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MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 315 Press
249-50 Mis.

Dated 14-12- 1871.

Not to be folded or roughly handled

Cl. 5111.

Govt. of [1871] Madras.

PUBLIC WORKS.

To [illegible]

Dated

Rec'd [illegible]

G. O. 14th Dec. [illegible] 3151.

Nos. 2494 750

Revised Estimate. Repairs

[illegible]

No. 249. Read the following Endorsement of the Acting Consulting Engineer for Railways, dated Madras, 28th November 1871, No. 515 :—

From the Agent and Manager of the Madras Railway Company, to the Acting Consulting Engineer for Railways, dated Madras, 22nd November 1871, No. 702.

In continuation of my letter No. 687, of the 16th instant, I have the honour to forward herewith, for submission to His Excellency the Governor in Council, the copy of a report* made to me by the Chief Engineer after a personal inspection of the portion of line between Somanore and Coimbatore which was flooded on the 16th instant.

* No. 625, 22nd November 1871.

2. The disaster, which occasioned considerable loss to the Company, not only in actual damage to the works, but also in respect to the falling off in the revenue occasioned by an interruption in traffic for three days, was caused it will be observed by the bursting of the bund of a Government tank.

3. The further report promised by Mr. Anderson in the last paragraph of his letter will be submitted to the Government in due course, when I will review the whole question; but meanwhile I lose no time in soliciting the serious attention of His Excellency the Governor in Council to the statement of the Chief Engineer, that tanks in the vicinity of the Railway "constitute a standing menace to the safety of our line."

4. I must be pardoned, therefore, for the anxiety which I, in common with my brother officers, feel at a time like this when there is so much water bordering on our lines of Railway, and for expressing the hope that some stringent orders will be passed by the Government for a more close supervision of tanks and their bunds in view to the safety of the travelling public.

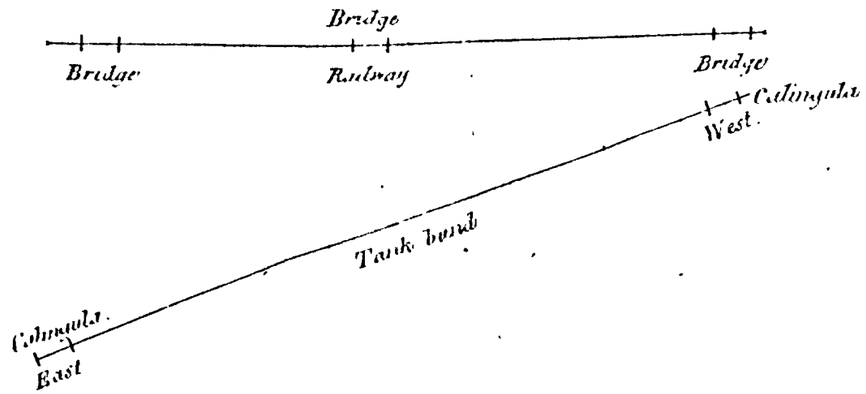
From the Chief Engineer, to the Agent and Manager of the Madras Railway Company, dated Madras, 22nd November 1871, No. 625.

I had just arrived at Raichore when I received your telegram of the 16th instant, informing me that eight chains of bank had been washed away at the 29~~th~~st mile, South-West Line.

2. The recent very heavy rains had made me anxious about the new works on the North-West Line, and I had completed a very careful inspection, little anticipating intelligence of floods on that portion of the South-West Line that is usually not affected by the north-east monsoon.

3. I arrived at Somanore on the morning of the 19th, and found that the breach in the line had been repaired and traffic resumed the previous day.

4. The injury to our line was the result of the breaching of the bund of a Government tank that runs close to the Railway, somewhat in the manner shown below :—



5. The bund of the tank is provided with two calingulahs, one at either end, and these are represented by bridges of corresponding capacity on the Railway.

6. On examination I found that the bund was breached in two places. One breach was within about 150 yards of the western calingulah, and was 25 feet wide and 10 feet deep. The main breach, however, was nearer to the eastern calingulah, and was about 150 feet wide and 22 feet deep. The volume of water carried through this opening must have been enormous.

7. The double 15-feet arched bridge at 291st mile, 18th telegraph post, was filled above the crown of the arches, and a large quantity of water found its way down the 191st mile cutting; but these two outlets were insufficient, and finally the bank gave way. So irresistible was the force of the water that not only was our artificial embankment washed away, but a deep hole was scoured in the natural soil. It is surprising that the Railway should have suffered so little damage, the masonry works having been exposed to so severe a trial.

8. The quantity of rain that fell on the 15th instant is described as having been something very unusual, but the failure of the tank bund is, in my opinion, attributable to the change that has taken place in the character of the tank since its first construction.

9. The bund appears, in the first instance, to have been well and carefully made, and was originally probably about 20 feet in height at the highest point. In process of time, however, the bed of the tank silted up, and at the date of my examination the depth of silt at the eastern breach was no less than 11 feet. As the tank silted up slight additions seem to have been made to the height of the bund, and this newer portion not having been constructed with the same care as the older portion was incapable of resisting the effects of a flood such as that of the 15th.

10. It is most unfortunate that so much of our line should run in proximity to tanks the owners of which (whether Government or private individuals) seem to be so entirely irresponsible for damage to the Railway caused by the bursting of tank bunds. As I have more than once pointed out, these tanks constitute a standing menace to the safety of our line. In the present instance ample provision was made to carry off all the water that could pass through the calingulahs of the tank. The good quality of our masonry is evidenced by the fact of its having so successfully withstood the extraordinary pressure brought to bear upon it, but all our care has not protected us from a stoppage of traffic, resulting in heavy loss to the Company.

11. Mr. Smith, the Engineer in charge of the division, and Mr. Kebby, the Inspector, worked with great zeal, and are entitled to much credit for having so rapidly re-opened the line for public traffic.

Proceedings of the Madras Government, Public Works Department,
14th December 1871.

12. The day and night watchmen of the mile (Sundasawmy and Mahomed Saib), who stopped the 7 A.M. passenger train from Madras, deserve great praise, and I recommend that a silver bangle to the value of, say, Rupees 30 should be presented to each as a reward.

13. I have directed Mr. Smith to make a detailed survey of the tank and to examine the country, so as to ascertain whether the tank that breached is one of a series, and will report to you in due course.

From the Agent and Manager of the Madras Railway Company, to the Acting Consulting Engineer for Railways, dated Madras, 27th November 1871, No. 714.

IN continuation of my letter, dated the 22nd instant, No. 702, I have the honour to quote as follows from a communication* just received from the Chief Engineer :—

* No. 634, 27th November 1871.

"The Engineer in charge of the 3rd Division, South-West Line, reports that on the night of the 23rd there was again heavy rain at Coimbatore.

"On the morning of the 24th, Mr. Smith went to the 291st mile and found that water was pouring through the breach of the injured tank 'like a water-fall.' The double 15-feet arched bridge at 291st mile, 18th telegraph post, was flooded 18 inches above springing of arches, but fortunately our line has sustained no injury. The bridge and the new embankment have both successfully withstood a very severe test, but there is no doubt but that our works will be exposed to great danger until the tank bund shall have been repaired.

"The breaching of the bund has completely changed the condition under which the drainage of the valley was effected. Whilst the bund remained intact the bulk of the surplus drainage water was carried over the western calingulah, and through our treble 15-feet arched bridge at 192nd mile, 11th telegraph post. A much smaller quantity found its way over the eastern calingulah, and through our double 15-feet at 291st mile, 18th telegraph post. Now, however, the whole drainage of the valley flows through the breach, and missing the treble 15-feet altogether has to find its way through the double 15-feet, a bridge that is manifestly inadequate for the purpose.

"I have had extra watchmen placed on this length, and have sent a Sub-Inspector to live on the spot and to inspect the tank bund and Railway embankment carefully before the passage of night trains."

SUBMITTED to the Government.

2. My own report of inspection of the breach on the 292nd mile was furnished under date the 22nd instant, No. 510. It would appear from the report of the Resident Engineer, that on the 24th instant no measures had been taken to close the breach in the tank, and it is very necessary that orders should be issued to that effect without delay.

(Signed) H. L. PRENDERGAST, Major, R.E.,
Acting Consulting Engineer for Railways.

Proceedings of the Madras Government, Public Works Department,
14th December 1871.

No. 250. ORDER THEREON, 14th December 1871, No. 3,151.

RAILWAY, No. 38.

ORDERS have already been issued by telegram to close the breach. These reports will now be communicated to the Superintending Engineer of the 7th Division, with a view to his reporting on the cause of the tank breaching, and on the capacity of the calingulahs for the discharge of floods. He should also furnish any available information as to the condition of the bund of the tank immediately prior to the floods which destroyed it.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the Acting Superintending Engineer, 7th Division
.. Consulting Engineer for Railways.

Ed. S. T. Augustin.

No. 702.

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE.

Madras, 22nd November 1871

From R. B. Elwin Esqr.
Agent and Manager. of the Rly Co

To Major H. L. Prendergast R.E.
Madras *Consulting Engineer for Railways.*

SIR,

In continuation of my letter No 689 of the 16th instant I have the honour to forward herewith for submission to His Excellency the Governor in Council the copy of a Report made to me by the Chief Engineer after a personal inspection of the portion of line between Somanoor and Coimbatore which was flooded on the 16th instant.

No 635. 22nd Nov. 1871.

2. The disaster which occasioned considerable loss to the Company, not only in actual damage to the works, but also in respect to the falling off in the Revenue occasioned by an interruption in

Traffic for three days was carried
it will be observed by the investig
of the Mind of a Government Bank.

3. The further Report promis
by Mr. Anderson in the last paragra
of his letter will be submitted to th
Government in due course when I
will review the whole question, but
meanwhile I take no time in soliciti
the serious attention of His Excellenc
the Governor in Council to the state
-ment of the Chief Engineer that
Banks in the vicinity of the Railway
"constitute a standing menace to the
"safety of our lives".

4 I must be pardoned
therefore for the anxiety which I
in Common with my brother Officers
feel at a time like this when there
is so much water bordering on our
lines of Railway, and for expressing
the hope that some stringent orders
will be passed by the Government
for a more close supervision of

3

Under and this Number, in reference to the Letter of the Consulting Engineer for Railways, dated

Mr. Agent and Manager,

Madras,

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

for Railways.

Dated 186

Recd.

No.

Madras Railway Co.
Chief Engineer's Office
Madras 22nd Nov. 1871.

No. 625.

The Agent and Manager.

Dear Sir,

I had just arrived at Raichore when I received your Telegram of the 16th instant, informing me that eight chains of bank had been washed away at the two hundred and ninety-first mile South West Line.

2. The recent very heavy rains had made me anxious about the new works on the South West Line and I had completed a very careful inspection little anticipating intelligence of floods on that portion of the South West Line that is usually not effected by the South East Monsoon.

3. I arrived at Lamamoor on the morning of the 19th and found that the breach in the line had been repaired and traffic resumed the previous day.

4. The injury to our line was the result of the breaching of the bund of a Government tank that runs close to the Railway somewhat in the manner shown.

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer for Railways.

Dated 22nd Nov. 1871.

Rec'd 25th " "

No. 625 of 1871.

Forwarding Drawing of Breach in S.W. Line.

Copy of Report of Chief Engineer of Line.

Cause of Breach.

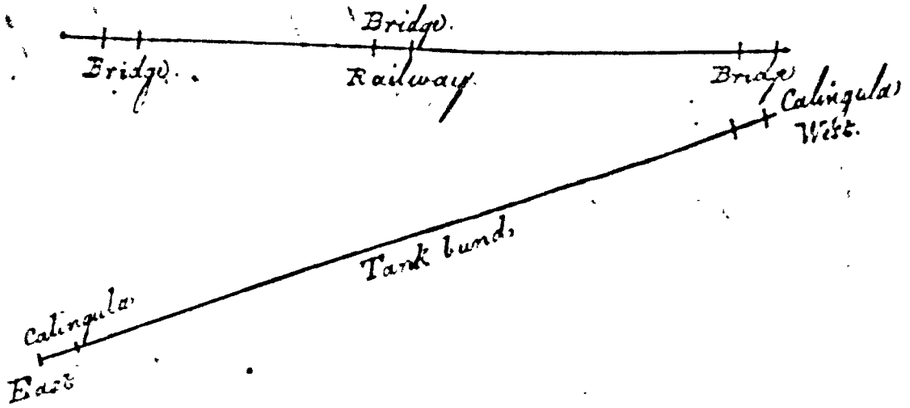
Measures taken to repair Line and to prevent recurrence of Breach.

Estimate of Cost.

Recommendations.

2/8/12

shown below.



5. The bund of the tank is provided with two Caligulas. One at either end, and these are represented by bridges of corresponding capacity on the Railway.

6. On examination I found that the bund was breached in two places. One breach was within about 100 yards of the western Caligula and was 20' wide and 10' deep. The main breach however was nearer to the eastern Caligula and was about 150' wide and 22' deep. The volume of water carried through this opening must have been enormous.

7. Miles 291 - 18 Yds. The double 15' arched bridge at Post was filled above the crown of the arches and a large quantity of water found its way down the 291st mile cutting, but these two outlets were insufficient and finally the bank gave way. So irresistible was the force of the water that not only was our railway embankment washed away but the rails were twisted in the manner

natural soil. It is surprising that the Railway should have suffered a little damage, the masonry works have been exposed to so severe a trial.

8. The quantity of rain that fell on the 16th in short is described as having been something very unusual, but the failure of the tank bund is in my opinion attributable to the change that has taken place in the character of the tank since its first construction.

9. The bund appears in the first instance to have been well and carefully made, and was originally probably about 20' in height at the highest point. In process of time however the bed of the tank silted up and at the date of my examination the depth of silt at the eastern breach was no less than eleven feet. As the tank silted up slight additions seem to have been made to the height of the bund and this newer portion not having been constructed with the same care as the older portion was incapable of resisting the effects of a flood such as that of the 16th.

10. It is most unfortunate that so much of our line should run in proximity to tanks the owners of which (whether Government or private individuals)

seem

seem to be so entirely irresponsible for damage to the Railway caused by the bursting of tank bunds. As I have more than once pointed out these tanks constitute a standing menace to the safety of our line. In the present instance ample provision was made to carry off all the water that could pass through the Caliugulas of the tank. The good quality of our masonry is evidenced by the fact of its having so successfully withstood the extraordinary pressure brought to bear upon it, but all our care has not prevented us from a stoppage of traffic resulting in heavy loss to the Company.

11. Mr Smith the Engineer in charge of the Division, and Mr Kelsey the Inspector worked with great zeal and are entitled to much credit for having so rapidly re-opened the line for public traffic.

12. The day and night watchmen of the mile, (Cundasawmy and Mahomed Saib) who stopped the first all passenger train from Matara deserve great praise, and I recommend that a Silver bangle to the value of £3.0.0 should be presented to each as a rewards.

13. I have directed Mr Smith to make a detailed survey of the tank and to examine the country so as to ascertain whether the tank that breached is one of a series; and with report began in due course.

Yours &c.

(Sgd) Beresford Anderson.
Chief Engineer.

(True Copy)

J. W. Mellis.

for the Agent and Manager.

No. 714

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE.

Madras, 24th Nov. 1870

From

Robt. B. Elwin Esq.
Agent and Manager. of the Railway

To

Major H. L. Prendergast R.E.
Acting Consulting Engineer for Railways.

SIR,

In Continuation of my letter dated the 22nd instant No 702. I have the honour to quote as follows from a Communication just received from the Chief Engineer.

634. Nov.

"The Engineer in Charge of the 3rd Division, South West Line, reports "that on the night of the 23rd there was "again heavy rain at Cumbatoor.

"On the morning of the 24th "Mr. Smith went to the 291st mile and "found that water was pouring through "the breach of the injured bank like "a water-fall". The double 15 feet "arched Bridge at 291-18 was flooded "18 inches above springing of arches.

"but fortunately our line has sustained
"no injury - The Bridge and the
"new Embankment have both successfully
"withstood a very severe test, but
"there is no doubt but that our
"works will be exposed to great
"danger until the Tank bund shall
"have been repaired -

"The breaching of the bund
"has completely changed the conditions
"under which the drainage of the
"valley was effected - Whilst the
"bund remained intact the bulk of
"the surplus drainage water was
"carried over the western Culvert
"and through our twelve 15' arched
"bridge at 192 m - 5 c. 11 . A much smaller
"quantity found its way over the
"eastern Culvert and through our
"double 15 feet at 291 m - 50 c - Now
"however the whole drainage of the
"valley flows through the breach
"and passing the twelve 15' arches
"has to find its way through the double
"15', a bridge that is only about

"Madras for the purpose.

"Plans have been submitted
"Plans on this length and have been sent.
"on this Engineer's line on the plan.
"and to inspect the Bank Guard and
"Gardening Embankment carefully before
"the passing of Bills."

Mr. Mare to Comm. Rates,
&c.
Comm. must observe the
J. N. Mallet.
for the Agent & Manager.

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

for Railways

Dated 186

Read

No.

No. 515.

Submitted to the Government.

My own report of inspection of the breach on the 29½ mile, was furnished under date the 22ⁿᵈ instant, C.No. 513. It would appear from the report of the Resident Engineer, that on the 24th instant, no measures had been taken to close the breach in the bank, and it is very necessary that it should be secured without delay.

21528

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

for Railways.

Dated 27th Octr 1871.
Recd. 28th "
P. W. 5665/71 No. 714.

Furnishing further information with regard to the damage done to the line between Coimbatore & Coimbatore

to that effect without delay.

Madras
28. Nov.
1841

I have &c.

(Signed) Chas. Sandeman Major R.E.

Ag. Consr. for Railways

To

The Secretary to Government

P.W. Departt.

Fort St. George

No 3151. P. W. Depttt 12

Proceedings of the Madras Government

Under date the 27

Read the following

From

Hodgkinson Engr to } (H.C. No 515 of 28 Nov/71
for Railways }

Orders have already been issued by telegram to close the breach. The reports will now be communicated to the Superintending Engineer 7th Div with a view to his reporting on the cause of the tank breaching, and on the capacity of the Calingulahs for the discharge of floods. He should also furnish any

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9 Dec 1871 Report
From Offg Sec to Govt
No 5666.
The Actg Chief Engineer
for Railways.
For Secretary to Govt
P.W. Dept

Dated 25th
Rec'd 28th } Nov 71.

Encl 3 / No 515.

Submitting two letters received from the Agent & the engineer of the Ry. A. Colonel reporting the breach on the 20th inst

No 3151 - 14 Dec/71

No 3245.

12 Dec/71 R.T.

available information
as to the condition
the bund of the tank
immediately prior
to the floods which
destroyed this
[illegible]
[illegible]