

Loveland-Symmes Fire Department Construction Checklist

This checklist contains items that are critical to the plan review process and the eventual outcome of the fire final (C.O.) inspection. This is a partial list only and should not be construed to be all inclusive of Fire, Building, City or Township Codes. The developer and his agent are expected to become familiar with all applicable codes.

Note: Depending upon the scope of your plans, the following checklist may or may not pertain to your specific development.

Plan Review Process

- Planning Department requirements met.
- Plans approved by Hamilton County and/or City of Loveland.
- Hydrant location plan to be approved prior to building permit. Water plan is required to show existing and proposed water mains, valves, fire hydrants (including hydrant detail), storm sewers, sidewalks, street curbs and other appropriate structures (Fire Department and Water Division sign off required).
- Building permit is issued by Hamilton County or City of Loveland.

Address/Requirements

- Address numbers of correct dimension, contrasting with background and properly posted (all buildings including single family and multi-family residential – 6 inch high, 3 inch wide, ½ inch stroke; mall tenant space – 4 inch high, ½ inch stroke).
- Hydrants (see detail sheet)
- Fire hydrants and access roadways serviceable and unobstructed prior to and during construction.
- Facing proper direction, steamer connection toward roadway.
- Hydrant caps attached.
- Proper distance from curb face (2 ½ feet).
- Hydrant stem not broken or rounded off.
- Proper grading around fire hydrant.

- Proper clearance around fire hydrant (3 feet).
- Serviceable and functional during construction (no dry hydrants).
- Kennedy's hydrant per Water Department approval.
- Access Easement Agreement executed as required.

Fire Lane

- Fire lane signs posted according to Fire Department specification sheets.
- Turning radius requirements met (see detail sheet).
- Design criteria met for Fire Department turnarounds (see detail sheet).
- Minimum access roadway width of 20 feet.
- Access Easement Agreement executed as required.

Knox Box

- Knox Box mounted and keys labeled.
- Contact Fire Department for ordering.
- All Building with a Fire Alarm must have a Knox Box.

Fire Extinguishers:

- Type of extinguisher may change with occupancy classification.
- Minimum 5lb. ABC for most occupancies.
- One Extinguisher at each marked exit (75 lineal feet is the maximum travel distance).
- Visible and accessible (locate in path of egress If possible).
- Fire extinguishers should be installed 3'-5' from floor level.
- Current inspection tag (annual inspection required) by a licensed company.

Fire Protection Equipment

- Where Applicable
- Fire department connections unobstructed.
- Water gong or outside horn and light properly located above fire department connection on street side.
- Sprinkler valves locked in “Open” position or properly supervised.
- Sprinkler heads properly placed, unobstructed and all concealed spaces properly protected.
- Alarm panels properly labeled for different zones.
- Fire department valves and connections properly labeled.
- No storage or shelving within 18” of plane of the sprinkler head.

Signage

- Exit signs posted as required.
 - “This door to remain unlocked during business hours” signs posted as required.
 - “No smoking” signs posted.

Site Maintenance During Construction

- Exits and exit corridors unobstructed prior to Fire final.
- Adequate removal of debris shall be maintained during construction.
- Compressed gas cylinders secure if applicable.
- Access roads and fire hydrants unobstructed.
- Fire extinguishers on each floor.

Permits

- Tank abandonment/installation permit.
- Hazardous Materials Permits
- Temporary above ground storage permit

Special permits (tents).

Fireworks permits

Special System Plan

To be approved prior to construction

Hood and duct extinguishing system

Alarm system

Compressed gasses.

Hydrant locaton

Spray booth/dyring ovens

Flammable liquid storage handling or mixing room

Flammable liquid storage cabinets

Emergency lighting

Emergency generator

Outside storage of hazardous materials or flammable/combustible liquids.

Hazardous Materials Safety Data Sheets.

System Test and Written Certification are required for:

Minimum 48 hour notification required unless otherwise noted.

Alarm system

Smoke detector system

Fire door test (magnetic hold open, smoke detectors, smoke seals, and self closures as applicable).

Smoke removal system test.

- Hydro pressure test
- Flame speed certification (i.e. wall coverings, etc.).
- Tank certification, pressure tests and line tests (24-hour notification required)
- Fire hydrant flow test (one week notification required).

Inspection Request Sequence

- Development checklist completed as appropriate.
- Building Department notifies Fire Prevention Division of inspection request after all other inspections are completed (Fire Final).
- Building is unlocked or prior arrangements made so the Inspector can gain entry and complete inspection.
- Building permit and approved set of construction plans are provided at the job site. Certificate of Occupancy issued by regional Building Department and/or Fire Department.

Developers Notebook

The Loveland-Symmes Fire Department has been approved as the Authority Having Jurisdiction (AHJ) in respect to the fire code issues.

All of this responsibility is to review development plans for compliance with the State of Ohio Fire Codes.

The Hamilton County/City of Loveland Building Departments have a standard list of comments, which are utilized when evaluating these development plans.

The following is a list of standard comments with a brief explanation to clarify a requirement of the fire code. These comments appear on plans as follows: (example Standard #3, #5, #10, #11 etc.).

With this information it is our desire that a beneficial understanding will result concerning the development plan review process conducted by the Hamilton County/City of Loveland Building Departments.

Fire Review Development – Standard Comments

Standard #1 Fire department access roads shall be engineered, established, and maintained serviceable for fire emergency purposes in accordance with the approved development plan.

Standard #2 Access roads shall be kept clear of all obstructions. Fire Lanes, when required, shall be posted after the access road is established. Street name and building address shall be posted after the access road is established.

Standard #3 Street and/or on-site fire hydrants or fire water supply, when required, shall be installed, inspected and approved prior to commencing construction.

As a developer, engineer, contractor or owner, understand that without clear access to the construction site for the fire department may not be able to respond quickly and efficiently in the event of an emergency. Access through the development or to the structure and fire water supply when required, are critical in the event of a medical or fire emergency.

Standard #4 Fire department roads shall be maintained and kept unobstructed at all times and in all types of weather.

The roadways are to be constructed and maintained to accommodate the weight of the largest fire department apparatus, with a minimum of 13ft 6 in. of vertical clearance through all areas.

Standard #5 Fire access roads shall extend to within 150ft. of all portions of a structure.

In most areas of the counties, fire departments carry 1 ¾ inch diameter fire hose in banks of 200 ft. in length. At the point of entry into a structure, from the fire access road, approximately 50 ft. of hose is remaining for entry into the structure to fight fire.

Standard #6 All portions of the structures first floor are accessible within 150 ft. of the fire access road; therefore no fire lane designation is required for this site. This condition will be “field verified” at the time of final fire inspection.

Standard #7 “No parking – fire lane” signs either erected or curb positioned, shall be posted on each side of a required fire department access roadway/street less than 28 ft. wide and on one side of required access roadway/street with a width of 23ft. or more but less than 34 ft.

Fire lane sign requirements are based on the regulation that a fire access roadway/street be a minimum of 20 ft. wide. Fire access roadway/streets that are less than 28 ft. in width, prohibit parking on each side of the roadway/street. Fire access roadway/streets that are between 28 ft. and 34 ft. wide, prohibit parking on only one side of the roadway/street. Parking restrictions or postings are not required on fire access roadway/streets that are wider than 34 ft.

Standard #8 All required fire department access roadway/streets shall meet Hamilton County/City of Loveland engineered design loading. Fire access roadway/streets shall be finished with an application of hot-mix asphalt pavement or concrete surface over an approved base material, creating an all-weather driving surface. Gravel roads may be acceptable if the road meets or exceeds Hamilton County/City of Loveland loading specifications.

Fire trucks carrying equipment and water require heavy; consequently the design and specifications of required fire access roadway/streets shall be engineered, stamped and signed by a qualified certified engineer.

Standard #9 Throughout the development and/or site 28 ft. wide roadway/streets shall be maintained for fire department access. An area where back-to-back parking is provided 24 ft. wide fire access roadway/street is acceptable. Access roadway/streets utilized “exclusively” for fire department use 20 ft. wide is acceptable. Fire access roadway/streets serving two single-family residences or one residential duplex 12 ft. wide is acceptable.

Standard #10 Roadway or street grades shall not exceed 10% or a grade approved by the fire department.

The guideline regulation is a 10% roadway or street grade. Locations such as hillside areas are a 10% grade which is sometimes not achievable; consequently a 12% grade is acceptable.

Standard #11 Dead-end access roadways or streets in excess of 200 feet shall be provided with an approved fire apparatus turnaround.

Backing out a fire truck under normal circumstances or in an emergency situation has safety limitations and considerations for the crew as well as response times.

Standard #12 Cul-de-sacs shall not exceed 500 feet in length. Turnaround provisions shall meet design criteria as specified.

Currently, a cul-de-sac less than 500 feet in length is designed as an 84 foot flow-to-flow diameter bulb. For cul-de-sacs over 500 feet in length a 90 foot flow-to-flow diameter bulb is required. For cul-de-sacs over 600 ft. in length, in addition to the larger bulb, an intermediate turnaround is required at 500 foot intervals.

Standard #13 Roadways/streets turning radii shall be adequate for fire department vehicle access.

Fire vehicle turning distance shall be considered in the design of new roadway/streets for both public and private access.

Standard #14 Two access/exit ways should be provided into a development and/or a building site for emergency response and public exit.

This safety consideration enhances fire and medical emergency response as well as emergency public egress. Single access approval shall be made on a case-by-case basis, considering the following:

- Density of the proposed development
- Length of dead-ends
- Width of access roadway/streets
- Firefighting water supply
- Structure construction type
- Size of structures
- Occupancy
- Landscaping/groundcover

Standard #15 Landscaping shall not hamper fire access or suppression activities.

Ensure that landscaping be maintained away from fire access roadways, streets and water supplies such as low-hanging tree branches, bushes or vegetation that obstruct fire equipment or personnel.

Standard #16 The developer, contractor, and/or property owner shall provide the required fire flow for fire suppression and protection of the site, when required by the fire department.

Without an adequate supply of water, available at strategic locations, the fire department will face an “extreme” tactical challenge involving fire.

Standard #17 A “Knox-Box” key vault, padlock or switch is required to be installed at any building with a monitored alarm or gate to gain access.

The “Knox Company” key vault, padlock or electronic switch is utilized by the fire department to quickly gain access into a structure or site, without causing property damage to doors or gates. The Knox system is a high security function maintained by the fire department. If the structure has fire sprinkler and/or fire alarm system monitored off-site, a Knox Box will be required. A highly secure site may also require a Knox component.

“NO PARKING FIRE LANE” Sign Specifications

The NO PARKING FIRE LANE sign shall be 12” x 18”, red lettering on white background. These signs shall be mounted so as the bottom of the sign is at least seven (7’) feet above any pedestrian surface. There shall be a minimum clearance of one foot from edge of sign to street face of curb. The fire lane sign shall be placed at beginning of the restriction, at the end of the restriction and at least every 100 feet within the restricted area. Appropriate arrow will indicate the direction of the restriction.

The NO PARKING FIRE LANE sign should be set at an angle of not less than 30 degrees and no more than 45 degrees with the lane of traffic flow to be visible to approaching traffic.

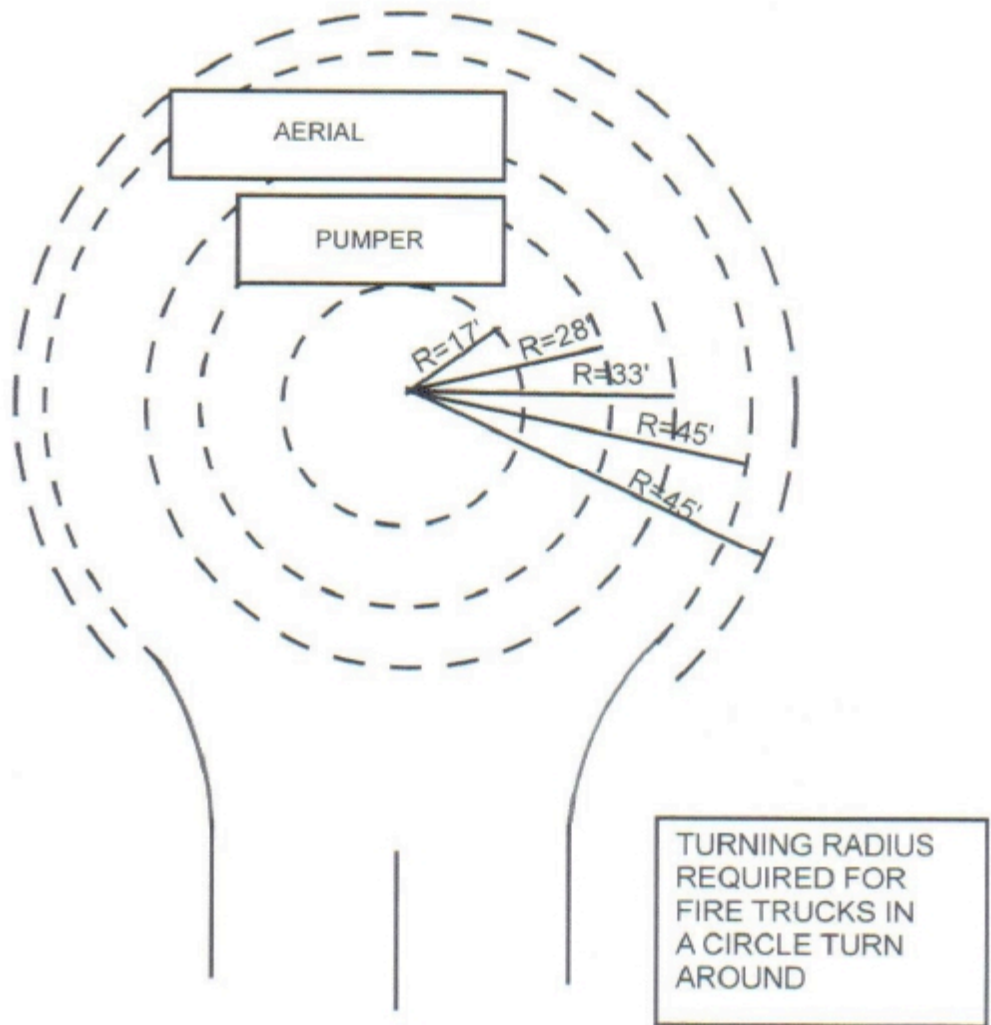
“NO PARKING FIRE LANE” sign must be posted by the developer on both sides of access roadways less than 28 feet wide and on one side of access roadways 28 feet wide but less than 34 feet wide. Contact Loveland-Symmes Fire Department for sign specifications.

The diagrams below indicate the types of signs that may be used and the recommended placement of these signs with the appropriate arrows.

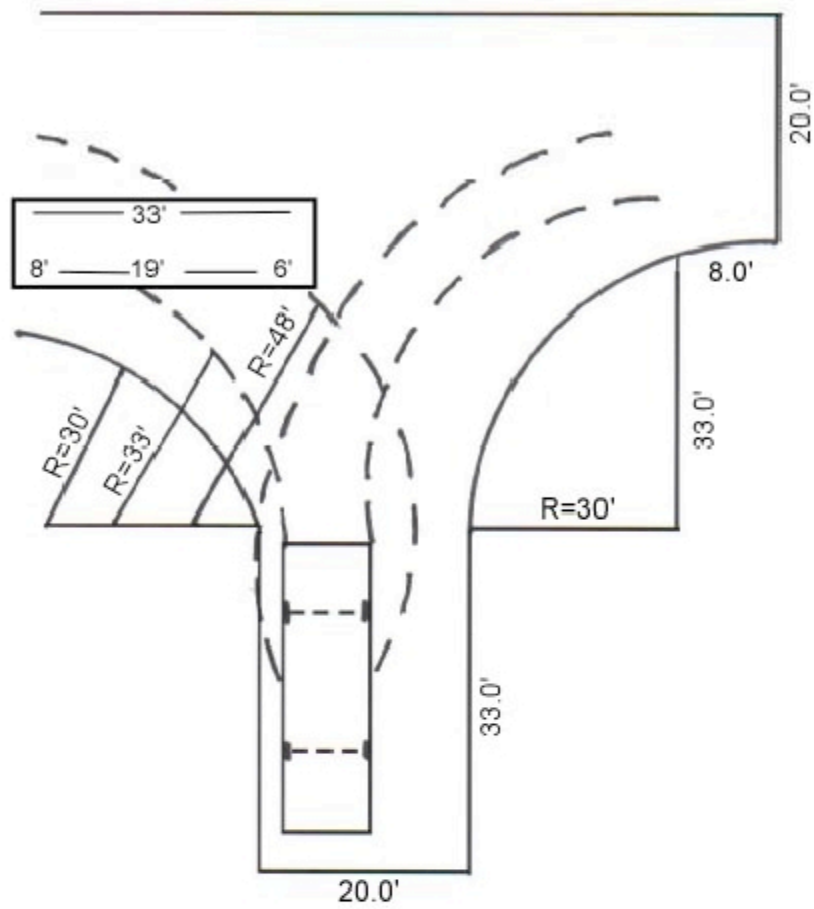


Either type may be used provided the same type is used consistently.





H=28' - OUTSIDE WHEEL, PUMPER
 R=33' - INSIDE WHEEL, AERIAL
 R=45' - OUTSIDE WHEEL, AERIAL



TURNING RADIUS REQUIRED FOR
FIRE TRUCKS IN A TEE TURNAROUND

KENNEDY K81 FIRE HYDRANT

The Kennedy Guardian

Fire hydrants have been used in fire protection for over 100 years. A.W.W.A. C502 was developed in 1913 as a standard for the manufacture and use of dry barrel hydrants. Kennedy has established itself as a leader in the industry with manufacturing experience dating back to 1905. Many of the early hydrants are in use today. Kennedy's most recent design is the Guardian. Based on a simple design, it is easy to install, maintain and repair. The Guardian sets a standard for quality in the industry and meets or exceeds all requirements for A.W.W.A. C502 latest revision, and is UL listed and FM approved.

K81D Meets or exceeds requirements of A.W.W.A. C-502 and is UL listed and FM approved.

K-81A Meets or exceeds requirements of A.W.W.A. C-502.

Guardian Features

Fig. K81D

One Piece Bonnet
Newly designed for easier maintenance.

Sealed Grease Cavity
For easier operation and maintenance.

Traffic Flange
Full 360° adjustment. New Breaking Ring on top for easy replacement and interchangeability on all K-81 models.

Corrosion Resistant
Bronze Drain Valve.

Bronze to Bronze Seating
This standard feature assures easy seat removal.

Full Cover Bottom Plate
Prevents corrosion to the lower stem threads and prevents main valve distortion. Provides a positive stop against the elbow.

Weather Shield
To protect exposed operating area from freezing rain and dirt.

Thrust Washer
For easy turning operation.

Two O-Rings
To protect operating threads from corrosion.

O-Ring
To seal between brass ferrule and stem.

Nozzle
Tamper resistant.

Breakable Coupling
Minimizes damage from traffic accident. New design makes repairs more efficient.

O-Ring
For ease of repair and nozzle facing.

AWWA
400 psi test pressure
200 psi working pressure

ULFM
400 psi test pressure
175 psi working pressure

Easy to install—Even easier to maintain

- Tamper resistant quarter turn hose and sleamer nozzles. For those who know how, replacement is easy.
- Easy to use, short, simple, inexpensive and lightweight seat removal wrench.
- Unique pressure-activated drain valve assures positive shut off. The higher the pressure, the tighter the seal. Automatically compensates for wear due to usage. Does not rely on interference fit.
- Two sizes available, 5/2" valve opening and 4 1/4" valve opening to best meet your needs.
- Fully and easily lubricated operating threads for corrosion protection and ease of operation.
- The Guardian K-81D Hydrant meets or exceeds all the latest provisions of AWWA, and UL 248-FM 1510 specifications (options are limited on UL/FM models)

Guardian K81D Hydrants

Dual Rated AWWA and UL/FM

Suggested Specifications

- Hydrants shall be UL listed and FM approved.
- Hydrants shall conform to AWWA Standard C-502 latest revision.
- Hydrants shall be of the compression type, closing with line pressure.
- Hydrants shall be of the traffic model breakaway type.
- Hydrant cap and stuffing box shall be of a utilized, one piece design creating a water tight cavity without the use of gaskets. The combination of O-rings to a crimped brass ferrule around the stem shall seal the cavity from contact with water. An alemite fitting shall be supplied for periodic lubrication of the operating threads with grease.
- Operating nut shall be of one piece bronze construction.
- A dirt shield shall be provided to protect the operating mechanism from grit buildup and corrosion due to moisture.
- A thrust washer shall be supplied between the operating nut and stem lock nut to facilitate operation.
- Nozzles shall be of the tamper resistant, 1/4 turn type with O-ring seals and stainless steel retaining screws.
- An O-ring shall be provided to seal between the upper and lower barrels.
- The main valve shall be of synthetic rubber reinforced with steel.
- The seat shall be of a bronze ring threaded to a bronze insert in the hydrant shoe, with O-rings to seal the drainway and barrel from leakage of water in the shoe.
- Hydrant drain valve shall momentarily force flush with each operation. Drainway shall be of bronze. Drain valve facing shall be of synthetic rubber with a stainless steel retaining pin.
- Hydrants shall be Guardian as manufactured by Kennedy Valve or approved equal.
- Hydrants shall be equipped with 5” stortz connection.