Enclosure to Director General of Railways' Circular No. 8 of 1895.

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

G. C. Press, Simla.—140 P. W. D.—25-7-95.—892.

Enclosure to Director General of Railways' Circular No. 8 of 1895.

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

STATEMENT showing the average rates per ton for entire Sea Freight on Bridgework sent out from England to the several ports in India for State Railways of both gauges during 1894.

Description of girders.	Karachi.	Bombay.	Calcutta.	Coconada or Vizagapatam.	Rangoon.	Remarks.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	
Clear span 6 feet	13 9	...	...	...	...	
„ 10 „	6 9	...	...	...	...	
„ 12 „	15 8	22 6	15 0	...	...	
„ 15 „	...	...	...	...	...	
„ 18 „	...	...	...	...	...	
„ 20 „	14 0	22 6	15 0	19 0	...	
„ 30 „	17 9	...	30 10	...	...	
„ 40 „	18 0	25 0	37 6	19 0	...	
„ 60 „	18 3	23 0	40 0	19 0	...	
„ 100 „	14 3	...	19 0	...	26 8	
„ 150 „	16 6	...	...	...	...	

Note.—Where rates have not been quoted, it should be understood that girders of the dimensions specified were not imported during the year.

CLASS OF STORES. A.—BRIDGEWORK.

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
30/193 17-1-94	10	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0	18	2	14	10	5	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	1	21					
				For all service bolts, nuts, and washers	0	0	0	14					
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ...	1	0	0	21	10	6	11	Span.	
39/38 2-10-94	10	Do.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0	18	2	14	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	1	21					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ..	1	0	1	0	9	10	2	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/386 31-1-94	12	Bhopal-Ujjain	Upper, open	*For all steel in girderwork, including rivets, spare rivets, and rivet rods...*	1 3 3 0	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 7	12 0 6	Span.	
33/115 11-4-94	12	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 8 4½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 2-5-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 4 9	Span.	
39/38 2-10-94	12	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	10 5 3	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	13 0 5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.		Remarks.
									Amount.	Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£ s. d.		
39/116 9-10-94	15	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	2	19	2	0	8 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	2	21			
				For all service bolts, nuts, and washers	0	0	0	21			
				Girders, plate, 15 ft., complete, with bolts, rivets, &c. ...	3	1	1	14	26 1 8	Span.	
39/125 11-10-94	18	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	6	5	1	14	8 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7			
				For all service bolts, nuts, and washers	0	0	3	0			
				Girders, plate, 18 ft., complete, with bolts, nuts, rivets, &c. ...	6	6	2	21	53 16 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.		Remarks.
									Amount.	Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£ s. d.		
30/193 17-1-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	3	13	3	21	9 17 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0			
				For all service bolts, nuts, and washers	0	0	1	14			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	37 13 7	Span.	
30/386 31-1-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork including rivets, spare rivets, and rivet rods	3	13	3	21	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0			
				For all service bolts, nuts, and washers	0	0	1	14			
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ...	3	16	1	7	36 5 0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
33/115 — 11-4-94	20	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	3	13	3	21	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	34	6	10	Span.	
34/1 — 2-5-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	3	13	3	21	8	17	0	Ton.	
				For all bolts, nuts, and washers ...	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 feet, complete, with bolts, rivets, &c. ...	3	16	1	7	33	15	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
39/38 — 2-10-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ..	3	16	0	14	36	8	2	Span.	
39/125 — 11-10-94	20	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods	7	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	7	6	2	21	62	6	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
40/313 28-11-94	20	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	3	13	0	0	8	12	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c.	3	15	1	14	32	10	0½	Span.	
30/385 31-1-94	30	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	6	15	2	0	9	8	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	6	18	3	7	65	8	3	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
34/67 10-5-94	30	Eastern Bengal	Lower ...	For all steel in girderwork, including rivets, spare rivets, and rivet rods	9	19	0	0	9	15	0	Ton	For a bridge of 3 spans, or 90 feet over all.
				For all service bolts, nuts, and washers	0	1	0	0					
				Girders, plate, 30 ft., complete, including bolts, rivets, &c. ...	10	0	0	0	97	10	0	Span.	
37/211 8-8-94	30	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	8	13	3	21	8	17	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	8	17	1	0	78	13	1	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span. Tons	cwt.	qr.	lbs.	RATE—FREE ON BOARD. Amount. £	s.	d.	Unit.	REMARKS.
	Ft.												
31/324 22-2-94	40*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghat, engines having axle loads of at least 17 tons per axle.	For all steel in girderwork including rivets, spare rivets, and rivet rods	22	11	2	0	9	5	0	Ton.	* On curve 1,011·5 ft. radius.
				For all bolts, nuts, and washers, except service bolts	0	0	3	23					
				For all service bolts, nuts, and washers	0	1	2	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	22	13	3	23	209	19	1	Span.	
33/111 10-4-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	21	18	1	0	9	12	0	Ton.	† Bridge No. 214.
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	1	2	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	22	0	1	7	211	7	0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span. Tons	cwt.	qr.	lbs.	RATE—FREE ON BOARD. Amount. £	s.	d.	Unit.	REMARKS.
	Ft.												
33/206 16-4-94	40	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10	11	0	0	9	10	0	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	1	0	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	15	0	14	102	3	8	Span.	
34/1 2-5-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	10	11	0	0	8	17	0	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	1	2	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	15	2	14	95	8	3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.			Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
31/324 22-2-94	40*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghat, engines having axle loads of at least 17 tons per axle.	For all steel in girderwork including rivets, spare rivets, and rivet rods	22	11	2	0	9	5	0	Ton.	* On curve 1,011·5 ft. radius.
				For all bolts, nuts, and washers, except service bolts	0	0	3	23					
				For all service bolts, nuts, and washers	0	1	2	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	22	13	3	23	209	19	1	Span.	
33/111 10-4-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	21	18	1	0	9	12	0	Ton.	† Bridge No. 214.
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	1	2	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	22	0	1	7	211	7	0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.			Remarks.
									Amount.			Unit.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*	
33/206 16-4-94	40	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10	11	0	0	9	10	0	Ton.
				For all bolts, nuts and washers, except service bolts	0	3	0	14				
				For all service bolts, nuts, and washers	0	1	0	0				
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	15	0	14	102	3	8	Span.
34/1 2-5-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	10	11	0	0	8	17	0	Ton.
				For all bolts, nuts and washers, except service bolts	0	3	0	14				
				For all service bolts, nuts, and washers	0	1	2	0				
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	15	2	14	95	8	3	Span.

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/324 22-2-94	40*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghat, engines having axle loads of at least 17 tons per axle.	For all steel in girderwork including rivets, spare rivets, and rivet rods	22 11 2 0	9 5 0	Ton.	* On curve 1,011·5 ft. radius.
				For all bolts, nuts, and washers, except service bolts	0 0 3 23			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	22 13 3 23	209 19 1	Span.	
33/111 10-4-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	21 18 1 0	9 12 0	Ton.	† Bridge No. 214.
				For all bolts, nuts, and washers, except service bolts	0 0 2 7			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	22 0 1 7	211 7 0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/206 16-4-94	40	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10 11 0 0	9 10 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 0 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10 15 0 14	102 3 8	Span.	
34/1 2-5-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	10 11 0 0	8 17 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10 15 2 14	95 8 3	Span.	

CLASSOF STORES. A.--BRIDGEWORK--*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Rate—Free on board. Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
39/38 2-10-94	40	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets and rivet rods...	10	11	0	0	9	7	10	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	14	2	0	101	3	3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—contd.

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Rate—Free on board. Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
30/385 31-1-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	26	13	0	0	9	8	6	Ton.	
				For all bolts, nuts and washers ...	0	4	3	14					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c. ...	27	0	3	14	254	17	9	Span.	
31/324 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43	13	0	0	9	5	0	Ton.	* Angle of skew 60° to left.
				For all bolts nuts, and washers, except service bolts	0	1	2	9					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43	17	2	9	405	17	9	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/324 — 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 9 3 11	9 5 0	Ton.	* Angle of skew 60° to right.
				For all bolts, nuts and washers, except service bolts.	0 1 2 18			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 * feet, complete, with bolts, rivets, &c.	43 14 2 1	404 9 3	Span.	
31/324 — 22-2-94	60 †	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 8 1 9	9 5 0	Ton.	† On curve 1,146 ft. radius.
				For all bolts, nuts and washers, except service bolts	0 1 2 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43 12 3 23	403 15 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/111 — 10-4-94	60*	Mushkaf Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 2 0 0	9 12 0	Ton.	*Bridge No. 215.
				For all bolts, nuts and washers, except service bolts	0 1 1 7			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete with bolts, rivets, &c. ...	44 6 1 7	425 7 8	Span.	
33/111 — 10-4-94	60†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 11 1 21	9 12 0	Ton.	†Bridge No. 216. Angle of skew 45° to left.
				For all bolts, nuts, and washers, except service bolts	0 1 1 2			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	44 15 2 23	429 18 9	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons. cwt. qr. lbs.	£ s. d.		
31/324 — 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 9 3 11	9 5 0	Ton.	* Angle of skew 60° to right.
				For all bolts, nuts and washers, except service bolts	0 1 2 18			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 * feet, complete, with bolts, rivets, &c.	43 14 2 1	404 9 3	Span.	
31/324 — 22-2-94	60 †	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 8 1 9	9 5 0	Ton.	† On curve 1,146 ft. radius.
				For all bolts, nuts and washers, except service bolts	0 1 2 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43 12 3 23	403 15 3	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/111 — 10-4-94	60*	Mushkaf Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 2 0 0	9 12 0	Ton.	*Bridge No. 215.
				For all bolts, nuts and washers, except service bolts	0 1 1 7			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete with bolts, rivets, &c. ...	44 6 1 7	425 7 8	Span.	
33/111 — 10-4-94	60†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 11 1 21	9 12 0	Ton.	†Bridge No. 216. Angle of skew 45° to left.
				For all bolts, nuts, and washers, except service bolts	0 1 1 2			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	44 15 2 23	429 18 9	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/177 13-4-94	60	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 4 0 0	10 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 7			
				For all srevice bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43 8 1 7	434 3 2	Span.	
33/206 16-4-94	60	East Coast	Upper, open	For all steel in girderwork including rivets, spare rivets, and rivet rods	26 12 0 0	9 10 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	26 19 3 14	256 8 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—contd.

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 2-5-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	26 13 0 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	27 0 3 14	239 6 8	Span.	
37/1 1-8-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	26 12 3 0	9 0 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, etc.	27 0 2 14	243 5 7½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/177 — 13-4-94	60	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 4 0 0	10 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 7			
				For all srevice bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43 8 1 7	434 3 2	Span.	
33/206 — 16-4-94	60	East Coast	Upper, open	For all steel in girderwork including rivets, spare rivets, and rivet rods	26 12 0 0	9 10 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	26 19 3 14	256 8 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—contd.

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 — 2-5-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	26 13 0 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	27 0 3 14	239 6 8	Span.	
37/1 — 1-8-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	26 12 3 0	9 0 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, etc.	27 0 2 14	243 5 7½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/111 — 10-4-94	100*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts and service bolts, &c.	79	8	3	0	9	12	0	Ton.	
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	„	*Bridge No. 215. Angle of skew 45° to right.
				For all cast-iron	3	12	1	0	8	15	0	„	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	17	3	0	808	0	7	Span.	
				For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	78	17	2	0	9	12	0	Ton.	
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	„	
33/111 — 10-4-94	100†	Mushkaf-Bolan	Ditto.	For all cast-iron	3	12	1	0	8	15	0	„	†Bridge No. 214. On curve of 900 feet radius.
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	6	2	0	802	12	6	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
37/234 — 17-8-94	100	Bhopal-Ujjain	Lower, with cart road on rail level.	For all steel in girderwork, including rivets and spare rivets. ...	79	14	3	21	8	15	0	Ton.	
				For all bolts, nuts, and washers ...	0	4	0	7					
				For all service bolts, nuts, and washers	0	6	0	0					
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	80	5	0	0	702	3	9	Span.	
				For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	151	17	0	21	8	17	6	Ton.	
				For all steel in expansion rollers and frames	1	16	3	0	20	0	0	„	
31/325 — 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all cast-iron	7	7	1	0	9	10	0	„	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161	1	0	21	1,454	7	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/111 — 10-4-94	100*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts and service bolts, &c.	79 8 3 0	9 12 0	Ton.	
				For all steel in expansion rollers and frames	0 16 3 0	16 10 0	„	*Bridge No. 215. Angle of skew 45° to right.
				For all cast-iron	3 12 1 0	8 15 0	„	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83 17 3 0	808 0 7	Span.	
33/111 — 10-4-94	100†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	78 17 2 0	9 12 0	Ton.	
				For all steel in expansion rollers and frames	0 16 3 0	16 10 0	„	†Bridge No. 214. On curve of 900 feet radius.
				For all cast-iron	3 12 1 0	8 15 0	„	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83 6 2 0	802 12 6	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
37/234 — 17-8-94	100	Bhopal-Ujjain	Lower, with cart road on rail level.	For all steel in girderwork, including rivets and spare rivets. ...	79 14 3 21	8 15 0	Ton.	
				For all bolts, nuts, and washers ...	0 4 0 7			
				For all service bolts, nuts, and washers	0 6 0 0			
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	80 5 0 0	702 3 9	Span.	
31/325 — 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	151 17 0 21	8 17 6	Ton.	
				For all steel in expansion rollers and frames	1 16 3 0	20 0 0	„	
				For all cast-iron	7 7 1 0	9 10 0	„	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161 1 0 21	1,454 7 5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/111 10-4-94	100*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts and service bolts, &c.	79	8	3	0	9	12	0	Ton.	
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	„	*Bridge No. 215. Angle of skew 45° to right.
				For all cast-iron	3	12	1	0	8	15	0	„	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	17	3	0	808	0	7	Span.	
33/111 10-4-94	100†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	78	17	2	0	9	12	0	Ton.	
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	„	†Bridge No. 214. On curve of 900 feet radius.
				For all cast-iron	3	12	1	0	8	15	0	„	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	6	2	0	802	12	6	Span.	

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
37/234 17-8-94	100	Bhopal-Ujjain	Lower, with cart road on rail level.	For all steel in girderwork, including rivets and spare rivets. ...	79	14	3	21	8	15	0	Ton.	
				For all bolts, nuts, and washers ...	0	4	0	7					
				For all service bolts, nuts, and washers	0	6	0	0					
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	80	5	0	0	702	3	9	Span.	
31/325 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	151	17	0	21	8	17	6	Ton.	
				For all steel in expansion rollers and frames	1	16	3	0	20	0	0	„	
				For all cast-iron	7	7	1	0	9	10	0	„	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161	1	0	21	1,454	7	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/111 — 10-4-94	100*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts and service bolts, &c.	79	8	3	0	9	12	0	Ton.	
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	„	*Bridge No. 215. Angle of skew 45° to right.
				For all cast-iron	3	12	1	0	8	15	0	„	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	17	3	0	808	0	7	Span.	
				For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	78	17	2	0	9	12	0	Ton.	
33/111 — 10-4-94	100†	Mushkaf-Bolan	Ditto.	For all steel in expansion rollers and frames	0	16	3	0	16	10	0	„	†Bridge No. 214. On curve of 900 feet radius.
				For all cast-iron	3	12	1	0	8	15	0	„	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	6	2	0	802	12	6	Span.	

CLASS OF STORES. A.—BRIDGEWORK—contd.

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
37/234 — 17-8-94	100	Bhopal-Ujjain	Lower, with cart road on rail level.	For all steel in girderwork, including rivets and spare rivets. ...	79	14	3	21	8	15	0	Ton.	
				For all bolts, nuts, and washers ...	0	4	0	7					
				For all service bolts, nuts, and washers	0	6	0	0					
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	80	5	0	0	702	3	9	Span.	
				For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	151	17	0	21	8	17	6	Ton.	
31/325 — 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in expansion rollers and frames	1	16	3	0	20	0	0	„	
				For all cast-iron	7	7	1	0	9	10	0	„	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161	1	0	21	1,454	7	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	REMARKS.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/326 — 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	151 17 0 21	9 3 9	Ton.	
				For all steel in expansion rollers and frames	1 16 3 0	35 0 0	,,	
				For all cast-iron	7 7 1 0	11 0 0	,,	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161 1 0 21	1,540 10 1	Span.	
33/252 — 19-4-94	150	East Coast	Lower, with cart road on rail level.	For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	138 4 1 0	9 0 0	Ton.	
				For all steel in expansion rollers and frames	0 19 3 0	25 0 0	,,	
				For all cast-iron	5 6 2 0	9 0 0	,,	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	144 10 2 0	1,316 10 6	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—contd.

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	REMARKS.
					Tons cwt. qr. lbs.	£ s. d.		
				Connections between spans.				
33/111 — 10-4-94	...	*Mushkaf-Bolan	...	For all steel in plates and angle bars	0 16 2 0			
				Rivet heads and spare rivets ...	0 1 0 0	9 12 0	Ton.	*For bridge No. 216, consisting of 4 spans of 60 feet.
				46 bolts and washers	0 0 1 21			
				Total in connections ...	1 17 3 21	18 4 2	Total.	
				Connections between spans and at abutments.				
33/111 — 10-4-94	...	†Mushkaf-Bolan	...	For all steel in plates angle bars and corrugated plates	1 16 3 0			
				Rivet heads and spare rivets ...	0 2 1 0	9 12 0	Ton.	† For bridge No. 215, consisting of 2 spans of 100 and 1 of 60 feet.
				154 bolts and washers	0 1 1 14			
				Total in connections ...	2 0 1 14	19 7 7	Total.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
				Connections between spans and at abutments.	Tons. cwt. qr. lbs.	£ s. d.		
33/111 — 10-4-94	...	*Mushkaf-Bolan	...	For all steel in plates angle bars and corrugated plates	0 17 3 0	9 12 0	Ton.	*For bridge No. 214, consisting of 2 spans of 100 and 2 of 40 feet.
				Rivet heads and spare rivets ...	0 2 1 0			
				118 bolts and washers	0 1 0 7			
				Total in connections ...	2 1 0 7	19 14 2	Total.	
				Spare Parts.				
39/297 — 27-10-94	...	North-Western	...	End trough floor plate 10′1″ × 1′6$\frac{1}{8}$″ × $\frac{15}{16}$″, depth of trough 5$\frac{5}{16}$″ ...		3 10 0	Each.	Required to complete one span of girder of 90 feet for Jhelum Bridge.

CLASS OF STORES. A.—BRIDGEWORK—contd.

METRE GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
38/208 — 15-9-94	12	Oodeypore-Chitore.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	0 19 0 14	9 5 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 0 0			
				For all service bolts, nuts and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 1 1 7	9 17 2	Span.	
38/208 — 15-9-94	20	Oodeypore-Chitore.	Upper, open	For all steel in girderwork, including rivets, spare rivets and rivet rods...	2 14 0 21	9 5 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 3 7			
				For all service bolts nuts and washers	0 0 0 21			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	2 17 0 21	26 8 11	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*concld.*

METRE GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
35/252 20-6-94	100	Mu Valley ...	*Upper, open	For all steel in girderwork, rivets, bolts, service bolts, &c. ...	43	3	3	11	10	18	6	Ton.	*Without footway.
				For all steel in expansion rollers and frames	0	9	0	0	26	2	6		
				For all cast-iron	2	0	1	0	12	0	0		
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	45	13	0	11	486	3	9	Span.	

26

Enclosure to Director General of Railways' Circular No. 8, dated 18th July 1895.

Appendix A.

Statement showing bridge girders of 250 feet span and above which have been obtained for State railways through the India Office up to end of 1894.

Number of India Office contracts.	Name of Contractors.	Clear span feet.	Gauge.	Price f. o. b. in England.	For what bridge and railway.	Approximate quantity of steel and iron.		Remarks.
				£ s. d.			Tons.	
A 125 of 1884 ...	Westwood, Baillie & Co.	250 ...	Metre ...	4,010 0 0	Bellary-Kistna railway. (This span was originally intended for the Jhansi-Manikpur railway).	Steel	219	Main girders, cross girders, longitudinal girders, and floor-plates are of steel. The whole of the rivets are of steel.
						Wrought iron	36½	
						Cast iron	13½	
						Bolts, screws, etc. ...	4	
							273	
A 163 of 1885 ...	Westwood, Baillie & Co.	250 ...	Do. ...	3,991 0 0	Gunduck bridge, Tirhoot State railway.	Steel	215	Main girders are of steel with the exception of plates and angle bars of diaphragms, cross girders, overhead girders, footways, hand-rails, floor, etc., are of wrought iron. The overhead diagonal bracing and gussets are of steel.
,, 164 ,, ...	Patent Shaft and Axle-tree Company.					Wrought iron	88¼	
						Cast iron	13¼	
						Bolts, etc.	3½	
							320	
A 41 of 1876 ...	Head, Wrightson & Co.	250 ...	5′ 6″ ...	5,942 0 0 & 5,964 0 0	Sutlej bridge, Adamwahan.	Wrought iron	383½	Rollers and knuckle pins only are of steel.
,, 42 ,, ...	Westwood, Baillie & Co.					Cast iron	15¾	
						Steel	5	
							404¼	
A 76 of 1880 ...	Westwood, Baillie & Co.	257 (centres of bearing.)	5′ 6″ ...	4,463 0 0	Indus bridge at Attock	Steel	241½	Top and bottom booms of main girders and pillars, bracing between top and bottom booms, resting gear and rivets are of steel.
						Wrought iron	144½	
						Cast iron	12¾	
							398½	
A 77 ,, ...	Westwood, Baillie & Co.	308 ...	5′ 6″ ...	Not given in the contract.	Ditto ...	TOTAL WEIGHT ...	553½	314 feet measured from centre to centre of piers was ordered, and the girder supplied was for openings of 308 feet. No schedule of quantities for this contract was received.
		(centre of bearings)						
A 116 of 1883 ...	Westwood, Baillie & Co.	278 ...	5′ 6″ ...	8,842 0 0	Indus bridge at Sukkur	Steel	866	Main girders are of steel with the exception of plates and angle bars of diaphragms in the top boom, the bracings and connections of the angle bars of the vertical struts, the stiffenings of the tension bars and the tapered packings of the angle bars on the inside of the upper boom which parts are of wrought iron, curb plates, longitudinal girders on the footways, diagonal bracing under roadway, corrugated floor-plates, etc., are of steel.
		(centre of bearings)				Wrought iron	136½	
						Cast iron	19	
							521½	
A 146 of 1885 ...	Westwood, Baillie & Co.	Two cantilevers, each 310 feet long.	5′ 6″ ...	49,403 0 0 (average for each.)	Ditto ...	*Bukkur Cantilever.*		
						Steel	1,417	
						Iron	13¼	
							1,430¼	
						Haji-Motu Cantilever.		
						Steel	1,433½	All steel except bed-plates for trimmers, the chipping pieces under the bed-plates of the girder span, the tubular portion of the bracing of the large pillar and of No. 3 strut and all bolts and screws, all of which are of wrought iron.
						Iron	13½	
							1,446½	
4711 of 1891 ...	P. and W. Mclellan ...	300 ...	5′ 6″ ...	6,459 0 0 & 6,421 0 0	Kistna bridge ...	TOTAL ...	2,876¾	
4712 ,, ...	Head Wrightson & Co.					Total weight, 535½ tons (exclusive of snaps.)		All steel except the saddles, knuckles and bed plates, which are of cast iron and the rolled frames and service bolts which are either of iron or steel.

CLASS OF STORES. A.—BRIDGEWORK—*concld.*

METRE GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
35/252 — 20-6-94	100	Mu Valley ...	*Upper, open	For all steel in girderwork, rivets, bolts, service bolts, &c. ...	43 3 3 11	10 18 6	Ton.	*Without footway.
				For all steel in expansion rollers and frames	0 9 0 0	26 2 6		
				For all cast-iron	2 0 1 0	12 0 0		
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	45 13 0 11	486 3 9	Span.	

Enclosure to Director General of Railways' Circular No. 8, dated 18th July 1895.

Appendix A.

Statement showing bridge girders of 250 feet span and above which have been obtained for State railways through the India Office up to end of 1894.

Number of India Office contracts.	Name of Contractors.	Clear span feet.	Gauge.	Price f. o. b. in England.	For what bridge and railway.	Approximate quantity of steel and iron.	Remarks.
A 125 of 1884 ...	Westwood, Baillie & Co.	250 ...	Metre ...	£ s. d. 4,010 0 0	Bellary-Kistna railway. (This span was originally intended for the Jhansi-Manikpur railway).	Steel ... ... 219 Wrought iron ... ... 36½ Cast iron ... ... 13¾ Bolts, screws, etc. ... 4 273	Main girders, cross girders, longitudinal girders, and floor-plates are of steel. The whole of the rivets are of steel.
A 163 of 1885 ...	Westwood, Baillie & Co.	250 ...	Do. ...	3,991 0 0	Gunduck bridge, Tirhoot State railway.	Steel ... ... 215 Wrought iron ... ... 88¼ Cast iron ... ... 13½ Bolts, etc. 3½ 320	Main girders are of steel with the exception of plates and angle bars of diaphragms, cross girders, overhead girders, footways, hand-rails, floor, etc., are of wrought iron. The overhead diagonal bracing and gussets are of steel.
,, 164 ,, ...	Patent Shaft and Axletree Company.						
A 41 of 1876 ...	Head, Wrightson & Co.	250 ...	5′ 6″ ...	5,942 0 0 & 5,964 0 0	Sutlej bridge, Adamwahan.	Wrought iron ... ... 383½ Cast iron ... ... 15½ Steel 5 404½	Rollers and knuckle pins only are of steel.
,, 42 ,, ...	Westwood, Baillie & Co.						
A 76 of 1880 ...	Westwood, Baillie & Co.	257 (centres of bearing.)	5′ 6″ ...	4,463 0 0	Indus bridge at Attock	Steel ... ... 241½ Wrought iron ... ... 144½ Cast iron 12¾ 398½	Top and bottom booms of main girders and pillars, bracing between top and bottom booms, resting gear and rivets are of steel.
A 77 ,, ...	Westwood, Baillie & Co.	308 ...	5′ 6″ ...	Not given in the contract.	Ditto ...	TOTAL WEIGHT ... 553¾	314 feet measured from centre to centre of piers was ordered, and the girder supplied was for openings of 308 feet. No schedule of quantities for this contract was received.
A 116 of 1883 ...	Westwood, Baillie & Co.	278 ... (centre of bearings)	5′ 6″ ...	8,842 0 0	Indus bridge at Sukkur	Steel ... ... 866 Wrought iron ... ... 136½ Cast iron 19 521½	Main girders are of steel with the exception of plates and angle bars of diaphragms in the top boom, the bracings and connections of the angle bars of the vertical struts, the stiffenings of the tension bars and the tapered packings of the angle bars on the inside of the upper boom which parts are of wrought iron, curb plates, longitudinal girders on the footways, diagonal bracing under roadway, corrugated floor-plates, etc., are of steel.
A 146 of 1885 ...	Westwood, Baillie & Co.	Two cantilevers, each 310 feet long.	5′ 6″ ...	49,403 0 0 (average for each.)	Ditto ...	*Bukkur Cantilever.* Steel ... ... 1,417 Iron ... ... 13¼ 1,430¼ *Haji-Motu Cantilever.* Steel ... ... 1,433¼ Iron ... ... 13¼ 1,446½ TOTAL ... 2,876¾	All steel except bed-plates for trimmers, the chipping pieces under the bed-plates of the girder span, the tubular portion of the bracing of the large pillar and of No. 3 strut and all bolts and screws, all of which are of wrought iron.
4711 of 1891 ...	P. and W. Mclellan ...	300 ...	5′ 6″ ...	6,459 0 0 & 6,421 0 0	Kistna bridge ...	Total weight, 535½ tons (exclusive of snaps.)	All steel except the saddles, knuckles and bed plates, which are of cast iron and the rolled frames and service bolts which are either of iron or steel.
4712 ,, ...	Head Wrightson & Co.						

[*General Distribution.*]

CIRCULAR No. 8.

FROM

THE DIRECTOR GENERAL OF RAILWAYS,

TO

THE MANAGER, NORTH WESTERN RAILWAY.
THE MANAGER, OUDH AND ROHILKHAND RAILWAY.
THE MANAGER, EASTERN BENGAL STATE RAILWAY.
THE MANAGER, EAST COAST RAILWAY.
THE ENGINEER-IN-CHIEF, MUSHKAF-BOLAN STATE RAILWAY.
THE ENGINEER-IN-CHIEF, KOTRI ROHRI RAILWAY.
THE ENGINEER-IN-CHIEF, MARI-ATTOCK RAILWAY AND GRADIENT IMPROVEMENT WORKS, NORTH-WESTERN RAILWAY.
THE ENGINEER-IN-CHIEF, BEZWADA MADRAS RAILWAY.
THE ENGINEER-IN-CHIEF, ASSAM BURMA CONNECTION RAILWAY SURVEY.
THE EXECUTIVE ENGINEER, KALKA-SIMLA RAILWAY SURVEY.
THE PORT STOREKEEPER, STATE RAILWAY DEPARTMENT, CALCUTTA.

Rate List, Class A.—Bridgework for 1894.

Simla, the 18th July 1895.

SIR,

I have the honour to forward herewith, for information and guidance, a printed statement showing the actual English rates *free on board* in England for A. Class, State Railway Stores, *viz.*, "Bridgework," contracted for by the Stores Department of the India Office during the year 1894.

2. A statement showing the average rates per ton for entire sea freight, on Bridgework sent out from England to the several ports in India during 1894, is prefixed to the Rate list.

3. In order to arrive at the total cost of the Bridgework landed in India, an insurance charge of one-half* per cent. on the *free on board* cost *plus* entire sea freight, should be added in addition to other incidental charges and exchange, which latter should be calculated at the official rate for the year.

4. A statement, showing the weight and f. o. b. cost of steel and iron for bridge girders, of 250 span and upwards, which have been obtained for state railways through the India Office up to end of 1894, has been added at end of the list as Appendix A.

I have the honour to be,

SIR,

Your most obedient Servant,

T. GRACEY, Lieut.-Colonel, R.E.,
Offg. Director General of Railways.

Documents accompanying.

1. Statement showing the average rates per ton for entire sea freight on Class A. Stores imported from England to the several ports during 1894.
2. Rate List, Class A.—Bridgework for 1894.

* *For State Railway Stores and Irrigation Works only classed as Imperial. Stores for Provincial and Local funds and for railways constructed by Native States are charged one per cent. as heretofore.*

The Secretaries to the Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh and the Punjab, Public Works Department.
The Secretaries to the Chief Commissioners of the Central Provinces, Burma, and Assam, Public Works Department.
The Secretaries to the Residents at Hyderabad and in Mysore, Public Works Department.
The Secretaries to the Agents to the Governor General, Rajputana and Central India, and Baluchistan, Public Works Department.
The Superintendent of Port Blair and Chief Commissioner, Andaman and Nicobar Islands.
The Director General of Telegraphs.
The Director General of Military Works.
The Chief Engineer, Kashmir.
The Accountant General, Bengal.
The Consulting Engineers for Railways, Madras and Bombay.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow, and Assam.

Copy forwarded to the Local Governments and Administrations and to the Officers noted in the margin for information, with the intimation that all Railway Administrations have been supplied with copies direct.

T. GRACEY, Lieut-Colonel, R.E.,
Offg. Director General of Railways.

To

THE

30-3-16 ✓

8-3-20 ✓

6618
1895

Govt. of Madras.

PUBLIC WORKS.

29. august 5: 2155 Rs

Tank Restoration Works.

Revised proposition Statement for Establishment in the P.W. Department

— Sanctioned with remarks, the existing Establishment regarded as Temporary to the 30th September 1895.

Original

Note.

PUBLIC WORKS DEPARTMENT.

No. 2155 W. & 29th August 1895

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

G.O. dated 22nd July 1895. No. 476. Revenue.

Office note from the Chief Engineer for Irrigation dated 1st August 1895
No. 210

The revised proposition
Statement for establishment
under the P. W. Department
Tank Restoration Work, submitted
by the Chief Engineer for Irrigation
is sanctioned.

2. The existing establishment
will be regarded as Temporary
up to the 30th September 1895. The
"Proposed scale" shows the Estab-
lishment, Permanent and Tem-
porary, as it will stand after
that date.

3. The 4 overseers referred to in
para 6 of the note by the
Chief Engineer for Irrigation
will be transferred to the General
Establishment and they
will

(40—4,000—14-3-95.)

PUBLIC WORKS DEPARTMENT.

No. 2155 W. dated 29th August 1895

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

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Statement for establishment

under the P. W. Department

Tank Restoration Work, submitted

by the Chief Engineer for Irrigation

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3. The Overseers referred to in para 6 of the note by the Chief Engineer for Irrigation will be transferred to the Sivers Establishment and they will

(40—4,000—14-3-95.)

Statement showing the extent of irrigations under the Revenue Department for 1892-93, the grant for expenditure for 1893-94, the number of tanks and the proposals for the Establishment, etc.

Districts	Name of Works under Revenue Department	Number of Irrigations	Grant for 1893-94 for expenditure by P.W.D.	Total Annual Cost	Remarks
	1st to 3rd Crops	Tanks	Rs.		
Ganjam	83.596	3	88.252	14.110	
Vizagapatam	99.658	3	130.453	18.428	
Godavari	57.664	10	81.401	17.000	
Kistna	29.346	12	94.861	12.000	
Nellore	40.365	9	110.984	12.000	
Cuddapah	220.316	11	536.087	30.000	
Kurnool	38.128	8	105.424	5.000	
Bellary	31.979	8	76.277	11.114	
Anantapur	108.048	7	281.718	34.841	
Salem	150.013	9	258.923	15.000	
Coimbatore	16.883	10	41.744	4.300	
North Arcot	250.345	9	629.942	47.808	
South Arcot	200.159	8	562.022	50.000	
Chingleput	117.684	6	189.084	30.000	
Tanjore	27.604	9	38.673	10.000	
Trichinopoly	60.384	5	88.121	14.182	
Madura	101.169	6	207.148	26.000	
Tinnevelly	94.234	9	235.939	48.017	
Total	17.27.594	142	37.56.853	399.800	

Number of Establishments			Total Annual Cost
Upper Subs.	Lower Subs.		
60	40	30	
1	1	1	14.110
1	1	1	18.428
1	1	1	17.000
1	1	1	12.000
1	1	1	12.000
1	1	1	30.000
1	1	1	5.000
1	1	1	11.114
1	1	1	34.841
1	1	1	15.000
1	1	1	4.300
1	1	1	47.808
1	1	1	50.000
1	1	1	30.000
1	1	1	10.000
1	1	1	14.182
1	1	1	26.000
1	1	1	48.017
18	19	34	399.800

REVENUE DEPARTMENT
To Current No. 2708
Confidential No. [illegible]
1895

Guntur Krishna
Chief Engineer for Irrigation

Statement No 1

Comparative Statement showing the cost of the present and proposed establishment for Tanks. Restoration Scheme.

	Present				Proposed	
	Monthly Cost			Annual Cost	Monthly Cost	Annual Cost
	Of paper Subordinate	Of regular establishment	Total			
Central Office	0	825	825	9.900	773	9276
No 1 Party	240	572	812	9744	588	7056
" 2 "	120	570	690	8280	588	7056
" 3 "	120	552	672	8064	588	7056
" 4 "	240	569	809	9708	588	7056
" 5 "	120	539	659	7908	588	7056
	840	3627	4467	53.604	3713	44.556
Leave & pension allowances	-	-	-	-	-	5431
Total	-	-	4467	53.604	-	49.987
Deduct proposed scale	-	-	-	49.987	-	-
Net Saving				3.617		

Note. The average cost of an upper subordinate is taken as Rs 120.

Madras
19th December 1894

Rudrahu. Buchanan Colonel RE
Chief Engineer for Irrig

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 22nd March 1895, No. 77A :—

Read—the following paper :—

No. 68 E. W.

Note by the Chief Engineer for Irrigation.

The working of the Tank Restoration Scheme and the machinery employed for the repair and maintenance of Minor Works, Revenue Department, have been the subject of much correspondence both locally and with the Government of India. The Tank Restoration Scheme under the name of the Tank Maintenance Scheme was approved as a temporary establishment by the Government of India in letter No. 40 I., dated 26th January 1883, communicated with G.O., dated 12th February 1883, No. 143 I., and provided for bringing each minor work up to the standard of efficiency and providing proper weirs and sluices, without any reference to the future maintenance of works already brought up to the standard, which latter duty was proposed to be entrusted to the interested ryots.

2. So soon after the establishment of the scheme as 1885, Colonel J. Pennycuick, R.E., Superintendent of Works, Tank Maintenance Scheme, in paragraph 11 of letter No. 799 T., dated 16th April 1885, and printed with G.O., dated 5th May 1885, No. 421 I., reported as follows :—

"The investigations in the Madras drainage basin have been, to a considerable extent, retarded by the withdrawal of a portion of the establishment for emergent work in connection with the restoration of the Red Hills and Cholavaram tanks ; but a more important source of delay is the system by which the establishment employed on these investigations is classed as "temporary" and filled, with but few exceptions, by men not on the regular staff of the department. The supposed economy of the employment of temporary establishments for permanent work (and a work estimated to last fifty years may fairly be called permanent) is altogether illusory, and the work cannot, and will not, be done satisfactorily until the divisions concerned are included in, and manned from, the permanent establishment of the department."

Again, in letter to the Government of India, No. 2611 W., dated 4th October 1887, Colonel J. O. Hasted, R.E., remarked—"the work, moreover, must take so many years to complete that it cannot be considered temporary."

3. In G.O., No. 359 I., dated 2nd August 1889, the Madras Government recorded its opinion that the experiment of handing over the maintenance of tanks in the Periyakulam Minor basin to the villagers must be abandoned, and in para. 17 of Proceedings of the Government of India, dated 1st March 1890, No. 41 I., printed with G.O., dated 26th March 1890, No. 199 I., the Government of India remarked :—

"It is also a question for serious and immediate consideration whether the whole system on which the Tank Restoration Scheme is based will not have to be modified. No mention is made of the fact in the report, but it is observed from Proceedings, No. 359-I., dated 2nd August 1889, that in the case of the Periyakulam Minor basin, which was handed over to the care of the villagers in 1888, they have refused to undertake the maintenance of the tanks on the terms offered, and the opinion of the Government of Madras is that the experiment must be abandoned. In lieu it is proposed to entrust the maintenance of minor tanks to the Revenue officers, the cost being met from the grant for Minor Irrigation Works, while tanks irrigating less than 15 acres are to be made over to the villagers on some special terms, which it is believed means a fixed dry assessment. A full and early report on this subject should be submitted, as it is useless to continue to spend large sums on investigating and estimating for the requirements of works which the villagers refuse to, and the Public Works Department cannot, maintain."

This reference was replied to by the Chief Engineer for Irrigation in note printed in G.O., dated 21st May 1890, No. 294 I., and in letter to the Government of India printed with G.O., dated 21st May 1890, No. 295 I. His Excellency in Council

informed that Government that his views were in general accord with those expressed by the Chief Engineer for Irrigation, and that he saw no reason for any considerable modification of the general scheme of tank restoration.

4. The Government of India being still dissatisfied with the arrangements made for the restoration and maintenance of Minor Irrigation Works, requested that the modified scheme of tank restoration suggested in letter, No. 143 I., dated 9th September 1890, might be worked out, and Government in G.O., dated 28th October 1890, No. 838, Revenue, requested the Board of Revenue to report on the proposals of the Government of India to abandon all tanks irrigating 50 acres or less.

5. This reference to the Board of Revenue was replied to in Proceedings, dated 14th November 1893, No. 452, in which the Board reported the impossibility, from a financial point of view, of abandoning these tanks, and Government in G.O., dated 13th April 1894, No. 260, Revenue, approved, with certain modifications, the Board's conclusions. Meanwhile the terms of the Provincial contract were altered, and in G.O., dated 27th May 1892, No. 499 I., Public Works, the information called for regarding the financial effect of abandoning tanks irrigating less than 50 acres was declared to be no longer required.

6. This closed the correspondence with the Government of India, and it will be observed that nothing has so far been done either to put the Tank Restoration Scheme on a satisfactory basis, or to provide efficient machinery for the maintenance of Minor Irrigation Works, Revenue Department. The Tank Restoration Scheme is still a temporary establishment, with an ever-changing staff, and Minor Irrigation Works are left to the care of Collectors who have no proper establishment working under them, and to do the required work either systematically or efficiently seems to be an impossibility.

7. The scheme now put forward is an attempt to provide efficient machinery for the restoration and maintenance of minor works, and involves—

(*a*) a permanent Tank Restoration office in Madras with parties working in the districts;

(*b*) a permanent trained establishment under Collectors for the maintenance of minor irrigation works.

8. The following explains the general working of the scheme:—

(*a*) The permanent Tank Restoration establishment to be under the orders of the Chief Engineer for Irrigation and to prepare maps and descriptive memoirs, collect the necessary hydraulic information, and prepare estimates for the restoration of tanks. This duty is now performed by the Tank Restoration Scheme, and the only change proposed is the substitution of permanent for temporary establishment, chiefly on the score of efficiency, but also for economy. The Tank Restoration Scheme has now been in existence for twelve years out of the 55 years which its work was originally estimated to last, and there is but little probability that this estimate will prove to have been an exaggeration, as many of the more important irrigation (tank) districts are as yet practically untouched. The establishment being temporary, men cannot be induced to continue in it, but join merely with the object of learning practical work, and after a few years', in many cases a few months' experience, resign for permanent appointment elsewhere, often in Native States. So much is this the case that there are at present only four passed surveyors and one passed draftsman in the Tank Restoration Scheme parties of over three years' service. As it is quite impossible to work the scheme satisfactorily under these conditions, the necessity of making the establishment permanent seems evident.

9. Statement No. 1 shows the financial result of the proposed change. It will be observed that the net result, including pension charges, is a saving of Rs. 3,617 per annum, after taking into account the leave and pension allowance for the permanent establishment, which is effected by substituting Lower Subordinates on the permanent establishment for the existing staff of overseers and surveyors. With permanent Lower Subordinates who have something to lose by being reduced or dismissed, it is believed that a better outturn of work both in quality and quantity will be ensured, and that instances of false and incorrect levels will not be so frequent as they now are.

10. (*b*) The second part of the scheme is an attempt to provide for the maintenance of Minor Irrigation Works, Revenue Department. The present custom is for the Collector to engage establishment on Government sanction up to a limit of 16 per cent. of the grant for each district (*vide* G.O., dated 11th December 1883, No. 1549, Revenue) and to prepare plans and estimates, and to execute all maintenance works such as earthwork and masonry repairs, while the Public Works Department are expected to assist the Revenue officers in all cases where an alteration of existing works involving a change in sluice levels or the discharging power of calingulahs, or where professional skill is required. Executive Engineers have not sufficient establishment to do more than supervise their own works, and in nearly every district the investigation of projects is delayed for want of establishment. They do not and cannot, therefore, comply with requisitions from Collectors without great delay, and no one probably knows better than a Collector or an Executive Engineer the amount of trouble and friction which such requisitions involve. An important feature in the proposed scheme is, therefore, the relief of Executive Engineers from any obligation to give their advice to Collectors except on a requisition from the Chief Engineer for Irrigation.

11. In the proposals now made the Collectors will be given one Upper and several Lower Subordinates who have previously had a training in the Tank Restoration Scheme to prepare estimates and carry out work under the supervision of the Revenue officers, the duty of the Upper Subordinate being to check the work of the Lower when called upon to do so by the Collector, in addition to supervising a small charge of his own.

12. All estimates when prepared and approved by the Collector will be submitted to the Chief Engineer for Irrigation, Tank Restoration Scheme, in just the same way as an ordinary Tank Restoration Scheme estimate. The Chief Engineer will see that the designs are suitable and that no deviation from the standard laid down in the Tank Restoration Scheme descriptive memoirs and plates is allowed without sufficient reason, and will return the estimates to the Collector for execution, communicating every month a list of sanctions to the Board of Revenue. Under this scheme, the Board of Revenue will still continue to manage the budget and distribution of funds, and the Collectors, with their establishment, will select the works to be taken up, and will carry them out as they now do. All that the Chief Engineer for Irrigation will do will be to deal with estimates in the Tank Restoration Scheme instead of in the Irrigation office, and seeing that Collectors will have an establishment who have been previously trained in the Tank Restoration Scheme there is a probability that the plans and estimates will be better prepared and the work more efficiently executed than is now the case.

13. Statement No. 2 shows roughly the cost of the proposed establishment, but, as it has been prepared on insufficient data, will probably require considerable modification.

14. Taken as a whole, it will be observed that the cost of the proposed establishment for the Tank Restoration Scheme, including the establishment proposed to be placed under Collectors, is Rs. 1,14,907 against a sanctioned scale of Rs. 53,604 for the Tank Restoration Scheme and Rs. 27,055 for Revenue establishment. The area irrigated by all works which have been, or will be, dealt with by the Tank Restoration Scheme is 3,220,877 acres bringing in a revenue of Rs. 78,28,923, of which the area irrigated by Minor Works, Revenue Department, is 1,727,594 acres, Revenue Rs. 37,56,853. The proposed establishment for both Tank Restoration Scheme and Revenue is therefore 1·47 per cent. per annum on the revenue; that for the Tank Restoration Scheme is 0·57 per cent. on the revenue from all minor works, and that for the Revenue Department 1·87 per cent. on the revenue for Minor Works, Revenue Department.

15. As the transfer of the existing Tank Restoration Scheme establishment from temporary to permanent will result in a saving to Government of Rs 3,617 per annum as stated in paragraph 9, and is much needed in the interests of efficiency, it is requested that the accompanying proposition statement may be sanctioned at a sufficiently early date to permit of the proposed change being introduced on the 31st

March 1895. The work of selecting men for the permanent appointments will take some time, as it is probable that a better class of men can be secured than some of the existing temporary establishment.

16. The Chief Engineer for Irrigation wishes it to be understood that the proposed reduction in the pay and numbers of the existing Tank Restoration Scheme staff is only possible if the establishment is sanctioned as permanent.

17. The introduction of the proposed change in the establishment for Minor Works, Revenue Department, cannot probably be provided at once. It is suggested that the change should be made gradually, those districts in which Tank Restoration Scheme investigation is well advanced being first provided for.

18. It will be observed that no additional establishment has been provided in the Tank Restoration Scheme head office for the scrutiny of estimates and plans from Collectors. It is possible that an additional clerk on Rs. 25 and a draftsman on Rupees 30 may be required, but it is not worthwhile providing for them until the necessity has been proved, as it is not proposed that the Tank Restoration Scheme head office should be responsible for mere arithmetical check but only for the general suitability of estimates and designs.

19. In addition to the permanent establishment required for the Tank Restoration Scheme, four temporary lascars will be required for each sub-overseer. The men may be charged to works in some localities where daily paid men can be obtained, but as a rule must be charged to establishment, temporary.

20. When comparing the cost of existing and proposed establishment for the Tank Restoration Scheme the sanctioned scale of Executive Engineers has been omitted, as it is believed that the Tank Restoration Scheme can be worked satisfactorily with selected Upper Subordinates.

Madras, 19th Dec. 1894. (Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E., Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

Resolution—dated 22nd March 1895, No. 77A.

In his note forwarded with the endorsement read above, the Chief Engineer for Irrigation proposes a scheme for providing efficient machinery—

(*a*) for the restoration of all tanks in charge of the Public Works, as well as of the Revenue, Department, which fall under the category of minor works for which Capital and Revenue accounts are not kept; and

(*b*) for the maintenance of minor irrigation works in charge of the Revenue Department.

2. The Board presumes that it is not called upon to give an opinion on the first portion of the scheme, which consists in replacing the existing temporary establishments of the Tank Restoration Scheme by a permanent staff, on slightly reduced pay. This measure is recommended on grounds of efficiency as well as of economy, and there can be little doubt but that the substitution of permanent, for temporary establishments, will result in a decided improvement in the quality of work turned out.

3. In the second part of his scheme, the Chief Engineer proposes to provide each Collector with a permanent staff of Upper and Lower Subordinates, who have previously had a training in the Tank Restoration Scheme Parties, to prepare estimates and carry out work under the supervision of the Revenue officers, the duty of the Upper Subordinate being to check the work of the Lower when called upon to do so by the Collector, in addition to supervising a small charge of his own. The existing arrangements regarding budget estimates and the distribution of funds by the Board of Revenue, and the selection of works for annual repairs by the Collector, will not be disturbed; but every estimate will be submitted by the Collector for sanction to the Chief Engineer for Irrigation, Tank Restoration Scheme, in the same way as an ordinary Tank Restoration Scheme estimate is; and the latter officer will return it, after approval, to the Collector for execution, communicating a list of sanctions every

month to the Board of Revenue. The change in the establishments will be effected gradually, those districts in which Tank Restoration Scheme investigation is well advanced, being first provided for.

4. Under the present system, all petty repairs are estimated for, and executed by, Tahsildars, or Revenue Inspectors, with the assistance of a small staff of low-paid Minor Irrigation overseers and maistries—mostly men of little or no training; and the help of the Public Works Department is sought only in cases requiring professional skill. When the duty of maintaining minor works irrigating less than 200 acres was transferred to the Revenue Department, all that it was expected to do was to keep them in ordinarily good repair; and the Public Works Department was understood to be generally responsible for the provision of new masonry sluices and calingulahs, and the reconstruction of ruined and abandoned tanks. All work of this kind has of late been left more and more to the Revenue Department, and in paragraph 10, the Chief Engineer correctly points out how little is to be expected from the Executive Engineers in this direction, with the very inadequate establishments at their disposal. An attempt was made last year to improve matters, by the entertainment of professionally trained men, wherever possible, and by the issue of rules for the preparation of estimates for, and the execution of repairs to, minor irrigation works; but the pay fixed was not sufficient to attract qualified men. The order of Government, dated 23rd November 1886, No. 1029, restricting the cost of establishment to 15 per cent. of the annual outlay on works has also, in many districts, operated to prevent a properly qualified staff being entertained.

5. The irrigation works in charge of the Revenue Department are not less important financially than the minor works under the control of the Public Works Department, while the maintenance charges in respect of the former do not amount even to a third of the sum allotted for the latter; and the cost of establishment incurred by the Revenue Department is less than one-ninth that of the Public Works Department, as will be seen from the subjoined statement:—

Years.	Public Works Department.				Revenue Department.			
	First crop.	Second crop.	Revenue.	Total expenditure including establishment, tools and plant.	First crop.	Second crop.	Revenue.	Expenditure including establishment, tools and plant.
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	Acs.	Acs.	Rs.	Rs.	Acs.	Acs.	Rs.	Rs.
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Years.	Establishment, &c., charges.					
	Public Works Department.	Revenue Department	Percentage on outlay.		Percentage on Revenue.	
			Public Works Department.	Revenue Department	Public Works Department.	Revenue Department.
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16. The Chief Engineer for Irrigation wishes it to be understood that the proposed reduction in the pay and numbers of the existing Tank Restoration Scheme staff is only possible if the establishment is sanctioned as permanent.

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19. In addition to the permanent establishment required for the Tank Restoration Scheme, four temporary lascars will be required for each sub-overseer. The men may be charged to works in some localities where daily paid men can be obtained, but as a rule must be charged to establishment, temporary.

20. When comparing the cost of existing and proposed establishment for the Tank Restoration Scheme the sanctioned scale of Executive Engineers has been omitted, as it is believed that the Tank Restoration Scheme can be worked satisfactorily with selected Upper Subordinates.

MADRAS, 19th Dec. 1894. (Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E., Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

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2. The Board presumes that it is not called upon to give an opinion on the first portion of the scheme, which consists in replacing the existing temporary establishments of the Tank Restoration Scheme by a permanent staff, on slightly reduced pay. This measure is recommended on grounds of efficiency as well as of economy, and there can be little doubt but that the substitution of permanent, for temporary establishments, will result in a decided improvement in the quality of work turned out.

3. In the second part of his scheme, the Chief Engineer proposes to provide each Collector with a permanent staff of Upper and Lower Subordinates, who have previously had a training in the Tank Restoration Scheme Parties, to prepare estimates and carry out work under the supervision of the Revenue officers, the duty of the Upper Subordinate being to check the work of the Lower when called upon to do so by the Collector, in addition to supervising a small charge of his own. The existing arrangements regarding budget estimates and the distribution of funds by the Board of Revenue, and the selection of works for annual repairs by the Collector, will not be disturbed; but every estimate will be submitted by the Collector for sanction to the Chief Engineer for Irrigation, Tank Restoration Scheme, in the same way as an ordinary Tank Restoration Scheme estimate is; and the latter officer will return it, after approval, to the Collector for execution, communicating a list of sanctions every

month to the Board of Revenue. The change in the establishments will be effected gradually, those districts in which Tank Restoration Scheme investigation is well advanced, being first provided for.

4. Under the present system, all petty repairs are estimated for, and executed by, Tahsildars, or Revenue Inspectors, with the assistance of a small staff of low-paid Minor Irrigation overseers and maistries—mostly men of little or no training; and the help of the Public Works Department is sought only in cases requiring professional skill. When the duty of maintaining minor works irrigating less than 200 acres was transferred to the Revenue Department, all that it was expected to do was to keep them in ordinarily good repair; and the Public Works Department was understood to be generally responsible for the provision of new masonry sluices and calingulahs, and the reconstruction of ruined and abandoned tanks. All work of this kind has of late been left more and more to the Revenue Department, and in paragraph 10, the Chief Engineer correctly points out how little is to be expected from the Executive Engineers in this direction, with the very inadequate establishments at their disposal. An attempt was made last year to improve matters, by the entertainment of professionally trained men, wherever possible, and by the issue of rules for the preparation of estimates for, and the execution of repairs to, minor irrigation works; but the pay fixed was not sufficient to attract qualified men. The order of Government, dated 23rd November 1886, No. 1029, restricting the cost of establishment to 15 per cent. of the annual outlay on works has also, in many districts, operated to prevent a properly qualified staff being entertained.

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To the Chief Engineer, Public Works Department.

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2. The Board presumes that it is not called upon to give an opinion on the first portion of the scheme, which consists in replacing the existing temporary establishments of the Tank Restoration Scheme by a permanent staff, on slightly reduced pay. This measure is recommended on grounds of efficiency as well as of economy, and there can be little doubt but that the substitution of permanent, for temporary establishments, will result in a decided improvement in the quality of work turned out.

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Years.	Establishment, &c., charges.					
	Public Works Department.	Revenue Department	Percentage on outlay.		Percentage on Revenue.	
			Public Works Department.	Revenue Department	Public Works Department.	Revenue Department.
	10	11	12	13	14	15
	RS.	RS.				
1889-90	3,07,508	27,331	32·55	8·26	9·33	0·71
1890-91	3,33,686	30,697	29·50	8·12	12·67	1·04
1891-92	2,13,305	32,408	24·49	6·33	8·37	1·11
1892-93	3,08,628	40,440	28·95	10·26	9·37	1·08
1893-94	3,11,857	29,430	30·69	9·44	8·12	0·67
Average ..	2,94,997	32,061	29·33	8·32	9·45	0·89

March 1895. The work of selecting men for the permanent appointments will take some time, as it is probable that a better class of men can be secured than some of the existing temporary establishment.

16. The Chief Engineer for Irrigation wishes it to be understood that the proposed reduction in the pay and numbers of the existing Tank Restoration Scheme staff is only possible if the establishment is sanctioned as permanent.

17. The introduction of the proposed change in the establishment for Minor Works, Revenue Department, cannot probably be provided at once. It is suggested that the change should be made gradually, those districts in which Tank Restoration Scheme investigation is well advanced being first provided for.

18. It will be observed that no additional establishment has been provided in the Tank Restoration Scheme head office for the scrutiny of estimates and plans from Collectors. It is possible that an additional clerk on Rs. 25 and a draftsman on Rupees 30 may be required, but it is not worthwhile providing for them until the necessity has been proved, as it is not proposed that the Tank Restoration Scheme head office should be responsible for mere arithmetical check but only for the general suitability of estimates and designs.

19. In addition to the permanent establishment required for the Tank Restoration Scheme, four temporary lascars will be required for each sub-overseer. The men may be charged to works in some localities where daily paid men can be obtained, but as a rule must be charged to establishment, temporary.

20. When comparing the cost of existing and proposed establishment for the Tank Restoration Scheme the sanctioned scale of Executive Engineers has been omitted, as it is believed that the Tank Restoration Scheme can be worked satisfactorily with selected Upper Subordinates.

Madras, 19th Dec. 1894. (Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E., Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

Resolution—dated 22nd March 1895, No. 77A.

In his note forwarded with the endorsement read above, the Chief Engineer for Irrigation proposes a scheme for providing efficient machinery—

(*a*) for the restoration of all tanks in charge of the Public Works, as well as of the Revenue, Department, which fall under the category of minor works for which Capital and Revenue accounts are not kept; and

(*b*) for the maintenance of minor irrigation works in charge of the Revenue Department.

2. The Board presumes that it is not called upon to give an opinion on the first portion of the scheme, which consists in replacing the existing temporary establishments of the Tank Restoration Scheme by a permanent staff, on slightly reduced pay. This measure is recommended on grounds of efficiency as well as of economy, and there can be little doubt but that the substitution of permanent, for temporary establishments, will result in a decided improvement in the quality of work turned out.

3. In the second part of his scheme, the Chief Engineer proposes to provide each Collector with a permanent staff of Upper and Lower Subordinates, who have previously had a training in the Tank Restoration Scheme Parties, to prepare estimates and carry out work under the supervision of the Revenue officers, the duty of the Upper Subordinate being to check the work of the Lower when called upon to do so by the Collector, in addition to supervising a small charge of his own. The existing arrangements regarding budget estimates and the distribution of funds by the Board of Revenue, and the selection of works for annual repairs by the Collector, will not be disturbed; but every estimate will be submitted by the Collector for sanction to the Chief Engineer for Irrigation, Tank Restoration Scheme, in the same way as an ordinary Tank Restoration Scheme estimate is; and the latter officer will return it, after approval, to the Collector for execution, communicating a list of sanctions every

month to the Board of Revenue. The change in the establishments will be effected gradually, those districts in which Tank Restoration Scheme investigation is well advanced, being first provided for.

4. Under the present system, all petty repairs are estimated for, and executed by, Tahsildars, or Revenue Inspectors, with the assistance of a small staff of low-paid Minor Irrigation overseers and maistries—mostly men of little or no training; and the help of the Public Works Department is sought only in cases requiring professional skill. When the duty of maintaining minor works irrigating less than 200 acres was transferred to the Revenue Department, all that it was expected to do was to keep them in ordinarily good repair; and the Public Works Department was understood to be generally responsible for the provision of new masonry sluices and calingulahs, and the reconstruction of ruined and abandoned tanks. All work of this kind has of late been left more and more to the Revenue Department, and in paragraph 10, the Chief Engineer correctly points out how little is to be expected from the Executive Engineers in this direction, with the very inadequate establishments at their disposal. An attempt was made last year to improve matters, by the entertainment of professionally trained men, wherever possible, and by the issue of rules for the preparation of estimates for, and the execution of repairs to, minor irrigation works; but the pay fixed was not sufficient to attract qualified men. The order of Government, dated 23rd November 1886, No. 1029, restricting the cost of establishment to 15 per cent. of the annual outlay on works has also, in many districts, operated to prevent a properly qualified staff being entertained.

5. The irrigation works in charge of the Revenue Department are not less important financially than the minor works under the control of the Public Works Department, while the maintenance charges in respect of the former do not amount even to a third of the sum allotted for the latter; and the cost of establishment incurred by the Revenue Department is less than one-ninth that of the Public Works Department, as will be seen from the subjoined statement:—

Years.	Public Works Department.				Revenue Department.			
	First crop.	Second crop.	Revenue.	Total expenditure including establishment, tools and plant.	First crop.	Second crop.	Revenue.	Expenditure including establishment, tools and plant.
1	2	3	4	5	6	7	8	9
	Acs.	Acs.	Rs.	Rs.	Acs.	Acs.	Rs.	Rs.
1889–90	959,862	286,430	32,97,010	12,52,123	1,323,279	408,945	38,73,472	3,58,407
1890–91	836,053	245,201	26,33,237	14,64,813	1,070,775	365,184	29,43,006	4,08,784
1891–92	838,584	218,259	25,48,886	10,84,400	1,128,489	321,693	29,20,372	5,44,593
1892–93	956,630	309,841	32,95,101	13,74,851	1,276,817	450,777	37,56,853	4,34,520
1893–94	1,053,234	353,510	38,39,543	13,27,979	1,401,504	530,035	44,20,607	3,41,330
Average ..	928,873	282,648	31,22,755	13,00,833	1,240,173	415,327	35,82,862	4,17,527

Years.	Establishment, &c., charges.					
	Public Works Department.	Revenue Department	Percentage on outlay.		Percentage on Revenue.	
			Public Works Department.	Revenue Department	Public Works Department.	Revenue Department.
	10	11	12	13	14	15
	Rs.	Rs.				
1889–90	3,07,508	27,331	32·55	8·26	9·33	0·71
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1893–94	3,11,857	29,430	30·69	9·44	8·12	0·67
Average ..	2,94,997	32,061	29·33	8·32	9·45	0·89

The large revenue now being realized from the minor irrigation works in charge of the Revenue Department may certainly be increased very considerably if more money be judiciously spent on them. But increased grants cannot be properly utilized until the Revenue Department can command a sufficiently strong and competent staff to work them out, and the Public Works Department is unable to render the necessary help.

6. In these circumstances, the Board cordially supports the proposal of the Chief Engineer to provide a permanent staff of trained men to look after the maintenance of minor irrigation works under the orders of the Revenue officers. It is observed, however, that the rough estimate of the staff, given in statement No. 2 appended to the Chief Engineer's note, is based mainly on the area irrigated, and the amount of irrigation revenue, in each district, and takes no account of the number of irrigation works in each taluk, their situation (whether scattered or otherwise), their size and importance. In some districts, the cost of the proposed staff greatly exceeds half the average annual outlay on the works. The Board has prepared a separate statement, showing the establishment it would propose for each district, with reference to the number of works in each taluk, the area under irrigation, the revenue derived, and the average expenditure annually incurred on their maintenance. The Collectors concerned will be requested to favour the Board with their opinion as to the adequacy of the proposed establishment. The total cost, it will be observed, amounts to Rs. 61,380 per annum, or 14·37 per cent. on the average outlay incurred during the three years ending 1893–94, and Rs. 3,540 less than the cost of the staff proposed by the Chief Engineer. Adding Rs. 8,400 on account of the pay of lascars, at one lascar on Rs. 7 a month, to each Upper and Lower Subordinate, the annual cost of the establishment proposed by the Board will be raised to Rs. 69,780, or Rs. 70,000 in round numbers. This will amount to about 16·3 per cent. on the average outlay mentioned above. On the average minor irrigation revenue for the last five years, the cost will be only 1·9 per cent. The proposed expenditure seems to be very moderate, and is still much below what is incurred by the Public Works Department for the same class of works under its management.

7. Owing to the difficulty of obtaining duly qualified men, the change in the establishment can, it is said, be made only gradually, and the Chief Engineer proposes to provide, in the first instance, for those districts in which the Tank Restoration Scheme investigation is well advanced. The Board understands that the Tank Restoration operations have so far been extended to the marginally noted districts, but that in several of these, the progress made is very small. The districts, where the work has been completed, or nearly so, by the Tank Restoration Scheme Parties, may, of course, be served first, but every endeavour should, the Board thinks, be made to supply, within the next year or two, trained men to all the districts in which there are minor irrigation works.

1. Vizagapatam.
2. Gódávari.
3. Kistna.
4. Kurnool.
5. Cuddapah.
6. Bellary.
7. Anantapur.
8. Salem.
9. Coimbatore.
10. North Arcot.
11. South Arcot.
12. Chingleput.
13. Madura.
14. Tinnevelly.
15. Tanjore (Pattukkóttai taluk only).

8. The only other point in the Chief Engineer's scheme on which the Board desires to offer any remark, is the proposal that every estimate should be submitted to him for sanction. Nearly 1,600 estimates are at present prepared by the Revenue Department annually, and under the new arrangements a much larger number may be expected, at least in the beginning. Most of these will be pouring in at about the same time from all districts; and it seems likely that the examination of such a large number of estimates (even omitting all arithmetical check) by a Central office at Madras may unduly delay the execution of the works. The estimates in many cases will relate only to petty earthwork repairs, and this will especially be the case in the minor basins in which investigations by Tank Restoration Scheme Parties have been completed and their estimates worked out. It is, therefore, a question for consideration, whether the submission of estimates to the Chief Engineer may not be restricted to

cases in which a deviation from the standards laid down by the Tank Restoration Scheme Parties, or any structural alteration in masonry works, is proposed, or in which the cost exceeds a certain limit, say Rs. 250.

(True Copy and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department,
with three statements in original.
„ Collectors of all districts, except Madras, the Nilgiris, Malabar and South Canara.
„ Chief Engineer for Irrigation.

APPENDIX.

Districts.	Number of talukas.	Number of minor irrigation works under charge of Revenue officers.	Area irrigated in 1893-94, 1st and 2nd crop.	Share of revenue due to irrigation, 1893-94.	Average expenditure during three years ending 1893-94.	Sanctioned grant for 1894-95 revised up to date.	Establishment as revised by the Board. Number on Rs. 135	Rs. 100	Rs. 80	Rs. 60	Rs. 40	Rs. 30	Total cost. Monthly.	Annual.	Percentage, columns 15 & 6.	Percentage on irrigation revenue, columns 15 and 5.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
			Acs.	Rs.	Rs.	Rs.							Rs.	Rs.			
Ganjam	3	2,748	81,313	86,976	16,138	15,000	..	1	..	..	2	1	210	2,520	15·62	2·90	In five taluks there are no works; in fou
Vizagapatam	3	1,275	104,974	1,47,904	11,772	13,000	..	1	..	..	1	2	200	2,400	20·39	1·63	the number is less than 50; in two more
Godávari	14	1,322	66,814	84,836	11,744	12,000	..	1	..	..	1	2	200	2,400	20·44	2·83	less than 100.
Kistna	12	861	28,562	93,672	15,915	7,300	..	1	..	..	2	..	200	2,400	15·08	2·56	In three taluks there are no works; in four the number is less than 50; in none is the number over 71.
Nellore	9	389	39,896	1,13,757	29,891	17,588	..	..	..	1	..	2	300	3,600	12·04	3·16	In six taluks the number of works is less than 50; in the rest less than 160.
Cuddapah	11	2,643	210,705	5,13,789	37,426	21,400	1	..	..	1	1	2	445	5,340	14·27	1·04	In two taluks the number is 25 or less; in two more less than 100; in three others less than 200 each.
Kurnool	8	603	35,209	97,485	9,875	6,138	..	..	..	1	..	3	210	2,520	25·52	2·59	In three taluks the number is less than 50; in four others it is between 50 and 78.
Bellary	8	243	37,460	89,705	3,628	7,000	..	..	..	1	..	3	170	2,040	56·23	2·27	In five taluks the number is less than 20 each. The number nowhere exceeds 70.
Anantapur	7	2,042	93,953	2,44,417	16,820	24,000	..	1	..	..	1	2	260	3,120	18·55	1·28	In one taluk the number is 55.
Salem	9	2,536	152,359	2,65,249	17,286	14,732	..	1	..	..	1	3	325	3,900	22·63	1·47	
Coimbatore ..	10	96	18,339	46,574	3,456	3,500	..	..	..	..	1	1	90	1,080	31·25	2·32	The extent shown in column 4 includes a large area under channels, jungle streams not maintained at the cost of Government.
North Arcot	9	8,356	253,733	6,45,069	59,572	50,000	..	..	1	..	..	..	475	5,700	9·67	0·88	
South Arcot	8	2,823	247,054	7,40,578	46,994	67,500	1	..	1	..	..	1	445	5,340	11·36	0·72	
Chingleput	6	2,039	180,751	2,82,249	42,877	40,000	1	..	1	..	..	1	415	4,980	11·61	1·76	
Tanjore	9	601	39,810	82,335	9,714	6,280	..	..	..	..	..	2	140	1,680	17·29	2·04	The works are confined chiefly to twr talukas—Tanjore and Pattukkottai.
Trichinopoly	5	989	70,639	1,11,335	16,253	17,000	..	..	..	1	..	1	200	2,400	14·77	2·16	
Madura	6	5,472	144,850	3,48,095	27,248	22,432	..	..	..	1	..	1	355	4,260	15·63	1·22	
Tinnevelly	9	1,798	133,128	4,26,692	50,551	55,000	1	..	..	1	..	1	475	5,700	11·28	1·34	
Total ..	146	81,336	1,931,539	44,20,607	4,27,110	3,93,870	7	7	8	9	22	47	5,115	61,380	14·37	1·39	

ORDER—dated 22nd July 1895, No. 476, Revenue.

Irrigation No. 8.

Transferred to the Public Works Department with the following remarks:—

(i) The establishments proposed by the Board of Revenue for the maintenance of the works in charge of the Revenue Department are approved, subject to such modifications as may be considered necessary, on the receipt of the reports which the Board has called for from Collectors. It is also necessary to attach a lascar to each Upper and Lower Subordinate.

(ii) The total annual cost of the establishments is Rs. 69,780, or 17·3 per cent. of the average outlay * on works during the three years ending 1893–94. The above figure will probably have to be modified slightly, as in calculating the cost the Board has taken the pay of the lascars at Rs. 7 per mensem, while the Chief Engineer for Irrigation apparently considers that lascars can be had for Rs. 6 per mensem for the tank restoration parties (*vide* his proposition statement).

* *i.e.*, exclusive of establishment, &c., charges. The percentage (16·3) given by the Board is calculated on the total expenditure.

(iii) It is desirable that all districts should be supplied with the new establishments within the next year or two, if possible, the districts where the tank restoration work is completed or nearly so being served first.

(iv) The suggestion in paragraph 8 of the Board's Proceedings as to the classes of estimates to be submitted to the Chief Engineer is approved.

2. The most economical plan of executing tank repairs is to entrust them to the headmen and villagers whose interest it is to see that the sanctioned grants are actually spent on the works, and the Government is of opinion that the new scheme should not in any way interfere with the present practice of giving contracts for works which do not involve skilled labour to the villagers concerned.

(True Extract.)

J. Gibson

Secretary to Government.

To the Public Works Department (Irrigation Branch).
" the Board of Revenue (Revenue Settlement, Land Records and Agriculture).

Exd. C. M. Brisson.

50 Copies.

P. W. CURRENT No. 6619

Encls 3

10.5.C

Accts: 28-8-55

Govt. of {1895} Madras.

REVENUE.

Issued

Read. Encl.

G.O., 22nd July 1895, No. 476.

JULY.

Minor Irrigation Works.

Board's Proceedings submitting remarks on the proposals of the Chief Engineer for Irrigation for providing efficient machinery for the restoration and maintenance of —, transferred to the Public Works Department with remarks.

Ltr + Enclosures (in original)

To be kindly returned when no longer reqd.

Encls 2
1. statement
1. G.O. Ref. vide Encls (in original)

Office Note

No 210 dt 21. 8. 55

To

W.

From. E. I.

Reference G.O. 22 July 1895 No 476. Revenue which should apparently have been sent to you.

2. I shall be glad if you will obtain the early sanction of Government to that part of the Scheme which provides for making the I. R. S. permanent as it is desirable that the re-organization should be carried out at once to enable me to separate those Parties which are now working together in order to provide a Party for the Nellore District where its services are urgently required.

3. The proposal in statement which accompanied my office Note printed with the G.O. under reference has been

P. W. CURRENT No. 6619

Encls 3

105.C

Accts: 28-8-55

Govt. of {1895} Madras.

REVENUE.

Sgd + enclosures (in original)

To be kindly returned when no longer required

Issued

Reed. Encl.

G.O., 22nd July 1895, No. 476.

JULY.

Minor Irrigation Works.

Board's Proceedings submitting remarks on the proposals of the Chief Engineer for Irrigation for providing efficient machinery for the restoration and maintenance of —, transferred to the Public Works Department with remarks.

Encls 2
1. statement
1. G.O. Rev. vide Encls (in original)

Office Note

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3. The proposition statement which accompanies the office Note printed as Encl. to the G.O. under reference

Encl. 1 to the enclosure.

Recd 21/8

E. J.

been revised as it was apparently not in the proper form and included upper subordinate Establishment which should apparently be omitted.

(4) In the revised proposition statement two alterations have been made

(a) The pay of 1 Draftsman has been increased by Rs 15 as this man is doing Excellent work in the preparation of maps to accompany the descriptive memoirs. His work is much superior both in class and quality to that of the other Draftsmen who merely make tracings of drawings.

(b) A personal allowance of Rs 20 has been allowed for Draughtsman Mr Thomas as he is at present in receipt of Rs 70 per mensem and to reduce him by Rs 50 is considered to be too great a reduction as he has long service in the T. R. S.

I shall be glad if the Temporary Establishment

Can

Can be sanctioned up to the end of September and the permanent Establishment from that date.

5. One result of the reorganization will be that 4 overseers (2 Permanent and 2 temporary) will be available for transfer elsewhere and in their place 2 Supervisors will be required to take charge of Parties. It will be convenient if these Supervisors can be placed at my disposal as early in September as possible in order that there may be no delay in starting the Parties with permanent Establishment in October.

6. As regards para 1 of the G.O. above referred to, I would suggest that further information from the Rev. Dept should be awaited as the Board of Revenue are still in correspondence with this office regarding the proposed Rev. Dept. Establishment.

Revd 21/8

E. I

been revised as it was apparently not in the proper form and included upper subordinate Establishment which should apparently be omitted.

(ii) In the revised proposition statement two alterations have been made

(a) The pay of 1 Draftsman has been increased by Rs 15 as this man is doing Excellent work in the preparation of maps to accompany the descriptive memoirs. His work is much superior both in class and quality to that of the other Draftsmen who merely make tracings of drawings.

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Can

B.

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7. As regards para 1 of the G.O. above referred to, I would suggest that further information from the Rev. Dept should be awaited as the Board of Revenue are still in correspondence with this office regarding the proposed Rev. Dept. Establishment.

W 1918

Revd 21/5

E. I

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W 10/10 Revd 21/8
E. I

P. W. CURRENT No. 6618

E1

Encls/

Recd: 28-8-95

Recd 22.8.95.

Encl 1 statement

x orig[l] Pol: Se 476 of 21.7.95

OD-313.

Note for the Press

The entries in red ink to be printed in black type

Statement showing the scale of Establishment in the Tank Restoration Scheme as at present sanctioned and the proposed Scale substituting Sub Overseers for Surveyors.

Order sanctioning present Establishment, &c.	Date	Office to which the proposition statement refers	Nature of changes. Present Scale: Number	Designation	Pay: Minimum	Increment	Maximum	average of Grade	Total Cost	Proposed Scale: Number	Designation	Pay: Minimum	Increment	Maximum	average of Grade	Total Cost	Proposition: Permanent: Increase per month	Decrease per month: Amount	Temporary: Increase per month: Period	Amount	Decrease per month: Period	Amount
					Rs	Rs	Rs	Rs	Rs			Rs	Rs	Rs	Rs		Rs	Rs		Rs		Rs
			1	Clerk	-	-	-	200	-	1	Clerk	-	-	-	150		150	-	-	-	-	-	200
			1	do	-	-	-	80		1	do	-	-	-	80		80	-	-	-	-	-	80
			1	do	-	-	-	40		1	do	-	-	-	40		40	-	-	-	-	-	40
			1	do	-	-	-	35		1	do	-	-	-	35		35	-	-	-	-	-	35
			1	do	-	-	-	20		1	do	-	-	-	20		20	-	-	-	-	-	20
			1	do	-	-	-	17		1	do	-	-	-	17		17	-	-	-	-	-	17
711. W.	13th March 1894		1	Draughtsman	-	-	-	115		1	Draughtsman	-	-	-	115		115	-	-	-	-	-	115
			1	do	-	-	-	70		1	do	-	-	-	70		70	-	-	-	-	-	70
			1	do	-	-	-	40		1	do	-	-	-	40		40	-	-	-	-	-	40
			2	Draughtsmen at Rs 30 Each	-	-	-	60		2	Draughtsmen at Rs 30 Each	-	-	-	60		60	-	-	-	-	-	60
			2	do - 25	-	-	-	50		2	do - 25	-	-	-	50		50	-	-	-	-	-	50
			1	Tracer	-	-	-	13		5	Tracers, one on Rs 15 & 4 on Rs 12 Each	-	-	-	63		63						61
			4	Tracers at Rs 12 Each	-	-	-	48															
				Total per mensem	-	-	-	569			Total per mensem	-	-	-	286		188						474
				Total per annum	-	-	-	6828			Total per annum	-	-	-	3432		2256						5652
			1	Clerk	-	-	-	35		1	Clerk	-	-	-	30		30	-	-	-	-	-	35
			1	do	-	-	-	25		1	do	-	-	-	20		20	-	-	-	-	-	25
			1	Draughtsman	-	-	-	50		1	Draughtsman	-	-	-	50		50	-	-	-	-	-	50
			1	do	-	-	-	35		1	do	-	-	-	30		30	-	-	-	-	-	35
			1	Tracer	-	-	-	14		1	do	-	-	-	15		15	-	-	-	-	-	14
No V Party			1	Surveyor on Rs 80																		
			1	do - 60	-	-	-	240														240
			2	Surveyors at Rs 50 Each																		
			23	Lascars - 1 at Rs 8 and 22 at Rs 6 Each	-	-	-	140		1	Peon	-	-	-	7		43	-	-	-	-	-	44
										6	Peons on Rs 6 Each	-	-	-	36								
										16	Lascars on Rs 6 Each	-	-	-	96								
				Total per mensem	-	-	-	539			Total per mensem	-	-	-	284		188	-	-	-	-	-	443
				Total per annum	-	-	-	6468			Total per annum	-	-	-	3408		2256	-	-	-	-	-	5316
										(x) 8	Sub Overseers 1st Grade	50	10	70	480		480	-	-	-	-	-	-
										(x) 8	do 2nd do	35	5	45	320		320	-	-	-	-	-	-
										4	do 3rd do	25	5	35	120		120	-	-	-	-	-	-
											Total per mensem				920		920						
											Total per annum				11040		11040						
				Grand total per mensem				3627			Grand total per mensem				3141		2656						314
				Grand total per annum				43524			Grand total per annum				37692		31872						3771
											Net decrease per annum												583

(x) The distribution of these men among the Parties will be made by the Chief Engineer for Irrig.

Note. Black type entries show Temporary Establishments.

WS 18 Dec 94 Col. R.E.

11. W

No. III. Party	1	Clerk	35	1	Clerk	30	30			35
	1	do	25	1	do	20	20			25
	1	Draughtsman	50	1	Draughtsman	50	50			50
	1	do	35	1	do	30	30			35
	1	do	25	1	do	15	15			25
	1	Surveyor on Rs 80								
	1	do 60	240							240
	2	Surveyors at Rs 50 Each								
	23	Lascars, 1 at Rs 8 and 22 at Rs 6 Each	140	1	Peon on Rs 7	7	43			44
	1	Sweeper	2	6	Peons at Rs 6 Each	36				
				1	Sweeper	2				
				16	Lascars on Rs 6 Each	96				
		Total per mensem	552		Total per mensem	286	188			454
		Total per annum	6624		Total per annum	3432	2256			5448
No. IV. Party	1	Clerk	35	1	Clerk	30	30			35
	1	do	25	1	do	20	20			25
	1	Draughtsman	60	1	Draughtsman	50	50			60
	1	do	30	1	do	30	30			30
	1	do	25	1	do	15	15			25
	1	Surveyor on Rs 80								
	1	do 60	240							24
	2	do at Rs 50 Each								
	25	Lascars, 1 at Rs 8 and 24 at Rs 6 Each	152	1	Peon	7	43			5
				6	Peons at Rs 6 Each	36				

	1	do	35	1	do	30	30			35
	1	do	25	1	do	15	15			2
	1	Surveyor on Rs 80								
	2	do at Rs 60 Each	250							2
	1	do 50								
	25	Lascars, 1 at Rs 8		1	Peon	7				
		and 24 at Rs 6 Each	152	6	Peons at Rs 6 Each	36	43			5
				16	Lascars on Rs 6 Each	96				
		Total per mensem	572		Total per mensem	284	188			476
		Total per annum	6864		Total per annum	3408	2256			5712
	1	Clerk	40	1	Clerk	30	30			40
	1	do	25	1	do	20	20			25
includes a personal allowa	1	Draughtsman	70	1	Draughtsman	70	70			70
20 to Ker Thomas. The pay will	1	do	30	1	do	30	30			30
reduced to Rs 50 as soon as	1	do	25	1	do	15	15			25
Thomas can be provided	1	Surveyor on Rs 80								
t an appointment on Rs 70	1	do 60	240							240
the Head office.	2	do at Rs 50 Each								
	23	Lascars, 1 at Rs 8		1	Peon	7				
		and 22 at Rs 6 Each	140	6	Peons at Rs 6 Each	36	43			44
				16	Lascars on Rs 6 Each	96				
		Total per mensem	570		Total per mensem	304	208			474
		Total per annum	6840		Total per annum	3648	2496			5688
		e		1	Head Peon	10	10			124
		w	10	2	Peons on Rs 7 Each	14	14			
		ns on Rs 7 Each	14	1	Waterman	1				
		erman	1							824
					Total per mensem	777	776			
		Total per mensem	825							9888
		Total per annum	9900		Total per annum	9324	9312			
	1	Clerk	35	1	Clerk	30	30			35
	1	do	25	1	do	20	20			25
	1	Draughtsman	50	1	Draughtsman	50	50			50

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Establishment.

READ—the following papers:—

G.O., dated 22nd July 1895, No. 476, Revenue.

Read—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 22nd March 1895, No. 77A:—

Read—the following paper:—

No. 68 E.W.

Note by the Chief Engineer for Irrigation.

The working of the Tank Restoration Scheme and the machinery employed for the repair and maintenance of Minor Works, Revenue Department, have been the subject of much correspondence both locally and with the Government of India. The Tank Restoration Scheme under the name of the Tank Maintenance Scheme was approved as a temporary establishment by the Government of India in letter No. 40 I., dated 26th January 1883, communicated with G.O., dated 12th February 1883, No. 143 I., and provided for bringing each minor work up to the standard of efficiency and providing proper weirs and sluices, without any reference to the future maintenance of works already brought up to the standard, which latter duty was proposed to be entrusted to the interested ryots.

2. So soon after the establishment of the scheme as 1885, Colonel J. Pennycuick, R.E., Superintendent of Works, Tank Maintenance Scheme, in paragraph 11 of letter No. 799 T., dated 16th April 1885, and printed with G.O., dated 5th May 1885, No. 421 I., reported as follows:—

"The investigations in the Madras drainage basin have been, to a considerable extent, retarded by the withdrawal of a portion of the establishment for emergent work in connection with the restoration of the Red Hills and Cholavaram tanks; but a more important source of delay is the system by which the establishment employed on these investigations is classed as "temporary" and filled, with but few exceptions, by men not on the regular staff of the department. The supposed economy of the employment of temporary establishments for permanent work (and a work estimated to last fifty years may fairly be called permanent) is altogether illusory, and the work cannot, and will not, be done satisfactorily until the divisions concerned are included in, and manned from, the permanent establishment of the department."

Again, in letter to the Government of India, No. 2611 W., dated 4th October 1887, Colonel J. O. Hasted, R.E., remarked—"the work, moreover, must take so many years to complete that it cannot be considered temporary."

3. In G.O., No. 359 I., dated 2nd August 1889, the Madras Government recorded its opinion that the experiment of handing over the maintenance of tanks in the Periyakulam Minor basin to the villagers must be abandoned, and in para. 17 of Proceedings of the Government of India, dated 1st March 1890, No. 41 I., printed with G.O., dated 26th March 1890, No. 199 I., the Government of India remarked:—

"It is also a question for serious and immediate consideration whether the whole system on which the Tank Restoration Scheme is based will not have to be modified. No mention is made of the fact in the report, but it is observed from Proceedings, No. 359-I., dated 2nd August 1889, that in the case of the Periyakulam Minor basin, which was handed over to the care of the villagers in 1888, they have refused to undertake the maintenance of the tanks on the terms offered, and the opinion of the Government of Madras is that the experiment must be abandoned. In lieu it is proposed to entrust the maintenance of minor tanks to the Revenue officers, the cost being met from the grant for Minor Irrigation Works, while tanks irrigating less than 15 acres are to be made over to the villagers on some special terms, which it is believed means a fixed dry assessment. A full and early report on this subject should be submitted, as it is useless to continue to spend large sums on investigating and estimating for the requirements of works which the villagers refuse to, and the Public Works Department cannot, maintain."

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This reference was replied to by the Chief Engineer for Irrigation in note printed in G.O., dated 21st May 1890, No. 294 I., and in letter to the Government of India printed with G.O., dated 21st May 1890, No. 295 I. His Excellency in Council informed that Government that his views were in general accord with those expressed by the Chief Engineer for Irrigation, and that he saw no reason for any considerable modification of the general scheme of tank restoration.

4. The Government of India being still dissatisfied with the arrangements made for the restoration and maintenance of Minor Irrigation Works, requested that the modified scheme of tank restoration suggested in letter, No. 143 I., dated 9th September 1890, might be worked out, and Government in G.O., dated 28th October 1890, No. 838, Revenue, requested the Board of Revenue to report on the proposals of the Government of India to abandon all tanks irrigating 50 acres or less.

5. This reference to the Board of Revenue was replied to in Proceedings, dated 14th November 1893, No. 452, in which the Board reported the impossibility, from a financial point of view, of abandoning these tanks, and Government in G.O., dated 13th April 1894, No. 260, Revenue, approved, with certain modifications, the Board's conclusions. Meanwhile the terms of the Provincial contract were altered, and in G.O., dated 27th May 1892, No. 499 I., Public Works, the information called for regarding the financial effect of abandoning tanks irrigating less than 50 acres was declared to be no longer required.

6. This closed the correspondence with the Government of India, and it will be observed that nothing has so far been done either to put the Tank Restoration Scheme on a satisfactory basis, or to provide efficient machinery for the maintenance of Minor Irrigation Works, Revenue Department. The Tank Restoration Scheme is still a temporary establishment, with an ever-changing staff, and Minor Irrigation Works are left to the care of Collectors who have no proper establishment working under them, and to do the required work either systematically or efficiently seems to be an impossibility.

7. The scheme now put forward is an attempt to provide efficient machinery for the restoration and maintenance of minor works, and involves—

(*a*) a permanent Tank Restoration office in Madras with parties working in the districts;

(*b*) a permanent trained establishment under Collectors for the maintenance of minor irrigation works.

8. The following explains the general working of the scheme:—

(*a*) The permanent Tank Restoration establishment to be under the orders of the Chief Engineer for Irrigation and to prepare maps and descriptive memoirs, collect the necessary hydraulic information, and prepare estimates for the restoration of tanks. This duty is now performed by the Tank Restoration Scheme, and the only change proposed is the substitution of permanent for temporary establishment, chiefly on the score of efficiency, but also for economy. The Tank Restoration Scheme has now been in existence for twelve years out of the 55 years which its work was originally estimated to last, and there is but little probability that this estimate will prove to have been an exaggeration, as many of the more important irrigation (tank) districts are as yet practically untouched. The establishment being temporary, men cannot be induced to continue in it, but join merely with the object of learning practical work, and after a few years', in many cases a few months' experience, resign for permanent appointment elsewhere, often in Native States. So much is this the case that there are at present only four passed surveyors and one passed draftsman in the Tank Restoration Scheme parties of over three years' service. As it is quite impossible to work the scheme satisfactorily under these conditions, the necessity of making the establishment permanent seems evident.

9. Statement No. 1 shows the financial result of the proposed change. It will be observed that the net result, including pension charges, is a saving of Rs. 3,617 per annum, after taking into account the leave and pension allowance for the permanent establishment, which is effected by substituting Lower Subordinates on the permanent establishment for the existing staff of overseers and surveyors. With permanent

Lower Subordinates who have something to lose by being reduced or dismissed, it is believed that a better outturn of work both in quality and quantity will be ensured, and that instances of false and incorrect levels will not be so frequent as they now are.

10. (*b*) The second part of the scheme is an attempt to provide for the maintenance of Minor Irrigation Works, Revenue Department. The present custom is for the Collector to engage establishment on Government sanction up to a limit of 16 per cent. of the grant for each district (*vide* G.O., dated 11th December 1883, No. 1549, Revenue), and to prepare plans and estimates, and to execute all maintenance works such as earthwork and masonry repairs, while the Public Works Department are expected to assist the Revenue officers in all cases where an alteration of existing works involving a change in sluice levels or the discharging power of calingulahs, or where professional skill is required. Executive Engineers have not sufficient establishment to do more than supervise their own works, and in nearly every district the investigation of projects is delayed for want of establishment. They do not and cannot, therefore, comply with requisitions from Collectors without great delay, and no one probably knows better than a Collector or an Executive Engineer the amount of trouble and friction which such requisitions involve. An important feature in the proposed scheme is, therefore, the relief of Executive Engineers from any obligation to give their advice to Collectors except on a requisition from the Chief Engineer for Irrigation.

11. In the proposals now made the Collectors will be given one Upper and several Lower Subordinates who have previously had a training in the Tank Restoration Scheme to prepare estimates and carry out work under the supervision of the Revenue officers, the duty of the Upper Subordinate being to check the work of the Lower when called upon to do so by the Collector, in addition to supervising a small charge of his own.

12. All estimates when prepared and approved by the Collector will be submitted to the Chief Engineer for Irrigation, Tank Restoration Scheme, in just the same way as an ordinary Tank Restoration Scheme estimate. The Chief Engineer will see that the designs are suitable and that no deviation from the standard laid down in the Tank Restoration Scheme descriptive memoirs and plates is allowed without sufficient reason, and will return the estimates to the Collector for execution, communicating every month a list of sanctions to the Board of Revenue. Under this scheme, the Board of Revenue will still continue to manage the budget and distribution of funds, and the Collectors, with their establishment, will select the works to be taken up, and will carry them out as they now do. All that the Chief Engineer for Irrigation will do will be to deal with estimates in the Tank Restoration Scheme instead of in the Irrigation office, and seeing that Collectors will have an establishment who have been previously trained in the Tank Restoration Scheme there is a probability that the plans and estimates will be better prepared and the work more efficiently executed than is now the case.

13. Statement No. 2 shows roughly the cost of the proposed establishment, but, as it has been prepared on insufficient data, will probably require considerable modification.

14. Taken as a whole, it will be observed that the cost of the proposed establishment for the Tank Restoration Scheme, including the establishment proposed to be placed under Collectors, is Rs. 1,14,907 against a sanctioned scale of Rs. 53,604 for the Tank Restoration Scheme and Rs. 27,055 for Revenue establishment. The area irrigated by all works which have been, or will be, dealt with by the Tank Restoration Scheme is 3,220,877 acres bringing in a revenue of Rs. 78,28,923, of which the area irrigated by Minor Works, Revenue Department, is 1,727,594 acres, Revenue Rs. 37,56,853. The proposed establishment for both Tank Restoration Scheme and Revenue is therefore 1·47 per cent. per annum on the revenue; that for the Tank Restoration Scheme is 0·57 per cent. on the revenue from all minor works, and that for the Revenue Department 1·87 per cent. on the revenue for Minor Works, Revenue Department.

15. As the transfer of the existing Tank Restoration Scheme establishment from temporary to permanent will result in a saving to Government of Rs. 3,617 per annum as stated in paragraph 9, and is much needed in the interests of efficiency, it is requested that the accompanying proposition statement may be sanctioned at a

sufficiently early date to permit of the proposed change being introduced on the 31st March 1895. The work of selecting men for the permanent appointments will take some time, as it is probable that a better class of men can be secured than some of the existing temporary establishment.

16. The Chief Engineer for Irrigation wishes it to be understood that the proposed reduction in the pay and numbers of the existing Tank Restoration Scheme staff is only possible if the establishment is sanctioned as permanent.

17. The introduction of the proposed change in the establishment for Minor Works, Revenue Department, cannot probably be provided at once. It is suggested that the change should be made gradually, those districts in which Tank Restoration Scheme investigation is well advanced being first provided for.

18. It will be observed that no additional establishment has been provided in the Tank Restoration Scheme head office for the scrutiny of estimates and plans from Collectors. It is possible that an additional clerk on Rs. 25 and a draftsman on Rupees 30 may be required, but it is not worthwhile providing for them until the necessity has been proved, as it is not proposed that the Tank Restoration Scheme head office should be responsible for mere arithmetical check but only for the general suitability of estimates and designs.

19. In addition to the permanent establishment required for the Tank Restoration Scheme, four temporary lascars will be required for each sub-overseer. The men may be charged to works in some localities where daily paid men can be obtained, but as a rule must be charged to establishment, temporary.

20. When comparing the cost of existing and proposed establishment for the Tank Restoration Scheme the sanctioned scale of Executive Engineers has been omitted, as it is believed that the Tank Restoration Scheme can be worked satisfactorily with selected Upper Subordinates.

MADRAS, 19th Dec. 1894. (Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E., Chief Engineer for Irrigation.

To the Chief Engineer, Public Works Department.

Resolution—dated 22nd March 1895, No. 77A.

In his note forwarded with the endorsement read above, the Chief Engineer for Irrigation proposes a scheme for providing efficient machinery—

(*a*) for the restoration of all tanks in charge of the Public Works, as well as of the Revenue, Department, which fall under the category of minor works for which Capital and Revenue accounts are not kept; and

(*b*) for the maintenance of minor irrigation works in charge of the Revenue Department.

2. The Board presumes that it is not called upon to give an opinion on the first portion of the scheme, which consists in replacing the existing temporary establishments of the Tank Restoration Scheme by a permanent staff, on slightly reduced pay. This measure is recommended on grounds of efficiency as well as of economy, and there can be little doubt but that the substitution of permanent, for temporary establishments, will result in a decided improvement in the quality of work turned out.

3. In the second part of his scheme, the Chief Engineer proposes to provide each Collector with a permanent staff of Upper and Lower Subordinates, who have previously had a training in the Tank Restoration Scheme Parties, to prepare estimates and carry out work under the supervision of the Revenue officers, the duty of the Upper Subordinate being to check the work of the Lower when called upon to do so by the Collector, in addition to supervising a small charge of his own. The existing arrangements regarding budget estimates and the distribution of funds by the Board of Revenue, and the selection of works for annual repairs by the Collector, will not be disturbed; but every estimate will be submitted by the Collector for sanction to the Chief Engineer for Irrigation, Tank Restoration Scheme, in the same way as an ordinary Tank Restoration Scheme estimate is; and the latter officer will return it, after approval, to the Collector for execution, communicating a list of sanctions every

month to the Board of Revenue. The change in the establishments will be effected gradually, those districts in which Tank Restoration Scheme investigation is well advanced, being first provided for.

4. Under the present system, all petty repairs are estimated for, and executed by, Tahsildars, or Revenue Inspectors, with the assistance of a small staff of low-paid Minor Irrigation overseers and maistries—mostly men of little or no training; and the help of the Public Works Department is sought only in cases requiring professional skill. When the duty of maintaining minor works irrigating less than 200 acres was transferred to the Revenue Department, all that it was expected to do was to keep them in ordinarily good repair; and the Public Works Department was understood to be generally responsible for the provision of new masonry sluices and calingulahs, and the reconstruction of ruined and abandoned tanks. All work of this kind has of late been left more and more to the Revenue Department, and in paragraph 10, the Chief Engineer correctly points out how little is to be expected from the Executive Engineers in this direction, with the very inadequate establishments at their disposal. An attempt was made last year to improve matters, by the entertainment of professionally trained men, wherever possible, and by the issue of rules for the preparation of estimates for, and the execution of repairs to, minor irrigation works; but the pay fixed was not sufficient to attract qualified men. The order of Government, dated 23rd November 1886, No. 1029, restricting the cost of establishment to 15 per cent. of the annual outlay on works has also, in many districts, operated to prevent a properly qualified staff being entertained.

5. The irrigation works in charge of the Revenue Department are not less important financially than the minor works under the control of the Public Works Department, while the maintenance charges in respect of the former do not amount even to a third of the sum allotted for the latter; and the cost of establishment incurred by the Revenue Department is less than one-ninth that of the Public Works Department, as will be seen from the subjoined statement :—

Years.	Public Works Department.				Revenue Department.			
	First crop.	Second crop.	Revenue.	Total expenditure including establishment, tools and plant.	First crop.	Second crop.	Revenue.	Expenditure including establishment, tools and plant.
1	2	3	4	5	6	7	8	9
	ACS.	ACS.	RS.	RS.	ACS.	ACS.	RS.	RS.
1889-90	959,862	286,430	32,97,010	12,52,123	1,323,279	408,945	38,73,472	3,58,407
1890-91	836,053	245,201	26,33,237	14,64,813	1,070,775	365,184	29,43,006	4,08,784
1891-92	838,584	218,259	25,48,886	10,84,400	1,128,489	321,693	29,20,372	5,44,593
1892-93	956,630	309,841	32,95,101	13,74,851	1,276,817	450,777	37,56,853	4,34,520
1893-94	1,053,234	353,510	38,39,543	13,27,979	1,401,504	530,035	44,20,607	3,41,330
Average ..	928,873	282,648	31,22,755	13,00,833	1,240,173	415,327	35,82,862	4,17,527

Years.	Establishment, &c., charges.					
	Public Works Department.	Revenue Department	Percentage on outlay.		Percentage on Revenue.	
			Public Works Department.	Revenue Department	Public Works Department.	Revenue Department.
	10	11	12	13	14	15
	RS.	RS.				
1889-90	3,07,508	27,331	32·55	8·26	9·33	0·71
1890-91	3,33,686	30,697	29·50	8·12	12·67	1·04
1891-92	2,13,305	32,408	24·49	6·33	8·37	1·11
1892-93	3,08,628	40,440	28·95	10·26	9·37	1·08
1893-94	3,11,857	29,430	30·69	9·44	8·12	0·67
Average ..	2,94,997	32,061	29·33	8·32	9·45	0·89

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(*b*) for the maintenance of minor irrigation works in charge of the Revenue Department.

2. The Board presumes that it is not called upon to give an opinion on the first portion of the scheme, which consists in replacing the existing temporary establishments of the Tank Restoration Scheme by a permanent staff, on slightly reduced pay. This measure is recommended on grounds of efficiency as well as of economy, and there can be little doubt but that the substitution of permanent, for temporary establishments, will result in a decided improvement in the quality of work turned out.

3. In the second part of his scheme, the Chief Engineer proposes to provide each Collector with a permanent staff of Upper and Lower Subordinates, who have previously had a training in the Tank Restoration Scheme Parties, to prepare estimates and carry out work under the supervision of the Revenue officers, the duty of the Upper Subordinate being to check the work of the Lower when called upon to do so by the Collector, in addition to supervising a small charge of his own. The existing arrangements regarding budget estimates and the distribution of funds by the Board of Revenue, and the selection of works for annual repairs by the Collector, will not be disturbed; but every estimate will be submitted by the Collector for sanction to the Chief Engineer for Irrigation, Tank Restoration Scheme, in the same way as an ordinary Tank Restoration Scheme estimate is; and the latter officer will return it, after approval, to the Collector for execution, communicating a list of sanctions every

month to the Board of Revenue. The change in the establishments will be effected gradually, those districts in which Tank Restoration Scheme investigation is well advanced, being first provided for.

4. Under the present system, all petty repairs are estimated for, and executed by, Tahsildars, or Revenue Inspectors, with the assistance of a small staff of low-paid Minor Irrigation overseers and maistries—mostly men of little or no training; and the help of the Public Works Department is sought only in cases requiring professional skill. When the duty of maintaining minor works irrigating less than 200 acres was transferred to the Revenue Department, all that it was expected to do was to keep them in ordinarily good repair; and the Public Works Department was understood to be generally responsible for the provision of new masonry sluices and calingulahs, and the reconstruction of ruined and abandoned tanks. All work of this kind has of late been left more and more to the Revenue Department, and in paragraph 10, the Chief Engineer correctly points out how little is to be expected from the Executive Engineers in this direction, with the very inadequate establishments at their disposal. An attempt was made last year to improve matters by the entertainment of professionally trained men, wherever possible, and by the issue of rules for the preparation of estimates for, and the execution of repairs to, minor irrigation works; but the pay fixed was not sufficient to attract qualified men. The order of Government, dated 23rd November 1886, No. 1029, restricting the cost of establishment to 15 per cent. of the annual outlay on works has also, in many districts, operated to prevent a properly qualified staff being entertained.

5. The irrigation works in charge of the Revenue Department are not less important financially than the minor works under the control of the Public Works Department, while the maintenance charges in respect of the former do not amount even to a third of the sum allotted for the latter; and the cost of establishment incurred by the Revenue Department is less than one-ninth that of the Public Works Department, as will be seen from the subjoined statement :—

Years.	Public Works Department.				Revenue Department.			
	First crop.	Second crop.	Revenue.	Total expenditure including establishment, tools and plant.	First crop.	Second crop.	Revenue.	Expenditure including establishment, tools and plant.
1	2	3	4	5	6	7	8	9
	ACS.	ACS.	RS.	RS.	ACS.	ACS.	RS.	RS.
1889–90	959,862	286,430	32,97,010	12,52,123	1,323,279	408,945	38,73,472	3,58,407
1890–91	836,053	245,201	26,33,237	14,64,813	1,070,775	365,184	29,43,006	4,08,784
1891–92	838,584	218,259	25,48,886	10,84,400	1,128,489	321,693	29,20,372	5,44,593
1892–93	956,630	309,841	32,95,101	13,74,851	1,276,817	450,777	37,56,853	4,34,520
1893–94	1,053,234	353,510	38,39,543	13,27,979	1,401,504	530,035	44,20,607	3,41,330
Average ..	928,873	282,648	31,22,755	13,00,833	1,240,173	415,327	35,82,862	4,17,527

Years.	Establishment, &c., charges.					
			Percentage on outlay.		Percentage on Revenue.	
	Public Works Department.	Revenue Department	Public Works Department.	Revenue Department	Public Works Department.	Revenue Department.
	10	11	12	13	14	15
	RS.	RS.				
1889–90	3,07,508	27,331	32·55	8·26	9·33	0·71
1890–91	3,33,686	30,697	29·50	8·12	12·67	1·04
1891–92	2,13,305	32,408	24·49	6·33	8·37	1·11
1892–93	3,08,628	40,440	28·95	10·26	9·37	1·08
1893–94	3,11,857	29,430	30·69	9·44	8·12	0·67
Average ..	2,94,997	32,061	29·33	8·32	9·45	0·89

The large revenue now being realized from the minor irrigation works in charge of the Revenue Department may certainly be increased very considerably if more money be judiciously spent on them. But increased grants cannot be properly utilized until the Revenue Department can command a sufficiently strong and competent staff to work them out, and the Public Works Department is unable to render the necessary help.

6. *In these circumstances, the Board cordially supports the proposal of the Chief Engineer to provide a permanent staff of trained men to look after the maintenance of minor irrigation works under the orders of the Revenue officers. It is observed, however, that the rough estimate of the staff, given in statement No. 2 appended to the Chief Engineer's note, is based mainly on the area irrigated, and the amount of irrigation revenue, in each district, and takes no account of the number of irrigation works in each taluk, their situation (whether scattered or otherwise), their size and importance. In some districts, the cost of the proposed staff greatly exceeds half the average annual outlay on the works. The Board has prepared a separate statement, showing the establishment it would propose for each district, with reference to the number of works in each taluk, the area under irrigation, the revenue derived, and the average expenditure annually incurred on their maintenance. The Collectors concerned will be requested to favour the Board with their opinion as to the adequacy of the proposed establishment. The total cost, it will be observed, amounts to Rs. 61,380 per annum, or 14·37 per cent. on the average outlay incurred during the three years ending 1893–94, and Rs. 3,540 less than the cost of the staff proposed by the Chief Engineer. Adding Rs. 8,400 on account of the pay of lascars, at one lascar on Rs. 7 a month, to each Upper and Lower Subordinate, the annual cost of the establishment proposed by the Board will be raised to Rs. 69,780, or Rs. 70,000 in round numbers. This will amount to about 16·3 per cent. on the average outlay mentioned above. On the average minor irrigation revenue for the last five years, the cost will be only 1·9 per cent. The proposed expenditure seems to be very moderate, and is still much below what is incurred by the Public Works Department for the same class of works under its management.*

7. Owing to the difficulty of obtaining duly qualified men, the change in the establishment can, it is said, be made only gradually, and the Chief Engineer proposes to provide, in the first instance, for those districts in which the Tank Restoration Scheme investigation is well advanced. The Board understands that the Tank Restoration operations have so far been extended to the marginally noted districts, but that in several of these, the progress made is very small. The districts, where the work has been completed, or nearly so, by the Tank Restoration Scheme Parties, may, of course, be served first, but every endeavour should, the Board thinks, be made to supply, within the next year or two, trained men to all the districts in which there are minor irrigation works.

1. Vizagápatam.
2. Gódávari.
3. Kistna.
4. Kurnool.
5. Cuddapah.
6. Bellary.
7. Anantapur.
8. Salem.
9. Coimbatore.
10. North Arcot.
11. South Arcot.
12. Chingleput.
13. Madura.
14. Tinnevelly.
15. Tanjore (Pattukkóttai taluk only).

8. The only other point in the Chief Engineer's scheme on which the Board desires to offer any remark, is the proposal that every estimate should be submitted to him for sanction. Nearly 1,600 estimates are at present prepared by the Revenue Department annually, and under the new arrangements a much larger number may be expected, at least in the beginning. Most of these will be pouring in at about the same time from all districts; and it seems likely that the examination of such a large number of estimates (even omitting all arithmetical check) by a Central office at Madras may unduly delay the execution of the works. The estimates in many cases will relate only to petty earthwork repairs, and this will especially be the case in the minor basins in which investigations by Tank Restoration Scheme Parties have been completed and their estimates worked out. It is, therefore, a question for consideration, whether the submission of estimates to the Chief Engineer may not be restricted to

cases in which a deviation from the standards laid down by the Tank Restoration Scheme Parties, or any structural alteration in masonry works, is proposed, or in which the cost exceeds a certain limit, say Rs. 250.

(True Copy and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department, with three statements in original.
" Collectors of all districts, except Madras, the Nilgiris, Malabar and South Canara.
" Chief Engineer for Irrigation.

APPENDIX.

Districts.	Number of talukas.	Number of minor irrigation works under charge of Revenue officers.	Area irrigated in 1893-94, 1st and 2nd crop.	Share of revenue due to irrigation, 1893-94.	Average expenditure during three years ending 1893-94.	Sanctioned grant for 1894-95 revised up to date.	Establishment as revised by the Board. Number on			Total cost.		Percentage on irrigation revenue, columns 15 & 6.	Remarks.
							Rs. 80	Rs. 60	Rs. 40	Monthly.	Annual.	Percentage, columns 15 & 6.	
1	2	3	4	5.	6	7	8	9	10	11	12	13	14	15	16	17	18
			Acs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
Ganjám	3	2,748	81,313	86,976	16,138	15,000	135	100	.. ..	210	2,520	2·90	In five taluks there are no works; in four the number is less than 50; in two more less than 100.
Vizagapatam	8	1,275	104,974	1,47,904	11,772	15,000	.. ..	.. ..	2 1	200	2,400	1·63	
Godávari	14	1,322	68,814	84,836	11,744	12,000	.. ..	.. ..	1 2	200	2,400	2·83	
Kistna	12	861	28,562	93,572	15,915	7,300	.. ..	1 ..	2 ..	200	2,400	2·56	In three taluks there are no works; in four the number is less than 50; in none is the number over 71.
Nellore	9	389	39,896	1,13,767	29,891	17,688	.. ..	.. ..	2 4	300	3,600	3·16	In six taluks the number of works is less than 50; in the rest less than 100.
Cuddapah	11	5,643	210,705	5,13,789	37,426	21,400	1 ..	1 ..	2 3	445	5,340	1·04	In two taluks the number is 25 or less; in two more less than 100; in three others less than 200 each.
Kurnool	8	603	36,209	97,485	9,875	6,158	.. ..	.. ..	.. ..	210	2,520	2·59	In three taluks the number is less than 50; in four others it is between 50 and 78.
Bellary	8	248	37,460	89,705	3,628	7,000	.. ..	.. ..	1 3	170	2,040	2·27	In five taluks the number is less than 20 each. The number nowhere exceeds 70.
Anantapur	7	2,042	93,953	2,44,417	16,820	24,000	.. ..	1 ..	1 2	260	3,120	1·28	In one taluk the number is 65.
Salem	9	2,536	152,359	2,65,249	17,266	14,732	.. ..	1 ..	1 3	325	3,900	1·47	
Coimbatore	10	96	18,339	46,574	3,456	3,500	.. ..	.. ..	.. 1	90	1,080	2·32	The extent shown in column 4 includes a large area under channels, jungle streams not maintained at the cost of Government.
North Arcot	9	3,356	253,733	6,45,069	59,572	50,000	1 ..	.. ..	2 4	475	5,700	0·88	
South Arcot	8	2,823	247,054	7,40,578	46,994	67,500	1 ..	.. ..	1 3	445	5,340	0·72	
Chingleput	6	2,039	180,761	2,82,249	42,877	40,000	1 ..	.. ..	2 3	415	4,980	1·76	
Tanjore	9	601	39,810	82,335	9,714	6,250	1 ..	.. ..	.. 2	140	1,080	2·04	The works are confined chiefly to two taluks—Tanjore and Pattukkóttai.
Trichinopoly	6	989	70,639	1,11,335	16,253	17,000	.. ..	.. ..	1 2	200	2,400	2·16	
Madura	6	5,472	144,850	3,98,085	27,248	22,432	.. ..	.. ..	1 4	355	4,260	1·22	
Tinnevelly	9	1,796	133,128	4,26,692	50,551	55,000	1 ..	.. ..	1 4	475	5,700	1·34	
Total ..	146	31,336	1,931,539	44,20,607	4,27,110	3,99,870	7	2	22	5,115	61,380	1·39	

Order—dated 22nd July 1895, No. 476, Revenue.

Irrigation No. 8.

Transferred to the Public Works Department with the following remarks:—

(i) The establishments proposed by the Board of Revenue for the maintenance of the works in charge of the Revenue Department are approved, subject to such modifications as may be considered necessary, on the receipt of the reports which the Board has called for from Collectors. It is also necessary to attach a lascar to each Upper and Lower Subordinate.

(ii) The total annual cost of the establishments is Rs. 69,780, or 17·3 per cent. of the average outlay * on works during the three years ending 1893–94. The above figure will probably have to be modified slightly, as in calculating the cost the Board has taken the pay of the lascars at Rs. 7 per mensem, while the Chief Engineer for Irrigation apparently considers that lascars can be had for Rs. 6 per mensem for the tank restoration parties (*vide* his proposition statement).

* *i.e.*, exclusive of establishment, &c., charges. The percentage (16·3) given by the Board is calculated on the total expenditure.

(iii) It is desirable that all districts should be supplied with the new establishments within the next year or two, if possible, the districts where the tank restoration work is completed or nearly so being served first.

(iv) The suggestion in paragraph 8 of the Board's Proceedings as to the classes of estimates to be submitted to the Chief Engineer is approved.

2. The most economical plan of executing tank repairs is to entrust them to the headmen and villagers whose interest it is to see that the sanctioned grants are actually spent on the works, and the Government is of opinion that the new scheme should not in any way interfere with the present practice of giving contracts for works which do not involve skilled labour to the villagers concerned.

(True Extract.)

(Signed) E. GIBSON,
Secretary to Government.

To the Public Works Department (Irrigation Branch).
„ the Board of Revenue (Revenue Settlement, Land Records and Agriculture).

Office-note from the Chief Engineer for Irrigation, dated 21st August 1895, No. 210.

Herewith G.O., dated 22nd July 1895, No. 476, Revenue, which should apparently have been sent to you.

2. I shall be glad if you will obtain the early sanction of Government to that part of the scheme which provides for making the Tank Restoration Scheme permanent as it is desirable that the re-organization should be carried out at once to enable me to separate those parties which are now working together, in order to provide a party for the Nellore district, where its services are urgently required.

3. The proposition statement which accompanied my office-note printed with the Government Order under reference has been revised, as it was apparently not in the proper form and included Upper Subordinate Establishment which should apparently be omitted.

4. In the revised proposition statement two alterations have been made—

(*a*) The pay of one tracer has been increased to Rs. 15 as this man is doing excellent work in the preparation of maps to accompany the descriptive memoirs. His work is much superior, both in class and quality to that of the other tracers, who merely make tracings of drawings.

APPENDIX.

Districts.	Number of taluks.	Number of minor irrigation works under charge of Revenue officers.	Area irrigated in 1893–94, 1st and 2nd crop.	Share of revenue due to irrigation, 1893–94.	Average expenditure during three years ending 1893–94.	Sanctioned grant for 1894–95 revised up to date.	Establishment as revised by the Board. Number on Monthly. Rs. 135	Rs. 100	Rs. 80	Rs. 60	Rs. 40	Rs. 30	Total cost. Monthly.	Annual.	Percentage, columns 15 & 6.	Percentage on irrigation revenue, columns 15 and 5.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
			Acs.	Rs.	Rs.	Rs.							Rs.	Rs.			
Ganjam	3	2,748	81,313	86,976	16,138	15,000		1			2	1	210	2,520	15·62	2·90	In five taluks there are no works; in four the number is less than 50; in two more less than 100.
Vizagapatam	3	1,275	104,974	1,47,904	11,772	13,000		1			1	2	200	2,400	20·89	1·63	
Godavari	14	1,322	58,814	84,856	11,744	12,000		1			1	2	200	2,400	20·44	2·83	
Kistna	12	361	28,552	93,572	15,915	7,360		1				2	200	2,400	15·08	2·66	In three taluks there are no works; in four the number is less than 50; in none is the number over 71.
Nellore	9	389	39,896	1,13,757	29,891	17,588		1*			2	4	300	3,600	12·04	3·16	In six taluks the number of works is less than 50; in the rest less than 100.
Cuddapah	11	2,643	210,705	5,13,789	37,426	21,400		1		1	2	3	445	5,340	14·27	1·04	In two taluks the number is 25 or less; in two more less than 100; in three others less than 200 each.
Kurnool	8	603	35,209	97,486	9,875	6,138				1		3	210	2,520	25·52	2·59	In three taluks the number is less than 50; in four others it is between 50 and 78.
Bellary	8	248	37,460	89,705	3,628	7,000				1		3	170	2,040	56·28	2·27	In five taluks the number is less than 20 each. The number nowhere exceeds 76.
Anantapur	7	2,042	93,953	2,44,417	16,820	24,000			1	1		2	260	3,120	18·55	1·28	In one taluk the number is 65.
Salem	29	2,536	152,359	2,65,249	17,286	14,732		1		1		3	325	3,900	22·63	1·47	
Coimbatore	10	96	18,339	46,574	3,456	3,500				1		1	90	1,080	31·25	2·32	The extent shown in column 4 includes a large area under channels, jungle streams not maintained at the cost of Government.
North Arcot	9	3,356	253,733	6,45,069	59,572	50,000	1			1	2	4	475	5,700	9·47	0·88	
South Arcot	8	2,823	247,054	7,40,578	46,994	67,500	1			1	2	3	445	5,340	11·36	0·72	
Chingleput	6	2,039	180,751	2,82,249	42,877	40,000	1			1	2	2	415	4,980	11·61	1·76	
Tanjore	9	601	39,810	82,335	9,714	6,280				1		2	140	1,680	17·29	2·04	The works are confined chiefly to two taluks—Tanjore and Pattukkottai.
Trichinopoly	5	989	70,639	1,11,385	16,253	17,000	1				1	2	200	2,400	14·77	2·16	
Madura	6	5,472	144,550	3,48,085	27,948	22,432	1			1	1	4	355	4,260	15·63	1·22	
Tinnevelly	9	1,798	133,129	4,26,692	50,551	55,000	1			1	2	4	475	5,700	11·28	1·34	
Total	146	81,336	1,931,539	44,20,607	4,27,110	3,99,870	7	7	8	9	22	47	5,115	61,380	14·37	1·39	

Order—dated 22nd July 1895, No. 476, Revenue.

Irrigation No. 8.

Transferred to the Public Works Department with the following remarks:—

(i) The establishments proposed by the Board of Revenue for the maintenance of the works in charge of the Revenue Department are approved, subject to such modifications as may be considered necessary, on the receipt of the reports which the Board has called for from Collectors. It is also necessary to attach a lascar to each Upper and Lower Subordinate.

(ii) The total annual cost of the establishments is Rs. 69,780, or 17·3 per cent. of the average outlay * on works during the three years ending 1893–94. The above figure will probably have to be modified slightly, as in calculating the cost the Board has taken the pay of the lascars at Rs. 7 per mensem, while the Chief Engineer for Irrigation apparently considers that lascars can be had for Rs. 6 per mensem for the tank restoration parties (*vide* his proposition statement).

* *i.e.*, exclusive of establishment, &c., charges. The percentage (16·3) given by the Board is calculated on the total expenditure.

(iii) It is desirable that all districts should be supplied with the new establishments within the next year or two, if possible, the districts where the tank restoration work is completed or nearly so being served first.

(iv) The suggestion in paragraph 8 of the Board's Proceedings as to the classes of estimates to be submitted to the Chief Engineer is approved.

2. The most economical plan of executing tank repairs is to entrust them to the headmen and villagers whose interest it is to see that the sanctioned grants are actually spent on the works, and the Government is of opinion that the new scheme should not in any way interfere with the present practice of giving contracts for works which do not involve skilled labour to the villagers concerned.

(True Extract.)

(Signed) E. GIBSON,
Secretary to Government.

To the Public Works Department (Irrigation Branch).
„ the Board of Revenue (Revenue Settlement, Land Records and Agriculture).

Office-note from the Chief Engineer for Irrigation, dated 21st August 1895, No. 210.

Herewith G.O., dated 22nd July 1895, No. 476, Revenue, which should apparently have been sent to you.

2. I shall be glad if you will obtain the early sanction of Government to that part of the scheme which provides for making the Tank Restoration Scheme permanent as it is desirable that the re-organization should be carried out at once to enable me to separate those parties which are now working together, in order to provide a party for the Nellore district, where its services are urgently required.

3. The proposition statement which accompanied my office-note printed with the Government Order under reference has been revised, as it was apparently not in the proper form and included Upper Subordinate Establishment which should apparently be omitted.

4. In the revised proposition statement two alterations have been made—

(*a*) The pay of one tracer has been increased to Rs. 15 as this man is doing excellent work in the preparation of maps to accompany the descriptive memoirs. His work is much superior, both in class and quality to that of the other tracers, who merely make tracings of drawings.

(*b*) A personal allowance of Rs. 20 has been allowed for Draughtsman Mr. Thomas, as he is at present in receipt of Rs. 70 per mensem and to reduce him to Rs. 50 is considered to be too great a reduction as he has long service in the Tank Restoration Scheme.

5. I shall be glad if the existing temporary establishment can be sanctioned up to the end of September and the permanent establishment from that date.

6. One result of the re-organization will be that four overseers (two permanent and two temporary) will be available for transfer elsewhere and in their place two supervisors will be required to take charge of parties. It will be convenient if these supervisors can be placed at my disposal as early in September as possible in order that there may be no delay in starting the parties with permanent establishment in October.

7. As regards paragraph 1 of the Government Order above referred to, I would suggest that further information from the Revenue Department should be awaited, as the Board of Revenue are still in correspondence with this office regarding the proposed Revenue Department Establishment.

STATEMENT showing the scale of establishment in the Tank Restoration Scheme as at present sanctioned and the proposed scale substituting

Sub-overseers for surveyors.

Order sanctioning present establishment, Government of Madras, Public Works Department.	Office to which the proposition statement refers.	Nature of changes.	Present scale.							Proposed scale.							Proposition.						
					Pay.							Pay.					Permanent.			Temporary.			
			No.	Designation.	Minimum.	Increment.	Maximum.	Average or fixed.	Total cost.	No.	Designation.	Minimum.	Increment.	Maximum.	Average or fixed.	Total cost.	Increase per month.	Decrease per month.	Amount.	Period.	Amount.	Period.	Amount.
								Rs.							Rs.		Rs.	Rs.	Rs.	MON.			
No.	Date.		1	Clerk	..	..	..	200	200	1	Clerk	..	..	..	150	150	150		200				
711 W.	13th March 1894.		1	Do.	..	..	..	80	80	1	Do.	..	..	..	80	80	80		80				
		Head office.	1	Do.	..	..	..	40	40	1	Do.	..	..	..	40	40	40		40				
			1	Do.	..	..	..	35	35	1	Do.	..	..	..	35	35	35		35				
			1	Do.	..	..	..	20	20	1	Do.	..	..	..	20	20	20		20				
			1	Do.	..	..	..	17	17	1	Do.	..	..	..	17	17	17		17				
			1	Draughtsman	..	..	..	115	115	1	Draughtsman	..	..	..	115	115	115		115				
			1	Do.	..	..	..	70	70	1	Do.	..	..	..	70	70	70		70				
			1	Do.	..	..	..	40	40	1	Do.	..	..	..	40	40	40		40				
			2	Draughtsmen at Rs. 30 each	..	..	..	60	60	2	Draughtsmen at Rs. 30 each	..	..	..	60	60	60		60				
			2	Do. at ,, 25	..	..	..	50	50	2	Do. at ,, 25	..	..	..	50	50	50		50				
			5	Tracers, 1 on Rs. 15 and 4 on Rs. 12 each	..	..	..	63	63	1	Tracer	..	..	..	13	13	63		61				
										4	Tracers at Rs. 12 each	..	..	..	48	48	12		12				
			1	Moochi	..	..	..	12	12	1	Moochi	..	..	..	12	12	12		12				
			1	Head peon	..	..	..	10	10	1	Head peon	..	..	..	10	10	10		10				
			2	Peons on Rs. 7 each	..	..	..	14	14	2	Peons on Rs. 7 each	..	..	..	14	14	14		14				
			1	Waterman	..	..	..	1	1	1	Waterman	..	..	..	1	1	1		1				
				Total per mensem	..	..	..	777	777		Total per mensem	..	..	..	825	825	776		824				
				Total per annum	..	..	..	9,324	9,324		Total per annum	..	..	..	9,900	9,900	9,312		9,888				
		No. 1 Party.	1	Clerk	..	..	..	30	30	1	Clerk	..	..	..	35	35	30		35				
			1	Do.	..	..	..	20	20	1	Do.	..	..	..	25	25	20		25				
			1	Draughtsman	..	..	..	50	50	1	Draughtsman	..	..	..	50	50	50		50				
			1	Do.	..	..	..	30	30	1	Do.	..	..	..	35	35	30		35				
			1	Do.	..	..	..	15	15	1	Do.	..	..	..	25	25	15		25				
			1	Surveyor on Rs. 80	..	..	..	..	..															
			2	Do. at ,, 60 each	..	..	..	..	..															
			1	Do. at ,, 50 ,,	..	..	..	..	..															
			25	Lascars, 1 at ,, 8 and 24 at Rs. 6 each	..	..	..	7 } 36 } 96	43	1	Peon	..	..	..	7 }	7 }	43		56				
			1	Peon	..	..	..	..	..	6	Peons at Rs. 6 each	..	..	..	36 }	36 }	..		..				
			6	Peons at Rs. 6 each	..	..	..	..	..	16	Lascars on Rs. 6 each	..	..	..	96	96	..		..				
				Total per mensem	..	..	..	284	284		Total per mensem	..	..	..	572	572	188		476				
				Total per annum	..	..	..	3,408	3,408		Total per annum	..	..	..	6,864	6,864	2,256		5,712				

(*b*) A personal allowance of Rs. 20 has been allowed for Draughtsman Mr. Thomas, as he is at present in receipt of Rs. 70 per mensem and to reduce him to Rs. 50 is considered to be too great a reduction as he has long service in the Tank Restoration Scheme.

5. I shall be glad if the existing temporary establishment can be sanctioned up to the end of September and the permanent establishment from that date.

6. One result of the re-organization will be that four overseers (two permanent and two temporary) will be available for transfer elsewhere and in their place two supervisors will be required to take charge of parties. It will be convenient if these supervisors can be placed at my disposal as early in September as possible in order that there may be no delay in starting the parties with permanent establishment in October.

7. As regards paragraph 1 of the Government Order above referred to, I would suggest that further information from the Revenue Department should be awaited, as the Board of Revenue are still in correspondence with this office regarding the proposed Revenue Department Establishment.

STATEMENT showing the scale of establishment in the Tank Restoration Scheme as at present sanctioned and the proposed scale substituting Sub-overseers for surveyors.

Order sanctioning present establishment, Government of Madras, Public Works Department. No.	Date.	Office to which the proposition statement refers.	Present scale. No.	Designation.	Pay. Minimum.	Increment.	Maximum.	Average or fixed.	Total cost.	Proposed scale. No.	Designation.	Pay. Minimum.	Increment.	Maximum.	Average or fixed.	Total cost.	Proposition. Permanent. Increase per month. Amount.	Permanent. Decrease per month. Amount.	Temporary. Increase per month. Period.	Amount.	Temporary. Decrease per month. Period.	Amount.
711 W.	13th March 1894.	Head office.	1	Clerk				RS. 200		1	Clerk				RS. 150		RS. 150		MON.			RS. 200
			1	Do.				80		~~1~~	~~Do.~~				~~80~~		~~80~~					~~80~~
			1	Do.				40		1	Do.				40		40					40
			1	Do.				35		1	Do.				35		35					35
			1	Do.				20		1	Do.				20		20					20
			1	Do.				17		1	Do.				17		17					17
			1	Draughtsman				115		1	Draughtsman				115		115					115
			1	Do.				70		1	Do.				70		70					70
			1	Do.				40		1	Do.				40		40					40
			2	Draughtsmen at Rs. 30 each				60		2	Draughtsmen at Rs. 30 each				60		60					60
			2	Do. at ,, 25 ,,				50		2	Do. at ,, 25 ,,				50		50					50
			1	Tracer				13		5	Tracers, 1 on Rs. 15 and 4 on Rs. 12 each				63		63					61
			4	Tracers at Rs. 12 each				48														
			1	Moochi				12		1	Moochi				12		12					12
			1	Head peon				10		1	Head peon				10		10					10
			2	Peons on Rs. 7 each				14		2	Peons on Rs. 7 each				14		14					14
			1	Waterman				1		1	Waterman				1		..					..
				Total per mensem				825			Total per mensem				777		776					824
				Total per annum				9,900			Total per annum				9,324		9,312					9,888
		No. 1 Party.	1	Clerk				35		1	Clerk				30		30					35
			1	Do.				25		1	Do.				20		20					25
			1	Draughtsman				50		1	Draughtsman				50		50					50
			1	Do.				35		1	Do.				30		30					35
			1	Do.				25		1	Do.				15		15					25
			1	Surveyor on Rs. 80				..														
			2	Do. at ,, 60 each				250							..		..					250
			1	Do. at ,, 50 ,,				..		1	Peon				7							
			25	Lascars, 1 at ,, 8 and 24 at Rs. 6 each				152		6	Peons at Rs. 6 each				36		43					56
										16	Lascars on Rs. 6 each				96		..					..
				Total per mensem				572			Total per mensem				284		188					476
				Total per annum				6,864			Total per annum				3,408		2,256					5,712

Statement showing the scale of establishment in the Tank Restoration Scheme as at present sanctioned and the proposed scale substituting, &c.—*cont.*

Order sanctioning present establishment, Government of Madras, Public Works Department.		Office to which the proposition statement refers.	Nature of changes.																			
			Present scale.							Proposed scale.							Proposition.					
						Pay.						Pay.					Permanent.		Temporary.			
No.	Date.		No.	Designation.	Minimum.	Increment.	Maximum.	Average or fixed.	Total cost.	No.	Designation.	Minimum.	Increment.	Maximum.	Average or fixed.	Total cost.	Increase per month.	Decrease per month.	Increase per month.		Decrease per month.	
																	Amount.	Amount.	Period.	Amount.	Period.	Amount.
		No. II Party.						Rs.							Rs.		Rs.					Rs.
			1	Clerk	..	..	..	40	..	1	Clerk	..	..	..	30	..	30	..	..	..	..	40
			1	Do.	..	..	..	25	..	1	Do.	..	..	..	20	..	20	..	..	..	..	25
			1	Draughtsman	..	..	..	70	..	1	Draughtsman	..	..	..	70	..	70	..	..	..	..	70
			1	Do.	..	..	..	30	..	1	Do.	..	..	..	30	..	30	..	..	..	..	30
			1	Do.	..	..	..	25	..	1	Do.	..	..	..	15	..	15	..	..	..	..	25
			1	Surveyor on Rs. 80	..	..	..	240	..	..	....	..	..	..	..	..	..	..	..	..	..	240
			1	Do. on ,, 60																		
			2	Surveyors at ,, 50 each																		
			23	Lascars, 1 at ,, 8 and 22 at Rs. 6 each	..	..	..	140	..	1	Peon	..	..	..	7	43	..	..	..	..	..	44
				....						6	Peons at Rs. 6 each				36							
					..	..	..	..	..	16	Lascars on Rs. 6 each	..	..	..	96	..	..	..	..	..	..	..
				Total per mensem	..	..	..	570	..		Total per mensem	..	..	..	304	..	208	..	..	..	..	474
				Total per annum	..	..	..	6,840	..		Total per annum	..	..	..	3,648	..	2,496	..	..	..	..	5,688
		No. III Party.	1	Clerk	..	..	..	35	..	1	Clerk	..	..	..	30	..	30	..	..	..	..	35
			1	Do.	..	..	..	25	..	1	Do.	..	..	..	20	..	20	..	..	..	..	25
			1	Draughtsman	..	..	..	50	..	1	Draughtsman	..	..	..	50	..	50	..	..	..	..	50
			1	Do.	..	..	..	35	..	1	Do.	..	..	..	30	..	30	..	..	..	..	35
			1	Do.	..	..	..	25	..	1	Do.	..	..	..	15	..	15	..	..	..	..	25
			1	Surveyor on Rs. 80	..	..	..	240	..	..	....	..	..	..	..	..	..	..	..	..	..	240
			1	Do. on ,, 60																		
			2	Surveyors at ,, 50 each																		
			23	Lascars, 1 at ,, 8 and 22 at Rs. 6 each	..	..	..	140	..	1	Peon on Rs. 7	..	..	..	7	43	..	..	..	..	..	44
			1	Sweeper	..	..	..	2	..	6	Peons at ,, 6 each				36							
				....						1	Sweeper	..	..	..	2							
					..	..	..	..	..	16	Lascars on Rs. 6 each	..	..	..	96	..	..	..	..	..	..	..
				Total per mensem	..	..	..	552	..		Total per mensem	..	..	..	286	..	188	..	..	..	..	454
				Total per annum	..	..	..	6,624	..		Total per annum	..	..	..	3,432	..	2,256	..	..	..	..	5,448
117 W.	13th March 1896.	No. IV Party.	1	Clerk	..	..	..	35	..	1	Clerk	..	..	..	30	..	30	..	..	..	..	35
			1	Do.	..	..	..	*25	..	1	Do.	..	..	..	20	..	20	..	..	..	..	*25
			1	Draughtsman	..	..	..	60	..	1	Draughtsman	..	..	..	50	..	50	..	..	..	..	60
			1	Do.	..	..	..	30	..	1	Do.	..	..	..	30	..	30	..	..	..	..	30
			1	Do.	..	..	..	25	..	1	Do.	..	..	..	15	..	15	..	..	..	..	25
			1	Surveyor on Rs. 80	..	..	..	240	..	..	....	..	..	..	..	..	..	..	..	..	..	240
			1	Do. on ,, 60																		
			2	Surveyors at ,, 50 each																		
			25	Lascars, 1 at ,, 8 and 24 at Rs. 6 each	..	..	..	152	..	1	Peon	..	..	..	7	43	..	..	..	..	..	56
			1	Sweeper	..	..	..	2	..	6	Peons at Rs. 6 each				36							
				....						1	Sweeper	..	..	..	2							
					..	..	..	..	..	16	Lascars on Rs. 6 each	..	..	..	96	..	..	..	..	..	..	..
				Total per mensem	..	..	..	569	..		Total per mensem	..	..	..	286	..	188	..	..	..	..	471
				Total per annum	..	..	..	6,828	..		Total per annum	..	..	..	3,432	..	2,256	..	..	..	..	5,652
		No. V Party.	1	Clerk	..	..	..	35	..	1	Clerk	..	..	..	30	..	30	..	..	..	..	35
			1	Do.	..	..	..	25	..	1	Do.	..	..	..	20	..	20	..	..	..	..	25
			1	Draughtsman	..	..	..	50	..	1	Draughtsman	..	..	..	50	..	50	..	..	..	..	50
			1	Do.	..	..	..	35	..	1	Do.	..	..	..	30	..	30	..	..	..	..	35
			1	Tracer	..	..	..	14	..	1	Do.	..	..	..	15	..	15	..	..	..	..	14
			1	Surveyor on Rs. 80	..	..	..	240	..	..	....	..	..	..	..	..	..	..	..	..	..	240
			1	Do. on ,, 60																		
			2	Surveyors at ,, 50 each																		
			23	Lascars, 1 at ,, 8 and 22 at Rs. 6 each	..	..	..	140	..	1	Peon	..	..	..	7	43	..	..	..	..	..	44
				....						6	Peons on Rs. 6 each				36							
					..	..	..	..	..	16	Lascars on Rs. 6 each	..	..	..	96	..	..	..	..	..	..	..
				Total per mensem	..	..	..	539	..		Total per mensem	..	..	..	284	..	188	..	..	..	..	443
				Total per annum	..	..	..	6,468	..		Total per annum	..	..	..	3,408	..	2,256	..	..	..	..	5,316
										†	8 Sub-overseers, 1st grade	..	50	10	70	480	..	480	..	..	..	..	..
											8 Do. 2nd ,,	..	35	5	45	320	..	320	..	..	..	..	..
											4 Do. 3rd ,,	..	25	5	35	120	..	120	..	..	..	..	..
											Total per mensem	..	..	..	..	920	..	920	..	..	..	..	..
											Total per annum	..	..	..	..	11,040	..	11,040	..	..	..	..	..
				Grand Total per mensem	..	..	..	3,627	..		Grand Total per mensem	..	..	..	..	3,141	..	2,656	..	..	..	..	3,142
				Grand Total per annum	..	..	..	43,524	..		Grand Total per annum	..	..	..	..	37,692	..	31,872	..	..	..	..	37,704
											Net decrease per annum	..	..	..	..	..	..	..	..	..	..	..	5,832

Note.—Block type entries show temporary establishments.

* This includes a personal allowance of Rs. 20 to Mr. Thomas. The pay will be reduced to Rs. 50 as soon as Mr. Thomas can be provided with an appointment on Rs. 70 in the head office.

† The distribution of these men among the parties will be made by the Chief Engineer for Irrigation.

21st August 1895.

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Chief Engineer for Irrigation.

Statement showing the scale of establishment in the Tank Restoration Scheme as at present sanctioned and the proposed scale substituting, &c.—*cont.*

Order sanctioning present establishment, Government of Madras, Public Works Department.		Office to which the proposition statement refers.	Nature of changes.																			
			Present scale.							Proposed scale.							Proposition.					
																	Permanent.		Temporary.			
						Pay.							Pay.									
No.	Date.		No.	Designation.	Minimum.	Increment.	Maximum.	Average or fixed.	Total cost.	No.	Designation.	Minimum.	Increment.	Maximum.	Average or fixed.	Total cost.	Increase per month. Amount.	Decrease per month. Amount.	Increase per month. Period.	Increase per month. Amount.	Decrease per month. Period.	Decrease per month. Amount.
								Rs.							Rs.		Rs.					Rs.
		No. II Party.	1	Clerk	..	..	..	40	..	1	Clerk	..	..	..	30	..	30	..	..	..	..	40
			1	Do.	..	..	..	25	..	1	Do.	..	..	..	20	..	20	..	..	..	..	25
			1	Draughtsman	..	..	..	70	..	1	Draughtsman	..	..	..	70	..	70	..	..	..	..	70
			1	Do.	..	..	..	30	..	1	Do.	..	..	..	30	..	30	..	..	..	..	30
			1	Surveyor on Rs. 80	..	..	..	240	..	..	....	..	..	..	15	..	15	..	..	..	..	25
			1	Do. on ,, 60																		
			2	Surveyors at ,, 50 each																		
			23	Lascars, 1 at ,, 8 and 22 at Rs. 6 each	..	..	..	140	..	1	Peon	..	..	..	7	..	..	..	..	..	..	240
				....						6	Peons at Rs. 6 each	..	..	..	36	..	43	..	..	..	..	44
				Total per mensem	..	..	..	570	..	16	Lascars on Rs. 6 each	..	..	..	96	..	..	..	..	..	..	..
				Total per annum	..	..	..	6,840	..		Total per mensem	..	..	..	304	..	208	..	..	..	..	474
											Total per annum	..	..	..	3,648	..	2,496	..	..	..	..	5,688
		No. III Party.	1	Clerk	..	..	..	35	..	1	Clerk	..	..	..	30	..	30	..	..	..	..	35
			1	Do.	..	..	..	25	..	1	Do.	..	..	..	20	..	20	..	..	..	..	25
			1	Draughtsman	..	..	..	50	..	1	Draughtsman	..	..	..	50	..	50	..	..	..	..	50
			1	Do.	..	..	..	35	..	1	Do.	..	..	..	30	..	30	..	..	..	..	35
			1	Surveyor on Rs. 80	..	..	..	240	..	..	....	..	..	..	15	..	15	..	..	..	..	25
			1	Do. on ,, 60																		
			2	Surveyors at ,, 50 each																		
			23	Lascars, 1 at ,, 8 and 22 at Rs. 6 each	..	..	..	140	..	1	Peon on Rs. 7	..	..	..	7	..	..	..	..	..	..	240
			1	Sweeper	..	..	..	2	..	6	Peons at ,, 6 each	..	..	..	36	..	43	..	..	..	..	44
				....						1	Sweeper	..	..	..	2	..	..	..	..	..	..	..
				Total per mensem	..	..	..	552	..	16	Lascars on Rs. 6 each	..	..	..	96	..	..	..	..	..	..	..
				Total per annum	..	..	..	6,624	..		Total per mensem	..	..	..	286	..	188	..	..	..	..	454
											Total per annum	..	..	..	3,432	..	2,256	..	..	..	..	5,448

117 W.	13th March 1895.	No. IV Party.	1	Clerk	..	..	..	35	..	1	Clerk	..	..	..	30	..	30	..	..	..	..	35
			1	Do.	..	..	..	*25	..	1	Do.	..	..	..	20	..	20	..	..	..	..	*25
			1	Draughtsman	..	..	..	60	..	1	Draughtsman	..	..	..	50	..	50	..	..	..	..	60
			1	Do.	..	..	..	30	..	1	Do.	..	..	..	30	..	30	..	..	..	..	30
			1	Do.	..	..	..	25	..	1	Do.	..	..	..	15	..	15	..	..	..	..	25
			1	Surveyor on Rs. 80	..	..	..	240	..	..	....	..	..	..	..	..	..	..	..	..	..	240
			1	Do. on ,, 60																		
			2	Surveyors at ,, 50 each																		
			25	Lascars, 1 at ,, 8 and 24 at Rs. 6 each	..	..	..	152	..	1	Peon	..	..	..	7	..	43	..	..	..	..	56
			1	Sweeper	..	..	..	2	..	6	Peons at Rs. 6 each	..	..	..	36	..	..	..	..	..	..	..
				....						1	Sweeper	..	..	..	2	..	..	..	..	..	..	..
				Total per mensem	..	..	..	569	..	16	Lascars on Rs. 6 each	..	..	..	96	..	..	..	..	..	..	..
				Total per annum	..	..	..	6,828	..		Total per mensem	..	..	..	286	..	188	..	..	..	..	471
											Total per annum	..	..	..	3,432	..	2,256	..	..	..	..	5,652
		No. V Party.	1	Clerk	..	..	..	35	..	1	Clerk	..	..	..	30	..	30	..	..	..	..	35
			1	Do.	..	..	..	25	..	1	Do.	..	..	..	20	..	20	..	..	..	..	25
			1	Draughtsman	..	..	..	50	..	1	Draughtsman	..	..	..	50	..	50	..	..	..	..	50
			1	Do.	..	..	..	35	..	1	Do.	..	..	..	30	..	30	..	..	..	..	35
			1	Tracer	..	..	..	14	..	1	Do.	..	..	..	15	..	15	..	..	..	..	14
			1	Surveyor on Rs. 80	..	..	..	240	..	..	....	..	..	..	..	..	..	..	..	..	..	240
			1	Do. on ,, 60																		
			2	Surveyors at ,, 50 each																		
			23	Lascars, 1 at ,, 8 and 22 at Rs. 6 each	..	..	..	140	..	1	Peon	..	..	..	7	..	43	..	..	..	..	44
				....						6	Peons on Rs. 6 each	..	..	..	36	..	..	..	..	..	..	..
				Total per mensem	..	..	..	539	..	16	Lascars on Rs. 6 each	..	..	..	96	..	..	..	..	..	..	..
				Total per annum	..	..	..	6,468	..		Total per mensem	..	..	..	284	..	188	..	..	..	..	443
											Total per annum	..	..	..	3,408	..	2,256	..	..	..	..	5,316
										†	8 Sub-overseers, 1st grade	..	50	10	70	480	..	480	..	..	..	..	..
											8 Do. 2nd ,,	..	35	5	45	320	..	320	..	..	..	..	..
											4 Do. 3rd ,,	..	25	5	35	120	..	120	..	..	..	..	..
											Total per mensem	..	..	..	..	920	..	920	..	..	..	..	..
											Total per annum	..	..	..	..	11,040	..	11,040	..	..	..	..	..
				Grand Total per mensem	..	..	..	3,627	..		Grand Total per mensem	..	..	..	..	3,141	..	2,656	..	..	..	..	3,142
				Grand Total per annum	..	..	..	43,524	..		Grand Total per annum	..	..	..	..	37,692	..	31,872	..	..	..	..	37,704
											Net decrease per annum	..	..	..	..	..	..	..	..	..	..	..	5,832

Note.—Block type entries show temporary establishments.

* This includes a personal allowance of Rs. 20 to Mr. Thomas. The pay will be reduced to Rs. 50 as soon as Mr. Thomas can be provided with an appointment on Rs. 70 in the head office.

† The distribution of these men among the parties will be made by the Chief Engineer for Irrigation.

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Chief Engineer for Irrigation.

21st August 1895.

Order—dated 29th August 1895, No. 2155 W., Public Works.

The revised proposition statement for establishment under the Public Works Department for tank restoration work, submitted by the Chief Engineer for Irrigation, is sanctioned.*

* Registered as Provincial No. 46 W. of 1895–96 and classified as establishment.

2. The existing establishment will be regarded as temporary up to the 30th September 1895. The "proposed scale" shows the establishment, permanent and temporary, as it will stand after that date.

3. The four overseers referred to in paragraph 6 of the note by the Chief Engineer for Irrigation will be transferred to the General Establishment, and they will be replaced by two upper subordinates of higher rank as soon as men can be made available.

4. Paragraph 7 of the note by the Chief Engineer for Irrigation will be considered in the Revenue Department.

(True Extract.)

Under Secy. to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Superintending Engineers.
" the Examiner, Public Works Accounts.
" the Revenue Department, with original notes returned.

Exd. Shaik Karim.
Spare Copies

GENERAL.
ESTABLISHMENT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated August, 29th.

Read. *Encl.*

G.O., 29th Aug. 1895, No. 2155 W.

AUGUST.

Tank Restoration Works.

The revised proposition statement for establishment under the Public Works Department for —, sanctioned, with remarks, the existing establishment being regarded as temporary up to the 30th September 1895.

[*General Distribution.*]

CIRCULAR No. 8.

FROM

THE DIRECTOR GENERAL OF RAILWAYS,

TO

THE MANAGER, NORTH WESTERN RAILWAY.
THE MANAGER, OUDH AND ROHILKHAND RAILWAY.
THE MANAGER, EASTERN BENGAL STATE RAILWAY.
THE MANAGER, EAST COAST RAILWAY.
THE ENGINEER-IN-CHIEF, MUSHKAF-BOLAN STATE RAILWAY.
THE ENGINEER-IN-CHIEF, KOTRI ROHRI RAILWAY.
THE ENGINEER-IN-CHIEF, MARI-ATTOCK RAILWAY AND GRADIENT IMPROVEMENT WORKS, NORTH-WESTERN RAILWAY.
THE ENGINEER-IN-CHIEF, BEZWADA MADRAS RAILWAY.
THE ENGINEER-IN-CHIEF, ASSAM BURMA CONNECTION RAILWAY SURVEY.
THE EXECUTIVE ENGINEER, KALKA-SIMLA RAILWAY SURVEY.
THE PORT STOREKEEPER, STATE RAILWAY DEPARTMENT, CALCUTTA.

Rate List, Class A.—Bridgework for 1894.

Simla, the 18th July 1895.

SIR,

I have the honour to forward herewith, for information and guidance, a printed statement showing the actual English rates *free on board* in England for A. Class, State Railway Stores, *viz.*, "Bridgework," contracted for by the Stores Department of the India Office during the year 1894.

2. A statement showing the average rates per ton for entire sea freight, on Bridgework sent out from England to the several ports in India during 1894, is prefixed to the Rate list.

3. In order to arrive at the total cost of the Bridgework landed in India, an insurance charge of one-half* per cent. on the *free on board* cost *plus* entire sea freight, should be added in addition to other incidental charges and exchange, which latter should be calculated at the official rate for the year.

4. A statement, showing the weight and f. o. b. cost of steel and iron for bridge girders, of 250 span and upwards, which have been obtained for state railways through the India Office up to end of 1894, has been added at end of the list as Appendix A.

I have the honour to be,

SIR,

Your most obedient Servant,

T. GRACEY, Lieut.-Colonel, R.E.,
Offg. Director General of Railways.

Documents accompanying.

1. Statement showing the average rates per ton for entire sea freight on Class A. Stores imported from England to the several ports during 1894.
2. Rate List, Class A—Bridgework for 1894.

* *For State Railway Stores and Irrigation Works only classed as Imperial. Stores for Provincial and Local funds and for railways constructed by Native States are charged one per cent. as heretofore.*

The Secretaries to the Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh and the Punjab, Public Works Department.
The Secretaries to the Chief Commissioners of the Central Provinces, Burma, and Assam, Public Works Department.
The Secretaries to the Residents at Hyderabad and in Mysore, Public Works Department.
The Secretaries to the Agents to the Governor General, Rajputana and Central India, and Baluchistan, Public Works Department.
The Superintendent of Port Blair and Chief Commissioner, Andaman and Nicobar Islands.
The Director General of Telegraphs.
The Director General of Military Works.
The Chief Engineer, Kashmir.
The Accountant General, Bengal.
The Consulting Engineers for Railways, Madras and Bombay.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow, and Assam.

Copy forwarded to the Local Governments and Administrations and to the Officers noted in the margin for information, with the intimation that all Railway Administrations have been supplied with copies direct.

T. GRACEY, Lieut-Colonel, R.E.,
Offg. Director General of Railways.

No. 2087 W. dated 21 August 1895

To

THE

Communicated to [illegible] offices of the P. W. Dept.
(Sd) J. P. W.

Ch. E for I
Supdg. Engrs:
C.A. & Govt
Sec of W.P.T.
Exrs. P.W.A

Enclosure to Director General of Railways' Circular No. 8 of 1895.

No. 2087 W. dated 21-8-95

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

G. C. Press, Simla.—140 P. W. D.—25-7-95.—892.

The Secretaries to the Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh and the Punjab, Public Works Department.
The Secretaries to the Chief Commissioners of the Central Provinces, Burma, and Assam, Public Works Department.
The Secretaries to the Residents at Hyderabad and in Mysore, Public Works Department.
The Secretaries to the Agents to the Governor General, Rajputana and Central India, and Baluchistan, Public Works Department.
The Superintendent of Port Blair and Chief Commissioner, Andaman and Nicobar Islands.
The Director General of Telegraphs.
The Director General of Military Works.
The Chief Engineer, Kashmir.
The Accountant General, Bengal.
The Consulting Engineers for Railways, Madras and Bombay.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow, and Assam.

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T. GRACEY, Lieut-Colonel, R.E.,
Offg. Director General of Railways.

No. 2087 W. dt. 21 August 1895

Communicated to [illegible] offices of the P. W. Dept.
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Sec. to W. P.
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RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

G. C. Press, Simla.—140 P. W. D.—25-7-95.—892.

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The Secretaries to the Chief Commissioners of the Central Provinces, Burma, and Assam, Public Works Department.
The Secretaries to the Residents at Hyderabad and in Mysore, Public Works Department.
The Secretaries to the Agents to the Governor General, Rajputana and Central India, and Baluchistan, Public Works Department.
The Superintendent of Port Blair and Chief Commissioner, Andaman and Nicobar Islands.
The Director General of Telegraphs.
The Director General of Military Works.
The Chief Engineer, Kashmir.
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The Consulting Engineers for Railways, Madras and Bombay.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow, and Assam.

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T. GRACEY, Lieut-Colonel, R.E.,
Offg. Director General of Railways.

No. 2087 W. dt. 21 August 1895

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C.E. for I
Supdg. Engrs.
C.A. & Govt.
Sobs W.P.
Exrs. P.W.A.

Enclosure to Director General of Railways' Circular No. 8 of 1895.

No. 2087 W. dt. 21-8-95

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

G. C. Press, Simla.—140 P. W. D.—25-7-95.—892.

The Secretaries to the Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh and the Punjab, Public Works Department.
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The Secretaries to the Residents at Hyderabad and in Mysore, Public Works Department.
The Secretaries to the Agents to the Governor General, Rajputana and Central India, and Baluchistan, Public Works Department.
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T. GRACEY, Lieut-Colonel, R.E.,
Offg. Director General of Railways.

No. 2087 W. dt. 21 August 1895

Communicated to
offices of the P. W. Dept.
(Sd) J. P.
W

To

THE

CL. E for I
Suptg. Engrs.
C.A.D. & Govt.
Sec. to W.P.P.
Exer. P.W.A.

No. 2087 W. dt. 21-8-95

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

G. C. Press, Simla.—140 P. W. D.—25-7-95.—802.

Enclosure to Director General of Railways' Circular No. 8 of 1895.

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

STATEMENT showing the average rates per ton for entire Sea Freight on Bridgework sent out from England to the several ports in India for State Railways of both gauges during 1894.

Description of girders.	Karachi.	Bombay.	Calcutta.	Coconada or Vizagapatam.	Rangoon.	Remarks.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	
Clear span 6 feet	13 9	...	...	...	...	
„ 10 „	6 9	...	...	...	...	
„ 12 „	15 8	22 6	15 0	...	...	
„ 15 „	...	...	...	...	...	
„ 18 „	...	...	...	...	...	
„ 20 „	14 0	22 6	15 0	19 0	...	
„ 30 „	17 9	...	30 10	...	...	
„ 40 „	18 0	25 0	37 6	19 0	...	
„ 60 „	18 3	23 0	40 0	19 0	...	
„ 100 „	14 3	...	19 0	...	26 8	
„ 150 „	16 6	...	...	...	...	

Note.—Where rates have not been quoted, it should be understood that girders of the dimensions specified were not imported during the year.

CLASS OF STORES. A.—BRIDGEWORK.

5′ 6″ Gauge.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/193 — 17-1-94	10	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0 18 2 14	10 5 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ...	1 0 0 21	10 6 11	Span.	
39/38 — 2-10-94	10	Do.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0 18 2 14	9 7 10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ..	1 0 1 0	9 10 2	Span.	

CLASS OF STORES. A.—BRIDGEWORK.

5′ 6″ Gauge.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/193 — 17-1-94	10	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0 18 2 14	10 5 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ...	1 0 0 21	10 6 11	Span.	
39/38 — 2-10-94	10	Do.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0 18 2 14	9 7 10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ..	1 0 1 0	9 10 2	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/386 — 31-1-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 7	12 0 6	Span.	
33/115 — 11-4-94	12	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 8 4½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 — 2-5-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 4 9	Span.	
39/38 — 2-10-94	12	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	10 5 3	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	13 0 5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/386 — 31-1-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 7	12 0 6	Span.	
33/115 — 11-4-94	12	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 8 4½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 — 2-5-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 4 9	Span.	
39/38 — 2-10-94	12	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	10 5 3	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	13 0 5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/386 — 31-1-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 7	12 0 6	Span.	
33/115 — 11-4-94	12	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 8 4½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 — 2-5-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 4 9	Span.	
39/38 — 2-10-94	12	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	10 5 3	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	13 0 5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/386 — 31-1-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 7	12 0 6	Span.	
33/115 — 11-4-94	12	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 8 4½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 — 2-5-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 4 9	Span.	
39/38 — 2-10-94	12	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	10 5 3	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	13 0 5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	RATE—FREE ON BOARD. Unit.	REMARKS.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/386 31-1-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 7	12 0 6	Span.	
33/115 11-4-94	12	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 8 4½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	RATE—FREE ON BOARD. Unit.	REMARKS.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 2-5-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 4 9	Span.	
39/38 2-10-94	12	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	10 5 3	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	13 0 5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/386 — 31-1-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 7	12 0 6	Span.	
33/115 — 11-4-94	12	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 8 4½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 — 2-5-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 4 9	Span.	
39/38 — 2-10-94	12	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	10 5 3	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	13 0 5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/115 11-4-94	20	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c.	3	16	1	7	34	6	10	Span.	
34/1 2-5-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets	3	13	3	21	8	17	0	Ton.	
				For all bolts, nuts, and washers	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
39/38 2-10-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c.	3	16	0	14	36	8	2	Span.	
39/125 11-10-94	20	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods	7	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c.	7	6	2	21	62	6	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/115 — 11-4-94	20	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	3	13	3	21	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	34	6	10	Span.	
34/1 — 2-5-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	3	13	3	21	8	17	0	Ton.	
				For all bolts, nuts, and washers ...	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 feet, complete, with bolts, rivets, &c. ...	3	16	1	7	33	15	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
39/38 — 2-10-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ..	3	16	0	14	36	8	2	Span.	
39/125 — 11-10-94	20	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods	7	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	7	6	2	21	62	6	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/115 — 11-4-94	20	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	3	13	3	21	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	34	6	10	Span.	
34/1 — 2-5-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	3	13	3	21	8	17	0	Ton.	
				For all bolts, nuts, and washers ...	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 feet, complete, with bolts, rivets, &c. ...	3	16	1	7	33	15	5	Span.	

9.

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
39/38 — 2-10-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ..	3	16	0	14	36	8	2	Span.	
39/125 — 11-10-94	20	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods	7	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	7	6	2	21	62	6	10	Span.	

9.

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
33/115 — 11-4-94	20	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	3	13	3	21	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	34	6	10	Span.	
34/1 — 2-5-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	3	13	3	21	8	17	0	Ton.	
				For all bolts, nuts, and washers ...	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 feet, complete, with bolts, rivets, &c. ...	3	16	1	7	33	15	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
39/38 — 2-10-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ..	3	16	0	14	36	8	2	Span.	
39/125 — 11-10-94	20	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods	7	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	7	6	2	21	62	6	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/115 — 11-4-94	20	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	3	13	3	21	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	34	6	10	Span.	
34/1 — 2-5-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	3	13	3	21	8	17	0	Ton.	
				For all bolts, nuts, and washers ...	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 feet, complete, with bolts, rivets, &c. ...	3	16	1	7	33	15	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
39/38 — 2-10-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ..	3	16	0	14	36	8	2	Span.	
39/125 — 11-10-94	20	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods	7	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	7	6	2	21	62	6	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/115 — 11-4-94	20	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	3	13	3	21	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	34	6	10	Span.	
34/1 — 2-5-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	3	13	3	21	8	17	0	Ton.	
				For all bolts, nuts, and washers ...	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 feet, complete, with bolts, rivets, &c. ...	3	16	1	7	33	15	5	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
39/38 — 2-10-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ..	3	16	0	14	36	8	2	Span.	
39/125 — 11-10-94	20	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods	7	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	7	6	2	21	62	6	10	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
37/212 — 16-8-94	30	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	8 13 3 21	8 12 6	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 2 7			
				For all service bolts, nuts, and washers	0 0 3 0			
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	8 17 1 0	76 8 9	Span.	
30/385 — 31-1-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10 11 0 0	9 8 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	10 15 2 14	101 12 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/324 — 22-2-94	40 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry heavy ghat engines having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	23 3 0 20	9 5 0	Ton.	*On curve 1311·5 ft. radius. Angle of skew varies from 60° to 47° 33″.
				For all bolts, nuts, and washers, except service bolts	0 1 0 7			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	23 5 2 27	215 8 7	Span.	
31/324 — 22-2-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods ..	22 5 2 21	9 5 0	Ton.	†On curve 1,273 ft. radius. Angle of skew 45°.
				For all bolts, nuts, and washers, except service bolts	0 0 3 21			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	23 8 0 14	216 10 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/324 — 22-2-94	40*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghat, engines having axle loads of at least 17 tons per axle.	For all steel in girderwork including rivets, spare rivets, and rivet rods	22 11 2 0	9 5 0	Ton.	* On curve 1,011·5 ft. radius.
				For all bolts, nuts, and washers, except service bolts	0 0 3 23			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	22 13 3 23	209 19 1	Span.	
33/111 — 10-4-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	21 18 1 0	9 12 0	Ton.	† Bridge No. 214.
				For all bolts, nuts, and washers, except service bolts	0 0 2 7			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	22 0 1 7	211 7 0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/206 — 16-4-94	40	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10 11 0 0	9 10 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 0 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10 15 0 14	102 3 8	Span.	
34/1 — 2-5-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	10 11 0 0	8 17 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10 15 2 14	95 8 3	Span.	

CLASS OF STORES. A.--BRIDGEWORK--*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Co[illegible]e and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
39/38 2-10-94	40	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets and rivet rods...	10	11	0	0	9	7	10	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	14	2	0	101	3	3	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
30/385 31-1-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	26	13	0	0	9	8	6	Ton.	
				For all bolts, nuts and washers ...	0	4	3	14					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c. ...	27	0	3	14	254	17	9	Span.	
31/324 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43	13	0	0	9	5	0	Ton.	* Angle of skew 60° to left.
				For all bolts nuts, and washers, except service bolts	0	1	2	9					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43	17	2	9	405	17	9	Span.	

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CLASSOF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
39/38 2-10-94	40	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets and rivet rods...	10	11	0	0	9	7	10	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	14	2	0	101	3	3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
30/385 31-1-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	26	13	0	0	9	8	6	Ton.	
				For all bolts, nuts and washers ...	0	4	3	14					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c. ...	27	0	3	14	254	17	9	Span.	
31/324 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43	13	0	0	9	5	0	Ton.	* Angle of skew 60° to left.
				For all bolts nuts, and washers, except service bolts	0	1	2	9					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43	17	2	9	405	17	9	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons. cwt. qr. lbs.	£ s. d.		
31/324 — 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 9 3 11	9 5 0	Ton.	* Angle of skew 60° to right.
				For all bolts, nuts and washers, except service bolts.	0 1 2 18			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 * feet, complete, with bolts, rivets, &c.	43 14 2 1	404 9 3	Span.	
31/324 — 22-2-94	60 †	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 8 1 9	9 5 0	Ton.	† On curve 1,146 ft. radius.
				For all bolts, nuts and washers, except service bolts	0 1 2 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43 12 3 23	403 15 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/111 — 10-4-94	60*	Mushkaf Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 2 0 0	9 12 0	Ton.	*Bridge No. 215.
				For all bolts, nuts and washers, except service bolts	0 1 1 7			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girde[illegible]te, 60 ft., complete with[illegible]rivets, &c. ...	44 6 1 7	425 7 8	Span.	
33/111 — 10-4-94	60†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 11 1 21	9 12 0	Ton.	†Bridge No. 216. Angle of skew 45° to left.
				For all bolts, nuts, and washers, except service bolts	0 1 1 2			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	44 15 2 23	429 18 9	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	REMARKS.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/177 — 13-4-94	60	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 4 0 0	10 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 7			
				For all srevice bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43 8 1 7	434 3 2	Span.	
33/206 — 16-4-94	60	East Coast	Upper, open	For all steel in girderwork including rivets, spare rivets, and rivet rods	26 12 0 0	9 10 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	26 19 3 14	256 8 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	REMARKS.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 — 2-5-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	26 13 0 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	27 0 3 14	239 6 8	Span.	
37/1 — 1-8-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	26 12 3 0	9 0 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, etc.	27 0 2 14	243 5 7½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/111 — 10-4-94	100*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts and service bolts, &c.	79	8	3	0	9	12	0	Ton.	
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	„	*Bridge No. 215. Angle of skew 45° to right.
				For all cast-iron	3	12	1	0	8	15	0	„	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	17	3	0	808	0	7	Span.	
33/111 — 10-4-94	100†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	78	17	2	0	9	12	0	Ton.	
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	„	†Bridge No. 214. On curve of 900 feet radius.
				For all cast-iron	3	12	1	0	8	15	0	„	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	6	2	0	802	12	6	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
37/234 — 17-8-94	100	Bhopal-Ujjain	Lower, with cart road on rail level.	For all steel in girderwork, including rivets and spare rivets. ...	79	14	3	21	8	15	0	Ton.	
				For all bolts, nuts, and washers ...	0	4	0	7					
				For all service bolts, nuts, and washers	0	6	0	0					
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	80	5	0	0	702	3	9	Span.	
31/325 — 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	151	17	0	21	8	17	6	Ton.	
				For all steel in expansion rollers and frames	1	16	3	0	20	0	0	„	
				For all cast-iron	7	7	1	0	9	10	0	„	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161	1	0	21	1,454	7	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
				For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	151 17 0 21	9 3 9	Ton.	
				For all steel in expansion rollers and frames	1 16 3 0	35 0 0	,,	
31/326 — 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all cast-iron	7 7 1 0	11 0 0	,,	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161 1 0 21	1,540 10 1	Span.	
				For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	138 4 1 0	9 0 0	Ton.	
				For all steel in expansion rollers and frames	0 19 3 0	25 0 0	,,	
33/252 — 19-4-94	150	East Coast	Lower, with cart road on rail level.	For all cast-iron	5 6 2 0	9 0 0	,,	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	144 10 2 0	1,316 10 6	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
					Tons cwt. qr. lbs.	£ s. d.		
				Connections between spans.				
33/111 — 10-4-94	...	*Mushkaf-Bolan	...	For all steel in plates and angle bars	0 16 2 0			
				Rivet heads and spare rivets ...	0 1 0 0	9 12 0	Ton.	*For bridge No. 216, consisting of 4 spans of 60 feet.
				46 bolts and washers	0 0 1 21			
				Total in connections ...	1 17 3 21	18 4 2	Total.	
				Connections between spans and at abutments.				
33/111 — 10-4-94	...	†Mushkaf-Bolan	...	For all steel in plates angle bars and corrugated plates	1 16 3 0			
				Rivet heads and spare rivets ...	0 2 1 0	9 12 0	Ton.	† For bridge No. 215, consisting of 2 spans of 100 and 1 of 60 feet.
				154 bolts and washers	0 1 1 14			
				Total in connections ...	2 0 1 14	19 7 7	Total.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ Gauge.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
				Connections between spans and at abutments.	Tons. cwt. qr. lbs.	£ s. d.		
33/111	10-4-94	...	*Mushkaf-Bolan	...	For all steel in plates angle bars and corrugated plates ... ... 0 17 3 0 Rivet heads and spare rivets ... 0 2 1 0 118 bolts and washers 0 1 0 7	9 12 0	Ton.	*For bridge No. 214, consisting of 2 spans of 100 and 2 of 40 feet.
				Total in connections ...	2 1 0 7	19 14 2	Total.	
				Spare Parts.				
39/297	27-10-94	...	North-Western	...	End trough floor plate 10′1″ × 1′6⅞″ × 5/16″, depth of trough 5 5/16″ ...	3 10 0	Each.	Required to complete one span of girder of 90 feet for Jhelum Bridge.

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

Metre Gauge.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
38/208	15-9-94	12	Oodeypore-Chitore.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods ... ... 0 19 0 14 For all bolts, nuts and washers, except service bolts ... ... 0 2 0 0 For all service bolts, nuts and washers 0 0 0 21	9 5 0	Ton.	
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 1 1 7	9 17 2	Span.	
38/208	15-9-94	20	Oodeypore-Chitore.	Upper, open	For all steel in girderwork, including rivets, spare rivets and rivet rods... 2 14 0 21 For all bolts, nuts and washers, except service bolts .. ... 0 2 3 7 For all service bolts nuts and washers 0 0 0 21	9 5 0	Ton.	
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	2 17 0 21	26 8 11	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*concld.*

METRE GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
35 / 252 20-6-94	100	Mu Valley ...	*Upper, open	For all steel in girderwork, rivets, bolts, service bolts, &c. ...	43 3 3 11	10 18 6	Ton.	*Without footway.
				For all steel in expansion rollers and frames	0 9 0 0	26 2 6		
				For all cast-iron	2 0 1 0	12 0 0		
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	45 13 0 11	486 3 9	Span.	

Enclosure to Director General of Railways' Circular No. 8, dated 18th July 1895.

Appendix A.

Statement showing bridge girders of 250 feet span and above which have been obtained for State railways through the India Office up to end of 1894.

Number of India Office contracts.	Name of Contractors.	Clear span feet.	Gauge.	Price f. o. b. in England.	For what bridge and railway.	Approximate quantity of steel and iron.	Remarks.
A 125 of 1884 ...	Westwood, Baillie & Co.	250 ...	Metre ...	£ s. d. 4,010 0 0	Bellary-Kistna railway. (This span was originally intended for the Jhansi-Manikpur railway).	Tons. Steel ... ... 219; Wrought iron ... ... 36¼; Cast iron ... ... 13¾; Bolts, screws, etc. ... 4; 273	Main girders, cross girders, longitudinal girders, and floor-plates are of steel. The whole of the rivets are of steel.
A 163 of 1885 ...	Westwood, Baillie & Co.	250 ...	Do. ...	3,991 0 0	Gunduck bridge, Tirhoot State railway.	Steel ... ... 215; Wrought iron ... 88¼; Cast iron ... ... 13¾; Bolts, etc. 3½; 320	Main girders are of steel with the exception of plates and angle bars of diaphragms, cross girders, overhead girders, footways, hand-rails, floor, etc., are of wrought iron. The overhead diagonal bracing and gussets are of steel.
,, 164 ,, ...	Patent Shaft and Axletree Company.						
A 41 of 1876 ...	Head, Wrightson & Co.	250 ...	5′ 6″ ...	5,942 0 0 & 5,964 0 0	Sutlej bridge, Adamwahan.	Wrought iron ... ... 383½; Cast iron ... ... 15¾; Steel 5; 404½	Rollers and knuckle pins only are of steel.
,, 42 ,, ...	Westwood, Baillie & Co.						
A 76 of 1880 ...	Westwood, Baillie & Co.	257 (centres of bearing.)	5′ 6″ ...	4,463 0 0	Indus bridge at Attock	Steel ... ... 241½; Wrought iron ... ... 144½; Cast iron 12¾; 398½	Top and bottom booms of main girders and pillars, bracing between top and bottom booms, resting gear and rivets are of steel.
A 77 ,, ...	Westwood, Baillie & Co.	308 ...	5′ 6″ ...	Not given in the contract.	Ditto ...	TOTAL WEIGHT ... 553¼	314 feet measured from centre to centre of piers was ordered, and the girder supplied was for openings of 308 feet. No schedule of quantities for this contract was received.
A 116 of 1883 ...	Westwood, Baillie & Co.	278 ... (centre of bearings)	5′ 6″ ...	8,842 0 0	Indus bridge at Sukkur	Steel ... ... 866; Wrought iron ... ... 136½; Cast iron 19; 521½	Main girders are of steel with the exception of plates and angle bars of diaphragms in the top boom, the bracings and connections of the angle bars of the vertical struts, the stiffenings of the tension bars and the tapered packings of the angle bars on the inside of the upper boom which parts are of wrought iron, curb plates, longitudinal girders on the footways, diagonal bracing under roadway, corrugated floor-plates, etc., are of steel.
A 146 of 1885 ...	Westwood, Baillie & Co.	Two cantilevers, each 310 feet long.	5′ 6″ ...	49,403 0 0 (average for each.)	Ditto ...	*Bukkur Cantilever.* Steel ... . 1,417; Iron 13¼; 1,430¼	
						Haji-Motu Cantilever. Steel ... ... 1,433¼; Iron 13¼; 1,446½	All steel except bed-plates for trimmers, the chipping pieces under the bed-plates of the girder span, the tubular portion of the bracing of the large pillar and of No. 3 strut and all bolts and screws, all of which are of wrought iron.
4711 of 1891 ...	P. and W. Mclellan ...	300 ...	5′ 6″ ...	6,459 0 0 & 6,421 0 0	Kistna bridge ...	TOTAL ... 2,876¾; Total weight, 535¼ tons (exclusive of snaps.)	All steel except the saddles, knuckles and bed-plates, which are of cast iron and the rolled frames and service bolts which are either of iron or steel.
4712 ,, ...	Head Wrightson & Co.						

[*General Distribution.*]

CIRCULAR No. 8.

FROM

THE DIRECTOR GENERAL OF RAILWAYS,

TO

THE MANAGER, NORTH WESTERN RAILWAY.
THE MANAGER, OUDH AND ROHILKHAND RAILWAY.
THE MANAGER, EASTERN BENGAL STATE RAILWAY.
THE MANAGER, EAST COAST RAILWAY.
THE ENGINEER-IN-CHIEF, MUSHKAF-BOLAN STATE RAILWAY.
THE ENGINEER-IN-CHIEF, KOTRI ROHRI RAILWAY.
THE ENGINEER-IN-CHIEF, MARI-ATTOCK RAILWAY AND GRADIENT IMPROVEMENT WORKS, NORTH-WESTERN RAILWAY.
THE ENGINEER-IN-CHIEF, BEZWADA MADRAS RAILWAY.
THE ENGINEER-IN-CHIEF, ASSAM BURMA CONNECTION RAILWAY SURVEY.
THE EXECUTIVE ENGINEER, KALKA-SIMLA RAILWAY SURVEY.
THE PORT STOREKEEPER, STATE RAILWAY DEPARTMENT, CALCUTTA.

Rate List, Class A.—Bridgework for 1894.

Simla, the 18th July 1895.

SIR,

I have the honour to forward herewith, for information and guidance, a printed statement showing the actual English rates *free on board* in England for A. Class, State Railway Stores, *viz.*, "Bridgework," contracted for by the Stores Department of the India Office during the year 1894.

2. A statement showing the average rates per ton for entire sea freight, on Bridgework sent out from England to the several ports in India during 1894, is prefixed to the Rate list.

3. In order to arrive at the total cost of the Bridgework landed in India, an insurance charge of one-half* per cent. on the *free on board* cost *plus* entire sea freight, should be added in addition to other incidental charges and exchange, which latter should be calculated at the official rate for the year.

4. A statement, showing the weight and f. o. b. cost of steel and iron for bridge girders, of 250 span and upwards, which have been obtained for state railways through the India Office up to end of 1894, has been added at end of the list as Appendix A.

I have the honour to be,

SIR,

Your most obedient Servant,

T. GRACEY, Lieut.-Colonel, R.E.,
Offg. Director General of Railways.

Documents accompanying.

1. Statement showing the average rates per ton for entire sea freight on Class A. Stores imported from England to the several ports during 1894.
2. Rate List, Class A—Bridgework for 1894.

* *For State Railway Stores and Irrigation Works only classed as Imperial. Stores for Provincial and Local funds and for railways constructed by Native States are charged one per cent. as heretofore.*

CURRENT No. 6043

The Secretaries to the Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh and the Punjab, Public Works Department.
The Secretaries to the Chief Commissioners of the Central Provinces, Burma, and Assam, Public Works Department.
The Secretaries to the Residents at Hyderabad and in Mysore, Public Works Department.
The Secretaries to the Agents to the Governor General, Rajputana and Central India, and Baluchistan, Public Works Department.
The Superintendent of Port Blair and Chief Commissioner, Andaman and Nicobar Islands.
The Director General of Telegraphs.
The Director General of Military Works.
The Chief Engineer, Kashmir.
The Accountant General, Bengal.
The Consulting Engineers for Railways, Madras and Bombay.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow, and Assam.

Copy forwarded to the Local Governments and Administrations and to the Officers noted in the margin for information, with the intimation that all Railway Administrations have been supplied with copies direct.

No. 2107 W.-4/22-8-94

Lieut-Colonel, R.E.,
Offg. Director General of Railways.

To

THE Secy: to the Govt of Madras
Public Works Dept.

No 2087 W. 21st August 1894

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to officers of the P.W. Dept
to Officers of the

Ch. E. for I. 24.8.94
Supdg. Engrs.
Ex. Engrs.
Sub. to Govt
S.&M.W.P.P.
Exrs. P.W. Dept

DESPATCHED
27 AUG. 94

Enclosure to Director General of Railways' Circular No. 8 of 1895.

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

G. C. Press, Simla.—140 P. W. D.—25-7-95.—892.

Desp. 6043/95

CURRENT No. 6043

The Secretaries to the Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh and the Punjab, Public Works Department.
The Secretaries to the Chief Commissioners of the Central Provinces, Burma, and Assam, Public Works Department.
The Secretaries to the Residents at Hyderabad and in Mysore, Public Works Department.
The Secretaries to the Agents to the Governor General, Rajputana and Central India, and Baluchistan, Public Works Department.
The Superintendent of Port Blair and Chief Commissioner, Andaman and Nicobar Islands.
The Director General of Telegraphs.
The Director General of Military Works.
The Chief Engineer, Kashmir.
The Accountant General, Bengal.
The Consulting Engineers for Railways, Madras and Bombay.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow, and Assam.

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No. 2107 W.d/22-8-95

Lieut-Colonel, R.E.,
Offg. Director General of Railways.

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Aug: 7. 8. 95

To

THE Secy: to the Govt of Madras
Public Works Dept.

No 2087 W.d/21st August 1895

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Communicated
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to offices of the P.W.Dept
to Officers of the

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Enclosure to Director General of Railways' Circular No. 8 of 1895.

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

Aug 5.1
6043/95

G. C. Press, Simla.—140 P. W. D.—25-7-95.—892.

Enclosure to Director General of Railways' Circular No. 8 of 1895.

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

Enclosure to Director General of Railways' Circular No. 8 of 1895.

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

STATEMENT showing the average rates per ton for entire Sea Freight on Bridgework sent out from England to the several ports in India for State Railways of both gauges during 1894.

Description of girders.	Karachi.	Bombay.	Calcutta.	Coconada or Vizagapatam.	Rangoon.	Remarks.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	
Clear span 6 feet	13 9	...	...	...	...	
„ 10 „	6 9	...	...	...	...	
„ 12 „	15 8	22 6	15 0	...	...	
„ 15 „	...	...	...	...	...	
„ 18 „	...	...	...	...	...	
„ 20 „	14 0	22 6	15 0	19 0	...	
„ 30 „	17 9	...	30 10	...	...	
„ 40 „	18 0	25 0	37 6	19 0	...	
„ 60 „	18 3	23 0	40 0	19 0	...	
„ 100 „	14 3	...	19 0	...	26 8	
„ 150 „	16 6	...	...	...	...	

Note.—Where rates have not been quoted, it should be understood that girders of the dimensions specified were not imported during the year.

CLASS OF STORES. A.—BRIDGEWORK.

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/193 17-1-94	10	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0 18 2 14	10 5 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ...	1 0 0 21	10 6 11	Span.	
39/38 2-10-94	10	Do.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0 18 2 14	9 7 10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ..	1 0 1 0	9 10 2	Span.	

CLASS OF STORES. A.—BRIDGEWORK.

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
30/193 — 17-1-94	10	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0	18	2	14	10	5	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	1	21					
				For all service bolts, nuts, and washers	0	0	0	14					
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ...	1	0	0	21	10	6	11	Span.	
39/38 — 2-10-94	10	Do.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0	18	2	14	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	1	21					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ..	1	0	1	0	9	10	2	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	REMARKS.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/386 — 31-1-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 7	12 0 6	Span.	
33/115 — 11-4-94	12	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 8 4½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	REMARKS.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 — 2-5-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 4 9	Span.	
39/38 — 2-10-94	12	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	10 5 3	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	13 0 5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
30/386 31-1-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1	3	3	0	9	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	1	21					
				For all service bolts, nuts, and washers	0	0	0	14					
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1	5	1	7	12	0	6	Span.	
33/115 11-4-94	12	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1	3	3	0	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	1	21					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1	5	1	14	11	8	4½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
34/1 2-5-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1	3	3	0	8	17	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	1	21					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1	5	1	14	11	4	9	Span.	
39/38 2-10-94	12	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1	3	3	0	10	5	3	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	1	21					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1	5	1	14	13	0	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.		Remarks.
									Amount.	Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£ s. d.		
39/116 9-10-94	15	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	2	19	2	0	8 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	2	21			
				For all service bolts, nuts, and washers	0	0	0	21			
				Girders, plate, 15 ft., complete, with bolts, rivets, &c. ...	3	1	1	14	26 1 8	Span.	
39/125 11-10-94	18	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	6	5	1	14	8 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7			
				For all service bolts, nuts, and washers	0	0	3	0			
				Girders, plate, 18 ft., complete, with bolts, nuts, rivets, &c. ...	6	6	2	21	53 16 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.		Remarks.
									Amount.	Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£ s. d.		
30/193 17-1-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	3	13	3	21	9 17 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0			
				For all service bolts, nuts, and washers	0	0	1	14			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	37 13 7	Span.	
30/386 31-1-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork including rivets, spare rivets, and rivet rods	3	13	3	21	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0			
				For all service bolts, nuts, and washers	0	0	1	14			
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ...	3	16	1	7	36 5 0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
39/116 9-10-94	15	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	2	19	2	0	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	2	21					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 15 ft., complete, with bolts, rivets, &c. ...	3	1	1	14	26	1	8	Span.	
39/125 11-10-94	18	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	6	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 18 ft., complete, with bolts, nuts, rivets, &c. ...	6	6	2	21	53	16	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
30/193 17-1-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	3	13	3	21	9	17	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	37	13	7	Span.	
30/386 31-1-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork including rivets, spare rivets, and rivet rods	3	13	3	21	9	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ...	3	16	1	7	36	5	0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				RATE—FREE ON BOARD.				REMARKS.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
33/115 — 11-4-94	20	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	3	13	3	21	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	34	6	10	Span.	
34/1 — 2-5-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	3	13	3	21	8	17	0	Ton.	
				For all bolts, nuts, and washers ...	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 feet, complete, with bolts, rivets, &c. ...	3	16	1	7	33	15	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				RATE—FREE ON BOARD.				REMARKS.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
39/38 — 2-10-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ..	3	16	0	14	36	8	2	Span.	
39/125 — 11-10-94	20	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods	7	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	7	6	2	21	62	6	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				RATE—FREE ON BOARD.				REMARKS.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
33/115 — 11-4-94	20	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	3	13	3	21	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	34	6	10	Span.	
34/1 — 2-5-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	3	13	3	21	8	17	0	Ton.	
				For all bolts, nuts, and washers ...	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 feet, complete, with bolts, rivets, &c. ...	3	16	1	7	33	15	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				RATE—FREE ON BOARD.				REMARKS.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
39/38 — 2-10-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ..	3	16	0	14	36	8	2	Span.	
39/125 — 11-10-94	20	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods	7	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	7	6	2	21	62	6	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Rate—Free on board. Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
40/313 28-11-94	20	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	3	13	0	0	8	12	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c.	3	15	1	14	32	10	0½	Span.	
30/385 31-1-94	30	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	6	15	2	0	9	8	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	6	18	3	7	65	8	3	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Rate—Free on board. Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
34/67 10-5-94	30	Eastern Bengal	Lower ...	For all steel in girderwork, including rivets, spare rivets, and rivet rods	9	19	0	0	9	15	0	Ton	For a bridge of 3 spans, or 90 feet over all.
				For all service bolts, nuts, and washers	0	1	0	0					
				Girders, plate, 30 ft., complete, including bolts, rivets, &c. ...	10	0	0	0	97	10	0	Span.	
37/211 8-8-94	30	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	8	13	3	21	8	17	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	8	17	1	0	78	13	1	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
40/313 28-11-94	20	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	3 13 0 0	8 12 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 2 0 0			
				For all service bolts, nuts, and washers	0 0 1 14			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c.	3 15 1 14	32 10 0½	Span.	
30/385 31-1-94	30	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	6 15 2 0	9 8 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 2 2 7			
				For all service bolts, nuts, and washers	0 0 3 0			
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	6 18 3 7	65 8 3	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/67 10-5-94	30	Eastern Bengal	Lower ...	For all steel in girderwork, including rivets, spare rivets, and rivet rods	9 19 0 0	9 15 0	Ton	For a bridge of 3 spans, or 90 feet over all.
				For all service bolts, nuts, and washers	0 1 0 0			
				Girders, plate, 30 ft., complete, including bolts, rivets, &c. ...	10 0 0 0	97 10 0	Span.	
37/211 8-8-94	30	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	8 13 3 21	8 17 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 2 2 7			
				For all service bolts, nuts, and washers	0 0 3 0			
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	8 17 1 0	78 13 1	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
40/313 28-11-94	20	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	3	13	0	0	8	12	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c.	3	15	1	14	32	10	0½	Span.	
30/385 31-1-94	30	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	6	15	2	0	9	8	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	6	18	3	7	65	8	3	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
34/67 10-5-94	30	Eastern Bengal	Lower ...	For all steel in girderwork, including rivets, spare rivets, and rivet rods	9	19	0	0	9	15	0	Ton	For a bridge of 3 spans, or 90 feet over all.
				For all service bolts, nuts, and washers	0	1	0	0					
				Girders, plate, 30 ft., complete, including bolts, rivets, &c. ...	10	0	0	0	97	10	0	Span.	
37/211 8-8-94	30	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	8	13	3	21	8	17	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	8	17	1	0	78	13	1	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
37/212 16-8-94	30	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	8 13 3 21	8 12 6	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 2 7			
				For all service bolts, nuts, and washers	0 0 3 0			
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	8 17 1 0	76 8 9	Span.	
30/385 31-1-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10 11 0 0	9 8 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	10 15 2 14	101 12 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/324 22-2-94	40 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry heavy ghat engines having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	23 3 0 20	9 5 0	Ton.	*On curve 1311·5 ft. radius. Angle of skew varies from 60° to 47° 33″.
				For all bolts, nuts, and washers, except service bolts	0 1 0 7			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	23 5 2 27	215 8 7	Span.	
31/324 22-2-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods ..	22 5 2 21	9 5 0	Ton.	†On curve 1,273 ft. radius. Angle of skew 45°.
				For all bolts, nuts, and washers, except service bolts	0 0 3 21			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	23 8 0 14	216 10 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
37/212 — 16-8-94	30	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	8 13 3 21	8 12 6	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 2 7			
				For all service bolts, nuts, and washers	0 0 3 0			
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	8 17 1 0	76 8 9	Span.	
30/385 — 31-1-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10 11 0 0	9 8 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	10 15 2 14	101 12 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/324 — 22-2-94	40 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry heavy ghat engines having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	23 3 0 20	9 5 0	Ton.	*On curve 1311·5 ft. radius. Angle of skew varies from 60° to 47° 33″.
				For all bolts, nuts, and washers, except service bolts	0 1 0 7			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	23 5 2 27	215 8 7	Span.	
22-2-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods ..	22 5 2 21	9 5 0	Ton.	†On curve 1,273 ft. radius. Angle of skew 45°.
				For all bolts, nuts, and washers, except service bolts	0 0 3 21			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	23 8 0 14	216 10 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/324 22-2-94	40*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghat, engines having axle loads of at least 17 tons per axle.	For all steel in girderwork including rivets, spare rivets, and rivet rods	22 11 2 0	9 5 0	Ton.	* On curve 1,011·5 ft. radius.
				For all bolts, nuts, and washers, except service bolts	0 0 3 23			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	22 13 3 23	209 19 1	Span.	
33/111 10-4-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	21 18 1 0	9 12 0	Ton.	† Bridge No. 214.
				For all bolts, nuts, and washers, except service bolts	0 0 2 7			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	22 0 1 7	211 7 0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/206 16-4-94	40	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10 11 0 0	9 10 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 0 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10 15 0 14	102 3 8	Span.	
34/1 2-5-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	10 11 0 0	8 17 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10 15 2 14	95 8 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/324 — 22-2-94	40*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghat, engines having axle loads of at least 17 tons per axle.	For all steel in girderwork including rivets, spare rivets, and rivet rods	22 11 2 0	9 5 0	Ton.	* On curve 1,011·5 ft. radius.
				For all bolts, nuts, and washers, except service bolts	0 0 3 23			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	22 13 3 23	209 19 1	Span.	
33/111 — 10-4-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	21 18 1 0	9 12 0	Ton.	† Bridge No. 214.
				For all bolts, nuts, and washers, except service bolts	0 0 2 7			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	22 0 1 7	211 7 0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/206 — 16-4-94	40	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10 11 0 0	9 10 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 0 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10 15 0 14	102 3 8	Span.	
34/1 — 2-5-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	10 11 0 0	8 17 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10 15 2 14	95 8 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
31/324 — 22-2-94	40*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghat, engines having axle loads of at least 17 tons per axle.	For all steel in girderwork including rivets, spare rivets, and rivet rods	22	11	2	0	9	5	0	Ton.	* On curve 1,011·5 ft. radius.
				For all bolts, nuts, and washers, except service bolts	0	0	3	23					
				For all service bolts, nuts, and washers	0	1	2	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	22	13	3	23	209	19	1	Span.	
33/111 — 10-4-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	21	18	1	0	9	12	0	Ton.	† Bridge No. 214.
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	1	2	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	22	0	1	7	211	7	0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/206 — 16-4-94	40	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10	11	0	0	9	10	0	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	1	0	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	15	0	14	102	3	8	Span.	
34/1 — 2-5-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	10	11	0	0	8	17	0	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	1	2	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	15	2	14	95	8	3	Span.	

CLASSOF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
39 38 — 2-10-94	40	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets and rivet rods...	10	11	0	0	9	7	10	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	14	2	0	101	3	3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
30 385 — 31-1-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	26	13	0	0	9	8	6	Ton.	
				For all bolts, nuts and washers ...	0	4	3	14					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c. ...	27	0	3	14	254	17	9	Span.	
31 324 — 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43	13	0	0	9	5	0	Ton.	* Angle of skew 60° to left.
				For all bolts nuts, and washers, except service bolts	0	1	2	9					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43	17	2	9	405	17	9	Span.	

CLASSOF STORES. A.--BRIDGEWORK--*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
39/38 2-10-94	40	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets and rivet rods...	10	11	0	0	9	7	10	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	14	2	0	101	3	3	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
30/385 31-1-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	26	13	0	0	9	8	6	Ton.	
				For all bolts, nuts and washers ...	0	4	3	14					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c. ...	27	0	3	14	254	17	9	Span.	
31/324 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43	13	0	0	9	5	0	Ton.	* Angle of skew 60° to left.
				For all bolts nuts, and washers, except service bolts	0	1	2	9					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43	17	2	9	405	17	9	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons. cwt. qr. lbs.	£ s. d.		
31/324 — 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 9 3 11	9 5 0	Ton.	* Angle of skew 60° to right.
				For all bolts, nuts and washers, except service bolts.	0 1 2 18			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 * feet, complete, with bolts, rivets, &c.	43 14 2 1	404 9 3	Span.	
31/324 — 22-2-94	60 †	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 8 1 9	9 5 0	Ton.	† On curve 1,146 ft. radius.
				For all bolts, nuts and washers, except service bolts	0 1 2 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43 12 3 23	403 15 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/111 — 10-4-94	60*	Mushkaf Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 2 0 0	9 12 0	Ton.	*Bridge No. 215.
				For all bolts, nuts and washers, except service bolts	0 1 1 7			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete with bolts, rivets, &c. ...	44 6 1 7	425 7 8	Span.	
33/111 — 10-4-94	60†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 11 1 21	9 12 0	Ton.	†Bridge No. 216. Angle of skew 45° to left.
				For all bolts, nuts, and washers, except service bolts	0 1 1 2			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	44 15 2 23	429 18 9	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons. cwt. qr. lbs.	£ s. d.		
31/324 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 9 3 11	9 5 0	Ton.	* Angle of skew 60° to right.
				For all bolts, nuts and washers, except service bolts.	0 1 2 18			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 * feet, complete, with bolts, rivets, &c.	43 14 2 1	404 9 3	Span.	
31/324 22-2-94	60 †	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 8 1 9	9 5 0	Ton.	† On curve 1,146 ft. radius.
				For all bolts, nuts and washers, except service bolts	0 1 2 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43 12 3 23	403 15 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/111 10-4-94	60*	Mushkaf Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 2 0 0	9 12 0	Ton.	*Bridge No. 215.
				For all bolts, nuts and washers, except service bolts	0 1 1 7			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete with bolts, rivets, &c. ...	44 6 1 7	425 7 8	Span.	
33/111 10-4-94	60†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 11 1 21	9 12 0	Ton.	†Bridge No. 216. Angle of skew 45° to left.
				For all bolts, nuts, and washers, except service bolts	0 1 1 2			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	44 15 2 23	429 18 9	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/177 — 13-4-94	60	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	*For all steel in girderwork, including rivets, spare rivets, and rivet rods*	43 4 0 0	10 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 7			
				For all srevice bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43 8 1 7	434 3 2	Span.	
33/206 — 16-4-94	60	East Coast	Upper, open	For all steel in girderwork including rivets, spare rivets, and rivet rods	26 12 0 0	9 10 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	26 19 3 14	256 8 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 — 2-5-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	26 13 0 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	27 0 3 14	239 6 8	Span.	
37/1 — 1-8-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	26 12 3 0	9 0 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 4 3 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, etc.	27 0 2 14	243 5 7½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
33/111 — 10-4-94	100*	Mushkaf-Bolan	Upper, decked; and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts and service bolts, &c.	79	8	3	0	9	12	0	Ton.	
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	„	*Bridge No. 215. Angle of skew 45° to right.
				For all cast-iron	3	12	1	0	8	15	0	„	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	17	3	0	808	0	7	Span.	
33/111 — 10-4-94	100†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	78	17	2	0	9	12	0	Ton.	
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	„	†Bridge No. 214. On curve of 900 feet radius.
				For all cast-iron	3	12	1	0	8	15	0	„	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	6	2	0	802	12	6	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
37/234 — 17-8-94	100	Bhopal-Ujjain	Lower, with cart road on rail level.	For all steel in girderwork, including rivets and spare rivets. ...	79	14	3	21	8	15	0	Ton.	
				For all bolts, nuts, and washers ...	0	4	0	7					
				For all service bolts, nuts, and washers	0	6	0	0					
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	80	5	0	0	702	3	9	Span.	
31/325 — 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	151	17	0	21	8	17	6	Ton.	
				For all steel in expansion rollers and frames	1	16	3	0	20	0	0	„	
				For all cast-iron	7	7	1	0	9	10	0	„	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161	1	0	21	1,454	7	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/111 — 10-4-94	100*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts and service bolts, &c.	79	8	3	0	9	12	0	Ton.	*Bridge No. 215. Angle of skew 45° to right.
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	,,	
				For all cast-iron	3	12	1	0	8	15	0	,,	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	17	3	0	808	0	7	Span.	
33/111 — 10-4-94	100†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	78	17	2	0	9	12	0	Ton.	†Bridge No. 214. On curve of 900 feet radius.
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	,,	
				For all cast-iron	3	12	1	0	8	15	0	,,	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	6	2	0	802	12	6	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
37/234 — 17-8-94	100	Bhopal-Ujjain	Lower, with cart road on rail level.	For all steel in girderwork, including rivets and spare rivets. ...	79	14	3	21	8	15	0	Ton.	
				For all bolts, nuts, and washers ...	0	4	0	7					
				For all service bolts, nuts, and washers	0	6	0	0					
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	80	5	0	0	702	3	9	Span.	
31/325 — 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	151	17	0	21	8	17	6	Ton.	
				For all steel in expansion rollers and frames	1	16	3	0	20	0	0	,,	
				For all cast-iron	7	7	1	0	9	10	0	,,	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161	1	0	21	1,454	7	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/326 — 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	151 17 0 21	9 3 9	Ton.	
				For all steel in expansion rollers and frames	1 16 3 0	35 0 0	,,	
				For all cast-iron	7 7 1 0	11 0 0	,,	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161 1 0 21	1,540 10 1	Span.	
33/252 — 19-4-94	150	East Coast	Lower, with cart road on rail level.	For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	138 4 1 0	9 0 0	Ton.	
				For all steel in expansion rollers and frames	0 19 3 0	25 0 0	,,	
				For all cast-iron	5 6 2 0	9 0 0	,,	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	144 10 2 0	1,316 10 6	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
					Tons cwt. qr. lbs.	£ s. d.		
				Connections between spans.				
33/111 — 10-4-94	...	*Mushkaf-Bolan	...	For all steel in plates and angle bars	0 16 2 0			
				Rivet heads and spare rivets ...	0 1 0 0	9 12 0	Ton.	*For bridge No. 216, consisting of 4 spans of 60 feet.
				46 bolts and washers	0 0 1 21			
				Total in connections ...	1 17 3 21	18 4 2	Total.	
				Connections between spans and at abutments.				
33/111 — 10-4-94	...	†Mushkaf-Bolan	...	For all steel in plates angle bars and corrugated plates	1 16 3 0			
				Rivet heads and spare rivets ...	0 2 1 0	9 12 0	Ton.	† For bridge No. 215, consisting of 2 spans of 100 and 1 of 60 feet.
				154 bolts and washers	0 1 1 14			
				Total in connections ...	2 0 1 14	19 7 7	Total.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	REMARKS.
				Connections between spans and at abutments.	Tons. cwt. qr. lbs.	£ *s.* *d.*		
33/111 — 10-4-94	...	*Mushkaf-Bolan	...	For all steel in plates angle bars and corrugated plates	0 17 3 0	9 12 0	Ton.	*For bridge No. 214, consisting of 2 spans of 100 and 2 of 40 feet.
				Rivet heads and spare rivets ...	0 2 1 0			
				118 bolts and washers	0 1 0 7			
				Total in connections ...	2 1 0 7	19 14 2	Total.	
				Spare Parts.				
39/297 — 27-10-94	...	North-Western	...	End trough floor plate 10′1″ × 1′6⅞″ × $\frac{15}{16}$″, depth of trough 5$\frac{5}{16}$″ ...		3 10 0	Each.	Required to complete one span of girder of 90 feet for Jhelum Bridge.

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

METRE GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	RATE—FREE ON BOARD. Amount.	Unit.	REMARKS.
	Ft.				Tons cwt. qr. lbs.	£ *s.* *d.*		
38/208 — 15-9-94	12	Oodeypore-Chitore.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	0 19 0 14	9 5 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 0 0			
				For all service bolts, nuts and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 1 1 7	9 17 2	Span.	
38/208 — 15-9-94	20	Oodeypore-Chitore.	Upper, open	For all steel in girderwork, including rivets, spare rivets and rivet rods...	2 14 0 21	9 5 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 3 7			
				For all service bolts nuts and washers	0 0 0 21			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	2 17 0 21	26 8 11	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*concld.*

METRE GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
35/252 20-6-94	100	Mu Valley ...	*Upper, open	For all steel in girderwork, rivets, bolts, service bolts, &c. ...	43 3 3 11	10 18 6	Ton.	*Without footway.
				For all steel in expansion rollers and frames	0 9 0 0	26 2 6		
				For all cast-iron	2 0 1 0	12 0 0		
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	45 13 0 11	486 3 9	Span.	

Enclosure to Director General of Railways' Circular No. 8, dated 18th July 1895.

Appendix A.

Statement showing bridge girders of 250 feet span and above which have been obtained for State railways through the India Office up to end of 1894.

Number of India Office contracts.	Name of Contractors.	Clear span feet.	Gauge.	Price f. o. b. in England.	For what bridge and railway.	Approximate quantity of steel and iron.	Tons.	Remarks.
A 125 of 1884 ...	Westwood, Baillie & Co.	250 ...	Metre ...	£ s. d. 4,010 0 0	Bellary-Kistna railway. (This span was originally intended for the Jhansi-Manikpur railway).	Steel	219	Main girders, cross girders, longitudinal girders, and floor-plates are of steel. The whole of the rivets are of steel.
						Wrought iron	36½	
						Cast iron	13½	
						Bolts, screws, etc.	4	
							273	
A 163 of 1885 ...	Westwood, Baillie & Co.	250 ...	Do. ...	3,991 0 0	Gunduck bridge, Tirhoot State railway.	Steel	215	Main girders are of steel with the exception of plates and angle bars of diaphragms, cross girders, overhead girders, footways, hand-rails, floor, etc., are of wrought iron. The overhead diagonal bracing and gussets are of steel.
,, 164 ,, ...	Patent Shaft and Axletree Company.					Wrought iron	88½	
						Cast iron	13¾	
						Bolts, etc.	3½	
							320	
A 41 of 1876 ...	Head, Wrightson & Co.	250 ...	5′ 6″ ...	5,942 0 0 & 5,964 0 0	Sutlej bridge, Adamwahan.	Wrought iron	383½	Rollers and knuckle pins only are of steel.
						Cast iron	15½	
,, 42 ,, ...	Westwood, Baillie & Co.					Steel	5	
							404¼	
A 76 of 1880 ...	Westwood, Baillie & Co.	257 (centres of bearing.)	5′ 6″ ...	4,463 0 0	Indus bridge at Attock	Steel	241¼	Top and bottom booms of main girders and pillars, bracing between top and bottom booms, resting gear and rivets are of steel.
						Wrought iron	144½	
						Cast iron	12¾	
							398½	
A 77 ,, ...	Westwood, Baillie & Co.	308 ...	5′ 6″ ...	Not given in the contract.	Ditto ...	TOTAL WEIGHT ...	553½	314 feet measured from centre to centre of piers was ordered, and the girder supplied was for openings of 308 feet. No schedule of quantities for this contract was received.
A 116 of 1883 ...	Westwood, Baillie & Co.	278 ... (centre of bearings)	5′ 6″ ...	8,842 0 0	Indus bridge at Sukkur	Steel	366	Main girders are of steel with the exception of plates and angle bars of diaphragms in the top boom, the bracings and connections of the angle bars of the vertical struts, the stiffenings of the tension bars and the tapered packings of the angle bars on the inside of the upper boom which parts are of wrought iron, curb plates, longitudinal girders on the footways, diagonal bracing under roadway, corrugated floor-plates, etc., are of steel.
						Wrought iron	136½	
						Cast iron	19	
							521½	
						Bukkur Cantilever.		
A 146 of 1885 ...	Westwood, Baillie & Co.	Two cantilevers, each 310 feet long.	5′ 6″ ...	49,403 0 0 (average for each.)	Ditto ...	Steel	1,417	
						Iron	13¼	
							1,430¼	
						Haji-Motu Cantilever.		
						Steel	1,433¼	All steel except bed-plates for trimmers, the chipping pieces under the bed-plates of the girder span, the tubular portion of the bracing of the large pillar and of No. 3 strut and all bolts and screws, all of which are of wrought iron.
						Iron	13½	
							1,446½	
						TOTAL ...	2,876¾	
4711 of 1891 ...	P. and W. Mclellan ...	300 ...	5′ 6″ ...	6,459 0 0 & 6,421 0 0	Kistna bridge ...	Total weight, 535½ tons (exclusive of snaps.)		All steel except the saddles, knuckles and bed plates, which are of cast iron and the rolled frames and service bolts which are either of iron or steel.
4712 ,, ...	Head Wrightson & Co.							

CLASS OF STORES. A.—BRIDGEWORK—*concld.*

METRE GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
35/252, 20-6-94	100	Mu Valley ...	*Upper, open	For all steel in girderwork, rivets, bolts, service bolts, &c. ...	43 3 3 11	10 18 6	Ton.	*Without footway.
				For all steel in expansion rollers and frames	0 9 0 0	26 2 6		
				For all cast-iron	2 0 1 0	12 0 0		
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	45 13 0 11	486 3 9	Span.	

Enclosure to Director General of Railways' Circular No. 8, dated 18th July 1895.

Appendix A.

Statement showing bridge girders of 250 feet span and above which have been obtained for State railways through the India Office up to end of 1894.

Number of India Office contracts.	Name of Contractors.	Clear span feet.	Gauge.	Price f. o. b. in England.	For what bridge and railway.	Approximate quantity of steel and iron.	Remarks.
A 125 of 1884 ...	Westwood, Baillie & Co.	250 ...	Metre ...	£ s. d. 4,010 0 0	Bellary-Kistna railway. (This span was originally intended for the Jhansi-Manikpur railway).	Steel ... ... 219 Wrought iron ... ... 36½ Cast iron ... ... 13½ Bolts, screws, etc. ... ... 4 Tons. 273	Main girders, cross girders, longitudinal girders, and floor-plates are of steel. The whole of the rivets are of steel.
A 163 of 1885 ...	Westwood, Baillie & Co.	250 ...	Do. ...	3,991 0 0	Gunduck bridge, Tirhoot State railway.	Steel ... ... 215 Wrought iron ... ... 88½ Cast iron ... ... 13½ Bolts, etc. 3½ 320	Main girders are of steel with the exception of plates and angle bars of diaphragms, cross girders, overhead girders, footways, hand-rails, floor, etc., are of wrought iron. The overhead diagonal bracing and gussets are of steel.
,, 164 ,, ...	Patent Shaft and Axletree Company.						
A 41 of 1876 ...	Head, Wrightson & Co.	250 ...	5′ 6″ ...	5,942 0 0 & 5,964 0 0	Sutlej bridge, Adamwahan.	Wrought iron ... ... 383½ Cast iron ... ... 15½ Steel 5 404½	Rollers and knuckle pins only are of steel.
,, 42 ,, ...	Westwood, Baillie & Co.						
A 76 of 1880 ...	Westwood, Baillie & Co.	257 (centres of bearing.)	5′ 6″ ...	4,463 0 0	Indus bridge at Attock	Steel ... ... 241½ Wrought iron ... ... 144½ Cast iron 12½ 398½	Top and bottom booms of main girders and pillars, bracing between top and bottom booms, resting gear and rivets are of steel.
A 77 ,, ...	Westwood, Baillie & Co.	308 ...	5′ 6″ ...	Not given in the contract.	Ditto ...	TOTAL WEIGHT ... 553½	314 feet measured from centre to centre of piers was ordered, and the girder supplied was for openings of 308 feet. No schedule of quantities for this contract was received.
A 116 of 1883 ...	Westwood, Baillie & Co.	278 ... (centre of bearings)	5′ 6″ ...	8,842 0 0	Indus bridge at Sukkur	Steel ... ... 866 Wrought iron ... ... 136½ Cast iron 19 521½	Main girders are of steel with the exception of plates and angle bars of diaphragms in the top boom, the bracings and connections of the angle bars of the vertical struts, the stiffenings of the tension bars and the tapered packings of the angle bars on the inside of the upper boom which parts are of wrought iron, curb plates, longitudinal girders on the footways, diagonal bracing under roadway, corrugated floor-plates, etc., are of steel.
A 146 of 1885 ...	Westwood, Baillie & Co.	Two cantilevers, each 310 feet long.	5′ 6″ ...	49,403 0 0 (average for each.)	Ditto ...	*Bukkur Cantilever.* Steel ... ... 1,417 Iron ... ... 13¼ 1,430¼ *Haji-Motu Cantilever.* Steel ... ... 1,433¼ Iron ... ... 13¼ 1,446½ TOTAL ... 2,876¾	All steel except bed-plates for trimmers, the chipping pieces under the bed-plates of the girder span, the tubular portion of the bracing of the large pillar and of No. 3 strut and all bolts and screws, all of which are of wrought iron.
4711 of 1891 ...	P. and W. Mclellan ...	300 ...	5′ 6″ ...	6,459 0 0 & 6,421 0 0	Kistna bridge ...	Total weight, 535½ tons (exclusive of snaps.)	All steel except the saddles, knuckles and bed plates, which are of cast iron and the rolled frames and service bolts which are either of iron or steel.
4712 ,, ...	Head Wrightson & Co.						

Enclosure to Director General of Railways' Circular No. 8 of 1895.

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

G. C. Press, Simla.—140 P. W. D.—25-7-95.—892.

Enclosure to Director General of Railways' Circular No. 8 of 1895.

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

Enclosure to Director General of Railways' Circular No. 8 of 1895.

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

RATE LIST.

CLASS A.

BRIDGEWORK

FOR 1894.

STATEMENT showing the average rates per ton for entire Sea Freight on Bridgework sent out from England to the several ports in India for State Railways of both gauges during 1894.

Description of girders.	Karachi.	Bombay.	Calcutta.	Coconada or Vizagapatam.	Rangoon.	Remarks.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	
Clear span 6 feet	13 9	...	...	...	...	
„ 10 „	6 9	...	...	...	...	
„ 12 „	15 8	22 6	15 0	...	...	
„ 15 „	...	...	...	...	...	
„ 18 „	...	...	...	...	...	
„ 20 „	14 0	22 6	15 0	19 0	...	
„ 30 „	17 9	...	30 10	...	...	
„ 40 „	18 0	25 0	37 6	19 0	...	
„ 60 „	18 3	23 0	40 0	19 0	...	
„ 100 „	14 3	...	19 0	...	26 8	
„ 150 „	16 6	...	...	...	...	

Note.—Where rates have not been quoted, it should be understood that girders of the dimensions specified were not imported during the year.

CLASS OF STORES. A.—BRIDGEWORK.

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/193 17-1-94	10	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0 18 2 14	10 5 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ...	1 0 0 21	10 6 11	Span.	
39/38 2-10-94	10	Do.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	0 18 2 14	9 7 10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 10 ft., complete, with bolts, rivets, &c. ..	1 0 1 0	9 10 2	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
30/386 31-1-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 14			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 7	12 0 6	Span.	
33/115 11-4-94	12	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	9 0 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 8 4½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
34/1 2-5-94	12	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	8 17 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	11 4 9	Span.	
39/38 2-10-94	12	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	1 3 3 0	10 5 3	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 1 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 5 1 14	13 0 5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.		Remarks.
									Amount.	Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£ s. d.		
39/116 9-10-94	15	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	2	19	2	0	8 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	2	21			
				For all service bolts, nuts, and washers	0	0	0	21			
				Girders, plate, 15 ft., complete, with bolts, rivets, &c. ...	3	1	1	14	26 1 8	Span.	
39/125 11-10-94	18	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	6	5	1	14	8 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7			
				For all service bolts, nuts, and washers	0	0	3	0			
				Girders, plate, 18 ft., complete, with bolts, nuts, rivets, &c. ...	6	6	2	21	53 16 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.		Remarks.
									Amount.	Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£ s. d.		
30/193 17-1-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	3	13	3	21	9 17 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0			
				For all service bolts, nuts, and washers	0	0	1	14			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	37 13 7	Span.	
30/386 31-1-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork including rivets, spare rivets, and rivet rods	3	13	3	21	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0			
				For all service bolts, nuts, and washers	0	0	1	14			
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ...	3	16	1	7	36 5 0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ *s.* *d.*		
39/116 9-10-94	15	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	2 19 2 0	8 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 1 2 21			
				For all service bolts, nuts, and washers	0 0 0 21			
				Girders, plate, 15 ft., complete, with bolts, rivets, &c. ...	3 1 1 14	26 1 8	Span.	
39/125 11-10-94	18	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	6 5 1 14	8 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 0 2 7			
				For all service bolts, nuts, and washers	0 0 3 0			
				Girders, plate, 18 ft., complete, with bolts, nuts, rivets, &c. ...	6 6 2 21	53 16 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ *s.* *d.*		
30/193 17-1-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	3 13 3 21	9 17 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 2 0 0			
				For all service bolts, nuts, and washers	0 0 1 14			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3 16 1 7	37 13 7	Span.	
30/386 31-1-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork including rivets, spare rivets, and rivet rods	3 13 3 21	9 10 0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 2 0 0			
				For all service bolts, nuts, and washers	0 0 1 14			
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ...	3 16 1 7	36 5 0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
39/116 9-10-94	15	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	2	19	2	0	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	2	21					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 15 ft., complete, with bolts, rivets, &c. ...	3	1	1	14	26	1	8	Span.	
39/125 11-10-94	18	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	6	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 18 ft., complete, with bolts, nuts, rivets, &c. ...	6	6	2	21	53	16	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
30/193 17-1-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	3	13	3	21	9	17	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	37	13	7	Span.	
30/386 31-1-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork including rivets, spare rivets, and rivet rods	3	13	3	21	9	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ...	3	16	1	7	36	5	0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/115 — 11-4-94	20	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	3	13	3	21	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	34	6	10	Span.	
34/1 — 2-5-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	3	13	3	21	8	17	0	Ton.	
				For all bolts, nuts, and washers ...	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 feet, complete, with bolts, rivets, &c. ...	3	16	1	7	33	15	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
39/38 — 2-10-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ..	3	16	0	14	36	8	2	Span.	
39/125 — 11-10-94	20	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods	7	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	7	6	2	21	62	6	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
33/115 — 11-4-94	20	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	3	13	3	21	9	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	3	16	1	7	34	6	10	Span.	
34/1 — 2-5-94	20	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	3	13	3	21	8	17	0	Ton.	
				For all bolts, nuts, and washers ...	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 feet, complete, with bolts, rivets, &c. ...	3	16	1	7	33	15	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
39/38 — 2-10-94	20	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	3	13	3	21	9	7	10	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	0	21					
				Girders, plate, 20 ft. complete, with bolts, rivets, &c. ..	3	16	0	14	36	8	2	Span.	
39/125 — 11-10-94	20	North-Western	Upper, decked	For all steel in girderwork, including rivets, spare rivets, and rivet rods	7	5	1	14	8	10	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	7	6	2	21	62	6	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
40/313 28-11-94	20	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	3	13	0	0	8	12	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	0	0					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 20 ft., complete, with bolts, rivets, &c.	3	15	1	14	32	10	0½	Span.	
30/385 31-1-94	30	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	6	15	2	0	9	8	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	6	18	3	7	65	8	3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
34/67 10-5-94	30	Eastern Bengal	Lower ...	For all steel in girderwork, including rivets, spare rivets, and rivet rods	9	19	0	0	9	15	0	Ton	For a bridge of 3 spans, or 90 feet over all.
				For all service bolts, nuts, and washers	0	1	0	0					
				Girders, plate, 30 ft., complete, including bolts, rivets, &c. ...	10	0	0	0	97	10	0	Span.	
37/211 8-8-94	30	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	8	13	3	21	8	17	6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	2	2	7					
				For all service bolts, nuts, and washers	0	0	3	0					
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	8	17	1	0	78	13	1	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
37/212 — 16-8-94	30	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	8 13 3 21	8 12 6	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 2 7			
				For all service bolts, nuts, and washers	0 0 3 0			
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	8 17 1 0	76 8 9	Span.	
30/385 — 31-1-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10 11 0 0	9 8 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	10 15 2 14	101 12 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/324 — 22-2-94	40 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry heavy ghat engines having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	23 3 0 20	9 5 0	Ton.	*On curve 1311·5 ft. radius. Angle of skew varies from 60° to 47° 33′.
				For all bolts, nuts, and washers, except service bolts	0 1 0 7			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	23 5 2 27	215 8 7	Span.	
31/324 — 22-2-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods ..	22 5 2 21	9 5 0	Ton.	†On curve 1,273 ft. radius. Angle of skew 45°.
				For all bolts, nuts, and washers, except service bolts	0 0 3 21			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	23 8 0 14	216 10 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
37/212 — 16-8-94	30	Oudh and Rohilkhand.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	8 13 3 21	8 12 6	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 2 7			
				For all service bolts, nuts, and washers	0 0 3 0			
				Girders, plate, 30 ft., complete, with bolts, rivets, &c. ...	8 17 1 0	76 8 9	Span.	
30/385 — 31-1-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10 11 0 0	9 8 6	Ton.	
				For all bolts, nuts, and washers, except service bolts	0 3 0 14			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	10 15 2 14	101 12 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
31/324 — 22-2-94	40 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry heavy ghat engines having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods.	23 3 0 20	9 5 0	Ton.	*On curve 1311·5 ft. radius. Angle of skew varies from 60° to 47° 33″.
				For all bolts, nuts, and washers, except service bolts	0 1 0 7			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	23 5 2 27	215 8 7	Span.	
31/324 — 22-2-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods ..	22 5 2 21	9 5 0	Ton.	†On curve 1,273 ft. radius. Angle of skew 45°.
				For all bolts, nuts, and washers, except service bolts	0 0 3 21			
				For all service bolts, nuts, and washers	0 1 2 0			
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	23 8 0 14	216 10 10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
31/324 — 22-2-94	40*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghat, engines having axle loads of at least 17 tons per axle.	For all steel in girderwork including rivets, spare rivets, and rivet rods	22	11	2	0	9	5	0	Ton.	* On curve 1,011·5 ft. radius.
				For all bolts, nuts, and washers, except service bolts	0	0	3	23					
				For all service bolts, nuts, and washers	0	1	2	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c.	22	13	3	23	209	19	1	Span.	
33/111 — 10-4-94	40†	Mushkaf-Bolan	Do. do.	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	21	18	1	0	9	12	0	Ton.	† Bridge No. 214.
				For all bolts, nuts, and washers, except service bolts	0	0	2	7					
				For all service bolts, nuts, and washers	0	1	2	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	22	0	1	7	211	7	0	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/206 — 16-4-94	40	East Coast	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	10	11	0	0	9	10	0	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	1	0	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	15	0	14	102	3	8	Span.	
34/1 — 2-5-94	40	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets and spare rivets ...	10	11	0	0	8	17	0	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	1	2	0					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	15	2	14	95	8	3	Span.	

CLASSOF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
39 / 38 — 2-10-94	40	North-Western	Upper, open	For all steel in girderwork, including rivets, spare rivets and rivet rods...	10	11	0	0	9	7	10	Ton.	
				For all bolts, nuts and washers, except service bolts	0	3	0	14					
				For all service bolts, nuts, and washers	0	0	1	14					
				Girders, plate, 40 ft., complete, with bolts, rivets, &c. ...	10	14	2	0	101	3	3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper *or* lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	*s.*	*d.*		
30 / 385 — 31-1-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	26	13	0	0	9	8	6	Ton.	
				For all bolts, nuts and washers ...	0	4	3	14					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c. ...	27	0	3	14	254	17	9	Span.	
31 / 324 — 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43	13	0	0	9	5	0	Ton.	* Angle of skew 60° to left.
				For all bolts nuts, and washers, except service bolts	0	1	2	9					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43	17	2	9	405	17	9	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons.	cwt.	qr.	lbs.	£	s.	d.		
31/324 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle loads of at least 17 tons per axle.	*For all steel in girderwork, including rivets, spare rivets, and rivet rods*	43	9	3	11	9	5	0	Ton.	* Angle of skew 60° to right.
				For all bolts, nuts and washers, except service bolts.	0	1	2	18					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 * feet, complete, with bolts, rivets, &c.	43	14	2	1	404	9	3	Span.	
31/324 22-2-94	60 †	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43	8	1	9	9	5	0	Ton.	† On curve 1,146 ft. radius.
				For all bolts, nuts and washers, except service bolts	0	1	2	14					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43	12	3	23	403	15	3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/111 10-4-94	60*	Mushkaf Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44	2	0	0	9	12	0	Ton.	*Bridge No. 215.
				For all bolts, nuts and washers, except service bolts	0	1	1	7					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete with bolts, rivets, &c. ...	44	6	1	7	425	7	8	Span.	
33/111 10-4-94	60†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44	11	1	21	9	12	0	Ton.	†Bridge No. 216. Angle of skew 45° to left.
				For all bolts, nuts, and washers, except service bolts	0	1	1	2					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	44	15	2	23	429	18	9	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons. cwt. qr. lbs.	£ s. d.		
31/324 — 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle loads of at least 17 tons per axle.	*For all steel in girderwork, including rivets, spare rivets, and rivet rods*	43 9 3 11	9 5 0	Ton.	* Angle of skew 60° to right.
				For all bolts, nuts and washers, except service bolts.	0 1 2 18			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 * feet, complete, with bolts, rivets, &c.	43 14 2 1	404 9 3	Span.	
31/324 — 22-2-94	60 †	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43 8 1 9	9 5 0	Ton.	† On curve 1,146 ft. radius.
				For all bolts, nuts and washers, except service bolts	0 1 2 14			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43 12 3 23	403 15 3	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
33/111 — 10-4-94	60*	Mushkaf Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 2 0 0	9 12 0	Ton.	*Bridge No. 215.
				For all bolts, nuts and washers, except service bolts	0 1 1 7			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete with bolts, rivets, &c. ...	44 6 1 7	425 7 8	Span.	
33/111 — 10-4-94	60†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44 11 1 21	9 12 0	Ton.	†Bridge No. 216. Angle of skew 45° to left.
				For all bolts, nuts, and washers, except service bolts	0 1 1 2			
				For all service bolts, nuts, and washers	0 3 0 0			
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	44 15 2 23	429 18 9	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				RATE—FREE ON BOARD.				Remarks.
									Amount.			Unit.	
	Ft.				Tons.	cwt.	qr.	lbs.	£	s.	d.		
31/324 22-2-94	60 *	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle loads of at least 17 tons per axle.	*For all steel in girderwork, including rivets, spare rivets, and rivet rods*	43	9	3	11	9	5	0	Ton.	* Angle of skew 60° to right.
				For all bolts, nuts and washers, except service bolts.	0	1	2	18					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 * feet, complete, with bolts, rivets, &c.	43	14	2	1	404	9	3	Span.	
31/324 22-2-94	60 †	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43	8	1	9	9	5	0	Ton.	† On curve 1,146 ft. radius.
				For all bolts, nuts and washers, except service bolts	0	1	2	14					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43	12	3	23	403	15	3	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—contd.

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				RATE—FREE ON BOARD.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/111 10-4-94	60*	Mushkaf Bolan	Upper, decked, and specially designed to carry specially heavy ghât-engines having axle-loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44	2	0	0	9	12	0	Ton.	*Bridge No. 215.
				For all bolts, nuts and washers, except service bolts	0	1	1	7					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete with bolts, rivets, &c. ...	44	6	1	7	425	7	8	Span.	
33/111 10-4-94	60†	Mushkaf-Bolan	Ditto.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	44	11	1	21	9	12	0	Ton.	†Bridge No. 216. Angle of skew 45° to left.
				For all bolts, nuts, and washers, except service bolts	0	1	1	2					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	44	15	2	23	429	18	9	Span.	

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CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/177 13-4-94	60	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, including rivets, spare rivets, and rivet rods	43	4	0	0	10	0	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	1	1	7					
				For all srevice bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	43	8	1	7	434	3	2	Span.	
33/206 16-4-94	60	East Coast	Upper, open	For all steel in girderwork including rivets, spare rivets, and rivet rods	26	12	0	0	9	10	0	Ton.	
				For all bolts, nuts and washers, except service bolts	0	4	3	14					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	26	19	3	14	256	8	10	Span.	

CLASS OF STORES. A.—BRIDGEWORK—contd.

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
34/1 2-5-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	26	13	0	0	8	17	0	Ton.	
				For all bolts, nuts, and washers, except service bolts	0	4	3	14					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, &c.	27	0	3	14	239	6	8	Span.	
37/1 1-8-94	60	Bhopal-Ujjain	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods...	26	12	3	0	9	0	0	Ton.	
				For all bolts, nuts and washers, except service bolts	0	4	3	14					
				For all service bolts, nuts, and washers	0	3	0	0					
				Girders, plate, 60 ft., complete, with bolts, rivets, etc.	27	0	2	14	243	5	7½	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
33/111 — 10-4-94	100*	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts and service bolts, &c.	79	8	3	0	9	12	0	Ton.	
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	,,	*Bridge No. 215. Angle of skew 45° to right.
				For all cast-iron	3	12	1	0	8	15	0	,,	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	17	3	0	808	0	7	Span.	
				For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	78	17	2	0	9	12	0	Ton.	
				For all steel in expansion rollers and frames	0	16	3	0	16	10	0	,,	†Bridge No. 214. On curve of 900 feet radius.
33/111 — 10-4-94	100†	Mushkaf-Bolan	Ditto.	For all cast-iron	3	12	1	0	8	15	0	,,	
				Girders, 100 ft., triangulated, complete, with bolts, rivets, &c.	83	6	2	0	802	12	6	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board.				Remarks.
									Amount.			Unit.	
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
37/234 — 17-8-94	100	Bhopal-Ujjain	Lower, with cart road on rail level.	For all steel in girderwork, including rivets and spare rivets. ...	79	14	3	21	8	15	0	Ton.	
				For all bolts, nuts, and washers ...	0	4	0	7					
				For all service bolts, nuts, and washers	0	6	0	0					
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	80	5	0	0	702	3	9	Span.	
				For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	151	17	0	21	8	17	6	Ton.	
				For all steel in expansion rollers and frames	1	16	3	0	20	0	0	,,	
31/325 — 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at least 17 tons per axle.	For all cast-iron	7	7	1	0	9	10	0	,,	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161	1	0	21	1,454	7	5	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Rate—Free on board. Unit.	Remarks.
	Ft.				Tons	cwt.	qr.	lbs.	£	s.	d.		
31/326 — 22-2-94	150	Mushkaf-Bolan	Upper, decked, and specially designed to carry specially heavy ghât engines, having axle loads of at ~~least~~ 17 tons per axle.	For all steel in girderwork, rivets, rivet rods, bolts, service bolts, &c.	151	17	0	21	9	3	9	Ton.	
				For all steel in expansion rollers and frames	1	16	3	0	35	0	0	,,	
				For all cast-iron	7	7	1	0	11	0	0	,,	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	161	1	0	21	1,540	10	1	Span.	
33/252 — 19-4-94	150	East Coast	Lower, with cart road on rail level.	For all steel in girderwork, rivets, rivet rods, bolts, and service bolts, &c.	138	4	1	0	9	0	0	Ton.	
				For all steel in expansion rollers and frames	0	19	3	0	25	0	0	,,	
				For all cast-iron	5	6	2	0	9	0	0	,,	
				Girders, 150 feet triangulated, complete, with bolts, rivets, &c.	144	10	2	0	1,316	10	6	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.				Rate—Free on board. Amount.			Rate—Free on board. Unit.	Remarks.
					Tons	cwt.	qr.	lbs.	£	s.	d.		
				Connections between spans.									
33/111 — 10-4-94	...	*Mushkaf-Bolan	...	For all steel in plates and angle bars	0	16	2	0	9	12	0	Ton.	*For bridge No. 216, consisting of 4 spans of 60 feet.
				Rivet heads and spare rivets ...	0	1	0	0					
				46 bolts and washers	0	0	1	21					
				Total in connections ...	1	17	3	21	18	4	2	Total.	
				Connections between spans and at abutments.									
33/111 — 10-4-94	...	†Mushkaf-Bolan	...	For all steel in plates angle bars and corrugated plates	1	16	3	0	9	12	0	Ton.	† For bridge No. 215, consisting of 2 spans of 100 and 1 of 60 feet.
				Rivet heads and spare rivets ...	0	2	1	0					
				154 bolts and washers	0	1	1	14					
				Total in connections ...	2	0	1	14	19	7	7	Total.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
				Connections between spans and at abutments.	Tons. cwt. qr. lbs.	£ s. d.		
33/111 10-4-94	...	*Mushkaf-Bolan	...	For all steel in plates angle bars and corrugated plates	0 17 3 0	9 12 0	Ton.	*For bridge No. 214, consisting of 2 spans of 100 and 2 of 40 feet.
				Rivet heads and spare rivets ...	0 2 1 0			
				118 bolts and washers	0 1 0 7			
				Total in connections ...	2 1 0 7	19 14 2	Total.	
				Spare Parts.				
39/297 27-10-94	...	North-Western	...	End trough floor plate 10′1″ × 1′6⅞″ × 15/16″, depth of trough 5 5/16″ ...		3 10 0	Each.	Required to complete one span of girder of 90 feet for Jhelum Bridge.

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

METRE GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
38/208 15-9-94	12	Oodeypore-Chitore.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	0 19 0 14	9 5 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 0 0			
				For all service bolts, nuts and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 1 1 7	9 17 2	Span.	
38/208 15-9-94	20	Oodeypore-Chitore.	Upper, open	For all steel in girderwork, including rivets, spare rivets and rivet rods...	2 14 0 21	9 5 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 3 7			
				For all service bolts nuts and washers	0 0 0 21			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	2 17 0 21	26 8 11	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

5′ 6″ Gauge.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
				Connections between spans and at abutments.	Tons. cwt. qr. lbs.	£ s. d.		
33/111 — 10-4-94	...	*Mushkaf-Bolan	...	For all steel in plates angle bars and corrugated plates	0 17 3 0	9 12 0	Ton.	*For bridge No. 214, consisting of 2 spans of 100 and 2 of 40 feet.
				Rivet heads and spare rivets ...	0 2 1 0			
				118 bolts and washers	0 1 0 7			
				Total in connections ...	2 1 0 7	19 14 2	Total.	
				Spare Parts.				
39/297 — 27-10-94	...	North-Western	...	End trough floor plate 10′1″ × 1′6$\frac{7}{8}$″ × $\frac{15}{16}$″, depth of trough 5$\frac{5}{16}$″ ...		3 10 0	Each.	Required to complete one span of girder of 90 feet for Jhelum Bridge.

CLASS OF STORES. A.—BRIDGEWORK—*contd.*

Metre Gauge.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
38/208 — 15-9-94	12	Oodeypore-Chitore.	Upper, open	For all steel in girderwork, including rivets, spare rivets, and rivet rods	0 19 0 14	9 5 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 0 0			
				For all service bolts, nuts and washers	0 0 0 21			
				Girders, plate, 12 ft., complete, with bolts, rivets, &c. ...	1 1 1 7	9 17 2	Span.	
38/208 — 15-9-94	20	Oodeypore-Chitore.	Upper, open	For all steel in girderwork, including rivets, spare rivets and rivet rods...	2 14 0 21	9 5 0	Ton.	
				For all bolts, nuts and washers, except service bolts	0 2 3 7			
				For all service bolts nuts and washers	0 0 0 21			
				Girders, plate, 20 ft., complete, with bolts, rivets, &c. ...	2 17 0 21	26 8 11	Span.	

CLASS OF STORES. A.—BRIDGEWORK—*concld.*

METRE GAUGE.

Contracted for in 1894.

Contract number and date.	Clear span.	Railway.	Roadway on upper or lower boom.	Details.	Estimated weight of each span.	Rate—Free on Board. Amount.	Unit.	Remarks.
	Ft.				Tons cwt. qr. lbs.	£ s. d.		
35/252 20-6-94	100	Mu Valley ...	*Upper, open	For all steel in girderwork, rivets, bolts, service bolts, &c. ...	43 3 3 11	10 18 6	Ton.	*Without footway.
				For all steel in expansion rollers and frames	0 9 0 0	26 2 6		
				For all cast-iron	2 0 1 0	12 0 0		
				Girders, 100 ft. triangulated, complete, with bolts, rivets, &c.	45 13 0 11	486 3 9	Span.	

Enclosure to Director General of Railways' Circular No. 8, dated 18th July 1895.

Appendix A.

Statement showing bridge girders of 250 feet span and above which have been obtained for State railways through the India Office up to end of 1894.

Number of India Office contracts.	Name of Contractors.	Clear span feet.	Gauge.	Price f. o. b. in England.	For what bridge and railway.	Approximate quantity of steel and iron.	Remarks.
				£ s. d.		Tons.	
A 125 of 1884 ...	Westwood, Baillie & Co.	250 ...	Metre ...	4,010 0 0	Bellary-Kistna railway. (This span was originally intended for the Jhansi-Manikpur railway).	Steel ... ... 219 Wrought iron ... ... 36½ Cast iron ... ... 13½ Bolts, screws, etc. ... 4 273	Main girders, cross girders, longitudinal girders, and floor-plates are of steel. The whole of the rivets are of steel.
A 163 of 1885 ...	Westwood, Baillie & Co.	250 ...	Do. ...	3,991 0 0	Gunduck bridge, Tirhoot State railway.	Steel ... ... 215 Wrought iron ... ... 88¼ Cast iron ... ... 13¼ Bolts, etc. 3½ 320	Main girders are of steel with the exception of plates and angle bars of diaphragms, cross girders, overhead girders, footways, hand-rails, floor, etc., are of wrought iron. The overhead diagonal bracing and gussets are of steel.
,, 164 ,, ...	Patent Shaft and Axle-tree Company.						
A 41 of 1876 ...	Head, Wrightson & Co.	250 ...	5′ 6″ ...	5,942 0 0 & 5,964 0 0	Sutlej bridge, Adamwahan.	Wrought iron ... ... 383½ Cast iron ... ... 15¼ Steel 5 404¾	Rollers and knuckle pins only are of steel.
,, 42 ,, ...	Westwood, Baillie & Co.						
A 76 of 1880 ...	Westwood, Baillie & Co.	257 (centres of bearing.)	5′ 6″ ...	4,463 0 0	Indus bridge at Attock	Steel ... ... 241½ Wrought iron ... ... 144½ Cast iron 12½ 398½	Top and bottom booms of main girders and pillars, bracing between top and bottom booms, resting gear and rivets are of steel.
A 77 ,, ...	Westwood, Baillie & Co.	308 ...	5′ 6″ ...	Not given in the contract.	Ditto ...	TOTAL WEIGHT ... 553½	314 feet measured from centre to centre of piers was ordered, and the girder supplied was for openings of 308 feet. No schedule of quantities for this contract was received.
A 116 of 1883 ...	Westwood, Baillie & Co.	278 ... (centre of bearings)	5′ 6″ ...	8,842 0 0	Indus bridge at Sukkur	Steel ... ... 866 Wrought iron ... ... 136½ Cast iron 19 521½	Main girders are of steel with the exception of plates and angle bars of diaphragms in the top boom, the bracings and connections of the angle bars of the vertical strnts, the stiffenings of the tension bars and the tapered packings of the angle bars on the inside of the upper boom which parts are of wrought iron, curb plates, longitudinal girders on the footways, diagonal bracing under roadway, corrugated floor-plates, etc., are of steel.
A 146 of 1885 ...	Westwood, Baillie & Co.	Two cantilevers, each 310 feet long.	5′ 6″ ...	49,403 0 0 (average for each.)	Ditto ...	*Bukkur Cantilever.* Steel ... ... 1,417 Iron 13¾ 1,430¼	
						Haji-Motu Cantilever. Steel ... ... 1,433¼ Iron 13¼ 1,446½	All steel except bed-plates for trimmers, the chipping pieces under the bed-plates of the girder span, the tubular portion of the bracing of the large pillar and of No. 3 strut and all bolts and screws, all of which are of wrought iron.
						TOTAL ... 2,876¾	
4711 of 1891 ...	P. and W. Mclellan ...	300 ...	5′ 6″ ...	6,459 0 0 & 6,421 0 0	Kistna bridge ...	Total weight, 535¼ tons (exclusive of snaps.)	All steel except the saddles, knuckles and bed plates, which are of cast iron and the rolled frames and service bolts which are either of iron or steel.
4712 ,, ...	Head Wrightson & Co.						

[*General Distribution.*]

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S W 60 43/55

CIRCULAR No. 8.

FROM

THE DIRECTOR GENERAL OF RAILWAYS,

TO

THE MANAGER, NORTH WESTERN RAILWAY.
THE MANAGER, OUDH AND ROHILKHAND RAILWAY.
THE MANAGER, EASTERN BENGAL STATE RAILWAY.
THE MANAGER, EAST COAST RAILWAY.
THE ENGINEER-IN-CHIEF, MUSHKAF-BOLAN STATE RAILWAY.
THE ENGINEER-IN-CHIEF, KOTRI ROHRI RAILWAY.
THE ENGINEER-IN-CHIEF, MARI-ATTOCK RAILWAY AND GRADIENT IMPROVEMENT WORKS, NORTH-WESTERN RAILWAY.
THE ENGINEER-IN-CHIEF, BEZWADA MADRAS RAILWAY.
THE ENGINEER-IN-CHIEF, ASSAM BURMA CONNECTION RAILWAY SURVEY.
THE EXECUTIVE ENGINEER, KALKA-SIMLA RAILWAY SURVEY.
THE PORT STOREKEEPER, STATE RAILWAY DEPARTMENT, CALCUTTA.

Rate List, Class A.—Bridgework for 1894.

Simla, the 18th July 1895.

SIR,

I have the honour to forward herewith, for information and guidance, a printed statement showing the actual English rates *free on board* in England for A. Class, State Railway Stores, *viz.*, "Bridgework," contracted for by the Stores Department of the India Office during the year 1894.

2. A statement showing the average rates per ton for entire sea freight, on Bridgework sent out from England to the several ports in India during 1894, is prefixed to the Rate list.

3. In order to arrive at the total cost of the Bridgework landed in India, an insurance charge of one-half* per cent. on the *free on board* cost *plus* entire sea freight, should be added in addition to other incidental charges and exchange, which latter should be calculated at the official rate for the year.

4. A statement, showing the weight and f. o. b. cost of steel and iron for bridge girders, of 250 span and upwards, which have been obtained for state railways through the India Office up to end of 1894, has been added at end of the list as Appendix A.

I have the honour to be,

SIR,

Your most obedient Servant,

T. GRACEY, Lieut.-Colonel, R.E.,
Offg. Director General of Railways.

Documents accompanying.

1. Statement showing the average rates per ton for entire sea freight on Class A. Stores imported from England to the several ports during 1894.
2. Rate List, Class A.—Bridgework for 1894.

* *For State Railway Stores and Irrigation Works only classed as Imperial. Stores for Provincial and Local funds and for railways constructed by Native States are charged one per cent. as heretofore.*

The Secretaries to the Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh and the Punjab, Public Works Department.
The Secretaries to the Chief Commissioners of the Central Provinces, Burma, and Assam, Public Works Department.
The Secretaries to the Residents at Hyderabad and in Mysore, Public Works Department.
The Secretaries to the Agents to the Governor General, Rajputana and Central India, and Baluchistan, Public Works Department.
The Superintendent of Port Blair and Chief Commissioner, Andaman and Nicobar Islands.
The Director General of Telegraphs.
The Director General of Military Works.
The Chief Engineer, Kashmir.
The Accountant General, Bengal.
The Consulting Engineers for Railways, Madras and Bombay.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow, and Assam.

Copy forwarded to the Local Governments and Administrations and to the Officers noted in the margin for information, with the intimation that all Railway Administrations have been supplied with copies direct.

T. GRACEY, Lieut-Colonel, R.E.,
Offg. Director General of Railways.

To

THE

[*General Distribution.*]

CIRC[illegible]. 8.

FROM

THE DIRECTOR GEN[illegible]F RAILWAYS,

To

THE MANAGER, NORTH WEST[illegible]WAY.
THE MANAGER, OUDH AND RO[illegible]D RAILWAY.
THE MANAGER, EASTERN BEN[illegible]TE RAILWAY.
THE MANAGER, EAST COAST R[illegible].
THE ENGINEER-IN-CHIEF, MUS[illegible]OLAN STATE RAILWAY.
THE ENGINEER-IN-CHIEF, KO[illegible]GIRI RAILWAY.
THE ENGINEER-IN-CHIEF, MA[illegible]CK RAILWAY AND GRADIENT IMPROVEMENT
WORKS, NORTH-WEST[illegible]ILWAY.
THE ENGINEER-IN-CHIEF, BE[illegible] MADRAS RAILWAY.
THE ENGINEER-IN-CHIEF, ASS[illegible]RMA CONNECTION RAILWAY SURVEY.
THE EXECUTIVE ENGINEER, [illegible] SIMLA RAILWAY SURVEY.
THE PORT STOREKEEPER, ST[illegible]AILWAY DEPARTMENT, CALCUTTA.

Rate List, Clas[illegible]-Bridgework for 1894.

Simla, the 18th July 1895.

SIR,

I have the honour to forw[illegible] herewith, for information and guidance, a printed statement showing the act[illegible] English rates *free on board* in England for A. Class, State Railway Store[illegible] *viz.*, "Bridgework," contracted for by the Stores Department of the India [illegible] ce during the year 1894.

2. A statement showing the [illegible] erage rates per ton for entire sea freight, on Bridgework sent out from Eng[illegible] d to the several ports in India during 1894, is prefixed to the Rate list.

3. In order to arrive at the [illegible] otal cost of the Bridgework landed in India, an insurance charge of one-half* per[illegible] cent. on the *free on board* cost *plus* entire sea freight, should be added in ad[illegible] ition to other incidental charges and exchange, which latter should be calculated [illegible] at the official rate for the year.

4. A statement, showing th[illegible] weight and f. o. b. cost of steel and iron for bridge girders, of 250 span and [illegible] upwards, which have been obtained for state railways through the India O[illegible] ice up to end of 1894, has been added at end of the list as Appendix A.

I have the honour to be,

SIR,

Your most obedient Servant,

T. GRACEY, Lieut.-Colon[illegible] R.E.,
Offg. Director Gener[illegible] of Railways.

Documents accompanying.

1. Statement showing the avera[illegible]ge rates per ton for entire sea freight on [illegible] Class A. Stores imported from England to the [illegible] several ports during 1894.
2. Rate List, Class A—Bridgew[illegible]ork for 1894.

The Secretaries to the Governments of Madras, Bombay, B , the North-
Western Provinces and Oudh and the Punjab, Public rks Depart-
ment. Provinces,
The Secretaries to the Chief Commissioners of the C ore, Public
Burma, and Assam, Public Works Department.
The Secretaries to the Residents at Hyderabad and utana and
Works Department.
The Secretaries to the Agents to the Governor General, laman and
Central India, and Baluchistan, Public Works Departm
The Superintendent of Port Blair and Chief Commissione
Nicobar Islands.
The Director General of Telegraphs.
The Director General of Military Works.
The Chief Engineer, Kashmir.
The Accountant General, Bengal.
The Consulting Engineers for Railways, Madras and Bomb ways, Cal-
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tions have been supplied
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RACEY, Lieut-Colonel, R.E.,
Offg. Director General of Railways.

No 2087 W dy 21 Augt

Communicated

for information of the P W D

(Sd) J

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To

THE

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Rly Engrs.
A to Govt.
of N.W.P.
P.W.A.