

POLICYNUMBER: I-1035
POLICYTYPE: LANDUSEPLANNING
SUBJECT: EMERGENCYSERVICEPOLICY

POLICYNUMBER: I-1035 DATE: APRIL 18, 2011
POLICYTYPE: LANDUSEPLANNING
SUBJECT: EMERGENCYSERVICEPOLICY
POLICYCONTENT:

Intent

The Emergency Service Policy was developed to provide developers, designers and constructors with clear direction on how to achieve the design principles that meet a minimum safe level of emergency service infrastructure provision in the City of Kitchener. These levels of infrastructure provision are based on the available emergency service equipment and historical data reflecting where our community risks lie. This document is not intended to replace or supersede documents such as the Ontario Building Code (OBC), but to provide specific details to ensure community infrastructure is sufficient to protect our citizens.

Where this policy intersects with existing legislation and regulation, this policy shall supplement or clarify only in those areas where the acts and regulations are silent or reflect a need for consultation. Nothing in this document shall limit a developer, designer or constructor from providing a higher level of service, or from making alternative compliance proposals in accordance with the OBC or the Ontario Fire Code (OFC).

The developer shall be responsible for including the applicable infrastructure into their plans submitted through existing city processes, such as Site Plan Pre-Applications, Site Plan Applications and Building Permits.

Application

This policy applies to all buildings, building features, and building infrastructure; except where those buildings and building features have been constructed to the prescriptive acceptable solutions of the OBC or OFC, or constructed to an **approved** alternative solution. This policy shall not be used to support an alternative solution proposal, where a prescriptive acceptable solution already exists in either the OBC or OFC.

This policy is meant to compliment and support all planning and development reference documents produced by the City of Kitchener. **Additional design answers may be found by referring to the Urban Design Manual and the Development Manual, available on line with this document at www.kitchener.ca.**

Questions related to this policy may be directed to the Fire Department at (519)741-2495 or via email at fireprevention@kitchener.ca.

Chapters

- 1. Water Supply**
- 2. Fire Routes**
- 3. Emergency Access**
- 4. Multiple Unit Identifiers/Municipal Addressing**
- 5. Miscellaneous**

Definitions (words possessing a defined meaning have been bolded in the body of this document)

Approved – means approved by the Chief Fire Official in consultation with the Chief Building Official.

Building – shall have the same meaning as that provided in the Building Code Act.

Emergency Access – (As covered in Section 3) These drivable access right of ways are intended for use by emergency vehicles in to cul de sacs and other cut off areas. They are typically gated or barred by bollards.

Emergency Access Routes – means a right of way provided to a building for the use of emergency service personnel and vehicles, and provided to protect the building and it's occupants.

Fire Route – shall have the same meaning as an Emergency Access Route.

Street Fronting Townhouse – means a townhouse unit where the principal entrance to the unit is located on a city street.

1. Water Supply

Except as otherwise stated, these requirements apply to all developments.

Fire Hydrants

- 1.1 Unless otherwise **approved**, any development served by private access roads, in which the individual buildings are to be constructed in accordance with Part 9 of the OBC, shall be provided with fire hydrants in conformance with the following:
- a) A fire hydrant shall be located within 90m of the principal entrance to each building. Where portions of the building are completely cut off from the remainder of the building, a fire hydrant shall be located within 90m of the principle entrance to each area. The distance from the hydrant to the principle entrance(s) shall be measured using the path that the fire hose would have to be actually laid along, not in a straight line. (Refer to Appendices 1 & 2)
 - b) If additional private fire hydrants are required to meet the requirements of this Subsection the developer shall provide them at their own expense.
 - c) Private fire hydrants shall be constructed and installed in conformance with the City of Kitchener Standard Specifications for Watermains available from Kitchener Utilities. (Appendix 1)
 - d) Private fire hydrants shall be located with the 100mm Stortz connection facing the private access road.
 - e) Private fire hydrants shall be located within 5m of the private access road, no closer than 3m to any building, and kept visible and accessible at all times.
- 1.2 Fire flow from the fire hydrants shall be determined to be sufficient for fire fighting activities in accordance with City of Kitchener Fire Flow Analysis Submission Requirements. A Fire Flow Analysis Report shall be submitted to the City of Kitchener Utilities Engineer for approval. (Appendix 1)
- 1.3 Private fire hydrants shall be tested and maintained annually in conformance with the Fire Code, and at the property owner's expense.

2. Emergency Access Routes

These requirements apply to all developments, except where prescriptive infrastructure requirements exist in the OBC.

- 2.1 All developments containing **emergency access routes** required by the Building Code, the Fire Code, or this policy shall be provided with fire route signs in conformance with Subsections 2.7 through 2.15. Any development, in which Part 9 of the OBC applies, may be required to be provided with **emergency access routes** in conformance with Subsections 2.2 through 2.6. Such determination shall be made by the City's Chief Fire Official in consultation with the Chief Building Official prior to Site Plan Approval in principle for the proposed development.

Location of Emergency Access Routes

- 2.2 Unless otherwise **approved**, multiple unit buildings containing townhomes and individual dwelling units, where the principal entrance to the unit or townhome has direct access to the exterior, shall be provided with **emergency access routes** located so that the principal entrance and every required access opening are located not less than 3 m and not more than 30 m (Appendix 2 Option 1) from the closest portion of the **emergency access route**, measured along the path of travel, horizontally from the face of the building. Where a developer can show that the 60 m (Appendix 2 Option 2) of provided hose can reach from the fire truck to the most remote room in the dwelling unit, a longer travel distance will be considered.

This limiting factor is based on fire apparatus hose loads intended for use in an initial fire attack in a residential setting. It should be noted that fires in residential homes are the most frequently occurring fire in the City of Kitchener. This restriction takes into account the ability for the Fire Department to effectively intervene in the dwelling unit, using the standard equipment provided on the vehicles. (Appendix 2)

- 2.3 Except as otherwise required in 2.2, **emergency access routes** shall be provided to a building so that (Appendix 3):
- a) for a building provided with a fire department pumper connection (siamese), a fire department pumper vehicle can be located adjacent to the hydrants so that the unobstructed distance from a fire department pumper connection to a hydrant is not more than 45 m.
 - b) for a building not provided with a fire department connection, a fire department pumper vehicle can be located so that the length of the **emergency access route** from a hydrant to the vehicle plus the

unobstructed path of travel for the fire fighter from the vehicle to the building is not more than 90 m, and

- c) the unobstructed path of travel for the fire fighter from the vehicle to the building is not more than 45 m.
 - d) **Emergency access routes** shall be located so that the principal entrance and every required access opening are located not less than 3 m and not more than 15 m from the closest portion of the **emergency access route**.
- 2.4 The unobstructed path of travel for the fire fighter required by Subsection 2.3 from the vehicle to the building shall be measured from the vehicle to the fire department connection provided for the building, except that where no fire department connection is provided, the path of travel shall be measured to the principal entrance of the building.
- 2.5 In all buildings, other than those addressed in 2.2, if a portion of a building is completely cut off from the remainder of the building so that there is no access to the remainder of the building, the **emergency access routes** required by Subsection 2.3 shall be located so that the unobstructed path of travel from the vehicle to one entrance of each portion of the building is not more than 45 m. (Appendix 4)

Emergency Access Route Design

2.6 Unless otherwise **approved**, a portion of a roadway or yard provided as a **fire route** for fire department use shall (Appendix 4):

:

- a) have a clear width not less than 6 m,
- b) have a centerline radius not less than 12 m,
- c) have an overhead clearance not less than 5 m,
- d) have a change of gradient not more than 1 in 12.5 (8%) over a minimum distance of 15 m,
- e) be designed to support the expected loads of fire department vehicles and be surfaced with concrete, asphalt or other material designed to permit accessibility under all climatic conditions,
- f) have turnaround facilities for any dead-end portion of the access route more than 90m long,

- g) be connected with a public thoroughfare, and
- h) will be considered accessible when the following has been provided; the roadway base coat layer, appropriate signage, and hydrants.

Design and Installation Standards for Emergency Access Route Signs

- 2.7 Sign Plate: Materials shall be **approved**, corrosion resistant metal; lettering, colour, size shall be in conformance with the following figure:



Red Circle 19.05cm

Black "P" 10.16cm

White Background

**Black "Fire Route"
4.45cm**

**Enforced Wording
1.91cm**

Sign: 30 x 45cm

- 2.8 Sign Mounting: mounting methods must be **approved**. Some methods that will be considered are:
- a) Standard sign post,
 - b) Light standard or other equivalent utility pole located not more than 4m from the limit of the **fire route**, or
 - c) Fences, landscape walls and building faces located not more than 4m from the limit of the **fire route**.
- 2.9 Mounting Height: Between 2 and 2.5m measured from the top limit of the sign to the grade of the **fire route** surface adjacent to the fire route sign.

- 2.10 Spacing between Signs: not more than 30m spaced such that at least one sign is clearly visible and lettering is legible from all locations within the **fire route**.
- 2.11 Location of Signs:
- a) Where practical, signs should be located alternating side to side of the fire route.
 - b) Where parking is located adjacent to the **fire route** and is not delineated from the **fire route** by curbs, signs may be located on the side of the **fire route** opposite the parking only.
- 2.12 Setback from the **Fire Route**: Fire route signs shall be at least 0.3m and no more than 4m from the edge of the **fire route**.
- 2.13 A detailed **fire route** and signage plan shall be submitted for **approval** prior to final site plan approval in a legible electronic format, preferably PDF or CAD. Plan detail must include width and centerline turning radii of the fire access route, all fire hydrants or other water supplies, fire department pumper connections relative to the buildings, and the location of all fire route signage. This information may be included on the site plan submission.
- 2.14 The Fire Route signs shall be installed before any occupancy is granted by the Building Department. The City's Chief Fire Official shall inspect the route for compliance when requested to do so by the developer and may order modifications if it does not comply with all requirements.
- 2.15 The property owner is responsible to ensure that the visibility and legibility of the signs are maintained at all times.

Maintenance

- 2.16 All **emergency accesses, emergency access routes and fire routes** located on private and public property shall remain clear from all parked vehicles, obstacles and obstructions and must be maintained in a passable state at all times in accordance with the following:
- a) Snow accumulation shall be removed from all **emergency accesses, emergency access routes and fire routes** on public property, based on Class 3 classification under the quality standards for winter maintenance activities by the Community Services – Operations Department.

- b) **Emergency accesses** designated as **Emergency Access Routes** on site plans shall remain clear from all obstruction and shall be maintained in a passable state at all times by the owner, as required by the Fire Code.
- c) **Emergency access routes** and **fire routes** to all buildings are required to be designed so that there is an unobstructed path of travel for a fire department pumper to the fire department connection of the building, or where there is no fire department connection, for a fire department pumper to the principal entrance of the building, or in instances where 2.2 applies a clear path of travel from the roadway or **emergency access route** to the principal entrance to each dwelling unit.
- d) The unobstructed path of travel between the roadway or **emergency access route** and those terminus locations identified in (c) shall be at least 1.2m in width. If the path is located between parking stalls, then it must be clearly defined to strongly discourage parking with physical barriers and/or signage.

3. Emergency Access

Emergency accesses are intended to be provided into areas that would be otherwise cut off, such as cul-de-sacs. These **emergency accesses** are not intended for normal driving, and are typically only accessible to emergency services by the opening gates or bollards. Design criteria are available at the end of this document and may also be found in the Development Manual available at www.kitchener.ca.

Residential Subdivisions

- 3.1 Cul-de-sacs, being a one access street, shall be permitted in plans of subdivisions subject to the following criteria (Appendix 6):
 - a) The length of the cul-de-sac is defined as the distance measured from the property line of the intersecting roads, along the centre line of the cul-de-sac to the farthest point of the property line of the bulb.
 - b) The maximum length of a cul-de-sac shall be 300m.
 - c) Cul-de-sacs without an **emergency access** shall not exceed 150m in length.
 - d) Cul-de-sacs exceeding 150 metres in length shall require an **emergency access** leading to a public right-of-way within 150m of the farthest point of the property line of the bulb.

- e) There shall only be one **emergency access** per cul-de-sac.
- f) **Emergency accesses** on temporary basis are subject to the same requirements as permanent accesses.
- g) **Emergency access routes** serving multiple unit residential subdivisions located on a cul-de-sac shall be included into the overall measurement of the cul-de-sac.
- h) The path of travel measurement described in 2.2 shall not be included in the overall measurement of the cul-de-sac.

Non-Residential Subdivisions

3.2 Cul-de-sacs in non-residential subdivisions shall be discouraged and shall only be permitted in the case where all alternate design possibilities have been determined to be unacceptable. If required, the standards under Residential Subdivisions shall apply subject to the specific requirements listed below:

- a) The maximum length of a cul-de-sac shall be 150m.
- b) Cul-de-sacs without an **emergency access** shall not exceed 60m in length.
- c) Cul-de-sacs exceeding 60m in length shall require an **emergency access** leading to a public right-of-way within 60m of the farthest point of the property line of the bulb.

Multiple Residential Site Design

3.3 Multiple residential developments which include more than three residential units, requires **emergency access** conforming to the following (Appendix 7):

- a) Any multiple residential development located on any public right-of-way, other than a cul-de-sac, where the length of the fire access route located in the development exceeds 150m shall be provided with an **emergency access** or a second means of access to any public roadway located in such a manner that the furthest distance of any part of the access route is not greater than 150m to the **emergency access** or the public right of way.

- b) The length of the fire access route located in multiple residential development, other than those located on a cul-de-sac, shall be measured along the centerline of the access route from the where it meets the property line of the public right-of-way.
- c) The length of the fire access route in multiple residential developments located on a cul-de-sac shall be measured along the centerline of the access route and the centerline of the cul-de-sac on which it is located to the property line of the nearest public right-of-way that is not a cul-de-sac.
- d) The path of travel measurement described in 2.2 shall not be included in the overall measurement described in this section.

Design and Construction

- 3.4 All **emergency access** routes shall be designed and constructed to the following criteria (Appendix 5):
- a) The maximum gradient change is to be 1:12.5 (8%) over 15m minimum.
 - b) The design and construction of the **emergency access** shall conform to diagrams found in Appendix 7.
 - c) The minimum centre line radius is 12m.
 - e) **Emergency access** shall not exceed 150m in length.
 - f) Both ends of the **emergency access** shall be protected by either gates or an **approved** type of removable bollards that can be easily removed and replaced year round, conforming to diagrams found in Appendix 7.
 - g) **Emergency access** signs shall be located at both ends of the **emergency access** at the owner's expense and to the satisfaction of the Chief Fire Official.
 - h) The construction of an **emergency access** must be completed prior to occupancy of any unit in a multiple residential or non-residential development in relation to a site plan.
 - i) The construction of an **emergency access** must be completed prior to the issuance of any building permit in a subdivision or otherwise provided for through the subdivision agreement.

- j) Where an **emergency access** intersects with a roadway bounded by a curb, the curb shall be cut the full width of the **emergency access**, plus required turning radii, so that no more than 5cm difference in height exists at the intersection points.
- k) A minimum level of completion will include at least a base coat layer, signage and hydrants.

Maintenance

3.5 All **emergency accesses** located on private and public property shall remain clear from all parked vehicles, obstacles and obstructions and must be maintained in a passable state at all times in accordance with the following:

- a) Snow accumulation shall be removed from all **emergency accesses** on public property based on Class 3 classification under the quality standards for winter maintenance activities by the Community Services – Operations Department.
- b) **Emergency accesses** designated as **Emergency Access Routes** on site plans shall remain clear from all obstruction and shall be maintained in a passable state at all times by the owner, as required by the Fire Code.
- c) Access routes to all buildings are required to be designed so that there is an unobstructed path of travel from a fire department pumper to the fire department connection for the building, or where there is no fire department connection, from a fire department pumper to the principal entrance of the building.
- d) The unobstructed path of travel shall be 1.2m in width. If the path is located between parking stalls, then it must be clearly defined to strongly discourage parking with physical barriers and/or signage.

Exemptions

3.6 The owner/developer may apply to council for an exemption to specific parts of the **Emergency Access** requirements contained in this policy.

- a) The Fire Department will support an exemption to the distance requirements contained in Subsections 3.1 or 3.3, assuming no extenuating circumstances affecting emergency service response exist and subject to the following conditions:

- i) Residential sprinklers conforming to the latest version of NFPA 13D, or other standard acceptable to the Chief Fire Official, and a direct-to-fire monitoring system are installed in all dwelling units located beyond 150m distance requirements contained in Subsections 3.1 and 3.3
- ii) The length of the fire access route or cul-de sac in the development for which the exemption is being applied for still cannot exceed 300m in length measured from the property line of the intersecting street, including the length of the cul-de-sac if located on a cul-de-sac.
- b) Other exemptions will be considered for support if alternative solutions are provided that, in the opinion of the Chief Fire Official in consultation with the Chief Building Official, will provide equivalent or increased life safety and hazard protection to affected occupants and buildings.
- c) Where an exemption has been granted and an alternative measure has been accepted that may require the future property owner to maintain a system or feature, the City may require the developer or constructor to take adequate measures to ensure that these requirements are disclosed, such as registering this information on title or some other reliable method acceptable to the City.

4. Multiple Unit Building Identification / Municipal Addressing

- 4.1 The intent of this section is to ensure that all developments are provided with an addressing scheme that is consistent with Council Policy and provides for buildings to be easily located once occupied. The general application is as follows:
- a) All buildings must be provided with a municipal address.
 - b) All buildings must be provided with a street number or Multiple Unit Identification sign easily visible from the street or public thoroughfare.
 - c) Addresses shall be provided in a manner that allows easy identification of the building or site, such that principal entrances to buildings or entrance routes are accessed from the street to which they are addressed from.

- d) All multiple unit residential properties, such as apartment buildings, shall ensure an addressing scheme for the building is submitted for **approval**, consistent with the Council Addressing Policy.
- e) Where multiple buildings are addressed under the same municipal address, a Multiple Unit Identification sign shall be provided consistent with the guidance below.
- f) **Street fronting townhouses** shall be municipally addressed consistent with Council policy.
- g) Municipal addresses should be proposed early in the development process, to allow the reviewed addresses to be used on documents, such as building permits.
- h) Where a concern is identified that does not meet the application here, the requirement for an addressing plan shall be identified early in the development process.
- i) All addressing proposals must be **approved**.

4.2 Lots containing more than one building intended for occupancy, may be required to:

- a) prominently display a multiple unit identification (MUI) sign at each entrance to a public thoroughfare showing the layout of the site, the municipal address, the building identifiers and occupancy unit identifiers. Such determination shall be **approved** prior to Site Plan Approval in Principle for the proposed development, or
- b) provide a site plan which incorporates private streets, where buildings are individually addressed, and multiple unit buildings are provided with prominent unit identifiers, tied to the private street addresses, and where the proposed identification scheme for the site plan is **approved** prior to Site Plan Approval, or
- c) any combination of the above, that provides for ease of identification of units and buildings by emergency service personnel during an emergency response, where the proposal has been **approved** prior to Site Plan Approval.
- d) The use of private named streets shall be encouraged, as buildings addressed off of a named street may be incorporated into the 911 system.

4.3 If required as per 4.2:

- a) the owner shall prepare and submit a colour concept plan of the MUI sign in accordance with the design, construction and location requirements set out below, and obtain **approval** of the MUI sign prior to the issuance of any building permits/ or site plan approval. Colors or materials that cannot be

- accurately represented on the concept plan may require submission of materials samples for **approval**, or
- b) the owner shall prepare and submit a detailed site plan describing the proposed street structure and addressing scheme, ensuring that all buildings and potential units within a multiple unit building are provided with a readily identifiable addressing scheme. The plan shall be submitted for review and **approval**, prior to the issuance of any building permits/ or site plan approval,
 - c) where a combination of multiple unit identification and municipal addressing are proposed for the same site, the inclusion of municipally addressed buildings may be included on the MUI sign where the inclusion provides clarification when trying to locate units using the MUI sign, and
 - c) submissions shall be made in a legible electronic format, preferably PDF or CAD.

4.4 All MUI signs shall be designed and constructed by the owner, as follows (Appendix 9):

- a) all signs shall use reflective letters and markings or be illuminated internally or externally, whichever is appropriate for their design
- b) all signs shall have contrasting lettering and backgrounds
- c) the sign shall identify the municipal address of the site in 50mm block letters
- d) each building identifier and occupancy unit identifier must be identified separately and clearly with numbers and/or letters at least 30mm in size
- e) each sign shall have a 1.2m clearance from grade and shall not exceed 3.0m in height from grade, or 6.0m² in total area, unless otherwise approved by the City's Supervisor of Site Plan Development.
- f) all abutting public streets, internal roads, **fire routes** and **emergency access** roads shall be identified
- g) the location of the Fire Department water connections and on-site hydrants shall be displayed in red

- h) an identification “YOU ARE HERE” label shall be clearly displayed in white letters on a red background
 - i) all signs shall be constructed of durable material by the sign industry and maintained in a legible condition in perpetuity
 - j) signs can be prepared by an independent sign maker or by the City of Kitchener, at the expense of the owner.
- 4.5 The location of all MUI signs shall be shown on the City’s Landscape Plan drawings. Planting in the vicinity of the sign shall be of a low growing variety (a maximum mature height of 1.0m) and maintained so as not to obstruct the sign.
- 4.6 A sign permit is not required for an MUI sign.
- 4.7 All MUI signs must be installed prior to the occupancy of any units within the development, in accordance with the following location requirements:
 - a) a MUI sign is required to be installed on the right side of each entrance driveway to the site within 10m of the property line
 - b) a MUI sign may not be located within the driveway visibility corner formed by the projection of the intersection of the front lot lines and driveway edge, connecting them 4.57m from their point of intersection
 - c) a MUI sign must be located on the owner’s property not more than 1.2m from the edge of pavement of the internal driveway, situated at a 45-degree angle to the driveway. When a sidewalk is located between the MUI sign and the driveway, the sign must not be located less than .6m from the sidewalk and not exceeding 1.8m from the edge of the pavement of the internal driveway.
- 4.8 Once an MUI sign is installed, the City’s Chief Fire Official shall inspect the sign for compliance and may order the sign to be modified if it does not comply with all requirements.
- 4.9 All MUI signs must accurately reflect any changes to the site as a result of redevelopment or building additions and must be changed at the time of undertaking the building or site alterations. All changes shall require **approval.**

4.10 All buildings containing multiple units, where the units are accessed from interior public corridors, shall submit an addressing design concept for review and **approval.**

4.11 In all cases developers and designers shall ensure they are familiar with and following the City of Kitchener Council policy on addressing.

5. MISCELLANEOUS

5.1 Fire Breaks During Construction (Appendix 10)

- a) Each builder is required to submit a plan or policy of designating fire break lots in accordance with 5.1.
- b) The fire break lot designation will be noted on the building permit application, in the tracking system and on the building permit.
- c) The construction of the building upon the foundation of the fire break lot cannot commence until the roofing and exterior cladding has been completed on the buildings located to the sides and rear (if less than a 7.5m rear yard).
- d) It is the responsibility of the Building Inspector to monitor compliance with the fire break lot policy.
- e) The Building Inspector has the discretion to alter the designated fire break lot on site; provided the principle of a maximum of six framed singles or semi-detached dwelling units or two townhouse blocks is not compromised.
- f) Fire break lots shall be provided so that:
 - i. for single family homes and semi-detached homes – not more than six buildings are grouped adjacent to each other,
 - ii. for townhomes – not more than two buildings or townhouse blocks are grouped adjacent to each other.
- g) Buildings on properties with side and rear yards greater than 7.5 meters are not required to be provided with fire breaks.

5.2 Fire Breaks For Fire Fighting – Street Fronting Townhomes (Appendix 11)

- a) In residential occupancies, it is important to have access between buildings for emergency situations.

POLICYNUMBER: I-1035
POLICYTYPE: LANDUSEPLANNING
SUBJECT: EMERGENCYSERVICEPOLICY

- b) In **street fronting townhomes**, designers shall ensure a fire break between townhome blocks is provided every 8 units.
- c) Fire breaks between these blocks shall not be less than 3 meters.
- d) Firewalls will not be considered as an acceptable solution to providing the firebreaks.

APPENDIX 1

FIRE FLOW ANALYSIS REPORT – SUBMISSION REQUIREMENTS

PURPOSE: The goal of the Fire Flow Analysis Report is to demonstrate that the fire load for the development, including existing buildings, will not exceed the water available for fire protection from the municipal distribution system.

MINIMUM REQUIREMENTS: The following is the minimum requirements of the Fire Flow Analysis Report for review by the City of Kitchener:

- Site plan detailing the water service, nearest municipal hydrants on the street, test hydrants, private hydrants, etc.
- Detailed description of the building construction materials and intended use.
- Calculation of fire load of the entire site development including new and existing buildings (summary only for sprinkler calculations).
- Details of hydrant fire flow test including time and date of test, persons conducting test, residual and pito pressure readings, graph of results (minimum three flow points plus static pressure), clear sketch of flow and residual test hydrant locations.
- Use metric units (L/min for flow and kPa for pressure).
- Plot the fire load on the hydrant fire flow test results graph. For sprinkler systems, provide the envelope of flow and pressure requirements including simultaneous fire department needs at private and municipal fire hydrants.
- List the application of codes, standards and/or guidelines used in the report preparation. The minimum requirements must satisfy the latest edition of the Ontario Building Code. The Fire Underwriters Survey is also an acceptable standard.
- Unless otherwise demanded by sprinklered system, the fire load must be supplied by the water distribution at a minimum pressure of 140 kPa in the main at the fire hydrant (municipal or private) to provide fire protection. This minimum pressure must be available on the day of the year with the maximum system demand.
- If the fire load is within 70kPa of the water pressure available, the City of Kitchener reserves the right to request additional flow tests, hydraulic calculations, computer modeling, etc., to ensure that the water distribution system can satisfy the fire flow during the maximum day system demand.
- Signed by an individual deemed competent to perform fire flow calculations such as a Professional Engineer. In doing so, this individual is attesting that:

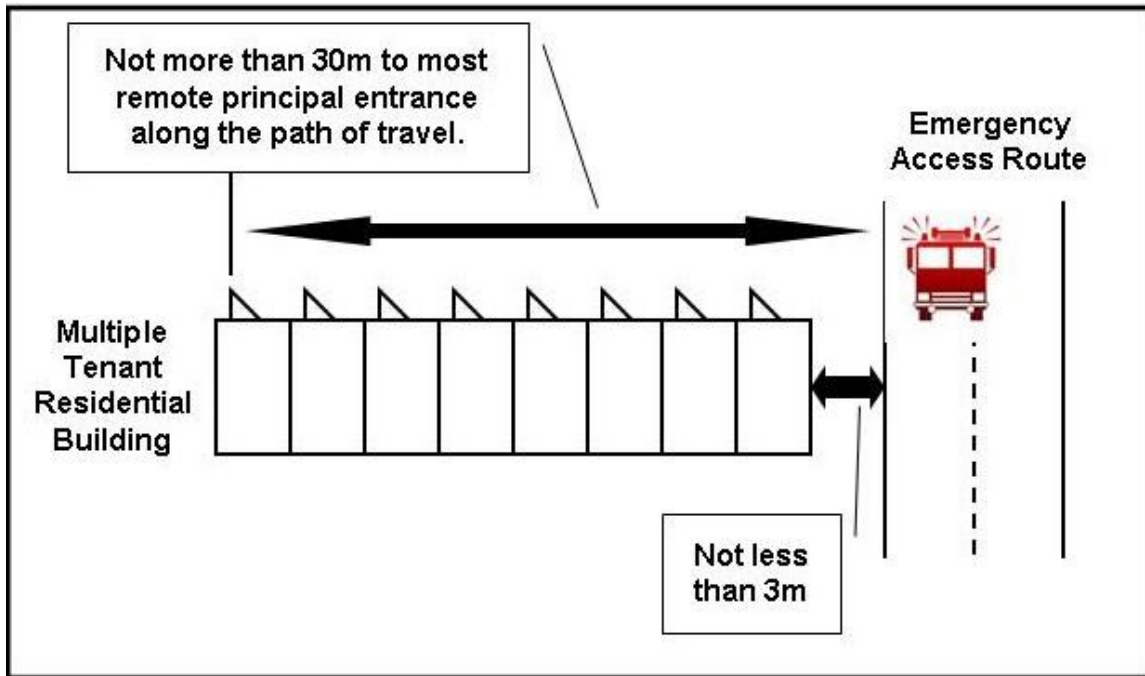
POLICYNUMBER: I-1035
POLICYTYPE: LANDUSEPLANNING
SUBJECT: EMERGENCYSERVICEPOLICY

- The fire flow analysis is representative of the building to be constructed. **Subsequent modification of the building will require the resubmission of the fire flow analysis.**
 - All codes, standards and guidelines used in the report have been applied appropriately
- If the proposed development is adjacent to a relatively large municipal watermain and the fire load is comparatively small, then the applicant may submit an abbreviated Fire Flow Analysis Report. This condensed report would comply with the above conditions excluding any computer modeling or hydrant flow test requirement, for consideration to waive a full fire flow analysis
- Submit report to: Angela Mick, P.Eng.
Utilities Water Engineer
City Hall, PO Box 1118
200 King St. West
Kitchener, ON N2G 4G7
Fax (519) 741-2638

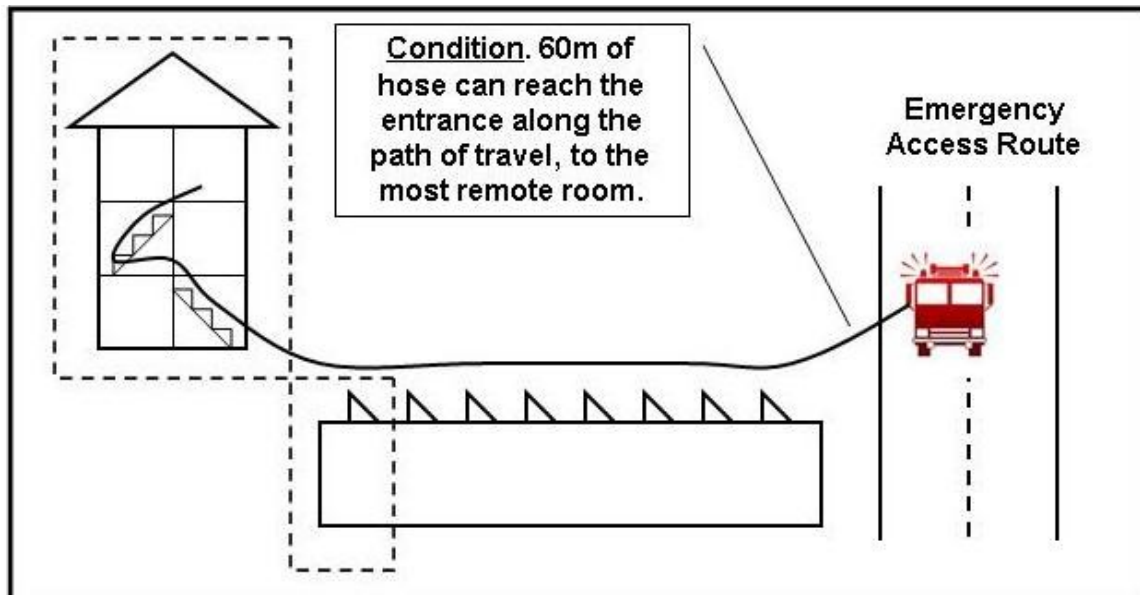
Please allow 2 weeks for review. If additional information is required, contact Angela Mick at (519) 741-2408.

Appendix 2

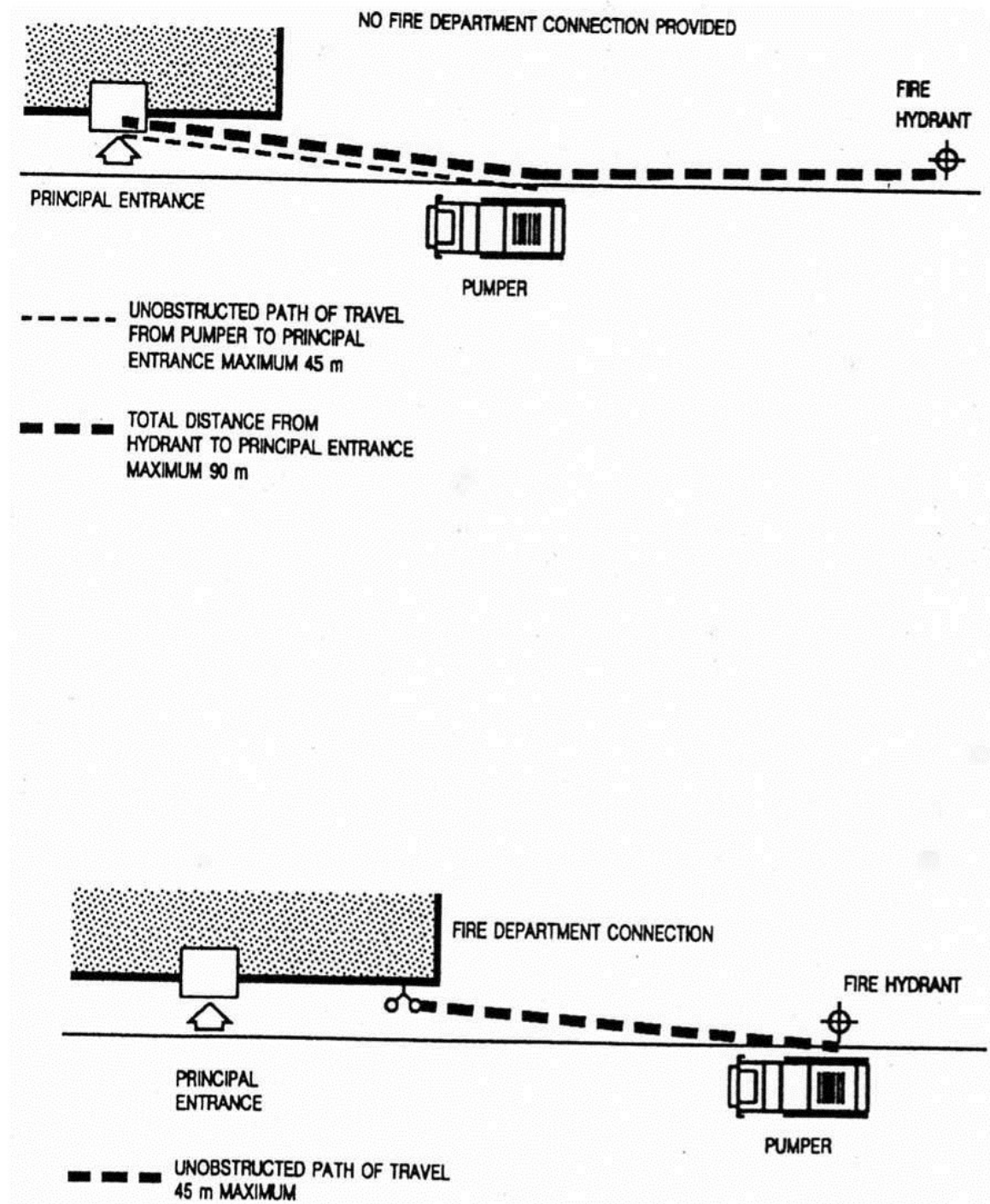
Option 1



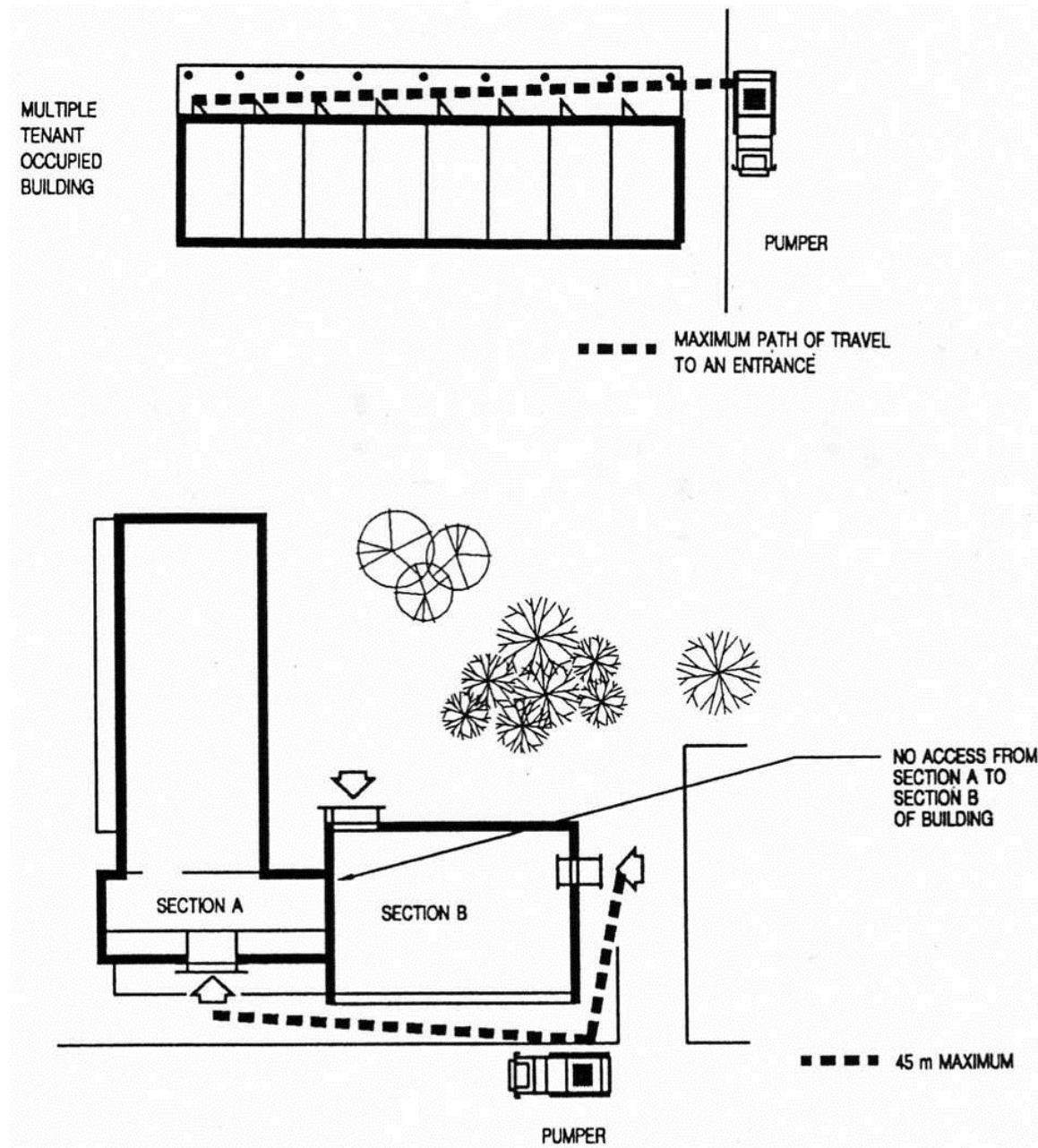
Option 2



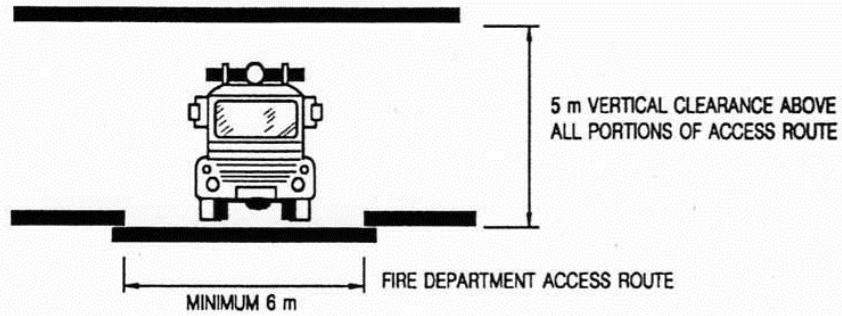
APPENDIX 3



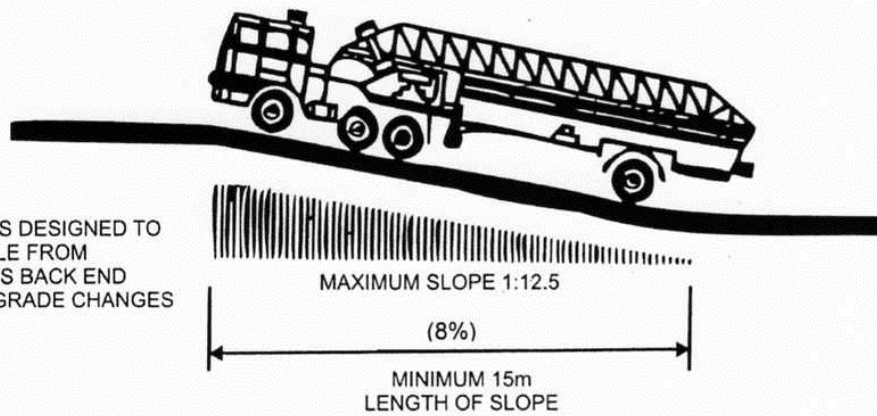
APPENDIX 4



Appendix 5

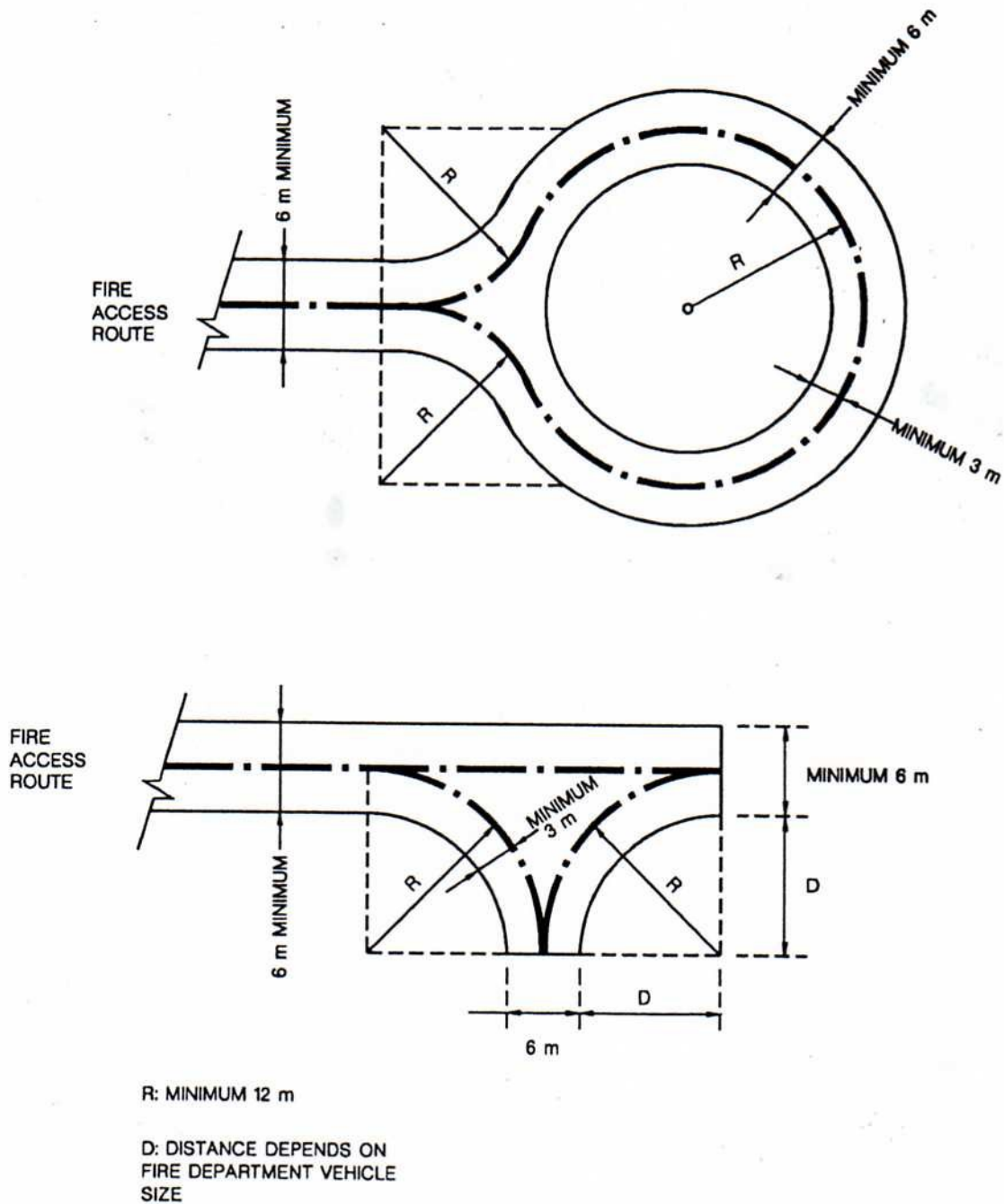


THIS REQUIREMENT IS DESIGNED TO PREVENT THE VEHICLE FROM DRAGGING EITHER ITS BACK END OR MIDSECTION ON GRADE CHANGES



Appendix 5

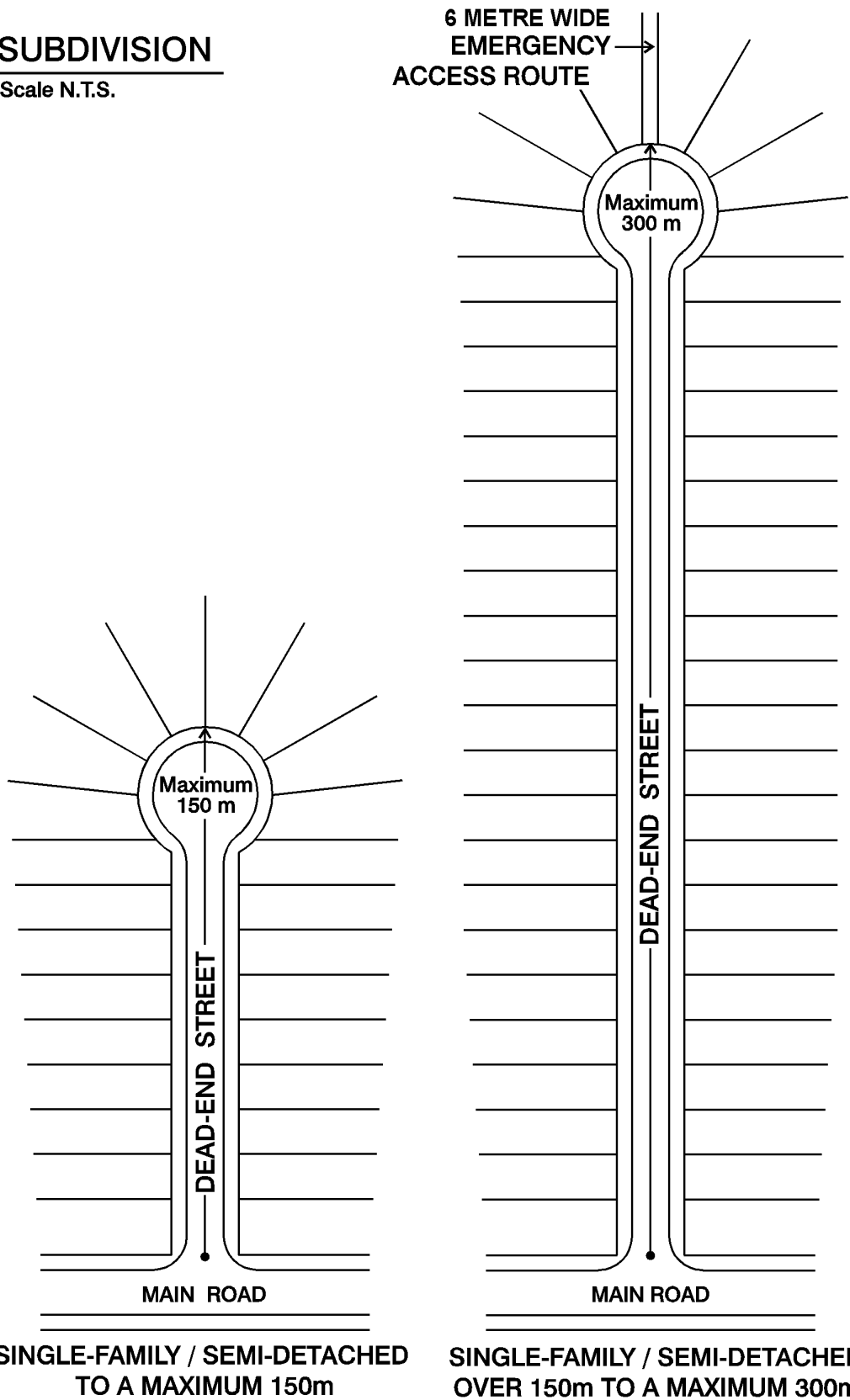
EXAMPLES OF TURN AROUND FACILITIES



Appendix 6

SUBDIVISION

Scale N.T.S.



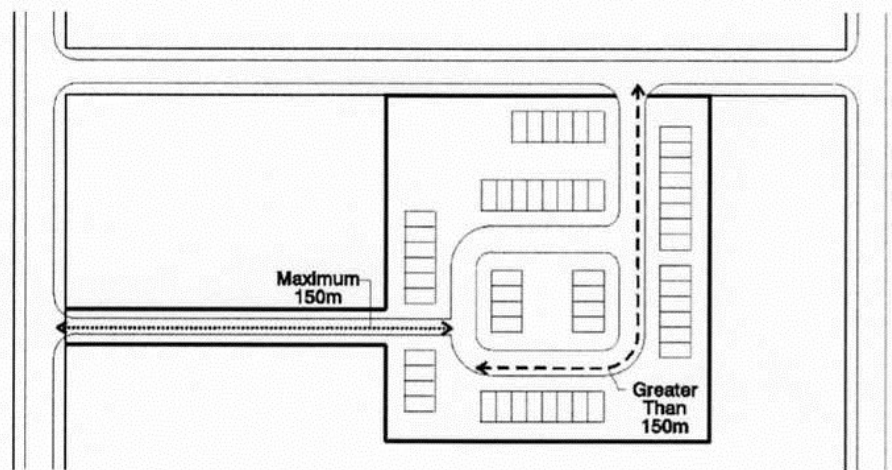
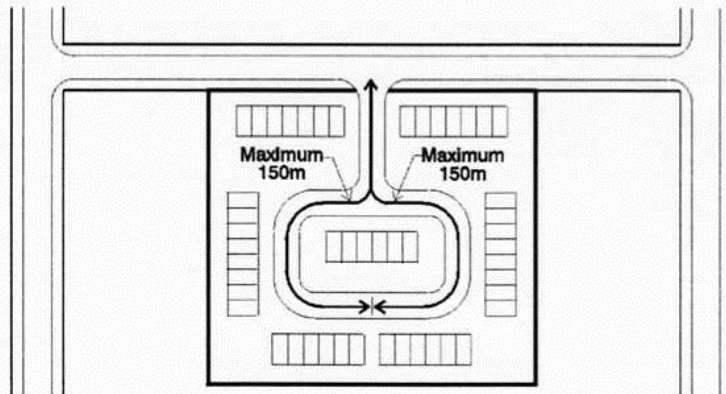
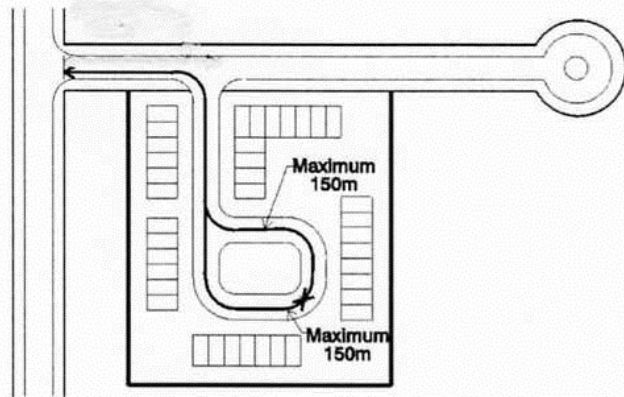
SINGLE-FAMILY / SEMI-DETACHED
TO A MAXIMUM 150m

SINGLE-FAMILY / SEMI-DETACHED
OVER 150m TO A MAXIMUM 300m

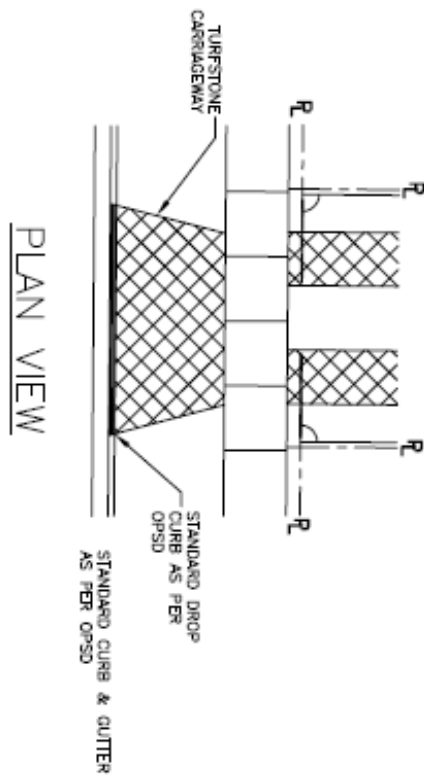
Appendix 7

MULTIPLE RESIDENTIAL

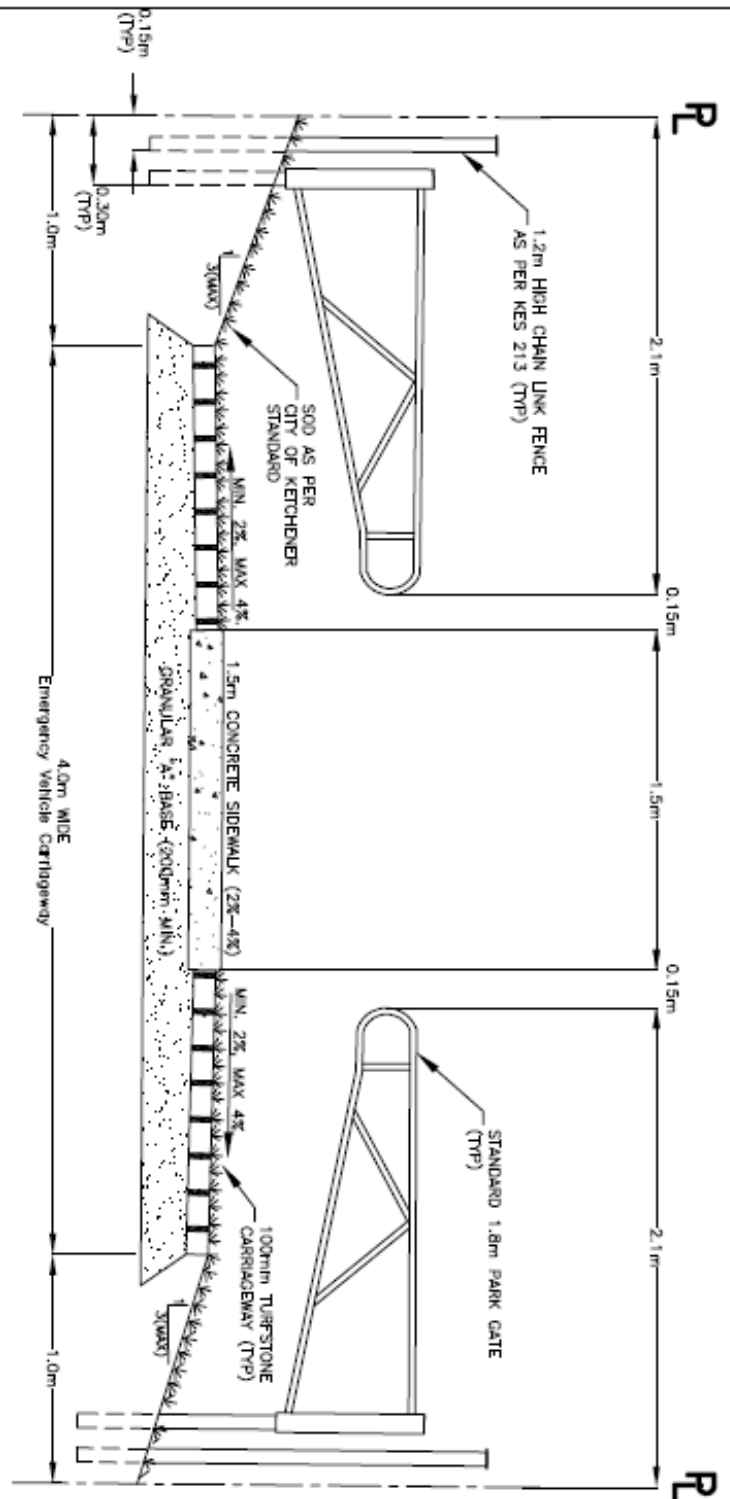
N.T.S.



Appendix 8



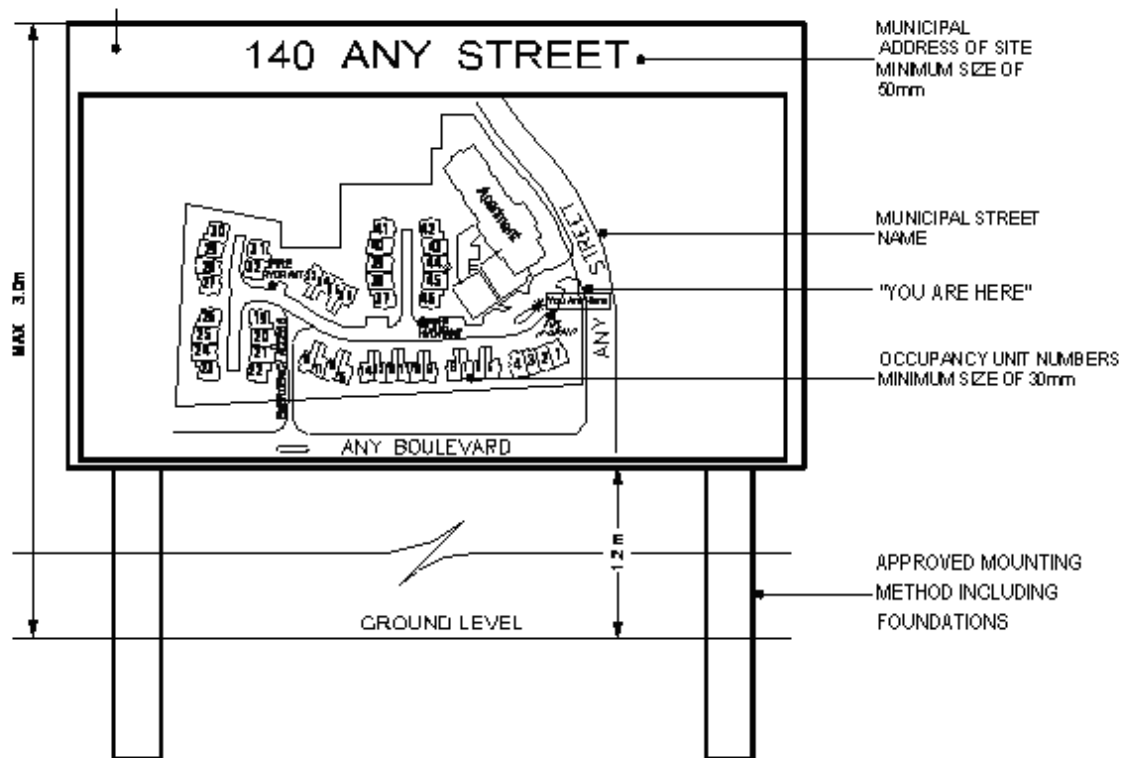
- NOTES**
1. STANDARD PARKS GATE REQUIRED AT EACH END OF THE EMERGENCY ACCESS.
 2. FINISHED TURF STONE LEVEL SHALL BE 25mm LOWER THAN TOP OF CONCRETE SIDEWALK. ASPHALT (65mm HL4) MAY BE SUBSTITUTED AT THE DISCRETION OF THE DIRECTOR OF ENGINEERING.
 3. SIDEWALK AS PER KITCHENER STANDARD DRAWING NO. 111



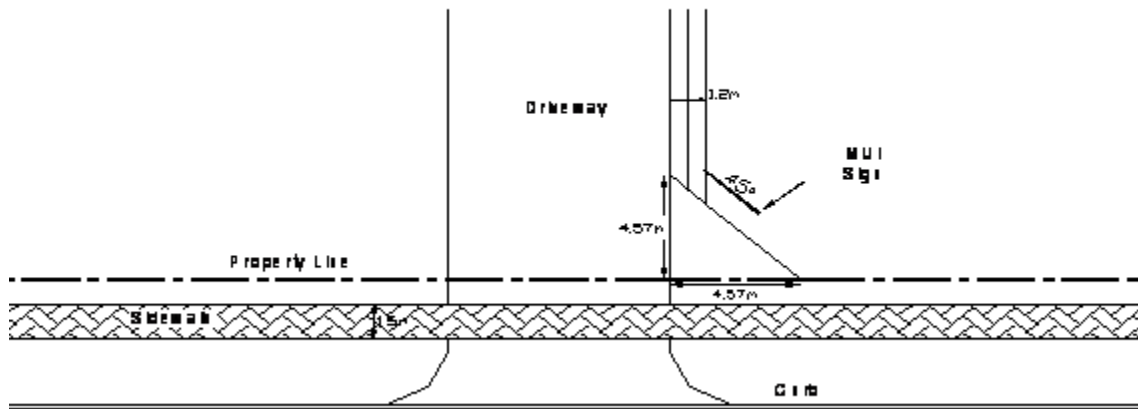
Additional design details are available from the City of
 Kitchener Development Manual, and available online at
www.kitchener.ca.

Appendix 9

Multiple Unit Identifier (MUI) Sign Detail

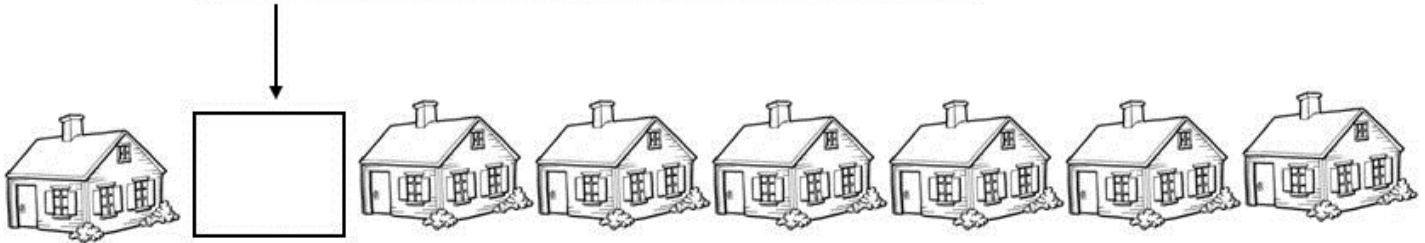


MUI Sign Location

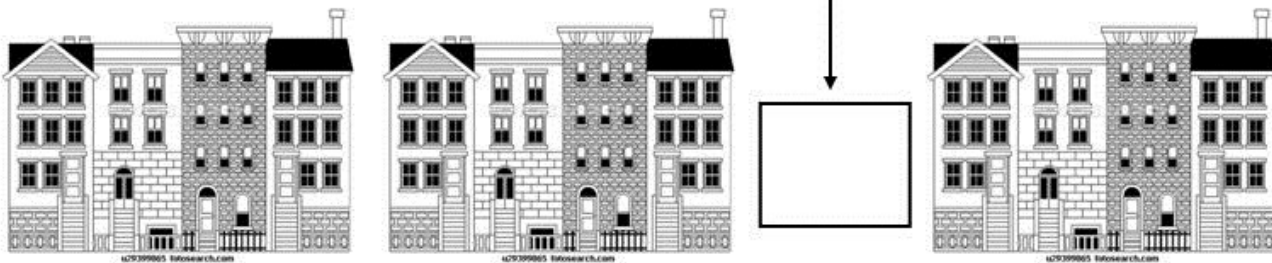


Appendix 10

Not more than 6 houses or semis under construction.
Empty Lot,
Side or rear yard distance greater than 7.5m,
Capped Foundation, or
Building complete with exterior cladding and roofing.



Not more than 2 townhome blocks under construction.
Empty Lot,
Side or rear yard distance greater than 7.5m,
Capped Foundation, or
Building complete with exterior cladding and roofing.



Appendix 11

Street fronting townhomes will be provided
with a minimum 3 meter fire break every 8 units.

