

PART I - GENERAL

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| <u>1.1 Related Work</u> | .1 | Rough Grading: | Section 02211 |
| <u>1.2 Scope of Work</u> | .1 | This section includes the supply and installation of all labour and materials to provide a complete and operational water service, yard hydrant, and Region of Peel water meter for the meter chamber. | |
| | .2 | Coordinate work in this section with work in all other sections. | |
| | .3 | Co-ordinate installation of Community Services supervised works with Region of Peel supervised works. | |
| | .4 | The contractor shall be responsible for locating all utility stakeouts. | |
| <u>1.3 Product Delivery, Storage, Handling</u> | .1 | Transport all materials to the site in their original protective wrapping and or cartons. | |
| | .2 | Any material or equipment found unacceptable, in the opinion of the Community Services Department, will be removed from the site and replaced at the contractor's expense. | |
| | .3 | Do not store materials on site. | |
| | .4 | Remove all surplus material from site. | |
| <u>1.4 Submittals</u> | .1 | Prior to issuance of Preliminary Acceptance, the contractor will deliver the hydrant wrench ('key') for the yard hydrant to the Community Services representative at the time of the hydrant function demonstration. | |
| <u>1.5 Quality Assurance</u> | .1 | Complete all work in this section in accordance with the specifications and drawings to the satisfaction of the City of Mississauga Community Services Department, Region of Peel Utility Operations Section and the City of Mississauga Transportation and Works Department. | |
| | .2 | It is the responsibility of the contractor to ensure that the water services are installed according to current standards at time of installation. The contractor shall obtain all required permits, tests, utility locations and any other approvals and inspections required and shall assume responsibility for payment of these approvals. | |
| | .3 | The contractor is to contact the Community Services Department and the Region of Peel, Utility Operations Section prior to commencing construction to ensure that the contractor is installing the water service in accordance with the latest revision of the standards. | |
| | .4 | The contractor must ensure that the entire system has been tested and operates properly. Any damaged and/or improperly installed materials or leaks shall be repaired immediately. | |

- 1.6 Guarantee .1 The contractor shall guarantee all material and workmanship for a period of two years from the date of Preliminary Acceptance by the City.

PART II - PRODUCTS

- 2.1 Water Meter .1 40mm and 50mm water meters shall conform to Region of Peel Standards as supplied by the Region of Peel. The meter within the chamber shall be as per Region of Peel Standard drawing STD DWG.1-4-6. The contractor is responsible to obtain the latest revision of the Region Standards.

- 2.2 Yard Hydrant .1 Approved Yard Hydrant:
Ratnik Model #2000, complete with #96-149 tamper resistant top and hydrant wrench.
Ratnik Industries Inc., 670 Phillips Road, Victor, NY 14564 USA
tel. 585-924-9111, fax 585-924-4936.
It is the responsibility of the contractor to ensure that the Yard Hydrant is ordered/received as to not delay the project and/or Preliminary Acceptance.

- .2 Length of yard hydrant to suit water line depth of 1700mm below finished grade and hose bib elevation 500mm above finished grade.

- 2.3 Chamber .1 The chamber shall be as per Region of Peel Standard drawing STD DWG.1-4-6. The contractor is responsible to obtain the latest revision of the Region Standards.

- 2.4 Pipe .1 Copper pipe shall be 50mm diameter copper type K and shall comply with ASTM Standard B42-02 Seamless Copper Pipe, standard sizes or latest revision.

- .2 Polyethylene pipe shall be 50mm diameter and shall be certified to C.S.A. Standard B137 Series-02 or latest revision. Polyethylene pipe, tubing and fittings for cold water pressure services shall have a rated working pressure of 160 P.S.I. or more.

- .3 Galvanized pipe and fittings used for connections between the polyethylene pipe and the yard hydrant as well as the A.R.B. Receptacle Standpipe shall be schedule 40 and comply with ASTM Standard A53/A53M or latest revision.

- 2.5 Valves .1 Gate valves and box should be located on the property line.

- 2.6 Banding .1 Banding used to secure dissimilar pipe materials together shall be 12mm minimum wide stainless steel strapping with stainless steel fasteners designed for that application.

- 2.7 Brace Posts .1 Yard hydrant brace posts shall be 140mm x 140mm (6" X 6") pressure treated lumber and shall comply with CSA-080 Series 97 (R2002).

- 2.8 Brace Posts Fasteners .1 Brace post fasteners shall be galvanized 8mm diameter threaded rods complete with nuts and washers.
- 2.9 Blocking .1 Vertical blocking shall be solid concrete masonry units and shall comply with CSA A165 Series 94 (R2000) latest revision.
- .2 Horizontal Blocking shall be 140mm x 140mm (6" x 6") ACQ pressure treated lumber (or approved equal) and shall comply with CSA-O80 Series 97 (R2002).
- 2.10 Trace Wire .1 Trace wire shall be Stranded White TWU 14 AWG, 600 volts.
- 2.11 Sand Bedding .1 Brick Sand.
- 2.12 Crushed Stone .1 19mm dia. clear stone.

PART III - EXECUTION

- 3.1 Preparation .1 The contractor is responsible for staking out the yard hydrant locations according to the drawings. Work must not commence until the locations have been confirmed by the Community Services Department.
- 3.2 Inspection .1 The contractor will notify the Region of Peel once work within the meter chamber is completed. Contractor shall bear all costs associated with inspections by Region of Peel forces.
- .2 The contractor will provide at least one week notice to the Community Services Department prior to commencing installation in order that a Community Services representative can be present.
- .3 The contractor shall leave the excavation open until a Community Services representative has inspected the connections, blocking and backfilling of the hydrant and the pipe connection into the chamber. The open excavation area will be secured with protective hoarding to City standards.
- 3.3 Installation .1 Water Meter Chamber
- .1 Water meters and chambers shall be installed in accordance with the Region of Peel Standards as supplied by the Region of Peel. The meter and the chamber shall be as per Region of Peel Standard drawing STD DWG.1-4-6. The contractor is responsible to obtain the latest revision of the Region Standards.
- .2 A 50mm diameter copper pipe from the gate valve box to the water chamber will be supplied and installed by the contractor to Region of Peel standards.
- .3 Blocking shall be placed underneath the meter to provide a level and stable surface as per Region of Peel Standard 1-4-6.

- .4 The contractor shall install valves in the chamber to comply with Region of Peel Standard 1-4-6.
 - .5 The contractor will extend a 50mm copper service a minimum of 2 m beyond the chamber.
 - .6 The contractor shall install a meter reader (A.R.B.) standpipe to comply with Region of Peel Standard.
- .2 Pipe
- .1 All copper to copper connections shall be soldered to comply with ANSI Standard B16.18 latest revision.
 - .2 All copper to polyethylene connections shall be jointed by product manufactured for that application.
 - .3 All polyethylene to galvanized metal connections shall be jointed by product manufactured for that application.
 - .4 All polyethylene pipe connections shall have two bands of stainless steel strapping securing the polyethylene pipe to the connectors.
 - .5 All galvanized metal to galvanized metal connections shall have Teflon tape wrapped around the threaded portion of the pipe.
 - .6 Install pipe 1700mm below grade, bedded and covered with 150mm of sand. Ensure the bottom of trenching is level without undulations and is clear of any debris, stone or organic matter prior to laying pipe.
 - .7 Backfill and compact remaining excavation with native backfill as per Division 2, Section 02211 Rough Grading and 02212 Topsoil and Finish Grading. Ensure backfill is free of rocks or other unsuitable substances which could damage the pipe.
- .3 Yard Hydrant
- .1 Vertical blocking shall be placed on undisturbed soil. Horizontal blocking shall be placed opposite the incoming water line and be supported by undisturbed soil.
 - .2 Connect hydrant to 50mm diameter galvanized "tee" connection. Tee shall have polyethylene connector on one horizontal end and a plug on the other horizontal end.
 - .3 The yard hydrant shall be placed on the vertical blocking and temporarily secured to ensure that while backfilling the hydrant remain straight and plumb. The Contractor shall ensure that the drain ports are not damaged or filled with soil.

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- .4 Backfill not less than three cubic meters of washed 19mm dia. crushed stone around the hydrant drain ports.
 - .5 Backfill and compact remaining excavation with native material as per Division 2, Section 02211 Rough Grading and 02212 Topsoil and Finish Grading.
 - .6 Contractor shall install galvanized fittings onto the outlet of the hydrant as indicated on Detail 15430-1.
- .4 Brace Posts
- .1 Brace posts to be installed directly behind the yard hydrant. Posts to rest on undisturbed soil and extend 500mm above the finished grade. The top of the post shall be cut at a 45 degree angle away from the hydrant. The hydrants shall be connected to the brace post with two galvanized threaded rods, nuts and bolts.
- .5 Restoration
- .1 Restoration of all disturbed sodded areas refer to Division 2, Section 02938 Sodding.
 - .2 Restoration of all disturbed asphalt areas, refer to Division 2, Section 02552 Asphalt Paving.
- 3.4 Flushing and Testing
- .1 The Contractor shall flush and pressure test the entire system per Region of Peel Standards.
 - .2 The Contractor shall arrange for, carry out, and bear the cost of any additional testing required by the Region of Peel.
 - .3 Prior to the issuance of Preliminary Acceptance, the contractor shall demonstrate for Community Services representatives to the satisfaction of same, that the yard hydrant functions as intended.

END OF SECTION 15400