M.R.O. 1—10,006—28-2-50.

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No. 1368	Press
B.P. No.	Mis.
	6874
Dated 20—5—	—195—

Not to be folded or roughly handled

Read the following papers:—

No. 423. From Major J. O. HASTED, R.E., District Engineer, Kistna District, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Camp at Bantumally, 24th March 1874, No. 136.

I HAVE the honour to forward herewith plan and estimate, amounting to Rupees 1,250, for raising the bridge in course of construction across the Polaraz Codu at Mudenapally, prepared in accordance with your instructions given personally.

1 Plan. 1 Estimate. 1 Copy of Range Officer's letter. } Return requested.

2. The delay in submitting the estimate will be explained by the Range Officer's letter (copy of which is enclosed); it was evident that the usual rates would not suffice in consequence of the great difficulty in getting materials to the spot after the water was reduced, and the estimate has been prepared from actual rates ascertained in carrying out the work. The arch has been turned and the parapet walls will shortly be completed.

3. I have the honour to request that the amount already expended (Rupees 547-3-6) may be placed at my disposal as early as possible. The balance of the estimate can be provided next year, as you may decide.

4. The tow-path provided is similar to that already constructed at Perikeed bridge on the Ellore canal, except that teak-wood posts are provided instead of palmyrahs, and that the irons have to be run into the masonry with lead instead of being built in; the headway above the path is very insufficient, but it can hardly be increased without submerging the timber beams.

From Lieutenant D. McN. CAMPBELL, R.E., Officer in charge of 7th or Masulipatam Range, to Major J. O. HASTED, R.E., District Engineer, Kistna, dated Masulipatam, 3rd March 1874, No. 486.

I HAVE the honour to forward a plan and estimate for improvements and alterations to Mudenapally bridge, prepared according to the verbal instructions given by the Chief Engineer. It allows for raising the abutments, wing-walls, etc., 2 feet 6 inches, and providing a towing-path; the latter is precisely similar to that of the Perikeed bridge. The high rate for stone-in-chunam is necessary, because the directions of the Chief Engineer being received late, when there was very little water in Pullair, the punts carrying stone and chunam were greatly delayed, and sometimes took as much as one month to make one trip; and, latterly, all the materials had to be unloaded in Bandar canal above Pamarru lock and loaded again on punts kept in Pullair below the lock. I request that early sanction may be given for this work, and an allotment given to cover the cost of raising which has already been done. The towing-path cannot be made till next year.

No. 267-B.

Note by the Chief Engineer for Irrigation.

No. 424.

WHEN inspecting the Polaraz Codu in the Eastern Delta of the Kistna in December last, the bridge under construction at $6\frac{3}{4}$ miles from the head was found to be very unsuitable in its design, and as the abutments and wings being then about 6 feet high it was too late to revise the design entirely, it had to be seen what could be done to prevent its being a serious obstruction.

2. The canal is navigated now, and will be a second-class line of navigation; the bridge was commenced some four years ago on a Local Fund sanction, and the height of the abutments was designed to be $6\frac{1}{2}$ feet which, with a depth of 5 feet in the canal, left no headway for a tow-path, and much too little headway for boats; and the only alteration which appeared feasible was an

addition of 2½ feet to the height of the abutments, and the use of such a form of towing-path as could, in the advanced state of the bridge, be added. The span of the bridge, 30 feet, is too small, the mean width of the canal being 37½ feet, so that 40 feet would have been none too much, which would have allowed a proper tow-path; the wings are much too short, and the depth of the foundations, 2½ feet, struck me as small. The date of the Circular* regulating the principal dimensions of bridges over navigable canals is May 1869, and I believe the date of the design of this bridge is earlier than that; but immediately on the receipt of that circular a revision should have been made.

* No. 14.

3. I beg to recommend that the estimate, amounting to Rupees 1,250, now submitted by the District Engineer, for alterations and improvements, be sanctioned as a Minor New Work, as the alterations and improvements being required only in the interests of the canal. The amount of the estimate is large, but it has been explained why it is so, and it was desirable not to lose another season by waiting until materials could be boated down conveniently.

4. The expenditure will be chargeable to Revenue, and will appertain to the Polaraz Codu canal of the Eastern Delta, Kistna.

CAMP AT COIMBATORE, *4th April* 1874.

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

No. 425. ORDER THEREON, 20th May 1874, No. 1,348.

IRRIGATION, No. 34.

LOOKING to the insufficient headway of 4½ feet in the centre of the tow-path gained by the arrangements authorized by the Chief Engineer for Irrigation, and to the depth of abutment foundations which struck him as small, His Excellency the Governor in Council is of opinion that it would have been better to substitute a wooden truss or iron girder bridge for an arch.

2. The neglect of the late Superintending Engineer, 2nd Division, to revise the sanctioned plan of bridge in conformity with the Government Order of 21st May 1869, is greatly to his discredit. The attention of the Revenue and Financial Departments will be called to the subject, in order that sanctions for bridges on local roads which cross Imperial lines of navigation and irrigation may not be accorded without previous approval of the design by the Chief Engineer for Irrigation.

3. The sum of Rupees 1,250 required to complete the additions and improvements to the bridge over the Polaraz Codu under execution by order of the Chief Engineer for Irrigation is sanctioned as a Minor New Work's charge under Agricultural, Ordinary, debitable to Revenue.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the District Engineer, Kistna.
" Chief Engineer for Irrigation.
" Financial Department.
" Revenue do.
" Officiating Controller of Public Works Accounts.

Frd. S. T. Austin.
Spare Copies

No. 2673.

Sub. 4

File by the Chief Engineers for Irrigation.

When inspecting the Polaraz-codu in the Eastern Delta of the Kistna in December last, the bridge under construction at 6¾ Miles from the head was found to be very unsuitable in its design and as the abutments and wings being then about 6 feet high, it was too late to revise the design entirely, it had to be seen what could be done to prevent its being a serious obstruction.

2 The Canal is navigated now, and will be a second class line of navigation; the bridge was commenced some 4 years ago on a Local Fund sanction, and the height of the abutments was designed to be 6½ feet which with a depth of 5 feet in the Canal left no headway for a tow path and much too little headway for boats,

(and

and the only alteration which appeared feasible was an addition of 2½ feet to the height of the abutments, and the use of such a form of towing path as could, in the advanced state of the bridges, be added. The span of the bridges, 30 feet, is too small, the mean width of the canal being 37½ feet, so that 40 feet would have been none too much, which would have allowed a proper tow path: the wings are much too short, and the depth of the foundations, 2¾ feet, struck me as small.

The date of the Circulars regulating the principal dimensions of bridges over Navigable Canals is May 1869, and I believe the date of the designs of this bridge is earlier than that, but immediately on the receipt of the circulars revised standards have been ordered.

3. I beg to recommend that the Estimate, amounting to (Rupees 1250, now submitted by the District Engineer, for alterations and improvements be sanctioned as a Minor Work on the

the alterations and improvements being required only in the interests of the Canal. The amount of the Estimate is large, but it has been explained why it is so, and it was desirable not to lose another season by waiting until materials could be located conveniently.—

4. The expenditure will be chargeable to Revenue, and will appertain to the Palar & Poduru Canal of the Eastern Delta Division.—

Camp at Coimbatore 1st April 1871.

Lt. Colonel
Chief Engineer for Irrigation

To, The Secretary to Government
Public Works Department

Pub: Works 1874. Depart.
Proc: Rc. No: 2208.

From

The Chief Engineer
for Irrigation

To The Secretary to Govt.
Pub. Dt.

No. 267/13

Dated 4th
Recd 11th April 1874.

Encld 4.

Ch. No. 348. 20-5-74.

Recommends that the estimate for additions & improvements to a bridge at 6¾ miles on the Pulicat road, in the Eastern Delta of the Kistna, under construction from Local Funds, is sanctioned as a Minor New Work under Agricultural Ordinary Chargeable to Revenue.

2 The defective design of this bridge which with the improvements now provided for will still be far from what the circumstances of the site require

Public Works Department

Proceedings of the Madras Government

Read the following

The Chief Engineer for Irrigation. } No. 267/13 dated 4th April 1874

The Estimate, amounting to Rupees 1250, for certain additions and improvements to a bridge at 6¾ Miles on the Pulicat road, in the Eastern Delta of the Kistna, under construction from Local Funds, is sanctioned as a Minor New Work under Agricultural Ordinary Chargeable to Revenue.

2 The defective design of this bridge which with the improvements now provided for will still be far from what the circumstances of the site require

P 424
Issued 23-4-74
Pub Works 26-4-74 Rec.

required, reflects that the
credit on the late Super-
intending Engineer's Di-
vision.

W.W. 7/4/74

P W D

1348

Proceedings of the Madras Government
under date the
Read the following

From the Chief Engr
for Irrign
(H S No. 267. B d 4th
Cpril 74)

Looking to the in-
sufficient headway of 4½
feet in the centre of the
low path gained by the
arrangements authorized
by the Chief Engineer for
Irrigation, and to the depth
of abutment foundations
which struck him as small,
His Excellency the Governor
in Council is of opinion
that it would have been
better to substitute a wooden
Truss or Iron girder Bridge
for

29th
Apl 74

Recd 23-4-74
Replied 26 April 74

for an arch.

The neglect of the late Superintending Engineer 2nd Division to revise the sanctioned plan of Bridge in conformity with the Govt. order of 21st May 1869 is greatly to his discredit. The attention of the Revenue and Financial Department will be called to the subject in order that sanctions for Bridges on Local Roads which cross Imperial Lines of Navigation and Irrigation may not be accorded without previous approval of the design by the Chief Engineer for Irrigation.

CRS

The sum of Rs: 1250 required to complete the additions and improvements to the Bridge over the Palar at Vaziyoor under execution by order of the Chief Engineer for Irrigation is sanctioned as a Minor new work's charge under Agricultural Veterinary debitable to Revenue.

Govt.



1.23-11.25.

Civ 28/6/21 RB 2501

Gobt. of 1874 Madras.

PUBLIC WORKS.

To

The Dist. Engr.
Kistna.

Dated

Read. Encl.

G. O. 20 May/74. No. 1348

Nos. 423-425.

Bridge - Kistna Dt.

Estimate amounting to Rs. 1,252 for certain additions and improvements to the Bridge on the Polavaykodu in the Kaleru Delta of the Kistna Dt. and —

The Revd. Civil Departmt. requested that to accord sanction for Bridge on Local Road which cross Imperial Line of Navigation & drain, estimate prepared & approved by the Superintending

1123-1125.

Civ 28/4/74 Rec'd 2/5/74.