

2022-02-03, Updated 2024-02-01

Information Bulletin on Long Driveways for *Fire Access*

Driveway design for *Fire Access* where the front door of a single family or duplex dwelling is greater than 45 m from the street.

Reference British Columbia Building Code sections 9.10.20.3 and 3.2.5.6.

1. If the front door is located greater than 45 m from the street, *Fire Access* is required.
2. *Fire Access* to be a minimum finish width of 6 m with a maximum grade of 10% and terminate with a 10 m long area at a maximum grade of 2% and be within 45 m of the front door.
3. If the access exceeds a length of 90 m from the street a dedicated fire truck turn around is required.
4. The finish surface may include $\frac{3}{4}$ " minus crush gravel, compacted on a suitable granular base that will support a fire truck, and be constructed with a 2% crown or cross slope for drainage.
5. The *Fire Access* is to be maintained and kept clear at all times.
6. The access is subject to inspection and approval by the Fire Chief prior to occupancy.
7. Access needs to be in place prior to the start of construction and needs to be maintained at all times.

Contact:

Building Official
building@lillooet.ca

Fire Chief
lf.d.chief@lillooet.ca



INFORMATION BULLETIN ON LONG DRIVEWAYS FOR FIRE ACCESS

This is a supplementary document to accompany the District of Lillooet's 2022-02-03 document titled "Information Bulletin on Long Driveways for Fire Access." The intent of this document is to provide property owners and developers with additional supporting information pertaining to fire access.

Below are excerpts from the 2018 British Columbia Building Code regarding Fire Access. This is to give the read references that pertain to fire access.

Part 3

3.2.5.6. Access Route Design

- 1) A portion of a roadway or yard provided as a required access route for fire department use shall
 - a) have a clear width not less than 6 m, unless it can be shown that lesser widths are satisfactory,
 - b) have a centre-line radius not less than 12 m,
 - c) have an overhead clearance not less than 5 m,
 - d) have a change of gradient not more than 1 in 12.5 over a minimum distance of 15 m,
 - e) be designed to support the expected loads imposed by firefighting equipment and be surfaced with concrete, asphalt or other material designed to permit accessibility under all climatic conditions,
 - f) have turnaround facilities for any dead-end portion of the access route more than 90 m long, and
 - g) be connected with a public thoroughfare. (See Note A-3.2.5.6. (1).)
- 2) For buildings conforming to Article 3.2.2.50. or 3.2.2.58., no portion of the access route described in Sentence 3.2.2.10.(3) shall be more than 20 m below the uppermost floor level.

Notes to Part 3 Fire Protection, Occupant Safety and Accessibility

A-3.2.5.6. (1) Fire Department Access Route. The design and construction of fire department access routes involves the consideration of many variables, some of which are specified in the requirements in the Code. All these variables should be considered in relation to the type and size of fire department vehicles available in the municipality or area where the building will be constructed. It is appropriate, therefore, that the local fire department be consulted prior to the design and construction of access routes.

Part 9

Section 9.10. Fire Protection

9.10.20.3. Fire Department Access to Buildings

- 1) Access for fire department equipment shall be provided to each building by means of a street, private roadway, or yard. (See Notes A-9.10.20.3. (1) and A-3.2.5.6. (1).)
- 2) Where access to a building as required in Sentence (1) is provided by means of a roadway or yard, the design and location of such roadway or yard shall take into account connection with public thoroughfares, weight of firefighting equipment, width of roadway, radius of curves, overhead clearance, location of fire hydrants, location of fire department connections and vehicular parking. 9.10.20.4. Portable Extinguishers

Notes to Part 9 Housing and Small Buildings

A-9.10.20.3. (1) Fire Department Access Route Modification. In addition to other considerations taken into account in the planning of fire department access routes, special variations could be permitted for a house or

residential building that is protected with an automatic sprinkler system. The sprinkler system must be designed in accordance with the appropriate NFPA standard and there must be assurance that water supply pressure and quantity are unlikely to fail. These considerations could apply to buildings that are located on the sides of hills and are not conveniently accessible by roads designed for firefighting equipment and also to infill housing units that are located behind other buildings on a given property.

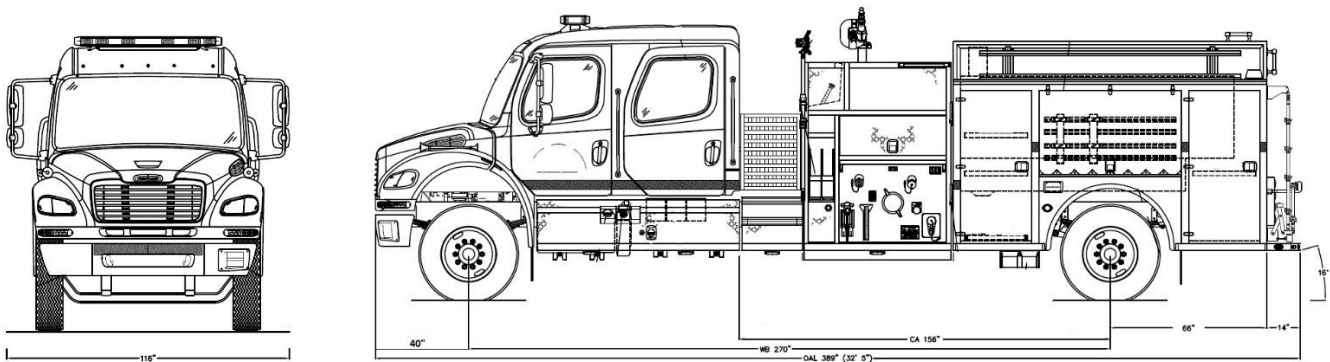
Notes to Part 9 Housing and Small Buildings

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Additional Information for design that is particular to the Lillooet Fire Department.

Engine 1 - (2019 Freightliner, Triple Combination Pumper) is the largest in the LFD fleet.

- Measuring at a width - 116" (9ft 8 in.) and a length of – 389" (32ft 5 in.)
- Driveway and private road surfaces should be constructed to withstand and **minimum weight of 30,000 kilograms.**

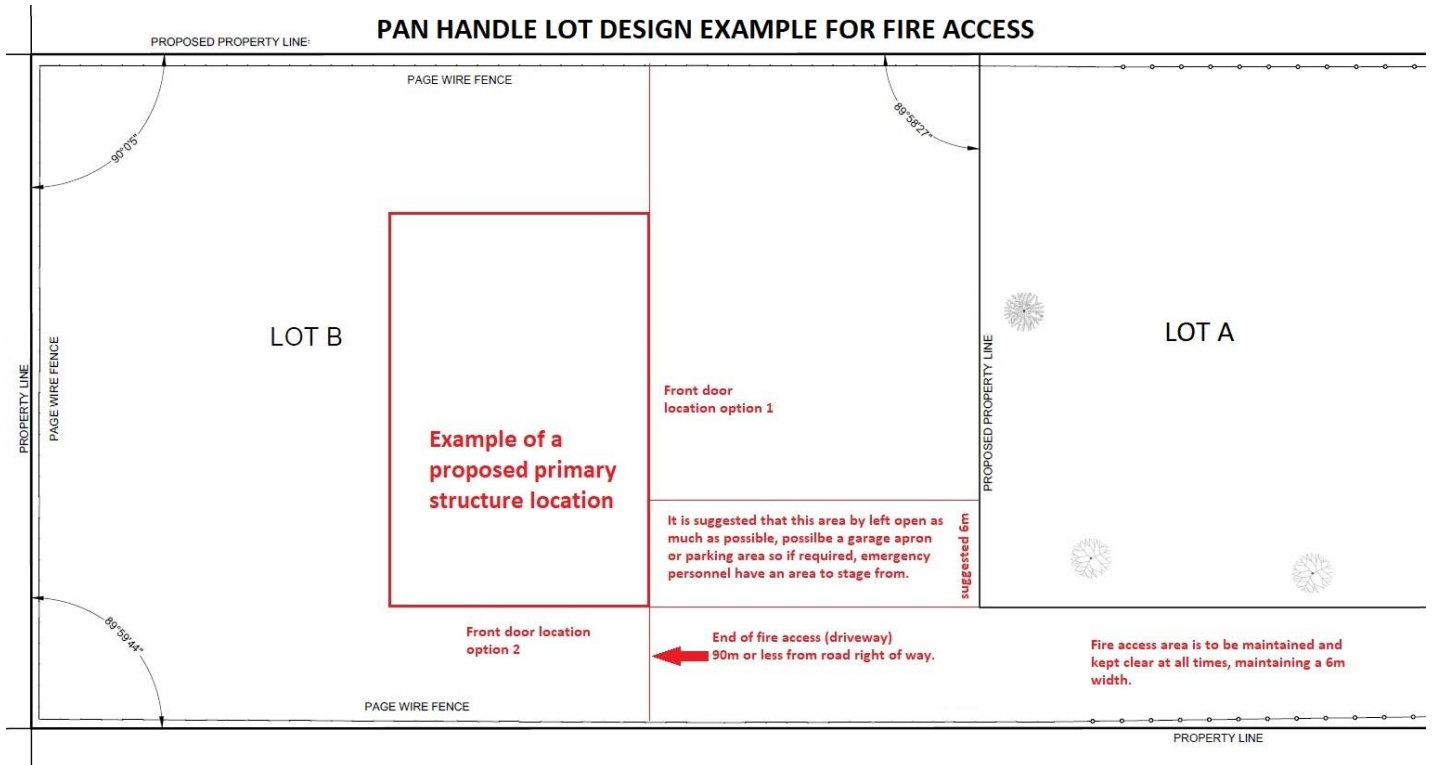


Driveway Assesses

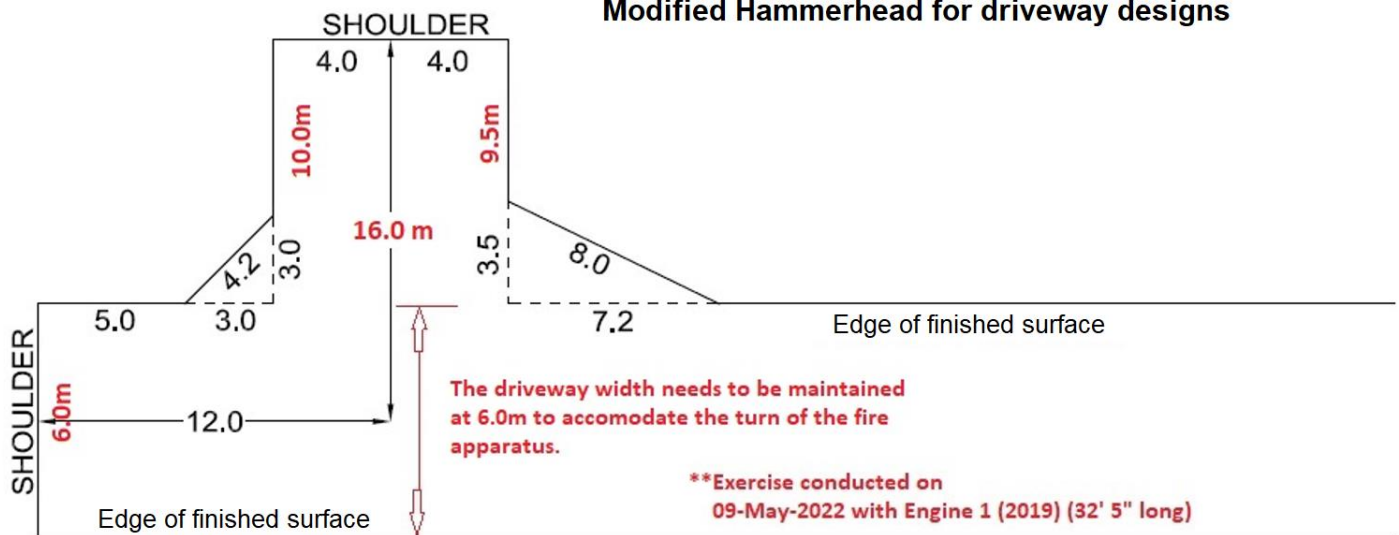
As per the District of Lillooet’s 2022-02-03 document titled **“Information Bulletin on Long Driveways for Fire Access.”** The following diagrams are intended to further explain the need for the clearances to accommodate the fire apparatus.

For accesses greater than 90-metres from the street, a dedicated fire truck turn around is required.

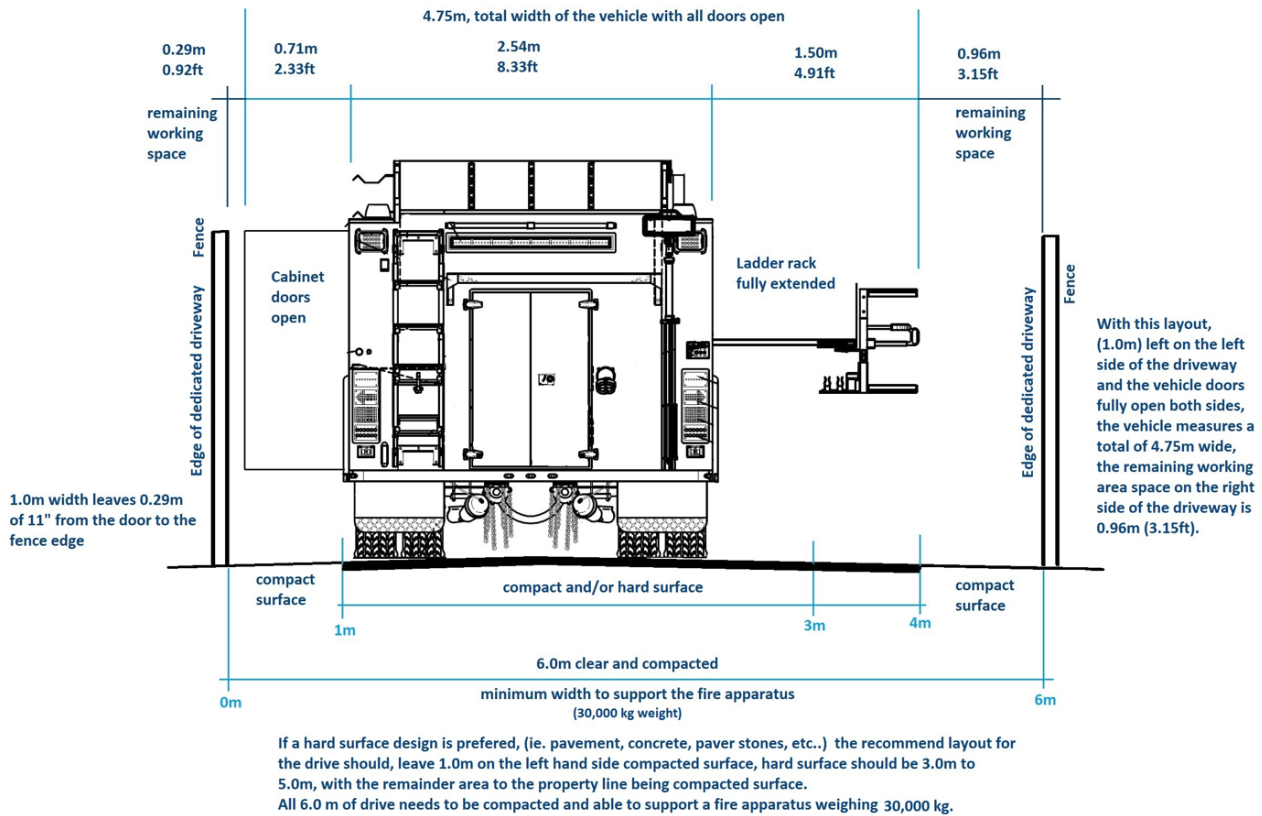
Below is a Modified Hammerhead design, including measurements for driveways.



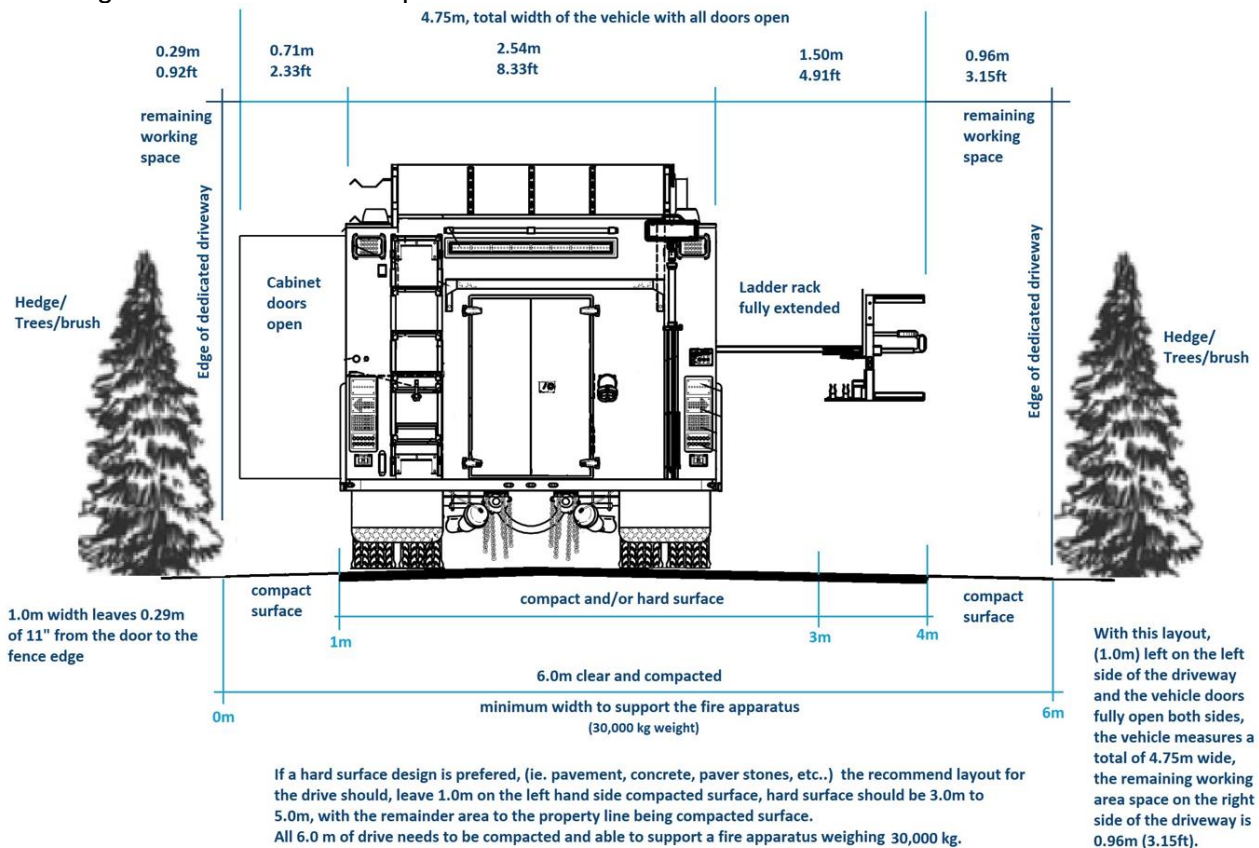
Modified Hammerhead for driveway designs



The following diagram demonstrates the need for the dedicated 6 metre width of the driveway. When the fire apparatus is in full operation at a fire scene the fire crew needs space to work around the vehicle. This driveway space needs to be kept clear of storage of materials, vehicles, trailers.



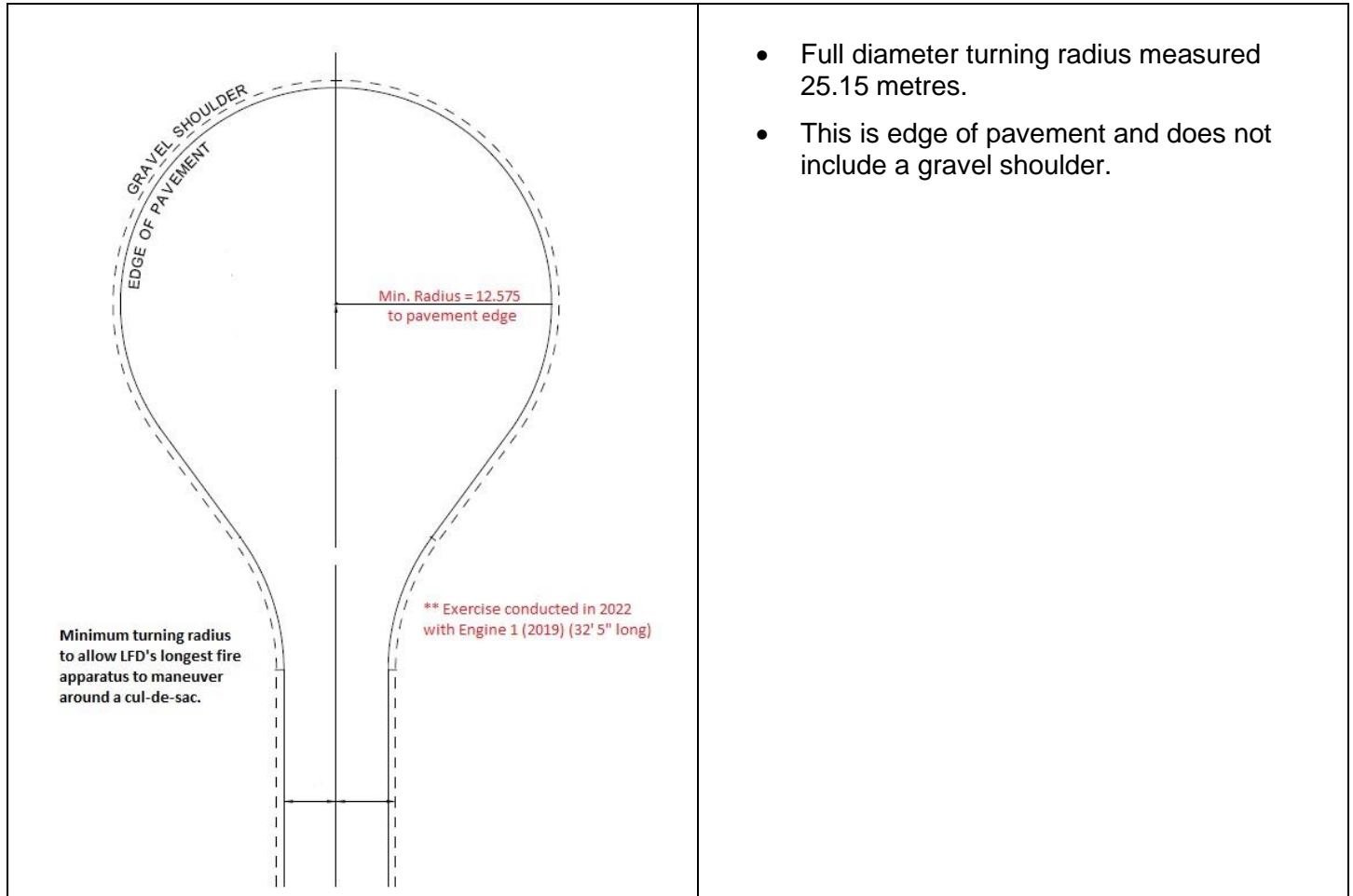
Even vegetation needs to be kept clear out of this 6-metre area.



Road accesses

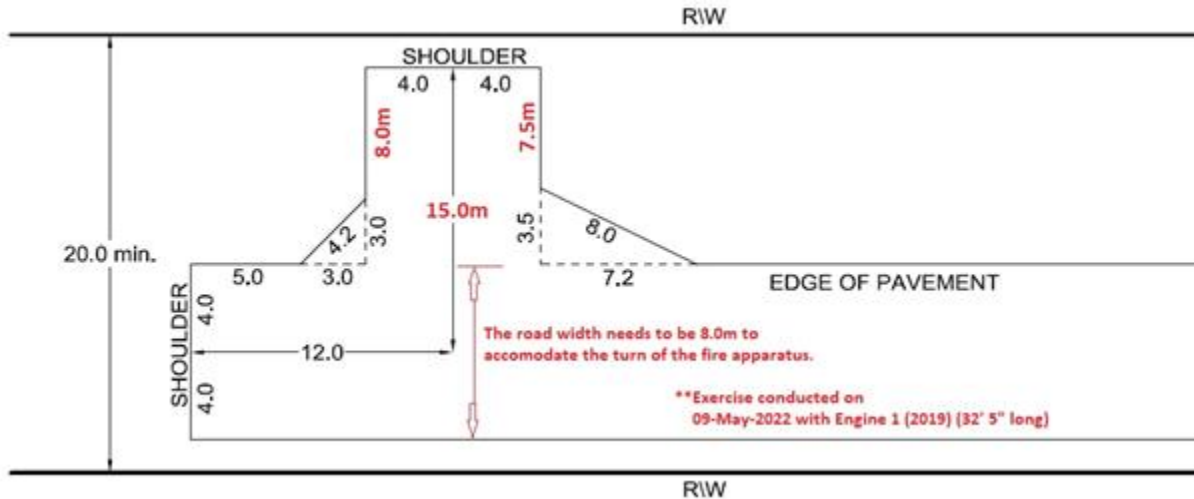
In 2022 the Fire Department conducted exercises with Engine 1 (2019 Freightliner) to ensure that we understood what the actual turning radius of this apparatus. The department measured out a modified hammerhead design and a cul-de-sac by physically laying out traffic cones in the two configurations and driving the apparatus around the cones to ensure that the vehicle can manoeuvre in the spaces. Below are the final diagrams to show the results.

Cul-de-Sac



Modified Hammerhead turn around.

Minimum of 8-metre-wide paved surface.



- This would be the minimum standard that would be required to accommodate the turning of Engine 1 LFDs largest vehicle.

Other considerations for driveways and road accesses

Wildland Urban Interface Concerns

The District of Lillooet is considered to be in a “High Risk” area for Wildfires and Urban Interface fires, thus FireSmart principles should be taken into consideration when developing properties with long accesses and vegetated areas. A properly maintained access is a matter of life safety in an emergency. To help with planning here are some additional documents that should be considered.

FireSmart Canada – Alberta’s FireSmart Protecting Your Community Manual. Chapter 3, Pages 88 – 92 discussion Road Access and Road Standards.

- <https://firesmartcanada.ca/wp-content/uploads/2022/01/FireSmart-Protecting-Your-Community.pdf>
- <https://firesmartcanada.ca/resources/>