

APPENDIX 'C'

GAS OPERATING CONSTRAINTS

2021 01 14

MH Gas File # 2021-0503

Scott Suderman
WSP
93 Lombard Suite 11
Winnipeg, MB R3B 3B1

Dear Scott Suderman:

Re: Pioneer, William Stephenson, Colony and St. Mary Pavement Renewals

Manitoba Hydro (Gas) has reviewed the design submitted by Scott Suderman of WSP for the Pioneer, William Stephenson, Colony and St. Mary Pavement Renewals. 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 not shown and must be traced for location.
- CAUTION: Large diameter gas main present.

2. Special Concerns

- Upon review, it was noted that the proposed street renewal occurs over large diameter 219.1 mm steel distribution pressure main on William Stephenson Way. A Manitoba Hydro Safety Watch may be required for all construction activities within 1.0 m of any large diameter mains. It was also noted that the pavement renewal crosses 114.3 mm and 60.3 mm steel distribution pressure 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/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 minimum depth of cover of 750 mm for the 114.3 mm and 60.3 mm steel distribution mains cannot be maintained, or if 900 mm depth of cover cannot be maintained for the 219.1 mm steel distribution mains, then please contact Phil Robertson at probertson@hydro.mb.ca to discuss options pertaining to relocations or lowerings as soon as possible. Under normal circumstances, the amount of time required to mobilize for small diameter distribution relocations/lowerings (114.3 mm and 60.3 mm) is approximately 3-5 months. Large diameter main relocations/lowerings (219.1 mm) would require approximately 6-12 months to complete due to engineering, approvals, and construction.

3. 219.1 mm Distribution Pressure Natural Gas Main

- Proposed road reconstruction crosses over an existing 219.1 mm distribution pressure natural gas main. A Manitoba Hydro Safety Watch may be required if any excavations are within 1.0 m of the 219.1 mm 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 distribution 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 Safety Watch, if required.
- A minimum 900 mm of cover shall be maintained in all areas where highway rated equipment will be crossing, traveling or compacting over 219.1 mm gas mains. Vibratory compaction cannot be used over or within 1.0 m of a 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 Phil Robertson at probertson@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.
- 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.
- Directional drills, punches, and bored crossing shall maintain the greater of a minimum of 1.0 meters or 1.5 times the bore diameter 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 third party's new pipeline or cable 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.
- 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 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.

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 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.

6. Catch Basin 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.
- 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. 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 Phil Robertson at probertson@hydro.mb.ca
- Underground structure installations above natural gas infrastructure should be avoided. Contact Phil Robertson at probertson@hydro.mb.ca if installations above facilities are required.

7. 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.

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 may also require lowering.

9. Service Relocations

- 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.

10. 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 separation of 300 mm from gas mains and 100 mm from service lines must be maintained for any new underground structure installations. If an underground structure must be installed with less than the minimum separation, an underground rigid foam barrier shall be placed over the main for protection. Submit plans for barrier installation to Phil Robertson at probertson@hydro.mb.ca
- 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 Phil Robertson at probertson@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.

- 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.
- Directional drills, punches, and bored crossings shall maintain a minimum of 600 mm between the external surface of the pipeline 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 third party's new pipeline or cable 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.
- 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,



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PR/GS

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
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