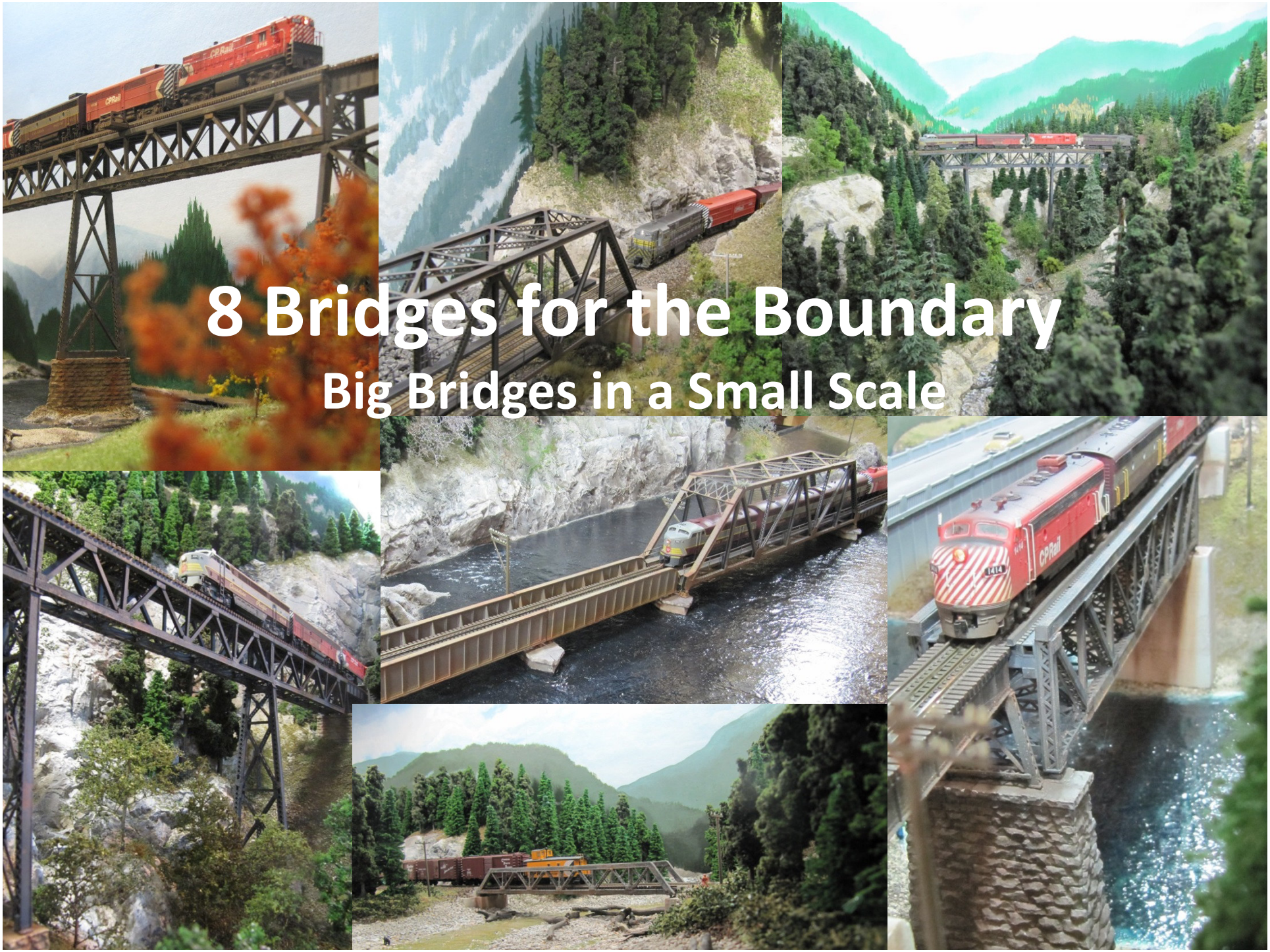
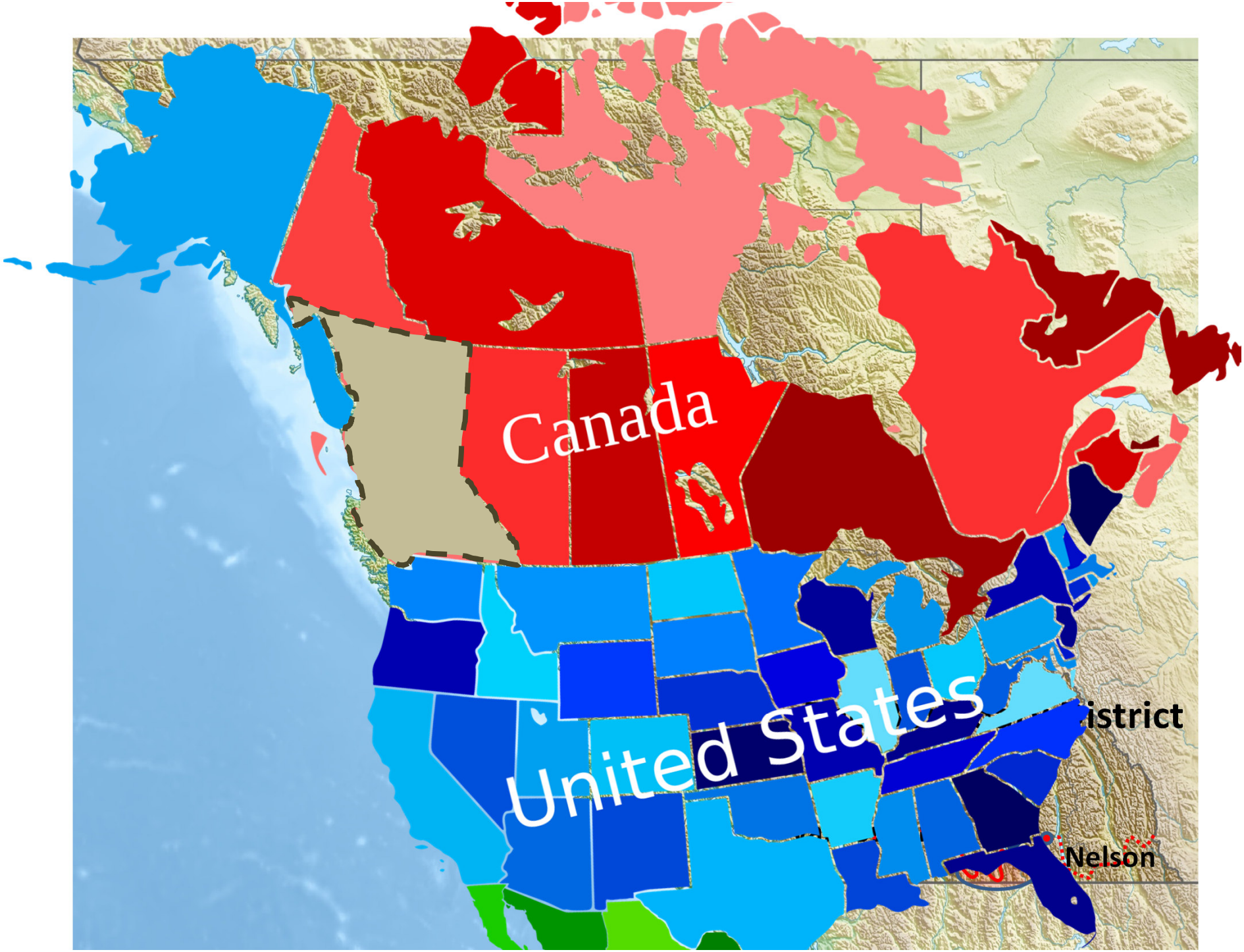
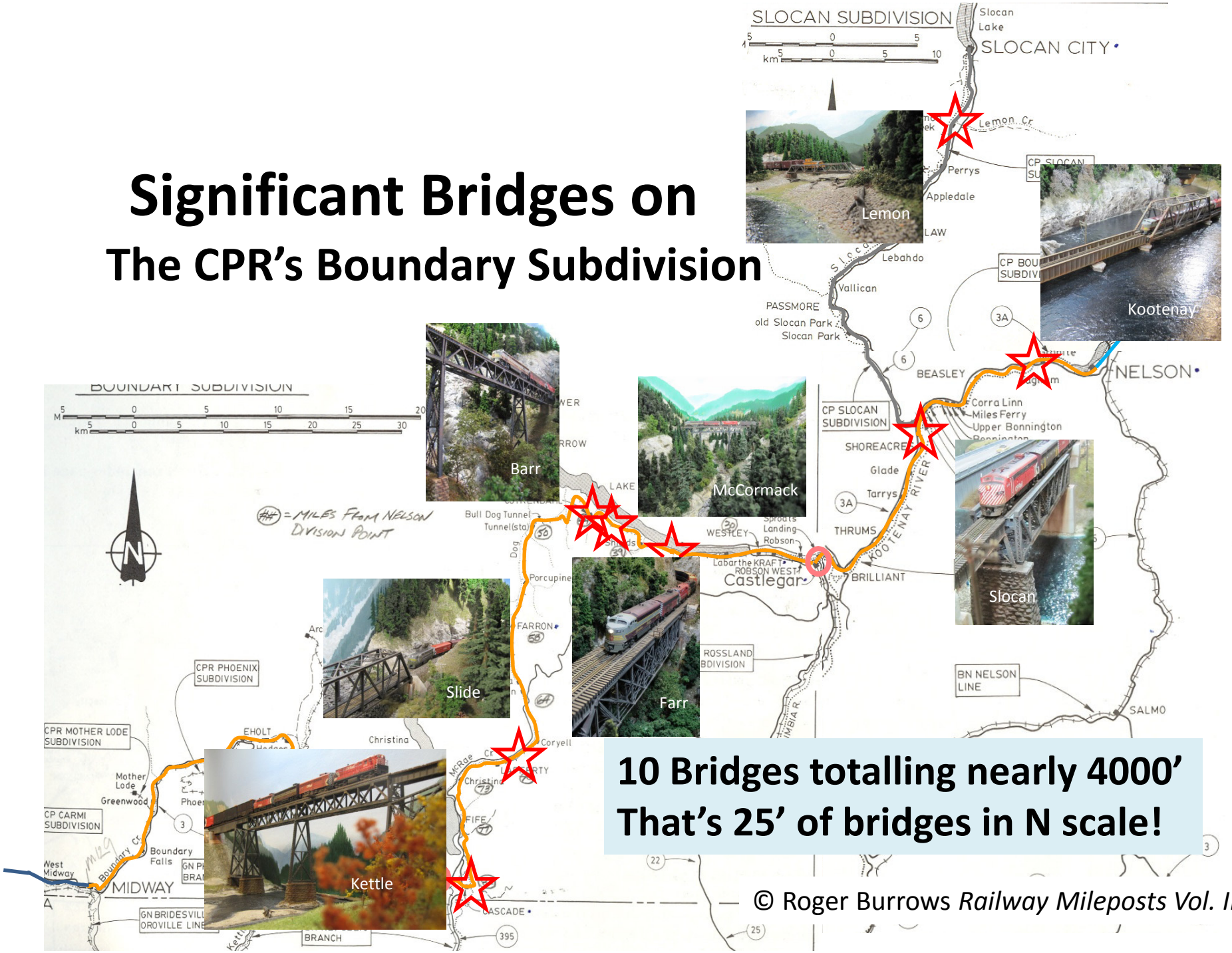
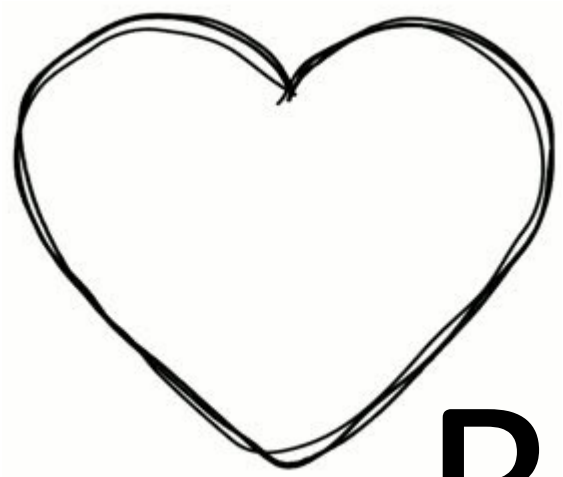

8 Bridges for the Boundary
Big Bridges in a Small Scale


Canada
United States
istrict
Nelson

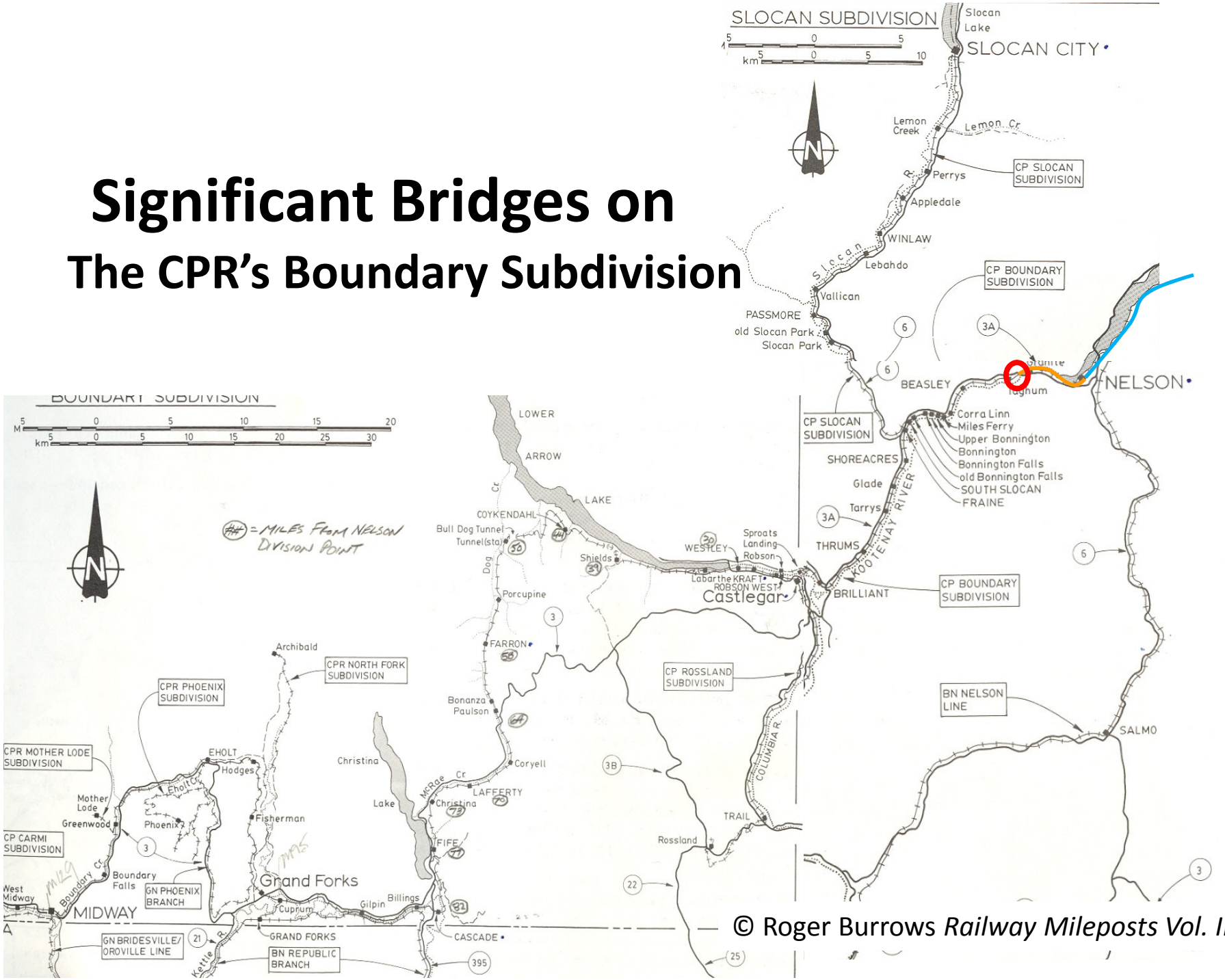
Significant Bridges on
The CPR's Boundary Subdivision



10 Bridges totalling nearly 4000'
That's 25' of bridges in N scale!

I  Bridges!

Significant Bridges on
The CPR's Boundary Subdivision



4th Crossing of the Kootenay

MP4.0 of the Boundary Sub

763’ Long

157’ Through Truss, ***7*** Half-Deck PG Bridges,

1 DPG Bridge and ***2*** Islands!

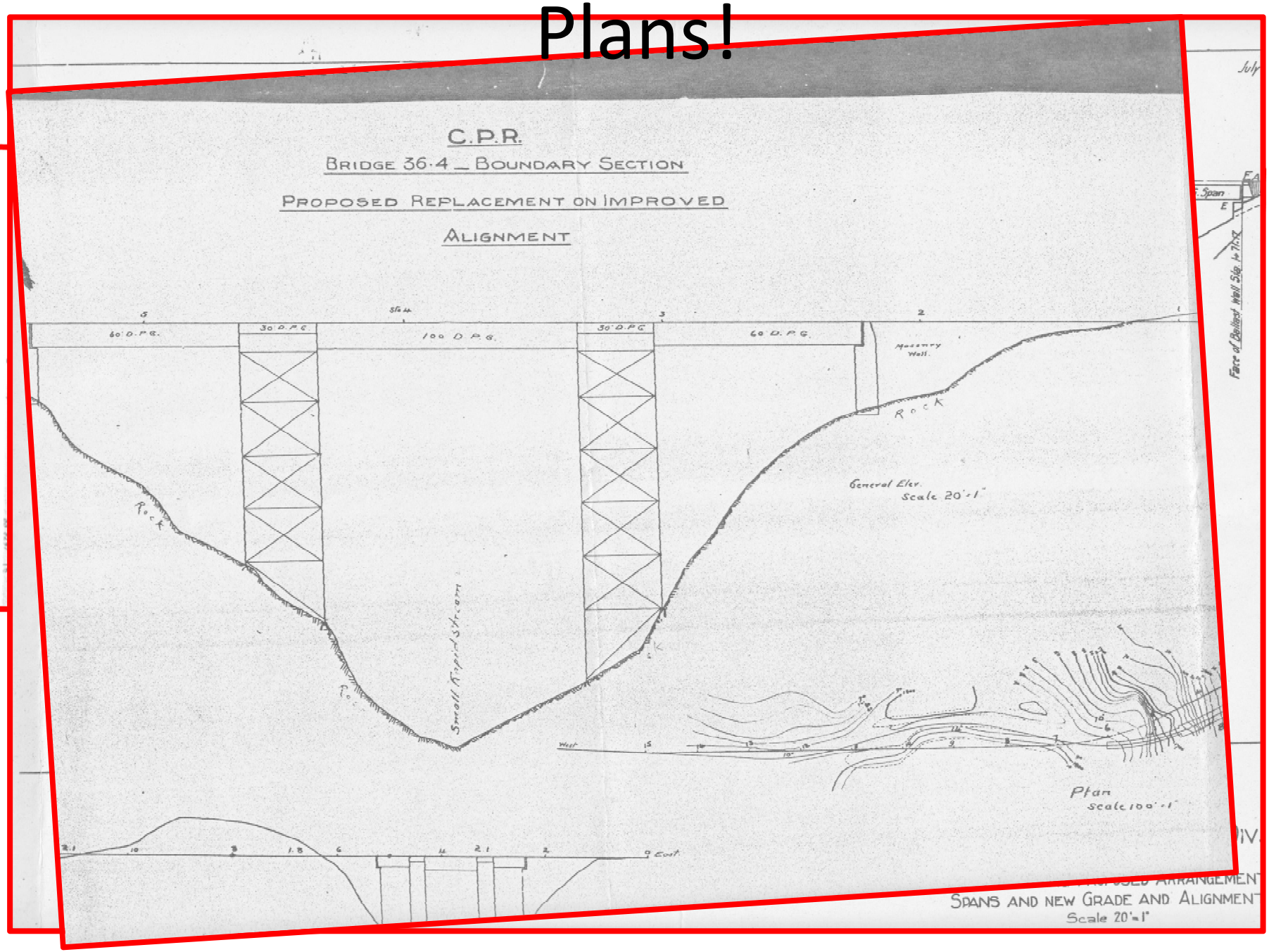
Model is scaled down 50% but mostly through selective omission


5985
5985
2008-03-30 8:26:17 AM -M.Novak- Taghum BC, Canada

4th Crossing of the Kootenay River

Photo by Matthew Hicks

Plans!


C.P.R.
BRIDGE 36·4 _ BOUNDARY SECTION
PROPOSED REPLACEMENT ON IMPROVED
ALIGNMENT
60' D.P.G.
30' D.P.G.
100 D.P.G.
30' D.P.G.
60 D.P.G.
Masonry Wall
ROCK
Rock
Rock
General Elev.
Scale 20'=1"
Plan
Scale 100'=1"
SPANS AND NEW GRADE AND ALIGNMENT
Scale 20'=1"

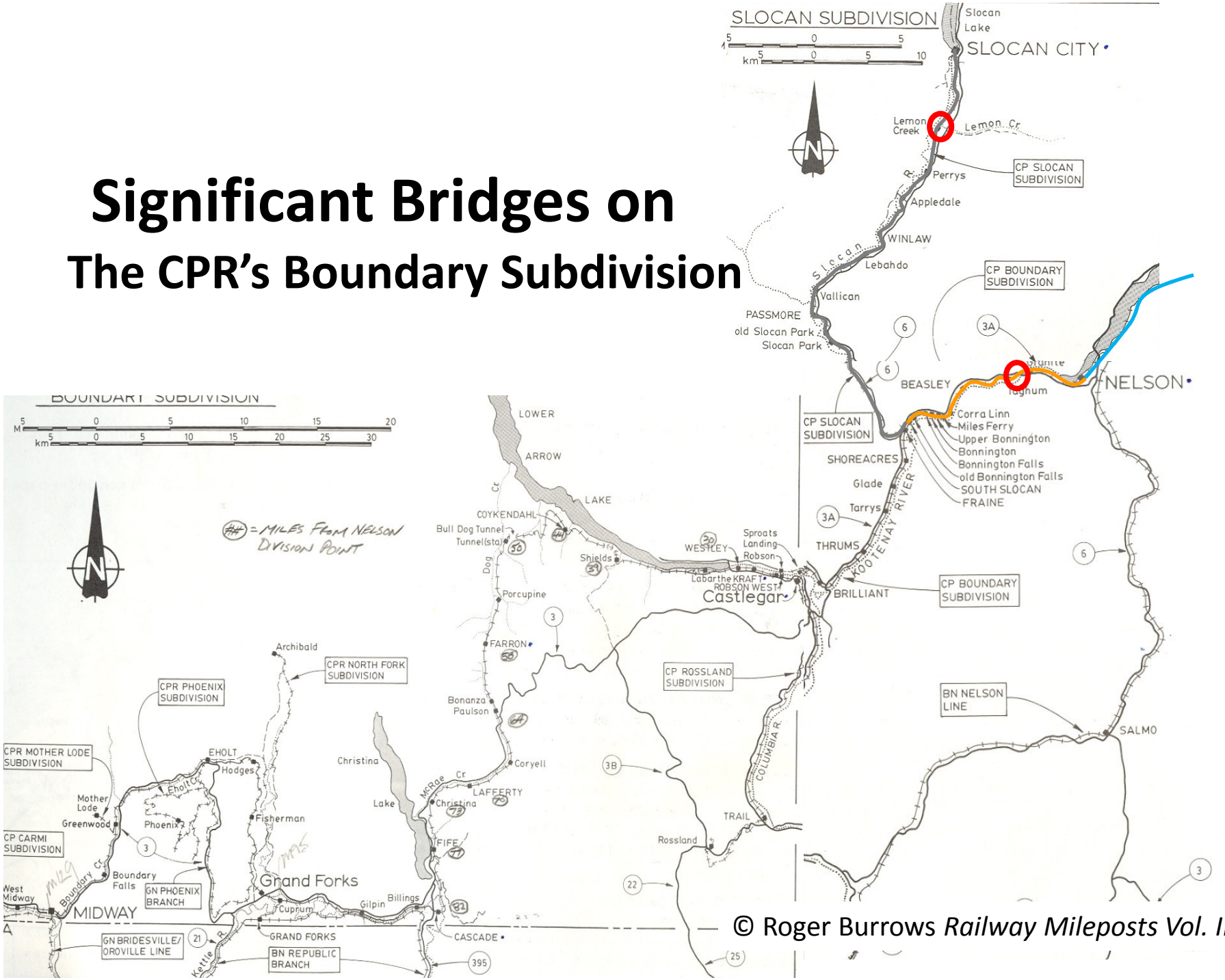
Kootenay River Bridge in progress


~3 ½ ’


CANADIAN PACIFIC


CP Rail

Significant Bridges on
The CPR's Boundary Subdivision



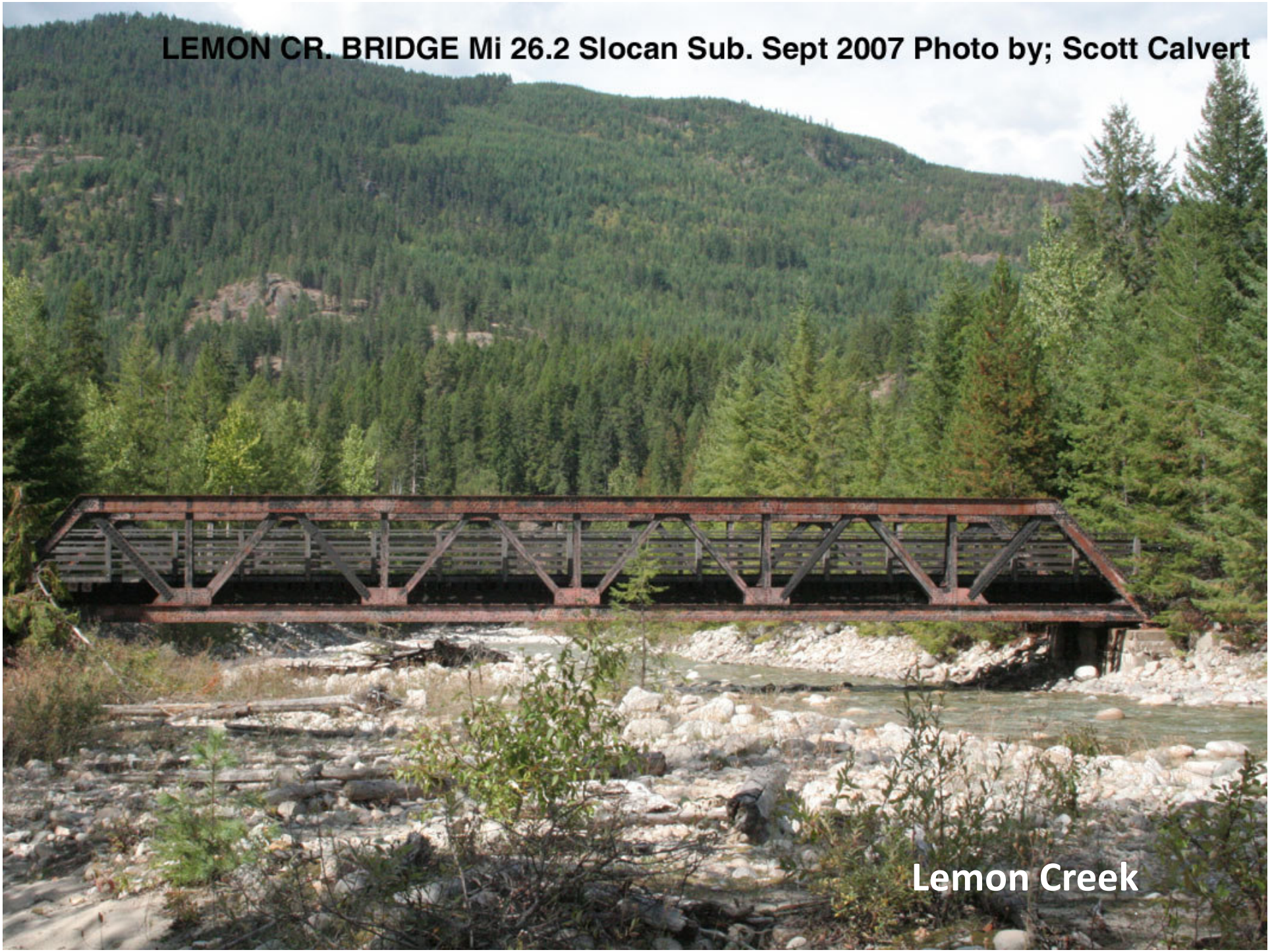
© Roger Burrows *Railway Mileposts Vol. II*

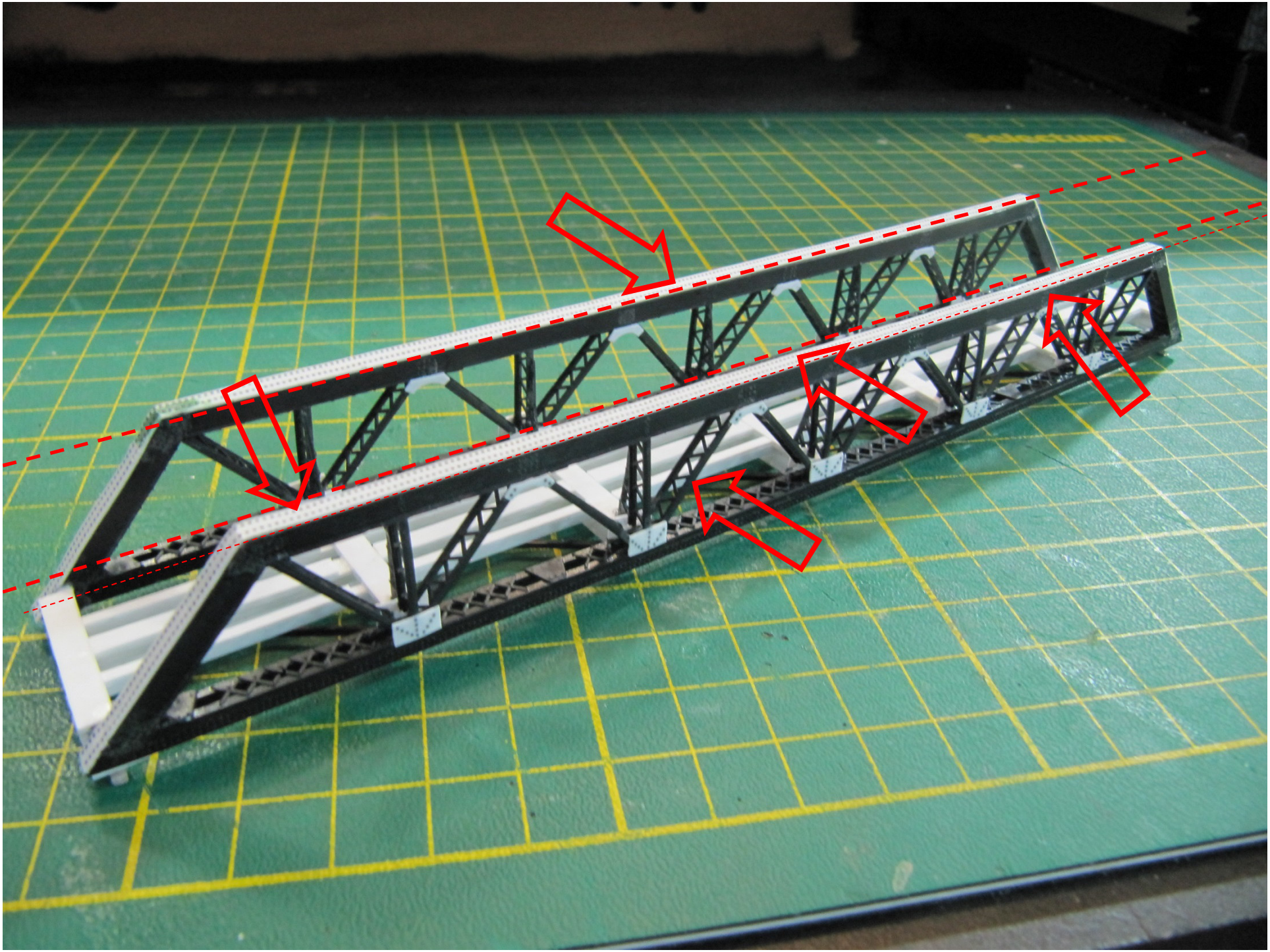
Lemon Creek

MP26.4 of the Slocan Sub

110’ long through Pony Truss bridge

Model is scaled 100% of full size


LEMON CR. BRIDGE Mi 26.2 Slocan Sub. Sept 2007 Photo by; Scott Calvert
Lemon Creek




LEMON CR. Mi 26.2 Slocan Sub. Sept 2007 Photo by; Scott Calv
CPRail
8727

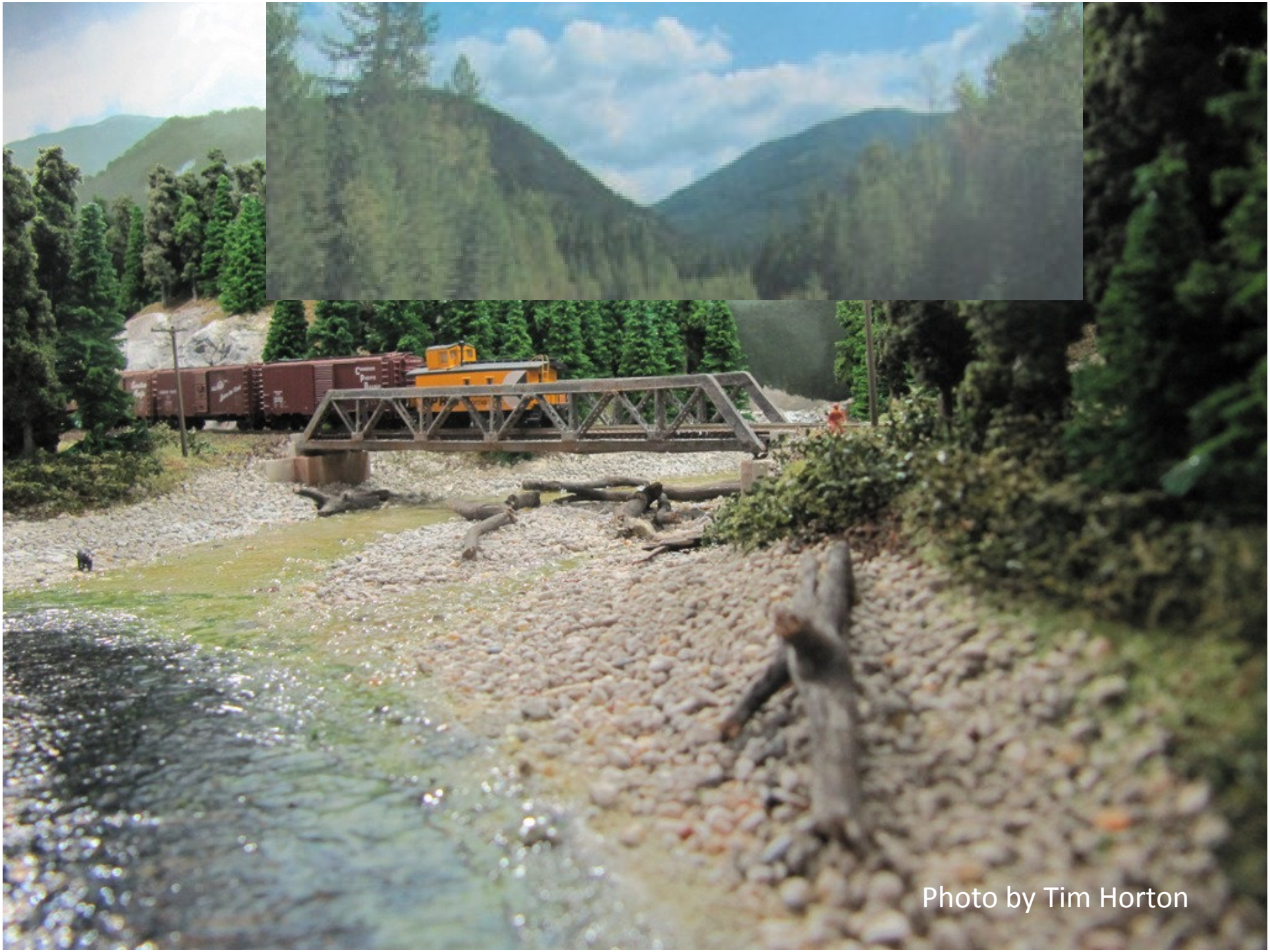
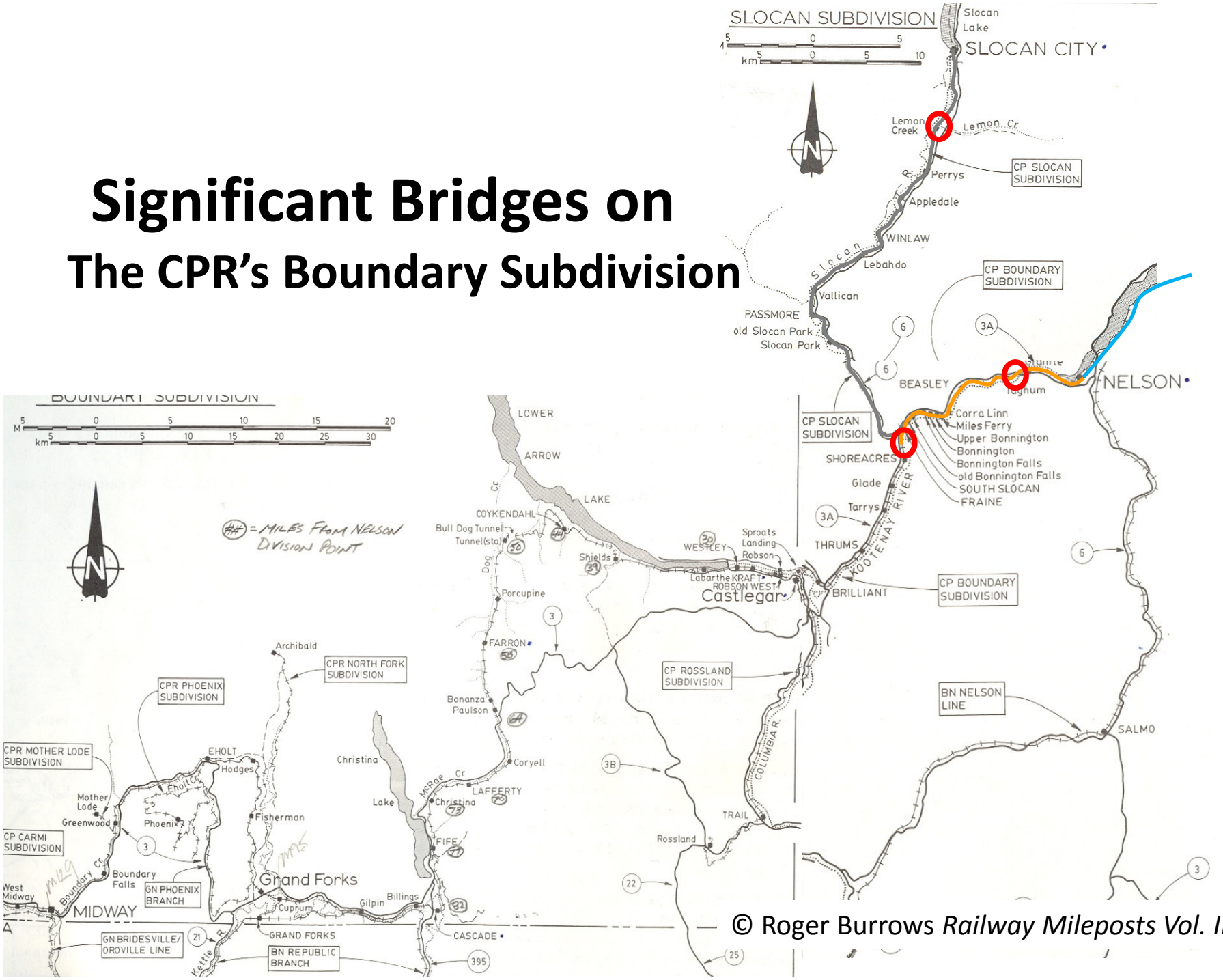


Photo by Tim Horton

Significant Bridges on
The CPR's Boundary Subdivision



Slocan River

MP14.6 of the Boundary Sub

332’ long x 69‘ High

Comprises east to west:

- 1 x 85’ long deck plate girder bridges
- 1 x 157’ long deck truss bridge
- 1 x 85’ long deck plate girder bridge
- Model is scaled down to **60%** of full size

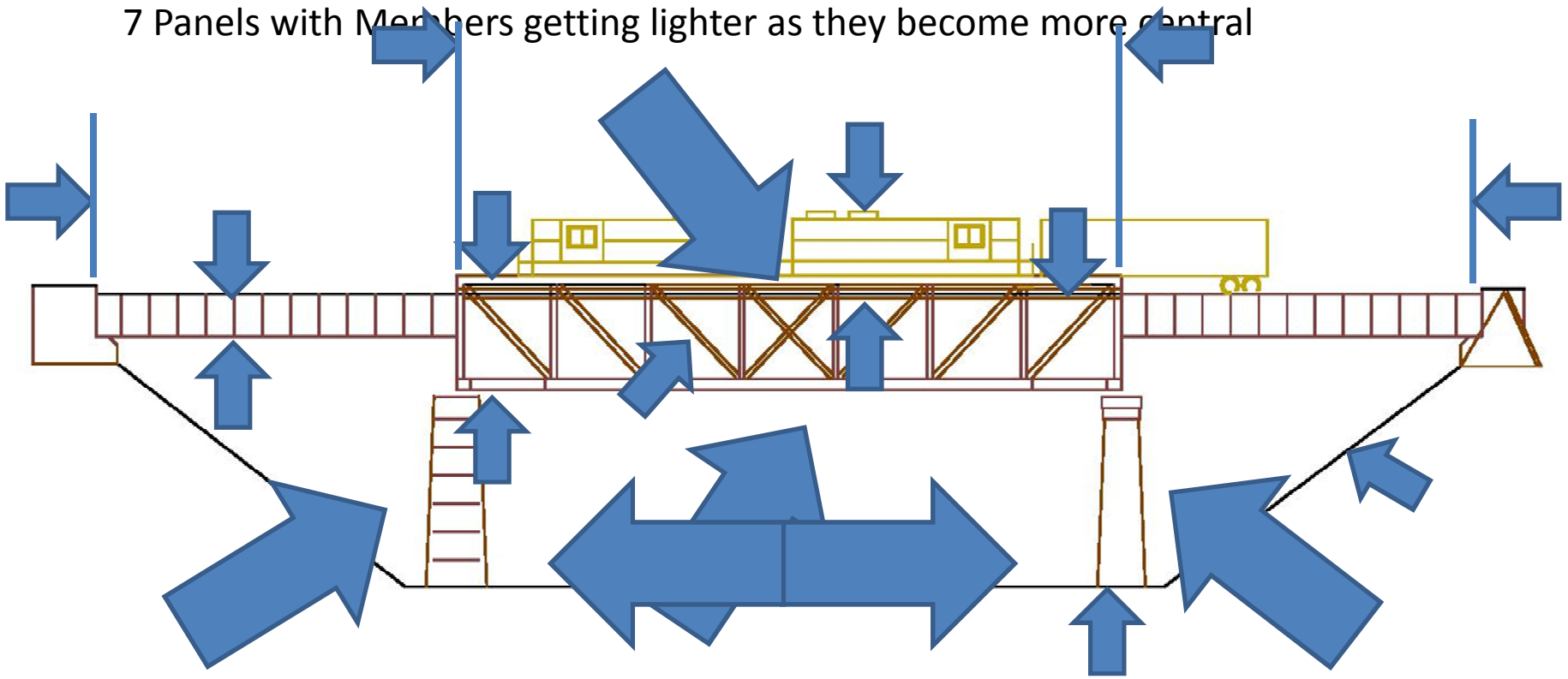
Slocan River

Photo by Matthew Hicks

Compression Test!

Key Characteristics (Spotting Features)

7 Panels with Members getting lighter as they become more central



Different Piers!

Ratios of Lengths

Ratios of Heights

Symmetrical Arrangement of DPG-DTB-DPG

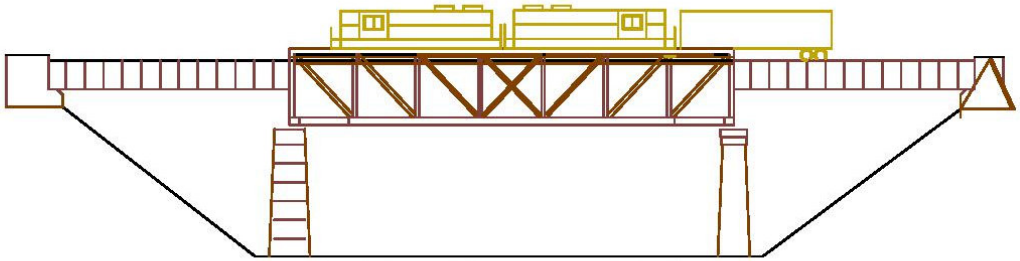
Depressed Deck Truss Bridge

Angles

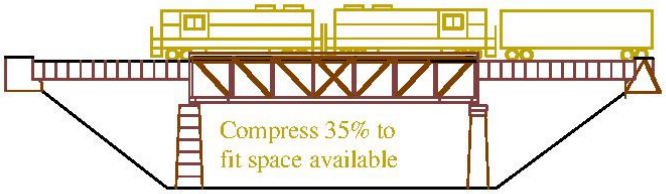
Ratios of Length and Heights

Rust Patches, Highway Bridge, etc. etc.

Selective Compression Options!

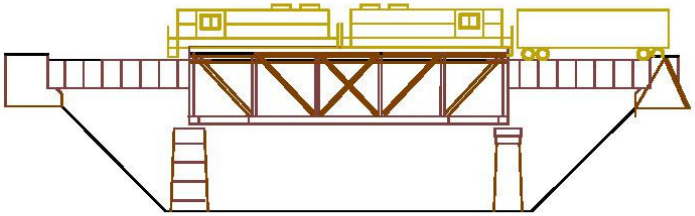


Prototype 332' long x 69' high

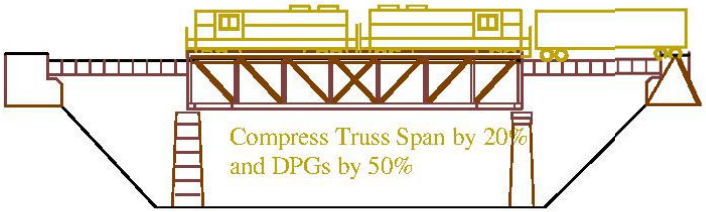


Option a) Uniform Compression

?



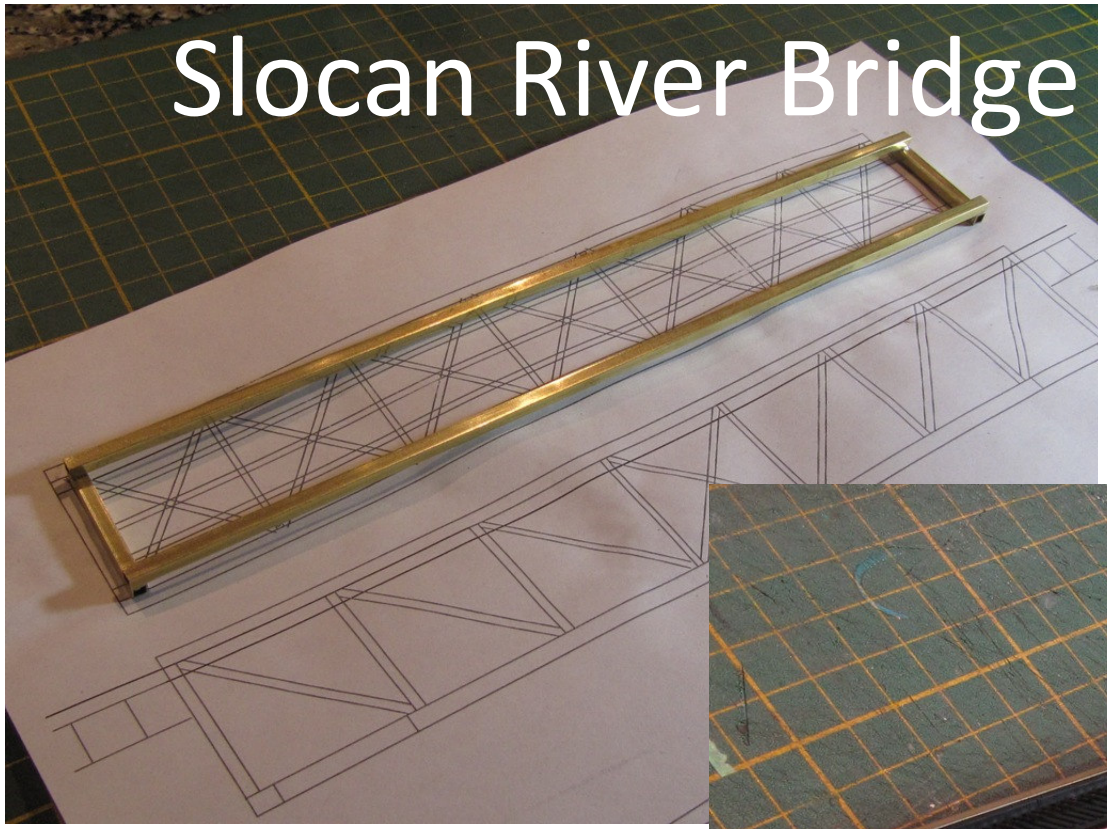
Option b) Selective Omission of Panels to Maintain the Bridge Depth

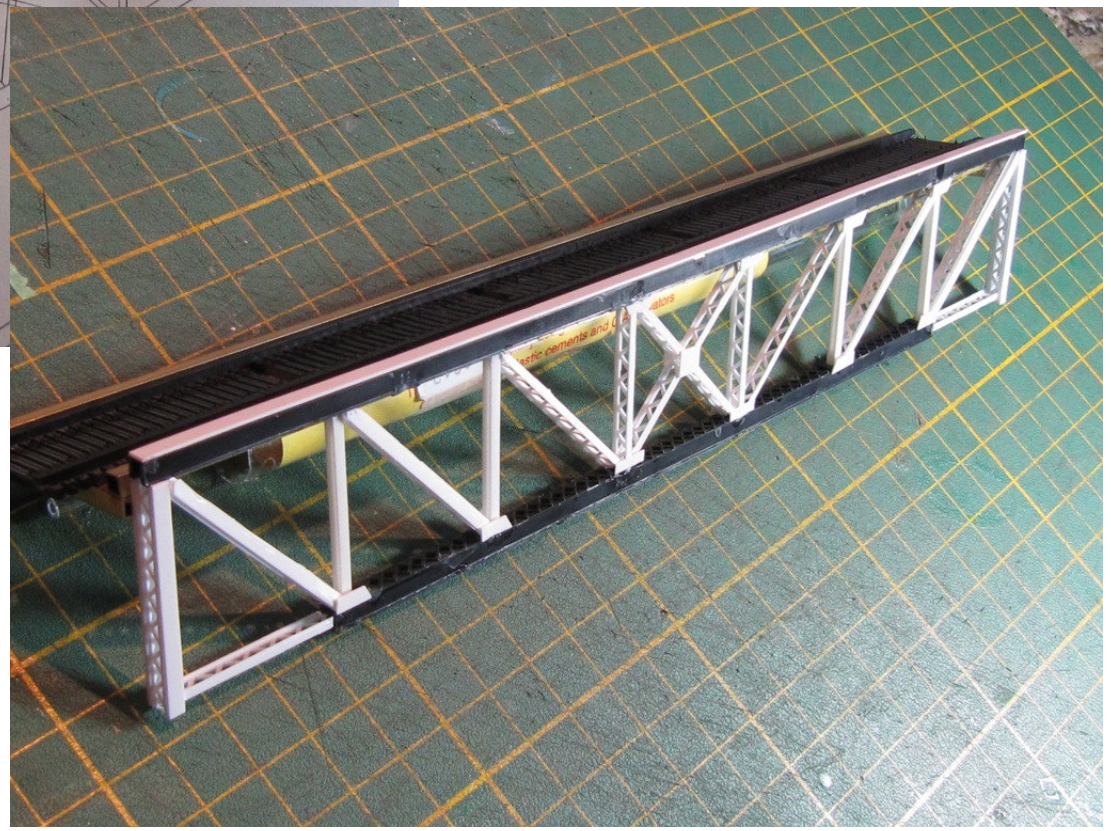


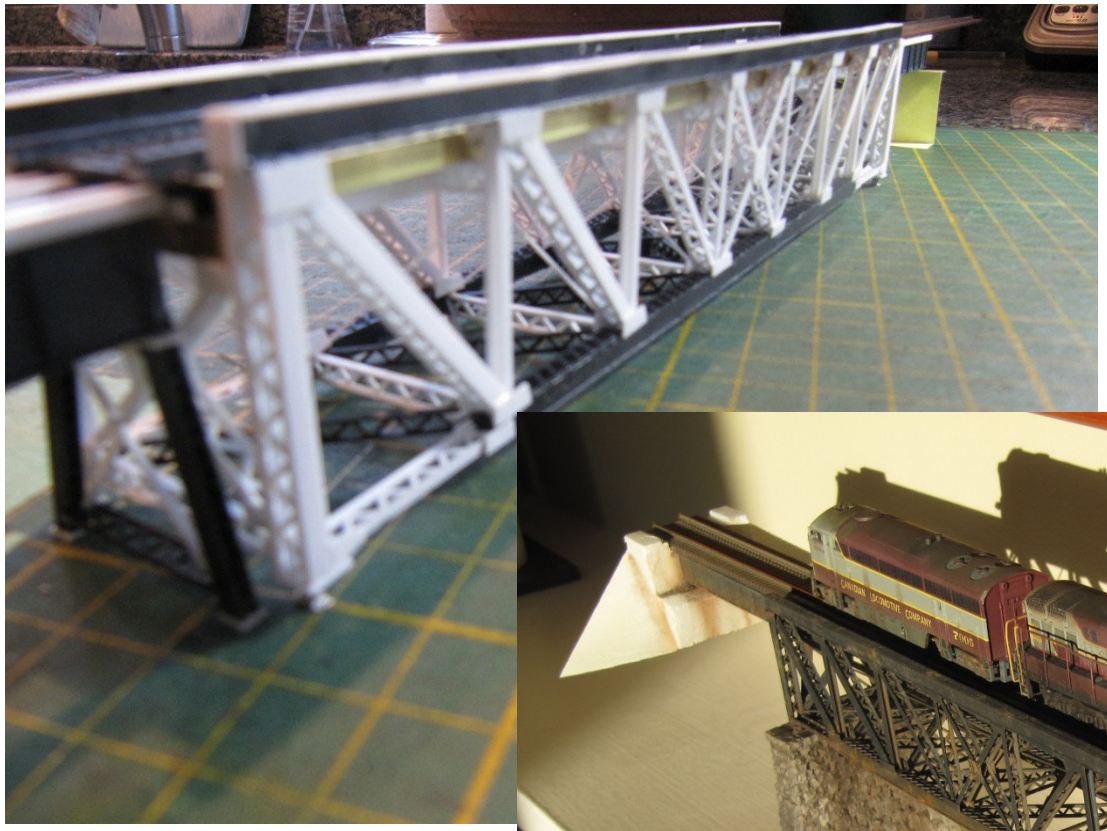
✓

Option c) Non Uniform Compression

Slocan River Bridge in progress



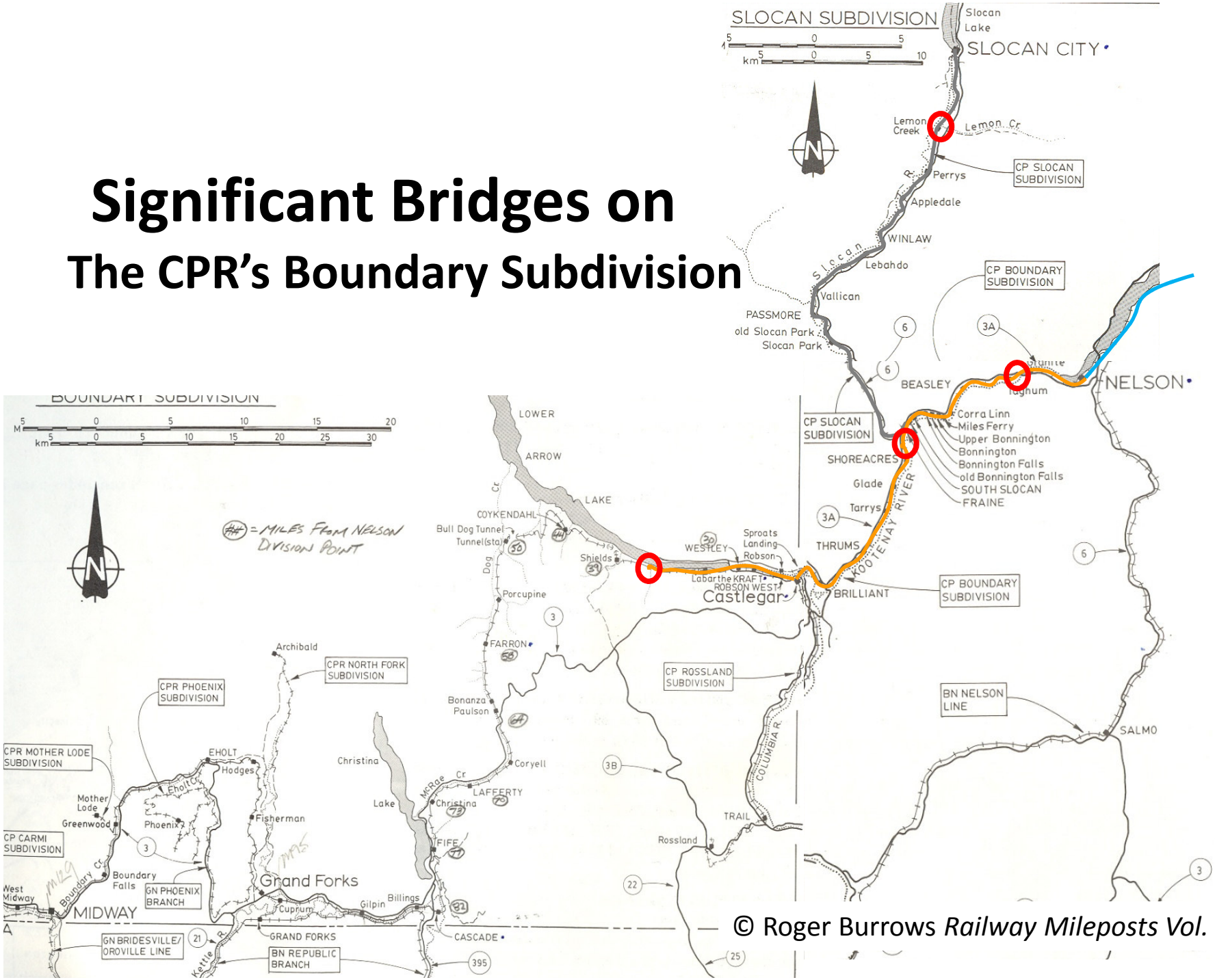





CANADIAN LOCOMOTIVE COMPANY


Canadian Pacific
4104

Significant Bridges on
The CPR's Boundary Subdivision



McCormack Creek

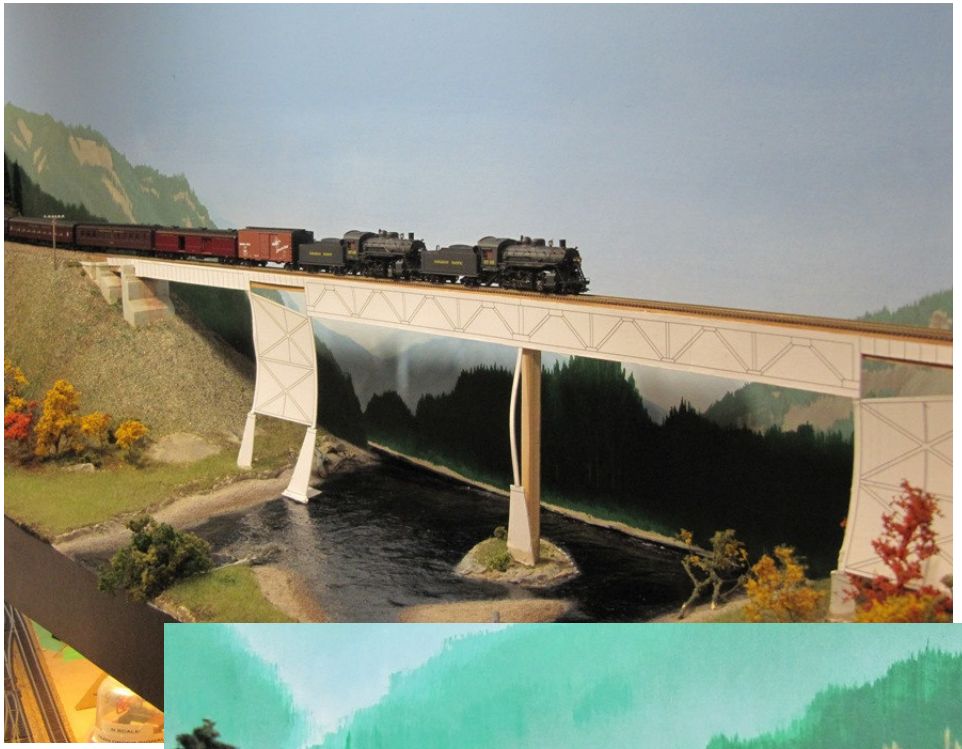
MP36.1 of the Boundary Sub

410’ long x 190‘ High

Comprises east to west:

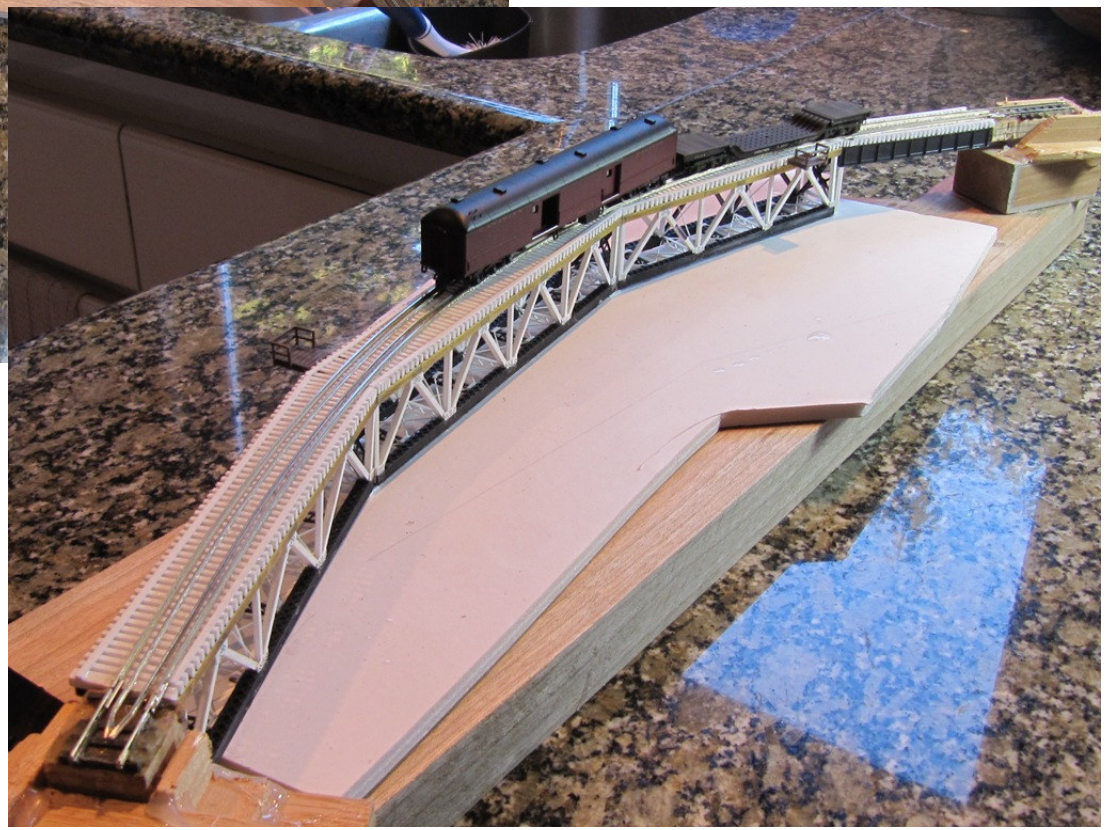
- 2 x 80‘ long deck plate girder bridges
- 3 x 85’ long deck truss bridges
- Model is scaled down from 70% of full size

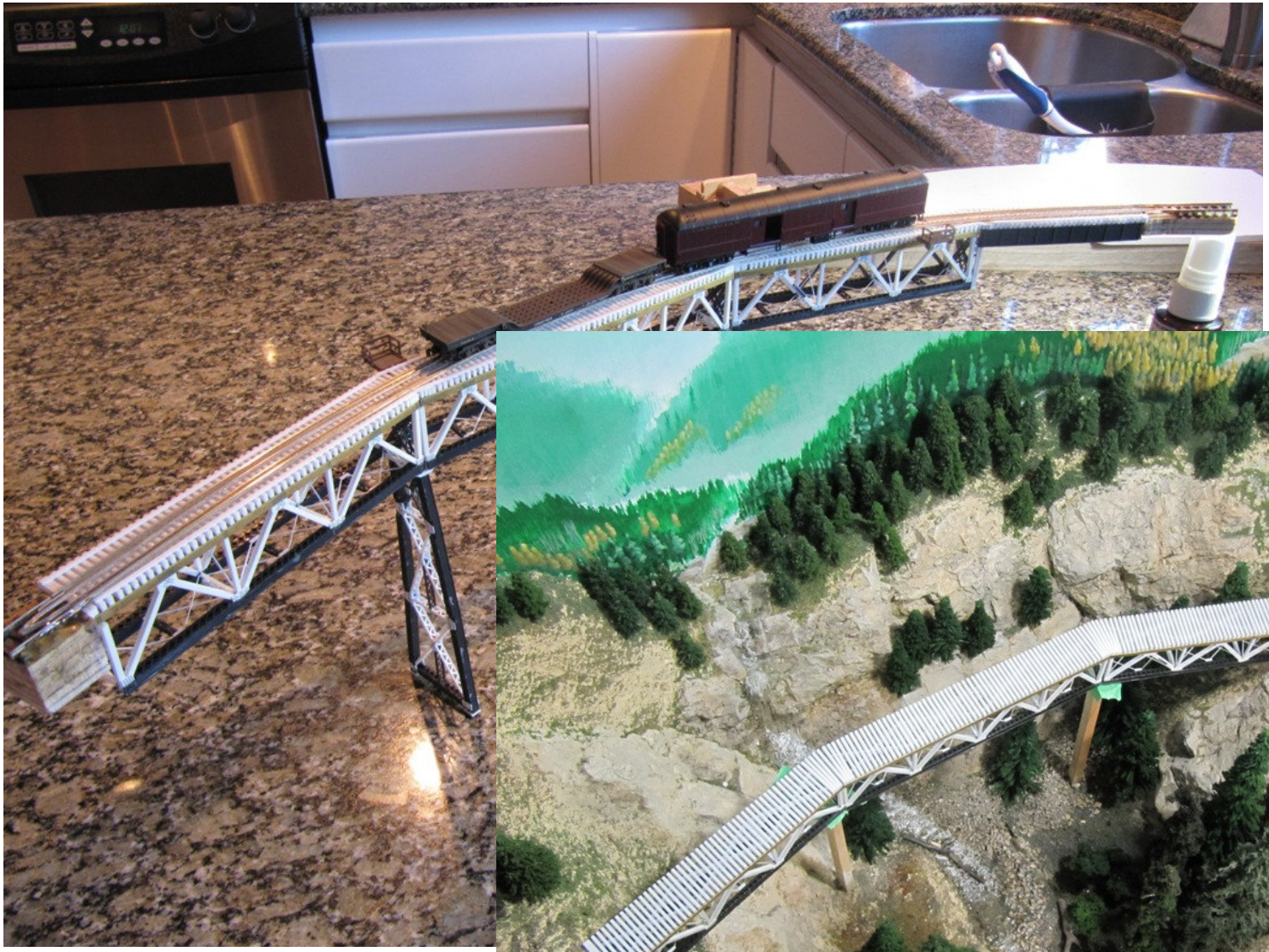

McCormack Creek
Photo by Al Reynish



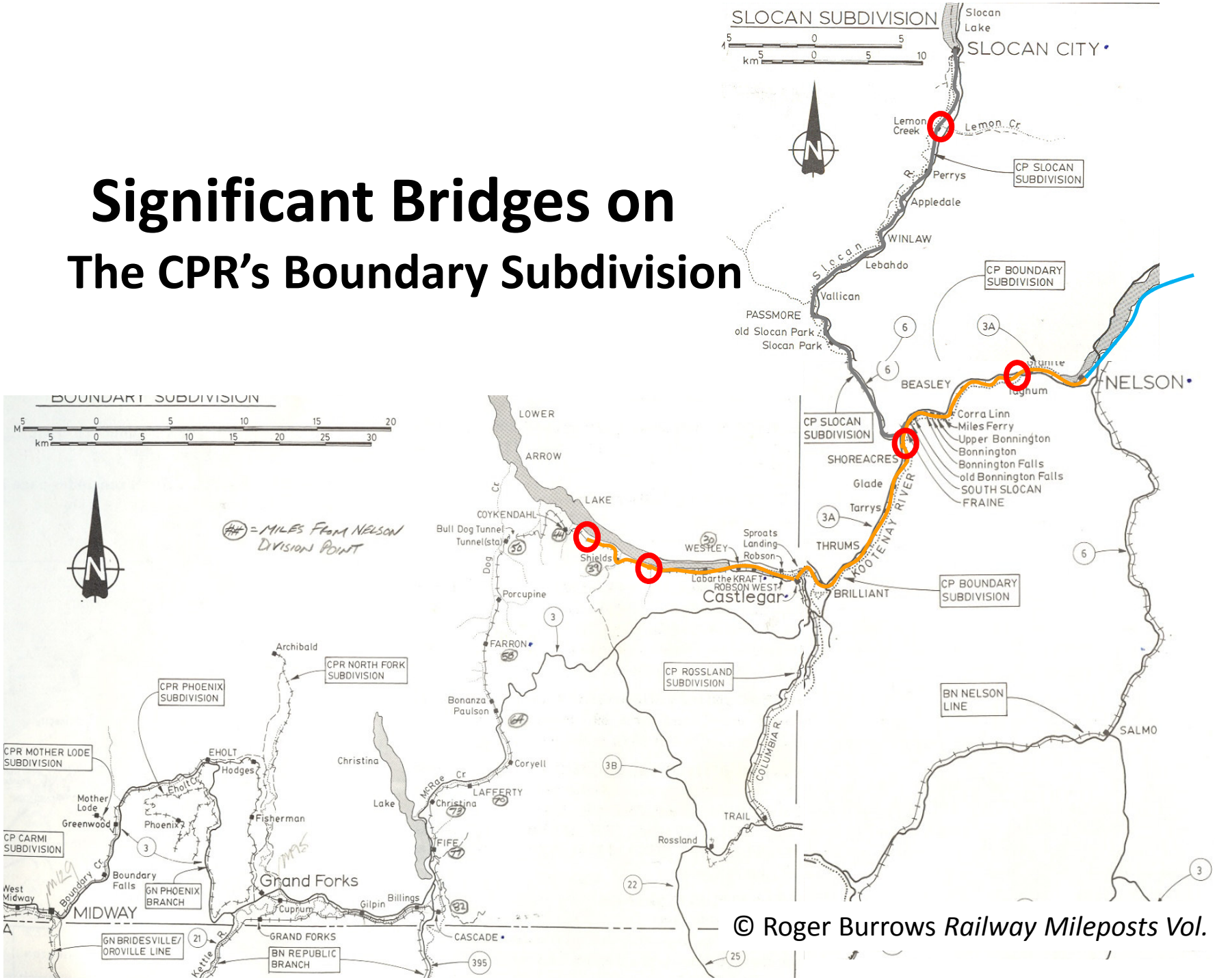
Mock Ups and Stand-Ins!

McCormack Creek Bridge in progress





Significant Bridges on
The CPR's Boundary Subdivision



© Roger Burrows *Railway Mileposts Vol. II*

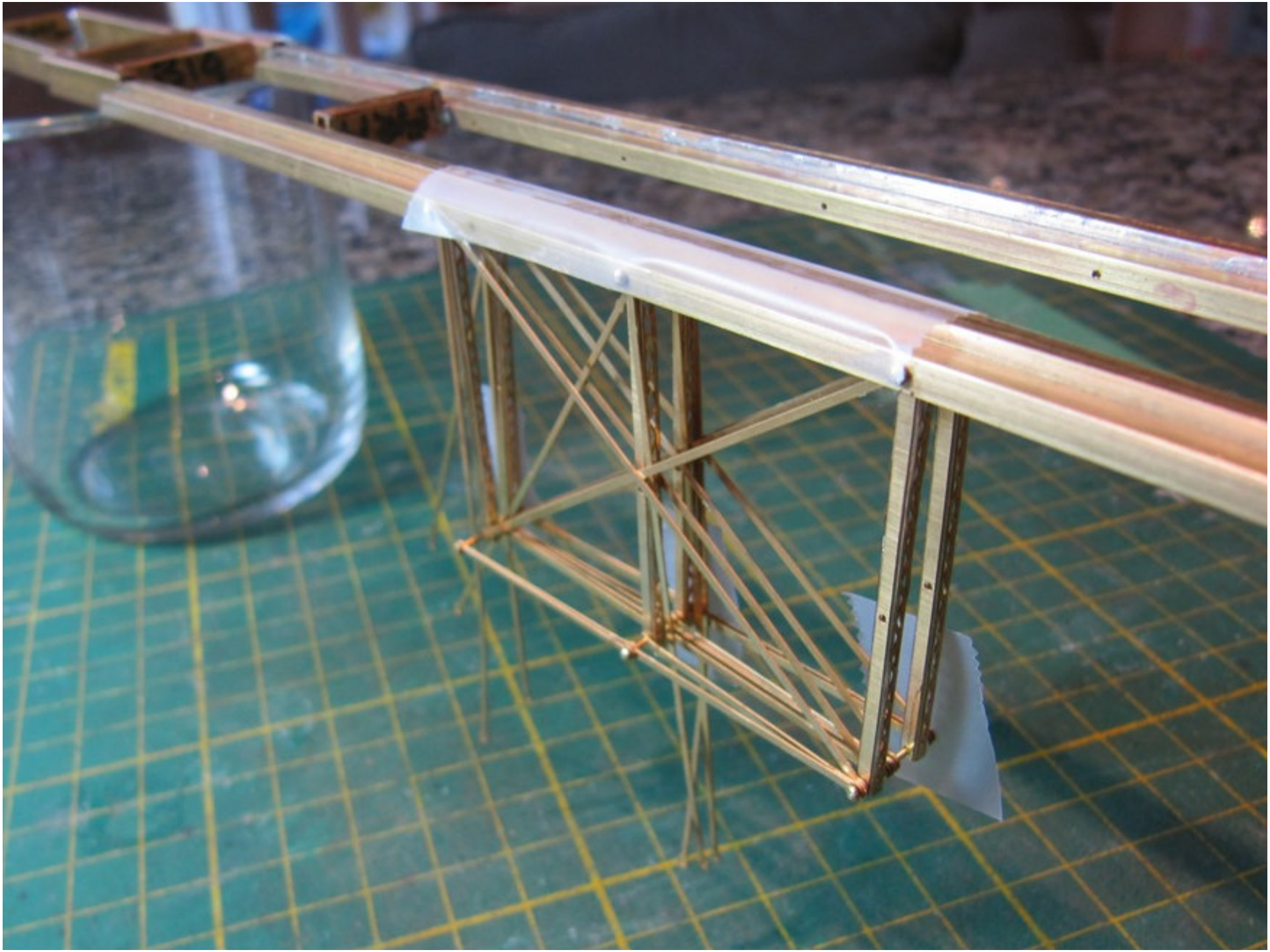
Farr Creek

MP41.1 of the Boundary Sub

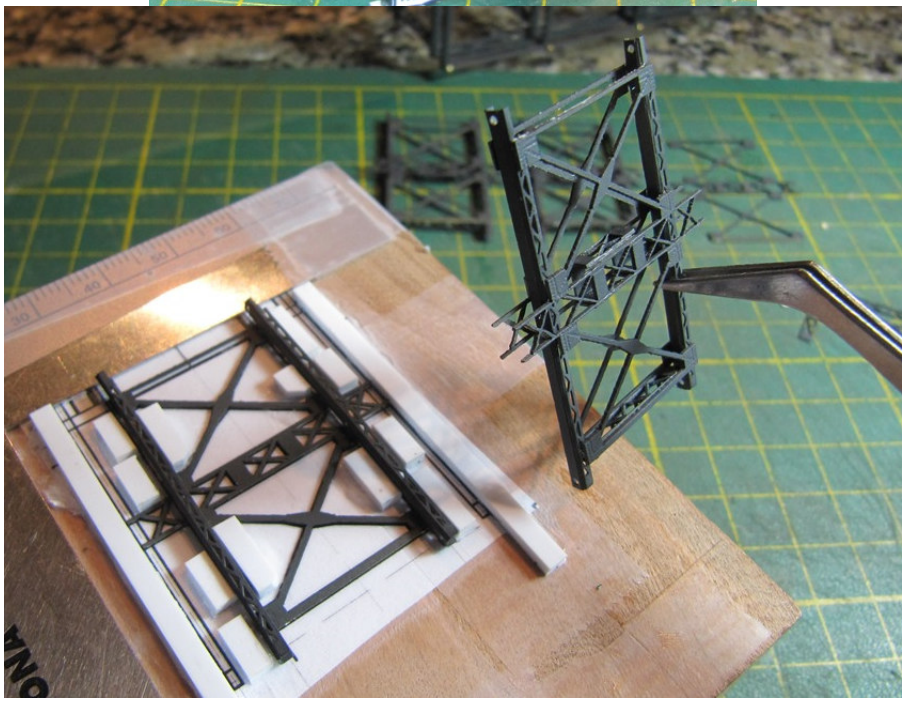
335’ long pin connected truss bridge

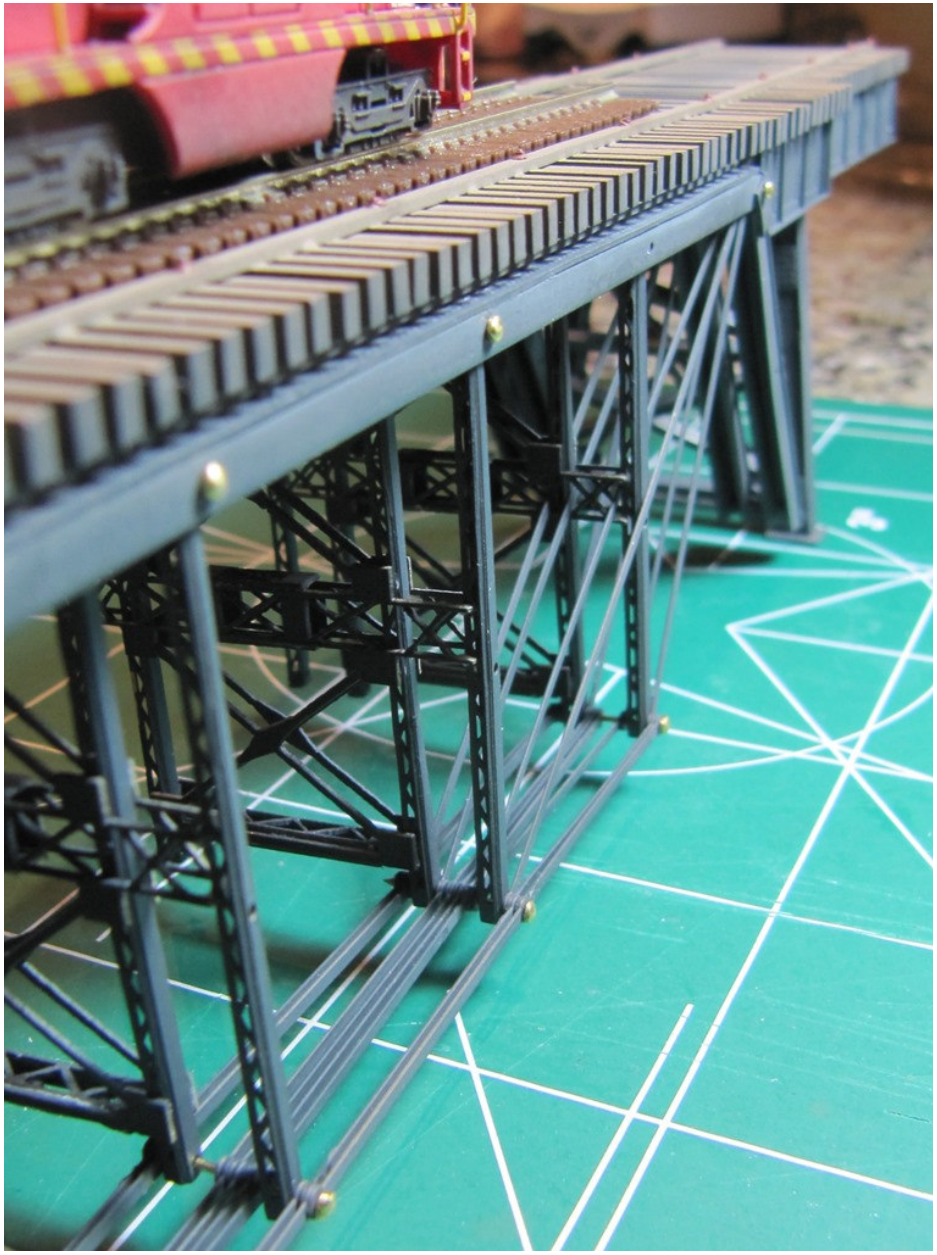
- Originally located across the Bow River in Calgary east of Alyth
- Model is scaled down from 70% of full size

Farr Creek
Photo by Scott Calvert




CPRail
8727





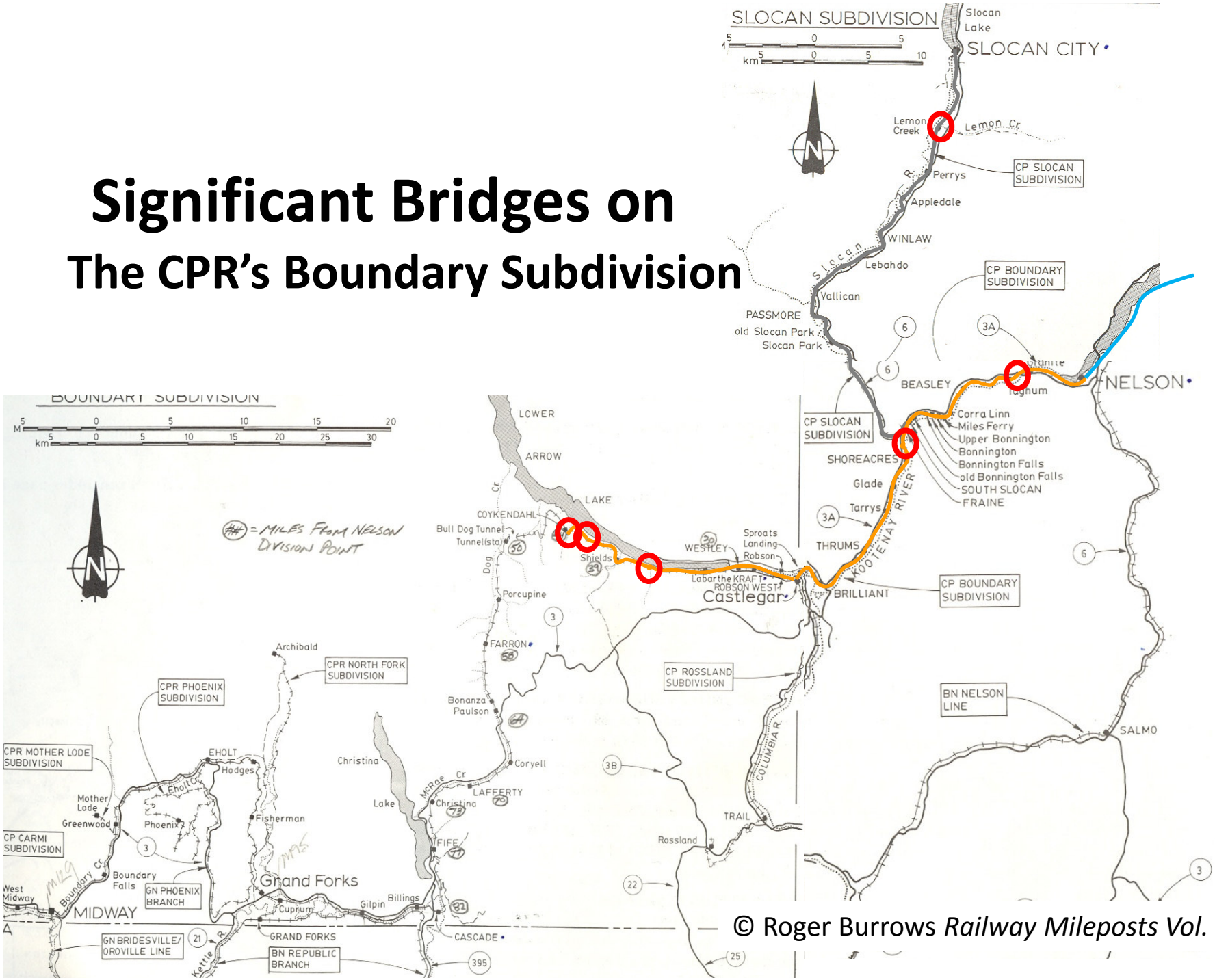

Canadian Pacific


Canadian Pacific
4104
Canadian Pacific


CP Rail
8608

Salt Technique Weathering

Significant Bridges on
The CPR's Boundary Subdivision



© Roger Burrows *Railway Mileposts Vol. II*

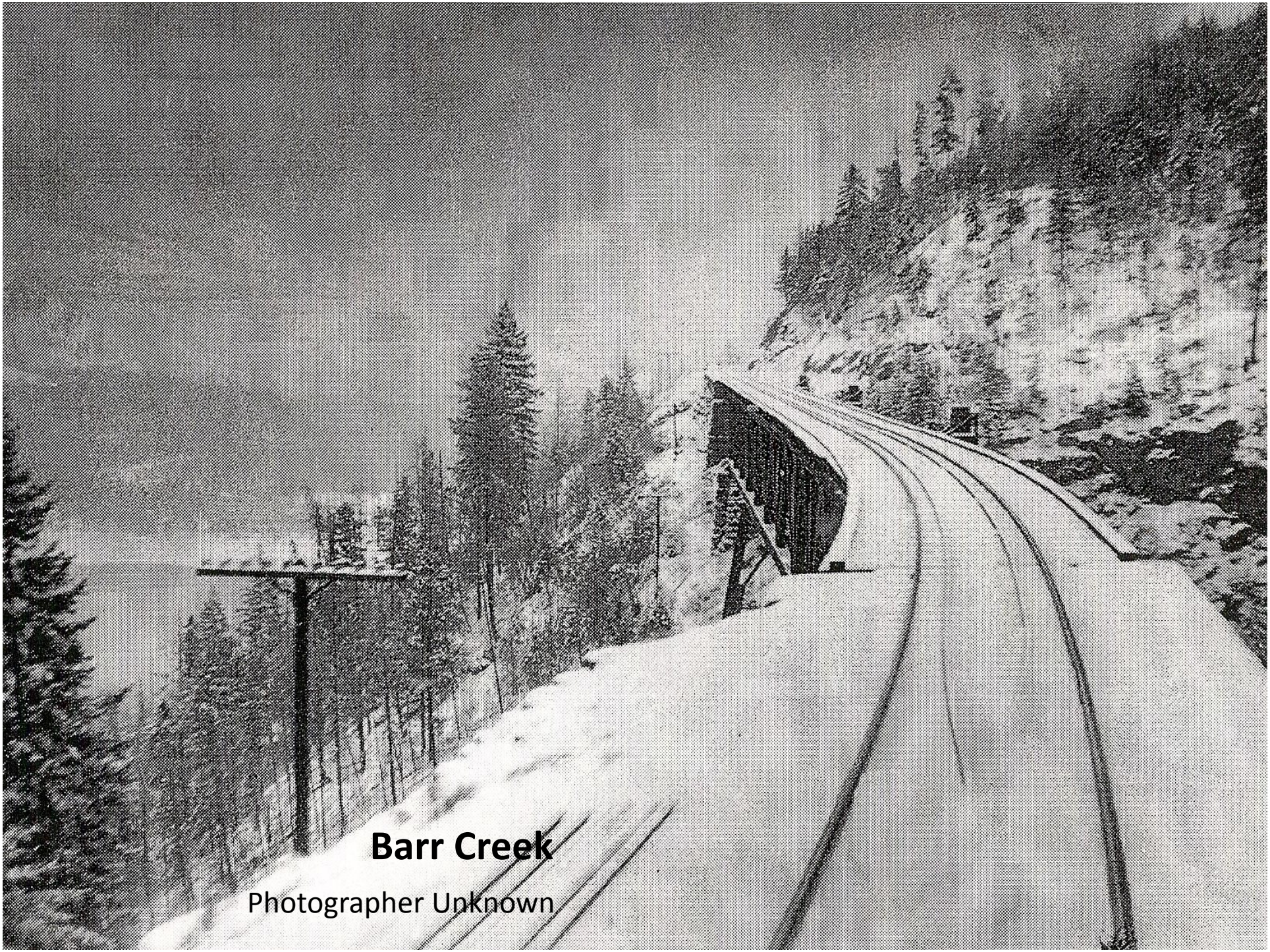
Barr Creek

MP41.7 of the Boundary Sub

410’ long x 190‘ High

Comprises east to west:

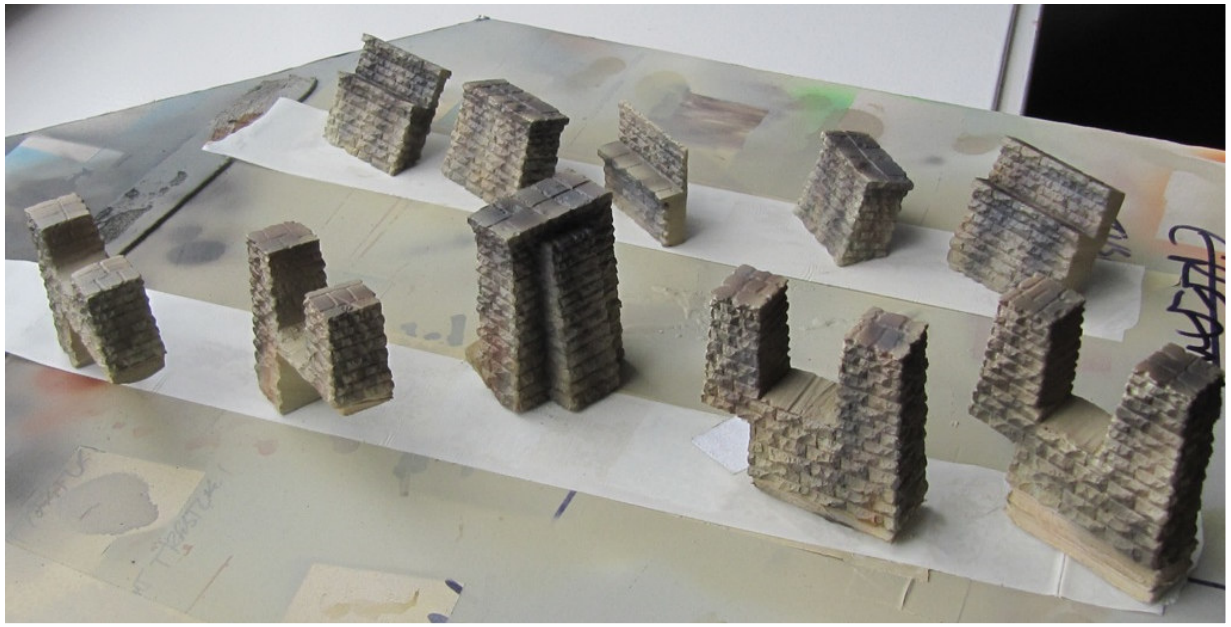
- 2 x 80‘ long deck plate girder bridges
- 3 x 85’ long deck truss bridges

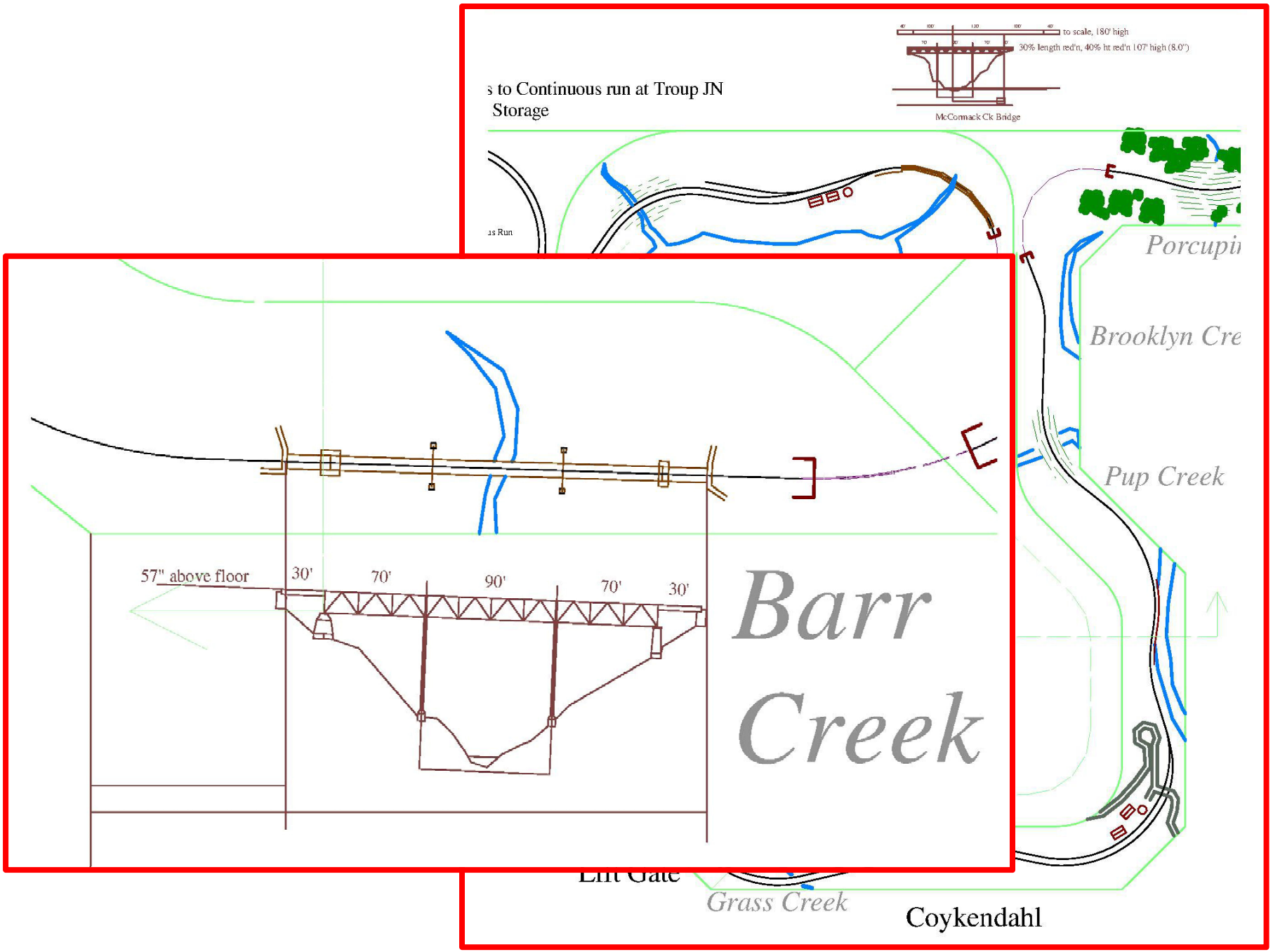


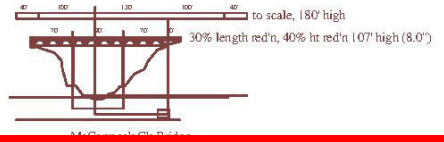
Barr Creek

Photographer Unknown

Barr Creek Bridge in progress




to scale, 180' high
30% length red'n, 40% ht red'n 107' high (8.0")
McCormack Ck Bridge
s to Continuous run at Troup JN
Storage
Porcupi
Brooklyn Cre
Pup Creek
57" above floor
30'
70'
90'
70'
30'
Barr
Creek
Lift Gate
Grass Creek
Coykendahl



s to Continuous run at Troup JN
Storage

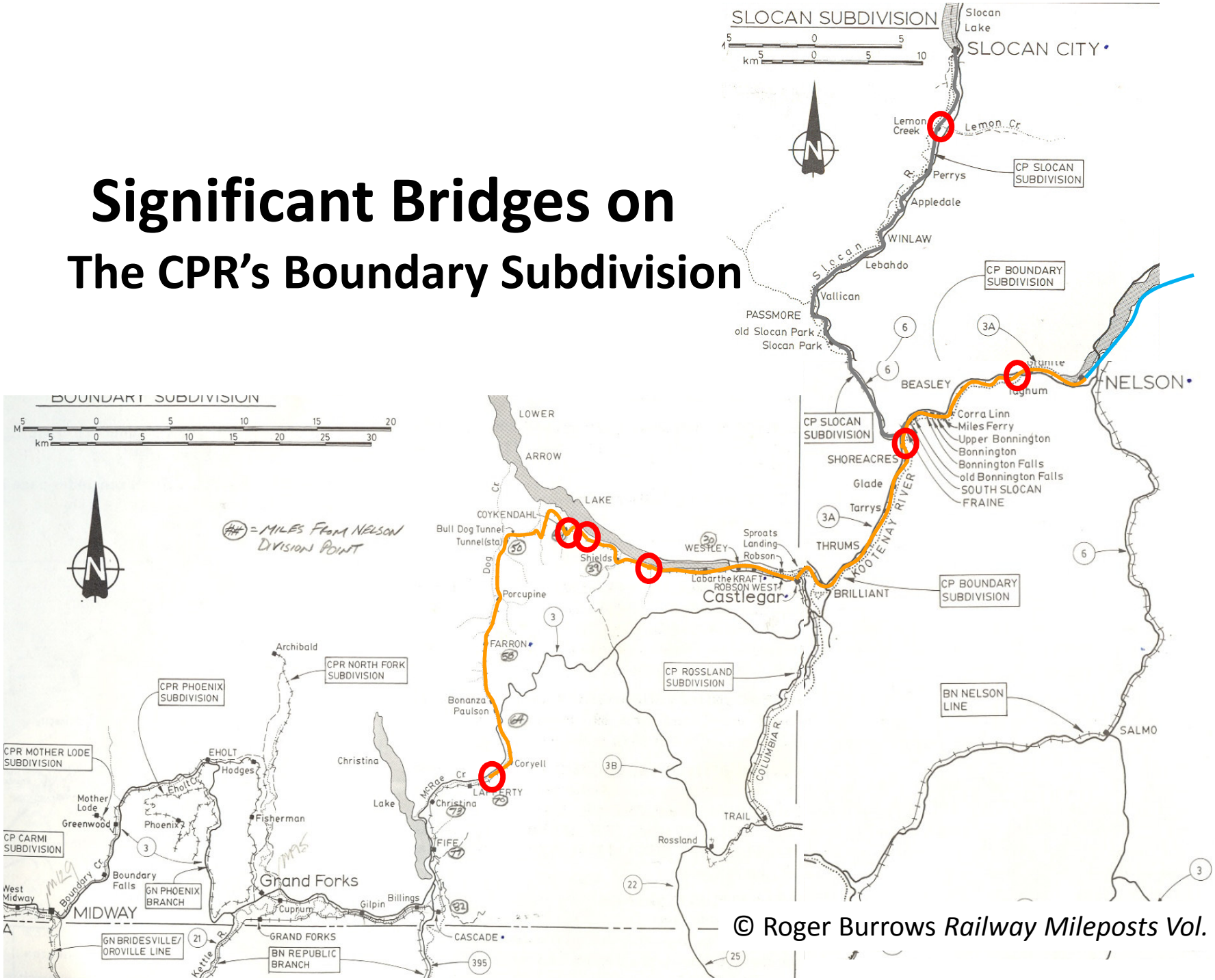
Grass Creek

Coykendahl


You Can **NEVER** have too many trees!
CN
1023
1024
CN


Photo by Tim Horton

Significant Bridges on
The CPR's Boundary Subdivision

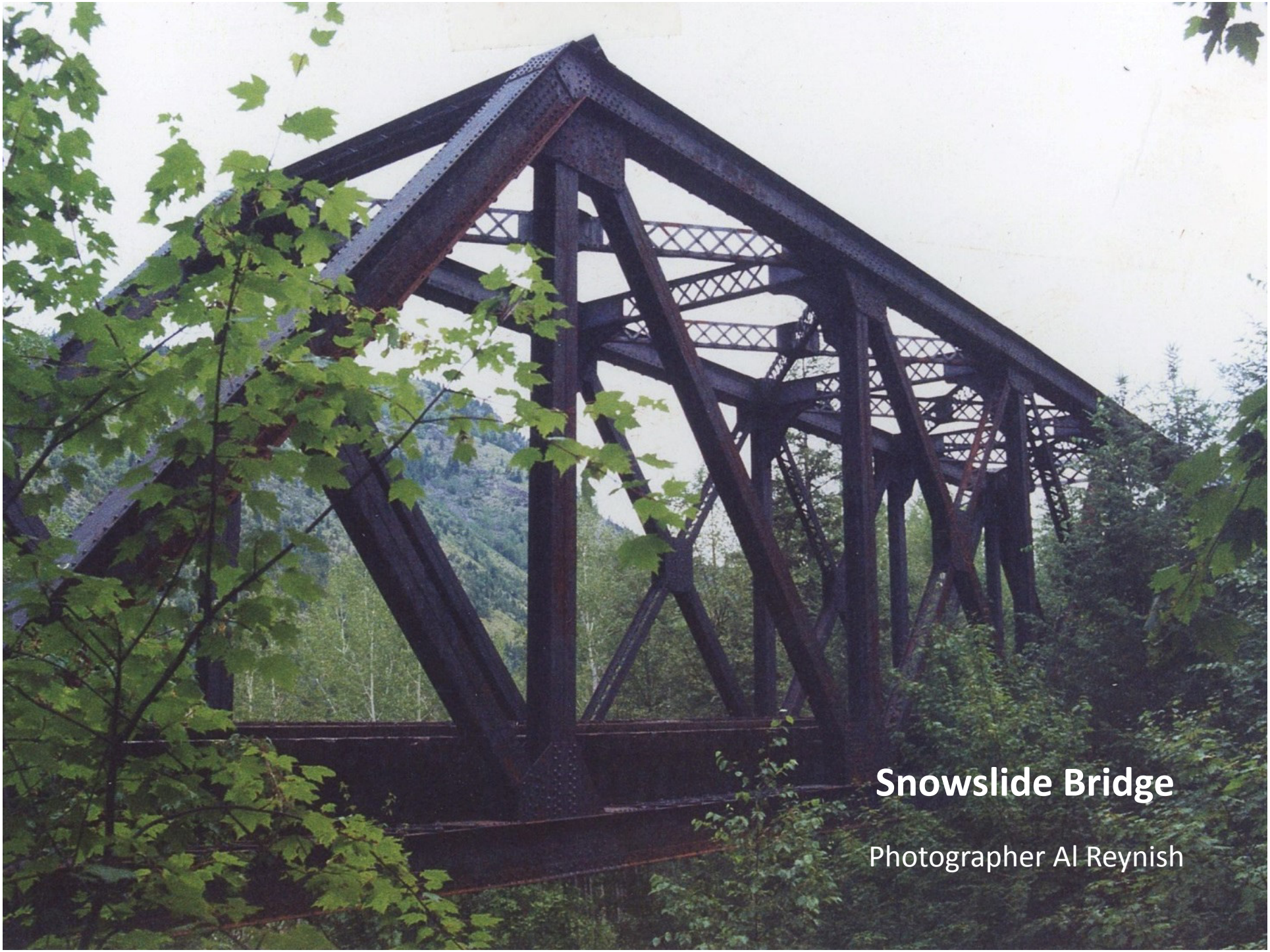


© Roger Burrows *Railway Mileposts Vol. II*

Snowslide Bridge

MP69.3 of the Boundary Sub

- 1 x 135’ long through truss bridge over a slide path
- Model is scaled 110% of full size

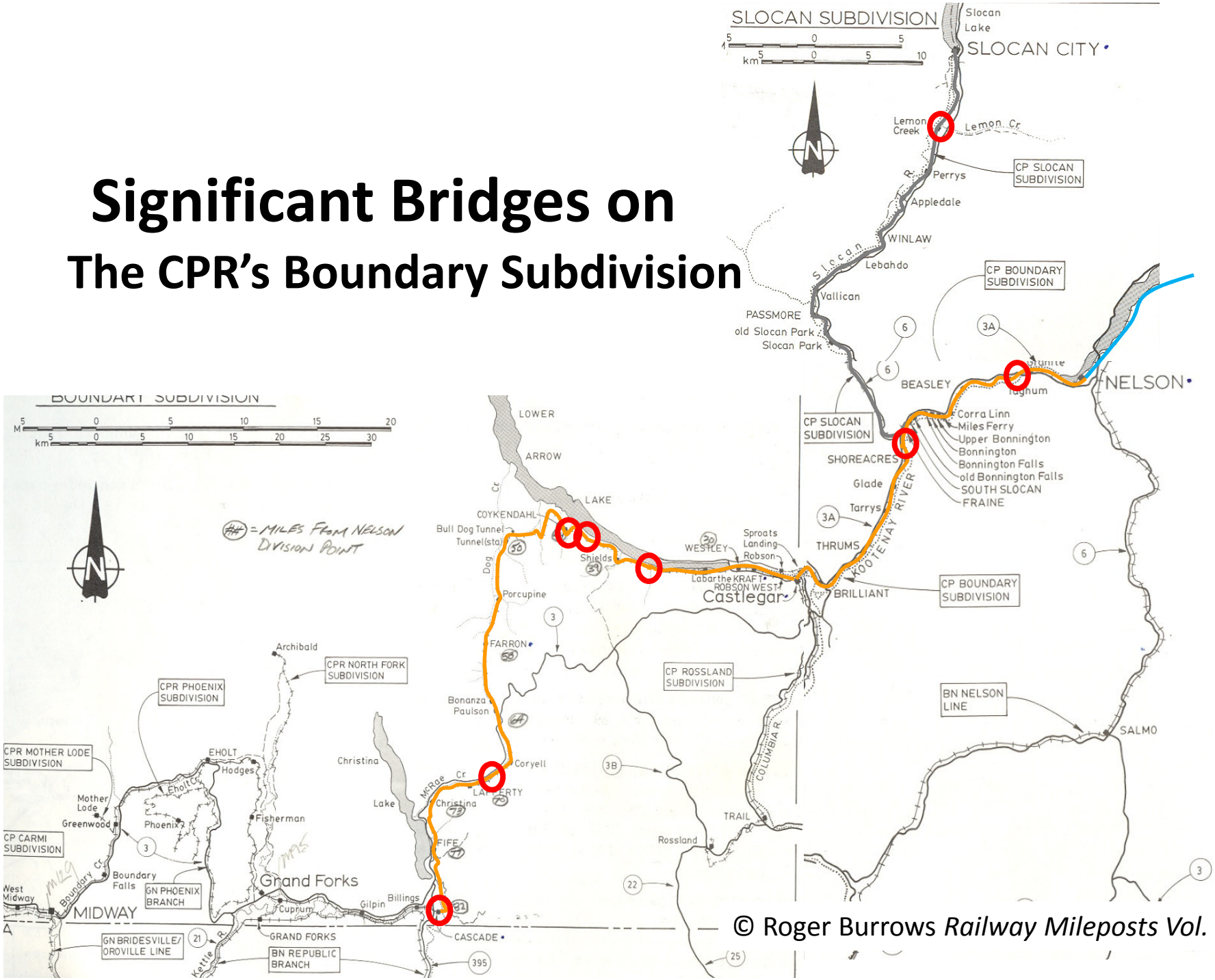


Snowslide Bridge

Photographer Al Reynish

Abutments and Ballast walls

Significant Bridges on
The CPR's Boundary Subdivision



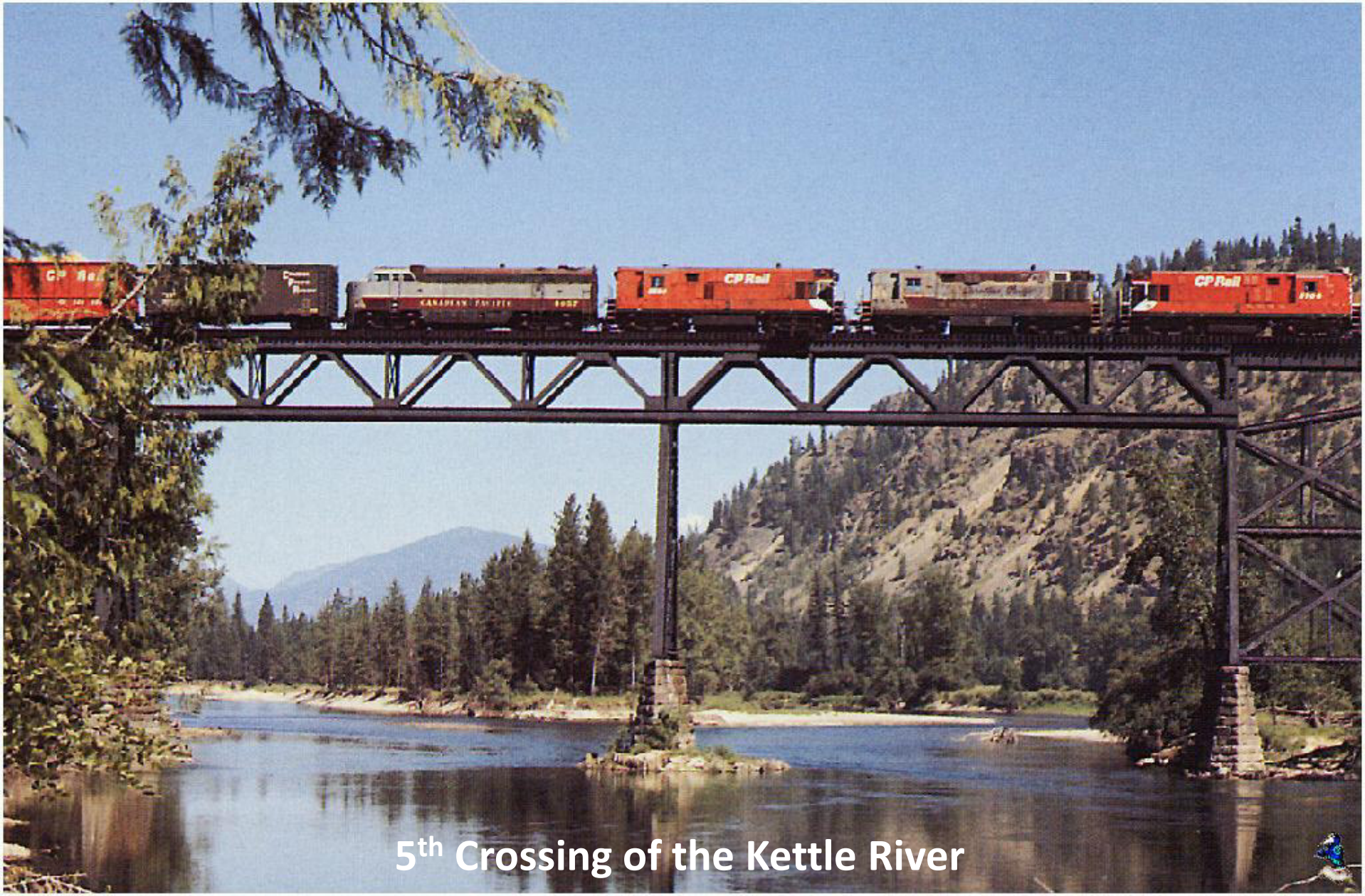
5th Crossing of the Kettle River

MP81.1 of the Boundary Sub

505’ long x 80‘ High

Comprises east to west:

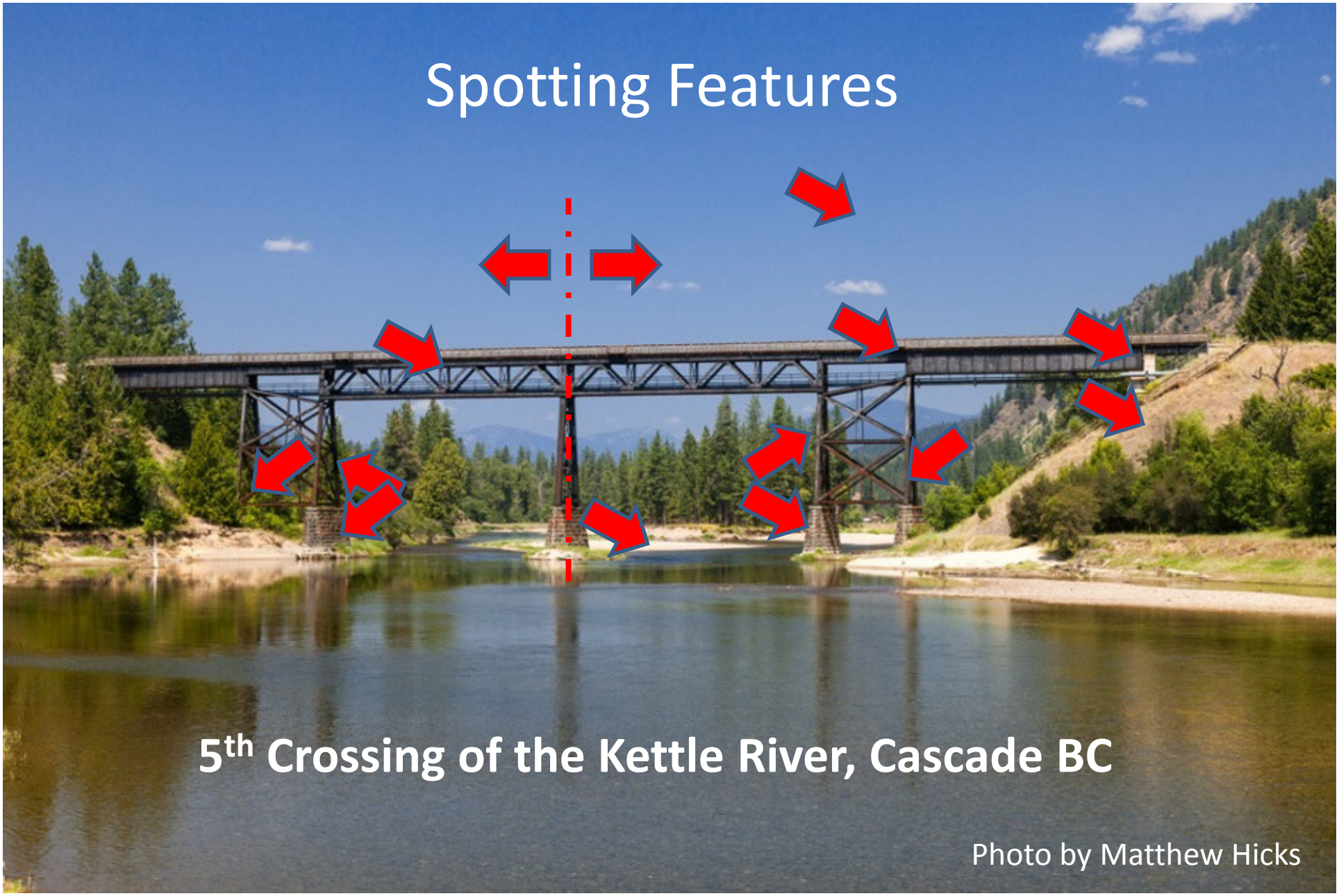
- 1 x 45’ long deck girder bridge
- 1 x 85’ long deck girder bridges
- 2 x 150’ long deck truss bridges
- 1 x 75’ long deck girder bridge
- Model is scaled down **100%** from full size



5th Crossing of the Kettle River

Kettle River trestle, near Cascade British Columbia, July 27, 1972 *Photographer Unknown*

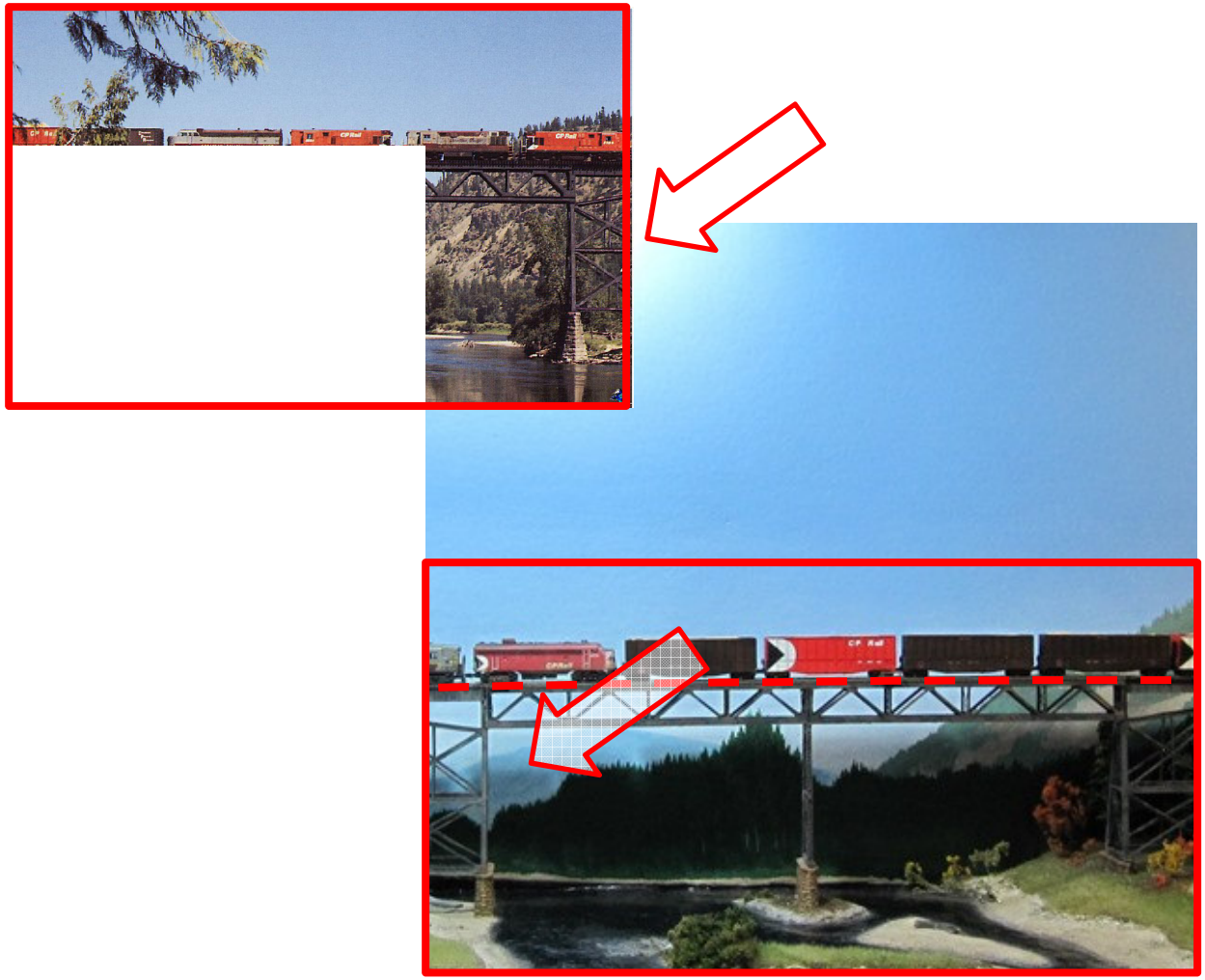
Spotting Features



5th Crossing of the Kettle River, Cascade BC

Photo by Matthew Hicks


Canadian Pacific
4104
CP Rail
CP Rail

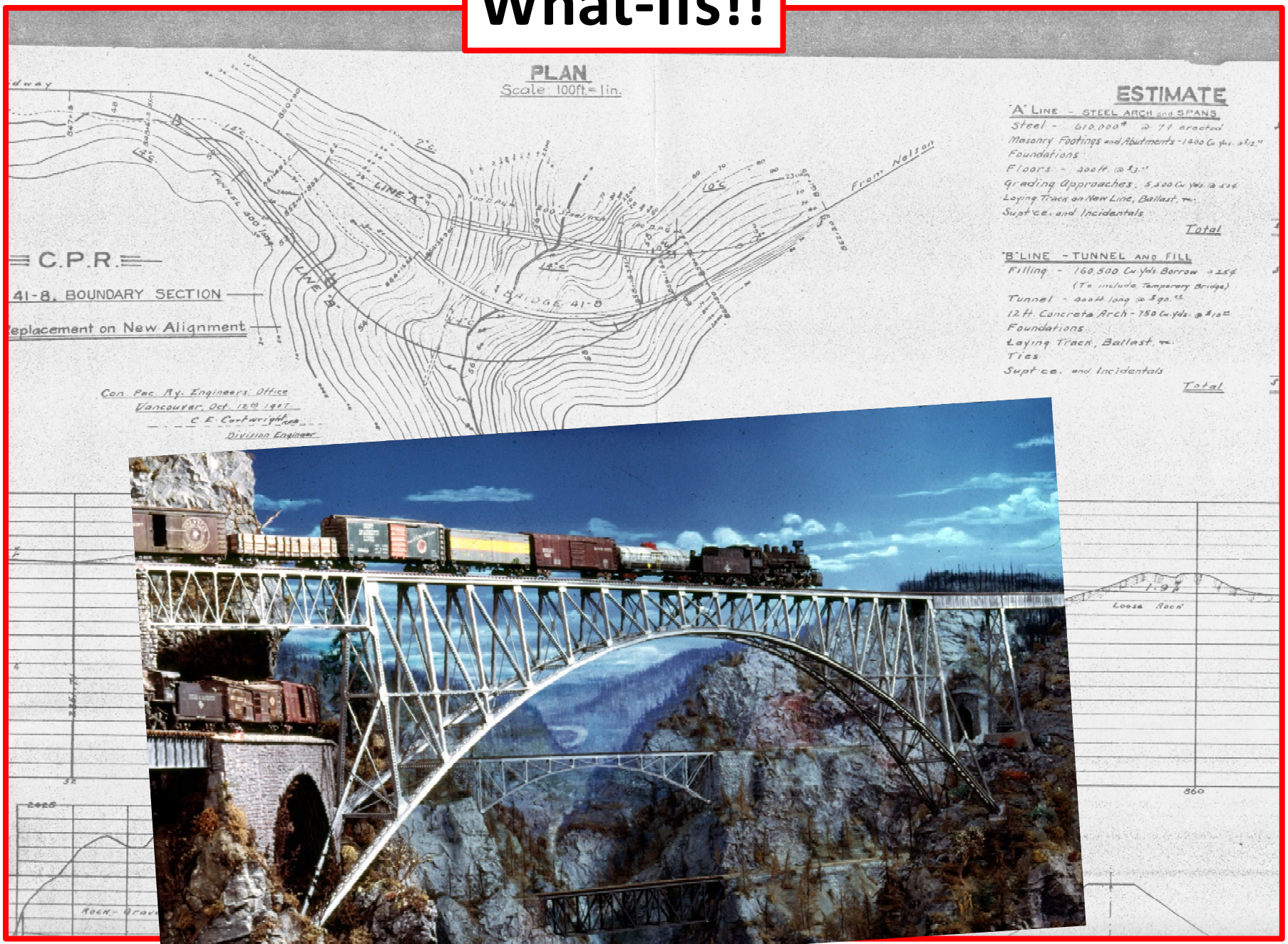


~ 6 ’


CP Rail
CPRail
CPRail

Finally….

What-Ifs!!

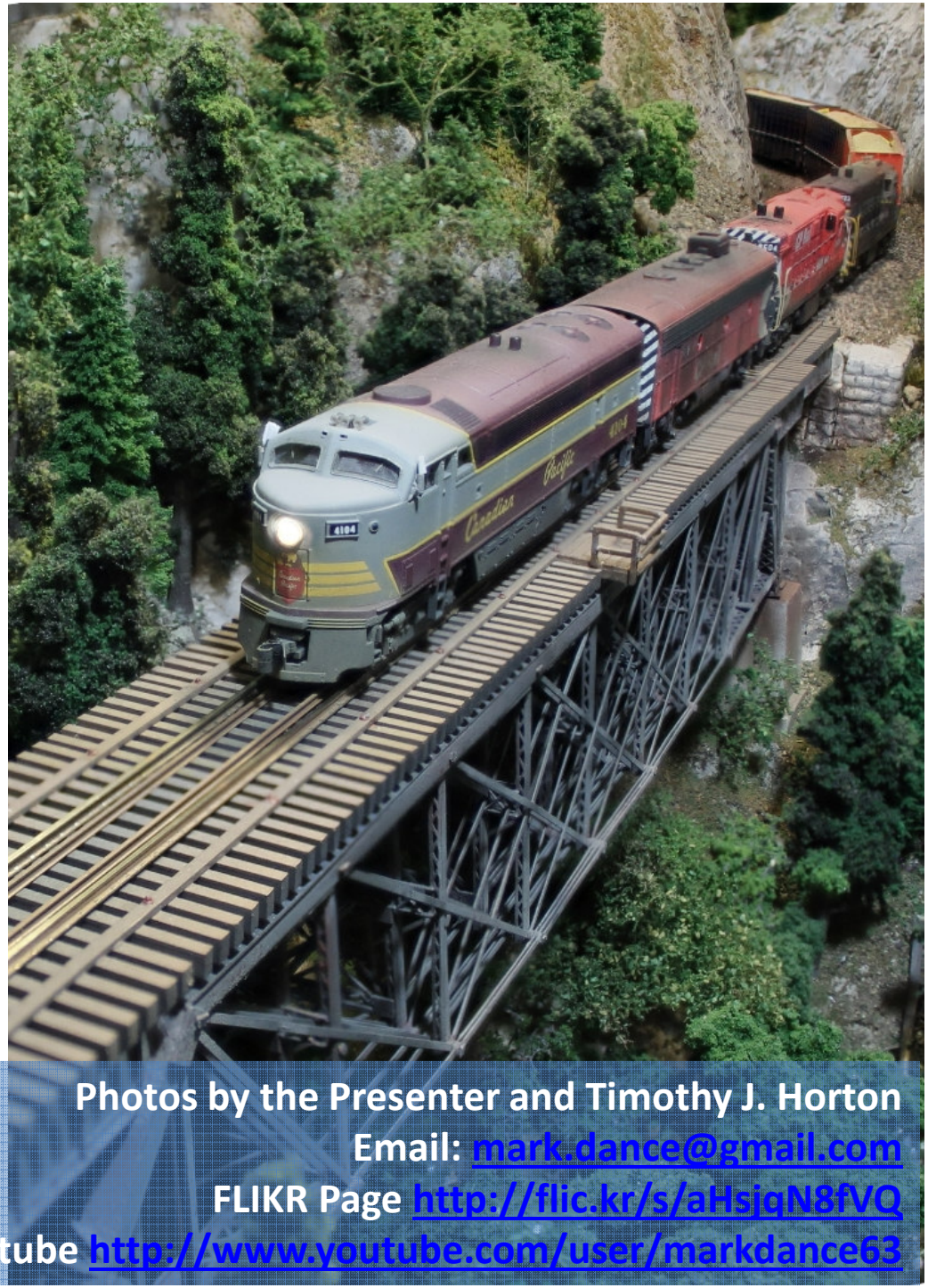

PLAN
Scale: 100ft.=1in.
ESTIMATE
"A" LINE - STEEL ARCH and SPANS
Steel - 610,000# @ 7¢ erected
Masonry Footings and Abutments - 1400 Cu Yds. @ $12.00
Foundations
Floors - 200ft. @ $3.00
Grading Approaches, 5,200 Cu Yds. @ 50¢
Laying Track on New Line, Ballast, etc.
Supt'ce. and Incidentals
Total
"B" LINE - TUNNEL AND FILL
Filling - 160,500 Cu Yds. Borrow @ 25¢
(To include Temporary Bridge)
Tunnel - 400ft long @ $90.00
12 ft. Concrete Arch - 780 Cu Yds. @ $15.00
Foundations
Laying Track, Ballast, etc.
Ties
Supt'ce. and Incidentals
Total
C.P.R.
41-8. BOUNDARY SECTION
Replacement on New Alignment
Con. Pac. Ry. Engineers' Office
Vancouver, Oct. 12th 1907
C. E. Cartwright
Division Engineer
LINE "A"
LINE "B"
BRIDGE 41-B
From Nelson
Loose Rock
Rock - Gravel

Trains & Bridges !

Bridges of the Boundary

Thank You for Coming!

Any Questions?



Photos by the Presenter and Timothy J. Horton

Email: mark.dance@gmail.com

FLIKR Page http://flic.kr/s/aHsjqN8fVQ

YOUtube http://www.youtube.com/user/markdance63


Thanks for Coming!
Any Questions?
8604
8604
Photos by the Presenter and Timothy J. Horton
Email: mark.dance@gmail.com
FLIKR Page http://flic.kr/s/aHsjqN8fVQ
YOUtube http://www.youtube.com/user/markdance63