

AUTOMATIC FLUSHING TECHNOLOGY



ST. JOHN'S

DEPARTMENT OF PUBLIC WORKS
WATER & WASTEWATER DIVISION

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Overview

- Applications
- Manual v Automated Flushing
- Installation
- Results
- Future Projects

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Managing Water Quality



Why?

1. Maintain Chlorine Residual
2. Improve Water Quality
3. Save Resources

Where?

'Areas of low water usage or no circulation'

1. Dead end water mains
2. Areas around closed valves
3. Large diameter water mains with low usage / designed for fire demand
4. Seasonal demand



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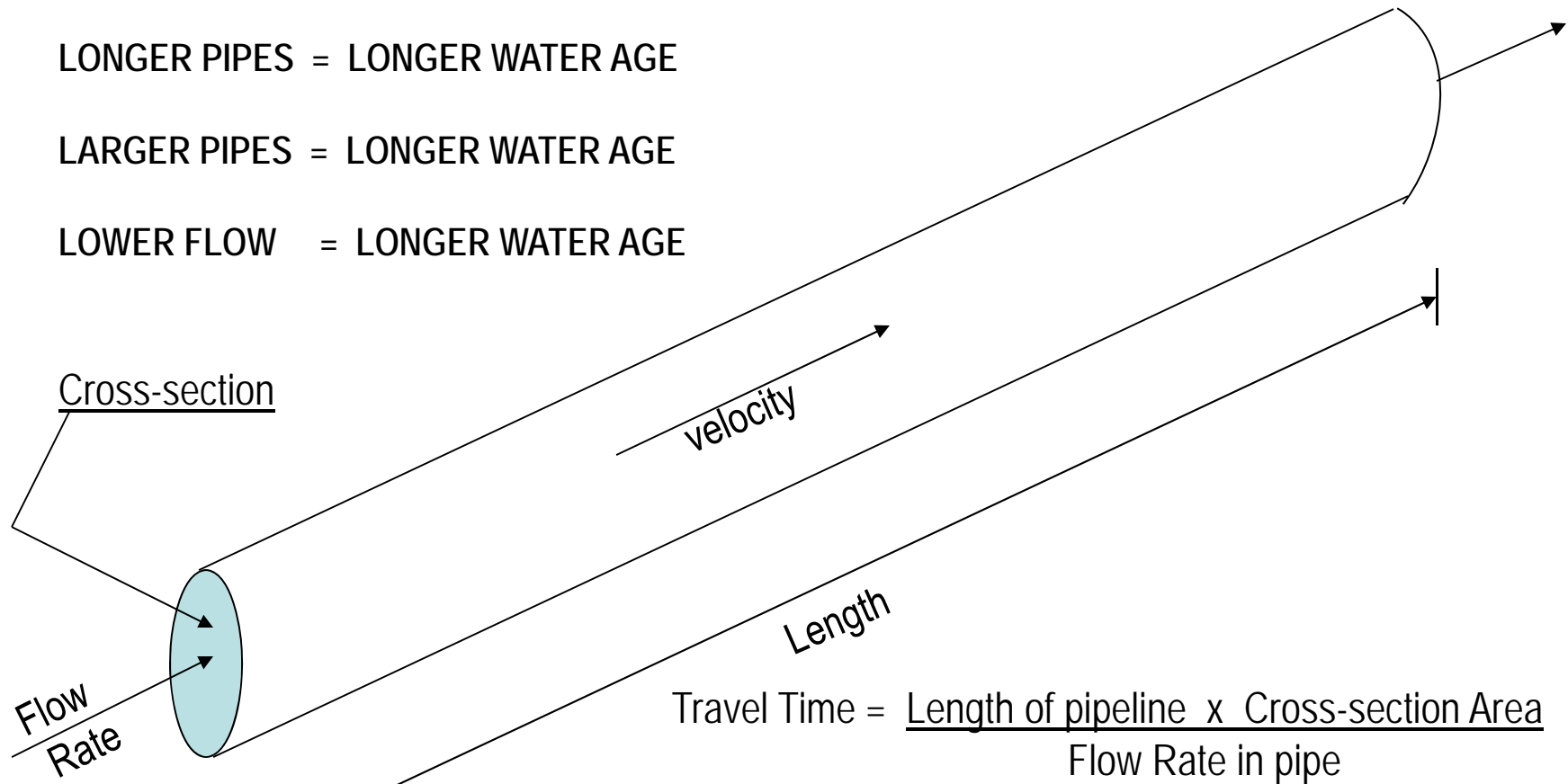
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Manage Water Age / Detention time

LONGER PIPES = LONGER WATER AGE

LARGER PIPES = LONGER WATER AGE

LOWER FLOW = LONGER WATER AGE



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Managing Water Age & Chlorine Residuals

- ▶ **MANUAL**– Infrequent Flushing up to 1,500 gpm for 45 minutes or longer until chlorine residual returns to an acceptable level



HG-6 temporary Auto Flusher

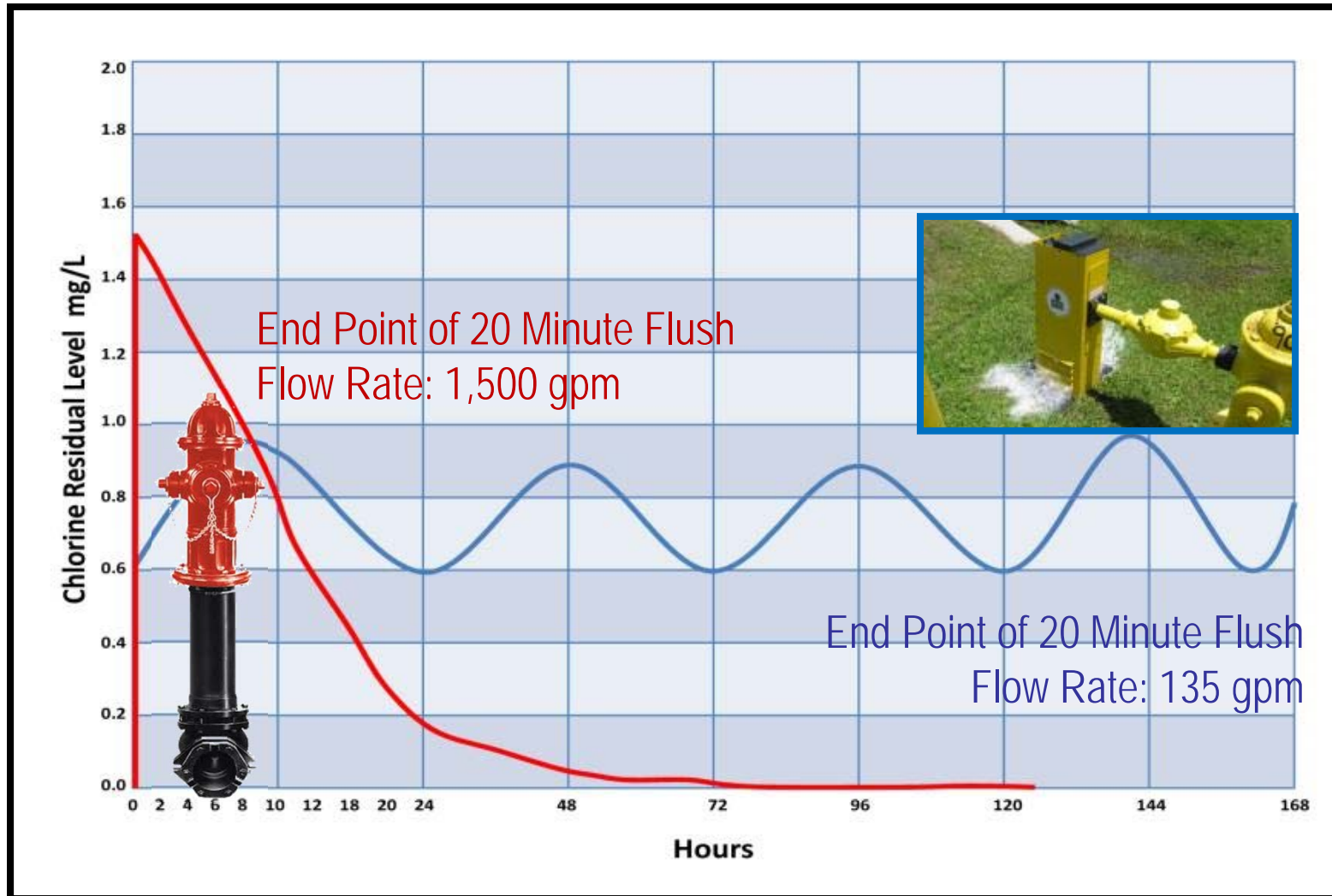
- ◀ **AUTOMATED** - Advanced Maintenance Flushing 135 gpm for 4 minutes per day to maintain chlorine residual

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Manual Flush Event vs Automated



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Automatic Flushing History – St. John's



HG-4 Hydro-Guard Cold Climate Programmable Flusher

- First HG-4 unit installed in 2006
- Due to water quality issues – discoloured water
- Installed after flushing and pipe cleaning did not improve water quality
- Immediate improvement after installation

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Automatic Flushing with model Hydro-Guard HG-4



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Automatic Flush Event model HG-4



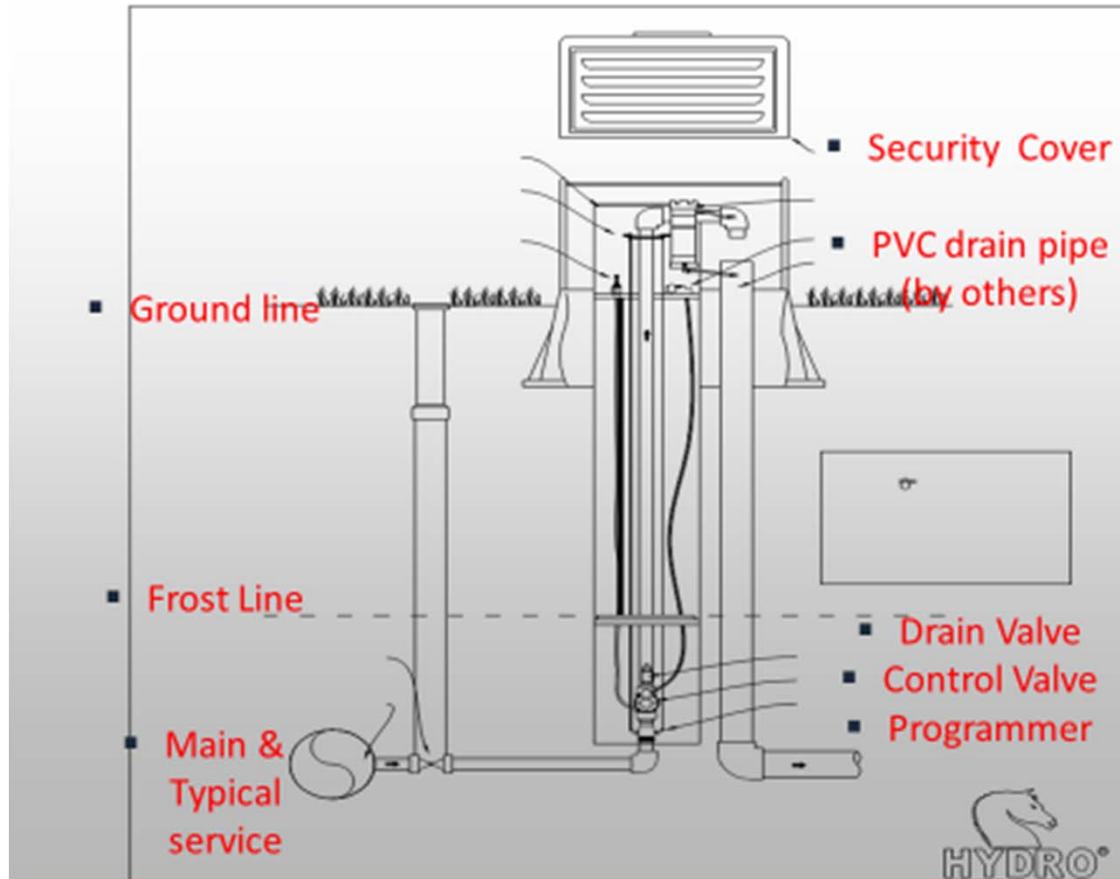
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Model HG-4 Installation Drawing



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Automatic Flushing in St. John's



Current Applications:

- Water Quality
 - Dead ends
- Chlorine Levels
 - New Developments
 - Partial Project

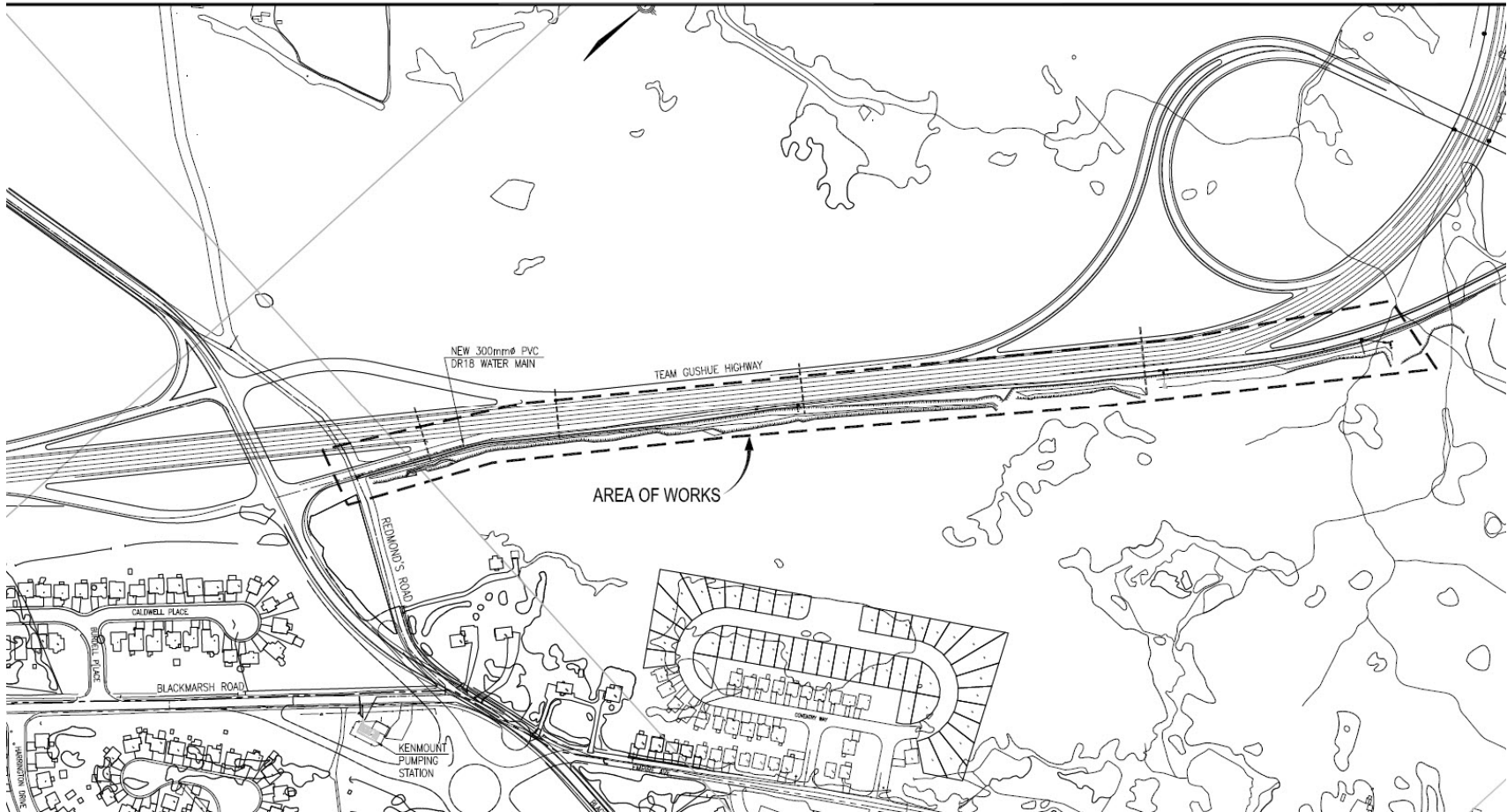
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Automatic Flushing Project Design

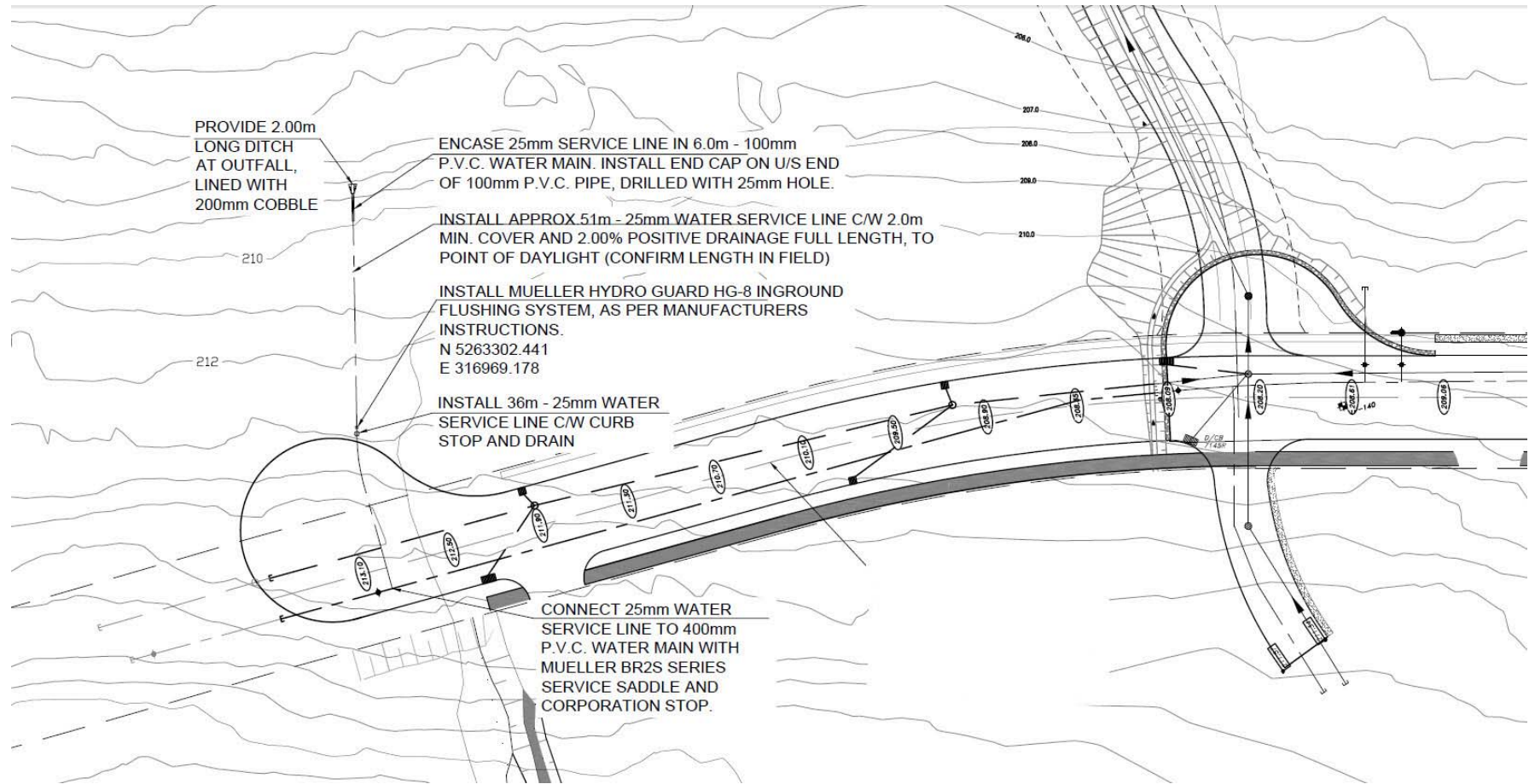


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Automatic Flushing Project Design



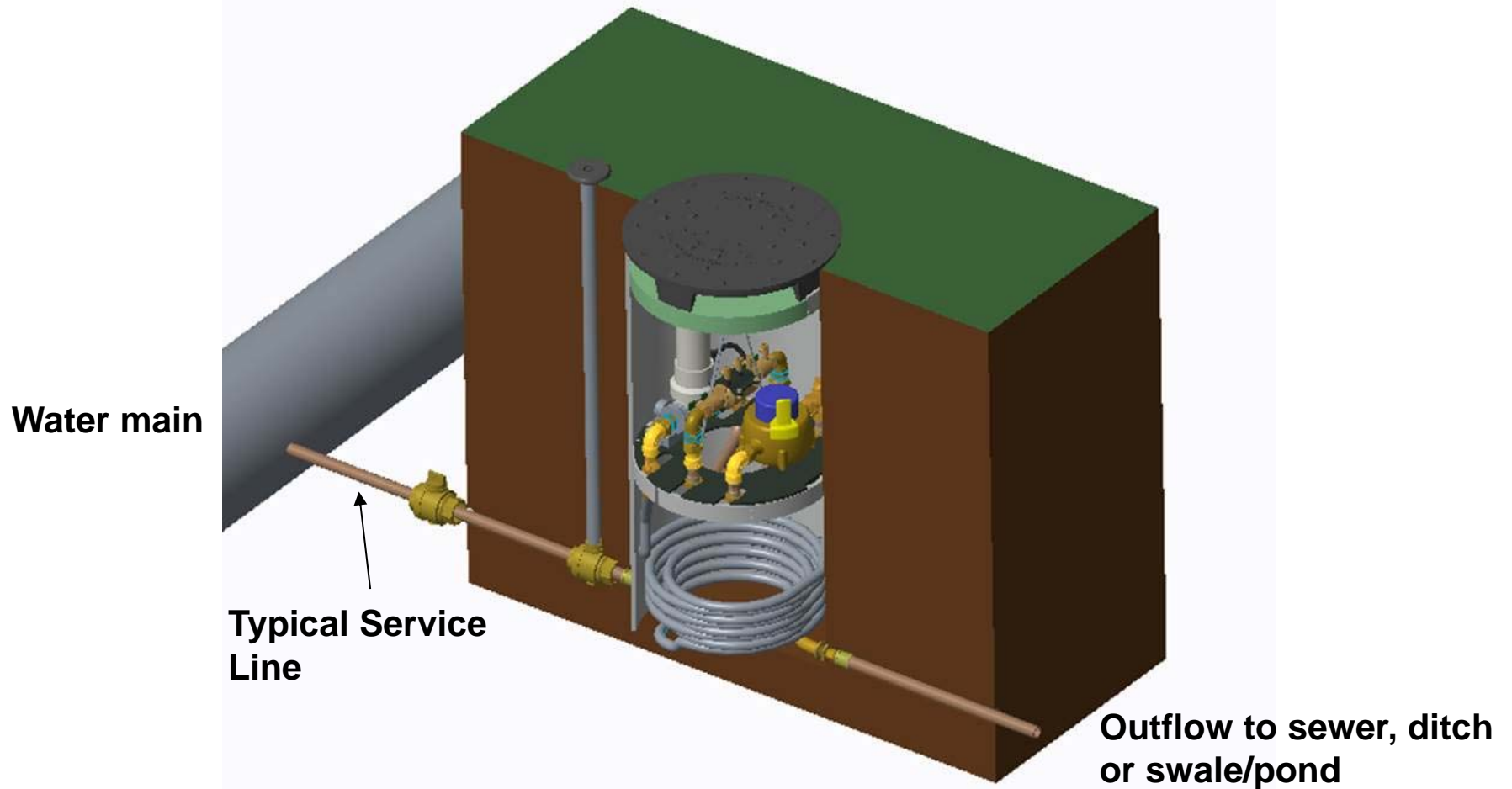
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HG-8 Sub-Surface buried device installation

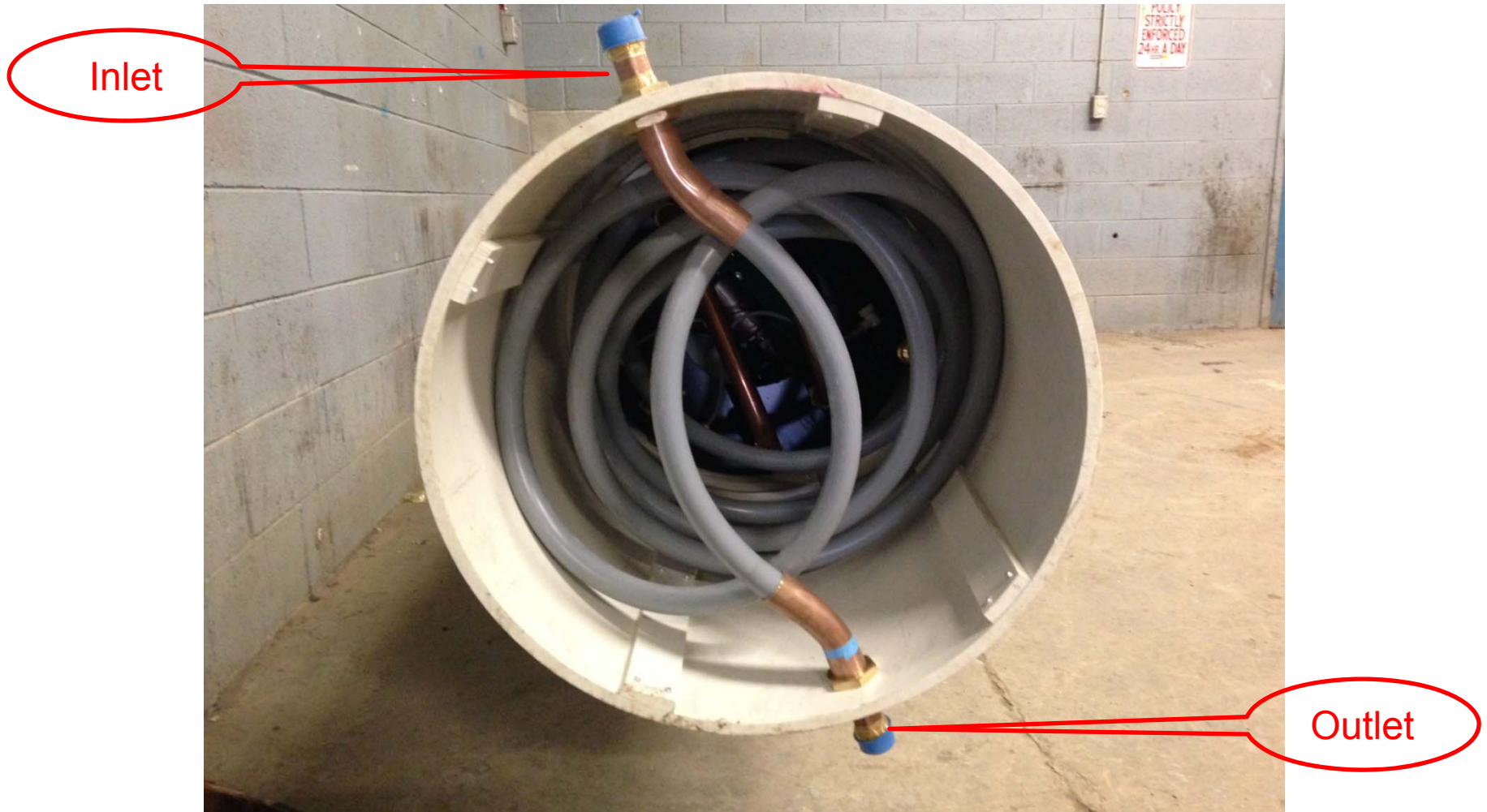


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HG-8 Base view before installation

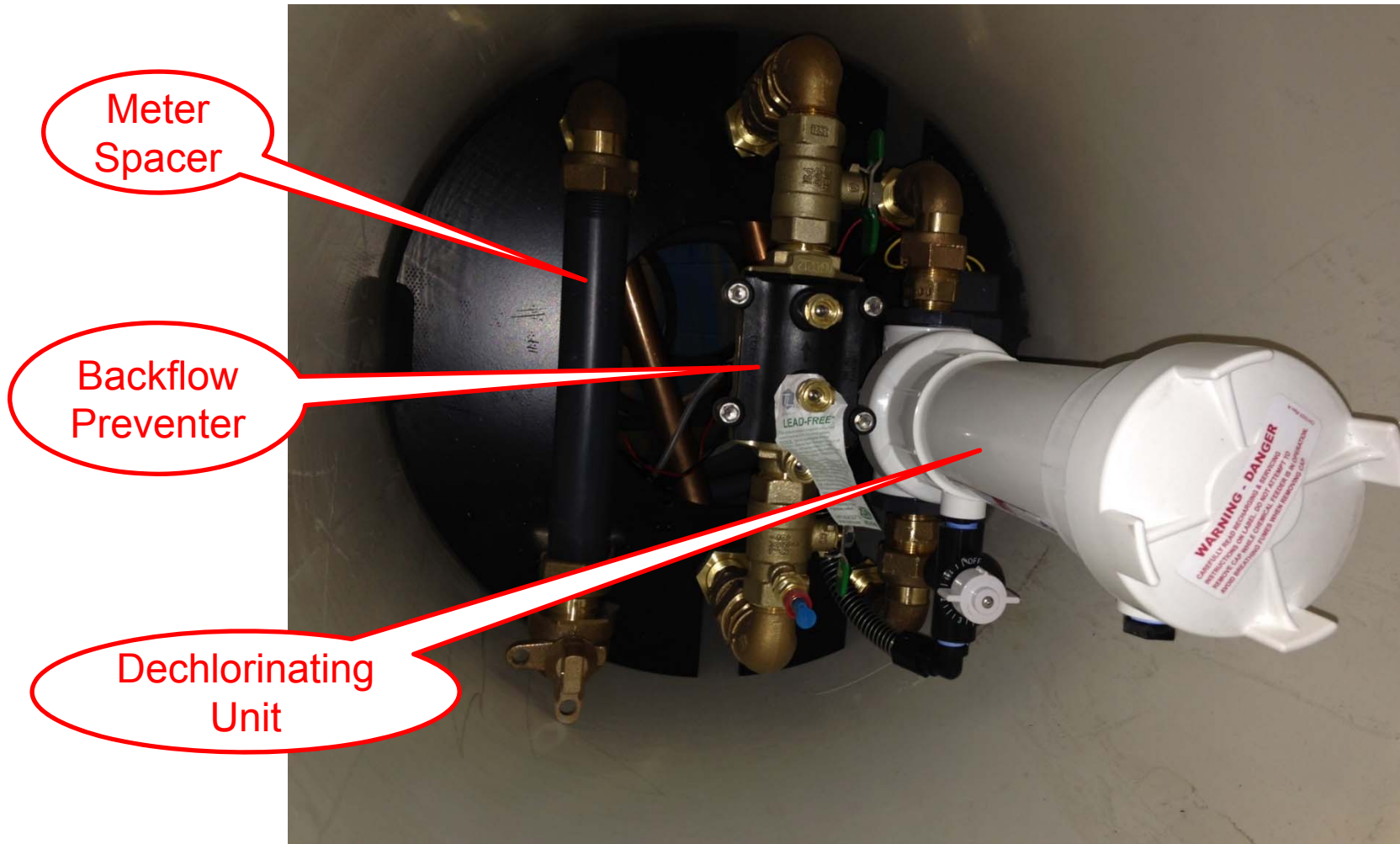


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HG-8 Top view of internal parts



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HG-8 finish installation – street view



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Automatic Flushing Remote Programming



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Automatic Flushing Remote Programming



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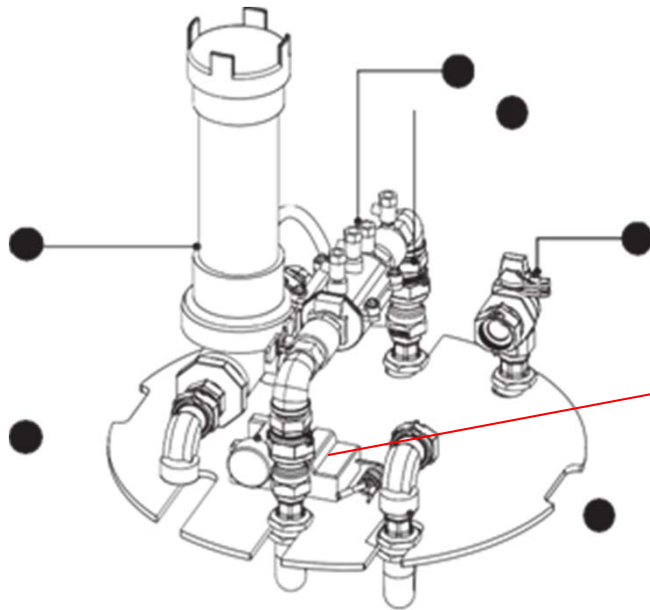
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HG-8 Device Programming Infrared

Use Remote with Programmer to set flush events.
Programmer apart of internal parts



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Automatic Flushing Future Projects

- Install new flusher at problematic dead end
- Install new flusher in developments with low usage
- Review all low flow areas
- Review and modify current programming of current flushers to optimize performance

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A nighttime photograph of St. John's, Newfoundland, showing the city lights and harbor. The city is illuminated with warm yellow and orange lights, reflecting on the water. The harbor is filled with boats and structures, and the city extends up a hillside in the background. The sky is a deep blue.

Thank You

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