Design and Contractor Guide

By: Bremerton Fire Marshal Office

Effective January 2026

Bremerton Fire Department
911 Park Ave
Bremerton WA 98337

Contents

REQUIRED PERMITS

Any owner or owner's authorized agent who intends to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be performed, shall first submit an application and obtain the required permit.

Exceptions:

1. One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided that the floor area is not greater than 120 square feet (11 m2).
2. Fences 7 feet or less (2134 mm) high.
3. Oil derricks.
4. Retaining walls that are not over 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II or IIIA liquids.
5. Water tanks can be supported directly on grade if the capacity is not greater than 5,000 gallons (18 925 L) and the ratio of height to diameter or width is not greater than 2:1.
6. Sidewalks and driveways not more than 30 inches (762 mm) above adjacent grade, and not over any basement or story below and are not part of an accessible route.
7. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.
8. Temporary motion picture, television and theater stage sets and scenery.
9. Prefabricated swimming pools accessory to a Group R-3 occupancy that are less than 24 inches (610mm) deep, are not greater than 5,000 gallons (18 925 L) and are installed entirely above ground.
10. Shade cloth structures constructed for nursery or agricultural purposes, not including service systems.
11. Swings and other playground equipment detached from one- and two-family dwellings.
12. Window awnings in Group R-3 and U occupancies, supported by an exterior wall that do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support.
13. Nonfixed and movable fixtures, cases, racks, counters, and partitions not over 5 feet 9 inches (1753 mm) in height.

TYPICAL PERMITS

A Pre-Sub Conference

Although it's not a formal permit, it's a good place to start if you're unsure. You meet with city reviewers to talk about your project and learn what types of permits, fees and other potential hurdles and challenges your project may have as you navigate through the codes.

Site Plan Review

This is largely a land use step and may include complex environmental discussions

Site Development Permit (SDP)

This permit includes fire hydrants, fire lanes, roads, sewer, storm water, street lighting etc. Typically, all the work on the site is managed through this permit.

Building Permit

The main building permit defines the bulk of the work for the building. Plans for this permit includes Architectural, Mechanical, Plumbing, Structural and Electrical. This also includes energy code items.

Fire Alarm

The fire alarm system, if required, is always a separate permit. See other sections of this guide for specific design aspects. The system is required to be designed by NICET III fire alarms and installed and tested by NICET II in fire alarms.

Fire Sprinkler

The fire sprinkler system, if required, is also a separate permit. See other sections of this guide for specific design aspects. This system is required to be designed by a designer holding a Washington State Fire Sprinkler design certification. The Standpipe & Fire Pump, if required, are included in this permit. Not all fire sprinkler systems require standpipes or a fire pump.

Hood Suppression

Hood suppression systems require separate permits. This holds true even if the system comes pre-installed in the Type I hood systems.

Underground Fire Line

The underground fire line permit is likely the most obscure of the fire permits. This permit is sometime rolled into the SDP. It's situational. If the SDP is being held up by the Underground Fire Line permit details, it may be pulled out and managed separately. However, keeping the scope of the SDP all-inclusive is a trending goal. The specifics of where this becomes a fire system rather than public water is at the valve where the tap occurs. From this point to the fire sprinkler riser is considered a "PRIVATE WATER MAIN".

NO DEFERRED SUBMITTIALS

The city has adopted the position of no deferred submittals.

BREMERTON FIRE SPECIFIC PERMITS

FIRE ALARMS

A full fire alarm system submittal. Drawings, battery calcs & cutsheets. NICET III reviewed.

FIRE ALARMS TI

The TI permit is intended to be used for simple system modifications. A permit is required for all fire alarm work. Submit a couple of photos and a narrative of the work. If the scope is too excessive the reviewer will request a full permit submittal.

FIRE SPR 13

A full fire sprinkler system submittal. Drawings, hydraulic calcs for each design area, seismic calcs, pump curve, cutsheets.

FIRE SPR 13TI

The 13TI permit is intended to be used for simple sprinkler modifications. Submit a couple of photos and a narrative of the work. If the scope is too excessive the reviewer will request a full permit submittal.

FIRE SPR 13D

A full fire sprinkler system submittal. Drawings, hydraulic calcs for each design area, pump curve, cutsheets.

FIRE SUPP

- Cooking Suppression
- Spray Booth Suppression
- FM 200 Suppression

FIRE SPR UNDERGROUND

The Underground Fire Line permit is intended to be used when the specifics of the connection of the fire line to the city main to the base of riser are difficult to specify. The fire line, backflow preventer, vault, PIV, FDC, trench & restraint systems.

DAS

Distributed Antenna System is an in-building antenna system to ensure complete radio communications for emergency operations.

PLAN REVIEW

Process

1. Plans, specifications and other design related documents are submitted to the Department of Community Development Online Center (permit portal). A permit number is assigned.

2. The documents are processed and routed to respective City Departments for review in their area of responsibility. (This document only defines the process for the fire department review)

3. The communications process is initiated between fire department reviewer and the project design team.

4. Following the review and approval of each City Department, the permit may be issued. (All departments must approve their workflow for the permit to be eligible for issuance.)

General Rules/Process for Fire Marshal's Office (FMO) plan review:

1. All formal issues/communication will be in writing or otherwise documented. Conversations not documented and agreed to by all parties are non-binding and deemed simple and sharing of ideas.

2. The FMO does not waive requirements; the approved method for deviating from the strict letter of the fire code and related standards is the Alternative Means & Method as outlined in the International Fire Code. This request will be from the design team to the Fire Marshal. The Fire Marshal will then evaluate that request and accept or deny that request. Appeals of that decision may be taken to the City of Bremerton Hearing examiner at your request.

3. The FMO does not give timelines for plan review or status updates. There are simply too many factors in place to make such an estimate.

4. The methods and procedures used by other Fire Departments are not taken into consideration.

5. When the FMO has completed their respective review, a letter, email, message or most likely a marked-up set of drawings, will be sent outlining the specifics of the issues requiring further detail, changes or additions. Often the review letter will be uploaded to the online permit portal.

6. The permit will then be placed in returned ("RTND") status, which means the permit, from the standpoint of that reviewer, is on hold and no action is being taken until revisions have been submitted for review. The permit status is reflected in the permit portal online.

7. All documents shall be submitted/ re-submitted via Department of Community Development Online Center (permit portal).

8. Re-submitted documents will change the workflow step to Pending (“PEND”) status and be scheduled for review. This process continues until the workflow step is placed in Approved (“AP”) status.

Tips for a rapid plan review

1. Provide as much detail as possible with the first plan submittal. Provide details and elevations for all areas not CLEARLY shown on the plan view.

2. For situations that are allowed by the code, but not the typical situation, include the code cites on the plan set.

3. Provide all documents for review to the FMO in PDF format via Online Center permit portal.

4. The word “STORAGE” does not mean there are no requirements. Typically, when there is a space where all the information has not been determined, the designer will show it as storage or some other causal type of space. This is not recommended and could result in delays.

5. Do not submit partially completed plans. This causes an enormous amount of confusion during the review process and may result in delays.

6. Although this guide is written largely for fire code related aspects of a specific project, the general guidelines for plans/permits are based on the IBC (Building Code).

7. Plan submittals, inspections, and testing of systems will be done by the subcontractor and will be witnessed by the Fire Department representative.

FIRE DEPARTMENT ACCESS ROADS (FDA)

1. Fire Apparatus Access Roads must be installed and marked per code prior to going vertical with any construction. This includes fire hydrants and road signage.

2. All Exterior walls shall be within 150 feet of Fire Apparatus Access Road or street, center of nearest lane. Distance may increase if building is sprinkled, if approved.

3. Required turning radii: 23' inside, 45' outside

4. Minimum of 13'-6" height clearance over Fire Apparatus Access Roads.

5. All Fire Apparatus Access Roads shall be of an all-weather surface. The City requires all driving surfaces to be paved per Bremerton Municipal Code 20.48 and 503.2.3 of the 2021 International Fire Code.

6. Cul-de-sac length is 500' Maximum. Any distance beyond 500', the building shall be sprinkled. This is located in the City Roadway standards, in the footnote.

7. Two points of Fire Department access are required. See page 18

8. Fire Department Access roads require a minimum of 20' for buildings 28' and under, buildings over 28' require a minimum of 26' Fire Department Ariel Access. (IFC Appendix D)

9. Fire Department Access roads over 150 ft require approved fire department turn around. See page 14

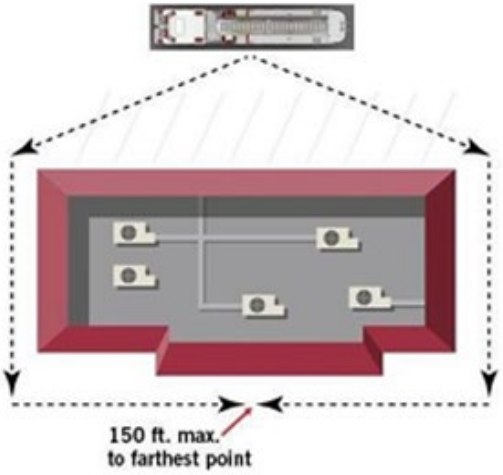
Definitions

- Fire Lane: A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.

- Fire Apparatus Access Road: A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lanes, public street, private street, parking lot drive aisle, and access roadway.

Required Access

Fire Apparatus shall have access to within 150 feet of all portions of a facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the facility or building.



Surface

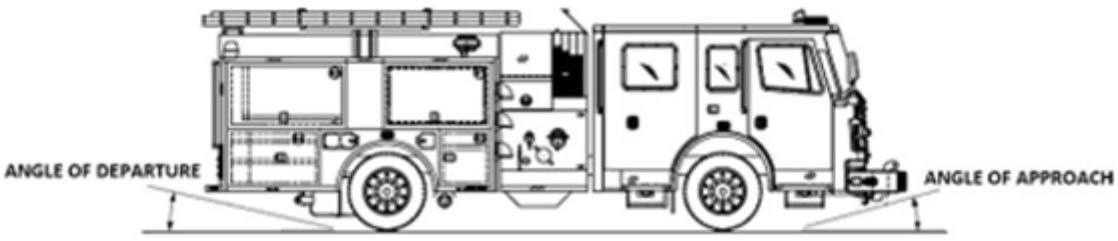
Approved Fire Apparatus Access Road shall be constructed of asphalt, concrete or other approved driving surface capable of supporting the imposed load of a fire apparatus weighing at least 75,000 pounds.

Vehicle Clearance

Fire Apparatus Access Road shall have an unobstructed vertical clearance of no less than 13 feet 6 inches.

Grade

- Fire Apparatus access roads shall not exceed 10 percent (19%) in grated longitudinally.
- Cross Slope of a road section or within a turnaround area shall not exceed fire percent (5%).
- To accommodate proper angles of approach and departure, the gradient in fire access roads shall not exceed a five percent (5%) change along any ten (10) foot sections.



Width

Fire apparatus access roads shall have a minumum unobstructed width (exclusive of shoulder) of no less than the following:

WIDTH (FEET)	
No Parking	20 feet
Parking on One Side (Parallel)	28 feet
Parking on Both Sides (Parallel)	34 feet

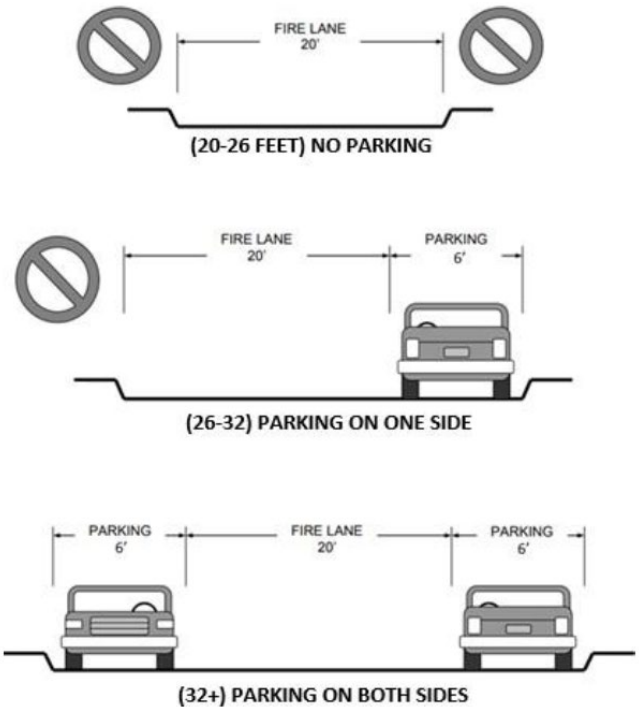


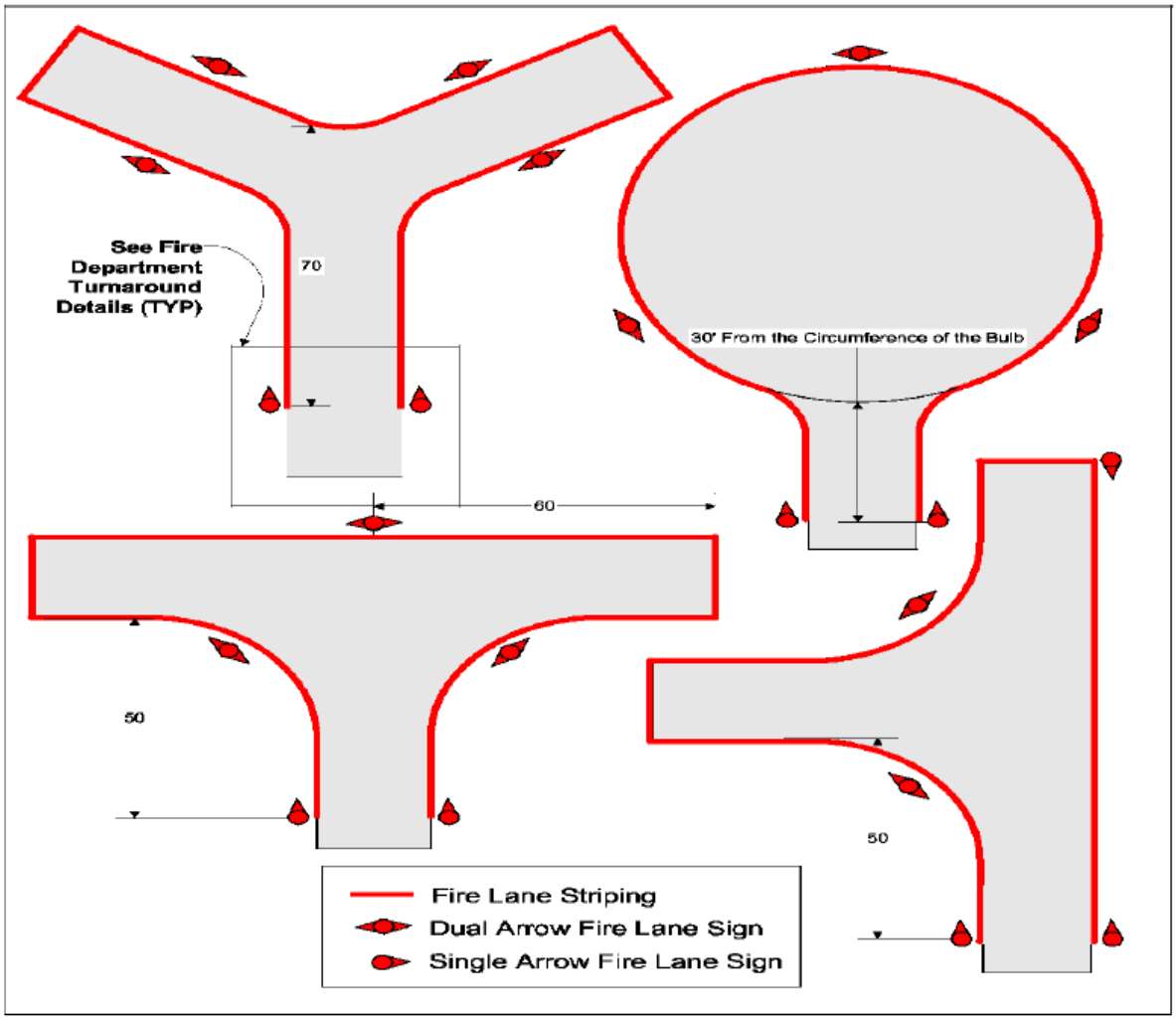
Diagram to the right is for visual aid. Required width is listed above. The Bremerton road standards require 8ft for parking.

Exceptions: Where Aerial Fire Apparatus Access Roads are required, see Aerial Fire Apparatus Access. Minimum unobstructed road width without parking.

Fire Department Required Turnarounds

When a fire department turnaround is required for a given site, the turnaround shall be marked as indicated in Figure 1. Note that both fire lane signage and fire lane striping is shown. This is for illustration purposes only. Either signage or striping is required.

Figure 1 - Fire lane marking requirements for various FD turnarounds



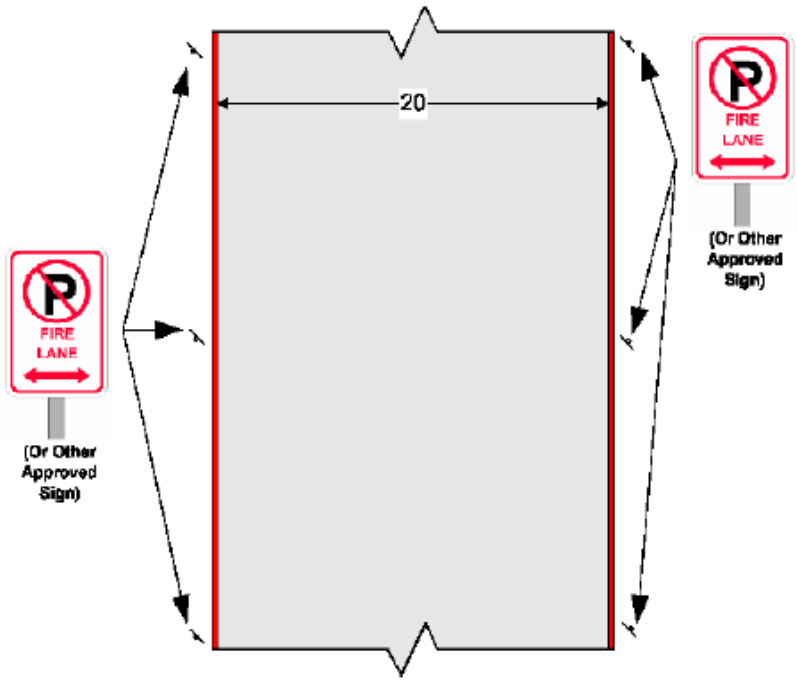
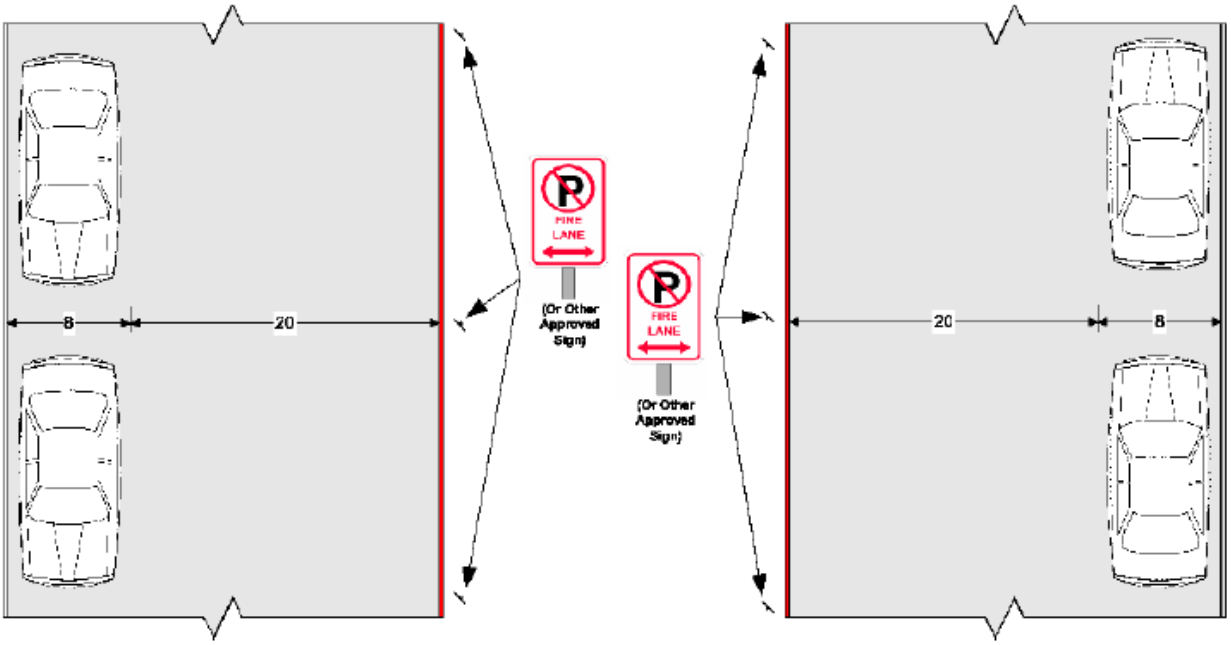


Figure 2-Access road with no parking permitted

Figure 3 - Access roads with parking along one side



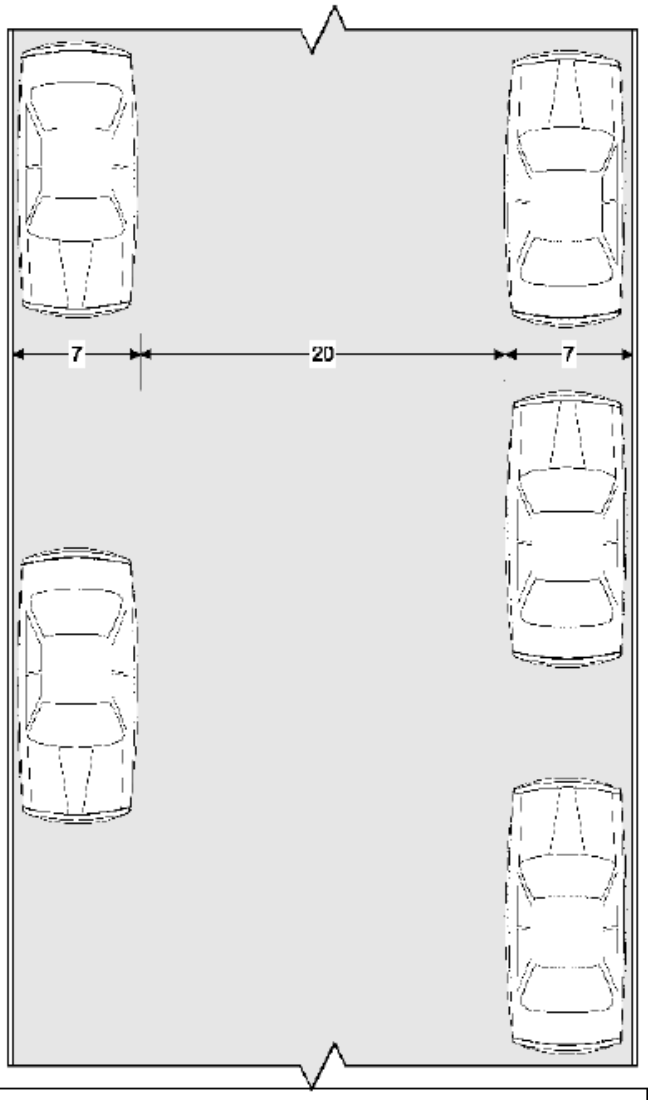
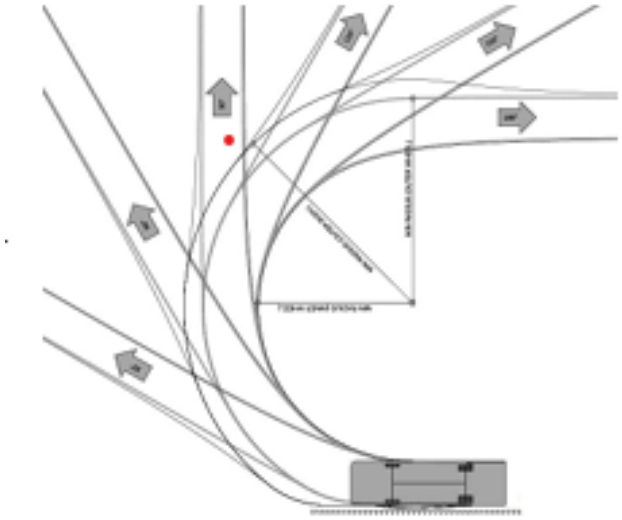


Figure 4 - Access roads with parking along both sides

Approved Fire Department Turnarounds

Dead-end fire department approved (FDA) roads more than 150’ are required to have an approved FD Turn Around. The image below is taken from IFC Appendix D as approved designs.



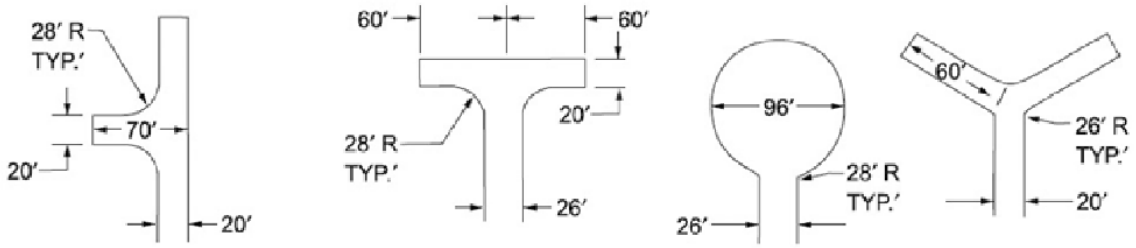
Required turning radii: 23’ inside, 45’ outside

Turnarounds

A Dead-end fire apparatus access roads more than 150 feet shall be provided with width and turnaround provisions in accordance with International Fire Code Table D103.4 & D103.1.

LENGTH (FEET)	Minimum Road Width (FEET)			TURNAROUNDS
	No Parking	Parking on One Side (Parallel)	Parking on Both Sides (Parallel)	
0-150	20	28	34	Not required
151-500	20	28	34	Required
Over 500	Special Approval Required			

DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND



Two or More Means of Access

- Buildings or facilities having a gross building area of more than 62,000 square feet shall be provided with two separate and approved fire apparatus access roads.
- Multiple-family residential projects having more than 100 dwelling units shall have two separate 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 approved automatic sprinkler systems.
- One- or two-family developments where the number of dwelling units exceeds 30 shall be provided with two separate and approved fire apparatus access roads.
    - Exception: When all dwelling units are equipped throughout with an approved automatic sprinkler system.
- The Fire Marshal is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.
- Where two fire apparatus 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 lot or area to be served, measured in a straight line between accesses.

During Construction

All required Fire Department Access Roads shall be installed to an extent that will provide all-weather paved access for emergency vehicles prior to combustibles being brought to the site or combustible construction taking place. The Fire Code Official shall determine the adequacy of the access roads during construction. Prior to final approval of any development project, fire department access roads shall be completed with all markings, signage and striping.

FIRE LANE MARKINGS

Fire apparatus access roads shall be marked whenever necessary to maintain the unobstructed minimum required width of roadways, as determined by the Fire Code Official.

Subject to the Fire Code Official's prior written approval, marked fire apparatus access roads, or "fire lanes" as defined in section 502.1 of the code, may be established or relocated at the time of plan review, pre-construction site inspection, and/or post construction site inspection as well as any time during life of occupancy. Only those fire apparatus access roads established by the Fire Code Official can utilize red marking paint and the term "fire lane."

Once a fire lane is established it shall be always maintained in a clean and legible condition or repair/replaced to maintain visibility.

Fire lanes shall be marked as directed by the Fire Code Official with one or more of the following types of marking:

Type 1

The following shall apply to Type 1 marking:

1. Curbs shall be identified by red traffic paint with a 6-inch-wide stripe on the top and front, extending the length of the designated fire lane.
2. Rolled curbs shall be identified by red traffic paint with a 6-inch-wide stripe on the curb, extending the length of the designated fire lane.
3. Lanes without curbs shall be identified by red traffic paint with a 6-inch-wide stripe on the pavement extending the length of the designated fire lane.
4. The words "NO PARKING - FIRE LANE" shall be in 3-inch stroke white letters 18 inches in height, and placed 8 inches measured perpendicular from the red paint stripe on the pavement. In most cases, both sides of the access road shall be marked. Where long drives are to be marked, the repetitions shall alternate sides of the drive.

Type 2

The following shall apply to Type 2 marking. In addition to the requirements for Type 1 marking, Type 2 marking shall also include:

1. The addition of metal signs stating "NO PARKING - FIRE LANE" to be installed at intervals or locations designated by the Fire Code Official
2. The signs shall be approximately 12 inches wide and 18 inches tall, with red letters on a white background.
3. Metal signs shall be installed on either 2-inch metal pipes, for private property, or treated 4x4 wood posts, for public property
4. The bottom of the sign shall be mounted at a minimum of 7 feet above the curb.
5. Where fire lanes are adjacent to buildings or structures, and when approved or directed by the Fire Code Official, the signs may be placed on the face of the building or structure.

Type 3

The following shall apply to Type 3 marking:

1. Where directed by the Fire Code Official, specific areas shall be designated, and those areas are to be marked with diagonal striping across the width of the fire lane.

2. Diagonal marking shall be used in conjunction with painted curbs and/or edge striping and shall run at an angle of 30 to 60 degrees from one side to the other. These diagonal lines shall be in red traffic paint, parallel with each other, at least 6 inches in width, and 24 inches apart. Lettering shall occur as with Type 1 marking.

Fire Lane Markings Where Required

Fire lane markings are required in different locations depending upon the land-use zone and/or development in which they are being installed. Markings are also required for certain fire apparatus access features such as turnarounds.

- On both sides of the fire department access roadways less than 28' wide.

- On one side of fire department access roadways with widths greater than twenty-eight feet (28') up to and including thirty-four feet (34').

- D103.6 of 2021 IFC Where required by the fire code official, fire apparatus access roads shall be marked with permanent NO PARKING—FIRE LANE signs complying with D103.6. Signs shall have a minimum dimension of 12 inches wide by 18 inches high and have red letters on a reflective white background. Signs shall be posted on one or both sides of the fire apparatus road as required by Section D103.6.1 or D103.6.2 of IFC.

SIGNAGE REQUIREMENTS

Design

When signs are used to identify fire apparatus access roads, the signs shall comply with Figure 9. All signs used for marking of fire lanes must meet the following criteria

- Be permanent bearing the words "NO PARKING FIRE LANE"
- Must meet IFC D103.6 Signs
- Provide directional arrows as applicable unless otherwise permitted.

Spacing

Fire lane signs shall be spaced approximately every 100 feet and at every change of roadway direction. A fire lane sign must be visible in the direction of vehicular travel, from any point along the curb of a fire lane.

Installation

When signs are used to indicate the extent of the fire lanes, the posts for the signs shall be set into solid ground at a minimum depth of 18-inches. The height of the bottom edge of the sign shall be no less than 7-ft from grade and the edge of the sign closest to the roadway shall be between 2- and 3-feet from the face of curb or edge of asphalt. The signs shall be affixed to heavy duty U-channel or other approved materials, with two carriage bolts, two washers and two nuts. Signs should be set at

an angle of not less than 30 degrees or more than 45 degrees with the line of traffic flow in order to be visible to approaching traffic

Figure 9 - Photo of typical fire lane sign installation

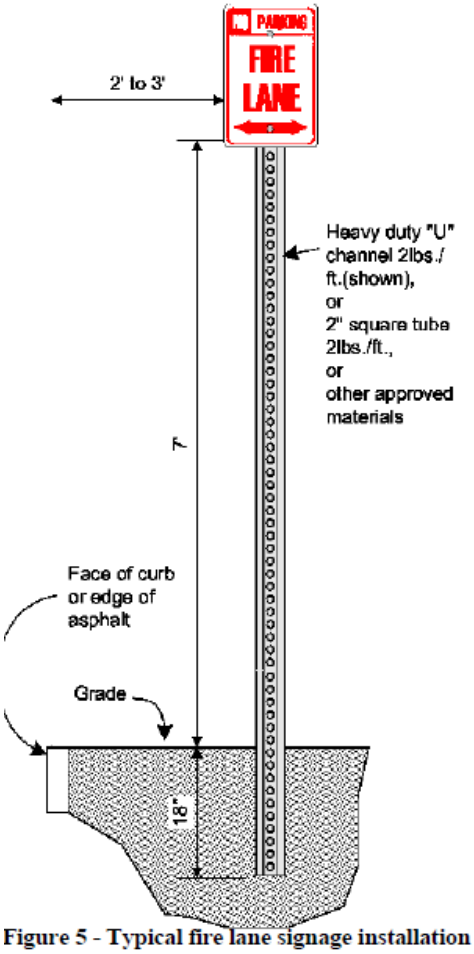


Figure 5 - Typical fire lane signage installation

Fire lane sign Alternatives

Fire lane signs not identified here may be submitted for review and approval. These signs must be readily identifiable as an enforcement sign that a driver may have encountered during driver lesson classes. Proposed signs that do not meet this will not be accepted. All signs must meet the R7 series sign criteria set forth by MUTCD. Visit http://mutcd.fhwa.dot.gov/ for more information.

STRIPING REQUIREMENTS

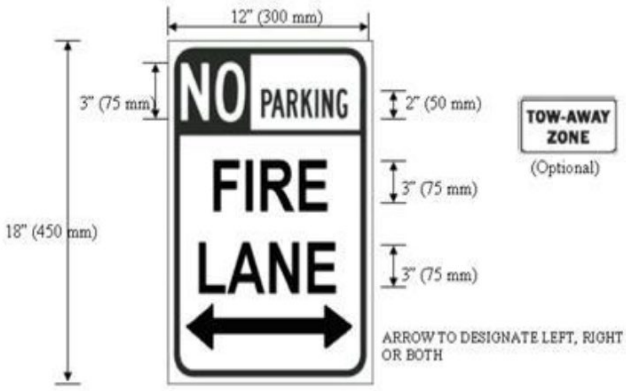
Design

When striping is used to identify fire apparatus access roads, all striping used for marking of fire lanes must meet the following criteria:

- 6-inch red traffic paint stripe
- 4-inch white reflective lettering/wording with 3/4-inch stroke stating “No Parking Fire Lane”
- Lettering/wording spaced every 25 feet
- See attachment for additional striping design criteria

Installation

The striping must be placed along the entire length of the fire lane. When no curb is available, the red stripe is placed directly on the roadway. When curbing is available, the red stripe is placed on the curb face and top of curb. It is important to note that currently, the use of striping for fire lane markings is limited to private roadways.



Signage combined with striping

When striping with the required lettering is provided, signage is not required. However, if the red striping without the required lettering is installed, approved fire lane signage is required. The marking must identify the zone as a fire lane. The red striping alone does not do this, hence the requirement of the signage. Therefore, when marking a fire lane, the required lettering is typically provided with the red striping to prevent additional costs from signage installations.

Plan Submittal for Review

Requirements: Where applicable, fire lanes must be identified on all site plans or development plans. This is accomplished by identifying every curb or side of roadway that will incorporate fire lane markings whether signage or striping. Individual signage locations are not required. The extent

of the markings must also be identified. Many times, the fire lane will start/stop mid-curb. The plans must identify the location of this start/stop. Typically, a hatched line will be offset from the curb or edge of roadway and follow the roadway. This hatched line would then indicate the curb(s) to be marked as well as the extents of the fire lane.

Fire Lane Placement Considerations

Coordination with fire hydrants. The placement of fire lanes should be coordinated with the placement of fire hydrants. This is particularly true when only one side of the roadway requires fire lane marking. By placing the fire lane on the same side of the road as the fire hydrants, the fire hydrants are then provided with an increased level of protection from obstruction-by-parking.

Fire lanes behind parking. For most instances, when perpendicular and/or parallel parking is provided along both sides of a drive, fire lane markings are not required behind such parking. There are of course, some instances in which markings are required and it's the fire lane striping that is used for marking. This is most commonly required when the drive lane, narrower than normal is accompanied with perpendicular parking. In this situation, care must be taken to ensure vehicles parking do not overhang into the already narrow fire lane.

Single points of access. When a site is provided with a single point of access, that single point of access may require fire lane markings along both sides regardless of the width of the access. This is determined on a case-by-case basis and a sites use plays a significant role in this determination. Higher risk uses will typically drive marking both sides of single access points over lower risk hazards.

Additional fire lane markings. There may be other instances in which additional fire lane markings are required. Some of these instances include, but are not limited to, adequate room for turning maneuvers or providing access to special hazards.

FIRE HYDRANTS

1. 300’ spacing commercial / 600’ residential
2. Hydrants will require Type II fire lane markings centered 30’ off the fire hydrant.
3. The number of hydrants for a project is based on Appendix C of the International Fire Code.
4. Hydrants are placed according to the city of Bremerton engineering standards.
5. Hydrants cannot be located in the FDA Road radii.
6. Requirement of a minimum 3’ clearance around hydrants.
7. City of Bremerton requires all hydrants to come with 4 ½ “-5” Hydra-Storz quick connection by Hydra-Shield.
8. A hydrant shall be located within 50’ feet of the FDC per the BMC
9. Fire Hydrants shall be painted to NFPA 291 Standards
10. Nearly all fire hydrants are public hydrants and therefore are largely selected, designed, installed, and tested by our Engineering/Utility department.

GATES & FENCES

This section is designed to facilitate emergency vehicle access into properties that are equipped with automatic security gates or vehicle access/egress gates installed across required Fire Apparatus Access Roads.

- Gates across Fire Apparatus Access Roads must be a minimum of 14’ wide. (BMC 18.02.130)
- Gate locations require review & approved by the Fire Marshal.
- Locked gates will require a FD Knox Box (see Knox Box section)

Automatic Gates

1. A separate fire permit is required for each automatic gate. (An approved site plan is not a permit.)
2. Gate motors shall be the type that the drive gear disengages on power failure.
3. The City approved Knox key switch (KS2) shall be used for 24-hour Fire Department access. The emergency key switch, when activated, shall bypass any occupant control and loop systems. When activated, the gate will remain in the open position until deactivated by the Fire Department.
4. Only when deactivated will the gate resume normal operation.
5. The key switch shall open both the entrance and exit gate(s) when gate(s) are near each other.
6. The Knox key switch shall be mounted 5 ½ feet from grade (location shown on plan). The key switch shall be located below a sign labeled “FD ACCESS”. The minimum clear opening width shall not be less than the width of the required Fire Apparatus Access Road

or access drive. feet and a minimum unobstructed height of 13’-6” feet shall be maintained.

7. Gate operator(s) shall open at a rate of one foot per second. Parking barrier arms will open or clear in approximately two seconds.
8. The primary drive gate type that may be installed across Fire Apparatus Access Roads shall be the sliding type.

In the event of a power failure the gate shall open freely. It shall be capable of being opened manually by one person of average stature.

Primary or Main Gate

Primary gate is defined as the drive or access point designed as the primary point or one of several primary points of ingress/egress for emergency vehicles.

The following access systems shall be installed on Primary Gates.

- “Opticom” receiver switches
- KS2 Knox switches
- Electrical disconnect

FIRE DEPARTMENT KEY BOXES (KNOX BOX)

General Notes for all Properties:

- All Knox Boxes are required to be installed at 5’ above finished floor.
- Knox Boxes shall be installed no more than 10 feet horizontally from the entrance or door being served.
- All Knox Boxes shall be of the hinged door type (except residential use)
- When any building utilizes any card reader access systems (electric or magnetic) a minimum of a series 4400 Knox Box will be required.
- Knox Boxes that serve multiple tenants, difficult to locate or as required, shall be identified using the approved signage. See Sign Specification Book.
- All new projects require recessed Knox Boxes
- Large Office, Warehouse and Big Box Retail Buildings A 4400 series Knox Box is required at the main entry. A 3200 series Knox Box is required at the riser room.
- An additional Knox Box may be required at the rear entry of the building.

Shopping/ Strip Mall Centers

A 4400 series Knox Box is required. The Box should be located by the riser room. If there is no riser room, the lock box should be centrally located on the building, identified by approved signage.

Small Commercial Buildings (small single occupant buildings)

- A 3200 series Knox Box is required.
- An additional Knox Box may

High Rise buildings

(Any building where any occupied floor is located greater than 75 feet from the lowest point of Fire Department Access)

- A 4400 series Knox Box is required at the main entry of the building. More than one lock box may be required at other access points.
- A 4400 series Knox Box is required in any elevator lobbies in the building.
- A 1300 series Knox Box is required in the fire control room / fire command room.

Apartment Complex

- A 3200 series Knox Box shall be placed at the club house or leasing office.
- Individual apartment lessees shall be allowed to purchase and place a 1600 series Knox Box outside their front door.

One- or Two-Family Residential

When a resident wishes to provide access to their home they may use a 1600 series Knox Box. The box should be placed at the main front entrance of the residence.

Special Hazard Occupancy

Any occupancy containing special hazards must contact the Fire Marshal's Office for the amount and placement of lock boxes.

- A 1300 series Knox Box shall be required at a minimum for occupancies with hazardous materials or other high hazard occupancies.

Other Applications Magnetic Locks

Magnetic Locks

If magnetic locks are used to secure any door in a facility, a 4400 series Knox Box, shall be required with a Knox multipurpose switch (Item # 3291, 4471). This switch will be connected to the mag-lock control panel and disengage all mag-lock devices.

Electrical Equipment Protection / Disconnect

The gate shall be opened by means of an electrical power disconnect switch in a weatherproof box:

- The box shall be red.
- The box shall be mounted on the entry side of the gate within 5 feet of the gate.
- The box shall be at least 5 inches high and 5 inches wide.
- The box shall be clearly labeled "Fire Dept." in white letters 1 inch tall with ¼ - inch stroke.
- A Knox padlock shall secure the box.
- The box must be clearly visible and accessible
- All electrical equipment shall be protected from physical damage and weather by approved weather tight boxes or housings.
- Gates and gate systems shall be tested by the Fire Marshal's Office upon completion of the installation of a gate or gate system or when required by the Fire Department.
- Gates shall not be placed into operation until after acceptance test is approved

Pedestrian Gates

Primary access points that have pedestrian gates require Fire Department access. This access may be provided with a 1600 series lock box or a 3500 series key switch. (A 3500 series key switch is required on electronically locked gates.

ACCESS CONTROL SYSTEMS

Doors in the means of egress shall be permitted to be equipped with an approved entrance and egress access control system provided that it complies with NFPA and IFC requirements, including but not limited to:

- A sensor is provided on the egress side arranged to detect an occupant approaching the doors and the doors are arranged to unlock upon detection of approaching occupant or loss of power to the sensor; and,
- Loss of power to that part of the access control system that locks the doors automatically unlocks the doors; and,
- The doors are arranged to unlock from a manual release device located 40 inches to 48 inches vertically above the floor and within 5 feet of the secured doors. The manual release shall be readily accessible and clearly identified by a sign that reads" PUSH TO EXIT". A touch sensor panic hardware device may be used in lieu of the manual release button.
- When operated, the manual release device shall result in direct interruption of power to the lock – independent of the access control system electronics – and the doors shall remain unlocked for at least 30 seconds; and,
- Activation of the building fire sprinkler or fire detection system, if provided, automatically unlocks the doors and the doors remain unlocked until the fire protective signaling system has been manually reset.
- A 4400 Knox Box shall be provided on all buildings having a magnetic access control system and shall be provided with a Knox toggle switch that when activated will disconnect the entire buildings access control system.

ADDRESSING GUIDELINES

Single family homes: Minimum 4" high, 5/8" stroke

Multi-family Communities

Street address shall be a minimum of 12" high with a 2" stroke. Individual building numbers shall be a minimum of 12" high with a 2" stroke. Buildings over 100 feet in length require a minimum of two numbers per building.

Apartment spread numbers shall be a minimum of 6" high with a 1 inch stroke and corridor spread numbers shall be a minimum of 4" high with a 5/8 inch brush stroke. Individual apartment unit numbers shall be a minimum of 4" in height with a 5/8 inch stroke.

Large Office and Warehouse Buildings

Address must be visible from all access directions. Number shall be a minimum of 12" in height with a 2 inch stroke. Buildings over 500 feet long shall have two address locations if more than one

access point is visible. Suite numbers shall be required for multi-tenant complexes and shall be located over the front door and on the rear door, 6 inches in height with a 1 inch brush stroke.

Shopping Centers, High Rise Buildings and Other Applications

A minimum of 12" high numbers with a 2" brush stroke shall be visible from all access directions. Suite numbers are required over the door with 4" high numbers with a 5/8 inch brush stroke.

Buildings beyond 100 feet from the street and 10,000 square feet shall install 18-inch numbers with a 3-inch stroke.

Marquee and Monument

Addresses installed on a marquee located next to the street will require numbers 8" high with a 1" brush stoke to be located a minimum of 3 feet above grade. Marquee and Monument signs must meet City of Bremerton Sign Ordinance requirements.

INTERNATIONAL FIRE CODE (IFC) SIGNAGE

General

Pursuant to the International Fire Code (IFC); in an attempt to standardize IFC signage requirements and to facilitate Fire Department operations, the Fire Marshal's Office has established the following specifications of sign language, size, text, font, design, and construction that indicate the location of Fire Department (or related) equipment and/or identifies location hazards.

Sign details and specifications MUST be contained in the construction drawings.

Sign Text

The signs in this document are the most commonly used signs in new construction; however, this document is not intended to cover all circumstances. In the event that additional signs are required and are not listed in this document, the Fire Marshal will provide the specifications to use.

- **Primary Descriptive Language 3" Letters/Numbers w/ ¾" stroke**
- **Indicating Address (if required) 1" Letters/Numbers**

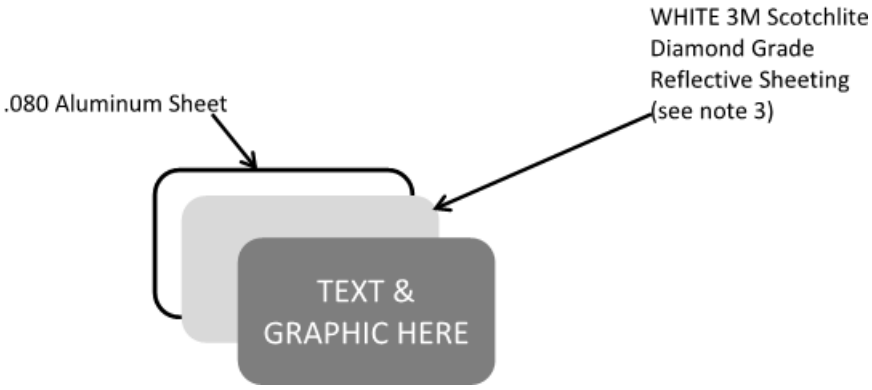
Sign Construction

The sign face shall be sized as indicated in the corresponding specification and fabricated from .080" Aluminum sheet with a minimum of .75" radius corners.

- Font style used is **ARIAL** fonts with additional kerning between letters.
- The sign face shall have a **WHITE 3M DIAMOND GRADE REFLECTIVE SHEETING**
- 3990 Series applied as a background.
- Lettering / graphics shall be one of the following:
    - 3M Electrocut film red 1172 or Oracal 8300 transparent 201c red, Or equivalent in durability, inverse cut to allow white reflective Background to show through lettering.
    - Screen printed using 3m 8801 series traffic sign red Translucent ink.
- When sign is used in building interiors, reflective background may not be required
- All signage and changes must be pre-approved by the fire marshal's office

The Fire Marshal's Office understands that there are unique situations to each building/site and have provided several options to facilitate fire suppression activities; however, due to the complexity of some building/sites, the Fire Marshal may require specific lettering and/or additional signage. Starting this process early will ensure no delays with project completion, inspections and occupancy.

Examples: Reflective Construction



Fire Department Connection

Any building that has an automatic fire suppression (sprinkler) system requiring a Fire Department connection (FDC) shall indicate the location of the FDC with the appropriate signage.

All FDC(s) for new construction shall be remote. In the event that an existing building has a wall mounted FDC or that FDC is adjacent to the building, the FDC sign may, with approval, be mounted to the wall behind/directly above the FDC seven (7) feet AFF.

For true remote FDC locations, the mounting of the FDC sign shall be on a sign-post that extends a minimum of 6 feet AFF; or, shall be mounted using pipe bolts directly to the FDC Pipe. If the pipe is too low for the sign, a sign-post will be required. This allows the arriving fire apparatus to locate the remote FDC promptly. In addition, the street number shall be included as noted in the previous section on FDC signage.

Please note: ALL SIGN LAYOUTS MUST BE APPROVED BY THE FIRE MARSHAL'S OFFICE.
It is suggested that the approval is obtained prior to ordering any signage. This will help reduce cost in the event of an error.

Fire Alarm Control Panel (F.A.C.P)

To be mounted on the door(s) to the fire alarm panel and/or leading to the fire alarm panel.

Post Indicator Valves (P.I.V)

Post indicator valves shall be identified. Sign specifications at the beginning of this document shall be used. Signs shall be posted, with the base of the sign located at 4 feet above grade, on the wall above the PIV or secured to a heavy duty U channel post and secured in the ground with cement. Lettering must be approved by the Fire Marshal's Office

Fire Sprinkler Riser Room

To be mounted on the access door to the fire sprinkler riser room.

HAZARDOUS MATERIALS IDENTIFICATION

Where compressed gases, hazardous materials, or required by the Fire Marshal, an NFPA 704 (Fire Diamond) shall be posted at a location on the premise as approved by the Fire Marshal's Office.

- The sign shall be constructed out of .080 aluminum construction with rounded corners.
- The sign face shall have a white diamond grade reflective background.
- Numbers and letters shall be arranged by color as shown above and be constructed of an engineer grade reflective vinyl.
- Numbering shall be a minimum of 3.5" high with an 11/16" stroke width.
- Lettering for the Special Hazard Box shall be as follows:
  - One Line: 1 ¾" high w/ 9/16" stroke width Two Lines: 1
  - 3/8" high w/ 7/16" stroke with Three Lines: 1 ¼" high w/ 3/8" stroke width

The materials on-site will dictate the numbers in each category. In the event of multiple hazardous materials, the numbers shall reflect the highest hazard of each category.

SYSTEM SPECIFICS

FIRE ALARM

- The FACP or Remote (functional) annunciator shall be located in the fire sprinkler riser room.
- A functional remote annunciator is required at each main entrance.
- Smoke detection shall be placed in common areas and corridors (unless these areas present the potential for nuisance alarms)
- Outdoor WP Horn/Strobe shall be placed on the approach side of the building. Mark/Label all devices
- Panel descriptions should provide ample detail

FIRE SPRINKLER SYSTEMS

Bremerton Fire follows the typical NFPA 13 for most designs. However, we do have a couple of unique elements for designs.

- All hydraulics must have a design cushion of 10 psi/10% whichever is greater for all design areas.
- A PIV is required if the fire sprinkler riser room is not directly accessible from the exterior.
- Fire Pumps are only permitted to be designed to 140% of the pump rating
- Electric Fire Pumps are required to have an emergency generator in most cases. There are a couple of exceptions to this rule.
- A remote FDC is required in almost every case. The exception would be zero lot line buildings and the like.
- Decks/Balconies are required to be protected by fire sprinkler coverage.

To request an analysis of fire flow/pressure from the city engineering department to be used for fire sprinkler design, click here. This is to be completed **BEFORE** system design.

STANDPIPE PIPES

- All Standpipes shall be automatic wet, unless specifically exempt
- Standpipe Connections shall be located at the floor level
- A Standpipe functional test is required on a case by case basis

REMOTE FIRE DEPARTMENT CONNECTION

- All FDCs shall be remote from the building and placed adjacent to the Fire Apparatus Access Road a minimum of 3’ max of 10’ from the finished edge of the access road. FDCs shall be located at a maximum of 50’ feet from a fire hydrant
- FDC shall not be placed where obstructed by parking spaces, landscaping, or building components.
- FDCs shall be 5” Stortz connections are required when the fire sprinkler system is equipped with a fire pump.
- Must have minimum 3’ clearance around FDC
- See Remote FDC detail in above section

FIRE PUMPS

- Pump controllers must be set for manual shut down only, NO TIMERS.

- All Fire Sprinkler Riser rooms containing fire pumps will be equipped with a 4" floor drain plumbed to a frost free location.
- A minimum of 3' clearance shall be provided around ALL fire protection equipment (fire alarm, fire sprinkler, fire pump & standpipes)
- If an Electric Driver is selected, a generator is required.
    - Exception: In Storage (S) or Factory (F) occupancies when the occupant load is < 15 and vacant during a power outage.
- Hoses are not allowed to be used during pump test
- All hose valves on test header must be utilized during pump test
- Fire Pumps shall provide the following signals to the alarm panel
    - Water flow
    - Tamper
    - Supervisory
    - Pump running
    - Phase reversal
    - Power loss

UNDERGROUND FIRE MAIN

Before the installation or construction of the fire service main, a permit must be obtained. This permit governs the installation of all fire service underground equipment and requirements from the valve required at the underground connection to the connection to the fire sprinkler system at the base of riser. *(2021 International Fire Code, 2016 NFPA 13, 2019 NFPA 24, Bremerton Municipal Code Title 18.02)*

Plans: An Approval Underground Fire Line Permit Drawing will include the following information.

1. Specific Narrative for the scope of work
2. Names/Company names of contractor doing the work
3. Contact Names & Emails for design and installation
4. A copy of the installing contractors Washington State Level U License

Specific Drawings Required:

- Site Plan showing the accurate and current location of the structure, property lines, power lines (above ground and below ground) fire hydrants, FDC, PIV, storm & sewer lines, valves, Fire Lines/FDC lines, gas lines, thrust block locations (if used) sight slopes and driving surfaces
- Elevation of the trench depth, pipe, base layer, layers for tampering, material for fill
- Elevations of the FDC, transition point from horizontal to vertical, location the pipe passes under the footing/foundation and any supporting members

Plan Notes:

- Equipment Schedule: List all equipment used in the Scope of the Underground Fire Line Permit. Example: Pipe, valves, PIV, ball drip valves, check valves, restraints, fittings, reducers, and the like. Equipment schedules should have quantities, sizes, make and model number for product research
- Restraint Schedule: Provide a table or matrix of the restraint system and locations
- Inspections Schedule/Process to be included on the plans
    - Testing/Inspection Schedule: Visual Inspection, Hydrostatic Test, Flush are all completed during a single inspection/test. Refer to Bremerton FD Youtube Channel for a more detailed explanation of this inspection/test.

Basics:

- Plan Deviations must be pre-approved
- Hydro/Flush: 200psi/2 hours, then a flush w/ burlap bags over at least two fire hoses
- Coordinate with Public Works for preliminary testing before connecting to the City System.

EXHAUST HOOD/FIRE SUPRESSION SYSTEM

Hood systems shall be designed and installed in accordance with the appropriate NFPA standard.

- All hood systems shall be UL300 Listed
- Class K extinguisher and appropriate signage must be supplied and mounted in the path of egress.
- If a fire alarm is present in the building, the hood system shall interface with the alarm Rubber nozzle caps shall not be used below the filter level.
- Metal or foil caps are the only acceptable covers.
- Domestic ranges when used for commercial purposes shall be provided with a Type I hood and therefore shall be covered by an exhaust hood fire suppression system (IFC 609).

ELECTRICALLY CLASSIFIED AREAS

Per IFC Chapter 57, certain areas called out in this chapter are to be protected via NFPA 70 (the Electrical Code) as classified. These areas will be called out during plan review for electricians and electrical inspectors.

UNDERGROUND FLAMMABLE/COMBUSTIBLE LIQUID STORAGE

An approved method of secondary containment shall be provided for underground tank systems, including tanks, piping, and related components.

Approved sampling tubes of a minimum of 6 inches in diameter shall be installed in the backfill material

The tubes shall extend from a point 12 inches below the average grade of the excavation to the ground level and shall be provided with suitable access caps.

Each tank site shall have sampling sump at the corners of the excavation with a minimum of 4 sumps. Sampling tubes shall be placed in the product line excavation within 10 feet of the tank excavation and one every 50 feet routed along product lines toward the dispenser; a minimum of two are required.

GENERAL INSPECTION PROCEDURES

****ONCE A FIRE INSPECTION IS REQUESTED, NO PLAN CHANGES WILL BE PERMITED-if you need a plan revision, it must be communicated prior to inspection requests****

1. All fees must be paid in full prior to requesting an inspection.
2. ONLY the PERMITTING COMPANY may request the inspection and MUST be on- site for the inspection.
3. No partial inspections will be performed.
4. Inspections may be scheduled via Department of Community Development Online Center (permit portal), by phone or email.
5. ALL INSPECTIONS ARE SCHEDULED A MINIMUM OF 2 DAYS IN ADVANCE
6. NO SAME DAY RE-INSPECTIONS
7. The system being inspected shall be complete and ready to inspect at the time of requesting the inspection.
8. Any work being done at the time of inspection or failure of any part of the system is an automatic failure. A re-inspection fee may be accessed, and the inspection rescheduled.

Fire Alarm Inspections

NICET II in fire alarms shall be onsite for all inspections.

1. A total of two personnel shall be provided by the alarm company, with working, two-way communication
2. All trades tied to the alarm panel must have a representative available at the acceptance test, including but not limited, HVAC, elevator, sprinkler, hood suppression, access control, etc.
3. Supervisory and Trouble signals shall set to non-latching.
4. Central station monitoring must be set up and active at the time of inspection.
5. All trades and final clean are required to be completed in accordance with NFPA prior to scheduling Alarm test.
6. A complete pre-test is required prior to performing the final inspection.
7. All fire alarm work requires the installation of a binder with hold or other approved system for holding documents related to fire protection systems.

Typical First Glance Inspection Item

- Final Clean
- Initiating devices are labeled
- Binder/Holder in place
- Red Breaker in the Electrical Panel
- Sign on the FACP room
- Outdoor WP Horn-strobe

If any of the above items are not complete, the inspection will have to be rescheduled.

Fire Alarm Inspection/Testing Procedure

Important Note A NICET II in Fire Alarms is required for all programming and testing of Fire Alarms

1. Binder Review:
    a. Review Permit/Plans
    b. Review Certificate of completion
    c. Must be fully completed
    d. Review Pre-test signals

2. Site Review:
    a. Detectors Labeled
    b. Detector Placement (per plans)
    c. Signage (Alarm Panel)
    d. Notification Placement
    e. Wire Type
    f. Batteries
    g. Electrical Panel
    h. Compliance with manufactures specifications

3. Functional Test:
    a. AC Power off
    b. Inspector will dictate the remainder of the test
    c. Alarms (General, Troubles, Supervisory)

4. The system will operate until the inspector is satisfied and the system is providing notification in all areas.

Most commonly documented fire alarm inspection violations

1. Red Breaker in the electrical panel
2. Batteries not marked/labeled
3. Location of the Fire Alarm breaker not marked in the fire alarm panel
4. Binder/holder
5. Trouble & Supervisory signals not programmed as non-latching (these are required to be non-latching signals)
6. Marked initiating devices
7. Un-approved deviations from the approved plans
8. Visual devices are not synchronized
9. Strobes set to the wrong setting
10. Door signage

Fire Sprinkler

1. A main Flush is required prior to connecting to the underground
2. Hydro and Cover inspections are done at the same time.
3. All piping, hangers, connections, or other components shall be visible from the walking surface.

Fire Sprinkler Inspections/Testing Procedure

Hydro/Cover

Important Note If the building is 3 or more stories, a floor-by-floor hydro/cover may be requested. If the building is less than 3 stories, all floors will be completed during a single hydro/cover inspection.

1. Permit/Plans Review:
   Site Walk reviewing plans for: Pipe Size, Head Placement, Bracing Placement, Hangers, Conformance to submitted plans, Checking for leaks, Final System hydro pressure.

2. Typical Fire Sprinkler System Test Items:
   Tamper Valves, Water Flow, Pressure Switches, Air Compressor, Isolation Valves

NFPA 13D Systems

1. Permit/Plans Review:
   Site Walk reviewing plans for:
   a. Pipe Size, Head Placement, Hangers, Conformance to submitted/approved plans.
   b. Checking for leaks, Review results from the pre-test (a bucket test performed prior to scheduling the formal test)

2. Bucket Test (all systems get at least one bucket test)
   a. Set up buckets for the performance of the most demanding area based on approved plans.
   b. Install an appropriately sized (psi) gauge directly adjacent to the two heads being flowed. This is a safety check to ensure minimum pressures are maintained.
   c. Fire Sprinkler personal shall be appropriately credentialed.
   d. Precision water volume measuring equipment should be available in case measurements are close.
   e. Flow points are to have the sprinkler head sizes as indicated in the plans.
   f. A working/functional pressure gauge not exceeding 100psi is to be placed immediately upstream of the two flow sprinklers.
   g. A reasonable method of measuring the amount of water from a full one minute flow is required to be provided.

Hood Suppression System

All electrical, gas, and mechanical (vents) shall be operational in order to perform this inspection.

1. If tied to an alarm system, the hood system inspection shall be conducted at the same time as the alarm.
2. All appliances shall be in place and functional.
3. A pre-test shall be completed prior to requesting a final inspection.
4. Balloon shall be placed over the nozzles during testing to test the nozzles.
5. Suppression system testing is expected to be pre-tested and fully complete whether in the suppression contractor's scope or not.

Suppression System Inspection Procedure

1. All appliances MUST be in place at the time of final hood suppression inspection
2. The permit will be reviewed against the installed appliances, nozzle selection, number of flow points, pull-station location, class K extinguisher, cylinder size, nozzle height for proper aim/positioned.
3. Once the visual inspection portion is complete, the functional test can begin.
4. Ensure gas/electricity is ready
5. Place tight fitting balloons on all nozzles
6. The first functional test should be nearly a full system test as if the system were in service.
7. A test link is used in the last link position and cut. The system should discharge compressed air or nitrogen, filling the balloons, shutting off gas/power, proper fan operation and activating the alarm system when applicable.
8. Second test is the pull-station

UNDERGROUND FIRE MAIN

1. For visual inspection, all bells and connections shall be visible, as well as the pipe lettering (DR and Class No.) shall be facing up, so it is readable from grade.
2. Fire Department will inspect from the tap to the riser stub-out inside of the building.
3. Visual inspection may be conducted separate from the hydro.
4. An underground flush shall be conducted on all underground pipe. A minimum of two fire houses.
5. The inspector will direct the test.

Underground Storage Tanks

1. Call the Fire Marshal's Office with tank delivery schedule.
2. Air pressure reading will be taken / soap test performed, prior to setting tank.
3. Once tank is in the excavation pit, air pressure will be read, strapping, and sump tubes will be inspected.
4. Distribution lines will be tested as appropriate when installed.

Final Building Inspections (conducted by Fire Inspectors)

1. All Fire Department related permits/items written up as non-compliant must have successfully passed all required inspections and re-inspections, prior to scheduling final.
2. A " Knox Box key-safe" is required to be installed on all buildings if required. Location will be determined by the Fire Marshal's Office. This location may be identified on permit documents. A full set of keys for the Knox Box is required at the time of Final Inspection.
3. Shell buildings shall have one Knox Box of appropriate size for all tenants. Each tenant is responsible to provide a key to the inspector at the time of fire final.
4. Premise address must be permanently affixed to the building front and rear. Suite numbers shall be placed over the main entrance and rear doors. See 'Building Address and Identification Guide' for address placement and size/stroke requirements. Address Numbers/Colors shall contrast with the building.
5. All utility (electric/gas/etc.) shall have the suite number affixed to the meter.
6. All required Fire Department signs shall be installed.

7. Exiting systems shall be clear and unobstructed. Proper hardware shall be installed on all exit doors. Dead bolts, slide bolts, bars, or other similar type of securing device are not allowed on secondary exits.
8. Exit signs and emergency lights shall transfer to battery backup and function properly when tested.
9. Assembly occupancies must have a Maximum Occupancy Load Sign prominently displayed near the main entrance and assembly spaces.
10. The Fire Department will not release their approval for CO/TCO issuance until all Fire Department related items are completed and the Fire Final has passed without exception.

APPENDIX A

All cites are from 2021 IBC

[A] 105.3.1 Action on application.

The building official shall examine or cause to be examined applications for permits and amendments thereto within a reasonable time after filing. If the application or the construction documents do not conform to the requirements of pertinent laws, the building official shall reject such application in writing, stating the reasons therefor. If the building official is satisfied that the proposed work conforms to the requirements of this code and laws and ordinances applicable thereto, the building official shall issue a permit therefore as soon as practicable.

[A] 105.4 Validity of permit.

The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. The issuance of a permit based on construction documents and other data shall not prevent the building official from requiring the correction of errors in the construction documents and other data. The building official is authorized to prevent occupancy or use of a structure where in violation of this code or of any other ordinances of this jurisdiction.

[A] 105.6 Suspension or revocation.

The building official is authorized to suspend or revoke a permit issued under the provisions of this code wherever the permit is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or regulation or any of the provisions of this code.

[A] 107.2.2 Fire protection system shop drawings.

Shop drawings for the fire protection system(s) shall be submitted to indicate conformance to this code and the construction documents and shall be approved prior to the start of system installation. Shop drawings shall contain all information as required by the referenced installation standards in Chapter 9.

[A] 107.4 Amended construction documents.

Work shall be installed in accordance with the approved construction documents, and any changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents.

[A] 107.2.1 Information on construction documents.

Construction documents shall be dimensioned and drawn upon suitable material. Electronic media documents are permitted to be submitted where approved by the building official. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules, and regulations, as determined by the building official.

Resources:

Bremerton Municipal Code
Bremerton Fire Code Amendments
International Fire Code
International Building code