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Aug. 30, 2013

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Dear Mr. Smalley:

Re: 726-2013: 2013 Alley Renewal Program – Contract 2

Manitoba Hydro (Gas) has reviewed the design submitted by the KGS Group for the 726-2013: 2013 Alley Renewal Program – Contract 2. 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 Concern I – 60.3mm Steel Natural Gas Main on Alley Adjacent to Intersection Toronto St. and Portage Ave. (Sheet 15)

- The gas main referenced above intersects with a proposed 6.0-150 PVC Subdrain. If you proceed with this design, a minimum vertical separation of 300mm must be maintained between the gas main and subdrain. However, Manitoba Hydro recommends shortening the subdrain's length so it ends before intersecting with this gas main.
- Ensure that a minimum horizontal separation of 1.0m is maintained between the subdrains and the 60.3mm gas main; nevertheless, a separation of 1.5m would be preferable if possible.
- A minimum of 600mm of cover shall be maintained in all areas where equipment will be crossing, traveling or compacting over the 60.3mm gas main. Prior to construction at this location, please expose the main by hand or hydro-excavation in order to confirm the elevation of the pipe. The elevations & corresponding locations shall be forwarded back to Andrew Greaves at agreaves@hydro.mb.ca.
- If the 60.3mm main is exposed during excavations, rock wrapping and lowering WILL be required.
- Please add "Caution-Gas" notes at the locations where this main intersects with proposed work.

2. Special Concern II – Abandoned Gas Mains on Kingsway (Sheet 1), Wolseley Ave. (Sheet 9), and Ethelbert Street (Sheet 11) in vicinity of excavations

- Try to avoid hitting these mains while excavating. If this is not possible, please remove the portions of the mains that interfere and cap the remaining ends.

3. Special Concern III – Excavations for Concrete Works on Sheets 4, 6, 7, 8, 9 & 11.

- Excavations 675 mm in depth coincide with the 60.3mm steel distribution pressure gas mains on the sheets referenced above. Hydro-excavation is required to verify the depth of these mains prior to constructions. These mains may require lowering and rock wrapping. The mains do not appear to be within the sub-base but will likely have minimal cover. Please refer to the cost estimates given later in this letter for lowering and rock wrapping of the 60.3 mm gas mains if they are in the sub-base and if required.
- A minimum 600 mm of cover shall be maintained in all areas where equipment will be crossing, traveling or compacting over the 60.3 mm gas main. Vibratory compaction cannot be used over or within 1m of this main.
- For the precise locations these mains intersect with proposed work, refer to pt. 7 below.

4. Installation of Land Drainage Sewers, Catch Basin, and Manhole

- Proposed excavations for the installation of 300 PVC Land Drainage Sewers appear to be within 1.0m of 60.3mm steel distribution pressure gas mains on Yarwood Ave. (Sheet 4) and the alley between Lot #'s 1204 and 1102 (Sheet 6). Please complete exposure by hand or by Hydro-excavation. Caution must be used when working in the vicinity of the natural gas mains at these locations.
- Please follow the above precautions for the proposed excavations for installation a catch basin and manhole in the vicinity of the 60.3mm gas main referenced in pt. 1 (Sheet 15).

5. Sidewalk Renewals

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

6. 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.

7. Please add "Caution – Gas" notes at the locations (all mains referenced are operating at Distribution Pressure):

- Sheet 4 where a 60.3mm gas main intersects with proposed concrete works on Yarwood Ave.
- Sheet 6 where a 60.3mm gas main intersects with proposed concrete works at the alley between Lot #'s 1204 and 1102.
- Sheet 7 where two 60.3mm gas mains intersect with proposed concrete works and sidewalk renewals at the alley between Lot #'s 1204 and 1102, and Garfield street.
- Sheet 8 where a 60.3mm gas main intersects with proposed concrete works and sidewalk renewals at intersection Garfield St. and Grundy St.
- Sheet-9 where a 60.3mm gas main intersects with proposed concrete works on Wolseley Ave.
- Sheet 11 where a 60.3mm gas main intersects with proposed concrete works on Ethelbert St.

8. 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. < 100-150mm or < 4-6").
- Please refer to the cost estimates given later in this letter for rock wrapping and lowering services.

9. 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 219.1mm gas mains. Vibratory compaction cannot be used over or within 1m of a main.
- A minimum 600 mm of cover shall be maintained in all areas where equipment will be crossing, traveling or compacting over the 60.3mm gas mains. Vibratory compaction cannot be used over or within 1m 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 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 (Gas) has prepared a cost estimate for the rock wrapping of the existing natural gas mains impacted by this project.

Please note that this estimate is for planning purposes only and is subject to change. Upon completion of the project an invoice for the actual cost will be forwarded to you for payment.

The value for this estimate is based on the lowering and rock wrapping of steel distribution pressure natural gas mains. The estimated cost is approximately the 60.3 mm

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distribution pressure mains (referenced in pts. 1, 3 and 7) coincide with proposed work. The estimated cost for rock wrapping and lowering a service is approximately . If there are numerous services that require lowering and this is coordinated on the same day, the costs per service will be lower.

These costs cover all work necessary for the scope of work identified. This work can commence upon your approval and agreement of the rock wrapping and lowering costs. Under normal circumstances, the amount of time required to mobilize for this work is approximately 2-3 weeks. A schedule for the rock wrapping and lowering can be set upon receipt of a purchase order agreement.

Please contact Shane Heiner at 204-360-5568 for any work required on site.

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 ManitobaHydroNaturalGasDesign@hydro.mb.ca.

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



Andrew Greaves, P.Eng.
Gas Design Engineer
Distribution Engineering - Winnipeg

AG/kt

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