Watermain Design Checklist for Submission with Form 1

Town of The Blue Mountains

Project Name: _____

Date: _____

Abbreviations and Meanings: **"TBM"** – Town of The Blue Mountains Engineering Standards, April 2009

"MOECC" – Ministry of the Environment and Climate Change Watermain Design Criteria for Future Alterations Authorized Under a Drinking Water Works Permit, June 2012

Legend: ✓ - Meets **X** – Does Not Meet **N/A** – Not Applicable

Table 1: Watermain Design Checklist

Criteria Addressed	Reference	Design Criteria	Requirement
☐	4.4.1.1 (TBM)	General	Watermains shall be designed to carry the maximum day demand plus fire suppression flows or peak hour flow, whichever is greater. Hydraulic network analysis of the water distribution system shall be carried out and shall include allowances for demands to adjacent areas anticipated.
☐	4.4.1.1 (TBM)	General	Provide copy of Watermain Design Distribution Report or copy of Hydraulic Calculations.
☐	4.4.1.1 (TBM)	General	Provide copy of Watermain Distribution Drawing and/or General Servicing Drawing.

Criteria Addressed	Reference	Design Criteria	Requirement
☐	4.4.2.1 (TBM)	Demand Criteria	Average Daily Demand is to be 450 litres/capita/day Maximum Daily Demand Factor: 2.0 Peak Hourly Demand Factor: 4.5
☐	4.4.2.2 (TBM)	Fire Suppression	Greater than FUS dependent on actual land uses.
☐	4.4.2.3 (TBM) 3.1 (MOECC)	Frictional Losses	Hazen-Williams C-Factors for various nominal diameters.
☐	4.4.2.4 (TBM)	Minimum Hydrant Size	150mm servicing hydrants.
☐	4.4.2.5 (TBM)	Maximum Velocity	5.0 m/s
☐	4.4.2.6 (TBM) 1.1 (MOECC)	Pressure Ranges	Average and Maximum Day: 350-550 kPa Minimum and Peak Hour: 275-700 kPa Maximum Day plus Fire Supression: 140-700 kPa
☐	4.4.3 (TBM)	Depth of Watermains	Minimum 1.7m or 1.2m with a pre-approved insulation procedure. Maximum 2.5

Criteria Addressed	Reference	Design Criteria	Requirement
☐	4.4.4 (TBM) 15.0 (MOECC)	Separation of Watermains and Sewers	In accordance with MOECC guidelines.
☐	4.4.5 (TBM)	Location	Located as shown of The Blue Mountains standard road cross section drawings.
☐	4.4.7 (TBM)	Bedding	As per OPSS and OPSD.
☐	4.4.8 (TBM)	Thrust Blocks and Joint Restraints	Provision of thrust blocks or joint restraints with supporting calculations.
☐	4.4.9 (TBM)	Cathodic Protection	Shall be provided for all pipes and appurtenances for the distribution system.
☐	4.4.9.1 (TBM)	Anodes	See specifications in Engineering Standards under this section.
☐	4.4.10 (TBM)	Underground Chambers	As per site specific requirements.
☐	4.4.11 (TBM) 11.0 (MOECC)	Fire Hydrants	Dry-barrel, conforming to latest AWWA Standard C-502: Dry Barrel Fire Hydrants Minimum Diameter 150mm

	Reference	Design Criteria	Requirement
☐	4.4.12 (TBM) 12.0 (MOECC)	Valves and Valve Spacing	Sufficient number provided at intersections as well as isolation valves between each fire hydrant.
☐	4.4.13 (TBM)	Air Release and Drain Chambers	As per site specific requirements.
☐	4.4.14 (TBM) 6.1 (MOECC)	Service Connections and Service Pipe Materials	Minimum 19mm or as required by the Ontario Building Code.
☐	4.4.16 (TBM)	Metering	AWWA M6 Water Meter Installation
☐	4.4.17 (TBM)	Tracer Wire	10 ga, multi-strand attached in two places on each length of PVC watermain and connection made with DRY-CONN connectors.
☐	4.4.18 (TBM)	Requirement for Looping	Where reasonable, watermains shall be looped.
☐		Materials	"All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60, NSF/61, and NSF/372."

Name (Print):

Date: _____

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