

# **METHOW ENGINEERING, PLLC**

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3 Feb., 2012

Okanogan County  
Juvenile and Family Services  
P.O. Box 432  
Okanogan, WA 98840

Atten: Dennis Rabidou, Director

RE: Okanogan County Juvenile Center

Dennis:

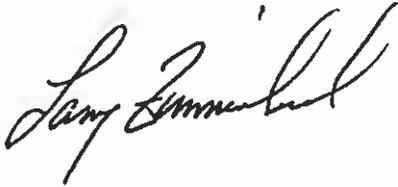
I have done an investigation of the cause of the large crack in the lintel over the corridor to the mechanical room in the lower floor of the above referenced building. That lintel is part of an 8" reinforced concrete wall that carries the weight of the floor above. The wall is continuous for the length of the building except at the corridor mentioned where it becomes a 4' deep lintel.

In reviewing the construction plans from 1973 I have determined that the wall, as designed, does not meet the minimum reinforcing requirements of the building code for control of cracking. Although the plans do not address that specific location, there is a standard detail for additional reinforcing at openings in concrete walls. That detail, again, does not meet the minimum reinforcing requirements of the building code for control of cracking. It may have been unclear whether that detail was meant to apply to the location under consideration, but given the size of the crack, it is unlikely that additional reinforcing was placed. I have consulted ACI 318 Building Code For Reinforced Concrete from 1963 and 2011 in making these determinations.

The crack was most likely caused by recent seismic activity. The beam, in its current state, is more than adequate to support any gravity loads imposed on it. A determination of its response to greater seismic forces would require an analysis of the entire building.

If I can be of further service please contact me at 509-997-2155

Sincerely

A handwritten signature in cursive script, appearing to read "Larry Zimmerlund". The signature is written in black ink and is positioned above the printed name.

Larry Zimmerlund P.E.