APPENDIX ‘C’

WORKING AROUND GAS MAINS

Bid Op 961-2014
Appendix C
Figure 1 (4 pages)

Manitoba Hydro

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agreaves@hydro.mb.ca

October 8, 2014

Kirby McRae
Senior Design Lead
Community Infrastructure
Tetra Tech
400-161 Portage Ave East
Winnipeg, MB R3B 0Y4

Dear Mr. McRae:

Re: Ferry Road Contract 4 – St. Matthews Ave and Madison St. Winnipeg

Manitoba Hydro (Gas) has reviewed the design submitted by Kirby McRae for the new land drainage sewer on St. Matthews Ave and Madison St. 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 Note:**
   - Manitoba Hydro currently has plans to move the regulating station at the northwest corner of St. Matthews and Madison (RS-022) north approximately 50 meters in the Spring of 2015. There are also proposed plans to relocate the 355.6 mm high pressure natural gas main along St. Matthew's, should final road design elevations require it, although this has not been finalized.

2. **High Pressure Natural Gas Main - Intersection St Matthews Ave and Madison St. to Century St.:**
   - Proposed land drainage sewer construction crosses over an existing 355.6mm 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 "Call before you dig" 2 weeks prior to any work commencing within 3.0 m of the high pressure natural gas main to arrange for a Manitoba Hydro High Pressure Safety Watch at **204-480-1212.**
   - Prior to construction at this location, please expose the main by hand or hydro-excavation in order to confirm elevation of the pipe. The elevations & corresponding locations shall be forwarded back to Andrew Greaves at agreaves@hydro.mb.ca.
   - A minimum 900 mm of cover shall be maintained in all areas where equipment will be crossing, traveling or compacting over the 355.6mm gas mains. Vibratory compaction cannot be used over or within 3 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 meter on either side at each crossing location.

- When working with less than minimum cover, a minimum 300mm 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. When using compaction equipment with less than the minimum depth of cover, please contact Andrew Greaves at agreaves@hydro.mb.ca for a loading analysis on the pipeline.
- A smooth edged bucket shall be used for any excavations within 3.0m of a high pressure main.
- Subbase material shall be bladed into place as opposed to being end dumped over the 355.6mm 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. **219.1mm Distribution Pressure Natural Gas Main - Intersection St Matthews Ave and Madison St. to Kind Edward St.:**
   - Proposed land sewer drainage construction crosses over an existing 219.1mm distribution pressure natural gas main. A Manitoba Hydro High Pressure Safety Watch may be required if any excavations are within 1.0 m of the 219.1mm natural gas main.
   - Contact "Call before you dig" 2 weeks prior to any work commencing within 1.0 m of the 219.1mm distribution pressure natural gas main to arrange for a Manitoba Hydro Safety Watch at **204-480-1212**, if required.
   - A minimum 900 mm of cover shall be maintained in all areas where equipment will be crossing, traveling or compacting over the 168.3 mm, 219.1 mm, 273.1 mm, 323.9 mm, 355.6mm, and 406.4 (also all HP mains including 3" and 4") mm gas mains. Vibratory compaction cannot be used over or within 1 m of a 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 meter on either side at each crossing location.
   - When working with less than minimum cover, a minimum 300mm 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.
   - A smooth edged bucket shall be used for any excavations within 1.0m of a large diameter distribution pressure main.
   - Subbase material shall be bladed into place as opposed to being end dumped over the 219.1 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. **Catch Basin Removal and Installation**
   - Proposed excavations for the removal and installation of catch basins appears to be within 1.0 meters 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.

- The western catch basin along Madison Street, north of St. Matthew's is shown between two natural gas mains. Relocating this catch basin from between these two mains may improve constructability.

5. **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.

6. **General:**
   - Manitoba Hydro is NOT part of the ClickBeforeYouDigMB.com service and Hydro customers must continue to phone1-888-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 600 mm of cover shall be maintained in all areas where equipment will be crossing, traveling or compacting over the 88.9 mm and 60.3 mm 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 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 sent to Gas Pipeline Engineering electronically at GasDesign@hydro.mb.ca. Physical drawings may also be mailed to Box 7950 Station Main, Manitoba, R3C 0J1.

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

Regards,

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

AG/EB

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