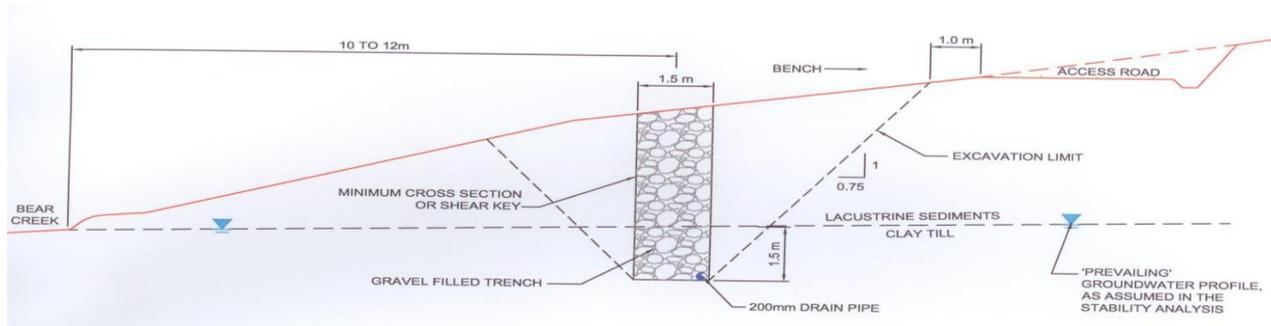




Client Focused
Worldwide Experience
Innovative, Value Added
Practical Solutions

Slope Assessment & Stabilization Works, Bear Creek Village Condominiums, Grande Prairie, Alberta



The Bear Creek Village (condominium development) in Grande Prairie, Alberta is located adjacent to the east crest of Bear Creek valley. The Bear Creek Village was constructed in three phases during 1997 to 1999. Two slide areas had been identified on the slope below the condominium site during previous studies with the approximate widths of the historical slide areas being about 105-120m.

Pre-existing shear zones within the natural slopes along a condominium development resulted in slope instability, tension cracks and cracks within concrete foundation walls.

GES completed a geotechnical borehole and CPT program to confirm the extent of pre-existing shear zones, followed by slope stability analysis, instrumentation monitoring (slope indicators and piezometers) and the detailed design, including quantities and cost estimates, for a Shear Key to stabilize the lower slope below the Bear Creek Village, together with construction review services from May 2003 to 2010.

The shear key system consisted of a continuous gravel trench excavated and constructed from ground surface through the sliding surface, keying a minimum depth of 1.5 m into the till materials

below the approximate horizon corresponding to the shear surface. The granular fill used to backfill the trench was placed in lifts and compacted to mobilize the full strength of the fill materials.

Subsurface conditions included banded lacustrine silt and clay about 3.5 to 4 m thick. In general, the lacustrine sediments were stiff to very stiff, with pre-sheared zones corresponding to depths where the clayey soil was soft and highly plastic; bedrock was at approximately 30 m below ground surface.

WHERE WE ADDED VALUE

- Applied CPT results to develop geotechnical parameters of shear zone.
- Designed shear key system to provide slope improvement and stabilization system.

GEOTECHNICAL SERVICES

- Geotechnical Investigation & Recommendations
- Slope Stability Analysis
- Slope Indicators and Piezometers Monitoring
- Detailed Design of Shear Key System
- Drainage Design
- Construction Supervision & Review Services

