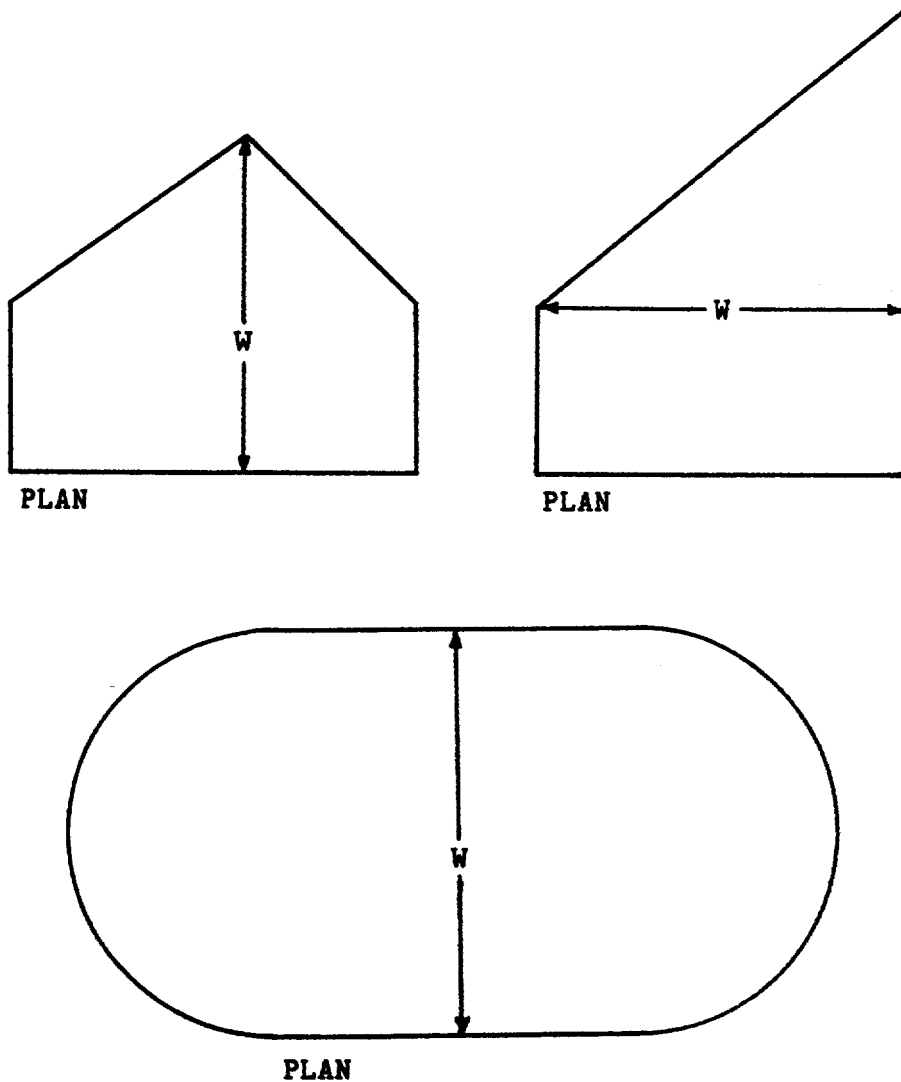


## EXAMPLE F: IRREGULAR, NON-RECTANGULAR SHAPED ROOFS

APPENDIX B TO SUBPART M OF PART  
1926—GUARDRAIL SYSTEMS*Non-Mandatory Guidelines for Complying with  
§ 1926.502(b)*

The standard requires guardrail systems and components to be designed and built to meet the requirements of § 1926.502 (b) (3), (4), and (5). This Appendix serves as a non-mandatory guideline to assist employers in com-

plying with these requirements. An employer may use these guidelines as a starting point for designing guardrail systems. However, the guidelines do not provide all the information necessary to build a complete system, and the employer is still responsible for designing and assembling these components in such a way that the completed system will meet the requirements of § 1926.502(b) (3), (4), and (5). Components for which no specific

guidelines are given in this Appendix (e.g., joints, base connections, components made with other materials, and components with other dimensions) must also be designed and constructed in such a way that the completed system meets the requirements of § 1926.502.

(1) For wood railings: Wood components shall be minimum 1500 lb-ft/in<sup>2</sup> fiber (stress grade) construction grade lumber; the posts shall be at least 2-inch by 4-inch (5 cm×10 cm) lumber spaced not more than 8 feet (2.4 m) apart on centers; the top rail shall be at least 2-inch by 4-inch (5 cm×10 cm) lumber, the intermediate rail shall be at least 1-inch by 6-inch (2.5 cm×15 cm) lumber. All lumber dimensions are nominal sizes as provided by the American Softwood Lumber Standards, dated January 1970.

(2) For pipe railings: posts, top rails, and intermediate railings shall be at least one and one-half inches nominal diameter (schedule 40 pipe) with posts spaced not more than 8 feet (2.4 m) apart on centers.

(3) For structural steel railings: posts, top rails, and intermediate rails shall be at least 2-inch by 2-inch (5 cm×10 cm) by ¾-inch (1.1 cm) angles, with posts spaced not more than 8 feet (2.4 m) apart on centers.

#### APPENDIX C TO SUBPART M OF PART 1926—PERSONAL FALL ARREST SYSTEMS

##### *Non-Mandatory Guidelines for Complying With § 1926.502(d)*

I. *Test methods for personal fall arrest systems and positioning device systems*—(a) *General*. This appendix serves as a non-mandatory guideline to assist employers comply with the requirements in § 1926.502(d). Paragraphs (b), (c), (d) and (e) of this Appendix describe test procedures which may be used to determine compliance with the requirements in § 1926.502 (d)(16). As noted in Appendix D of this subpart, the test methods listed here in Appendix C can also be used to assist employers comply with the requirements in § 1926.502(e) (3) and (4) for positioning device systems.

(b) *General conditions for all tests in the Appendix to § 1926.502(d)*. (1) Lifelines, lanyards and deceleration devices should be attached to an anchorage and connected to the body-belt or body harness in the same manner as they would be when used to protect employees.

(2) The anchorage should be rigid, and should not have a deflection greater than 0.04 inches (1 mm) when a force of 2,250 pounds (10 kN) is applied.

(3) The frequency response of the load measuring instrumentation should be 500 Hz.

(4) The test weight used in the strength and force tests should be a rigid, metal, cylindrical or torso-shaped object with a girth

of 38 inches plus or minus 4 inches (96 cm plus or minus 10 cm).

(5) The lanyard or lifeline used to create the free fall distance should be supplied with the system, or in its absence, the least elastic lanyard or lifeline available to be used with the system.

(6) The test weight for each test should be hoisted to the required level and should be quickly released without having any appreciable motion imparted to it.

(7) The system's performance should be evaluated taking into account the range of environmental conditions for which it is designed to be used.

(8) Following the test, the system need not be capable of further operation.

(c) *Strength test*. (1) During the testing of all systems, a test weight of 300 pounds plus or minus 5 pounds (135 kg plus or minus 2.5 kg) should be used. (See paragraph (b)(4) of this section.)

(2) The test consists of dropping the test weight once. A new unused system should be used for each test.

(3) For lanyard systems, the lanyard length should be 6 feet plus or minus 2 inches (1.83 m plus or minus 5 cm) as measured from the fixed anchorage to the attachment on the body belt or body harness.

(4) For rope-grab-type deceleration systems, the length of the lifeline above the centerline of the grabbing mechanism to the lifeline's anchorage point should not exceed 2 feet (0.61 m).

(5) For lanyard systems, for systems with deceleration devices which do not automatically limit free fall distance to 2 feet (0.61 m) or less, and for systems with deceleration devices which have a connection distance in excess of 1 foot (0.3 m) (measured between the centerline of the lifeline and the attachment point to the body belt or harness), the test weight should be rigged to free fall a distance of 7.5 feet (2.3 m) from a point that is 1.5 feet (.46 m) above the anchorage point, to its hanging location (6 feet below the anchorage). The test weight should fall without interference, obstruction, or hitting the floor or ground during the test. In some cases a non-elastic wire lanyard of sufficient length may need to be added to the system (for test purposes) to create the necessary free fall distance.

(6) For deceleration device systems with integral lifelines or lanyards which automatically limit free fall distance to 2 feet (0.61 m) or less, the test weight should be rigged to free fall a distance of 4 feet (1.22 m).

(7) Any weight which detaches from the belt or harness has failed the strength test.

(d) *Force test*—(1) *General*. The test consists of dropping the respective test weight once as specified in paragraph (d)(2)(i) or (d)(3)(i) of this section. A new, unused system should be used for each test.