

Fire Code Alternate Request – Valentin Residence

June 6, 2019

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4350 E. Mercer Way, Mercer Island, WA 98040

Permit no. 1902-013

Parcel Numbers: 004610-0150 and 004610-0151

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This fire code alternate request is to comply with MICC and 2015 IFC - [A] 104.9

Scope of work:

Construct a single family residence with 7229 sqf fire area.

Deficiencies:

Available fire flow at 878 GPM does not meet fire flow even with sprinkler reduction.

Fire access road width <26'. Code is 26'.

50' sub-standard turnaround and grade of 15 degrees. Code is 96' and 10 degrees or less.

Proposal:

-) Install 13R fire sprinklers
-) NFPA 72 low voltage Household Fire Alarm
-) Provide fire retardant coating treatment in the attic and crawl space (as noted on architectural plans)
-) Widening the fire access road to 16' per SUB2-PLANS which is 130' long.

Summary:

We believe the proposed is equal to or better than the code requirement.



Mercer Island Fire Marshal Office
 3030 78th Avenue SE
 Mercer Island, WA 98040
 (206) 275-7966

Permit No: 1908 - 013

Metric

FIRE PLAN REVIEW

Name: _____

Address: 4350 E MW

1. PROJECT TYPE



NSF



Alteration or Addition

Valuation Ratio

Proposed Work _____ / Assessed Value _____ =
 _____ % (from Fire Area Work Sheet)

- Exempt structure - detached garage or similar structure less than 750 sf.
- Less than 10% (fire review not required)
- 10 - 49% (monitored Household Fire Alarm System per NFPA 72 Chapter 29, if fire deficiency)
- 50% or greater (substantial alteration)

2. FIRE AREA



Fire Area = 7289 square feet (sf) (from Fire Area Worksheet)

≥ 10000 SF Requires a NFPA 13R or 13 sprinkler system (use 13R sprinkler system as base)

3. FIRE FLOW

Hydrant ID# D5-43 PSI 86

Flow Required 2250 GPM @ 20 psi (from IFC table B105.1)

With Sprinkler Reduction 1125 GPM @ 20 psi (50% reduction)

Available 878 GPM @ 20 psi (Max of 500gpm for a 2-port hydrant)



Does not meet fire flow even with sprinkler reduction (use 13R sprinkler system as base)

4. HYDRANTS

Number Required: 1 Spacing _____ Max. Frontage _____



Number Available: 1 Spacing _____ Frontage _____



Distance from all building points to a hydrant 360 (300' Max, 600' w/ Sprinklers)
 OK w/Sprinklers

5. FIRE ACCESS ROADS

- Distance from all points to access road (150'). _____
- Length provided: 718 _____ ft.
- Width Required: 26' _____ (< 500' = 20, ≥ 500' = 26')
- Width provided: ≥ 16' 12' - 16' ≤ 12' 16 SUBS - PLANS
- Radius provided (minimum 28' inside/45' outside): _____ ft.
- Turnaround provided: None Sub Standard Standard 30'
- Grade Provided: < 10' < 15' < 20' > 20'

?

6. CODE ALT/DEFICIENCIES

- Distance _____
- Length _____ = Width 20' 26'
- Width Provided: _____
- 16'
- 12' - 16'
- ≤ 12' (Code Alternate Required)
- Radius _____
- Turn Around
- Substandard
- None
- Grade _____
- 10' - 15'
- 15' - 20'
- Over 20' (Code Alternate Required)

~~Need easement info.~~ provided

13 R
HFA
Code Alt



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FIRE CODE ALTERNATE REQUEST

This document is intended to provide guidance on the approval process for a code alternate request.

The unique and challenging geography, water system, and design desires often make it difficult to meet the Fire Code requirements for a project on Mercer Island. The fire code allows applicants to propose alternate fire protection or design methods to be used to overcome these deficiencies.

2012 IFC - [A] 104.9 Alternative materials and methods.

The provisions of this code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been approved. The fire code official is authorized to approve an alternative material or method of construction where the fire code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

Draft Submittal and Review Process:

Before you propose an alternative to mitigate a fire service deficiency, you will be provided with a "Fire Plan Review" sheet with the specific deficiencies for your project. You will need to address each fire deficiency noted. Checked items marked on this review sheet are areas where the required code is not met. You will draft your request letter, stating the scope of work for the project, citing the deficiencies that were identified from the review sheet, proposing your specific items that you propose as alternative(s) to meeting the code, and finally a summary statement which states "We believe the proposed is equal to or better than the code requirement." Your proposal or "code alternate" will be reviewed to determine if your proposal meets this final summary statement.

Below is a list of items that will be considered as alternative fire protections.

- An "NFPA 13D - Standard" sprinkler system
- An upgrade to an "NFPA 13D – Plus" sprinkler system
- An upgrade to an "NFPA 13R – Plus" sprinkler system
- Installation of a "Household Fire Alarm System" per NFPA 72 Chapter 29
- Provide fire retardant coating treatment in the attic and crawl space
- Install 1-hr rated gypsum in all areas.
- Provide solid core or fire rated doors
- Any other items that you would like to propose

All fire code alternate proposals are required to be submitted for review to our Mercer Island Development Services Group. Either in person or submitted to our FTP site. Please contact the Mercer Island Fire Marshal's office for additional information.