for famine relief purposes:—

Irrigation.
33. Famine Relief.
Minor Works and Navigation.
Minor Works for which Capital and Revenue Accounts are kept.
Godavari Eastern Divn.
Bogaindani Tank System.
Capital Account.
I. Works.

			Rs.	Rs.
1. Head Works.				
	3. Masonry Works.	(1). Constructing head sluice.	30,000.	30,000.
2. Main Canals & branches.				
	1. Preliminary Expenses.	(2). Clearing jungle &c.	400.	
	2. Land.	(3) Land Compensation.	10,000.	
	3. Masonry Works.	(4). Constructing surplus.	20,000.	
	6. Earthwork.	(5). Constructing bund.	1,04,600.	1,35,000.
3. Distributaries.		(6). Excavation.	10,000.	10,000.
			Total Estimate	1,75,000.

2 This sanction is registered
as No. 73 I. of 1897-98.

13/8/97.

WH
14.8.97
I

To The Chief Engineer for Irrigation
" Superg. Engineer, First Circle.
" Examiner, P.W. Accounts.

Dr 23/8/97 with 5 Enclos

13/8/97

E. I. Form No. 1—500—3-12-96.

Public Works (1897) Department.

CURRENT No. 8269

Order Print soon

M/8 to SE I

From The Chief Engr for Irrigation

No. 159 I

Dated 14-8-97

Received 19-8-97

Enclosures ~~3~~ 8

Spare copies

Regd.
23/8/97

23/8

SUBJECT.

Bogamdani Tank - Estimates for the Restoration of the — note submitting for sanction the — as a famine relief work.

BACK PAPERS.

No.	Date.

FURTHER PAPERS. 1

No.	Date.

Public Works (1897) Department.

CURRENT No. 169 Gd 8

Wefirst famine

Order

From J Charmine Esq M.I.C.E. Supdg Engr P. Circle

No. C/365.

Dated 31-7-1897

Received 7-8-97

Enclosures 3.

Spare copies

SUBJECT.

Submits Estimates for the restoration of the Bogum-dani Tank for Sanction as a famine Relief work & requests also the necessary Staff —.

To D.E.
Paper
JHB 7/8/97

[illegible] 9/8/1897

9/8/97

Indx 7/8

Recd 9/8/97

Duplicates [illegible] Stable

13/8/97

BACK PAPERS.

G.O.	No.	Department.	Date.
I	127 G.D.	D/	4.12.96
R	235 G.D.	D/	24-11-96

FURTHER PAPERS.

G.O.	No.	Department.	Date.

No: $\frac{C}{365}$

Office of the Supt'g Engr 1st Circle
Camp Dmlaishwaram

Dated 31. } July 1897.
Despd 31. }

9

From

J.C. Laruinie Esquire M.I.C.E.
Superintending Engineer
First Circle

Enc: 3 {2 Ests / 1 Data Sheet.

To

The Chief Engineer
For Irrigation.

Sir,

With reference to your memo No: $\frac{I}{127}$ G.D. of 4. 12. 1896, I have the honour to submit for sanction as a Famine Relief Work an Estimate amounting to Rs 175,000 for the restoration of the Bogamdani Tank.

2 No report accompanies the Estimate as my Inspection Notes No: $\frac{C}{342}$ of 24th November 1896 give all available information. The Estimate has been prepared allowing Embankment Slopes 2:1, top width for the 400 feet across the river, 15 feet, elsewhere, 12 feet. At the Crossing

of the river the section will be as proposed in my Inspection Notes, while provision is made to puddle the front slope for a length of 420 feet, 3' thick. To facilitate the formation of a puddle wall in front, provision has been made for twelve brick wells in cement 6 feet square, inside, to be sunk to a depth of 15 feet and filled with puddle.

3 A detailed Plan and Estimate for a 600 foot byewash has been made amounting to Rs 17,000. Rs 20,000 have however been entered in the Estimate to admit of subsequent modification. The other lump entries will probably be near approximations.

4 The Collector has warned the Executive Engineer to be ready to start the work at a day's notice. But so extensive an undertaking should not, I consider, be started until it is absolutely certain that relief work on an extended scale for the next twelve or sixteen months will be required in the Peddapur Taluq.

5 Further – it will be quite impossible

impossible to start such a work without a skilled and reliable Staff of one experienced Assistant or Sub Engineer and one good Overseer with the usual Staff of writers and lascars. I cannot provide any of the above by transfers within the Circle.

I have the honour to be,
Sir,
Your Most obedt Servant

Superintending Engineer 1st Circle
31/7

CHIEF ENGINEER FOR IRRIGATION.
7 JAN 1897
No. 169 G.D.

O.W.S. 1
8269/97

H.D.
Please send the fair memo after numbering –

Retd.
W.H.S.
4/12

Clerk
Rely on the plan &c.

Enclosures. 11 ×

1. Preliminary Report on Bogadani Tank
1 – Sheet of section showing borings taken at site of bund.
1 – do – do – at weir site
1 – do of section of bund
2 Sheets of Cross sections of the proposed bund between Kunda & Chakarevoo Hills
1 Sheet of Longl & Cross section of – do – do –
1 – Sheet of Ordnance Atlas map
1 – Sheet of Survey showing the Existing + proposed line of bund.
1 – Sheet of plan showing lands to be irrigated by Bogadani Reservoir –
1 – Statement showing the details of cultivation in the Villages whose tanks are fed by Gokarum stream.

× Retd to S.E. I from Bezwada –

Despd 8.12.96

Camp Bezwada

20 1/127 G.D.

S.E. I.

With reference to the Supdt. Engr's Inspection notes c 34/20 d 24.11.96 on the proposed Bogadani Tank it is clear that the project would not be recommended and could only be recommended ~~for~~ as a famine relief work for which it would be very suitable –

2. In estimating the possible revenue it appears correct to take about the same number of acres irrigable per square mile of Catchment a~~s the area~~ ~~the~~ is actually cultivated under the [illegible] Tank. The catchment areas appear to have been taken out only on the ordnance map but should be ascertained from a large scale map.

3. As so much has been done the estimates should be prepared in a sufficiently complete manner to allow of its being sanctioned at once on the occurrence of famine.

W.H.S.
4/12/96

RECEIVED IN THE SURVEY OFFICE
ON
7-SEP. 97
MADRAS

Inspection Notes of J.C. Larminie Esquire, M.I.C.E. Superintending Engineer, 1st Circle for Novr. 1896

20th & 21st Novr.

Bogamdani Tank.

Situated some 7 miles north of Prathipad at mile 35 of the Main Trunk Road from Rajahmundry northwards. It is probably over 100 years since the old Native Constructed bund breached, owing no doubt to there being no weir or Byewash.

× as now proposed

2. The bund, a short one (1800× feet) was formed across a stream draining some 45 Square miles of a steep narrow valley above the Village of Gokaram, some two miles north of the more Considerable villages of Peddha Shunkerlapudi and Outrakunchi.

Question of Restoration

3 The question of restoring the Tank arose

from a reference from the Godavari Deputy Collector's No: 149 of 20. 6. 1891. An Estimate for the requisite surveys being sanctioned in Proceedings of the Board of Revenue, Land Revenue, Agriculture No: 7384 Mis of 17. 12. 1891 received from the Chief Engineer for Irrigation with his No: $\frac{I}{7GD}$ of 7. 1. 1892. And further reference to the Scheme will be found (regarding land to be submerged) in Board's Proceedings forwarded with Irrigation Chief Engineer's No: $\frac{I}{61GD}$ of 9. 5. 1892.

Put up vide 1638 Rn/91.

put up

put up

Investigations made.

4. The outcome has been a very complete survey with levels of the Tank site and a survey with levels of the country to be irrigated from the Reservoir including all the villages and tanks in that area

put up

Probable Cost

5. The scheme is included in the Collector's Programme of famine works, printed with Board's Proceedings No: 134 of 16. 6. 1896 at an Estimate of Rs 30,000!. But I am quite satisfied that the Cost would amount to Rs 172,000 if not two lakhs. Of this amount, the embankment and Byewash (the latter chiefly excavation) would absorb about Rs 135,000 and so the Project would be well adapted as a famine work.

Area Commanded.

6 The area commanded includes 2400 acres belonging to six* villages now cultivated wet and which, in an ordinary season form unusually pretty sketches of cultivation under the various tanks formed between hills, have now quite a desolate appearance being so much withered

* Outpakanchi
Lampakalova
1 Peddha Shumbarlapudi
Elloree
Thathavarthi Rayaram
Jagapatinagaram.

withered paddy straw.

Project as a Relief Work.

7. Distress is already being felt. The villagers seemed most anxious that work should be started, and only as a famine or at least, as a Protective work can the Project be considered.

Additional Cultivation.

8. In addition to 2450 acres + 250 acres Zemindari, or, in all 2700 acres now cultivated wet, there are 3000 acres of dry and waste which could be commanded, but in ordinary years it is improbable that water would be available for more than 1700 acres.

Return to be expected.

9. 1700 acres @ Rs 4 = Rs 6800
Average Remissions = 490
Total 7290

or, about 3½% on the Capital Cost (most probably however the assessment could be revised). But it cannot be doubted that the indirect benefit would be great. Water now frittered away in a number of petty channels and shallow ponds would be stored in a deep reservoir, of very small superficial area, whence the distribution could be exactly regulated.

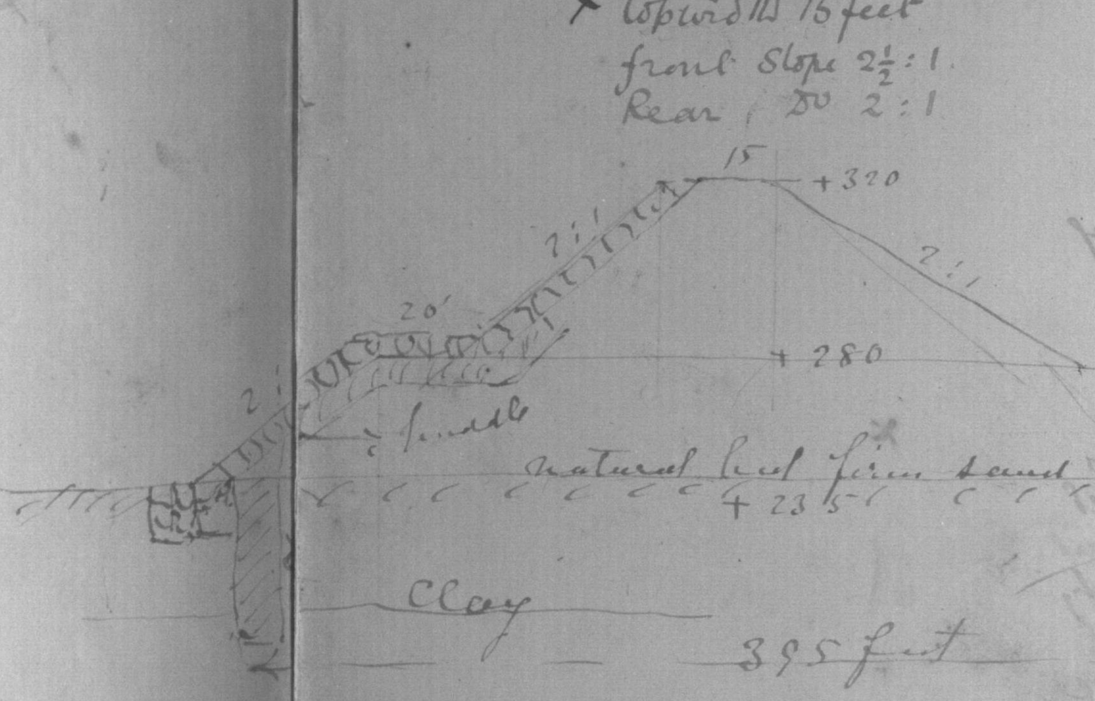
10. At the end of an ordinary season sufficient water would be stored up to tide over a bad year like the present, as is now being exemplified in Ganjam, where the Rushikulya Reservoir has saved many thousand more acres of crop than theoretically it was supposed capable of supplying.

Engineering Details.

11. The old embankment most probably failed owing to the absence of a

weir or Byewash. A good site for one is available, but to utilize it, as well as to secure a fair amount of Storage, it will be necessary to hold up water (F.T.L.) to 73 feet above the river bed at site of Dam. This is a very considerable depth and will involve special precautions in the Construction of the bund at this point. But the length of bund at this depth is very inconsiderable only 60 feet. The stream flows through a narrow deep cut, with nearly vertical sides rising 45 feet on the Right and 22 on the Left above the bed, so that for the remainder of its length, some 1740 feet, the embankment will average only 50 to 60 feet in height

The



× topwidth 15 feet
front Slope 2½:1
Rear Do 2:1

The proposed levels are as under:—

Bed of Stream lowest point +235.0
*: F.T.L ------ +308.0
M.W.L. ------ +312.0
Top of Embankment. +320.0
Sluice Sill -------- +260.0
Average level of ground above River along which bund would run } Right +280.0 Left +257.0

*: old original F.T.L probably +280.0

12) Probably at Crossing of River, the best place would be to fill in the bed up to ground level to a width sufficient to allow for forming the upper height of bund, to its full section × a berm 20 feet wide beyond each slope. This would provide a base 395 feet wide at the Crossing of the deep bed. Keeping in view the precedent of the Jeypore Waterworks embankment (Vol 115 Prodgs Inst C. E.), I would not carry down the

whole of the base of the bund to clay level (thro' 9 feet of sand), but only a puddle wall in front and rear as sketched. The soil available is firm red earth and for the upper part of the embankment, only the usual precautions need be followed.

Capacity of Tank.

13. The available capacity (sluice sill level to F.T.L.) will be about 450 M.C.F. Waterspread area at F.T.L. 0.60 of a square mile

Rainfall.

14. The average rainfall at Orattipad on the Trunk Road, some seven miles away from the hills is stated to be 32.5 inches. If only 12%× of this be run off, the catchment area of 45 sq miles, the resultant quantity will be 405 M.C.F, a minimum quantity which all ordinary North East monsoons alone would bring into the reservoir, to be carried over to the next season's crop.

× 3.9 inches of rain.

32.5 is supposed to be the average for the year. How is it distributed.

Comparison of Catchment basin with that of the adjacent Timmarazu Tank.

15. The catchment basin adjoins that of the Timmarazu Tank of Lingampally, the finest in the District. A portion of the Eastern watershed of the latter being common to both catchments. The area of Timmarazu Catchment is a little less – 42 square miles – and it irrigates 3300 acres. Its capacity is probably about the same, as that now proposed for Bogandani Reservoir but on a much greater waterspread. It may however also be noted that Timmarazu Tank is now quite empty and the crop under it a complete failure.

42) 3300 (80 nearly

Land Submerged by the Reservoir.

16 The land comprised within the Reservoir site

belongs to the Pittapur Estate, but, from the Proceedings of the Board No: 4069 Mis of $4\frac{5}{92}$, it would appear that there will be no difficulty in acquiring it.

Purpt. ref. vide K 2746/92

Conclusion.

17. I believe that the tank if restored would prove most beneficial to the stretch of Country to be Commanded by it, as already noted (para 9 Supra). No great return can now be calculated on, though one influential ryot expresses his willingness to pay an assessment of Rs 10 per acre were the tank restored and no doubt the value of the land would be increased. As a famine work, it would be most suitable. Work could be started at once. The sluice alone has to be designed and a detailed Estimate could very quickly be framed.

(Sd) J. C. Larminie
Supdg Engineer
1st Circle

No. $\frac{C}{342}$ Dated 24 $\frac{11}{96}$
Despd 27. 11. 96

Copy forwarded to the Chief Engineer for Irrigation for favors of early orders.

J. C. Larminie
Supdg Engineer
1st Circle
27/11/96