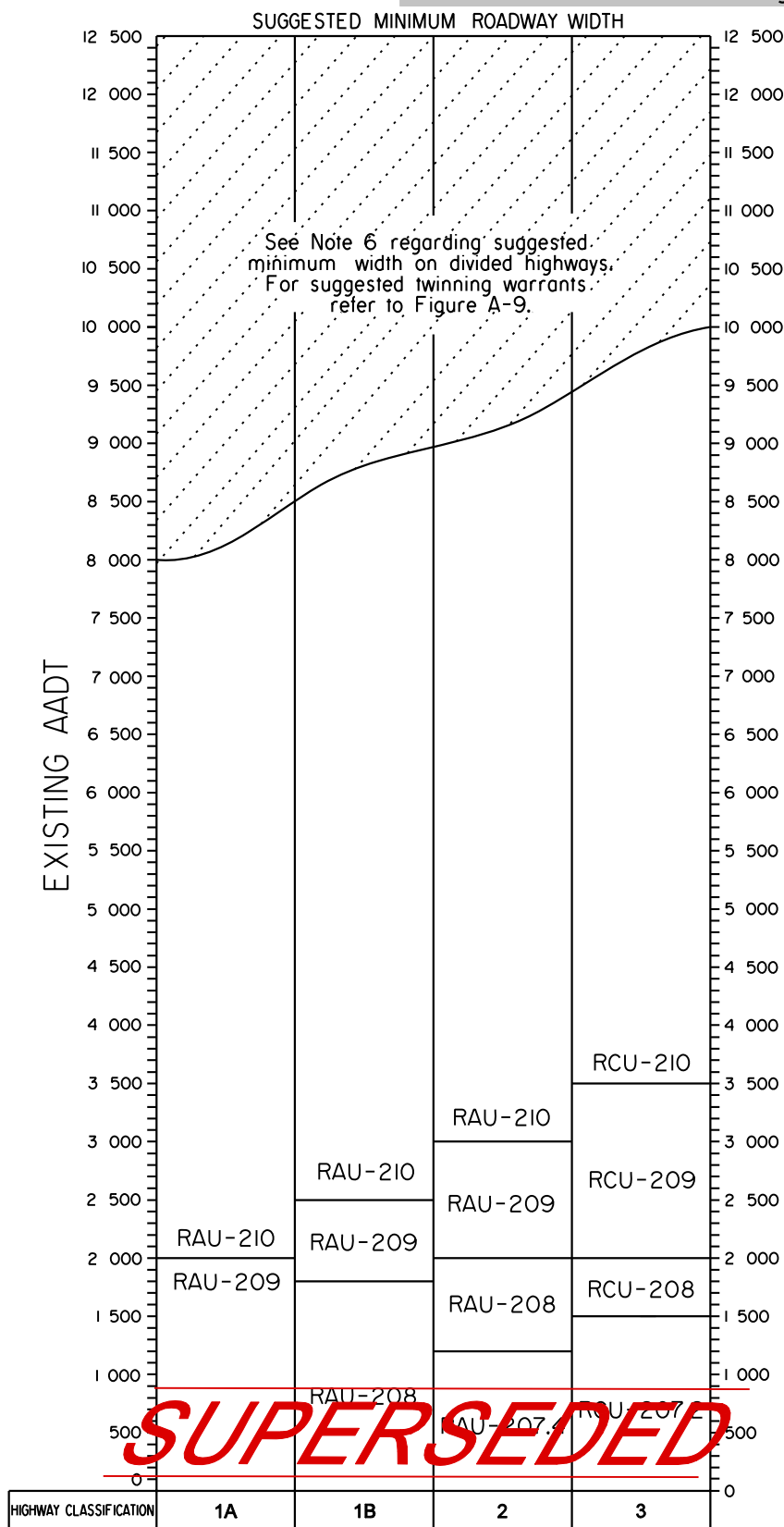


FIGURE G-1.I SUGGESTED MINIMUM ROADWAY WIDTH FOR RURAL HIGHWAYS IN ALBERTA (shown in terms of existing AADT)



(shown in terms of existing AADT)

NOTE: This chart has been developed as a guideline to assist in deciding whether a particular roadway, which requires pavement rehabilitation, should be widened. The chart should be used as follows:

1. A geometric assessment should be conducted on all pavement rehabilitation projects. The need for, and cost-effectiveness of, grade widening will be considered as part of that assessment. This chart has been prepared to show cost-effectiveness based on generalized assumptions for construction cost, collision rate and collision severity. The collision rates have been based on design designation (roadway width) and traffic volume. Appendix B provides the background information and an example of the economic analysis. The assumptions are based on provincial averages. Where any of the major parameters related to costs or benefits, on a particular project, are significantly different from those assumed, a project specific economic analysis should be undertaken.
2. The chart shows suggested minimum widths for roadways of each classification, based on traffic volumes. The ranges have been established based on practical considerations, which limit the minimum widening that can be done, and the results of a life-cycle economic analysis, which includes safety benefits associated with grade widening. The existing AADT values have been obtained from the economic analysis, by determining the current traffic volume required to yield a satisfactory rate of return on construction investment, by the end of the design life. For this purpose, a 20 year design life and an average annual traffic growth rate of 2.5% (not compounded) was used. Generally, this is considered to be a good ballpark growth rate to apply to Alberta's rural roads based on examination of traffic growth patterns for the period from 1979 to 1989. Where a more accurate 20 year traffic volume projection is available for a specific roadway, a designer may use that information to adjust the ranges shown here or run a special economic analysis to determine the cost-effectiveness of grade-widening on that particular project.
3. If the roadway after being overlaid would have a width less than that shown for the existing AADT and function, then grade widening, reconstruction, or twinning is called for. Desirable standards, as shown on Figure A-3-2ii, should generally be used on all projects which involve a significant amount of grading work.
4. If the overlaid width is greater than, or equal to, the width shown and the accident rate is normal, an overlay is appropriate.
5. Where reconstruction has been selected, it must be decided whether "new construction standards" or special "retrofit design standards" should be used. The geometric and safety record of the existing roadway, the level of access control, the desirable design speed, the design AADT, the passing demand and opportunity should all be considered in that decision.
6. On existing twinned highways or highways that are being twinned the suggested minimum width on the existing two lane carriageway (roadway) is 9.5m for class 1A. For class 1B 9.0m is acceptable if the AADT is less than 5000, otherwise 9.5 is the suggested minimum.

NOTE: ON RURAL HIGHWAYS IN ALBERTA, THE TYPICAL PASSING ZONE AVAILABILITY IS 75%.

REVISIONS	No.	BY	REVISED CLASSIFICATION	DATE
	No.	BY BK		DATE
				06 /01
3R/4R GEOMETRIC DESIGN GUIDELINES				G-9