

RESIDENTIAL SWIMMING POOL HOT TUB & SWIM SPA Installation Guide

Contents	Page
Contacts & Approvals	2-3
1. Initiating the Process	4
Legal Survey	4
Swimming Pool Site Plan	4-5
Statutory Declaration	7-8
Swimming Pool Enclosure Inspection Request Form (Sample)	9
2. Survey & Site Plan Review	10
3. Development & Construction Payments & Deposits	10
4. Joint Pre-Construction Inspection	10
5. Pool Installation Phase	11
By-law Requirements, Fiberglass Pool Installation	12
Pool Enclosure Checklist	13
Pool and Spa Wastewater Safety	14
Acceptable Pool Enclosures – Examples	15-16
6. Final Pool Enclosure Inspection	17
7. Lot Grading and Municipal Services Protection Deposit Refund Process	17

Contacts and Approvals

You are responsible to contact and verify whether your property meets the requirements or is not affected by the agencies mentioned below, before you submit a Swimming Pool Enclosure Inspection Request to Compliance & Licensing Enforcement.

Approvals / Permits	Requirements	Contact
Alectra Utilities	Alectra Utilities must review and approve your survey & site plan for all in-ground and above ground installations to ensure your installation is safe.	Alectra Utilities - 905-273-7425 2185 Derry Rd. W, Mississauga ON L5N 7A6 recordsMississauga.pool@alectrautilities.com
Conservation Authorities	You must obtain approval if any part of construction is within an area regulated by a conservation authority.	Credit Valley Conservation Authority - 905-670-1615 1255 Old Derry Rd. Mississauga ON L5N 6R4 Home - Credit Valley Conservation Credit Valley Conservation (cvc.ca) Conservation Halton - 905-336-1158 2596 Britannia Rd W Burlington ON L7P 0G3 https://conservationhalton.ca/contact-us Toronto and Region Conservation Authority - 416-661-6600 101 Exchange Ave. Vaughan ON L4K 5R6 Toronto and Region Conservation Authority (TRCA)
Heritage Properties	You need heritage approval from the City to make any alterations on a designated heritage property.	Heritage Properties 905-615-3200 x 4061 Heritage.planning@mississauga.ca
Community Services Park Access	You will need a park access permit if you need to access your private property through a City park or natural area to complete construction of a pool	Community Services Park Access Permit park.planning@mississauga.ca
Ontario One Call	You must contact Ontario One Call to get buried cables, pipes and wires located so you can dig safely.	Ontario One Call – Call or Click Before You Dig 1-800-400-2255 www.ontarioonecall.ca

IF YOU HAVE NOT OBTAINED APPROVALS FROM THE ABOVE AGENCIES, Compliance & Licensing Enforcement will NOT accept and process a Swimming Pool Enclosure Inspection Request.

You must use the latest version of all forms.

What happens next?

Swimming Pool Enclosure Inspection Request	Submit Swimming Pool Enclosure Inspection Request & required documents with the current enclosure inspection fee. We will disperse your site plan and survey to the following departments.	Licensing, Permits & Regulatory Services Enforcement City of Mississauga 950 Burnhamthorpe Road W - ground floor Mississauga ON L5C 3B4 311 or 905-615-4311 In Person Appointment: https://reservation.frontdesksuite.com/mississauga/compliance
Survey & Site Plan	Your site plan & survey will be reviewed to ensure the swimming pool/hot tub/swim spa meets regulations	You will be copied in our email to Transportation & Works Department Development Construction You will be informed whether or not the survey and site plan is acceptable and to pay lot grading and municipal service protection fees prior to the initial property inspection.
Pool Site Plan	Your site plan will be reviewed to ensure the swimming pool/hot tub/swim spa meets Zoning regulations	You will be copied in our email to Planning & Building Dept. Zoning You will be informed whether or not the site plan is acceptable.
Site Plan Control	If your property is subject to Site Plan Control, you will be informed to obtain Site Plan Approval	You will be notified by email if Site Plan Approval is required. Planning & Building Department Development & Design Contact 311 or (905-615-3200 if calling from outside of City limits) Development & Design Division - eplans.devdes@mississauga.ca Site Plan Control Information :

Note: Requirements are subject to change without notice

RESIDENTIAL SWIMMING POOL AND HOT TUB/SWIM SPA INSTALLATION GUIDE

STEP 1: Initiating the Process

Follow the steps below and provide the documents required to initiate your Swimming Pool Enclosure Inspection Request for all types of pools that are capable of holding water exceeding 24" (61 cm) in depth at any point. For more information, refer to the [Swimming Pool Enclosure Bylaw 0191-2011](#).

Residential swimming pools are for the sole use of the property residents and their invited guests only and cannot be used for any commercial or business related activities.

LEGAL SURVEY

You are required to supply one 11"x 17" (279mm x 432mm) legal survey of the property where the swimming pool, hot tub, or swim spa is being installed. The legal survey must accurately reflect all current and existing fencing, structures, easements and property boundaries. Further information about surveys and how to obtain one visit the Association of Ontario Land Surveyors at <https://www.aols.org/>.

SWIMMING POOL SITE PLAN

You are required to submit one 11" x 17" (279mm x 432mm) scaled drawing of the **swimming pool site plan** showing the location of the proposed pool, pool equipment, accessory structure(s), landscaping features and relevant grade elevations. **Free-hand drawn sketches will not be accepted.** See a sample drawing below.

The Swimming Pool Site Plan must include:

- a. the street location and street name (if the property is in a corner lot, show both street names)
- b. the shape and size of the lot
- c. the dimensions of the yard
- d. the house location with municipal address
- e. the proposed swimming pool with elevations, set-backs to property line and all accessory structures (sheds/cabanas/detached garages) and or pool equipment - the shape, location and overall dimensions, including the width of the coping to be around the pool (if proposed). These structures may require a building permit.
- f. the distance from the dwelling to the closed inside wall of the pool
- g. existing and proposed landscaping such as gardens, grassy areas, retaining walls, etc., with height and setback from the property line (minimum 0.6 metres or 2 feet)
- h. all hard surfaces such as decks, patio stones, interlocking brick, etc., include elevations and size (provide dimensions in brackets) and set-backs to property lines

- i. all easements and right-of-way's and their widths (check your property title if you are not sure)
- j. existing and proposed fence with self-closing gate location(s)
- k. construction access
- l. existing and proposed grading:
 - Start at the back door sill and use it as the base point measurement, assign a measurement value, for example 100.00. Use metres as unit of measurement
 - Indicate the grading by estimating the difference in elevation at different points of property, i.e. points that are either above or below the base point measurement. If you look at the sample plan, you will see that the base value of the back door sill is 100.00, the North East corner of the lot slopes down slightly with a value of 99.70 and the North West corner slopes down a bit more and has a value 99.40
 - Indicate existing and proposed grading elevations at various points throughout the backyard property, including points along the property lines using the above method for assigning a value
- m. show street trees and adjacent parkland/greenbelt if applicable

Hot Tub/Swim Spa/ Portable Pool

An 11" X 17" (279mm x 432mm) site plan and legal survey is required for Hot Tubs/Swim Spas and portable pools that will be installed above ground. The site plan must show the location of the proposed pool, pool equipment, all accessory structure(s), landscaping features, relevant grade elevations and setbacks to property lines.

Types of Pools

In-ground Pool: a permanent pool installed in the ground or an artificial pond

Above Ground Pool: a permanent pool installed completely above grade

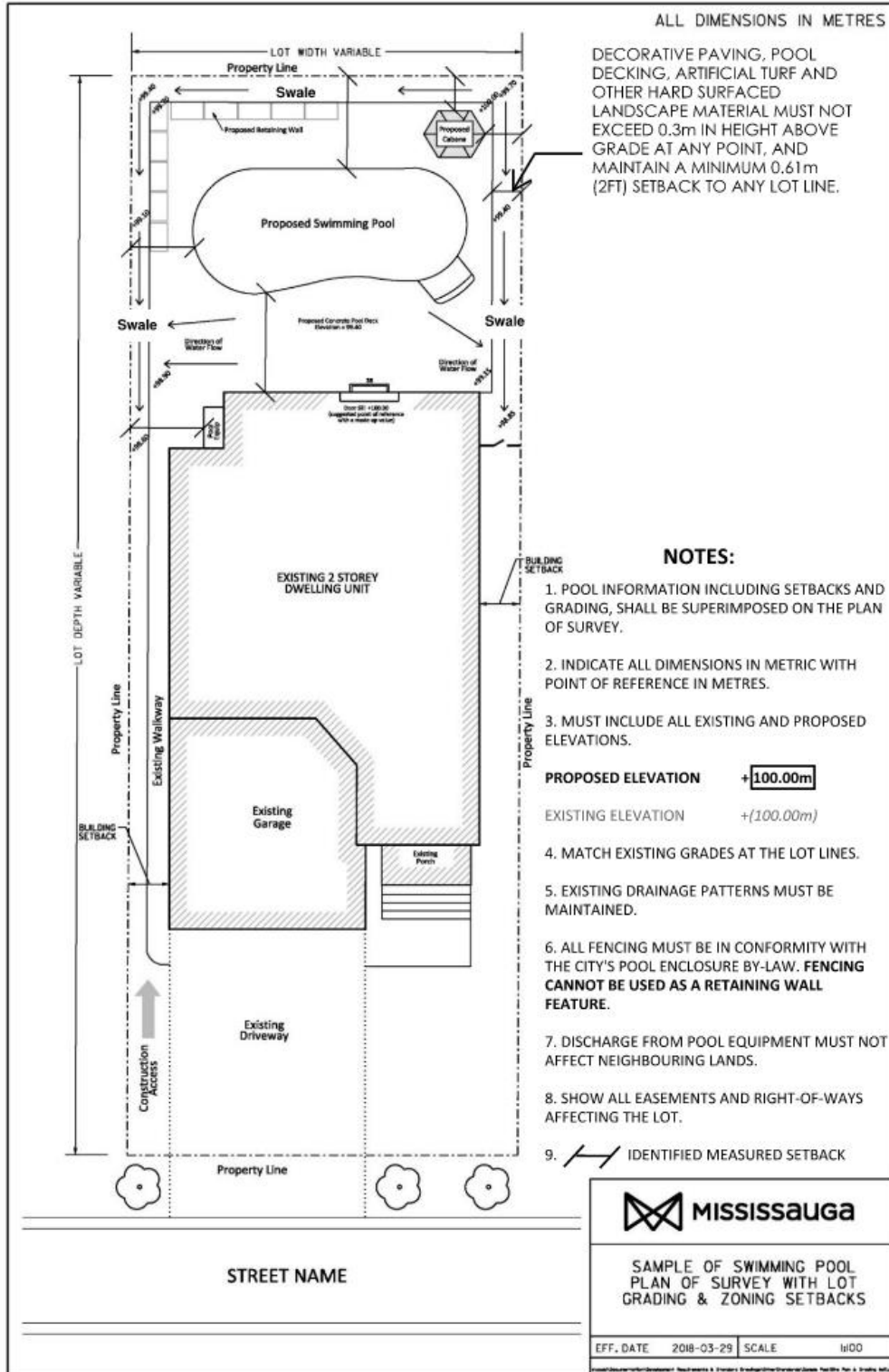
On-ground Pool: a permanent pool installed partially below and above grade

Inflatable/Portable Pool: a temporary pool which can be moved or removed

Hot Tub/Swim Spa: an above ground portable, self contained vessel

SAMPLE - SWIMMING POOL SITE PLAN WITH LOT GRADING

INDICATE ALL DIMENSIONS IN METRIC WITH POINT OF REFERENCE IN METRES



STATUTORY DECLARATION - Information

A Statutory Declaration is a written declaration or statement of facts which a person swears, affirms or declares to be true in the presence of an authorized witness. City staff may not commission this declaration and therefore the person must seek other individuals who are authorized to administer oaths - usually a Commissioner of Oaths, Notary Public, or lawyer.

If there is more than one (1) registered homeowner, **EACH** homeowner will need to sign the Statutory Declaration.

It is a criminal offence to solemnly declare a false Statutory Declaration, and may be subject to prosecution resulting in an offence punishable on summary conviction (Section 134, Criminal Code of Canada).

The City of Mississauga will only accept an **ORIGINAL** signed copy of the Statutory Declaration. The person who is authorized to administer oaths (e.g. lawyer) must stamp the document and clearly provide their contact information.

The **ORIGINAL** signed Statutory Declaration for Swimming Pool Installation must be submitted to the Compliance and Licensing Enforcement Division services counter located on the ground floor of the Mississauga Civic Centre, 300 City Centre Drive with all other required documentation.

For more information, contact:

By Phone: 3-1-1 (if calling outside of City 905-615-4311)

By Email: bylaw.enforcement@mississauga.ca

In Person: Schedule a reservation using this link
<https://reservation.frontdesksuite.com/mississauga/compliance>
Licensing, Permits & Regulatory Services Enforcement
950 Burnhamthorpe Road W
Mississauga, Ontario L5C 3B4

Statutory Declaration

CANADA	Swimming Pool Installation MUNICIPAL ADDRESS:
PROVINCE OF ONTARIO	_____ Mississauga, Ontario (the "Lands")

I/We _____ and _____, of the City of Mississauga, in the Regional Municipality of Peel, DO SOLEMNLY DECLARE THAT:

1. I am/ We are the registered owners of the above described Lands and as such have direct knowledge of the matters hereinafter deposited to.
2. I/We confirm that the swimming pool and the fence surrounding the swimming pool, including any equipment, buildings or structures relating to the swimming pool (the "Installations") are or will be located entirely within the boundaries of the Lands that I/We own.
3. I/We have conducted a proper title search of the lands and confirm that none of the Installations referred to in section 2 are or will be located upon or encroach upon any City owned property, easements, right-of- ways, neighbour's property or any property owned by the Credit Valley Conservation Authority, the Toronto Region Conservation Authority, or the Halton Region Conservation Authority.
4. I/We have or will satisfy all applicable requirements imposed by the relevant conservation authority (i.e. the Credit Valley Conservation Authority or the Toronto Region Conservation Authority or the Halton Region Conservation Authority).
5. I/We have reviewed the applicable provisions of the Mississauga Zoning By-law regarding permitted uses and property line setbacks and hereby confirm that all such provisions have been or will be fully complied with.
6. I/We confirm that I/We are solely responsible for lot grading and drainage works within the identified Lands; and that any and all works associated with the lot grading and drainage will be completed and maintained so as to not adversely impact any surrounding lands.
7. I/We have or will supervise the work of all contractors on our Lands to ensure strict conformity with all the statements made herein.

I/WE make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath.

Declared before me at the City of _____ this _____ day of _____ 20____	_____ <i>Signature</i>
_____ <i>Lawyer, Notary or Commissioner for taking Oaths</i>	_____ <i>Signature</i>

Personal information collected on the statutory declaration is collected as part of the building permit application process in order to satisfy Section 8 (2) (a) of the *Building Code Act, 1992*, S.O. 1992, c. 23, and will be used to confirm the proposed and/or existing use of the subject property and may be used in an enforcement proceeding should the property be used in a manner contrary to the facts set out in the statutory declaration. Questions about the collection of this information should be directed to Customer Service at 3-1-1 (905-615-4311 outside City limits).

2021/05

STEP 2: Survey & Site Plan Review

We will forward your survey and site plan to the following City departments:

- Zoning Section – for applicable zoning regulations
- Development Construction – for grading and assessment of the submitted survey
- Property Standards & Investigations Enforcement – for a Hot Tub/Swim Spa/Portable Pool that is located entirely above ground. It must have a suitable enclosure that meets the requirements of the Swimming Pool Enclosure Bylaw or equipped with a fitted and secured prefabricated cover so as to prevent access when not in use.

STEP 3: Development Construction Payments & Deposits

Once your site plan and survey are deemed acceptable by all applicable City departments you will be informed to provide deposits for Municipal Services Protection and Lot Grading, together with a non-refundable Administration fee in accordance with the Fees and Charges Bylaw (subject to change if paid following year) as follows:

Inspection & Administration 2026 Fees (non-refundable)

On-Ground /Hot Tubs / Spas: **\$297.19** (\$263.00 + \$34.19 HST)

Above Ground Pools: **\$593.25** (\$525.00 + \$68.25 HST)

Administrative Fee: **\$33.90** (\$30.00 + \$3.90 HST)

Municipal Services Protection Deposit – “MSPD” (refundable)

In/On Ground Pools: **\$1,500.00**

Above-Ground: **\$750.00**

- Electronic payment details **will be emailed to the applicant** with the required fee and deposit amounts.
- Fees and charges are in accordance with the User Fees and Charges for Services, Activities or the Use of Property, as amended or replaced from time to time. Lot Grading and Municipal Services Protection Deposits are collected through the Lot Grading and Municipal Services Protection Deposit By-law, No. 0172-2020, as amended, or a deposit amount as determined by the Commissioner, Planning & Building.

After all required fees & deposits are paid, Development Construction will provide an email to Licensing, Permits & Regulatory Services providing their clearance to proceed to construct the pool.

Notice to Commence is based on the following:

1. The pool plan has been deemed acceptable.
2. The required Development Construction fees & deposits have been paid.
3. The required site meeting shall take place as arranged by ByLaw Enforcement.
4. The owner(s) are responsible to ensure that the pool enclosure, and any accessory structures, meet with all applicable by-laws and easement restrictions, and do not encroach onto the City right-of-way or park lands.
5. The owner(s) are responsible to ensure that the Public & Private Tree By-laws are being adhered to.

If you have any questions, please contact Development Construction by calling 311 or (905-615-4311 if calling from outside the city limits) or email DEVCONPOOLS@mississauga.ca.

STEP 4: Joint Pre-Construction Meeting

- Once the site plan and survey has been approved, a Compliance & Licensing Enforcement officer will contact the applicant to arrange for a pre-construction site meeting. The homeowner and/or agent must be present at the meeting and will include staff from Compliance & Licensing Enforcement, Development Construction, and if required Community Services, Heritage conservation authorities (CVC, CH or TRCA).
- During the meeting, the Inspectors will determine if there are any by-law, lot grading or other issues that may impact the proposed location and construction of the pool. It is important that the location and configuration of the pool be staked accurately according to the submitted site plan. If the homeowner or agent is not present and/or the site is not prepared, the meeting **will not** proceed and may delay the pool installation process.
- Trees on the boulevard and/or adjacent to parkland/greenbelt require hoarding and/or sediment control to be installed prior to the initial inspection so Community Services can inspect on site to accelerate the process and not have to wait for another inspection or photo.
- If changes to the site plan are identified during the inspection, you may receive a notice from the Development Construction section advising you not to proceed with construction until the changes have been addressed and a revised site plan is submitted.

STEP 5: Pool Installation Phase

The contractor/applicant/homeowner must ensure during the swimming pool installation phase that:

- there are no infield changes made to the information submitted on the site plan(s) with regard to grades, elevations, landscaping and setbacks;
- all existing grades at the lot lines and all existing drainage patterns are maintained; and
- all municipal rights-of-way (which includes roads, boulevards, sidewalks, City-owned lands and all easements) are maintained free of equipment, debris, bins, storage of materials and mud at all times.
- It will be necessary to obtain a Road Occupancy Permit (ROP) to utilize a mobile crane and/or place/store dumpsters, equipment/machinery, materials or portable washrooms within a municipal right-of-way. For further information on, and to apply for an ROP, please contact the Transportation and Works Department's Customer Service Counter at tw.pas@mississauga.ca or call at 905-615-4950 or online at <https://www.mississauga.ca/services-and-programs/transportation-and-streets/roads-and-sidewalks/apply-for-a-road-occupancy-permit/>

By-Law Requirements

Zoning

- Ensure that the swimming pool/hot tub/swim spa meets the regulations of the Zoning By-Law 225-07. Information can be found at <http://www.mississauga.ca/portal/pb/swimmingpools>
 - ❖ No part of an outdoor **swimming pool** is permitted in a front or required **exterior side yard**
 - ❖ An outdoor **swimming pool** shall be set back a minimum of 1.5 m from all **lot lines**, measured from the inside wall of the outdoor **swimming pool**
 - ❖ Pool heating/filtering equipment may be located in a required **yard**, other than a **front yard**, provided that it is not closer than 0.61 m to any **lot line**
 - ❖ All setbacks to Greenland Zones are met

Encroachment

- No part of your swimming pool, enclosure (fence), pool equipment, sheds, or structures are encroaching on **ANY** public lands owned by the City of Mississauga.
- **City lands include parks, boulevards, and easements (city right-of-way) that may run adjacent to or on your property.**

Heritage Planning

- If the property is designated under the Ontario Heritage Act, a heritage permit may be required. This is an additional process that will impact timelines. For more information on the process, visit www.mississauga.ca/heritageplanning

Fiberglass Pool Installation

Fiberglass Swimming Pools are required to be filled with water as part of the installation process. Prior to the installation, the homeowner or agent must contact Compliance and Licensing Enforcement with the installation date. The officer will attend the property on that date to inspect the temporary enclosure and provide a Fiberglass Swimming Pool Temporary Fencing Letter allowing the swimming pool to be filled, prior to a Final Swimming Pool Enclosure inspection.

- The swimming pool must be surrounded by a substantially completed enclosure or a temporary enclosure that will restrict any access to the swimming pool except for those persons installing the pool.
- After the swimming pool is filled with water, it must be kept enclosed by the swimming pool enclosure or temporary enclosure. Any breaches or openings must be immediately repaired and secured so that no person can access the swimming pool.

Pool and Spa Wastewater Safety

Debris and Anti Littering By-Law 219-85 places strict conditions for discharge of pool and spa water including filter backwash.

- Filter backwash water should **only** be directed to the closest sanitary sewer connection **on the pool owner's property**.

A plumbing permit is required from the City's Planning and Building Department prior to the installation of a direct connection to the sanitary sewer system for the purpose of discharging backwash water. The **Storm Sewer Use By-Law 259-05** makes it illegal to discharge water to a storm drain that contains contaminants. If you discharge (or hire someone to discharge) water that exceeds the Storm Sewer Use By-Law limits, you may be subject to enforcement action.

- **Chlorine or Bromine** treated pool and spa water may be discharged to a storm drain **ONLY** if the water meets the following conditions:
 - ✓ It is free of chemicals in toxic amounts including, but not limited to, chlorine, bromine, hydrogen peroxide-based sanitizers, algaecides, fungicides, copper, silver, muriatic acid, soda ash and cyanuric acid. Remember, most pool and spa chemicals are toxic to aquatic organisms.
 - ✓ It is free of debris, vegetation or algae
 - ✓ It has a pH of between 6 and 9
 - ✓ It has a chlorine concentration of no more than 1 ppm (1 mg/L)
- To help to reduce chemical concentrations, stop adding chlorine and bromine 7-10 days before pumping down the pool and leave the cover off to allow exposure to sunlight.

Saltwater pools and spas contain elevated levels of sodium chloride or sodium bromide. Because these salts cannot be removed from the water, saltwater pool and spa owners should direct all saltwater discharge to the **sanitary sewer connection**.

The Region of Peel suggests the following conditions for discharge to the sanitary sewer system:

- ✓ Direct the discharge from the pool to your nearest drain inside your house
- ✓ Limit the size of the discharge hose from the pool to 4 cm (1 1/2 inches) or less in diameter
- ✓ Discharge the water at a non-peak time such as evenings after 8 p.m. or weekends after 10 a.m.

FAILURE TO FOLLOW REGIONAL SANITARY DISCHARGE GUIDELINES MAY CAUSE FLOODING IN BASEMENTS OF NEARBY HOMES AND MAY ALSO RESULT IN SURCHARGES BEING ADDED TO YOUR ACCOUNT.

Pool Enclosure (Fence) Inspection Checklist

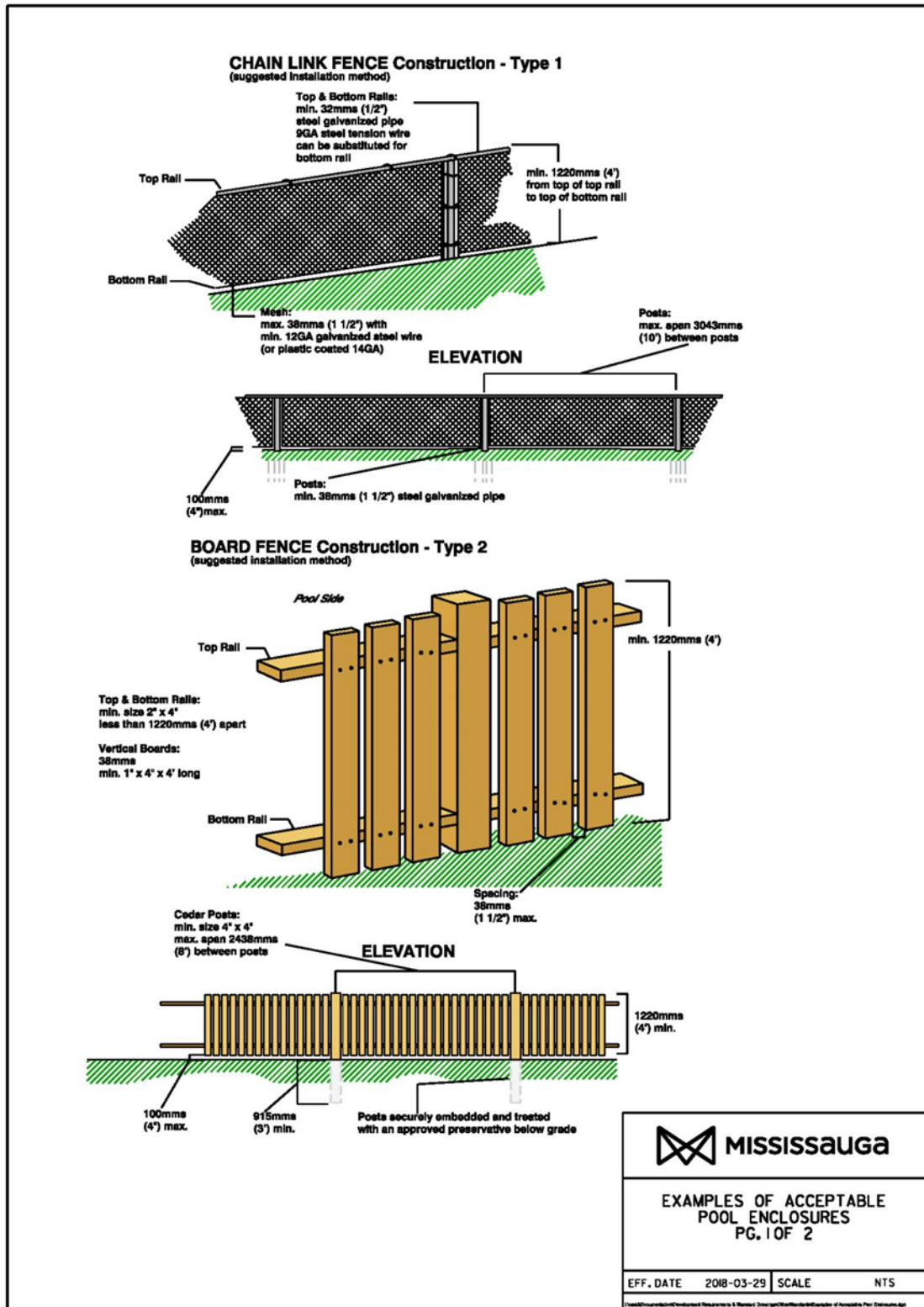
Prior to calling Compliance and Licensing Enforcement for your Final Pool Enclosure Inspection, ensure that the enclosure meets the following minimum requirements. Swimming pool enclosures not meeting the minimum requirements will delay the progression of installing the liner and filling the pool.

- ✓ **Height of Pool Enclosure (fence)** - A continuous **non climbable fence**, having a minimum height of **1.2 metre (4 feet)** around the pool, but not higher than 2 metres (6 feet, 7 inches) above effective ground level. Decorative/ornamental items, accessible latches on wrought iron fencing, or exposed diagonal braces on wood gates would not be acceptable as part of the enclosure and would have to be removed.
- ✓ **Vertical Spacing** - A separation distance between vertical boards, bars, pipes, tubes, rails or other material does not exceed **10 centimetres (4 inches)**, or in the case of a chain link fence, have a chain link mesh does not exceed **38 millimetres (1 ½ inches)**.
- ✓ **Chain Link Fence** - Must be at least **1.2 metre (4 feet)** in height, with maximum **38 millimetres (1 1/2 inch)** mesh, a continuous solid top rail, and a bottom tension wire.
- ✓ **No Fence Stepping** - Where there is a grade change that affects the height of the swimming pool enclosure, the height measurement is taken from the “effective ground level” which is the highest level of the ground within **1.0 metre (3 feet 3 inches)** measured in a horizontal distance in any direction from the swimming pool enclosure.
- ✓ **Fence type Changes** - Where fence materials change from one type to another, the vertical spacing between materials must not be greater than 2 inches.
- ✓ **Bottom Spacing** - any ground clearance space or gap cannot be more than **10 centimetres (4 inches)** at any point under the enclosure.
- ✓ **Gates** - Gates must be **self-closing and self-latching**. The latches must be located at the top of the pool side of the gate. A padlock on the gate is not considered adequate, even if the intention is to keep the gate permanently locked. You cannot have decorative ornaments or cross-braces that could be climbable from the outside.

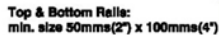
Hot Tubs/Swim Spas

Where an above ground Hot Tub/Swim Spa meets the required Zoning By-Law setbacks, a prefabricated fitted and secured cover may be considered as a swimming pool enclosure. You must submit a Swimming Pool Enclosure Inspection Request, Inspection fee, Declaration, Site Plan and Survey for review.

EXAMPLES OF ACCEPTABLE POOL ENCLOSURES



(suggested installation method)



Vertical Boards:
38mm (1") min.
x 100mm (4")
x 1220mm (4') long min.

Cedar Posts:
min. size 100mm(4") x 100mm(4")
max. span 2438mm (8')
between posts

Spacing:
92mm(4") max.

ELEVATION

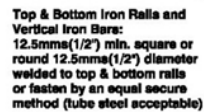


100mm
(4") max

915mm
(3') min.

Posts: securely embedded and treated with an approved preservative below grade

(suggested installation method)



min. 1220mm(4') from top of
top rail to top of bottom rail

Spacing:
92mm(4") max.

Iron Posts: min. 25mm(1") square or round 25mm(1") diameter welded to top & bottom rails or fasten by an equal secure method



100mm
(4") max.

ELEVATION

max. span 3043mms(10')
between posts

Posts: must extend min 1220mm (4') below grade. All posts to be encased in concrete min. 50mm (2") thick all around.

**MISSISSAUGA**

EXAMPLES OF ACCEPTABLE
POOL ENCLOSURES
PG. 2 OF 2

EFF. DATE	2018-03-29	SCALE	NTS
-----------	------------	-------	-----

STEP 6: Final Pool Enclosure Inspection

After the fence has been erected and **before** you fill the pool, you must call 311 or 905-615-4311 if calling outside of Mississauga to request a final inspection of the pool enclosure. A Compliance & Licensing Enforcement Officer will conduct an inspection and determine whether or not you may proceed to fill the pool. Once the swimming pool enclosure has been approved, you will receive a Certificate of Approval. **It is illegal to fill a pool without an approved swimming pool enclosure.**

STEP 7: Lot Grading and Municipal Services Protection Deposit Refund Process

After the pool has been installed, all associated sodding and landscaping works have been completed and the Swimming Pool Enclosure Approval has been issued by Compliance & Licensing Enforcement, you must request a lot grading and municipal right-of-way inspection by calling 3-1-1 (or 905-615-4311) if calling from outside city limits) and ask the Call Center Advisor to direct a service request to Development and Construction department.

Please note, should the landscaping and sodding work not be completed at the time of inspection, additional inspection fees may be charged for each subsequent inspection.

Should there be damage identified to the municipal right-of-way, the Development and Construction Inspector will provide details of the damaged area/item(s). All associated costs will be assessed to the held Deposits. Repair work may take up to 18 months to complete and can only be completed by City staff. Both Deposits (Lot Grading and the MSPD) will be retained in full until the reinstatement work is completed.

If all is in order, and no damage and/or deficiencies are identified, a refund of the applicable deposits will be processed within four to six (4-6) weeks.

For all other Deposits, please contact the relevant City Department and/or external Agency for their respective refund process.