

12/23/2019

MH Gas File # 2019-0159 R1

Scott Suderman
Stantec
500 – 311 Portage Ave
Winnipeg, Manitoba R3B 2B9

Dear Scott Suderman:

Re: 19-C-08 Corydon Stafford Taylor Reconstruction – MB Hydro Gas

Manitoba Hydro (Gas) has reviewed the preliminary design submitted by Stantec for the proposed roadwork on Corydon, Stafford and Taylor. 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. Special Concerns

Main Lowerings:

- For mains that would exist in the road base of proposed construction: notify Larry Tole of MH Customer Service Operations (CSO) at ltole@hydro.mb.ca or (204) 360-5220 and copy Phil Robertson 12 weeks before mobilizing to site. CSO will investigate on site when the mains are exposed for lowering potential. CSO may be able to lower these mains, but the services attached to them may make it difficult. If lowering is not possible, the main must be rock wrapped by Manitoba Hydro personnel and then covered with a minimum of 150 mm of sand. Another option is benching the main so that native undisturbed soil remains around the main in the road base.
- For mains that do not meet minimum final depth of cover requirements (2+420 east of Wilton, 2+766 east of Harrow): the same as above applies. Notify CSO to arrange for investigation and copy Phil Robertson. If the main cannot be lowered out of road base, it must be rock wrapped and sand covered.

Trolley Tracks affecting services between Stafford and Wilton on Corydon:

- See the attached document for service and main ages in this section of road.
- No field notes are available regarding the concrete trolley tracks during service installation. Installers drilled the services through without hitting the concrete at the time of installation.

- Breaking of the concrete is allowed if there is at least 200 mm of native fill between bottom of concrete trolley tracks and service pipe.
- Recommendation – Request locators to provide service pipe depth estimates at the trolley tracks when they locate. This is an estimate only and carries +/-15% accuracy. Compare this depth with how deep the trolley track concrete is in the middle Corydon.

General Concerns:

Upon review, it was noted that proposed road construction for Tender #1 along Corydon Avenue and Tender #2 along Taylor Avenue cross a high pressure 323.9 mm steel gas main on Harrow Street. A Manitoba Hydro High Pressure Safety Watch is required for all construction activities within 3.0 m of this gas main. Additionally, roadwork for Tender #2 crosses a large diameter 219.1 mm and 168.3 mm steel distribution pressure main at Stafford and Lorette and at Taylor and Wilton, respectively. A Manitoba Hydro Safety Watch may be required for all construction activities within 1.0 m of these large diameter mains. 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 1.0 m or underneath the proposed road 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 minimum depth of cover of 600 mm for the 60.3 mm and 114.3 mm steel distribution mains cannot be maintained, or if 750 mm depth of cover cannot be maintained for 323.9 mm, 219.1 mm, and 168.3 mm mains, then relocations or lowerings may be required. Under normal circumstances, the amount of time required to mobilize for small diameter distribution lowerings (60.3 mm and 114.3 mm) is approximately 3-5 months. Large diameter and high pressure distribution main lowerings (323.9 mm, 219.1 mm and 168.3 mm) would require approximately 6-12 months to complete due to engineering, approvals, and construction. Contact Phil Robertson at probertson@hydro.mb.ca or (204) 360-5709 to discuss options pertaining to lowerings or relocations as soon as possible for scheduling.

2. High Pressure Natural Gas Main – Harrow Street

- Proposed road reconstruction on Corydon Avenue crosses an existing 323.9 mm steel high pressure natural gas main running on the west side of Harrow Street. 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 in order to confirm elevation of the pipe at the area of road construction. The elevations & corresponding locations shall be forwarded back to Phil Robertson at probertson@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 equipment will be crossing, traveling or compacting over the 323.9 mm gas mains. Vibratory compaction cannot be used over or within 3.0 m of a high pressure main.
- 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 m on either side at each crossing location.
- 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 323.9 mm gas main in areas with less than the minimum cover.
- 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.

3. 219.1 mm and 168.3 mm Distribution Pressure Natural Gas Main – Lorette Avenue and Wilton Street

- Proposed road reconstruction crosses an existing 219.1 mm steel distribution pressure natural gas main along Lorette Avenue at Stafford Street and a 168.3 mm steel main along Wilton Street at Taylor Avenue. A Manitoba Hydro Safety Watch may be required if any excavations are within 1.0 m of these natural gas main.
- Contact “Click before you dig” a minimum of 2 weeks prior to any work commencing within 1.0 m of the 219.1 mm or 168.3 mm distribution pressure natural gas mains 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 Safety Watch, if required.

- A minimum 750 mm of cover shall be maintained in all areas where equipment will be crossing, traveling or compacting over the 219.1 mm and 168.3 mm gas mains. Vibratory compaction cannot be used over or within 1.0 m of large diameter mains.
- If equipment must cross, travel, or compact over these 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 m on either side at each crossing location.
- 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.
- 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 1.0 m of the main.
- Subbase material shall be bladed into place as opposed to being end dumped over the 219.1 mm and 168 mm gas mains in areas with less than the minimum cover.
- 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 work including concrete cutting or pavement breaking may occur over the pipeline (regardless of size) until depth of cover is determined and 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 natural 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 Phil Robertson at probertson@hydro.mb.ca.

6. Tree Removal

- Any 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, Hydrant, Manhole Removal and Installation, Watermain and Sewer Renewal

- Proposed excavations for the removal and installation of below grade infrastructure may 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.

- A minimum separation of 300 mm shall be maintained between any Manitoba Hydro facility and new underground structures.

8. 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 sand covering and may also require lowering.

9. 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.

10. 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 sand covering and may also require lowering.

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

12. 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 Larry Tole at 204-360-5220 or ltole@hydro.mb.ca for any work required on site.

13. 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 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 600 mm of cover shall be maintained in all areas where equipment will be crossing, traveling or compacting over 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 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 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 m on either side at each crossing location.
- 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.

Please note that all construction drawings requiring review or approval must be mailed to Gas Design, 360 Portage Ave (18) Winnipeg, Manitoba, R3C 0G8. 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.

Regards,



Phil Robertson, P.Eng.
Gas Design Engineer – Rural Area
Manitoba Hydro - Gas Design
360 Portage Ave (18), Wpg. MB., R3C 0G8
P: (204) 360-5709 C: (204) 990-1727
Email: probertson@hydro.mb.ca

PR/DF

Cc: Larry Tole, Gas Distribution MTCE – Sutherland Ave, Manitoba Hydro
Robert Morrison, Damage Prevention – Sutherland Ave, Manitoba Hydro
Aaron Dueck, District Service Worker – Henlow Bay, Manitoba Hydro
Brian Jensen, Gas Distribution MTCE – Sutherland Ave, Manitoba Hydro
Aldo Garofalo, Gas Distribution MTCE – Sutherland Ave, Manitoba Hydro

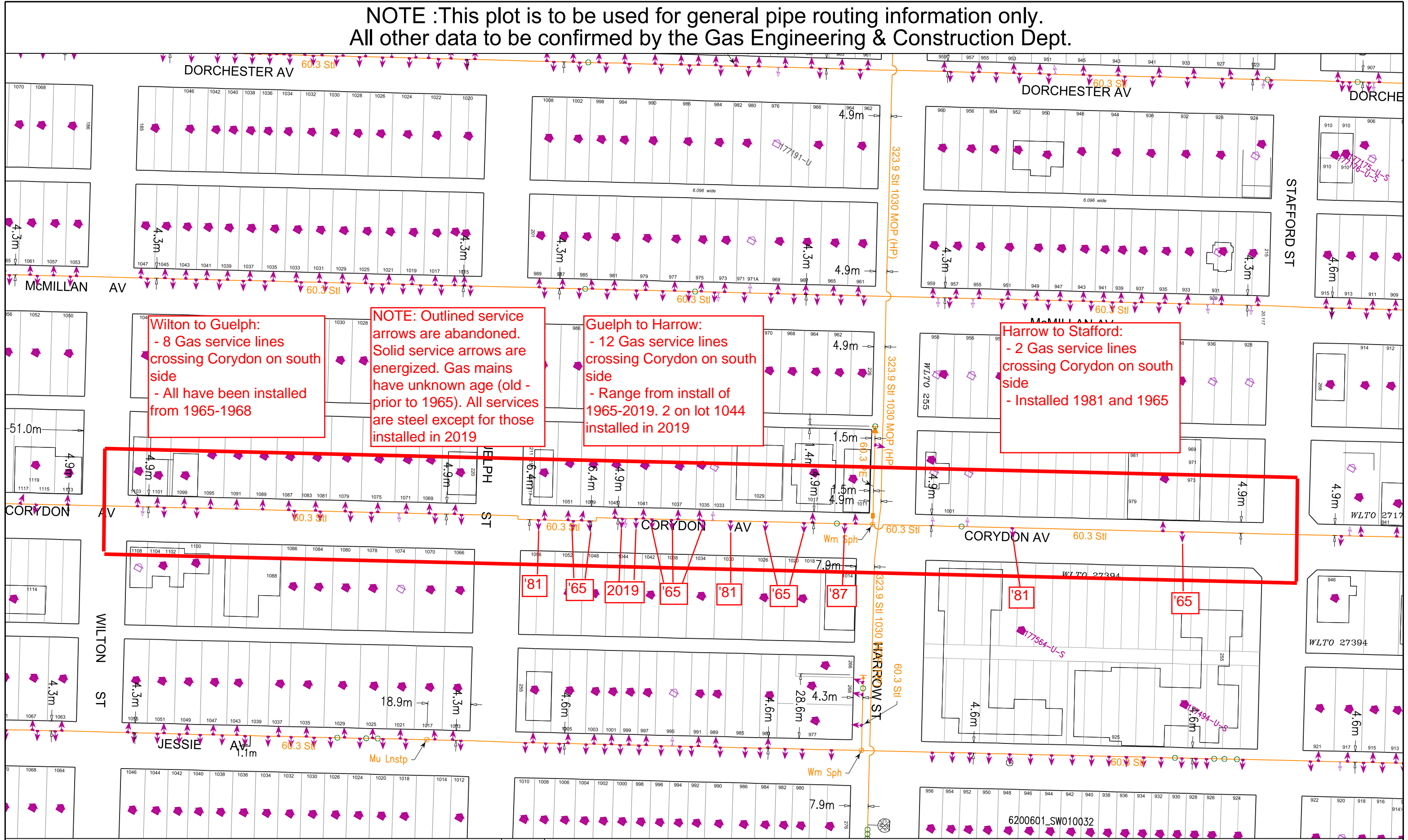
NOTE :This plot is to be used for general pipe routing information only.
All other data to be confirmed by the Gas Engineering & Construction Dept.

Wilton to Guelph:
- 8 Gas service lines crossing Corydon on south side
- All have been installed from 1965-1968

NOTE: Outlined service arrows are abandoned. Solid service arrows are energized. Gas mains have unknown age (old - prior to 1965). All services are steel except for those installed in 2019

Guelph to Harrow:
- 12 Gas service lines crossing Corydon on south side
- Range from install of 1965-2019. 2 on lot 1044 installed in 2019

Harrow to Stafford:
- 2 Gas service lines crossing Corydon on south side
- Installed 1981 and 1965



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

