M.R.O. 1—77,006—8-6-37.

(1) Number of pages_____

(2) Date of repair_____

(3) Initials of the Reference_____

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 785 Press
382—385
386.
Dated 12 3 1870. Mis.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 14th March 1870.

Read the following papers:—

No. 284. From Captain R. F. OAKES, R. E., Superintending Engineer, 6th Division, to the Secretary to Government, Public Works Department, dated Camp at Combaconum, 12th February 1870, No. 1,302.

I HAVE the honour to inform you that I have lately inspected the Vichalore sluice in the Anunda Cauvery, regarding the injury to which I reported in letter No. 1,055, dated 11th December 1869. I regret that the bank which was restored after the heavy rain of November was again breached in December, and the work has been so much injured that it cannot be restored.

One plan.
,, specification.
,, estimate, Rupees 6,850.
In G. O., No. 197, dated 18th January.

2. The old work consisted of two vents with a sectional area of 44 feet, and discharged about 440 cubic feet per 1 inch when the Anunda Cauvery was flooded by the drainage of land to its south.

3. The floor of the sluice was on a level with the bed of the Anunda Cauvery, and the drop in rear into the channel which leads into the Vennaur River is now 5 feet, and the channel itself must have been scoured out to that depth when the breach occurred; it is now $3\frac{3}{4}$ feet below its proper level.

4. The Anunda Cauvery here runs almost parallel to the Vennaur and about 180 yards from it. The Anunda Cauvery north bank is common to the two streams, or the Vennaur may be said to have no bank here. On the south the Anunda Cauvery has no bank; it receives the drainage of a large area of country, and after heavy rain the water stands over the country as in a tank till the drainage works in the channel and the channel itself are capable of carrying off the water, and hence, though the drainage works *per se* are incapable of discharging the floods due to rainfall in the drainage basin, they have proved sufficient, with the aid of the basin formed by the Anunda Cauvery bund, to dispose of the drainage in ordinary years.

5. This year the rain has been very heavy and the water has overtopped the bank, and several breaches have occurred; and, as the Vichalore sluice is a complete wreck and a new work must be provided, I propose to build a dam with 4 vents in it, very similar to the dam* built in 1860 about $1\frac{1}{2}$ miles further to the westward. Two jungle streams fall into the Anunda Cauvery close to the Vichalore sluice, and they drain an area of about 45 square miles. There is nothing in this area particularly to attract rain, while the greater portion of it is very sandy and must absorb a large quantity of water. I think it will, therefore, be sufficient to provide here for the discharge of 2 cubic yards per second per square mile drained, which is nearly equivalent to a fall of 2 inches of rain over the whole area in 24 hours, the maximum fall gauged in the neighbourhood during the north-east monsoon, which was an exceptionally heavy one, having been 2·1 inches in 24 hours. A dam 120 feet long with 4 vents $4\frac{1}{2}$ by 6 feet and with 3 feet of water passing over the dam will discharge 2,430 cubic feet per 1 inch, and for such a dam the estimate provides. Owing to the difference of level of 5 feet between the beds of the channels above and below the dam, the dam must be 9 feet high, and hence the work is costly.

* Chenavari, 106 feet long, 3 vents of $4\frac{1}{2}$ feet.

2,430 cubic feet per 1 inch.

6. There are some small tanks in the valley drained by the two surplus streams which enter the Anunda Cauvery near the site of the old Vichalore sluice; and, as the more important are in the Puducotta Territory, and to the breaching of some of these the extraordinary height to which the water rose in the Anunda Cauvery is attributable, it would be well in constructing a new work to provide liberally for the discharge of flood-waters, and the difference between the discharging powers of the old and new works, viz., nearly 2,000 cubic feet per 1 inch will, I think, be sufficient.

7. 523 vayles of land, on 169 of which a second crop is raised and yielding a revenue of about Rupees 24,000, depend upon the Anunda Cauvery.

8. If the dam is not built this year there will be the risk of the loss of this large revenue, for it is not likely that any new bank which could be formed on the site of the old sluice would stand; and, even if it did so, were no provision made for the discharge of the surplus waters brought down by the jungle streams, the water would probably rise so as to overtop the Anunda Cauvery bank elsewhere. The site of the work is far away from all villages and is difficult of access, and it was with great difficulty that the Chenavari dam was completed in one season in 1860. Under these circumstances I beg that I may be authorized by return of post to commence the preparation of materials, payments for which may be made in 1870-71.

No. 36.

No. 285. *Note by the Acting Chief Engineer for Irrigation.*

THE construction of the dam proposed by the Superintending Engineer, 6th Division, appears to be necessary, and its capacity is, I think, likely to prove sufficient.

2. The stability of the apron with an overfall from the crest of 9 feet would be doubtful in the event of land floods occurring when the water in the Vennaur happened to be low. It will be advisable, therefore, to build a wall three feet high along the centre line of the apron, and this with its foundations will cost about 550 rupees, and the estimate will become 7,400 rupees.

3. Under the circumstances represented by Captain Oakes I beg to recommend that sanction for the immediate preparation of materials be given, and that provision may be made for the construction of the dam out of the Reserve under Agricultural for 1870-71.

4. The batter of the wing-walls should be placed on the outside.

FORT SAINT GEORGE,
17th February 1870. (Signed) J. MULLINS, Major, R. E.,
Acting Chief Engineer for Irrigation.

No. 286. ORDER THEREON, 14th March 1870, No. 785.

IRRIGATION, No. 20.

THE Government sanction the estimate which, as revised by the Acting Chief Engineer for Irrigation, amounts to Rupees 7,400, for constructing a dam or surplus weir in the bank of the Anunda Cauvery.

Proceedings of the Madras Government, Public Works Department,
14th March 1870.

2. Provision will be made for the construction of the work out of the Reserve under Agricultural for 1870-71, and the Superintending Engineer is authorized to commence the preparation of materials immediately.

(True Extract.)

(Signed) J. MULLINS, Major, R. E.,
Acting Joint-Secretary to Government.

Square Chain | Pauger Lichfield | Sheet No. 1

Pauger Perkins

Plange Self

Section 1 Schedule of Piles & Timber

Pile No. 1 — Centre Piles being Sawn Square Hewn Piles of Red Pine Timber Pile Driving Shod with Iron Shoes —

Number of Piles	Particulars of Plange	Nos.	Feet	Inches	£ s. d.
25,200 lin	Cubic Feet Hewn Timber at				£ 31 39 7 6
43	Square of Planking at		8	0	Square 16 8 0
43	Cubic Feet Framed Stowed at		14	0	31 5 12 0
2772	Cubic Feet Labour Stowed Chamfered		0	0	11 3 9 8 0
27½	Square of Painting at		12	0	Square 24 12 6
11 2/6	Cubic Feet Excavating Foundation Trenches		26	0	17 7 8 0
	Balling		0	0	0	300 0 0
40 ½	Cubic Feet Teak wood at		4	0	0	162 0 0
	Measuring Old Stone, and raising do Pressure a Rough Cube a Square Contents of Sound Stone a Cube		78	0	0	Cubic 25 0 0

Carried to Section 2 Schedule £ 550 0 0

Surveyors Office 6th Dec. Examined Correct 12th February 1870 14th Approved

Dated at Rangoon this 6th Day of Dec. 1869

Surveyors 6th Division

Specification to accompany the following Estimate

1 Estimate of Rs 6,850 Six thousand eight hundred & fifty for constructing a Surplus Dam in the bank of the Chunnda Canary in the Pachalore limits to raise the Standing of about 48 square miles.

2. The Dam is to be built of Brick chunam 120 ft long 6 ft broad and raised 6 ft above the foundations which are to be sunk 7½

3. The Apron is to be 9 ft below the crown of the Dam, its breadth to be 21 ft and its thickness 2½ ft and to consist of 1 foot of Catrick over 1½ ft of brick in chunam, and supported on rear by a retaining wall of 5 ft or 7½ ft below the level of the Apron.

4. There are to be 4 Sluices in the body of the Dam each vent 4½ ft broad by 6 ft high. The sides of the sluices and the flooring and covering to be of cut stone 9" thick.

5. The front wings to be 15 ft long 2 ft broad at top and 3¾ ft at the basement level with a batter of 2" to 1' on the inner side, the outside face being vertical. The wings to be 10½ feet high with foundations 7½ ft deep and 4¾ ft broad

broad at basement level and 6 ft
at bottom with a batter on the outer side
of 2" to 1'. The curved portion of the wings
in front to be 6 ft in radius to outer face
and the side wings to be 8½ feet in length
projecting 1½ ft in rear of the Dam, and
the thickness above and below foundations
to be the same as those of the front wings.
The curved portion of the wings on rear to be
18 ft long with a radius of 24 ft to outer
face, the thickness at top 2 ft with a
batter of 2" to 1' a on the front wings; the
foundation being carried down wards for each
6" high to meet the foundations of the
rear returns which are to be 15 ft long
2 ft thick at top with a batter of 2" to 1'
on the inner side and an offset of 4½"
on the outer side 3 ft above the floor level:
the foundations to be 5⅛' thick at top
and 6⅜' at bottom with a batter 2" to 1'
on the outer side.

The parapets to be 1½ ft thick and
1½ ft high above the wings in front and rear

There are to be 6 steps 1¼' long 1'
broad and 9" high on each side of
the side wings to admit of access to
the

the Dam.

The Dam and wings to be plastered
and the flooring to be pointed.

Sluice Gates 9' x 2' 7 ¼, with Iron
clamps, to be provided for the sluices.

12th February 1870.

L. D'Aguilar Jackson M.C.
Sub Engineer 6 Division

Supt. Engineers Office 6th Div.

Camp Combaconum 12th February 1870

No. 1302

Dupatcher to Do

From

Captain A. F. Pocher R.E.

Supt. Engineer 6th Division

To

Lieut. Col. A. Cotton R.E.

Secretary to Government P.W.D.

Sir

I have the honor to inform you that I have lately inspected the Vennaur Anicut in the Cauvery Delta regarding the injury which I reported in letter No. 1355 dated 11th December 1869.

I regret that the work which was restored after the heavy rains of November last began breached in December and the work has been connected injured that it cannot be restored.

2. The old work consists of 2 bunds with a section at each of 44 and 48 feet long which 440 cubic feet per foot run the Vennaur Cauvery was flooded by the opening of land to the south.

3. The floor of the Anicut was on a level with the bed of the Vennaur Cauvery and the

the

Encl. Cancel No. 2 sir A. Cotton from the Supt. Engineer 6 Div. C.P.D. No. 1302 dated 12th February 1870.

Recd. 17th Feby. 1870.

Statement showing the number of days employed and the number of coolies employed on the Vennaur Anicut during the month of January 1870.

Date	Number of coolies employed
1st	5
2nd	5
3rd	5
4th	5
5th	5
6th	5
7th	5
8th	5
9th	5
10th	5
11th	5
12th	5
13th	5
14th	5
15th	5
16th	5
17th	5
18th	5
19th	5
20th	5
21st	5
22nd	5
23rd	5
24th	5
25th	5
26th	5
27th	5
28th	5
29th	5
30th	5
31st	5

Certified that the above is a correct statement of the number of coolies employed on the Vennaur Anicut during the month of January 1870.

Executive Engineer

the drop in rear into the channel which
leads into the Vennaar Vlei is now 5'
and the channel itself must have been deepened
as to that depth when the Breach occurred
it is now 3 2/3' below the proper level.

4. ——— The Alemanda Canery has raised
almost parallel to the Vennaar and about
180 yards from it. The Alemanda Canery
North bank is common to the 2 Streams, so
the Vennaar may be said to have no bank
here. On the South the Alemanda Canery has
a bank: it receives the drainage of a
large area of country by a few heavy rains
the water stands over the country in a
tank, till the drainage works in the channel
and the channel itself are capable of
carrying off the water and hence, though the
drainage works per se are incapable
of discharging the floods due to rain fall
on the drainage basin, they have proved
sufficient with the aid of the basin formed
by the Alemanda Canery bund to dispose
of the drainage in ordinary years.

5. ——— This year the rain has been very
heavy and the water has overtopped the
bank and several breaches have
occurred

occurred and so the Vlei Valley Sluice
is a complete wreck and a new work
must be provided. I propose to build a
Dam with 4 vents in it, very similar to
the Dam built in 1860 about 1½ miles
Jeanette to the westward; 2 Jungle Streams
fall into the Alemanda Canery close to the
Vlei Valley Sluice and they drain an area
of about 45 Square Miles; there is nothing
in this Area particularly to attract rain
while the greater portion of it is very sandy
and must absorb a large quantity of water
I think it will therefore be sufficient to
provide here for the discharge of 2 Cubic feet
per second per square mile drained which
is nearly equivalent to a fall of 2" of rain
over the whole area in 24 hours, the maximum
fall gauged in the neighbourhood during the
N. E. Monsoon, which was an exceptionally
heavy one, having been 2.1 inches in 24 hours
a Dam 120' long with 4 vents 4½ by 6 and with
3' of water passing over the Dam will discharge
2430 Cft per 1" and for such a Dam the
estimate provides: owing to the difference
of level of 5' between the beds of the channel
above and below the Dam, the Dam must
be 9' high and hence the work is costly.

6.

6. — There are some small tanks in the nearby drowned by the 2 surplus Streams which enter the Alameda Canary near the site of the old Vehalore Sluice and as the more important are in the Pozzolla Territory and the breaching of some of these the extraordinary height to which the water rose in the Alameda Canary is attributable. It would be well in constructing a new work to provide liberally for the discharge of flood waters and the difference between the discharging powers of the old and new works will nearly 2000 cft per Mill which be sufficient.

7. ——— 523 Bayliss of Land on 109 of which the second crop is raised depending a Revenue of about Rupees 24,000 — depend upon the Alameda Canary.

8. ——— If the Dam is not built this year there will be the risk of the loss of this large Revenue for it is not likely that any new bank which could be formed on the site of the old Sluice would stand, and even if it did so, were no provision made for the discharge of the surplus waters brought down by the jungle streams, the water would probably rise so as to overlop

overlop the Alameda Canary bank elsewhere. The site of the work is far away from all villages and is difficult of access. It was with great difficulty that the Edmonari Dam was completed in one season in 1860. Under these circumstances I beg that I may be authorized by return of post to commence the preparation of materials, payments for which may be made in 1870-71.

I have the honor to be
Sir
Your most obedt Servt

[signature]
Capt RE
Supg Engineer 6 Division

No 36.

Note by Tht Acting Chief Engineer for Irrigation

She enclosed Plan of the dam proposed by the plaintiff pending Enquiry to Previous Appeal to be made by any, and the capacity is of Kinds, likely to Irrigation purposes.

2. She stability of the dam into an overfall from the crest of 9 feet would be doubtful, in the event of land flood running when the water in the reservoir Lakened to Ordinary level of the Thereto to build a wall 3 feet high along the centre line of the dam, and this with by foundation, will cost about 550 Rupees and the estimate will become 7,400 Rupees.

3. Under the circumstances referred to by Colonel Oakes I beg to recommend that sanction for the immediate preparation of materials given, and that provision may be made for the estimated of the Sum out of the current Agricultural for 1870-71.

4. She letter of the ninth should be addressed on the matter.

John Lumsden
Acting Chief Engineer
for Irrigation.

Copy to Govt
14th February 1870

Acting Chief Engineer for Irrigation.

Do Secretary to Government of Punjab

The Supt Engineer
6th Division

Do The Secretary to Govt
of Punjab

Dated 17th Jan
Desp 14 } February 1870.
Rec'd 17 th
No 1302

Enclosures.
1870/302/70

Submits Plan, Specification & estimate for constructing a surplus dam in the bank of Canal da Canary in the Kalabagh Circle and requests that he may be authorized to commence preparation of materials.

Supt Engr Multan 1/70

Secretary to Govt of Punjab

1870/302/70

Dated 19th Jan
Desp 14 } February 1870.
Rec'd 17 th
No 1302

Enclosures.
1870/302/70

Submits Plan, Specification & estimate for constructing a surplus dam in the bank of Canal da Canary in the Kalabagh Circle and requests that he may be authorized to commence preparation of materials.

Supt Engr Multan 1/70

Secretary to Govt of Punjab

1870/302/70

The Supt Engineer
6th Division

To The Secretary to Govt
of Punjab

Dated 19th Jan
Desp 14 } February 1870.
Rec'd 17 th
No 1302

Enclosures.
1870/302/70

Submits Plan, Specification & estimate for constructing a surplus dam in the bank of Canal da Canary in the Kalabagh Circle and requests that he may be authorized to commence preparation of materials.

Supt Engr Multan 1/70

Secretary to Govt of Punjab

1870/302/70

1870/302/70

1870/302/70

O. M. Nelankuma.

No 785

Proceedings of the Madras Government

Dated Madras the 14th March 1870

Subject: Engineer's Diary

Read the following letter from the Chief Engineer for Irrigation, dated the 17th February 1870 No. 36 forwarding his Diary for the week ending the 5th instant.

Ordered,

That the Diary be returned to the Chief Engineer for Irrigation, with the remark that the Government approve of the estimate which he has framed for the Chief Engineer for Irrigation, amounting to Rs. 7,400, for the Arubanda Channel.

2. Provision will be made for the Construction of the work out of the revenue surplus of the Agricultural Fund for 1870-71.

Ordered also, that the Chief Engineer in charge of the Irrigation Department be informed that the Government approve of the Chief Engineer's proposal to commence the Irrigation Channels from the Cauvery.

To the Chief Engineer, P.W.D.
" Controller, Pr. Accts.
" Chief Engr. for Irrigation.
" Revenue Depts.

Mad. 22/3/70

To the Chief Engineer for Irrigation.

Sir,

I have the honor to forward herewith a letter from the Collector of Trichinopoly, No. 302 of the 7th instant, with a Plan and Estimate for the Arubanda Channel, and to request that you will be pleased to lay the same before the Chief Engineer for Irrigation, for submission to Government.

I have the honor to be,
Sir,
Your most obedient Servant,
Chief Engineer.

Trichinopoly
7th February 1870.

To
The Secretary to Govt.
P.W.D.

Dated 17th February 1870.
Recd 19th February 1870.
No. 36.
Encls 4 & 1 Plan

Note on the dam proposed to be constructed on the banks of the Arubanda Channel in the Vickalore limits recommending that sanction for the immediate preparation of materials be given.

No 785 - 14th March 1870

No 288

23rd July 1870. R. S. Thurle

23rd July 1870 R. S. Thurle

(8)

C. 23 Feby 1870 R. S. Marsh

Cwx 657 & 708

Estt. of 1870 71 & 72.

PUBLIC WORKS.

To The Superintending Engr.
6th Division

Dated

Recd. No. 4

G. O., 14th March 1870, No. 385

Nos. 282 @ 286

Plan Estimate of Rs 7400 for a drain or pucka weir in the bunding the Ananda Canal in the Tanjore Dt., Sanctioned vide Remarks.