

Zachary Crum

From: Braaten, Michael <Michael.Braaten@co.snohomish.wa.us>
Sent: Wednesday, February 9, 2022 2:36 PM
To: Zachary Crum
Cc: Jim Wolch; Michael Barene
Subject: RE: File No: 211 117783 - Fire Flow Calculation Confirmation
Residential Treatment Facility North - 22 102230 CUP

Zachary,

Per 2018 IFC Appendix B105 Table B105.1(2) the required fire flow is 3,250 GPM with a duration of 3 hours.

With the 25% reduction this is now 2,437.5 GPM

50% reduction with automatic sprinkler systems is now 1218.75 GPM = **1219 GPM** and if you look across the Table for this amount you would be correct that it is now only for a 2-Hour Duration. 😊

R. Michael Braaten, CFI, Sr. Fire Inspector
[Snohomish County Planning and Development Services](#)
3000 Rockefeller Ave. M/S 604 Everett, WA 98201
Office: 425-262-2659 Mobile: 425-754-5296
Fax: 425-388-3872 Michael.Braaten@snoco.org

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From: Zachary Crum <zcrum@bcradesign.com>
Sent: Friday, January 28, 2022 10:43 AM
To: Braaten, Michael <Michael.Braaten@co.snohomish.wa.us>
Cc: Jim Wolch <jwolch@bcradesign.com>; Michael Barene <MBarene@bcradesign.com>
Subject: RE: File No: 211 117783 - Fire Flow Calculation Confirmation

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Michael,

Appreciate the response below. Very Helpful!

Can you confirm our interpretation of the reduced duration? At the reduced flow rate, we are seeing a 2hr duration in the table. Correct?

Zachary Crum PE
ASSOCIATE
CIVIL ENGINEER

T (253) 627-4367
C (253) 222-9609

bcradesign.com

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From: Braaten, Michael <Michael.Braaten@co.snohomish.wa.us>
Sent: Wednesday, January 5, 2022 2:48 PM
To: Zachary Crum <zcrum@bcradesign.com>
Cc: Jim Wolch <jwolch@bcradesign.com>; Michael Barene <MBarene@bcradesign.com>
Subject: RE: File No: 211 117783 - Fire Flow Calculation Confirmation

Good afternoon,

Sorry to take so long to get back to you. Per your interpretation question:

Not exactly.

We take the Rural 25% off at the beginning.

Construction Type: V-B
Gross Floor Area: 15,416 sf per building

Per 2018 IFC Appendix B105 Table B105.1(2) the required fire flow is 3,250 GPM with a duration of 3 hours.

With the 25% reduction this is now 2,437.5 GPM

50% reduction with automatic sprinkler systems is now 1218.75 GPM = **1219 GPM**

The additional 25% for the monitored fire alarm is not calculated with the 50% reduction due to automatic sprinkler systems.

We would give this 25% reduction for the monitored fire alarm if you install **ONLY** a fire alarm as a form of mitigation to reduce the fire flow, but you don't get 25% for the fire alarm AND 50% for the automatic sprinkler systems. That has been our past interpretation of this portion of SCC 30.53A.514(3)(b).

Hope this helps and thank you for asking 😊

R. Michael Braaten, CFI, Sr. Fire Inspector
Snohomish County Planning and Development Services
3000 Rockefeller Ave. M/S 604 Everett, WA 98201
Office: 425-262-2659 Mobile: 425-754-5296
Fax: 425-388-3872 Michael.Braaten@snoco.org

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From: Zachary Crum <zcrum@bcradesign.com>
Sent: Wednesday, January 5, 2022 9:38 AM
To: Braaten, Michael <Michael.Braaten@co.snohomish.wa.us>
Cc: Jim Wolch <jwolch@bcradesign.com>; Michael Barene <MBarene@bcradesign.com>
Subject: File No: 211 117783 - Fire Flow Calculation Confirmation

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Hi Michael,

Following up on our preapplication meeting for the subject file number. We'd like to confirm our understanding of the County's fire code based upon our building size, construction type, and specific requirements.

Here is our interpretation of SCC 30.53A and the 2018 IFC Appendix B105:

Construction Type: V-B
Gross Floor Area: 15,416 sf per building

Per 2018 IFC Appendix B105 Table B105.1(2) the required fire flow is 3,250 GPM with a duration of 3 hours.

The project will be protected with a NFPA 13 sprinkler system and therefore fire flow can be reduce by 50% to 1,625 GPM and duration can be reduced to 2 hours per SCC 30.53A.538 Table B105.2.

The project is outside the UGA and can therefore further reduce fire flow by 25% to 1218.75 GPM per SCC 30.53A.514.(3)(b).

Also per SCC 30.53A.514.(3)(b), we understand if the project includes a fire alarm system supervised by a UL approved fire alarm center it may be reduced by an additional 25%. This brings the flow to 914.06 GPM.

The allowable minimum fire flow for systems protected by NFPA 13 sprinkler systems is 1,000 GPM per the sub-note 'a' in the amended Table B105.2 in SCC 30.53A.538.

Therefore, the fire flow is determined to be 1000 GPM. The duration is 2 hours per Table B105.2 of SCC 30.53A.538.

Can you please review and confirm our understanding of the fire flow and duration?

Thanks!

Zachary Crum PE
ASSOCIATE
CIVIL ENGINEER

T (253) 627-4367
C (253) 222-9609

bcradesign.com

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