

(1) Number of pages _____

(2) Date of repair _____

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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	1475	Press	<i>Original</i>
B.P. No.		Mis.	
Dated	4-6-	195	1954

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
4th June 1874.*

No. 79. Read the following letter from Major C. H. LUARD, R.E., Officiating Under Secretary to the Government of India, Public Works Department, (Railway,) to Colonel G. W. WALKER, R.E., Secretary to the Government of Madras, Public Works Department, dated Fort William, 4th May 1874, No. 939-R. :—

I AM directed to forward, herewith, three copies of a statement of cost and of some of the dimensions of the largest bridges on Guaranteed and State lines in India, and to request that any necessary corrections may be noted, and column No. 4 filled up in one of the copies, and returned to the Government of India, with an intimation of the number of copies, if any, that are required.

Statement of Cost of some of the dimensions of the largest Bridges on Guaranteed and State Railways in India.

Name of Bridge.	1	2	3	4	5	6	Remarks.
No. of Spans.	Length of Bridge.	Depth of Foundation below low-water.	Height from low-water level to under-side girders.	Total Cost.	Cost per Linear Foot.		
	Feet.	Feet.		Rs.	Rs.		
Goral Bridge	7	1,995	77 to 95		970		{ Actual cost for a single railway. Each pier consists of two iron cylinders. The approaches cost 3 lakhs. Deducting approaches the cost per foot is Rupees 1,977.
Approaches to ditto	12	452					Ten wells in foundation of piers, which are of stone masonry, for a double way, but girders for a single way only yet laid. Common roadway between the girders and railway on top.
Junna (Allahabad)	14	3,080	40	40,75,800	1,323		Doublesub-structure with girders for single way with second girder; the total cost is Rupees 37,67,473, or Rupees 500 per foot nearly.
Soane	28	4,730	33	16,10,167	551		Estimated cost. One well of 18 feet and one of 10 feet in pier. Railway over roadway between the girders.
Ganges (Cawnpore)	25	2,750	50 to 65	19,40,000	685		Ditto. Three wells in foundation of piers, which are of stone masonry, and carry girders for a single railway* both broad and narrow between, and a common roadway on top.
Land-spans	3	80					Ditto. One well of 16 feet diameter in pier foundation. Railway on the top of the girders.
Junna (Agra)	16	2,272	70	16,54,203	728		Actual cost. Ten wells in foundation of piers, which are not dressed with stone masonry. Sub-structure and girders for a single way on top with a common roadway between the girders.
Ganges (Raighat)...	33	3,040	55	9,03,530	317		{ The contract rate was Rupees 428 per foot, but extensive additions have since become necessary, and actual cost is not known—piers are on single wells 12 feet 6 inches diameter.
Junna (Delhi)	12	2,640	7 to 39	16,60,354	629		Estimated cost without training works for a narrow gauge railway. Three wells in foundation of piers, which are of brick masonry.
" (Saharanpore)	24	2,640	42				Estimated cost for broad gauge. Two wells of 16 feet in pier foundation. Railway between the girders.
Sutlej (Loodianah)	58	6,424	40 to 50				Ditto. Wells of 16 feet and of 14 feet in pier foundation single cylinders. Railway on top of the girders.
Reas	29	3,220	43				Actual cost for a double-way. Three iron-piles in each pier.
Ravoe (Lahore)	33	3,217	75	18,52,176	575		Ditto ditto. Five ditto, with a cluster of 10 in every 6th pier.
Chenab	64	9,088	75	41,75,073	459		Ditto single line.
Jhelum	50	4,875	80	14,78,077	1,167		Ditto ditto.
Sutlej (Bhawnpore)	16	4,224	100	38,85,790	920		Ditto double line
Goomtee (Jounpore)	16	1,472	45 to 50	9,00,000	611		{ Ditto single line over masonry piers built for a double line.
Rangunga (Bareilly)	34	2,260	85	10,74,000	475		
Taptée	30	1,875	Average 14	8,95,280	497		
Nerbudda	67	4,187	87	46,93,490	1,167		
Sabarmuttee	18	1,125	" 81	3,89,853	360		
Kisna	36	3,865	" 15-69	12,80,001	331		
Taptée	33	2,536	" 17-30	13,61,900	534		
Cauvery	22	1,636	Shallow on rock	4,04,753	264		
Toongabudra	58	4,060	" "	7,55,756	186		

*Both broad and narrow gauge railway between the girders and a common roadway on the top.

N.B.—With the exception of the Cauvery and Toongabudra, the cost of Engineer and General Establishment is not included in the above. If it were, the "total cost" would be increased from 1th to 4th more, according to circumstances of time and place.

21st February 1874.

H. D.

Proceedings of the Madras Government, Public Works Department,
4th June 1874.

No. 80.

ORDER THEREON, 4th June 1874, No. 1,475.

RAILWAY, No. 14.

COMMUNICATED to the Consulting
Engineer for Railways for early atten-
tion.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the Consulting Engineer for Railways.

No. of Length of

	NO. OF SPANS.	LENGTH OF BRIDGE.	DEPTH OF FOUNDATION BELOW WATER LEVEL TO UN-DECK-SIDE GIRDERS.	HEIGHT FROM LOW-WATER LEVEL TO UN-DECK-SIDE GIRDERS.	TOTAL COST.	COST PER LINEAL FOOT.	REMARKS.
Gorai Bridge	7	Feet. 1,295	Feet. 77 to 95		Rs. 16,93,009	Rs. 970	Actual cost for a single railway. Each pier consists of two iron-cylinders. The approaches cost 3 lakhs. Deducting approaches the cost per foot is Rs. 1,077.
Approaches to ditto	12	452	25			1,323	Ten wells in foundation of piers, which are of stone masonry, for a double way, but girders for a single way only yet laid. Common roadway between the girders and railway on top.
Jumna (Allahabad)	14	3,080	40		40,75,800		Double substructure with girders for single way with second girder; the total cost is Rs. 37,67,473, or Rs. 800 per foot nearly.
Soane	28	4,730	32		26,10,167	551	Estimated cost. One well of 18 feet and one of 10 feet in pier. Railway over, roadway between the girders.
Ganges (Cawnpore)	25	2,750	50 to 65		19,40,000	685	Ditto. Three wells in foundation of piers, which are of stone masonry, and carry girders for a single railway* both broad and narrow between, and a common roadway on top.
Land-spans	2	80	70		16,54,203	728	Ditto. One well of 16 feet diameter in pier foundation. Railway on the top of the girders.
Jumna (Agra)	16	2,272					Actual cost. Ten wells in foundation of piers, which are not dressed with stone masonry. Substructure and girders for a single way on top with a common roadway between the girders.
Ganges (Rajghat)	33	3,040	55		9,63,580	317	The contract rate was Rs. 428 per foot, but extensive additions have since become necessary, and actual cost is not known—piers are on single wells 12 feet 6 inches diameter.
Jumna (Delhi)	12	2,640	7 to 39		16,60,354	629	Estimated cost without training works for a narrow gauge-railway. Three wells in foundation of piers, which are of brick masonry.
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Chenab	64	9,088	75		41,75,973	459	Ditto. Wells of 16 feet and of 14 feet in pier foundation single cylinders. Railway on top of the girders.
Jhelum	50	4,875	30		14,78,077	303	Actual cost for a double-way. Three iron-piles in each pier.
Sutlej (Bhawulpoor)	16	4,224	100		38,85,780	920	Ditto ditto. Five ditto ditto, with a cluster of 10 in every 6th pier.
Goontee (Jounpoor)	16	1,472	45 to 50		9,00,000	611	Ditto single line.
Ramgunga (Bareilly)	34	2,260	85		10,74,000	475	Ditto ditto.
Taptree	30	1,875	Average 14		8,95,260	497	Ditto double line.
Nerbudda	67	4,157	37		46,93,490	1,167	Ditto single line over masonry piers built for a double line.
Sabarnuttee	18	1,125	" 31		3,89,852	360	
Kistna	36	3,865	" 15-69		12,80,001	331	
Taptree	33	2,536	" 17-30		13,64,900	534	
Cauvery	22	11,586	Shallow on rock		4,08,752	266	
Toongabudra	58	4,060	"		7,55,756	186	

* Both broad and narrow gauge railway between the girders and a common roadway on the top.

N. B.—With the exception of the Cauvery and Toongabudra, the cost of Engineer and General Establishment is not included in the above. If it were, the "total cost" would be increased from 4th to 4th more, according to circumstances of time and place.

21st February, 1874.

All communications
should be addressed to
the Secretary

No. 939 S-R
GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

~~GUARANTEED~~ RAILWAYS

To
THE SECRETARY TO THE GOVERNMENT OF *Madras*.
PUBLIC WORKS DEPARTMENT.

FORT WILLIAM, 4th May 1874.

SIR,

I am directed to forward herewith 3
copies of a statement of cost and of some
of the dimensions of the largest bridges
on Guaranteed and State lines in India,
and to request that any necessary corrections
may be noted, and column N^o 4 filled up
in one of the copies, and returned to the
Government of India, with an intima-
tion of the number of copies, if any, that
are required.

I have the honor to be
Sir,

Your most obedient servant.

C. D. Dward Major R. E.,
Offg. Under Secretary.

Ms. 747
L. 8/10/74
M. 28/5/74

Con. Eng. v. B. & O. R. 11/6/74.

69

1475
Com. to Mr. Con. Eng. for Railways
for early attention
Miss

Del. Mexico 1874 Sept.
No. 2815.

Two

The Court of Judica

Del. 4th May 1874
Rec'd 12th July 1874

No. 9398 R.

of procuring
statements showing the
cost and dimensions of
some of the largest Rail-
way bridges in Austria
& requesting that certain
information may be
furnished and the
statement completed
and returned with an
indication of the
number of copies that
may be required.

There is no necessity of requiring the
Government of Austria to be
in one of the official papers to the
effect that the Government of Austria
is not a party to the Convention of 1874.

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33

28/5
Govt. of 1874 Madras.
PUBLIC WORKS.

To The Comr. Supr. & Myp

Dated
Recd.

Encl. /

G. O. 4th June 1874, No. 1475

Nos. 79-80.

may be required.
Comr. to the Comr. Supr.
for Myp for early
attention —

Railways - Letter from
the Govt. of India forwarding
Statements showing the cost
& dimensions of some of the
largest Railway bridges in
India & requesting that certain
information may be furnished
to the statement complete &
returned with an intimation
of the number of copies sent