

Title: Gravel Road to Paved Road Upgrade

Memorandum Date: March 29, 2010

Design Exception Request Date: March 8, 2011

Region: North Central

Approval Status: Approved

Project Location					
Highway	Control Section	At km	From km	To km	Existing AADT
661	02		23.250	24.300	350

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

Summary

A request to upgrade a 1.15km section of highway 661 from a gravel surface to a paved surface structure without making necessary upgrades to the roadway width, geometrics and traffic control scheme. The current design classification of this highway (RAU-209-110) requires a design speed of 110 km/hr and a top width of 10.28 meters. The surfacing upgrade will allow for a top width of 10m. The existing curve has a radius of 340m and does not meet the minimum radius requirement of 600m for a RAU-209-110, but can accommodate a design speed of approximately 90 km/hr.

Rationale for Approval/Rejection

- **Roadway Width:** The proposed pavement width is 10m while the design designation is RAU-209-110. Normally to provide for two future overlays with 80mm ACP thickness on each overlay, the initial width needs to be 10.28m. In this case the traffic volume is at the low end of the range (350 existing AADT with 15% trucks) and therefore it is possible that the future overlay thickness may be less than the typical 80mm for each overlay. Therefore a 10m initial width is acceptable.
- **Horizontal Curve Radius:** The proposed radius is 340m which is suitable for a design speed of 90 km/hr. This curve is located at the transition from Hwy 661 to Range Road 45A. The highway has a posted speed of 100 km/hr and the Range Road has a posted speed of 80 km/hr. It is proposed that the curve be posted at 80 km/hr. With the revised speed posting, the 340m radius is acceptable.
- The intersection has an unconventional traffic control scheme as the east leg of Hwy 661 stops for the Hwy 661/Range Road 45a traffic. The existing traffic control and alignment has been in place for over 10 years since before Alberta Transportation was the road authority. The collision record is very good with only one reported animal collision (PDO). The east leg of Hwy 661 leads to a ferry crossing of the Athabasca River. The ferry is closed from mid-November to mid-May for most years due to ice on the river. Consequently there is a good rationale to support the traffic control as it is. The proposed traffic control scheme with no change is acceptable.

Additional Mitigation Required

The posting of Hwy 661 eastbound at 80 km/hr prior to the curve and intersection to allow for a safe operating speed on the curve.

Key Words

Design speed, Minimum radius, Overlay, Top width

Photograph/Diagram (If Available)



