

# Stevens Pass

A ROUTE FOR  
*Train Simulator*

GNTX

## USER MANUAL

### History

The railroad was completed by the Great Northern Railway in 1893. In 1929 portions of the railroad between Leavenworth and Scenic were realigned to the present-day right of way. That year also saw the completion of the 8-mile-long Cascade Tunnel, as well as the installation of electric catenary between Skykomish and Wenatchee. Electrification was removed in 1956 and in 1970 the Great Northern became part of what today is the BNSF Railway.

### Setting

Refer to the following map for the full scope of the Stevens Pass route.



The Stevens Pass route for Train Simulator represents a major portion of the modern-era BNSF Scenic Subdivision, along with fragments of several other subdivisions. It extends from Wenatchee on the Columbia River to Mukilteo alongside Puget Sound in Washington, USA. Geographically, there are four major regions within the route: Urban, maritime

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Everett; the agricultural plains between Lowell and Gold Bar; the heavily forested, mountainous Cascades region; and the semi-arid eastern slope with its ubiquitous fruit orchards. In addition to the Cascade Tunnel, there are several other smaller tunnels, including one running beneath the city of Everett.

There are major railroad yards at both ends of the route in Wenatchee and Everett. Many industries are located in those two cities and there are several smaller yards and industrial spurs in between them. The most prominent industry is the assembly facility at Paine Field, where Boeing's jumbo jets are made, and which is accessed via a 5% grade originating at Mukilteo. The Amtrak Empire Builder (not included with the route) makes stops at Everett, Leavenworth and Wenatchee. Except for the yards, the route is under CTC control and consists of a single main line with passing sidings.

## Locomotives and Rolling Stock

The Stevens Pass route includes two types of locomotives and a variety of rolling stock, all of which are representative of what you would see on the actual railroad. First the locomotives:



GE ES44DC



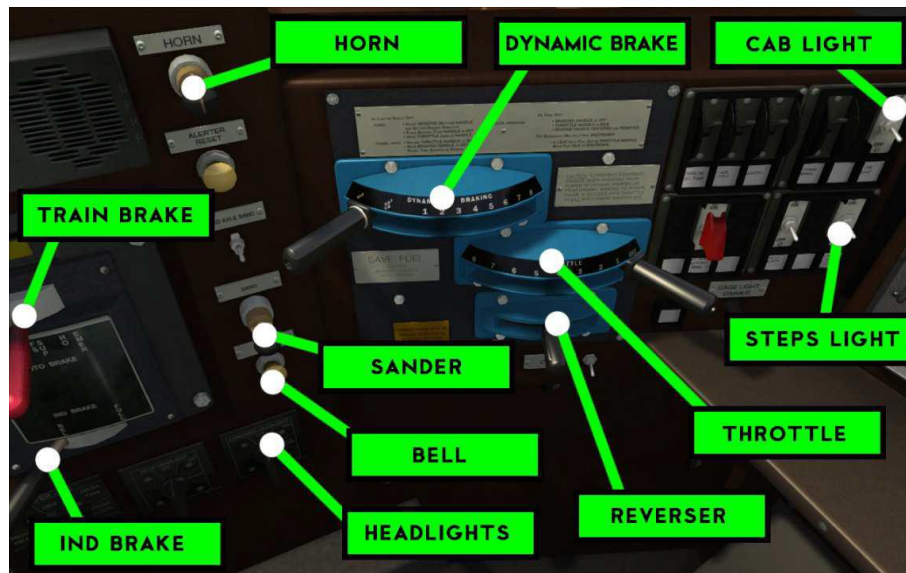
EMD GP38-2, former BN



EMD GP38-2, Heritage I

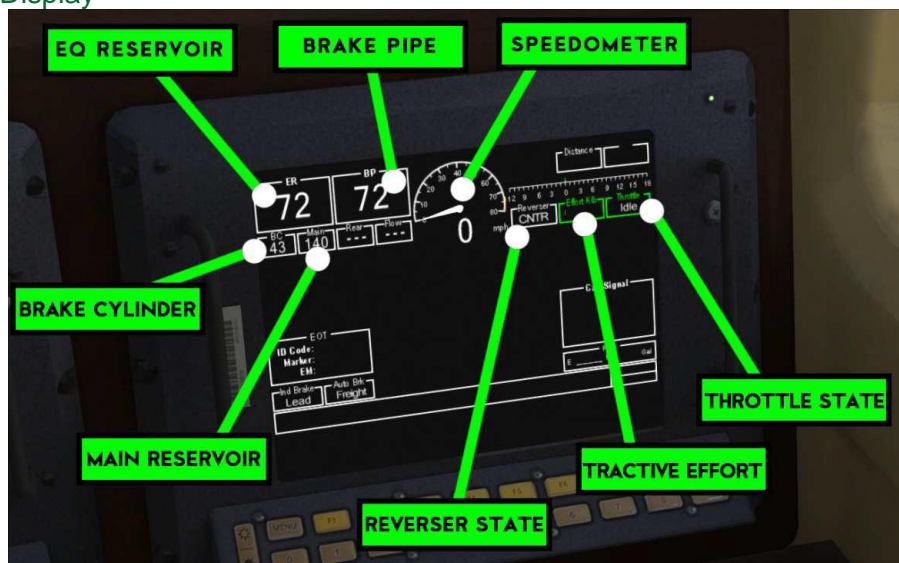
Each locomotive is also available in a driverless ("nd") version. These are to be used when a locomotive is placed anywhere other than at the head end of a consist.

## ES44DC Controls and Keyboard Shortcuts



Throttle	A / D
Reverser	W / S
Train Brake	Apply ' (apostrophe) Release ; (semicolon)
Independent / Locomotive Brake	Apply [ (left bracket) Release ] (right bracket)
Dynamic Brake	Apply . (period) Release , (comma)
Headlights	Toggle H
Bell	B
Sander	X
Windshield Wipers	V
Horn	Space Bar
Cab Lights	Click switch in cab view
Step Lights	Click switch in cab view

## ES44DC Operating Display



## GP38-2 Controls and Keyboard Shortcuts



Train Brake ( 1 )	Apply ' (apostrophe) Release ; (semicolon)
Locomotive Brake ( 2 )	Apply [ (left bracket) Release ] (right bracket)
Horn ( 3 )	Space Bar
Sander ( 4 )	X
Bell ( 5 )	B
Dynamic Brake ( 6 )	Apply . (period) Release , (comma)
Throttle ( 7 )	A / D
Reverser ( 8 )	W / S
Step Lights ( 9 )	Click switch in cab view
Wipers ( 10 )	V
Headlights ( 11 )	Toggle H
Cab Light ( 12 )	Click switch in cab view
Engine Start and Stop ( 13 )	Toggle Z
Beacon Light ( 14 )	C

## Common Rolling Stock



Boxcar



Tank Car



Refrigerator Car



Woodchip Gondola



Bulkhead Flatcar



Covered Hopper



Coal Hopper



Autorack



Double-stack Well Car



Centerbeam Flatcar

## Specialty Rolling Stock



Fuselage Flatcar with Idler Flatcar



Aircraft Parts Cars (767 and 777)



Oversize-Container Flatcars

# Scenarios

## Career Scenarios

### Everett - One Time Round

Drive a special officer-inspection train around Everett via the Scenic and Bellingham Subdivision tracks. This move has been given top priority so expect a clear ride.

Duration – 60 minutes  
Weather – Clear / Summer

Locomotive – EMD GP38-2  
Departure – 12:00

### Gold Bar Showdown

It has not been a good day. Our engine is running hot and there is trouble ahead at Gold Bar. Be prepared for a minor delay, as the dispatcher has 5 trains passing with one Main. If we can make it to Monroe there will be service waiting. Drive carefully.

Duration – 45 minutes  
Weather – Sleet / Winter

Locomotive – EMD GP38-2  
Departure – 12:00

### PA Jct to Delta Yard

Deliver a string of centerbeam flatcars to Delta Yard.

Duration – 30 minutes  
Weather – Rain / Autumn

Locomotive – EMD GP38-2  
Departure – 13:20

### Special Delivery Pt1

Due to a failure of the crane at Mt. Baker Terminal a special shipment of Boeing 767 over-sized containers has arrived overnight at Pacific Terminal in Everett. These aircraft parts need to travel to Mukilteo in a special move, as no traffic can be allowed on any adjacent tracks. After we arrive, we will spend the rest of this shift servicing the plant up at Paine Field.

Duration – 65 minutes  
Weather – Clear / Autumn

Locomotive – EMD GP38-2  
Departure – 08:05

### Special Delivery Pt2

Due to Mt. Baker Terminal being out of service, Mukilteo Yard has accumulated outgoing traffic. The Terminal's crane has just been repaired so let's get the shipments ready.

Duration – 30 minutes  
Weather – Clear / Autumn

Locomotive – EMD GP38-2  
Departure – 10:00

### Fruit Service Local

Fruit shipping is a year-round business now that apple storage has been perfected. You will service the local Wentachee Cold storage facilities.

Duration – 80 minutes  
Weather – Clear / Autumn

Locomotive – EMD GP38-2  
Departure – 12:00

### **Snohomish Swap**

Take a local freight from Everett's Delta Yard to Snohomish in order to service the lumber mill and agricultural dealer. Your challenge is to maintain schedule, avoiding any delays of the Mainline traffic.

Duration – 85 minutes  
Weather – Clear / Summer

Locomotive – EMD GP38-2  
Departure – 05:20

### **Winter Hill Climb East**

The challenges of track grade become even greater with the snow in winter. The line is open, but snow makes the track slippery. Remember sand can be your friend, but a gentle hand on the throttle is essential. Take our mile-and-a-half long train from Skykomish to the Cascade Tunnel...and beyond.

Duration – 90 minutes  
Weather – Snow / Winter

Locomotive – GE ES44DC  
Departure – 09:00

### **Wenatchee Local Set**

While interstate highways have reduced the number of local industries dependent on rail transportation, BNSF still dispatches a weekly local to serve the remaining businesses with their shipping needs.

#### **Wenatchee Local Part 1**

We depart the Wenatchee Locomotive Service Yard, and pick up a small consist of cars to be delivered to businesses along the eastern part of the Scenic Subdivision. This segment focuses on delivering needed refrigerator cars (reefers in railroad slang) to the fruit warehouses in Cashmere. Its early morning and the sun may peek over the hills as we travel up the Wenatchee River Valley.

Duration – 35 minutes  
Weather – Clear / Spring

Locomotive – EMD GP38-2  
Departure – 06:45

#### **Wenatchee Local Part 2**

We skip ahead to the second task of the morning, serving the lumber mill at Winton. At the mill we will deliver empty woodchip hopper cars and pick up the cars that have been filled in the last week. After completing the task we will run around the cars and prepare for our return trip to Wenatchee

Duration – 35 minutes  
Weather – Clear / Spring

Locomotive – EMD GP38-2  
Departure – 08:30

## **Standard Scenarios**

### **Scenic Inspection Tour Set**

Drive from Malaga, Washington westbound to Puget Sound, with Fred the chatty conductor, who will fill you in on many of the sights along the way.

### Scenic Inspection Tour Part 1

Travel from Malaga, just east of Wenatchee, as far as Leavenworth. Wenatchee is a large city along the banks of the Columbia River, and a division point for the BNSF railroad. Leavenworth has become a tourist destination and recently Amtrak has added Leavenworth as a stop on its Empire Builder service. This area is famed for its fruit production, especially Washington State apples.

Duration – 55 minutes  
Weather – Clear / Summer

Locomotive – GE ES44DC  
Departure – 07:30

### Scenic Inspection Tour Part 2

Leaving Leavenworth, we continue to climb into the Cascade Mountain Range. We travel to the highest elevation of the Scenic Subdivision and then begin our descent through the Cascade Tunnel. This segment ends at the BNSF depot at Scenic, just beyond the western portal of the tunnel.

Duration – 80 minutes  
Weather – Clear / Summer

Locomotive – GE ES44DC  
Departure – 08:40

### Scenic Inspection Tour Part 3

Descending the over 2 percent grades down through Skykomish, we make our way to the town of Gold Bar. Along the way we pass over the Foss River Bridge and pass by stunning Sunset Falls. This segment of our trip is through dense forests with small scattered communities.

Duration – 75 minutes  
Weather – Partly Cloudy / Summer

Locomotive – GE ES44DC  
Departure – 10:45

### Scenic Inspection Tour Part 4

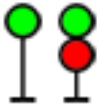


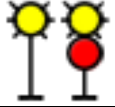
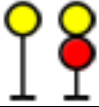
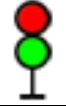


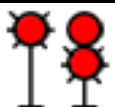
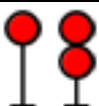
In this segment, we travel from Gold Bar, past the city of Everett to the terminus of this route just past the community of Mukilteo. Along the way we pass through numerous agricultural communities. When we reach Puget Sound, a major inlet of the Pacific Ocean, we enter urban, suburban and industrial areas.

Duration – 60 minutes  
Weather – Partly Cloudy / Summer

Locomotive – GE ES44DC  
Departure - 13:00

## Signals and Infrastructure

A variety of signal types can be seen on the route, representing different stages of upgrade. Most of the signals are the modern, hooded Safetran style, although some older signals styles are also present. The signal aspects display in accordance with the following BNSF rules.

Rule	Aspects	Name	Indication
9.1.3		CLEAR	Proceed.
9.1.4		APPROACH LIMITED	Proceed prepared to pass next signal not exceeding 60 MPH and be prepared to enter diverging route at prescribed speed.
9.1.5		ADVANCE APPROACH	Proceed prepared to pass next signal not exceeding 50 MPH and be prepared to enter diverging route at prescribed speed.
9.1.6		APPROACH MEDIUM	Proceed prepared to pass next signal not exceeding 40 MPH and be prepared to enter diverging route at prescribed speed.
9.1.8		APPROACH	Proceed prepared to stop at next signal, trains exceeding 30 MPH immediately reduce to that speed. (Note: Speed is 40 MPH for Amtrak and Commuter trains.)
9.1.9		DIVERGING CLEAR	Proceed on diverging route not exceeding prescribed speed through turnout.
9.1.11		DIVERGING APPROACH MEDIUM	Proceed on diverging route not exceeding prescribed speed through turnout prepared to pass next signal not exceeding 35 MPH.
9.1.12		DIVERGING APPROACH	Proceed on diverging route not exceeding prescribed speed through turnout; approach next signal preparing to stop, if , exceeding 30 MPH immediately reduce to that speed. (Note: Speed is 40 MPH for Amtrak and Commuter trains.)
9.1.13		RESTRICTING	Proceed at restricted speed.
9.1.15		STOP	Stop.

### Notes:

Restricted speed is 15 MPH.

Permissive signals are equipped with milepost number plates (stop at red and proceed at restricted speed). In some cases, a 'G' placard (proceed at restricted speed on red) is also present. Train Simulator does not currently support proceed-at-restricted-speed operation, so red always means Stop!

## Speed Limit Signs



Left to Right: Speed Limit (P = Passenger, F = Freight); Reduced Speed, 2 miles ahead; Speed Limit (T = Talgo trains. Applies to Amtrak Cascade trains from Seattle to Vancouver, BC via Scenic/Bellingham Sub only. Non-interactive.)

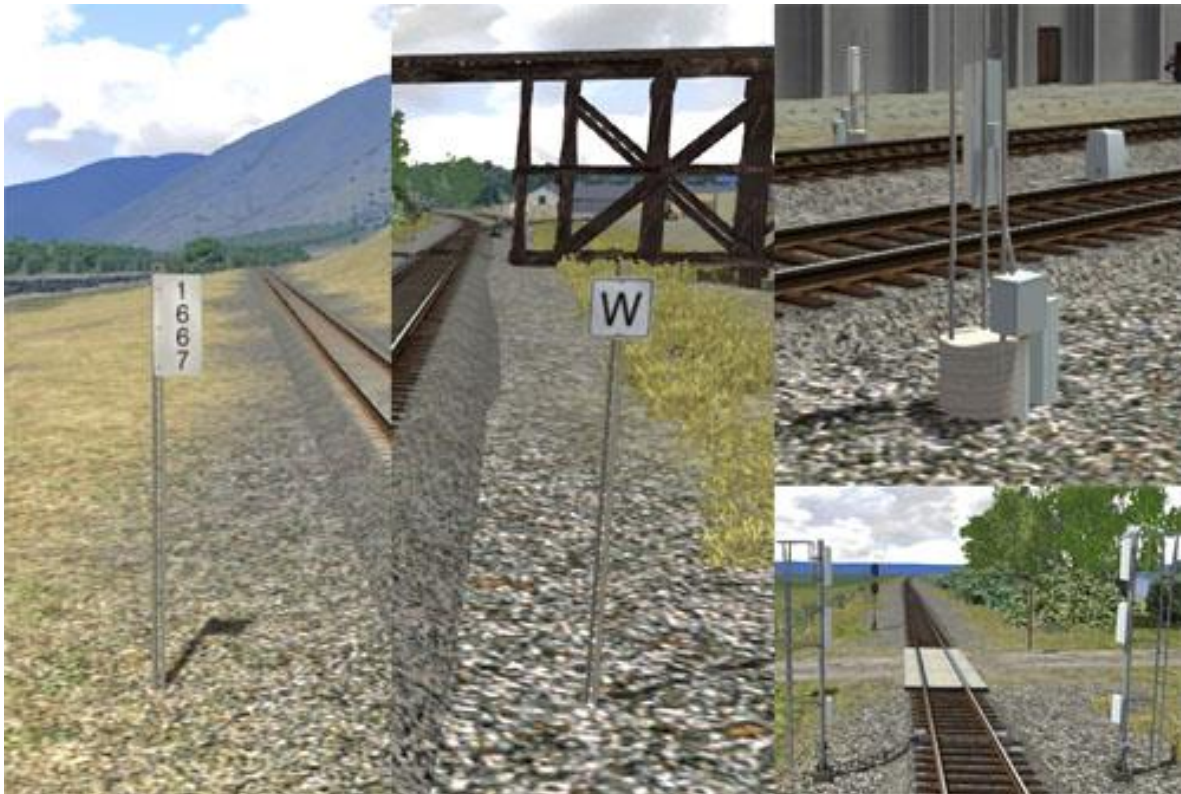
BNSF rules specify a speed limit of 15 mph in industrial and MOW spurs and sidings, whether signed or not. Speed in yards is 15 mph unless signed otherwise. Speed limit on the Paine Field branch is 15 mph in both directions.

## Trackside Warning Detectors



Trackside warning detectors (TWD) provide the engineer with information about defects or other safety issues. Left: Dragging Equipment Detector (raised metal flaps) and "Hot Box" (overheated bearing) infrared detectors. Right: Shifted Load Detector (excess car height or width). TWDs typically will report the defect status to the engineer by radio using simulated speech. When a **\*DED** sign is placed next to a dragging equipment detector, a report is transmitted only if a defect is actually present. Audible TWD reports are simulated in the Stevens Pass route on an individual scenario basis.

## Other Infrastructure Items



Left to Right:

Milepost. Numbering begins in St. Paul, MN. The Scenic Sub begins at MP 1650.2 at the south end of Columbia Station platform in Wenatchee. Although the Scenic Sub runs all the way to King Street Station in Seattle, the mileage numbering ends at Everett Junction, MP 1784.68. From King Street Station (MP 0.0), the milepost numbering extends northward along Puget Sound, through Everett Junction, and ultimately to Vancouver, BC.

Whistle Post. These are typically placed 1/4 mile (400 m) ahead of grade crossings. In Mukilteo, the accompanying 'QZ' sign indicates a Quiet Zone where whistles may not be sounded and where the grade crossing has additional, approved safety features.

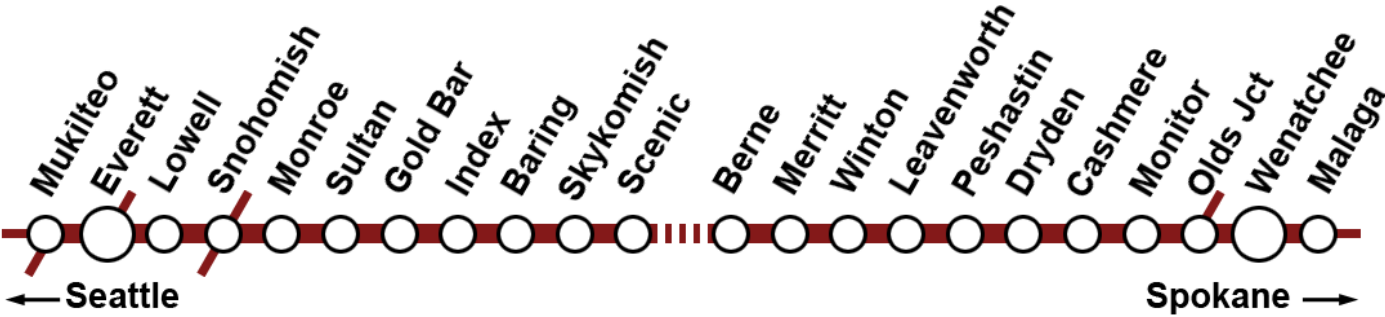
Automatic Equipment Identification. Upper: Wenatchee; lower: Snohomish. These are static scenery models.

## Cascade Tunnel

Cascade Tunnel has several special features. The east portal door automatically opens when a train approaches it from either side. Absolute signals on both sides of the door display a Green aspect when the door is completely open. Near the west portal you will see a pair of alternately flashing white strobe lights which indicate that the tunnel ventilation system is functioning properly. The strobes are repeated inside the tunnel as you near the east portal. Also inside the tunnel you will see a series lit, numbered signs. Those are the bay numbers, 21 in all. They're generally 2400 feet apart except near the tunnel ends where the spacing is 1200 feet. A storage container at each bay holds safety equipment and repair items such as spare coupler knuckles.

Track Schematics

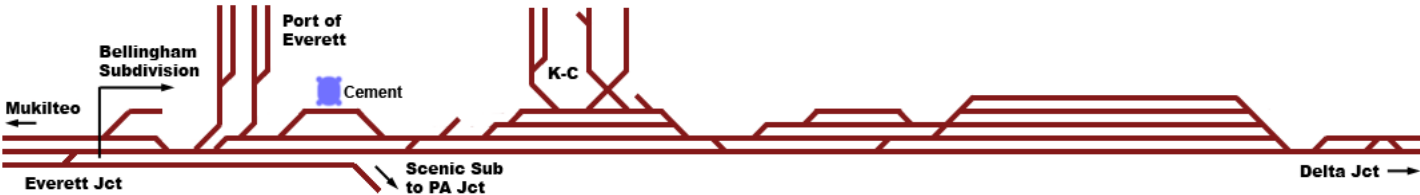
Overall Route  
Schematic



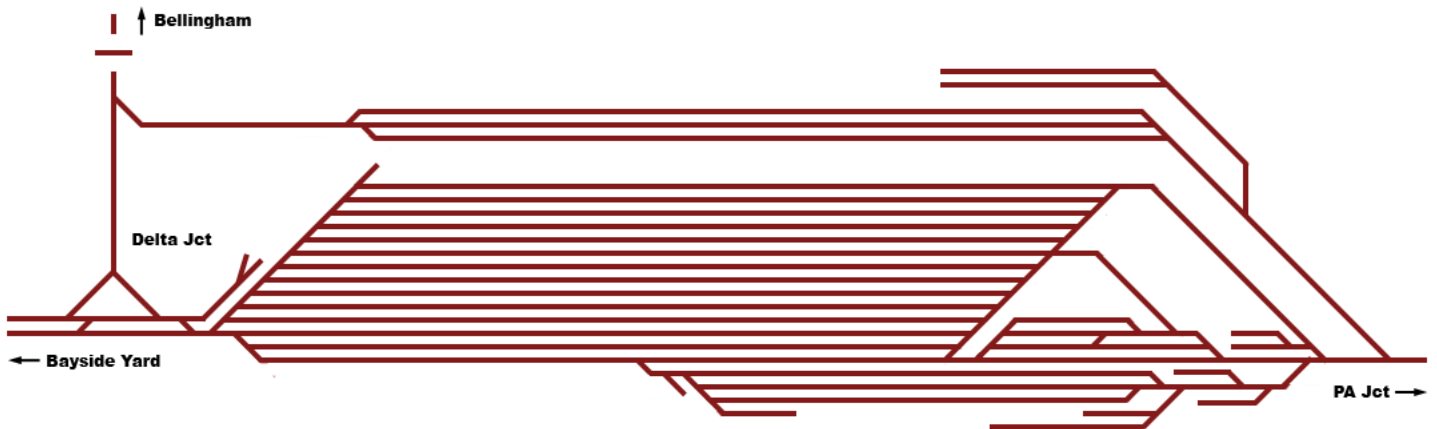
Mukilteo



Bayside Yard,  
Everett



## Delta Yard. Everett (Bellingham Sub)



## PA Jct, Everett



## Snohomish to Gold Bar



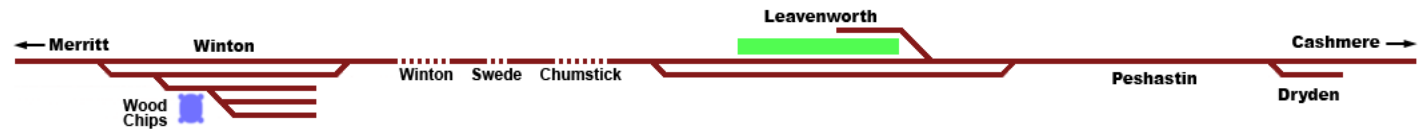
## Index to Skykomish



## Scenic to Merritt



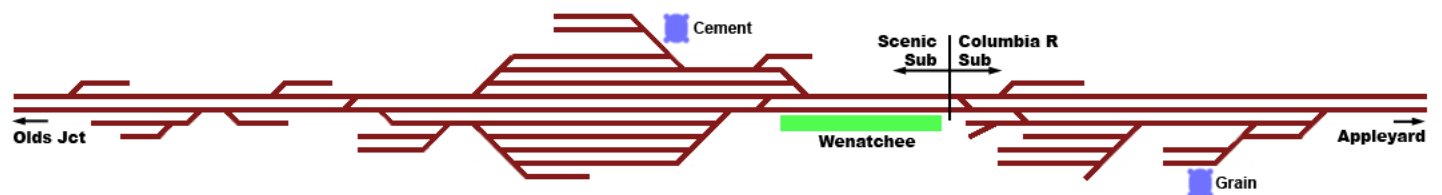
## Winton to Dryden



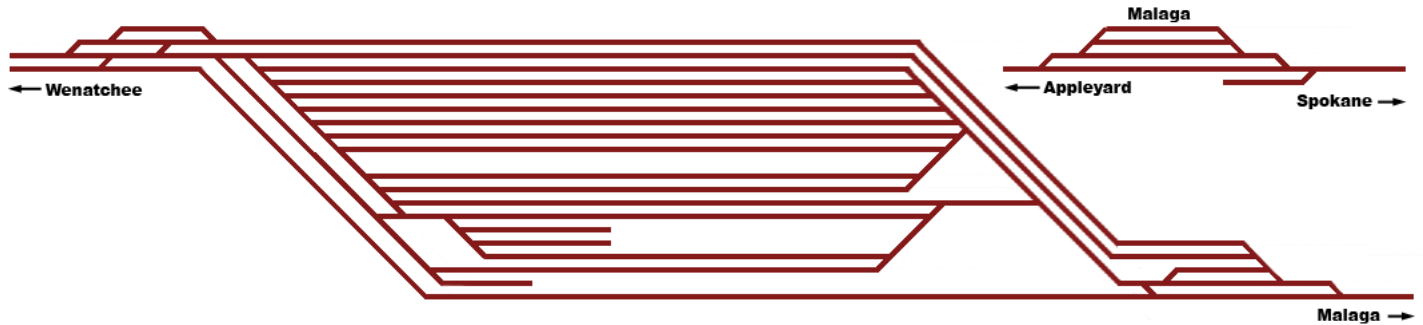
## Cashmere to Olds Jct



## Wenatchee



## Appleyard, Malaga



## Credits

Route by GNTX: Rick Grout, Michael Stephan, and Jim Friedland. Additional contributions by Rich Chargin and Jonathan Lewis.

Locomotives and rolling stock were provided by RailSimulator.com, except double-stacks and aircraft specialty cars by GNTX. Modifications to RSC GP38-2, centerbeam flatcar, and caboose by GNTX.

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