

Public Works (1893) Department.

RAILWAY BRANCH.

G.O., No. 846-7R

DATED 10th May

[Despatch Abstract.]

Bezwada Extension Railway. — The final issue of the Revenue revised & Budget estimates of the — and of the Bezwada-Godavari section of the East coast Railway for 1892-93 & 1893-94, ordered to be forwarded to the Govt of India.

Forwarding 35 printed copies of the final issue of the Revenue revised & Budget estimates of the — and of the Bezwada-Godavari section of the East coast Railway for 1892-93 and 1893-94.

[illegible][illegible]

AND

FOR THE YEAR

1893-94.

BUDGET Estimate of Revenue and Expenditure of the Bezwada Extension and Bezwada-Godavari section of the East Coast Railway for the year 1893-94.

Heads.	Actuals in 1891-92 (a).	Sanctioned estimate, 1892-93 (a).	* Revised estimate, 1892-93 (b).	* Budget estimate, 1893-94 (b).
	RS.	RS.	RS.	RS.
I. Receipts—				
Earnings of the line—				
Coaching traffic	23,830	25,000	24,300	1,12,000
Goods traffic	62,648	65,000	73,000	2,84,000
Electric telegraph earnings ...	807	700	500	2,700
Steam boat earnings	...	...	...	...
Sundries	82	300	200	1,300
Total, Earnings ...	87,367	91,000	98,000	4,00,000
Add decrease in balance ac- counts as per appendix A ...	...	...	...	...
Total, Receipts ...	87,367	91,000	98,000	4,00,000
II. Expenditure—				
Maintenance of way, works and stations (abstract A) ...	21,095	27,000	28,700	52,000
Locomotive expenses (abstract B)	13,016	12,000	15,300	64,000
Carriage and wagon expenses (abstract C)	2,974	3,000	4,000	24,000
Traffic expenses (abstract D). General charges (abstract E). Steam boat service (abstract F)	6,865 9,239 ...	8,000 9,000 ...	8,000 11,000 ...	40,000 60,000 ...
Special and miscellaneous ex- penditure (abstract G) ...	(a) 5,087	5,000	6,000	40,000
Add 5 per cent. of gross earnings for hire of rolling stock	...			
Total, outlay ...	58,276	64,000	73,000	2,80,000
Add increase to balance of suspense accounts as per appendix B	...	...	...	...
Add decrease to credit of "demands payable" ...	...	...	...	...
Total, Expenditure ...	58,276	64,000	73,000	2,80,000
III. Net cash receipts ...	29,091	27,000	25,000	1,20,000

(a) Figures for Bezwada Extension Railway only.
 (b) Figures for Bezwada Extension and Bezwada-Godavari section of East Coast Railway.
 * Sanctioned by the Government of India in their No. ³ B.O. A. B., dated 23rd March 1893.

MEMORANDUM.

Number of miles open for traffic on 1st April 1892	...	...	21·47
Expected to be open during 1892-93	...	...	90·00
Total on 1st April 1893	...	...	111·47
Expected to be open during 1893-94	...	...	N ⁷
Total likely to be open at end of 1893-94	...	...	111·47
Average number of miles expected to be open during the whole of 1893-94	...	...	111·47
Train miles expected to be run during 1893-94	...	...	104,000

ABSTRACT A.—Maintenance of Way, Works and Stations.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
I. Salaries, office expenses and general superintendence	RS.	RS.	RS.	RS.
II. Maintenance and renewals of perma- nent-way—Wages and materials ...		5,000	4,500	8,000
III. Repairs of bridges, &c.—Wages and materials		14,000	15,410	30,000
III-A. Conservancy of rivers		2,000	3,350	5,000
IV. Repairs of stations and buildings— Wages and materials	21,095	...	20	500
V. Maintenance by contract inclusive of materials		4,000	3,640	4,000
VI. New minor works		...	100	...
VII. Unclassified expenditure		...	...	500
Total ...	21,095	27,000	28,700	52,000

ABSTRACT B.—Locomotive Expenses.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
I. General superintendence	RS.	RS.	RS.	RS.
II. Running expenses (wages connected with the working of the Locomotive engines)				
III. Fuel				
IV. Water (including wages and stores) ...				
V. Oil, tallow and other stores (expended on engines in work)	13,016	12,000	15,300	64,000
VI. Maintenance and renewals of Locomo- tive engines and machinery				
VII. New minor works				
VIII. Payments to other lines				
IX. Unclassified expenditure				
Total ...	13,016	12,000	15,300	64,000

ABSTRACT C.—Carriage and Wagon Expenses.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
I. General superintendence	RS.	RS.	RS.	RS.
II. Repairs and renewals of vehicles and machinery—				
(a) Coaching vehicles				
(b) Goods vehicles	2,974	3,000	4,000	24,000
III. Cleaning carriages and wagons and oiling				
IV. New minor works				
V. Unclassified expenditure				
Total ...	2,974	3,000	4,000	24,000

ABSTRACT D.—Traffic Expenses.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
I. Salaries, wages, &c.—				
(a) General superintendence.				
(b) Station staff				
(c) Train staff				
II. Fuel, lighting, water and general stores	6,865	8,000	8,000	40,000
III. Clothing				
IV. Printing, stationery and tickets				
V. Charges for delivery and col- lection of goods, &c.				
VI. Miscellaneous expenses				
VII. Payments to other lines				
VIII. Unclassified expenditure				
Total ...	6,865	8,000	8,000	40,000

ABSTRACT E.—General Charges.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
	RS.	RS.	RS.	RS.
I. General administration— Direction (English charges)...				
II. Salaries of Indian Manage- ment—				
(a) Controlling office ...				
(b) Auditor's " ...				
(c) Accounts " ...				
(d) Paymaster's " ...				
(e) Store Department ...				
(f) Medical " ...				
(g) Miscellaneous ...				
III. Police ...				
IV. Advertising ...				
V. Electric Telegraph ...				
VI. Clearing account with other lines ...				
VII. Unclassified expenditure ...				
Total ...	9,239	9,000	11,000	60,000

ABSTRACT F.—Steam Boat Service—Nil.

ABSTRACT G.—Special and Miscellaneous Expenditure.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
	RS.	RS.	RS.	RS.
I. Law charges ...				
II. Compensation ...				
III. Rates and taxes ...				
IV. Payments to other lines ...				
V. Prizes for the best kept stations, station gardens, kitchen gardens, gate lodges, live fences, &c. ...				
VI. Contribution to Provident Fund ...				
VII. Miscellaneous ...				
Five per cent. of gross earnings for hire of rolling stock ...				
Total ...	5,087	5,000	6,000	40,000

APPENDIX A.—Details of unadjusted accounts under the head Earnings.

Particulars.	Balance at beginning of year.	Balance at close of year.	DIFFERENCE.	
			Increase.	Decrease.
	RS.	RS.	RS.	RS.
Actuals in 1891-92—				
Stations ...	...	...	...	...
Foreign railways, &c. ...	...	...	...	...
Total ...	...	...	...	...
Sanctioned estimate, 1892-93—				
Stations ...	...	...	...	...
Foreign railways, &c. ...	...	...	...	...
Total ...	...	...	...	...
Revised estimate, 1892-93—				
Stations ...	...	...	...	...
Foreign railways, &c. ...	...	...	...	...
Total ...	...	...	...	...
Budget estimate, 1893-94—				
Stations ...	...	...	...	...
Foreign railways, &c. ...	...	...	...	...
Total ...	...	...	...	...

APPENDIX B.—Detail of suspense account under the head Expenditure.

Particulars.	Balance at beginning of year.	Balance at close of year.	DIFFERENCE.	
			Increase.	Decrease.
	RS.	RS.	RS.	RS.
Actuals in 1891-92—				
Stores ...	...	...	...	...
Suspense other than deposits and fines ...	...	...	...	...
Total ...	...	...	...	...
Sanctioned estimate, 1892-93—				
Stores ...	...	...	...	...
Suspense other than deposits and fines ...	...	...	...	...
Total ...	...	...	...	...
Revised estimate, 1892-93—				
Stores ...	...	...	...	...
Suspense other than deposits and fines ...	...	...	...	...
Total ...	...	...	...	...
Budget estimate, 1893-94—				
Stores as per detailed statement accom- panying ...	...	...	...	...
Suspense other than deposits and fines ...	...	...	...	...
Total ...	...	...	...	...

DETAILED statement of expenditure on stores for the year 1892-93.

Details.	ACTUAL PURCHASES DURING 1891-92.		SANCTIONED PURCHASES DURING 1892-93.		ESTIMATED PURCHASES DURING 1893-94.	
	Quantity.	Amount.	Quantity.	Amount.	Quantity.	Amount.
<i>In India.</i>	RS.	RS.	RS.	RS.	RS.	RS.
Sleepers	...	...	...	...	...	...
Coal	...	...	...	...	...	...
Oil	...	...	...	...	...	...
&c.	...	...	...	...	...	...
&c.	...	...	...	...	...	...
(Petty items to be lumped together.)						
Total	...	...	...	...	...	...
<i>In England.</i>						
(Petty items to be lumped together.)						
Grand Total	...	...	...	...	...	...

REMARKS.—Stores are kept in capital suspense and their value charged off to Revenue as issued.

MEMORANDUM.

Actual balance of stores in hand on 1st April 1892	...	...	RS.
Estimated purchases during 1892-93	...	...	...
		Total	...
Estimated issues during 1892-93	...	...	...
Estimated balance on 1st April 1893	...	...	...
Estimated purchases during 1893-94	...	...	...
		Total	...
Estimated issues during 1893-94	...	...	...
Estimated balance on 1st April 1894	...	...	...

SECUNDERABAD,
15th March 1893.(Signed) W. PENDLEBURY,
Agent and Manager.

10TH MAY 1893, No. 846 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper :—

Endorsement from the Consulting Engineer for Railways, dated 5th May 1893, No. 208.

ORDER—dated 10th May 1893, No. 846 R., Public Works.

Ordered that the Revenue revised and budget estimates of the Bezwada Extension Railway and of the Bezwada-Godavari section of the East Coast Railway for 1892-93 and 1893-94 be forwarded to the Government of India with reference to para. 5 of its Resolution No. ³ B.O. A.R., dated 23rd March 1893.

[Here enter No. 847 R., Public Works, dated 10th May 1893.]

(True Extract.)

Joint Secy. to Govt., P.W.D.,
Railway Branch.To the Agent and Manager, His Highness the Nizam's Guaranteed State Railway.
„ Examiner, Public Works Accounts, Hyderabad.
„ Examiner, East Coast Railway Accounts.
„ Engineer-in-Chief, East Coast Railway.
Editors' Table.Exd. C. A. Munisawmy.
Spare Copies

RAILWAY.

Govt. of {1893} Madras.
PUBLIC WORKS.

Dated May, 10th.

Recd.

Encl.

G.O., 10th May 1893, No. 846 R.

MAY.

Bezwada Extension Railway

The final issue of the Revenue revised and budget estimates of the — and of the Bezwada-Godavari section of the East Coast Railway for 1892-93 and 1893-94, ordered to be forwarded to the Government of India.

FINAL ISSUE.

BEZWADA EXTENSION RAILWAY

AND

BEZWADA-GODAVARI SECTION, EAST COAST RAILWAY.

REVENUE BUDGET ESTIMATE

FOR THE YEAR

1893-94.

BUDGET Estimate of Revenue and Expenditure of the Bezwada Extension and Bezwada-Gódavari section of the East Coast Railway for the year 1893-94.

Heads.	Actuals in 1891-92 (a).	Sanctioned estimate, 1892-93 (a).	* Revised estimate, 1892-93 (b).	* Budget estimate, 1893-94 (b).
	RS.	RS.	RS.	RS.
I. Receipts—				
Earnings of the line—	23,830	25,000	24,300	1,12,000
Coaching traffic	62,648	65,000	73,000	2,84,000
Goods traffic	807	700	500	2,700
Electric telegraph earnings	...	...	...	...
Steam boat earnings	82	300	200	1,300
Sundries	...	...	...	...
Total, Earnings	87,367	91,000	98,000	4,00,000
Add decrease in balance ac- counts as per appendix A	...	...	...	...
Total, Receipts	87,367	91,000	98,000	4,00,000
II. Expenditure—				
Maintenance of way, works and stations (abstract A)	21,095	27,000	28,700	52,000
Locomotive expenses (abstract B)	13,016	12,000	15,300	64,000
Carriage and wagon expenses (abstract C)	2,974	3,000	4,000	24,000
Traffic expenses (abstract D). General charges (abstract E). Steam boat service (abstract F)	6,865 9,239	8,000 9,000	8,000 11,000	40,000 60,000
Special and miscellaneous ex- penditure (abstract G)	(a) 5,087	...	...	...
Add 5 per cent. of gross earnings for hire of rolling stock	...	5,000	6,000	40,000
Total, outlay	58,276	64,000	73,000	2,80,000
Add increase to balance of suspense accounts as per appendix B	...	...	...	...
Add decrease to credit of "demands payable"	...	...	...	...
Total, Expenditure	58,276	64,000	73,000	2,80,000
III. Net cash receipts	29,091	27,000	25,000	1,20,000

(a) Figures for Bezwada Extension Railway only.
 (b) Figures for Bezwada Extension and Bezwada-Gódavari section of East Coast Railway.
 * Sanctioned by the Government of India in their No. 3 B.O. A. R., dated 23rd March 1893.

MEMORANDUM.

Number of miles open for traffic on 1st April 1892	...	...	21.47
Expected to be open during 1892-93	...	...	90.00
Total on 1st April 1893	...	...	111.47
Expected to be open during 1893-94	...	...	Nil
Total likely to be open at end of 1893-94	...	...	111.47
Average number of miles expected to be open during the whole of 1893-94	...	...	111.47
Train miles expected to be run during 1893-94	...	...	104,000

ABSTRACT A.—Maintenance of Way, Works and Stations.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
I. Salaries, office expenses and general superintendence	Rs.	Rs.	Rs.	Rs.
II. Maintenance and renewals of perma- nent-way—Wages and materials ...		5,000	4,500	8,000
III. Repairs of bridges, &c.—Wages and materials		14,000	15,410	30,000
III-A. Conservancy of rivers		2,000	3,350	5,000
IV. Repairs of stations and buildings— Wages and materials	21,095	...	20	500
V. Maintenance by contract inclusive of materials		4,000	3,640	4,000
VI. New minor works		...	100	...
VII. Unclassified expenditure		...	...	500
		2,000	1,680	4,000
Total	21,095	27,000	28,700	52,000

ABSTRACT B.—Locomotive Expenses.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
I. General superintendence	Rs.	Rs.	Rs.	Rs.
II. Running expenses (wages connected with the working of the Locomotive engines)				
III. Fuel				
IV. Water (including wages and stores) ...				
V. Oil, tallow and other stores (expended on engines in work)	13,016	12,000	15,300	64,000
VI. Maintenance and renewals of Locomo- tive engines and machinery				
VII. New minor works				
VIII. Payments to other lines				
IX. Unclassified expenditure				
Total	13,016	12,000	15,300	64,000

ABSTRACT C.—Carriage and Wagon Expenses.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
	RS.	RS.	RS.	RS.
I. General superintendence				
II. Repairs and renewals of vehicles and machinery—				
(a) Coaching vehicles	2,974	3,000	4,000	24,000
(b) Goods vehicles				
III. Cleaning carriages and wagons and oiling				
IV. New minor works				
V. Unclassified expenditure				
Total	2,974	3,000	4,000	24,000

ABSTRACT D.—Traffic Expenses.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
	RS.	RS.	RS.	RS.
I. Salaries, wages, &c.—				
(a) General superintendence.				
(b) Station staff				
(c) Train staff				
II. Fuel, lighting, water and general stores	6,865	8,000	8,000	40,000
III. Clothing				
IV. Printing, stationery and tickets				
V. Charges for delivery and col- lection of goods, &c.				
VI. Miscellaneous expenses				
VII. Payments to other lines				
VIII. Unclassified expenditure				
Total	6,865	8,000	8,000	40,000

ABSTRACT E.—General Charges.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
	RS.	RS.	RS.	RS.
I. General administration— Direction (English charges)...				
II. Salaries of Indian Manage- ment—				
(a) Controlling office ...				
(b) Auditor's " ...				
(c) Accounts " ...				
(d) Paymaster's " ...				
(e) Store Department ...				
(f) Medical " ...				
(g) Miscellaneous ...				
III. Police ...				
IV. Advertising ...				
V. Electric Telegraph ...				
VI. Clearing account with other lines ...				
VII. Unclassified expenditure ...				
Total ...	9,239	9,000	11,000	60,000

ABSTRACT F.—Steam Boat Service—Nil.

ABSTRACT G.—Special and Miscellaneous Expenditure.

Particulars.	Actuals in 1891-92.	Sanctioned estimate, 1892-93.	Revised estimate, 1892-93.	Budget estimate, 1893-94.
	RS.	RS.	RS.	RS.
I. Law charges ...				
II. Compensation ...				
III. Rates and taxes ...				
IV. Payments to other lines ...				
V. Prizes for the best kept stations, station gardens, kitchen gardens, gate lodges, live fences, &c. ...	5,087	5,000	6,000	40,000
VI. Contribution to Provident Fund ...				
VII. Miscellaneous ...				
Five per cent. of gross earnings for hire of rolling stock ...				
Total ...	5,087	5,000	6,000	40,000

APPENDIX A.—Details of unadjusted accounts under the head Earnings.

Particulars.	Balance at beginning of year.	Balance at close of year.	DIFFERENCE.	
			Increase.	Decrease.
	RS.	RS.	RS.	RS.
Actuals in 1891-92—				
Stations ...	...	...	...	...
Foreign railways, &c. ...	...	...	...	...
Total ...	...	...	...	...
Sanctioned estimate, 1892-93—				
Stations ...	...	...	...	...
Foreign railways, &c. ...	...	...	...	...
Total ...	...	...	...	...
Revised estimate, 1892-93—				
Stations ...	...	...	...	...
Foreign railways, &c. ...	...	...	...	...
Total ...	...	...	...	...
Budget estimate, 1893-94—				
Stations ...	...	...	...	...
Foreign railways, &c. ...	...	...	...	...
Total ...	...	...	...	...

APPENDIX B.—Detail of suspense account under the head Expenditure.

Particulars.	Balance at beginning of year.	Balance at close of year.	DIFFERENCE.	
			Increase.	Decrease.
	RS.	RS.	RS.	RS.
Actuals in 1891-92—				
Stores ...	...	...	...	...
Suspense other than deposits and fines ...	...	...	...	...
Total ...	...	...	...	...
Sanctioned estimate, 1892-93—				
Stores ...	...	...	...	...
Suspense other than deposits and fines ...	...	...	...	...
Total ...	...	...	...	...
Revised estimate, 1892-93—				
Stores ...	...	...	...	...
Suspense other than deposits and fines ...	...	...	...	...
Total ...	...	...	...	...
Budget estimate, 1893-94—				
Stores as per detailed statement accom- panying ...	...	...	...	...
Suspense other than deposits and fines ...	...	...	...	...
Total ...	...	...	...	...

DETAILED statement of expenditure on stores for the year 1892-03.

Details.	ACTUAL PURCHASES DURING 1891-92.		SANCTIONED PURCHASES DURING 1892-93.		ESTIMATED PURCHASES DURING 1893-94.	
	Quantity.	Amount.	Quantity.	Amount.	Quantity.	Amount.
<i>In India.</i>	RS.	RS.	RS.	RS.	RS.	RS.
Sleepers	...	...	...	...	...	...
Coal	...	...	...	...	...	...
Oil	...	...	...	...	...	...
&c.	...	...	...	...	...	...
&c.	...	...	...	...	...	...
(Petty items to be lumped together.)	...	...	...	...	...	...
Total	...	...	...	...	...	...
<i>In England.</i>						
(Petty items to be lumped together.)						
Grand Total	...	...	...	...	..	...

REMARKS.—Stores are kept in capital suspense and their value charged off to Revenue as issued.

MEMORANDUM.

Actual balance of stores in hand on 1st April 1892	...	...	RS.
Estimated purchases during 1892-93	...	...	...
		Total	...
Estimated issues during 1892-93	...	...	...
Estimated balance on 1st April 1893	...	...	...
Estimated purchases during 1893-94	...	...	...
		Total	...
Estimated issues during 1893-94	...	...	...
Estimated balance on 1st April 1894	...	...	...

SECUNDERABAD,
15th March 1893.(Signed) W. PENDLEBURY,
Agent and Manager.

10TH MAY 1893, No. 847 R., PUBLIC WORKS.

PUBLIC WORKS DEPARTMENT.

Railway.

LETTER—from

F. R. UPCOTT, Esq.,

*Joint Secretary to the Government of Madras,**Public Works Department,**Railway Branch,*

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,

PUBLIC WORKS DEPARTMENT.

SIR,

With reference to para. 5 of Government of India Resolution No. ³/_{B.O.} A.R.,

* 10 copies to Simla.

25 „ to Calcutta.

dated 23rd March 1893, I am directed

to forward 35 * printed copies of the

final issue of the Revenue revised and

budget estimates of the Bezwada Extension Railway and of the Bezwada-Godavari section of the East Coast Railway for 1892-93 and 1893-94.

2. The estimates have been prepared in accordance with the figures accepted by the Government of India.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) F. R. UPCOTT,

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

Railway Branch.

OOTACAMUND,
10th May 1893.Exd. C. A. Munisawmy.
Spare Copies

RAILWAY.

Gobt. of {1893} Madras.
PUBLIC WORKS.

Dated May, 10th

Recd.

Encl.

10th May 1893, No. 847 R.

MAY.

Bezavada Extension Railway

Forwarding 35 printed copies of the final issue of the Revenue revised and budget estimates of the — and of the Bezavada-Godavari section of the East Coast Railway for 1892-93 and 1893-94.

Revised copy

to Mr. 10/5/93

FINAL ISSUE.

BEZVADA EXTENSION RAILWAY

AND

Bezavada Godavary Section—East Coast Railway.

REVENUE BUDGET ESTIMATE.

FOR THE YEAR

1893-94.

Editorial done

BUDGET ESTIMATE OF REVENUE AND EXPENDITURE OF THE BEZVADA
EXTENSION AND BEZVADA-GODAVARY SECTION OF THE EAST COAST RAILWAY
FOR THE YEAR 1893-94.

HEADS.	Actuals in 1891-92. (a)	Sanctioned Estimate 1892-93. (a)	* Revised Estimate 1892-93. (b)	* Budget Estimate 1893-94. (b)
I.—RECEIPTS—				
Earnings of the Line—				
Coaching Traffic	23,830	25,000	24,300	1,12,000
Goods Traffic	62,648	65,000	73,000	2,84,000
Electric Telegraph Earnings	807	700	500	2,700
Steam Boat Earnings	82	300	200	1,300
Sundries				
Total Earnings...	87,367	91,000	98,000	4,00,000
Add—Decrease in balance Accounts as per Appendix A.	...	...	...	...
Total Receipts...	87,367	91,000	98,000	4,00,000
II.—EXPENDITURE—				
Maintenance of Way, Works, and Stations, Abstract A	21,095	27,000	28,700	52,000
Locomotive Expenses B.	13,016	12,000	15,300	64,000
Carriage and Wagon Expenses C.	2,974	3,000	4,000	24,000
Traffic Expenses D.	6,865	8,000	8,000	40,000
General Charges E.	9,239	9,000	11,000	60,000
Steam Boat Service F.	...	...	...	...
Special & Miscellaneous Expenditure G.	(a) 5,087	5,000	6,000	40,000
Add—Five per cent of Gross earnings for hire of Rolling Stock.	...	...	...	...
Total Outlay...	58,276	64,000	73,000	2,80,000
Add—Increase to Balance of Suspense Accounts as per Appendix B.	...	...	...	...
Add—Decrease to Credit of "Demands payable" ..	...	...	...	...
Total Expenditure...	58,276	64,000	73,000	2,80,000
III.—NET CASH RECEIPTS...	29,091	27,000	25,000	1,20,000

MEMORANDUM.

Number of miles open for Traffic on 1st April 1892	...	...	...	21-47
Expected to be open during 1892-93	...	...	...	90-00
Total on 1st April 1893	...	...	...	111-47
Expected to be open during 1893-94	...	...	...	Nil.
Total likely to be open at end of 1893-94	...	...	...	111-47
Average number of miles expected to be open during the whole of 1893-94...	...	...	...	111-47
Train miles expected to be run during 1893-94...	...	...	...	104,000

*Sanctioned by the Government of India in their No. ^{S.A.R.}_{B.C.} dated 23rd March 1893.

(a) Figures for Bezvada Extension Railway only.

(b) Figures for Bezvada Extension and Bezvada-Godavary Section of East Coast Railway.

3

2

Abstract A.

MAINTENANCE OF WAY, WORKS, AND STATIONS.

PARTICULARS.	Actuals in 1891-92.	Sanctioned Estimate 1892-93.	Revised Estimate 1892-93.	Budget Estimate 1893-94.
I.—Salaries, Office Expenses, and General Superintendence		5,000	4,500	8,000
II.—Maintenance and Renewals of Permanent-Way Wages and Materials		14,000	15,416	30,000
III.—Repairs of Bridges, &c.—Wages & Materials ...		2,000	3,350	5,000
III.—A.—Conservancy of Rivers		...	20	500
IV.—Repairs of Stations and Buildings—Wages and Materials	21,095	4,000	3,640	4,000
V.—Maintenance by Contract, inclusive of Materials...		...	100	...
VI.—New Minor Works... ..		...	...	500
VII.—Unclassified Expenditure		2,000	1,680	4,000
Total ...	21,095	27,000	28,700	52,000

3

4

Abstract B.

LOCOMOTIVE EXPENSES.

PARTICULARS.	Actuals in 1891-92.	Sanctioned Estimate 1892-93.	Revised Estimate 1892-93.	Budget Estimate 1893-94.
I.—General Superintendence				
II.—Running Expenses (Wages connected with the working of the Locomotive En- gines)				
III.—Fuel				
IV.—Water (including Wages and Stores) ...				
V.—Oil, Tallow and other Stores (expended on Engines in work)	13,016	12,000	15,300	64,000
VI.—Maintenance and Renewals of Locomotive Engines and Machinery				
VII.—New Minor Works				
VIII.—Payments to other lines				
IX.—Unclassified Expenditure				
Total ...	13,016	12,000	15,300	64,000

Abstract C.

CARRIAGE AND WAGON EXPENSES.

PARTICULARS.	Actuals in 1891-92.	Sanctioned Estimate 1892-93.	Revised Estimate 1892-93.	Budget Estimate 1893-94.
I.—General Superintendence.—				
II.—Repairs and renewals of Vehicles and Machinery				
(a) Coaching Vehicles ...	2,974	3,000	4,000	24,000
(b) Goods Vehicles ...				
III.—Cleaning Carriages and Wagons, and Oiling ...				
IV.—New Minor Works ...				
V.—Unclassified Expenditure ...				
Total ...	2,974	3,000	4,000	24,000

Abstract D.

TRAFFIC EXPENSES.

PARTICULARS.	Actuals in 1891-92.	Sanctioned Estimate 1892-93.	Revised Estimate 1892-93.	Budget Estimate 1893-94.
I.—Salaries, Wages, &c.—				
(a) General Superintendence ...				
(b) Station Staff ...				
(c) Train Staff ...				
II.—Fuel, Lighting, Water, & General Stores ..				
III.—Clothing ...				
IV.—Printing, Stationery, and Tickets ...	6,865	8,000	8,000	40,000
V.—Charges for delivery and collection of Goods, &c....				
VI.—Miscellaneous Expenses ...				
VII.—Payments to other lines ...				
VIII.—Unclassified expenditure ...				
Total ...	6,865	8,000	8,000	40,000

7

6

Abstract E.
GENERAL CHARGES.

PARTICULARS.	Actuals in 1891-92.	Sanctioned Estimate 1892-93.	Revised Estimate 1892-93.	Budget Estimate 1893-94.
I.—General Administration—				
Direction (English charges) ...				
II.—Salaries of Indian Management—				
(a) Controlling Office ...				
(b) Auditor's " ...				
(c) Accounts " ...				
(d) Paymaster's " ...	9,239	9,000	11,000	60,000
(e) Store Department ...				
(f) Medical " ...				
(g) Miscellaneous ...				
III.—Police ...				
IV.—Advertising ...				
V.—Electric Telegraph ...				
VI.—Clearing account with other lines ...				
VII.—Unclassified Expenditure ...				
Total ...	9,239	9,000	11,000	60,000

Abstract F.
STEAM BOAT SERVICE.
Nil.

7

8

Abstract G.
SPECIAL AND MISCELLANEOUS EXPENDITURE.

PARTICULARS.	Actuals in 1891-92.	Sanctioned Estimate 1892-93.	Revised Estimate 1892-93.	Budget Estimate 1893-94.
I.—Law Charges ...				
II.—Compensation ...				
III.—Rate and Taxes ...				
IV.—Payments to other lines ...	5,087	5,000	6,000	40,000
V.—Prizes for the best kept Stations, Station Gardens, Kitchen Gardens, Gate lodges, Live fences, &c. ...				
<i>Contribution</i> VI.— ~~Construction~~ to Provident Fund ...				
VII.—Miscellaneous ...				
Five percent of gross earnings for hire of Rolling Stock. ...				
Total ...	5,087	5,000	6,000	40,000

Appendix A.

DETAILS OF UNADJUSTED ACCOUNTS UNDER THE HEAD EARNINGS.

PARTICULARS.	Balance at beginning of year.	Balance at close of year.	DIFFERENCE.	
			Increase.	Decrease.
<i>Actuals in 1891-92.</i>				
Stations ...	...	...	...	...
Foreign Railways, &c. ...	...	...	...	...
Total ...	...	...	...	...
<i>Sanctioned Estimate, 1892-93.</i>				
Stations ...	...	...	...	...
Foreign Railways, &c. ...	...	...	...	...
Total ...	...	...	...	...
<i>Revised Estimate, 1892-93.</i>				
Stations ...	...	...	...	...
Foreign Railways, &c. ...	...	...	...	...
Total ...	...	...	...	...
<i>Budget Estimate, 1893-94.</i>				
Stations ...	...	...	...	...
Foreign Railways, &c. ...	...	...	...	...
Total ...	...	...	...	...

Appendix B.

DETAIL OF SUSPENSE ACCOUNT UNDER THE HEAD EXPENDITURE.

Particulars.	Balance at beginning of year.	Balance at close of year.	DIFFERENCE.	
			Increase.	Decrease.
<i>Actuals in 1891-92.</i>				
Stores ...	...	...	...	...
Suspense other than deposits and fines...	...	...	...	...
Total ...	...	...	...	...
<i>Sanctioned Estimate, 1892-93.</i>				
Stores ...	...	...	...	...
Suspense other than deposits and fines...	...	...	...	...
Total ..	...	...	...	...
<i>Revised Estimate, 1892-93.</i>				
Stores ...	...	...	...	...
Suspense other than deposits and fines...	...	...	...	...
Total ...	...	...	...	...
<i>Budget Estimate, 1893-94.</i>				
Stores as per detailed Statement accompanying ...	...	...	...	...
Suspense other than deposits and fines ..	...	...	...	...
Total ...	...	...	...	...

DETAILED STATEMENT OF EXPENDITURE ON STORES FOR THE YEAR 1892-93.

Details.	Actual purchases during 1891-92.		Sanctioned purchases during 1892-93.		Estimated purchases during 1893-94.		Remarks.
	Quantity.	Amount.	Quantity.	Amount.	Quantity.	Amount.	
<i>In India.</i>							
Sleepers	...	...					
Coal	...	...					
Oil	...	...					
&c.	...	...					
&c.	...	...					
(Petty items to be lumped together)...	...	...					
Total							
<i>IN ENGLAND.</i>							
(Petty items to be lumped together)...							
Grand Total							

Stores are kept in Capital Ex-
penditure and their value charged off
to Revenue as issued.

MEMORANDUM.

	Rs.
Actual balance of Stores in hand on 1st April 1892...	...
Estimated purchases during 1892-93	...
Total	...
Estimated issues during 1892-93	...
Estimated balance on 1st April 1893	...
Estimated purchases during 1893-94	...
Total	...
Estimated issues during 1893-94	...
Estimated balance on 1st April 1894	...

W. PENDLEBURY,
Agent and Manager.

Secunderabad 15th March 1893.

00 5/107/53

To *Madras* (Office) From *Secunderabad* (Office)

Words *27/5* Day *2* Hour *17* Minute *hrs* Official Instructions *Ofc. En. 2*

To (Person) From (Person) *agent and Manager*

Consulting Engr. for rlys.

40 copies revenue Budget posted 25 sending 5 more copies per registered Book. post. today.

64 Word Form.

MADRAS 2-5-33

Recd. from LN. Sent to LN. At Hrs. Mts. by At Hrs. Mts. by Telegraph Master.

*To The Agent & Manager H.H. the Nizam's Secy
- Exam. P. & A. Secy Hyderabad
- Exam. S. C. Ry. Secy
- Engr. in Ch. S. C. Ry.
- Editor Table.*

FM 8/5 R

41187

E.W. GOVERNMENT No. 4187

47

Encls/
Accd. 5.5.93
no 208 of 5.5.93.

Transferred to Joint

Secretary-

2. Attention should be invited
to para 2 of AM. Nizam N. 88 E of 23-2-93.
(Enclosure)

CTM. for E. R.

5-5-93

Full &

Distribution - No
need to call attention
renewal

A

Sp. 846 R 2 10 May 93.

PUBLIC WORKS DEPARTMENT.
RAILWAY BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following

Endorsement from
the Comptroller Genl. } HE No. 208 of 5 May 1893

Ordered that
the Capital and Revenue
Revised & Budget Estimates
of the Bangalore Extension Rail-
way & of the Bangalore Gora-
vari section of the East-
Coast Railway for 1892-93
and 1893-94 be forwarded
to the Government of India
with reference to para 5
of its Resolution No. 3
dated 23rd March 1893.

To The Agent & Comptroller
the Nizam's Estab.

- Examr. P. & A. Estab. Hyderabad
- Examr. S. C. Ry. Accts.
- Engr. in Ch. S. C. Ry.
- Editor's Table.

Full
S 10 R
5 5

No. 847R

Government of Madras.

PUBLIC WORKS DEPARTMENT,
RAILWAY BRANCH.

To

THE SECY. TO THE GOVT. OF INDIA,

P. W. DEPARTMENT.

10th May 1893.

SIR,

P. L

With reference to
para 5 of the Govt. of
India Resolution No.
3 A.R. dated 23rd March
1893, I am directed to
forward *35* printed copies
of the final issue of
the ~~Capital and Revenue~~
Budget Estimates of the
Bengal Extension Railway
& of the Bengal Goods
section of the East Coast
Railway for *1892-93 &*
1893-94.

*10 Copies to Secy
25 - do - Collector.*

*Inc
9 May*

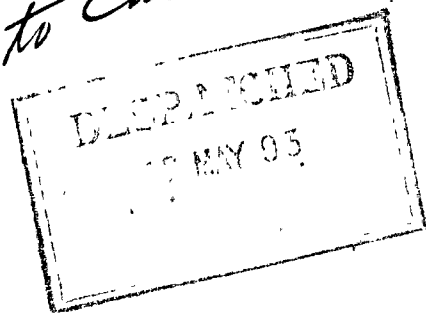
14/11

2. The estimates have
been

been prepared in accordance
with the figures ac-
cepted by the Government
of India.

FRU
 $\frac{8}{5} \frac{10}{6}$

not sent
with 10 copies of
Budget to Simla
& 25 copies sent
to Calcutta.



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

FURTHER PAPERS.

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

12TH MAY 1893, No. 854 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper:—

From the Secretary to the Government of Bombay, Public Works Department, Railway Branch, to the Joint Secretary to the Government of Madras, Public Works Department, Railway Branch, dated Bombay Castle, 7th April 1893, No. 685.

I am directed to forward, for information and consideration, 3 copies of the report with estimates and one copy of the plans of the survey of the project from Nanjangud, Mysore to Gúdalúr, Wynaad.

2. The estimate of Rs. 300 per mile for the survey has been found quite insufficient as particularly difficult country has to be crossed between Gundlupet and Gúdalúr, and these difficulties are about equal on either side of the frontier. In order, therefore, to utilize the money at disposal as far as possible, the Governor in Council ordered the 23 miles between Nanjangud and Gundlupet—the easy portion—to be permanently located and estimated for, and the rest of the money to be used, as far as possible, in running trial lines through the hilly country.

The results for a 1 in 70 gradient and for a 1 in 40 gradient are given, but this part of the project seems to require much further investigation by a very experienced Engineer before any definite conclusion can be arrived at. It is also to be noticed that the southernmost point reached is placed 5 miles by road from Gúdalúr and 1,000 feet below it owing to the unfavorable nature of the ground, and it is stated by the Chief Engineer of the Southern Mahratta Railway Company that the point selected—Thorapalli—is the most suitable spot, to continue the line through the Wynaad to the Western Coast.

3. It appears evident from these trial surveys that the alignment between Gundlupet and Gúdalúr must be considered wholly with regard to the physical features of the country to be traversed, and consequently the Mysore Durbar is equally interested in the further consideration of the project. So, in this connection, I am to forward a copy of a letter addressed to the Resident in Mysore and to ask for the further views of His Excellency the Governor of Madras in Council on the project.

ENCLOSURE.

From the Consulting Engineer for Railways, Bombay, to the Resident in Mysore, dated 7th April 1893, No. 2609.

I have the honour to forward three copies of the report and estimates, with one copy of the plans, of the proposed line of railway southwards from Nanjangud to the limits of the Mysore territory and onwards towards Gúdalúr in the Wynaad for consideration by the Mysore Durbar.

2. The distance between Nanjangud and Gúdalúr was assumed at 54 miles, and it was thought that a good survey could be made for Rs. 300 per mile, and money provision was made accordingly both by the Mysore Durbar and by the Madras Government. But it was soon found out that the hilly nature of the country between Gundlupet and Gúdalúr required much more investigation than was anticipated, and that many trial surveys would have to be made before any definite alignment could be recommended. The money at the disposal of the Agent, Southern Mahratta Railway Company, was thus found quite inadequate for the work required, and so the Bombay Government—*vide* Bombay Government Resolution No. 1073, dated 19th May 1892, copy attached—decided to make a permanent survey with plans and estimates of the easy portion between Nanjangud and Gundlupet and to run as many trial lines between Gundlupet and Gúdalúr as the balance of the money at disposal would admit of.

3. It will be observed that there are no difficulties whatever in the first section of 23 miles to Gundlupet, and that the present railway could be extended to that town for about Rs. 40,000 per mile, or in all Rs. 9,60,000, the actual figure in the report being Rs. 9,09,880; and it will

be noticed that the first 5 miles south of Gundlupet can also be constructed at the same rate, but beyond that difficult country is entered and is continuous the whole way to Gúdalúr. On this section specially steep gradients will apparently have to be permitted, as to reduce the gradient from 1 in 40 to 1 in 70 seems to

• Distance gradient 1 in 70	..	..	MILES.	involve an increase in mileage length of about
Do. 1 in 40	..	..	43	13 miles.* But in either case the cost of con-
	..	..	30	struction will be very heavy, and as I under-
	..	..	—	stand there is no centre of trade or other
Difference	..	..	13	commercial obligatory point between Gundlu-
	..	..	—	pet and Gúdalúr, the alignment between these

two places need not be considered as regards territorial divisions, but will be regulated wholly by the physical features of the country to be crossed. The difficulties are encountered on both sides of the frontier and for about equal distances, so in the alignment of this section the Mysore Durbar and the Madras Government seem about equally interested. Much more investigation seems necessary before a trace can be selected, and the cost will be somewhat heavy owing to the density of the jungle and to the necessity of employing a very experienced Engineer and one who has had previous experience in similar work.

4. But it appears to me that the section between Nanjangud and Gundlupet can be treated quite independently, and if the Mysore Durbar should be desirous of continuing their present venture 23 miles further south to that town, the present surveys are sufficient to allow work being started at once, and I see no reason why the estimate of Rs. 9,03,880 should not be taken as very fairly approximate.

5. The results are also being sent to the Government of Madras for information and for such orders as they may desire to issue, and I have no doubt that any orders or remarks issued by that Government will be in due course sent you for the information of the Durbar.

ORDER—dated 12th May 1893, No. 854 R., Public Works.

The detailed survey for a line of railway between Nanjangud and Gundlupet and the reconnaissance from Gundlupet to Thorapalli show that the probable cost for the Wynad portion would be—

for a grade of 1 in 70
14 miles @ Rs. 70,000 = Rs. 9,80,000;
for a grade of 1 in 40
11½ miles @ Rs. 74,000 = Rs. 8,41,750.

Considering the physical features of the country it is not improbable that these figures are too low.

2. The Mysore Durbar has already stated that a line from Nanjangud to Erode would be a better project than the one now under consideration, and as definite proposals have been already made and accepted by the Mysore Durbar in favour of a line connecting Nanjangud and Erode, the Government of Madras considers that further investigation of the Nanjangud-Gúdalúr project may be deferred.

3. A copy of these proceedings will be forwarded to the Government of Bombay.

[Here enter No. $\frac{854}{A}$ R., Public Works, dated 12th May 1893.]

(True Extract.)

(Signed) F. R. UPCOTT,
Joint Secy. to Govt., P.W.D.,
Railway Branch.

To the Political Department.

ENDORSEMENT—dated 12th May 1893, No. $\frac{854}{A}$ R., Public Works.

Forwarded.

(By Order.)

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

Exd. C. A. Munisawmy.

Share Copies

RAILWAY.

Gobt. of {1893} Madras.
PUBLIC WORKS.

Dated May, 12th.

Recd.

Encl.

G.O., 12th May 1893, Nos. 854 R.,
854 R.
A

MAY.

Nanjangud-Gudalur Extension
Project

Forwarding copy of Proceedings considering that, as the Mysore Durbar have accepted the proposals for a line connecting Nanjangud and Erode, further investigation of the — may be deferred.

12TH MAY 1893, No. 854 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

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The results for a 1 in 70 gradient and for a 1 in 40 gradient are given, but this part of the project seems to require much further investigation by a very experienced Engineer before any definite conclusion can be arrived at. It is also to be noticed that the southernmost point reached is placed 5 miles by road from Gudalur and 1,000 feet below it owing to the unfavorable nature of the ground, and it is stated by the Chief Engineer of the Southern Mahratta Railway Company that the point selected—Thorapalli—is the most suitable spot to continue the line through the Wynaad to the Western Coast.

3. It appears evident from these trial surveys that the alignment between Gundlupet and Gudalur must be considered wholly with regard to the physical features of the country to be traversed, and consequently the Mysore Durbar is equally interested in the further consideration of the project. So, in this connection, I am to forward a copy of a letter addressed to the Resident in Mysore and to ask for the further views of His Excellency the Governor of Madras in Council on the project.

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2. The distance between Nanjangud and Gudalur was assumed at 54 miles, and it was thought that a good survey could be made for Rs. 300 per mile, and money provision was made accordingly both by the Mysore Durbar and by the Madras Government. But it was soon found out that the hilly nature of the country between Gundlupet and Gudalur required much more investigation than was anticipated, and that many trial surveys would have to be made before any definite alignment could be recommended. The money at the disposal of the Agent, Southern Mahratta Railway Company, was thus found quite inadequate for the work required, and so the Bombay Government—vide Bombay Government Resolution No. 1073, dated 19th May 1892, copy attached—decided to make a permanent survey with plans and estimates of the easy portion between Nanjangud and Gundlupet and to run as many trial lines between Gundlupet and Gudalur as the balance of the money at disposal would admit of.

3. It will be observed that there are no difficulties whatever in the first section of 23 miles to Gundlupet, and that the present railway could be extended to that town for about Rs. 40,000 per mile, or in all Rs. 9,60,000, the actual figure in the report being Rs. 9,09,880; and it will be noticed that the first 5 miles south of Gundlupet can also be constructed at the same rate, but beyond that difficult country is entered and is continuous the whole way to Gúdalúr. On this section specially steep gradients will apparently have to be permitted, as to reduce the

* Distance gradient 1 in 70
Do. 1 in 40

MILES.
43
30
Difference .. 13

involve an increase in mileage length of about 13 miles.* But in either case the cost of construction will be very heavy, and as I understand there is no centre of trade or other commercial obligatory point between Gundlupet and Gúdalúr, the alignment between these

two places need not be considered as regards territorial divisions, but will be regulated wholly by the physical features of the country to be crossed. The difficulties are encountered on both sides of the frontier and for about equal distances, so in the alignment of this section the Mysore Durbar and the Madras Government seem about equally interested. Much more investigation seems necessary before a trace can be selected, and the cost will be somewhat heavy owing to the density of the jungle and to the necessity of employing a very experienced Engineer and one who has had previous experience in similar work.

4. But it appears to me that the section between Nanjangud and Gundlupet can be treated quite independently, and if the Mysore Durbar should be desirous of continuing their present venture 23 miles further south to that town, the present surveys are sufficient to allow work being started at once, and I see no reason why the estimate of Rs. 9,09,880 should not be taken as very fairly approximate.

5. The results are also being sent to the Government of Madras for information and for such orders as they may desire to issue, and I have no doubt that any orders or remarks issued by that Government will be in due course sent you for the information of the Durbar.

ORDER—dated 12th May 1893, No. 854 R., Public Works.

The detailed survey for a line of railway between Nanjangud and Gundlupet and the reconnaissance from Gundlupet to Thorapalli show that the probable cost for the Wynnad portion would be—

for a grade of 1 in 70

14 miles @ Rs. 70,000 = Rs. 9,80,000;

for a grade of 1 in 40

11½ miles @ Rs. 74,000 = Rs. 8,41,750.

Considering the physical features of the country it is not improbable that these figures are too low.

2. The Mysore Durbar has already stated that a line from Nanjangud to Erode would be a better project than the one now under consideration, and as definite proposals have been already made and accepted by the Mysore Durbar in favour of a line connecting Nanjangud and Erode, the Government of Madras considers that further investigation of the Nanjangud-Gúdalúr project may be deferred.

3. A copy of these proceedings will be forwarded to the Government of Bombay.

[Here enter No. $\frac{854}{A}$ R., Public Works, dated 12th May 1893.]

(True Extract.)

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

To the Political Department.

Exd. C. A. Munisawmy.

Spare Copies

RAILWAY.

Govt. of {1893} Madras.
PUBLIC WORKS.

Dated May, 12th.

Recd.

Encl.

G.O., 12th May 1893, No. 854 R.

MAY.

Nanjangud-Gudalur Extension Project

Considering that as the Mysore Durbar have accepted the proposals for a line connecting Nanjangud and Erode, further investigation of the — may be deferred.

JAN Plans connected
with G.O. No 854 R of
12-5-93 herewith sent
to you for custody -
We have no means
of keeping them in
our hands -

14-9-93- J.P.
H.C.
P.W. Secty

To
R.C.

for safe custody

G.O.
16.7

Received Plans & Papers

R.
Please see the
gradients in the
mileage given on page
2 of the prop. - In the
original letter from ER
Bombay the "distance
gradient" has been altered
to

1 in 70 — 48 miles

1 in 40 — 30 — do.

Kindly say if the above
correction is to be made
in the prop. -

Corrected. 27/6

REPORT

OF THE

NANJANGUD-GUDALUR EXTENSION.

O. N. 1869-75.

REPORT
ON THE
NANJANGUD-GUDALUR EXTENSION.

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REPORT ON THE NANJANGUD-GUDALUR SECTION.....	5—14
„ GUNDLUPET-FRONTIER Do.	15—18
„ SOUTH-EAST WYNAAD Do.	19—21

SOUTHERN MAHRATTA RAILWAY.

CHIEF ENGINEER'S OFFICE.

September 25th, 1892.

28

No. 2379

Subject.

Nanjangud-Gudalur Survey.

To

THE AGENT,

SOUTHERN MAHRATTA RAILWAY COY.

DHARWAR.

Your No. 1033, dated 23rd July, 1892.

SIR,

I have the honor to forward plans, reports, and estimates of the above, prepared by Mr. Lockyer, who took the contract for the survey. The field work as far as Gundlupet is completed. The alignment has been permanently located for this portion, and the centre line marked on the ground according to specification. The work has been inspected on the ground by one of the Company's Engineers, and has my approval.

A working plan and section for this length is herewith submitted. There only remains, therefore, the tracing of Type Drawings, &c., and the printing of estimates (which have been prepared), to complete the project for this length, hence construction could be started, if thought necessary, at any time. The cost of the first 23 miles comes only to about Rs. 40,000 per mile, and should, I consider, prove remunerative; as it would intercept traffic which is now lost in consequence of the present terminus at Nanjangud being only 15 miles from Mysore City, and consequently cart traffic from the vicinity of Gundlupet being taken direct to Mysore.

For the remaining length from Gundlupet to Gudalur the country has been carefully investigated with a view of ascertaining the most favourable trace for a line of railway.

As already reported in this office No. 1108 of 25th April last, Mr. Vibart made a preliminary reconnaissance of the Bhandipur Ghat in April, 1892, and came to the conclusion that to obtain a fairly graded alignment it would be necessary to work round the east end of the Bhandipur range.

I subsequently instructed Mr. Fox to carefully examine the country from Gundlupet to Gudalur, and he practically came to the same conclusion that Mr. Lockyer arrived at independently, viz., that a workable 1 in 70 grade was feasible by making a detour around the eastern end of the Bhandipur range.

This route would allow of a maximum grade of $\frac{1}{43}$ p. c. or 1 in 70 (uncompensated). This is not steeper than the maximum grading between Mysore and Bangalore and would consequently not require any special engine power. This alignment is estimated to approximately cost about 30 lakhs of rupees (about Rs. 70,000 per mile). It is 43 miles in length from Gundlupet to the proposed terminus at Thorapalli, the nearest point to Gudalur at which a site for a terminus is available, the distance by road being 27 miles. Thorapalli is over 1,000 feet below Gudalur, about 5 miles distant by the road, and 2 miles in a straight line. There is nothing to be gained by taking the alignment into Gudalur, and in the event of an extension to the coast through the Wynaad, Thorapalli would be the most suitable spot for a take off.

An alternative route is submitted which is shorter and cheaper, but for which special engine power would be necessary, as it requires grades of 2.50 p. c., or 1 in 40. This route would cost approximately 22 lakhs of rupees (about Rs. 74,000 per mile) and would only be 30 miles long—or 13 miles shorter than the first route.

On receipt of orders as to which route is to be adopted an estimate will be submitted of the probable cost of the survey, but as it will be some time before these orders can be received I have terminated the contract for the survey.

I have the honour to be,

Sir,

Your most obedient servant,

ED. H. HALLUM,

Chief Engineer.

Accompaniments

- | | | |
|--|-----|--|
| ✓ 1. Portfolio of plans and sections, in duplicate | ... | For the Nanjangud- |
| 2. Report and Cost of Railway abstract do ✓ | ... | Gundlupet section. |
| 3. Topographical sheet ... do | ... | For the Gundlupet- |
| 4. Index section ... do | ... | Frontier section. |
| ✓ 5. Report, including approximate estimate do ✓ | ... | |
| 6. Topographical sheets ... do | ... | For the S. E. Wynaad |
| 7. Index section ... do | ... | section. |
| 8. Report, including approximate estimate do ✓ | ... | |
| 9. Reconnaissance section | ... | Of the S. E. Wynaad |
| 10. Topographical sheets | ... | section, bound separately for the Govern-
ment of Madras. |

** 36 Copies*

GENERAL REPORT.

Letter No. 2173, dated 25th July, 1890.
From the Assistant to the Resident, Mysore.
To the Consulting Engineer for Railways,
Bombay.

1. On the 25th July, 1890, the Assistant to the Resident in Mysore wrote "*the Mysore Government has expressed a wish to have a line from Nanjangud to Gudalur surveyed at once, with a view to its construction at an early date, and desires to know whether the Southern Mahratta Railway Company will undertake the survey, and if so what would be the cost.*"

Letter No. 5303, dated 2nd August, 1890.
From the Consulting Engineer for Railways,
Bombay.
To the Agent and Chief Engineer, Southern
Mahratta Railway.

2. The Consulting Engineer forwarded a copy of the above to the Agent and Chief Engineer for report.

Letter No. 1084, dated 15th August, 1890.
From the Agent and Chief Engineer, Southern
Mahratta Railway.
To the Consulting Engineer for Railways,
Bombay.

3. The Agent and Chief Engineer reports he is prepared to undertake the survey, which he takes to be a distance of 50 miles, at a mileage rate of Rs. 300.

Bombay G. R. No. 440, dated 25th February,
1891.

4. *Communicates sanction to the survey of the Nanjangud-Gudalur Extension, and calls for detailed estimates.*

Bombay G. R. No. 622, dated 19th March,
1891.

5. *Communicates sanction to the estimates for the survey of the Nanjangud-Gudalur Extension.*

Letter No. 370, dated 25th March, 1891.
From the Agent and Chief Engineer, Southern
Mahratta Railway Company.
To the Consulting Engineer for Railways,
Bombay.

6. The Agent and Chief Engineer proposes to postpone the survey for a time in consequence of the near approach of the unhealthy season for that part of the country.

Letter No. 3701, dated 29th May, 1891.
From the Consulting Engineer for Railways,
Bombay.
To the Agent and Chief Engineer, Southern
Mahratta Railway Company.

7. The Consulting Engineer intimates the consent of the Mysore Durbar to the proposed postponement.

Letter No. 8503, dated 29th December, 1891.
From the Consulting Engineer for Railways,
Bombay.
To the Agent and Chief Engineer, Southern
Mahratta Railway Company.

8. The Consulting Engineer sanctions the survey being put in hand as soon as funds have been placed at the disposal of the Company by the Mysore Durbar, and also providing that the Rs. 4,000 promised by the Madras Government is still at the disposal of the Company.

9. The survey was accordingly started in February last, and proceeded with until the beginning of May, when

Letter No. 2233, dated 4th May, 1892.
From the Agent, Southern Mahratta Railway
Company.
To the Consulting Engineer for Railways,
Bombay.

10. The Agent forwarded a letter from the Chief Engineer asking for instructions as to whether a grade of 1 in 40 would be allowed on the ghat section, or a deviation made to get an improved gradient.

Bombay G. R. No. 1073, dated 19th May 1892.

11. *The proposed alignment of the Nanjangud-Gudalur Extension.* The Resolution deals with the above letter, and requests that two trial lines be run with fairly easy gradients, a report with plans and estimates being submitted to Government for decision as to the final line to be adopted.

Letter No. 9040, dated 24th June, 1892.
From the Agent, Southern Mahratta Railway Company.
To the Consulting Engineer for Railways, Bombay.

12. Forwards a report by the Chief Engineer, with plan and section of the two most feasible routes between Gundlupet and Gudalur.

Letter No. 4935, dated 20th July, 1892.
From the Consulting Engineer for Railways, Bombay.
To the Agent, Southern Mahratta Railway Company.

13. Asking that a report in a more complete form may be submitted, embodying the information already given, and adding what is further required together with a plan and section of the portion from Nanjangud to Gundlupet.

In compliance with the last letter, the plan and section of the length between Nanjangud and Gundlupet has been completed, and is submitted herewith, together with a report and an abstract estimate for the same—the latter being prepared from detail estimates (which are available if called for). An index plan and section of the above length, together with (a) reconnaissance plan and section, (b) report, and (c) approximate estimates of the alternative routes between Gundlupet and Gudalur, are also submitted.

* For the length Nanjangud to Gundlupet the field work has been completed, also plans and sections, and detail estimates—the only work remaining to be done being the printing of the estimates, and the tracing of "Drawings and Designs." This being the case, and as the southern portion of the extension lies in British territory, separate reports and estimates have been prepared, as below :—

No. 1.	For the Nanjangud-Gundlupet section,
" 2.	" Gundlupet-Frontier "
" 3.	" Frontier-Gudalur* "

J. E. LOCKYER,

Assoc : M : INST : C. E.,

Contracting Engineer.

*S. E. Wynaad.

REPORT

ON THE

NANJANGUD-GUDALUR SECTION.

REPORT ON THE NANJANGUD-GUDALUR SECTION.

These will be found in the preceeding General Report.

These are points which were, it is presumed, fully considered by the Mysore Durbar before asking the Southern Mahratta Railway Company to carry out the survey. Their consideration, therefore, does not lie within the province of this report, which is purely an engineering one.

It is the usual undulating country of the Mysore province—red soil being greatly predominant (very hard to dig when dry, but easy when moist)—cultivated with jola and ragi, and a few patches of cocoanut and betel plantations; rice being grown in the flooded flats of the Gundel river between the 10th and 13th miles, and below several of the tanks formed by bunds across the many streams. Along the course of most of the streams date-trees are abundant; excepting these, there are practically no trees along the whole length of the section, in its immediate vicinity, but jungle timber and firewood can be obtained from the hills about 4 miles to the right of the line. The general slope of the country along the alignment is a gradual rise from Nanjangud to Gundlupet, the total rise being 436 feet (in 23 miles), an average of about 0.36 per cent.

This has been fixed as metre in consequence of it being a short extension of a large system on the same gauge.

This point, from which the mileage is reckoned, is the centre of a brick pillar, built up to formation level in the centre of the main line at the south end of the Nanjangud Station yard, in a line with the wire fencing of its terminal boundary, and forms the present "terminal point" of the Mysore State Railway.

Location.

It lies between the 66th and 67th degrees of east longitude, and $11^{\circ} 48\frac{1}{2}'$ to $12^{\circ} 47\frac{1}{2}'$ north latitude, and is located nearly due north and south, mainly in the valley of the Gundel river, on its left bank. At mile 3.5 the line leaves the river and crosses the saddle of a low ridge at mile 9, again approaching the main stream at mile 10, and runs along the valley to Gundlupet.

Locating the line (at almost any points in its length) further to the right would throw it into rolling ground, necessitating heavy cuttings and embankments, without any advantage being derived—whilst the river on the left prevents any further move in that direction, even where it desirable, which it is not. In cross section the ground is higher to the right than to the left, and as the banks are low, the land for side-cuttings has been marked on the working plan to the right of the line, so that the side-cutting may act as a catch-water drain. The only other points which require explanation are as follows:—

- (a) At the first half mile the line cuts through a few huts, the reasons for which will be given under "Alternative Routes" on the next page.
- (b) At mile 3.5 the line approaches rather close to the river, but as no flood was ever known to rise into the garden through which the line runs, no danger is anticipated.
- (c) The 3 curves between miles 3.5 and 4 are necessary to avoid a rocky spur about 50 feet high.

1. References to order of Government, and preliminary correspondence.

2. Special objects and reasons for making the Railway, with advantages which may be expected to result from an administrative point of view, and as a commercial undertaking.

3. General description of the country to be traversed with its leading physical, geological, and botanical features.

4. The choice of gauge (metre)

5. The "fixed point."

1. General description of the location.

2. Obligatory, or important points.

- (d) At mile 7.5 the line passes through a chain or two of marsh land, but the ground is quite solid, and is only wet at exceptional times.
- (e) At mile 9 there is a 20 feet rock cutting, crossing the saddle of a spur which stretches away to the right to the hills, and for a mile and half to the left.
- (f) At mile 11 a few more chains of marsh land are passed through, but this is also solid, as at mile 7.5.

There are none and the junction with the existing line does not necessitate any extra provision being made at what is now the terminal station (Nanjangud).

3 Junctions with other lines.

There are none.

4. Crossings for important rivers.

The site selected for the station at Gundlupet (the only town or trade centre of any importance on the section) is close to the east of the town, between it and the river, its southern extremity being bounded by the main road to Chamrajnagar.

5. Station sites in or near large towns, or centres of trade.

Alternative Routes.

- (a) At the first half mile, the line might be laid (as shown by the dotted red line on the working plan) to avoid cutting through the village of Madiger Hutty, but this would place the distant signal on a curve and would necessitate having a 1 per cent. grade running down into the station yard. Both of these objections have been obviated by the location adopted, and the compensation for huts will only be about 200 rupees. The dotted line could not be placed further east, as sufficient room must be left between the railway line and the road bridge over the canal to allow of a reasonable grade for the road between the bridge and the top of the railway bank, which would be about 8 feet higher than the road level at the bridge. Hence the location adopted seems the best under the circumstances.
- (b) Keeping further away from the river at mile 3.5 would throw the line into rock cutting, and entail more curvature to get round the spur at mile 4.
- (c) Trying to avoid the marsh land at mile 7.5 would lead the line into rock-cutting to the right, or into the tank on the left.
- (d) The only means of avoiding the rock-cutting at mile 9 would have been to follow the course of the river from mile 3.5 to 10, but as this would have lengthened the line some 3.5 miles, the rock-cutting was accepted as unavoidable.
- (e) Regarding the marsh land at mile 11, it could have only been avoided by going to the west of the village of Tandwadi, the contours for which route are very steep and rolling—hence, as the marsh land is quite solid, and of small extent, the location seems the best available. The line cannot be placed to the left without locating it on the rice lands of the Gundel, which would have been much worse than the marsh land.
- (f) The location between miles 14.75 and 16.75 is faulty, and would have been altered immediately the error was discovered but for the damage which would have been caused to growing crops, which had risen to 4 and 5 feet high. Instead of three tangent lines between these two points there ought only to be one, as shewn by a dotted red line on the working plan. This dotted line will shorten the distance, eliminate two curves, and will give an improved grade, with a slightly cheaper section. The alteration can easily be made before construction is commenced, as it is only to run a straight line between these two points.
- (g) The station at Gundlupet might have been located to the west of the town, but the approaching grades would have been worse, and the site not so even, neither would it have been so conveniently placed for the public. The site

selected is not so level in longitudinal section as might be wished, but in every other respect is favourable—has a fairly level cross section, good foundations, easy drainage, level grade, is close to the town (also close to the camping ground for carts from all parts), close to a plentiful supply of water, is in the most favourable place for the continuance of the line to Gudalur (4 miles of which have been located), and is generally approved of by the inhabitants.

Gradients and curves.

The ruling gradient of the line is 1 per cent. (compensated for all curves), and is pretty evenly distributed along the section in short lengths—the longest being 4,200 feet at mile 19-20, 3,300 feet at mile 8-9, 2,600 feet at mile 7-8, and 2,400 feet at mile 4-5, the others being short lengths.

No adjustment is necessary, as the grades are easier than those of the existing line; the engine power necessary for the latter is therefore more than sufficient for the length under report. It is anticipated that the direction of loaded traffic will be from Gundlupet, and consequently on a down grade; no adjustment is therefore necessary for loaded traffic.

The physical features of the alignment render any bunching of grades unnecessary.

The sharpest curve adopted is 5°, one at mile 0.5 and another at mile 3.7; the other curves are either 4° or 2°, mostly the latter.

Compensation has been allowed according to the diagram (enclosure No. 1 to the Rules for the Preparation of Railway Projects), using the line delineated for metre gauge goods' stock with a 10 feet wheel base.

Construction and Engineering.

This is easy, there being no single feature calling for any special remark, or requiring any special arrangement for carrying out.

There are no important works.

It is proposed to use wire fencing near all villages, round station yards, and on each side of level crossings.

The type proposed is the same as that at present in use on the existing line, viz 41½ lb. steel flat-footed rails on teak sleepers, with the usual fastenings. The teak sleepers from the Mysore State forests are durable, and cheap, and by their use a certain portion of the purchase money is returned to the State as revenue.

It is considered that the Southern Mahratta Railway Company's Workshops at Hubli, and the Mysore State Railway workshops at Bangalore are sufficient for all requirements.

The vicinity of the Gundel river (which is a perennial one), along nearly the whole length of the line, offers exceptional advantages for construction purposes. There is a good well, with tank and water column, at Nanjangud—water can be obtained close to the surface at Tundwadi—and about 20 feet below the surface at Gundlupet, these 3 being the only stations proposed at first. At intermediate distances little difficulty will be found in getting water at reasonable depths.

The present arrangement for the open line will not be disturbed by this short increase in length, and provision is only made for turning engines, not for stabling—as this latter question can only be decided when it is finally known what the full length of the extension will be, and whether special engines will be required for the Bhandipur ghats, or not.

1. Ruling gradient and distribution of the same.

2. Adjustment of grades to engine power and direction of loaded traffic.

2. "Bunched" grades.

4. The sharpest curve, and distribution of the same.

5. The compensation allowed for curves on grades.

1. The general character of the work.

2. Brief description of each important work.

3. Fencing.

4. Permanent Way.

5. Workshops.

6. Water supply.

7. Locomotive districts.

Labour and Materials.

No difficulty is anticipated in getting reliable contractors to take up the work.

In the immediate vicinity of the line labour of any sort can only be obtained when field labor is light, as there is no excess population over agricultural requirements. The wandering wudder tribe (supplemented by the local population when field labor is light) must therefore be depended on for earthwork and quarrying stone, whilst skilled labour must be imported from Mysore and Bangalore, principally from the latter place.

This is not contemplated.

Stone—Good gneiss quarries are situated at (a) $1\frac{1}{2}$ miles east of mile 6.75; (b) 3 miles west of mile 9.5, and (c) two miles west of Gundlupet, the usual method in Southern India (burning) being employed for getting the stone. Slabs of almost any length are obtainable from either of the quarries, also good flat bedded rubble and arching.

Brick earth—of fair quality can be obtained at almost any mileage on the line, from the beds of tanks or elsewhere.

Lime kunker—can be obtained in large quantities on the alignment at miles 6 and 18, and in smaller quantities at intermediate points.

Teak Timber—is obtainable from the city of Mysore, brought from the Kakenkot forests, and from the State timber depot at Gundlupet, brought from the forests of Maddur and Bhandipur.

Fuel—Wood fuel is obtainable from the hills about 4 miles to the west of the line.

Gravel, sand, or moorum ballast is obtainable along the whole section. The sleepers will probably be supplied by contractors from the State forests; either carted, or floated down the Halhalli canal to mile 1 of the extension, which is a favourable point for landing and stacking. For the purposes of the estimate they are supposed to be purchased at Mysore, and from thence carted to site—should they be delivered at mile 1, or at Gundlupet, there will be a saving on that item.

Mangalore tiling is proposed, this being the most durable cheap roofing available.

(1) The existing railway, for bringing English material from port of landing, (2) carts ($\frac{1}{2}$ ton capacity), do. ($\frac{1}{4}$ ton), 10 to 12 as. and 6 to 8 as. per diem respectively, but these rates will probably be higher during the time of construction. The main road to the Nilgiris is within a mile, or two, from any part of the line—whilst the old track to the Nilgiris, and the village roads which cross the line, afford exceptional facilities for delivering material at any point in the alignment.

Should the sleepers be floated down the Halhalli Canal a temporary siding will be required at mile 1, but no special provision requires to be made for this, as the ground is level enough at that point for a surface line.

A depot can be formed in the Nanjangud station yard for everything except sleepers. For these the depot will be at mile 1, should they be floated down the canal; or at Gundlupet, should they be obtained from the southern end.

The following rates are those which ruled during the construction of the Nanjangud extension, and may be accepted as likely to be average rates for this extension:—

1. Facilities for carrying out the work.
2. Labour available.

3. Employment of Military or convict labor.
4. Materials for buildings.

5. Ballast.

6. Style of roofing.

7. Means of transport.

8. The use of temporary lines or tramways.

9. Depôts for receiving and forwarding material.

10. Rates and wages.

		Rs.	
Rates.	Earth and gravel, in banks and cuttings ...	5 to 10	per 1000 cft
	Soft rock ...	25	35
	Hard rock ...	60	65
	Moorum top dressing for banks ...	10	15
	Excavation of foundations, earth and gravel ...	10	20
	Refilling do ...	4	5
	Ballast, stone ...	3	4 per 100 cft.
	Do gravel, sand, or moorum ...	1	2
	Masonry in lime, for small bridges ...	20	30
	Do do large do ...		
	Do do buildings ...		
	Lime concrete ...	18	20
	Wood-work, in place ...	3	3.5
	Dry walling ...	10	12
	Arching, including centreing ...	50	80
Wages.	Coping ...	35	40
	Pumping and baling ...	Special agreement.	
	Iron work, in place, for girders ...	300 per ton.	
	Bricklayers ...	8 to 10 as each per day.	
	Masons ...	10 to 12	
	Smiths ...	10	
	Carpenters ...	8	
	Carts, large ($\frac{1}{2}$ ton capacity) ...	10	
	Do. wudders small ...	6	
		8	

There are no local conditions likely to affect rates or methods of construction.

Arrangement of Staff.

This point is left for consideration until it is finally known whether the section under report will be constructed simultaneously with the extension to Gudalur, or whether it will be done separately. A mileage rate only has been entered in the estimates.

1. Division into sections, &c., and arrangements for supervision and control.

Permanent--The staff quarters provided for in the estimates are practically the same as those provided on the Nanjangud Extension (the number and class of stations being the same), the only exception being that the number of clerks' quarters has been reduced by two. This allows for Gundlupet being equipped as a terminal and reversing stations for engines; this arrangement would of course require alteration in the event of a simultaneous extension to Gudalur. In the former case it would perhaps be best to build only those quarters which are necessary for its working as a through station, and utilizing two of them as temporary running rooms for guards and drivers, allowing the surplus staff of the station to find accommodation in the town, which is only a few hundred yards distant from the station. In this there would be no difficulty.

2. Staff quarters.

Temporary--There are 3 good Government rest-bungalows, situated as follows:--

1. 1 mile to the right of mile 5 (called the Shindhulli bungalow)
2. do 12 " Begur "
3. do 23 " Gundlupet "

These are seldom used by travellers, and part of each can be occupied by the officers or upper subordinates, as was done during the construction of the Nanjangud Extension. For the lower subordinates, office staff, &c., accommodation can usually be obtained in the adjacent villages, but a small lump sum has been provided in the general charges for any special requirements.

Huts for workmen are not considered necessary.

The climate is healthy, except for a simple type of intermittent fever which prevails during the rainy months. The route, however, is subject to slight epidemics of cholera, which is usually supposed to be brought from the town of Nanjangud, where it is very often violent, especially at the time of pilgrimages. The question of medical staff, dispensaries, &c., can best be dealt with after it is decided whether this length is to be constructed simultaneously with the length to Gudalur, or not.

Relations with the Public.

There are no cantonments on this section, and the only case in which buildings are interfered with is at the 1st half mile, where a few huts require to be dismantled. Regarding communications, no interference of any importance is proposed.

The adjacent bridged and metalled road renders any adoption of this description unnecessary.

Level crossings with gate-lodges have been provided for the metalled roads at mile 0, and mile $\frac{1}{2}$, these being the only metalled roads crossed on the proposed route. 3rd class crossings have been provided for nearly all village tracks, only those being diverted or closed which do not provide alternative routes without unreasonable increase in length. An over-bridge (12 feet wide inside parapets) is proposed over the 20 feet cutting at mile 9, and an underbridge opposite the village of Shindhulli at mile 5.5, where there is constant traffic between the village and the wells. In selecting the types of bridges, provision has been made as much as possible for the passing of carts, or men and animals, under the line when there is no flood. The provision made has been generally accepted by the adjacent villagers as suitable to their requirements, they having been consulted in all cases.

This is unnecessary, as the adjacent metalled road, supplemented by the old Mysore road and village tracks, is sufficient for the purpose required.

None is necessary. At mile $3\frac{1}{2}$ the line passes close to an abandoned temple, but does not interfere with it.

Land.

A mileage rate, based on awards made on the Mysore and Nanjangud extensions, has been entered in the estimates. No difficulties are expected in acquiring the land.

Traffic Statistics.

Only two stations are proposed at first; this number can be increased if found necessary. The first station, Tundwadi, is on the straight with a level grade, and will be equipped as a watering and crossing station. It would have been better placed at mile $11\frac{1}{2}$ (as it would then divide the distance better, and would be more convenient for passengers and goods to or from the western main road junction at the Begur bungalow, see index plan), but the ground is unsuitable. A flag station may be required by-and-bye at Shinduvalli, mile 5.5; it may therefore be thought desirable to adopt the dotted grade line on the working section, as it gives a longer level for a station site. The site for Gundlupet has been fully dealt with under "Location." To insert a station between Tundwadi and Gundlupet, it should be placed at mile 17.25, slightly altering the grade to the dotted red line; it would then be on a level grade, would nearly halve the distance between the two stations, and would be conveniently placed to serve adjacent villages.

Supposing this section to be constructed by itself, a great advantage would be that it would serve for the goods and passenger traffic of the adjacent villages, but its principal one would be that it would arrest at Gundlupet all traffic to and from the south, east and west, which centres at Gundlupet before going to or when coming from, the city of Mysore, and which is now lost to the Nanjangud Extension. It does not pay merchants to send goods from these directions via the Nanjangud Extension, as Nanjangud is only 15 miles from the

3. Sanitary condition of district, &c.

1. Interference with the existing cantonments, &c.

2. Adoption of bridges to military traffic.

3. Accommodation works.

4. Adaption of bridges to road traffic.

5. Interference with religious edifices.

1. Nature, design, or position of stations.

2. Nature, extent, and direction of traffic.

city of Mysore; but it would be a very different matter if the terminal were at Gundlupet, 39 miles from Mysore. Similar arguments hold good for goods exported from Mysore to those directions. Further consideration of this particular question does not seem necessary at this stage.

Conclusion.

Separate reports of the length between Gundlupet and Gudalur are appended.

J. E. LOCKYER,

Assoc: M: INST: C. E.,

Contracting Engineer.

Accompaniments.

1 Abstract Estimate. }
1 Roll plans and sections. } in duplicate, for the Nanjangud-Gudalur section.
1 Report. }

1 Reconnaissance section } do. Gundlupet-Frontier section.
1 Topographical sheet }
1 Report. }

1 Reconnaissance section } do. S. E. Wynaad section.
1 Topographical sheet }
1 Report. }

Cost of Railway—Abstract.

Nanjungud-Gundlupet Section.
METRE GAUGE.

HEADS OF ACCOUNTS.	TOTAL COST IN RUPEES.			
	SUB-HEADS		MAIN-HEADS.	
	Total cost.	Rate per mile.	Total cost.	Rate per mile.
I. Preliminary Expenses.—			6,900	300
1. Survey expenses				
2. Plant				
3. Establishment				
II. Land.—			5,750	250
III. Formation.—			1,50,008	6,522
1. Earthwork	1,50,006	6,522		
2. Tunnels	0	0		
IV. Bridgework.—			1,68,015	7,305
1. Large Bridges	60,306	2,622		
2. Minor Bridges	1,07,709	4,683		
V. Fencing, &c.—			27,209	1,183
1. Fencing	16,215	705		
2. Road crossings	10,442	454		
3. Mile and Gradient posts	552	24		
VI. Electric Telegraph.—			690	30
VII. Ballast and Permanent Way.—			4,05,145	17,615
1. Ballast	45,517	1,979		
2. Permanent Way	3,59,628	15,636		
VIII. Stations and Buildings.—			71,438	3,106
1. Stations and Offices	20,746	902		
2. Workshops, Store Buildings	2,875	125		
3. Staff quarters	13,639	593		
4. Station machinery	34,178	1,436		
IX. Plant.—			4,577	190
1. Engineering	2,507	109		
2. Locomotive	0	0		
3. Carriage and Wagon	0	0		
4. Station and Office furniture	2,070	90		
X. Ferries.—			0	0
1. Ferries	0	0		
2. Floating Bridges	0	0		
XI. Rolling Stock.—			0	0
1. Locomotives... ..	0	0		
2. Carriages and Wagon	0	0		
XII. General Charges.—			70,150	3,050
1. Direction				
2. Engineering				
3. Stores				
4. Audit and Account				
5. Medical and Sanitation				
Total Expenditure			Rs. 9,09,880	
Length in miles			23	
Total rate per mile			39,560	

J. E. LOCKYER,
ASSOC. M : INST. C. E.,
Contracting Engineer.

Explanations.

The survey having been done by contract at a rate per mile, it is not possible to separate the charges under the different sub-heads.

No provision has been made under sub-heads 2 and 3, as the addition of only 23 miles to the present long length of line does not require that any provision should be made under the sub-heads.

Detail estimates will be submitted after construction is commenced (vide p. 29, Rules for the Preparation of Railway Projects.)

REPORT

ON THE

GUNDLUPET-FRONTIER SECTION.

REPORT ON THE GUNDLUPET-FRONTIER SECTION.

For the first 8 or 10 miles south of Gundlupet the country is fairly level and even—in fact, much the same as that between Nanjangud and Gundlupet, but slightly steeper as the foot hills of the Nilgiris are approached. These hills (at this point called the Bhandipur range) must be crossed to get to the frontier.

A reconnaissance was first made to find the most suitable point at which the Bhandipur range might be crossed. The Ghat over which the present Nilgiri road passes was obviously incapable of being crossed by anything but the very steepest gradients—search was therefore made for a more favourable place for crossing. The range to the west being evidently very much worse than the road Ghat, investigation was made to the east—with the result that the most favourable point for crossing the range was found to be at the Ghat over which the *old* main road to the Nilgiris passes, and about 6 miles east of the Ghat over which the *present* road passes. The village of Bachhalli, about 2 miles south of this Ghat, is approximately 2,900 feet above sea level, and a line of spirit levels run between this village and the top of the Ghat shewed the latter to be 236 feet higher than the former, or R. L. 3,136. As the top of the present road Ghat is about R. L. 3,400 it is consequently 264 feet higher than the Ghat selected for crossing.

This (old road) Ghat was therefore first examined as to its practicability for a 1 in 100 grade, compensated for curvature. This grading was found to be impossible, the northern slope of the range being much too steep for the purpose.

It was next considered what was the steepest grade admissible, without necessitating the use of pusher grades—or of employing heavier engines, and consequently heavier rails. As the Mysore-Bangalore section of the Mysore State Railways has been worked for some years by ordinary engine power, on uncompensated grades of 1 in 70, it was considered not unreasonable to assume the same as a maximum grading for this section; but as on the Mysore-Bangalore section the engines are worked to their utmost, any thing steeper was inadmissible.

An alignment with a maximum grade of 1 in 70 (1.43 p.c.)

This grade was accordingly fixed upon as the maximum, and it was found on trial that the reduced levels and contours on the Government topographical map (scale 1 inch=1 mile) admitted of the plotting of a line with this grading. The route so plotted was afterwards examined and checked by personal observation and aneroid readings, those points which were evidently obligatory being checked by the spirit level. At other points also, where the projected alignment lies close to forest tracks, lines of spirit levels were run, and comparisons made between these levels, and the mapped out alignment. Finally, a rough index section was prepared in accordance, which is herewith submitted, together with a copy of the topographical map, with the line marked on it.

For the first 4 miles from Gundlupet the line has been located with an easy grade, in almost a due south line. Beyond this the route has only been mapped out, and diverges slightly to the east towards the Ghat selected for crossing, rising with a nearly continuous grade of 1 in 70 to the top of the Ghat at mile 34, the last two miles being in rather broken and sidelong rocky ground.

To avoid this broken ground an alternative line was mapped out (see thin red dotted line on the map), lying more to the eastward, on good ground. The alternative line runs on a comparatively level grade as far as Bachhalli—thus the rise to the top of the grade is concentrated

1. The physical aspect of the country between Gundlupet and the frontier.

2. The most favourable point for crossing the Bhandipur range.

3. The possibility of a grade of 1 p. c. (1 in 100), compensated for curvature.

4. The steepest grade practicable without increased engine power.

5. A 1 in 70 (uncompensated) grade fixed upon.

6. Description of the proposed route between Gundlupet and the first Bhandipur range.

7. Alternative route between mile 27½ and the top of the ghat.

trated in the distance between it and Bachhalli, and to enable a grade of 1 in 70 to be obtained it is necessary to lengthen the line by a detour to the east. The decision as to the better of these two routes can only be arrived at after detail estimates of each have been framed.

After crossing the ghat any continuation of the line southward is rendered impossible by the steep fall of the ground, and the line was therefore mapped out in a direction at nearly right angles to its former course, and to the westward. As far as the 41st mile it was mapped out practically level, and although this places the alignment in sidelong rocky ground, broken up by ravines, it is unavoidable. Were a down grade (from the top of the ghat) adopted, it would certainly place the line on much more favourable ground, but it would also place it so low that the ascent of the 2nd Bhandipur range would become impossible with a 1 in 70 grade. Local deviations from the level grade must of course be made at the crossings of the ravines, but the general level must be retained for the reasons above mentioned.

The valley immediately to the left still preventing any attempt to cross the 2nd range the line was continued on till it met the Nilgiri road, and from this point a line of levels was run up the road to the summit of the 2nd range and from thence to a point a short distance to the west of the road which seemed to offer a suitable place for crossing. The difference of level between this point and the crossing of the road proved to be 186 feet, necessitating a continuous grade of 1 in 70 for $(186 \times 70) = 13,020$ feet, but as the ground immediately to the west of the road is too flat for this a line was mapped out having a length of about 3 miles. The physical features of this length are much more favourable than from mile 34 to 41, the ground being fairly level and unbroken, with very few streams to cross, and the country is more open.

From the top of this range a long tongue runs out to the south-west, affording on its northern slope the best means of getting down to the frontier at the Kakkan Halla (Kagan Hole on the map). The alignment along the northern slope of this tongue is on steep sidelong ground, part earth and part rock, but not intersected with any big ravines, and having very little water running across it. No other alternative route offers itself to get down to the river. The south bank of the river being unfavourable, the line was continued along the northern (or left) bank to its point of crossing the frontier at mile 52, about $\frac{1}{4}$ mile to the west of the point at which the river is crossed by the Nilgiri road. The greater part of this length requires a continuous 1 in 70 grade, and lies in the track of the elephants during their migrations east and west.

The distance from Gundlupet to the frontier is as follows:—

By the proposed Railway alignment				29 miles
By road	...	...	16	„
Increase over road mileage				13 „

The following is an approximate estimate of the cost of a 1 in 70 grade from Gundlupet to the frontier.

Position.	General description of work.	Length.	Rate. *		Total.
			Rs.	Per.	
Mile 23-28	Light	5 miles.	40,000	Mile.	2,00,000
28-34	Rather light	6 „	50,000	„	3,00,000
34-41	Very heavy	7 „	1,00,000	„	7,00,000
41-45	Moderate	4 „	60,000	„	2,40,000
45-52	Heavy	7 „	80,000	„	5,60,000
Total.....					20,00,000
Say 29 miles at Rs. 69,000* per mile					=20,01,000

* Excluding Rolling Stock.

8. From mile 34 to mile 41.

9. From mile 41 to mile 46.

10. From mile 46 to mile 52 (the crossing of the frontier).

11. Length of railway as compared with length of road.

12. Approximate cost.

An alignment with a maximum grade of 1 in 40 (2.5 p. c.)

As a 1 in 70 grade necessitates such a serious increase in length, and is also costly, search was made for an alignment with a grade of 1 in 40 (uncompensated for curves) to be worked with special engine power. 13. A shorter route with a steeper grade.

A ghat about $2\frac{1}{2}$ miles to the west of the 1 in 70 crossing (and consequently $2\frac{1}{2}$ miles nearer to the existing Nilgiri Road) was examined, and as it appeared to be suitable, a line of levels was run up the northern slope. These levels shewed that a grade of 1 in 40 was obtainable by the aid of a rock tunnel about 1,200 feet long. An alternative grade of 1 in 50 would increase the length of the tunnel to 2,600 feet, but give a much cheaper approach. The tunnel cannot be avoided, as the upper portion of the north face of the ghat is too precipitous, and the ground on either side is unsuitable for lengthening the line sufficiently to surmount the ghat. 14. Ghat for crossing the Bhandipur range.

The ghat having been proved suitable for this gradient an alternative route was mapped out, starting from the 28th mile of the 1 in 70 route, and running from there in nearly a straight line to the top of the ghat, with easy work along the whole length till it reaches the tunnel. Only 2 miles are on the maximum grade. 15. From mile 28 to mile 33.

The descent of the southern slope being more gradual than that of the northern one, no spirit levelling was necessary, and the line was mapped out to cross the first alignment at mile 39. It was afterwards run for a couple of miles nearly parallel to it, but diverging slightly southwards as it descends to the bottom of the Bhandipur valley. Only half a mile of the maximum grading is necessary on this length and the line is on moderately easy ground. 16. Mile 33 to 36.

Near mile 36 the ascent of the 2nd range commences, the line crossing it (about a mile and a quarter east of the road) at mile 39, and then descending its southern face to the crossing of the frontier near mile 41. This last $5\frac{1}{2}$ miles entails heavy work and the maximum grading for over 5 miles, and is the most difficult portion of the alignment, the forest being very thick, and the ground rocky, sidelong and broken up by ravines, but not so much broken up as miles 34 to 36 on the 1 in 70 alignment—neither is there so much curvature. The last $2\frac{1}{2}$ miles is directly across the tracks of elephants in their migrations east and west. 17. Mile 36 to 41½ (the crossing of the frontier)

The distance from Gundlupet to the frontier is as follows:—

By the proposed Railway alignment	18½ miles
By road, about	16 "
Increase over road	2½ "

18. Length of railway as compared with road.

Position.	General description of work.	Length	Rate.*		Total.
			Rs.	Per.	
Mile 23-28	Light	5 miles.	47,000	Mile.	2,00,000
28-33	Rather light	5 "	51,000	"	2,50,000
33	Tunnel	1150 ft.	250	Foot run.	2,87,000
33-36	Moderate	3 miles	60,000	Mile.	1,80,000
36-41½	Heavy	5½ miles.	80,000	"	4,50,000
Total Rs..					13,67,000
Say 18½ miles at Rs. 73,400* per mile =Rs..					13,67,075*

19. Approximate cost.

* Without Rolling Stock.

J. E. LOCKYER,

Assoc: M: INST: C. E.,

Contracting Engineer.

REPORT

ON THE

S. E. WYNAAD SECTION.

REPORT ON THE S. E. WYNAAD SECTION.

An alignment with a maximum grade of 1 in 70 (1.43 p. c.), uncompensated.

After entering on British territory the first 5 miles of the 1 in 70 alignment is on fairly good ground, with easy gradients, and runs parallel to the road except where it has to make a detour to round the spur between miles 54 and 56; and between miles 56 and 57, where it has to make a detour to cross a ravine at a suitable level; these detours make the line nearly double length of the road between the frontier and the Tippakadu Bungalow. The contours of the topographical map clearly shew this to be the only possible route, and though the forest is very thick, there is very little of that broken and rocky ground which is met with in the alignment on the Mysore side of the frontier. This length lies directly across the track of the elephants in their migrations east and west.

The proposed line then follows the left bank of the Moyar River, close to the river and the main road to Gudalur, there being no alternative route. There are no particular difficulties, the ground being fairly easy and the gradients favourable, but it will be curved for nearly the whole distance, though very sharp curves may generally be avoided without greatly increasing the expense. This length also crosses the elephant track.

Between these points it is necessary first to cross the Moyar to avoid the precipitous ground on the right bank and to re-cross it to avoid a similar obstacle on the left bank.

Near mile 61 the road diverges from the river, but as the route followed by the road necessitates grades steeper than 1 in 70 the line has been mapped out to continue along the river bank to mile 63½. It then re-crosses to the opposite side of the river, the left bank being too precipitous. Keeping to the right bank as far as mile 65½ the line again re-crosses to the left bank. The physical features of this length are much the same as between miles 57 and 61.

The increasing steepness of the country along the river preventing any further advance towards Gudalur, the line has been swerved round towards the road and stopped at the 66th mile, the proposed terminus at Thorapalli.

The contours admit of a 1 in 70 alignment being carried a little farther towards Gudalur, but are too steep in cross section to admit of a terminus being located beyond the 66th mile. The site selected is about 200 feet below, and ¾ of a mile from, the main road at the 141st mile from Bangalore. An approach road would therefore have to be made from the main road to the terminus, which would then be about 5 miles by road from the Gudalur Post Office (and Bazaar). The site selected is only 2 miles, in a straight line, from Gudalur, but is over a thousand feet below it; any attempt to reach it by a 1 in 70 grade would therefore be futile.

The distance from the frontier to the terminus at Thorapalli is as follows:—

By the proposed railway alignment	...	14	miles
By road	...	11	"
		3	"
Increase over road	...	3	"

7. Length of railways compared with length of road.

Position.	General description of work.	Length.	Rate.		Total*
			Rs.	Per.	
Mile 52-57	... Moderate	... 5 miles.	60,000	Mile.	3,00,000
" 57-59	... Rather heavy	... 4 "	80,000	"	3,20,000
" 61-65	... Do.	... 4 "	80,000	"	3,20,000
" 65-66	... Moderate	... 1 "	60,000	"	60,000
Total Rs. ...					10,00,000
14 miles at say Rs.70,000* per mile = Rs. ...					9,80,000*

*Excluding Rolling Stock.

Alternative alignment with a maximum grade of 1 in 40 (2.5 p. c.)

For similar reasons to those given in the report on the Gundlupet-Frontier Section (excessive length and cost of a 1 in 70 alignment), the 1 in 40 alignment was continued on from the frontier.

This alignment crosses the frontier about a quarter of a mile to the east of the road to Gudalur, and follows practically the same route as the 1 in 70 alignment, but the increased steepness of the grade allows of the intervening spurs being crossed, instead of rounded as on the 1 in 70 alignment, thus decreasing the distance considerably in the length from the frontier to the Tippakadu Bungalow. The character of the ground is fairly easy for this length, as on the first alignment.

After passing the Tippakadu Bungalow there would be no appreciable advantage gained by continuing the 1 in 40 grade any farther, as very little distance could be saved by it between this point and the proposed terminus at Thorapalli. Beyond the 58th mile (45th of the 1 in 40 alignment) therefore, the 1 in 70 alignment has been retained, though the introduction of short lengths of 1 in 40 at the crossings of ravines, &c., would be economical.

As mentioned in para. 5, the alignment might be continued still farther towards Gudalur, but no suitable ground offers for a terminus.

The length of each is about the same, a little over 11 miles.

Position.	General description of work.	Length.	Rate.		*Total.
			Rs.*	Per.	
Mile 41½-44	... Moderate	.. 2½ miles	60,000	Mile.	1,42,500
" 44-52	... Rather heavy	.. 8 "	80,000	"	6,40,000
" 52-53	... Moderate	.. 1 "	60,000	"	60,000
Total Rs. ..					8,42,500
Say 11½ miles at Rs. 74,000* = Rs. ..					8,41,750*

J. E. LOCKYER,

Assoc. M. INST. C. E.,

Contracting Engineer.

8. Approximate cost.

9. An alternative grade of 1 in 40.

10. From the Frontier to the Tippakadu Bungalow.

11. From Tippakadu Bungalow to Thorapalli.

12. Beyond Thorapalli.

13. Length of railway, compared with length of road.

14. Approximate cost.

Copy a letter No. 2609 dated 7th April
1893 from the Consulting Engineer
for Railways, Bombay to the Resi-
dent in Mysore. 3

I have the honor to forward 3
copies of the report and estimates
with one copy of the plans of the
proposed line of railway south-
wards from Hanjangud to the
limits of the Mysore territory and
onwards towards Gudalur in the
Wynaad for consideration by the
Mysore Durbar.

2. The distance between Hanyan-
gad and Gudalur was assumed
at 54 miles and it was thought
that a good survey could be
made for Rs 300 per mile, and
money provision was made ac-
cordingly both by the Mysore Durbar
and by the Madras Government.
But it was soon found out that

25.04.8.2

DW 3648/93

the hilly nature of the country between Gundelpet and Gudalur required much more investigation than was anticipated, and that many trial surveys would have to be made before any definite alignment could be recommended. The money at the disposal of the Agent, Southern Maharashtra Railway Company, was thus found ~~not~~ quite inadequate for the work required, and so the Bombay Government - vide Bombay Government Resolution No 1073 dated 19th May 1892, copy attached - decided to make a permanent survey with plans and estimates of the easy portions between Nanjangud and Gundelpet, and to run as many trial lines between Gundelpet and Gudalur as the balance of the money at disposal would admit of.

3 It will be observed that there are no difficulties whatever in the first section of 23 miles to Gundelpet and that the present railway could be extended to that town for about Rs 40,000/- per mile, or in all Rs 9,60,000/- the actual figure in the report being Rs 9,09,880. And it will be noticed that the first 5 miles south of Gundelpet can also be constructed at the same rate, but beyond that, difficult country is entered, and is continuous the whole way to Gudalur. On this section specially steep gradients will apparently have to be permitted - as to reduce the gradient from 1 in 40 to 1 in 70 seems to involve an increase in mileage length of about 13 miles. But in either case the cost of construction will be very heavy; and as I

Distance gradient.	
1 in 40	43 miles
do - 1 in 70	30 -
Difference - 13 miles	

understand there is no centre of trade or other commercial obligatory point between Gundlupet and Gudalur, the alignment between these two places need not be considered as regards territorial divisions but will be regulated wholly by the physical features of the country to be crossed. The difficulties are encountered on both sides of the frontier, and for about equal distances, so in the alignment of this section the Mysore Durbar and the Madras Government seem about equally interested. Much more investigation seems necessary before a trace can be selected, and the cost will be somewhat heavy owing to the density of the jungle, and to the necessity of employing a very experienced engineer, and one who has had previous experience in similar work.

4. But it appears to me that the section between Haryangud and Gundlupet can be treated quite independently, and if the Mysore Durbar should ^{be} desirous of continuing their present venture 23 miles further south to that town, the present surveys are sufficient to allow work being started at once; and I see no reason why the estimate of Rs 9,09,800 should not be taken as very fairly approximate.

5 The results are also being sent to the Government of Madras for information and for such orders as they may desire to issue. And I have no doubt that any orders or remarks issued by that Government will be in due course sent you for the information of the Durbar.

No. 685 of 1893.

P. W. DEPARTMENT, RAILWAY BRANCH :

Bombay Castle, 7 April 1893.

To

The Joint Secretary to the
Government of Madras
Public Works Department
(Railway Branch)

Sir,

I am directed to forward
for information and considera-
tion, 3 copies of the report with
estimates - and one copy of the
plans - of the survey of the pro-
ject from Tanjanguad, Mysore
to Gudalur, Wynad.

2. The estimate of Rs 300 per
mile for the survey has been
found quite insufficient as
particularly difficult country
has to be crossed between
Gundlupet and Gudalur;

and

the

To, Joint Secretary
to the Government of Madras
Public Works Department
(Railway Branch)

Put into file
7/11/93
17/4

PW 3648/93

and these difficulties are about equal on either side of the frontier. In order therefore to utilize the money at disposal as far as possible the Governor in Council ordered the 23 miles between Kanjargud and Gundlapet - the easy portion - to be permanently located and estimated for, and the rest of the money to be used as far as possible in running trial lines through the hilly country.

The results for a 1 in 70 gradient and for a 1 in 110 gradient are given, but this part of the project seems to require much further investigation by a very experienced Engineer before any definite conclusion can be arrived at. It is also to be noticed that the southernmost point reached is placed 5 miles by

by road from Gundalur ²⁹⁰⁰ and 1000 f. below it owing to the unfavorable nature of the ground, and it is stated by the Chief Engineer of the Southern Mahratta Railway Company that the point selected - Thorapalli - is the most suitable spot to continue the line through the Myriad to the Western Coast.

3. It appears evident from these trial surveys that the alignment between Gundlupur and Gundalur must be considered wholly with regard to the physical features of the country to be traversed and consequently the Mysore Durbar is equally interested in the further consideration of the project. So, in this connection, I am to forward a copy of a letter addressed to the Resident in Mysore and to ask for the further views of His Excellency.

The Governor of Madras in Council
on the project.

I have the honor to be,

Sir,

Your most obed^t Servant,

Am Subbar

Lt Col R. C.

Secretary to Government.

Doct & comp

- 3 copies of the report with estimates
- One copy of the plans.
- Copy of Capt. Ruge's letter No 2609 of 7 April 93 to the Resident in Mysore

Encls 3 (1 book of plans & 2 S.C. of Encls 2)

Dates: 17.4.93

* Plans returned to
R. office for custody
14.9.93

W.C.

W.C.

The project cannot be pursued.
The result of the survey is not very satisfactory, the line terminating 1000 feet below Gudalur. I don't know the country but I should imagine that this result is enough to show that there is little prospect of a connection with the west coast being found from by this route. It is more difficult than I think was expected. There will be very little traffic and there is no prospect of getting the survey to make the portion of the line in British territory. I agree with the conclusions in the last part of Mr. W. C. Ruge's note.

W.C.
25 Apr.

His Excellency the Governor
None of further

I can't find Thorapalli on the Ordnance Survey Map - but if the height of that place as given in the trial survey (3220 feet) is correct 3220 ft. above the sea I don't think there is to be any great difficulty in running the line, or something like a level from Thorapalli to the base of the Kankar plateau. Devide. Hence to take the line down the plateau to the low country 5 miles

Mumpinfolle
Gudalur extension
Survey -

The Bombay foot. hills on the Report of this survey which was made taken in Feb 92 and the widest place out of the portion in the S.E. Wyndham (British territory)

In consequence of the estimate of 3000 ft. per mile being insufficient the detailed survey stopped at Mumpinfolle 23 miles from Mumpinfolle and the remaining length is a mere reconnaissance route.

Two lines were examined on 1 in 70 and the other 1 in 40 and the respective lengths of them & their estimated cost for the Wyndham portion is

1/70	14 miles @ 70,000	= 9,80,000
1/40	11 3/4 miles @ 74,000	= 8,41,750

The proposed terminus is Thorapalli which is 2 miles from Mumpinfolle.

and 1000' below it -
The Sec. of Public Works
may remark that the
alignment between
Gundlupet & Gudalur
must be considered
wholly with regard to
the physical features
of the ground -

In the absence of fur-
ther survey it is difficult
to criticize but I think
the rate per mile is
much too low -

There is no mention
in the report of any
possible traffic -

The Mysore Durbar
remarks in a letter of
6 July 91 that it is ac-
cused to favour the
project to Nanjangud
with Erode -

Now that definite
proposals have been
made with regard to
connecting Mysore &
Erode - I assume

this project will not
now be further con-
sidered & that & Bom-
bay & Mysore may be
thus addressed

M
21
4

of the line is not to be difficult.
There are no serious, however, is
any probability of traffic but
it is just the same as the
so long that Mysore & Bombay
may be addressed as suggested
by C.E. for R. S. J. S.
1/5/92

So my thinking this is a most impracticable
scheme - even if there were money for the purpose.
The very heavy expense wh. w. be incurred on
the 14 miles on each side of the frontier would
almost of itself shut out the idea of making
the railway even if it led to any definite profit.
There can be but very slight traffic over this
end of the line, and I understand that to
continue it from Thorapalli to the lower
border would necessitate an enormous amount
of bridging, as it would cross all the drainage
streams from the hills - a constant
succession of nullahs, besides having to cross
a very big river at Mambal, and another
heavy river, the Rarkur - and this in a
country with a low rich soil.
I am not prepared to say whether it might
not be more advantageously be brought up to
Doddaballapur - but as the proposal now stands
I do not see that we can read any other message
to Mysore & Bombay than the one now
proposed.

W
9 May

Letter from the Govt. of India, No. 685 of 7 April 1893
Bombay P. W. Dept.

A

order
No. 854 R of 12 May 93.

Note to the
Planning
Committee
15/5/93

The detailed survey
for a line of Railway
between Nanjangud
and Gundlupet &
the reconnaissance
from Gundlupet to
Thorapalli show
that the probable
cost for the Wynad
portion would be
for a grade of 1
in 70

14 miles @ 70,000
= 9,80,000

for a grade of 1 in
40
11 $\frac{3}{4}$ miles @ 74,000
= 8,41,750

Considering the phy-
sical features of the
country it is not
improbable that
these figures are
too low -

2. The Mysore Durbar
has already stated
that a line from

Mumprid to Erode
would be a better
project than the
one now under con-
sideration - and
as definite proposals
have been already
made & accepted
by the Mysore Dur-
bar in favour of
a line connecting
Mumprid and
Erode - I am to
say that the Govt
of Madras does
not consider that
further ^{investigations} consideration
of the Mumprid
Gudalur project
may be deferred

JM

$\frac{10}{5}$

3. A copy of these Prop.
will be furnished to the
Govt. of Bombay.

20

M. No 854 A of 12 May 1893
Forwarded.

~~The Govt. of Bombay P. & D. Dept.~~
The Political Dept.

DESPATCHED

20 May 93

A

No. 852 R 8 12. May / 93.