

## L. Test Borings and Soils Analysis

In July, 2003, Haley & Aldrich, Inc. (“H&A”) performed a preliminary geologic investigation of the land owned by the State of Connecticut located within the Project Area (the “Site”). This work included:

- Geological site reconnaissance
- Preliminary subsurface explorations
- Engineering analysis and report.

The report by H&A on this investigation was issued on October 2, 2003, and is on file at the Mansfield Downtown Partnership. See Figure 19 prepared by Haley & Aldrich. The preliminary investigation included seven borings and ten test pits, as well as mapping of the bedrock outcrops in the undeveloped parts of the Site.

### Geology

The Project Area is located in the Eastern Uplands of Connecticut. The Project Area is underlain by Hebron gneiss, described as interlayered dark gray schist and greenish-gray, fine-grained to medium-grained calc-silicate gneiss. Previous work in the Project Area has identified a number of bedrock outcrops, primarily along the central topographic ridge bisecting the Project Area along an east-west axis. Test pits along this ridge intersected bedrock at all locations. Bedrock was described as highly micaceous (schist bands) at test pits TP2, TP5 and TP9 and quartz-rich gneiss bands at the other locations.

Overburden deposits are classified as till and thick till. The thickness of till varies across the Project Area from up to 5 feet in the western portion of the Project Area near Dog Lane to 8 to 14 feet of glacial till near borings B105 and B106 in the southwestern portion of the Project Area. Across the undeveloped portion of the Project Area, overburden thickness generally 1 to 5 feet in thickness. There are several bedrock outcrops along the east-west central ridge.

Along Storrs road and Dog Lane, the land has been developed by filling to depths generally up to 5 feet, but to as much as 20 feet over former low lying wetlands. Glacial till and bedrock underlie the fill. In the undeveloped area, the irregular topography is controlled by the bedrock level, which is at or within about 5 feet of ground surface.

Haley & Aldrich also identified impacted fill material at two borehole locations, B105 and B106. These boreholes are located at the southwestern corner of the Project Area behind the University Shopping Center. Black staining and a “creosote” odor were identified in boring B105. Black staining and a “fuel oil” odor were noted in boring B106. Haley & Aldrich concluded that two separate “contaminant plumes” are present, and that the impacted soil at boring B106 may be a result historic or on-going fuel oil release from an upgradient source.

## Geotechnical Engineering Investigation

As described above, the preliminary geotechnical engineering investigation included seven borings and ten test pits as well as mapping of bedrock outcrops in the undeveloped parcel. The preliminary conclusion of this work is that near-surface bedrock will generate premium costs for site grading and building construction in the undeveloped area of the site. Blasting will be necessary for efficient excavation of significant quantities of rock. Spread footing foundations and slab-on-grade floors may be planned for buildings over most of the Project Area. Pile foundations or spread footings after ground improvement may be required in the area of thick fill in the southwest portion of the Project Area.

## Soils

Two soil types are present at the Project Area. The primary soil is the Charlton-Chatfield Complex. It is described as having slopes 3-15% and very rocky. The second soil type is the Canton and Charlton soils described as having slopes 15-35% and very stony.