Appendix E – Manitoba Hydro Safe Excavation & Safety Watch Guidelines, Construction Parameters Letter, Gas As-Builts

Safe Excavation & Safety Watch Guidelines

For your SAFETY

ClickBeforeYouDigMB.com

Manitoba Hydro

Or call 1-800-940-3447

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IMPORTANT: ***No excavation shall take place prior to receiving Manitoba Hydro's "Electric and/or Natural Gas Facilities Locate form".***

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 entering 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 hydro.mb.ca. 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".

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 204-480-5900 or 1-888-624-9376. 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.

Each ground disturbance is unique and this guide's purpose is to help you determine whether you must obtain a facilities locate, how to obtain it and proper excavation guidelines which must be followed when excavating around Manitoba Hydro facilities.

- Once the lines are marked, you will be provided with a Manitoba Hydro "Electric and/or Natural Gas Facilities Locate form" with specific instructions. You must obtain this form prior to excavation.
- If work has not started within 14 calendar days of receiving the locate from Manitoba Hydro, you must contact ClickBeforeYouDigMB.com to have the lines re-marked and receive an updated 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 Facilities Locate form is kept at the excavation site until the excavation and backfill are complete.
- The location markings must be tracked, maintained and kept visible during the excavation process.

In addition to contacting ClickBeforeYouDigMB.com be sure to contact any other underground services that may be in the area.

This guideline applies to all excavation types within the vicinity of Manitoba Hydro electrical conductors and natural gas pipelines only. When Manitoba Hydro fibre optic cables are identified within the work area, Manitoba Hydro personnel will identify on the Manitoba Hydro "Electric and/or Natural Gas Facilities Locate form". The contractor must contact Manitoba Hydro's Communications Department for further instructions prior to excavating.

The first step to a safe excavation starts with contacting ClickBeforeYouDigMB.com to arrange for the underground utility lines to be located. Manitoba Hydro will notify you within three business days the date which personnel will arrive to locate Manitoba Hydro's plant for the work area that's been identified.

WHY YOU SHOULD PLAN AHEAD

When you contact ClickBeforeYouDigMB.com prior to excavating, we can identify buried lines so you can dig safely. This prevents injury or death, costly repairs, equipment damage, service outages, and environmental pollution.

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 project information for all activities involving ground disturbance be submitted for review. Instructions for submitting construction drawings and project information are available on our natural gas project review application web page. Plans submitted on this web page 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. Submitted construction drawings must include details of the proposed work, as well as all existing gas and electrical lines in the project 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 Customer Service Centre 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:

Provincial

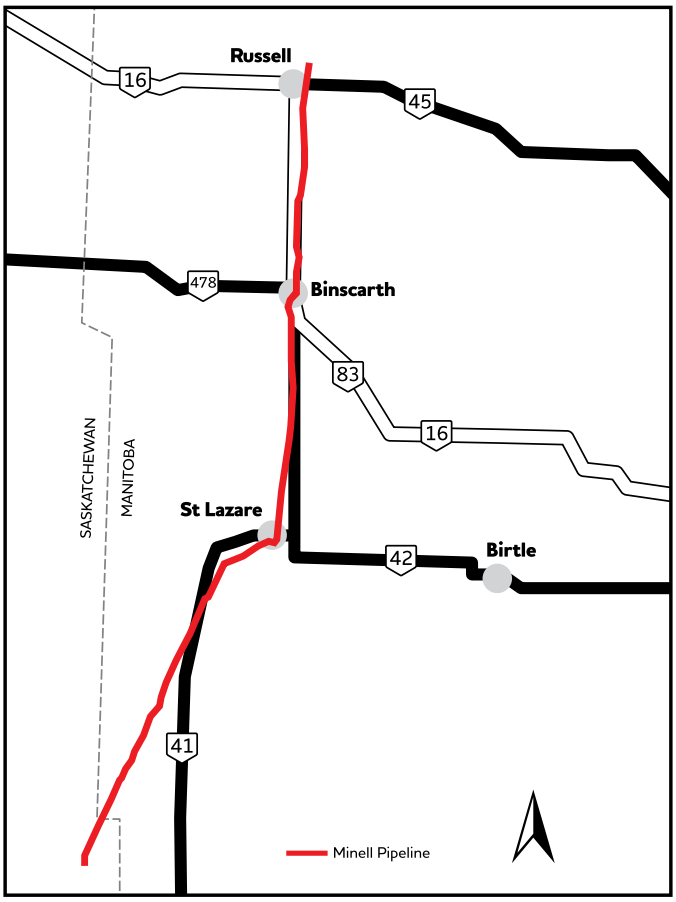
- Manitoba Gas Pipeline Act, Regulation 140/92 – Provides the legal definition of an excavation and outlines Excavator and Utility responsibilities.
- Manitoba Workplace Safety and Health Act and Regulation M.R. 217/2006 - Part 26, Excavations and Tunnels – Describes legal responsibilities in regards to excavating safely.
- Guideline for Excavation Work, Manitoba Workplace Safety & Health Division.

Federal

- Canadian Energy Regulator Pipeline Onshore Pipeline Regulations SOR/99-294
- Canadian Energy Regulator Pipeline Damage Prevention Regulations: Authorizations, SOR/2016-124;
- Canadian Energy Regulator Pipeline Damage Prevention Regulations: Obligations of Pipeline Companies, SOR/2016-133
- Canadian Energy Regulator – Pipeline Damage Prevention; Ground Disturbance, Construction and Vehicle Crossings (Guideline)
- Canadian Energy Regulator – Landowner Guide
- CSA Z247 Damage Prevention Standard.

MINELL PIPELINE

The Minell pipeline starts near Moosomin, SK, travels 4 km to the Saskatchewan–Manitoba border, and continues up to Russell, MB. Federally regulated, it has a 30-metre prescribed area outside of the right-of-way (ROW) that restricts some activities. This specific area starts from the pipeline's center and expands 30 metres on each side.



You must receive consent from Manitoba Hydro before you start any construction or excavation work on or around the Minell pipeline (for example, installing field drainage, stump removal).

Please visit our natural gas project review application web page if you are conducting any excavation work around the Minell pipeline.

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).

Hydro-vac/Air-vac – A truck or trailer used for excavation that injects pressurized water/air from an onboard reservoir tank into the ground through a handheld wand. As the soil cover is liquefied/ granulated, the resulting byproduct is simultaneously extracted by a powerful vacuum and stored in an onboard tank for 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 can be accomplished electronically through ClickBeforeYouDigMB.com along with incorporating "white lining" into the process.

- Prior to excavating; contact ClickBeforeYouDigMB.com to submit electronically a detailed excavation area utilizing the mapping and drawing features provided; along with the option of including additional attachments or,
- Call 1-800-940-3447 to communicate where the excavation is to occur and pre-mark the excavation area by "white lining".

In either scenario you will be issued a reference number from ClickBeforeYouDigMB.com which will be followed by an email from Manitoba Hydro identifying the date we will be on site.

IMPORTANT: *When a project is too large for or not conducive to pre-marking, additional information may be requested by Manitoba Hydro to ensure the excavation area is captured. Face-to-face meetings between Manitoba Hydro's facility locator and the excavators may also be arranged at the proposed work site.*

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.

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

IMPORTANT: *Manitoba Hydro will not provide locates outside the excavation area identified through the ClickBeforeYouDigMB.com process. Please be detailed in your submissions to minimize any delays.*

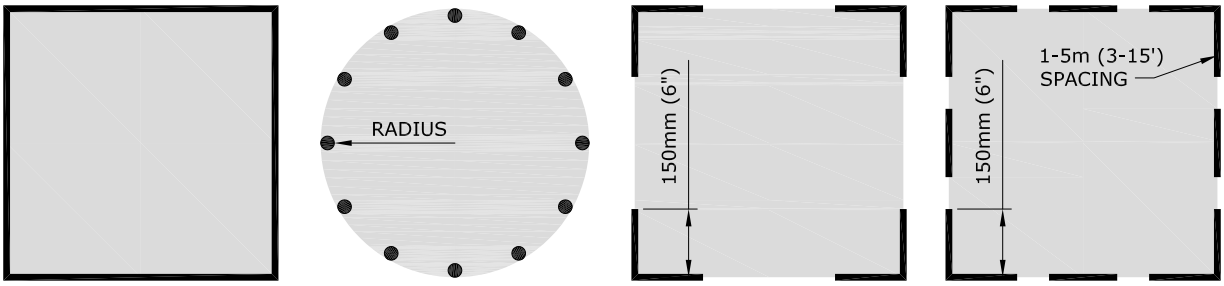
Guidelines for Excavation Marking

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.

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. The recommended size of each dash is approximately

150–300 mm in length and 20 mm in width with interval spacing approximately 1–5 metres 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 diameter are typically used to define arcs or radii and may be placed at closer intervals in lieu of dashes.

SINGLE POINT EXCAVATION MARKINGS



If an excavation is contained within a 5 metre 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.

IMPORTANT: *In winter, please mark in black paint when snow conditions warrant.*

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 and provide an "Electric and/or Natural Gas Facilities Locate form" electronically (email) or on site if requested. Please note: customer must be on site if requesting paper copy of locate form.

A detailed map identifying Manitoba Hydro's owned plant and the excavation area is also a part of every Manitoba Hydro "Electric and/or Natural Gas Facilities Locate form". The map attached to the information package must match the paint/flag/stake markings presented on site including the excavation area. If there are any deviations between the map provided and the excavation area / markings on site, Manitoba Hydro must be contacted for further direction prior to excavating.

When the locator has completed locating the facilities, clear direction will be provided within Manitoba Hydro's "Electric and/or Natural Gas Facilities Locate form" on how to address any conflicts there may be within the excavation area. The "Electric and/or Natural Gas Facilities Locate form" must also be on site and available at all times until the project has been complete (including backfill) as per:

- The Manitoba Gas Pipeline Act, Regulation 140/92
- Workplace Safety and Health Act, regulations M.R.217/2006, part 26.6
- Canadian Energy Regulator Onshore Pipeline Regulations SOR/99-294

If an excavation takes place without a current locate form on site, the locate is considered "not valid". Excavating prior to a locate being available will result in 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 of an electrical or gas line until the line has been 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)**. An alternative to exposing cables by hand digging is to use a Hydro-vac/Air-vac system capable of exposing Manitoba Hydro facilities without damage.

There are several things to remember when hand exposing:

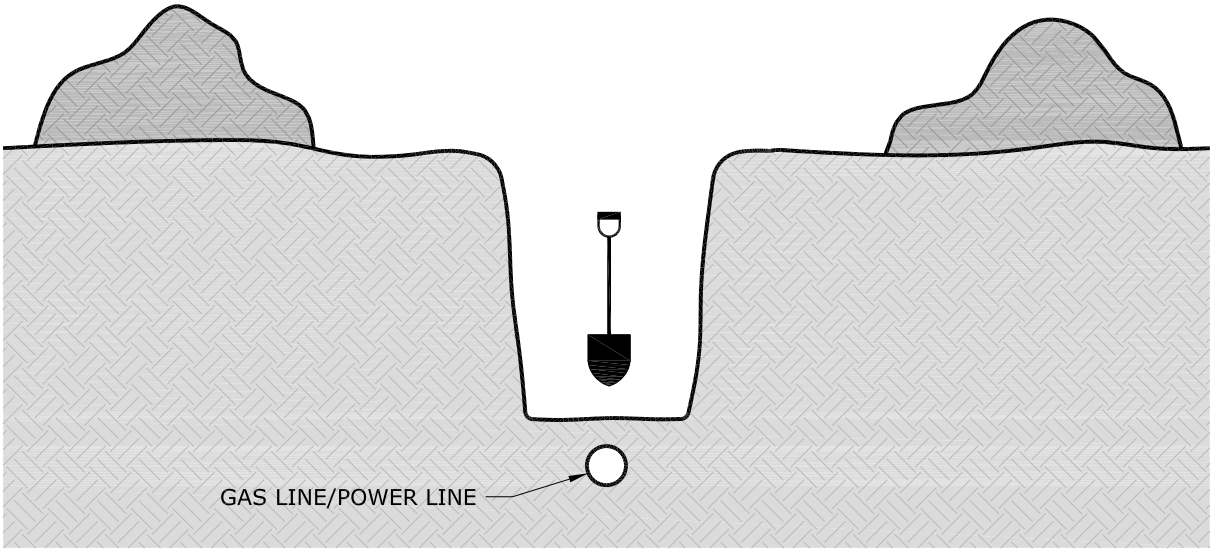
- No one should ever jump on or use their entire body weight on a shovel when digging.
- Use a prying (rather than striking) motion to loosen hard dirt.
- Never probe for the facility using a sharp pointed tool such as a pickaxe or pointed bar.
- Dig on an angle if possible, such that any contact with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

IMPORTANT: *Fittings such as active or abandoned service tees may be present on gas pipelines that protrude from the pressurized gas mains. Abandoned gas and electrical lines may also be in the general area of facility markings requiring care when excavating and crossing utilities.*

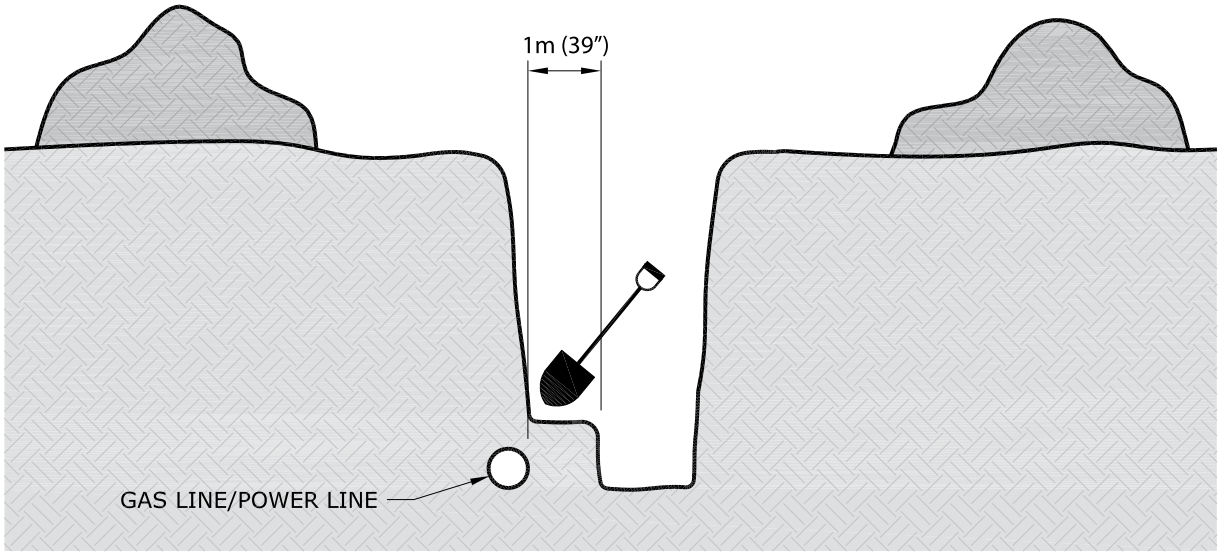
Some acceptable excavation methods:

a) Dig Vertically



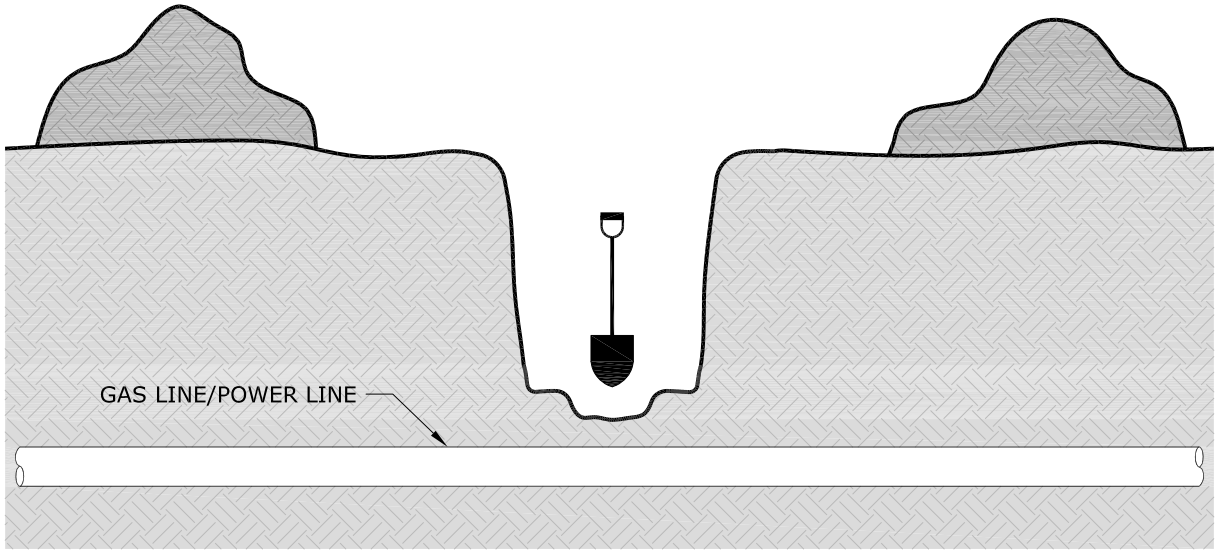
Dig a hole with a shovel directly above the line location until the line is exposed. Take care not to damage the line or coating. Mechanical excavation equipment MUST NOT be used to widen or deepen the hole before exposing the line.

b) Dig Laterally



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

c) Dig Trench Full Width of the Excavation



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.

Hydro-vac (Water Pressure/Vacuum System)

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 pressure (1,500 psi) must not be exceeded. The end of the vacuum tube shall be neoprene or equivalent. To expose the buried line; a sweeping motion should be used, perpendicular to the locate markings, until the line has been sighted.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.

Air-vac (Air Pressure/Vacuum System)

When excavating within one meter of underground cables or pipe a fiberglass air lance with an Air-Tec nozzle is required. The maximum allowable pressure for an air-vac system is 220 psi while ensuring the 'wand' maintains a minimum distance of 2 inches from any electrical or gas lines. The end of the vacuum tube shall be neoprene or equivalent. To expose the buried line; a sweeping motion should be used, perpendicular to the locate markings, until the line has been sighted.

IMPORTANT: *After sighting, the line shall not be contacted by high pressure spray (air/water) or vacuum to avoid damage to wraps and coatings.*

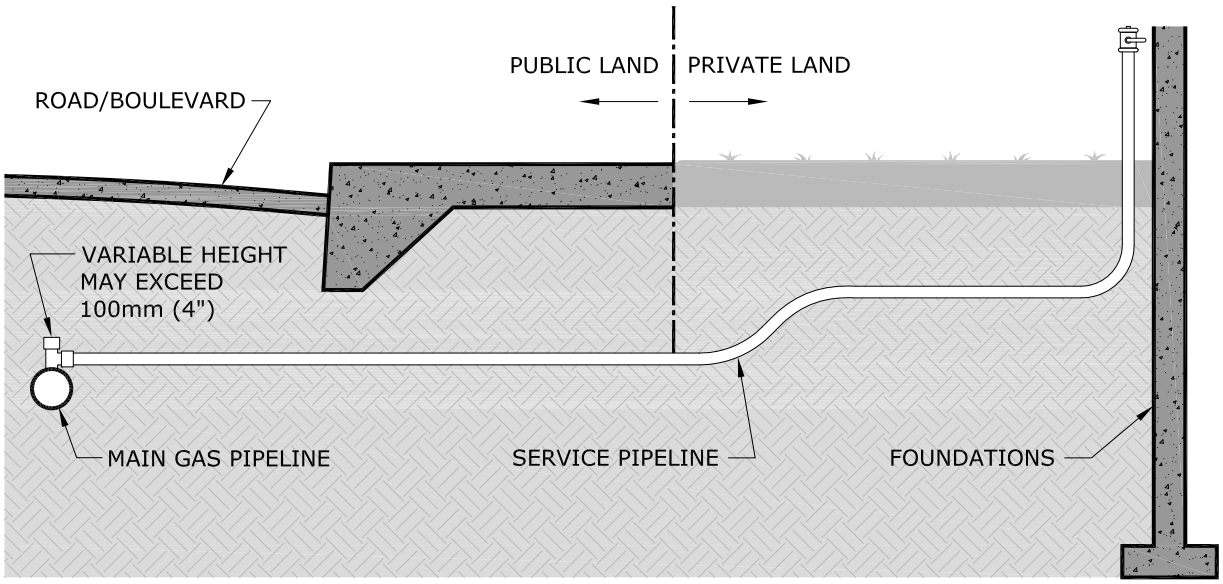
General Approach

- When the line is not visible, mechanical excavation shall not be used within 1 metre of an electrical or gas line.
- When the line is visible, mechanical excavation can be used no closer than 450 mm to natural gas lines and 600 mm to electrical lines.
- When soil conditions permit, a smooth edge bucket is preferred 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.

Typical Gas Service Installation

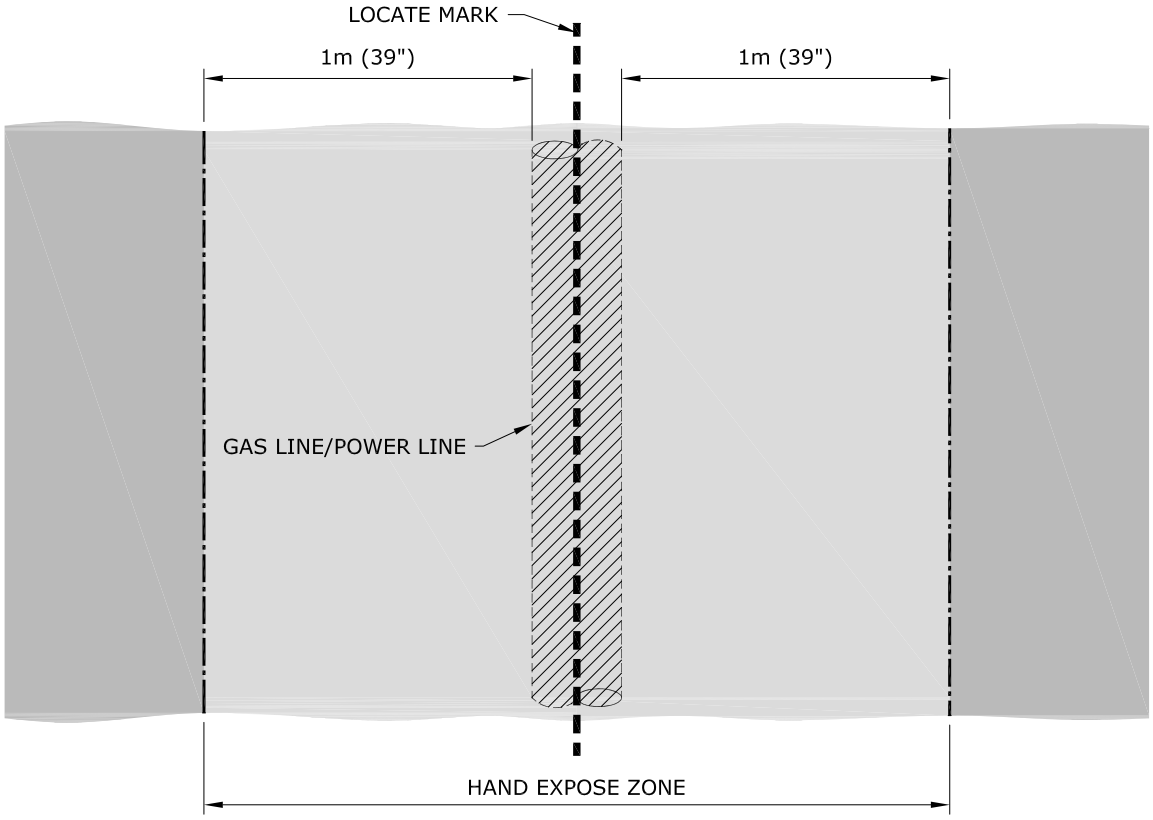
(Example only, does not represent all installations)



IMPORTANT: *Gas pipelines are generally yellow in color; however, there are instances of other colors being used such as black, blue, orange, tan and green as an example. Caution when verifying* must be observed and all pipes and cables excavated must be considered "operational" until verified by a Manitoba Hydro representative.

Daylighting to Expose Line

Before line is exposed



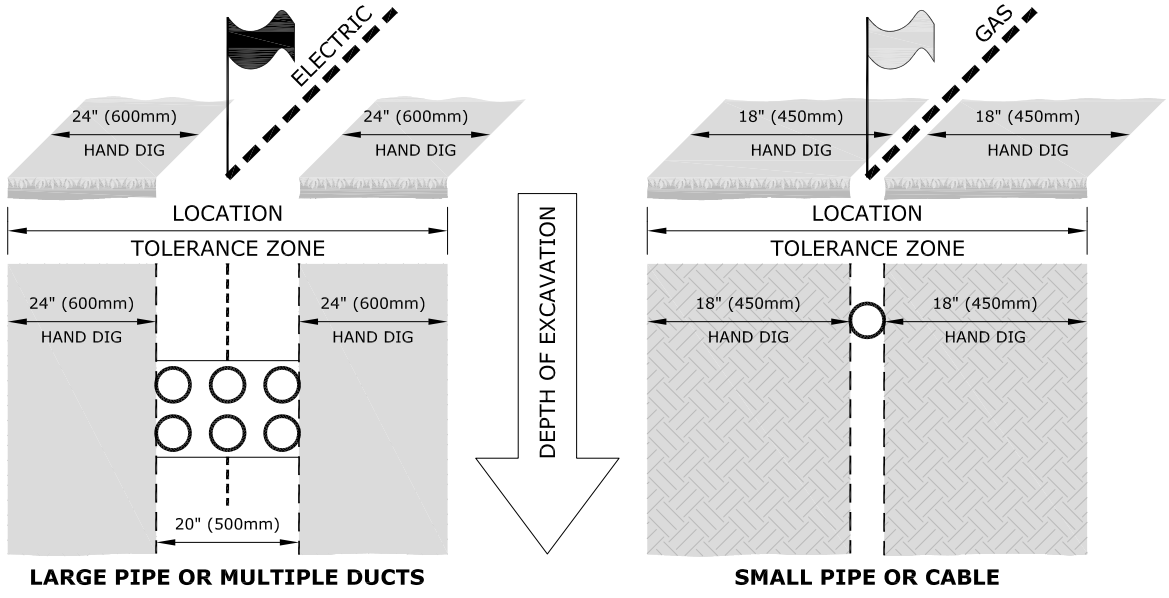
Crossing Lines

- 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 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 from the outside of the line at each daylight hole for gas and 600 mm 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 of the tolerance zone.
- If at any point the line becomes obscured, it shall be re-marked 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 parallel to the line so their bucket remains more than 450 mm away for gas and 600 mm away for electric lines. They must preview the work prior to entering their machine and prior to any trenching.

Once line is exposed



LARGE PIPE OR MULTIPLE DUCTS **SMALL PIPE OR CABLE**

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.

Utility 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

- Visually inspect the line and if you suspect a power cable has been damaged, contact Manitoba Hydro to inspect the cable. Do not contact the cable as it may be energized.

Gas Pipelines

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

Report Contact or Damage

Any contact with or damage to any gas line or underground cable must be reported immediately to Manitoba Hydro.

Backfilling

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 of screened sand or soft fill before backfilling.

If mechanical protection is required, or if the backfill contains rocks, the cable or pipeline must be enclosed in a minimum 150 mm 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 an employee qualified by 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;
- Hydro-vac/Air-vac 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 1 to 3 metres of a cable or pipeline may require a Safety Watch and will be clearly identified if required on the first page of Manitoba Hydro's "Electric and/or Natural Gas Facilities Locate form". The decision to provide a Safety Watch is based on the proposed excavation, type of cable or pipeline, and the proximity of the excavation to the cable or pipeline.

Why is a Safety Watch done?

Safety Watch services are 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 or future issues with the utility.

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 diameter. Manitoba Hydro staff may assess other situations outside the noted Safety Watch guidelines depending on congestion of utilities in the area, essential service feeds (Hospitals) or other conditions that are deemed warranted.*

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. Please contact Manitoba Hydro at 1-888-624-9376 for further information.

How to Schedule a Safety Watch?

When an underground line is located in response to a ClickBeforeYouDigMB.com request, the Manitoba Hydro employee will indicate whether a Safety Watch is required on Manitoba Hydro's "Electric and/or Natural Gas Facilities Locate form". A phone number is provided on the form for the excavator to call to schedule with Manitoba Hydro a Safety Watch appointment.

IMPORTANT: *Manitoba Hydro requires a minimum of three business days' notice for scheduling a Safety Watch. This timeline may be extended depending on utility type and location.*

DIRECTIONAL BORING – CONTRACTOR GUIDELINES

Prior to all ground disturbance activity, the excavator must first obtain a Manitoba Hydro's "Electric and/or Natural Gas Facilities Locate form" by contacting:

ClickBeforeYouDigMB.com

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.

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.

Electrical Conductors and Gas Pipelines

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

- Expose the line by hand digging, or
- Expose the line by Hydro-vac/Air-vac excavation; or
- Locate on the side wall of a trench that has been excavated 1 metre on either side of the surface locates; or
- Use reference measurements that are known to be accurate, for example: electrical duct lines.

Observation Hole Required When Crossing Any Manitoba Hydro Facility

The accuracy of the drill head location and depth must be visually verified 1 metre prior to crossing Manitoba Hydro facilities by use of an observation or discovery hole (as detailed on page 23 & 24). Acceptable practices for excavating an observation/discovery hole shall follow Hydro-Vac, Air-Vac or hand digging practices (described on page 12, 13 & 14).

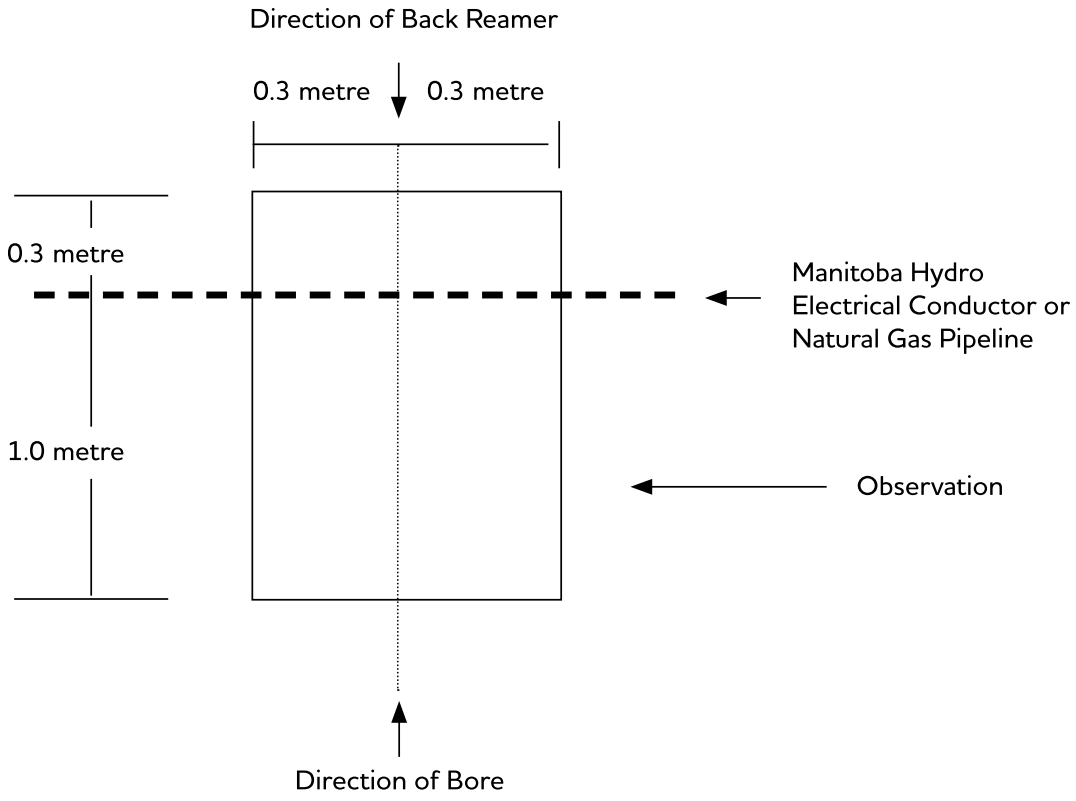
When boring head and/or back reamers path is crossing above a natural gas pipeline or electrical conductor the boring head and/or back reamer must be visually observed crossing the facility.

When the boring head and/or back reamer's 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/safety watcher hole within 1 metre of the line. If the boring head or back reamer path is set to cross within 1 meter below the gas pipeline or electrical conductor, the observation hole must increase in depth to 1 meter; ensuring equipment does not encroach on the tolerance zone.

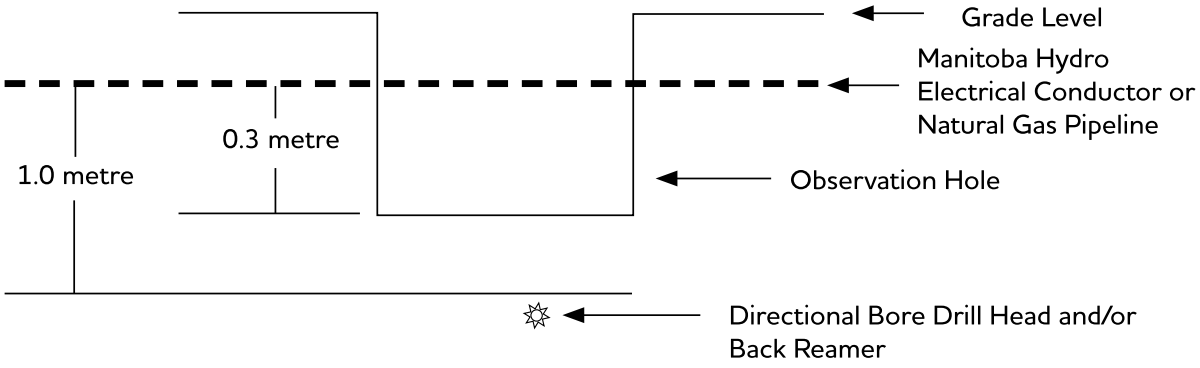
The minimum dimensions of the observation/discovery hole MUST BE:

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

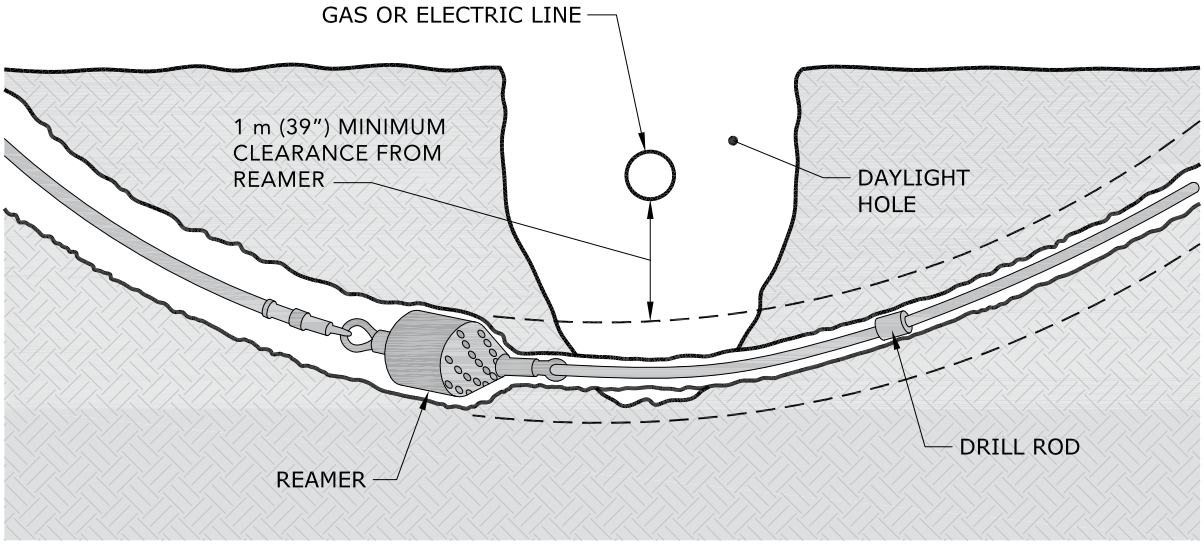
Observation Hole – Plan View



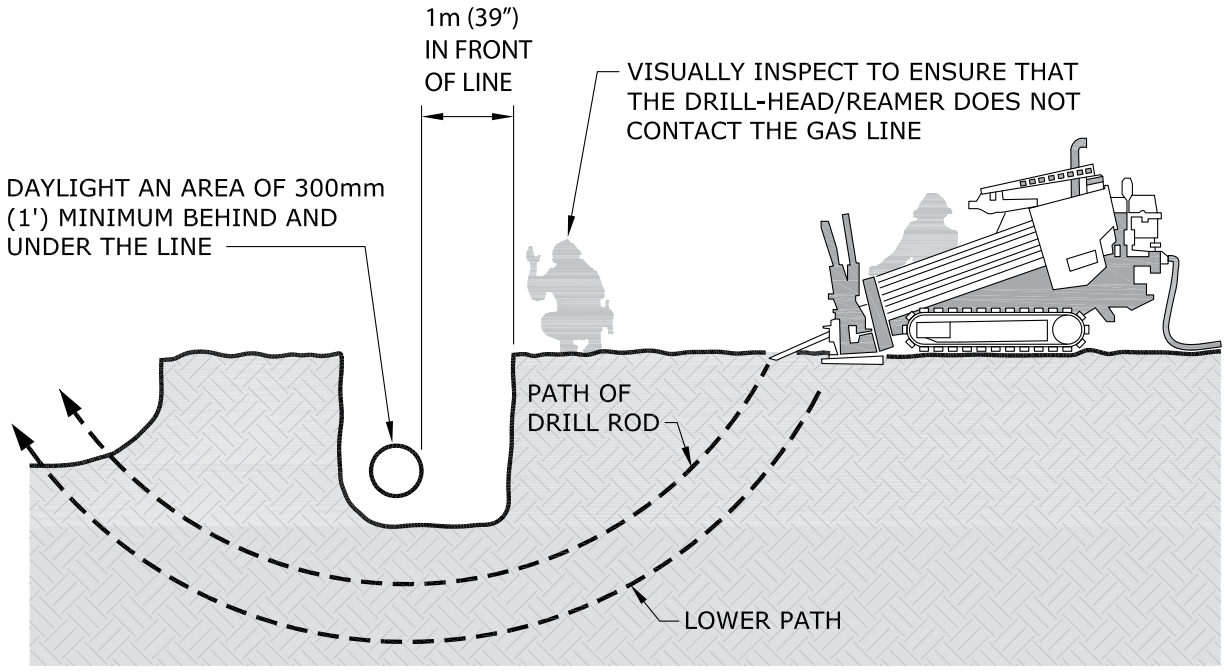
Observation Hole – Profile View



Direction Boring/Reamer 1 meter or Less below Manitoba Hydro Facilities



Direction Boring/Reamer greater than 1 meter below Manitoba Hydro Facilities



Drilling Parallel to Manitoba Hydro Facilities

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.

IMPORTANT: *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 between the boring head (sonde) position readings and the utility locate markings, the location of the lines shall be verified by hand exposing (or Hydro-vac/Air-vac) to determine location of Manitoba Hydro's facilities. The bore head (sonde) must also be verified through daylighting ensuring path does not encroach on tolerance zone.

- The frequency of the exposures depends on the consistency of the alignment of the existing facility.
- Manitoba Hydro facility must be exposed once for each lot, or a minimum of once every 15 metres, whichever is the shorter distance, to confirm alignment.
- Where there is an alignment change indicated by the facility locate marks, the Manitoba Hydro facility shall be visually confirmed at each alignment deviation.

IMPORTANT: *Working parallel to lines guidelines (page 16) must be followed ensuring no mechanical equipment (boring head/back reamer) enters the tolerance zone and daylight holes are large enough to expose the full width of the line or lines.*

UNPLANNED CONTACT WITH ELECTRIC OR NATURAL GAS LINES

This 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 Manitoba Hydro does not charge for this inspection and coating repair; however, gas pipeline must be fully accessible for Manitoba Hydro personnel to 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, steel 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

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. Operations at the site shall stop immediately. Operators should stay in the equipment unless it is not safe (as in the case of a fire) and all others should be kept clear of the equipment as it may have become energized. If you must leave the equipment, jump clear with both feet together so you are not in contact with the equipment and the ground at the same time. Continue to hop or shuffle with your feet close together until you are a safe distance away.

Call It In

The person involved in the incident must call Manitoba Hydro immediately and report the location of the hit. (In Winnipeg at 204-480-5900 or outside of Winnipeg at 1-888-624-9376.)The exact address, or street intersection, along with what type of contact occurred, will help the utility respond in an appropriate manner.

Notes

Available in accessible formats upon request.

ClickBeforeYouDigMB.com®

Or call 1-800-940-3447

In addition to contacting
ClickBeforeYouDigMB.com
be sure to contact other
underground services in the area.

For more information visit
hydro.mb.ca

Manitoba Hydro

Rev. 2021 01

Manitoba Hydro

360 Portage Ave (16) ♦ Winnipeg, Manitoba Canada • R3C 0G8
P: (204) 360-3570 C: (204) 451-7184
E: dfinnbogason@hydro.mb.ca

March 30, 2026

MH Gas File # 2026-0067

Maria Asaulova
Transportation Group
Tetra Tech Canada Inc
400-161 Portage Ave East
Winnipeg, MB R3B 0Y4

Dear Maria Asaulova:

Re: 2026 LOCAL STREET RENEWAL PROGRAM 26-R-03

Manitoba Hydro (Gas) has reviewed the design submitted by Tetra Tech Canada Inc for the 2026 LOCAL STREET RENEWAL PROGRAM 26-R-03. 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. **Natural Gas Record Drawings**
   - During the review it was noted that Manitoba Hydro's natural gas plant is incorrectly represented. Please update your records in accordance with the attached as-built drawings.
   - Note: Services are not shown and must be traced for location.
   - CAUTION: Large diameter gas main present.
   - CAUTION: High pressure gas main present.

2. **Special Concerns**

Small Diameter Distribution

- Upon review, it was noted that proposed sidewalk and road reconstruction occurs over distribution pressure gas mains. During construction, gas mains should not be undermined or exposed past the 3 o'clock and 9 o'clock positions on the cross section of the pipe.
- Please locate any mains within 1.0 m or underneath the proposed sidewalk and road construction and investigate to determine depth of cover in relation to both existing and proposed grades. Note that all locating and soft-digging requirements listed below are to be upheld.
- It has been determined that the existing 60.3 mm steel main may be in conflict with the proposed catch basin installation at STA 0+484.32 on Parker Avenue. Gas Design is coordinating with Tetra Tech and the City of Winnipeg for the relocation of this steel main

to accommodate the proposed works. Please contact David Finnbogason at dfinnbogason@hydro.mb.ca for information regarding this.

406.4 mm HP Gas Main on Parker Avenue

- Upon review, it was noted that the proposed road renewal at Parker Avenue occurs over a high pressure 406.4 mm steel main. A Manitoba Hydro High Pressure Safety Watch may be required for all construction activities within 3.0 m of any high-pressure mains. It was also noted that the road renewal crosses 114.3 mm and 60.3 mm steel and PE distribution pressure mains at multiple locations. All excavations within 1.0 m of any natural gas main must be completed by hand or Hydro-excavation. During construction, gas mains should not be undermined or exposed past the 3 o'clock and 9 o'clock positions on the cross section of the pipe.
- Please locate any mains within 3.0 m or underneath the proposed road/sidewalk reconstruction and investigate by hand or soft-digging to determine depth of cover in relation to both existing and proposed grades. Note that all locating and soft-digging requirements listed below are to be upheld.
- If it is determined that a final total minimum depth of cover of 750 mm (engineering assessment completed) cannot be maintained for the 406.4 mm steel high pressure main, then please contact David Finnbogason at dfinnbogason@hydro.mb.ca to discuss options pertaining to relocations or lowerings as soon as possible. Large diameter main relocations/lowerings would require approximately 6-12 months to complete due to engineering, approvals, and construction.
- Please provide vehicle information to David Finnbogason dfinnbogason@hydro.mb.ca as soon as available for any equipment planned to cross the high pressure main, as an analysis will need to be completed. Vehicles are not permitted to cross unless consent is granted by Manitoba Hydro Gas Design.

3. High Pressure Natural Gas Main

- Proposed road reconstruction crosses over an existing 406.4 mm high pressure natural gas main. A Manitoba Hydro High Pressure Safety Watch is required for all construction activities within 3.0 m of the high-pressure natural gas main.
- Contact "Click before you dig" a minimum of 2 weeks prior to any work commencing within 3.0 m of the high-pressure natural gas main to arrange for the pipeline to be properly located and marked by Manitoba Hydro personnel at **ClickBeforeYouDigMB.com or Call 1-800-940-3447.** Upon receiving clearances, the excavator will be provided with the phone number of the appropriate District in order to coordinate a Manitoba Hydro High Pressure Safety Watch.
- Prior to construction at this location, please expose the main by hand or hydro-excavation every 25 m in order to confirm elevation of the pipe. The elevations & corresponding locations shall be forwarded back to David Finnbogason at dfinnbogason@hydro.mb.ca.
- Once the pipeline depth and location has been confirmed by hand or hydro-excavation, the safety watcher may authorize the limited use of mechanical

excavation. A smooth-edged bucket must be used for excavations within 3.0 m of the main.

- A minimum 750 mm of cover shall be maintained in all areas where highway rated equipment will be crossing, traveling or compacting over the 406.4 mm gas main. Vibratory compaction cannot be used over or within 3.0 m of a high pressure main.
- If highway rated equipment must cross, travel, or compact over the gas main with less than the minimum depth of cover, or if equipment heavier than highway rated load cross the main then submit construction/crossing plans to David Finnbogason at dfinnbogason@hydro.mb.ca. Earth bridging or steel plates must be placed over the main and extend a minimum of 1.0 m on either side at each crossing location when crossing with less than minimum cover.
- When working with less than minimum cover, a minimum 300 mm of granular material shall be bladed into place with tracked equipment offset from the pipeline. Then static compaction equipment would be allowed and built up in layers until minimum cover is achieved.
- Subbase material shall be bladed into place as opposed to being end dumped over the 406.4 gas main in areas with less than the minimum cover.
- Crossings shall be punched, bored, or horizontally directionally drilled (HDD). Open cut or trenched crossings may be authorized under special circumstance but require further review and engineering approval from Manitoba Hydro Gas Design. Pipe jacking across any gas main is not permitted unless approved by Gas Design.
- Directional drills, punches, and bored crossing shall maintain a minimum of 1.0 meters separation between external surfaces of the pipelines or cables and bores and must be drilled beneath the existing Manitoba Hydro pipeline. Crossings above Manitoba Hydro's pipeline are not acceptable.
- For directional drills, punches, and bored crossings, the clearance space around the third party's pipeline or cable must be kept to a minimum and post installation soil settling of the clearance space must not reduce the support or soil compaction of Manitoba Hydro's pipeline above.
- The new water line shall maintain the same elevation and alignment for the width of the crossing, with no bends or changes in elevation.
- The crossing shall be made such that the pipeline or cable crosses Manitoba Hydro's pipeline as close to perpendicular as possible.
- No joints shall be made directly over or under of the Manitoba Hydro pipeline.
- Cathodically protected foreign facilities shall be designed and tested to ensure no adverse interference with the existing pipeline cathodic protection.
- The third party shall soft-dig by hand or hydro-vac a "viewing hole" as per the Manitoba Hydro Safe Excavation and Safety Watch Guidelines to confirm alignment and elevation of drill head during crossing.
- 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.
- The contractor and all site supervisory personnel and equipment operators shall be informed of the risks associated with working adjacent to, and over this pipeline by the Resident Inspector. New site personnel during construction shall be orientated as

to the significance and constraints associated with working over and around a high pressure natural gas main.

- 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.

4. Insufficient Cover

- Absolutely no excavation below the bottom of pavement may occur over the pipeline (regardless of size) until depth of cover is determined and (for the 406.4 HP main), a safety watch is on site.

5. Tree Installation

- A minimum 1.9 m of separation shall be maintained in all areas between the center line of new trees and the 60.3 mm gas mains. Under no circumstances are trees approved to be planted closer.
- The minimum separation may be reduced to 1.0 m if an approved root barrier system is used. For further details on approved products contact David Finnbogason at dfinnbogason@hydro.mb.ca.

6. Tree Removal

- Proposed excavations of trees and roots within 3.0 m of a natural gas main require the roots to be exposed by hand to ensure it does not affect the integrity of the main or the coating on the pipe.

7. Catch Basin / Catch Pit and CB Lead Removal and Installation

- Proposed excavations for the removal and installation of catch basins appear to be within 1.0 m of a gas main in which case will require exposure to be completed by hand or Hydro-excavation. Caution must be used when working in the vicinity of the natural gas mains at these locations.
- Deep utilities shall maintain a minimum horizontal clearance from natural gas mains of 1.25 m when running in parallel.
- A minimum horizontal separation of 300 mm from gas mains and 100 mm from service lines must be maintained for any new underground structure installations such as catch basins and CB leads. If an underground structure must be installed with less than the minimum horizontal separation, an underground rigid foam barrier shall be placed over the main for protection. Submit plans for barrier installation to David Finnbogason at dfinnbogason@hydro.mb.ca.
- Underground structure installations above natural gas infrastructure should be avoided. Contact David Finnbogason at dfinnbogason@hydro.mb.ca if installations above facilities are required.

8. Sidewalk Renewals

- Excavations shall be limited to removal of the existing concrete sidewalk. All further excavations within 1.0 m of any natural gas main or service must be completed by hand or soft dig methods.

9. Asphalt Overlays and Road Reconstruction

- When excavations for concrete works are required within 1.0 m 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.

10. Please add a "Caution – Gas" note to your drawing set wherever gas mains are present

11. Service Relocations (road reconstruction)

- This project may impact services. Services that are to be exposed in the subgrade must be rock wrapped and lowered during construction or replaced prior to construction. Manitoba Hydro will not be able to complete rock wrapping or lowering of any services unless the lowering is minimal (i.e. < 100-150 mm or < 4-6").
- Manitoba Hydro is currently performing lowerings and rock wrapping free of charge to City Of Winnipeg works during normal working hours.
- Under normal circumstances, the amount of time required to mobilize for this work is approximately 2-3 weeks.
- Please contact Curtis Menzul at 204-360-5286 or cmenzul@hydro.mb.ca for any work required on site.

12. General:

- Please note that the requirements of Manitoba Hydro's Safe Excavation and Safety Watch guidelines shall apply. All natural gas pipelines and service lines must be properly located and marked by Manitoba Hydro personnel. This can be arranged by visiting **ClickBeforeYouDigMB.com or call 1-800-940-3447.** Construction operations are not to commence unless these conditions are adhered to.
- All excavations within 1.0 m of any natural gas main must be completed by hand or Hydro-excavation.
- A minimum 600 mm of cover shall be maintained in all areas where highway rated 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 1.0 m of a main.
- A minimum 450 mm of cover shall be maintained in all areas where highway rated equipment will be crossing, traveling or compacting over the gas service lines. Vibratory compaction cannot be used over or within 1.0 m of a service.
- If highway rated equipment must cross, travel, or compact over the gas main with less than the minimum depth of cover, or if equipment heavier than highway rated load cross the main then submit construction/crossing plans to David Finnbogason at dfinnbogason@hydro.mb.ca. Earth bridging or steel plates must be placed over the main and extend a minimum of 1.0 m on either side at each crossing location when crossing with less than minimum cover.
- 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. 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.

If you have any questions or comments, please contact the undersigned.

Regards,

David Finnbogason, P.Eng
Manitoba Hydro - Gas Design
360 Portage Ave (16), Wpg. MB., R3C 0G8
P: (204) 360-3570 C: (204) 451-7184
Email: dfinnbogason@hydro.mb.ca

DF/SR

Cc: Curtis Menzul, Gas Operations MTCE – Sutherland Ave, Manitoba Hydro
Nadine Gosselin, Damage Prevention – Sutherland Ave, Manitoba Hydro
Aldo Garofalo, Gas Operations MTCE – Sutherland Ave, Manitoba Hydro
winnipegsafetywatches@hydro.mb.ca

NOTE :This plot is to be used for general pipe routing information only.
All other data to be confirmed by the Gas Engineering & Construction Dept.

DEREK ST

4.877 wide

60.3 MP
ONTOP OF
406.4 HP
HERE - 3.0m
O/S

HEATHERDALE AV

3.0m[406.4 Stl] Under 60.3 Stl

WLTO 276
WLTO 58894

For R.R. X-ing
See C-1603

For R.R. X-ing
See CR-2589

60.3 PE

WYNNE ST

Wm Sph

3.0m
2.4m
2.4m
0.9m
10.0m
11.0m

0.4m[60.3 Stl]
3.0m[406.4 Stl]
0.4m[60.3 Stl]
0.4m[60.3 Stl]
3.0m[406.4 Stl]

20.117

1150 1144 1142A 1142 1140A 1140 1136 1134 1130 1120A 1120 1118A 1118 1116 1112 1108

1100 1096 1094 1090 1088 1084 1068 1066 1064 1060 1050

60.3 Stl

PARKER AV

406.4 Stl 1030 MOP (HP)

60.3 Stl Follows Over
406.4 Stl 1030 MOP

Wm Sstp

Wm Sstp

406.4 Stl 1030 MOP

22.09

1151 1149 1147 1145 1139 1137 1137A 1135 1135A 1131 1123 1119 1115 1107

1103 1101 1099 1097 1095 1081 1081 A 1079 1063 1061 1059 1057

1.5m

ROCKMAN ST

60.3 Stl

WYNNE ST

2.1m
2.1m
1.5m

1147A 1147 1145A 1145 1135 1129 1125 1121 1119 1113 1111 1107 1101

1057 1045 1041A 1041 1039A 1039 1037 1035 1029 1025 1023A 1023 1021A 1021 1017 1015

2.1m
2.1m

60.3 Stl

60.3 Stl

Wm Sph

ROSEMOUNT AV

1146 1146A 1142 1142A 1138 1138A 1134 1134A 1130 1124 1122 1116 1112 1108 1106 1106A 1104 1104A 1100

20.117

1048 1044 1040 1038 1036 1032 1028 1024 1020 1016

NOTE: Maximum Operating Presure (MOP) is 420 kpa unless otherwise noted.
Outside Diameter (O.D.) of pipe in millimeters unless otherwise noted.

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3 CONCRETE PADS (650X1500X150) ARE PROTECTING THE HP GAS MAIN HERE - 0.35 +/- BURY

0.66 BURY

60.3 AT 0.4 m O/S

0.81 BURY

406.4 HP STARTS TO TAPER TO 3.0m O/S

DANIEL ST

DEREK

HEATHERDALE AV

PARKER AV

ROSEMOUNT AV

4.877 wide

3.0m[60.3 Stl]

4.3m[406.4 Stl]

2.1m

20.117

14.3m

0.6m

57.9m

0.4m[60.3 Stl]

3.0m[406.4 Stl]

Wm Sstp

Wm TOR Unsc

Mu Lnstp

60.3 Stl

406.4 Stl 1030 MOP (HP)

H.P. Take-off Assembly
See DWG C-1348

2.0m

20.3m

3.7m

3.4m

1.8m

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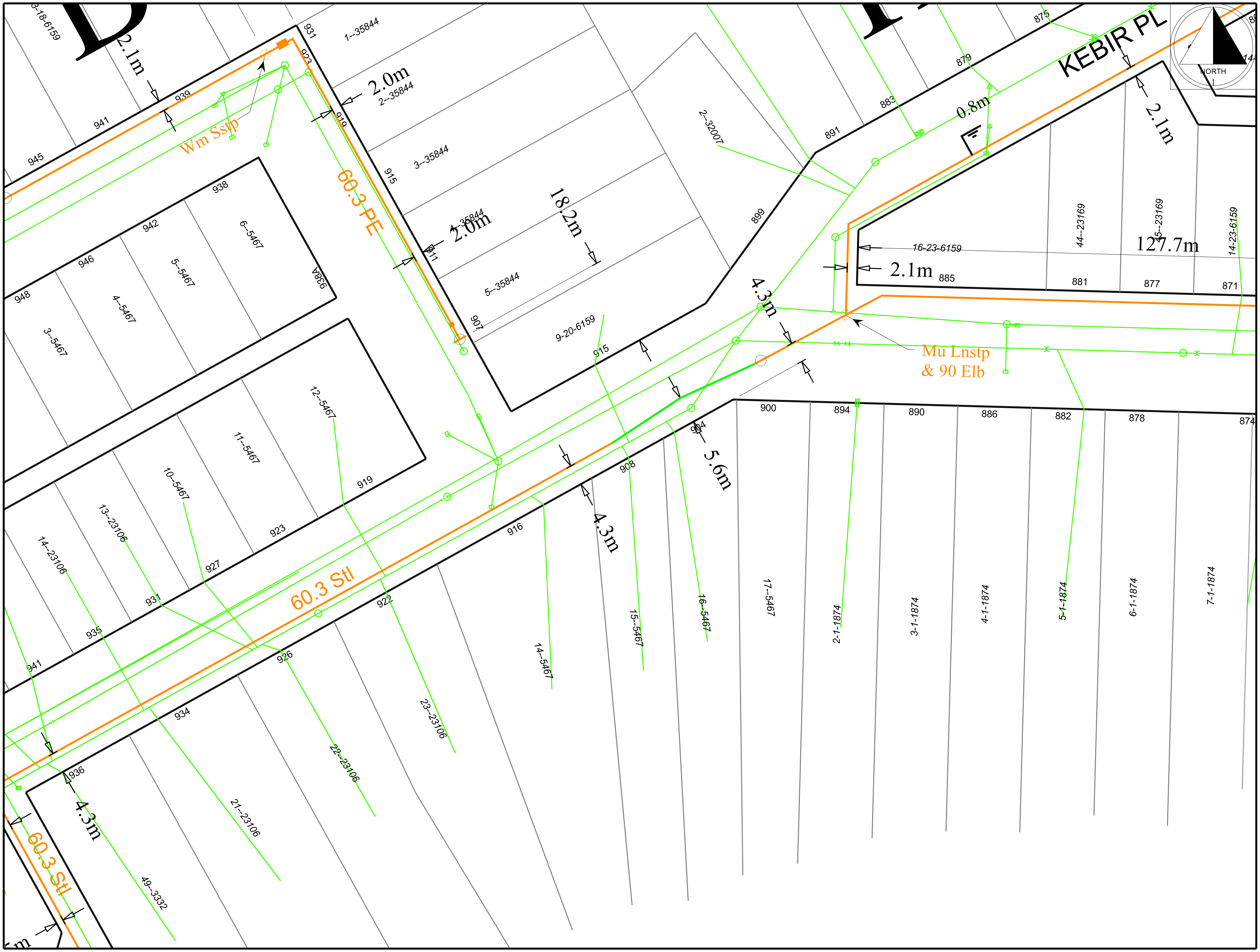
Outside Diameter (O.D.) of pipe in millimeters unless otherwise noted.



KEBIR PL
NORTH
Wm Sstp
60.3 PE
60.3 Stl
60.3 Stl
Mu Lnstp
& 90 Elb
2.1m
2.0m
2.0m
18.2m
4.3m
5.6m
4.3m
4.3m
2.1m
2.1m
0.8m
127.7m
1--35844
2--35844
3--35844
4--35844
5--35844
9-20-6159
2--32007
16-23-6159
44--23169
15--23169
14-23-6159
3-18-6159
6--5467
5--5467
4--5467
3--5467
12--5467
11--5467
10--5467
13--23106
14--23106
17--5467
16--5467
15--5467
14--5467
23--23106
22--23106
21--23106
49--3332
2-1-1874
3-1-1874
4-1-1874
5-1-1874
6-1-1874
7-1-1874
931
923
919
915
911
907
915
899
891
883
879
875
885
881
877
871
939
941
945
938
942
946
948
938A
919
923
927
931
935
941
916
922
926
934
936
908
904
900
894
890
886
882
878
874


915
NORTH
904
908
5.6m

NOTE :This plot is to be used for general pipe routing information only.
All other data to be confirmed by the Gas Engineering & Construction Dept.

NOTE: Maximum Operating Presure (MOP) is 420 kpa unless otherwise noted.
Outside Diameter (O.D.) of pipe in millimeters unless otherwise noted.