

A NEW HIGHWAY FOR WESTERN TRADE.

Western Pacific Taps Country Rich in Mineral, Agricultural and Industrial Possibilities—
New Ideas Compared With Old in Transcontinental Railroad Building—One Per Cent Grade the Highest.

Shippers throughout the country will be interested in a railroad which is being built with every consideration in advance of shipping needs and costs, the maximum of operating efficiency, and, logically, the greatest promise for immediate returns to investors.

Partial operation will begin very shortly and within a year the last spike will have been driven on this new road, the Western Pacific railway, as noteworthy a piece of railway construction, in its way, as the first of

the lake it crosses Great Salt Lake desert, whose soft and treacherous sands were once the terror of travelers in the days of the emigrant trail. Through careful engineering and permanent construction from the start this part of the line has been so located and built, however, as to avoid the danger of any possible yielding of the roadbed, while the cost has been kept down to the figure, remarkable in the circumstances of \$20,000 per mile, a fraction of what previous lines have cost.

The road then turns north and meets

As a matter of fact, its superiority was known to the early railroad builders. The trail down the Humboldt valley and over Beckworth pass was a main route of emigrant travel to California. That Beckworth Pass was the lowest point in the summit of the Sierra had been known for more than half a century, ever since the pioneer Jim Beckworth made the discovery and established there a hotel frequented by emigrant trains.

At the time of the conception of the first Pacific railway surveys were made with a view to construction through this pass, and the project was abandoned only because of the difficulty of the route along the stream-

Western Pacific a route through the mountains which can be operated during the winter months without delay to traffic from storms and with the heavy expenditures for handling snow and maintaining snowsheds incurred by other roads. One snow plow, it is anticipated, will be able to take care of the line across the mountains in the heaviest storm likely to occur.

The securing of a location so nearly approaching the ideal from an operating point of view has, naturally, not made the road a cheap one to build. The cost of construction averages over \$20,000 per mile, and for some miles it is over \$200,000. The construction, however, is according to the best modern practice, the work done to date exceeding the best rebuilt portions of other transcontinental lines and the present cost will be repaid by the greater efficiency of operation and in the saving of future outlay for improvement and rebuilding. The policy of the men who are making the new transcontinental line is to build the road but once and to build it to last.

In line with this policy have been the changes made in successive revisions of the plans. The use of



Western Pacific Line Across Salt Desert West of Great Salt Lake.

has overtaken the heretofore existing routes, causing delay and loss to California shippers.

From the edge of San Francisco bay to the summit of the Sierra the new road taps one of the richest parts of the American continent, the great central valley of California. Watered in its northern half by the northward flowing Sacramento river, and in its southern half by the northward flowing San Joaquin, with many narrow side valleys extending into the recesses of the Sierra and drained by tributary streams, the valley of California is an empire in itself, rich in food and minerals and capable of supporting twenty times its present population. The Western Pacific cuts directly across the middle of this splendid country, a route where the avenues of communication from both directions naturally converge and taps it at its three most important centers—Sacramento, Stockton, and Oakland.

From these points the branch lines reach out to the extremities of the whole 400 mile range of the valley, which is far from having adequate railroad facilities at present and can reach out to the extremities of the 17,000 square miles. Eastward from the great valley, in the Sierra region, the road opens a new mining and timber country larger than the state of Connecticut, and hitherfore without transportation facilities. In the Sierra the virgin forest extends 50 miles from the right of way on each side, and it is estimated that the timber traffic from this district will amount to \$1,000,000 a year.

GREAT TRADE OF SAN FRANCISCO.

Around San Francisco Bay and in the central valley of the state are found more than two-thirds of the population and wealth of California. Through the cities of this region passes a still greater proportion of the trade of the state. How great that trade is may be conceived from the figures of California's development and production in the past two years. There were entered in 1906, under the homestead acts in 1906, 211,567 acres of public lands; in 1907, 173,438 acres. The total sales of public lands for cash under the homestead and other acts were, in 1906, \$99,311 acres, and in 1907, 579,244 acres. There still remained in the state, in 1907, 39,391,000 acres of public lands unappropriated. Much of this land lies in the regions on the slopes of the Sierra and will become valuable on the opening of the territory to markets. California's timber production in 1906 was 1,348,000,000 feet of lumber, valued at \$20,726,000, and, as previously described, there are millions of acres of practically virgin forests still within the state. In the national forest reserves alone, mostly in the Sierra region, there are 20,000,000 acres, secured from destruction, which will be a permanent source of future traffic under new methods of use.

Then there are the mines. In 1906 they produced an amount of gold valued at \$18,332,000, and silver to the amount of \$1,027,000. Some of the most productive gold fields of the state are in the territory traversed by the Western Pacific. There is also to be considered the manufacturing industries of the state, which use raw material to the value of over \$125,000,000 annually and turn out over \$260,000,000 in products. These manufacturing industries are largely concentrated in San Francisco, Oakland, Stockton and Sacramento.

All this is without consideration of the agriculture, which yields products which is greater in value than all the others combined. More than 90,000 carloads of fruit, wine and vegetables are shipped from the state annually, and the trade in these products is increasing by leaps and bounds. There is also to be considered the traffic wholly within the state from the producing ports to the distributing centers, and especially to the port of San Francisco, which last year shipped about \$35,000,000 of goods and in 1906 nearly \$40,000,000. The imports into San Francisco, which are also for the most part distributed by rail to interior destinations, were \$54,000,000 in 1907 and over \$44,000,000 in 1906.

It is possible, however, to obtain more detailed figures on the trade of the regions which the Western Pacific reaches. In California the road touches or crosses the counties of Lassen, Sierra Nevada, Butte, Placer, Yuba, Sutter, Sacramento, San Joaquin, Santa Clara, Alameda, Contra Costa and Solano. These counties include the portions of the Sierra, the Sacramento valley, the great central valley, and the trade of which passes naturally through Stockton.

In the year 1908 the products of these counties shipped out of the state included 478,180 boxes of fresh fruit, 118,619,000 pounds of other orchard and garden products, 2,267,000 gallons of wine and brandy, 5,662,000 pounds of wool and 1,000,000 bushels of grain, besides dairy and poultry products in large amounts.

These figures do not by any means represent the entire product of the counties mentioned, but merely that portion of their product which was shipped to points outside the state. Even on this point they are admittedly not a complete representation of the traffic produced by the district covered. For example, that portion of the product first shipped to one of the several distributing points within the state and then transhipped to destinations in another State are in large part not included, or are credited as products of the place of transshipment. Nor do these figures take any account of the traffic within the state. The traffic possibilities of the territory directly reached by the Western

Pacific may be better indicated by figures showing some of the products of the first group of counties enumerated—those adjacent to the main line of the road. These included in 1906, among other articles, 1,355,000,000 pounds of green fruits, 355,000,000 pounds of dried fruits, 14,000,000 bushels of grain, 1,000,000 tons of hay and alfalfa, 2,000,000 cases of canned fruit and vegetables, 13,000,000 gallons of wine and beer, 53,000 tons of sugar beets, 12,000,000 pounds of butter and cheese, 158,000,000 feet of lumber. In addition the manufacturing output of this group of counties in 1906 produced of various kinds to the value of \$67,500,000.

MINERAL WEALTH.

The total mineral product of California in 1906 was \$46,778,000. Of this amount the fourteen counties embraced in the territory directly traversed by the Western Pacific railroad produced \$13,130,000. Oroville, in Butte county, is the center of the principal gold dredging industry of the state. The industry is one which has come into existence within the past decade, but it has had a healthy growth in the past few years. In 1906 it produced \$130,000,000 in output from 13,329,998 in 1903 to nearly \$3,000,000 in 1906. Between twenty and thirty dredges, costing from \$50,000 to \$250,000 each, are engaged in working the ore bearing gravel, which has a depth of about 40 feet. It is estimated that over \$50,000,000 has been taken from these gravel beds at Oroville, and lands which a few years ago could be purchased for from \$10 to \$50 an acre, now sell at from \$1,500 to \$2,000 per acre.

Quartz and hydraulic mining is an important industry in Sierra, Plumas and other mountain counties. In Plumas are located such famous gold producers as the Plumas Eureka, from which \$12,000,000 has been taken, the Green Mountain, which has yielded \$7,000,000, the Crescent, Cherokee and Gold Strike. The gold mines of Sierra county have yielded \$10,000,000. There are also extensive copper and iron deposits, which are awaiting adequate transportation facilities to make their development profitable. The copper deposits of this region are the continuation of the Shasta belt, on which are situated farther north the famous Keswick, Bully Hill and other properties, producing about \$5,000,000 annually.

The same section of the state which contains the richest mineral resources tributary to the road likewise contains the greater part of the standing timber in the Western Pacific territory. Something has already been said of the annual lumber product of California and of the area contained in the forest reserves lying within the state. The amount of timber tributary to the Western Pacific line has been carefully estimated, and it has been concluded that there is enough to furnish 225,000,000 carloads of freight, producing a large and certain revenue to the railroad company. One man has holdings of 400,000 acres along the line in the mountain district, on which it is estimated there is more timber than is now standing in the whole state of Minnesota.

From the summit of the Sierra to Salt Lake City the Western Pacific draws a line across Nevada and Western Utah. Nevada is rich in mineral resources and some of its most promising districts lie along the route of the new road. Deposits of sulphur, borax and salt, gold, silver and copper occur along the line between the border of Nevada and that of Utah. Moreover, irrigation has proved that the soil of Nevada is as rich as anywhere. In the Truckee-Carson River country, for instance, where an irrigation project of the United States government is reclaiming some 350,000 acres of land, the beginnings of a prosperous agricultural community have already sprung up. The country is rich in soil, and the Western Pacific is as rich in soil potentialities as any in Nevada.

When the Western Pacific is in operation, the value of this country will be realized upon. The mines, which commenced their work of development, will send their trainloads eastward to the smelters of Salt Lake City, while the mining communities themselves will furnish markets near at hand for the lumber and farm products of California, and their presence will encourage the further development of grazing and irrigation. New developments like those of Goldfield and Tonopah may take place in the northern regions of the state.

Few people appreciate the way Nevada has grown, despite her lack of rainfall and arid climate. During the decade ending with 1906, the sales of public lands in Nevada amounted to over 1,600,000 acres. The 1907 wool crop of the state was 6,000,000 pounds, valued at \$1,000,000, and her product amounted to over \$2,000,000 yearly. These industries have tripled since 1900. The gold production of the state in 1906, was \$9,278,000, ranking after Colorado, Alaska and California. The previous year it was \$5,359,000. There was also a silver production of \$3,525,000, exceeded in amount only by Montana, Colorado, Utah and Idaho.

Of west bound traffic, in addition to that which will be taken by the line at Salt Lake City by the connecting roads from the east, the Western Pacific will receive a large tonnage in coal from the Utah coal fields, the product of which in 1906 amounted to 1,582,000 tons. This coal will be distributed to the coalless territories of Nevada and California.

Taking into consideration all these sources of traffic, with their possibilities, it does not appear that the ex-

pectation of the Western Pacific can claim that the road should have gross earnings from the start of approximately \$9,000 per mile are unfounded. Still more does the estimate appear to be a reasonable one when compared with the actual gross earnings of the Central Pacific, which were in 1906 more than \$17,000 per mile, or nearly double the Western Pacific estimate. There will be many things to interest the traveler over the new route, especially on that portion of the line which crosses the Sierra and descends the turbulent Feather River. Another mud desert west of the Great Salt Lake, particularly a deposit of salt, snow white and seven miles wide, which the road crosses in traversing the desert. Much of the scenery rivaling that of the so-called "scenic route" of the coast, an added inducement for passenger traffic, the rapid and smooth running made possible by the low grades, light curves and permanent construction.

The Western Pacific railroad was incorporated under the laws of California, March 6, 1903. It is absorbed the rights and franchises held by the Stockton & Beckwith, Sacramento & Oaklands, and the Santa Clara & San Joaquin Terminal Railway company. In April, 1905, it acquired the Boca & Loyalton railroad, the Central Pacific Terminal, the Santa Clara & San Joaquin Terminal, and the Santa Clara & San Joaquin Terminal. Its splendid terminal facilities in Oakland were secured after a bitter fight.

—New York Freight.



The Honeysuckle Milk

Is the only milk put up in the West in sanitary cans.

No solder—no acid—germ proof.

ASK YOUR GROCER.

Why keep a cow? Use



The Natural Flavor.

Our Popular Six Per Cent Certificates.

are secured by first mortgage (double value) and a special withdrawal fund as well as by the bank's capital and surplus of \$500,000. They are free from taxation, redeemable on short notice, and double themselves in twelve years, if the interest is left to be compounded.

Salt Lake Security & Trust Co.,
32-34 Main Street.



COKE

60 DAY SPECIAL.

\$5.85, less 10 per cent for cash with order or C. O. D.

\$5.25

Net per ton delivered. Sacked 50c per ton, 30c half ton extra.

Half Tons - \$2.75.

Coke Slack, delivered \$3.75.

Burn "The Fuel" that Saves You Money.

Utah Gas & Coke Co.,

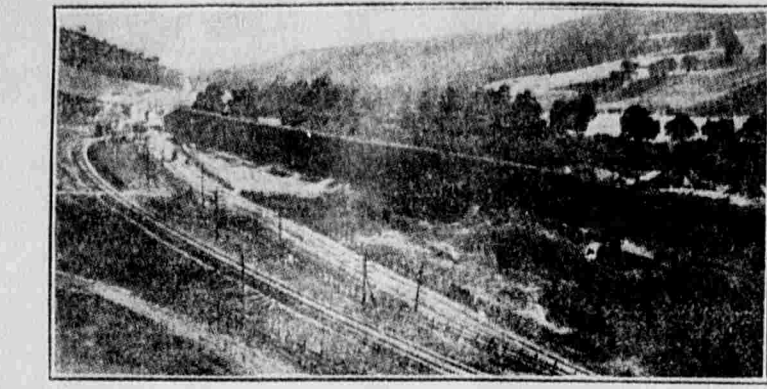
61-65 Main St. Phone 432.



Corner 2nd St. and Main St.

\$7.00 Set of Teeth. Gold Crowns, 25c. Porcelain Crowns, 25c. Gold Fillings, 25c. One-half price.

\$3



New and Old Railway Construction. Graded Lane of New Western Pacific on Right, Southern Pacific on Left.

the great western lines which were completed nearly 40 years ago. Like the pioneer line, it marks an era in the development of American railroading. Somewhere in Nevada two sections of track, which have been driving steadily forward, one from the east and another from the west, will meet, and one more through line will have been drawn across the transportation map.

The new transcontinental road will be the shortest, in time of travel, of all the routes to the Pacific, because it will be the one with the minimum of grades, curves and other obstructions to high speed and economical operation. Although traversing from Salt Lake City to San Francisco a course generally parallel to that of the Central Pacific, the new road has a maximum gradient only one-half that of the earlier constructed line, and crosses the summit of the Sierras by a pass actually nearly 2,000 feet lower than the pass occupied by the Central Pacific.

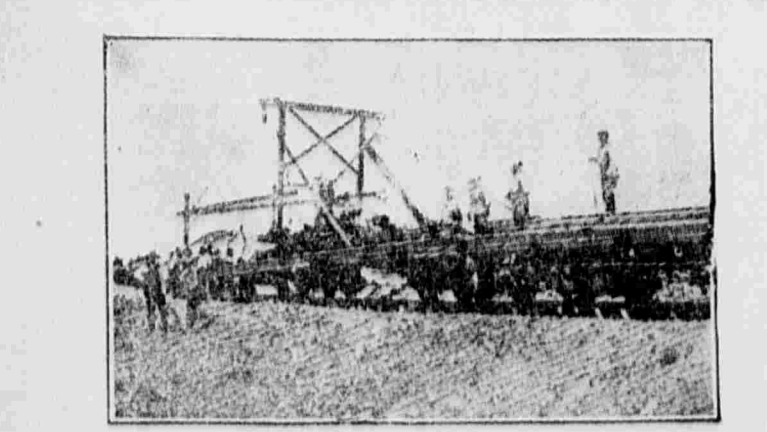
In fact, the Western Pacific grades will compare favorably with those of the best built eastern roads. That a transcontinental road could be built with a maximum grade of 1 per cent was a proposition which, before the putting through of the Western Pacific line, was regarded as absurd by all except one man. The one man was Edward T. Jeffery, now president of the road, and since 1891 president of the Denver & Rio Grande. He knew that the 1 per cent route was possible, and he kept the engineers at work until they found it.

The advantages in grade and in resultant economy of operation which the Western Pacific enjoys in comparison with other western roads is strikingly shown by the following table, which gives the highest elevations reached by the various lines, the maximum gradient for both eastbound and westbound trains, and the total ascent or descent. From this it will be seen that the heaviest grade is only half that of the Union Pacific system, which ranks next to it in this respect, while in the total ascent to be overcome, an important factor in the cost of operation, the difference is even more striking. The figures follow:

Name of R. R.	Highest summits Feet.	Maximum gradient in feet per mile.	Total ascent in ft. overcome.
		E. bound.	W. bound.
Canadian Pacific	2 summits 4298	237-4.49%	116-2.2%
Great Northern	3 summits 5202	116-2.2%	116-2.2%
Northern Pacific	3 summits 5569	116-2.2%	116-2.2%
Union Pacific—Central Pacific, Omaha to San Francisco	3 summits 5532	116-2.2%	105-2%
Union Pacific—Oregon Short Line, Omaha to Portland	5 summits 5532	108-2.2%	116-2.2%
Santa Fe	6 summits 7510	175-3.3%	185-3.5%
Western Pacific	2 summits 5018	52-8.1%	52-8.1%

The task was not a simple matter of avoiding grades and curves. The Western Pacific was planned and laid out primarily as a commercial proposition. It is proposed to have it self-supporting from the start, and the engineers have had to reconcile the problems of construction with the necessities of future traffic development. The line is a road which crosses Utah and Nevada, climbs the crest of the Sierra

(7,300 feet long) and Spanish creek, it crosses to the north fork of the Feather river, which it pursues to the junction of the two streams in the main river. Along its banks the road reaches Oroville, the seat of Butte county, and the center of a fruit-growing and gold-dredging region. From Oroville the road continues south through Marysville and along the banks of the Sacramento river into Sacra-



Track Laying Machine Putting Down Rails on Line of New Road.

Nevada, dips down into the valley of California, and finally terminates at the harbor of San Francisco without a grade anywhere exceeding 5.8 feet to the mile (1 per cent) or a curve of more than 10 degrees, without a snowshed along its whole course, and with all its bridges of permanent construction before the line is completed.

THROUGH A RICH COUNTRY.

At the same time it traverses some of the finest agricultural land in California, rich mineral territories in that state and Nevada, and in the latter state opens hundreds of square miles of land where grazing is already profitable and where the soil needs only the water which irrigation will bring to make it equal in productiveness to any in the west.

From Salt Lake City the main line of the new road runs due west, crossing Great Salt Lake for about five miles in its southern part, where the water

ment, the capital of the state, a city of nearly 50,000, and further south at Stockton, the "Gateway City," at the entrance to the two great valleys of the Sacramento and the San Joaquin. From Stockton it follows nearly the old line of the Central Pacific to the terminus at Oakland, 4 miles distant across the bay from San Francisco. A direct short line, from Sacramento to Oakland, will later cut 60 miles off the final portion of the route. The present construction is directed to possibilities of freight traffic offered by the San Joaquin and Santa Clara valleys, to which it gives access. It is planned also to build a bridge across the arm of the bay at Dumbarton point. If done, this will give the road a further advantage, enabling it to run its trains directly into San Francisco.

That the superior advantages of the route here followed should have been left for more than a generation to be discovered by the youngest of the great western lines, perhaps seems singular.

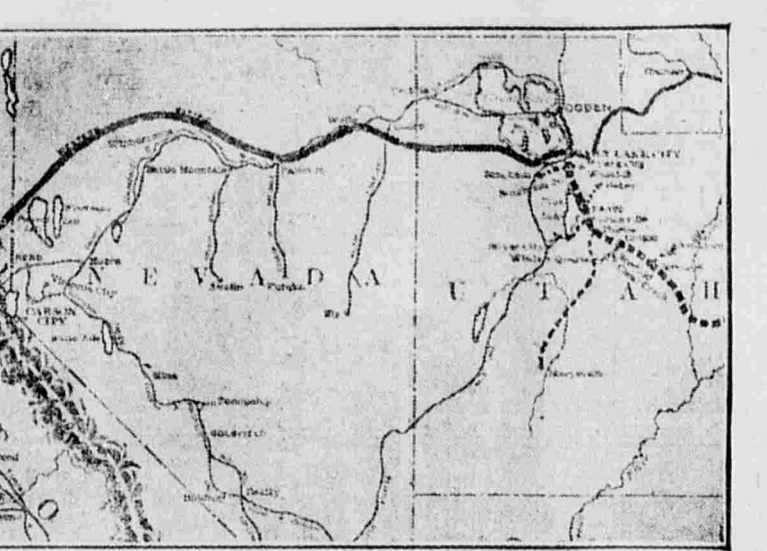
Fill 125 Feet High and 500 Feet Long Constructed Instead of Usual Culverts to Insure Greater Speed and Firmance.

the Feather river, which must be followed down the western slope. Then, too, the government subsidy, based on mileage, with which the construction of the pioneer roads was aided, encouraged the following of the longest route, even with high grades and curvature, rather than the choice of the most economical location. The difference of the aims of the builders of forty years ago and those of today

wooden trestles, which has been customary in railroad building in the west, has been almost eliminated. Fifty-five of these, provided for in the preliminary location, have been replaced by solid earth embankments, which can neither burn nor decay.

TERMINAL FACILITIES GOOD.

In the matter of terminal facilities the Western Pacific is remarkably well

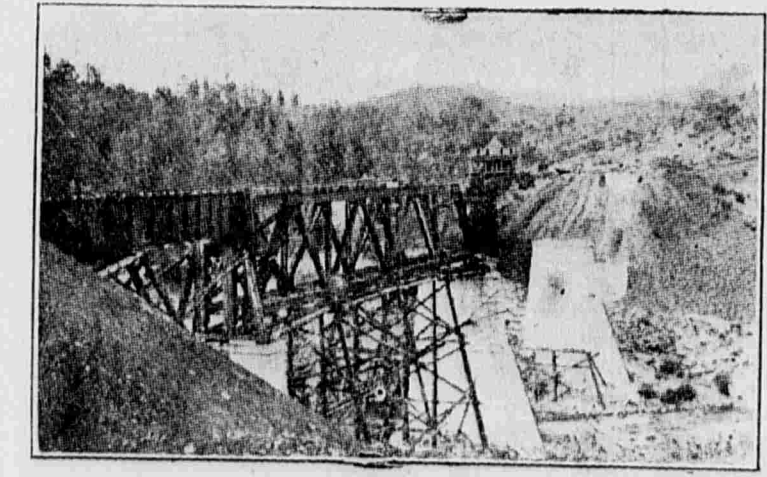


Route of the Western Pacific from Salt Lake to San Francisco.

illustrates the change from the pioneer era of railroad construction in the west to that of the present time.

HEAVIEST GRADE IN 100 MILE STRETCH.

It is in the Sierra that the road rises to the maximum grade of 1 per cent, and practically the whole of this maximum gradient is concentrated in one stretch of 100 miles. Elsewhere there are only about 15 miles of the road where the grade is so high. From the state line of California to Salt Lake City the maximum is only fourteen of 1 per cent, or about 22 feet to the mile, with the exception of two very short stretches. The maximum gradient on the Central Pacific is 106 feet to the mile (2 per cent) or double that of the Western Pacific, and indicated by the fact that it occupies a location north of Twenty-fifth street, in the heart of the city and within seven blocks of the city hall. This includes all or portions of twenty-nine blocks, covering 53 acres. This is connected by the 1,645 foot Portero Tunnel, running under Portero Hill to the water front property of the company, known as the Islais Creek terminal. The latter takes in 70 blocks, giving 216 acres to be devoted to



Bridge Over Middle Fork of the Feather River, Showing Permanent Type of Bridge Construction Employed.

"you can railroad on a 1 per cent," which tersely states the expert's point of view.

Second only in value to low grades is the elimination of curvature, and on the Western Pacific this has been carried to the farthest possible point. The maximum curve used is ten degrees, and in only a few cases do the curves exceed six degrees. The line is so located in the sections where it proceeds along mountain sides as to avoid the dangers from slides and the undermining action of water, and in the Sacramento Valley it is located well above the flood line, which was determined after years of observation and months of computation.

The location through Beckworth Pass secures an advantage besides that of low grades and altitude, which is that there is no necessity for the use of snowsheds, the abandonment of which, a combination of low elevation with peculiar geographical conditions, the line of highest point is practically free from snow. The average maximum depth of snowfall at Beckworth Pass is only 2 feet, as compared with on the Central Pacific route of 8 feet on the first line surveyed for the Western Pacific and afterward discarded, and of 40 to 60 feet on the lines still further north. The change in the snow would mean better time in handling traffic, greater safety and lower costs. The advantage possessed by Beckworth Pass is due to the fact that it serves as a funnel through which the warm "chinook" winds, which melt the snow almost as rapidly as it falls.

Freedom from snow drifts was also secured by the uniform location of the line on the sunny sides of valleys, thus avoiding long lasting and hard frozen banks. These conditions give the

yards and storage tracks, with abundant space for handling car floats. On the Oakland side of the bay the Western Pacific has docks and yards adjoining those of the Southern Pacific, which will be transferred from Oakland directly across the bay by ferry to Marysville, as on all the other lines. With these provisions, especially the city street terminal on Oakland, the Western Pacific enjoys what James H. Bull has characterized as the first essential of a modern railroad—terminal facilities adequate for the prompt and economical handling of traffic. The value of the terminal land in San Francisco and Oakland is upward of \$5,000,000.

The lowest of gradients, the easiest of curves and the most solid construction known to engineering practice, while all these advantages are not, however, supply the place of one thing indispensable to railroad prosperity—traffic. Traffic is what pays the shareholders' interest and the stockholders' dividends, and its development in profitable quantities is the chief factor for which the \$50,000,000 now being put into roadbed and rails and ties and tunnels, between San Francisco and Salt Lake, is expended. What then are the traffic possibilities of the territory which the Western Pacific traverses and its terminals, east and west? What is the basis on which it is estimated that the new road will gross earnings will approximate from the start at least \$9,000 per mile—an estimate made on the authority of one of the road's officials?

In the first place the Western Pacific will receive at Salt Lake City its share of the through westbound traffic from the eastward, and the single line which has heretofore existed, it will likewise get at San Francisco a share of the growing through eastern traffic which

Line Through Altamont Pass in California.