

**Title: Glenmore Trail & Deerfoot Trail Interchange, Use of Normal Crown on Horizontal Curve with R4000 and Design Speed of 110 km/hr**

Memorandum Date: June 16, 2011

Design Exception Request Date: May 17, 2011

Region: Southern

Approval Status: Approved

Project Location					
Highway	Control Section	At km	From km	To km	Existing AADT
2	15		24.104	26.678	121,440

Project Type (Mark all that apply with an X)			
Functional Planning:	New Construction: <b>X</b>	Reconstruction:	Paving/Surfacing:
Bridge:	Operations:	Geotechnical:	Environmental:
Other:			

**Summary**

A request to use a normal crown along a horizontal curve with a radius of 4000m and a design speed of 110km/hr.

**Rationale for Approval/Rejection**

- The calculated side friction factor value for the normal crown is 0.0438 which is less than the maximum safe side friction factor of 0.10 for a design speed of 110 km/hr according to Alberta Transportation's Design Guide.
- Based on AASHTO's superelevation calculation Method 1, the minimum radius for a design speed of 110 km/hr with a normal crown is 3,500m which is less than the proposed 4000m radius for this curve.
- By applying the normal crown along this curve, the project cost savings will be \$90,020.
- No significant impacts or risks anticipated other than a slight risk of overdriving along the horizontal curve. Overdriving is being addressed with the addition of rumble strips

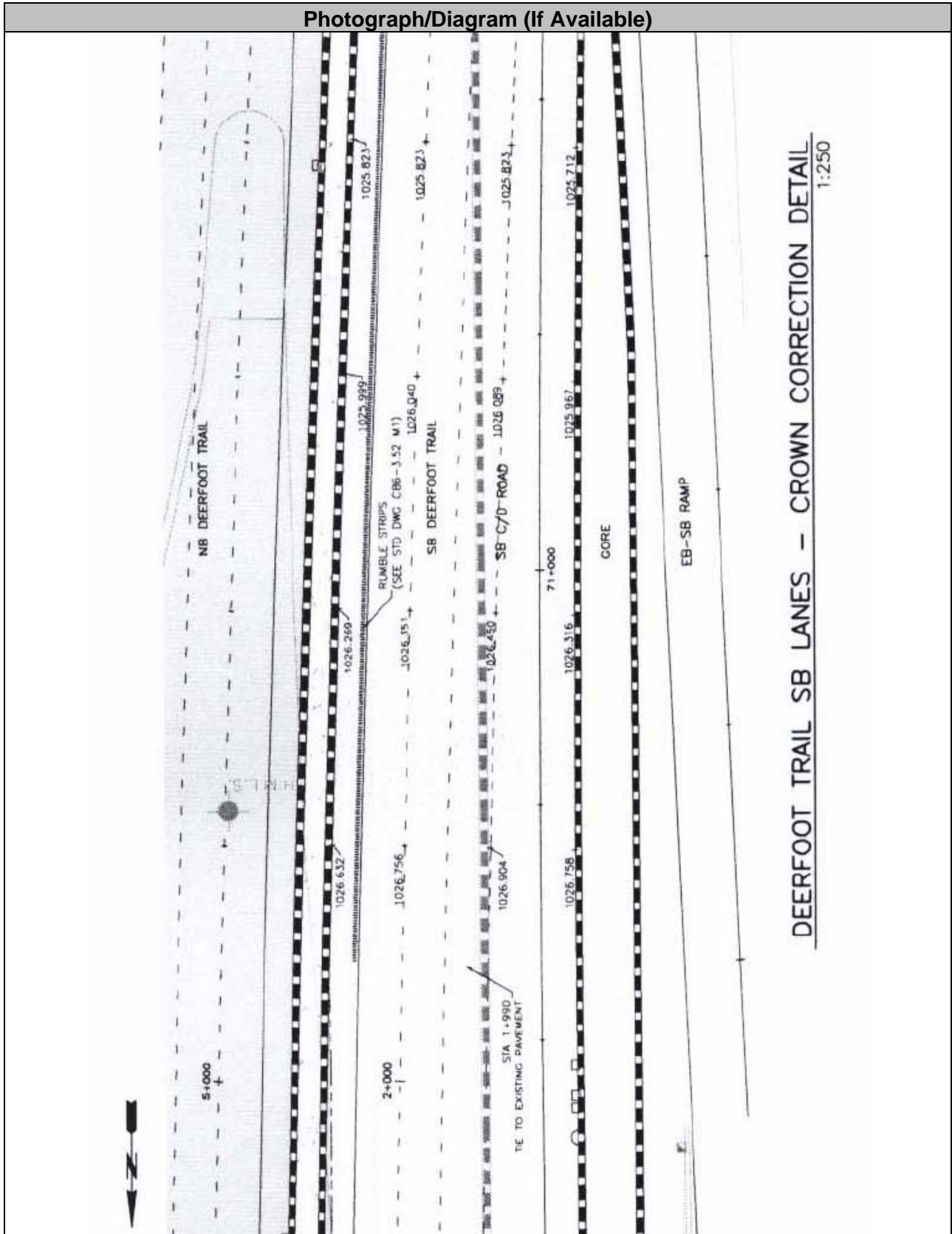
**Additional Mitigation Required**

Rumble strips will be installed along the inside shoulder of this curve.

**Key Words**

Friction factor, Normal crown, Horizontal curve,

Photograph/Diagram (If Available)



DEERFOOT TRAIL SB LANES - CROWN CORRECTION DETAIL  
1:250

