**General Notes**

1. Every location where guardrails are required must be investigated separately. The hazards must be investigated and the length of need calculated to determine the best location for protection of vehicles from the hazards.
2. The design of a knee or barrier is placed at the end of the length of need except for trailing ends as shown in Figure C.
3. The knee is a simple support for the full depth of the fill from 5 feet on center.
4. The length of need for tangent roads shall be placed at the end of the length of need.
5. The knee shall be placed at the edge of the hazard.
6. The knee shall be placed for the full depth of the hazard in the clear zone.
7. The knee shall be placed for the full depth of the hazard in the clear zone.
8. If the knee is less than 5 feet, use a complete instant barrier instead of a guardrail.
9. The maximum installation distance is equal to the knee of the hazard length of need.