

**Client Contact:**  
**Mr. Dan Hudick**  
**MLC Development**  
**Corp**  
**303-756-2579**

**Services Provided:**

- **Materials Testing**
- **Pavement Thickness Design**
- **Geotechnical Studies**

**Project Summary:**

Cesare, Inc. (Cesare) provided materials testing services, pavement thickness design, and geotechnical studies at the Ravenna Development. The Ravenna Development is a subdivision and golf course located at the mouth of Waterton Canyon in northwestern Douglas County. Cesare's responsibilities for the project included:

- Performing subsurface investigations and providing geotechnical recommendations for the on-site community center and water storage tank.
- Performing pavement thickness design and swelling subgrade recommendations for on-site roadways.
- Performing a subsurface investigation, design, materials testing, and state reporting for the on-site small Class III

dam.

- Testing moisture content/density of all overlot fill, roadway fill, utility trench backfill, and box culvert backfill.
- Inspecting concrete reinforcement for the numerous box culverts and water tank on site.
- Testing strength, slump, and air content of the concrete placed for box culverts and curb and gutter, and the on-site water storage tank.
- Testing density and observation of placement procedures of the in-place hot mix asphalt for the on-site roadways.

The project was complicated by steeply dipping hard sandstone bedrock, a large variety of on-site soil types, and its size. Cesare was able to work closely with the contractors to make sure quality materials were placed within project specifications for the duration of the project.

