

*Proceedings of the Madras Government, Public Works Department,
22nd April 1875.*

No. 577. Read the following letter from Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, to Colonel G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Madras, 13th April 1875, No. 208 :—

In my letter dated the 21st December 1874, No. 771, it was mentioned that a survey was in progress with a view to determine the best mode of insuring the safety of the line of Railway at the "Tiger Rock" cutting on the Bangalore Branch. Among other ways of dealing with the difficulty it seemed possible that the cutting in question might be altogether avoided and the line diverted so as to pass entirely outside and to the east of the rocky spur through which the cutting was excavated.

2. With reference thereto I have the honor to lay before Government two letters* from the Agent of the Madras Railway with accompaniments. It will be seen that the result of the survey shows that

the diversion scheme must be abandoned, and that the best mode of dealing with the difficulty is to secure the sides of the cutting by building up with solid masonry revetment under such of the boulders as threaten to descend now or in future.

3. The cost of this alternative scheme is estimated at Rupees 8,347, and this is recommended for sanction. The work is already in progress, its commencement having been authorized in anticipation of approval in order that the cutting might be secured against accident during the approaching monsoon.

4. It is proposed to meet the expenditure from Schedule B. of the Budget Estimate for 1875-76, and the sanction will lapse at the end of the fourth quarter after its receipt.

"Unforeseen Requirements."

From R. B. ELWIN, Esq., Agent and Manager of the Madras Railway Company, to Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, dated Madras, 4th March 1875, No. 239.

With reference to your letter No. 771, of the 21st of December 1874, to the Secretary to Government, Public Works Department, I have the honor to enclose you a copy of the Acting Chief Engineer's letter, No. 174, of this date, with the estimate therein referred to showing the comparative cost of two schemes for avoiding the danger threatened to the Railway at the Tiger Rock cutting.

2. If you approve of the scheme recommended by Mr. Going, I shall be much obliged if you will communicate authority for the work to be proceeded with at once pending the submission of the regular estimate.

From T. H. GOING, Esq., Acting Chief Engineer, to R. B. ELWIN, Esq., Agent and Manager of the Madras Railway Company, dated Madras, 4th March 1875, No. 174.

REVERTING to Consulting Engineer's letter, No. 771, of 21st December 1874, to the Secretary to Government, Public Works Department, published with G. O., No. 177, of 21st January 1875, I beg to inform you that the survey therein stated to have been in progress has been since completed.

2. I have laid down upon the plot of this survey an alternative line, which would avoid the danger to be apprehended from the slipping of boulders on the slopes of Tiger Rock cutting.
3. The alignment and levels of such a line would not be inferior to those of the existing one, but the cost of making it would be considerable, and compares unfavorably with the alternative scheme. This latter proposes to build up, with solid masonry revetment, under such of the boulders as threaten to descend either now or at any future time.
4. I append to this letter a comparative estimate showing approximately the cost of the two methods of dealing with the case, and strongly recommend the adoption of the latter one, both as being less costly and as being capable of execution more rapidly, and being consequently more efficient as a preventative against possible accident during the next wet season.
5. As it is very important that the work should be put in hand without delay, I shall be glad of the Consulting Engineer's authority to proceed with it at once pending the submission of the regular estimate if he agrees with me in thinking it should be undertaken.

From R. B. ELWIN, Esq., Agent and Manager of the Madras Railway Company, to Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, dated Madras, 9th April 1875, No. 368.

Madras, 9th April 1875, No. 368.

WITH reference to your letter, No. 290, of the 8th ultimo, I have the honor to forward you, herewith, an estimate (in duplicate) of the cost of securing the loose boulders of rock at the Tiger Rock cutting, Bangalore Branch, and I request that you will be so good as to communicate to me the sanction of Government for the required expenditure, viz., Rupees 8,347.

2. I learn from the Chief Auditor that the expenditure on this work has been charged to Schedule B. "Unforeseen Requirements" in the Budget for 1875-76, thus:—

Schedule B. "Unforeseen Requirements."	Budget allotment, 1875-76.	Already charged.	Proposed Expenditure.	Balance available.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Securing loose boulders at Tiger Rock, 145th mile	40,000 0 0	6,789 3 3	8,347 0 0	
	40,000 0 0	6,789 3 3	8,347 0 0	24,863 12 9

3. The date on which the sanction will lapse is given on the face of the estimate in red ink.

No. 578.

ORDER THEREON, 22nd April 1875, No. 1,136.

RAILWAY, No. 70.

THE estimate amounting to Rs. 8,347
is sanctioned as proposed.

(True Extract.)

Colonel R.E.,

Secretary to Government.

To the Consulting Engineer for Railways.
" Examiner of Railway Accounts.

Exd. S. T. Austin.
Spare Copies

Siger Rock Bangalore Branch - Comparative Estimate.

Proposed Division of Line (Approximate)		Securing Loose Builders of Rock	
Earthwork in forming bank	Lyds. 31472 7/16.	Cutting Steps	6 ft. 524 2 1/2.
Ballasting	" 1170 7/8.	Masonry with burnt stone	
Rock Cutting	" 2200 2 1/2.	in Churnam	19 ft. 420 15 1/2.
Excavations for subvert	" 172 7/8.	Part filling	" 963 74 1/2.
Masonry in extending subvert	" 488 15 1/2.	Partingencies	758 4.
Revetment in retaining wall	" 20 4 1/2.		
Laying Rails	Sw. Yrs 528 7/8.		
Removing present line	" 528 7/16.		
Partingencies			
	Refuses 22973 "		Refuses 8367 "

Chapman's Office }
4th March 1843

Mr. J. P. Foster
Friend of Slaves.

W. H. Jones
Actg. Chief Engineer.

Madras
MADRAS RAILWAY.

ENGINEERING DEPARTMENT.

Schedule B
"Unforeseen Requirements" 1875/76

Estimate.

Required for the Madras Railway in the

Bangalore Branch Line

This Sanction will lapse at the end of the financial year after the receipt of sanction in this office.

DESCRIPTION.	To be expended Departmentally.	To be drawn from Stores.	Total.
<i>III Construction of Line.</i> <i>I. Earthwork.</i> <i>Estimate of the cost of securing some boulders at Sugar Rock 145 mile.</i>	8347		8347
<i>Schedule B</i> <i>"Unforeseen Requirements" 1875/76.</i> <i>Budget allotment Rs. 40,000/-</i> <i>Already charged Rs. 15,136.33.</i> <i>Balance available Rs. 24,863.12.</i>	8347		8347
TOTAL...	8347		8347

Submitted for approval and Sanction to the Government of

Agent and Manager, Railway.

Chief Engineer, Railway.

CHIEF ENGINEER'S OFFICE,

12th March 1875.

Consulting Engineer to Government.

Secretary to Government.

2434/50

MADRAS RAILWAY.

Bangalore Branch Line.

Estimate of the cost of securing loose Boulders at Tige Rock
14 5th Mile. as per Plan No.

DESCRIPTION.	Quantity.	Rate.	To be expended Departmentally.	To be drawn from Stores.	Total.
Putting Steps—Sqft	524	2 1/2	1048	..	..
Masonry with bund					
stones in channel—sqft	420	15 1/2	6300	..	..
Carting—	963	7 1/4	24012	..	..
Contingencies—			758	4	..
Rupees			8347	..	..

Rupees eight thousand, three hundred, and forty seven

Chief Engineer's Office
12th March 1875

W. J. Carter
Agent and Manager

John
Actg. Chief Engineer

This sanction will lapse at the end of the 4th month
quarter after the receipt of sanction in the Office.

Agent & Manager

M. 2424/35

No. 239

MADRAS RAILWAY.

AGENT AND MANAGERS OFFICE.

Madras, 14th March 1875.

From

P. B. Clavin Esqre,

Agent and Manager of the M.R.C.

To

Lieut Col. J. H. M. Shew Stewart R.E.

Consulting Engineer for Railways.

SIR,

With reference to your letter No 10771 of the 21st of December 1874 to the Secretary to Government Public Works Department I have the honour to enclose you a copy of the Acting Chief Engineer's letter No 1741 of this date with the estimate therein referred to showing the comparative cost of two schemes for avoiding the danger threatened to the railway at the Tiger Rock Cutting.

2 If you approve of the scheme recommended by Mr. Goring I shall be much obliged if you will communicate authority for the work to be proceeded with at once pending the submission of the regular estimate.

I have the honour to be,
Sir,

Your most obedient servant,

W. B. Clavin

MS. 24.3.1.1
21.3.75

N^o 174.

Madras Railway Company,
Chief Engineer's Office
Madras, 2^d March 1875

The Agent and Manager

Dear Sir,

Reverting to Consulting Engineer's letter N^o 771 of 21st December 1874 to the Secretary to Government P.W.D., published with G.O. N^o 1777 of 21st January 1875, I beg to inform you that the survey therein stated to have been in progress has been since completed:

2. I have laid down upon the Plot of this survey an alternative line which would avoid the danger to be apprehended from the slipping of Boulders on the slopes of Tiger Rock Cutting.

3. The alignment and levels of such a line would not be inferior to those of the existing one, but the cost of making it would be considerable and compares unfavourably with the alternative scheme. This latter proposes to build up, with solid masonry pavement, under such of the Boulders as threaten to descend either now or at any future time.

4. I append to this letter a Comparative Estimate shewing approximately the cost of the two methods of dealing with the case and strongly recommend the adoption of the latter one, both as being less costly and as being capable of execution more rapidly and being consequently more efficient as a preventative against possible accident during the next wet season.

5. As it is very important that the work should be put in hand without delay I shall be glad of the Consulting Engineer's authority to proceed with it at once pending the submission of the regular Estimate if he

MADRAS RAILWAY

From The Agent and Manager.

To The Consulting Engineer
for Railways.

Dated 17th March 1875

Recd 5th 1875

No. 239

Regarding Scheme for avoiding the danger threatening to the railway at the Tiger Rock Cutting

A.P. 2434/75

agrees with me in thinking it should be undertaken.

Yours faithfully,
Signed J. H. Goring.
Ag. Chief Engineer

Truesdell
Agent and Manager.

No. 368

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE

Madras, 9th April 1875.

From

Robert B. Clunie Esq.
Agent and Manager of the M.R.

To

Laurelance J. H. Shaw Stewart Esq.
Consulting Engineer for Railways.

Sir,

With reference to your
letter No 290 of the 8th ultimo, I have
the honour to forward you herewith
in duplicate an Estimate of the cost of securing
the loose Boulders of rock at the
Tiger Rock Cutting, Bangalore Branch,
and I request that you will be so good
as to communicate to me the sanction
of Government for the required expenditure
viz Rs 8347.

2 I learn from the Chief
Auditor that the expenditure on this work
has been charged to Schedule B "Unforeseen
Requirements" in the Budget for 1875-76, thus:

Schedule B "Unforeseen Requirements"	Budget Allocated 1875-76.	Already Repaid Charged.	Balance Spent.	Balance Available
Securing loose Boulders at Tiger Rock 145 miles	40,000-0-0	6,789-3-3		8347-0-0

18 6
3. The date on which the
auction will take place is given on the
face of the Estimate in red ink.

I have the honour to be,

Yr most obedient servant

W. J. H. W. W.
Agent and Manager.

Railway Department,

CONSULTING ENGINEER'S OFFICE.

No. 208

From
LIEUT.-COLONEL J. H. M. SHAW STEWART, R.E.,
Consulting Engineer for Railways,

To
COLONEL G. W. WALKER, R.E.,
Secretary to Government,
Public Works Department,
Fort Saint George.

SIR,

Proceedings of
Government
21st January
1875 No. 177.

In my letter dated the
21st December 1874 No. 771, it
was mentioned that a survey was
in progress with a view to deter-
-mine the best mode of insuring
the safety of the line of railway at
the "Tiger Rock" cutting on the
Bangalore branch. Among other
ways of dealing with the diffi-
-culty, it seemed possible that
the cutting in question might be
altogether avoided and the line
diverted so as to pass entirely
outside and to the east of the
rocky

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

for Railways.

Dated 9th April 1875
Recd. 10th April 1875
No. 368.

Arranging for the
excavation of the
cutting on the
east of the
Tiger Rock cutting
on the Bangalore branch

W.P. 2434/55

rocky spur through which the
cutting was excavated.

2. With reference thereto, I have the honour to lay before Government two letters* from the Agent of the Madras Railway, with accompaniments. It will be seen that the result of the survey shows that the Diversion scheme must be abandoned, and that the best mode of dealing with the difficulty is to secure the sides of the cutting by building up, with solid masonry revetment, under such of the boulders as threaten to descend now or in future.

3. The cost of this alterna-
-tive scheme is estimated at
Rs. 8347, and this is recommen-
-ded for sanction: The

mark

* N^o. 239 - 4 th
 March 1875
 N^o. 368 - 9 th
 April 1875.

work is already in progress, its
commencement having been autho-
rized in anticipation of approval,
in order that the cutting might
be secured against accident
during the approaching monsoon.

4. It is proposed to meet the expenditure from schedule B of the Budget estimate for 1895/96, and the sanction will lapse at the end of the fourth quarter after its receipt.

I have the honor to be
Sir
Your most obedient servant

Mumtaz Ali Durrani

Cons. Engineer for Railways

Machras
 13th April
 1895
 W. G. R.

10

NAVY DEPARTMENT.

Fr

SAFETY

1

Noted

10.

Dear Mr. Wells
 From the Agent - Will
 forward you for payment
 an extract of the cost
 of securing the horse
 breeders, as the dogs
 have eating is my alone
 thought
 5. 8 No. 113 62 2-4-175
 of the order

[illegible][illegible]

12-577/8

2434
Govt. of 1875 *Vladivostok*
PUBLIC WORKS.

To *Civil Engineer*
Railways

Dated

Recd.

Encl.

G. O. *22 April* 1875, No. *1136*

Nos. *57-58*

Tiger Rock cutting, Bangalore
Branch. Estimate of the
cost of securing the loose
Boulders at the
sanctioned.