Grade Separation Inspection & Ratings

Grade Separation Inspection and Rating

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Transportation

**Grade Separation Inspection & Ratings Grade Separation Form** Applies to structures which have traffic going over and under Applies to Wildlife/Cattlepass or Pedestrian Underpass structures Replaces channel section Has items specific to under/overpass rather than Generated automatically Can be requested for blank forms Refer to Chapter 10 in BIM Manual for Bridges Refer to Chapter 13 - section 13.8 for Culverts Technical Standards Branch Alberta Class B Bridge Inspection Course BIM

Grade Separation Form

Generated for following usage types:

GS - vehicle grade separation

PS - pedestrian grade separation

SP - stockpass or cattlepass

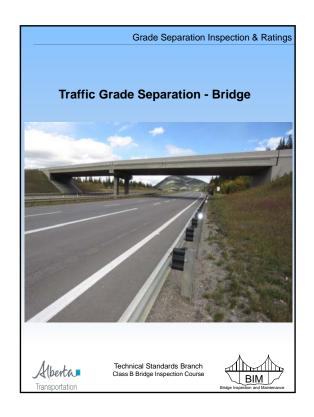
RO - railway overpass

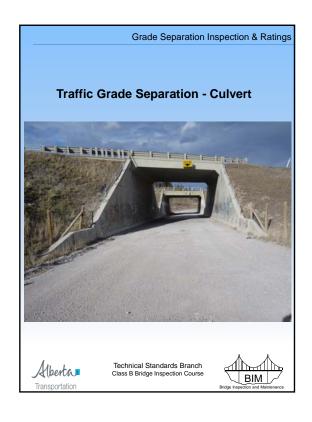
RU - railway underpass

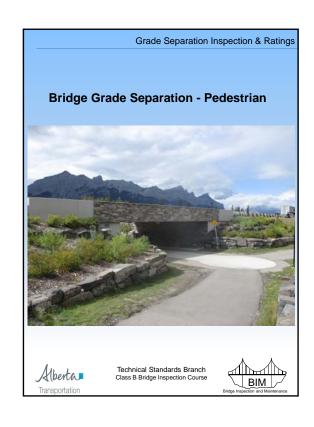
All types above can be either bridge or culvert Grade Separation

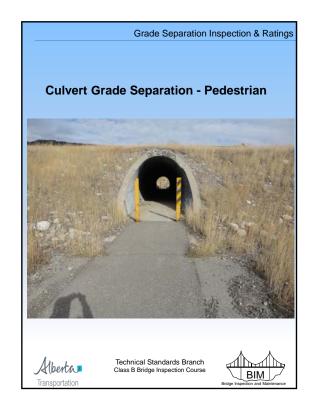
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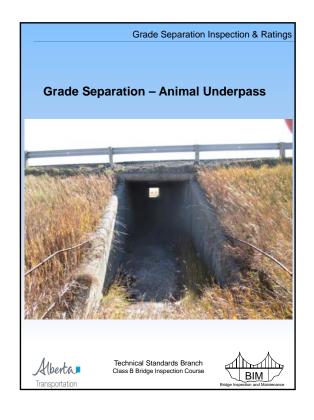
Transportation

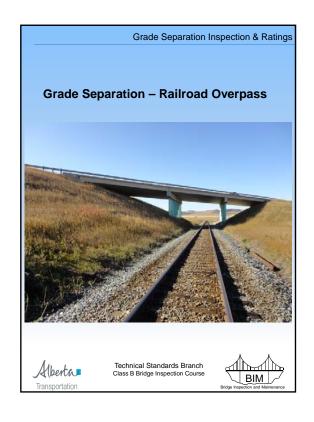


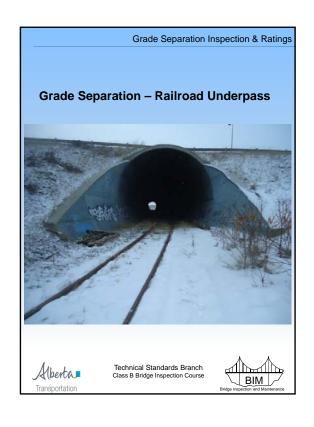


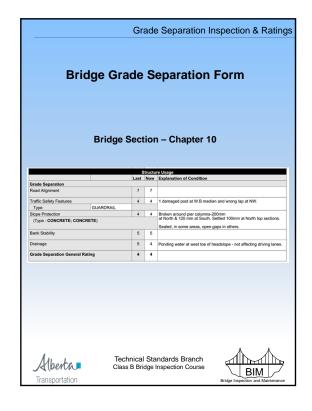


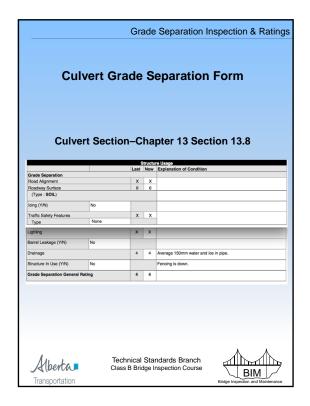












Grade Separation Inspection & Ratings

# **Road Alignment**

- Refers to alignment up to and through the Bridge/Culvert including surface condition
- Look for:
  - Cracks, heaves & roughness
  - Super elevation & orientation
  - Accessibility for stock
  - Collision potential
- If alignment can be safely driven at legal or posted speed limit, rate 5 or more.
- For Railway, Pedestrian and Animal underpasses rate alignment "X".



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#### **Roadway Surface**

- Refers to Culvert Grade Separations and Animal/Pedestrian Underpasses
- · Purpose is to provide a surface for traffic usage
  - Smooth surface
  - No holes, depressions or projections
  - Not slippery
- Record type of surface
  - Asphalt
  - Concrete
  - Gravel
  - Soil
- Look for defects that might affect high load vehicles
- Defects that create hazards to traffic or pedestrians
- Record the presence of icing on the roadway Y/N comment if Yes. May affect Drainage rating.
- If defects a problem for stock/traffic, rate 4 or less
- If hazardardous, rate 2 or less (holes, projections, icing on traffic or pedestrian surfaces)



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## **Traffic Safety Features**

- Refers to curbs, medians, guardrails, advance warning signs, crash protection, etc.
- Not applicable for stock underpasses
- Indicate type and rate condition and functionality
- If not present record type as "None" and rate "X"



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## **Slope Protection**

- Refers to protection system on headslopes
- Look for:
  - evidence of settlement
  - cracked, broken or bulging concrete protection
  - Deck drainage away from system
  - voids under concrete slabs
- Note graffiti
- Rate 4 or less for:
- Significant settlement or moving downwards
  - Significant heaving or cracking of concrete slope protection
  - > Voids under concrete slope protection



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# **Bank Stability**

- · Refers to stability of bridge headslopes
- Look for:
  - damage or displacement
  - settlement at abutment and piers
  - bulging at toe of slope
  - loss of material at toe of slope

Rate 4 or less if:

- Settled and exposing underside of abutment seat
- Instability that affects the Substructure or Superstructure
- > Instability requiring monitoring



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### Drainage

- · Refers to the ability to dispose of water at:
- > Toe of headslopes and transitions on bridges
- Roadway surface from Culvert Grade Separations
- Ends and barrel of Pedestrian or Animal underpasses
- Typ. water sources are deck and approach road drainage, ditch drainage, and weep holes.
- Some underpasses are also designed for water flow
  - See "Special Comments for Next Inspection"



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## **Drainage**

- On Bridge or Culvert Grade Separations handling vehicle traffic look for:
  - Ponding at toe of headslopes and transitions or inside culverts
  - Blockage of existing drainage systems
  - Damage to embankments
  - Record "Yes" if barrel leakage comment

#### Ratings:

- If functioning and no damage to slope protection, embankments and no bank instability rate 5 or more
- > If damage or slope instability rate 4 or less
- If drainage causes ponding or icing on travel lanes and potential traffic hazard rate 2 or less



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#### Drainage

- On Pedestrian/Animal Underpasses look for:
  - Ponding in culvert barrel or at ends
  - Any condition contributing to icing
  - Damage to sideslopes or embankments
- Record "Yes" if barrel leakage and provide comment. Rating is not required but if "Yes" leakage may effect rating of Roadway surface and Drainage
  - Ratings:
  - > If functioning and no damage to sideslope or embankment rate 5 or more
  - > If poor drainage causes icing or ponding around animal underpasses rate 4 or less
  - If drainage causes ponding or icing and potential hazard on pedestrian underpass 2 or less



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