

Appendix F – SOP for Main Repairs

MAIN REPAIRS

Personal Protective Equipment (PPE) Required

- Approved Safety Vest
- Safety Boots
- Gloves
- Hard Hat
- Safety Glasses

Equipment Check

- Prior to leaving shop check tools, supplies and equipment.
- Do a walk around of the truck, dump truck and hoe & check the tires lights & condition of the vehicle.
- Check that PPE is either on your person or in the van.

Drive to work assignment location

- Prior to driving, check mirrors and buckle up.

Site Survey

- Visit site of repair to determine process by which repair will be completed and look for special circumstances, such as trees, patios, gardens, landscaping, fences, driveways, overhead power lines or other items that will be an obstruction to the project.
- Contact property owner and/or occupants to discuss the special circumstances and involve them in the process, explaining the need for the work and how you plan to perform the repair.
- Mark out area or repair or excavation.
- Plan for any traffic lane closures and schedule with traffic operations.
- Plan staging areas for equipment

Contact One Call

- Once repair area is marked in white, notify One Call via computer or phone
- One Call requires 48 hours notice prior to digging.
- The utilities will either locate their lines or notify WW that the area is clear.
- Once all utilities have located or contacted WW or after 48 hours then digging can commence.

Materials

- PVC pipe — size and length of repair
- Couplers PVC to existing pipe material — quantity 2
- Service repair material, 4" pipe, fittings and PVC saddle or wye, 4 couplers
- Stainless steel straps — 2 for each coupler and saddle, minimum of 4.

Collection SOPs

- Pre mixed sack concrete — 4 bags.
- Epoxy, cleaner, primer, glue
- Utility work ahead sign — qty 2
- Shoring
- Plywood
- Ladder

On Site

- Put on PPE
- Put in place traffic control devices
- Check locations of flagged utilities
- Check for overhead power lines.
- Place down plywood to protect landscaping, if necessary
- Contact property owners if necessary

Excavation

- Position hoe at excavation site for maximum range and start digging
- Position dump truck so that it can be filled with dirt.
- Position vehicles at least 3 feet away from edge of trench.
- Once the hole is a greater depth than 4 feet, shoring must be installed for entry.
- When the approximate depth of main is reached, Install shoring and ladder to probe for main.
- Once main is discovered, remove what is possible with the hoe.
- Remove what is left by shovel.
- Once the digging by hand starts, heavy equipment should be moved farther away from excavation.
- Have a plan for the excess dirt.

Repair

- The main needs to be dug out just a little below the bottom of the pipe and at least six to eight inches (6"-8") past both ends of the break.
- Dig completely around the pipe at each end so you will have room to get the snapper (clay and cast iron) or saw (all other material) around it.
- Take out the broken area of the pipe, severing it 2-3 inches past visible break or cracking.
- Straighten ends of existing pipe if necessary
- Measure and cut a piece of replacement piping.
- Ensure the proper fit.
- Put couplers on each end and slide into place.
- If there is no service connection on the new pipe, you can tighten all of the straps on the coupler now.

Collection SOPs

Service Connections

- If you have to connect a service, you should only tighten down the straps on the clay tile pipe and leave the PVC side loose.
- Depending on the service connection, you may need to use either your tee saddle or your wye saddle.
- If you are using a tee saddle, set it on top of the pipe and make a mark in the center of the hole of the saddle.
- Remove your saddle and center your mark and drill a four-inch (4") hole using your four-inch (4") hole saw drill bit. If you chose to use a wye saddle, you need to set it on top of the pipe and mark the outside edge of the oval tap hole.
- Now remove your saddle and enter on the larger "round" end of the mark and drill a four-inch (4") hole with your drill. Now you will need to use a saw and remove the remainder of your marked area.
- Depending upon the situation of the repair, it may work better to glue your saddle on later, but if it works out, you can now glue your saddle in place, making sure to line up the tap hole with the hole on the saddle.
- Use two of your hose clamp straps and tighten the saddle in place.
- On shorter repairs, it may be necessary to cut down the length of the saddle being used in order to fit between the couplers.
- Now roll your pipe so that your saddle is pointed in the direction needed.
- You will need to decide what fitting will work best in order to reconnect the service. Make sure you have a good idea as to what fittings and pipe you will need before cutting or gluing anything in order to minimize waste.
- Once you have everything you think you will need, you should "dry" fit the pipe and fittings together and make sure that your connection is going to work properly.
- If everything fits in its place, you can begin gluing your pipe together.
- Clean, primer and glue each joint if needed.
- Make sure to have an idea of how you need to get your pipe in place. It may work best to put your connection all together and connect it to the main with the tap upright, and then roll the main so that your connection goes into place.
- Once you have your service connected, tighten down any loose straps and install two more straps on each coupler. One will go on the PVC side of the coupler and the other on the clay side of the coupler.
- Once straps are tightened down, dump two bags of sack concrete mix on each coupler and using a shovel, jab the dry mix under the couplings.

Collection SOPs

Backfilling

- You will need to put some crushed rock around the main now.
- If the repair is small enough, you can fill buckets with rock from the shop and dump them around the main.
- For larger repairs, you may need to get some rock in the back of a dump truck and dump it in place.
- Whichever method you use, make sure that you only cover the pipe about halfway first and then hand spade the rock under the main to get a good base.
- Once you have a good base, you can cover the pipe with at least six inches (6") of rock. Make sure to get plenty of rock around any service connections as well.
- With the repair completed, you now need to measure from the up manhole to the point where the repair starts and ends along with the measurement of the tap location and the address of the house it serves. Now you can begin backfilling.
- Put the compaction plate on the backhoe and get it in place to backfill.
- You need to place plywood along the edge of the trench opposite of the side you will be dumping the dirt from. This will help to prevent dirt from spilling over and make the cleanup easier.
- Maneuver the dump truck into place so that you can just raise the box to dump the dirt in the trench.
- Dump the dirt in approximately one foot (1') lifts - and no more than three foot (3') lifts so that you will get good compaction. Be careful not to tamp too hard around the main and services. Backfill the trench, leaving it down about two inches (2") from ground level. Haul off any extra dirt and load up enough compost from the shop to fill the remaining two inches (2").
- Shovel or dump the compost in the trench to bring it slightly above grade level to allow for some settlement.

Leaving the site

- Rake all the large clumps out of the graded compost and remove them.
- Throw some grass seed on the composted area and rake it in lightly.
- Contact property owners if necessary
- Load up all tools and equipment and trash into truck
- Take down lane closure material and working signs.
- Review site and surrounding area for anything left behind or out of place.
- Remove PPE if warranted, buckle up, and drive to next site or shop

Paperwork

- Once back at the shop, the crew leader/supervisor needs to fill out his daily report, if not already completed on site.
- Fill out new tap ticket for the home in which the service was being connected.
- Turn in the repair sheet; noting that the repair was completed and what day it was completed so this can be filed.
- Fill out crewcard and daily log for the day.