Extract from Letter from ROSWELL G. BENEDICT, Esq., Engineer of the Great Western Railway of Canada, to PETER BUCHANAN, Esq., dated Hamilton, 16th April, 1851.

I consider that THE THROUGH PASSENGER business of the Great Western Road will be DOUBLE that of the Central Road, and that THE WAY PASSENGERS will be nearly if not quite equal. The local freight business cannot but equal it. In addition to this, the Great Western will have the benefit of all the freight brought to Detroit. The same argument holds good with regard to passengers. The number of passengers between Detroit and Buffalo during the season of navigation 1850, (a space of about five months) was 146,000, independent of the large numbers carried past Detroit, by the upper lake steamers amounting to at least double the above number.

I have no means of ascertaining the exact number of Through Passengers on the Central Railroad; but it cannot vary much from 60,000.—I think it safe, and much below the figure to estimate 100,000 Through Passengers on the Great Western Line, and assuming the way-travel and freight to be only equal, we shall MORE THAN REALISE the estimate of Mr Stuart, making no allowance for increase, &c.

*(Signed)* ROSWELL G. BENEDICT,
*Engineer Great Western Railroad, Canada*

## NOTE G.

### *Table of Gradients.*

| DENOMINATION OF GRADE. | NAME OF DIVISION. Eastern. | Central. | Western. | Pt. Sarnia Branch. | Total. |
|---|---|---|---|---|---|
| | Miles. | Miles. | Miles. | Miles. | Miles. |
| Level and under 5 feet per mile, .... | 21·37 | 31·83 | 85·52 | 11·40 | 150·12 |
| 5 to 10 feet per mile, ..... | 1·15 | 2·06 | 8·50 | 8·45 | 20·16 |
| 10 to 20 feet per mile, ..... | 8·55 | 14·75 | 6·41 | | 29·71 |
| 20 to 30 feet per mile, ..... | 8·03 | 9·75 | 6·82 | | 24·60 |
| 30 to 40 feet per mile, ..... | | 3·45 | 3·00 | | 6·45 |
| 74 feet maximum west, ..... | | 11·40 | | | 11·40 |
| Total, ..... | 12·10 | 77·84 | 109·95 | 19·85 | 277·74 |

### *Linear Arrangement.*

| DIVISION. | CURVES IN MILES. Tangent in miles. | Radius 11460 ft. | Radius 5730 ft. | Radius 2865 ft. | Radius 1910 ft. | Total Length. |
|---|---|---|---|---|---|---|
| Eastern, ..... | 39·84 | | 1·87 | | 0·41 | 42·10 |
| Central, ..... | 70·91 | 0·39 | 1·42 | 2·52 | 0·58 | 75·84 |
| Western, ..... | 100·38 | 1·53 | 2·04 | | | 103·95 |
| Sarnia Branch, ..... | 17·24 | 1·59 | | 1·02 | | 19·85 |
| | 264·38 | 3·52 | 5·33 | 3·54 | 0·99 | 277·74 |

REFERENCES TO THE SKETCH, No. III.

The Railways in the United States connected with THE WESTERN TERMINUS of the Great Western Railway are distinguished as follows:—

| | | |
|---|---|---|
| A. | Milwaukie and Mississippi, ..... | Railway. |
| B. | Chicago and Galena ..... | ——— |
| C. | Michigan Central ..... | ——— |

The Railways in the United States, connected with THE EASTERN TERMINUS of the Great Western Railway are distinguished as follows:—

| | | |
|---|---|---|
| D. | Lewiston and Lockport ..... | Railway. |
| E. | Attica and Buffalo ..... | ——— |
| F. | Tonawanda (Rochester to Attica) ..... | ——— |
| G. | Rochester and Syracuse ..... | ——— |
| H. | Syracuse and Utica ..... | ——— |
| I. | Utica and Schenectady ..... | ——— |
| J. | Albany and Schenectady ..... | ——— |
| K. | Hudson River and New York City ..... | ——— |
| L. | Western (Albany to Boston) ..... | ——— |

The Railways which radiate in different directions, through the States of New England and New York, and which will be tributaries to the traffic of the Great Western Railway are distinguished as follows, viz.:—

| | | |
|---|---|---|
| M. | Oswego and Syracuse ..... | Railway. |
| N. | Rome and Cape Vincent, ..... | ——— |
| O. | Ogdensburgh, Burlington, and Boston .... | ——— |
| P. | Montreal, Laprairie, and Rouse's Point .. | ——— |
| Q. | St. Lawrence and Atlantic ..... .. | ——— |

X X, denotes a projected line of Railway into THE HURON TRACT belonging to the Canada Company.

The Canals connected with the Main Lines of communication through Canada, are denoted by a dotted line, viz.:

The Welland Canal, connecting Lake Erie with Lake Ontario.
The Rideau - - - -, .. Kingston at the Eastern End of Lake Ontario with the Ottawa River at Bytown
The Erie, ———, .. the Eastern end of Lake Erie with the Hudson River in the State of New York, at Albany and Troy.

The Maps attached to this Prospectus have been compiled from the following Authorities:

1.—Skeleton Map, shewing the Railroads completed and in progress in the United States, and their connection as proposed with the Harbour of Pensacola, prepared by Order of the House of Representatives of the United States, 1st Sess., 30th Con., and presented to Congress, 1848.

2. Disturnell's Railway, Steamboat, and Telegraph Book, with the Map attached, published at New York in May 1850.

3. Report and Surveys of Major Robinson, of the Royal Engineers, and other Officers and Surveyors, on the Projected Railways through Nova Scotia and New Brunswick to Quebec, published by Order of the House of Commons; 1846-1851.

4.—Report on THE GREAT WESTERN RAILWAY of Canada, of Charles B. Stuart, Esq., late State Engineer and Surveyor of the State of New York, and now Surveyor General of the United States Navy.

5. MS. Map of R. G. Benedict, Esq., Chief Engineer of THE GREAT WESTERN RAILWAY.