

# Olson Kundig

Fused Elements Fire Code Alternate Request  
September 09, 2023

Fused Elements Residence is a single-family project located at 4525 Forest Ave SE. The project is proposing to demolish an existing single-family residence and construct a new single-family residence on the property.

Per the comments in pre-application meeting notes (PRE23-024, June 27, 2023), the following deficiencies have been noted for the property as a draft Fire Review Sheet:

1. Width of the existing fire access road (8.26 ft) does not meet the standards required under 2018 IFC Appendix D.
  - a. Due to multiple easements and driveway connection points to adjacent properties from the existing access road, it is not feasible to widen the drive to meet the standard access road requirements.
  - b. Steep existing grade makes it not feasible to widen the drive to full 26' access width.
  - c. A type Np watercourse runs across the property. In some sections of the property the watercourse runs parallel to and crosses the existing access road; increasing the access road width would have permanent impacts to the stream.
2. Distance to the existing fire hydrant exceeds the standard minimum distances; a fire turnaround per 2018 IFC Appendix D is not provided on the existing access road.
  - a. Turnaround is not feasible due to neighboring property access, space constraints on the site and steep existing grade.
  - b. Near the south property line the existing access road spurs off to adjacent properties; this area is approximately 30' across and provides a smaller fire turnaround area. The watercourse crosses the existing drive at this location; modifying this area to meet full fire turnaround radius would permanently impact the stream.
3. Fire access road distance exceeds 150 feet.
  - a. Existing access road connects Forest Ave SE to the existing building pad at the west edge of the site. Due to neighboring access, space constraints on the site and existing steep grade, it is not feasible to relocate the building to shorten the fire access distance.

The following mitigations are proposed as alternates to the meeting the code deficiencies noted above. We believe the proposed alternates are equal to or better than the code requirements for the deficiencies listed.

1. The narrowest part of the existing access road (8.26') is replaced with a new concrete 14 foot wide drive; the narrowest part of the remaining existing drive is 10.5'.
2. An upgraded sprinkler system NFPA 13R – Plus that meets the requirements noted per Mercer Island Fire Marshal's Office.
3. Installation of a Household Fire Alarm System per NFPA 72 Chapter 29 as alternate mitigation to increasing fire access road width.
4. Fire retardant coating treatment in the crawl space; see assemblies sheet.
5. Installation of 1-hr rated gypsum in all interior spaces.
6. Solid core doors at all interior locations.