

(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.	942	Press
		Mis.
702-703		
Dated	30-3-	1871.

Not to be folded or roughly handled

10. 9 4

List of Bridges referred to in letter from
Roberts & Co. dated 1st March 1871, No. 3

L. W. Line

Bridge at 30 Ms: 23 Chains

Description

2/71

Remarks

This bridge is not to be inspected here for the Committee. It is above the level of the river. The river is 30 feet deep at this point. The bridge is 23 chains long. The river is 30 feet deep at this point. The bridge is 23 chains long.

Bridge at 32 Ms: 54 Chains

Description

Remarks

Twenty six 31 feet seg. arch. over the Forth River (stone throughout). Inspected 24th Feb. 1871. Excavation made on bench side of 13th pier showing foundation on stiff clay at a depth of 6 1/2 ft. below river bed. The clay is wet, a depth of 4 ft. and the foundation is taken down 2 1/2 ft. into the clay. This bridge has the appearance of great solidity and may be considered in every way satisfactory.

W. Line

Bridge at 51 Ms: 23 Chains

Description

2/71

Remarks

Three 40 feet seg. Arches. Not ready for Committee's inspection will be examined hereafter.

Bridge at 59 Ms: 60 Chains

Description

Thirteen 40 feet seg. Arches over the Taggery River.

21-2-71 Remarks

Not ready for Committee's inspection, will be examined hereafter.

Bridge at 72 Ms: 59 Chains

Description

Remarks

Three 30 feet eq. Arches over the Ladeky River.
all of stone. arches on the skew. the piers are of entire width but the arches are only of a width sufficient for a single line.
Excavation made on both side of No. 9 pier. But with 1 scottish and 1 baling basket at work the water could not be kept clear of the excavation without additional fuddling and the Committee were unable therefore to inspect the foundation of the pier; on this occasion. It will be arranged for the Committee's next visit.

Bridge at 82 Ms: 0 Chain

Description

Remarks

Five 30 feet eq. arches over the Soornamooker River.
The piers are of stone. the arches of brick. the bricks at the haunch soffits are perishing in many instances from damp. they are removed as they decay & replaced with good material. The Chief Engineer proposes to remedy this serious defect by coating the entire soffit with a bituminous glaze.

Excavation made on North side of No. 5 pier, exposing foundation on rock, at a depth of 4 ft. from the surface bed of river. the Curdwall walls also exposed for inspection.

Bridge at 83 Ms: 28 Chains

Description

Remarks

Four 30 feet eq. Arches.
Bridge of stone throughout.
Excavation made on North side of No. 3 Arch exposing foundation on stiff (fuddling) clay, at a depth of 9 ft. from surface of bed of river.

Bridge at 84 Ms: 25 Chains

Description

Remarks

Five 30 feet eq. Arches.
Excavation made on North side of No. 3 pier, exposing foundation on decomposed granite, at depth of (5) five feet.

Bridge at 95 Ms: 38 Chains

Description

Remarks

Five 20 feet openings with W. S. S. Stone piers.
Foundations on boulder rock.
Inspection of foundation not necessary.

Bridge at 107 Ms: 36 Chains

Description

Remarks

Five 47 feet openings with W. S. S. over the Cadour River.
No excavation made for inspection of foundation, as the excavation

recently commenced for the curtain walls at
to be constructed, shows that boulder rock is not
below the river bed. There is a considerable scour
at the cutwaters of the piers, when the river
comes down in torrent, and the construction of
curtain walls and flooring had appeared ad-
visable.

Bridge at 109 Ms 59 Chains

Description Four 30 feet seg. Arches over the
Mooshy Air River.
Remarks Foundation on boulders. Inspection
of foundation not required.

Bridge at 112 Ms 75 Chains

Description Eight 20'-4" openings with wall over
the Moondab Air River.
Remarks Boulder rock bed. Inspection of
foundations not required.

Bridge at 117 Ms 70 Chains

Description Three 30 feet seg. Arches
Remarks Stony bed. Inspection of foundation
not required.

Bridge at 123 Ms 51 Chains

Description Five 30 feet seg. Arches over the
Poolunga Air River.
Remarks Stony bed. Inspection of founda-
tion not necessary.

Bridge at 135 Ms 50 Chains

Description Thirty eight big feet openings with
wall over the Cheyair River.
Remarks Piles are being driven for the construction
of a coffer dam round the entire pier.
With a boring rod the wooden platform
of the 15th pier appeared to be rusted
at a depth of 12 ft. 4 inches. This is where
the half pier had been washed off
the platform.

At the St. Abtment's piers there were
at work baling at the time of the Com-
mittee's inspection. But there were
insufficient to enable the foundation
to be exposed for inspection. But as
in consequence of this excavation
and baling the cracks which former-
ly were but slight in this Abtment
have opened out to a dangerous
extent, the baling had been stopped,
as the Committee are of opinion that
insufficient had been done to show
the want of reliability in the abt-
ment for further use.

Bridge at 142 Ms 24 Chains

Description Two 62'-10" openings with wall.
Remarks Foundations on rock & boulders.
Inspection of foundation not required.

Bridge at 152 Ms 31 Chains

Description Three 30 feet seg. Arches.
Remarks Foundations on boulders. Excavation
for inspection not considered necessary.

Bridge at 153 Ms 32 Chains

Description

Remarks

Two 30 feet openings with w. sh.
Foundations on rock & boulders.
Excavation for inspection not considered requisite

Bridge at 162 Ms 10 Chains

Description

Remarks

Eight 60 feet openings with w. sh.
over the Andapah River
Foundations on boulders. Excavation
for inspection not considered necessary.

Bridge at 164 Ms 44 Chains

Description

Remarks

Five 30 feet seg. Arches.
Excavation made on North side of
No. 4 pier, exposing foundation on
decomposed rock, at a depth of 10 ft.
below level of river bed

Bridge at 165 Ms 50 Chains

Description

Remarks

Six 51'-10" openings with w. sh.
over the Kollaront River
Excavation made on North side of
No. 6 pier, exposing foundation on
schistose clay and rock, at a depth of
9 ft. below surface level of river bed

Bridge at 169 Ms 60 Chains

Description

Remarks

Three 30 feet seg. Arches
Excavation made on South side of North
Abutment exposing foundation on clay
at a depth of 8 ft. below the bed. The

clay is met. at 2 ft 6 inches below the bed.

Bridge at 170 Ms 66 Chains

Description

Remarks

Seven 20 feet openings with w. sh.
Excavation made on South side of No. 6
pier, exposing foundation on clay at a
depth of 8 ft. below surface of bed.
Curtain walls have been constructed
to full depth of foundation, and a
flooring laid.

A. B. The banks of the river above
bridge require to be aligned with a
reticement, as the bed of the river has
shifted somewhat in consequence
of the breach of a bank which washed
away the bridge of 6 arches originally
constructed over the river at this point.

Bridge at 174 Ms 74 Chains

Description

Remarks

Twenty 40 feet openings with w. sh.
over the Pampingree River.
On screw piles. Inspection of foundation
not feasible.

Bridge at 179 Ms 84 Chains

Description

Remarks

Five 50 feet openings with w. sh. over
the Hopahpooram River.
Excavation made on South side of
No. 4 pier, exposing foundation on clay,
at a depth of 7 ft. below river bed.
A. B. Curtain walls & flooring appear
to the Committee to be required for the
protection of this bridge, and orders

for constructing the same, have accordingly been
issued by the Chief Engineer.

Bridge at 179 Ms: 54 Chamis

Description

Remarks

Twenty eight 16 ft openings with
w Sh. over the Yerragardspan River
Limestone rock on surface of bed. No
excavation for inspection of founda-
tions considered necessary.

Bridge at 180 Ms: 49 Chamis

Description

Remarks

Sewer 49.2" openings with w Sh.
over the Mattagapilly River.
Stone piers. Limestone rock on
surface. No excavation for inspection
of foundations considered necessary.

Bridge at 192 Ms: 8 Chamis

Description

Remarks

Three 30 feet seg. arches.
Stone arches & piers.
Excavation made on south side
of 2nd pier exposing foundation
on hard shale at a depth of 8 ft.

Bridge at 193 Ms: 56 Chamis

Description

Remarks

Eight 30 feet seg. arches (stone)
Excavation made at south side of
2nd pier exposing foundation on hard
compact gravel at a depth of 7
feet.

Bridge at 196 Ms: 44 Chamis

Description

Remarks

Three 30 feet openings with w Sh.
Excavation made at upper cut-
water of 1st pier exposing founda-
tion on very stiff yellow clay at a
depth of 5 feet below river bed.
(The flooring to one of the openings
was laid for the convenience of the
Villagers passing under the bridge
when the river contains water.)

Bridge at 200 Ms

Description

Remarks

Two 30' openings on stone piers (sh.)
with w Sh.
Excavation made at upper cut water
of 1st pier exposing foundation on stiff
clay at a depth of 4 1/2 ft.
This bridge being of smaller size
than the minimum selected for
examination, would not have been
inspected, but for an impression
that the foundations were not
on firm soil. The inspection how-
ever proved the foundations to be
very satisfactory.

Bridge at 205 Ms: 28 Chamis

Description

Remarks

Three 31-3 1/2 openings with w. Sh.
Excavation made on south side of
1st pier by the upper cut water,
exposing foundation on minimum
(decomposed granite) at a depth of
6 1/2 ft.

Bridge at 207 ms: 24 Chains

Description
Remarks

Three 30 feet openings with 10 ft. over
Excavation made at upper part - water
of 1st pier - exposing foundation on
clay and gravel at a depth of (6) feet.

Bridge at 211 ms: 55 Chains

Description

Remarks

Forty 30 feet openings with 10 ft. over
the Chittavady river
Excavation made on North side of pier
next beyond the screw pile openings, and
taken out to a depth of 9 feet below river
bed, exposing the top & upper two feet of
brick cylinders. These cylinders are
taken down to the hard in each case, as
above stated, & filled with concrete, and
the two sets of piers are covered diagonally
with large slabs of Kurpie limestone, which
in each case reach across two wells. These
slabs are 7 inches thick. On a former
occasion it was observed that the caps
of two of the screw pile piers had cracked.
These have been now rectified by means
of an iron belt, being fixed to them.

Bridge at 215 ms: 70 Chains

Description

Remarks

Four 30 feet openings with 10 ft. over
Excavation made on North side
of 2nd pier, exposing foundation
on stiff clay and shale, at a
depth of (5) feet.

Bridge at 221 ms: 4 Chains

Description
Remarks

Eight 30 feet sq. arches.
Excavation made on North side of
6th pier, exposing foundation on
hard Kinnier, (partially decomposed
gneiss, at a depth of (9) more feet.

Bridge at 231 ms: 74 Chains

Description

Remarks

Four 64 feet openings with 10 ft. over
the Sootoor river.
Not sandy soil. Inspection of
foundation not considered necessary.
Experimental Hand-rail fixed to
this bridge. The hand-rail consists
of standards formed of ordinary
bar iron, bolted firmly on to end
of each sleeper and supporting 3 lines
of fencing wire. The track is formed
of 1 width of plank laid over the
sleepers. This hand-rail suggested
by the Chief Engineer was found by
the committee to answer its purpose
admirably, and in the most economical
manner.

Bridge at 232 ms: 22 Chains

Description

Remarks

Two 64 feet openings with 10 ft. over
Not sandy soil. Inspection of
foundation does not appear necessary.

Bridge at 233 ms: 48 Chains

Description

Twenty four 64 feet openings with 10 ft. over
the Tennari river.

Remarks.

Excavation made at south side of 9th pier, exposing bottom course of stone work on brick wells, at a depth of 6 ft. below bed of river.

Bridge at 238 Ms: 11 Cham's.

Description

Remarks.

Two 30 feet openings with 10 lb. Not sandy bed. Inspection of foundation does not appear requisite.

Bridge at 245 Ms: 30 Cham's.

Description

Remarks.

Three 30 feet openings with 10 lb. Not sandy bed. Inspection of foundation does not appear necessary.

Bridge at 248 Ms: 36 Cham's.

Description

Remarks.

Four 64 feet openings with 10 lb. Owing to a misunderstanding of the ^{the excavation} structure for the inspection of the foundation of this bridge, was not made. The examination will be made on the Committee's next visit.

Bridge at 248 Ms: 60 Cham's.

Description

Remarks.

Two 64 feet openings with 10 lb. Excavation made on south side of pier, exposing foundation on loose clay, at a depth of 7 ft. below river bed. As the abutment & pier are of a considerable height and the soil is of a treacherous nature, the Committee are of opinion that curtain walls and flooring are essentially necessary.

And the Chief Engineer has given the necessary orders for carrying out this work at once.

Bridge at 254 Ms: 72-37 Cham's.

Description

Remarks.

Five 30 feet openings with 10 lb. Excavation made on south side of 4th pier, exposing foundation at a depth of 8 1/2 ft. below river bed, on sand, Kinkur, and gravelly clay. Curtain walls & flooring recommended.

Bridge at 258 Ms: 55-49 Cham's.

Description

Remarks.

Four 64 feet openings with 10 lb. Excavation made on south side of 2nd pier exposing foundation in very hard Kinkur at a depth of 8 ft.

Bridge at 263 Ms: 13-37 Cham's.

Description

Remarks.

Four 64 feet openings with 10 lb. Not inspected. In a tank. Too much water.

Bridge at 285 Ms: 57-71 Cham's.

Description

Remarks.

Three 30 feet openings with 10 lb. over the Hindry river. Excavations made on south side of south abutment, exposing foundation on Moorumboos, at a depth of 9 1/2 ft. and on north side of 2nd pier exposing foundation on Moorumboos and clay at a depth of 6 1/2 ft. below river bed.

Bridge at 315 Ms: 14.42 Chams

Description
Remarks

Three 30 feet openings with 12 ft.
Excavation made at lower end
of strib abutment exposing founda-
tion on stiff clay at depth of (4)
seven feet below river bed

Bridge at 321 Ms: 46.45 Chams

Description
Remarks

Three 30 feet reg. arches
Excavation made at upper cutwater
of No. 1 pier exposing foundation
on hard decomposed granite,
Kaolini, and pink quartz at a
depth of 5 feet below river bed

Bridge at 324 Ms: 18.14 Chams

Description
Remarks

Three 30 feet openings with 10 ft.
Excavation made on shore side of
No. 1 pier exposing foundation
on rock at a depth of 5 ft. below
river bed

Bridge at 333 Ms: 110 Chams

Description
Remarks

Fifty eight 64 feet openings with
w. 12 ft. over the Srangabutta River.
Inspection of the foundations of
this bridge are evidently unnecessary

P. W. 957/71. Cleared August - Major R.E.
1st March 1871. Briefed Anclut.

6th P. 1

Madras, 1st March, 1871.

No. 3

From,

Colonel. R. A. Roberts, R.E.,

To,

Colonel. Charles. A. Ott, R.E.,
Secretary to Government. P. W. D.

Sir,

In continuation of my letter No. 2 of the
15th ultimo, I have the honor to report that the Committee were
engaged for the whole of the 21st & 22nd idem, in inspecting
the foundations of the Bridges included in the accompanying
List.

2. From this List it will be seen that the
Committee have disposed of the inspection of the whole of
the Bridges on the N. W. line (omitting the Bellary branch)
up to the Srangabutta River, with the exception of the
Shegar and the 6 Bridges noted below:-

1. S. W. line. 30 Ms. 23 Chs. - four 15 & three 30 ft. arches.
2. N. W. line. 51. - 23. - three 40 feet arches.
3. " 59. - 18. - thirteen 40 ft. arches.
4. " 72. - 52. - three 30 feet arches.
5. " 248. - 36. - four 64 feet openings.
6. " 263. - 13.37 Chs. - four 64 feet openings.

The reasons for these not being inspected are mentioned
in each case in the List.

3. The total number of Bridges the foundations
of which have been exposed and inspected by the
Committee is 26.

4. It will be observed that Curtain walls
and flooring have been recommended for these Bridges

as below:-

1. 107 Miles. 36 Chs.
2. 179 " 4 Chs.
3. 248 " 60 "
4. 257 " 72 "

5. The experimental hand-rail that has been fitted to the Bridge of four 64 ft openings with W. I. Girders over the Jostoor River, at 231 Miles 74 Chains, is described in its place in the List. As this rail and foot-path appear to answer the purposes desired by Government, the Committee would recommend the adoption of this arrangement for all the Girder Bridges, on the Massas Railway of and above four 64 ft openings. For all those Girder Bridges below the above limit, but exceeding 30 ft. opening, the Committee are of opinion that a single plank-way laid betwixt the rails will suffice. For the smaller Girder Bridges, i.e. all those less than 30 ft. opening, the laying of a foot-way scarcely appears requisite.

b. With regard to the Sneyaur it will be seen that the Committee are not yet in a position to be able to recommend anything definite. Their recent inspection has tended still more than ever to impress them most seriously with the great gravity of the question on which they have to report.

v. Having been relieved of my connection with the Committee, as per G. O. of 25th February 1871, No. 559, I consider it only my duty to bring to the notice of the Government the most cordial assistance that has been afforded me by the Agent and Manager as by ~~any~~ ^{every} other official with whom I have had to do duty in the course of my various tours of inspection. It has been a labor of many weeks in some instances

to prepare the foundations for inspection, and in one case as many as 30 men were engaged in baling alone at the time of the Committee's visit. And it was only by these means that the inspections were carried out so satisfactorily as they were.

I have the honor to be,
Sir,

Your most obedient servant.

Rich^d. Roberts
Lt. Col. R.E.

Member of Committee on Bridges
of Madras Railway }

S.S. Since drafting the above I have been informed that the Bridge at 30 mi. 23 ch. S.V. f. is one 30 ft. and two 15 ft. arches, & so does not come within the limit which the Committee imposed upon themselves. - I am not in a position to state why the waterway originally proposed has thus reduced. - There now remain therefore only (5) more Bridges for examination on the N.W. Line. -

Madras
1st March 1871.

Rich^d. Roberts
A. Col. R.E.

Pa 15 Feb 8/71 P 528
27 548-549

1871 kept
Prin of 1st March
From No 957
Lieut Colonel P. A. Roberts
To

The Secretary to Govt
P. W. Dept.
Fort St. J.
Dated 1st }
Recd 2nd } March 1871.

No 3.
Encls: 1-1

Reporting that
the Committee were
engaged in inspecting the
foundations of the Bridges
included in the enclosed
List.

No 942 30 March 1871.

Op 72

10 March 1871 A. 135

Public Works Department
No 942
Proceedings of the Madras Government
Under date the 30 March 1871.
Read the following
in Lieut Colonel P. A. Roberts
H. E. No 371 March 1871

The Government
are gratified to learn from
this report of the Committee
appointed to inquire into
the state of the bridges of
the Madras Railway that
the foundations of all those
on the North West line
which they have as yet
been able to examine have
been found to be satisfactory
although in a few in-
stances the addition of
certain walls and flooring
which experience has
shown

shown to give great security is considered advisable.

The design of footway and hand rail which

has been experimentally tried with success on the

girder bridges of four sixty-four feet openings in the 232 mile appears to afford

all the facilities for the inspection of the larger bridges which is so desirable and His Excellency the Governor in Council

accordingly approves of its adoption and sanctions its application to all the larger girder bridges.

The further reports of the result of the examination of the foundations

of

17
of the Cheyane and other bridges will, the Govt. hope, be submitted at an early date.

AL

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do.

The President of the Committee
for the Examⁿ of Railway Bridges -
" C. Eng^r for Ry^s ✓

Sept 23/71

25-1-024 ✓

Further Pro. No. 1270 of 9-5-71
 " 1727 of 22-6-71
 " 1743 of 20-6-71

610th March/77 R. 13th

1010 March 17Kd. 1.25

1/95

Govt. of 1871 Madras.

PUBLIC WORKS.

To the President of the Committee
for the Examination of
Railway Bridges

30 March 1892.

No. 702-703

Bridges (Railway) - Paper
enclosed in the letter from
Lt Col Roberts R.A. dated
10th, with remarks, a
list of the bridges, ^{on the Madras Railway} ex-
amined by the Committee