Public Works (1895) Department.

RAILWAY BRANCH.

G.O., No. 635R

DATED 2nd October

[Despatch Abstract.]

Stationhouse and other buildings at Tirupati East station. — Estimate of Rs 9,614 for erecting permanent —, South Indian Railway, Sanctioned.

[P. W. 26.]

Indexed.

BACK PAPERS.

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

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

No. 635 R., 2ND OCTOBER 1895.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper :—

From the Acting Agent, South Indian Railway, to the Consulting Engineer for Railways, No. 842, dated Trichinopoly, 16th September 1895.

The necessity for replacing the temporary structures at Tirupati East Station by permanent buildings has long been recognized, it having been decided on the inspection of the line for the half-year ended 30th June 1892, that the work should be carried out. Other works have, however, been thought more important and so the estimate has not been submitted earlier. I have now the honour to forward an estimate, No. 1727, amounting to Rs. 9,614 chargeable in the proportions of Rs. 9,230 to Capital, and Rs. 384 to Revenue, for erecting permanent station-house, platform, latrine and stationmaster's quarters at this station, as per tracings of drawings Nos. $\frac{28}{95}$, $\frac{1630}{90}$ and $\frac{2018\ B}{90}$, herewith sent, and shall be glad to receive early sanction thereto.

This station is one at which very large numbers of pilgrims arrive at and depart from.

In his letter, No. 84 of 23rd of December 1892, the Managing Director communicated the sanction of the Board of Directors to a provision of Rs. 12,500 being made in the budget for 1893-94 for the abovementioned works.

ORDER—No. 635 R., dated 2nd October 1895.

Sanctioned.

2. This sanction has been registered as No. 23 R. of 1895-96.

(True Extract.)

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

To the Agent, South Indian Railway.
„ Examiner, Guaranteed Railway Accounts.

Exd. Md. Pahilvan.
Spare Copies

RAILWAY.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 2nd.

Recd. *Encl.*

G.O. No. 635 R., 2nd Oct. 1895.

OCTOBER.

Station-house and other buildings at Tirupati East Station

Estimate of Rs. 9,614 for erecting permanent —, South Indian Railway, sanctioned.

No. 842

South Indian Railway Co., Ld.

AGENT'S OFFICE,

TRICHINOPOLY, 16th September 1895.

From Acting

THE AGENT,

SOUTH INDIAN RAILWAY,

To

THE CONSULTING ENGINEER

FOR RAILWAYS,

MADRAS.

Sir,

The necessity for replacing the temporary structures at Tirupati East Station by permanent buildings has long been recognized, it having been decided on the Inspection of the line for the half year ended 30th June 1892, that the work should be carried out. Other works have however been thought more important and so the Estimate has not been submitted earlier. I have now the honor to forward an Estimate, No. 1727, amounting to Rs 9,614/-, chargeable in the proportions of Rs 9,230/- to Capital, and Rs 384/- to Revenue, for erecting permanent station-house, platform, latrine, and Station Masters' quarters, at this Station, as per tracings of drawings Nos. $\frac{28}{95}$, $\frac{1630}{90}$ and $\frac{2048B}{90}$ herewith sent, and shall be glad to receive early Sanction thereto.

This Station is one at which very large numbers of pilgrims arrive at and depart from.

4076
17.9.95

In his letter No. 84 of 23rd of December 1892 the Managing Director communicated the sanction of the Board of Directors to a provision of Rs 12,500/- being made in the Budget for 1893-94 for the above mentioned works.

I have the honor to be
Sir
Your most obedient Servant

T. H. Le Mesurier
for Acting Agent.

4 Enclosures by Railway Parcel

From
The Agent,
South Indian Railway,
Trichinopoly,

To
The Consulting Engineer for Railways,
Madras.

Dated
Received 189 .
No.
Enclosure.

Form No. 31.
500—6-6-59.

EXAMINER, RAILWAY ACCOUNTS, MADRAS.
431
19 SEP. 95
Enclosures

Office of the Consulting Engineer for Railways,
Madras, 17th September 1895.

No. 2944

OFFICE NOTE.

Letter from the Agent, South Indian Railway, No. 842 dated 16th September 1895, forwarded to the Examiner of Railway Accounts, for favor of check as to allocation and budget provision.

F. O. Locke
for E. R.

EXAMINER'S REPLY.

20/9

The estimate is correct as to allocation and requires the sanction of the Local Government.

Funds have been certified by C.R. Trichinopoly.

20.9.95

C.R.

No. 635. R. dated 2. 10. 95

PUBLIC WORKS DEPARTMENT,
RAILWAY BRANCH.

A.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

Letter from the Agent S. I. Ry. — } H.E. No. 842 of 16 Sept. 95.

Sanctioned.

2. This sanction has been registered as No. 23. R. of 1895-96

[illegible]

1/10 R

635 R

635 R

DEC[illegible]
15 OCT. 95

To
The Agent S. I. Ry. [illegible]
[illegible] Ex. G. Ry. [illegible]

A/-

No 635. Rd 2.10.95

REPORT ON THE INSPECTION OF THE SOUTH INDIAN RAILWAY (INCLUDING THE VILLUPURAM-GUNTAKAL STATE RAILWAY) FOR THE HALF-YEAR ENDED 30TH JUNE 1892.

1. The inspection was made between August 10th and 22nd, both dates inclusive, in company with the Agent and Heads of Departments, and over their respective lengths with the district officers concerned.

2. **Earthwork.**—The recent heavy rains have considerably damaged the banks of the Villupuram-Guntakal line in many places to the north of Dharmavaram, particularly in the approaches of the Pennér and Punnamairoo bridges and in miles 400 G and 401 G. The banks have also suffered, though to a less degree, between Tanakallu and Kadiri and in mile 302 G. The road requires lifting at several points in miles 317 G and 320 G. Water lodges in most of the side drains of the cuttings of the Villupuram-Guntakal system, but as they are hard and ballasted with stones, the defective drainage is not of much consequence at present. The Chief Engineer proposes to remedy matters by boxing in the ballast with dry stone walling, and giving the side drains a proper slope. The drain to the west of the station yard at Panapakam requires deepening to prevent water flowing across the lines. The second line at Chittoor should be drained. In other respects the earthwork over the whole system is in excellent order.

3. **Bridges.**—The bridges inspected were generally in good condition, but in a few cases required painting. In miles 274 G and 275 G the girder bridges require ballast walls.

4. *Pennér bridge.*—The footway on the east side of the Pennér bridge is not yet entirely laid, but otherwise the bridge is finished. The training bunds are nearly completed, the earthwork being done, and the stone pitching well advanced. The tramway is mostly laid, but the soiling of the bunds, and the delivery at site of the surplus stone, still remain to be completed. The work should be finished in a month.

5. *Bridge at 406/17 G.*—The bridge of four spans of 40 feet at mileage 406/17 G was scoured during the last rains to a depth of 7 feet at the north-west wing wall, and at the excavation pit of No. 1 pier. Both these holes are being filled in with boulders.

6. *Punnamairoo bridge.*—The flooring of the south span of the Punnamairoo bridge is in progress, but the pitching of the approaches remains to be done. The hand-rail has not yet been erected.

7. It was observed that twelve rivets were out in the Peddapollium, ten in the Pálár (Villupuram-Guntakal crossing), one in the Cheyár, two in the 1 × 60 girder at mileage 245/13 B, and two in the Callian bridge.

8. The 2-feet culvert at mileage 36/2 A, which is cracked, is to be taken out and the bank filled in. The approval of the Collector has been received to this action.

9. The 1-foot circular opening at mileage 63/1 A which has fallen in is to be rebuilt as an open culvert, and the cracked 3-feet arch at mileage 70/5 A is to be replaced by a rail-top culvert.

10. One link in the first left bay of the 10th span of the old Pálár bridge has a laminated crack and is to be replaced. Cracks of a similar character also occur in the end vertical suspender, west girder, No. 3 span, and in a tension link of the second south bay east girder, No. 12 span, of the Coleroon bridge.

11. At mileage 190/12 a new 20-foot girder bridge has been built at the expense of the Kumbakónam Municipality, and at mileage 200/7 a new 3-feet culvert has been put in at the cost of a local mirasadar.

Statement showing the renewals of rails for the half-year ending 30th June 1892—*cont.*

	Rails replaced.																			
	Iron.								Steel.											
	68 lb.				40·3 lb.				50 lb.				41 lb.				56 lb.			
	24′.	21′.	18′.	Cwt.	24′.	21′.	18′.	Cwt.	24′.	21′.	18′.	Cwt.	24′.	21′.	18′.	Cwt.	24′.	21′.	18′.	Cwt.
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Main Line.																				
January 1892	..	15	..	..	269	113	11	..	1,870	6	..	20′	..	..	..	..	..	..	..	..
February ,,	..	23	1	..	124	12	2	..	1,664	21	..	247′	1	8	1	..	..	..	..	..
March ,,	..	14	..	..	110	48	8	..	2,841	..	..	..	..	7	..	..	..	..	..	..
April ,,	..	11	..	..	196	37	4	..	1,841	..	..	..	1	2	..	..	..	..	..	..
May ,,	..	17	1	..	122	15	2	..	926	..	..	..	..	..	..	..	..	..	..	..
June ,,	..	12	..	..	212	67	1	..	70	20	..	..	1	..	..	..	..	..	..	..
Total ..	..	92	2	..	1,033	292	28	..	9,212	47	..	267′	3	17	1	..	..	..	..	..
Sidings.																				
January 1892	..	..	2	..	6	17	6	..	..	..	..	..	..	..	..	..	..	..	..	..
February ,,	2	..	..	21	8	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..
March ,,	1	1	..	27	20	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
April ,,	7	1	..	4	6	4	..	..	..	..	..	..	4	..	..	..	..	..	..	..
May ,,	2	2	..	25	34	..	..	..	..	..	..	..	1	..	..	32′	..	..	..	..
June ,,	5	..	..	10	..	3	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Total ..	17	6	..	93	85	18	..	..	..	1	..	5	..	..	32′	..	..	..	..	
Grand Total ..	109	8	..	1,126	377	46	..	9,212	47	1	267′	8	17	1	32′	..	..	..	..	

Statement showing the renewals of sleepers for the half-year ending 30th June 1892.

	Sleepers displaced.									Sleepers replaced.								
	Creos. 6′.	Creos. 9′.	Pyngadu.	Teak, of sizes.	Pots 68 lb., pairs.	Pots 50 lb., pairs.	Pots 40 lb., pairs.	Transverse steel sleepers.	D and O sleepers.	Creos. 6′.	Creos. 9′.	Pyngadu.	Teak, of sizes.	Pots 68 lb., pairs.	Pots 50 lb., pairs.	Pots 40 lb., pairs.	Transverse steel sleepers.	D and O sleepers.
Main line.																		
January 1892 ..	8,304	..	1	..	1	1½	..	..	84	328	..	1	..	1	8,037½	..	..	84
February ,, ..	8,573	..	9	..	13	1½	3	6	83	782	..	547	..	13	7,244½	3	6	83
March ,, ..	14,919	..	16	1	13½	11½	2	..	53	744	..	1,368	1	13½	12,795½	2	..	53
April ,, ..	10,550	..	613	..	7½	1	..	..	56	1,597	..	523	..	770½	8,281	½	..	56
May ,, ..	6,662	..	241	..	6	13	1½	..	17	482	..	1,915	..	349	4,176	1½	..	17
June ,, ..	2,150	..	116	29	6½	4½	2½	..	36	731	..	930	29	386½	22½	2½	..	36
Total ..	51,218	..	996	30	47½	33	9½	6	334	4,663	..	5,304	30	1,533½	40,774	9½	6	334
Sidings.																		
January 1892 ..	538	..	4	2	..	..	..	..	..	206	..	316	2	20	..	..	..	..
February ,, ..	924	..	4	..	½	..	..	..	..	244	..	684	..	½	..	..	..	..
March ,, ..	536	..	7	3	..	..	..	..	..	365	..	173	3	..	..	..	..	..
April ,, ..	307	..	17	12	..	..	..	..	..	228	..	82	3	..	..	..	23	..
May ,, ..	196	..	13	2	..	..	..	..	..	184	..	23	2	..	..	..	..	..
June ,, ..	176	..	5	..	..	..	..	..	..	168	..	13	..	..	..	..	..	..
Total ..	2,677	..	50	19	½	..	..	..	..	1,395	..	1,298	10	20½	..	..	23	..
Grand Total ..	53,895	..	1,046	49	48	33	9½	6	334	6,078	..	6,602	40	1,554	40,774	9½	29	334

18. **Ballast.**—The railway is, except in mile 56, fully ballasted everywhere. The laterite ballast used on the Nellore branch makes a very good, neat and clean road.

19. **Fencing.**—The fencing is, as a rule, good, but there are numerous gaps in the aloe hedge in miles 66 and 68 which are being closed by wire fencing.

20. **Stations and Buildings.**—The stations throughout the system were, with the exception of Máyavaram, clean and tidy, but the platforms in the neighbourhood of Madras should be covered with laterite, as at present a moderate shower of rain renders them very soft and muddy.

21. *Beach station, Madras.*—The proposed replacement of the sentry-box representing the Beach station by a structure affording reasonable accommodation to passengers has been greatly delayed in consequence of the difficulty experienced by the Company in ascertaining the boundaries of their land and in obtaining possession of a siding from the Harbour Trust Board. It is to be feared that that the railway limits have never been properly fixed and that the Company have taken over the various lines transferred from the Harbour Works without ascertaining the extent of the land handed over with the sidings. Every effort will now be made to regularize the matter, and when once the necessary land has been definitely acquired the provision of a station will be proceeded with as soon as possible.

22. *Egmore.*—With a view of facilitating the exit of passengers from the station it has been decided to separate the passage for third-class passengers from that of the higher class by erecting fencing between the platform pillars on the buffer stop side, and doubling the exit space at the end of the platform. This should, to a considerable extent, relieve the present much-complained-of congestion of traffic at the ticket gates.

23. The extension of the through siding and platform at Chetpet remains to be done, the similar work at Kodambakam is postponed, and that at Saidápet is finished.

24. *Pallávaram.*—The goods shed at Pallávaram, which is a temporary structure, is to be removed to Saidápet where it is wanted in connection with the cigar traffic. A small engine shelter is required by the Locomotive department.

25. *Conjeeveram.*—The station house suddenly cracked in several places a short time ago. The damage was promptly repaired and no signs of further failure have appeared. It would be well, however, to closely watch this building, and to fill in the arch which has cracked most with honey-comb work.

26. *North Kolatúr.*—A permanent station house and goods shed are to be built, and a stationmaster's house is finished to roof level. The lever of the south facing points, which is worked from the abutment of a small bridge should be fenced round to prevent the pointsman falling into the nullah beneath.

27. *Tindivanam.*—The through siding has been lengthened and the well requires clearing out and squaring at the sides.

28. *Mailam.*—The extension of the through siding and the raising of the platform are about to be commenced.

29. *Villupuram.*—The whole of the sanctioned works at Villupuram, with the exception of one double block of quarters for Native drivers and Eurasian fitters, are now completed, and this building is being roofed. Sanction is to be applied for to the construction of a running bungalow, an Apothecary's quarters, and an additional bay to the engine shed; the latter work has been approved by the Board of Directors. The home signal levers are worked in a pit at the end of the passenger shed and should be railed round to prevent accidents. The terraced roof on to which the upstair rooms of the station house open, should be provided with a parapet wall.

30. *Cuddalore Old Town.*—The latrine for the running room is to be enlarged and altered, and a Permanent-way Inspector's bungalow is to be built.

31. The lengthening of the through sidings at Nellikuppam, Porto Novo, Alapákam and Killo is finished; at the last station the platform has been raised.

32. *Máyavaram.*—The alterations and extension at Máyavaram in connection with the junction with the Máyavaram-Mutupet Railway have just been commenced. Two through sidings are in. The Traffic department consider that the old station house, which is to remain unaltered, will shortly have to be pulled down and a more suitable

structure put up. If the heavy additional traffic anticipated is realized I have little doubt that the existing building will prove unsuitable, but I think that the present arrangements should stand until they are proved to be insufficient. The present ticket window for third-class passengers is far too low and should be raised.

33. The lengthening of the through siding is about to be commenced at Kuttalam and is in progress at Tiruvadamarudúr and Kumbakónam. At the last-named station it is proposed to take up two arches of the waiting shed for a new booking office, and a third arch for a first and second class passage. The existing rooms would then be re-arranged, the parcels office becoming the stationmaster's room, the passage the new store-room, and the present stationmaster's room the waiting room.

34. *Tanjore.*—The present arrangements at Tanjore are not very convenient, nor are they sufficient for the traffic. A design is being prepared for extensive alterations, but there is no probability of any immediate proposals being put forward. A scheme for a laterite siding four miles in length was discussed. The estimated cost was given at Rs. 57,000, but this sum is, I understand, susceptible of large reduction by using old permanent-way. Laterite is required in large quantities for ballasting the Máyavaram-Mutupet Railway, as well as for the use of the main line, and Local Fund Boards. If found desirable, the siding might hereafter be extended three miles to Vallam where there is a Collector's cutcherry. This siding would be of great utility, and, as there is no ballast obtainable along the Máyavaram-Mutupet Railway, is almost a necessity. When the proposal comes forward, it should, I think, be strongly supported.

35. *Trichinopoly.*—At Trichinopoly the construction of pandals in front of the various quarters is in hand and a Permanent-way Inspector's bungalow is nearly up to roof level. The carriage shelter, which will abut against the pillars of the roofing over the station lines, is just started.

36. *Manapárai.*—The earthwork of the extended siding is nearly completed and the widening of the platform is finished.

37. *Vadamadurá.*—The extension of the through siding is finished.

38. *Ammayanáyakanúr.*—The lengthening of the through siding is in progress, and the girders of a bridge, the extension of which was necessitated in consequence, are in position.

39. *Madura.*—The construction of the new recreation room and the dispensary and Apothecaries' quarters are not yet commenced, but the Permanent-way Inspector's bungalow, store room and office are practically finished.

40. *Sátúr.*—The lengthening of the through siding is nearly finished.

41. *Kumarapuram.*—A permanent station, with raised platform, is to be built at Kumarapuram.

42. *Maniyáchi.*—The end bays of the passenger shed require cross bracing, as the whole of the rail standards are out of the vertical.

43. *Tuticorin.*—The new bungalow for the Permanent-way Inspector is nearly up to roof level and the weigh-bridge house is approaching completion. A new platform should be provided for the engine turn-table.

44. *Koradáchéri.*—It is proposed to build a new passenger shed at the east end of Koradáchéri station and re-arrange the present rooms. The stationmaster's house is to be demolished and a new passengers' approach road made.

45. *Tiruválúr.*—The enlargement of the station to accommodate the Máyavaram-Mutupet Railway is in progress. A revised estimate providing more accommodation is about to be submited.

46. *Kivalúr.*—The station is to be entirely re-arranged, proposals to come forward later.

47. *Negapatam.*—The goods loading shed requires verandahs on both sides, and the weigh-bridge pit wants draining when the present primitive pump could be dispensed with.

48. *Erode.*—An additional transhipping platform and loading bank have been provided.

49. *Tinnevelly.*—The goods traffic at this station is not sufficiently accommodated at present, but as the extension to Quilon, if made, would relieve the pressure, it is hardly worth while now to enlarge the goods shed.

50. *Nellore.*—The menials' quarters might be separated by partition walls. There seems to be a paucity of quarters for the Locomotive staff, and it may be necessary to build a double block bungalow.

51. *Kálahasti.*—The Traffic department has asked for a loading bank, iron goods shed, and approach road. It was decided to wall off the end bay of the waiting shed and convert it into a general waiting room, as there are about 400 first and second class passengers a month who have no accommodation at present provided for them.

52. *Tirupati (East).*—An estimate is to come forward for converting the present trial into a permanent station. The accommodation to be provided consists of a waiting shed, booking office, store room, general waiting room, latrine and platform. The station is not to be a block station.

53. *Pákala junction.*—The sanctioned accommodation is nearly finished, the works in progress being the Telegraph lineman's hut, Permanent-way Inspectors' offices and stores, sidings at the back of the engine shed, engine shed lift and coal stage. Proposals are coming forward for the construction of a considerable number of additional quarters for the staff, which will necessitate the acquisition of a large area of land. There appears to be insufficient accommodation at present, and the land to be taken up is of little value I should say.

54. *Tiruvannámalai.*—The waiting shed and goods shed roofs which are of corrugated iron have been painted with a non-conductor of heat called "arabic." The result would seem to be a lowering of the inside temperature by about six degrees, but perhaps a thicker application of arabic might effect a more decided reduction of temperature.

55. *Vellore.*—The goods shed requires an additional bay, the weigh-bridge is in course of construction, and the goods approach road should be properly metalled. In forming the corrugated iron enclosure in the goods shed, it would be well to run the walls out nearly to the eaves, as the present type of room involves a lot of roof space being quite wasted.

56. *Chittoor.*—The coal stage and the Permanent-way Inspectors' offices, stores and bungalow are not yet started. The goods shed enclosure is to be extended another bay, the shed itself not being enlarged.

57. The minor stations north of Pákala on the Villupuram-Guntakal line are completed with thefollowing exceptions: — Dámalcheruvu — compound fencing unfinished; Mangalampeta — pump house and compound fencing not completed; Pulicherla—compound fencing to be done; Pflér—goods godown in course of erection; Kalikiri—boundary fencing and goods shed unfinished, porters' lines nearly done; Chinna Tippasamudram—Permanent-way Inspectors' offices and stores not commenced, station waiting room unfinished and unfurnished, goods shed enclosure not started; Kurabalakota—platform fencing not erected; Tummanangutta—platform fencing not quite finished; Buttulapuram—platform fencing not quite done, doors for staff quarters still required; Mulacalacheruvu—the through siding wants lifting; Tanakallu—gates not put up to clerk-in-charge's bungalow, porters' lines, and approach roads; Kadiri—Permanent-way Inspector's bungalow, offices and stores commenced, Telegraph lineman's hut not roofed, extension of goods shed to be put in hand; Kalasamudram—platform fencing not erected; Malaka Vemala—platform fencing not put up, approach road not made, boundary fencing wire not in position; Mudigubba—boundary fencing not erected, goods approach road not made; Muktapuram—boundary and platform fencing not erected, doors required to staff quarters; Chinnekuntapalli—latrines not completed; Kandakur—fencing round compound, and approach road not begun; Anantapur—platform and boundary fencing remains to be done, goods shed nearly finished, waiting room unfurnished; Garladinne—platform fencing in progress, boundary fencing waiting for wire, staff quarters complete but for gates, and approach road not made; Kalluru—fencing in course of erection, road badly required to connect station with main road about a quarter of a mile distant, and a goods shed will eventually be required; Khadarpet—platform fencing in hand; Gulapalyam—platform fencing not commenced, boundary fence not wired, no gates to staff quarters.

58. *Dharmavaram junction.*—At Dharmavaram good progress has been made, the engine shed is up to roof level, the engine lift is erected and the ash pit is finished. The coal shed cannot be put up yet as the temporary engine shed occupies the site. The following buildings are finished:—running bungalow, a double block of drivers' quarters, Locomotive Foreman's and Permanent-way Inspector's quarters, Apothecary's quarters, officers' rest-house, a double block of Native drivers' quarters, a double block of Native guards' quarters, stationmaster and assistant stationmasters' quarters, goods Inspector's bungalow, Native and European latrines, lamp-room and kitchen. The station building is completed except the recently sanctioned addition which is up to roof level. One double block of European drivers' quarters is nearly finished, but the out-houses are not commenced. The hut for the telegraph lineman is being roofed and the Permanent-way Inspector's office, store and bungalow are not started. The engine turn-table is finished and the well and steam pump are ready, but the piping is not connected. The proposed overbridge of old rails has not been commenced owing to pressure of work in the Trichinopoly shops, and as there seems no probability of the South Indian Railway being able to do the work in time, the Southern Mahratta Railway might be asked to undertake the job.

59. From the two preceeding paragraphs it will be seen that the section to be handed over to the Southern Mahratta Railway is practically completed, fencing and gates constituting most of the unfinished works. I think it would be well for special efforts to be made to complete these small jobs as soon as possible.

60. **Watering arrangements.**—At Egmore station the water-supply is derived from the Red Hills tank, and as the height of delivery is low, pumping has to be resorted to. This, together with the heavy payment of Rs. 2,800 annually disbursed to the Municipality, makes the watering arrangements very costly. The Locomotive Superintendent considers that the expense could be reduced by sinking a well in the Cooum bed and laying down about two miles of piping. No suitable water has yet been found nearer to the station, and I fear that unless the length of piping can be shortened, the Locomotive Superintendent's scheme will prove just as costly as the present arrangements. At Tanjore it is proposed to do away with the tank house which is low, and substitute cast iron tanks on rail columns. Nothing permanent should be erected until the re-arrangement of the station is determined on. At Trichinopoly the sinking of the well in the bed of the Kodamurti has been stopped owing to the works being submerged for the last two months. If the joint water-supply scheme at Trichinopoly is vigorously prosecuted, there may be no need to spend any further money on this well. At Koilpati the steam pump is fixed and working, but the additional tank house has not yet been started. At Kadambur the new well which is nearly a mile from the station is almost finished, only three feet of sinking remaining to be done, one water column is erected, and another will in all probability be required. At Tatapárai a well near the north points seems to offer every prospect of proving a source of an abundant and good supply of water. Should this prove the case, it may be worth while laying pipes the nine miles into Tuticorin, as the present service of water trucks could then be dispensed with. At Vellore a fresh well is being sunk near just inside the station boundary near the Municipal tank, which offers every prospect of success. The Municipality, I understand, are objecting to this well on the score of its draining the tank and at first sight there would appear grounds for this contention. The water level in the well is below that of the tank, and as water was not met with until the well had been sunk a considerable depth, it is not improbable that an independent spring has been tapped. At Kátpádi the Locomotive Superintendent desires to have a separate supply from that of the Madras Railway, and proposes to take over the well and old tank house of that company. This scheme seems to be dependent on whether any modification in the joint station working agreement will be agreed to, as under present arrangements the proposal would lead to increased expenditure. At Mangalampeta and Pflér the watering arrangements are nearly completed. The tank house at Váyalpád is still unfinished and watering is effected with temporary arrangements. The new well has been started and promises to be a success.

61. *Signals.*—The existing signals are in good working order, and home signals are being erected throughout the line. At Panruti the south distant signal is somewhat obscured by cocoanut palms, and the north distant signal at Vikravándi requires a stop.

62. *New stations.*—A new station has been asked for between Manapárai and South Kolatúr. The distance between these stations is 11 miles, but as the country is said to be sparsely populated, the proposal is not regarded favorably by the Agent. An application for a station at Savadipoliam, mileage 330/3, half-way between Pásur and Erode, is worthy of consideration. It breaks up a long run and appears to offer a chance of attracting a fair amount of traffic. The site selected is suitable, but would run into money with a long through siding. A deputation met the inspection train at Darasaram, mileage 196/11, to petition for a station at this spot. As the site selected is only three miles from Kumbakónam and two miles from Sundaraperumal-koil, the proposed station would only tap the traffic now dealt with at these places.

63. **Workshops.**—The Locomotive Workshops at Negapatam, despite the recent extensions, seem none too large for the increased length of the South Indian Railway system. The Locomotive Superintendent explained that the new additions were only what were asked for prior to the Villupuram-Guntakal line being taken over by the Company. There seems to be difficulty in acquiring land at a reasonable cost, and until this matter is satisfactorily disposed of, the question of further extension of the shops must lie over. The Locomotive Superintendent asks for a third line in the repair lines shed, and I think the request should be granted. There is no machine in the shops for testing rolling stock springs. I consider it most necessary that a hydraulic testing apparatus should be procured and brought into operation as soon as possible.

64. The Engineering Workshops at Trichinopoly appear to be well managed, but are manifestly unable to cope with the enormous amount of petty work, especially blacksmith's, which they are now called on to do. This appears to be due to over-centralization, and the attempt to make everything, however small, at Trichinopoly and not to any fault in the conduct of the shops themselves. In my opinion a good deal of petty district work is undertaken which would be executed more expeditiously and, probably in some cases, more cheaply by the Resident Engineers themselves. So long as the South Indian Railway system was small, these central shops worked admirably, but now that the mileage of the railway is so largely increased they are often a source of considerable delay to the completion of work at distant stations. As an example of this delay, I would instance the case of a rail roof over a pump house on the Villupuram-Guntakal line, which has been retarded some months, simply because the Resident Engineer might not bend the necessary rails, but had to wait until the Trichinopoly shops could do this very simple job. This question was discussed with the Chief Engineer, who, I understand, is prepared to allow Resident Engineers more liberty in undertaking small works.

65. **Rolling-stock.**—The engines as usual are beautifully maintained and could not possibly be better kept up. This, however, is unfortunately far from being the case with the passenger stock, which especially, as regards the upper class, is generally shabby, dilapidated, and in bad running order. The condition of the carriage stock is the main cause of the unpopularity of the railway, and undoubtedly has a prejudicial effect on passenger traffic. Paucity of stock is, I am aware, one of the reasons why these vehicles have run down, and the Locomotive department have been practically powerless in the matter, as carriages could not be spared from running sufficiently long or frequently to permit of their being properly overhauled. Every effort is now being made to improve the condition of the stock, and as 100 bogie carriages are under indent from home, the bodies of which are to be built to the cross section approved at the last committee of Locomotive Superintendents, there will shortly be some really good carriages on the line. The bad running of the passenger stock is, I believe, due principally to three causes — the softness of the brasses, unequal strength of the springs, and to want of proper out-door supervision. The brasses now used have been melted and remelted until their composition may be anything, some are probably too hard, while others, and these seem to form the majority, are so soft that they wear out rapidly. The Locomotive Superintendent informed me that he was importing new material of a harder nature for the bearings of fast running stock. Without any means of testing springs, it is only to be expected that their strength should be irregular, and that they should be a source of oscillation. The dimensions, fittings and arrangement of the bath-rooms of the old stock are very inconvenient, but this matter is receiving the attention of the Locomotive Superintendent, who is about to introduce several improvements which should minimize the present discomfort. I would

suggest that the handles, hand rails, &c., of second and third class carriages be made of iron; the present practice of using brass for these fittings is unnecessary and wasteful.

66. *Spark arrestors.*—Several fires having lately been attributed to the imperfect action of the spark arrestors on the wood-burning engines, the Locomotive Superintendent was good enough to show me the designs of the two types now in use. The older pattern consists of a simple iron grating of V shaped bars, the newer of cross grating. The latter appears to me to be the more efficient obstacle to the passage of sparks. To prevent fires between the roofs of carriages it is proposed to cover in the terminal space between the double roof with wire netting of small mesh. This will, in addition to hindering the entrance of sparks, prevent squirrels from building nests of easily inflammable material between the roofs, but arrangements should be made to enable the enclosed space to be cleaned when necessary.

67. *Catch-sidings.*—It has been proposed to construct catch-sidings at some of the stations on the Pákala-Guntakal section in consequence of the proximity to the outside points of long and severe gradients. As the traffic for years to come will be probably be very light and the features of the ground entail considerable expense in making the sidings, it was proposed to run a small dead end line from the points. This will certainly meet all requirements and is preferable to expending nearly Rs. 5,000 at a station like Kurabalakota where a truck will hardly ever be standing on the sidings.

68. *Staff quarters.*—It was suggested that, instead of acquiring land on which to build staff quarters at Egmore, five bungalows in the Male Asylum road should be acquired. The owners of these houses have some years back, I believe, petitioned that the bungalows should be bought by the Company as the close proximity of the railway caused discomfort to the occupiers. The houses are certainly conveniently situated for Railway employés, but may prove expensive to acquire as they possess a good deal of stabling and other outside accommodation. Before any action can be taken in the matter the relative merits of, and expenditure involved in, carrying out the two schemes must be fully investigated.

69. *General.*—With a view to improving the condition of the rolling-stock I would suggest the introduction of the excellent practice obtaining on the Madras Railway of all stock being sent to the Locomotive Workshops for periodical examination. I am aware that this procedure entails the running of a certain amount of empty vehicle mileage, but the great advantages gained by not letting the stock run down outweighs in my opinion any drawbacks involved in the procedure.

MADRAS,
27th August 1892.

(Signed) A. D. G. SHELLEY, Captain, R.E.,
Dy. Consulting Engr. for Railways.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper :—

From the Consulting Engineer for Railways, dated Madras, 10th September 1892, No. 673.

REPORT on the Inspection of the South Indian Railway (including Villupuram-Gantakal State Railway) for the half-year ended 30th June 1892.

Submitted for the information of Government.

2. It is requested that 35 copies of the report, together with a similar number of copies of the orders of Government passed thereon, may be forwarded to the Government of India.

ORDER—dated 26th September 1892, No. 2313 R., Public Works.

The attention of the Agent is directed to paras. 7, 10, 20, 22, 26, 29, 34, 47, 55, 59, 60, 64, and 66.

2. Immediate steps should be taken to settle with the Harbour Trust Board the limits of the Railway land at the Beach station and the Consulting Engineer should satisfy himself, when the boundaries of the land are fixed to the satisfaction of the parties concerned, that proper boundary marks are erected. The neglect of the Railway authorities to demarcate this land has been productive of much correspondence and delay in providing a suitable station.

3. With regard to para. 64 Government is disposed to agree with the Deputy Consulting Engineer for Railways that over-centralization exists and that Resident Engineers are not allowed sufficient powers. There is no doubt delay in starting and completing sanctioned works.

4. In respect to paras. 65 and 69 Government regrets that the condition of the passenger vehicles is not what it should be and trusts that the Railway Administration will make every effort to improve the upkeep of this class of stock. The state of the springs and the inferiority in the quality of the brasses would appear to require attention. The introduction of a through system of periodical examination such as exists on the Madras Railway should be brought into force as soon as possible. As soon as all the new stock now under indent and construction has been turned out, there should be no difficulty in sparing each vehicle for examination in its proper turn.

(True Extract.)

(Signed) F. B. WALKER,
Offg. Joint Secy. to Govt., P.W.D.,
Railway Branch.

To the Consulting Engineer for Railways.
" Marine Department.

Exd. A. D. Xavier.
Spare Copies

RAILWAY.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated September, 26th.

Read. *Encl.*

G.O., 26th Sept. 1892, No. 2313 R.

SEPTEMBER.

South Indian Railway

Orders on the report on the inspection of the — (including Villupuram-Guntakal State Railway) for the half-year ended 30th June 1892.