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**2020 - SECTION 11****SANITARY SEWER AND WATER SERVICE CONNECTIONS****11.1 GENERAL**

A separate service shall be provided to all lots unless specific approval is received in writing from Aquatera. Separate water and sanitary service connections are required to each duplex lot.

**11.1.1 ALIGNMENT**

Services shall be placed so that when facing the lot from the water and sanitary mains, the water service shall be on the right side of the sanitary sewer service. Water and sewer connections are to be installed parallel to the lot and/or perpendicular to the mains, where ever possible. In no case shall the sanitary sewer service be installed at an angle of less than 90 degrees to the direction of flow.

**11.1.2 DRIVEWAYS AND STREET FURNITURE**

Services shall be located such that they do not conflict with driveways, street lights, transformers, pedestals and shallow bury utilities. Curb stops and clean-outs shall not be located in sidewalks or driveways. Where curb stops in driveways cannot be avoided (i.e. cul de sacs) refer to Section 93 of Aquatera's Construction Manual.

**11.1.3 CONNECTION TO LOT(S)**

Whenever possible, services are to be located at the centre of the lot. Where services and access are both from the lane or the street, the service connection shall be off-set from the centre of the lot, away from the driveway; services shall be installed no closer than 2.0 metres to the side lot line where no other utilities exist. If another utility is to pass between the water/sanitary sewer services and the side lot line, then the minimum distance between the service and the side lot line shall be 3.0 meters and the maximum shall be 4.0 meters. Common lot line servicing will not be allowed unless approved by Aquatera in writing.

All water and sewer service connections are to be installed into private property, a minimum of 1.85 meters beyond the property line or the easement boundary, as the case may require.

**11.1.4 BEDDING**

All sizes of sanitary sewer and water services shall be installed using sand bedding conforming to the materials specifications of the construction manual for the applicable municipality, provided the pipes have water tight joints.

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11.1.5 CATHODIC PROTECTION

Unless specifically recommended in the geotechnical report, cathodic protection shall not be provided for all service connections.

11.1.6 CONNECTION TO PARKS

Parks may be provided with a water service. The size and type are to be determined according to the type of park or as required by Aquatera. Where a water service is provided to a park space or municipal reserve a curb stop shall be located 0.3 m from the property line to the park or municipal reserve.

**11.2 SANITARY SEWER SERVICE**

11.2.1 DEPTH, SIZE, AND MINIMUM GRADE

The minimum depth of cover shall be 2.60 m to top of pipe at the property line. Where the depth of cover cannot be achieved, the pipe shall be insulated to the satisfaction of Aquatera.

The minimum size of a sanitary sewer service connection to a single family dwelling shall be 100 mm inside diameter. Each lot shall have its own separate, sanitary service connection.

The minimum size of a sanitary sewer service connection to a commercial/industrial lot shall be 150 mm inside diameter. Each lot shall have its own separate, sanitary service connection.

The minimum grade on 100mm service lines shall be 2.00%.

The minimum grade on 150mm and larger service lines shall be 1.00%.

Sewer service risers are required to deep sewer mains where the main is in excess of 4.0 meters in depth from finished grade to the obvert of the pipe.

The minimum size for a low pressure sanitary sewer service for residential shall be 40mm & for commercial & industrial 50mm. If the consultants determine a larger service size is required then the service can't exceed the size of the main.

11.2.2 VIDEO INSPECTION

Video inspection under simulated flow conditions shall be required on all sanitary sewer services.

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**11.3 WATER SERVICE**

**11.3.1 DEPTH, SIZE, AND TAPPING**

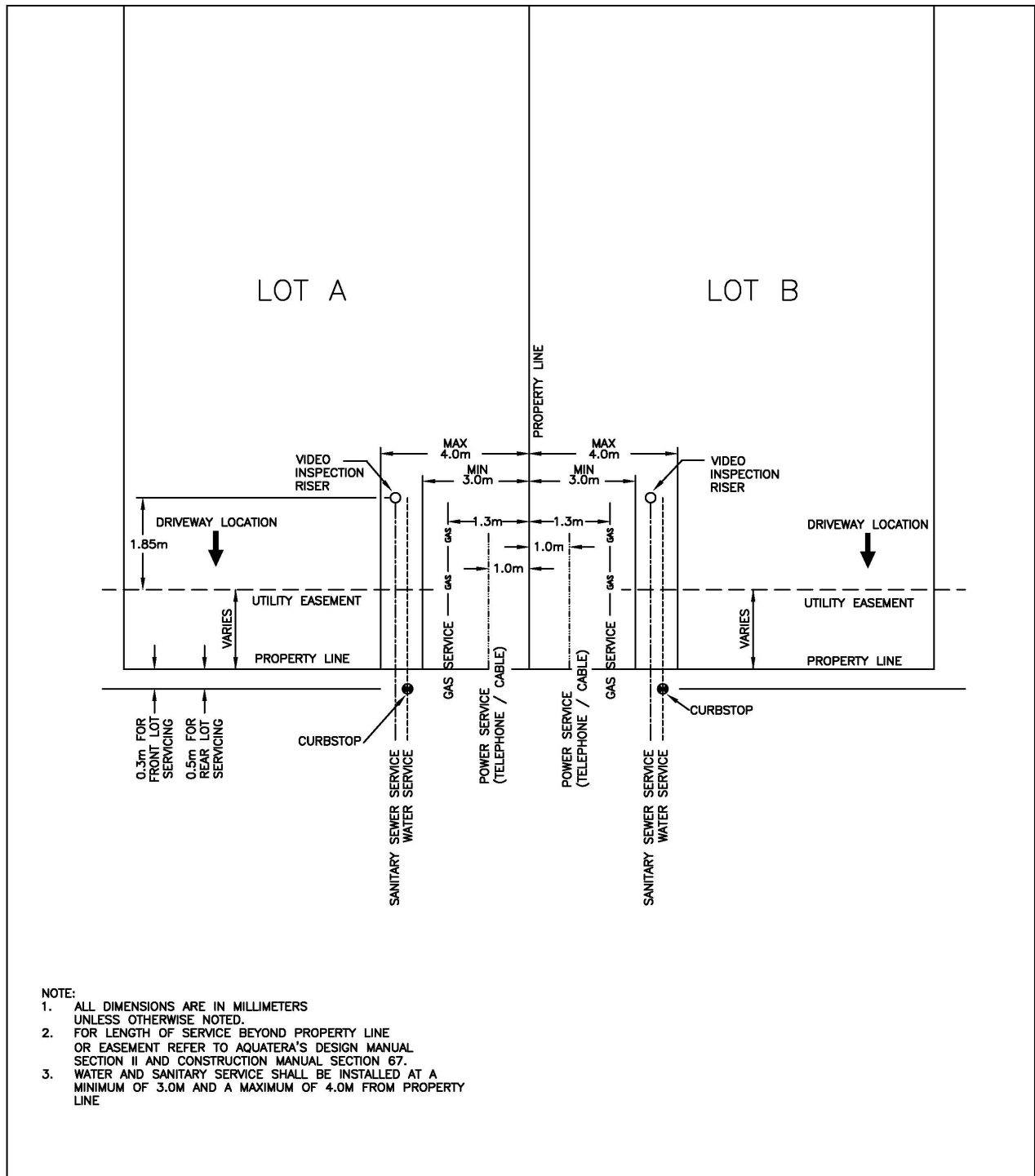
The minimum depth of cover shall be 2.75 m.

Residential water services shall be 19 mm diameter (minimum). Non-residential service connections shall be sized according to anticipated user demand with a minimum requirement of 150 mm for commercial and for industrial development. **All 150mm water services shall be complete with a flush point for testing.**

This requirement may be reduced **at service connection** to 25 mm if it can be demonstrated to Aquatera that a smaller line size will be sufficient for the development. Any reductions in service size for commercial and industrial shall be approved by Aquatera.

Each service connection shall be tapped into the water main at an angle of 15° to 45° from the horizontal and utilize an approved corporation stop.

Tapping for service connection shall be done with full operating pressure in the main unless otherwise approved by Aquatera.



- NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
  2. FOR LENGTH OF SERVICE BEYOND PROPERTY LINE OR EASEMENT REFER TO AQUATERA'S DESIGN MANUAL SECTION II AND CONSTRUCTION MANUAL SECTION 67.
  3. WATER AND SANITARY SERVICE SHALL BE INSTALLED AT A MINIMUM OF 3.0M AND A MAXIMUM OF 4.0M FROM PROPERTY LINE

Revisions			TYPICAL JOINT PARTY SHALLOW LOT SERVICING DETAIL		Standard Detail 11-01
Date	Details		Approved by	Date	
2/01/12	CHANGED WATER AND SANITARY SERVICE LINE LOCATION TOLERANCES AND ADDED NOTE 3		Timothy Lau P.Eng.	12/07/12	
OCT 2015	MOVED CLEAN OUT LOCATION TO MATCH CURRENT DESIGN, REMOVE CITY FILE #		Checked by Brad Vall C.E.T.	Scale N.T.S.	
			Drawn by Scott Walls	Permit Number P09242	
				File Number	