

Case 364. 59-year-old excavating company owner died in a trench collapse.

A 59 year-old excavating company owner died in a trench collapse. The decedent and a residential developer had a verbal contract to perform a sanitary sewer tap into a 60-inch sewer pipe for a new home under construction. The decedent used a CAT 325BL excavator to dig a 15-22 foot deep, varied width excavation. The west side of the excavation was nearly vertical. The decedent centered and placed the 4-foot 6-inch wide excavator bucket at the top of west wall apparently to provide wall support. The angle of repose for the north and south walls were estimated by MIOSHA at 70⁰ (best case) and 76⁰ (worst case). When the decedent obtained the construction permit, he was told by a city official that he needed to post a surety bond and use a trench box during the sewer tap. One worker was retrieving a piece of pipe when the incident occurred. The decedent had a friend attend to the outside of the excavation to watch the walls. The decedent entered the excavation without installing shoring or a trench box. He had completed the sewer tap into the 60-inch diameter sewer main and was preparing to install a pipe. He was standing next to the south wall near the 60-inch sewer when the friend yelled for him to watch out. He could not react in time when the south (left) wall of the excavation collapsed. The friend called emergency response. The first responders contacted another excavating contractor working nearby and he entered the excavation. The first responders and others who had entered the excavation had uncovered the decedent's head and arms almost to his waist when a second collapse (south wall and southwest corner) occurred and injured a first responder. Rescuers in the excavation were placing plywood and studs to shore the walls when an emergency responder noticed that clay was ready to fall in the northwest corner of the excavation. All rescue workers were ordered out of the excavation. The northwest wall's clay eventually fell and reburied the decedent. A trench rescue team was called and the decedent's body was recovered from the excavation two days later. MIOSHA tested the blue and grey clay excavation spoils with a penetrometer and found the blue clay at 0.5-1.0 tons per square foot and the grey clay at 1.25-1.75 tons per square foot.

The MIOSHA Construction Safety and Health Division issued the following Serious and Willful Serious citations to the decedent's firm at the conclusion of its investigation:

SERIOUS: GENERAL RULES, CS PART 1, RULE 408.40114(1):

An employer shall develop, maintain, and coordinate with employees an accident prevention program, a copy of which shall be available at the worksite.

No accident prevention program developed. Employer engaged in sanitary sewer installation for new home construction.

SERIOUS: EXCAVATION, TRENCHING AND SHORING, CS PART 9, RULE 408.40953(2):

Before the excavation begins, the design of the protection used shall be set forth by a qualified person who is knowledgeable in the subject area.

Employer failed to evaluate soil conditions; select and construct appropriate protective systems for an excavation up to 22 feet deep. Employer engaged in sanitary sewer installation for new home construction.

SERIOUS: SIGNALS, SIGNS, TAGS, AND BARRICADES, CS PART 22, RULE 408.42223(1):

Traffic control devices shall be installed and maintained as prescribed in Part 6 of the 2011 MMUTCD, which is adopted by reference in R 408.42209.

Inadequate traffic control implemented, only “No Through Traffic” signs installed. Excavation in right of way on Fairway Drive, vehicular traffic is being permitted to pass the excavation. Employer engaged in sanitary sewer installation for new home construction.

WILLFUL SERIOUS: EXCAVATION, TRENCHING AND SHORING, CS PART 9, RULE 408.40941(1):

The side of an excavation more than 5 feet deep shall be sloped as prescribed in Table 1, unless supported as prescribed in this part.

Sides of excavation are not cut to the proper angle of repose, no shoring, no trench box. One excavation 14 ft. 11 in. north to south, and 15 ft. 7 in. east to west, and 15 to 22 ft. deep. West side of the excavation is near vertical. Employer engaged in sanitary sewer installation for new home construction.

Soil conditions previously excavated material, blue clay 0.5 to 1.0 TSF and grey clay 1.25 to 1.75 TSF.