Wages: Drillers and helpers $3, muckers $2.50, blacksmiths $4, helpers $2.50, motormen $2.75, dumpmen $2.50.

Maximum progress in any calendar month: 604 feet, April, 1910.

Average monthly progress per heading: 350 feet per month.

North Heading, Elizabeth Lake Tunnel.

(Through altered granite, requiring much timbering, 13,370 feet.)

	Cost per foot of tunnel.
Drilling and blasting	$11.25
Mucking and tramming	11.70
Engineering and superintendence	1.27
Drainage	.45
Ventilation	.22
Light and power	5.55
Timbering (13,031 feet)	8.48
Cost of auxiliary shaft	.93
Permanent equipment (full charge, no salvage; estimated)	3.70
	$43.55

South Heading, Elizabeth Lake Tunnel.

(Through medium-hard to hard granite, requiring but little timbering, 13,500 feet.)

	Cost per foot of tunnel.
Drilling and blasting	$14.65
Mucking and tramming	11.10
Engineering and superintendence	.86
Drainage	.17
Ventilation	.41
Light and power	4.93
Permanent equipment (without salvage; estimated)	3.70
Timbering (3,424 feet)	2.19
	$38.01

LUCANIA TUNNEL.

Location: Idaho Springs, Colo.

Purpose: Mine development and transportation.

Cross-section: Square.

Size: 8 by 8 feet.

Length: 12,000 feet projected; 6,385 feet driven December 1, 1911.

Character of rock penetrated: Hard granite.

Type of power: Purchased electric current.

Ventilator: Pressure blower.

Size of ventilating pipe: 18 and 19 inches.

Drills: Pneumatic hammer, 3 in the heading.

Mounting of drills: Vertical columns.

Number of holes per round: 25.

Average depth of round: 8 to 9 feet.

Number of drillers and helpers per shift: 3 drillers and 2 helpers.

Number of drilling shifts per day: 1.

Explosive: 50 per cent. gelatine dynamite.

Number of muckers per shift: 3.

Number of mucking shifts per day: 1.

Type of haulage: Horses.

Wages: Head driller $5, drillers $4, nipper $3.50, boss mucker $5, muckers $4, drivers $4, power engineers $4, blacksmith $5.

Maximum progress in any calendar month: 263 feet, September, 1911.

Average monthly progress: 125 feet per month for the first 4,800 feet, 240 feet per month for the last 1,575 feet.

Average Cost of Driving First 4,800 Feet.

	Cost per foot of tunnel.
Labor	$ 8.86
Powder	7.86
Fuse and caps	.17
Candles and oil	.21
Horse feed and shoeing	.18
Power	1.64
Repairs	.14
Tunnel equipment	2.75
Surface plant	1.25
	$23.06

"Tunnel equipment" includes the cost of materials and installation of the pressure air line, the ventilating line, rails, ties and fittings, and the drainage ditch. "Surface plant" includes buildings, compressor, blower, transformers, motors and drill sharpener.

Cost of Driving Next 1,575 Feet.

The contractor received $21.50 per foot to cover the cost of labor, powder, fuse, caps, candles, oil, horse feed and shoeing, power and repairs, and the installation of the tunnel equipment.

(To be continued.)

REMARKABLE SPEED IN BRIDGE BUILDING.

Since the establishment of the Canadian military camp at Valcartier, Que., there has been much accomplished that reflects credit upon the manner in which the engineering features of the camp have been handled. First, it took but a few days for the Canadian Northern Railway to transform a small flag station into an important terminal point with twenty miles of railway sidings, giving a splendid impetus to the establishment of the camp and expediting the movement of the men and materials which went to make this city of thirty thousand souls.

Now comes news of a bridge-building record made by the men of the Royal Canadian Engineers under the direction of Major W. Bethune Lindsay, of Winnipeg. The Jacques Cartier River separates the main camp from the artillery practice grounds at the base of Mounts Ileene and Irene. Across this 350 feet of waterway, the Royal Canadian Engineers built in four hours, a barrel-pier pontoon bridge, capable of carrying heavy batteries. The major and his three hundred men worked with that well ordered efficiency which characterizes the efforts of the British bred. The race for the record started with the Canadian Northern Railway. The materials—barrels, planking, etc., were freighted on to the ground with remarkable despatch. The casks were made watertight, the timber was made ready, the twenty-foot bank cut down to provide an easy grade for traffic, and the actual test was on.

There is a telephone for every 15.2 persons in Canada, according to official figures.

Promising surface indications of petroleum deposits in Spain have led the government to investigate the discoveries.