

THE CORPORATION OF THE MUNICIPALITY OF THAMES CENTRE

BY-LAW NO. 6-2019

Being a By-law to Regulate Backflow Prevention and Cross Connection Control in order to Protect Water Quality in the Municipality of Thames Centre.

WHEREAS section 9 of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that a municipality has the capacity, rights, powers and privileges of a natural person for the purpose of exercising its authority under the Municipal Act or any other Act;

AND WHEREAS section 8(1) of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that the powers of a municipality under the Municipal Act or any other Act shall be interpreted broadly so as to confer broad authority on the municipality to enable the municipality to govern its affairs as it considers appropriate and to enhance the municipality's ability to respond to municipal issues;

AND WHEREAS section 11(1) of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that a lower-tier municipality may provide any service or thing that the municipality considers necessary or desirable for the public, subject to the rules set out in subsection;

AND WHEREAS section 11(2) of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that a lower-tier municipality may pass by-laws respecting the health, safety and well-being of persons;

AND WHEREAS section 11(3) of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that a lower-tier municipality may pass by-laws respecting matters within the following spheres of jurisdiction set out therein including public utilities;

AND WHEREAS section 80(1) of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that a municipality may, at reasonable times, enter on land to which it supplies a public utility, to inspect, repair, alter or disconnect the service pipe or wire, machinery, equipment and other works used to supply the public utility;

AND WHEREAS section 80(2) of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that a municipality may shut off or reduce the supply of the public utility to the land;

AND WHEREAS section 80(3) of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that if a municipality lawfully decides to cease supplying the public utility to land, the municipality may enter on the land to determine whether the public utility has been or is being unlawfully used;

AND WHEREAS section 82(1) of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that a municipality is not liable for damages caused by the interruption or reduction of the amount of a public utility supplied to a municipality or to the land of any person as a result of an emergency or a breakdown, repair or extension of its public utility if, in the circumstances, reasonable notice of its intention to interrupt or reduce the supply is given;

AND WHEREAS section 425 of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that a municipality may pass by-laws providing that a person who contravenes a by-law of the municipality passed under the Municipal Act is guilty of an offence; and that a by-law under this section may provide that a director or officer of a corporation who knowingly concurs in the contravention of a by-law by the corporation is guilty of an offence;

AND WHEREAS section 429 of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that a municipality may establish a system of fines for offences under a by-law of the municipality passed under the Municipal Act;

AND WHEREAS Section 11(1) of the Safe Drinking Water Act, 2002, S.O. 2002, c. 32, as amended, provides that every owner and operating authority of a municipal drinking water system shall ensure that all water provided by the system to the point where the system is connected to a user's plumbing system meets the requirements of the prescribed drinking water quality standards, and that, at all times in which it is in service, the drinking water system is operated in accordance with the requirements under the Safe Drinking Water Act;

AND WHEREAS Section 19 of the Safe Drinking Water Act, 2002, S.O. 2002, c. 32, as amended, provides that the owner and operating authority of the municipal drinking water system shall exercise the level of care, diligence and skill in respect of a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation; and act honestly, competently and with integrity, with a view to ensuring the protection and safety of the users of the municipal drinking water system;

AND WHEREAS Section 7.6.2.1 of the Ontario Regulation 332/12: Building Code, as amended, provides that connections to potable water systems shall be designed and installed so that non-potable water or substances that may render the water non-potable cannot enter the system; and that no connection shall be made between a potable water system supplied with water from a drinking water system and any other potable water system without the consent of the owner or operator of the drinking water system;

AND WHEREAS Cross connection of another water system to, and Backflow from a plumbing system into the Municipality of Thames Centre Municipal Drinking Water System could threaten the integrity of the water in the Municipal Drinking Water System and could prevent such water from meeting the requirements of the prescribed drinking water standards;

NOW THEREFORE the Council of the Corporation of the Municipality of Thames Centre **HEREBY ENACTS AS FOLLOWS:**

1. CITATION

1.1 This By-law shall be known as and may be cited as the "Backflow Prevention By-law".

2. DEFINITIONS

2.1 For the purposes of this By-law, the following terms shall have the corresponding meanings:

- a) "auxiliary water" means any water source or system, other than the Municipality of Thames Centre's drinking water system, available in any building or any premise;
- b) "backflow" means any unwanted flow of used or non-potable water or substance from any domestic, commercial, industrial or institutional piping system into the municipal water distribution system;
- c) "backflow preventer" means a device or method that prevents backflow in a water distribution system;

- d) "building" shall mean any structure supplied with water by the Municipality of Thames Centre;
- e) "Building Code" means the regulations made under Section 34 of the Building Code Act being O. Reg. 332/12: Building Code as amended, or any successor thereof;
- f) "Building Code Act" means the Building Code Act, 1992, S.O. 1992, c. 23, as amended, or any successor thereof;
- g) "municipality" means The Corporation of the Municipality of Thames Centre and includes its employees, servants and agents;
- h) "commercial" means lands, buildings or structures that is deemed by the Municipality to be used for the sale or provisions of goods and services to the general public which does not include Industrial and not excluding additional residential usage;
- i) "cross connection" means any actual or potential connection between a potable water system and any source of pollutant or contamination;
- j) "cross connection control specialist" means an individual who is recognized as such, shall have completed and passed an Ontario Water Works Association endorsed Cross Connection Control Specialist Course or equivalent at an accredited school or college and shall have a current certificate issued by the accrediting association;
- k) "cross connection survey" means a report which shall include existing backflow preventers, cross connections discovered, corrective measures and recommendations on the prescribed Municipality of Thames Centre's *Cross Connection Survey Form*; as amended from time to time;
- l) "CSA" means the Canadian Standards Association;
- m) "CSA Standard" means the document(s) entitled CAN/CSA B64.10/B64.10.1 Manual Selection and installation of backflow preventers/Maintenance and field testing of backflow preventers; as amended from time to time;
- n) "fire service" means a pipe and its appurtenances that are connected to a source of water and that are located on a property:
 - i. between the source of water and the base of the riser of a water-based fire protection system;
 - ii. between the source of water and inlets to foam making systems;
 - iii. between the source of water and the base elbow of private fire hydrants or monitor nozzles;
 - iv. as fire pump suction and discharge piping not within a building; or
 - v. beginning at the inlet side of the check valve on a gravity or pressure tank.
- o) "individual residential dwelling unit" means a single room or series of rooms of complementary use, operated under a single tenancy, for residential occupancy, and includes dwelling units, individual guest rooms in motels, hotels, boarding houses, rooming houses and dormitories;

- p) "industrial" means lands, buildings or structures that is deemed by the Municipality to be used for assembling, fabricating, manufacturing, production, processing, repairing, supplying, storing or selling of Industrial goods and materials to the general public which does not include Commercial and not excluding additional residential usage;
- q) "institutional" means a building or part of a building used for non-commercial, non-profit purposes by an organized body, religious group or society such as a public hospital, library, convent or similar use;
- r) "minor hazard (MH)" means any type of cross-connection or potential cross connection that involves a substance that constitutes only a nuisance and that results in a reduction in only the aesthetic qualities of the water as defined by the CSA Standard; as amended;
- s) "moderate hazard (MoH)" means any minor hazard (MH) connection that has a low probability of becoming a severe hazard. This category includes, but not limited to, connections involving water where the aesthetic qualities of the water have been reduced and, under certain conditions, can create a danger to public health as defined by the CSA Standard; as amended;
- t) "multi-residential" means lands, buildings or structures that are used for residential purposes and have four or more self-contained units;
- u) "municipal drinking water system" means the Municipality's system of works, excluding plumbing, that is established for the purpose of providing users of the system with drinking water, and that includes:
 - i. Anything used for the collection, production, treatment, storage, supply or distribution of water;
 - ii. Anything related to the management of residue from the treatment process or the management of the discharge of a substance into the natural environment from the treatment system; and
 - iii. A well or intake that serves as the source or entry point of raw water supply for the system.
- v) "owner" shall include any person or any firm or corporation that is the registered owner of the property under consideration or any agent thereof, a person entitled to a limited estate in land, a trustee in whom land is vested, a committee of the estate of a mentally incompetent person, an executor, an administrator or a guardian;
- w) "person" includes any individual, Corporation, partnership, company, association or party and the heirs, executors, administrators, or other legal representative of such person, to whom the context can apply according to law; shall include any group of persons comprising a society or other organization and shall include the plural wherein the context requires. Wherever the word "he" or "him" is used, it shall mean and include the feminine or neuter gender wherever the context so requires;
- x) "plumbing system" means a system for water and wastewater not on the Municipality right of ways and easements, separate from the municipal drinking water system as defined in the Building Code; as amended;
- y) "potable water" means water that is fit for human consumption;

- z) "premise isolation" means isolation provided at the entrance to a building, structure, or property from the municipal drinking water system;
- aa) "private service" means the portion of the water service pipe located on private property;
- bb) "property" means any land within the Municipality of Thames Centre and includes all buildings and structures;
- cc) "qualified person" means a person whom meets the following requirements:
 - i. The person is registered with the Municipality's Backflow Prevention Program's "Prequalification Program"; and
 - ii. The person holds a valid and current Certificate of Achievement in Cross Connection Control endorsed by the Ontario Water Works Association (OWWA) or equivalent as approved by the Municipality's Water Operation Branch; and
 - iii. The person possesses a current calibration certificate as required under the "Prequalification Program" for the testing equipment to be employed; and
 - iv. The person is authorized to perform the specified task as indicated in the "Authorized Functions List" as set out in Schedule "A" of this By-law, as amended from time to time;
- dd) "severe hazard (HH)" means any type of cross-connection or potential cross connection that has additives or substances that, under any concentration, can create a danger to health as defined by the CSA Standard; as amended;
- ee) "source isolation" means isolation of the water located within or having flowed through a source or potential source of contamination within a building or structure including a device, machine, water system or the like, from any potable water system;
- ff) "structure" means anything constructed or built permanently or temporarily which is provided with a source of potable water;
- gg) "Test Report" means an inspection and testing report of a backflow preventer containing the make, model, serial number, size, type, installation date, location and installation address and the test results. The report must also contain information related to the qualified person. This report shall be completed on the prescribed Municipality of Thames Centre "Backflow Prevention Device Test Report Form", as amended from time to time;
- hh) "water service pipe" means a pipe on the property that conveys potable water from the municipal drinking water system to the inside of the building or structure; and
 - ii) "zone isolation" means the isolation of the water located within an area of a building or structure from any potable water system located within such building or structure.

3. APPLICATION OF BY-LAW

- 3.1 This By-law applies to all existing or future industrial, commercial, institutional and multi-residential buildings and structures connected to the municipality of

Thames Centre drinking water system, except buildings or structures of residential occupancy where each dwelling unit is individually serviced from the municipal drinking-water system only through a single connection less than 50 mm diameter.

3.2 In addition to and notwithstanding Section 3.1 of this By-law, this By-law applies where a condition exists in any building or structure that may be hazardous or detrimental to the municipal drinking water system.

3.3 In addition to and not withstanding Section 3.1 of this By-law, this By-law applies to plumbing in residential occupancies having connections to the municipal drinking water system and any auxiliary water supply, private well, lawn sprinkler or irrigation system, or fire protection system.

4. GENERAL PROVISIONS

4.1 Every owner in respect of property upon which a backflow prevention device is installed shall ensure that such device is in good repair at all times and in compliance with this By-law.

4.2 In addition to any other provisions of this By-law, the Municipality may at any time order an owner to conduct tests, provide reports and undertake any other measures required for the prevention of backflow or protection from a cross connection.

4.3 Where a time frame is prescribed in this By-law, the Municipality may extend the time for compliance at its discretion.

4.4 *All Cross Connection Surveys Forms and Backflow Prevention Device Test Report* are to be submitted to the Municipality of Thames Centre – Environmental Services Department.

5. PROHIBITION OF CROSS CONNECTIONS - OWNER'S RESPONSIBILITY

5.1 No person or owner, shall connect, cause to be connected, or allow to remain connected to a plumbing system which is connected to the municipal drinking water system or any other potable water system any piping, fixture, fitting, container, appliance, vehicle, machine or the like, in a manner which may under any circumstances, allow any liquid including but not limited to water, untreated or otherwise, waste water, or any source of pollution or any other liquid, chemical, gas or other substance to enter the municipal drinking water system or any other potable water system.

5.2 In accordance with the provisions of this By-law, every owner of property to which this By-law applies shall ensure that a Backflow Preventer is installed in respect of source isolation and/or zone isolation in every building or structure where a municipal drinking water system or other potable water exists.

5.3 No person or owner shall connect, cause to be connected, or allow to remain connected; any auxiliary water supply to the municipal drinking water system except as otherwise defined in the Building Code.

5.4 In accordance with the provisions of this By-law, every owner of industrial, commercial, institutional, multi-residential property, residential occupancies having connections to the municipal drinking water system and any auxiliary water supply, private well, lawn sprinkler, irrigation system, fire protection system,

or where a condition exists in any building or structure that may be hazardous or detrimental to the municipal drinking water system, shall ensure a testable Backflow Preventer is installed in respect of premise isolation.

6. CROSS CONNECTION SURVEY REQUIREMENTS

- 6.1 Every owner of industrial, commercial, institutional, multi-residential property, residential occupancies having connections to the municipal drinking water system and any auxiliary water supply, private well, lawn sprinkler, irrigation system, fire protection system, or where a condition exists in any building or structure that may be hazardous or detrimental to the municipal drinking water system, shall cause to be carried out a *Cross Connection Survey* of the plumbing system associated with his or her property and shall ensure that such survey is undertaken by qualified person pursuant to the Authorized Functions List (see Schedule "A") at the owner's expense.
- 6.2 The *Cross Connection Survey* shall be in the prescribed Municipality of Thames Centre's *Cross Connection Survey Form*; as amended from time to time, and shall be completed as a report, which shall include existing Backflow Preventers, cross connections discovered, corrective measures, recommendations and a schedule of work to be completed.
- 6.3 A *Cross Connection Survey* shall be completed at a frequency of:
- a) every 5 years; and
 - b) Upon change of operation or use of the property, zoning change, change of owner, change of tenant, or as otherwise required by the municipality.
- 6.4 Upon identification of Severe Hazard, the qualified person as prescribed in the Authorized Function List and/or owner, within 24 hours shall notify the Municipality in writing.
- 6.5 An individual residential dwelling unit within an industrial, commercial, institutional, and multi-residential property is exempt from a *Cross Connection Survey* unless a severe hazard is known and/or brought to the attention of the qualified person.
- 6.6 No person shall submit or cause to be submitted a *Cross Connection Survey Form* to the municipality that contains inaccurate or false information.

7. APPLICATION OF STANDARDS AND SELECTION OF METHODS

- 7.1 Except as otherwise set out in this By-law, the installation, maintenance, and field testing of Backflow Preventers shall be in accordance with the CSA Standard.
- 7.2 The Backflow Preventer whether it be for premise isolation, source isolation or zone isolation shall be determined by a professional engineer or journeyman plumber using the CSA Standard, as amended or any successor thereof.
- 7.3 Despite Section 7.2 of this By-law, where a source isolation backflow preventer has been previously installed by the manufacturer of equipment, the cross connection is required to be reviewed by qualified person as prescribed in the Authorized Functions List to determine if the Backflow Preventer meets the selection specifications. These cross connections are to be clearly indicated on the *Cross Connection Survey*.

8. INSTALLATION OF BACKFLOW PREVENTERS

- 8.1 Every person installing a Backflow Preventer shall ensure that:
- a) such device is installed in accordance with acceptable engineering practices and the requirements of the Building Code, this By-law, and the CSA Standard;
 - b) such device is located in such a manner so that in the event of backflow the device prevents contamination of the municipal drinking water system and any other potable water system;
 - c) where such device is installed in respect of premise isolation, such device is located within a maximum of 3.0 meters downstream of the water meter, except where circumstances require the device to be installed in an alternative location and such location is to the satisfaction of the municipality;
 - d) where such device is installed in respect of premise isolation, all piping between the water meter and such device shall have no connections and is clearly and permanently labelled "*no connections permitted*" unless otherwise directed by the municipality; and
 - e) where such device is installed in respect of source or zone isolation, all piping between the point of potential contamination and the point at which the device is located is clearly and permanently labelled "*non-potable water*" and no new connection shall be permitted unless authorized by the municipality.
- 8.2 Every owner of property upon which a Backflow Preventer is installed shall ensure that such device is maintained in proper working order at all times.
- 8.3 Where in the opinion of the municipality, a risk of possible contamination of the municipal drinking water system exists, an owner on notice from the municipality, shall install premise isolation in addition to any other source of protection devices on the premise.
- 8.4 Once the *Cross Connection Survey* is conducted and determined that a backflow prevention device(s) is required, the installation of a backflow prevention device(s) shall occur within the timeframes outlined below, depending upon the degree of hazard:

<u>Degree of Hazard</u>	<u>Compliance Date</u>
Severe	No later than 30 calendar days from the date of identification of the hazard as severe
Moderate and Minor	No later than 90 days from the date of notification of the hazard as moderate or minor

9. MAINTENANCE AND FIELD-TESTING OF CROSS-CONNECTION CONTROL METHODS

- 9.1 Every person who tests a Backflow Preventer shall carry out such testing in strict accordance with this By-law and the CSA Standard.
- 9.2 Every person who tests a Backflow Preventer shall:

- a) be a qualified person, in addition to meeting the requirements listed on the Authorized Functions List in Schedule "A" of this By-law;
- b) within 14 days of carrying out such a test, provide a legible and complete a *Backflow Prevention Device Test Report* to the municipality;
- c) upon finding that such device is malfunctioning or otherwise not maintained in proper working order, immediately notify the owner of the property and the municipality in writing of such condition.

9.3 Every owner who has a Backflow Preventer located on his or her property shall ensure that:

- a) such device is tested by a Cross Connection Control Specialist when it is first installed and annually thereafter and/or upon request by the municipality and also when it is cleaned, repaired, overhauled, or relocated;
- b) when such device is tested that a *Backflow Prevention Device Test Report* is provided to the municipality within 14 days; and
- c) in the event that such device is malfunctioning or otherwise not in proper working order, the device is immediately repaired or replaced with an equivalent type of Backflow Preventer, and the municipality is notified.

10. BACKFLOW TEST EQUIPMENT MAINTENANCE

10.1 Where required by CSA Standard, as amended; all equipment used to test Backflow Preventers shall be verified and/or calibrated for accuracy annually by a qualified person.

10.2 Proof of such verification and/or calibration shall be presented to the municipality upon request.

11. REMOVAL OF BACKFLOW PREVENTION DEVICES PROHIBITION

11.1 No person shall remove a Backflow Preventer required under this Bylaw, or any part thereof, after it has been installed, and no owner of a property where such a Backflow Preventer is installed shall cause or permit the removal of such a device, unless such removal is:

- a) to facilitate the repair of the device, with the device replaced immediately after the repair is carried out;
- b) to replace the device with another one that meets or exceeds the provisions of this By-law;
- c) a result of the cross connection to which the Backflow Preventer was isolating has been permanently removed; or
- d) to facilitate the disconnection of the private service from the municipal drinking water system in accordance with the written approval from the municipality, or any combination of the foregoing.

11.2 Whenever a Backflow Preventer required under this By-law has been permanently removed or the type of device has been changed, the owner of the property must notify the municipality in writing immediately of such change.

12. INSPECTION FOR CROSS CONNECTIONS – ACCESS

- 12.1 The municipality shall be permitted access, within 24 hours of providing notice, to any property that are connected to the municipal drinking water system for the purpose of performing inspections to verify compliance with this By-law.
- 12.2 Where in the opinion of the municipality, a risk of possible contamination of the municipal drinking water system exists; the Municipality shall be permitted immediate access to any property that are connected to the municipal drinking water system. In such instances, the municipality may require a routine cross connection inspection of the property to be performed by a qualified person as described in the Authorized Functions List (see Schedule "A"). Should an unsafe and/or undocumented cross connection be found during said inspection, the cost of the inspection shall become the responsibility of the owner.

13. MAINTENANCE OF FIRE SERVICE MAINS AND TEMPORARY CONNECTIONS

- 13.1 No person shall connect, cause to be connected, or allow to remain connected, any piping, fixture, fitting, container or appliance to a municipality owned, or private fire hydrant in a manner which, under any circumstances may allow water, wastewater or any liquid or substance of any kind to enter the municipal drinking water system.
- 13.2 No connection for water supply, other than a fire protection system, shall be made to a fire protection piping system.
- 13.3 All private fire hydrants are the responsibility of the property owner and must be installed and maintained according to:
- a) The Ontario Regulation 213/07: Fire Code, as amended;
 - b) The Building Code as amended; and
 - c) NFPA 24 - Installation of Private Fire Service Mains and Their Appurtenances as amended.

14. ORDER TO CORRECT CROSS CONNECTION

- 14.1 Should a condition be found to exist which is contrary to the provisions of any section of this By-law, or if the owner to whom the Municipality has issued a notice fails to comply, the municipality, at its sole discretion may:
- a) Give notice to the owner to correct the fault at their expense within a specified time period and if the notice is not complied with, the municipality may then discontinue the supply of municipal water to the plumbing system; and/or
 - b) Issue an unsafe order under 'unsafe requirements' in accordance with the Building Code Act if a condition exists that could be hazardous to the health or safety of persons in the normal use of the building, persons outside the building or persons whose access to the building has not been reasonably prevented; and/or
 - c) Without notice to the owner, discontinue the supply of municipal water to the plumbing system, where the Municipality, at its discretion, has determined that

an immediate severe hazard exists that could result in contamination of the municipal drinking water system that may endanger public health or safety.

15. ENFORCEMENT

15.1 The By-law shall be enforced by a building inspector employed by the Municipality of Thames Centre; or any person appointed by the Chief Building Official; any Water Operations Staff or any person appointed by the Director of Environmental Services; or any Municipal By-law Enforcement Officer of the Municipality of Thames Centre.

15.2 No Person shall hinder or obstruct, or attempt to hinder or obstruct, an Enforcement Officer lawfully carrying out a power, duty or direction under this By-law.

16. PENALTY

16.1 Every person who is guilty of an offence under this By-law shall be subject to the penalties indicated in the municipality of Thames Centre's *Tariff of Fees By-law*, as amended.

17. FEES

17.1 Any fees and administrative costs associated with the By-law are non-refundable and are indicated in the municipality of Thames Centre's *Tariff of Fees By-law*, as amended.

17.2 Receipt of *Backflow Prevention Device Test Report* or *Cross Connection Survey Form* does not indicate compliance to the requirements of this By-law.

18. SEVERABILITY

18.1 If any section or sections of this By-law, or parts thereof are found by any court of competent jurisdiction to be illegal or beyond the power of municipal Council to enact, such section or sections or parts thereof shall be deemed to be severable from this By-law and all remaining sections or parts of this By-law shall be deemed to be separate and independent therefrom and to be properly enacted and to be of full force and effect.

19. SCHEDULES

19.1 This By-law includes Schedule "A" hereto which forms part of the By-law.

20. ENACTMENT

20.1 THAT this By-law shall come into force and effect on the date of passage.

READ a FIRST and SECOND time this 14th day of January, 2019.

READ a THIRD time and **FINALLY PASSED** this 14th day of January, 2019.

Original signed by:

Mayor, A. Warwick

Original signed by:

Clerk, T. Michiels

Schedule A
Authorized Functions List

Authorized function by Qualified Person	Perform Cross-Connection Survey	Install, relocate or replace backflow prevention device	Repair backflow prevention device	Test backflow prevention device	Items 1 - 4 in relation of fire protection systems	items 3 and 4 in relation to lawn sprinkler systems
Professional Engineer Licensed in Accordance with CSA Standards	X		X	X	X	X
Certified Engineering Technologist Licensed in Accordance with CSA Standards ⁱ	X		X	X	X	X
Licensed Master Plumber Licensed in Accordance with CSA Standards	X	X	X	X	X	X
Journeyman Plumber Licensed in Accordance with CSA Standards ⁱⁱ	X	X	X	X	X	X
Apprentice Plumber Licensed in Accordance with CSA Standards ⁱⁱⁱ	X	X	X	X	X	X
Fire System Sprinkler Fitter Licensed in Accordance with CSA Standards	X				X	
Lawn Irrigation System Installer Licensed in Accordance with CSA Standards	X					X

ⁱ Required to be under the direction of a professional engineer

ⁱⁱ Required to be employed by a licensed plumbing contractor or licensed fire sprinkler contractor

ⁱⁱⁱ Required to be employed by a licensed plumbing contractor and under the direct supervision of a journeyman plumber or master plumber.