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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 2781	Press ~~Mis.~~
534-535	
Dated 26 - 9 - 1864.	

Not to be folded or roughly handled

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*Proceedings of the Madras Government, Public Works Department,
26th September 1864.*

No. 534. Read the following Proceedings of the Madras Government in the Financial
Railway Department :—

Passing orders on the letter from the Consulting Engineer }
for Railways, submitting correspondence regarding the } (Here enter 17th September 1864, No. 601.)
river Padugays in the Trichinopoly District.

No. 535. ORDER THEREON, 26th September 1864, No. 2,781.
Communicated to the Superintending Engineer, 6th Division.
(True Extract.)

(Signed) J. H. M. SHAW STEWART, Major, R. E.,
Deputy Secretary to Government.

To the Superintending Engineer, 6th Division.

Exd. T. Cartledge.

*Proceedings of the Madras Government, Financial Railway
Department, 17th September 1864.*

No. 93. Read the following letter from Lieutenant Colonel P. P. L. O'CONNELL, R. E., Consulting Engineer for Railways; to J. D. SIM, Esq., Secretary to Government, Fort Saint George, dated Madras, 17th August 1864, No. 448.

From Agent, No. 1040, dated 26th February 1864, with 1 Enclosure.
From Suptg. Engineer, No. 2059, dated 8th March 1864.
Do. do. No. 2522, dated 26th April 1864.
Do. Agent, No. 1149, dated 9th May 1864.
Do. do. No. 1266, dated 28th July 1864, with 1 Enclosure.
Do. Suptg. Engineer, No. 1019, dated 9th August 1864.

I have the honor to submit, for the consideration and orders of Government, the correspondence noted in the margin, regarding the Padugays in the Trichinopoly District.

2. The Railway authorities desire that the Padugays be raised and strengthened so as

to prevent their being breached by floods in the river Cauvery.

3. The Superintending Engineer is of opinion that the Government will not go to the expense of doing so, and he states that the late flood has opportunely shown what height of bank is really required, and that his Range officers have been engaged in estimating for the necessary repairs, which will be carried out in due course.

From W. S. BETTS, Agent, Great Southern of India Railway; to the Consulting Engineer for Railways, Madras, dated Negapatam, 26th February 1864, No. 1040.

On the 24th instant I sent to your address, per Banghy post, a section and plan of the land required for the first five miles of the Railway from Trichinopoly to Erode; and I now send you herewith a copy of the remarks of the Chief Engineer with reference thereto. I hope these papers will enable you to arrange for a speedy transfer of the necessary land.

2. I trust that Government, when they read Mr. Logan's description of the existing state of the bank of the Cauvery, will recognize the advisability of immediate steps being taken to provide a better protection for the surrounding country.

From D. LOGAN, Esq., Chief Engineer, Great Southern of India Railway; to W. S. BETTS, Esq., Agent, Great Southern of India Railway, dated Trichinopoly, 25th February 1864.

With reference to the working plan and section of the first five miles of the Erode extension, which I handed to you on the 23rd instant, they will, I trust, afford the necessary data to enable the Consulting Engineer to direct the Revenue authorities to hand over the land to us.

2. I took much pains in having the line staked out, to avoid valuable house property and the many Musselmen tombs with which parts of the second and third miles are studded, and I have reason to believe that this object has been attained as far as it was possible.

3. With regard to the height of embankment in relation to the flood level of the river Cauvery: the high flood of July last year was, as far as I can learn, one that may be expected to recur only every four or five years, and rose to 11 feet 1 inch on the Cauvery dam at the upper annicut, equivalent to 375.52 above the datum of our working section. The top water level in the river falls at the rate of about 3 feet per mile, and the point from which the Railway embankment begins to run, close and parallel to the river Cauvery, is at the crossing of the Kudumurti channel, about eight miles east of and lower down the river than the dam. Consequently the flood level at that point should be (375.52—8 in. x 3 ft.) 351.52.

4. Checking this by what was pointed out to me as the level of the same flood at the existing road bridge over the Kudumurti channel I get

Springing of arches of road bridge over Kudumurti channel.....	348.80
Flood-level, said to be above the springing.....	2.0
Level of flood.....	350.80

5. From these data I concluded that I should be safe in taking ordinary high flood level at 351.00 above datum, and I have accordingly started formation level from 4 miles 3 chains (immediately west of the Kudumurti channel) at 333.000 above datum, or two feet above flood level, carrying the embankment forward with a rise of 3 feet to a mile. In this way rail level will be 4 feet above such high floods, as we may reasonably, from past experience, expect at intervals of from three to five years.

*Proceedings of the Madras Government, Financial Railway
Department, 17th September 1864.*

6. The flood of 1858 was, I believe, the highest known; and we may, I think, safely conclude that such a flood is not likely to recur oftener than once in a century.

From the best data which I can collect, I find that this 1858 flood, rose at the Cauvery dam at upper annicut to about.....

Ordinary high floods rise to about	378 27	} Above working section datum.
Do. monsoon season do.....	375 52	
	374 19.	

7. Formation level of the Railway opposite the Cauvery dam will be 377 00, which, with the usual thickness 1' 6" of ballast added, will give 378 50 above datum—a height which may fairly be assumed to be out of the reach of any danger against which it would be at all expedient to grounds.

8. In calling your attention to the fact that the Government order on the Consulting Engineer's report directed us to keep the Railway embankment on the south of outside of the river Cauvery bund, partly on the ground that if the embankment were carried along the Padugay of the river it would require to be protected from scour by revetments, or groynes of stone-work, or both, I would point out the urgent necessity existing that the river-bund should be put into thorough and substantial repair.

9. If a Railway embankment 20 feet wide at top and with well turfed slopes spreading 2 to 1 is considered insufficient or in danger unless so protected, I leave you to judge of the state of security enjoyed by a country and people under the protection of what is in many places a mere mud heap not more than 3 or 4 feet wide at top, with no slopes worthy the name, and no turf to protect them. Being above flood level would avail our embankment but little in the event of a breach taking place in the river bund. The torrent in such a case would be so overwhelmingly strong that it would almost inevitably break the Railway embankment also.

(True Copy.)

(Signed) W. S. BETTS,

Agent.

From Captain J. BEAN, R. E., Officiating Superintending Engineer, 6th Division; to Captain P. P. L. O'CONNELL, R. E., Consulting Engineer for Railways, dated Camp Cabilalam, 8th March 1864, No. 2059.

In reply to your letter, dated 29th ultimo, No. 28, I have the honor to inform you that it would be a great assistance in carrying out your requisition regarding the river Padugays in Trichinopoly District, if you could give me a tracing of the Railway line for such distance as it runs parallel to them.

From Captain J. BEAN, R. E., Officiating Superintending Engineer, 6th Division; to Lieutenant Colonel P. P. L. O'CONNELL, R. E., Consulting Engineer for Railways, dated Trichinopoly, 26th April 1864, No. 2522.

With reference to the correspondence as per margin, I have the honor to inform you that I have received no trace of the proposed Railway extension line, but I have directed the Executive Engineer to prepare an estimate for strengthening the Cauvery bank, which I will have sanctioned on its receipt.

From W. S. BETTS, Esq., Agent, Great Southern of India Railway; to the Consulting Engineer for Railways, Madras, dated Negapatam, 9th May 1864, No. 1149.

In order to save time as well as postage, I sent on Saturday last direct to Tanjore, to Captain Bean, the tracing applied for in your letter, No. 109, of the 11th March last,

*Proceedings of the Madras Government, Financial Railway
Department, 17th September 1864.*

From W. S. BETTS, Esq., Agent, Great Southern of India Railway; to the Consulting Engineer for Railways, Madras, dated Negapatam, 28th July 1864, No. 1266.

On the 26th February last (letter No. 1040), I sent forward, for the information of Government, the report of the Chief Engineer of this Company upon the insecure condition of the bank or bund of the river Cauvery, and trusted that immediate steps would be taken for the better protection of the surrounding country.

2. On the 11th of the following month you told me that the Superintending Engineer of the 6th Division had been requested to take steps to render the Padugays sufficiently strong to prevent any damage occurring to the Railway, which would be carried parallel to the Padugays.

3. On the 14th instant the Superintending Engineer of the 6th Division informed the Chief Engineer of this Company that with his present limited establishment and means it is impossible to provide for the strengthening of the whole 40 miles of river bank in his division, and asked that any spots which were considered dangerous to the safety of the Railway works might be pointed out.

4. To this the Chief Engineer replied that, in his opinion, the entire distance required strengthening and putting in order; failing this, and in the event of damage occurring to the Railway works through such omission, then the Railway Company would look to Government for compensation.

5. I have the honor to request that this correspondence may be brought under the notice of Government. The present unfortunate condition of the country in parts of the Tanjore District, caused by the breaches in the river banks, which have been made by floods during the last week, show how necessary it is that the banks or bunds should be at once strengthened.

From Captain J. BEAN, R. E., Officiating Superintending Engineer, 6th Division; to the Chief Engineer, Great Southern of India Railway, Trichinopoly, dated Tanjore, 14th June 1864, No. 706.

I have the honor to suggest that when carrying out the Railway extension to Erode junction, you should point out any spots which you consider may endanger the safety of your works from the Cauvery river bank not being in a proper state of repair. Any application from you on this subject will be attended to, whilst, with our present limited establishment and means, it will be impossible for us to provide for the strengthening of the whole 40 miles of river bank in this division.

(True Copy.)

(Signed) W. S. BETTS,
Agent.

From D. LOGAN, Esq., Chief Engineer, Great Southern of India Railway; to the Officiating Superintending Engineer, 6th Division, dated Trichinopoly, 22nd July 1864.

I have the honor to acknowledge receipt of your letter, No. 706, dated 14th June (July?) last, I consider that the bund and protective works on the south bank of the river Cauvery require strengthening and putting in order throughout the distance of 40 miles to which you refer, and I submit that if Government refuses to sanction the staff necessary to enable you to put the bund and bank into a sound and efficient state, then upon Government will fall the liability for any damage which may result to the property of the Railway Company in consequence of such refusal.

(True Copy.)

(Signed) W. S. BETTS,
Agent.

From Captain J. BEAN, R. E., Officiating Superintending Engineer, 6th Division; to Captain J. G. LINDSAY, R. E., Deputy Consulting Engineer for Railways in charge, dated Combaconum, 9th August 1864, No. 1019.

I have the honor to acknowledge receipt of your letter, No. 225, dated 2nd August 1864, forwarding copy of a letter from the Agent of the Negapatam and Trichinopoly Railway, dated 28th July 1864.

*Proceedings of the Madras Government, Financial Railway
Department, 17th September 1864.*

2. The correspondence which I had with the Chief Engineer of the line he relates correctly, excepting that, when I applied to him for information as to the places which he thought should be repaired on the Cauvery river south bank, I called attention more especially to the want of funds at my disposal to raise and strengthen the 40 miles of bund throughout, and not to the staff available as well to carry out this work, as Mr. Belts would make it appear.

3. Mr. Logan has since declined to point out such places, under the impression that his Company will be held responsible should any neglect of the banks arise from his failing to do so, after having agreed to my request. I need scarcely say that, in making the proposal, I had no thought of throwing responsibility upon the Company, but I merely followed a suggestion made by Mr. Brosnahan to facilitate the progress of repairs wherever required.

4. I am still of opinion that Government will not go to the expense of raising and strengthening the bank from one end to the other, and I have certainly no funds to undertake as much as this. The late flood in Tanjore has done less mischief than might have been anticipated, but the banks of the rivers were generally in fair order and sufficiently so to withstand any average flood. If, as in this case, a fresh comes down which is higher than any known one, excepting that of 1858, it is impossible but that some breaches must take place, unless Government are willing to expend a few lacs of Rupees to avoid the possibility of such a contingency.

5. My request to the Chief Engineer was not made with a view to delay any necessary repairs to the Cauvery banks. This flood, so far opportunely, will show what height of bank is really required, and my Range officers have been engaged ever since the occurrence in estimating for the necessary repairs required to the banks throughout, and the repairs will be carried out in due course.

No. 94.

ORDER THEREON, 17th September 1864, No. 601.

The Governor in Council observes that it is not the duty of the Government to construct and maintain expensive works for the security of the Railway. It is for the Railway Company to construct their line in such a manner that it shall be safe from all risk of flood. The Government will keep the river embankments in such a state of efficiency as the interests of the country require, but they must disclaim all responsibility for any injury that may occur to the Railway, owing to the line being carried within reach of the river floods.

(True Extract.)

L. Logan

Secretary to Government.

To the Consulting Engineer for Railways.
„ Public Works Department.

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*Communicated to the
Chief Engineer 6th Division*

*Chieftain
26th Sept/64*

*To the Chief Engineer 6th Division
X^o 87*

27th September

PT 1864 Dept
Pro. of Govt for Sept
No. 4136

No. of Govt in the
Genl. Railway Dept

Dated 17 } Sept 1864
Received 22 }

No. 601.

Paying orders
on the bills from the Genl
Eng. & Iron Railways submitting
correspondence regarding the
river Padungays in the Tri-
-climopoly District.

No. 534. 535 ex 2781-26th Sept, 1864.

With an order