

TOWN OF AJAX
DESIGN CRITERIA

SECTION D
STORM DRAINAGE CONNECTIONS

SECTION D - STORM DRAIN CONNECTIONS**DESIGN CRITERIA**

D 1.00 SINGLE FAMILY AND SEMI-DETACHED LOTS**D 1.01 GENERAL**

The weeping tile foundation drains for single family and semi-detached lots shall be connected to the storm sewer unless the 100-year storm hydraulic grade line is within 0.15 m or less of the basement floor elevation, in which case the weeping tile foundation drain shall be connected to a “third pipe” which is a relatively small diameter pipe installed usually beside the sanitary sewer. The only connections to it are the weeping tile foundation drains. Its point of discharge is far enough downstream so that the basement floors it protects are above the 100-year hydraulic grade line level at the discharge point.

The roof water leaders shall be connected to the storm sewer in areas where lot frontages are less than 12.2m or the distance between structures is less than 3.0m. Otherwise, roof leaders are to be discharged to the ground surface onto splash pads, as identified in the Town of Ajax Standard Drawings, with due care being taken to ensure positive lot drainage.

Storm sewers shall be designed with the capacity to accept direct roof leader discharge, should the future need arise.

D 1.02 CONNECTION SIZE AND GRADE

The minimum size for storm drain connections shall be 125 mm installed at a minimum grade of 2 percent.

D 1.03 DEPTH OF CONNECTION

The storm drain connection shall be installed to a sufficient depth to provide for the drainage of the weeping tile around the foundation of the house. Measured from the crown of the road to the invert of the connection at the street line, the minimum depth shall be 2m and the maximum depth shall be 2.5m.

Risers shall be used on all drain connections when the depth to invert of the storm sewer exceeds 4.5m. The riser shall be constructed as shown in the Town of Ajax Standard Drawings.

D 1.04 CONNECTION TO THE STORM SEWER

The connection of the storm drain to the storm sewer shall be made by means of a manufactured tee on the storm sewer main line pipe up to and including 900mm. For storm sewers over 900mm, the connection is to be cored before the saddle is placed.

All connections are to be made at 45 degrees above the springline.

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D 1.05 STORM DRAIN MATERIALS

Storm drain connections shall be constructed of polyvinyl chloride (SDR 28) pipe.

D 1.06 LOCATION

Storm drain connections shall be installed to the location as shown in the Town of Ajax Standard Detail Drawings.

After construction, the end of the connection shall be marked by a suitable length of 50mm x 100mm lumber extending from the invert of the connection to a point 0.9 m above grade minimum. The top of this marker shall be painted green.

Storm drain connections shall be installed with a manufactured watertight plug.

D 1.07 AS-BUILT SKETCHES

As-built sketches are to be produced for all storm sewer work and are to include a sketch of the road plan indicating lot lines and numbers. The storm sewer main is to be drawn on the plan indicating size, class and direction of flow in the pipe along with manhole numbers.

All service and catch basin connections are to be shown on the drawings with a measurement along the sewer main between all service connections. The service at property line are to be tied in with distance between services and a measurement to a perpendicular projection from the manhole. The inverts of all connections and stubs must be shown to two decimal places.

D 2.00 MULTI-FAMILY, HIGHRISE, INDUSTRIAL, INSTITUTIONAL, COMMERCIAL AND OTHER BLOCKS**D 2.01 GENERAL**

All blocks of land within the plan of subdivision, intended for use other than for park purposes, shall have a storm drain installed from the storm sewer to the street limit. This service is to be used to provide site drainage until the property in question is built upon and shall be placed close to the low point of the property in anticipation of the future system draining to this point.

D 2.02 CONNECTION

The storm drain connection to all multi-family, high rise and other blocks shall be sized individually according to the intended use of the lands.

The design for the sizing of the connection shall be based on a constant 102 mm per hour rainfall intensity using the appropriate runoff co-efficient and the total block area.

The minimum grade for a storm drain connection to any block shall be 0.5 percent.

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D 2.03 DEPTH OF CONNECTION

The depth of the storm drain connection shall be governed by the grading of lands and the extent of the area to be served. The depth of the connection shall be sufficient to provide for drainage of all lands within the block, but in no case shall the depth to the top of the pipe be less than 1.5m.

D 2.04 CONNECTION TO MAIN SEWER

The connection of the storm drain to the storm sewer may be made at a manhole, or directly to the storm sewer if the size of the connection is less than one half the size of the storm sewer. If the connection size is greater than one half the size of the main sewer, the connection must be made to a manhole on the storm sewer.

For all connections to the storm sewer pipe, a manhole must be installed on the private lands within 1.5m of the street limit.

D 2.05 STORM DRAIN MATERIALS

Concrete or PVC pipe shall be used for a storm drain connection to all blocks in the class and size as required by design.

D 2.06 LOCATION AND TIMING OF CONSTRUCTION

Since the ultimate development of the block may be unknown at the time of the construction of the underground services, it may be desirable to delay the installation of the storm drain connections to the blocks in the plan of subdivision until further information is available.

If the block is developed prior to the placement of the surface course asphalt, the service connection can be installed in the location required to suit the development. If no development proposals are received for the block at the time of the placement of the surface course asphalt, the storm drain connections shall be installed in the location shown on the approved engineering drawings prior to the placing of the surface course asphalt.

In either case, all trenches crossing the travelled portion of the roadway shall be backfilled with native earth material, thoroughly compacted, and the road base shall be restored.

D 3.00 BEDDING FOR STORM DRAIN CONNECTIONS

All storm drain connections shall be installed using the type of bedding as shown in the Town of Ajax Standard Drawings.

D 4.00 CONSTRUCTION

All storm drain connections shall be constructed in accordance with the Standards and Specifications of the Town of Ajax, current at the time of approval of the engineering drawings by the Town.