

Case 511. 44-year-old underground equipment locating field manager died when he was struck by a vehicle while taking a drilling depth measurement in an active roadway.

A 44-year-old male underground equipment locating field manager died when he was struck by a vehicle while taking a drilling depth measurement in an active roadway. The north-south roadway had two traffic lanes with a middle (center) lane. At a nearby intersection, the southbound roadway widened to two lanes and the northbound two-lane wide roadway narrowed to one lane. The posted speed limit was 50 mph. There had been a water tap break on the west side of the roadway. The foreman instructed two workers to place temporary traffic control signs (Work Zone Ahead and Work Zone) on the each side of the roadway. Channelizing devices were placed on the east and west fog lines of the roadway in the work zone; both the northbound and southbound travel lanes were open to active traffic. A subcontractor dug an excavation on the west side of the roadway and then dug a second excavation on the east side of the roadway. A directional boring machine was set up on the west side. The plan was to bore under the roadway, west to east, pull the new water pipe through and then make the connection. While boring takes place, the location and depth of the bore was monitored. The decedent and a coworker, who worked for a company that marketed instruments for underground locating were at the site to demonstrate their new locating equipment. The decedent and his coworker placed sensors on both sides of the road to assist with locating the boring head. Throughout the boring operation, the decedent had walked back and forth across the open traffic lanes, assessing the depth and location of the bore head, demonstrating the new underground locating equipment. Checking the bore depth one last time, the decedent took an older piece of equipment into the northbound travel lane. He placed the equipment on the roadway and bent over facing west to read the results. A vehicle travelling in the open northbound lane at approximately 55 mph neared the work zone. A worker ran toward the vehicle yelling and waving his hands and hard hat. The vehicle struck the decedent, propelling him in the air approximately 80 feet. He landed on the asphalt. Emergency response arrived and transported the decedent to a nearby hospital. He died several days later from the injuries sustained at the time of the crash. The decedent was wearing a high visibility vest at the time of the incident.

MIOSHA Construction Safety and Health Division issued the following Serious citations at the conclusion of its investigation.

SERIOUS: Rule 408.40114(1): CS Part 1 General Rules

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

Workers/employees were walking/working in the traveled way.

The employer does not have an accident prevention program in place as it relates to construction related work activities pertaining to their sales operation including but not limited to water line repair/replacement. Such a document would at a minimum:

Instance A. Pertain to the construction hazards the employees are exposed to, including but not limited to being exposed to the hazard of vehicular traffic in the work zone.

Instance B. Ensure that employees are properly trained by the employer or that the

employer has reviewed employee training by other entities and made a determination that the scope of training received meets corporate requirements and those of the State of Michigan.

Instance C. Ensure the subject matter and employee training (workers and supervision) received is properly recorded and monitored for effectiveness, for the type of work being performed and area it is performed in.

Instance D. Evaluation of the site conditions, to recognize traffic control hazards/hazards created by other workers on site, whose actions could/would affect the safety of employees.

Instance E. Instruction to comply with the Maintenance Work Zone Traffic Control Guidelines, which is referred to as a Temporary Traffic Control Plan.

SERIOUS: Rule 408.42223(1): CS Part 22, Signals, Signs, Tags, and Barricades

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.

On *Incident Location*, employees are walking/working in the traveled way while exposed to vehicular traffic. The temporary traffic control devices used are not in compliance of Part 6 of the 2011 MMUTCD.

Instance A. The Vertical Panels, installed for the *Incident Location* shoulder closure (north and south directions) that are located in the traveled way (*Incident Location*) and are not properly oriented to direct traffic flow.

Reference: Part 6 of the Michigan Manual on Uniform Traffic Control Devices Section 6F.66 Vertical Panels (see Figure 6F-7) shall have retroreflective stripe material that is 8 to 12 inches in width and at least 244 inches in height. They shall have alternating diagonal orange and white retroreflective stripes sloping downward at an angle of 45 degrees in the direction the traffic is to pass.

Instance B. Permit application was not made to the state transportation department, a county road commission, or a local authority, prior to commencement of work under/across *Incident Location*. Such a permit would ensure determining if the speed limit, through the work zone should be maintained, at the current posted 50 miles per hour or, should be reduced. This determination would also require the appropriate Temporary Traffic Control Devices.

Reference: Part 6 of the Michigan Manual on Uniform Traffic Control Devices Section 6C.01 – Temporary Traffic Control Devices – The setting of speed limits within work zones shall be in accordance with section 257.627(9) of the Michigan Vehicle Code. A person operating a vehicle on a highway, when entering and passing through a work zone described in section 79d(a) where a normal lane or part of the lane of traffic has been closed due to highway construction, Maintenance or surveying activities, shall not exceed a speed of 45 miles per hour unless a different speed limit is determined for that work zone by the state transportation department, a county road commission, or a local authority shall post speed limit signs in each work zone described in Section

79d(a) that indicate the speed limit in that work zone and shall identify that work zone with any other traffic control devices necessary to conform to the Michigan Manual of Uniform Traffic Control Devices (MMUTCD).

MIOSHA Construction Safety and Health Division issued a Notice of Potential Hazard to the employer at the conclusion of its investigation

NOTICE OF POTENTIAL HAZARD

The following information is provided to the employer to correct an identified hazard. A MIOSHA rule violation exists, but employee exposure has not been determined or evidence is not sufficient to document a violation at this time.

1. The employer should, prior to sending employees to work sites outside of the state of Washington, review the local, state, and/or federal Occupational Safety and Health Administration rules/regulations. (This includes U.S possessions/territories such as but not limited to Guam, U.S. Virgin Islands...) Said review should familiarize employees with the applicable safety and health requirements necessary to protect the workers and to detect any differences between those and the employers' requirements. Should there be a difference the most stringent safety/health requirements should be followed.
2. Work should not be permitted within the traveled way without the use of traffic regulators and proper advanced signage or other appropriate traffic controls per the applicable documents (Example: In Michigan – Part 6 being the Michigan Manual on Uniform Traffic Control Devices).
3. Supervisors should also receive the same training required for employees, so they can ensure compliance with the company requirements.