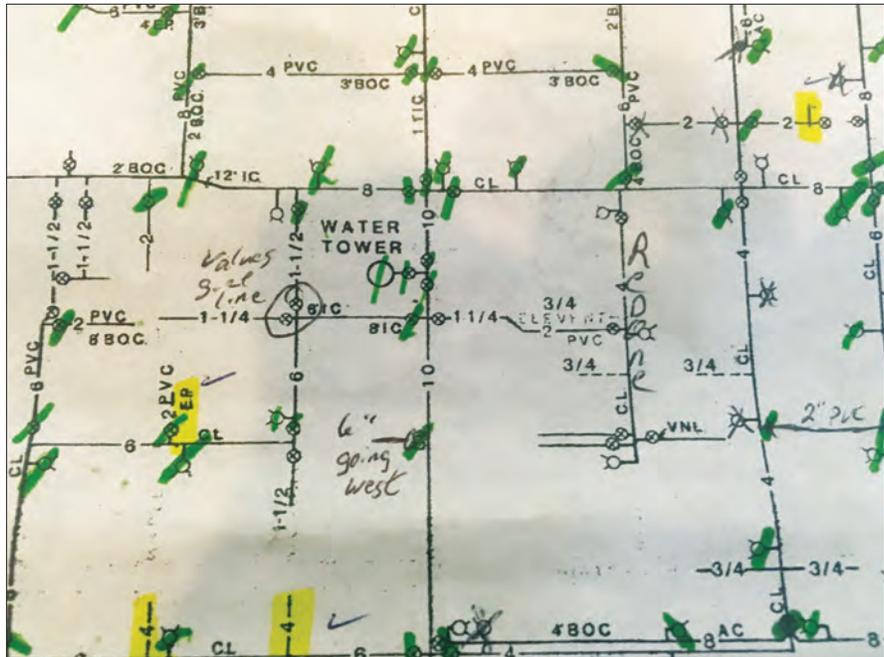


City of Harper Making Big Improvements with Utility Locating

Most public works directors throughout Kansas have old sections of communities that continue to use original construction infrastructure in their water or wastewater systems. Depending on budgets, and how dilapidated these old pipes are, many communities in Kansas are still operating with all the original pipelines in their water systems. Locating pipes that were installed decades ago, and especially so when there have been no repairs to those pipes, can make locating them a real challenge. That is the position that Bill Sanders, Public Works Director for the city of Harper, knew all too well for the last 28 years of his employment with the city. This became especially apparent after the local telecommunications company installed fiber optic cable in this town of roughly 1,500 people last year.

In recognizing that something needed to be done, and wanting to make the situation to be better for the future, Sanders requested that the city council approve a plan to locate the water lines. The council agreed and helped implement a plan. The plan included hiring a company to pot-hole for the lines in areas of town that Sanders deemed most needed. After that though, permanently marking these locations and archiving them would be necessary. In doing so, the city water department staff used 2-inch wide by 1/2-inch thick steel punch-outs which were waste from a local manufacturing company to lay in the ground on top of the water line locations that could be traced by metal detection in the future. Sanders also made detailed measurement notes on each location. The city of Harper also hired KRWA to collect GPS locations on all



A section of the original water system map at Harper is no more better or worse than those most systems in Kansas have. Few have adequate detail to help utility workers locate pipelines.

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these location, as well as the rest of the water system valves, meters, etc., and the city's wastewater system.

Prior to having this location work completed, finding water or wastewater lines was somewhat of a guess. The approach was to mark it and cross your fingers that the suggested location would be accurate. This became apparent during the fiber optic cable installation last year, as Harper's water lines were hit many times. But as many utility operators can attest to, even perfect locates can end up being hit –

its just that accurate locates can help reduce the number of hits. The city has maps of the system just as do most communities. But as evident by reviewing the map section, if one of the lines has never been exposed, the utility's old map will provide little help locating the pipeline.

In choosing to proceed with this plan, the city Harper did invest a relatively large sum of money, as the company pot-holing for the water lines was there for three weeks, and KRWA's estimate for mapping the entire system including



Pot-holing helped locate the mainline at the edge of the city.

the pot-hole locations was \$14,000. This may seem like a large investment, but having the knowledge of where the water lines are was important to Harper. The city also spent \$1.7 million two years ago on a nitrate removal plant, so knowing where all of that clean water is going should be valuable information. Protecting the pipeline and helping ensure continued service are central to the operation of a public water system. The city of Harper is commended for making the necessary investment to help achieve that responsibility.



Follow the arrows! This photo shows the correct location of a water main and branch line near a fire hydrant. This was pot-holed to obtain correct mapping.

The 2018 KRWA Annual Conference & Exhibition will include several vendors in addition to KRWA that provide GPS mapping services. I encourage you to talk to those providers. Mark your calendars for March 27 - 29 at Century II Convention Center in Wichita.

Mark Thomas has been a GIS Mapping Tech since September 2006. Mark has a bachelors degree in geography from Kansas State University and has specialized studies in ESRI's ArcView and ArcPad software.





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