

# ***Maple Leaf Tracks***

## **Rogers Pass**

### **Canadian Pacific's Mountain Subdivision**

In the late 1800's, Canada needed a railroad passage through the Selkirk Mountains of South central British Columbia. A soldier named Major Rogers was asked to survey a way through the granite cliffs in an effort to shorten the upcoming transcontinental mainline to the West coast. The Beaver Valley was found and a passage was surveyed over the Pass to the Illecillewaet Valley beyond. This area gets some of the largest snowfalls in Western Canada and proved to be too much for the railroad. The five mile Connaught Tunnel was built to pass under the worst of the snow and reduce the distance over the pass. Almost 100 years later, the nine mile Mount MacDonald Tunnel was built to reduce the Westbound grade to 1% and double the mainline for increased traffic demands.

Today's trains are up to two miles long and weigh up to 14,000 tons. With powerful AC traction motored locomotives, they make the grade at 16 mph with only three of these monster machines in the consist. MLT's version of Rogers Pass attempts to simulate the modern day operations of the CPR over the Mountain Sub from Field, BC to Revelstoke, BC. Certain compromises had to be made for best performance of the simulation. Even with this, there are 70 car unit trains and mixed traffic in ten scenarios for many hours of enjoyment. We have applied the latest physics and route building techniques and feel this is possibly our best product release. Please enjoy and if you have a question or concern, visit our website at [www.mapleleaftracks.com](http://www.mapleleaftracks.com) or ask the question on a forum at [www.mltdownloads.net](http://www.mltdownloads.net). Thank you.

Andy Hockin  
Maple Leaf Tracks

**CANADIAN PACIFIC RAILWAY** Ingenuity.  
British Columbia Interior Service Area

***Time Table***

**51**

**Effective at 1200 Thursday February 6, 2003**

Pacific Standard Time



***“...willingness to obey the rules...”***

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Vice President Transportation/Field Operations

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**Time Table No 51 – February 6, 2003**

Haulage Factors		Train Standby Channel	RTC Call-in Channel and RTC Call-in Code	RTC Authorities Channel	Emergency Call-in Code	Utility Channel and RTC Call-in Code	Utility Tower Code	Maintenance of Way Channel	Switching Zone	DL Zone GOI Sec 10 item 5.4	Miles from Calgary	WESTWARD	LAGGAN SUBDIVISION (Subdivision No 6201)	EASTWARD	Main Track(s)	Method of Train Control	Siding Capacity in Feet Signalled Siding	Station Number	Haulage Factors
Down-grade		CP 1	CP 3 *71#	CP 7	911	CP 20 *61#	143	CP 19	135.0	135.0	135.0	WESTWARD	STATIONS	EASTWARD	1	CTC	Yard	9500	0.83
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	611	CP 13	3.0	3.0	0.0	WESTWARD	FIELD	EASTWARD	1	CTC	Yard	9500	1.6
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	612	CP 13	32.0	38.0	8.2	OTTERTAIL					Yard	8188	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	613	CP 13			16.9	LEANCHOIL				9468	9504	0.9	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	614	CP 13			22.4	PALLISER			9032	9505			
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	615	CP 13			28.1	GLENOGLE			9000	9506	3.2		
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	616	CP 13			34.1	HILL			Yard				
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	617	CP 13			36.7	KC JUNCTION Jct Windermere Sub			2		9513	1.97	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	618	CP 13			45.7	FORDE					9514		
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	619	CP 13			51.2	DONALD			1		8394	0.83	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	620	CP 13			57.3	REDGRAVE					7764		
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	621	CP 13			62.0	BEAVERMOUTH					9980	1.6	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	622	CP 13			66.2	ROGERS					9515		
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	623	CP 13			68.3	Connaught Track   Macdonald Track					9516	Down-grade	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	624	CP 13			68.3	FRAINE					9150		
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	625	CP 13			71.7	GRIFFITH					6300	9517	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	626	CP 13			75.0	WAKELY					8800	9518	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	627	CP 13			77.7	STONE CREEK					8471	9520	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	628	CP 13			79.3	BEAR CREEK					6818	9522	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	629	CP 13			85.5	GLACIER						9523	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	630	CP 13			89.9	ROSS PEAK						9524	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	631	CP 13			94.2	FLAT CREEK						9525	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	632	CP 13			98.1	ILLECILLEWAET					9936	9525	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	633	CP 13			101.6	DOWNIE						9527	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	634	CP 13			105.8	ALBERT CANYON						9528	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	635	CP 13			109.5	LAURETTA						9530	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	636	CP 13			115.0	TWIN BUTTE						9531	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	637	CP 13			119.9	GREELY						9533	
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	638	CP 13			123.4	WHITE							
Down-grade		CP 1		CP 3 *51#	911	CP 14 *51#	639	CP 13			125.7	REVELSTOKE							

## MOUNTAIN SUBDIVISION FOOTNOTES

Note: "Field Switching Zone" extends between mile 135.0 Laggan Subdivision and mile 3.0 Mountain Subdivision.

MOUNTAIN SUB FOOTNOTES CONTAIN INSTRUCTIONS PERTAINING TO FIELD SWITCHING ZONE.

### 0.0 RADIO

- 0.1 Trackside Radio System 2.2 in effect.
- 0.2 Zone Code (Z) is 5, except 1 in Mount Macdonald Tunnel and 2 in Connaught Tunnel.

0.3

To Call:	Channel	Dial
Diesel Specialist	CP 14	*51110#
S&C Support Desk	CP 14	*51106#
Time Signal	CP 14 or CP 3	*59777#
<b>In Mount Macdonald Tunnel</b>		
Diesel Specialist	CP 15	*11110#
S&C Support Desk	CP 15	*11106#
Time Signal	CP 15 or CP 3	*19777#
<b>In Connaught Tunnel</b>		
Diesel Specialist	CP 15	*21110#
S&C Support Desk	CP 15	*21106#
Time Signal	CP 15 or CP 3	*29777#

Disconnect call by dialing \*5# (or \*1# in Mount Macdonald Tunnel or \*2# in Connaught Tunnel).

- 0.4 Radio Base Station located at Golden Yard. Channel CP 7 monitored on a continuous basis by Yardmaster.
- 0.5 Radio Base Station located at Revelstoke. Channel CP 4 monitored on a continuous basis by Yardmaster.
- 0.6 Connaught, Mount Macdonald and Mount Shaughnessy Tunnels are equipped with repeater systems. To use, select Channel CP 3 on all radio equipment within the limits of each tunnel.
- 0.7 In Mount Macdonald and Mount Shaughnessy Tunnels, the following may be reached from Channel CP 3 by selecting indicated code:  
 Diesel Specialist .....1\*789  
 Mountain Subdivision RTC .....5\*789  
 Road Manager, Revelstoke .....8\*789  
 Mechanical Specialist, Revelstoke .....9\*789  
 Mechanical Specialist, Golden Yard .....10\*789  
 When call complete, disconnect by selecting #789

### 1.0 HOT BOX DETECTOR SYSTEM

1.1

WESTWARD			LOCATION	EASTWARD		
INSPECTION POINT	SET-OFF POINT	** GOI SEC 8 ITEM 8.1	MILE	** GOI SEC 8 ITEM 8.1	INSPECTION POINT	SET-OFF POINT
Leancoil	Leancoil		14.2		Ottertail	Ottertail
Immediate	Mile 42.3		39.3 North Track		Immediate	Hill
Immediate	Donald		39.3 South Track		Immediate	Hill
Redgrave	Redgrave		54.5		Donald	Donald
Immediate	Wakely		70.9 Macdonald Track		Immediate	Mile 67.5 (Connaught Track)
Stoney Creek	Stoney Creek		74.8 Connaught Track		Griffith	Griffith
Illecillewaet	Illecillewaet		95.1		Immediately east of Flat Creek	Mile 93.4 (Connaught Track)
Immediate	Mile 114.0		111.7 North Track		Immediate	Mile 105.0
Immediate	Mile 119.6 (North Track)		111.7 South Track		Immediate	Mile 105.0

- 1.2 When there is danger of snow slides reaching the track, trains receiving alarms at Detectors Mile 74.8, Connaught Track or Mile 95.1 indicating dragging equipment, or at Dimensional Shipment Detector Mile 95.1, may proceed to a safer location but in no case beyond the first switch at the inspection point, and there perform the required inspection.
- 1.3 Hot Box Detectors at Mile 70.9, Macdonald Track and Mile 95.1 are equipped with Dimensional Shipment Detectors. Trains receiving dimensional shipment alarm must stop immediately and perform inspection, except as provided above by Footnote 1.2. When heavy snowfall conditions exist at these detector locations, dimensional shipment alarms associated with either the lead or remote locomotive consist are void.

## MOUNTAIN SUBDIVISION FOOTNOTES

### 2.0 EQUIPMENT RESTRICTIONS

#### 2.1 Cars

— except for cars in series CEFX 80000-80799, CRDX 6600-6693, 6900-6947, 9000-9099, 9300-9604 and 20000-20724, ITLX 30000-30467, NDYX 298000-298399, GACX 3000-3399 and SOO 100000-100279: (i) short cars (less than 44 feet outside length) over 177,000 pounds and not exceeding 220,000 pounds gross weight 20 MPH on bridge Mile 76.2 Connaught Track; and

(ii) short cars (less than 44 feet outside length) over 220,000 pounds and not exceeding 268,000 pounds gross weight 10 MPH on bridge Mile 74.5 Connaught Track; and must be separated by one car, 44 feet or longer, not exceeding 220,000 pounds gross weight, on bridge Mile 76.2 Connaught Track.

— Trains handling empty 112J Tank Cars must not exceed:

- 20 MPH between Mile 0.0 and 7.3,
- 20 MPH between Mile 29.0 and 34.1,
- 20 MPH between Mile 53.0 and 54.0,
- 10 MPH between Mile 54.0 and 54.2, and
- 20 MPH between Mile 54.2 and 61.0.

#### 2.2 Crane and Auxiliary

— 414502 and 414651 20 MPH on bridges Mile 25.5, 31.4, 31.8, 32.6 and 66.0.

**2.3** Eastward empty coal trains must not exceed 20 MPH in Mount Macdonald Tunnel.

**2.4** Westward unit bulk trains handling loaded covered hoppers must not exceed 15 MPH between Mile 94.2 and Mile 97.3.

**2.5** Trains handling woodchips in open top cars must not exceed 15 MPH through Mount Macdonald Tunnel. When a westward train is handling woodchips in open top cars, the RTC must be advised before train departs KC Junction and ventilation mode 8 must be used.

**2.6** Trains handling multi-level auto cars, loaded or empty, must contact RTC prior to arriving Hill and request ventilation fans be set in mode 8.

### 4.0 SPEEDS

#### 4.1

Westward MPH				Eastward MPH	
Freight	Psgr	Mile		Psgr	Freight
<b>LAGGAN SUBDIVISION</b>					
20	20	135.0 to 136.6		20	20
<b>MOUNTAIN SUBDIVISION</b>					
20	20	0.0 to 0.4		20	20
30	30	0.4 to 6.4		30	30
25		6.4 to 6.6			25
30		6.6 to 17.8			30
20 <sup>Ⓞ</sup>		17.8 to 23.1			
	25	23.1 to 34.1		25	25
50	50	34.1 to 46.5		50	50
45		46.5 to 46.8			45
50		46.8 to 51.7			50
45		51.7 to 52.3			45
40	40	52.3 to 53.0		40	40

Westward MPH				Eastward MPH	
Freight	Psgr	Mile		Psgr	Freight
35	35	53.0 to 53.5		35	35
30	30	53.5 to 54.0		30	30
25	25	54.0 to 54.2		25	25
35	35	54.2 to 65.9		35	35
30	30	65.9 to 68.3		30	30
30	30	68.3 to 89.9 Macdonald		30	30
25	30	68.3 to 72.2 Connaught		30	20 <sup>Ⓞ</sup>
20	20	72.2 to 72.3 Connaught		20	20
25	25	72.3 to 76.2 Connaught		25	20 <sup>Ⓞ</sup>
20	20	76.2 to 76.5 Connaught		20	20
30	30	76.5 to 79.6 Connaught		30	30
	40	79.6 to 85.2 Connaught		40	
20 <sup>Ⓞ</sup>	35	85.2 to 89.9 Connaught		35	
20 <sup>Ⓞ</sup>	35	89.9 to 90.4		35	30
	30	90.4 to 94.2		30	
20	20	94.2 to 97.3		20	20
20 <sup>Ⓞ</sup>	25	97.3 to 99.6		25	25
25	35	99.6 to 102.5		35	35
20 <sup>Ⓞ</sup>		102.5 to 105.0			
35		105.0 to 123.9			
20	20	123.9 to 125.7		20	20

**4.2** ① Freight trains may be operated westward between Mile 17.8 and 34.1 at a speed of 25 MPH provided engine is equipped with pressure maintaining feature and dynamic brakes are in effective operating condition. BC Interior Service Area Special Instruction 1 on page 47 is amended accordingly.

**4.3** ② Freight trains may be operated at locations shown below at a speed of 25 MPH provided engine is equipped with pressure maintaining feature, the dynamic brakes are in effective operating condition, trailing tonnage does not exceed 6000 tons and the average weight per car does not exceed 100 tons. BC Interior Service Area Special Instruction 1 on page 47 is amended accordingly.

Direction	Between	Track(s)
Westward	Mile 85.2 and 89.9	Connaught
	Mile 89.9 and 94.2	Connaught and Macdonald
	Mile 97.3 and 99.6	Main
	Mile 102.5 and 105.0	North and South
Eastward	Mile 76.3 and 72.3	Connaught
	Mile 72.2 and 68.3	Connaught

**4.4** Maximum speed 30 MPH on sidings except 25 MPH on sidings at Palliser and Glenogle.

**4.5** Maximum speed on signalled yard track between Signal 1234S and Signal 1242B is 20 MPH for westward movements, and same as main track between these points for eastward movements.

**4.6** Maximum speed 30 MPH for northward movements approaching KC Junction on B Track when indication on Signal 1447C authorizes movement greater than Slow Speed.

## MOUNTAIN SUBDIVISION FOOTNOTES

### 5.0 CLEARANCES

- 5.1** System Special Instruction to Rule 81 (Clearance required in yard limits, cautionary limits or switching zones) applies:  
 — at Field. Clearance must be obtained from Laggan or Mountain Subdivision RTC;  
 — between Switching Zone Sign Mile 32.0 and Switching Zone Sign Mile 38.0, except that a Clearance obtained from Mountain Subdivision RTC must be used to meet the requirements of this special instruction.  
 — between Switching Zone Sign Mile 122.0 and Revelstoke. Clearance must be obtained from Mountain or Shuswap Subdivision RTC.

### 6.0 CENTRALIZED TRAFFIC CONTROL

- 6.1** CTC Rules apply between Switching Zone Sign Mile 135.0, Laggan Subdivision and Revelstoke.
- 6.2** All sidings are signalled sidings and CTC Rules apply.
- 6.3** The track south of the main track between Signal 1234S, White and Signal 1242B, Revelstoke is a signalled yard track and CTC Rules apply.
- 6.4** Two main tracks, designated NORTH TRACK and SOUTH TRACK, between:  
 — Hill and Forde; and  
 — Downie and White.
- 6.5** Two main tracks, designated CONNAUGHT TRACK and MACDONALD TRACK, between Rogers and Flat Creek.
- 6.6** Westward Signals 813M, 839M and 863M, and eastward Signals 812M, 838M and 862M, located in Mount Macdonald Tunnel, are single unit dwarf signals. System Special Instruction to Rule 404 (Non-Standard Signal Aspects) applies.
- 6.7** Westward Signal 849M located in Mount Macdonald Tunnel is a non-standard, two unit dwarf signal, displaying aspects and indications as follows:

Aspect	Name	Indication
Red over Red	Stop Signal	Stop, provisions of Rule 564 apply. In addition to the requirements of Rule 564(d), a crew member must visually ascertain that the movement will not contact Mount Macdonald Tunnel door. <u>Exception:</u> Stop is not required provided Rule 564 authority has been received and it has been visually ascertained that the movement will not contact Mount Macdonald Tunnel door.
Green over Green	Clear Signal	Proceed.

- 6.8** At KC Junction, three crossovers between the North Track and South Track are numbered 1, 2 and 4 from west to east. Authority under Rule 564 or 564.1 to use one of these crossovers will, when required, specify crossover to be used.

### 9.0 PUBLIC CROSSINGS AT GRADE

- 9.1** **Mile 36.02, 13th Street North (Evans Crossing)**  
 Whistle signal Rule 14(l) is prohibited at this crossing. On other than main tracks, all movements must stop at STOP signs before obstructing crossing.
- 9.2** **Mile 36.8, Anderson Road**  
 Whistle signal Rule 14(l) is prohibited at this crossing.
- 9.3** **Mile 118.25, 119.0 and 119.8 (private crossings)**  
 These crossings must be left clear if trains are secured or stored at these locations.

### 11.0 GENERAL FOOTNOTES

- 11.1** Derailment detector located at Mile 32.2.  
 When activated, the voice talker system will transmit, and repeat, an emergency message to the train until acknowledged by a crew member by entering \*322 on Standby Radio Channel CP 1. Stop must be made immediately and entire train inspected for derailed equipment.
- 11.2** \*Designated Switch at Field on Laggan Subdivision at Mile 136.3.  
 \*Designated Switch at Field on Mountain Subdivision at Mile 1.5.
- 11.3** Mountain Subdivision RTC is responsible for accepting requests for, and providing confirmation of GBO protection, when any portion of the restriction is located within the Field Switching Zone. Shuswap Subdivision RTC is responsible for accepting requests for, and providing confirmation of GBO protection, when any portion of the restriction is located within Switching Zone between Mile 122.0 and Revelstoke.
- 11.4** GOI Section 10, Item 5.4 applies:  
 — between D L Zone Sign Mile 122.0 and Revelstoke. Yardmaster Revelstoke is responsible.  
 — between D L Zone Sign Mile 135.0 Laggan Subdivision and D L Zone Sign Mile 3.0. Mountain Subdivision RTC is responsible.
- 11.5** In the application of Rule 104(c), a train or engine may leave other than main track switches in Revelstoke and Hill yards, except crossover switches, lined and locked in either position.
- 11.6** In the application of GOI Section 14, Item 2.0(c), grades greater than 1.5% between:  
 Mile 135.0 and 136.2 Laggan Subdivision,  
 Mile 17.7 and 21.3,  
 Mile 24.6 and 26.5,  
 Mile 28.3 and 31.5,  
 Mile 68.5 and 76.5, Connaught Track,  
 Mile 85.5 and 101.6,  
 Mile 102.5 and 106.3.
- 11.7** Bridges at Mile 11.5, 66.0 and 74.0, Connaught Track not equipped with walkways or guard rails and must not be crossed when occupied by equipment.
- 11.8** Dual control switch point derail located on turnout within controlled location at Mile 1.5.

## MOUNTAIN SUBDIVISION FOOTNOTES

**11.9** All crew members on trains west of Rogers are required to have their personal gas mask available at all times.

**11.10 Snow Accumulation above top of rail**

Train movements must not descend the grade between Leancoil and Hill when there are heavy snow conditions such that there is an estimated accumulation of 3 inches or more above the top of rail.

Descending movements should proceed only after the excess snow has been removed by machine, eastward movement or removed by movement of a locomotive consist, without loaded cars.

Train movements must not descend the grade between Ross Peak and Albert Canyon and also between Stoney Creek and Fraine when there are heavy snow conditions such that there is an estimated accumulation of 3 inches or more above the top of the rail AND the outside ambient temperature is colder than -18 Degrees Celsius.

Outside ambient temperatures colder than -18 Degrees Celsius in combination with 3 inches or more snow above the top of rail, will trigger the requirement to have the excess snow removed by machine, ascending train movement or locomotive consist without loaded cars, between Ross Peak and Albert Canyon and also between Stoney Creek and Fraine.

White lights that “flash/strobe” when outside ambient temperatures are below -18 degrees Celsius are located at the west end of Stoney Creek siding on the signal bungalow and on the signal bungalow exiting the Mount Macdonald Tunnel. NOTE: There is no digital display of temperature at these locations.

**11.11 Emergency brake application required**

From Leancoil to Hill, Ross Peak to Albert Canyon, and Stoney Creek to Fraine, any descending movement that attains a speed which is 5 MPH above the speed permitted by time table is considered an uncontrolled movement and an emergency brake application must be made. Three immediate actions are required:

- the conductor's emergency valve must be opened fully and left open until the movement is stopped;
- the locomotive engineer must place the automatic brake valve handle in the emergency position; and
- the TIBS emergency brake feature must be activated.

Note: It is not intended by this instruction to exclude those other occasions which may require an emergency brake application.

**11.12** Following Instructions apply to descending trains handling more than 6000 tons or the average weight per car exceeds 100 tons.

**A. Emergency brake recovery procedure** for descending movements on the mountain grades (1.8% or greater) between Leancoil and Hill, Ross Peak and Albert Canyon or between Stoney Creek and Fraine

First Emergency Brake Application:

Before the emergency PCS is recovered, the locomotive engineer, conductor and road manager must discuss with each other whether retainers and/or hand brakes are needed.

When discussing the use of retainers and/or hand brakes, consider train location, amount of train on the mountain grade, proximity of lesser grade, weather and rail conditions and any other condition present that may affect the braking of that train.

Second Emergency Brake Application:

In the application of GOI Section 15, Item 14.3, set retaining valves to the HP (high pressure) position on at least 65 per cent of the loaded cars.

Note: If abnormal conditions such as weather or poor braking train dictate that the application of hand brakes is necessary to secure the train while re-charging, then apply a hand brake on at least 65 per cent of the cars and set retaining valves to the HP position on at least 65 per cent of the loaded cars. Do not release hand brakes until the entire train air brake system is fully charged and a brake pipe reduction has been made to prevent movement while hand brakes are being released.

**B. When stop required** for descending movements on the mountain grades (1.8% or greater) between Leancoil and Hill, Ross Peak and Albert Canyon or between Stoney Creek and Fraine

Brakes applied: An attempt to move the train with the train air brake applied must be made, using care to avoid a train separation.

Running recharge: If a train air brake release is required, but the locomotive brakes are not sufficient to prevent train movement, then the train air brake must be re-applied at a speed not exceeding 5 MPH. This application must be made as per GOI instructions for trains which are not fully charged. (e.g. make an equalizing reservoir reduction of at least 7 psi below the rear car brake pipe pressure.

Standing recharge: If a train air brake release is required, and the locomotive brakes are sufficient to prevent train movement, then completely recharge the train air brake system before proceeding.

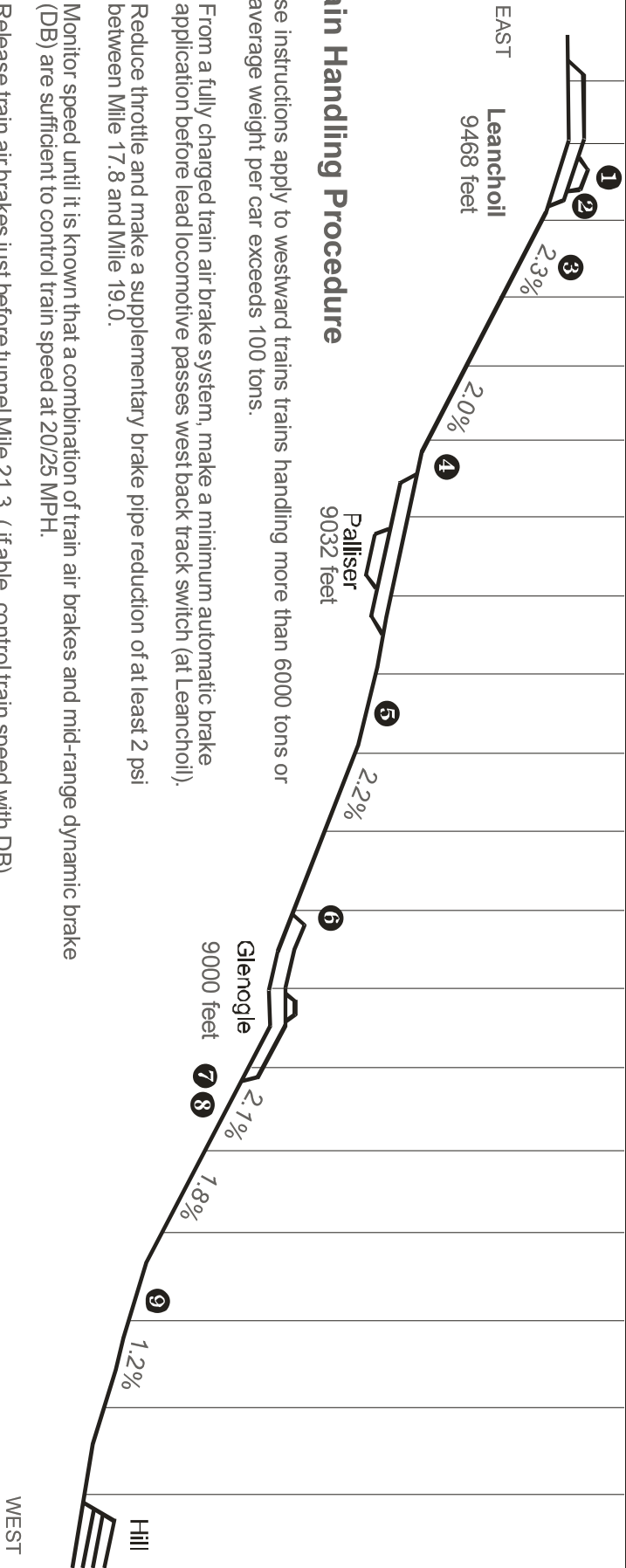
**11.13** Be governed by train handling procedures:

- Leancoil to Hill ..... page 18
- Stoney Creek to Fraine ..... page 19
- Ross Peak to Laurretta ..... page 20

## Leanchoil to Hill

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Maximum Speed Locomotive	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px dashed black; width: 100%; height: 10px; margin-right: 5px;"></div> <span style="font-size: 24px;">25</span> </div>																		
Lead	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px dashed black; width: 100%; height: 10px; margin-right: 5px;"></div> <span style="font-size: 24px;">20</span> </div>																		

Mile	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
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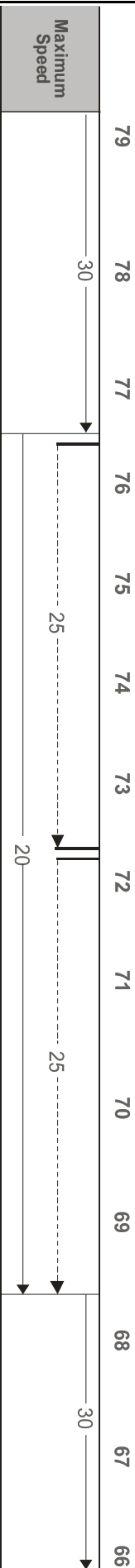
### Train Handling Procedure

These instructions apply to westward trains handling more than 6000 tons or the average weight per car exceeds 100 tons.

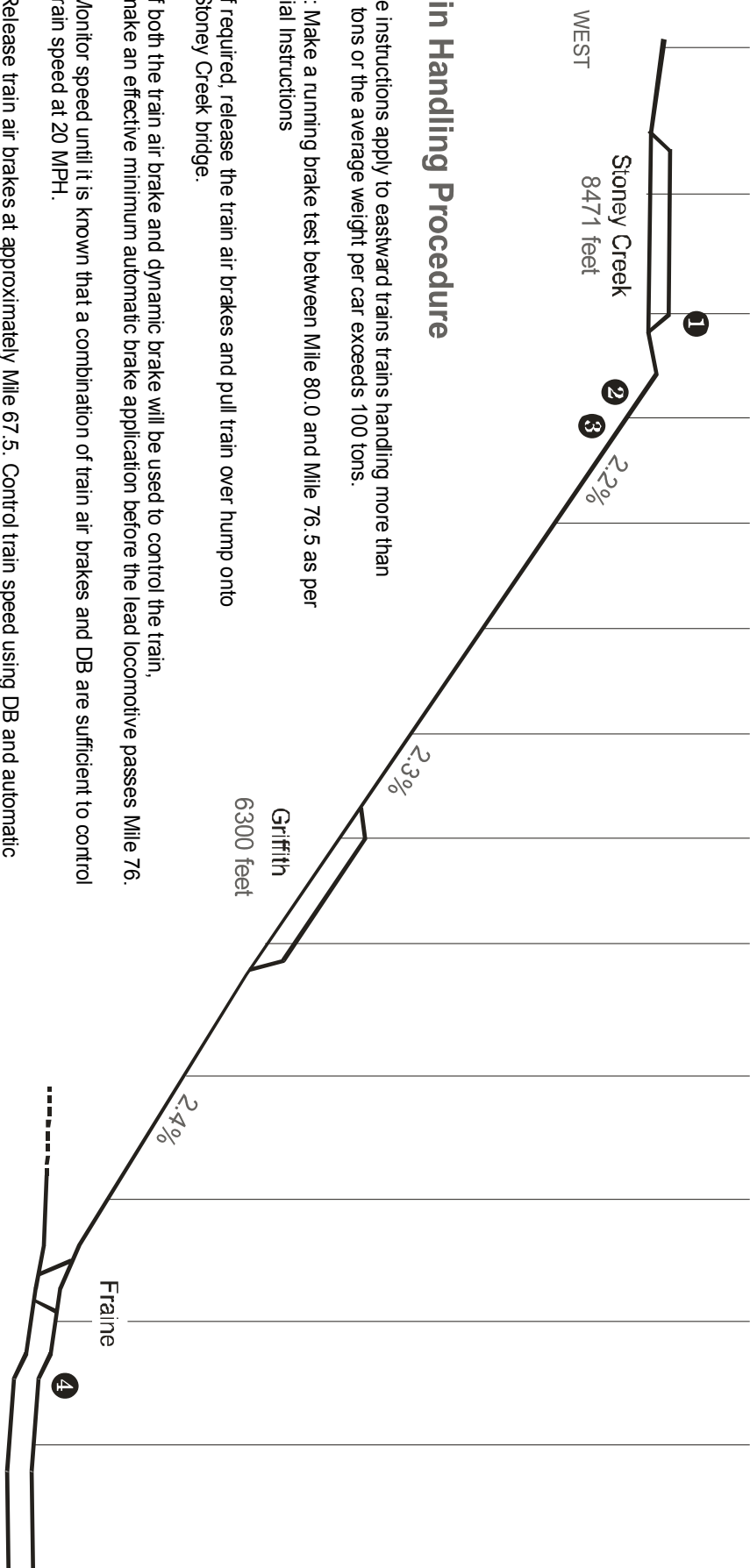
- ➊ From a fully changed train air brake system, make a minimum automatic brake application before lead locomotive passes west back track switch (at Leanchoil).
- ➋ Reduce throttle and make a supplementary brake pipe reduction of at least 2 psi between Mile 17.8 and Mile 19.0.
- ➌ Monitor speed until it is known that a combination of train air brakes and mid-range dynamic brake (DB) are sufficient to control train speed at 20/25 MPH.
- ➍ Release train air brakes just before tunnel Mile 21.3. (if able, control train speed with DB).
- ➎ Make an effective minimum automatic brake application near Mile 24.5. Monitor speed until it is known that a combination of train air brakes and mid-range DB are sufficient to control train speed at 20/25 MPH.
- ➏ Pull the train across lesser grades, if able.
- ➐ Make a supplementary brake pipe reductions of at least 2 psi before lead locomotive passes West Siding Switch (at Glenogle).
- ➑ At the Trans-Canada Overpass, a 2 psi supplementary brake pipe reduction is often required.
- ➒ Release train air brakes at approximately Mile 31.3 (between the 2 tunnels). Control train speed through to Hill using DB and automatic brake applications as required.



## Stoney Creek to Fraine



Train Air Brake	Running Brake Test	Minimum application	Air Brake / Dynamic Brake											
Mile	79	78	77	76	75	74	73	72	71	70	69	68	67	66



### Train Handling Procedure

These instructions apply to eastward trains. Trains handling more than 6000 tons or the average weight per car exceeds 100 tons.

Note: Make a running brake test between Mile 80.0 and Mile 76.5 as per Special Instructions

- 1 If required, release the train air brakes and pull train over hump onto Stoney Creek bridge.
- 2 If both the train air brake and dynamic brake will be used to control the train, make an effective minimum automatic brake application before the lead locomotive passes Mile 76.
- 3 Monitor speed until it is known that a combination of train air brakes and DB are sufficient to control train speed at 20 MPH.
- 4 Release train air brakes at approximately Mile 67.5. Control train speed using DB and automatic brake applications as required.

EAST



**MOUNTAIN SUBDIVISION FOOTNOTES**

**11.14 Emergency Tunnel Procedures when unable to proceed in Connaught, Mount Macdonald or Mount Shaughnessy Tunnel:**

- A. Tunnel air flow control gates are located between Signals 793M and 796M, Bear Creek and between Signals 849M and 848M, Macdonald. If necessary to operate these gates manually on instruction from the RTC, a crew member must proceed to the box labelled “gate control” located east and west of the gates on the north side of the track, and operate the controls as per instructions posted in the box.
- B. Telus telephone located inside refuge bay 11 (at midtunnel gate) in Mount Macdonald Tunnel. Instructions for operation of the telephone are posted inside telephone box.
- C. Make an emergency call to the RTC by switching to Channel CP 3 and dialing 911. After hearing an “OK” tone (2 short beeps), then an “Emergency” tone (2 second tone), broadcast “Emergency, Emergency, Emergency” within 10 seconds. Wait on Channel CP 3 for the RTC to respond. Request RTC to immediately advise an Operating Officer at Revelstoke.
- D. Determine if tunnel is being ventilated. If not request manual ventilation. Prepare to put on gas mask.
- E. In case of ventilation failure, advise the RTC. If ventilation system not activated in an appropriate period of time, depart tunnel with lead locomotives.
- F. When working outside the immediate vicinity of the lead locomotive, employees should be in possession of a gas mask at all times.
- G. Gas mask canisters located:
  - at both portals and all refuge bays Mount Macdonald Tunnel;
  - at both portals and both refuge bays Mount Shaughnessy Tunnel;
  - on signal bungalows at Fraine and east siding switch Wakely, and in water house Rogers;
  - at both portals and every 1/2 mile on north wall, Connaught Tunnel;
  - Golden Administration building.
 Spare gas masks are located at both portals of Connaught, Mount Shaughnessy and Mount Macdonald Tunnels.
- H. Mount Macdonald Tunnel refuge bays located on the north wall of the tunnel every 2000 feet and are identified by a blue light over the door.
- I. Pull-by inspections may be performed at tunnel portal, if required and operating rules permit.
- J. In case of emergency brake application on trains carrying dangerous goods, if ventilation system is:

<b>Operating</b>	investigate cause, repair if possible.
<b>Not Operating and unable to manually start</b>	depart tunnel with lead locomotives, advise RTC when clear of tunnel.

- K. In case of fire:
  - immediately consult 9Plan for location and type of dangerous commodities;
  - advise RTC of location and type of fire, if possible;
  - employees may attempt to control fire if safe to do so;
  - if unable to control fire, cut off that part of train which can be done safely and depart tunnel;
  - advise RTC when clear.

- L. Emergency knuckles, air hoses, gaskets, wrenches, hammers, chisels and wire in boxes located in all refuge bays Mount Macdonald and Mount Shaughnessy Tunnels.
- M. If employees use their gas mask for any reason, they must turn in used canisters for replacement with yardmasters or a road manager. Employees must also properly clean their gas mask after each use. Employees that use spare gas masks must turn in the gas mask advising of the location it was taken from. Similarly, spare canisters taken from storage locations must be reported to yardmaster or road manager to enable replacement.
- N. In instances where the train or a portion of it must be secured, hand brakes are to be applied, if ventilation permits, as per GOI Section 14, Item 2.0(d), i.e. at the head end of the train or portion thereof regardless of the low end or high end of the grade.

**11.15 All Trains descending the grades between Glacier and Albert Canyon.**

- A. Extra vigilance must be used in colder winter conditions to avoid thermal brake pipe rise caused by extreme temperatures inside Mount Macdonald, Mount Shaughnessy and Connaught Tunnels.
- B. The preferred method of operation is to proceed from Ross Peak to Albert Canyon without releasing the automatic brake. If, for any reason the train cannot be efficiently pulled across the lesser grades and it is necessary to release the automatic brake, train speed must be reduced to less than 10 MPH or the train stopped prior to release. After an automatic brake release, care must be taken to ensure that the brake pipe reduction is sufficient to compensate for any false gradient. This will eliminate the possibility of a brake pipe rise situation and possible undesired emergency brake application or undesired release. The automatic brakes must be set again in accordance with GOI Section 18 Item 8.0.
- C. Automatic brake applications should be kept as small as practicable to enable the train to be pulled across the lesser grades.

**12.0 SPURS AND OTHER TRACKS**

- 12.1** 6 axle units prohibited on Chip Spur, Evans Products Ltd., Mile 51.8.
- 12.2** Air brakes must be used when switching on Noranda spur Mile 125.1.
- 12.3 Arrow Lake Spur, Revelstoke**  
At Fourth Street, all movements must stop at STOP signs before obstructing crossing.
- 12.4** Maximum speed 15 MPH on tracks 1 and 2, Revelstoke yard.
- 12.5 Locomotive restrictions, Revelstoke Yard**  
On all K yard tracks and tracks 8 to 11 inclusive:
  - GE AC4400 and GM SD90MAC units prohibited.
  - GM SD40 units maximum speed 4 MPH.
- 12.6 Station Numbers:**
  - Mile 35.0 (Golden) ..... 9508
  - Mile 42.3 (Moberly) ..... 9510

Time Table No 51 – February 6, 2003

Haulage Factors	Train Standby Channel	RTC Call-in Channel and RTC Call-in Code	RTC Authorities Channel	Emergency Call-in Code	Utility Channel and RTC Call-in Code	Utility Tower Code	Maintenance of Way Channel	Cautionary Limits	D L Zone GOI Sec 10 item 5.4	Miles from Fort Steele	NORTHWARD	WINDERMERE SUBDIVISION (Subdivision No 6104)	SOUTHWARD	Main Track(s)	Method of Train Control	DOB Limits	Siding Capacity in Feet Signalled Siding	Station Number	Haulage Factors
											↓	STATIONS	↑						
								0.5 ↓		0.0	N CL Sign Ds Swt	FORT STEELE Jct Cranbrook Sub	*UY		CL INT	0.5 ↓	Yard	9537	
										6.0		DOYLE							
						121				12.1	S Sdg Swt	6.1 WASA					8517	9538	
										17.0		TEEPEE							
										22.4	SNS	5.4 SKOOKUMCHUCK	Y					9539	
										28.1		TORRENT					8775	9540	
						122				34.0		COPPER CREEK							
										39.5	N Sdg Swt	5.5 CANAL FLATS	Y				9364	9541	
										44.9		COLUMBIA LAKE						9542	
										50.4		ENVIRON							
										53.7	S Sdg Swt	3.3 FAIRMONT					9481	9543	
										60.0		RUSHMERE							
										64.4		GOLDIE CREEK							
										68.8	S Sdg Swt	4.4 WINDERMERE			OCS		7928	9545	
										73.0		FIRLANDS		1					2.72
										77.6		RADIUM						9547	
										83.0	N Sdg Swt	5.4 EDGEWATER					2160	9548	
										88.3		LUXOR					8374	9549	
										94.0	SNS	5.7 BRISCO						9550	
										102.2		SPILLIMACHEEN					8250	9551	
										109.1		HARROGATE						9552	
										114.0	SNS	4.9 CASTLEDALE							
										117.7		SEENEY					8532	9557	
										127.4	SNS	9.7 McMURDO						9554	
						124				134.0		HORSE CREEK					8375	9559	
										140.7	SNS	6.7 PURCELL	U			140.7 ↑			
										143.0	Permanent TOP Limits	2.3 GOLDEN YARD	BU		CL		Yard	9508	
										144.8		1.8 KC JUNCTION	UY						
												Jct Mountain Sub							
										Rules 40.2 and 94.1 apply within Cautionary Limits at Fort Steele and between Purcell and KC Junction									

## WINDERMERE SUBDIVISION FOOTNOTES

### 0.0 RADIO

- 0.1 Trackside Radio System 2.2 in effect.
- 0.2 Zone Code (Z) is 1.
- 0.3 Spectra “DISP” feature does not apply.
- 0.4 Radio Base Station located at Golden Yard. Channel CP 7 monitored on a continuous basis by Yardmaster.

### 0.5

To Call:	Channel	Dial
Diesel Specialist	CP 20	*11110#
S&C Support Desk	CP 20	*11106#
Time Signal	CP 20 or CP 6	*19777#

Disconnect call by dialing \*1#

### 1.0 HOT BOX DETECTOR SYSTEM

#### 1.1

NORTHWARD			LOCATION	SOUTHWARD		
INSPECTION POINT	SET-OFF POINT	** GOI SEC 8 ITEM 8.1	MILE	** GOI SEC 8 ITEM 8.1	INSPECTION POINT	SET-OFF POINT
Wasa	Wasa		8.5	**	Fort Steele	Fort Steele
Torrent	Torrent		25.2		Skookumchuck	Skookumchuck
Fairmont	Fairmont		50.4		Columbia Lake	Columbia Lake
Radium	Radium		74.7		Windermere	Windermere
Spillimacheen	Spillimacheen		97.2		Brisco	Brisco
McMurdo	McMurdo		123.3		Mile 119.6	Mile 119.6

### 4.0 SPEEDS

#### 4.1

Northward MPH		Southward MPH
All Trains	Mile	All Trains
30	0.0 to 2.0	30
45	2.0 to 5.0	45
50	5.0 to 14.0	50
35	14.0 to 14.6	35
30	14.6 to 14.9	30
45	14.9 to 48.2	45
30	48.2 to 51.0	30
40	51.0 to 63.3	40
30	63.3 to 68.0	30
35	68.0 to 75.4	35
25	75.4 to 77.1	25
35	77.1 to 83.4	35
25	83.4 to 84.6	25
35	84.6 to 91.1	35
25	91.1 to 91.5	25
35	91.5 to 94.7	35
25	94.7 to 95.3	25
35	95.3 to 112.6	35
25	112.6 to 112.8	25
35	112.8 to 137.3	35
30	137.3 to 144.8	30

- 4.2 Maximum speed 30 MPH for northward movements approaching KC Junction on B Track when indication on Signal 1447C authorizes movement greater than Slow Speed.

### 5.0 CLEARANCES

#### 5.1

Columbia/Kootenay DOB Limits include all tracks between Fort Steele and Mile 0.5 and between Purcell and KC Junction. Rule 83.1(e) is modified to require all train and engine movements in Columbia/Kootenay DOB Limits to be in possession of current DOB. The DOB will be issued by the Nelson Subdivision RTC.

### 6.0 CENTRALIZED TRAFFIC CONTROL

#### 6.1

Junction with Mountain Subdivision at KC Junction – CTC.

### 7.0 OCCUPANCY CONTROL SYSTEM

#### 7.1

OCS Rules apply between Cautionary Limit Sign Mile 0.5 and Station Name Sign Purcell.

**WINDERMERE SUBDIVISION FOOTNOTES**

**9.0 PUBLIC CROSSINGS AT GRADE**

**9.1** Whistle signal Rule 14(l) is prohibited at the following public crossings:  
 Mile 67.62 ..... Kinsmen Beach Road  
 Mile 69.0 ..... Borden Street  
 Mile 143.6 ..... 5th Avenue South (Airport Road)  
 Mile 143.7 ..... 11th Street North (Golf Club Road)

**9.2 Mile 69.0**  
 Rule 103.1(c) does not apply.  
 Movements on business car track must stop at STOP sign before obstructing crossing.

**9.3 Mile 143.6**  
 Rule 103.1(c) does not apply.  
 Pushbuttons provided to operate warning devices when switching or standing clear of crossing on either track.

**9.4 Mile 143.7**  
 Rule 103.1(c) does not apply.  
 Pushbuttons provided to operate warning devices when switching or standing clear of crossing on either track.

**9.5 Anderson Road, Mile 36.8, Mountain Subdivision**  
 When authorized to pass Signal 1447C or 1447, indicating Stop at KC Junction, movement must not obstruct crossing until warning devices have been operating for at least twenty seconds and gates are in horizontal position.

**10.0 INTERLOCKINGS**

**10.1 Mile 0.0**  
 Remotely-controlled interlocked junction with Cranbrook Subdivision. Controlled by Cranbrook Subdivision RTC. Before passing Signal 02, train must be in possession of a Clearance authorizing movement on the Cranbrook Subdivision.

**11.0 GENERAL FOOTNOTES**

**11.1** Rules 40.2 and 94.1 apply within Cautionary Limits at Fort Steele and between Purcell and KC Junction.

**11.2** \*Designated Switch at Fort Steele at Mile 2.05.

**11.3** GOI Section 15, item 3.1 does not apply on the Windermere Subdivision, except when approaching crossings equipped with automatic warning devices.

**11.4** At Fort Steele and Golden Yard:  
 — within Cautionary Limits at Fort Steele and between Purcell and KC Junction, in the application of Rule 104(b), a train or engine may leave a main track switch lined and locked in the reverse position. Employees encountering such switch in reverse position need not restore it to normal position, nor advise the RTC if restored.  
 — in the application of Rule 104(c), a train or engine may leave other than main track switches lined and locked in either position;  
 — both switches of a crossover or yard crossover must be left in the same position.

**11.5** GOI Section 10, Item 5.4 applies between D L Zone Sign Purcell, Mile 139.35 and KC Junction. Yardmaster Golden Yard is responsible.

**11.6** In the application of GOI Section 14, Item 1.1(k), when a train, or portion remaining after locomotive(s) removed, is left unattended in:  
 — Golden yard, the minimum number of hand brakes to be applied is two on head end. On all other blocks of cars left unattended, the minimum number is two on north end of each separate block.  
 — Fort Steele yard, the minimum number of hand brakes to be applied is two on head end.

**11.7** Nelson Subdivision RTC is responsible for accepting requests for, and providing confirmation of GBO protection, when any portion of the restriction is located within the Columbia/Kootenay DOB limits.

**11.8** Pull-by inspections at Golden Yard will be done as follows:  
 (i) empty coal trains; two qualified employees, inbound or outbound.  
 (ii) north wayfreight; terminates, no pull-by.  
 (iii) south wayfreight; No 1 brake test having been performed, no pull-by.  
 (iv) diverted trains; inbound or outbound.

**11.9** A Schedule “B” will only be provided to southward trains departing Golden Yard as per GOI Section 13, Item 2.2.  
 Empty coal trains that have not had the locomotives laid over, altered or repaired, will not receive a Schedule “B”.  
 The pacesetter on all empty coal trains not provided with a Schedule “B” must be tested before the train departs Golden Yard.

**11.10** Permanent TOP limits in effect on the Windermere Subdivision. In the application of Rule 49(b), only the following identifiable locations may be used to define the limits of a TOP:

<b>Identifiable Location</b>	<b>Mile</b>
North cautionary limit sign Fort Steele.....	0.5
Designated switch Fort Steele.....	2.05
South siding switch Wasa.....	11.30
Station name sign Skookumchuck.....	22.4
North siding switch Canal Flats.....	40.5
South siding switch Fairmont.....	52.75
South siding switch Windermere.....	68.03
North siding switch Edgewater.....	83.26
Station name sign Brisco.....	94.0
Station name sign Castledale.....	114.0
Station name sign McMurdo.....	127.4
Station name sign Purcell.....	140.7

**11.11** In addition to the requirements of System Special Instruction relating to Rule 90, a crew member must announce on the standby radio channel, between one and three miles from permanent TOP limits, whether or not the train has a permanent TOP restriction.

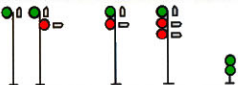

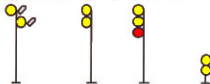
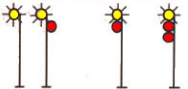
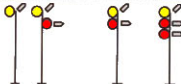


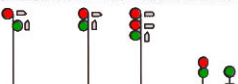
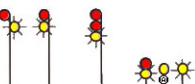
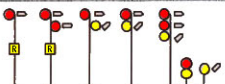

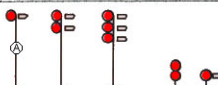
**WINDERMERE SUBDIVISION FOOTNOTES**

**12.0 SPURS AND OTHER TRACKS**

- 12.1 Skookumchuck Pulp Mill Track 8**  
Train and engine movements prohibited north of STOP sign.
- 12.2** GM SD90MAC and GE AC4400 units prohibited on private tracks east of signs, at Canal Flats and Skookumchuck.
- 12.3** Movements on tail of wye at Canal Flats must stop at STOP signs before obstructing crossing.
- 12.4** General Rule E applies on tracks DG, DI, DJ and DK, Golden Yard.
- 12.5** On G lead, Golden Yard, Rule 13(iii) applies at road crossings at either end of car shop.
- 12.6** Maximum speed 15 MPH on other than main track between Purcell and KC Junction, except wye.
- 12.7** GOI Section 15, Item 4.2 applies at the following locations:



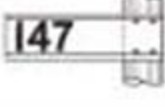
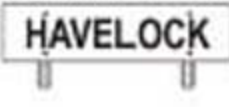



Wasa	Back track
Skookumchuck	All CFI trackage
Canal Flats	Back track, tail of wye past Georgia Pacific spur and all CFI trackage
Windermere	Portion of team track mile 68.8 to 69.1 and maintenance of way stub spur
Radium	South end of storage track mile 77.3 to 77.6
Seeney	Back track






- 12.8 Station Numbers:**  
 Mile 119.6 (Parson).....9553  
 Mile 137.0 (Nicholson) .....9555

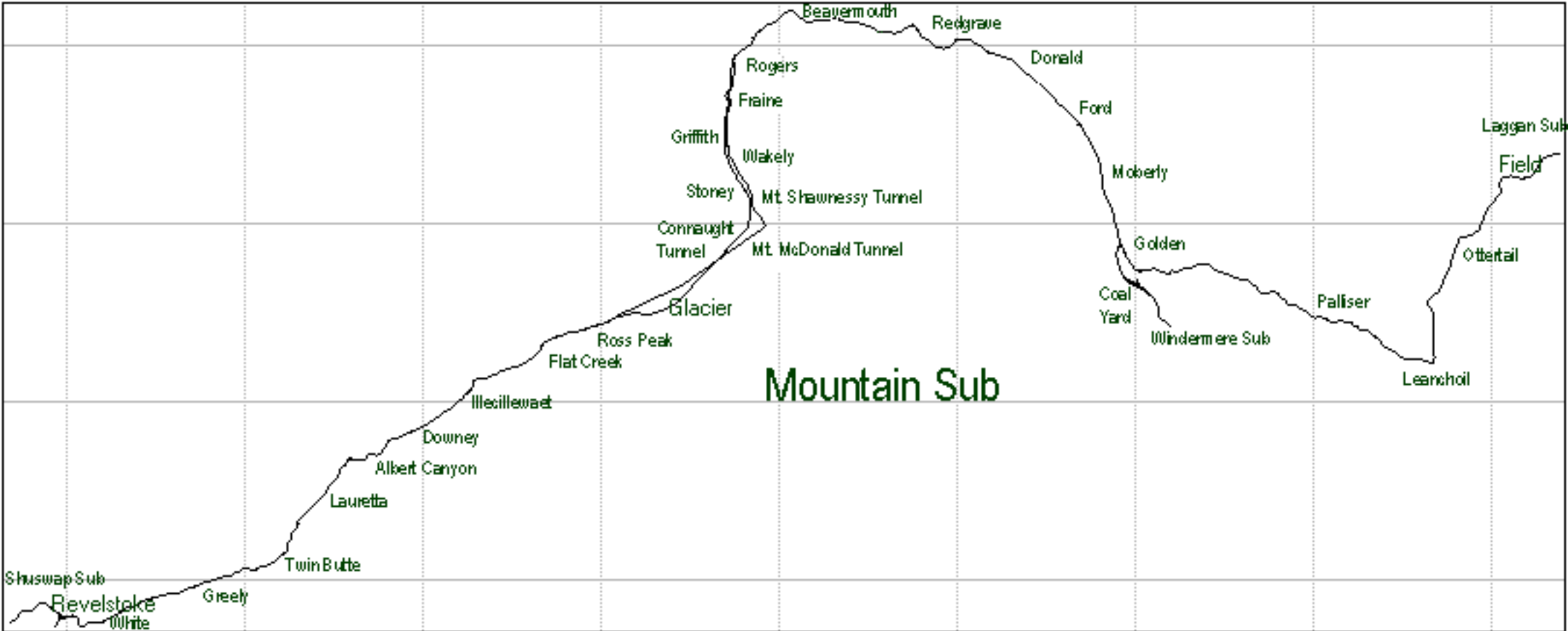
Rule	Aspects	Name	Indication
405		Clear	Proceed
407		Clear to Medium	Proceed, approach next signal at medium speed.
408		Clear to Slow	Proceed, approach next signal at slow speed.
409		Advance Clear to Stop	Proceed, next signal is displaying clear to stop.
410		Clear to Stop	Proceed, prepare to stop at next signal.
416		Medium to Clear	Proceed, medium speed passing signals and through turnouts.
420		Medium to Stop	Proceed, medium speed passing signals and through turnouts, prepare to stop at next signal.
421		Slow to Clear	Proceed, slow speed passing signals and through turnouts.
425		Slow to Stop	Proceed, slow speed passing signals and through turnouts. Prepare to stop at next signal.
426		Restricting Signal	Proceed at restricted speed.
428		Stop and Proceed	Stop, then proceed at restricted speed.
429		Stop	Stop.



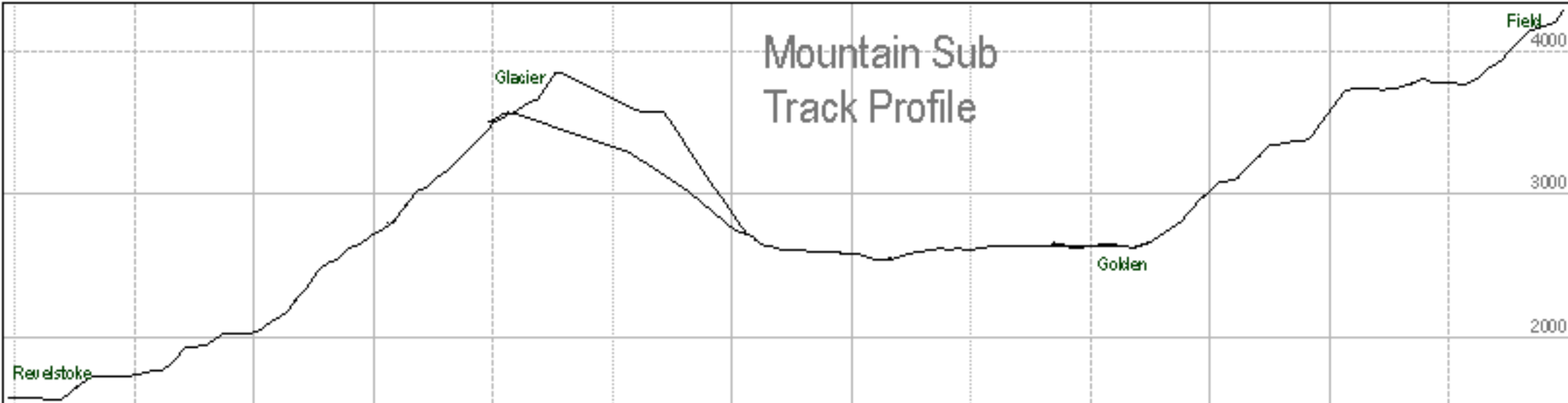
## Trackside Signs

<p><b>WHISTLE POST</b></p> 	<p>Located at least one-quarter (1/4) mile from the edge of all public crossings at grade, blind curves and tunnels.</p>
<p><b>PROHIBITED WHISTLE POST</b></p> 	<p>Located at least one-quarter (1/4) mile from the edge of every public crossing at grade, where engine whistle signal Rule 14 (f) is prohibited by special instruction.</p>
<p><b>MILE POST</b></p> 	<p>Located at one mile intervals to designate subdivision mileage.</p>
<p><b>STATION MILE BOARD</b></p> 	<p>Located one mile from station, siding switch, first main track switch where trains can enter or leave yard tracks, designated switch, or junction switch, whichever is the most outlying in each direction.</p>
<p><b>PLOW / FLANGER WARNING</b></p> 	<p>To call attention of snow plow and flanger operators to an obstruction to the operation of their snow removal equipment.</p>
<p><b>END OF TRACK WARNING</b></p> 	<p>Located at the actual termination point of track, to indicate end of track.</p>
<p><b>BEGIN / END HEAVY GRADE</b></p> 	<p>Placed at locations indicated in special instructions or in time table footnotes to mark the beginning and end of a downgrade which exceeds 0.8%, but does not exceed 1.8%, for a distance of 2 miles or more.</p>

<p><b>BEGIN / END MOUNTAIN GRADE</b></p> 	<p>Placed at locations indicated in time table footnotes or special instructions to mark the beginning and end of a downgrade which exceeds 1.8%.</p>
<p><b>REDUCE SPEED WARNING</b></p> 	<p>Located one mile in advance of a permissible speed sign marking the beginning of a zone of lower speed.</p>
<p><b>PERMISSIBLE SPEED SIGN</b></p> 	<p>To mark the beginning of a speed zone specified in special instructions. When two speeds are shown on the sign, the upper speed applies to passenger trains and the lower speed to other trains and engines. When one speed is shown, it applies to all trains and engines.</p>
<p><b>ADVANCE YARD LIMIT SIGN</b></p> 	<p>Placed at least one mile in advance of a yard limit sign.</p>
<p><b>YARD LIMIT SIGN</b></p> 	<p>Defines yard limits.</p>



# Mountain Sub Track Profile



RogersPass 130 M

10 M

TS Mapper by Okrasa Ghia

# **MLT's Rogers Pass Additional Information**

With this product we have a few new features not found in previous products:

The hotbox detectors are interactive not just background chatter. They can be heard shortly after passing each detector on route.

The cab chatter can be turned off if desired by moving the "quantity of sounds" slider in the sound options in MSTS to the lowest setting. All other sounds will still be played.

Crews have been added to the lead locos.

The AI trains will be heard as they pass by.

We found in testing that lengthy folder and file names reduced system performance, so the names have been kept short.

We found that not all shape files were compressed as fully as could be. This also helped performance.

The loco textures are all 1024 and the rolling stock is all 512. We felt that this makes for best performance versus appearance in the simulation. This was also done with Niagara Corridor with good results.

Also in testing, we found that changing the cam config to settings of 50 and 40 from the default 60 for the field of view improved performance. There are several write-ups in the forums on how to do this.

New tree textures and graphics techniques were used with great results. Check out the clear winter scenes.

## List of Credits

Route build:	Andy Hockin
New objects:	Andy Hockin
Locomotives:	Danny Beck
Reskinned by:	Peter Haase, Andy Hockin
Rolling Stock:	Jason Dilworth, Danny Beck
Reskinned by:	Peter Haase, Andy Hockin
Locomotive Crewman:	Marc Nelson
Beta testing:	Colin Graham, Andy Hockin

Special thanks to Harold Clitheroe and Chris Donoghue at CPR for all their help.

Go to [www.cpr.ca](http://www.cpr.ca) for a free demo version of Kicking Horse Pass and other MSTs downloads.