

Cast iron gas main encroachments are our top priority

Federal law requires us to replace cast iron gas mains when they are encroached upon by nearby construction. **There will be NO COST to you for any of the following services:**

- A National Grid representative may need to be present during your excavation to determine whether the main should be replaced.
- Our representative will suggest measures to protect the cast iron main from damage.
- We will monitor the affected gas main daily for leaks until it is replaced.
- When needed, National Grid will design and install a new plastic main on the first regular workday after the necessary permits have been obtained and 811 notification requirements have been met.
- In an emergency, the main will be replaced immediately.



This excavation has encroached upon a cast iron natural gas main, exposing the gas main to potential damage.

Learn to recognize and respond to natural gas leaks

Gas leak warning signs

A natural gas leak may smell like sulfur or rotten eggs, but not always. Don't rely on your nose alone – be alert for these sights and sounds as well:

- A hissing, whistling or roaring sound
- Dirt blowing into the air from a hole in the ground
- Continuous bubbling in water
- Dead or dying vegetation (in an otherwise moist area) over or near a pipeline
- An exposed pipeline after an earthquake, fire, flood or other disaster
- A damaged connection to a gas appliance



If you suspect a natural gas leak

Remember the three R's of natural gas safety: **Recognize, React and Report**. If you **RECOGNIZE** any signs of a gas leak, **REACT** by warning others and immediately leaving the area. When you are in a safe place, **REPORT** the leak by calling 911 and National Grid any time, day or night, at the appropriate emergency number:

- Long Island and the Rockaways: 1-800-490-0045
- Metro New York: 1-718-643-4050
- Upstate New York: 1-800-892-2345
- Massachusetts: 1-800-233-5325

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Cast iron mains need special protection

Follow these safety measures to protect our community



We're in this together

Cast iron gas mains have been the backbone of the natural gas distribution system in our Northeast communities since the early 1900s. With weather and age, these pipes become brittle and prone to damage. Help us protect them until they can be replaced.

This brochure explains how public officials and excavators can work with us at National Grid to assure that nearby excavations do not damage vulnerable cast iron mains.



Cast iron mains can break!

When cast iron gas mains are damaged, the release of natural gas may at least lead to disruption of service, and at worst result in fire or explosion, risking lives and property.

Protect our community and yourself

Cast iron gas mains are supported by the soil around them. They are vulnerable to damage when the earth near them is moved in any way. When your excavation encroaches on a cast iron natural gas main by crossing its path or running parallel nearby, special circumstances apply.



Cast iron gas mains are brittle and can break, endangering life and property when natural gas leaks.

How can you help?

- Be aware of areas of your community where cast iron gas mains are common.
- When possible, work with National Grid to plan your excavation to avoid cast iron mains.
- When you call 811 or make an online locate request, notify National Grid that you believe your excavation might affect a cast iron gas main.
- If you encounter a cast iron gas pipe as you excavate, stop digging and notify National Grid immediately at the natural gas emergency number located on the back of this brochure.

If gas is escaping, call 911 and National Grid. It's the law!

Smell Gas. Act Fast.



Know what's below.
811 before you dig.

nationalgrid

What causes an encroachment?

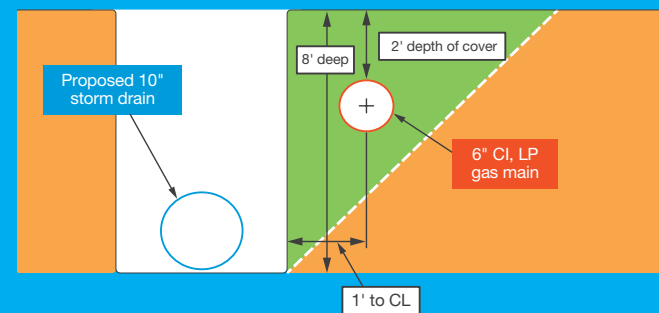
Encroachment occurs when nearby excavation undermines the stability of the soil supporting the cast iron gas main.

Most often, encroachment affects cast iron pipe 8 inches or less in diameter and is the result of construction activities, such as installation or repair of water, sewer or electrical facilities. Encroachment can occur even if the gas main is not exposed by the excavation.

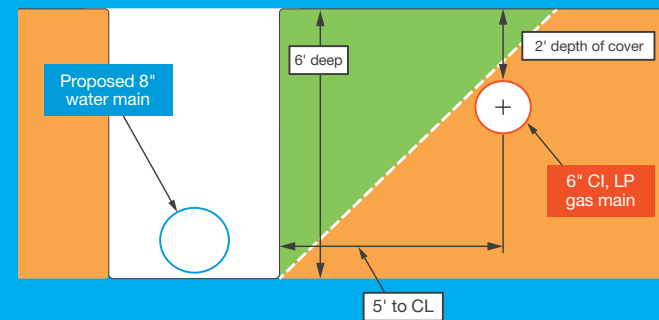
There are two types of encroachment:

- **Undermine encroachment** occurs when the excavation crosses under the existing cast iron gas main.
- **Parallel encroachment** results when an excavation trench runs parallel to the cast iron gas main and puts the main within the "angle of influence," where the soil is no longer supported after a trench is dug.

Encroachment



Not encroached

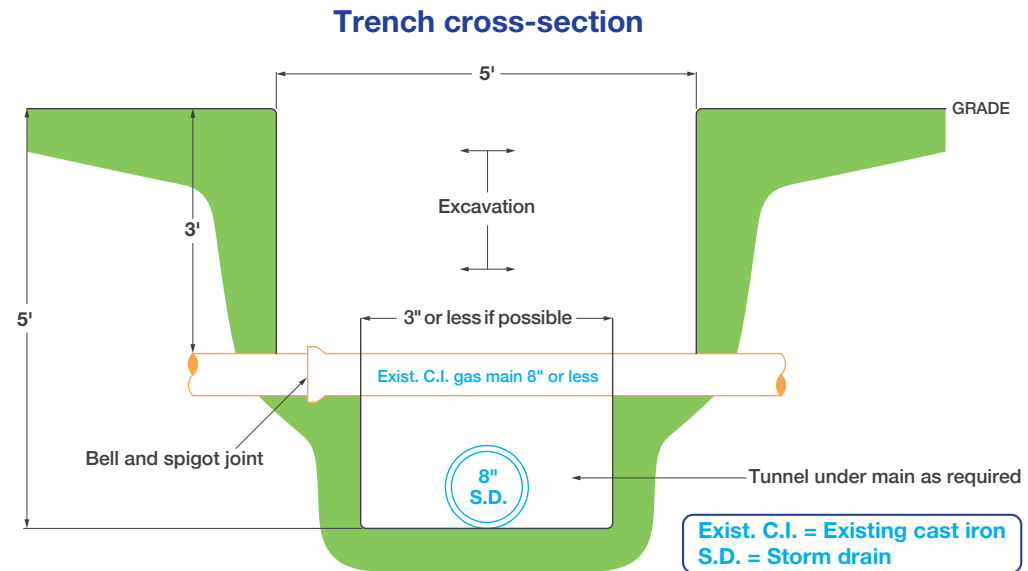


In these illustrations, the white dotted line represents the "angle of influence." Beyond this angle, the soil in the green area is in danger of shifting after the trench is dug and damaging a vulnerable cast iron gas main located within it.

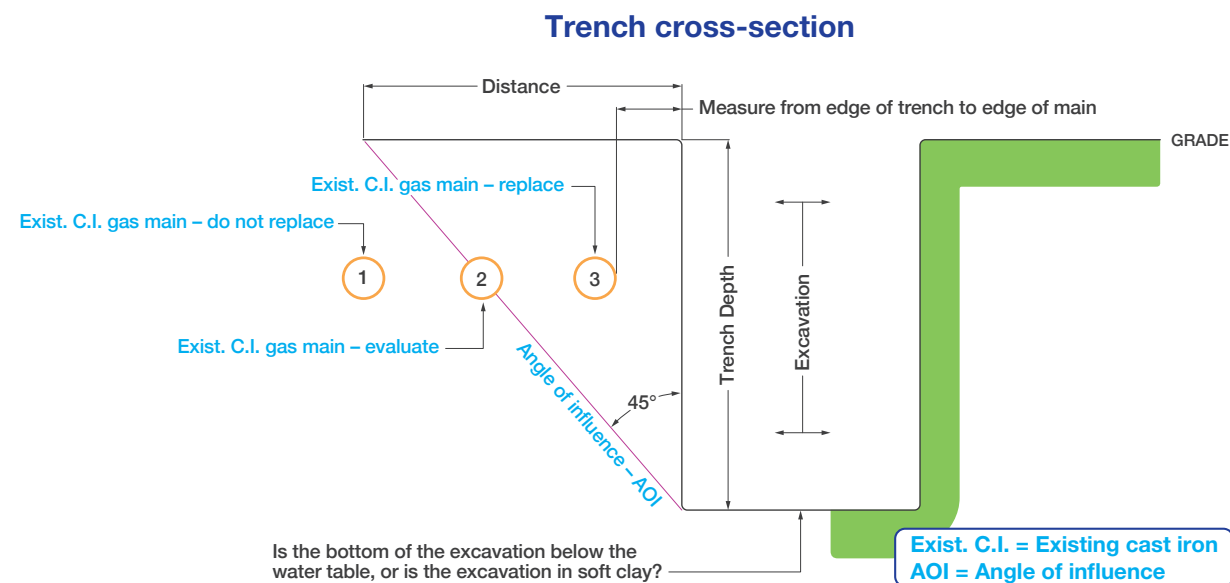
Excavating to prevent damage to cast iron mains

Step excavation can prevent encroachment

Report any bell and spigot joint that is exposed during excavation. It may need to be sealed or clamped to prevent leaks.



How angle of influence determines parallel encroachment



Is the bottom of the excavation below the water table, or is the excavation in soft clay?

Preventing cast iron gas main damage

Planning ahead to avoid impacting cast iron gas mains is the best way to prevent damaging them. But sometimes nearby excavation is necessary.



Take these precautions to prevent encroachment in excavations that cross beneath the cast iron gas main:

- Use a stepped trench or sloping method of excavation (see illustration at left). Keeping the trench beneath the main less than 3 feet wide usually avoids encroachment.*
- Tunnel under the gas main at a width of less than 3 feet.
- Make your crossing perpendicular to the gas main whenever possible.

*In this excavation, the tunnel under the cast iron main is less than 3 feet wide and is NOT an encroachment.

Take these precautions to prevent encroachment in parallel excavations:

- Provide as much distance as possible between the cast iron gas main and the trench. Under most conditions, if the distance between the gas main and the excavation is greater than the depth of the trench, encroachment will be avoided.
- Make the excavation as short as possible. In most cases, if the length of the excavation is less than 8 feet, encroachment will be avoided.**

**Soil composition, water table level and other factors may influence distances needed to prevent encroachment.

Remember, if any gas facility is bumped, scratched or dented, contact National Grid immediately. Though it may look like nothing to worry about, even the smallest scratch can lead to corrosion and future leaks, endangering life and property.