

SECTION 7.5.2 JULY 2022

WAT	ER SYSTEM						
\$18 \$18	GIS Revision Tracking Point						
PŦ	Pressure Tank						
	Unknown FCODE						
OAVC	Air and Vacuum Valve						
OARV	Air Release Valve						
OALT	Altitude Valve						
0	Ball Valve						
-	Butterfly Valve						
os	Butterfly Valve Operator Side						
Ζţ	Check Valve						
$_{\odot}$ CS	Corporation Stop						
$_{\odot}$ CC	Curb Stop						
\bigcirc DRN	Drain Valve						
\otimes	Gate Valve						
\bigcirc GLV	Globe Valve						
\otimes	Hydrant Valve						
\bigcirc PRV	Pressure Reducing Valve						
$_{\bigcirc}SRV$	Service Valve						
$\bigcirc {\rm SUR}$	Surge Relief Valve						
\bigcirc ARV	Private Air Release Valve						
OAVC	Private Air and Vacuum Valve						
\bigcirc ALT	Private Altitude Valve						
0	Private Ball Valve						
	Private Butterfly Valve						
os	Private Butterfly Valve Operator Side						
Zt	Private Check Valve						
○ CS	Private Corporation Stop						
○ CC	Private Curb Stop						
ODRN	Private Drain Valve						
\otimes	Private Gate Valve						
\bigcirc GLV	Private Globe Valve						
\otimes	Private Hydrant Valve						
PRV	Private Pressure Reducing Valve						
SRV	Private Service Valve						
SUR	Private Surge Relief Valve						

Closed Valve

Isolation Valve

Private Isolation Valve

Backflow Preventer

	Flowmeter					
W QS	Water Quality Station					
≜ WQI	Water Quality Instrument					
Hydrant	s					
<u></u>	Hydrant					
-OPVT	Private Hydrant					
Water F	ittings					
	Adaptor					
_	Bend					
=	Blind Flange					
П	Сар					
\blacktriangle	Chamber Flow Arrow					
T VT	Chamber Vent					
)(Coupling					
Ū	Cross					
	Denso Tape					
	Link Seal on a Pipe Sleeve					
¥	M.J. Restraint Device					
	Non-shrink Fill on a Pipe Sleeve					
I * 1	Plug					
	Reducer					
	Sleeve					
•	Strainer					
=	Tapping Sleeve					
	Tee					
TM	Test Meter Pit					
I	Victaulic Coupling					
=	Wye					
_	Wye Left					
=	Wye Right					
	re Points					
ARV	Air Release Chamber					
\Box	Booster Station					
CTR	Control Chamber					

 \square MTR

PW

PRV

RSV

Meter Chamber

Production Well

PRV Chamber

Reservoir Chamber

Water Treatment Plant





SECTION 7.5.2 JULY 2022

WASTEWATER COLLECTION SYSTEM

GIS Revision Tracking Point



Collection System Spot Repair

Wastewater Manholes and Outfalls

Public Manhole

Private Manhole

Wastewater Chambers

Diversion Chamber

Diversion Point

Force Main Valve Chamber

JNC

Junction Chamber

Pre-Treatment Unit

Pump Chamber

Regulating Chamber

T

Tide Chamber

Outfall

Wastewater Fittings

Bend

Cap

Cleanout

Coupling

Eccentric Reducer

Flexible Coupling

Flex Joint

Grouted Connection

Long Radius Bend

Mechanical Joint Restraint

Reducer

Saddle

Tap

Tee

Wve Vent Service Point

Legacy Service Point

(TS)

Cathodic Protection Test Station

Control Structure

Identified Deficiency (Pipes/Laterals)

Tracewire Access Point

Force Main Flow Meter

Gravity Flow Meter

Gravity Flow Meter - Removed

 $_{\odot}$ CS

Wastewater Corp Stop

 $_{\odot}$ cc

Wastewater Curb Stop

Wastewater Pumping Stations

 \mathcal{O}

Public Pumping Station

Private Pumping Station

Wastewater Holding Tanks

#

Heat Recovery Tank

9

Holding Tank

OF

Overflow Tank

Wastewater Valves

 \bigcirc ARV

Air Release Valve

 \bigcirc ALT

Altitude Valve

Butterfly Valve

0

Ball Valve

Cone Valve

71

Check Valve

ORN

Drain Valve Gate Valve

Plug Valve

Valve

 \bigcirc PRV

Pressure Release Valve

 \bigcirc SUR

3

Surge Relief Valve

Sewer Pump



Treatment Facility

Casing Lining

Tracewire

Vent Line

CCTV Televised Main

Wastewater Insulation

Concrete Slab

Pre-Insulated Pipe

Styrofoam Sheet **Wastewater Pipes**

FM▶—

Public Force Main

GP**>**—

Public Gravity Pressure Pipe

PP>-

Public Pressure Pipe

Public Inverted Siphon

·IS>-

Public Pipe

FM>-

Private Force Main

Private Gravity Pressure Pipe

PP>-

Private Pressure Pipe

IS>-

Private Inverted Siphon

Private Pipe Public Lateral

Private Lateral

Wastewater Structure Polygon



Treatment Unit

(

 $\langle \hat{\bullet} \rangle$

(0)

Private Unknown

Other (See Remarks)

Private Other (See Remarks)

DESIGN SPECIFICATIONS SECTION 7 - DRAWING REQUIREMENTS (GIS SYMBOLOGY)

SECTION 7.5.2 JULY 2022

STORMWATER COLLECTION SYSTEM Stormwater Manholes Service Point Identified Deficiency (Pipes/Laterals) O Public Manhole Control Structure Force Main Flow Meter Private Manhole Stormwater Valves Stormwater Inlets \bigcirc ARV **Gravity Flow Meter** Air Release Valve Public Catchbasin ○ ALT Altitude Valve Gravity Flow Meter - Removed Public Double Catchbasin **Butterfly Valve** Ħ ⊖ CS Public Triple Catchbasin Stormwater Corp Stop **Ball Valve** o cc Private Catchbasin Stormwater Curb Stop Cone Valve **Stormwater Pumping Stations** Private Double Catchbasin Z^{\dagger} Check Valve Private Triple Catchbasin **Public Pumping Station ○DRN** Drain Valve Stormwater Headwalls and Outfalls **Private Pumping Station** \otimes Gate Valve Headwall Plug Valve Casing Δ Outfall ○ PRV Pressure Release Valve Lining Stormwater Fittings SUR Surge Relief Valve Ditch Bend Valve **CCTV Televised Main** Cap CO **Stormwater Management Structures** Stormwater Insulation Cleanout \hat{ullet} Other (No Remarks) _____ Concrete Slab)[Coupling Berm Pre-Insulated Pipe A Eccentric Reducer Private Berm \overline{m} Styrofoam Sheet Flexible Coupling **Stormwater Pipes** : Flex Joint Constructed Wetland Public Catchbasin Lead **Grouted Connection** Public Culvert Private Constructed Wetland Long Radius Bend **Public Drain** Mechanical Joint Restraint Lake FM>-Public Force Main Reducer GP>-Public Gravity Pressure Pipe Private Lake Saddle PP>— Public Pressure Pipe Тар Oversize Pipe 1S>-**Public Inverted Siphon** Tee Public Pipe Wye Private Oversize Pipe Private Catchbasin Lead Stormwater Chambers **Underground Storage Private Culvert** \bigvee **Diversion Chamber** Private Drain Private Underground Storage **Diversion Point M**VL FM>— Private Force Main Force Main Valve Chamber Wet Pond GP) Private Gravity Pressure Pipe JNC Junction Chamber Private Wet Pond PP — Private Pressure Pipe Pump Chamber ******* Dry Pond (IS) Private Inverted Siphon Regulating Chamber ANNA ANNA Private Dry Pond Private Pipe T Tide Chamber \bigcirc Unknown

Public Lateral

Private Lateral

Stormwater Structure Polygon



SECTION 7.5.2 JULY 2022

COMBINED COLLECTION SYSTEM

Combined Manholes and Outfalls Control Structure ===== П Public Manhole Identified Deficiency (Pipes/Laterals) П Private Manhole Force Main Flow Meter ᠘ Outfall **Gravity Flow Meter** Combined Sewer Overflow П (CSO) Structure Gravity Flow Meter - Removed **Combined Fitting** Bend o cs Combined Corp Stop Cap ○ CC Combined Curb Stop **⊕**CO Cleanout **Combined Chambers**)[Coupling \bigvee **Diversion Chamber Eccentric Reducer Diversion Point** FM VL Flexible Coupling Force Main Valve Chamber • Flex Joint JNC Junction Chamber PUMP **Grouted Connection Pump Chamber** Long Radius Bend Regulating Chamber Mechanical Joint Restraint T Tide Chamber **Combined Valves** Reducer \bigcirc ARV Air Release Valve Saddle \bigcirc ALT Altitude Valve Tap **Butterfly Valve** Tee Wye **Ball Valve (Combined Holding Tanks** Cone Valve Heat Recovery Tank Zt Check Valve \bigcirc DRN Drain Valve **Holding Tank OF** Gate Valve Overflow Tank **Combined Pumping Stations** Plug Valve PRV **Public Pumping Station** Pressure Release Valve \bigcirc SUR Surge Relief Valve

Valve

Private Pumping Station

Lining **CCTV Televised Main** Insulation *.....* Concrete Slab Pre-Insulated Pipe mStyrofoam Sheet **Combined Pipes** FM▶-**Public Force Main** GP≫— Public Gravity Pressure Pipe PP>-Public Pressure Pipe ·IS·>-**Public Inverted Siphon** Public Pipe FM>-Private Force Main Private Gravity Pressure Pipe PP>-Private Pressure Pipe Private Inverted Siphon Private Pipe Public Lateral Private Lateral Combined Structure Polygon

Casing



SECTION 7.5.2 JULY 2022

UNK	NOWN COLLEC	CTION	SYSTEM	
Unknow	n Manholes	•	Service Point	=====
O	Public Manhole	Œ	Cathodic Protection Test Station	
\bigcirc	Private Manhole	×	Control Structure	
Unknow	Unknown Headwalls and Outfalls		Identified Deficiency (Pipes/Laterals)	Unknown I
\smile	Headwall	* - A		
᠘ Outfall		Y	Force Main Flow Meter	
Unknow	n Fittings	+	Gravity Flow Meter	<u> </u>
_	Bend		0 11 51 14 1 5	Unknown F
п	Сар		Gravity Flow Meter - Removed	FM > —
€ co	Cleanout	⊖ CS	Unknown Corp Stop	GP > —
)(Coupling	○ cc	Unknown Curb Stop	PP > —
T	Eccentric Reducer	Unknown	Chambers	·IS > —
)(Flexible Coupling	\square	Diversion Chamber	
1	Flex Joint	₩	Diversion Point	
Ŷ	Grouted Connection	FM VL	Force Main Valve Chamber	FM▶—
	Long Radius Bend	JNC	Junction Chamber	GP≯—
¥	-	PUMP	Pump Chamber	PP>—
≠	Mechanical Joint Restraint		Regulating Chamber	·IS>—
_	Reducer	T	Tide Chamber	-> -
	Saddle	Unknown	ı Valves	
Ξ	Тар	ARV	Air Release Valve	
С	Tee	○ALT	Altitude Valve	
=	Wye			
Unknow	n Holding Tanks		Butterfly Valve	
	Heat Recovery Tank	©	Ball Valve	
8	Holding Tank	lacktriangle	Cone Valve	
OF	Overflow Tank	Ζħ	Check Valve	
	n Pumping Stations	\bigcirc DRN	Drain Valve	
Public Pumping Station		\otimes	Gate Valve	
\simeq	. abile i amping otation	①	Plug Valvo	

 \bigcirc PRV

 $\bigcirc \, \mathsf{SUR} \,$

Private Pumping Station

Plug Valve

Valve

Pressure Release Valve

Surge Relief Valve

=====	Casing					
	Lining					
	CCTV Televised Main					
Unknown Insulation						
	Concrete Slab					
	Pre-Insulated Pipe					
	Styrofoam Sheet					
Unknown	Pipes					
-M > —	Public Force Main					
GP > —	Public Gravity Pressure Pipe					
PP > —	Public Pressure Pipe					
ıs > —	Public Inverted Siphon					
—	Public Pipe					
M>—	Private Force Main					
GP > —	Private Gravity Pressure Pipe					
PP>—	Private Pressure Pipe					
IS>—	Private Inverted Siphon					
->	Private Pipe					
	Public Lateral					
	Private Lateral					

Unknown Structure Polygon

Wastewater Inverted Siphon

Wastewater Pipe

Lateral



Abandoned Service Points

Unknown

Stormwater

Wastewater

UK

SW

ww

DESIGN SPECIFICATIONS SECTION 7 - DRAWING REQUIREMENTS (GIS SYMBOLOGY)

ABANDONED WATER SYSTEM

	ndoned valves	WR At	andoned Water Reservoir	17		on a Pipe Sieeve
- Ó - Aba	andoned Hydrants	Aba	ndoned Flowmeter		M.J. Restra	
— Abar	ndoned Water Pipe					Fill on a Pipe Sleeve
	ndoned Water Drain		oned Fittings		Plug	
• Ahai	ndoned Service Point	× Ur	known FCODE	_	Reducer	
		☐ Ad	laptor	_	Sleeve	
	ndoned Service Lateral	— Ве	end		Strainer	
Aband	oned Structure Points	= Bli	nd Flange	_	Tapping SI	eeve
	Jnknown Structure Subtype	e □ Ca	р	_	Tee Test Meter	Dit
ARV A	ir Release Chamber	▲ Ch	namber Flow Arrow		Victaulic C	
€ в	Booster Station	77	namber Vent		Wye	oupling
CTR C	Control Chamber		oupling oss		Wye Left	
	Meter Chamber	_	enso Tape		Wye Right	
⊙PW P	Production Well					ture Polygons
PRV P	PRV Chamber			Abunc	ionica otrac	are relygone
RSV R	Reservoir Chamber					
1 ,	Notes Treatment Diest			_		
	Vater Treatment Plant					
ABAN	IDONED COLLE	CTIO	NSYSTEM			
Abandone	d Manholes	TO	Abandoned Cathodic		Î	Abandanad Tractment Facility
	Combined Manhole	(TS)	Protection Test Station			Abandoned Treatment Facility
	Wastewater Manhole		Abandoned Control Structure		\bigcirc	Abandoned Pumping Station
0	Stormwater Manhole	•	Abandoned Stormwater Management Structure		201	Abandoned Fullipling Station
	Unknown Manhole Abandoned CSO Structure	lacktriangle	Abandoned Tracewire Access Point	t		Abandoned Casing
_	d Inlets and Outfalls	(WW)	Abandoned Sewer Pump			Abandoned Lining
	Catchbasin		·			Abandoned Ditch
	Double Catchbasin	⊖ CS	Abandoned Corp Stop		XXXXXXXX	Abandoned Insulation Abandoned Tracewire
	Triple Catchbasin	O CC	Abandoned Curb Stop Chambers			Abandoned Vent Line
	Abandoned Headwall	Abandoned	Diversion Chamber		Abandone	
L	Abandoned Outfall	*	Diversion Point		FM>—	Combined Force Main
Abandone		FM VL	Force Main Valve Chamber		GP>—	Combined Gravity Pressure Pipe
_	Bend	JNC	Junction Chamber		PP>—	Combined Pressure Pipe
C CO	Сар	PUMP			ISD—	Combined Inverted Siphon
•co	Cleanout		Pump Chamber		10	
<u> </u>	Coupling		Regulating Chamber			Combined Pipe Catchbasin Lead
•	Eccentric Reducer		Stormwater Treatment Unit			Culvert
	Flex Joint Flexible Coupling	T	Tide Chamber			Drain
	Grouted Connection	Abandoned	Wastewater Pre-Treatment Unit		FM>—	Stormwater Force Main
	Long Radius Bend	ARV	Air Release Valve		GP≯—	Stormwater Gravity Pressure Pipe
N M ←	Mechanical Joint Restraint	ALT	Altitude Valve		PP>—	Stormwater Pressure Pipe
	Reducer	-	Butterfly Valve			•
	Saddle Tap		•		·IS>—	Stormwater Inverted Siphon
Ē	Tee	⊚	Ball Valve			Stormwater Pipe
	Wye	▼	Cone Valve		FM>—	Unknown Force Main
I_ VT	Vent	Z† Odrn	Check Valve		GP > ─	Unknown Gravity Pressure Pipe
	d Holding Tanks	⊗ ⊗	Drain Valve Gate Valve		PP>	Unknown Pressure Pipe
))	-	(I)	Plug Valve		IS)	Unknown Inverted Siphon
	Heat Recovery Tank	PRV	Pressure Relief Valve		\rightarrow	Unknown Pipe
	Holding Tank	SUR	Surge Relief Valve		FM>—	Wastewater Force Main
OF	Overflow Tank		Valve	_4.	GP>—	Wastewater Gravity Pressure Pipe
	Cyclilow fails		Abandoned Collection System Struc	cture	PP>—	Wastewater Pressure Pipe



SECTION 7.5.2 JULY 2022

LAND FEATURES



BASEMAP

•	Power Pole / Transmission Tower	Building
	Municipal Boundary	Road
	Railroad	Parking Area / Driveway / Sidewalk
	Rivers / Stream	Property Boundary
	Streets and Highways (1:100 - 1:8,000)	Lake
	Streets and Highways (1:16,000: - 1:64,000)	Parks / Recreational Areas
Streets and H	ighways (1:128,000 - 1:256,000)	Land Owned by University
	Major Highway	Coastline
	Minor Highway	
	Primary Street	
	Street	
WATE	R SCHEMATIC	
	Water - Schematic System	

Water - Schematic Hydrant

Water - Schematic System (Private)
Water - Schematic Hydrant (Private)



SECTION 7.5.2 JULY 2022

ZONES AND REGIONS

Distribution System Regions		Glenforest Intermediate	Me	ter Zones		Kearney Lake Intermediate
Unknown		Hemlock High		Unknown Meter Zone		Kingswood High
East		Hemlock Intermediate		#7 Highway Boosted		Lake Major High
Central		Hemlock Super High		24 East High		Lakeside High
West		Herring Cove Low		Aerotech		Lakeside Intermediate
Collection System Regions		Kearney Lake Intermediate		Atholea Low		Leiblin Boosted
Unknown		Kingswood High		Beaver Bank Boosted		Lively Boosted
East		Lake Major High		Beaver Bank Intermediate		Lucasville High
Central		Lakeside Intermediate		Bedford Intermediate		Miller Lake High
West		Leiblin Boosted		Bedford Low		Miller Lake Low
Pressure Zones		Lively Boosted		Bedford South Intermediate		Monarch/Rivendale High
Unknown Pressure Zone		Lucasville High		Berry Hills Boosted		Montague High
24 East High		Miller Lake High		Birch Cove		Mount Edward Boosted
Aerotech		Miller Lake Low		Bluewater Intermediate		Mowatt Intermediate
Atholea Low		Monarch/Rivendale High		Broadholme Intermediate		North Preston
Beaver Bank Boosted		Montague High		Brunello Boosted		Orchard High
Beaver Bank Intermediate		Mount Edward Boosted		Burnside Boosted		Penhorn Intermediate
Bedford Intermediate		Mowatt Intermediate		Burnside High		Peninsula High
Bedford Low		No. 7 Highway Boosted		Burnside Low		Peninsula Intermediate Centra
Bedford South Intermediate		North Preston		Caldwell Rd Boosted		Peninsula Intermediate North
Berry Hills Boosted		Orchard High		Caledonia High		Peninsula Intermediate South
Bluewater Intermediate		Peninsula High		Central Dartmouth		Peninsula Low North
Broadholme Intermediate		Peninsula Intermediate		Charles Rd Boosted		Peninsula Low South
Brunello Boosted		Peninsula Low		Churchill Intermediate		Pockwock Boosted
Burnside Boosted		Pockwock Boosted		Cobequid High		Pockwock High
Burnside High		Pockwock High		Cowie High		Princess Margaret Low
Burnside Low		Princess Margaret Low		Dartmouth Low		Ritcey Low
Caldwell Road Boosted				Eastern Passage Low		Robie Reservoir
Charles Road Boosted	_	Ritcey Low Robie Reservoir		Fairview Clayton Park		Rockmanor Intermediate
Churchill Intermediate		Rockingham Low		Fall River Intermediate		Ross Rd
Cowie High		Rockmanor Intermediate		Farnhamgate Intermediate	_	Sackville High
Dartmouth Intermediate East		Ross Road Low		Flamingo Intermediate		Sackville Intermediate
Dartmouth Intermediate West				Geizer123 High		Silverside Boosted
Dartmouth Low		Sackville High		Geizer158 High		
Eaglewood Boosted		Sackville Intermediate		Geizer Boosted		Spryfield Intermediate
Eastern Passage/Woodside Low		Silverside Boosted		Glenforest Intermediate		Titus Evans Low
Fairview Clayton High		Spryfield Intermediate		Hammond Kearney	_	Upper Hammonds Plains High
Fall River Intermediate		Titas Evans Low		Hemlock High		Waverley Intermediate
Farnhamgate Intermediate		Upper Hammonds Plains High		Hemlock Intermediate		Waverley Low
Flamingo Intermediate		Waverley Intermediate				West Bedford Intermediate
Geizer 123 High		Waverley Low		Hemlock Super High		Williams Lake Low
Geizer 158 High		West Bedford Intermediate		Herring Cove Road Intermediate		Woodlawn Inter
Geizer Boosted		Williams Lake Low		Herring Cove Road Intermediate		Woodside Low