

Umatilla County Fire District #1



New Construction Fire Code Applications Guide for Commercial and Multi-Family Development

This guide is intended to assist in the application of the fire code in all areas served by Umatilla County Fire District #1.

Mail

Umatilla County Fire District #1
320 South Street
Hermiston, OR 97838
541-567-8822

Prevention Division

Umatilla County Fire District #1
280 West Coe Avenue
Stanfield, OR 97875
541-667-5134

AUTHORITY AND SCOPE

Umatilla County Fire District #1 enforces the Oregon Fire Code under the authority granted in ORS 476.060. The current Fire Code is the 2025 Oregon Fire Code (based on the 2024 International Fire Code published by the International Code Council).

Umatilla County Fire District #1 has prepared this guide to provide information on the Oregon Fire Code. This guide does not create or replace code provisions. The reader is cautioned that the guidance detailed in this guide may or may not apply to their specific situation, and that Umatilla County Fire District #1 retains final authority to determine compliance.

****This guide applies to structures constructed under the Oregon Structural Specialty Code (OSSC).**

****See the UCFD1 New Construction Fire Code Applications Guide for One and Two-Family Dwellings for structures constructed under the Oregon Residential Specialty Code (ORSC).**

LOCAL DEVELOPMENT CODES

Check the local city or county development code to determine public roadway standards.

DISPUTE RESOLUTION PROCESS

Any person seeking an adjustment or variance to the Fire Code, or who believes they have been adversely affected by an action of the District or its officers in interpreting or enforcing the Fire Code, may file an appeal (ORS 479.180).

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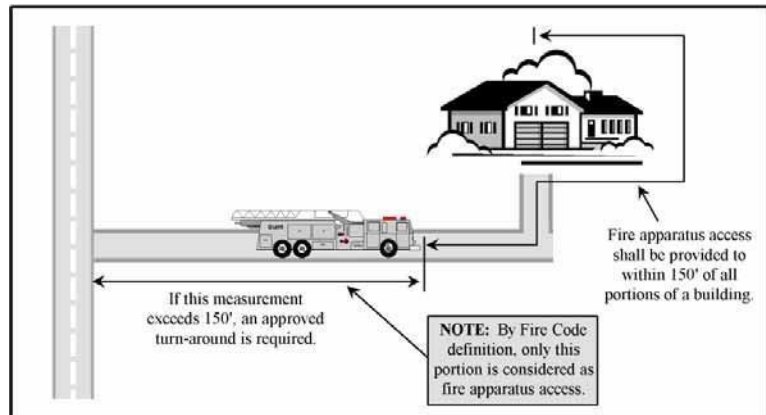
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Fire Apparatus Access

FIRE APPARATUS ACCESS ROADS: Access roads shall be provided for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction.

- **Exception:** Approved agricultural and equine structures complying with ORS 455.315 are not required to have fire apparatus access roads. (See Appendix C)

Access roads for additions to existing commercial structures may be modified by the fire official in accordance with OFC 503.1.1 to account for the pre-existing conditions.



Access roads are not required to be modified for commercial buildings that undergo a change in occupancy, change in use, or conversion from agricultural or equine exempt to non-exempt unless there is a change to the structure's square footage or building footprint. (OFC 503.1.1)

FIRE ACCESS ROADS FOR NON-BUILDING FACILITIES: Fire apparatus access is required for uses at fixed locations that are deemed as being a "facility" by the Fire Marshal. A "facility" includes exterior storage, processing or filling areas for flammable and combustible substances and hazardous materials; piers and wharves; recreational vehicle, mobile home and manufactured housing parks, sales, and storage lots; permanent outdoor assembly venues for gatherings exceeding 1,000 persons; and similar uses. Access to facilities may be modified by the Fire Marshal in accordance with OFC 104.9 based on the specific use, frequency, location, and other site conditions. (OFC 503.1.1)

FIRE ACCESS ROAD DISTANCE FROM BUILDINGS: The access shall extend to 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. (OFC 503.1.1)

FIRE ACCESS ROAD EXCEPTIONS: The requirements for fire apparatus access may be modified as approved by the Fire Marshal where any of the following apply: (OFC 503.1.1 Exceptions)

- 1) Buildings are equipped throughout with an approved automatic fire sprinkler system in accordance with sections 903.3.1.1, 903.3.1.2 or 903.3.3.1.3.
- 2) Fire apparatus access roads cannot be installed because of location on property, topography, waterways, non-negotiable grades, or other similar conditions, and an approved alternative means of fire protection is provided.
- 3) There are not more than (2) two group U occupancies.

DEAD ENDS AND ROADS IN EXCESS OF 150 FEET (TURNAROUNDS): Dead end fire apparatus access roads or 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 & Figure D103.1)

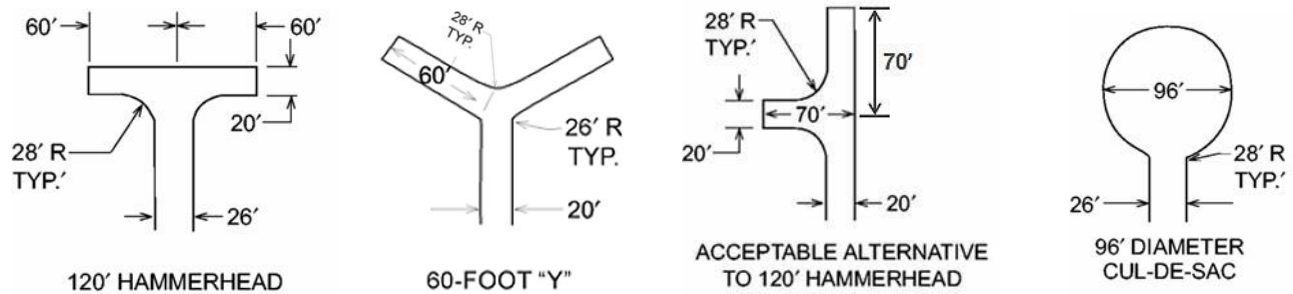


Figure D103.1

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)

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 3307)

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)

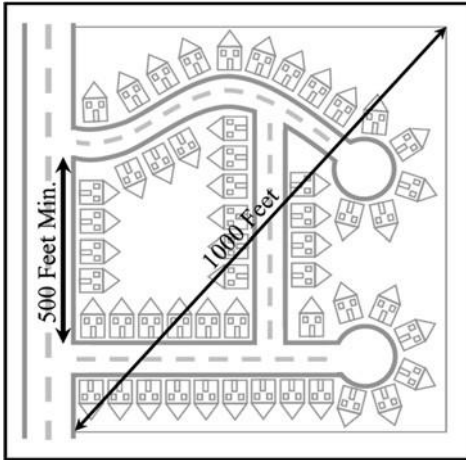
TURNOUTS: Where access roads are less than 20 feet wide and exceed 400 feet in length, turnouts 10 feet wide and 30 feet long may be required and will be determined on a case-by-case basis. (OFC 503.2.2)

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)

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)

ADDITIONAL ACCESS ROADS – MULTI-FAMILY RESIDENTIAL DEVELOPMENTS: Projects having more than 100 dwelling units shall be provided with two separate and approved fire apparatus access roads. Exception: Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with an approved automatic sprinkler system in accordance with section 903.3.1.1, 903.3.1.2. Projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus roads regardless of whether they are equipped with an approved automatic sprinkler system (OFC D106).

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 Marshal), measured in a straight line between accesses. (OFC D104.3)



ACCESS ROAD GRADE: Fire apparatus access roadway grades shall not exceed 14% (OFC 503.2.7 & D103.2).

ANGLE OF APPROACH/DEPARTURE 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 503.2.8).

ANGLE OF APPROACH/DEPARTURE GRADE FOR INTERSECTIONS: Intersections shall be level (maximum 5%) with the exception of crowning for water run-off (OFC 503.2.8).

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% (OFC 503.2.7).

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) and an unobstructed vertical clearance of not less than 13 feet 6 inches (OFC 503.2.1 & D103.1).

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 Figure D103.1).



Figure D103.1

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).

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 Marshal. 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).

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)

BRIDGES: Private bridges shall be designed and constructed in accordance with the State of Oregon Department of Transportation and American Association of State Highway and Transportation Officials Standards *Standard Specification for Highway Bridges (AASHTO LRFD)*. A building permit shall be obtained for the construction of the bridge if required by the building official of the jurisdiction where the bridge is to be built. The design engineer shall prepare a special inspection and structural observation program for approval by the building official. The design engineer shall give, in writing; final approval of the bridge to the fire district after construction is completed. Maintenance of the bridge shall be the responsibility of the party or parties that use the bridge for access to their property. The fire district may at any time, for due cause, ask that a registered engineer inspect the bridge for structural stability and soundness at the expense of the property owner(s) the bridge serves. Vehicle load limits shall be posted at both entrances to bridges when required by the Fire Marshal. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, approved barriers, approved signs, or both shall be installed and maintained when required by the Fire Marshal. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, approved barriers, approved signs, or both shall be installed and maintained when required by the Fire Marshal (OFC 503.2.6).

GATES: Gates securing fire apparatus roads shall comply with all of the following (OFC D103.5, OFC 503.6) (See Appendix G):

1. Minimum unobstructed width shall be not less than 20 feet (or the required roadway surface width).
2. Gates shall be set back at minimum of 30 feet from the intersecting roadway or as approved.
3. Electric gates shall be equipped with a means for operation by fire department personnel.
4. Electric automatic gates shall comply with ASTM F 2200 and UL 325.
5. When the access gate needs to be locked an expendable long shank padlock which can be cut off with a bolt cutter shall be installed. A Knox padlock is not required.

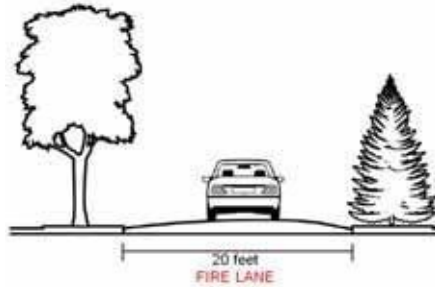
TRAFFIC CALMING DEVICES: Shall be prohibited on fire access routes unless approved by the Fire Marshal (OFC 503.4.1).

NO PARKING: Parking on emergency access roads shall be as follows (OFC D103.6.1-2):

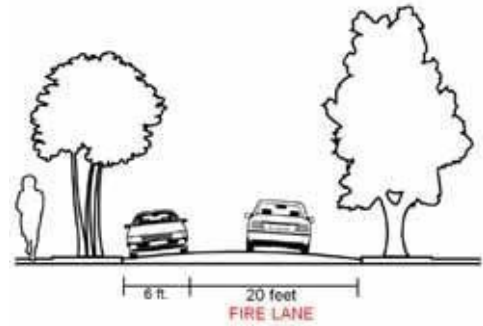
1. 20-26 feet road width – no parking on either side of roadway
2. 26-32 feet road width – parking is allowed on one side.
3. Greater than 32 feet road width – parking is not restricted.

Note: For specific widths and parking allowances, contact the local municipality.

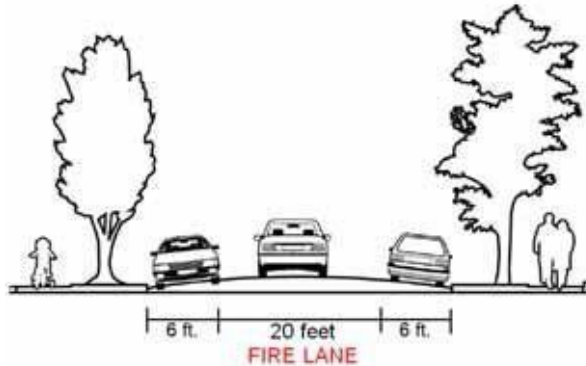
Parking prohibited on either side:



Parking prohibited on one side only:



Parking permitted on both sides:



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).



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) (Ref. Appendix E).

Building Access and Fire Service Features

KNOX BOX: A Knox Box for building access may be required for structures and gates. See Appendix B for further information and detail on required installations. Contact UCFD1 for assistance and instructions regarding installation and placement (OFC 506.1) (See Appendix B).

NEW FIRE PROTECTION SYSTEMS: Records for all newly installed fire protection systems including final approvals shall be entered into The Compliance Engine Database for the Fire District (OFC 110.3).

FIRE PROTECTION EQUIPMENT 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).

FIRE ALARM VERIFICATION: Supervisory Stations shall not retransmit alarm signals to Public Fire Service Dispatch and Communication Centers until an attempt is made to verify the accuracy of the alarm signal at the protected premises. The verification attempt shall be made within 90 seconds of the receipt of the alarm signal. If the protected premises is contacted and can confirm that no fire or emergency condition exists, then the alarm signal shall not be retransmitted. In all other situations, the alarm signal shall be retransmitted immediately (OFC 907.6).

- **Exception:** Water flow and manual pull station alarms shall be immediately retransmitted without verification.

EMERGENCY RESPONDER COMMUNICATIONS ENHANCEMENT SYSTEM: All new buildings, as described in OFC 510.1, shall have approved radio coverage for emergency responders within the building based on existing coverage levels of the public safety communication system utilized by the jurisdiction, measured at the exterior of the buildings. This section shall not require improvement of the existing public communication systems. The radio communications system used by Umatilla County Fire District #1 is owned and operated by Umatilla Morrow Radio Data District. If an in-building system is to be installed it will require both the OSSC Form 918 and forms from the Umatilla Morrow Radio Data District (See Appendices I, J, K and L).

POST INDICATOR VALVES: Where fire protection sprinkler system riser rooms are accessible directly from an exterior door Post Indicator Valves will not be required.

FIRE DEPARTMENT CONNECTION (FDC) LOCATIONS: FDCs shall be located in accordance with the following:

- The FDC shall be located so that when in-use, the fire apparatus and hose connections to the FDC and to the supply hydrant will not obstruct access to the building for other fire apparatus. (OFC 912.2)
- FDC shall be located on street side of building or facing approved apparatus access roads. (OFC 912.2.1)
- The FDC shall be within 100 feet of street or fire apparatus access road. (OFC 912.2)
- The FDC shall be within 50 feet of a fire hydrant. (OFC 912.2)
- The FDC shall be wall-mounted on the building it serves or be remotely located (OFC 912.2).

Firefighting Water Supplies

COMMERCIAL BUILDINGS – REQUIRED FIRE FLOW: The minimum fire flow and flow duration shall be determined in accordance with 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 (OFC B105.3 and Appendix A of this document).

Note: OFC B106, Limiting Fire-Flow is also enforced, except for the following:

- The maximum needed fire flow shall be 3,000 GPM at 20 psi.
- Umatilla County Fire District #1 does not adopt Occupancy Hazards Modifiers.

**TABLE B105.2
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS**

| FIRE-FLOW CALCULATION AREA (square feet) | | | | | FIRE-FLOW (gallons per minute) ^b | FLOW DURATION (hours) |
|--|--------------------------------|------------------------------|--------------------------------|-----------------------|--|--------------------------|
| Type IA and IB ^a | Type IIA and IIIA ^a | Type IV and V-A ^a | Type IIB and IIIB ^a | Type V-B ^a | | |
| 0-22,700 | 0-12,700 | 0-8,200 | 0-5,900 | 0-3,600 | 1,500 | 2 |
| 22,701-30,200 | 12,701-17,000 | 8,201-10,900 | 5,901-7,900 | 3,601-4,800 | 1,750 | |
| 30,201-38,700 | 17,001-21,800 | 10,901-12,900 | 7,901-9,800 | 4,801-6,200 | 2,000 | |
| 38,701-48,300 | 21,801-24,200 | 12,901-17,400 | 9,801-12,600 | 6,201-7,700 | 2,250 | |
| 48,301-59,000 | 24,201-33,200 | 17,401-21,300 | 12,601-15,400 | 7,701-9,400 | 2,500 | |
| 59,001-70,900 | 33,201-39,700 | 21,301-25,500 | 15,401-18,400 | 9,401-11,300 | 2,750 | 3 |
| 70,901-83,700 | 39,701-47,100 | 25,501-30,100 | 18,401-21,800 | 11,301-13,400 | 3,000 | |
| 83,701-97,700 | 47,101-54,900 | 30,101-35,200 | 21,801-25,900 | 13,401-15,600 | 3,250 | |
| 97,701-112,700 | 54,901-63,400 | 35,201-40,600 | 25,901-29,300 | 15,601-18,000 | 3,500 | |
| 112,701-128,700 | 63,401-72,400 | 40,601-46,400 | 29,301-33,500 | 18,001-20,600 | 3,750 | |
| 128,701-145,900 | 72,401-82,100 | 46,401-52,500 | 33,501-37,900 | 20,601-23,300 | 4,000 | 4 |
| 145,901-164,200 | 82,101-92,400 | 52,501-59,100 | 37,901-42,700 | 23,301-26,300 | 4,250 | |
| 164,201-183,400 | 92,401-103,100 | 59,101-66,000 | 42,701-47,700 | 26,301-29,300 | 4,500 | |
| 183,401-203,700 | 103,101-114,600 | 66,001-73,300 | 47,701-53,000 | 29,301-32,600 | 4,750 | |
| 203,701-225,200 | 114,601-126,700 | 73,301-81,100 | 53,001-58,600 | 32,601-36,000 | 5,000 | |
| 225,201-247,700 | 126,701-139,400 | 81,101-89,200 | 58,601-65,400 | 36,001-39,600 | 5,250 | |
| 247,701-271,200 | 139,401-152,600 | 89,201-97,700 | 65,401-70,600 | 39,601-43,400 | 5,500 | |
| 271,201-295,900 | 152,601-166,500 | 97,701-106,500 | 70,601-77,000 | 43,401-47,400 | 5,750 | |
| 295,901-Greater | 166,501-Greater | 106,501-115,800 | 77,001-83,700 | 47,401-51,500 | 6,000 | |
| — | — | 115,801-125,500 | 83,701-90,600 | 51,501-55,700 | 6,250 | |
| — | — | 125,501-135,500 | 90,601-97,900 | 55,701-60,200 | 6,500 | |
| — | — | 135,501-145,800 | 97,901-106,800 | 60,201-64,800 | 6,750 | |
| — | — | 145,801-156,700 | 106,801-113,200 | 64,801-69,600 | 7,000 | |
| — | — | 156,701-167,900 | 113,201-121,300 | 69,601-74,600 | 7,250 | |
| — | — | 167,901-179,400 | 121,301-129,600 | 74,601-79,800 | 7,500 | |
| — | — | 179,401-191,400 | 129,601-138,300 | 79,801-85,100 | 7,750 | |
| — | — | 191,401-Greater | 138,301-Greater | 85,101-Greater | 8,000 | |

For SI: 1 square foot = 0.0929 m², 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. Types of construction are based on the *International Building Code*.

b. Measured at 20 psi residual pressure.

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 507 and OFC Appendix B).

RURAL COMMERCIAL BUILDINGS - REQUIRED FIRE FLOW: Commercial structures in rural and suburban areas where adequate and reliable water supply systems DO NOT exist will require a firefighting water supply system sized in accordance with NFPA Standard 1142 (or an approved alternate) capable of delivering a minimum of 500 gpm at 20 psi through an approved fire hydrant or connection in an approved location (OFC 507, B103.2, B105, and B107).

- **Exception:** Buildings less than 40,000 cubic feet do not require an onsite firefighting water supply (OFC B103.1).

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 3307).

Fire Hydrants

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 C102.1, following any fire-flow reductions allowed by section B105.3.2. Additional fire hydrants may be required due to spacing and/or section 507.5.1 of the Oregon Fire Code.

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 102.1 (OFC Appendix C).

**TABLE C102.1
NUMBER AND DISTRIBUTION OF FIRE HYDRANTS^h**

| FIRE-FLOW REQUIREMENT (gpm) | MINIMUM NUMBER OF HYDRANTS | AVERAGE SPACING BETWEEN HYDRANTS ^{a, b, c} (feet) | MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT ^d |
|-----------------------------|----------------------------|--|--|
| 1,750 or less | 1 | 500 | 250 |
| 1751-2,250 | 2 | 450 | 225 |
| 2,251-2,750 | 3 | 450 | 225 |
| 2,751-3,250 | 3 | 400 | 225 |
| 3,251-4,000 | 4 | 350 | 210 |
| 4,001-5,000 | 5 | 300 | 180 |
| 5,001-5,500 | 6 | 300 | 180 |
| 5,501-6,000 | 6 | 250 | 150 |
| 6,001-7,000 | 7 | 250 | 150 |
| 7,001 or more | 8 or more ^e | 200 | 120 |

Table Footnotes:

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

- Reduce by 100 feet for dead-end streets or roads.
- Where streets are provided with median dividers which can be crossed by firefighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.
- Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
- Reduce by 50 feet for dead-end streets or roads.
- One hydrant for each 1,000 gallons per minute or fraction thereof.
- A 50-percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 of the International Fire Code.
- A 25-percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.2 or 903.3.3.1.3 of the International Fire Code or Section P2904 of the International Residential Code.
- The fire code official is authorized to modify the location, number and distribution of fire hydrants based on site-specific constraints and hazards.

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 Marshal.
- 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 Marshal.
- 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 Marshal.

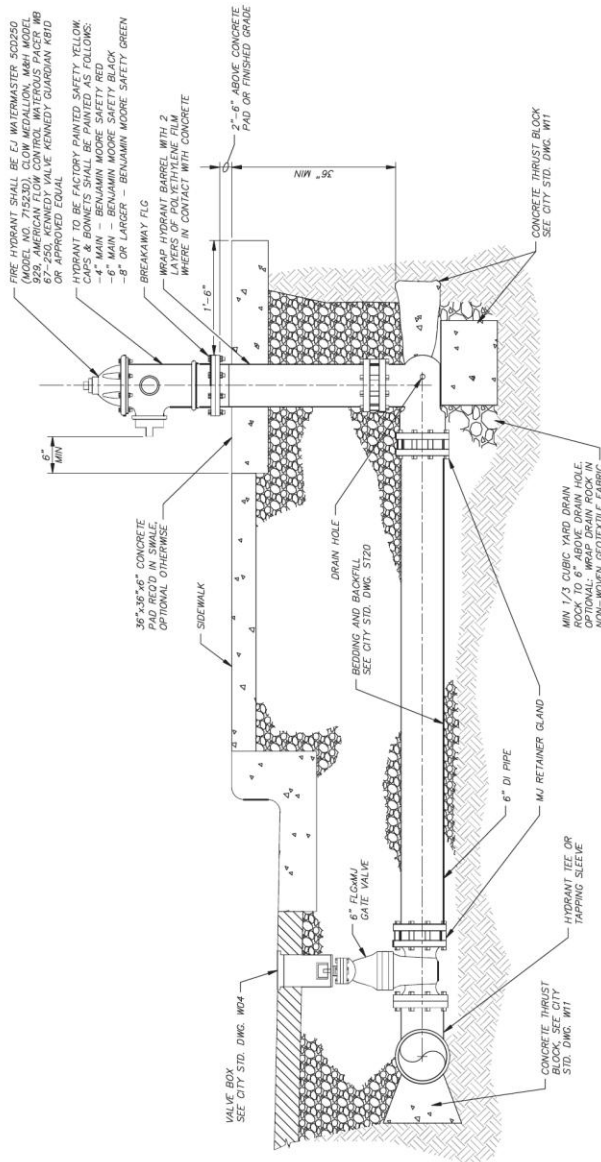
FIRE HYDRANT DISTANCE FROM AN ACCESS ROAD: Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway unless approved by the Fire Marshal (OFC C102.1 h).

PRIVATE FIRE HYDRANTS: Private fire hydrants shall be flow tested annually. Flow tests shall be documented and reported in The Compliance Engine database for the fire district (OFC 507.5.3 & 110.3). Private fire hydrants not connected to a municipal water system shall follow the Fire Hydrant Standard Drawing for the City of Hermiston and Fire Hydrant Discharge requirements of this document.

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).

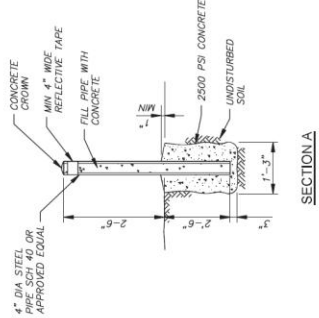
CLEAR SPACE AROUND FIRE HYDRANTS: A 3-foot clear space shall be provided around the circumference of fire hydrants (OFC 507.5.5).

FIRE HYDRANT DISCHARGE: Fire hydrant discharge ports shall include two (2) 2.5-inch discharges with NST thread and one (1) 5-inch Storz connector.



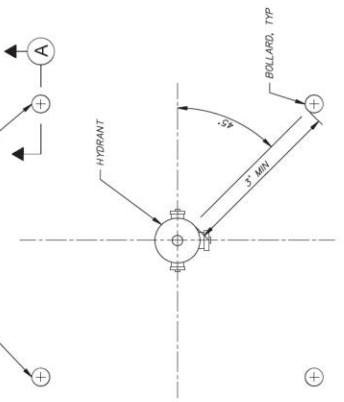
HYDRANT ASSEMBLY
NTS

- NOTES**
1. WHEN PIPE IS SHORTER THAN 18", NO JOINTS ALLOWED. USE MECHANICAL JOINT RETAINER GLANDS, TWO 3/4" GALVANIZED TIE RODS AND WEDGES IN LIEU OF THRUST BLOCKS FOR INSTALLATION LESS THAN 18" LONG. COAT TIE RODS WITH 2 COATS OF COAL TAR EPOXY.
 2. WHEN PIPE IS LONGER THAN 18" RETAINER GLANDS NOT REQUIRED.
 3. THERE SHALL BE A MINIMUM OF 3" HORIZONTAL CLEARANCE AROUND HYDRANT.
 4. WHEN PLACED ADJACENT TO CURB, HYDRANT PORT SHALL BE 24" FROM FACE OF CURB.
 5. CONCRETE THRUST BLOCKS SHALL BE CONSTRUCTED PER CITY STD. DWG. W11. DO NOT BLOCK DRAIN HOLES.
 6. EXTENSIONS REQUIRED FOR HYDRANT SYSTEMS SHALL BE INSTALLED TO THE MANUFACTURER'S SPECIFICATIONS.
 7. HYDRANT PUMPER PORT SHALL FACE DIRECTION OF ACCESS.
 8. SET HYDRANT PLUMB IN ALL DIRECTIONS.



SECTION A

OPTIONAL TO BE INSTALLED IF PAVEMENT ABUTS HYDRANT ON ALL 4 SIDES



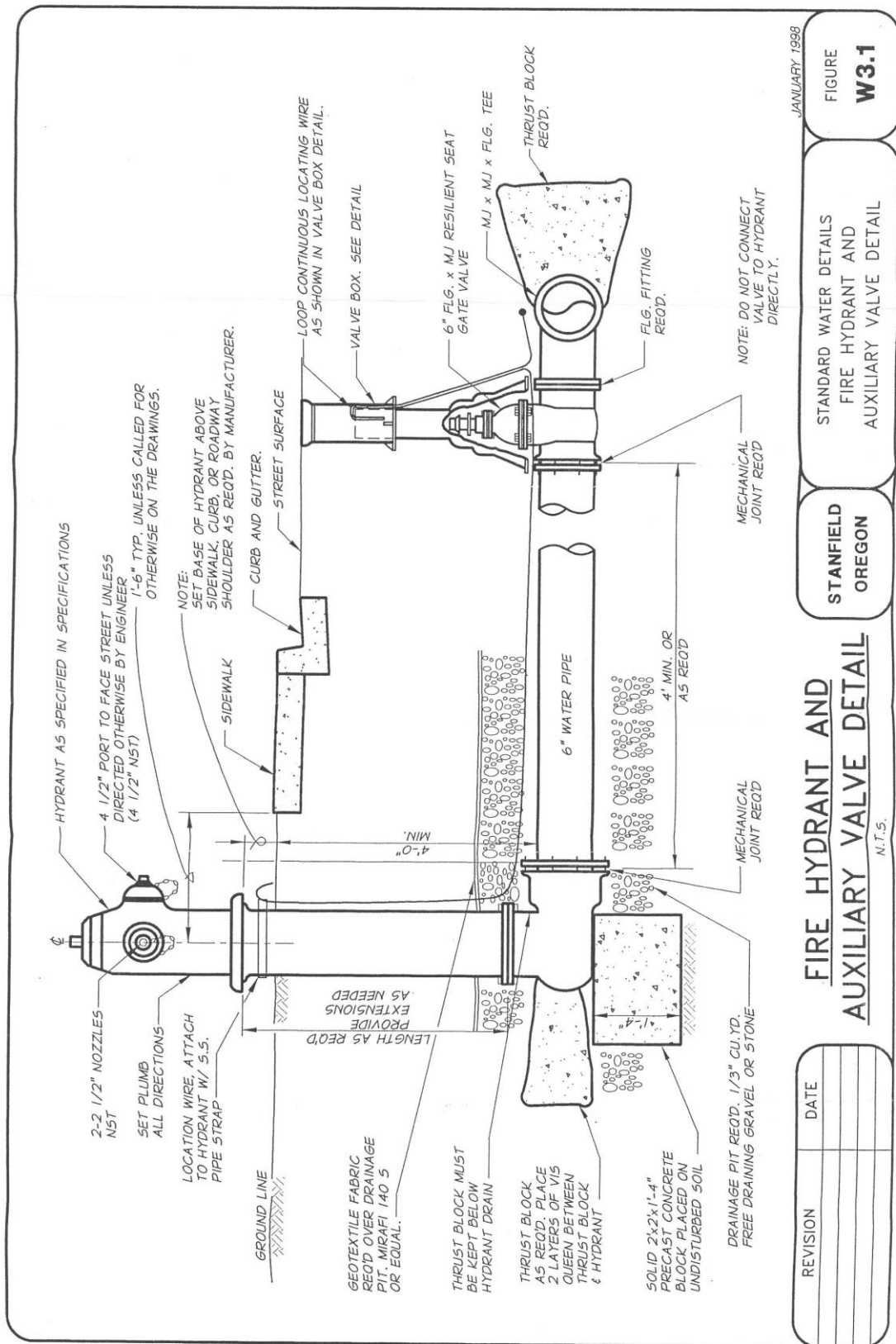
PLAN

- BOLLARD NOTES**
1. WHERE CONCRETE CURBING IS NOT INSTALLED, BOLLARDS (2 EA MIN) SHALL BE PLACED AT THE END OF THE PAVING PAVED SURFACE.
 2. BOLLARDS SHALL BE PLUMB.
 3. PAINT ONLY AFTER SURFACE IS FREE OF RUST, OIL, AND GREASE. PRIMER AND TWO SAFETY YELLOW (BENJAMIN MOORE OR APPROVED EQUAL) COATS OF PAINT SHALL BE APPLIED TO METAL PIPE FOLLOWED BY THE REFLECTION TAPE AS SHOWN.

BOLLARD DETAIL
NTS


HERMISTON, OREGON
 STANDARD DRAWINGS
FIRE HYDRANT ASSEMBLY

FIGURE W07



JANUARY, 1988

FIGURE
W3.1

STANDARD WATER DETAILS
FIRE HYDRANT AND
AUXILIARY VALVE DETAIL

**FIRE HYDRANT AND
AUXILIARY VALVE DETAIL**
N.T.S.

| REVISION | DATE |
|----------|------|
| | |
| | |
| | |

Construction/Demolition Site Safety

Fire Safety During Construction or Demolition: These requirements seek to maintain minimum levels of fire protection, limit fire spread, establish the appropriate operation of equipment and promote prompt response to fire emergencies. There is an emphasis on owner responsibility and the need to create and implement a site safety plan. Features regulated include fire protection systems, firefighter access to the site and building, water supply, means of egress, hazardous materials storage and use, temporary heating equipment, other ignition sources, and Firewatch (Appendix H).

Application: OFC Chapter 33, and NFPA 241 provisions for construction and demolition site safety are required for construction or demolition of structures 25,000 square feet and larger, two or more stories in height, or when multiple buildings are proposed for the site.

Site Safety Plan Responsibility: The owner or authorized agent shall be responsible for the development, implementation, and maintenance of an approved site-specific fire prevention and safety plan. This plan shall be approved and in place prior to materials arriving at the site. This plan shall be updated throughout all phases and duration of work conducted at the site. A site safety director shall also be designated for projects meeting the application requirements who shall have the authority to enforce the provisions of the plan.

Site Safety Plan Components: The site safety plan shall address the following items and be submitted for review and approval by the Fire Marshal. The plan shall also be updated or modified as needed to ensure that the current site information is available.

1. Name and contact information of site safety director.
2. Documentation of the training of the site safety director and Firewatch personnel.
3. Procedures for reporting emergencies.
4. Fire department vehicle access routes.
5. Location of fire protection equipment, including portable fire extinguishers, standpipes, fire department connections and fire hydrants.
6. Smoking and cooking policies, designated areas to be used where approved, and signage locations.
7. Location and safety considerations for temporary heating equipment.
8. Hot work permit plan.
9. Plans for controlling combustible waste material.
10. Locations and methods for storage and use of flammable and combustible liquids and other hazardous materials.
11. Provisions for site security and where required, for a fire watch.
12. Changes that affect this plan.
13. Other site-specific information required by the fire code official.

Daily Inspections: The site safety director shall be responsible for conducting daily inspections and compiling required documentation. This documentation shall be provided on request of fire district personnel. Inspections/Information to include as a minimum:

1. Any contractors entering the site to perform hot work each day have been instructed in the hot work safety requirements for the site, and hot work is performed only in areas approved by the site safety director.

2. Temporary heating equipment is maintained away from combustible materials in accordance with the equipment manufacturer's instructions.
3. Combustible debris, rubbish and waste materials are removed from the building in areas where work is not being performed.
4. Temporary wiring does not have exposed conductors.
5. Flammable liquids and other hazardous materials are stored in locations that have been approved by the site safety director when not involved in work that is being performed.
6. Fire apparatus access roads required identified and approved in the plan are maintained clear of obstructions that reduce the width of the usable roadway to less than 20 feet.
7. Fire hydrants are clearly visible from access roads and are not obstructed.
8. The location of fire department connections to standpipe and in-service automatic sprinkler systems are clearly identifiable from the access road and such connections are not obstructed.
9. Standpipe systems are in service and continuous to the highest work floor.
10. Portable fire extinguishers are available in the required locations.
11. Where a fire watch is required, fire watch records required are up to date (See Appendix H).

Suggested Site Safety Director Training: <https://pdhsafety.com/course/construction-site-fire-safety-manager/>

Suggested Firewatch Training: <https://www.nationaloshafoundation.com/fire-watch-training/>

References

2025 Oregon Fire Code (OFC)

National Fire Protection Association (NFPA) (See OFC Chapter 80)

Oregon Department of Transportation (ODOT) RD-700

City of Hermiston Public Works Standards

City of Stanfield Public Works Standards

City of Umatilla Public Works Standards

New Construction Fire Code Application Guide

Appendix A

COMMERCIAL RURAL WATER SUPPLIES

PURPOSE: To define the requirements for firefighting water supply for commercial occupancies in rural areas outside of adequate and reliable water systems.

SCOPE: This guide shall apply to all areas served by Umatilla County Fire District #1.

CODE REFERENCES: 2025 OFC Chapter 5 and Appendix B.

Rural firefighting water supply volume will be established using NFPA 1142.

Tanks and supply systems for Private Water Supplies

Tanks to store firefighting water supplies will comply with NFPA Standard 22. Piping systems will comply with NFPA Standard 24. Fire pumps will comply with NFPA Standard 20.

Swimming pools, ponds, streams, lakes, rivers, pressurized irrigation, and similar open or seasonal water sources may be considered for firefighting water supplies. Approved fire department access, including vehicles and equipment, shall be provided and maintained with the proposed water source. Pressurized or gravity fed systems shall be provided that are capable of flowing a minimum of 500 gpm at 20 PSI residual, from an approved connection or fire hydrant in an approved location.

Fire hydrants shall be equipped with one large diameter (4 ½ inch) port with 5-inch Storz Connector and two 2 ½ inch ports.

All rural water supplies will be fitted with a permanent sign of adequate lettering stating, "Firefighting Water Supply" and shall include the number of gallons available. The sign will be mounted so that it is not less than 2 feet above the driving surface. The sign will be not less than 24 inches wide by 10 inches tall. The sign will be white background with black or red lettering. Lettering will be no less than 6 inches tall by ¾ inch wide stroke.

The center of the large diameter port on the fire hydrant shall be approximately 18 inches above the plane of the access roadway finished grade.

The fire hydrant shall be located no further than fifteen (15) feet from the approved fire department access road. A clear space of no less than 3 feet will be maintained around the hydrant so that it is in clear view and easily accessible for use. The driving surface leading to the hydrant will be kept clear at all times of all materials and vegetation.

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Appendix B

KEY BOXES

PURPOSE: To define the requirements for installation of key boxes.

SCOPE: This shall apply to all areas served by Umatilla County Fire District #1.

CODE REFERENCES: 2025 OFC Section 506, UCFD1 Policy 706.

Building access shall be provided in accordance with Oregon Fire Code Section 506, Key Boxes.

Umatilla County Fire District #1 requires key boxes on buildings that meet certain parameters. When key boxes are required by this policy, Knox brand key boxes shall be used.

Required Installation - Key boxes shall be installed on buildings and structures when:

- An elevator is installed.
- Equipped with an automatic fire extinguishing system.
- Equipped with a fire alarm system.
- Access is restricted due to security arrangements.
- Other circumstances as noted in plans review.

EXCEPTION: Buildings and structures open and supervised twenty-four hours a day, seven days a week or constantly attended.

Installation Details - Key boxes shall be installed in an approved location; normally adjacent to primary entrance. The key box shall not be more than six feet (6') above the walking surface unless approved by the Chief or authorized representative.

EXCEPTION: In multi-tenant buildings (each with their own outside entrance) the key box shall be located at the door that will best and most easily gain access to automatic sprinkler system controls alarm system controls, etc.

Contents - Key boxes typically may contain the following keys and critical information necessary to gain access:

- Building or structure keys
- Gate key
- Alarm systems keys and instructions
- Elevator door key
- Elevator recall key
- Automatic fire extinguishing system control valve keys
- Hazardous materials safety data sheets

Multiple sets of keys when required
Emergency personnel contact numbers
Electronic access cards

Required Labeling - All keys shall be labeled as to their use, i.e., main entrance, alarm control panel, sprinkler room door, etc.

Key Box Size - The size of the key box shall be sufficient to contain all necessary keys and/or equipment.

New Construction Fire Code Application Guide

Appendix C

AGRICULTURAL AND EQUINE FACILITIES

PURPOSE: To define the requirements for access and firefighting water supplies for exempt agricultural buildings and equine facilities.

SCOPE: This shall apply to all areas served by Umatilla County Fire District #1.

CODE REFERENCES: Oregon Revised Statute 455.315

For the purposes of this guide, fire apparatus access and firefighting water supplies for agricultural buildings and equine facilities, as defined in ORS 455.315, shall be as follows:

1. Agricultural buildings and equine facilities, as defined in ORS 455.315, shall be exempt from the fire apparatus access and firefighting water supply requirements contained in the Oregon Fire Code.
2. Umatilla County Fire District #1 encourages the installation of fire sprinkler systems in agricultural buildings and equine facilities.
3. Umatilla County Fire District #1 encourages the installation of fire apparatus access roadways and firefighting water supplies.

New Construction Fire Code Application Guide

Appendix D

ALTERNATE MATERIAL AND METHODS REQUESTS

PURPOSE: This guideline is intended to provide directions for submitting requests for use of alternate materials and methods (AM&Ms) in accordance with the 2025 Oregon Fire Code (OFC), section 104.9.

SCOPE: Requests for alternate materials and methods shall be evaluated by UCFD1 staff to ensure the proposed design, use, or operation satisfactorily complies with the intent of the OFC and that the method of work performed or operation is, for the purpose intended, at least equivalent to that prescribed in the OFC in quality, strength, effectiveness, fire resistance, durability, or safety

CODE REFERENCES: 2025 OFC Chapter 1, Section 104.9

SUBMITTAL REQUIREMENTS

1. General Requirements

The applicant shall provide the following information, in writing, with the plans necessary to evaluate the project:

- A. Identify relevant project information:
 - 1) The project name, address, contact person, and phone number.
 - 2) The owner's name, address, and phone number.
 - 3) Other specific information identifying the project may be required (e.g., development permit type, tract, and lot number, etc.).
- B. Identify the code section or reference of the specific requirement for which the modification is requested (e.g., OFC Appendix D, Section D 103.2, Grade exceeding 10%).
- C. Detail the alternate fire protection measures that will comprise the AM&M proposal, and how they establish equivalency to those prescribed in the code.

The report shall address UCFD1 concerns and the issues as identified above.

2. Engineering Evaluation

If the Fire Chief, or established designee, deems an engineering evaluation necessary, it shall be performed and reported by a firm or individual that has been approved by UCFD1. All costs associated with the preparation of the AM&M shall be borne by the applicant.

3. Submittal Process

- A. Submit both the AM&M request letter and other supporting information to the City/County building department and directly to UCFD1.
- B. AM&M requests will be evaluated by UCFD1 plan review staff for equivalency to adopted codes and standards. All such requests are evaluated on a case-by-case basis. Approval of the request is based upon several factors, including, but not limited to, the level of equivalency achieved (as described under "Scope" in this guideline), the effect of the AM&M on fire and emergency response, and site conditions. All evaluations will be performed in the context of the specific project being reviewed.
- C. If the AM&M proposal provides an equivalent level of protection considering all related conditions pertaining to the project, UCFD1 will issue a response letter granting approval. Such approval may be conditional upon implementation of additional requirements listed in the AM&M response letter that were not part of the original AM&M proposal. Approval is granted only for the specific project under review, and the conditions for approval shall not be construed as applicable to any other project.

- D. In the event that the AM&M proposal does not provide an equivalent level of protection, the request will be denied, and a response letter will be issued to this effect. Should the applicant submit a different AM&M request for this project or choose to revise and resubmit the previously denied request, additional AM&M fees must be paid. To facilitate the evaluation process, include any previously denied AM&M proposals when submitting a revised AM&M request.
- E. Upon completion of the evaluation, the AM&M response letter and a copy of the applicant's AM&M proposal will be available to be picked up at a Division office or mailed back to the applicant's representative. Should evaluation of the AM&M proposal require time and resources beyond the standard allotted for this activity, additional time and materials fees *may* be applied. These additional fees must be paid when the applicant picks up the AM&M response letter.
- F. The approved AM&M request and response letters must be blue lined on the plans prior to plan approval. Retain a copy of the AM&M proposal and response at the project site at all times. This documentation may be required for review by UCFD1 inspection staff.

New Construction Fire Code Application Guide

Appendix E

NO PARKING FIRE LANE CURB DETAIL

PURPOSE: To define the requirements of marking fire lane curbing.

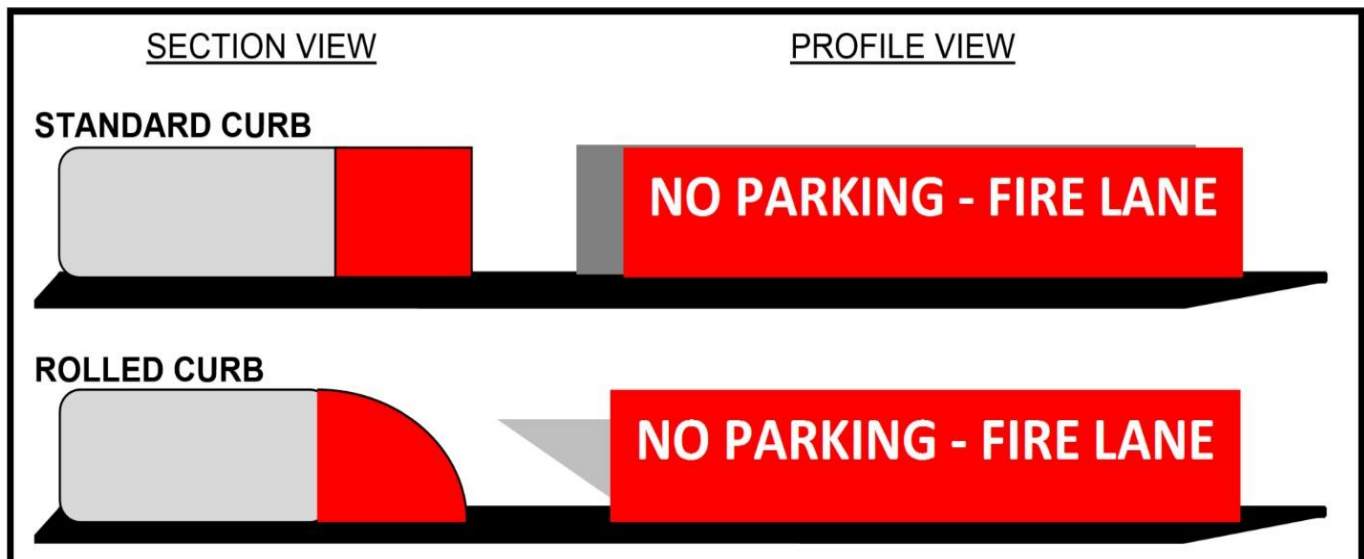
SCOPE: This shall apply to all areas served by Umatilla County Fire District #1.

CODE REFERENCES: 2025 OFC Chapter 5, Section 503.3

No Parking Fire Lane Curb Detail

The OFC does not provide guidance with regards to the color or marking style of fire lane curbing. The requirement of Umatilla County Fire District #1 is as follows:

- Curb paint shall be red for the entire length of the fire lane.
- “NO PARKING FIRE LANE” shall be stenciled with a 3 ½ inch minimum height block in white lettering with a minimum of ½ inch stroke width.
- The markings shall be spaced at 25-foot intervals.



New Construction Fire Code Application Guide

Appendix F MOUNTABLE CURB DETAIL

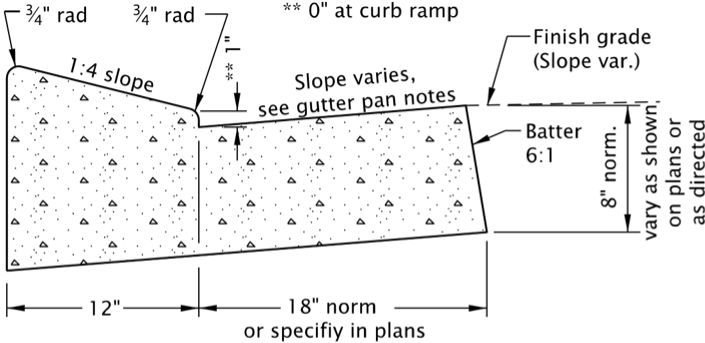
PURPOSE: To define the requirements of a mountable curb for fire access.

SCOPE: This policy shall apply to all areas served by Umatilla County Fire District #1.

CODE REFERENCES: 2025 OFC Chapter 5, Section 503.2.8

Mountable Curb Detail per Oregon Department of Transportation RD-700.

The OFC does not provide guidance with regards to the use of mountable curbs for fire access roads. Mountable curbs will be approved on a case-by-case basis. Where a local jurisdiction has a design detail that meets or exceeds this detail the detail of the local jurisdiction shall apply. Umatilla County Fire District #1 references ODOT RD-700 as follows:



LOW PROFILE MOUNTABLE CURB AND GUTTER
(Where shown on plans)

ODOT Standard

New Construction Fire Code Application Guide

Appendix G

FIRE DEPARTMENT ACCESS, POWERED GATES

PURPOSE: To identify the requirements for fire department access box for override switch on powered access gates.

SCOPE: This policy shall apply to all areas served by Umatilla County Fire District #1.

CODE REFERENCES: 503.6 OFC 2025

Fire Department Access for powered gates.

Power-operated gates that obstruct required firefighting access shall be equipped with an approved means of emergency operation as required per OFC 503.6 and the following language:

SECURITY GATE OVERRIDE DEVICE REQUIREMENTS

The override device shall consist of the following:

1. FIRE DEPARTMENT OPERATION: The fire department shall be able to open the gate during an emergency. A manual switch or Knox-key mechanism for operating the gate shall be protected with a weatherproof enclosure box. The enclosure shall be secured with either a long-shanked padlock that can be cut with bolt cutters, or with Knox Padlock. The design shall be approved by UCFD1 prior to installation.

2. PLACEMENT OF FIRE DEPARTMENT ACCESS BOX

The fire department box shall be installed on a support pillar or post adjacent to the gate. The box must be visible from approach and marked "FIRE DEPARTMENT" or similar.

3. GATE OPERATION

When the fire department switch is activated, the gate/gates shall fully open without delay.

New Construction Fire Code Application Guide

Appendix H

Firewatch Sample Forms

-Notice

-Log

FIRE WATCH NOTICE

Date: ____ / ____ / ____ Time: _____

Business Name: _____

Location Address: _____

Type of Impairment: _____

BY ORDER OF THE FIRE MARSHAL

_____(Responsible Person / Impairment Coordinator) is hereby notified that you are responsible to conduct a fire watch throughout the building or property.

Failure to follow this order will make you subject to prosecution. if a fire or injury results from a failure to comply with this order, you may be liable for damages to persons or property under ORS 479.190. Failure to repair a building may result in closure of the building in accordance with ORS 479.170. In addition, see violations and abatement of unsafe buildings in Oregon Fire Code, Sections 113, 114 and 901.7.

Fire Inspector: _____ Email: _____ Phone: _____

REQUIREMENTS

Definition. A fire watch is a temporary measure intended to ensure continuous and systematic surveillance of a building or portion thereof by one or more qualified individuals for the purpose of identifying and controlling fire hazards, detecting early signs of unwanted fire, raising an alarm of fire and notifying the fire department.

Dedicated person(s). At least one dedicated person is required to conduct patrols. Additional personnel shall be added as necessary to meet the interval requirements of Section 1901.1.3. If applicable, at the beginning of each shift, all personnel shall be updated on the fire watch status, shall review the fire evacuation plan and understand their role. All personnel shall meet the following criteria and be:

1. At least 18 years of age.
2. Competent to identify fire hazards.
3. Knowledgeable of the street address and capable of effectively communicating the need for a fire department response.
4. Physically capable of performing patrols and self-preservation.
5. Familiar with the structure and the emergency plan for the structure.
6. Knowledgeable in the location and use of portable fire extinguishers and manual fire alarm boxes.

Patrol intervals. The structure or portions thereof shall be checked for fire hazards every 15 minutes or as required by the fire code official.

Notification. At least one method of communication to initiate a fire department response is required. Fire watch personnel shall have a cellular phone or other means of communication acceptable to the fire code official. In the event of a fire, personnel shall alert occupants; take other appropriate actions; and if provided, use a manual fire alarm box to activate the building notification system.

Activity log sheet. An activity log sheet is required to document the activities of the fire watch. The log shall list the name of the person(s) who conducted the fire watch, time of each activity and description of activity performed. See Figure 1901.2B.

Termination. A fire watch shall continue until the initiating circumstances have been abated and the fire code official has approved its termination.

ADDITIONAL REQUIREMENTS or COMMENTS:

New Construction Fire Code Application Guide

Appendix I

EMERGENCY RESPONDER COMMUNICATIONS ENHANCEMENT SYSTEMS

PURPOSE: To define the requirements for application of OFC 510 Emergency Radio Responder Coverage.

SCOPE: This shall apply to all areas served by Umatilla County Fire District #1.

CODE REFERENCES: 2025 OFC Sections 510 and 907.2.13.2, 2025 OSSC Sections 403.4.5 and 918.

EMERGENCY RADIO RESPONDER COVERAGE

All new buildings, as described in OFC 510.1.1, shall have approved radio coverage for emergency responders within the building based on existing coverage levels of the public safety communication system.

The following building types shall require Emergency Radio Coverage testing prior to Certificate of Occupancy (OFC 510.1.1):

1. Any building with one or more basements or below grade building levels
2. Any underground building
3. Any building more than five stories in height
4. Any building 50,000 square feet or larger

Testing: Documentation of testing in accordance with OFC 510.5.2 and 510.5.3 shall be provided to UCFD1 prior to issuance of Certificate-of-Occupancy.

Testing shall take place after installation of all roofing systems; exterior walls, glazing and siding/cladding; and all permanent interiors walls, partitions, ceilings, and glazing.

If the building fails the OFC 510.4.1 test, a distributed antenna system with FCC certified signal booster or other approved system shall be installed to achieve the required level of radio coverage. Plans and specifications for ERCES systems must be approved by UCFD1, Umatilla Morrow Radio Data District, and the applicable Building Department prior to installation.

Mobile Emergency Radio Responder Coverage (MERRC):

Building applicants may request to participate in the MERRC program in lieu of testing and installing a BDA/DAS system by completing the application (available from UCFD1). Building projects are evaluated for the MERRC alternative on an individual basis. Participation must be applied for and approved before a building permit is issued (See Appendix I).

Umatilla Morrow Radio Data District (UMRDD) Approval:

FCC rules require anyone who has installed or will be installing a device that amplifies and rebroadcasts a public safety frequency must have an agreement with the public safety radio system owner. UMRDD is the owner of the emergency radio frequency used by UCFD1 and therefore must approve any amplification of these frequencies. UMRDD has specific criteria that the system must be met and a legal agreement that parties must sign. Contact the Manager at Umatilla Morrow Radio Data District (UMRDD), 541-966-3774 for forms and information.

Technical Criteria: Please contact the Manager at Umatilla Morrow Radio Data District (UMRDD), 541-966-3774 for information per OFC 510.4.2.2 related to frequencies used, radio sites, etc. necessary for modeling or designing radio coverage or amplification.

Survivability: Pathways serving Emergency Responder Radio System elements such as wiring, cables, boosters, and conduit shall be protected as specified in Oregon Structural Specialty Code Section 918.

Wired Communication Systems: Wired communication systems in accordance with OFC 907.2.13.2 are not allowed in lieu of an approved emergency radio communication system.

Plan Submittal, Inspection and Acceptance Testing (when a system is required): A permit for installation of a radio signal enhancement system shall be obtained from the applicable building department. A final acceptance test report per OFC 510.5.4 shall be provided to UCFD1 prior to issuance of Certificate- of- Occupancy. Final approval from UMRDD is required prior to placing any system into service.

Coordination with Building Department / OSSC: UCFD1 determines when an ERCES system is required and has final authority for all requirements and testing specified in OFC Section 510. An ERCES system may only be waived if the fire code official makes a determination.

When an ERCES system is required by UCFD1, then the applicable building department enforces OSSC 918, which primarily sets requirements for the survivability of certain circuits and components. OSSC does not regulate the equipment itself, radio frequencies, performance, testing, or any other items in OFC 510.

It is important that applicants installing an ERCES system coordinate with the applicable building department in addition to UCFD1 and UMRDD.

New Construction Fire Code Application Guide

Appendix J

MOBILE EMERGENCY RESPONDER COMMUNICATIONS

Subject: Emergency Responder Radio Coverage

Reference: 2025 Oregon Fire Code (OFC) Section 510 and 2025 Oregon Structural Specialty Code (OSSC) Sections 403.4.5 and 918.

Definitions: OFC Section 202

Approved- Acceptable to the Fire Code Official

Fire Code Official- The Fire Chief or other designated authority charged with the administration and enforcement of the code, or a duly authorized representative.

Background: Section 104.9 of the 2025 OFC gives the Fire Code Official the authority to grant modification to the 2025 OFC whenever there are practical difficulties involved in carrying out the provisions of the code. This modification must still meet the intent and purpose of the 2025 OFC, and cannot lessen health, life, and fire safety requirements.

Section 510 of the 2025 OFC addresses Emergency Responder Communications Enhancement Systems in new buildings. This section outlines minimum criteria for evaluation of radio signals that must be met inside of newly constructed buildings. When signal strength falls below the parameters in OFC 510.4, an in-building emergency responder radio coverage system is required to be designed and installed in the building. These systems are at the expense of the building owner and are required to be tested and maintained in operating condition at all times including upgrades and changes to the radio system.

Section 510.1.1 of the 2025 OFC provides the scope of Emergency Responder Communications Enhancement Systems for the following buildings and locations:

1. Any building with one or more basement or below-grade building levels.
2. Any underground building.
3. Any building more than five stories in height.
4. Any building 50,000 square feet in size or larger.
5. Any building that, through performance testing, does not meet the requirements of Section 510.

Consideration: These systems are costly to install and require continuous testing, maintenance, and modification, which is an on-going expense for the building owner. There may also be additional construction costs associated with the installation of this type of system to provide protection (survivability) in the event of a fire (Oregon Structural Specialty Code Section 918).

These systems, when installed, only provide the required Emergency Responder Radio Coverage for that building.

Advances in technology for the radio system used by Umatilla County Fire District #1 have made these in-building radio systems potentially cost prohibitive for building owners to install and maintain creating a practical difficulty for the installation of these fixed systems.

Approved Alternative: As an approved alternative to the fixed building systems required by Section 510 of the 2025 Oregon Fire Code, a one-time fee may be imposed for new construction that does not meet the technical requirements for emergency responder radio communications.

This one-time fee would be paid to Umatilla County Fire District #1 and placed in a capitol fund for communications equipment to assist the fire district in purchasing equipment as outlined in the Emergency Responder Radio Coverage System and associated Fee Ordinance.

New Construction Fire Code Application Guide

Appendix K

**OREGON STRUCTURAL SPECIALTY CODE FORM OSSC 918
EMERGENCY RESPONDER COMMUNICATIONS ENHANCEMENT
SYSTEM**



Emergency Responder Communication Coverage Form

State of Oregon - Form OSSC 918

This form provides the minimum required information to comply with the Emergency Responder Communication Coverage (ERCC) requirements in Sections 403.4.5 and 918 of the Oregon Structural Specialty Code (OSSC), and shall be provided to the building official at the time of building permit application where a proposed new building meets any one of the following criteria:

1. Any building with one or more basements or below-grade building levels (*OSSC 918.1*).
2. Any underground building (*OSSC 918.1*).
3. Any building more than five stories in height (*OSSC 918.1*).
4. Any building 50,000 square feet in size or larger (*OSSC 918.1*).

| Part I Project information <i>(to be completed by permit applicant or representative)</i> | | |
|---|--|--------------------------|
| Applicant or representative name: | | Phone number: |
| Project name: | | |
| Address / location: | | |
| City: | State: Oregon | ZIP: |
| Building height: | Construction type: | |
| Number of floors below grade: | Number of floors above grade: | Building square footage: |
| Acknowledgement: I understand, unless exempted by the building official, this project is required to comply with the construction requirements for ERCC systems, and that a building permit cannot be issued without this form being properly completed. If the project is an approved deferred submittal, only Parts I and II need to be completed at the time of permit application. I also understand that the fire official may waive the ERCC requirements. I have consulted with the local fire official. | | |
| Applicant / Representative: | Signature: | Date: |
| Part II Deferred submittal <i>(signed by local fire official, permit applicant and building official)</i> | | |
| By signature below, the designated parties acknowledge that ERCC compliance documentation for this project is being deferred (see OSSC 107.3.4.1). Per OSSC Section 918.2, only Parts I and II need to initially be completed. Parts III through VII of this form must be completed as necessary to demonstrate compliance and be submitted to the building official when appropriate in the deferred submittal process. | | |
| Applicant / Representative: | | Date: |
| Building Official: | | Date: |
| Local Fire Official / Jurisdiction: | Signature: | Date: |
| Part III Local fire official requirement <i>(to be completed by the Fire Code Official)</i> | | |
| Does the local fire official require Emergency Responder Communication Coverage? | | |
| Yes <input type="checkbox"/> | If yes, complete Part IV technical criteria. | |
| No <input type="checkbox"/> | If no, indicate the reason below and return this form to the building official for approval. | |
| | <input type="checkbox"/> A wired communication system is being installed. | |
| | Other (specify): | |
| Local Fire Official / Jurisdiction: | Signature: | Date: |

Part IV Technical criteria *(to be completed by the local fire official)*

The following technical criteria are provided to aid in design where equipment is necessary to achieve compliance. This part may not contain all necessary information and additional information may be required. This information is required as a condition of building permit issuance, but it is not adopted or made part of the state building code. If part of a deferred submittal, this section must be completed when appropriate in the process.

Technologies used / frequencies / channels required:

FCC license holder for emergency communication frequency:

Contact person / phone number:

Location and technical specifications of agency antennas available at:

FCC frequency holder special requirements for equipment:

Repeater type(s):

Minimum distance to closest repeater:

Effective radiated power of donor site:

Specific standards for maximum spurious oscillation levels:

Any other specific criteria:

Anticipated frequency changes:

Specific testing requirements:

Legal agreement required with FCC license holder? Yes No

Plan and specification submittal required? Yes No

Additional local information is attached. Yes No

Part V System design *(to be completed by the applicant and FCC license holder)*

Systems must comply with local fire service requirements, Section 510 of the Oregon Fire Code, FCC rules, and all conditions of FCC license holder use agreements. This information is required as a condition of building permit issuance, but it is not adopted or made part of the state building code.

System Type: DAS with signal booster: Other:

Signal booster make / model:

Donor antenna type:

Proposed frequency range or number of channels:

Part VI Building official approval

Where Emergency Responder Communication Coverage is required by the fire official, the building official regulates the ERCC construction components through the state building code. Only a building official may waive the construction requirements after a determination by the local fire official that ERCC is not necessary for the building.

| | | |
|------------------------|-----------|------|
| Building official name | Signature | Date |
|------------------------|-----------|------|

New Construction Fire Code Application Guide

Appendix L

**UMATILLA MORROW RADIO DATA DISTRICT EMERGENCY
RESPONDER COMMUNICATIONS ENHANCEMENT SYSTEM**



UMATILLA MORROW RADIO & DATA DISTRICT

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1 Definitions

AGC - Automatic Gain Control.

AHJ - Authority Having Jurisdiction.

BDA – Bi-Directional Amplifier receives, amplifies, and broadcasts radio signal back and forth from a radio site allowing re-transmission using a DAS inside a building.

DAQ - Delivered Audio Quality.

DAS – Distributed Antenna System are the antennas located throughout a building that connect to a BDA allowing two-way communication using an external radio network.

dB: A method for specifying the ratio of two signals, which is equal to 10 times the log of the ratio of the power of the two signals.

dBd: Power ratio in decibels of a signal compared to a reference dipole (defined as 2.15 dBi).

dBi: Power ratio in decibels of a signal compared to an isotropic radiator.

dBm: Power ratio in decibels of the measured power referenced to one milliwatt.

DL – Downlink is the link from the radio system to the end user.

ERCES – Emergency Radio Communication Enhancement System, also referred to as BDA/DAS, or DAS.

ERP - Effective Radiated Power.

FCC Class A - A signal booster is deemed to be a Class A signal booster if none of its passbands exceed 75kHz.

FCC GROL - General Radiotelephone Operator License.

OFC 510 – Oregon Fire Code 510

OSSC (2022) - Oregon Structural Specialty Code Section 918 - Emergency Responder Communication Coverage

P25 Phase 2 - A suite of standards focusing on interoperable radio communications. Phase 2 is time-division multiple access (TDMA).

UMRDD – Umatilla Morrow Radio and Data District. The P25 radio system operator for Umatilla and Morrow County's

TDI - Time Domain Interference.

UL - Uplink is the link between the end user and the radio system.



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2 Design Approval Process

2.1 Purpose

UMRDD has instituted design review and approval process for in-building ERCES (Emergency Radio Communication Enhancement Systems, also referred to as BDA/DAS or DAS) operating within their district to:

- Integrate radio operator approval with fire AHJ approval processes.
- Verify adherence to UMRDD technical criteria and the uplink validation process (See the appendix for links to supplemental documentation).
- Reduce risk to property developers and ERCES vendors when commissioning ERCES.
- Protect the integrity of the radio network from interference sources
- Early identification and intercept of interference sources as the result of unapproved equipment or design decisions

2.2 Limitation of Authority

Successful completion of the UMRDD design approval process does not preclude or guarantee approval by the local fire code authority, building authority, or any other authority having jurisdiction.

2.3 UMRDD ERCES Design Review and UL Validation Fees

UMRDD has implemented an ERCES Design Review and Uplink Validation cost recovery fee for all ERCES applications in UMRDD. This fee is payable by the ERCES vendor making application for the installation or modification of any ERCES in the UMRDD coverage areas. The fee is in 2 parts:

Part 1 – The Design Review Fee billed per hour.

Part 2 – The Uplink Validation Fee billed per hour.

Total fees for each of Part 1 and Part 2, are dependent on the number of hours UMRDD personnel use to process the design approval and perform the uplink validation testing. Typical fees will range between \$900-\$1500.

2.4 Request to UMRDD for a New ERCES and Donor Site

When a vendor is engaged with a property owner/developer to install a new ERCES in the Umatilla and Morrow Radio and Data District the Vendor must submit a request to UMRDD to have a donor site identified for the new installation. All requests are made via email to

ERCES@umoregonradio.gov. The following information must be provided in the request:



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- Civic Address for the property
- Property Owner/Manager Contact information
 - Name
 - Address
 - Phone Number
 - Email
- Installer/Vendor Contact Information
 - Name
 - Address
 - Phone Number
 - Email
- Lat/Long of the donor antenna location
- Height above ground for the donor antenna

When the request is received, UMRDD will:

- Create a record for the property.
- Identify an appropriate donor site and provide the vendor with the following information:
 - Donor Site Name
 - Distance to the donor site
 - Donor antenna azimuth
 - Donor Site ERP

Any changes to the donor antenna location must be highlighted in the design submission document. If during the installation process a clear path to the donor site is unavailable, vendors must immediately contact UMRDD to request an alternate donor site.

2.5 UMRDD ERCES Design Submittal Process

ERCES design submittals (refer to section 3) are submitted to UMRDD via email to ERCES@umregonradio.gov.

Upon receipt, UMRDD will:

- Review the submittal for conformance to this document as well as the most current UMRDD technical criteria document.
- Document the review using the UMRDD ERCES Design Approval Checklist.
- Report status and send a copy of the UMRDD ERCES Design Approval Checklist to the submitter.



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- Deficiencies, if any, will be documented in the checklist. Requests for modification of design documentation will be made via email to the submitter.
- Approval of design documentation will be communicated via a signed checklist sent by email to the submitter.

2.6 Design Changes After Approval

Reapproval is required for any design changes materially impacting RF propagation or system performance. Resubmittals should be made as a new request by email to ERCES@umoregonradio.gov. A copy of the previously granted approval must be included. Examples of changes requiring reapproval include but are not limited to:

- Substitution of active (powered) ERCES components.
- Relocation of the donor antenna.
- Orientation of the donor antenna to a different donor site.
- Relocation of a ERCES service antenna more than 10 feet.
- Link budget adjustment due to changes in directional couplers, splitters, tappers, or the addition or removal of more than 50' of coaxial cable.

2.7 Next Steps Following Design Approval

Following receipt of design approval, ERCES vendors will:

- Install ERCES.
- Obtain signatures from property owner/developer on rebroadcast agreement.
- Perform and submit the Uplink Validation checklist.
- Schedule Uplink Validation with UMRDD technical staff.
- Demonstrate Uplink Validation performance.

Note that design approval from UMRDD is not a substitute for building permits that may be required.

Upon satisfactory completion, UMRDD will execute a rebroadcast agreement with the property owner.

3 Design Submittal Requirements

3.1 Transmittals

Transmittals will be submitted via email to ERCES@umoregonradio.gov and must include a point of contact for response to this request.



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Documents must be submitted in a flattened (non-editable) PDF format using a secure cloud storage service such as Box, OneDrive, Dropbox, Google Drive, etc.

Submittals must include the following:

- Complete contact information as specified in section 2.3
- ERCES designer qualifications (NICET In-Building Public Safety Communications (IB-PSC) Certified).
- ERCES construction floor plans.
- ERCES donor antenna information (make, model, RF parameters, etc.).
- ERCES one-line diagram.
- ERCES equipment list.
- ERCES equipment cut sheets for each component.
- ERCES performance calculations.
- ERCES coverage predictions using industry recognized software like iBwave.
- A fully executed UMRDD Rebroadcast agreement.
- Copy of form OSSC 918 – Emergency Responder Communication Coverage Form

All documentation must comply with the following requirements:

- Documents should follow ASME or ISO standards and must be of sufficient quality and free of extraneous markings to be legible.
- Color is permitted but documents must be legible in grayscale.

4 Transmittal Details

4.1 ERCES Designer Qualifications

In addition to the FCC GROL and a certificate issued by the manufacturer of the equipment being installed, UMRDD highly recommends that ERCES designers have a NICET In-Building Public Safety Communications (IB-PSC) Certification.

Pass/Fail Criteria:

- Proof of certification must be included.

4.2 ERCES Construction Floor Plans

All drawings:



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- Must match the same orientation.
- Documentation must follow ASME or ISO drafting standards and be legible to distinguish items. Hand drawn floor plans will not be accepted.
- Must show the location with unique labels of each cable, splitter, coupler, tapper, antenna, BDA, fiber-fed remote, and donor antenna.

Pass/Fail Criteria:

- Drawings must conform to requirements.

4.3 ERCES Donor Antenna Information

UMRDD will specify the donor site to be used. If, for any reason, there are questions regarding donor site selection, please contact UMRDD at ERCES@umoregonradio.gov.

ERCES donor information must be submitted as one of the construction floor plans, conforming to the requirements in 4.2. When considering a ERCES and radio coverage, please consider the following from the UMRDD technical criteria:

ERCES donor information shall include the following:

- Google Earth elevation profile between building location and the UMRDD specified donor site.
- Straight-line distance to the donor site.
- Donor line of sight shall be unobstructed, or explanation shall be provided as to why obstructed line of sight is the best choice.
- Google Earth 1/4 mile surroundings view with donor azimuth indicated.
- Indication on roof floor plan of proposed donor location.

Pass/Fail Criteria:

- All items must be present.
- Donor line of sight shall be unobstructed, or an explanation shall be provided as to why obstructed line of sight is the best choice.

4.4 ERCES One-Line Diagram

ERCES one-line diagram(s) must be submitted as one of the construction floor plans, conforming to the requirements in 4.2.

ERCES one-line diagram(s) must show interconnection of all system components displayed on a building elevation.



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Pass/Fail Criteria

- All items must be present.

4.5 ERCES Equipment List

ERCES equipment list shall include the following components if present:

- BDA.
- Fiber head-end.
- Fiber-fed remote.
- Fiber jumpers and connectors.
- Coaxial cable.
- Donor antenna.
- ERCES/Service antennas.
- Lightning arrestor.
- Splitters/Couplers/Tappers.
- External filters.

For each component in the equipment list, provide:

- Manufacturer.
- Model number.
- Options or Licenses as appropriate.
- Quantity.
- Unit (if length of cable).

Pass/Fail Criteria

- All items must be present.

4.6 ERCES Equipment Cut Sheets

Manufacturer information sheets shall be provided for each item on the ERCES equipment list. Any effort to minimize sales literature and only provide RF transmission equipment specifications is appreciated.



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Conformance to the UMRDD ERCES Technical Criteria will be demonstrated through the equipment cut sheets. Mark up documents with boxes or arrows to describe how these are met.

Pass/Fail Criteria:

- All items must be present.

4.7 Downlink Performance Calculations

Provide the following table:

| Est. DL Output | | Add green columns, subtract red columns | | | |
|----------------|------|---|-------------------------------------|-------------|----------------|
| Donor ERP | FSPL | Donor ant. gain (in dBd) | Cable + ins. loss to BDA donor port | BDA DL gain | DL PPCH output |
| | | | | | |

Use DL power per channel output for your coverage prediction mapping

Pass/Fail Criteria:

- All items must be present
- DL PPCH must be used to generate coverage prediction mapping

4.8 Uplink Performance Calculations

ERCES link budgeting and propagation modeling should be configured for signal level at hip height (3 ft) and with 15dB of body loss.

Provide the following table for the 3 lowest transmission locations served by different antennas, and 1 highest transmission while measuring with a resolution bandwidth of 10 kHz:

| Lowest UL Receive | | Add green columns, subtract red columns | | | | | | |
|-------------------|--------------|---|-----------------------------------|-------------|----------------------|--------------------------|----------------------------------|--------------------------|
| Antenna ID | Portable ERP | Body loss + loss from portable to ant. | Cable + ins. loss to BDA DAS port | BDA UL gain | Donor insertion loss | Donor ant. gain (in dBd) | Loss to donor (include RX delta) | Expected receive at site |
| | | | | | | | | |
| | | | | | | | | |

| Highest UL Receive | | Add green columns, subtract red columns | | | | | | |
|--------------------|--------------|---|-----------------------------------|-------------|----------------------|--------------------------|----------------------------------|--------------------------|
| Antenna ID | Portable ERP | Body loss + loss from portable to ant. | Cable + ins. loss to BDA DAS port | BDA UL gain | Donor insertion loss | Donor ant. gain (in dBd) | Loss to donor (include RX delta) | Expected receive at site |
| | | | | | | | | |

Indicate on coverage predictions the expected 3 lowest uplink transmission power locations and 1 highest power location.



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Provide a statement of how the combination of BDA channelized AGC and dynamic receive range at the broadcast site between -75dBm and -100dBm will satisfy best- and worst-case transmissions.

Pass/Fail Criteria:

- All items must be present
 - Calculations table
 - Arrows or clouds on coverage predictions identifying the 1 highest and 3 lowest UL locations
 - Statement of means to achieve signal between -75dBm and -100dBm at donor site
 - Dynamic range of uplink transmissions, accounting for AGC, must arrive at donor site within -75dBm and -100dBm.
 - Max ERP must be $\leq +37$ dBm per channel

4.9 ERCES Coverage Predictions

- Conforming to the requirements in 4.2, provide coverage predictions using industry standard tools like iBwave for each floor and area receiving ERCES coverage on individual floorplans.
- Provide a legend for the prediction color code, including the percent of floor area receiving at least the indicated level of signal.
- Any portion of the building where coverage is planned to be provided by either through-floor signal or macro coverage must be clouded and noted. Through-floor coverage notation must also describe the material composition of the floor and the expected attenuation.

Pass/Fail Criteria:

- All items must be present.
- Minimum downlink signal strength of -95dBm in 95% of coverage area, and 99% of critical areas.

4.10 UMRDD Rebroadcast Agreement

Attach a completed rebroadcast agreement signed and dated by the property owner.

Pass/Fail Criteria:

- Completed rebroadcast agreement submitted.

4.11 OSSC 918 – Emergency Responder Communication Coverage Form

Attached a completed OSSC 918 – Emergency Responder Coverage form and proof of submission to the appropriate authority.



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Pass/Fail Criteria:

- Completed OSSC 918 form and proof submission supplied.

5 References

5.1 Current UMRDD In-Building ERCES Technical Criteria.

5.2 FCC 90.219

<https://www.law.cornell.edu/cfr/text/47/90.219>

5.3 NFPA 1221

<https://www.nfpa.org/codes-and-standards/nfpa-1221-standard-development/1221>

5.4 TIA Project 25

http://standards.tiaonline.org/standards/technology/project_25/index.cfm

5.5 TSB-88.1-E

https://global.ihs.com/doc_detail.cfm?document_name=TIA%20TSB%2D88%2E1&items_key=00504960

5.6 OFC 510 – Oregon Fire Code 510 - Emergency Responder Communication Coverage

<https://codes.iccsafe.org/s/ORFC2022P1/chapter-5-fire-service-features/ORFC2022P1-Pt03-Ch05-Sec510>

5.7 OSSC (2022) – Oregon Structural Specialty Code Section 918 – Emergency Responder Communication Coverage

https://codes.iccsafe.org/content/ORSSC2022P2/chapter-9-fire-protection-and-life-safety-systems#ORSSC2022P2_Ch09_Sec918

5.8 OSSC Form 918 – Emergency Responder Communication Coverage Form

<https://www.oregon.gov/bcd/Formslibrary/osscc-form918-errc.pdf>