

East Side Resident  
Address

Dear Sundre Resident,

The work to install water and wastewater lines on the east side has continued to proceed well over the Winter and into Spring. There still remains much surface work to be done but the underground work is basically complete and, hopefully this letter will provide some additional information concerning the proposed timing of the remaining work and the tie in procedures and materials.

The water main lines installed along 7<sup>th</sup>, 9<sup>th</sup> and 11<sup>th</sup> St.'s NE have all now been installed, flushed, chlorinated, pressure tested and passed through the required testing for quality. This means these lines are now ready to provide water but there is still remaining work on the wastewater lines that must be completed prior to allowing residents to tie in. The wastewater lines are also all installed and scheduled to be flushed and inspected with a crawler type video camera to detect any deficiencies. This is a standard procedure to ensure the lines have been installed to the specifications as set out by the Town and should happen within the next three weeks. Allowing a time allowance of two additional weeks for any repairs required means that residents should be able to tie in within 5-6 weeks.

Over the Spring the Town will be monitoring the roads and provide gravel and grading as required to maintain a drivable road surface. At the first opportunity following the thaw, the contractor will be back to complete the construction of the road in preparation of applying a chip seal surface later in the summer. This will require removing and re-compacting portions of the road. While working on the road, the contractor will continue with the cleanup of the area and begin laying loam as required. The Town will then follow behind the contractor to do the final landscaping. Someone from the Town will be visiting with each resident to ensure the final cleanup is acceptable and to respond to noted deficiencies.

Of course, the timing of all of this work is very weather dependent and, so far, the weather has not been helping out much to get this work completed. The contractor and Town will endeavor to get this work done in a timely manner but wet weather will certainly dictate the timing.

## **For Your Water and Wastewater Services**

### **Recommended Pipe to be installed:**

- Water service piping should be Rehau Municipex Water Service line or equivalent with a diameter of 25mm (1") or 50mm (2"). Rehau Municipex is a very durable pipe which is easy to install and is resistant to corrosion. Municipex is the same size as copper tube size SDR 9 which allows standard AWWA C800 compression valves and fittings to be used. Water service pipes should be buried at a depth of 3.0m or greater in Sundre to reduce the risk of freezing. Attached, please Municipex Installation Guide for more information.
- Wastewater service pipe should be SDR 28 PVC piping (supplied by IPEX or similar), with a diameter of 100mm (4"). It is recommended that the sewer service be installed with no bends (vertical or horizontal) to reduce the chance of future hang ups and blockages. The wastewater main should be installed at a slope of 1% or greater to ensure good future operation.
- Both the water and wastewater service should be buried in 20mm diameter gravel to ensure the service pipes are protected during the backfill and compaction process.

### **Recommendations for Excavation of Services:**

- Clear the entire area of the proposed trench, prior to excavating. This exercise of planning out the excavation area will help ensure that no unexpected and difficult or unsafe work will have to be performed as a result of the excavations. Removal of trees, support of buildings and location of existing utilities (gas, buried electrical, etc.) should all be predetermined, before the excavation begins.
- Topsoil from the excavation should be removed and stored separate from the gravels and clays which are found at deeper levels. Once the excavation is completed, the topsoil can be put back on top of the excavation and permit the rapid regrowth of grass.
- The town recommends that the entire area which was cleared for the excavation be rehabilitated with grass or easy to replace shrubs only. Future buildings or trees should not be constructed and planted above the new service pipes. In the future, any required repairs to the service pipes would require a similar excavation and therefore, good forethought would be to leave this area open.
- Alberta Labour code and the Occupational Health and Safety regulations require that any excavation deeper than 1 meter be constructed with slopes no steeper than 1 to 1. This means that an excavation which is 3 meters deep, would be at minimum 4 meters wide (plus the width of the pipe trench, typically 0.5 meter or wider, based on the equipment used). Refer to the attached diagram which shows this concept.
- Some contractors in Sundre have used trench boxing (bracing and shoring) to

reduce the width of the excavation required. This process is also regulated by Occupational Health and Safety rules. The gravelly soils in Sundre can make this option difficult in practice.

- The work should not be performed when the ground is frozen. Backfilling of frozen material can lead to poor results (poor compaction resulting in a sinking ground as the material settles as it thaws). Excavation of frozen material near building foundations can also risk the integrity of the foundation.
- With such deep excavations, ground water may need to be pumped out of the trench to perform the required work.
- When backfilling over installed service pipes, the backfill material should be placed and compacted in lifts no more than 0.3m to ensure completed compaction when the project is completed.

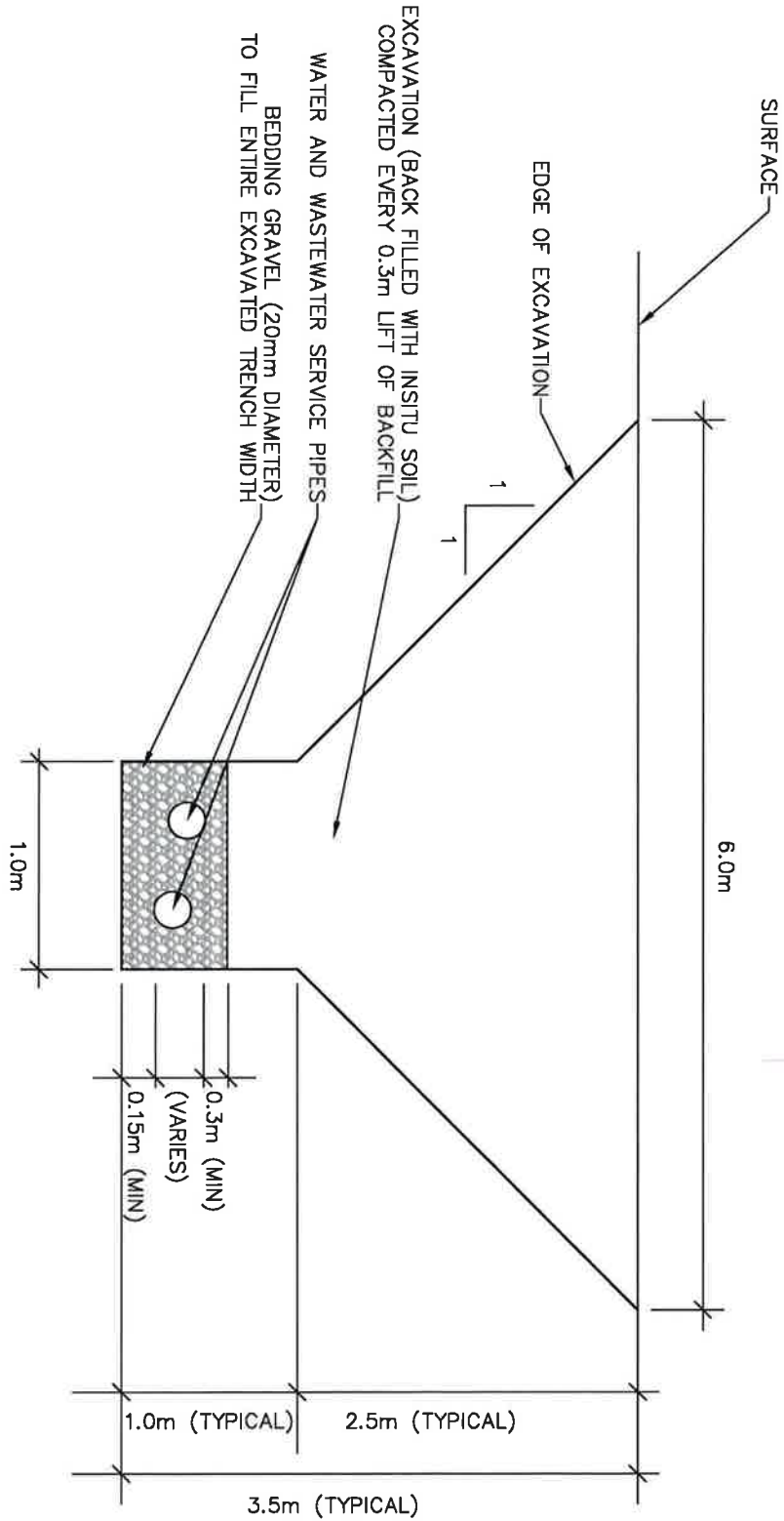
**Other Requirements:**

- Ground water is not be permitted to flow into the towns wastewater system which will require that the trench is pumped out and dry when the wastewater service is being installed.

The Town thanks everyone for their continued patience during this project. Please call Ron Baker at 403-638-4707 ext. 100 if you have any questions concerning the information contained in this letter or about the project in general.



Ron Baker  
Director of Operational Services  
Town of Sundre



**BSEI**  
 Since 1977  
 Municipal Consulting Engineers



TOWN OF SUNDRE

SITE SERVICING

TYPICAL SAFE TRENCH FOR SERVICES

DATE: FEB 2013

JOB: S055-244

DRAWN: ADT

SCALE: N/A

DRAWING: 1.0



**REHAU**

Unlimited Polymer Solutions



## MUNICIPEX® WATER SERVICE LINE

TESTED. TRUSTED. CHOSEN BY PROFESSIONALS.



# PERFORMANCE PROPERTIES

## PROVEN RELIABILITY

For service line and underground applications, it is the responsibility of the installer to ensure fittings selected meet local jurisdictional codes.



Pipe sizes 3/4" to 2"



No internal deposits



Corrosion build-up in metal pipes

### SDR9 Copper Tube Sizes (CTS)

Produced to copper tube size OD, MUNICIPEX connects to standard, off-the-shelf, potable water fitting solutions such as AWWA C800 compression joint valves and fittings and ASTM F2080 brass compression-sleeve fittings. When using AWWA C800 fittings, the manufacturer's recommended insert is required to stiffen the pipe at these connections. These fitting options make MUNICIPEX pipe easy and convenient to install.

### Tools

No special tools are required for MUNICIPEX connections. Standard pipe wrenches are used with compression joint connections.

### Corrosion Resistance

As a polymer material, MUNICIPEX resists corrosion in soil or aggressive water conditions.

### Mineral Build-up Resistance

MUNICIPEX resists scaling and internal deposits.

### Chlorine Resistance

MUNICIPEX exceeds the requirements of ASTM F876 for chlorine resistance, when tested in accordance with ASTM F2023, and is listed by NSF for chlorine resistance.

### Chemical Resistance

MUNICIPEX is resistant to a wide range of chemicals. However, while some chemicals may not harm MUNICIPEX, chemical concentration, temperature, pressure and other parameters can influence the suitability and service life of the MUNICIPEX application. Do not bury MUNICIPEX in contaminated soil. If you have questions regarding chemical compatibility, please contact your REHAU regional sales office.

### Freeze Resistance

Unlike HDPE and copper pipes, MUNICIPEX will not split when frozen, if allowed to expand along its entire length. It will return to its original shape when thawed. In addition, MUNICIPEX will freeze at a slower rate than copper due to its significantly lower (four orders of magnitude) coefficient of thermal conductivity.

1. Thawing can be performed by using available hot water injection equipment. After thawing, MUNICIPEX can immediately be put back into service.

2. Thawing can also be performed by applying hot air to the pipe. When using a hot air gun to heat frozen areas, ensure that the temperature of the pipe does not exceed 210°F (93.3°C). Do not use an open flame to thaw MUNICIPEX.

### Abrasion Resistance

The increased abrasion resistance of cross-linked polyethylene pipe ensures long service life even in directional drilling applications.

### High Impact Resistance

MUNICIPEX is more flexible than other piping materials, and will not crush, kink or collapse when proper backfill techniques are used. MUNICIPEX also has high resistance to gouges or scratches and outstanding resistance to slow crack growth. Even at temperatures as low as -184°F (-120°C) MUNICIPEX will not become brittle.

# INSTALLATION

## EASY TO HANDLE

Lightweight and flexible, MUNICIPEX is supplied in longer coils to reduce the number of couplings, minimize waste and speed installation. Being five to six times lighter than copper, MUNICIPEX is easier and safer to handle. It is also easier to plan an installation as consecutive footage marks on the pipe indicate the length and how much material is available. Allowing a slight curve while laying MUNICIPEX in the trench is all that is required to accommodate expansion and contraction. Follow all published installation instructions.

For additional information, please refer to REHAU *MUNICIPEX® Installation Guide* or contact your regional REHAU sales office.

Using a squeeze-off tool to temporarily stop the water flow through MUNICIPEX will not cause permanent damage or deformation to the service line, and is the fastest and cleanest way to temporarily stop flow through the pipe, such as when replacing a curb stop or other shut-off valve.



*Standard tools and connections*

# SHORT FORM SPECIFICATION

Service line pipe to be cross-linked polyethylene (PEXa) pipe manufactured using the high-pressure peroxide (Engel) method of cross-linking, with an approved cell classification of 354400 in accordance with ASTM D3350, and a typical degree of cross-linking of 80% when tested in accordance with ASTM D2765, Method B.

Pipe to have a co-extruded UV shield made from UV-resistant, high-density polyethylene, color blue; UV shield to resist exposure to natural sunlight for up to one year.

Pipe to be certified by approved testing agency to standards:

- ASTM F876, F877, F2023 and F2657
- CSA B137.5
- NSF 61 and NSF 14
- PPI TR-4

Pipe to be manufactured to industry standards:

- In accordance with AWWA C904
- ASTM F876 and ASTM F877
- Copper Tube Sizes (CTS)
- SDR9

Pipe to be manufactured in an ISO 9001 certified production facility.

Approved temperature and pressure ratings based on PPI Hydrostatic Design Basis, as certified by CSA and NSF or equivalent testing agency.

Minimum Burst Pressure Requirements:

- 475 psi @ 73.4°F (3310 kPa @ 23°C)
- 210 psi @ 180°F (690 kPa @ 82.2°C)
- 180 psi @ 200°F (550 kPa @ 93.3°C)

MUNICIPEX carries the following continuous-use temperature and pressure ratings:

- 160 psi @ 73.4°F (1105 kPa @ 23°C)
- 100 psi @ 180°F (690 kPa @ 82°C)
- 200 psi @ 73.4°F (1,379 kPa @ 23°C)  
using a design factor of 0.63

Pipe to carry the following markings:

Manufacturer's name or trademark, nominal size, AWWA C904, ASTM F876, F877, CSA B137.5, NSF-pw-g, PEXa (material designation), SDR9 (standard dimension ratio), ES-pmg, 160 psi @ 73.4°F, 100 psi @ 180°F, 200 psi @ 73.4°F, potable tubing, footage mark, manufacturing date and hour code and machine number.

## Pressure Loss (psi loss/100 ft of pipe)

Flow Rate USGPM	Pipe Size				
	3/4"	1"	1 1/4"	1 1/2"	2"
1	0.37	0.11	0.05	0.01	<.01
2	1.22	0.37	0.14	0.07	0.02
3	2.47	0.75	0.29	0.13	0.04
4	4.10	1.24	0.48	0.22	0.06
5	6.08	1.83	0.70	0.32	0.09
6	8.41	2.52	0.97	0.44	0.12
7	11.1	3.31	1.27	0.57	0.16
8	14.1	4.20	1.61	0.72	0.20
9	17.4	5.18	1.98	0.89	0.25
10	21.1	6.26	2.39	1.07	0.30
12	29.4	8.68	3.30	1.48	0.41
14		11.5	4.35	1.95	0.54
16		14.6	5.53	2.47	0.68
18		18.1	6.84	3.05	0.84
20		21.9	8.27	3.69	1.01
22			9.83	4.38	1.20
24			11.5	5.12	1.40
26			13.3	5.92	1.61
28			15.3	6.77	1.84
30			17.3	7.68	2.09
35				10.2	2.75
40				13.0	3.50
45					4.34
50					5.25
55					6.25
60					7.33

*MUNICIPEX flows rates are excellent, and will not decrease over time due to internal corrosion or mineral deposits.*

## MUNICIPEX Sizes and Properties

Nominal Diameter	O.D. in* (mm)	Wall in** (mm)	Weight lb/ft (kg/m)	Capacity gal/ft (l/m)	Bend Radius in (cm)
3/4	0.875 (22.2)	0.097 (2.5)	0.10 (0.15)	0.0189 (0.2356)	4.50 (11.25)
1	1.125 (28.6)	0.125 (3.2)	0.16 (0.24)	0.0316 (0.3939)	5.75 (14.40)
1 1/4	1.375 (34.9)	0.153 (3.9)	0.25 (0.37)	0.0467 (0.5827)	7.00 (17.80)
1 1/2	1.625 (41.3)	0.181 (4.6)	0.35 (0.52)	0.0650 (0.8118)	8.25 (21.00)
2	2.125 (54.0)	0.236 (6.0)	0.60 (0.90)	0.1114 (1.3906)	10.75 (27.30)

*\*Average dimensions from ASTM F 876 \*\* Minimum wall thickness from ASTM F876*