



Constructing Pipelines Across Farmland with Drain Tile and Other Drainage Features

Enbridge pipelines have crossed the breadbasket states of the Midwest for decades. As we maintain and expand our pipeline system, we first plan and design the project to minimize impacts to landowners and the environment while still meeting the need to safely transport vital energy supplies to regional refineries. We work closely with landowners to preserve agricultural productivity along rights-of-way for years to come.

To support this effort, Enbridge employs a construction management team comprised of experienced inspectors to oversee construction activities. The team is focused on ensuring that commitments agreed upon with landowners or contained in regulatory mandates, permits, contract bid specifications, and other project-related requirements are met. One of the primary responsibilities of the inspectors is to ensure the contractor complies with landowner special requirements.

Should drain tile be identified during route assessment or meetings with landowners, Enbridge will plan to protect, restore, replace and/or repair the drainage section impacted to a condition similar to what it was prior to construction. Enbridge is committed to working with landowners and tenant farmers to ensure adequate and reliable resolution for drain tile related damages caused by pipeline construction activity.

Enbridge representatives will contact local County Soil and Water Conservation Districts (SWCDs), Agricultural Extension Agents, and others to obtain similar information regarding publically owned drainage properties.

During construction or maintenance activities across farmland, Enbridge hires experienced and reputable local drain tile contractors when possible or will direct the pipeline contractor to assign experienced

personnel to oversee drain tile repairs so that they are completed in accordance with locally acceptable standards.

In addition to Enbridge inspectors, the federal regulator of interstate pipelines will have an inspector periodically checking construction and inspecting records. Other federal, state and local agencies may also inspect construction practices for compliance with environmental commitments and agricultural impact mitigation practices.

While pipeline construction has temporary impacts, we instruct our construction contractors to think of themselves as guests on your land and to minimize those impacts. Enbridge requires its construction contractors to use modern construction and land restoration techniques to prevent soil erosion, protect agricultural topsoil, repair agricultural drain tile and irrigation systems and alleviate soil compaction.

Requested Drain Tile Information

Enbridge representatives will make every reasonable effort to obtain information on drain tile or drainage systems from landowners and/or tenant farmers. If it is possible, a drawing or sketch would help communicate important information.

We are looking for the following:

- Size (diameter) of all drain tiles located within the proposed work areas,
- Location of those drain tiles,
- Composition (clay or plastic),
- The approximate depth,
- Direction of flow, and
- Functioning or abandoned.



Drain Tile Repair Process

Prior to construction, affected drain tile will be relocated by a drain tile contractor, if possible. During the course of removing topsoil and/or excavating the pipe trench, all exposed drain tiles will be staked and their locations recorded by way of global positioning system (GPS).

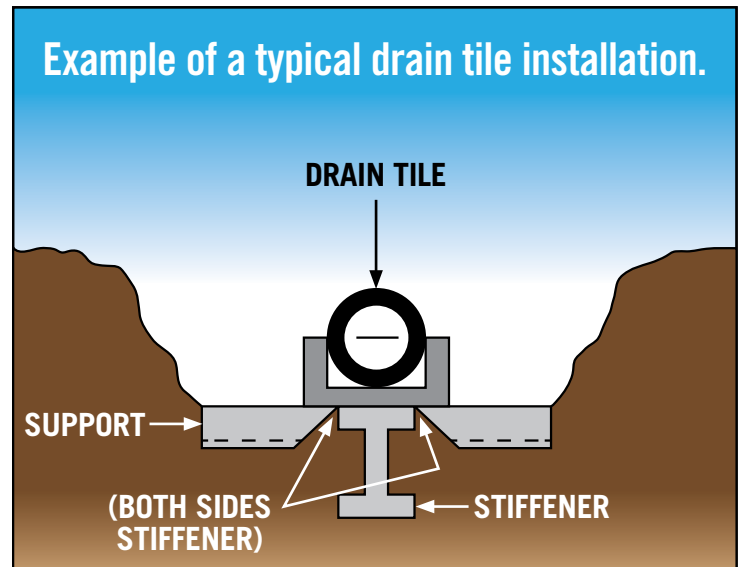
Should drain tile need to be cut, the process below will be followed to avoid flooding and other drainage related issues:

- The contractor will immediately stake the location and contact a survey crew.
- The survey crew will establish the GPS location and depth and will mark the stake with a circle.
- Where there is a potential for dirt to enter a damaged or severed drain tile, the contractor will cap, screen or otherwise install a temporary repair. If dry conditions exist, the ends will be capped. If water is flowing, a temporary line will be installed. When ends are capped or temporarily repaired, the stake will be marked.

It is Enbridge's intent to install and backfill the pipe trench within days following excavation. Permanent drain tile repairs will follow promptly.

For drain tile repairs that cross the pipe trench, a method to rigidly support the drain tile will be implemented. The support method will include the installation of a rigid beam or channel composed of steel or high strength composite material, a rigid outer casing pipe, or other method that will keep the repaired drain tile relatively straight. In most cases high-density polyethylene (HDPE) will be used for repairs. Properly sized and designed transition fittings will be used when connecting to a clay tile system.

Where multiple drain tiles cross the pipe trench, following landowner agreements, a secondary lateral may be installed parallel to the new pipeline. Severed drain tiles upstream of the pipe trench will be tied in to the new secondary lateral.



The secondary lateral will either cross the pipeline and tie into the existing drain tile system, or go to a new outlet. Proposed drain tile system modifications will be discussed and agreed upon by the landowner and/or tenant. Consideration will be made when the presence of an existing parallel pipeline impacts drainage.

Prior to connecting the repair section, the contractor will insert a semi-rigid wire (snake) in the undamaged drain tile for an appropriate length to ensure unidentified damage hasn't occurred. If there is any indication of blockage within 25 feet of the right-of-way, the contractor will be directed to investigate and make appropriate repairs. An Enbridge representative will review any necessary work that is outside the approved work area individually with affected landowners.

Repair Drawings Available Upon Request

Landowners interested in a computer-generated drawing showing the location (including GPS coordinates) of all drain tile repairs on their respective property, can make a request to their land agent.

For more information visit our website at enbridgeus.com or contact an Enbridge right-of-way agent.