



TOWN OF SHERBORN

Building Department

19 Washington Street
Sherborn, MA 01770
(774) 270-5643 phone
(508) 655-7037 fax

Christopher Canney, CBO
Building Commissioner
Zoning Code Enforcement
inspector@sherbornma.org

4/4/18

Mike Newman
16 Nason Hill Lane
Sherborn, MA 01770

Re: Sprinkler Requirements for Riding Arena with Apartment

Mr. Newman,

I have reviewed the code analysis provided by Harold Cutler regarding the sprinkler system for the apartment/barn/riding arena structure at 16 Nason Hill Lane. Although Mr. Cutler's analysis provides a detailed review of the code provisions regarding accessory occupancies and their sprinkler requirements in the Massachusetts State Building Code (MSBC), I disagree with his interpretation. I stand by my previous determination that the language of the MSBC requires that the entire building be provided with an automatic sprinkler system. See below:

The proposed building is a Type 5B structure. The Occupancy classification is primarily U-Agricultural with an accessory occupancy of R3. There is a proposed 1 hour fire separation between the main occupancy and the accessory. An NFPA 13-D sprinkler system has been proposed for the R3 occupancy only.

To begin the analysis, we must look at Section 508.2 Accessory Occupancies in depth:

Section 508.2 defines Accessory Occupancies as "those occupancies that are ancillary to the main occupancy of the building or portion thereof." The proposed residential unit is intended for a live-in caretaker for the animals stabled in the barn. This use meets the definition of an accessory occupancy. The code then goes into the specific requirements for accessory occupancies:

"Section 508.2.2 Occupancy Classification. Accessory occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space."

The IBC Commentary elaborates on Section 508.2.2: “Code requirements such as means of egress, the provisions of sprinkler protections and structural load are to be determined for this occupancy as if it were the main occupancy of the building.”

The Commentary goes on to clarify: “When applying Chapter 9, many of the requirements for automatic sprinkler systems are based upon the size of the fire area in which the occupancy is located.” “By understanding the definition of a “fire area,” if there is no rated separation of the accessory occupancy from the main occupancy, the fire area will be everything between fire barriers, fire walls or exterior walls, and therefore could, and most likely will, contain both the accessory occupancy area as well as the main occupancy.”

This is fairly in line with Mr. Cutler’s assessment. Essentially, by providing a fire barrier between the R3 and U occupancy he wishes to only provide sprinklers within the R3 fire area. However, Massachusetts amends the definition of Fire Area from the base IBC definition in a substantial way:

BASE IBC - Definition of Fire Area: The aggregate floor area enclosed and bounded by fire walls, fire barriers, exterior walls or horizontal assemblies of a building. Areas of the building not provided with surrounding walls shall be included in the fire area if such areas are included within the horizontal projection of the roof or floor next above.

MA AMENDMENT - Definition of Fire Area: The aggregate area of the building regardless of subdivisions by fire barriers and horizontal assemblies.

If we apply this new definition of Fire Area to the language from the Commentary, it becomes apparent that there will be no conditions in which an accessory occupancy is able to be separated from the main occupancy into its own fire area using fire barriers or horizontal assemblies. In this one change alone, Massachusetts has established that limited scope fire sprinklers will not be permitted in new construction. If the accessory occupancy fire area requires an automatic sprinkler system, then in Massachusetts the entire building will require a sprinkler system, even if the fire area is separated from the principal occupancy by fire barriers or horizontal assemblies.

Massachusetts goes on to amend the language of Section 903.2.1 through 903.2.10 and replaces it with Table 903.2. While the base code language utilizes fire areas when determining sprinkler requirements, Massachusetts removes any mentions of fire areas from the determination and instead adds this heading to Table 903.2 “Provide automatic fire sprinkler system throughout building if one of the following conditions will exist (see Note a)” This language reinforces the idea that Massachusetts does not allow partial sprinkler installations based on occupancy. If any condition is present that requires sprinklers, the entire building will be provided with sprinklers.

Let’s now walk our way through the code regarding the proposed building at your property. We have a barn and riding arena of Occupancy Classification U – Agricultural, which is not required to have an automatic sprinkler system by Table 903.2. An accessory occupancy of Occupancy Classification R3 is also proposed. Section 508.2 tells us to look at the sprinkler requirements for an R3 use in chapter 9. Table 903.2 tells us that for any R use, the entire building must be provided with an automatic sprinkler system and directs us to look at Note A. Note A-1 tells us that for Mixed Use Buildings containing R-Uses, the sprinkler system shall be designed and

installed throughout the structure in accordance with NFPA 13. Since Accessory Occupancies (Section 508.2) fall under section heading 508 Mixed Use and Occupancies, it can be inferred that Accessory Occupancies are a type of Mixed Use and therefore Note A-1 applies. Additionally, Note A-1 requires that a full NFPA 13 system be installed throughout the structure. This is the highest grade of sprinkler system required by the MSBC, and points towards the fact that Massachusetts requires a higher level of protection for Mixed Use with Residential buildings than the base IBC requires.

For additional guidance on this matter, we can also refer to 780 CMR 102.1, which states “Where there is a conflict between a general code requirement and a specific code requirement, the specific code requirement shall be applicable. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern.” In this case, 508.2.2 requires that the provisions of the building code shall apply to each portion of the space is a general requirement, while Table 903.2 and Note A-1 are specific requirements related to these use groups. It is my determination that the more restrictive provisions of Section 903.2 Note A-1 shall apply to this project, requiring a full-building NFPA 13 sprinkler system.

You have the right to appeal my determination to the BBRS in accordance with 780 CMR Section 113.

Sincerely,

Christopher Canney, CBO