



## GEO-FOUNDATIONS Contractors Inc.

### Lowe's of York



Date: 2007

Technology: Anchored Shotcrete

The new Lowe's of York at Caledonia and Castlefield is the anchor store of a new, multi-outlet retail complex in the heart of Toronto's interior design district. A 206 metre long, varying height, anchored shotcrete wall constructed by Geo-Foundations separates the grades between the rear laneway behind Lowe's and the neighboring properties to the north and east.

The anchored shotcrete wall's construction involved the installation and proof-testing of over 500 soil anchors. Anchored shotcrete was chosen over mechanically stabilized earth (MSE) due to the geometry at the northeast corner of the property. At this location, the wall separates 9.1 metres of grades but the backset to the property line from the wall is a mere 6 metres. As opposed to MSE construction which requires excavation to the base of the wall prior to any wall construction, anchored shotcrete's top-down installation and preservation of the existing soil behind the wall avoided excavation beyond the property line and avoided the need for temporary excavation support.

The permanent wall is reinforced with two layers of welded wire steel mesh and was constructed in two phases. The first phase included all sequential excavation, installation and proof testing of all soil anchors, and application of the first layer of mesh reinforced shotcrete. The second phase involved installation of mesh and application of coloured shotcrete over the entire 912 square metres of wall face.

The anchored shotcrete wall and all its soil anchors were constructed by Geo-Foundations under subcontract to Dagmar Construction Inc. The wall was designed by Isherwood Geotechnical Engineers.



*Third lift of eastern arm of wall excavated and ready for shotcrete installation*



*Drilling soil anchors at the eastern arm of the wall*



*First phase of wall construction nearing completion*