



**CITY OF HOMER
PUBLIC WORKS**

3575 HEATH STREET HOMER, AK 99603

TELEPHONE (907)235-3170
FACSIMILE (907)235-3145

MEMORANDUM 08-41

To: Walt Wrede, City Manager *W. Wrede*
From: Carey Meyer, Public Works Director *CSM*
Date: September 4, 2007
Subject: Proposed Modifications to the Design Criteria manual

Below is a response to the recommendations of the Transportation Advisory Committee regarding changes to the Design Criteria Manual as it relates to road design in bluff and steep slope areas (as delineated in Resolution 03-30).

Public Works does not support the recommendations. Public Works supports minimizing the impact of development on steep slopes; but not to the detriment of the traveling public's safety (vehicular and pedestrian). We believe that the reduction in the standards will adversely affect the safety and effectiveness of our maintenance efforts and create difficulties for emergency response vehicle access.

Prism Template:	Current Criteria	Proposed Criteria
	26' wide prism	22' wide prism
	4' shoulder width- (2' ea. side)	2 -3.5' shoulder width (1-1.75' ea. side)
	22' wide traveled road width	20-18.5' traveled road width
	2% cross slope (paved rd)	2% cross slope (paved rd)
	3% cross slope (gravel rd)	3% cross slope (gravel rd)

Implementing this proposed change would reduce the traveled width of the road from 22' to between 20' and 18.5'. Shoulder widths would be narrower. Any reduction of the current two foot shoulder requirement compromises road integrity and future pavement stability. The design manual already provides for the recommended cross slope grades.

Vertical Curve Design Speed	Current Criteria	Proposed Criteria
	20 mph (K = 7 for cresting curves)	31 mph (K = 20; cresting)
	20 mph (K = 19 for sagging curves)	22mph (K = 20; sagging)

K = the horizontal distance needed to produce a 1% change in gradient. The higher the K value, the longer the curve length. The existing criteria allows for lower design speeds and shorter vertical curve lengths than what is proposed.

Backslopes	Current Criteria	Proposed Criteria
	max. 2:1*	max 1.5:1
	*- (2:1 means a 1 foot rise for every 2 foot of run)	

The existing design criteria requires a soils report. If the engineer determines that cut slopes can be steeper (1.5:1); the proposed steeper backslopes can be approved. Additional erosion protection (control fabric, special seeding) would probably be required.

Road Grades	Current Criteria	Proposed Criteria
	max. 10%	max. 12%

The current design criteria establishes maximum road grades in hilly areas at 10%; with 15% slopes allowed for short distances.

Intersection Road Grades	Current Criteria	Proposed Criteria
	7% max. (primary streets)	8% max.
	4% max. (secondary streets)	

Most accidents occur at intersections. Increasing the allowable intersection grades on steep slopes would create unsafe winter conditions (where a mistake that causes a vehicle to leave the roadway becomes a significant problem)

Cul-de-sac Radius	Current Criteria	Proposed Criteria
	40' radius	30' radius

Cul-de-sacs are designed to allow maintenance and emergency vehicle to turn around in a effective manner. Reducing radiuses would have negative impacts to maintenance and emergency vehicle response.

If these recommended reductions to the road design criteria can be justified on steep slopes, they can be justified elsewhere in town. *The current standards have been developed with an Alaskan environment in mind.* Our current standards are consistent with other Alaskan communities.

Recommendation: The Council should not approve these recommendations at this time. The Council might consider asking the Planning Commission to evaluate these recommendations as part of their ongoing effort to establish Steep Slope Development regulations.