Form No. A No. 8

Public No. 55-12

55/13

Govt. of India

PUBLIC WORKS.

Dated

Read. Encl.

G.O., 17th June 1920 No. 840-IR.

Villupuram Gunta Kal State Railway.

Ordered that the reply of the Chief Engineer S.I. Ry. to certain points in the note by the Comptroller to the Govt of India on the be forwarded to that Govt.

Villupuram Guntakal State Railway.

Forwd. Reply of the Chief Engr. S.I. Ry to certain points in the note by the Comptroller to the Govt of India on the

1/7/20

19/6

19/6

P W C No. 55/13.

A Form No. 3. No. 840 R 17th June/90.

H.C. 15/jun

Ordered that for-
-warded to the Govt. of
India with reference to its
letter No. 78 R. C. dated 21st
January 1890.

H.E. No. 841 R 17th June 1890.

Forwarded.

Rueda 14.6.90 W Fork.

S.C. Gestal 22/7/90

To The Consulting Engineer for Rys.

1/12

C.S. 12/6
H.M. 13/6 R 16.6.90

From

THE CONSULTING ENGINEER
FOR RAILWAYS,
MADRAS,

No. 403

Dated 11th } June 1890
Received 12 }

No. OF ENCLOSURES, 2.

Subject.

Submitting, chief Engineer's reply to a portion of the Note by the Consulting Engineer to the Govt. of India for State Railways on the Villupuram Gantakal State Railway.

A
No. 840-41 R 17th June/90.

Form No. I.

PUBLIC WORKS DEPARTMENT.

OFFICE OF CONSULTING ENGINEER FOR RAILWAYS,

Madras, 11th June 1890.

Letter from the Agent, South Indian Railway, No. 819, dated 9th June 1890, with enclosure.

10 P

No. 403.

Submitted to Government with reference to its Proceedings No. 181 R, dated 4th February 1890.

~~SUBMITTED~~.

not received in P. W. D. office. 12-6-90.

Sd/- [illegible]

Major R.E.,

Offg: Consg: Engr. for Rys.

VR

REGISTER No. 765

FILE No.

P W Rec 2

55-13/90

steep gradients (1 in 100) and numerous curves on a great length of the line that ten sleepers to the 24' Rail will conduce to Safety and economy in maintenance

15 When the Consulting Engineer to the Govt of India started on his inspection I much regretted being unable to accompany him over the line. I had just returned from a considerable absence on inspection over the same ground and my presence was much required at Head Quarters. When I read his Inspection Report this regret was intensified because I felt that had I accompanied Mr O'Callaghan I would have been able to satisfy him that our views were identical in essentials, and to have explained several matters about which he appears not to have received the details explanation and information I would myself have given had I been present.

Yours faithfully
Sd. David Logan
Chief Engineer

Agents office
Trichinopoly
6th June 1870

True Copy
Abdappa Reddy
Chief Clerk.

on which it is hoped to Secure the most favourable returns from Traffic and which ought therefore to be opened to the public as Soon as possible.

9. With reference to two of the principal Bridges reported as practically untouched between Chittoor and Pakala I presume this refers to the Pinky and Putalpet Bridges. When the Consulting Engineer (Madras) and I went over the line in July, I found that the Engineers were about to start work on these bridges, but the Sandy beds of the rivers were waterlogged owing to freshes. In the Case of the Pinky, two Engines and pumps were quite unable to keep down the water in even one foundation pit. The rainy Season was approaching and I at once ordered all foundation work to be Stopped in these Rivers until after the rains should be over in December or January. This resulted in a large Saving of money. the Bridges are now both practically Complete and ready for Girders long before platelaying has been able to reach them.

10. On the length between Pakala and Dharmavaram the Sites for Some of the large Bridges were not quite Settled because after inspecting the Sites Selected for the origi-nal project I was not Satisfied that the best had been Secured and I awaited plans, Sections and other data to enable this to be decided. All the Bridges are now begun Some are well in hand and there is no fear of any of them

insisted upon everything coming up to me for Confirmation as I had sufficient grounds for adopting this Course.

b. Alignment. Most of the rectifications of alignment were Suggested by Deputy Chief Engineer Mr Spalding who first went over the line with orders to Examine and report on this. The longest and most important alteration was however Suggested to me by Executive Engineer Mr W. Michell with whom and Colonel B. J. Smith, I went over inspected, approved it and gave orders for the Survey and Section of the deviation. When Mr O'Callaghan passed up in December I was awaiting data from Mr Michell to enable final orders to be given to him on points raised when Colonel Smith and I were on the ground. So that I was waiting on Mr Michell not Mr Michell on me.

c The alignment was in some places unsettled because investigations ordered by me after inspecting the ground were being carried out in the hope of Securing important improvements. In Some Cases the original alignment proved the best attainable in others Substantial improvements both in line and in Cost were Secured.

d These investigations were the more readily entered upon that it Seemed inexpedient to urge on the Construction of the Northern portion of the line So long as Sufficient labour was not obtainable to push the Works between Villupuram and Trichi the latter being that portion of the S. I. Railway

on

3 AP

miles being represented by a line running from 2 inches at one Sq: mile into 5 Sq: miles on the Dickens Formula Curve.

3. So far from ignoring the nature of the drainage areas as alleged by the Consulting Engineer every Waterway large & small, on the line has been looked into by myself and dealt with separately in Consultation with the Engineers of the respective Districts and Divisions; and wherever the Size and Conformation of the drainage areas, or any local Circumstances, peculiarities or other available data seemed to demand it the waterway allowances have as far as possible been adapted to these local conditions

4. I view formula simply as empirical aids requiring to be checked by careful investigation of such local Conditions, formulæ in their turn being themselves and - Said checks when intelligently used as for instance where the conditions are approximately the same the Waterways may reasonably be expected to bear some fixed relation to their respective Catchment basins.

5. With reference to allowing Superintending Engineer to settle matters on the ground with the Executive Engineers I have done this and wish to do so as far as possible, consistent with being kept fully informed of what is being done within the lines laid down for general guidance. In the matter of Waterways I have

visited

Villupuram Guntakal State Railway
South Indian Railway
Chief Engineer's office
Trichinopoly 5th June 1890

No C.G. 233/870

William S. Betts Esqre
Agent
Trichinopoly

Dear Sir

Your letter No 2161/120 of 6. 2. 90. and enclosures.

Waterways — At the time when the rules referred to by the Consulting Engineer to the Govt of India were issued there was considerable discussion as to the most suitable formula to serve as a Standard of Comparison for Small Watershed areas of from about 5 Sq miles and under, Colonel Dicken's Formula in use for the larger, being considered to give generally too small results for such smaller areas

2. Almost immediately after the issue of the rules above referred to, I withdrew and modified them in the light of further Study of the Country and rainfall, the result being that waterway allowances between Pakala and Guntakal are for the most part calculated to pass 3 inches of rainfall per hour off areas of half a Square mile and under, and 2 inches rainfall per hour off areas of one Square mile and under the allow-ances above 1 Sq: mile and up to 5 Sq miles

REGISTER No 7655 FILE No

P W Let 5513/90

From
The Agent,
South Indian Railway,
Trichinopoly.

To
The Consulting Engineer for
Railways,
Madras.

Sir,

Dated 9th June 1890.
Received 10th do
No. 879
Enclosure.

No 819

South Indian Railway,

AGENT'S OFFICE,

TRICHINOPOLY, 9th June 1890.

From

The AGENT,
SOUTH INDIAN RAILWAY,

To

The CONSULTING ENGINEER FOR RAILWAYS,
MADRAS.

Sir,

For the information of Government I forward herewith a copy of the Chief Engineer's reply to a portion of the Note by the Consulting Engineer to the Government of India for State Railways, dated 6th January 1890, on the Villupuram Guntakal State Railway.

I am
Sir.
Your most obedient Servant.
William A Betts.
Agent.

RAILWAY.

Govt. of {1890} Madras.

PUBLIC WORKS.

Dated June, 17th.

Read. *Enol.*

G.O., 17th June 1890, Nos. 840, 841 R.

JUNE.

Villupuram-Guntakal State Railway

Forwarding reply of the Chief Engineer, South Indian Railway, to certain points in the note by the Consulting Engineer to the Government of India on the —.

No 819.

South Indian Railway,

AGENT'S OFFICE,

TRICHINOPOLY, 9th June 1890.

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SOUTH INDIAN RAILWAY,

To

The CONSULTING ENGINEER FOR RAILWAYS,

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I am

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Your most obedient Servant.

William A Betts.

Agent.

17TH JUNE 1890, No. 840 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper:—

From the Consulting Engineer for Railways, dated Madras, 11th June 1890, No. 403.

From the Agent, South Indian Railway, to the Consulting Engineer for Railways, dated Trichinopoly, 9th June 1890, No. 819.

For the information of Government I forward, herewith, a copy of the Chief Engineer's reply to a portion of the note by the Consulting Engineer to the Government of India for State Railways, dated 6th January 1890, on the Villupuram-Guntakal State Railway.

ENCLOSURE.

From the Chief Engineer, South Indian Railway, to the Agent, South Indian Railway, dated Trichinopoly, 5th June 1890, No. V.G. 233/870.

[Your letter No. 2161/120 of 6th February 1890, and enclosures.]

Waterways.—At the time when the rules referred to by the Consulting Engineer to the Government of India were issued there was considerable discussion as to the most suitable formula to serve as a standard of comparison for small water-shed areas of from about 5 square miles and under, Colonel Dicken's formula in use for the larger being considered to give generally too small results for such smaller areas.

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3. So far from ignoring the nature of the drainage areas as alleged by the Consulting Engineer every waterway, large and small, on the line has been looked into by myself and dealt with separately in consultation with the Engineers of the respective districts and divisions; and wherever the size and conformation of the drainage areas, or any local circumstances, peculiarities or other available data seemed to demand it, the waterway allowances have as far as possible been adopted to these local conditions.

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6. *Alignment.*—Most of the rectifications of alignment were suggested by Deputy Chief Engineer Mr. Spalding, who first went over the line with orders to examine and report on this. The longest and most important alteration was however suggested to me by Executive Engineer Mr. W. Michell, with whom and Colonel C. J. Smith I went over, inspected, approved it and gave orders for the survey and section of the deviation. When Mr. O'Callaghan passed up in December I was awaiting data from Mr. Michell to enable final orders to be given to him on points raised when Colonel Smith and I were on the ground, so that I was waiting on Mr. Michell, not Mr. Michell on me.

7. The alignment was in some places unsettled because investigations ordered by me after inspecting the ground were being carried out in the hope of securing important improvements. In some cases the original alignment proved the best attainable, in others substantial improvements both in line and in cost were secured.

8. These investigations were the more readily entered upon that it seemed inexpedient to urge on the construction of the northern portion of the line so long as sufficient labor was not obtainable to push the works between Villupuram and Tirupati, the latter being that portion of the Villupuram-Guntakal State Railway on which it is hoped to secure the most favorable returns from traffic and which ou ght therefore to be opened to the public as soon as possible.

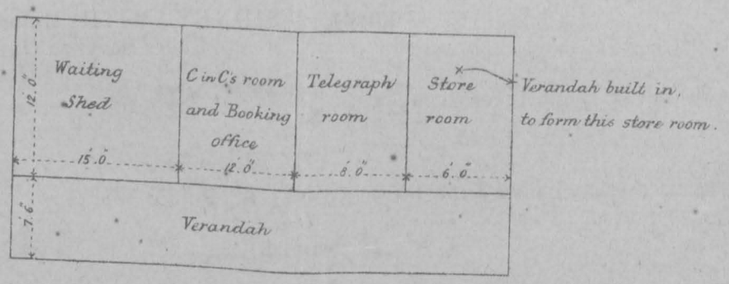
9. With reference to two of the principal bridges reported as practically untouched between Chittoor and Pakala, I presume this refers to the Poiney and Putalput bridges. When the Consulting Engineer (Madras) and I went over the line in July, I found that the Engineers were about to start work on these bridges, but the sandy beds of the rivers were waterlogged owing to freshes. In the case of the Poiney, two engines and pumps were quite unable to keep down the water in even one foundation pit. The rainy season was approaching, and I at once ordered all foundation work to be stopped in these rivers until after the rains should be over in December or January. This resulted in a large saving of money; the bridges are now both practically complete and ready for girders long before plate-laying has been able to reach them.

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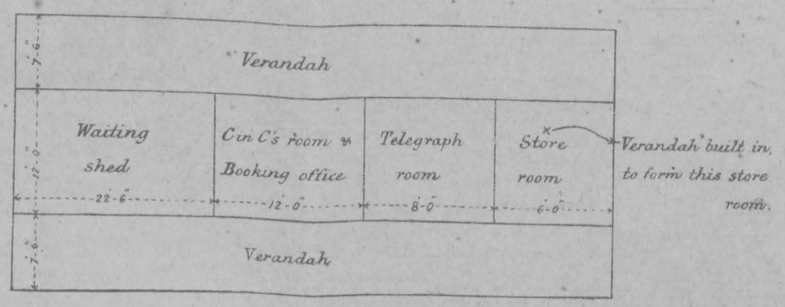
11. *Stations.*—With reference to stations the intention was and is to follow our usual plan of providing permanent buildings only to such towns and villages as are certain to require this accommodation and of providing trial stations without platforms and with temporary buildings (mud walls and thatch) only of the most modest dimensions and cost wherever the prospects of traffic are doubtful.

12. Plans showing the accommodation proposed were submitted to Sir Charles Elliott and the Director-General of Railways when they visited Trichinopoly towards the end of last year, and I understood that the proposals were considered suitable and reasonable. They were based on the experience of a great many years working in this part of the country, and I do not think that any one can accuse the South Indian Railway Company of extravagance in the style or extent of their station accommodation.

13. For fourth-class stations there were three small rooms and a third-class waiting-shed provided thus :—



For third-class stations the third-class waiting-shed was enlarged from 15 feet by 12 feet to 22½ feet by 12 feet, and a verandah was added to the back as well as the front of the building thus :—



14. *Permanent-way.*—In the list of standard dimensions ordered by the Government of India to be adopted on the Villupuram-Guntakal State Railway, it is stated that 2,112 sleepers to the mile are to be laid. This number is arrived at by allowing 12 sleepers to a 30-feet rail. The rails supplied for the Villupuram-Guntakal State Railway are only 24-feet long. If 10 sleepers are laid to each 24-feet rail, the resulting number per mile is 2,200 or 88 sleepers per mile more than stated in the list above referred to; if 9 sleepers to the 24-feet rail are laid, the number per mile is 1,980 or 132 sleepers less per mile than ordered by the Government of India. The subject was discussed by the Consulting Engineer (Madras) and myself with the Director-General of Railways when he was in Trichinopoly in November last, and it was decided that 10 sleepers to the 24-feet rail should be laid, and this is being carried out. I am of opinion, considering the lightness of the permanent-way, the steep gradients (1 in 100), and numerous curves on a great length of the line, that 10 sleepers to the 24-feet rail will conduce to safety and economy in maintenance.

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Submitted to Government with reference to its Proceedings No. 181 R., dated 4th February 1890.

ORDER—dated 17th June 1890, No. 840 R., Public Works.

Ordered to be forwarded to the Government of India with reference to its letter No. 78 R.C., dated 21st January 1890.

(Here enter No. 841 R., dated 17th June 1890.)

(True Extract.)

(Signed) SIDNEY SMITH, Major, R.E.,
Under Secy. to Govt., P.W.D.,
Railway Branch.

To the Consulting Engineer for Railways.

ENDORSEMENT—dated 17th June 1890, No. 841 R., Public Works.

(Fowarded.)

(By Order.)

Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.

Exd. J. Moses.
Spare Copies

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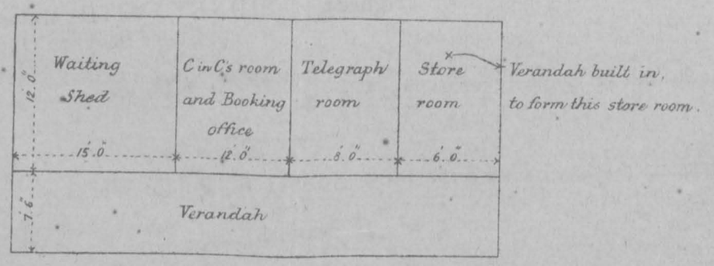
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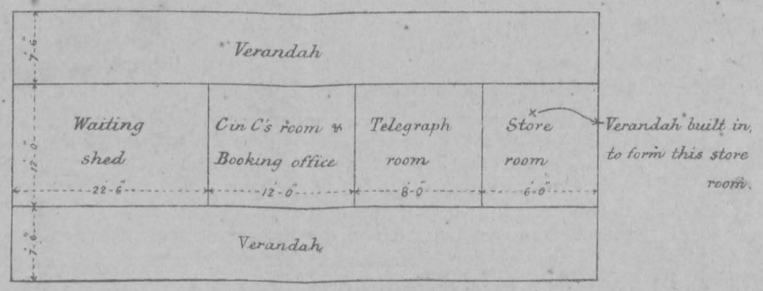
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