



January 31, 2018

Erin Engman
City of Tualatin
18880 SW Martinazzi Ave.
Tualatin, OR 97062

Re: AR17-0011, 22300 SW Boones Ferry Rd., Tualatin, OR 97062

Tax Lot I.D: 2S135A00700

Dear Erin,

Thank you for the opportunity to review the proposed site plan surrounding the above named development project. Tualatin Valley Fire & Rescue endorses this proposal predicated on the following criteria and conditions of approval:

FIRE APPARATUS ACCESS:

1. **FIRE APPARATUS ACCESS ROAD DISTANCE FROM BUILDINGS AND FACILITIES:** Access roads shall be within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. An approved turnaround is required if the remaining distance to an approved intersecting roadway, as measured along the fire apparatus access road, is greater than 150 feet. (OFC 503.1.1))
2. **DEAD END ROADS AND TURNAROUNDS:** Dead end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved turnaround. Diagrams of approved turnarounds are shown below: (OFC 503.2.5 & D103.1)
3. **ADDITIONAL ACCESS ROADS – COMMERCIAL/INDUSTRIAL HEIGHT:** Buildings exceeding 30 feet in height or three stories in height shall have at least two separate means of fire apparatus access. (D104.1)
4. **ADDITIONAL ACCESS ROADS – COMMERCIAL/INDUSTRIAL SQUARE FOOTAGE:** Buildings or facilities having a gross building area of more than 62,000 square feet shall have at least two approved separate means of fire apparatus access. Exception: Projects having a gross building area of up to 124,000 square feet that have a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems. (OFC D104.2)
5. **AERIAL FIRE APPARATUS ROADS:** Buildings with a vertical distance between the grade plane and the highest roof surface that exceeds 30 feet in height shall be provided with a fire apparatus access road constructed for use by aerial apparatus with an unobstructed driving surface width of not less than 26 feet. For the purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of the parapet walls, whichever is greater. Any portion of the building may be used for this measurement, provided that it is accessible to firefighters and is capable of supporting ground ladder placement. (OFC D105.1, D105.2)

- 6. **AERIAL APPARATUS OPERATIONS:** At least one of the required aerial access routes shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial access road is positioned shall be approved by the fire code official. Overhead utility and power lines shall not be located over the aerial access road or between the aerial access road and the building. (D105.3, D105.4)
- 7. **MULTIPLE ACCESS ROADS SEPARATION:** Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the area to be served (as identified by the Fire Code Official), measured in a straight line between accesses. (OFC D104.3) Exception: Buildings equipped throughout with an approved automatic fire sprinkler system (the approval of this alternate method of construction shall be accomplished in accordance with the provisions of ORS 455.610(5).
- 8. **FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE:** Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to fire hydrants (OFC D103.1)) and an unobstructed vertical clearance of not less than 13 feet 6 inches. The fire district will approve access roads of 12 feet for up to three dwelling units and accessory buildings. (OFC 503.2.1 & D103.1)
- 9. **NO PARKING SIGNS:** Where fire apparatus roadways are not of sufficient width to accommodate parked vehicles and 20 feet of unobstructed driving surface, "No Parking" signs shall be installed on one or both sides of the roadway and in turnarounds as needed. Signs shall read "NO PARKING - FIRE LANE" and shall be installed with a clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background. (OFC D103.6)
- 10. **NO PARKING:** Parking on emergency access roads shall be as follows (OFC D103.6.1-2):
 - 1. 20-26 feet road width – no parking on either side of roadway
 - 2. 26-32 feet road width – parking is allowed on one side
 - 3. Greater than 32 feet road width – parking is not restricted
- 11. **PAINTED CURBS:** Where required, fire apparatus access roadway curbs shall be painted red (or as approved) and marked "NO PARKING FIRE LANE" at 25 foot intervals. Lettering shall have a stroke of not less than one inch wide by six inches high. Lettering shall be white on red background (or as approved). (OFC 503.3)
- 12. **FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS:** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet and shall extend 20 feet before and after the point of the hydrant. (OFC D103.1)
- 13. **SURFACE AND LOAD CAPACITIES:** Fire apparatus access roads shall be of an all-weather surface that is easily distinguishable from the surrounding area and is capable of supporting not less than 12,500 pounds point load (wheel load) and 75,000 pounds live load (gross vehicle weight). Documentation from a registered engineer that the final construction is in accordance with approved plans or the requirements of the Fire Code may be requested. (OFC 503.2.3)
- 14. **TURNING RADIUS:** The inside turning radius and outside turning radius shall not be less than 28 feet and 48 feet respectively, measured from the same center point. (OFC 503.2.4 & D103.3)
- 15. **ACCESS ROAD GRADE:** Fire apparatus access roadway grades shall not exceed 12%. When fire sprinklers* are installed, a maximum grade of 15% will be allowed.

0-12%	Allowed
13-15%	Special consideration with submission of written Alternate Methods and Materials request. Ex: Automatic fire sprinkler (13-D) system* in lieu of grade.
≥16%	Special consideration on a case by case basis with submission of written Alternate Methods and Materials request Ex: Automatic fire sprinkler (13-D)

system* plus additional engineering controls in lieu of grade.**

*The approval of fire sprinklers as an alternate shall be accomplished in accordance with the provisions of ORS 455.610(5) and OAR 918-480-0100 and installed per section 903.3.1.1, 903.3.1.2, or 903.3.1.3 of the Oregon Fire Code (OFC 503.2.7 & D103.2)

** See Forest Dwelling Access section for exceptions.

16. **ANGLE OF APPROACH/GRADE FOR TURNAROUNDS:** Turnarounds shall be as flat as possible and have a maximum of 5% grade with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)
17. **ANGLE OF APPROACH/GRADE FOR INTERSECTIONS:** Intersections shall be level (maximum 5%) with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)
18. **AERIAL APPARATUS OPERATING GRADES:** Portions of aerial apparatus roads that will be used for aerial operations shall be as flat as possible. Front to rear and side to side maximum slope shall not exceed 10%.
19. **GATES:** Gates securing fire apparatus roads shall comply with all of the following (OFC D103.5, and 503.6):
 1. Minimum unobstructed width shall be not less than 20 feet (or the required roadway surface width).
 2. Gates serving three or less single-family dwellings shall be a minimum of 12 feet in width.
 3. Gates shall be set back at minimum of 30 feet from the intersecting roadway or as approved.
 4. Electric gates shall be equipped with a means for operation by fire department personnel
 5. Electric automatic gates shall comply with ASTM F 2200 and UL 325.
20. **ACCESS DURING CONSTRUCTION:** Approved fire apparatus access roadways shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. Temporary address signage shall also be provided during construction. (OFC 3309 and 3310.1)
21. **TRAFFIC CALMING DEVICES:** Shall be prohibited on fire access routes unless approved by the Fire Code Official. (OFC 503.4.1).

FIREFIGHTING WATER SUPPLIES:

22. **MUNICIPAL FIREFIGHTING WATER SUPPLY EXCEPTIONS:** The requirements for firefighting water supplies may be modified as approved by the fire code official where any of the following apply: (OFC 507.5.1 Exceptions)
 1. Buildings are equipped throughout with an approved automatic fire sprinkler system (the approval of this alternate method of construction shall be accomplished in accordance with the provisions of ORS 455.610(5)).
 2. There are not more than three Group R-3 or Group U occupancies.
23. **COMMERCIAL BUILDINGS – REQUIRED FIRE FLOW:** The minimum fire flow and flow duration for buildings other than one- and two-family dwellings shall be determined in accordance with residual pressure (OFC Table B105.2). The required fire flow for a building shall not exceed the available GPM in the water delivery system at 20 psi.
Note: OFC B106, Limiting Fire-Flow is also enforced, except for the following:
 - In areas where the water system is already developed, the maximum needed fire flow shall be either 3,000 GPM or the available flow in the system at 20 psi, whichever is greater.
 - In new developed areas, the maximum needed fire flow shall be 3,000 GPM at 20 psi.
 - Tualatin Valley Fire & Rescue does not adopt Occupancy Hazards Modifiers in section B105.4-B105.4.1
24. **FIRE FLOW WATER AVAILABILITY:** Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. Water availability information may not be required to be submitted for every project. (OFC Appendix B)

25. **WATER SUPPLY DURING CONSTRUCTION:** Approved firefighting water supplies shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. (OFC 3312.1)

FIRE HYDRANTS:

26. **FIRE HYDRANTS – COMMERCIAL BUILDINGS:** Where a portion of the building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided. (OFC 507.5.1)
- This distance may be increased to 600 feet for buildings equipped throughout with an approved automatic sprinkler system.
 - The number and distribution of fire hydrants required for commercial structure(s) is based on Table C105.1, following any fire-flow reductions allowed by section B105.3.1. Additional fire hydrants may be required due to spacing and/or section 507.5 of the Oregon Fire Code.
27. **FIRE HYDRANT NUMBER AND DISTRIBUTION:** The minimum number and distribution of fire hydrants available to a building shall not be less than that listed in Table C 105.1. (OFC Appendix C)
28. **FIRE HYDRANT(S) PLACEMENT:** (OFC C104)
- Existing hydrants in the area may be used to meet the required number of hydrants as approved. Hydrants that are up to 600 feet away from the nearest point of a subject building that is protected with fire sprinklers may contribute to the required number of hydrants. (OFC 507.5.1)
 - Hydrants that are separated from the subject building by railroad tracks shall not contribute to the required number of hydrants unless approved by the fire code official.
 - Hydrants that are separated from the subject building by divided highways or freeways shall not contribute to the required number of hydrants. Heavily traveled collector streets may be considered when approved by the fire code official.
 - Hydrants that are accessible only by a bridge shall be acceptable to contribute to the required number of hydrants only if approved by the fire code official.
29. **PRIVATE FIRE HYDRANT IDENTIFICATION:** Private fire hydrants shall be painted red in color. Exception: Private fire hydrants within the City of Tualatin shall be yellow in color. (OFC 507)
30. **FIRE HYDRANT DISTANCE FROM AN ACCESS ROAD:** Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway unless approved by the fire code official. (OFC C102.1)
31. **REFLECTIVE HYDRANT MARKERS:** Fire hydrant locations shall be identified by the installation of blue reflective markers. They shall be located adjacent and to the side of the center line of the access roadway that the fire hydrant is located on. In the case that there is no center line, then assume a center line and place the reflectors accordingly. (OFC 507)
32. **PHYSICAL PROTECTION:** Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided. (OFC 507.5.6 & OFC 312)
33. **CLEAR SPACE AROUND FIRE HYDRANTS:** A 3 foot clear space shall be provided around the circumference of fire hydrants. (OFC 507.5.5)
34. **FIRE DEPARTMENT CONNECTION (FDC) LOCATIONS:** FDCs shall be located within 100 feet of a fire hydrant (or as approved). Hydrants and FDC's shall be located on the same side of the fire apparatus access roadway or drive aisle, fully visible, and recognizable from the street or nearest point of the fire department vehicle access or as otherwise approved. (OFC 912.2.1 & NFPA 13)
- Fire department connections (FDCs) shall normally be located remotely and outside of the fall-line of the building when required. FDCs may be mounted on the building they serve, when approved.

- FDCs shall be plumbed on the system side of the check valve when sprinklers are served by underground lines also serving private fire hydrants.

BUILDING ACCESS AND FIRE SERVICE FEATURES

35. **EMERGENCY RESPONDER RADIO COVERAGE:** In new buildings where the design reduces the level of radio coverage for public safety communications systems below minimum performance levels, a distributed antenna system, signal booster, or other method approved by TVF&R and Washington County Consolidated Communications Agency shall be provided. (OSSC 915.1; OFC 510.1)
 - a. Emergency responder radio system testing and/or system installation is required for this building. Please contact me (using my contact info below) for further information including an alternate means of compliance that is available. If the alternate method is preferred, it must be requested from TVF&R prior to issuance of building permit.
36. **KNOX BOX:** A Knox Box for building access may be required for structures and gates. See Appendix C for further information and detail on required installations. Order via www.tvfr.com or contact TVF&R for assistance and instructions regarding installation and placement. (OFC 506.1)
37. **UTILITY IDENTIFICATION:** Rooms containing controls to fire suppression and detection equipment shall be identified as "Fire Control Room." Signage shall have letters with a minimum of 4 inches high with a minimum stroke width of 1/2 inch, and be plainly legible, and contrast with its background. (OFC 509.1)
38. **PREMISES IDENTIFICATION:** New and existing buildings shall have approved address numbers; building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property, including monument signs. These numbers shall contrast with their background. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 1/2 inch. (OFC 505.1)

If you have questions or need further clarification, please feel free to contact me at (503) 649-8577.

Sincerely,



Ty Darby
Deputy Fire Marshal

Cc: file