Public Works (1893) Department.

RAILWAY BRANCH.

G.O., No. 524-5R

DATED 13th March

[Despatch Abstract.]

Dharmavaram-Hindupur State Railway.—Ordered that the Govt of India be addressed in regard to arrangements being made to take over the—from the South Indian Railway from 1st april 1892.

The Govt of India addressed.

Indexed.

[P. W. Dy. 1,000—11-8-93.]

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

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NOTE ON THE INSPECTION OF THE DHARMAVARAM-HINDUPUR STATE RAILWAY BY THE GOVERNMENT INSPECTOR PRIOR TO OPENING.

This inspection was made on the 9th and 10th March 1893 in company with Mr. H. W. Bennett, the Divisional officer, and Mr. Scovell, his Assistant. Mr. Bennett at the request of the South Indian Railway represented that Company. Mr. Hallum, the Chief Engineer of the Southern Mahratta Railway, accompanied the party.

2. **Description.**—The section to be opened is 56·20 miles in length and extends from zero, the south entrance points of Dharmavaram junction, which are ·28 mile from the centre of the station platform, to the Mysore frontier, 7·40 miles south of the centre of Hindupur station platform. The country is undulating, rocky and somewhat barren, the surface of the plateau necessitating steep grades and sharp curves, especially near Penukonda.

3. **Land.**—The boundaries of the permanent land have been demarcated by stone pillars.

4. **Banks and cuttings.**—Are of standard width or over 16 and 18 feet respectively, and most of them have had a good south-west monsoon over them. The north-east monsoon was a failure. The banks are full in section with side slopes of 2 to 1 except in the ghât section near Penukonda where they are 1½ to 1. They are well consolidated and consist mostly of moorum or hard soil, except through the Cotnoor tank near Hindupur where half the bank is quite new and is made up of tank silt and loam.

The pitching of the big bank through the Cotnoor tank is in hand. The full amount of stone has been collected and about one-third of the pitching will be completed by the 1st April. The remaining two-thirds may take some time to finish, say 2 months, as the lead for the stone is 16 miles.

The cuttings are chiefly driven through rock or moorum. As a rule, there are no side drains, the ballast being kept up by stone pitched side walls. For the first 33 miles out of Dharmavaram these ballast walls have been completed.

5. **Gradients and curves.**—The ruling gradient is 1 in 100 or 1 per cent., of which grade there are 14·70 miles; approximately 35 per cent. of the line is level.

The sharpest curve is 5½° (radius 1,042 feet) and about 80 per cent. of the whole line is straight. No compensation for the maximum grades has been made for the reasons given in G.O., No. 2004 R., of the 16th August 1892. The grade south of Penukonda is equal to a gradient of 1 in 71·4 for passenger and of 1 in 73·5 for goods stock.

6. **Permanent-way.**—It consists of the ordinary State Railway type of 41¼ lb. steel flat-footed rail, mostly 24 feet long, with shallow four-bolt fish-plates laid on the ordinary transverse steel sleepers 1,980 to the mile. The latter are spaced 2′ 9″ apart excepting the joint sleepers, which are 2 feet apart centre to centre. There are about 11 miles of rails in the main line, 18 feet and 21 feet long. For sidings 2nd class rails have been used. The road is in very good order and fit for a speed of 20 miles an hour between Dharmavaram and Hindupur. Beyond that the road has not been straightened or packed thoroughly and is at present only fit for a speed of 5 to 10 miles an hour, but it will be fit for 20 miles an hour by the 15th April. To test the road, the return journey was made without stops with perfectly steady running from Malugur to Dharmavaram, a distance of 42¾ miles, in one hour and 55 minutes.

7. **Ballast**—Is to be of broken stone or good screened gravel. The final section is to be of standard type and will measure 10′ 6¾″ at bottom, 7½′ at top and 1′ 1½″ in depth below rail level and where there are no ballast walls with side slopes of 1½ to 1. In the cuttings it has already been laid to full or nearly full section and a great deal has been put on the banks. The Engineer promises that the first 45 miles will be practically fully ballasted by the 1st April. Of the full estimated section, all but one lakh will have been collected on the first 34 miles or ⅓ of the whole. The last 10 miles will be fully ballasted by that date with good screened gravel. Over the whole line fully three-fourths of the final section of stone or good screened gravel has been collected, most of which is now in the road.

8. **Level crossings and fencing, mile and gradient posts.**—No fencing has yet been provided except around station yards. Level crossings are provided with inner and outer guard rails and as a rule the approaches are either metalled or consist of moorum. Wooden sleepers have been laid under the rails across the roads. Nearly all the gate lodges are built and most of the posts are up, but the chains are not yet provided. There are to be 11 gate lodges with huts and gates not closing across the Railway and 64 road crossings with posts and chains. Permanent mile and gradient posts have been made and the latter are erected. The telegraph posts have to be numbered and the mile posts have to be altered, as the through mileage from Guntakal has only just been settled.

9. **Bridges.**—The bridges and culverts are all built of sound gneiss and are of excellent quality and of standard design with splayed wing walls generally of 1 to 3. There is no bridge of over 40-foot span. All girder bridges have cross sleepers on the upper flange except the 3 × 40 feet at chain 5,707·00 (mile 46) and the 4 × 40 feet at chain 5,781·70 (mile 48) in which the roadway is carried on longitudinal timbers bolted to cross girders. There are double 14 feet girders continuous over two spans at miles 12, 15, 17, 22, 38 and 45. These girders are strong and satisfactory. Some of the culverts and major bridges still require coping which work is in hand.

There are two diversions; one is at mile 44 where there is a 2 × 40 feet girder bridge over which the road will be laid in 10 days. It is about half a mile long with grades of about one in 80 and easy 1,000 feet radius curves. At the bottom is a temporary sleeper crib rail bridge of 10 feet span.

The other is at mile 46 where there is a 3 × 40 feet girder bridge over which the road will be laid in 10 days. It is about three-quarters of a mile long with grades of about 1 in 80 and sharpest curve of 1,000 feet radius. At the bottom is a strong stone causeway.

There will be a dead end siding to the north of the Cotnoor bank where the north portion of this diversion now commences for the convenience of working of the stone pitching trains. This should be protected by a home and distant signal which are arranged for. There is a telegraph hut and it will be treated as a crossing station between Malugur and Hindupur.

10. **Stations and station yards.**—There are six, viz., Nagasamudram at mile 9·10, Guttur at mile 18·32, Penukonda at mile 25·82, Chakarlapalli at mile 34·76, Malugur at mile 42·71 and Hindupur at mile 49·08. All of these are 4th-class type except Penukonda and Hindupur which are 3rd and 2nd class respectively.

All are provided with 700 feet long, 1 foot high metalled platforms, with steel pale platform fence, a latrine and home and distant signals. The 4th class stations possess the type station building common to the Villupuram-Guntakal State Railway consisting of a joint booking and telegraph office, an iron-roofed partially-walled in waiting-shed and a small store room. There are also quarters for the stationmaster and 4 menials. They are provided with a through siding 1,300 feet in the clear, an infringement sanctioned in Government of India's letter No. 1001 R.C. of the 10th November 1891, and also with a dead end. There is also a goods loading bank and platform and approach road and all stations are furnished with stop blocks and padlocks for the points and most of them with a small well for drinking purposes.

Penukonda has an extra room in the station building for telegraph work, but has no well for drinking water, whilst Hindupur has, besides the extra room, a 1st and 2nd class waiting room and a room set apart for Engineer's staff quarters; it also possesses three through sidings and a slip siding just outside the north facing points of the yard.

The watering stations are Guttur, Penukonda, Chakarlapalli and Hindupur, each provided with a 20 feet well, a masonry tank house, a hand pump, two ash-pits and two hydrants, whilst Hindupur is to have a temporary triangle put in in case the Southern Maharatta Railway may wish to work the section before through communication to Bangalore is established.

Guttur, Penukonda and Hindupur are also provided with iron goods sheds. The goods platforms are only 2 feet instead of 2′ 3″ above rail level. Platform lamps and lamps for the latrines have been received for all stations but are not yet erected.

11. The following works at stations are incomplete:—

Nagasamudrum.—Latrine requires masonry foundations; passenger platform wants levelling up—the moorum it is now made of answers the purpose of metal; goods loading bank requires dressing and platform wall requires curb rail and finishing off by 3 inches. The buffer stop will be up in two days.

Guttur.—Latrine foundations in hand; goods platform wall practically finished; goods platform requires levelling and small iron goods shed in office is being run up; stand pipe over well is up, but pipes from it to hydrants are only three-fourths laid; permanent tank-house will be completed by the end of the month; temporary watering arrangements are satisfactory; hydrants are at site but are not yet erected; drinking-water well is not finished; passenger platform has to be metalled.

Penukonda.—Goods platform wall requires curb rail to be fixed and top 3 inches of masonry to be built; dead end is to be put in; good shed is to be erected and goods platform is to be levelled off; passenger platform is being dressed and metalled; temporary watering arrangements are sufficient; stand pipe over well is just commenced; piping except 100 feet is laid but is not joined to hydrants; drinking-water well is not sunk but is said to be not required.

Chakarlapalli.—Piping is complete but is not connected with well or water columns, the latter are at site but not erected; the iron work of the stand pipe over well has arrived but is not erected; foundations of latrines are nearly completed; passenger platform requires metalling; goods loading-bank earthwork is started and its wall is finished but requires rail curb; drinking-water well is practically finished; Permanent-way Inspector's quarters are up to roof level; his office and store are not yet started; Permanent-way Inspector's servants quarters started; temporary quarters however are available.

Malugur.—Passenger platform wants making up and wall requires finishing; fencing is ready to put up; staff quarters are being rooted; station building is nearly finished and is about to be plastered; latrine is just started; goods platform and loading bank are not started; drinking-water well is in progress. The Engineer guarantees that everything will be completed by 1st April.

Hindupur.—Plastering and whitewashing of the station building is being done. The station building is promised complete by the 20th instant. Tank-house is promised to be completed by the 25th instant. Fixing of pipes and hydrants is in hand and these will be ready by the 1st April. Well is still being excavated and is already steined to a depth of 37 feet. No stand pipe is required; the temporary watering arrangements are satisfactory; goods loading bank requires levelling off and curb rail has to be fixed; iron goods shed will be finished in 10 days; a slip siding just outside the north facing points has to be put in. Its earthwork is complete and the work will be ready by the 1st April. A temporary triangle which was not required is now being put in, as it is understood the Mysore authorities have still 15 miles to link up to reach the frontier. The triangle is promised complete by the 1st April. Besides the permanent staff quarters which are completed, there are lots of good temporary staff quarters if required.

12. **Signals.**—These are all in good working order and are worked from the points.

13. **Turntables and Triangles.**—There is a turntable at Dharmavaram and a triangle is about to be put in at Hindupur.

14. **System of Working**—Is line clear and caution message as on the South Indian Railway. This is in use and all stations are provided with the necessary instruments and forms. General rules for working will, it is supposed, be submitted for sanction by the Southern Mahratta Railway.

15. **Rolling Stock**—Will be supplied by the Southern Mahratta Railway.

16. *General Remarks.*—The line is very complete and the road is excellent; it can be opened with safety for passenger traffic at a speed of 20 miles an hour between Dharmavaram and Hindupur. There is nothing whatsoever to prevent the line up to Hindupur being opened on the 1st April, as all important details affecting the safety and the convenience of the public are either completed or will be finished by that date.

From Hindupur to the frontier the line is now only fit for 5 or 10 miles an hour, but it is being straightened and packed and will be fit for 20 miles an hour by the 15th April.

17. The following plans and papers are attached to this report:—

(1) Table showing the results of tests applied to girders.

(2) The plans and tables prescribed in section 3 of enclosure to Government of India circular No. 19 of 1883.

(3) One of the five certificates prescribed in section 3 of the same circular. The remaining four should be furnished by the agency appointed to work the line.

(4) Drawings and calculations of strains of the different types of girder bridges used on the line.

18. The Chief Engineer states that he has taken the wind pressure and live loads as given in the proposed rules for determining the maximum permissible stress and working load for bridges of wrought iron and steel on Railways in India as issued from the Technical section, Simla.

19. The addition of the total wind pressure to the dead load seems to be an incorrect way of treating this subject, but it errs on the side of safety.

20. I am of opinion that the section of Railway between Dharmavaram and Hindupur may be opened for the public carriage of passengers without danger to the public using it at a speed of 20 miles an hour subject to the condition that the triangle at Hindupur is in working order by the 1st April.

MADRAS,
11th March 1893.

(Signed) W. V. CONSTABLE, Major, R.E.,
Government Inspector.

STATEMENT showing result of tests of bridges on the Dharmavaram-Hindupur State Railway, inspected on the 9th and 10th March 1893.

Name or number of bridge.	Mileage.	Particulars of water-way.			Particulars showing position in which test was applied.				First test.		Second test.		Third test.			Remarks.
		Number of spans.	Length of span in feet.	Description of girder.	Number of span counting from Dharmavaram.	Right or left girder.	Top or bottom boom.	Point at which deflection and oscillation were taken.	Deflection. In inches.	Deflection. In terms of span.	Deflection. In inches.	Deflection. In terms of span.	Deflection. In inches.	Deflection. In terms of span.	Oscillation in inches.	
.....	..	..	..	.....	..	..	..	..	..	..	..	..	..	..	..	
	18	1	30	Plate with road on top flange	1	R	T	Centre	·24	1/1,500	·18	1/2,000	·26	1/1,385	·11	The testing was done with two heavy F class engines funnel to funnel weighing 44½ tons.
						L	T	Do.	·18	1/2,000	·15	1/2,000	·26	1/1,385	·14	
	21	3	40	Do.	2	R	T	Do.	·30	1/1,600	·23	1/1,714	·25	1/1,714	·06	Load 30 tons 10 cwts.
						L	T	Do.	·25	1/1,920	·20	1/1,816	·22	1/2,182	·04	
	23	1	40	Do.	1	R	T	Do.	·20	1/2,400	·18	1/2,667	·22	1/2,182	·14	
						L	T	Do.	·22	1/2,182	·18	1/2,667	·25	1/1,846	·14	Load 44 tons 10 cwts.
	38	2	14	R. I. plate girder converted to a 40 ft. Continuous plate girders roadway on top	2	R	T	6½ feet from free end.	·08	1/2,100	·06	1/2,800	Failed.	..	Failed	Tested span loaded with 22½ tons; other span empty.
						L	T	Centre	·06	1/2,800	·06	1/2,800	·15	1/1,720	·05	
	38½	3	20	Plate girder roadway on top	1	R	T	Do.	·12	1/2,000	·12	1/2,000	·14	1/1,714	·06	
						L	T	Do.	·28	1/857	·28	1/857	·30	1/800	·08	
	39½	2	15	Do.	2	R	T	Do.	·15	1/1,200	·12	1/1,600	·14	1/1,286	·04	Load 22½ tons.
						L	T	Do.	·16	1/1,125	·14	1/1,286	·16	1/1,125	·04	
	40½	1	12	Do.	1	R	T	Do.	·08	1/1,800	·10	1/1,440	·08	1/1,800	·02	
						L	T	Do.	·12	1/1,200	·12	1/1,200	·10	1/1,440	·04	
	41½	2	25	Do.	1	R	T	Do.	·10	1/2,000	·14	1/2,143	·16	1/1,875	·02	
						L	T	Do.	·12	1/2,500	·12	1/2,500	·16	1/1,875	·04	Load 26 tons 17 cwts.
	47½	3	40	Plate girder with roadway on longitudinals bolted to cross girders on bottom flanges.	3	R	T	Do.	·30	1/1,600	·28	1/1,714	·32	1/1,500	·08	
						L	T	Do.	·22	1/2,182	·30	1/1,600	·32	1/1,500	·08	Load 44 tons 10 cwts.

The speed for third test was from 20 to 25 miles an hour. No permanent set was recorded, the girders having been run over before.

(Signed) W. V. CONSTABLE, Major, R.E.,
Government Inspector.

MADRAS,
11th March 1893.

Enclosure

Statement showing result of tests of Bridges on the Bhimavaram Nidadavole State Railway, inspected on the 9th and 10th March 1893.

Name or Number of Bridge.	Mileage.	Particulars of Water-way. No. of spans.	Length of span in feet.	Description of Girder.	Particulars showing position in which test was applied. No. of span counting from Bhimavaram	Right or Left Girder.	Top or bottom Boom.	Point at which deflection and oscillation were taken.	First test. Deflection In inches.	In terms of span.	Second test. Deflection In inches.	In terms of span.	Third test. Deflection In inches.	In terms of span.	Oscillation in inches.	Remarks.
																The testing was done with 2 Heavy Felix Engines funnel to funnel weighing 46½ tons
	18	1	30	Plate with road	1	R	T	Centre	.24	1/1500	.18	1/2000	.26	1/1385	.14	
				on top flange	1	L	T	"	.18	1/2000	.18	1/2000	.26	1/1385	.14	Load 30 tons 10 cwt
	24	3	40	— do —	2	R	T	"	.30	1/1600	.28	1/1714	.28	1/1714	.06	
					2	L	T	"	.25	1/1920	.26	1/1846	.22	1/2182	.04	Load 44 tons 10 cwt
	28	1	40	— do —	1	R	T	"	.20	1/2400	.18	1/2667	.22	1/2182	.14	
				Is a soft S.S. plate girder converted to a 40 ft	1	L	T	"	.22	1/2182	.18	1/2667	.26	1/1846	.14	— ditto —
	38	2	14	Continuous												
				plate girders	2	R	T	5¼ feet from free end.	.08	1/2100	.06	1/2800	failed	—	failed	tested span loaded with 22¼ tons — other span empty
				roadway on top	2	L	T		.06	1/2800	.06	1/2800	.15	1/1120	.05	
	38½	3	20	Plate girder	1	R	T	Centre	.12	1/2000	.12	1/2000	.14	1/1714	.06	
				roadway on top	1	L	T	"	.28	1/857	.28	1/857	.30	1/800	.08	Load 22¼ tons
	39¾	2	15	— do —	1	R	T	"	.15	1/1200	.12	1/1500	.14	1/1286	.04	
					1	L	T	"	.16	1/1125	.14	1/1286	.16	1/1125	.04	— ditto —
	40¾	1	12	do —	1	R	T	"	.08	1/1500	.10	1/1440	.08	1/1500	.02	
					1	L	T	"	.12	1/1200	.12	1/1200	.10	1/1440	.04	— do —
	41½	2	25	do —	1	R	T	"	.10	1/3000	.14	1/2143	.16	1/1875	.02	
					1	L	T	"	.12	1/2500	.12	1/2500	.16	1/1875	.04	Load 26 tons 17 cwt
	47½	3	40	Plate girder with roadway on longitudinals bolted to cross girders on bottom flange	3	R	T	"	.30	1/1600	.28	1/1714	.32	1/1500	.08	
					3	L	T	"	.22	1/2182	.30	1/1600	.32	1/1500	.08	Load 44 tons 10 cwt

The speed for 3rd test was from 20 to 25 miles an hour. No permanent set was recorded, the girders having been run over before.

Madras,
11th March 1893.

Sd/ H. V. Coustable, Major R.E.,
~~Consulting Engineer for Railways~~
Government Inspector.

Note on the Inspection of the Dharmavaram - Hindupur State Railway by the Government Inspector prior to opening.

This Inspection was made on the 9th and 10th March 1893 in company with Mr H. W. Bennett the Divisional Officer and Mr Scovell his assistant. Mr Bennett at the request of the South Indian Railway represented that Company. — Mr Hallum the Chief Engineer of the Southern Mahratta Railway accompanied the party. The section to be opened is 56.20 miles in length and extends from zero the South extreme point of Dharmavaram junction, which are 28 miles from the centre of the station platform, to the Mysore frontier 7.40 miles South of the centre of Hindupur station platform. The country is undulating rocky and somewhat barren, the surface of the plateau necessitating steep grades and sharp curves especially near Penukonda.

2. Description.

3 Land The boundaries of the permanent land have been demarcated by stone pillars.

4 Bridges and Cuttings. Are of standard width or over 16 and 18 feet respectively and most of them have had a good deal of West monsoon over them. The North East monsoon was a failure. The banks are full in section with side slopes of 2 to 1 except in the flat section near Penukonda where they are 1½ to 1. They are well consolidated and consist mostly of moorum or hard soil, except through the Cotmoor tank near Hindupur where half the bank is quite new and is made up of tank silt and loam.

The pitching of the big bank through the Cotmoor tank is in hand. The full amount of stone has been collected and about one third of the pitching will be completed by the 1st April; the remaining two-thirds may take some time to finish say 2 months, as the lead for the stone is 16 miles.

The cuttings are chiefly drivers through rock or moorum. As a rule, there are no side drains, the ballast being kept up by stone pitching side walls. For the first 33 miles out of Dharmavaram these ballast walls have been completed.

5 Sprinkling

5. Gradients and Curves. The ruling gradient is 1 in 100 or 1% per cent, of which grade there are 14.70 miles, approximately 25 per cent of the line is level.

The sharpest curve is 5½° (radius 1042 feet) and about 50 per cent of the whole line is straight. No compensation for the maximum grades has been made for the reasons given in G.O. No 2004 R of the 16th August 1892. The grade equivalent of a curve is equal to a gradient of 1 in 71.4 for passenger and of 1 in 73.5 for goods stock.

6 Permanent Way. It consists of the ordinary 60 lb Railway type of 31¼ lb steel flat-footed rail mostly 24 feet long, with fourteen-bolt fish-plates laid on the ordinary transverse steel sleepers 1760 to the mile. The latter are spaced 2' 9" apart except at the joint sleepers, which are 2 feet apart centre to centre. There are about 11 miles of rails in the main line 18 feet and 21 feet long. For sidings 2nd class rails have been used. The road is in very good order and fit for a speed of 20 miles an hour between Dharmavaram and Hindupur. Beyond that the road has not been straightened or packed thoroughly and is at present only fit for a speed of 5 to 10 miles an hour, but it will be fit for 20 miles an hour by the 15th April. On first the road, the return journey was made without stops with perfectly steady running from Mulagur to Dharmavaram, a distance of 42¾ miles, in 1 hour and 55 minutes.

7. Ballast. It is to be of broken stone or good screened gravel. The final section is to be of standard type and will measure 13' - 6¾" at bottom, 7½' at top and 1' - 1½" in depth below rail level and where there are no ballast walls with side slopes of 1½ to 1. In the cuttings it has already been laid to full or nearly full section and a great deal has been put on the banks. The Engineer promises that the first 45 miles will be practically fully ballasted by the 1st April. Of the full estimated section, all but one lakh will have been collected on the first 34 miles or 19/20ths of the whole. The last 10 miles will be fully ballasted by that date with good screened gravel. Over the whole line fully ¾ths of the final section of stone or good screened gravel has been collected most of which is now in the road.

8. Level Crossings and Fencing, Mile and Gradient posts. No fencing has yet been provided except around station yards. Level crossings are provided with inner and outer guard rails and as a rule the approaches are either metalled or consist of moorum. Wooden sleepers have been laid under the rails across the roads. Nearly all the gate lodges are built and most of the posts are up but the chains are not yet provided. There are to be 11 gate lodges with ducts and gates not closing across the Railway and 64 road crossings with posts and chains. Permanent mile and gradient posts have been made and the latter are erected. The telegraph posts have to be numbered and the mile posts have to be altered as the through mileage from Guntakal has only just been settled.

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The other is at mile 46 where there is a 3 × 40 ft girder bridge over which the road will be laid in 10 days. It is about three-quarters of a mile long with grades of about 1 in 80 and a sharpest curve of 1000 ft radius. At the bottom is a strong stone revetment.

There will be a dead end siding to the North of the lower bank where the North portion of the diversion now commences for the convenience of working of the stone

pitching

pitching trains. This should be protected by a home and distant signal which are arranged for. There is a telegraph and it will be treated as a crossing station between Mulugur and Hindupur.

10 Stations and station yards. There are dip siding, Nagasamudram at mile 9.10, Gutteur at mile 18.32, Penukonda at mile 25.32, Chikkarlapalli at mile 34.76, Mulugur at mile 42.71 and Hindupur at mile 49.08. All of these are 4th class type except Penukonda and Hindupur which are 3rd and 2nd class respectively.

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Gutteur

Gutteur, Penukonda and Hindupur are also provided with iron goods sheds. The goods platforms are only 2 feet instead of 2'-3" above rail level. Platform lamps and lamps for the latrines have been received for all stations but are not yet erected.

11 The following works at stations are incomplete:—

Nagasamudram. Latrine requires masonry foundations — passenger platform wants levelling up — the masonry it is now made of answers the purpose of metal — goods loading bank requires dressing and platform wall requires earth rail and finishing off by 3 inches — The buffer stop will be up in two days.

Gutteur. Latrine foundations in hand; goods platform wall practically finished — goods platform requires levelling and small iron goods shed in office is being run up — Stand pipe over well is up but pipes from it to hydrants are only 2/4 laid — permanent tank house will be completed by the end of the month — temporary watering arrangements are satisfactory — hydrants are at site but are not yet erected — drinking water well is not finished — passenger platform has to be metalled.

Penukonda. Goods platform wall requires earth rail to be fixed and top 3 inches of masonry to be built — dead end is to be put in — goods shed is to be erected and goods platform is to be levelled off — passenger platform is being dressed and metalled — temporary watering arrangements are sufficient — stand pipe over well is just commenced — piping except 100 feet is laid but is not joined to hydrants — drinking water well is not sunk but is said to be not required.

Chikkarlapalli. Piping is complete but is not connected with well or water — at present — the latter are at site but are not erected — the iron work of the stand pipe over well has arrived but is not erected — foundations of latrines are nearly completed — passenger platform requires metalling — goods loading bank earthwork is started and its wall is finished but requires rail curb — drinking water well is practically finished. Permanent way inspector's quarters are up to roof level.

His

His office and store are not yet started - Permane.
Inspector's servants quarters started - Temporary quarters however are available.

Malagar. Passenger platform wants making up and well requires finishing - fencing is ready to put up - staff quarters are being roofed - station building is nearly finished and is about to be plastered - latrine is just started - goods platform and loading bank are not started - drinking water well is in progress. The Engineer guarantees that everything will be completed by 1st April.

Hindupur - Plastering and whitewashing of the station building is being done. The station building is promised complete by the 20th instant - tank house is promised to be completed by the 26th instant - Fixing of pipes and hydrants is in hand and these will be ready by the 1st April. Well is still being excavated and is already sinned to a depth of 37 feet - No stand pipe is required - the temporary watering arrangements are satisfactory - goods loading bank requires levelling off and curb rail has to be fixed - iron goods shed will be finished in 10 days - a slip siding just outside the north facing points has to be put in - The earthwork is complete and the work will be ready by the 1st April - A temporary triangle which was not required is now being put in, as it is understood the Mysore authorities have still 15 miles to link up to reach the frontier. The triangle is promised complete by the 1st April - Besides the permanent staff quarters which are completed there are lots of good temporary staff quarters if required.

12. Signals. These are all in good working order and are worked from the points.

13. Turntables and triangles. There is a turntable at Dharmavaram and a triangle is about to be put in at Hindupur.

14. System of working is Line clear and caution message as on the South Indian Railway. This is in use and all stations are provided with the necessary instruments and forms. General rules for working will, it is supposed, be submitted for sanction by the Southern Mahratta Railway.

15. Rolling stock will be supplied by the Southern Mahratta Railway.

16. General Remarks. The line is being completed and the road is excellent. It can be opened with safety for passenger traffic at a speed of 20 miles an hour between Dharmavaram and Hindupur. There is nothing whatsoever to prevent the line up to Hindupur being opened on the 1st April, as all important details affecting the safety and convenience of the public are either completed or will be finished by that date.

From Hindupur to the frontier, the line is now only fit for 5 or 10 miles an hour, but it is being straightened and packed and will be fit for 20 miles an hour by the 15th April.

The following plans and particulars are attached to this report:-

(1) Table showing the results of tests applied to girders.

(2) The plans and tables prescribed in section 3 of enclosure to Government of India Circular No 17 of 1883.

(3) One of the five certificates prescribed in section 3 of the same circular. The remaining four should be furnished by the agency appointed to work the line.

(4) Drawings and calculations of stresses of the different types of girder bridges used on the line.

The Chief Engineer states that he has taken the wind pressure and the loads as given in the proposed Rules for determining the maximum permissible stress and working load for bridges of wrought iron and steel on Railways in India as issued from the Technical Section, Simla.

The addition of the total wind pressure to the dead load seems to be an incorrect way of treating the subject but it errs on the side of safety.

I am of opinion that the section of Railway between Dharmavaram and Hindupur may be opened for the public carriage of passengers without danger to the public using it at a speed of 20 miles an

an hour subject to the condition that the temporary triangle at Hindupur is in working order by the 1st April.

Madras
18th March 1893.

(Sd) W. V. Constable Major R.E.
Government Inspector

PW 5/3037/93

Madras, 11th March 1893.

No 581

From
The Senior Govt. Inspector of Railways,
Madras,

To
The Secretary to the Government of India,
P. W. Department.

Sir,

I have the honor to forward the report by Major Constable R.E., Government Inspector, on the inspection prior to opening of the Dharmararam-Hindupur State Railway and to recommend that the section of railway between Dharmararam and Hindupur be opened for passenger traffic on the 1st April 1893, at a maximum speed of 20 miles an hour, subject to the condition that a temporary triangle is in working order at Hindupur by that date.

I have &c
(Signed) F. R. Elpcott, M. Inst. C.E.,
Senior Govt. Inspector of Rys.

Form No. 2.

PUBLIC WORKS DEPARTMENT.

OFFICE OF CONSULTING ENGINEER FOR RAILWAYS,

Madras, 11th March 1893.

Copy of the Report on the inspection prior to opening of the Dharmavaram - Hindupur State Railway made by the Government Inspector, Madras.

Copy of letter No. 581, dated 11th March 1893, from the Senior Government Inspector, Madras, to the Secretary to the Government of India, P. W. Department.

No. 140.

SUBMITTED for the information of Government in continuation of endorsement No. 120, dated 1st March 1893, with the request that the Government of India may be asked to take over the Dharmavaram - Hindupur State Railway from the South Indian Railway Company on the 1st April 1893, and to arrange to relieve Mr. Benne[illegible] his services being promised to the Consulting Engineer for

P.W. 5 2
3037/93

for Railways, madras, by that date.

2. It has been arranged that Mr. Scovell shall be relieved on the 18th instant.

F. R. Upcott

~~Incorpt. E.~~,

for Consg. Engr. for Rlys.

P. W. CURRENT No.

Form No. 3.

From

THE CONSULTING ENGINEER

FOR RAILWAYS,

Madras,

No. 140

Dated 11th } March 1893.
Received Sept. 25th

No. OF ENCLOSURES. 4 (Three)

Subject.

Submitting for information report on inspection prior to opening of the Dharmavaram. Kindupur State Railway

B No. 524 R dy 13-3-93

PUBLIC WORKS DEPARTMENT,
RAILWAY BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

Endorsement from the Consulting Engr for Rys } No. 140 dy 11th March 1893

Ordered that the Government of India be addressed.

2. A copy of these Proc. will be forwarded to the Govt. of Bombay for information.

F. R. M.
11/3 R

To
The Consulting Engr for Rys
Exec. Engr. Rly. Const.
Secy. to the Govt. of Bombay
C. D. Railways
& 10 spare copies of printed note

No. 524 R dy 13th March 1893.

B

No. 525 R

Government of Madras.

PUBLIC WORKS DEPARTMENT,

RAILWAY BRANCH.

To

THE SECY. TO THE GOVT. OF INDIA,

P. W. DEPARTMENT.

13th March 1893.

SIR,

In continuation of my letter No 465 R, dated 2nd March 1893, I am directed to forward a copy of the Prop. of this Government No 524 R, dated 13th March 1893, with the request that the Govt. of India may be pleased to arrange for the taking over of the Dharmavaram - Hindupur State Railway from the South Indian Railway Company by the 1st April next. The South Indian Railway Company wish to be relieved of any further work or account keeping in connection with

1893
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13/3

Imp to India despatched on 13th March 1893.

with the line and by that date at the latest Mr. Bennett is required for duty in this office.

F. M.
11/3 R

Info despatched with intl 1Cm.
13/3/93.

B.
No: 524-5 R dy 13-3-93

B.
No: 524-5 R dy 13-3-93

S. C. 18/3

Hon. 11/3
R 13/3

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following papers :—

From the Agent, South Indian Railway, to the Consulting Engineer for Railways, dated Trichinopoly, 14th February 1893, No. 209.

I have the honour to request the favour of your being kind enough to inform me whether the notice required under section 17 (1), chapter IV of the Indian Railways Act (No. IX of 1890) should, in the case of the Dharmavaram-Hindupur State Railway, be given by this Company or by the Southern Mahratta Railway Company, to which Company the section in question will be transferred on 1st April 1893. Further, if it be considered that the South Indian Railway Company should give the notice, should such notice be served upon you or upon the Consulting Engineer for Railways, Bombay?

Letter to the Agent, South Indian Railway, dated 15th February 1893, No. 179.

From the Agent, South Indian Railway, to the Consulting Engineer for Railways, dated Trichinopoly, 28th February 1893, No. 281.

I have the honour to report that the section of railway between Dharmavaram and Hindupur will be ready to be opened for public traffic on the 1st of April next, and I shall feel obliged by your arranging to inspect the line with a view to the necessary sanction of Government being obtained to its being so opened.

2. The Managing Director of the South Indian Railway Company, in his letter No. 152 of 9th April 1892 to the Under Secretary of State for India, intimated the Company would be prepared, in compliance with the wishes of the Secretary of State, to make over to Government the portion of line from Dharmavaram to the Mysore frontier, which is not included in the contract with the Company, as soon as it is ready for opening. I have to request that you will inform me to whom I should hand over charge of this section on the 31st proximo.

From the same officer, dated Trichinopoly, 28th February 1893, No. 282.

Your letter of the 15th instant, No. 179. If the Dharmavaram-Hindupur section formed a part of the South Indian Railway undertaking, I should have been prepared to open it for public traffic on the 1st of April next. The pitching of the bank through the Cotnoor tank may not be completely finished by that date, but that need not prevent the opening of the line.

2. I understand the officers of the Mysore Government will not be ready to open for public traffic their line from the frontier to Dod Balapur before June next; the trains on the Hindupur section need therefore until that date only run between Dharmavaram and Hindupur stations. To meet this I have arranged to put in at Hindupur a triangular line so that engines may be turned there.

3. I propose that the inspection of the Hindupur section should take place not later than the 15th proximo. Will you please fix the exact date?

4. The information called for in your letter No. 226 of the 23rd instant is being prepared and it will be submitted shortly.

5. In a separate letter I have given you notice of this section being ready for inspection, which notice the regulations provide should be submitted a month before the date on which it is proposed to open the line for public traffic.

No. 120.

Endorsement by the Consulting Engineer for Railways, dated Madras, 1st March 1893.

Submitted for the information and orders of the Government of India.

2. The Agent, South Indian Railway, gives notice, in compliance with section 17 (1), chapter IV of the Indian Railways Act, 1890, that it is his intention to open the section of railway between Dharmavaram and the Mysore frontier beyond Hindupur to public passenger traffic on the 1st April 1893, and in connection with this the usual inspection prior to opening, which the Government Inspector, Bombay, considers should be made by the Inspector of the Madras Circle, is being arranged for for the 9th or 10th instant.

3. It should be brought to notice that the Inspecting officer, who has just returned from the usual half-yearly inspection of the South Indian Railway, has reported that the Dharmavaram-Hindupur Railway will, in his opinion, be quite fit for opening by the 1st April 1893, the road being good and practically all the minor details at stations being complete, and as both the Secretary of State and the Board of the South Indian Railway Company have agreed (as reported in G.O., No. 1630 R., of the 31st June 1892) that the line would be taken over by the Southern Mahratta Railway Company when reported fit for opening for passenger traffic, it is requested that, subject to the Inspecting officer's favorable report, arrangements may be made by the Government of India for the handing over of the section on the 1st of April 1893. It is understood that the line south of the Mysore frontier will not be ready for opening for some two months later, but this should not prevent the Southern Mahratta Railway taking over, and opening if necessary, the Dharmavaram-Hindupur section on the 1st April 1893, which date will also be suitable from an accounts point of view.

ORDER—dated 2nd March 1893, No. 464 R., Public Works.

Ordered that the Government of India be addressed.

2. A copy of these Proceedings, together with a copy of letter No. 465 R., dated 2nd March 1893, to the Government of India, will be forwarded to the Government of Bombay, Public Works Department, Railway Branch.

[Here enter No. 465 R., Public Works, dated 2nd March 1893.]

(True Extract.)

(Signed) W. V. CONSTABLE, Major, R.E.,
Offg. Under-Secy. to Govt., P.W.D.,
Railway Branch.

To the Consulting Engineer for Railways.
" Examiner of Railway Accounts.
" Secretary to the Government of Bombay,
Public Works Department, Railway Branch.

Exd. C. A. Munisawmy.
Spare Copies

RAILWAY.

Govt. of {1893} Madras.

PUBLIC WORKS.

Dated March, 2nd.

Recd. *Encl.*

G.O., 2nd March 1893, No. 464 R.

MARCH.

Dharmavaram-Hindupur Section

Ordered that the Government of India be addressed regarding the proposal to open the — for passenger traffic on 1st April 1893.

2ND MARCH 1893, No. 465 R., PUBLIC WORKS.

PUBLIC WORKS DEPARTMENT.

Railway.

LETTER—from

MAJOR W. V. CONSTABLE, R.E.,
Offg. Under-Secretary to the Government of Madras,
Public Works Department,
Railway Branch,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
PUBLIC WORKS DEPARTMENT.

SIR,

I am directed to forward, herewith, for the orders of the Government of India, copy of Proceedings of this Government No. 464 R., dated 2nd March 1893, on a proposal made by the Agent, South Indian Railway, in accordance with section 17 (1), chapter IV of the Indian Railways Act, 1890, that the section of railway between Dharmavaram and the Mysore frontier beyond Hindupur should be opened for public passenger traffic on the 1st April 1893, which date would have been selected for the opening of this line if it were intended that it should be worked by the South Indian Railway Company.

2. The usual inspection prior to opening, which the Government Inspector, Bombay, considers should be made by the Inspector of the Madras Circle, will be carried out on the 9th or 10th instant, and I am to request that, should the Inspecting officer's report be satisfactory, orders may be issued for the Southern Mahratta Railway to take charge of the section on the 1st April 1893. It is understood that the line south of the Mysore frontier will not be ready for opening until some two months later, but it is considered that this should not prevent the Southern Mahratta Railway taking over, and if necessary opening, the Dharmavaram-Hindupur section on the 1st April next.

3. A copy of this letter and of the Proceedings submitted therewith have been forwarded to the Government of Bombay for information.

I have the honour to be,
Sir,
Your most obedient servant,

(Signed) W. V. CONSTABLE, Major, R.E.,
Offg. Under-Secy. to Govt., P.W.D.,
Railway Branch.

FORT ST. GEORGE,
2nd March 1893.

Exd. C. A. Munisawmy.
Spare Copies

RAILWAY.

Govt. of {1893} Madras.

PUBLIC WORKS.

Dated March, 2nd.

Recd. *Encl.*

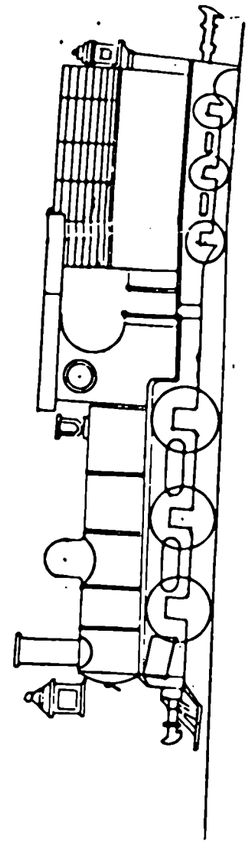
2nd March 1893, No. 465 R.

MARCH.

Dharmavaram-Hindupur Section

Forwarding copy of Proceedings regarding the proposal to open the — for passenger traffic on 1st April 1893 with request that, should the Inspecting officer's report prior to opening be satisfactory, orders may issue for the Southern Mahratta Railway to take charge of the section.

S.I.R.
6 WHEEL COUPLED ENGINES
F. CLASS
FROM 125 TO 134



WEIGHT OF ENGINE — TONS — 22·5·0
—Do —TENDER — 0 — 13·16·0

ENGINE
WEIGHT ON LEADING WHEEL — 7·9·0
—Do —DRIVING — " — 7·16·0
—Do —TRAILING — " — 7·0·0

TENDER
—Do —LEADING — " — 4·12·0
—Do —CENTRE — " — 4·12·0
—Do —TRAILING — " — 4·12·0

(Signed) W.H. Spitzing
for Chief Engineer

TRUE COPY