

BRINNON FIRE DEPARTMENT



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Standards for Fire Apparatus Access Roads, Driveways & Bridges

Standards

- 2009 edition of the International Fire Code (IFC), Chapter 5, Section 503 "Fire Apparatus Access Roads"
- American Association of State Highway and Transportation Officials (AASHTO)
- Washington State Department of Transportation (WSDOT)

Purpose

To provide property owners with a responsible design and construction standard for their Fire and Sheriff Department's efficient delivery of emergency services to the subject property(s), as well as other services.

Scope

The scope of this policy is for emergency services access provision on private properties and privately constructed and maintained roadways in the public right of way.

Standards

- 1) This Standard shall not apply to roads, driveways, or other means of access to existing structures or within subdivisions of land developed under a permit from Jefferson County issued prior to the adoption of this Ordinance.
- 2) Plans for fire apparatus access roads shall be submitted to the Fire marshal and the Brinnon FD for review and approval prior to construction.
- 3) When required by the Fire Marshal or the Brinnon FD, approved signs or other approved notices shall be provided and maintained for fire apparatus access roads to identify such roads and prohibit the obstruction thereof.

Adopted in 1994
Modified in 2006
Modified in 2009

4) Roadways and driveway driving surfaces shall be designed and constructed with an all weather driving surface. This surface shall consist of;

- 6 inch ballast or gravel base, which may need to be increased depending on the suitability of the native material, with a 2 inch minimum depth of compacted crushed surfacing top course. There shall be 2 % crown slope at the center line and the compaction of the material shall be such that it has a load capacity of 75,000 lbs.

5) Maximum grade of the roadway or driveway shall not exceed 12%. Any gradient greater than 12% shall require the approval of the Brinnon FD and the Fire Marshal. A gradient over 12% will also require additional mitigation measures, subject to the approval of the Brinnon FD and the Fire Marshal.

6) Gradient changes or transitions shall be limited to 7% or less to accommodate the wheelbase of fire and EMS apparatus body frame beyond the rear axle.

7) Driveway approach to any constructed public roadway shall meet an approved 75 to 105 degree approach angle, to include brush clearance for line of sight at any stop and yield controlled intersection with a constructed public road, and include an approved apron.

8) A fire apparatus access road shall have an unobstructed horizontal and vertical clearance of not less than 12' the full width and length of the roadway.

9) Fire apparatus access roads shall extend to within 150' of all portions of the exterior wall of any residential or commercial structure, and within 50' of at least 25% of the exterior wall of any commercial structure.

10) A fire apparatus access road shall be a minimum unobstructed width of 20' for commercial structures, or 4 or more parcels or building sites. The access road may be reduced to 12' of unobstructed width with a minimum 10' wide driving surface for 1-3 parcels or building sites on approval of the Fire Marshal and the Brinnon FD.

11) A 10' wide fire apparatus access road exceeding 300' in length will be required to make provisions for the passing of fire apparatus by providing approved pullouts. Pullouts shall be reasonably located, based on sight distance, road curvature, and grade; and shall be a minimum size of 8' wide and 30' long with tapered ends.

12) A dead end fire apparatus access road longer than 300' is required to provide provisions for the turning around of fire apparatus within 150' of any facility or structure.

See exhibit A - Hammer Head Turn Around, B - Modified Hammer Head, C- Cul De Sac Turn Around, D & E - Pullouts, for examples of accepted turnarounds and pullouts.

13) The turning radius of a fire apparatus access road shall be a minimum of 28' interior, 45' exterior centerline radius.

14) Where more than 50 units are designed in a residential development, either single family, multifamily, retirement or similar, there shall be a minimum of two access points to the county road system. Such access points shall be located so as to provide for general circulation, alternate emergency vehicle access routes, through access, and general transportation design considerations. One of these access points may be for emergency vehicle use only where the number of units does not exceed 100. Design of an "emergency vehicle use only" access must be approved by the Brinnon FD and Fire Marshal.

15) When buildings are completely protected with an automatic fire sprinkler system, the provisions of these standards may be modified by the Fire Marshal with the consent of the Brinnon FD.

16) When a bridge is required as part of a fire apparatus access road, it is to be constructed and maintained in accordance with Washington State and nationally recognized standards. It shall have designed live loading capacity sufficient to carry the imposed load of fire apparatus. An evaluation by a professional engineer will be required to determine the imposed load rating for all of the responding fire districts fire apparatus and shall be approved by the Brinnon FD and the Fire Marshal.

17) When access roads cannot be installed to these standards due to topography, waterways, nonnegotiable grades or other similar conditions, the Fire Marshal, in conjunction with the Brinnon FD, is authorized to require additional fire protection or mitigation as specified in Section 1001.9 of the UFC. The Fire Marshal, in conjunction with the Brinnon FD, may also approve access roads which do not meet these requirements if the road provides reasonable access under the individual facts of the case.

18) Approved numbers or addresses shall be placed on all new commercial or residential buildings (that require an address), at the beginning of long driveways when the address is not clearly visible from the access road, or in any other areas deemed necessary by the Brinnon FD or the Fire Marshal. They shall be placed in such a position as to be plainly visible and legible from the street or road fronting the property. Said numbers shall be a minimum of 4 inches in height and of white reflective material, the mounting plate shall be a minimum of 12 inches long and 5 inches high with a red reflective background. Said plate and numbers may be obtained from the Jefferson County Department of Community Development (DCD) for a nominal fee.

19) Traffic calming measures on fire apparatus roads (speed bumps, etc) shall be approved by the Fire Marshal and the Brinnon FD before installation.

20) Gates, fences, bollards or other roadway obstructions are obstacles to efficient emergency services delivery, and create width constrictions. Any such assemblies shall be a minimum of 11 feet in opening width and shall not be locked. If such obstacles are locked they shall be required to have Knox key access. The property owner shall obtain the necessary order approval form from the Brinnon FD. The property owner shall be responsible for all costs incurred with the purchase of the appropriate locking device.

Bridge Standards

1) All bridges within the boundaries of the Brinnon Fire Department Response area shall be built and designed by a licensed and registered Washington State Engineer.

1) All bridges built within the boundaries of the Brinnon Fire Department Response area shall be built to a minimum of 50,000 lbs weight loading, based on the AASHTO Vehicle Type 3 standard. Increases in weight loading may be required dependent on the actual physical location of the bridge.

2) In addition all bridges shall comply with the most current edition of the following:

- WAC 220-110-070 – WDFW Hydraulic Code

- Washington Department of Transportation “Standard Specification for Road, Bridge and Municipal Construction”

Hammer Head Turn Around

Direction may be right or left direction (left direction is shown)

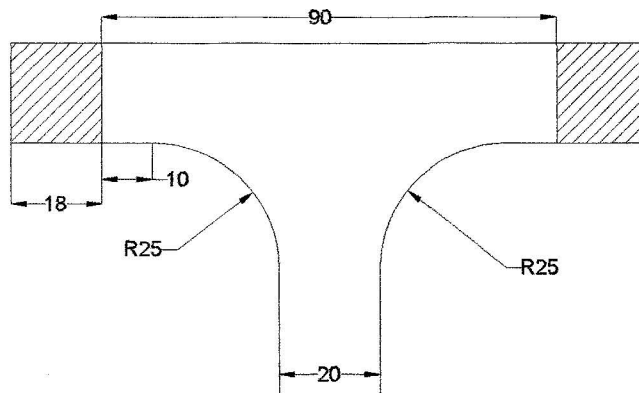


OVERHANG AREA - Driving surface in this area is not required.
No obstructions greater than twelve (12) inches in height are allowed

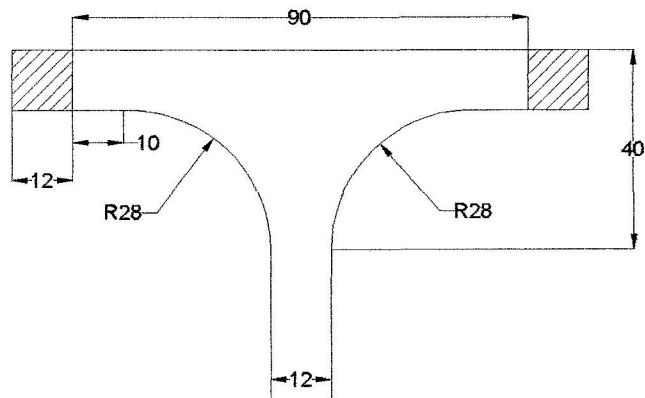


Area required for turn around located at a single residence. In this special case, the area could, for instance, consist of pasture adjacent to the building and will to continue to function as a viable turn around in adverse weather conditions (ie remains solid in any weather).

Requirements for roads 20' in width and commercial sites

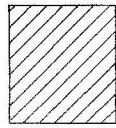


Requirements for roads 12' in width



Modified Hammer Head

Direction may be right or left direction (left direction is shown)



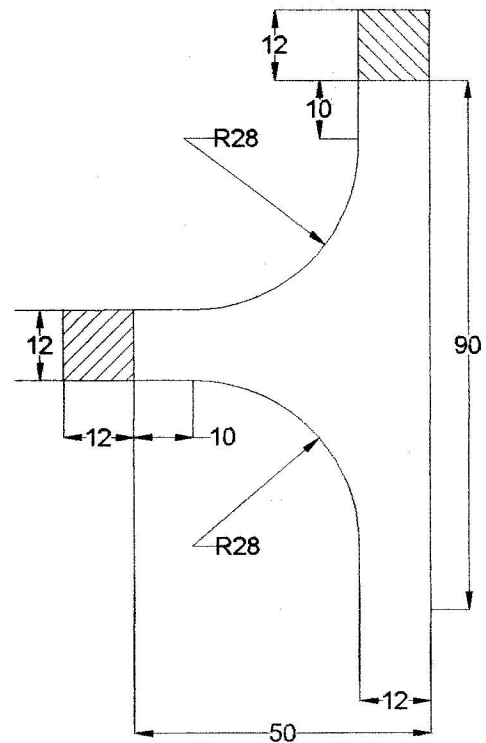
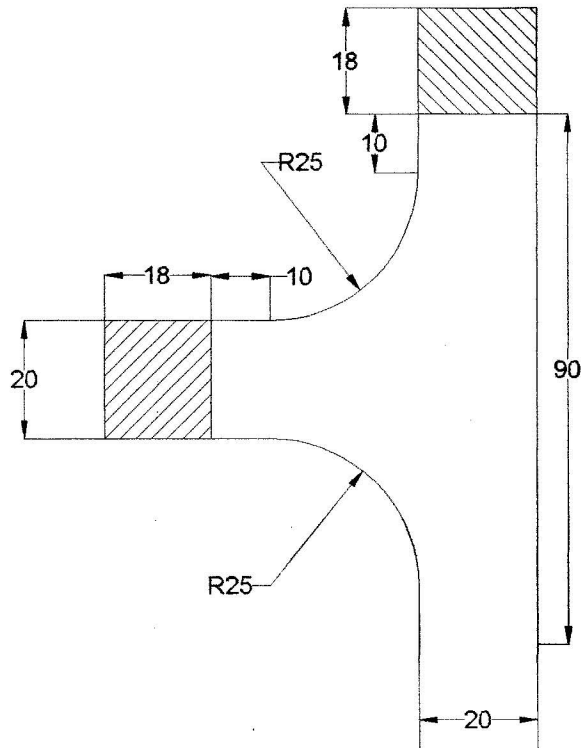
OVERHANG AREA - Driving surface in this area is not required.
No obstructions greater than twelve (12) inches in height are allowed



Area required for turn around located at a single residence. In this special case, the area could, for instance, consist of pasture adjacent to the building and will continue to function as a viable turn around in adverse weather conditions (ie remains solid in any weather).

Requirements for roads 20' in width and commercial sites

Requirements for roads 12' in width



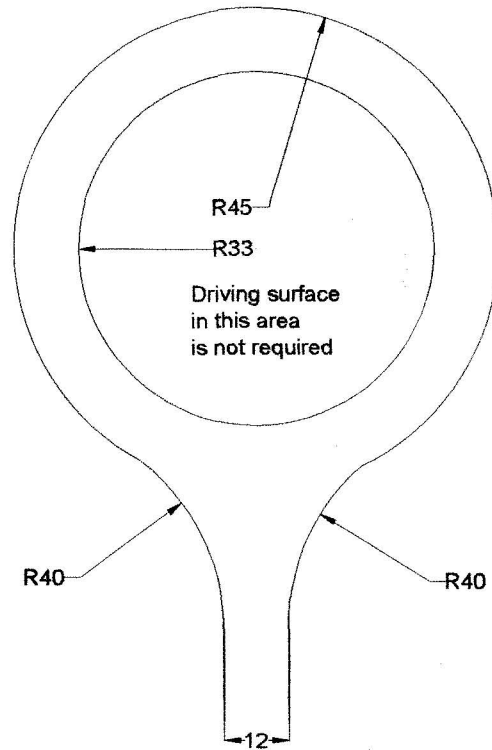
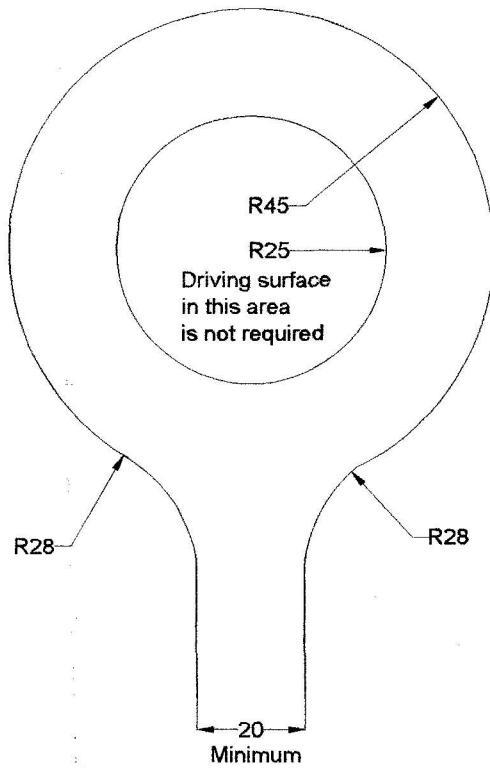
Cul De Sac Turn Around



Area required for turn around located at a single residence. In this special case, the area could, for instance, consist of pasture adjacent to the building and will continue to function as a viable turn around in adverse weather conditions (ie remains solid in any weather).

Requirements for roads 20' in width and commercial sites

Requirements for roads 12' in width



Turnouts

Any dead end fire apparatus access road longer than 300 feet shall have provisions for the turning around of fire apparatus within 150 feet of any structure or facility and have approved provisions for the passing of fire apparatus.

If turnouts are used to accommodate the passing of fire apparatus, they shall be reasonably located based on sight distance, road curvature and grade. Turnouts shall be a minimum of 8 feet wide and 30 feet long with tapered ends.

Note: Only access roads which do not maintain continuous width of 20 feet or more need turnouts.

Turnouts may be placed on either side of the access road. Adequate sight distance between turnouts must be maintained.

