GTSWCA AGM

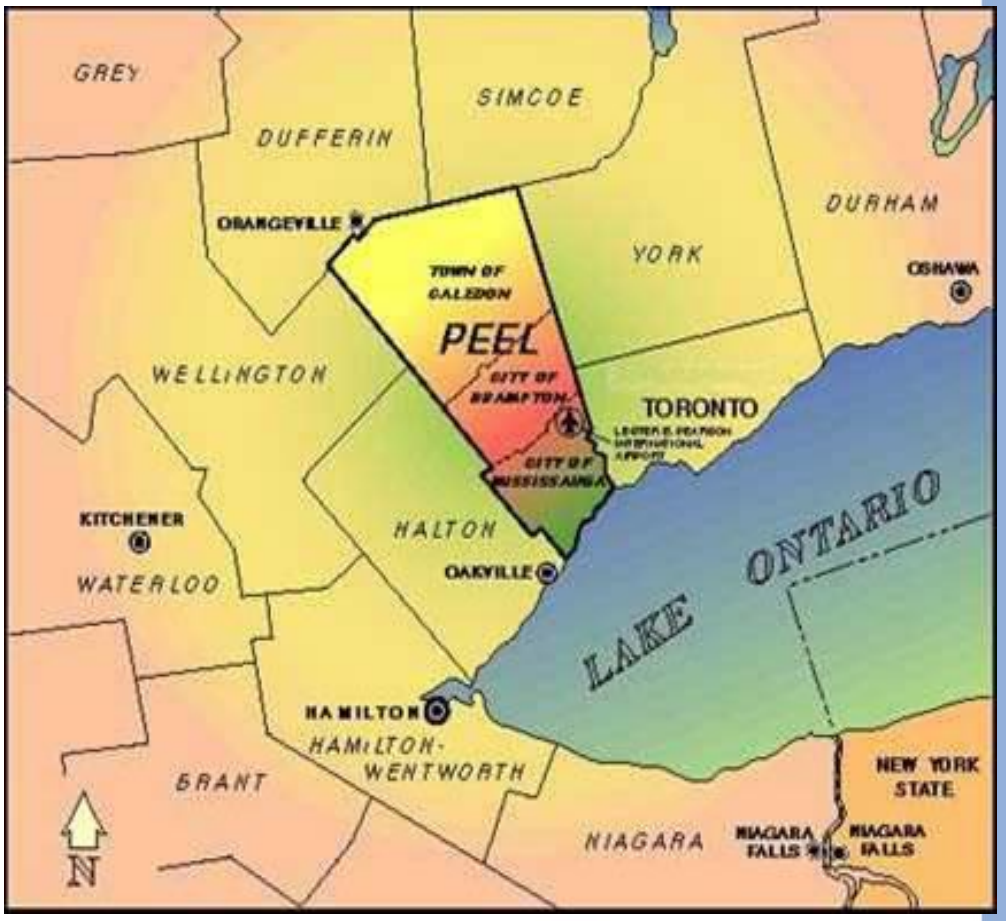
April 21st 2017

Anthony Parente
Director, WW

Region of Peel
Working for you

Region of Peel

- **2nd Largest Municipality in Ontario**
- 1,244 km^2 area
- Population:
  - 800,000 (1991)
  - 1,300,000 (2011)
  - 2,300,000 (Projected 2031)
- **Peel Wastewater Infrastructure**:
  - 2 Major WWTPs
  - 36 Sewage pumping facilities,
  - 2 Storm pumping facilities
  - 2 Communal treatment plants
  - Servicing to York
    - Approx. 53 ML/d
  - Servicing to Toronto
    - Approx. 50 ML/d
  - 3541km of san. Sewers
  - 52,000+ MH's
  - 307,000+ customer accounts



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Region of Peel
Wastewater Org Structure

Capital Works – Linear

- Responsible for all linear works in collection system
- Includes State of Good Repair (SOGR)
- Includes large Trunk Sewers

Simon Hopton

Capital Works – Treatment

- Responsible for Treatment Capital
- Includes major maintenance and replacement projects
- Includes **a lot of pipe!**

John Glass

New 2400 Dia. Inlet Sewer

Upcoming Work – 2017

Project Description	Project Manager	Project Status	Estimated Construction Cost	RFT Anticipated Date	Anticipated Construction Start Date
Sanitary sewer replacements: Ponytrail and Rathburn	Derek Gorzynski	Design	$15,000,000	May-17	July, 2017
900mm sanitary sewer on Dixie Road and crossing QEW	Jimmy Chong	Design	$10,000,000	May-17	July, 2017
Sanitary Sewer Spot Repairs on various streets within the Region, sanitary sewer main and laterals sealing and spot repairs	Joanna Pietkiewicz	Design	$3,000,000	May-17	July, 2017
Rehabilitation of sanitary sewer and manholes along the Lornewood Creek from Streambank Dr. to Queen St.	Grace Krasowski	Design	$3,500,000	Jun-17	Aug-17
Relining of various sanitary sewers	Derek Gorzynski	Design	$2,000,000	Aug-17	Oct-17
Sanitary sewermain and lateral connection replacements on various streets; joint with w/m contract	Joanna Pietkiewicz	Design	$1,500,000	Sep-17	Nov-17
Diversion of Cooksville Creek sewer to CPR Interceptor - part of Burnhamthorpe water and sewer tender packages	Grace Krasowski	Design	$3,500,000	Oct-17	2018/2019
New Sanitary trunk sewer - part of Burnhamthorpe water and sewer tender packages	Grace Krasowski	Design	$23,000,000	Oct-17	2018
Rehabilitation of sanitary manholes across Peel	Lesley Radman	RFP/ RFQ/ Procurement	$5,000,000	Dec-17	Mar-18
			$66,500,000		

Design Work – 2017/18

Project	Value	Anticipated Construction Year
SOGR Replacement/ Relining Program	$20-$25M / year	Yearly, 10 year program +
East to West Collector	$180M +	2019/2020
Cawthra Diversion	$42M	2019/2020
Lakeshore West	$40M	2020?
Pump Station Replacement (Various)	$40M	2018

Coming Soon…

Project	Value	Anticipated Construction Year
Manhole Rehabilitation Program	$5M/ year?	Yearly, 10 year program +
I/I Rehabilitation Program	$5M/ year?	Yearly, 10 year program +
Trunk Sewer Rehabilitation Program	$??M/ year	TBD

WASTEWATER DESIGN/ CONSTRUCTION STANDARDS

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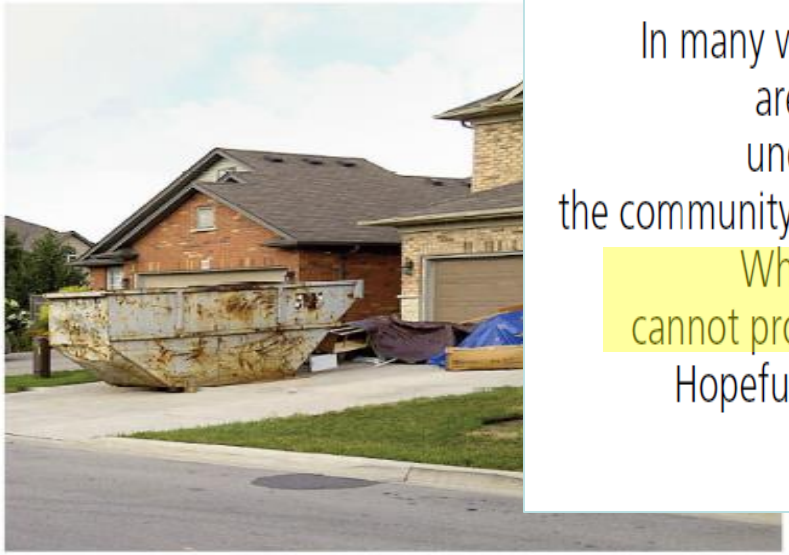
Institute for Catastrophic Loss Reduction
Building resilient communities

Institut de prévention des sinistres catastrophiques
Bâtir des communautés résilientes

Best practices guide:
Management of inflow and infiltration in new urban developments

By Ted Kesik
February 2015



WHY..?

In many ways, inflow and infiltration in new sanitary sewer systems are a barometer of the quality, care and stewardship underlying the municipality, its system of governance, the community's planning vision and its infrastructure engineering excellence.

What can be said about a 21st century civilization that cannot properly design, construct and sustain its vital infrastructure?

Hopefully, it is a question that should not have to be answered by future generations of Canadians.

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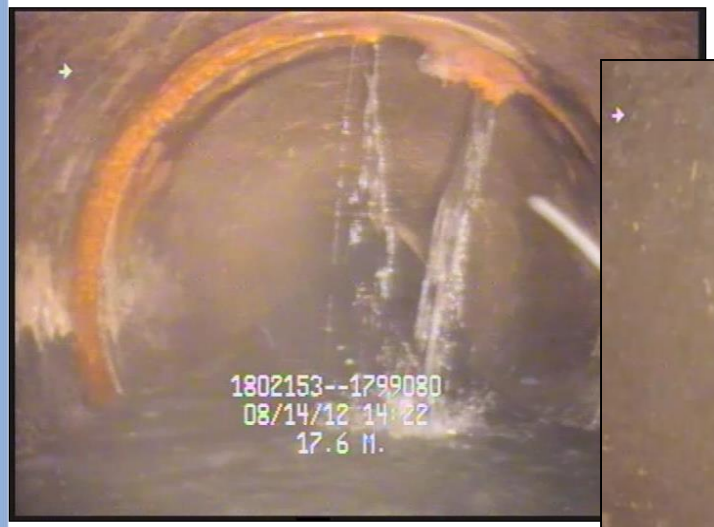
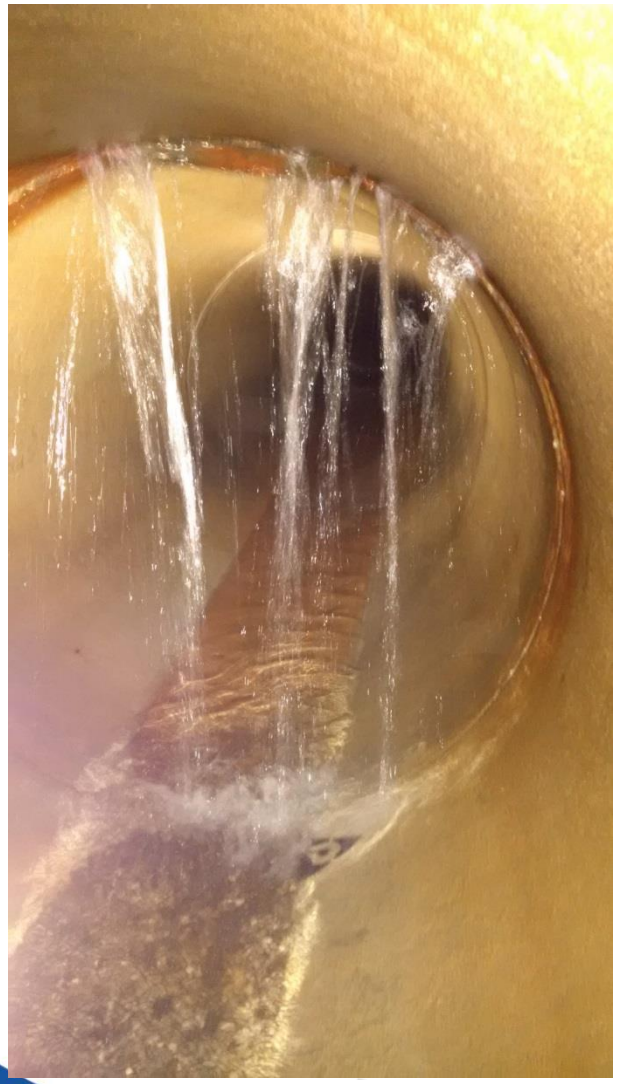
WHY.. *Infiltration*



1200mm – NEW – Beechwood



5 Joints in 171m long Section of pipe failed

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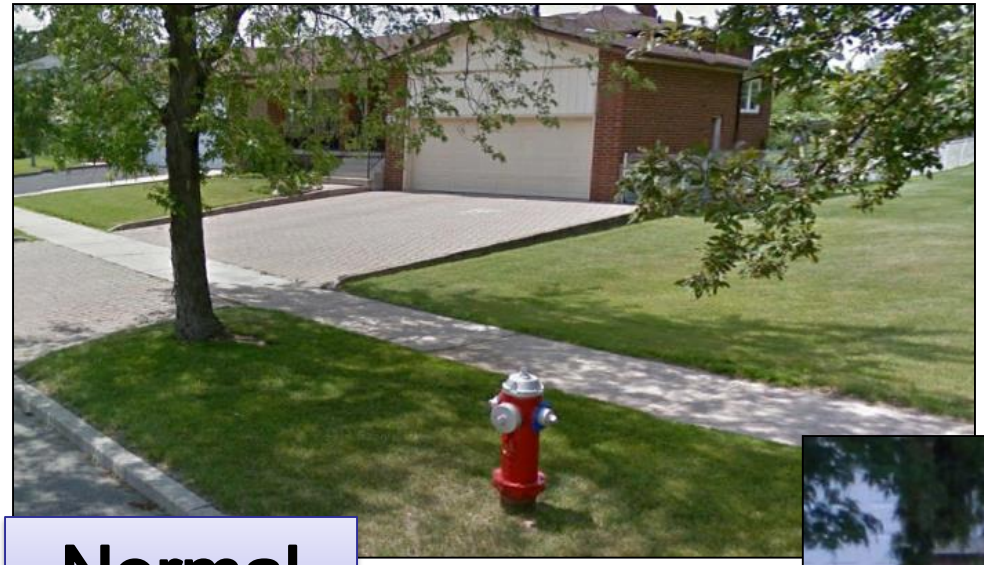
WHY.. *Climate Change*

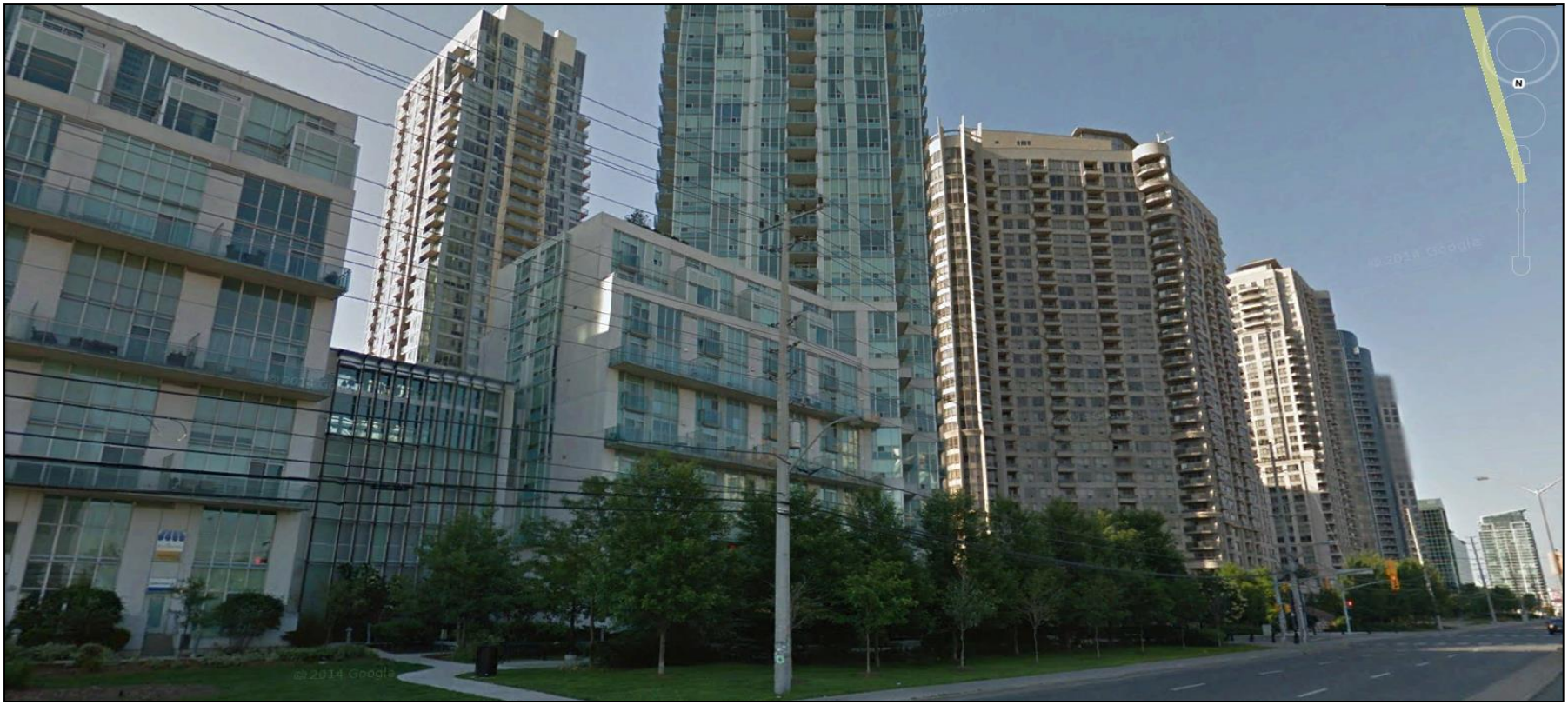


Normal

- Significant overland flow and surcharging event
- Significant basement flooding in Mississauga and some parts of Brampton
- Plant washouts and bypassing

This is Mississauga
July 2013

WHY.. *Intensification*



- Increasing demand on existing infrastructure to accommodate increased population density.
- Inability to convey flows overland
- Increased reliance on sanitary flows – parking garages, common areas which cannot be conveyed to storm sewers

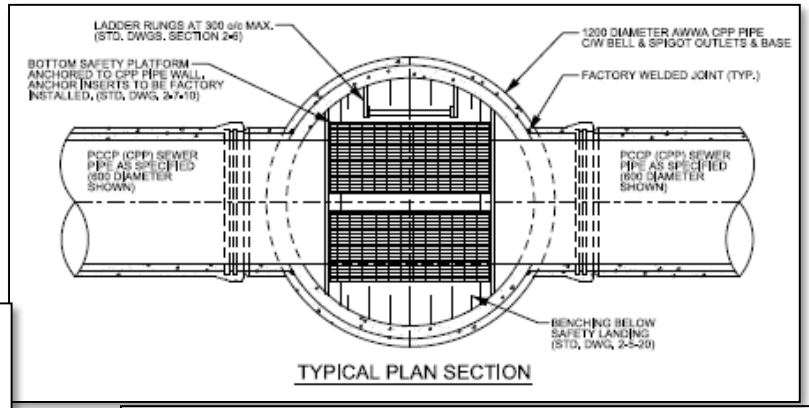
STANDARDS SUMMARY

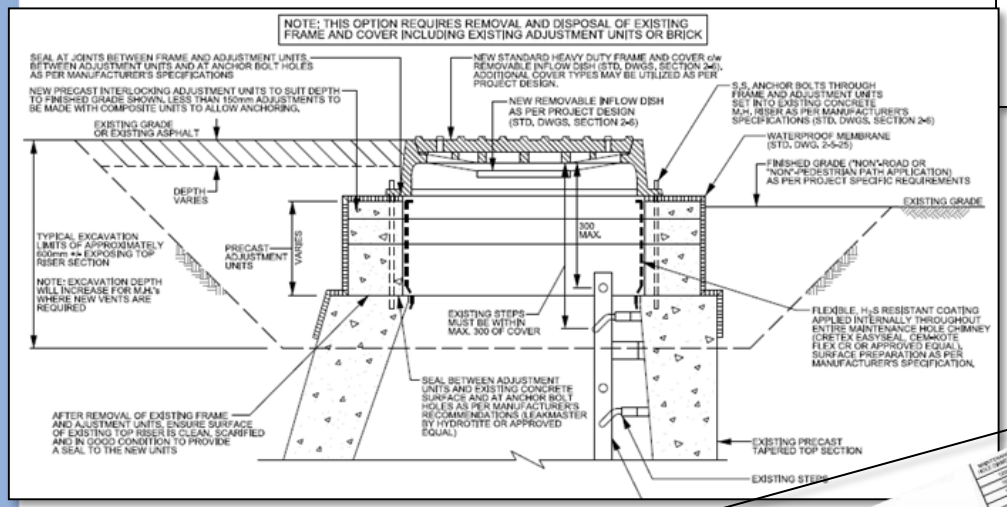
- NEW **SMALL** DIA. CONSTRUCTION
  - Standard Gravity - < 24”
  - More robust requirements
- NEW **LARGE** DIA. CONSTRUCTION
  - Pressure Design
  - Low pressure testing to 50 psi
- DETAILS
- REHABILITATION

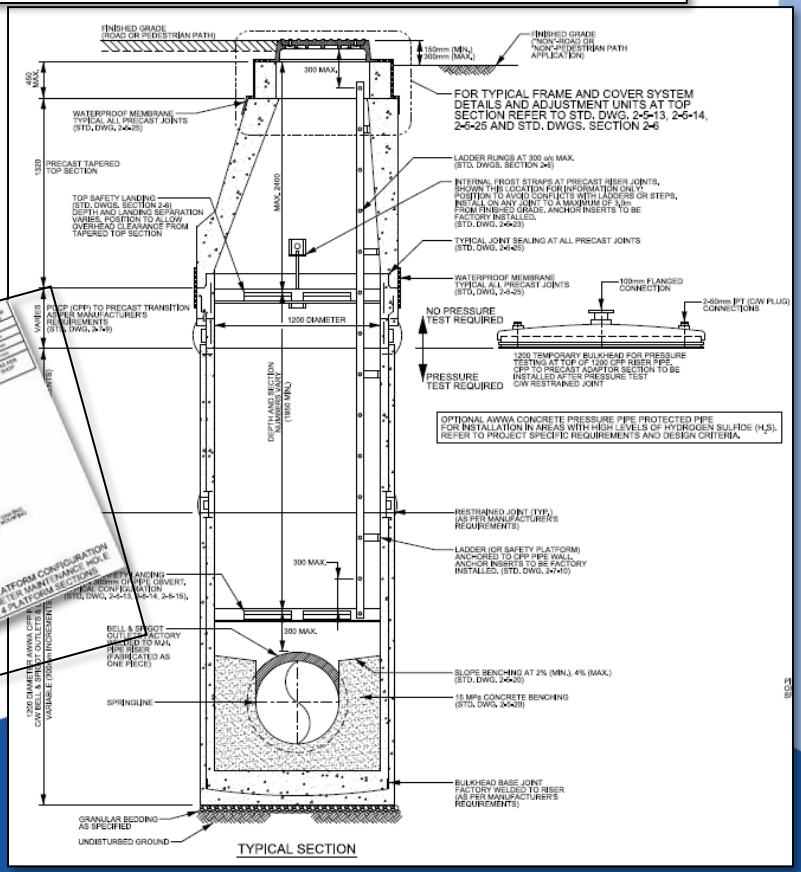
Drawing Count

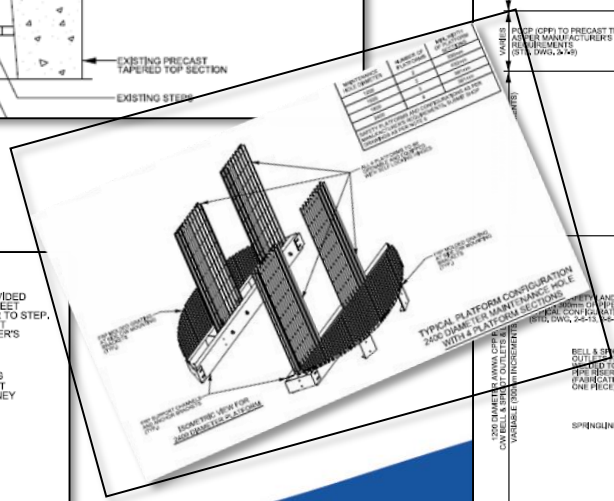
13 Deleted
3 Updated
3 Pending
63 NEW

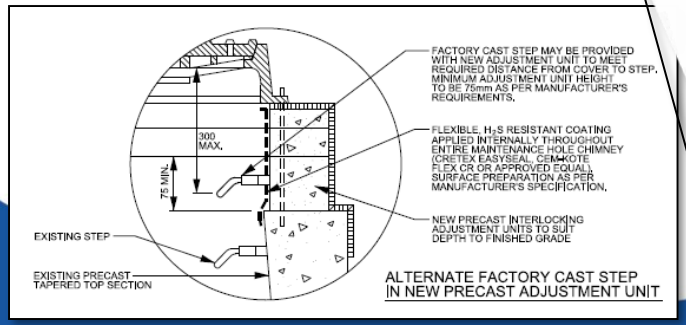
Samples of new Standards



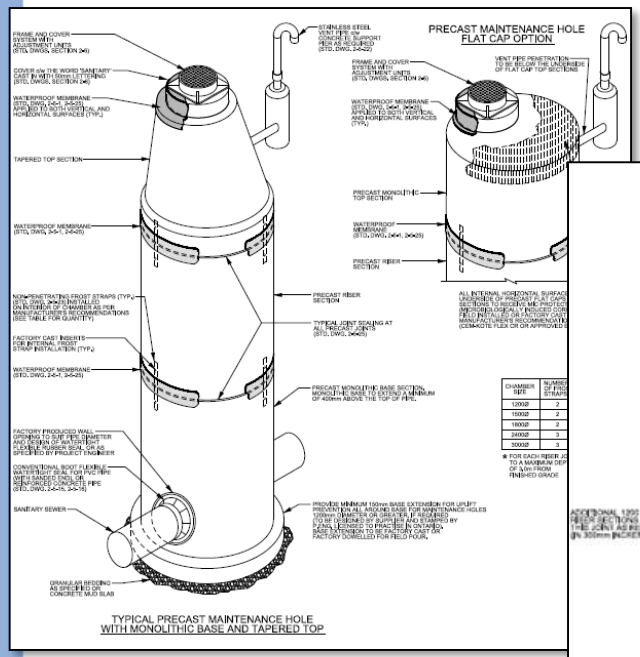


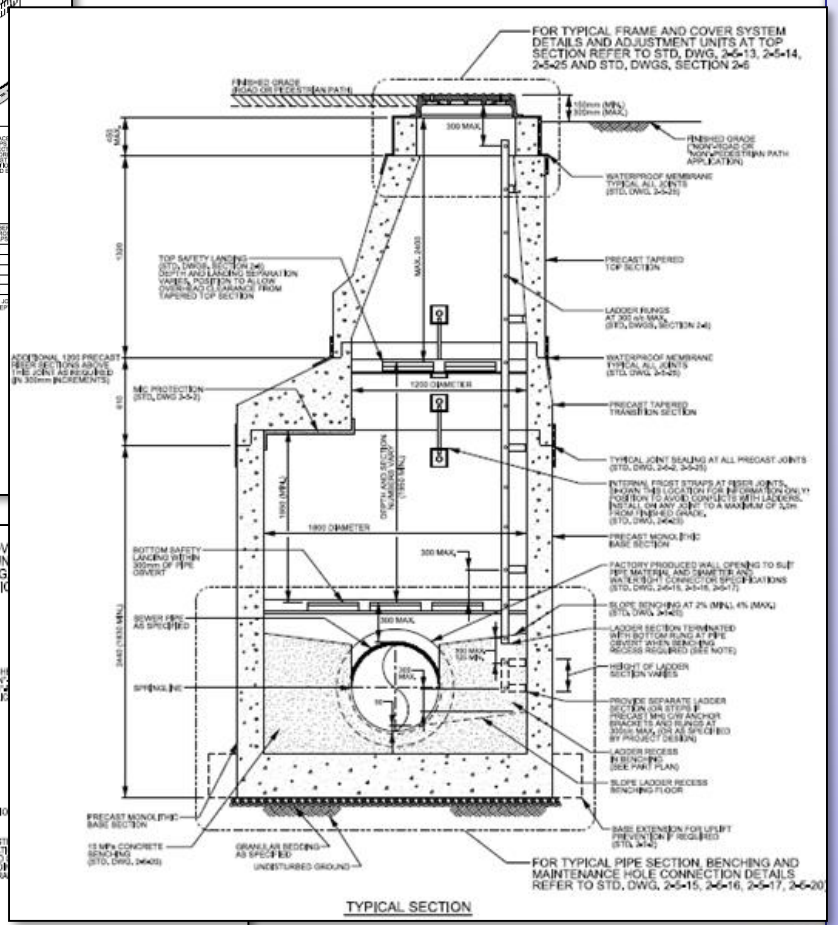


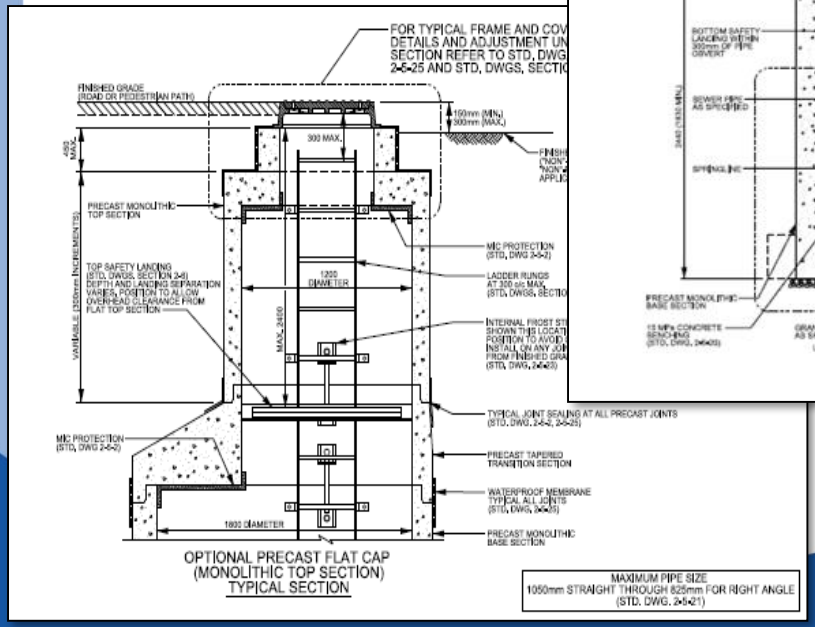




New Construction – *Non-pressure* design







Key Improvements

- Less dramatic amendments
- Frame and cover
  - Modified design
  - Exterior sealing
  - Sealed covers in vulnerable areas
- Exterior joint sealing
- Pipe to manhole modifications
- Sealed vent stacks
- Flood-safe devices

APPLICATION

- Services up to 600mm Diameter

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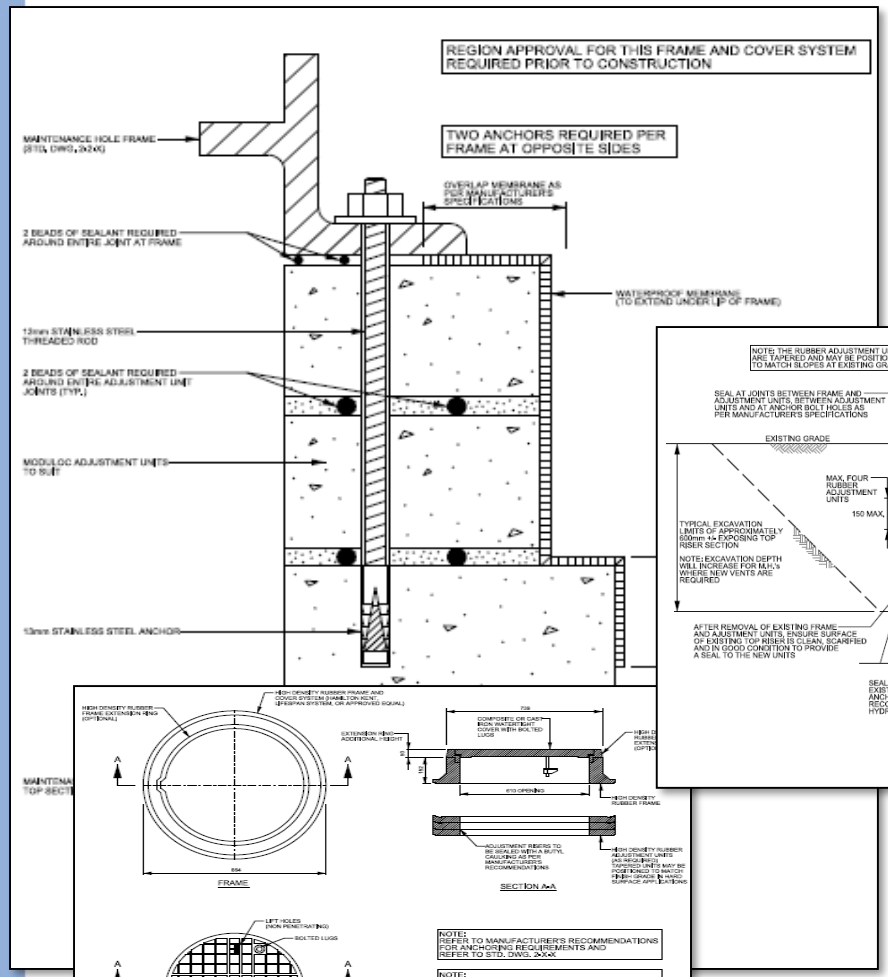
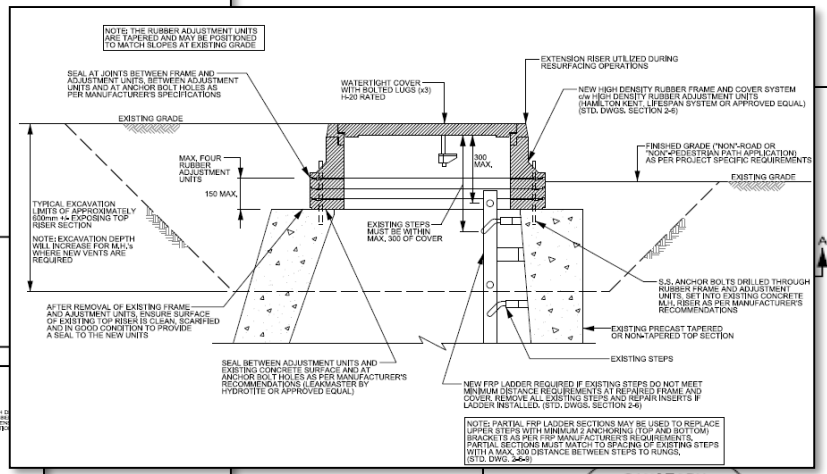
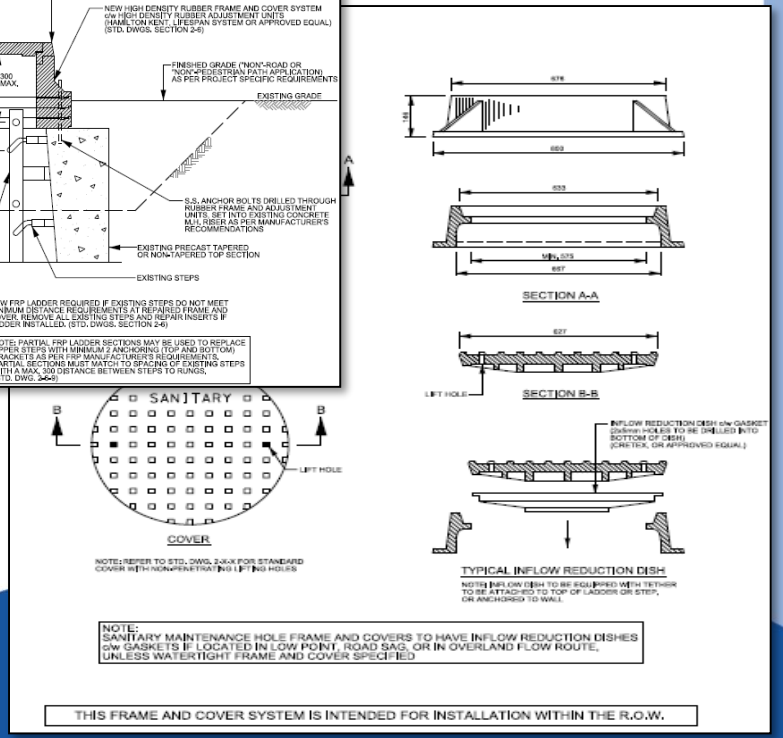
New Standards – Details

Key Improvements

- Frame and cover
  - Permit “Moduloc” but require anchoring and exterior sealing (still working on this)
- Cover may be standard, sealed or composite depending on location



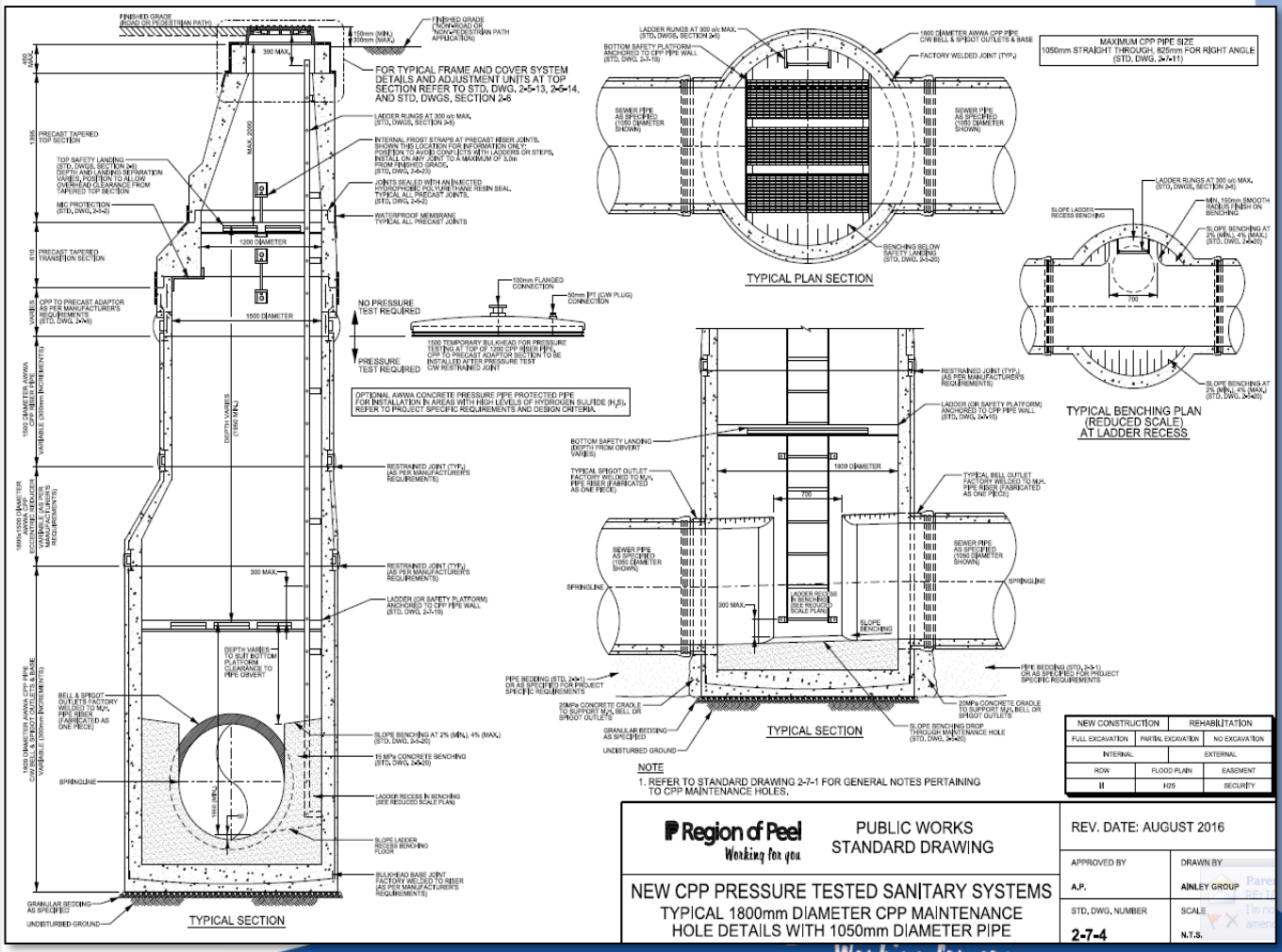




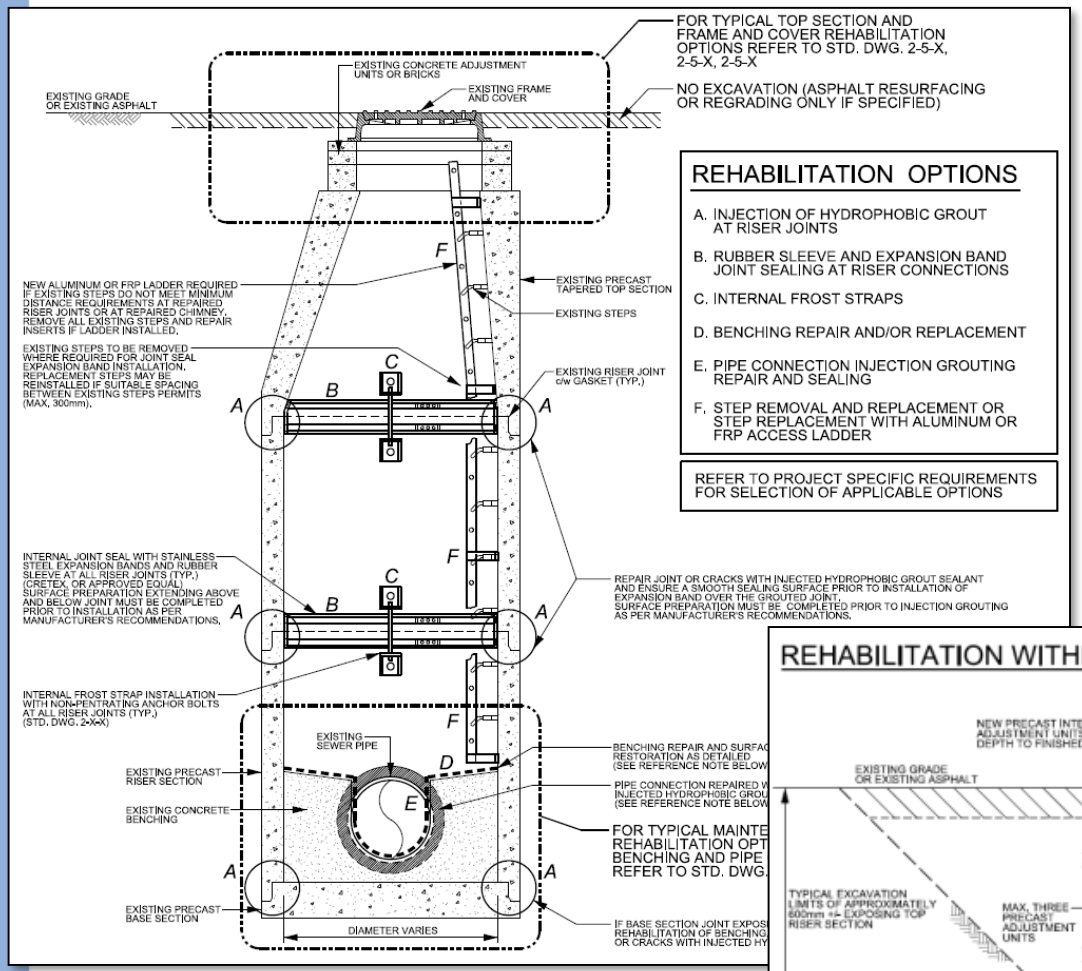
New Construction – *Pressure* Design

Key Improvements

- Pressure design below tapers
- 24” (600mm) and above only (PROPOSED)
- Proposed pressure 50 psi at Pipe CL
- Working on setting pressure requirements
- AWWA C301/C302 design basis – will permit both
- MH Tee permitted
- Will incorporate pressure testing requirements
- May require closure pieces – same as water
- Balance of gravity design applications

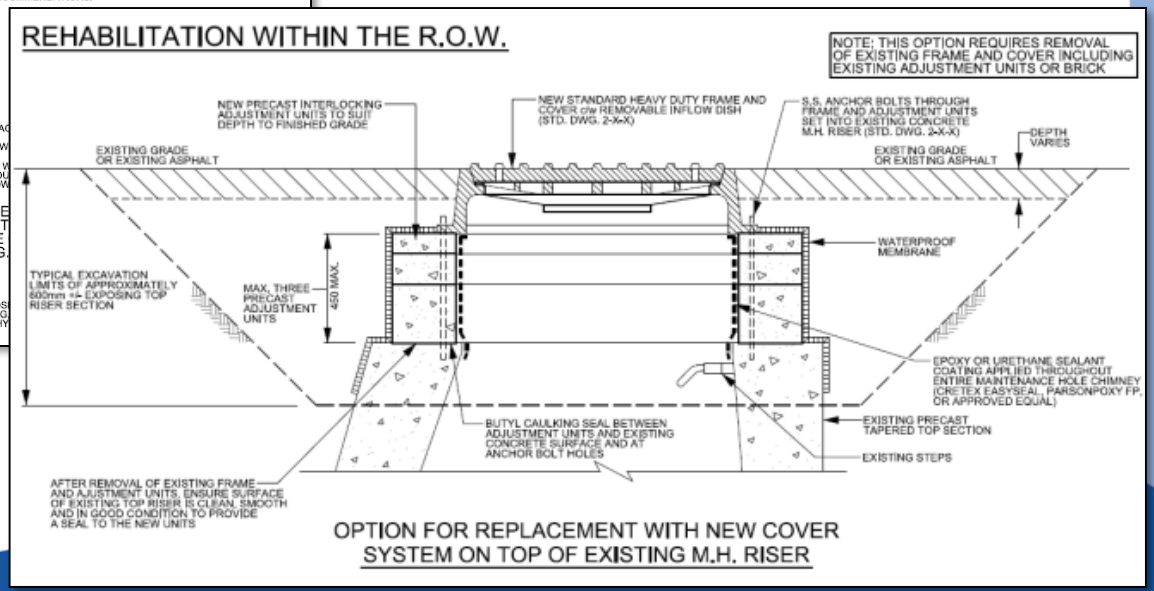


Rehabilitation



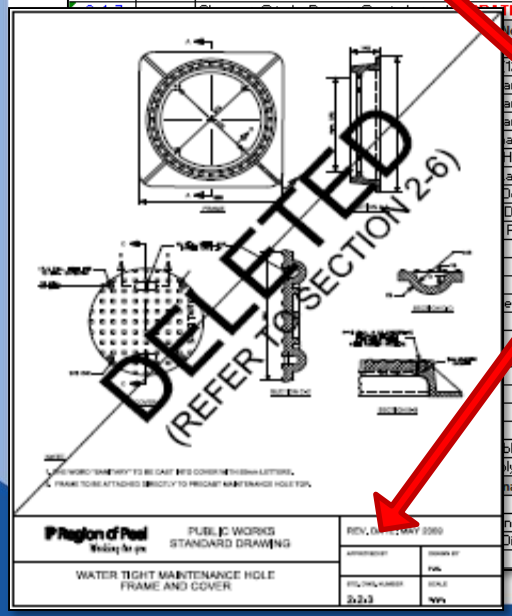
Key Improvements

- Multiple level standard
  1. ROW
  2. Easement/Floodplain installation
  3. Excavation/ NO Excavation (ie. Internal or External MH repairs)
- Selected by Designer
- Standard design permitted
- Recognize that significant portion of problem lies in frame/cover and adjustment units
- Secondary issue of significance is Pipe to MH connection



Web Site

Number		Title		PDF Siz
		Printing Instructions		
info		Printing notes		1KB
2-0		**Overall General Notes**		
2-0-1		Overall General Notes		399 KB
2-1		**Maintenance Holes**		
2-1-1		Precast Maintenance Hole 1200mm diameter **(DELETED)**		180 KB
2-1-2		Precast Maintenance Hole 1500mm and 1800mm diameter **(DELETED)**		177 KB
2-1-3		Precast Maintenance Hole Tees **(DELETED)**		123 KB
2-1-4		Maintenance Hole Benching Details **(DELETED)**		112 KB
2-1-5		Maintenance Hole Drop Structure - External Assembly **(DELETED)**		144 KB
2-1-6		Maintenance Hole Drop Structure - Internal Assembly **(DELETED)**		102 KB
2-1-7		Maintenance Hole Venting Details **(DELETED)**		85 KB
2-2		**Maintenance Hole Fittings**		
2-2-1		Safety Platform for 1200mm dia. Precast Maintenance Hole **(DELETED)**		144 KB
2-2-2		Standard Heavy Duty Frame and Cover **(DELETED)**		82 KB
2-2-3		Water Tight Maintenance Hole Frame and Cover **(DELETED)**		90 KB
2-2-3A		Detail of Anchoring Method for Water Tight Maintenance Hole - Steel or Aluminum Strap **(DELETED)**		71 KB
2-2-3B		Detail of Anchoring Method for Water Tight Maintenance Hole - Threaded Rod **(DELETED)**		68 KB
2-2-4		Maintenance Hole Steps - Aluminum **(DELETED)**		100 KB
2-3		**Bedding and Backfill**		
2-3-1		Bedding Details for Sanitary Sewer **(NEW)**		316 KB
2-4		**Service Connections**		
2-4-1		Service Connections For Rigid Pipe		152 KB
2-4-1		Service Connections For Rigid Pipe Low to Medium Density **(UPDATED) PENDING APPROVAL**		217 KB
2-4-2		Service Connections For Flexible Pipe		148 KB
2-4-2		Service Connections For Flexible Pipe Low to Medium Density **(UPDATED) PENDING APPROV**		228 KB
2-4-3		Service Connections For ible or Rigid Pipe Industrial, Commercial or Institutional **(NEW) PENDING APPRO**		282 KB
2-4-4		Service Connection Extensions (Development) **(UPDATED)**		207 KB
2-4-5		Grinder Pump to Low Pressure **(UP ED)**		191 KB
2-4-6		Grinder Pump to Low Pressure - The Ro llow ance **(UPDATED)**		158 KB
		ED)		193 KB
		ion Pressure Tested) (NEW)		
				510 KB
		m-3000mm)		398 KB
				228 KB
		Dish Option		199 KB
				178 KB



2-2		**Maintenance Hole Fittings**		
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- Currently on-line
- Previous versions of drawings will still be accessible but clearly direct a path to new version
- Main page will clearly identify changes

Region of Peel
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Next Steps - Standards

Feedback/ Concerns

- **THANK YOU for your feedback to date**
- Please email concerns (red penned PDF of drawing) direct to Chris Smith, Project Manager – chris.smith@peelregion.ca
- Continuous improvement goal
- Revisions will be issued and revision index maintained
- Revision frequency and Web page update cycle (TBD)

THANK YOU