

2729.

Govt. of Madras

PUBLIC WORKS.

Dated

24/3

Recd.

Encl.

G.O. 22 March 1890 No. 409R.

Inspection of the
M. Ry.

Passing orders on
report ~~of~~ ^{on} for the
half year ended
the 31st December 1889.

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22/3

25/3

A Form No. 3.

10 409 R 22nd March 1890.

His
Honour

The Agent's attention

will be drawn to para 6 clauses
2, 8, 9 and 10, para 7 clauses
2 and 4 and para 10 clause
1.

18/3/90

for R

From

THE CONSULTING ENGINEER

FOR RAILWAYS,

MADRAS,

No. 192

Dated 15th

Received 17

March 1890.

No. of ENCLOSURES. 1

Subject.

Report on inspection of
the Madras Railway for
the half-year ended the
31st December 1889.

A

10 409 R 22nd March 1890.

To The Comg. Engr for Rys

R

PUBLIC WORKS DEPARTMENT.

OFFICE OF CONSULTING ENGINEER FOR RAILWAYS,

Madras, *15th March* 1890.

*Report on inspection of the
Madras Railway for the half
year ended 31st December 1889.*

No. *192*

SUBMITTED

for the orders of Government.

Sidney Smith

Major R.E.

for consulting Engrs for Rys.

*Wint
separately*

REPORT ON INSPECTION OF THE MADRAS RAILWAY

FOR THE

HALF-YEAR ENDED 31ST DECEMBER 1889.

THE inspection of the North-West Line was made between 20th and 24th January, and that of the South-West Line between 3rd and 8th February 1890, in company with the Chief Engineer of the Railway.

2. **Earthwork.**—The banks and cuttings were in good order, and evinced careful maintenance. The banks, which run through black cotton soil, show signs of cracking in places, and require constant supervision; the running on these portions was not so smooth as on other parts of the line.

(1) At 271/17 and 18, South-West Line, the bank had been slightly eroded in two places by a small stream which runs parallel to the line. These will be repaired, and steps will be taken to prevent its recurrence.

(2) The stone pitching in the Ambatūr tank, mile 10, and protective works at 201-13 to 207-7 were completed during the half-year.

(3) Water banks up against the line to rail level in the 228th mile, North-West Line; a scheme will be submitted for opening out existing bridges and constructing a relieving channel.

3. **Bridges.**—The bridges inspected were in good order.

(1) At mile 2-8 materials were being collected to rebuild a 9-foot girder bridge, the existing one having shown signs of failure.

(2) At mile 210-17, North-West Line, a diversion has been put in, in order that the girders of a two 34-foot bridge may be removed to similar openings on the new approach to the Chitrāvati bridge.

(3) The new Chitrāvati bridge has made good progress, and is complete with the exception of two spans, which have been delayed by the great difficulty found in sinking No. 11 pier through a stratum of large boulders. It is expected that the bridge will be ready for inspection early in March.

(4) The new Pennér bridge was opened for traffic on 1st October 1889, a fortnight after which the old one was partially destroyed by a very heavy flood in the river. The 30-foot opening at the south end of the bridge is to be utilized half as a public road and half as an irrigation channel; these works are in progress. The bank near the north end of the bridge on the up-stream side is being lowered in order to open out the two land spans.

(5) The bridge of four 64-foot spans at 258-10, North-West Line, which was severely damaged by the flood of 16th October 1889, was temporarily repaired, and trains now run over it at a speed of 4 miles an hour. The fallen pier and abutment are to be rebuilt at once, but as it is not possible to rebuild them on the old sites on account of the sunken debris, an additional pier, and girder 35 feet in length, will be inserted in the centre of the bridge. The repairs to this bridge will necessitate a diversion through the bed of the river.

(6) The relaying of the new permanent-way over the Tungabhadra bridge, which consists of rolled cross girders and longitudinal timbers to which are bolted flat-bottomed steel rails, has commenced, but as this work has to be done without interrupting traffic, it will take some time to complete. The rail level of the new permanent-way will be 9 inches higher than that of the old.

(7) The up-stream flooring of the Poiney bridge at 71-3, South-West Line, requires some slight repairs.

(8) The girders of the Thootha bridge, twelve 62-feet openings at 373-17, South-West Line, are to be renewed with those set free from the old Pennér bridge, as the present girders are found to be too light for the engines now in use.

(9) The barrel drain which has been inserted in the culvert at 407-21, South-West Line, will be extended to the end of the present wing walls, which will then be removed.

4. **Permanent-way.**—The permanent-way is thoroughly well maintained, but the rails in many places, though still serviceable, are beginning to show signs of wear, and on the iron portion of the road the joints are becoming very marked.

(1) Grover's washers for securing fish-bolts have been inserted as an experiment in 5 miles of line, and are giving satisfaction.

(2) The heavy fish-plates originally laid in the Pálghat branch, and some pots of a heavier type, have been put in the main line between Madras and Arkónam for about 500 yards, and also in the 211th mile, South-West Line, but the lengths were too short to judge whether there was any marked improvement.

(3) The lengthening of the through sidings has made good progress. Those at the following stations were extended during the half-year ending 31st December 1889:—

At Nagari	to 1,350 feet.	At Coimbatore	to 1,250 feet.
„ Peddapád	to 1,450 „	„ Kanyikód	to 1,450 „
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„ Tiruvallam	to 1,650 „	„ Kuttipuram	to 1,450 „
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(4) At *Kolar road* extra lay-byes have been added and the main line and sidings altered and rearranged.

(5) At *Tirutani* the lay-bye has been converted into a through siding, and that at *Yerraguntla* extended; a new one has been laid in at *Kamasamudram*, and two lay-byes and a cross-over road have been laid down in the stores yard at *Ráyapuram*.

(6) At *Virinjipuram* station, South-West Line, the through siding was stated to be upwards of 2,000 feet in length; as this appears to be unnecessarily long, it is suggested that it should be reduced to the maximum length of siding approved for this section of the line, viz., 1,650 feet.

(7) The new schemes for the rearrangement and improvements of the sidings in the station yards at *Cuddapah* and *Jalárpét* are in progress.

(8) Rough running was noticed in the 280th, 285th, 289th and 342nd miles, North-West Line, and in the 155th, 156th, 294th, 343rd, 354th and 384th miles, South-West Line, and also on those portions of line between Madras and Arkónam laid with iron rails.

5. **Ballast and Fencing.**—The line is fully ballasted throughout, though in some parts the sand is so very fine that the interior of the carriages becomes covered with a thick layer of it. It would be a great boon if this sand could be screened, provided it could be done at a small cost before being laid in the line as ballast.

(1) The fencing is as a rule effective, but in some parts, where stone-wall fencing is used, it requires repair; in certain places the aloe fencing does not thrive well, and requires attention.

6. **Station Yards and Buildings.**—At *Bangalore* the alterations to the station, involving a new arrival platform, &c., are in hand, and the foundations for the extension of the bridge on the west side of the station are being excavated.

(1) Pandals are being added to certain bungalows at *Rénigunta*, *Cuddapah* and *Gooty*, and at the last named station an additional verandah to the Assistant Traffic Manager's bungalow is in progress.

(2) At *Mettupálaiyam* a refreshment-room would be very advantageous to the public and probably remunerative to the Company. It could be easily arranged by taking down the partition wall between the gentlemen's and the second-class waiting rooms and converting these into a refreshment-room; a gentlemen's lavatory could then be constructed.

(3) The following stations have been made permanent, and the station buildings, platforms, &c., completed during the half-year:—

Sevvápet.	Krishnapuram.
Siddhavattam.	Tyakal.

(4) Quarters for the staff have made good progress, and the following have been completed:—

Double Stationmaster's house at *Rajampet*.

Staff quarters for officers at *Gooty*.

Native Police hut at *Aspari*.

Stationmaster's house and three porters' huts at *Kosgi* and *Matmari*.

Three quarters for Eurasian and eight for Native clerks at *Raichur*, and stationmasters' houses at *Kolar road* (European), *Kagankarai*, *Nancherla* and *Pudi*. At *Samalpatti* the tank has been raised by putting an iron cistern on top of the old masonry one.

(5) A wall enclosure with tablet has been built to mark the spot where the Sappers were buried who were killed in the accident near *Chinnammápet* on 31st October 1879.

(6) The platforms at the following stations have been lengthened during the half-year:—

Tirutáni	to 600 feet.	Tiruvallam	to 600 feet.
Nagari	to 500 „	Vániyambádi	to 600 „
Peddapád	to 400 „	Aryanur	to 500 „
Ráyalcheru	to 500 „	Ottapálam	to 600 „

(7) At *Perambúr Works* the over-bridge for workmen at the west end is completed and opened for traffic; that at the east end of the station for passengers is also finished, but will not be opened until the new waiting-shed on the south platform is ready. Materials for the shed on the north platform are being collected. The new tiffin-room is nearly finished, but the site selected is unavoidably rather far from the works.

(8) At *Orampád* and *Peddapád* verandahs in front of the station-houses would be an improvement, as they are completely unprotected from the afternoon sun.

(9) New station arrangements are in progress at *Ráyalcheru*, *Vanganur*, *Ulli* and *Sómanúr*. At *Timmancherla* it was stated that the arrangements, settled at the joint meeting with the Southern Mahratta Railway Company, have not yet been confirmed, so that nothing has been done there as yet in the way of taking up the now disused sidings, turn-table, &c.

(10) The trial station at *Mallagavalli*, North-West Line, is only just paying its expenses; it seems unnecessary for the mails to stop here.

(11) A sun-shade over the arch-way at the top of the staircase of the Locomotive Foreman's bungalow, now under construction, at *Gooty*, and a small cheaply constructed latrine to replace the temporary one used by the Eurasian staff occupying the salt godown at *Raichur*, were asked for by the Chief Engineer, and approved.

7. **Station Machinery.**—The home signal at *Rénigunta* has been raised 6 feet to give a better view of the lamps.

(1) All distant signals have been swallow-tailed to distinguish them from home signals. At *Salem* the west distant signal is not easy to see on account of trees in the background.

(2) The electric starting signals appear to be acting well; the only failure noticed was the one at *Bangalore City* which failed to come up to danger after the train had passed. These signals have now been erected at *Ferók* and *Kadalundi*, but are not yet working. At *Kadgodí* the east starting semaphore seems to be too far from the platform.

(3) At *Mangalam* a crane has been erected, and at *Salem* one is in progress.

(4) All points inspected appeared to be in good order. Stoney's points would be advantageous at *Mámandur*, the yard being on a gradient.

(5) The Chief Engineer is making experiments at the Engineering Workshops with a view to the grouping of points in the larger station yards.

8. **Telegraph.**—The telegraph posts throughout the line are being renumbered with double numbers placed at an angle, so that they can be more easily read from passing trains.

9. **Watering arrangements.**—An auxiliary well (Thocock's) near *Rénigunta* is in progress, but further work is at present postponed until the hot weather, when the water will be lower.

(1) A permanent auxiliary well and tank-house are being constructed at the north end of the new Chitravati bridge.

(2) A portion of the large well at *Raichur* having fallen in, a retaining wall with buttresses is being added; water is reported to be very scarce here.

(3) At *Bangalore* a new well is in progress, which, it is hoped, will improve the present limited supply at that station.

10. **Sanitation.**—The sanitation of the line is very well attended to; all latrines inspected were clean, and great improvement in many of the compounds was noticed. Trees have been planted of late in several of them, and are coming on well.

(1) The drain from the porter's lines at *Arkónam* wants rectifying badly, and should be attended to at once.

(2) Most of the open surface drains from the engine pits, &c., in the large stationyards are gradually being stone-lined, which will be an improvement both in appearance and from a sanitary point of view.

(3) New latrines have been erected at *Krishnarajapuram* and *Salem*, but one is still required at *Munnal*, *Perundurai*, and especially at *Woshermanpet*.

11. **Schools.**—The construction of the new school-house at *Perambúr* is in progress. The number of pupils at all stations where there are schools is generally increasing, except at *Arkónam* where the school has been discontinued for want of sufficient candidates to obtain a grant-in-aid.

(1) The school-house at *Raichur* having been condemned by the Inspector of Schools on account of insufficient space, it is proposed to convert two rooms into one by means of an arch, and to add one more room, which it is stated will satisfy requirements.

12. The following works completed during the half-year were inspected, and may now be struck out of the schedule of estimates sanctioned up to 31st December 1889:—

Register number.	Authority and Date.	Description of Work.	AMOUNT OF ESTIMATE.		
			Capital.	Revenue.	Total.
8	C.E. No. 437, dated 13th June 1888.	Platform at Connur station	rs. 4,970	rs. 82	rs. 5,052
10	G.O., No. 741 R., dated 8th September 1888.	Foot-bridge at the west end of Perambúr Works.	7,038	22	7,060
11	C.E. No. 746, dated 21st September 1888.	Pointsmen's huts at Matmari station ..	..	1,115	1,115
12	C.E. No. 747, dated 21st September 1888.	Do. at Kósgí station	..	1,112	1,112
14	C.E. No. 756, dated 22nd September 1888.	Station-house, &c., at Tyakal station ..	4,632	..	4,632
15	C.E. No. 764, dated 24th September 1888.	Proposed pointsmen's huts at Tungabhadra.	..	1,114	1,114
17	C.E. No. 771 A, dated 24th September 1888.	Pointsmen's huts at Aspari station ..	..	1,107	1,107
19	C.E. No. 800, dated 4th October 1888.	Stationmaster's house at Matmari ..	..	1,086	1,086
22	C.E. No. 813, dated 6th October 1888.	Do. at Nancherla	..	1,146	1,146
24	C.E. No. 815, dated 6th October 1888.	A double house for the Stationmaster at Kósgí.	..	1,805	1,805
25	G.O., No. 782 R., dated 25th September 1888.	Staff quarters at Gooty	6,085	110	6,195
26	C.E. No. 19, dated 9th January 1889.	Protective works considered emergent at 201-12 to 203-11 miles, North-west line.	2,905	4,916	7,821
29	C.E. No. 37, dated 14th January 1889.	Single house for Stationmaster at Kagan-karai, South-west line.	..	1,013	1,013
30	C.E. No. 38, dated 14th January 1889.	Single house for the Assistant Stationmaster at Pódi, North-west line.	..	1,175	1,175
31	C.E. No. 39, dated 14th January 1889.	Extension of platform at Tiruvallam, South-west line.	..	1,318	1,318
32	G.O., No. 71 R., dated 22nd January 1889.	Alterations and additions to sidings at Kolar road, Bangalore branch.	9,483	205	9,688

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36	C.E. No. 152, dated 18th February 1889.	Converting station-house into goods shed and goods shed into station-house at Tirútr.	rs. ..	rs. 1,280	rs. 1,280
38	G.O., No. 218 R., dated 26th February 1889.	Overbridge at the east end of Perambúr ..	5,422	..	5,422
39	C.E. No. 212, dated 9th March 1889.	Substituting a derrick for a lay-bye at Mangalam station.	..	1,786	1,786
41	C.E. No. 321, dated 9th April 1889.	Enlarging and deepening locomotive well No. 2 at Salem.	2,125	422	2,547
42	G.O., No. 379 R., dated 16th April 1889.	Station-house, &c., at Krishnapuram station.	5,876	11	5,887
44	G.O., No. 464 R., dated 26th April 1889.	Thirty-ton weigh-bridge and siding at Bangalore pettah.	6,499	..	6,499
46	G.O., No. 527 R., dated 10th May 1889.	Thirty-ton weigh-bridge and siding at Guntakal junction.	6,583	..	6,583
48	G.O., No. 559 R., dated 17th May 1889.	Crane lines, &c., in the General Stores yard at Rayapuram.	5,223	..	5,223
49	G.O., No. 560 R., dated 17th May 1889.	Alteration of the main line and additional siding at Kólar road.	9,785	200	9,985
51	G.O., No. 588 R., dated 22nd May 1889.	Extension of platform and through siding at Otupálam.	3,581	44	3,625
52	C.E. No. 484, dated 3rd June 1889.	Five-ton crane at Rénigunta	2,935	..	2,935
53	C.E. No. 488, dated 6th June 1889.	Stationmaster's bungalow at Kolar road ..	3,127	..	3,127
54	G.O., No. 639 R., dated 5th June 1889.	Extension of through siding at Kanyikód.	3,174	33	3,207
55	C.E. No. 493, dated 7th June 1889.	Extension of platform and through siding at Vániyambádi.	4,021	835	4,856
56	G.O., No. 642 R., dated 6th June 1889.	Additional siding accommodation required at Kámasamudram.	6,525	63	6,588
58	C.E. No. 515, dated 17th June 1889.	Extension of platform and through siding at Peddapád.	4,823	33	4,856
59	C.E. No. 516, dated 17th June 1889.	Extension of through siding at Tiruvallam.	2,875	16	2,891
61	G.O., No. 684 R., dated 18th June 1889.	Extension of platform and through siding at Kuttipuram.	5,149	154	5,303
62	C.E. No. 572, dated 8th July 1889.	Extension of platform and through siding at Tirutani.	..	869	869
63	Do. do.	Goods shed siding at Tirutani	..	1,381	1,381
64	C.E. No. 593, dated 13th July 1889.	Platform at Aryanur station	2,733	..	2,733
65	C.E. No. 594, dated 13th July 1889.	Extension of goods shed lay-bye at Yerraguntla.	2,412	..	2,412
70	C.E., No. 659, dated 12th August 1889.	Extension of the goods godown and loading bank at Sankaridrug.	2,498	..	2,498
71	C.E., No. 660, dated 12th August 1889.	Reconstruction of the single 9 feet opening at 2/8 miles, South-west line.	..	2,441	2,441
73	C.E. No. 662, dated 12th August 1889.	Extension of the goods-shed at Erode station.	3,686	22	3,708
74	C.E. No. 663, dated 12th August 1889.	Raising the pitching of the Ambatúr tank from 10/6 to 10/13 and 10/20 to 11/8 miles.	3,267	..	3,267
86	C.E., No. 953, dated 13th November 1889.	Extension of through siding at Coimbatore.	2,122	144	2,266
87	C.E. No. 958, dated 14th November 1889.	Extension of through siding at Gudiyátam.	2,059	62	2,121

MADRAS,
4th March 1890.

(Signed) SIDNEY SMITH, Major, R.E.,
Deputy Consulting Engineer for Railways.

RAILWAY.

Govt. of {1890} Madras.

PUBLIC WORKS.

P. W. Inc. 1
2729/90

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15/3/90

Dated March, 22nd.

Recd.

Encl.

G.O., 22nd Mar. 1890, No. 409 R.

MARCH.

Inspection of the Madras
Railway

Passing orders on report on — for the
half-year ended the 31st December 1889.

FORM No. 1.
22ND MARCH 1890, No. 409 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper:—

From the Consulting Engineer for Railways, dated Madras, 15th March 1890, No. 192.
Report on inspection of the Madras Railway for the half-year ended 31st December 1889.

Submitted for the orders of Government.

ORDER—dated 22nd March 1890, No. 409 R., Public Works.

The Agent's attention will be drawn to para. 6, clauses 2, 8, 9 and 10; para. 7, clauses 2 and 4; and para. 10, clause 1.

(True Extract.)

Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Railway Branch.

To the Consulting Engineer for Railways.

Exd. J. Moses.
Spare Copies

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Siddhavattam.	Tyakal.

(4) Quarters for the staff have made good progress, and the following have been completed:—

Double Stationmaster's house at Rajampet.
Staff quarters for officers at Gooty.
Native Police hut at Aspari.

Stationmaster's house and three porters' huts at Kosgi and Matmari.
Three quarters for Eurasian and eight for Native clerks at Raichur, and stationmasters' houses at Kolar road (European), Kagankarai, Nancherla and Pudi. At Samalpatti the tank has been raised by putting an iron cistern on top of the old masonry one.

(5) A wall enclosure with tablet has been built to mark the spot where the Sappers were buried who were killed in the accident near Chinnammápet on 31st October 1879.

(6) The platforms at the following stations have been lengthened during the half-year:—

Tirutáni	to 600 feet.	Tiruvallam	to 600 feet.
Nagari	to 500 "	Vániyambádi	to 600 "
Peddapád	to 400 "	Aryanur	to 500 "
Ráyalcheru	to 500 "	Ottapálam	to 600 "

(7) At Perambúr Works the over-bridge for workmen at the west end is completed and opened for traffic; that at the east end of the station for passengers is also finished, but will not be opened until the new waiting-shed on the south platform is ready. Materials for the shed on the north platform are being collected. The new tiffin-room is nearly finished, but the site selected is unavoidably rather far from the works.

(8) At Orampád and Peddapád verandahs in front of the station-houses would be an improvement, as they are completely unprotected from the afternoon sun.

(9) New station arrangements are in progress at Ráyalcheru, Vanganur, Ulli and Sómanúr. At Timmancherla it was stated that the arrangements, settled at the joint meeting with the Southern Mahratta Railway Company, have not yet been confirmed, so that nothing has been done there as yet in the way of taking up the now disused sidings, turn-table, &c.

(10) The trial station at Mallagavalli, North-West Line, is only just paying its expenses; it seems unnecessary for the mails to stop here.

(11) A sun-shade over the arch-way at the top of the staircase of the Locomotive Foreman's bungalow, now under construction, at Gooty, and a small cheaply constructed latrine to replace the temporary one used by the Eurasian staff occupying the salt godown at Raichur, were asked for by the Chief Engineer, and approved.

7. **Station Machinery.**—The home signal at Rénigunta has been raised 6 feet to give a better view of the lamps.

(1) All distant signals have been swallow-tailed to distinguish them from home signals. At Salem the west distant signal is not easy to see on account of trees in the background.

(2) The electric starting signals appear to be acting well; the only failure noticed was the one at Bangalore City which failed to come up to danger after the train had passed. These signals have now been erected at Ferók and Kadalundi, but are not yet working. At Kadgodí the east starting semaphore seems to be too far from the platform.

(3) At Mangalam a crane has been erected, and at Salem one is in progress.
(4) All points inspected appeared to be in good order. Stoney's points would be advantageous at Mámampur, the yard being on a gradient.

(5) The Chief Engineer is making experiments at the Engineering Workshops with a view to the grouping of points in the larger station yards.

8. **Telegraph.**—The telegraph posts throughout the line are being renumbered with double numbers placed at an angle, so that they can be more easily read from passing trains.

9. **Watering arrangements.**—An auxiliary well (Thocock's) near *Rénigunta* is in progress, but further work is at present postponed until the hot weather, when the water will be lower.

(1) A permanent auxiliary well and tank-house are being constructed at the north end of the new Chitravati bridge.

(2) A portion of the large well at *Raichur* having fallen in, a retaining wall with buttresses is being added; water is reported to be very scarce here.

(3) At *Bangalore* a new well is in progress, which, it is hoped, will improve the present limited supply at that station.

10. **Sanitation.**—The sanitation of the line is very well attended to; all latrines inspected were clean, and great improvement in many of the compounds was noticed. Trees have been planted of late in several of them, and are coming on well.

(1) The drain from the porter's lines at *Arkónam* wants rectifying badly, and should be attended to at once.

(2) Most of the open surface drains from the engine pits, &c., in the large stationyards are gradually being stone-lined, which will be an improvement both in appearance and from a sanitary point of view.

(3) New latrines have been erected at *Krishnarajapuram* and *Salem*, but one is still required at *Munnal*, *Perundurai*, and especially at *Woshermanpet*.

11. **Schools.**—The construction of the new school-house at *Perambúr* is in progress. The number of pupils at all stations where there are schools is generally increasing, except at *Arkónam* where the school has been discontinued for want of sufficient candidates to obtain a grant-in-aid.

(1) The school-house at *Raichur* having been condemned by the Inspector of Schools on account of insufficient space, it is proposed to convert two rooms into one by means of an arch, and to add one more room, which it is stated will satisfy requirements.

12. The following works completed during the half-year were inspected, and may now be struck out of the schedule of estimates sanctioned up to 31st December 1889:—

Register number.	Authority and Date.	Description of Work.	AMOUNT OF ESTIMATE.		
			Capital.	Revenue.	Total.
8	C.E. No. 437, dated 13th June 1888.	Platform at Connur station	RS. 4,970	RS. 82	RS. 5,052
10	G.O., No. 741 R., dated 8th September 1888.	Foot-bridge at the west end of Perambúr Works.	7,038	22	7,060
11	C.E. No. 746, dated 21st September 1888.	Pointsmen's huts at Matmari station ..	..	1,115	1,115
12	C.E. No. 747, dated 21st September 1888.	Do. at Kósgí station	..	1,112	1,112
14	C.E. No. 756, dated 22nd September 1888.	Station-house, &c., at Tyakal station ..	4,632	..	4,632
15	C.E. No. 764, dated 24th September 1888.	Proposed pointsmen's huts at Tunga-bhadra.	..	1,114	1,114
17	C.E. No. 771 A, dated 24th September 1888.	Pointsmen's huts at Aspari station ..	..	1,107	1,107
19	C.E. No. 800, dated 4th October 1888.	Stationmaster's house at Matmari ..	..	1,086	1,086
22	C.E. No. 813, dated 6th October 1888.	Do. at Nancherla	..	1,146	1,146
24	C.E. No. 815, dated 6th October 1888.	A double house for the Stationmaster at Kósgí.	..	1,805	1,805
25	G.O., No. 782 R., dated 25th September 1888.	Staff quarters at Gooty	6,085	110	6,195
26	C.E. No. 19, dated 9th January 1889.	Protective works considered emergent at 201-12 to 203-11 miles, North-west line.	2,905	4,916	7,821
29	C.E. No. 37, dated 14th January 1889.	Single house for Stationmaster at Kagan-kurai, South-west line.	..	1,013	1,013
30	C.E. No. 38, dated 14th January 1889.	Single house for the Assistant Stationmaster at Púdi, North-west line.	..	1,175	1,175
31	C.E. No. 39, dated 14th January 1889.	Extension of platform at Tiruvallam, South-west line.	..	1,318	1,318
32	G.O., No. 71 R., dated 22nd January 1889.	Alterations and additions to sidings at Kolar road, Bangalore branch.	9,483	205	9,688

Register number.	Authority and Date.	Description of Work.	AMOUNT OF ESTIMATE.		
			Capital.	Revenue.	Total.
36	C.E. No. 152, dated 18th February 1889.	Converting station-house into goods shed and goods shed into station-house at Tirú.	RS. ..	RS. 1,280	RS. 1,280
38	G.O., No. 218 R., dated 26th February 1889.	Overbridge at the east end of Perambúr ..	5,422	..	5,422
39	C.E. No. 212, dated 9th March 1889.	Substituting a derrick for a lay-bye at Mangalam station.	..	1,786	1,786
41	C.E. No. 321, dated 9th April 1889.	Enlarging and deepening locomotive well No. 2 at Salem.	2,125	422	2,547
42	G.O., No. 379 R., dated 16th April 1889.	Station-house, &c., at Krishnapuram station.	5,876	11	5,887
44	G.O., No. 464 R., dated 26th April 1889.	Thirty-ton weigh-bridge and siding at Bangalore pettah.	6,499	..	6,499
46	G.O., No. 527 R., dated 10th May 1889.	Thirty-ton weigh-bridge and siding at Guntakal junction.	6,583	..	6,583
48	G.O., No. 559 R., dated 17th May 1889.	Crane lines, &c., in the General Stores yard at Ráyapuram.	5,223	..	5,223
49	G.O., No. 560 R., dated 17th May 1889.	Alteration of the main line and additional sidings at Kólar road.	9,785	200	9,985
51	G.O., No. 588 R., dated 22nd May 1889.	Extension of platform and through siding at Ottapálam.	3,581	44	3,625
52	C.E. No. 484, dated 3rd June 1889.	Five-ton crane at Rénigunta	2,935	..	2,935
53	C.E. No. 488, dated 6th June 1889.	Stationmaster's bungalow at Kolar road ..	3,127	..	3,127
54	G.O., No. 639 R., dated 5th June 1889.	Extension of through siding at Kanyikód.	3,174	33	3,207
55	C.E. No. 493, dated 7th June 1889.	Extension of platform and through siding at Vániyambádi.	4,021	835	4,856
56	G.O., No. 642 R., dated 6th June 1889.	Additional siding accommodation required at Kámasamudram.	6,525	63	6,588
58	C.E. No. 515, dated 17th June 1889.	Extension of platform and through siding at Peddapád.	4,823	33	4,856
59	C.E. No. 516, dated 17th June 1889.	Extension of through siding at Tiruvallam.	2,875	16	2,891
61	G.O., No. 684 R., dated 18th June 1889.	Extension of platform and through siding at Kuttipuram.	5,149	154	5,303
62	C.E. No. 572, dated 8th July 1889.	Extension of platform and through siding at Tirutani.	..	869	869
63	Do. do.	Goods shed siding at Tirutani	..	1,381	1,381
64	C.E. No. 593, dated 13th July 1889.	Platform at Aryanur station	2,733	..	2,733
65	C.E. No. 594, dated 13th July 1889.	Extension of goods shed lay-bye at Yerraguntla.	2,412	..	2,412
70	C.E., No. 659, dated 12th August 1889.	Extension of the goods godown and loading bank at Sankaridrug.	2,498	..	2,498
71	C.E., No. 660, dated 12th August 1889.	Reconstruction of the single 9 feet opening at 2/8 miles, South-west line.	..	2,441	2,441
73	C.E. No. 662, dated 12th August 1889.	Extension of the goods-shed at Erode station.	3,686	22	3,708
74	C.E. No. 663, dated 12th August 1889.	Raising the pitching of the Ambatúr tank from 10/6 to 10/13 and 10/20 to 11/8 miles.	3,267	..	3,267
86	C.E., No. 953, dated 13th November 1889.	Extension of through siding at Coimbatore.	2,122	144	2,266
87	C.E. No. 958, dated 14th November 1889.	Extension of through siding at Gudiyátam.	2,059	62	2,121

MADRAS,
4th March 1890.

(Signed) SIDNEY SMITH, Major, R.E.,
Deputy Consulting Engineer for Railways.