SAFETY MEMO

Did you know?

November 9, 2020 – Underground Utilities- Hidden Risks! (1 of 2)

Introduction

Underground utilites must be considered in projects which require ground disturbance. Examples of this are; excavation for the construction of a new building, a new trench to install a new pipe or sawing concrete in an existing plant. It is important to understand the risks and legal requirements associated with this work.

Ground Disturbance

Ground disturbance is defined as the disturbance or displacement of the soil. This definition is used in many jurisdictions as a legal term in laws regarding excavation. An exception to the legal requirements (in some jurisdictions) for ground disturbance can be made if hand-digging to a depth of not more than 300mm (1 foot).

Underground Utility Risks

Underground utilties outside of a facility can include; gas, oil, steam, water, sewer, communication and electrical systems. The consequences of failing to locate and mark these utilites can result in a utility strike during excavation activites. The cost of the emergency response and repair of a utilty strike is immense and can be easily avoided by using underground utility location and marking services.

Many of the factories we work in are over 40 years old. A frequent past construction practice was to cast electrical power lines into the concrete slab. Simple sawing of a slab can turn into a disaster both in terms of the impact on the saw operator and for the company which sees its factory shut down due to a loss of power supply.

Additonal risks include a fire, explosion as a result of striking a gas line and water damage as a result of striking a water line. Serious injuiry or death to can occur from underground utilty strikes.

Legislation

In most Canadian provinces the law requires that underground utilities must be located and marked prior to excavation. OSHA in the US also describes requirements for location of underground utilites.

Local laws must be consulted prior to starting work which requires ground disturbance.

Figure 1: Example of a Montreal water main severed by a contractor during ground disturbance activities

Underground Utility Location and Marking Services

In Canada and the US, each province/state has a free service which provides utility location and marking based upon all the stakeholders in their database. France does not have this service currently available, however, a national initiative to map all urban critical subsurface infrastructure is currently in progress.

In general, this free service available in Canada and the US is completed within 3-5 days of placing a location request. Underground utility location and marking is done using electromagnetic technology and/or Ground Penetraing Radar (GPR), depending on the site conditions and nature of the ground disturbance activities.

Due to the no cost and fast delivery of these services, the inconvenience of having underground utiities located prior to beginning an excavation far outweighs the cost of a potential utiltiy strike.

It should be noted that this service is conducted by referencing the stakeholder utility database and marking only the lines associated. Any private utilites on the property will not be included in this service.