

**WAC 296-155-655 General protection requirements. (1) Surface encumbrances.** You must remove or support surface encumbrances that are located so as to create a hazard to employees, as necessary, to safeguard employees.

**(2) Underground installations.**

(a) You must locate utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, prior to opening an excavation.

(b) You must contact utility companies or owners within established or customary local response times, advised of the proposed work, and asked to locate the underground utility installation prior to the start of actual excavation.

(c) When excavation operations approach the location of underground installations, you must determine the exact location of the installations by safe and acceptable means.

(d) While the excavation is open, you must protect underground installations, supported, or removed as necessary to safeguard employees.

**(3) Access and egress.**

(a) Structural ramps.

(i) Structural ramps that are used solely by employees as a means of access or egress from excavations must be designed by a competent person. Structural ramps used for access or egress of equipment must be designed by a competent person qualified in structural design, and must be constructed in accordance with the design.

(ii) Ramps and runways constructed of two or more structural members must have the structural members connected together to prevent displacement.

(iii) Structural members used for ramps and runways must be of uniform thickness.

(iv) Cleats or other appropriate means used to connect runway structural members must be attached to the bottom of the runway or must be attached in a manner to prevent tripping.

(v) Structural ramps used in lieu of steps must be provided with cleats or other surface treatments on the top surface to prevent slipping.

(b) Means of egress from trench excavations. A stairway, ladder, ramp or other safe means of egress must be located in trench excavations that are four feet (1.22 m) or more in depth so as to require no more than 25 feet (7.62 m) of lateral travel for employees.

**(4) Exposure to vehicular traffic.** You must provide employees exposed to vehicular traffic with, and they must wear, high-visibility garments meeting the requirements of WAC 296-155-200, General requirements for personal protective equipment (PPE).

**(5) Exposure to falling loads.** You must not permit any employee underneath loads handled by lifting or digging equipment. You must require employees to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped, in accordance with WAC 296-155-610 (2)(g), to provide adequate protection for the operator during loading and unloading operations.

**(6) Warning system for mobile equipment.** When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, you must uti-

lize a warning system such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

(7) **Hazardous atmospheres.**

(a) Testing and controls. In addition to the requirements set forth in parts B-1 and C of this chapter (296-155 WAC) and chapter 296-880 WAC to prevent exposure to harmful levels of atmospheric contaminants and to assure acceptable atmospheric conditions, the following requirements apply:

(i) Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, you must test the atmospheres in the excavation before employees enter excavations greater than four feet (1.22 m) in depth.

(ii) You must take adequate precautions to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or ventilation in accordance with chapter 296-842 WAC.

(iii) You must take adequate precaution such as providing ventilation, to prevent employee exposure to an atmosphere containing a concentration of a flammable gas in excess of 10 percent of the lower flammable limit of the gas.

(iv) When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, you must conduct testing as often as necessary to ensure that the atmosphere remains safe.

(b) Emergency rescue equipment.

(i) Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, must be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment must be attended when in use.

(ii) Employees entering bell-bottom pier holes, or other similar deep and confined footing excavations, must wear a harness with a lifeline securely attached to it. The lifeline must be separate from any line used to handle materials, and must be individually attended at all times while the employee wearing the lifeline is in the excavation.

Note: See chapter 296-62 WAC, Part M for additional requirements applicable to confined space operations.

(8) **Protection from hazards associated with water accumulation.**

(a) Employees must not work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation. The precautions necessary to protect employees adequately vary with each situation, but could include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline.

(b) If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operations must be monitored by a competent person to ensure proper operation.

(c) If excavation work interrupts the natural drainage of surface water (such as streams), you must use diversion ditches, dikes, or

other suitable means to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains will require an inspection by a competent person and compliance with (a) and (b) of this subsection.

**(9) Stability of adjacent structures.**

(a) Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, you must provide support systems such as shoring, bracing, or underpinning to ensure the stability of such structures for the protection of employees.

(b) You must not permit excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees except when:

(i) A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure; or

(ii) The excavation is in stable rock; or

(iii) A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity; or

(iv) A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees.

(c) Sidewalks, pavements, and appurtenant structure must not be undermined unless a support system or another method of protection is provided to protect employees from the possible collapse of such structures.

**(10) Protection of employees from loose rock or soil.**

(a) You must provide adequate protection to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection must consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material; or other means that provide equivalent protection.

(b) You must protect employees from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection must be provided by placing and keeping such materials or equipment at least two feet (.61 m) from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

**(11) Inspections.**

(a) Daily inspections of excavations, the adjacent areas, and protective systems must be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection must be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections must also be made after every rainstorm or other hazard increasing occurrence. These inspections are only required when employee exposure can be reasonably anticipated.

(b) Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, you must remove exposed employees from the hazardous area until the necessary precautions have been taken to ensure their safety.

**(12) Fall protection.**

(a) You must provide walkways where employees or equipment are required or permitted to cross over excavations. You must provide

guardrails which comply with chapter 296-880 WAC, Unified safety standards for fall protection where walkways are four feet or more above lower levels.

(b) You must provide adequate barrier physical protection at all remotely located excavations. You must barricade or cover all wells, pits, shafts, etc. Upon completion of exploration and similar operations, you must backfill temporary wells, pits, shafts, etc.

(c) Additional information regarding fall protection requirements and exceptions for trench excavations may be found at WAC 296-880-30005.

(13) **Trench excavations.**

(a) A competent person must remain on the job site any time trench excavation work is being performed.

(b) The employer must have a competent person complete a written trench excavation **work plan** for any trench excavation into which an employee may enter and where a protective system is required under WAC 296-155-657 (1)(a). A written trench excavation work plan is not required when:

(i) The trench is four feet or less and a protective system is not required; or

(ii) When the trench excavations are sloped at an angle not steeper than one and one-half horizontal to one vertical (34 degrees measured from the horizontal) as described in WAC 296-155-657.

(c) The employer may use a trench excavation **work plan** available on the department's website, or may develop a trench excavation work plan that includes at minimum the following:

(i) Identify all trench excavations where a protective system is required as described in WAC 296-155-657;

(ii) Identify the classification of soil and rock deposits as described in WAC 296-155-66401, Appendix A;

(iii) Identify underground installations as described in subsection (2) of this section;

(iv) Describe the method of protecting underground installations when the trench excavation is open as described in subsection (2) of this section;

(v) Describe the method of protection from surface encumbrances as described in subsection (1) of this section;

(vi) Describe the method of stabilizing adjacent structures as described in subsection (9) of this section;

(vii) Identify and assess potentially hazardous atmospheres as described in subsection (7) of this section;

(viii) Describe the type of protective system to be provided as described in WAC 296-155-657;

(ix) Describe the procedure for the installation and removal of the protective system that protects employees from cave-ins, structural collapses, or from being struck by members of the protective system as described in WAC 296-155-657;

(x) Describe the frequency of inspections of trench excavations, the adjacent areas, and protective system for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions as described in subsection (9) of this section;

(xi) Describe the method of protection for employees from cave-ins when entering or exiting the areas protected by shields as described in subsection (10) of this section;

(xii) Describe the method of protecting workers in a trench excavation from loose soil, rock, or equipment that could pose a hazard by

falling or rolling into the excavation as described in subsection (10) of this section;

(xiii) Describe the method of protection from hazards associated with water accumulation as described in subsection (8) of this section;

(xiv) Describe the safe means of egress from trench excavations as described in subsection (3) of this section;

(xv) Be available on the job site for inspection by the department.

(d) Training. Prior to permitting employees into any trench excavation where a protective system is required, the employer must ensure employees are trained and instructed on the requirements of the trench excavation work plan.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, and chapter 49.17 RCW. WSR 26-09-113 (Order 21-20), s 296-155-655, filed 4/21/26, effective 6/1/26. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. WSR 22-15-089, § 296-155-655, filed 7/19/22, effective 8/19/22. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, and chapter 49.17 RCW. WSR 20-12-091, § 296-155-655, filed 6/2/20, effective 10/1/20. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-655, filed 4/19/16, effective 5/20/16. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060 and 29 C.F.R. 1926, Subpart M, Fall Protection. WSR 13-04-073, § 296-155-655, filed 2/4/13, effective 4/1/13. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 05-20-055, § 296-155-655, filed 10/3/05, effective 12/1/05; WSR 05-03-093, § 296-155-655, filed 1/18/05, effective 3/1/05; WSR 04-24-089, § 296-155-655, filed 12/1/04, effective 1/1/05. Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. WSR 99-17-094, § 296-155-655, filed 8/17/99, effective 12/1/99; WSR 99-10-071, § 296-155-655, filed 5/4/99, effective 9/1/99. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. WSR 96-24-051, § 296-155-655, filed 11/27/96, effective 2/1/97. Statutory Authority: Chapter 49.17 RCW. WSR 95-10-016, § 296-155-655, filed 4/25/95, effective 10/1/95. Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. WSR 92-22-067 (Order 92-06), § 296-155-655, filed 10/30/92, effective 12/8/92. Statutory Authority: Chapter 49.17 RCW. WSR 91-03-044 (Order 90-18), § 296-155-655, filed 1/10/91, effective 2/12/91. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 86-03-074 (Order 86-14), § 296-155-655, filed 1/21/86. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. WSR 81-13-053 (Order 81-9), § 296-155-655, filed 6/17/81; Order 76-29, § 296-155-655, filed 9/30/76; Order 74-26, § 296-155-655, filed 5/7/74, effective 6/6/74.]