

## 100 POTHOLING

**101 SCOPE:** Potholing shall be utilized during construction activities as required herein to prevent excavation damage to existing underground utilities for all open-cut excavations and trenchless installation methods.

**102 DESCRIPTION:** Potholing is the practice of digging a test hole to expose underground utilities to determine the horizontal and vertical location of the facility.

**103 METHODS:** The following alternative methods shall be utilized for potholing.

**.01 Hand Digging.** Hand digging is the method of excavating a pothole by manual means with hand-held, non- mechanical equipment such as a shovel.

**.02 Vacuum Excavation.** Vacuum excavation shall consist of air or water pressure to break up the soil and a vacuum device to collect the spoil. The Contractor shall determine if air or water vacuum excavation shall be used dependent upon specific site and environmental characteristics. Soil type such as heavy clay may require water vacuum excavation. Air vacuum excavators shall be utilized if mud from water vacuum excavators cannot be disposed of properly. Air vacuum excavators shall be used if damage to utilities, such as cutting through cables, will occur with the use of water vacuum excavators.

**A. Air:** Air vacuum excavators shall utilize a high velocity air stream to penetrate, expand, and break-up the soil. The loosened particles of soil and rock shall be removed from the excavation through the use of a vacuum.

**B. Water:** Water vacuum excavation systems shall excavate the pothole using high-pressure water to reduce and loosen the soil. The wet soil and mud slurry shall be removed to a spoil tank using a vacuum.

**104 SIZE OF POTHOLE:** Maximum pothole size shall be 12 inches in diameter or 12 inch x 12 inch square.

**105 CONSTRUCTION DRAWINGS:** Construction drawings indicating the proposed construction and existing utilities shall be present and utilized during potholing activities. The construction drawings shall be compared to locate paint marks to determine if all existing utilities shown on the drawings have been identified in the field. If the drawings and locate paint marks do not match, additional potholing shall be completed to determine accurate locations.

**106 MIS-DESIGNATED FACILITY:** If locate paint marks have improperly designated the location of a facility, and the facility is exposed during potholing, the facility owner and Kansas One-Call shall be notified. The entity that exposed the facility shall document the horizontal and vertical location of the facility and communicate the information to the facility owner. If a utility cannot be located through potholing used in conjunction with construction drawings and locate marks, the facility owner and Kansas One-Call shall be contacted

**107 CONDITIONS REQUIRING POTHOLING.**

**.01 Open-Cut Excavations:** Potholing shall be completed to expose existing utilities, including mains and service lines, when open cut excavations are within the tolerance zone of the marked utility. The tolerance zone, also known as the “approximate location”, is a strip of land equal to the width of the underground utility plus two feet on each side.

**.02 Trenchless Installation Methods:**

For trenchless operations with a bore path that parallels a utility (mains and service lines) within 3 feet, potholing shall be completed at the beginning and end of the bore and every 50 feet along the route. For trenchless operations with a bore path that parallels a utility (mains and service lines) within 5 feet, potholing should be required at the beginning and end of the bore and every 200 feet along the route. Potholing shall be completed for all utilities (mains and service lines) crossing the path of trenchless operations.

**.03 Congested Utilities:** In congested areas having several facilities in close proximity and/or crisscrossing each other, locates have greater potential to be less accurate. Potholing shall be utilized for excavations near congested utility areas.

**108 PROTECTION OF EXPOSED FACILITIES:** Facilities exposed during potholing shall be protected throughout the project. Utilities that are rendered unsupported due to potholing shall be temporarily supported by shoring or other means. The utility shall be protected from heavy and sharp items falling into the excavation that could damage or cut the facility.

**109 BACKFILL AND RESTORATION:** Potholes shall be restored within 24 hours after the utility has been located or as otherwise directed by the City of Shawnee. Backfilling and restoration of the pavement shall be in accordance with the City of Shawnee construction standards and specifications.

End of Section