2020 - SECTION 33

ABANDONMENT OF INFRASTRUCTURE

33.1 GENERAL

This Section specifies requirements for abandonment of water and sanitary sewer infrastructure within the R/W's of Aquatera's service area.

Abandoned lines will be clearly documented and details provided to Aquatera. Backfill testing to be provided as per Excavation, Trenching & Backfill standards.

Aquatera maintenance department shall be contact at 780-882-7800 to schedule shut down of water or sanitary sewer infrastructure.

33.1.1 ABANDONMENT OF SANITARY SEWER MAINS

Sanitary mains shall be abandoned by removal, or by being plugged at one end and completely filled with cement-stabilized flow-able fill to form a water tight seal. Plug each end of the sewer section identified on the drawings for abandonment as follows:

a) For concrete pipe up to 675 mm diameter, place sandbags 300 mm inside the abandoned sewer and seal with concrete. Pre-manufactured mechanical or inflatable plugs may be used for backing. Break out section of the pipe invert in front of the sandbags to allow concrete to key into the ground and pipe to prevent shifting.

b) For PVC pipe up to 675 mm diameter, place sandbags inside the abandoned sanitary sewer and seal using manufactured compression type plug.

33.1.2 ABANDONMENT OF WATER MAINS

Water mains shall be abandoned by removal, or by being plugged at one end and completely filled with cement-stabilized flow-able fill to form a water tight seal. Plug each end of the pipe section identified on the drawings for abandonment as follows:

a) Place sandbags 300 mm inside the abandoned pipe and seal with concrete. Pre-manufactured mechanical or inflatable plugs may be used for backing. Break out section of the pipe invert in front of the sandbags to allow concrete to key into the ground and pipe to prevent shifting.

b) or if host pipe is suitable, place sandbags inside the abandoned water pipe and seal using manufactured compression type plug on either end.

33.1.3 ABANDONMENT OF SERVICES

Services shall be abandoned by removal, or by being plugged at one end and completely filled with cement-stabilized flow-able fill to form a water tight seal. Water and sanitary services shall be plugged within 300 lineal millimeters of each other. Plug each end of the pipe section identified on the drawings for abandonment as follows:

Water service

a) Locate service and disconnect from main. Place sand bag 300mm inside abandoned pipe and seal with concrete. Pre-manufactured mechanical or inflatable plugs may be used for backing. Break out section of the pipe invert in front of the sandbags to allow concrete to key into the ground and pipe to prevent shifting.

b) or if host pipe is suitable, seal using manufactured compression type plug on either end.

c) 20mm-50mm services shall be abandoned within 150mm of the main, by shutting off the main stop and crimping the pipe.

d) Services greater than 50mm shall also be abandoned at main and the tee or service shall be replaced with pipe and slip couplers. Mechanical fittings are to be avoided.

e) HDPE service – shall have a stainless steel repair clamp rated for HDPE installed at main to replace tap fitting. Tee fittings shall have fused caps installed within 300mm of main.

Sanitary service

a) Locate service and disconnect from main. Place sand bag 300mm inside abandoned pipe and seal with concrete. Pre-manufactured mechanical or inflatable plugs may be used for backing. Break out section of the pipe invert in front of the sandbags to allow concrete to key into the ground and pipe to prevent shifting.

b) Stubbed from main – plug/cap with water tight seal within 300mm of main, if surface conditions allow. If asphalt or concrete roads exist stub may be plugged/capped with a water tight seal and left in place, at the boundary of the specified hard surface.

c) Previously in service – pipe shall be removed and disconnected from the main and plugged, or by being plugged at one end and completely filled with cement-stabilized flow-able fill to form a water tight seal and then plugged at filling end.

d) Stubbed into Manhole – inlet shall be plugged and channel filled or removed. Service pipe shall be removed, or by being plugged at one end and completely filled with cement-stabilized flow-able fill to form a water tight seal and then plugged at filling end.

e) or if host pipe is suitable, seal using manufactured compression type plug on either end after filling.

f) 200mm and greater shall be disconnected and plugged within 300mm of main and shall be abandoned as per section 33.1.1.

Temporary injection points are to be removed as per 91.3.16

33.1.4 ABANDONMENT OF MANHOLES/CHAMBERS

Temporary Abandonment of Manholes

If in the opinion of Aquatera, a manhole could be re-commissioned in the future, a manhole maybe be temporarily abandoned with written approval from Aquatera as follows:

A circular piece of white PVC minimum 12mm thick shall be cut and installed to fit between the cone and grade ring and sealed with rubber neck. The PVC shall be mark with a red "x" and or the markings "not in service." It shall also be marked with a symbol to indicate "Warning, do not stand on."

All markings shall be visible when the cover is removed.

Permanent Abandoning of Manholes

If in the opinion of Aquatera, a manhole will not be used in the future, with written approval from Aquatera a manhole shall be permanently abandoned as follows:

Fill all leads (pipes) at the manhole as per Section 33.1.1 Abandonment of Sanitary Sewer mains. The concrete in the leads shall be finished smooth and flush with the manhole walls. Excavate to a minimum of 500mm below existing grade or design grade (whichever is lower) and remove each manhole lid and frame, grade rings and cone as necessary. Barrels may be left in place or removed to their base. Fill base with flowable concrete fill to

a minimum of 300mm above highest obvert of pipes and let set for minimum of 48 hours. Continue to fill all barrels to top with sand or washed rock and compacted to meet standards specified for road trench backfill material and compaction testing. Seal the top of the abandoned manhole with a steel plate minimum 25mm and rubber neck to top of final barrel. Option to cap top with cast-in-place concrete minimum 150 mm thick.