

The following are the characteristics of Line A :—

Length of west approach	...	...	...	...	8 m. 8 ch.
Length of east approach	...	...	...	...	45 ch.
Total length of line	...	...	...	...	8 m. 53 ch.
Maximum grade, west approach	...	...	...	...	1 in 37.
Maximum grade, east approach	...	...	...	...	1 in 40.
Grade in summit tunnel	...	...	...	...	1 in 37.
Minimum radius of curves	...	...	...	...	12 ch.
Total degrees of curvature	...	...	...	...	357 degrees.
Percentage of line curved	...	...	...	...	13.
Length of summit tunnel	...	...	...	...	6 m.
Total length of tunnels outside summit tunnels	...	...	...	...	160 yards.
Total length of bridging	...	...	...	...	820 ft.
Grade-height at summit	...	...	...	...	2,398.
Estimated cost of construction	...	...	...	...	£567,000.

Line A 1.

This line crosses Otira River just below Goat Creek, and follows the right bank up to a point in the gorge about opposite the lower road-bridge, where it goes into tunnel, and comes out on the left bank of the Bealey River at a point about 30 chains below the Punchbowl Creek, and thence follows the left bank of the Bealey, partly in embankment in the river-bed, and partly cutting through rock-points, until it reaches the common point.

Characteristics of line A 1 :—

Length of west approach	...	...	...	...	7 m. 54 ch.
Length of east approach	...	...	...	...	1 m. 7.5 ch.
Total length of line...	...	...	...	...	8 m. 61.5 ch.
Maximum grade, west approach	...	...	...	...	1 in 30.
Maximum grade, east approach	...	...	...	...	1 in 40.
Grade in summit tunnel	...	...	...	...	1 in 36.
Total length of tunnels outside summit tunnel	...	...	...	...	439 yards.
Minimum radius of curves	...	...	...	...	7½ ch.
Total degrees of curvature	...	...	...	...	809 degrees.
Percentage of line curved	...	...	...	...	19½.
Length of summit tunnel	...	...	...	...	8,646 yards.
Total length of bridging	...	...	...	...	1,120 ft.
Grade-height at summit	...	...	...	...	2,446.
Estimated cost of construction	...	...	...	...	£517,000.

Line B 3.

This line follows the left bank of the Otira River until it passes the junction with the Rolleston, and crossing the latter not far above the wire footbridge runs up the centre of the river-bed to the rocky point at the end of the spur between the Otira and the Rolleston. From this point it follows the right-hand bank of the Rolleston to a point above Rose Creek, where it crosses the river, coming out on the left bank just above the junction of Holt's Creek. It recrosses the Rolleston about 10 chains further up, and then continues along the hillside on the right bank of the river and through the dividing spur in a tunnel, and then follows up the steep hillside on the left bank of the Otira until it reaches a point just below Cape Horn, where it crosses with a high bridge and keeps the right bank up to Starvation Point, where it again crosses just above Park's Creek and enters summit tunnel, and comes out on the left side of the Bealey River about 14 chains below the road-bridge. It crosses the Bealey there and follows right side down to a crossing just above Rough Creek, and from there follows the left bank to the common point, the last half-mile being common in grade and alignment with line A 1.

Characteristics of line B 3 :—

Length of west approach	...	...	...	...	8 m. 21 ch.
Length of east approach	...	...	...	...	2 m. 2.5 ch.
Total length of line	...	...	...	...	10 m. 23.5 ch.
Maximum grade, west approach	...	...	...	...	1 in 30.
Maximum grade, east approach	...	...	...	...	1 in 40.
Grade in summit tunnel	...	...	...	...	1 in 33.
Minimum radius of curve	...	...	...	...	7½ ch.
Total degree of curvature	...	...	...	...	1,315 degrees.
Percentage of line curved	...	...	...	...	29.
Length of summit tunnel	...	...	...	...	5,990 yards.
Total length of tunnels outside summit tunnel	...	...	...	...	638 yards.
Total length of bridging	...	...	...	...	2,791 ft.
Grade-level of summit	...	...	...	...	2,535.
Estimated cost of construction	...	...	...	...	£543,000.