

APPENDIX 'D'

HYDRO SAFETY REQUIREMENTS NEAR 219.1MM DISTRIBUTION PRESSURE NATURAL GAS MAIN



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agreaves@hydro.mb.ca

April 22, 2014

Alexis Wilcott
Municipal Designer
Municipal Infrastructure Department
KGS Group

Dear Alexis Wilcott:

Re: FW: Century/Saskatchewan Intersection Improvements: Preliminary Design Drawings

Manitoba Hydro (Gas) has reviewed the design submitted by KGS for the roadway construction at Century St and Saskatchewan Ave. The following parameters shall be followed when working in proximity to all natural gas mains. Please ensure that all requirements are communicated to your contractor.

1. 219.1 mm Distribution Pressure Natural Gas Main – Saskatchewan Ave

- Proposed road reconstruction crosses over an existing 219.1 mm distribution pressure natural gas main. A Manitoba Hydro High Pressure Safety Watch is required if any excavations are within 1.0 m of the 219.1 mm natural gas main.
- A smooth edged bucket shall be used for any excavations within 1.0m of a large diameter distribution pressure main.
- Contact “Call before you dig” 2 weeks prior to any work commencing within 1.0 m of the 219.1mm distribution pressure natural gas main to arrange for a Manitoba Hydro Safety Watch at **204-480-1212**, if required.

2. Asphalt Overlays and Road Reconstruction

- When excavations for concrete works are required within 1.0 meters of any natural gas main, the main must be exposed by hand or soft dig methods to verify the main elevation at intervals to be determined by the site inspector.
- Should a main be exposed to sub-base, the main requires rock wrap and may also require lowering. This work shall be completed by Manitoba Hydro, please contact Shane Heiner at 204-360-5568 or sheiner@hydro.mb.ca to arrange.

3. General:

- Manitoba Hydro is NOT part of the ClickBeforeYouDigMB.com service and Hydro customers must continue to phone 1-888-MBHYDRO (1-888-624-9376), or 204-480-1212 in Winnipeg, to arrange electric and natural gas line locates. Hydro is supportive of the ClickBeforeYouDigMB.com initiative but cannot participate at this time due to legislation which Hydro is lobbying to change.
- Please note that the requirements of Manitoba Hydro’s Safe Excavation and Safety Watch

guidelines shall apply. All construction operations within the vicinity of natural gas pipelines are to take place in a manner so as not to damage or cause detriment to the integrity of the natural gas pipeline. All natural gas pipelines and service lines must be properly located and marked by Manitoba Hydro personnel. Construction operations are not to commence unless these conditions are adhered to. **Call before you dig 480-1212.** (1-888-624-9376 outside of Winnipeg).

- All excavations within 1.0 meter of any natural gas main must be completed by hand or Hydro-excavation.
- A minimum vertical separation of 300 mm from gas mains and 100 mm from gas service lines must be maintained between any Manitoba Hydro facility and any new installations.
- A minimum 900 mm of cover shall be maintained in all areas where equipment will be crossing, traveling or compacting over the 219.1 mm gas main. Vibratory compaction cannot be used over or within 1 of a distribution pressure main.
- A minimum 600 mm of cover shall be maintained in all areas where equipment will be crossing, traveling or compacting over the 114.3 mm and 60.3 mm gas mains. Vibratory compaction cannot be used over or within 1 m of a distribution pressure main.
- A minimum 450 mm of cover shall be maintained in all areas where equipment will be crossing, traveling or compacting over the gas service lines. Vibratory compaction cannot be used over or within 1 m of a service.
- If equipment must cross, travel, or compact over the gas main with less than the minimum depth of cover, earth bridging or steel plates shall be placed over the main and extend a minimum of 1.0 meter on either side at each crossing location.
- Caution must be used to ensure the integrity of the pipeline coating. Any damages to the coating must be reported to and repaired at no cost by Manitoba Hydro prior to backfilling.

Manitoba Hydro believes that there should be no problem with this work however; Manitoba Hydro makes no representations or warranties in that regard.

Please note that all construction drawings requiring review or approval must be mailed to Gas Pipeline Engineering, Box 7950 Station Main, Manitoba, R3C 0J1. If you wish to send construction drawings electronically, they may be sent to GasDesign@hydro.mb.ca.

If you have any questions or comments, please contact the undersigned at (204) 360-4170.


Regards,
Andrew Greaves, P.Eng.
Gas Design Engineer
Gas Design Planning and Construction Dept.

AG/bc

Cc: Vern Los, Gas Supervisor - Notre Dame, Manitoba Hydro
Shane Heiner, Gas Distribution MTCE - Notre Dame, Manitoba Hydro
Larry Tole, Gas Program Advisor - Sutherland Ave, Manitoba Hydro



Safe Excavation & Safety Watch Guidelines



For your **SAFETY**

WINNIPEG

Call Before You Dig
Emergency

(204) 480-1212
(204) 480-5900

OUTSIDE WINNIPEG

1-888-MBHYDRO
1-888-624-9376



RELEASE OF NATURAL GAS

In the event of any damage to a natural gas pipeline (regardless of whether it is steel, plastic or aluminum) or to its protective pipe coating or tracer wire, however minor, call Manitoba Hydro immediately. In most cases there is no charge for minor repairs.

In case of damage causing a release of natural gas:

- Call 911 and Manitoba Hydro immediately.
- Clear people from the vicinity and prevent people from approaching the area of the leak.
- Shut off all vehicles and equipment. Remove or extinguish all sources of ignition. **DO NOT** smoke or allow open flame in the presence of natural gas.
- If a gas line has been punctured, do not remove the tool or equipment that punctured the line. This could result in a larger gas leak and pose a greater hazard.
- **DO NOT** attempt to backfill over a leaking natural gas line or attempt to stop the leak, it is safest to allow the gas to vent into the atmosphere.

Before you start to dig, contact Manitoba Hydro to locate the underground cables or natural gas pipelines in your area. With a minimum of three days notice (M-F), or at least one week's notice during construction season, Manitoba Hydro will mark the underground electric and natural gas utilities.

- A locate form must be obtained prior to excavation and specific instructions on the form must be followed.
- If work has not started within 10 calendar days after the locate was provided by Manitoba Hydro, you must request to have the utility re-mark the work area and provide an updated electric and/or natural gas facilities locate form.
- Contractors must ensure that everyone on the worksite is aware of the presence of all gas and electric facilities and ensure that the locate form is kept at the excavation site until the excavation and backfill are complete.
- The location markings must be maintained and kept visible by the person or contractor doing the excavation. Be careful that site operators do not remove the line location markings.

In addition to contacting Manitoba Hydro “Call before you dig” be sure to contact Clickbeforeyoudigmb.com as well as any other underground services that may be in the area.

This guideline applies to the crossing of Manitoba Hydro electrical conductors and natural gas pipelines only. When Manitoba Hydro fibre optic cables are present contractors will be referred by the Manitoba Hydro Facilities Locator to the Manitoba Hydro communications department for more information.

Manitoba Hydro only locates facilities that it owns and has no knowledge of or responsibility for privately owned facilities.

Electric conductors or gas pipes installed past the meter are owned privately by the property owner, and at times are installed below ground before it enters the building. Outbuildings that are heated or have electric power, wells, septic systems, pumps, pools and hot tubs are examples where privately owned buried facilities may exist.

This booklet has been prepared by Manitoba Hydro for Manitoba Hydro staff, contractors and homeowners involved with excavation and is available at www.hydro.mb.ca/callbeforeyoudig. Information on excavation and safety watch is included to inform excavators about basic requirements for excavation in the vicinity of buried electric power lines and gas pipelines. Unless otherwise indicated, gas pipelines and underground power cables will be called “lines”.

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WHY YOU SHOULD PLAN AHEAD

By calling before you dig, you prevent damage and save the costs of unnecessary repairs. Most important, the call will help prevent the loss of life, injury, environmental pollution, equipment damage, product losses and service outages.

It is YOUR responsibility to contact all owners of buried underground services.

PLANNING LARGE PROJECTS

Determining the location of existing Manitoba Hydro Underground Structures within the work area should be one of the first priorities of any work. Knowing the location of all utilities infrastructure allows the third party to plan work proactively, mitigating the need for costly design changes or delays during construction.

Gas

Manitoba Hydro requests that drawings be submitted for review for all projects involving ground disturbance. Drawings shall be submitted to: gasdesign@hydro.mb.ca.

Drawings will be reviewed by Manitoba Hydro at no cost and a letter providing details of any work restrictions, specific requirements or costs will be provided to the contractor.

Drawings should be submitted a minimum of 4 weeks before the start of any excavation work. Drawings shall include the details of the proposed work and include any gas or electrical line in the work area.

Electric

Contact Manitoba Hydro in Winnipeg at (204) 480-5900 or outside Winnipeg at 1-888-MBHYDRO (1-888-624-9376)

You will be referred to the local district office for further instruction.

REGULATIONS

There are several federal and provincial agencies overseeing the operation of and around natural gas pipelines and electric cables. The following regulations and safe practice guides specify requirements for both the contractor and the utility:

- Manitoba Gas Pipeline Act, Regulation 140/92 – The legal definition of an excavation, outlines Excavator and Utility responsibilities.
- National Energy Board Pipeline Crossing Regulations:
Part I SOR/88-528;
Part II SOR/89-529 plus amendments;

For more details, check Excavations and Construction New Pipelines National Energy Board, January 2000

- Workplace Safety and Health Act W210 and Regulations #217/2006, Part 26.
- Manitoba Workplace Safety & Health Regulation Part 26 – Excavations and Tunnels – Describes legal responsibilities in regards to excavating safely.
- Guideline for Excavation Work, Manitoba Workplace Safety & Health Division
- CSA Z247 Damage Prevention Standard

Copies of these regulations and safe practice guidelines are available from Manitoba Hydro or the appropriate government agency.

DEFINITIONS

Daylighting – A term used to describe the uncovering and exposing of underground utilities to daylight without the use of mechanical excavation.

Excavation – includes digging, boring, pushing, ploughing, trenching, grading, post installation and breaking and displacement of soil or other material below the existing level of the ground that will disturb more than the top 150 mm (6 inches) of the ground.

High Pressure gas line – A natural gas line that operates in excess of 700 KPa (100psi).

Hydrovac – A truck or trailer that injects pressurized water from an onboard reservoir tank into the ground through a handheld wand. As the soil cover is liquefied, the resulting slurry is simultaneously extracted by a powerful vacuum and stored in an onboard debris tank for later disposal.

Large diameter pipeline – A natural gas pipeline that is 168.3 mm (6 inches) in diameter or larger, regardless of operating pressure.

Safety Watcher – A person designated by Manitoba Hydro to ensure that workers are not put at risk as a result of special hazards on the work site.

Sonde – A transmitter behind the bore head which registers angle, rotation, direction and temperature data.

Tolerance Zone – The space in which a line or facility is located, and in which special care is to be taken.

White lining – Designating the route and/or work area of the excavation using white paint, stakes and/or flags to outline the work area prior to the locator arriving on the site.

EXCAVATOR PRE-MARKING

Pre-marking your proposed work site allows excavators to accurately communicate to Manitoba Hydro's facility locators where the excavation is to occur. This may be accomplished either electronically or by white lining.

For excavator pre-marking, call Manitoba Hydro for a facilities locate at 204-480-1212 or outside Winnipeg 1-888-MBHYDRO (1-888-624-9376) (Monday to Friday – 7:00 a.m. to 11:30 p.m.; Saturday – 8:00 a.m. to 4:00 p.m.)

Communicate to Manitoba Hydro where the excavation is to occur and:

- Provide a map of the excavation area via email or
- Pre-mark the excavation area by white lining

In either scenario you will be issued a reference number and notified of the day the locator will be on site.

When a project is too large for or not conducive to pre-marking, face-to-face meetings between Manitoba Hydro's facility locator and the excavators will be arranged at the proposed work site.

Electronic

In the subject line of the email that you send to Manitoba Hydro, note the reference number that you were provided as well as the area/town and address of the excavation site. Attach a legible map that clearly identifies your work area. For the City of Winnipeg send maps to Excavatorpre-marking@hydro.mb.ca. For rural areas, please contact the designated district office for the proper email address. (not available in all areas)

White Line

The excavator designates the route and/or area of the excavation using white paint, stakes and/or flags to outline the work area prior to the locator arriving on the site.

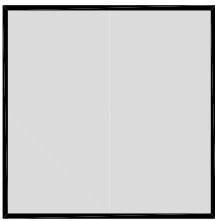
White paint, white stakes or white flags with the excavator's company identifier on them are permissible methods of marking.

When using stakes or flags to mark the excavation work area, do not drive them into the ground deeper than 150 mm (6 inches). Any activity which disturbs more than 150 mm (6 inches) must have the facilities located.

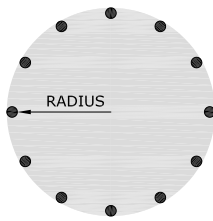
Guidelines for excavation marking

The following marking illustrations are examples of how excavators may choose to mark their area of proposed excavation. The use of white marking products (e.g. paint, flags, stakes, or a combination of these) may be used to identify the excavation site.

SINGLE POINT EXCAVATION MARKINGS

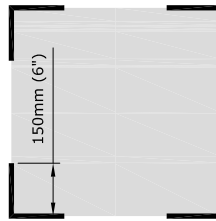


FULL LINE

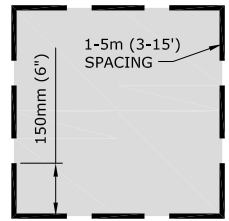


STAKE IN CENTRE WITH
COMPANY NAME & RADIUS
OF CIRCLE

RADIUS OR ARC



FOUR CORNERS



DASH LINE

Mark in white paint the proposed area of excavation through the use of a continuous line, dots marking the radius or arcs, dashes marking the four corners of the project, or dashes outlining the excavation project. Limit the size of each dash to approximately 150 – 300 mm (6-12 inches) in length and 20 mm (3/4 inch) in width with interval spacing approximately 1 – 5 metres (3-16 feet) apart. The maximum

separation of excavation marks is to be reduced to a length that can be reasonably seen by the operator's locators when the terrain or excavation site conditions warrant it. Dots of approximately 20 mm (3/4 inch) diameter are typically used to define arcs or radii and may be placed at closer intervals in lieu of dashes.

If an excavation is contained within a 5 metre (16 feet) maximum radius then it can be marked with a single white stake at the centre of the excavation. The stake must clearly state the company identifier and the radius of the excavation in black lettering. This information must be conveyed to Manitoba Hydro.

After the area is Pre-Marked

On the appointed date, the locator will identify the Manitoba Hydro facilities that are located in the designated work area. They will document it using a sketch or map attached to the Electric and/or Natural Gas Facilities Locate Form.

When the locator has completed locating the facilities, they will advise the excavator of completion and if there is a conflict. The locate request sheet will be available at the designated district office the next working day. The excavator must pick up and sign the facilities locate form.

The Manitoba Gas Pipeline Act, Regulation #140/92 and the Workplace Safety and Health Act, regulations #217/2006, part 26.6 require that a valid utilities locate advise form be on the work site at all times until the project is complete.

If the excavator fails to sign and pick up the facilities locate form at the district and excavates without the facilities locate form on site, the locate is not valid. The excavator could face consequences which may include fines and/or sanctions by Manitoba Workplace Safety and Health and Manitoba Hydro.

APWA UNIFORM COLOUR CODE

Underground utility marking



WHITE – Proposed Excavation



PINK – Temporary Survey Markings



RED – Electric Power Lines, Cables, Conduit and Lighting Cables



YELLOW – Gas, Oil, Petroleum, or Gaseous Materials



ORANGE – Communication, Alarm or Signal Lines, Cables or Conduit



BLUE – Potable Water



PURPLE – Reclaimed Water, Irrigation and Slurry Lines



GREEN – Sewer and Drain Lines

GUIDELINES FOR EXCAVATION NEAR ELECTRICAL AND NATURAL GAS LINES

Hand Digging to Expose Lines

Mechanical excavation cannot be used within 1 metre (39 inches) of an electrical or gas line until the line is physically exposed by hand. Hand exposing means exposing a buried facility, whose location has been marked by Manitoba Hydro, using non-powered tools such as a Spade or shovel (hand augers are not acceptable). A water pressure/vacuum system (hydrovac) is an acceptable alternative.

There are several things to remember when hand exposing:

- No one should ever jump on or use their entire body weight on a shovel when digging.
- Use a prying (rather than striking) motion to loosen hard dirt.
- Never probe for the facility using a sharp pointed tool such as a pick axe or pointed bar.
- Dig on an angle if possible, such that any contact with the facility is a glancing blow rather than a direct hit.

Once the line is visible, mechanical excavation equipment can be used in accordance with the guidelines for mechanical excavation.

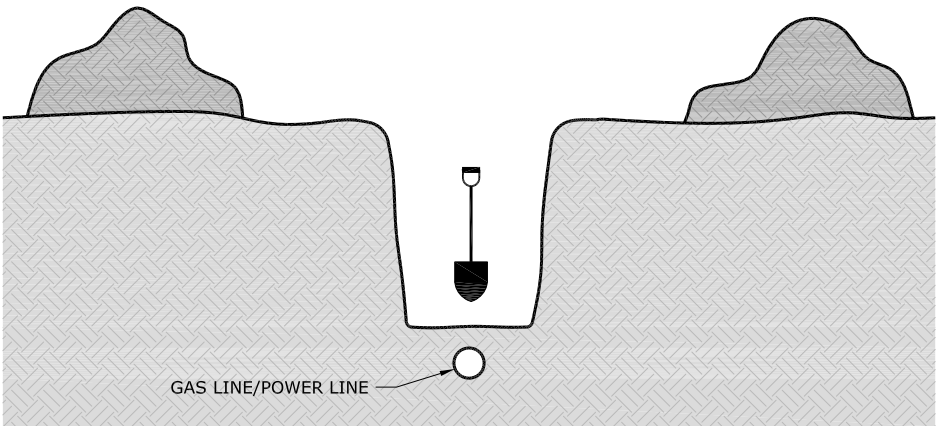
Water Pressure/Vacuum System (Hydrovac)

An alternative to exposing cables by hand digging is to use a water pressure/vacuum system capable of exposing Manitoba Hydro facilities without damage.

Only oscillating head type nozzles are to be used for the water wand. When excavating within 1 metre of a marked line the maximum setting of 38°C (100°F) water temperature and 10,342 Kpa (1,500 psi) must not be exceeded. The end of the vacuum tube shall be neoprene or equivalent. Expose the buried line by using a sweeping motion only, perpendicular to the locate markings, until the line is sighted. **IMPORTANT: After sighting, the line shall not be contacted by spray or vacuum to avoid damage to wraps and coatings.**

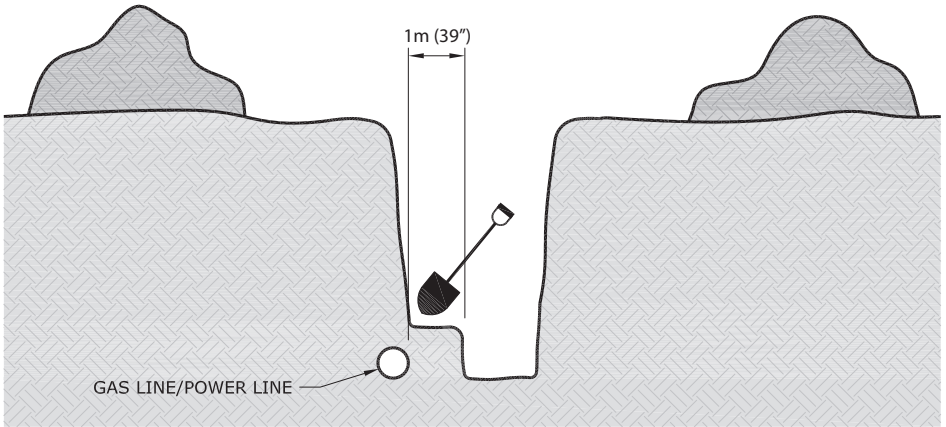
Some acceptable excavation methods:

a) Dig Vertically



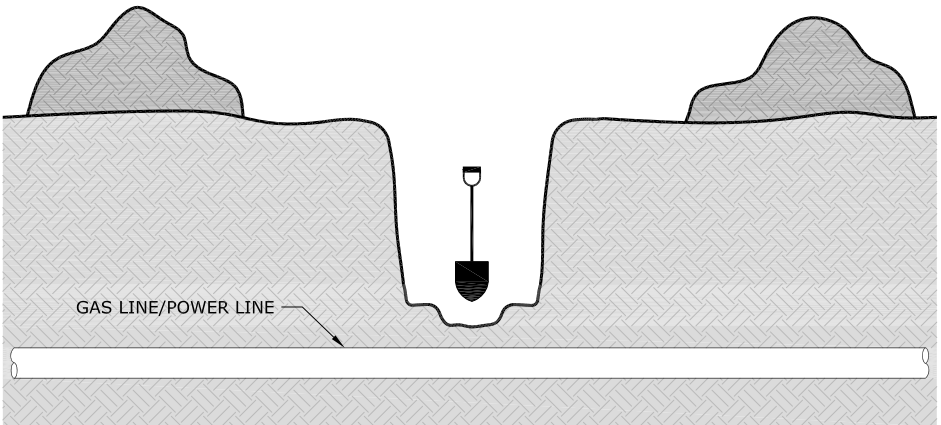
Dig a hole with a shovel directly above the line location until the line is exposed. Take care not to damage the line or coating. Mechanical excavation equipment **MUST NOT** be used to widen or deepen the hole before exposing the line.

b) Dig Laterally



Dig a trench or bell hole 1 metre (39 inches) from the line location, parallel to the line, then hand dig laterally to expose the line.

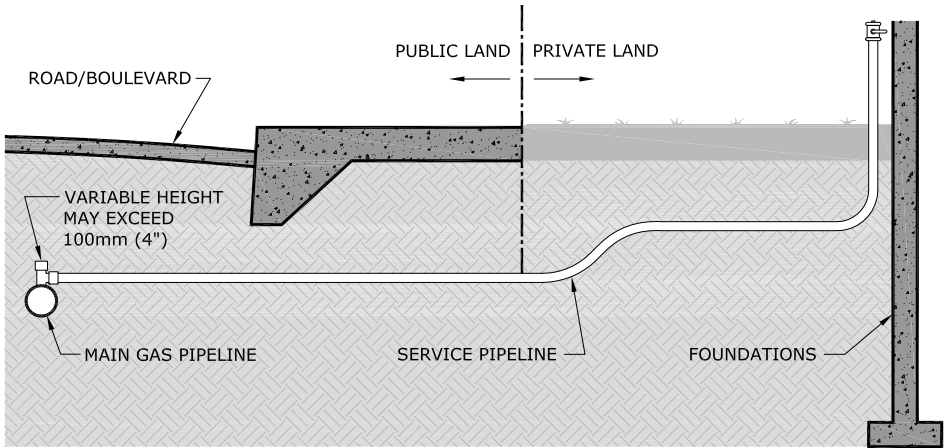
c) Dig Trench and excavate



Dig a trench by hand across the full width of the excavation (perpendicular to or “across from” the line). If the line is not uncovered, mechanically excavate to one half the depth of the trench. Repeat this process until the line is exposed.

Typical Gas Service Installation

(example only does not represent all installations)

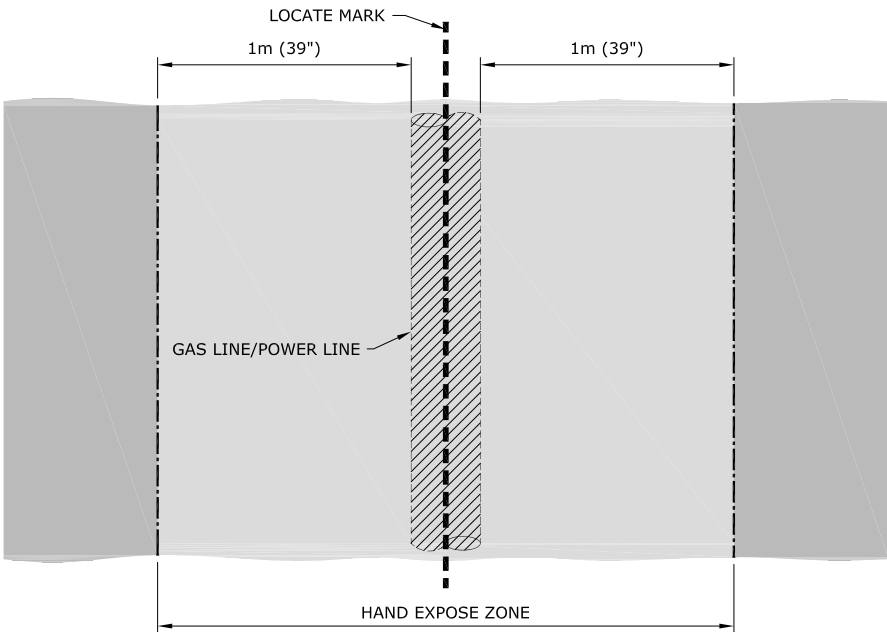


Fittings such as active or abandoned service tees may be present on gas pipelines, exercise care when excavating.

General Approach

- When the line is not visible, mechanical excavation shall not be used within 1 metre (39 inches) of an electrical or gas line.
- When the line is visible, mechanical excavation can be used to within 450 mm (18 inches) for natural gas lines and 600 mm (24 inches) for electrical lines.
- When soil conditions permit, a smooth edge bucket should be used at all times when excavating near gas and electrical lines.
- An observer (excavator staff) located near the line must maintain communication and control of the operator at all times by the use of hand signals and verbal communication. The observer is responsible for maintaining the minimum distance from the pipe. If at any point the observer or operator is unclear of the location or orientation of the line, no digging shall occur until this is confirmed and agreed upon by all on the worksite.

Before line is exposed



Crossing Lines

- When crossing a line, the line is to be exposed for the width of the excavation.
- After the line is daylighted, and provided there is space for excavator access, it is recommended that excavation near the line be performed parallel to the line.

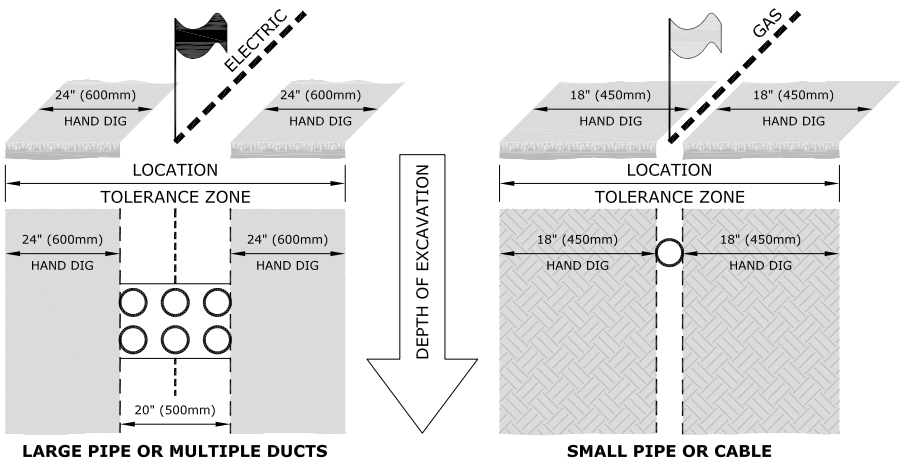
Working Parallel to Lines

- When working parallel to a line it is not necessary to expose the full length of the line to reduce the acceptable mechanical excavation separation. A series of daylight holes along the line is acceptable. The distance between daylight holes will be a maximum of 10 metres (33 feet) or as required to define the location of the line. Daylight holes must be large enough to expose the full width of the line or lines.
- After daylighting and previewing of the line, marks shall be placed a minimum of 450 mm (18 inches) from the outside of the line at each daylight hole for gas and 600 mm (24 inches)

for electrical lines. This tolerance zone should be marked along the entire length of the work area to ensure that the operator maintains proper alignment with the line. With the line daylighted and the tolerance zone marked, it is acceptable to use mechanical excavation on the outside of the marked line.

- If at any point the line becomes obscured, it shall be remarked immediately. The observer is responsible for maintaining the minimum distance from the pipe by confirming the machine's distance and alignment with the line.
- The operator will orient his machine so their bucket remains more than 450 mm (18 inches) away for gas and 600 mm (24 inches) away for electric, and parallel to the line. They will also preview the work prior to entering their machine and prior to any trenching.

Once line is exposed



Hard Surface Removal

- Mechanical equipment can be used to remove the asphalt or concrete road/sidewalk surface and should only be used to the depth of that surface.
- Avoid starting the pavement break directly over the marked facility.
- Start a few feet away from the marks and attempt to “peel off” the pavement or break it into small chunks for removal.

Line Exposed

When a length of line is exposed consult the utility for proper handling procedures. The line may need to be supported to prevent settling or sagging.

No Relocation

The line shall not be moved or relocated. No operation or work shall be done that would put stress on the line.

Inspect for Damage

Electric Power Lines – If a power cable has been exposed, contact Hydro to inspect the cable for damage.

Gas Pipelines – Thoroughly clean (with water only) and inspect the exposed gas line for damage to the pipe, yellow plastic pipe covering or tracer wire (used on plastic pipe).

Report Contact or Damage – Any contact with or damage to any line or underground cable must be reported immediately to Manitoba Hydro.

Backfilling

Before backfilling, Manitoba Hydro requires an inspection of all exposed power cables and gas lines for damage.

Electric Power Lines – If damage to an electric power line is suspected, contact Manitoba Hydro to inspect the cable for damage.

Gas Pipelines – Thoroughly clean (with water only) and inspect the exposed gas line for damage to the pipe, yellow plastic pipe covering or tracer wire (used on plastic pipe). If damage is found, notify Manitoba Hydro and they will repair minor damage to the pipe coating or tracer wire at no charge.

To prevent settling or stress, the contractor is required to place clean fill under the power or gas line and compact the fill. The backfill material must be free of rocks, sharp objects or other material that could damage the line. If the backfill material is frozen, it should be free of large frozen lumps of soil. The backfill material must be

gradually placed, not dumped, on the line. Alternatively, the line may be hand padded with 300 mm (12 inches) of screened sand or soft fill before backfilling.

If mechanical protection is required, or if the backfill contains rocks or debris, the cable or pipeline must be enclosed in a 150 mm (6 inches) envelope of screened sand.

Access

Manitoba Hydro utility personnel shall have access to the excavation to inspect the underground line at any time during construction.

Project Closeout

When the excavation project has been completed all flags and stakes used to mark gas and electric lines shall be removed from the site.

SAFETY WATCH

Safety Watch is a program where a qualified employee of Manitoba Hydro observes the excavation work in progress and determines actions to be taken by the contractor to prevent injury, property damage or damage to Manitoba Hydro facilities.

Safety Watch personnel work with the excavator to check that:

- the excavation is done safely;
- rules and procedures related to the excavation are followed;
- the plant is located accurately;
- all documentation is accurate and complete;
- Hydrovac guidelines are followed.

Safety Watch personnel shall be recognized as an authority on site with the ability to shut the job down.

When is a Safety Watch required?

Any excavation within 3 metres (10 feet) of a cable or pipeline may require a Safety Watch. The need for a Safety Watch will be assessed during an on-site meeting held between an authorized employee of Manitoba Hydro and the contractor undertaking the work. The decision to provide a Safety Watch will be based on the excavation proposed, the type of cable or pipeline, and the proximity of the excavation to the cable or pipeline.

Why is a Safety Watch done?

Safety Watch service is provided to ensure the safety of customers and their contractors when working in close proximity to either energized electrical or pressurized gas lines. In addition, this protects the integrity of the utility lines minimizing the chance of an outage.

NOTE: Typically, Safety Watch personnel are not provided for low voltage conductors (under 750 volts) or distribution pressure gas mains and services under 168.3 mm (6 inches) diameter. However, Manitoba Hydro staff may assess the situation and choose to provide Safety Watch personnel where conditions warrant.

Who pays for a Safety Watch?

Generally, Safety Watch service is provided at no cost to the homeowner for minor projects. For larger projects, the contractor may be charged at a cost shared rate. Contact the local district office for further information.

How to get a Safety Watch.

When an underground line is located in response to a “Call Before You Dig” call, the Manitoba Hydro employee will indicate whether a Safety Watch is required. A call to Manitoba Hydro is required to arrange for a Safety Watch appointment typically within three business days before any excavation is to occur.

DIRECTIONAL BORING – CONTRACTOR GUIDELINES

As with all ground disturbance activity, the excavator must first obtain a facilities locate from Manitoba Hydro.

The distance measured to Manitoba Hydro electrical conductor or gas pipeline must always be measured from the **outside** diameter or wall of the Manitoba Hydro facility to the outside diameter of the back reamer. The same measuring methodology must be used when paralleling Manitoba Hydro facilities.

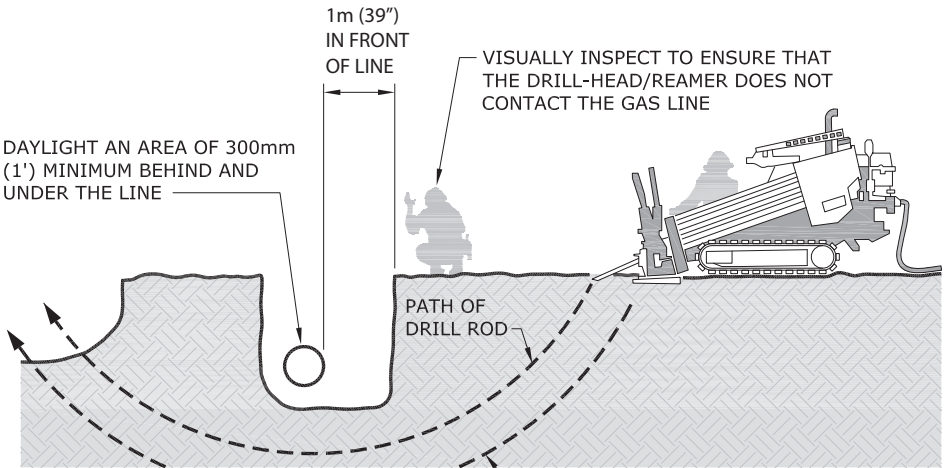
When boring within the tolerance zone of a high pressure or large diameter gas pipeline or any critical distribution gas pipeline or electrical conductor, as identified by Manitoba Hydro's Facilities Locate personnel, qualified natural gas or electric Safety Watch personnel are required.

Electrical Conductors and Gas Pipelines

Prior to directional boring across Manitoba Hydro gas and electrical lines, the buried depth must be confirmed. Acceptable practice to verify line depth is to:

- Expose the line by hand digging, or
- Expose the line by water pressure/vacuum excavation; or
- Locating on the side wall of a trench that has been excavated 1 metre (39 inches) on either side of the surface locates; or
- By use of reference measurements that are known to be accurate, for example: electrical duct lines.
- The drill head and/or back reamer should at all times maintain a minimum of 1 metre (39 inches) clearance from all Manitoba Hydro lines.

Where underground facility congestion does not effectively allow a 1 metre (39 inches) clearance/separation from Manitoba Hydro lines, the contractor may consult with Manitoba Hydro Engineering for site specific direction. Any deviations in clearances/separations must be provided in writing and must be present on-site when the work is being performed.



Observation Hole Required When Crossing Any Manitoba Hydro Facility

The accuracy of the drill head location and depth must be visually verified 1 metre (39 inches) prior to crossing Manitoba Hydro facilities. An observation or discovery hole is required.

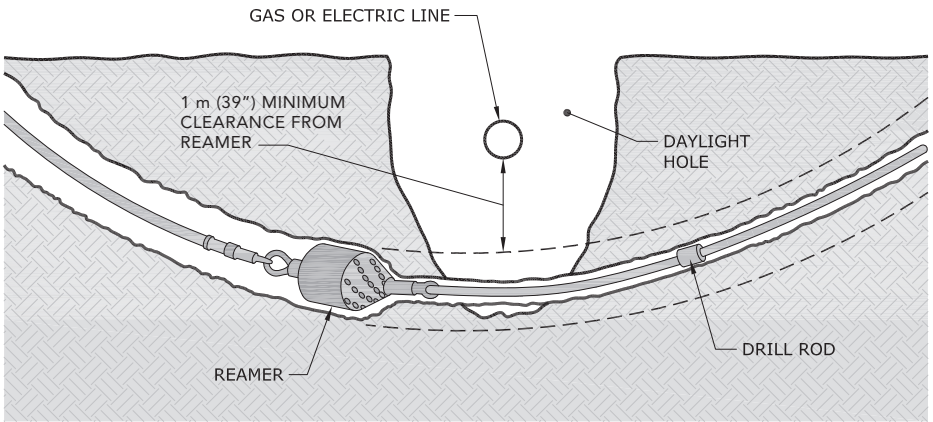
Acceptable practice for opening up the observation hole is using water pressure/vacuum or hand digging.

When boring head and/or back reamers path is crossing above a natural gas pipeline or electrical conductor the boring head and/or back reamer must be visually observed crossing the facility.

When boring head and/or back reamers path is crossing below a gas pipeline or electrical conductor an observer must verify that the bore head and/or reamer does not enter the observation hole.

The minimum dimensions of the observation/discovery hole MUST BE:

- 1 metre (39 inches) in front of the gas pipeline or electrical conductor on the near side of the bore path;
- 300 mm (12 inches) on the far side of the bore path;
- 300 mm (12 inches) on each side of the bore path;
- 300 mm (12 inches) below natural gas pipeline or electrical conductor.



Drilling Parallel to Manitoba Hydro Facilities

Paralleling Electrical Conductors & Natural Gas Pipelines

There must be 1 metre of separation between the outside diameter of the back reamer assembly and the outside diameter of any Manitoba Hydro electrical conductors or natural gas pipelines.

NOTE: When drilling within 1 metre horizontally, the drill must be kept at a depth either deeper or shallower than the existing electrical conductor or natural gas pipeline to maintain 1 metre separation when measured diagonally.

If 1 metre horizontal separation cannot be maintained, the electrical conductor or natural gas pipeline adjacent to the bore path must be exposed. When it is not possible to de-energize electrical conductors, a Safety Hold-Off must be in place and qualified Safety Watch personnel must be on site.

When suspected of drilling within 1 metre of any gas or electrical lines determined by the boring head (sonde) position readings and the proximity to the locate marks, the location of the conductor or pipeline shall be verified; the electrical conductor or natural gas pipeline adjacent to the bore path must be hand exposed or exposed by water pressure/vacuum excavation as determined by Manitoba Hydro. The frequency of exposures depends on the consistency of the alignment of the existing facility.

Manitoba Hydro facilities must be exposed a minimum of once every 10 metres, to confirm alignment. Where there is an alignment change indicated by the locator marks, the Manitoba Hydro facility shall be visually confirmed at each alignment deviation.

UNPLANNED CONTACT WITH ELECTRIC OR NATURAL GAS LINES

This procedure guideline applies to people who come in contact with or simply expose a buried utility line while excavating.

Anyone who comes in contact with buried utility lines should contact the utility owner immediately. Although there may be no apparent external damage, the impact of striking a line can cause internal structural damage that can only be determined and repaired by qualified utility personnel. Generally, we do not charge for this inspection and coating repair.

Abrasions

Even if contact does not cause the utility line to stop working, a nick or cut to the outer, protective sheath of the utility line can allow ground water, laden with salts and other caustic substances, to corrode the line. Abrasions may compromise the sidewall strength of a plastic or aluminum gas line.

Aerial

Cables suspended along utility poles can easily be damaged if struck by a vehicle or a mechanical implement like a hydraulic lift. Cable clamps and other attachments can be pulled apart and component housings may hide damage to the electronic equipment inside.

Stop Work

Operations at the site shall stop immediately. If any equipment is snared in the utility lines, it should be left in place. Trying to extract, flex or manipulate the line can compound the damage.

Call It In

The person involved in the incident should call Manitoba Hydro immediately and report the location of the hit. The exact address, or street intersection, along with what type of contact occurred, will help the utility respond in an appropriate manner.

CALL BEFORE YOU DIG

WINNIPEG

Call Before You Dig (204) 480-1212

Emergency (204) 480-5900

OUTSIDE WINNIPEG 1-888-MBHYDRO

1-888-624-9376

Please remember to contact
Clickbeforeyoudigmb.com
as well as any other underground services
that may be in your area.

For more information www.hydro.mb.ca

