

Underground Infrastructure Safety Enhancement Act

Bill S-233

March 24, 2016

Overview

Professional Surveyors Canada and its members propose the following changes to Bill S-233 to better enhance the safety of the public and workers. It is imperative for the safety of the public and workers that common standards for buried utilities are used and well known. The positions below are considerate of that goal and allow for the reasonable use of the public of the extents and marking of their lands without undue hardship or risk of harm or death. The positions require no further cost to companies related to underground infrastructure as the standards already are followed by prudent owners. Please see the Reasoning Section for supporting materials. The table below proposes additions or wording changes to this legislation which, in concert with the proposed bill, may affect other acts for the betterment of the public and the safety of workers.

Table of Changes Required

- All additions and changes shown in green italics
- Section refers to the pending legislation S -233 but may affect the Pipeline Safety Act and National Energy Board Act

Section 2 Definitions

Addition *Buried Depth means the vertical distance from the general surface of the ground to the top of any buried infrastructure.*

Addition *Buffer Distance means the horizontal distance from a buried infrastructure inside a right of way or easement to a right of way or easement limit.*

Section 4 Application – Pipeline Safety Act and National Energy Board Act

Change **4.0** ground disturbance does not include a ground disturbance caused by

- (a) any activity that is specified in the orders or regulations made under subsection 112(5),
- (b) *cultivation to a depth of less than 45 cm below the surface of the ground, or any other activity and that does not result in a reduction of the earth cover*

over the pipeline to a depth that is less than the cover provided when the pipeline was constructed;

Addition *Owners installing underground infrastructure must maintain a minimum buried depth of one metre except where conditions do not allow or in transition zones between underground and above ground infrastructure.*

Addition *Owners installing underground infrastructure must maintain a minimum buffer distance of one metre.*

Section 8 Changes

Addition **8.2** “made to the underground infrastructure and its location *and buried depth*”

Section 9 Locate Request

Change **9 (1)** “...that results in a ground disturbance that may affect...” change to “...*that results in a ground disturbance or planned ground disturbance that may affect...*”

Reasoning

Most underground infrastructure legislation does not consider the rights of the public nor the workers for them being affected by underground infrastructure. Call before you dig has been a catch all that addresses one problem but safe installation practices have been ignored in some instance as shown below. The property rights of citizens have been eroded and the health and safety of land owners and land surveyors has been put at risk. We believe this is an oversight and once made aware, legislators will see the obvious benefits of the proposals we are putting forward. Prudent owners and operators of underground infrastructure respect land owners rights and secure sufficient easements or respect right of way limits. Thus most owners are not affected by these proposals as they have to change nothing or little to their existing practices.

The following is the reasoning behind the proposals above. At the end of this are diagrams that show the logic of the proposals as to what is needed to service the public’s land and ensure worker safety for the land surveying community.

Work Safe Distances

Buried Depth “If a dog can dig it up, it is not installed in a safe manner”

The standard should be a minimum of 1 metre of depth of cover for all buried utilities. Currently there is no standard for safe underground infrastructure placement by pipeline or utility companies. This lack of a standard puts the public and workers at risk. CSA Z247 and legislation surrounding buried utilities and underground infrastructure should contain provisions for the safe buried depth of

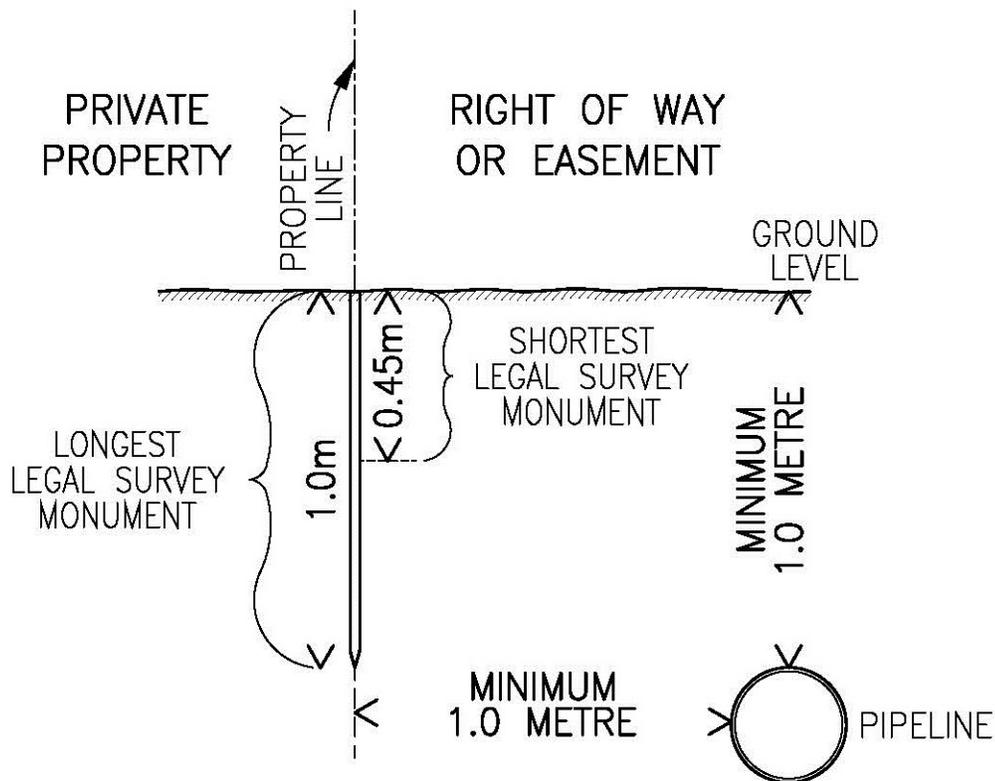
utilities; notwithstanding transition zones from underground to above ground, which can and should have reasonable markings. If there is a standard for ground disturbance there should be a standard for depth of cover.

Buffer Distance “If you cannot locate it to an accuracy of one metre, don’t install it within one metre of the right-of-way boundary”

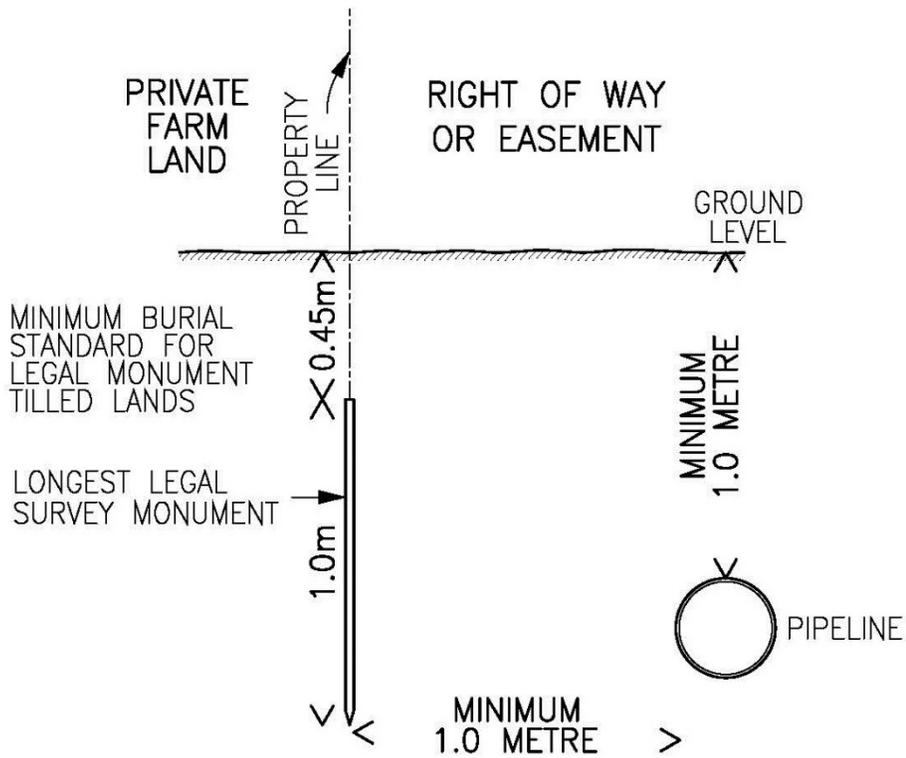
Standard underground infrastructure locating equipment is reliable to a distance of one metre from the buried facility. However, buried lines are still being installed on or very close to the edge of their legal right of way corridor. This does not make sense. The public has the right to fair use of their land up to that boundary on their side. If you cannot locate it to an accuracy of one metre, don’t install it within one metre of the right-of-way boundary. This standard will keep new utilities where they are approved to be, and greatly reduce the risk of the facility being exposed or struck and danger to workers. This does not mean to imply a restriction to underground infrastructure servicing individual properties.

Minimum Underground Infrastructure Installation Standards

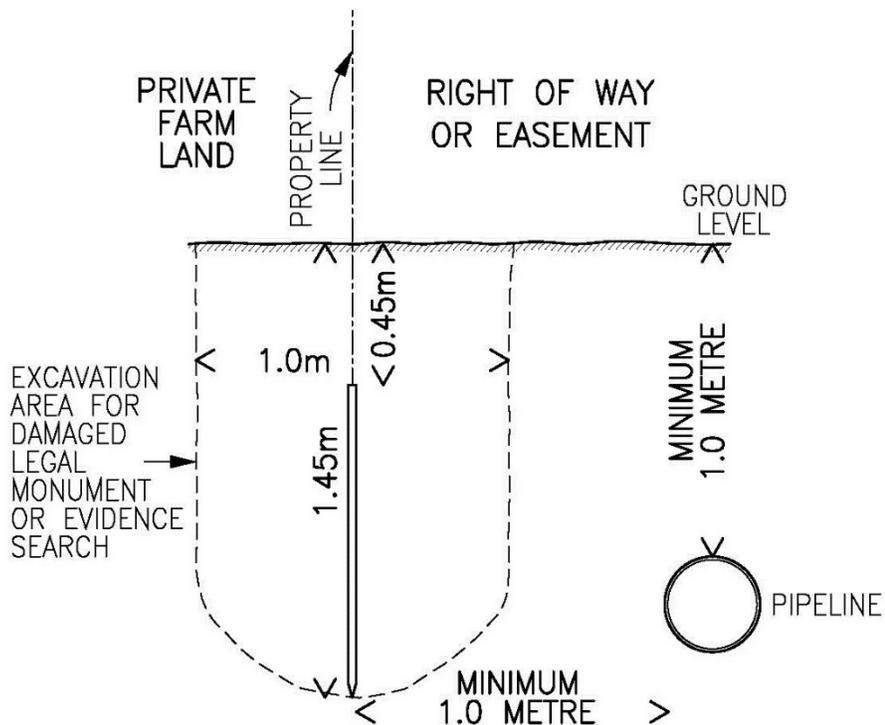
Non-Farm Lands Installation Standard



Farm Lands Installation Standard



Common Evidence Search Area for Professional Surveyors



One Example of Poor Installation



Ground Disturbance Standard

It is not reasonable to have two standards for ground disturbance. It is confusing, requires explanation and sets the public into two categories. Adopting a common standard at the 0.45 metre level as expressed in the Pipeline Safety Act will make the standard more easily understood and fair to everyone.

Locates

“Locate requirements will substantially increase the cost of legal surveys to land owners”

Adopting the above standards will allow land owners to be reasonably protected from unfair costs to establish their property limits. As currently proposed, the costs to property owners will substantially increase for surveys that were reasonable before. This is an undue burden for no benefit to the public. A reasonable person conducting a hand dig of an area to set a property monument should be reasonably assured of no harm. A legal survey monument of reasonable depth for stability can be set this way. Hundreds of thousands of survey monuments are set each year in Canada. Substantially increasing the cost is not reasonable. Bill C-46 was implemented without the consultation of the land surveying industry, and as such does not take into account the large financial burden to land owners caused by requiring a ground disturbance locate for each and every survey monument placed.

“Locates are done for planning, and so construction can be safely planned”

Professional land surveyors will contact individual owners of underground infrastructure directly or through One Call centers for locates to plan a building or road or any development. This allows for plans to be made for the orderly and safe development of the lands in the area. Some owners will not perform underground locates if there is not an immediate ground disturbance being conducted. As well, locates may be denied for underground infrastructure in existing roads or rights of ways. This makes planning for safe development difficult and benefits no one. If the owners will not locate their underground infrastructure in a reasonable time, or outright deny service, who benefits from this? These are unreasonable acts. There is not an upsurge of architects and engineers planning to obtain critical information frivolously. Provisions need to be in place to ensure that information on underground infrastructure is provided in all relevant areas to a development, in a reasonable timeframe. Safe development and safe work rely on good information and should not be a subjective consideration of an owner.

Background

Bill C-46 amended the National Energy Board Act and the Canada Oil and Gas Operations Act. The bill applies to federally regulated pipelines. The bill establishes a definition of “ground disturbance” and a definition of “prescribed area” in federal legislation. The definition of ground disturbance essentially applies to any activity to a depth exceeding 30cm and 45cm. There is no need to have two standards and adds confusion to the public and workers. Standardizing at the 45 cm level is a logical and reasonable position.

Currently One-Call systems in provinces are barely able to handle volumes within reasonable timeframes. Adding thousands of requests and more going forward is unreasonable to the public and the resource industry itself. Professional Land Surveying associations were not consulted prior to introduction of current legislation nor standards even though our work requires excavations for evidence around boundaries and placing of survey monuments. This is nothing new and has been going on for hundreds of years.

The CSA Z247 Standard was formed by the CSA (Canadian Standards Association) Taskforce. The land surveying community was only consulted in one province even though land surveyors' activities are known. Had proper consultation taken place, the duty of professional land surveyors would entail putting forward the proposals above and bringing to the fore the unfairness to landowners and the safety of our workers. This standard did not consider depth of cover of placement of the utilities themselves, which is counterproductive.

Two studies of real world projects in Ontario concluded that proper mapping during installation of underground utilities saves at a ratio three to one. This is significant cost savings that can ease the financial burden of infrastructure and lead to less accidents, damages and harm. Professional Surveyors Canada is working with underground utility companies and community to better formalize mapping of these assets to better protect the public and our workers. The above is the first of many steps yet needed to ensure that goal.

Impact on the Land Surveying Profession

If the current lack of placement standards go forward, or the weakened standards within CSA Z247 become further adopted, placing survey monuments for adjacent private property owners, as defined by most acts and regulations, will increase risk of harm to workers, overwhelm One Call centres and continue to put undue cost on the public. Further, due to the lack of placement standards of pipelines within rights of way, the actual work may not be possible, or disproportionately expensive. We do not believe that any legislator knows of this. As well, the notice requirement is not possible given the nature of the surveys required, especially when resource work is being done. This can be avoided in most cases by adopting the proposals above.