



New Construction and Major Remodel Inspection Checklist

Abbreviations Used Throughout This Checklist

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|------|-----------------------------------|---------|--------------------------------------|
| FACP | Fire alarm control panel | KLB | Key lock box |
| FACU | Fire alarm control unit | LFD | Laurencia Fire Department |
| FD | Fire department | NFF | Nominal fire flow |
| FDC | Fire department connection | NFPA | National Fire Protection Association |
| ft. | Feet | PIV | Post indicator valve |
| GPM | Gallons per minute | PSI | Pounds per square inch |
| HVAC | Heating, cooling, and ventilation | sq. ft. | Square feet |
| in. | Inches | UL® | Underwriters Laboratories® |

Section 1.0: Fire Department Access

- 1.1: Access roadways shall have at least 20 ft. of width and adequate turning radius for fire apparatus.
- 1.2: Access roadways shall have a vertical clearance of 13.5 ft. maintained above them.
- 1.3: Fire lanes shall be established and posted with the recognized international signage. The fire inspector in the field shall mandate where fire lanes are required.
- 1.4: All occupancies that are equipped with fire alarm systems that are monitored off-site shall have a key lock box (KLB) installed. The fire alarm contractor to install the KLB shall obtain a permit. KLB shall be mounted at the recognized main public entry unless the fire inspector has approved another location. KLB shall be mounted no less that 8 ft. above finished grade and shall report directly to the fire alarm control panel on a separate zone as a supervisory signal. Said zone shall report to the off-site monitoring facility as a KLB shall require response local law enforcement.
- 1.5: All occupancies that have gated access shall equip the gate with a siren-operated switch to allow emergency egress. A FD permit shall be obtained for the installation and a functional test shall be performed in the presence of a fire inspector. Siren operated switches shall be equipped with an emergency power source capable of operating the gate in the event of power loss or said gates shall be equipped with a fail-safe feature to automatically open in the event of power failure.

Comments *(Indicate specific item number cited.)*

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Section 2.0: Fire Hydrants & Fire Department Connections

- 2.1:** Fire hydrants shall be provided as required by FD plans review.
- 2.2:** FD inspectors shall inspect permitted fire hydrants. (visual, hydro, and flush)
- 2.3:** Fire hydrants shall be installed in accordance with all criteria set forth by NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition and FD standards.
- 2.4:** Fire hydrants shall set back at least 5 ft. from any road or curb but no more than 10 ft. from any road or curb.
- 2.5:** Fire hydrants shall be installed so that the operating nut of the largest port is no less than 18 in. but no more than 30 in. above the final grade.
- 2.6:** Fire hydrants shall be painted in accordance with FD standards: private metered hydrants have a red body; non-metered hydrants shall have their bodies painted yellow. The bonnets of all hydrants shall be painted a color determined by the fire flow i.e. ≥ 1500 GPM = light blue; 1000-1499 GPM = green; 500-999 GPM = orange; < 499 GPM = red.
- 2.7:** All fire hydrants shall have fire lanes established. Said fire lanes shall extend for a distance not less than 7.5 ft. from centerline of the hydrant in both directions. The curbing or roadway shall be painted yellow for the entire width of the fire lane. No parking fire lane signage shall be posted at each fire hydrant location. Fire lanes shall be established and posted with the recognized international signage. The fire inspector in the field shall mandate where fire lanes are required.
- 2.8:** Fire hydrant locations shall be indicated by placement of a blue reflector in the middle of the roadway lane closest to the hydrant.
- 2.9:** All fire dept connections (FDC) shall have a fire lane established. Said fire lane shall extend for a distance of not less than 15 ft. from centerline of the FDC in both directions. The roadway shall have a diagonal striping of not less than 4 ft. in width for the entire length of the fire lane. Said striping shall be painted yellow. Fire lanes shall be established and posted with the recognized international signage. The fire inspector in the field shall mandate where fire lanes are required.
- 2.10:** FDC and fire hydrants shall not be obstructed in any manner. No less than 7.5 ft. of clearance shall be maintained from the centerline of the hydrant and said clearance shall extend out to the roadway. No less than 4 ft. of clearance shall be maintained behind the centerline of the hydrant. Vertical clearance of not less than 8 ft. shall be maintained in the required clearance area.
- 2.11:** All FDC shall have signage posted "NO PARKING, FIRE DEPARTMENT CONNECTION". Said signage shall indicate the physical address of the building served by the FDC.
- 2.12:** Siamese connections shall be located no less than 18 in. above finish grade and no more than 48 in. above finish grade.
- 2.13:** FDC shall be located at least 40 ft. from the building
- 2.14:** FDC shall be located no less than 18 in. but no more than 48 in. above final finish grade.
- 2.15:** FDC shall be provided with at least one additional hose connection for at each 500 GPM demand in excess of 1000GPM, i.e: ≤ 1000 GPM=2, 1001-1500 GPM=3, 1501-2000 GPM=4, etc.

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Section 3.0: Fire Sprinkler Systems

- 3.1: A Kansas-licensed sprinkler system contractor shall install all sprinkler systems.

- 3.2: Sprinkler system installation or alteration requires an FD permit.

- 3.3: Only the contractor of record on the permit shall request inspections from LFD. Said request shall only be generated after the contractor has performed any necessary tests and inspections to his satisfaction.

- 3.4: Other trades shall not cover any work associated with the sprinkler system prior to inspection and approval by the fire inspector. Covered work will not be inspected until fully accessible and a re-inspection fee shall be assessed if applicable.

- 3.5: Flow tests determining available water supply for sprinkler system demand shall be conducted by design professional. Said flow test shall be current (conducted within 60 days of permitting) and shall be conducted during times of peak demand for the area. LFD encourages design professionals to obtain peak demand info from the utility of record and we further encourage a safety margin be implemented in the design to account for future growth and use in the area. It is incumbent upon the design professional to ensure an adequate water supply exists to support sprinkler system demand.

- 3.6: Contractors shall provide to the fire inspector all documents related to the installation of a sprinkler system, i.e.: permit, approved plans, cut sheets, technical bulletins, and installation manuals prior to any inspection. Failure to have said documents on site shall result in no inspection being conducted and a re-inspection fee shall be assessed if applicable.

- 3.7: Sprinkler systems shall be installed to meet all the criteria set forth by NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2010 Edition, and all other applicable NFPA standards. It is incumbent upon the licensed contractor to provide a product to his client that meets all national standards as well as state statutes and local ordinances. Said contractor shall address any questions with the LFD.

- 3.8: Sprinkler system water supply control valves shall be electrically supervised through a fire alarm system to a remote station facility. Said valves shall be secured with a lock and chain.

- 3.9: LFD requires a separate control valve and flow switch for each floor within a building except apartment buildings using a NFPA 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height*, 2010 Edition, design.

- 3.10: Each building equipped with a sprinkler system shall have an independent FDC.

Comments (Indicate specific item number cited.)

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Section 4.0: Underground Fire Mains

- 4.1:** LFD requires underground fire mains to meet all applicable criteria set forth by NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition.
- 4.2:** Plans shall be drawn to scale and include all essential details set forth by NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition.
- 4.3:** FDC shall meet all the criteria set forth by NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition.
- 4.4:** Every building provided with a sprinkler system, standpipe system or other system providing water for fire extinguishment shall be equipped with an FDC. LFD does not allow multiple buildings to be served by a single FDC. Each building shall be provided with its own FDC.
- 4.5:** LFD requires a FDC to be located at least 40 feet from the building it is serving. The fire inspector must approve exceptions to this requirement in writing.
- 4.6:** A FDC shall be located as close as possible to fire hydrant. Said fire hydrant shall be no closer than 10 feet. Said fire hydrant shall be no farther than 100 feet when the FDC is supplying a sprinkler system and a standpipe system or combination system. Said fire hydrants shall be located on the same side of roadways and driveways as the FDC as to not obstruct access to other incoming units.
- 4.7:** There shall be no shutoff valve in the FDC, unless allowed by code.
- 4.8:** LFD requires that FDC check valves be located at least 1 foot below finish grade. Note: an additional check valve is required on underground fire mains supplying multiple buildings to prevent the FD from pressurizing the rest of the complex and/or fire hydrants.
- 4.9:** LFD requires the FDC be provided with a ball drip valve below finish grade and that the valve be surrounded by pea gravel. The pea gravel is to be protected by plastic prior to backfilling.
- 4.10:** LFD requires full accessibility to the FDC. Nothing shall be located within 7.5 ft. of the FDC in all compass directions and a path at least 15 ft. wide shall be maintained from the FDC out to the roadway. No landscaping is allowed within this area except for mulch, gravel, and/or sod.
- 4.11:** LFD requires that each FDC be identified as to the building it serves. (Each building shall be provided with its own FDC).
- 4.12:** LFD requires that wherever the FDC is not visible to the approaching fire apparatus a sign be placed on the street side of the building to indicate the location of the FDC. Such sign shall have the letters FDC at least 6 inches high and words or an arrow to indicate the location. A pictographic sign not less than 12 inches square with an FDC symbol conforming to NFPA® 170, Standard for Fire Safety and Emergency Symbols, 2009 Edition is also deemed acceptable.
- 4.13:** Valves controlling water supply shall conform to all applicable criteria set forth by NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition. A post indicator valve (PIV) must be provided at the point of service unless otherwise approved by the fire inspector.
- 4.14:** LFD does not allow roadway valves to be installed in underground fire mains located on the discharge side of a fire pump unless they are PIVs.
- 4.15:** Every connection from the private fire main to a building shall be provided with a listed PIV.
- 4.16:** Each PIV shall be located at least 40 feet from buildings unless approved in writing by the fire inspector.

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- 4.17:** Each PIV shall be set so that the top of the post will be no greater than 36 in. above final grade.
- 4.18:** Each PIV shall be protected against mechanical damage where needed.
- 4.19:** LFD requires all indicating valves controlling water supply to automatic sprinkler systems be provided with tamper switches monitored by a fire alarm control panel.
- 4.20:** Hydrants shall comply with all applicable criteria set forth by NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition.
- 4.21:** Hydrants shall be located at least 40 feet from the buildings protected.
- 4.22:** The center of a hydrant hose outlet shall not be less than 18 in. above final grade.
- 4.23:** Fire hydrants shall meet criteria for spacing and location set forth by LFD Standard 6006. Fire hydrant layout shall comply with the following tables:

**Table A
Fire Hydrant Layout Table**

| NFF Range | Required Portion | Within: | Remainder |
|---------------|------------------|---------|----------------|
| 500-1000 GPM | 100% | 500 ft | (Not Required) |
| 1001-2000 GPM | 50% | 300 ft | 1000 ft |
| 2001-4000 GPM | 50% | 250 ft | 1000 ft |
| >4000 GPM | 50% | 250 ft | 500 ft |

**Table B
Fire Hydrant Credit Table**

| Travel Distance | Flow Credit |
|-----------------|--------------------|
| 0-300 ft | 1000 GPM/hydrant |
| 301-600 ft | 670 GPM/hydrant |
| 601-1000 ft | 250 GPM (one only) |

- 4.24:** Pipe and fittings used in fire mains shall comply with all applicable criteria set forth by NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition.
- 4.25:** LFD requires all exposed piping to be provided with freeze protection.
- 4.26:** Steel pipe and fittings shall be coated and wrapped.
- 4.27:** The depth of cover for underground fire mains shall comply with all applicable criteria set forth by NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition.
- 4.28:** Minimum depth of cover below a building footer is 12 in. to top of pipe.
- 4.29:** The depth of cover shall be at least 30 in. from the top of the pipe to final grade.

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- 4.30:** Depth of cover for pipe buried beneath driveways shall be at least 36 in. to final grade.
- 4.31:** Depth of cover for pipe buried beneath train tracks shall be at least 48 in. to final grade.
- 4.32:** Pipe shall not be run under buildings, other than footings.
- 4.33:** Pipe shall not be used for the grounding of electrical services.
- 4.34:** Restraint of fire mains shall comply with all applicable criteria set forth by NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition.
- 4.35:** All tees, plugs, caps, bends, and hydrant branches shall be restrained.
- 4.36:** Rods, nuts, washers, couplings, and other restraining devices shall be cleaned and thoroughly coated with bituminous or other acceptable corrosion-retarding material.
- 4.37:** Flushing of pipe shall comply with all the applicable criteria set forth by NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition.
- 4.38:** Flow rates for flushing shall not be less than the water demand of the system design or not less than a velocity of 10 feet per second whichever is greater.
- 4.39:** Flow rates necessary to produce a velocity of 10 feet per second shall meet NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition, Table 9-1.1.
- 4.40:** Testing of fire mains shall comply with all applicable criteria set forth by NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2010 Edition, Chapter 9
- 4.41:** Hydrostatic test pressures for fire mains not located on the discharge side of a fire pump shall be not less than 200 PSI for 2 hours or at 50 psi greater than the maximum static pressure when the static pressure is in excess of 150 PSI.
- 4.42:** Hydrostatic test pressure for fire mains located on the discharge side of a fire pump shall be static pressure + fire pump churn pressure + 50 PSI.
- 4.43:** The authority having jurisdiction shall witness hydrostatic tests.

Comments *(Indicate specific item number cited.)*

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Section 5.0: Fire Alarm Systems

- 5.1:** A Kansas-licensed fire alarm system contractor shall install fire alarm systems.
- 5.2:** Fire alarm system installation and modification requires a LFD permit.
- 5.3:** LFD fire inspectors shall inspect fire alarm system installation and modifications.
- 5.4:** Only the contractor of record on the permit shall request inspections from LFD. Said request shall only be generated after the contractor has performed all necessary tests and inspections to his satisfaction.
- 5.5:** Contractors shall submit their request for inspection at least 48 hours in advance. Warning inspections are conducted on first come first served basis; there is no guarantee of service within 48 hours.
- 5.6:** Contractors shall provide to the inspector all documents related to the installation of a fire alarm system, i.e. permit, approved plans, cut sheets, technical bulletins, and installation manuals prior to any inspection. Failure to have said documents on site shall result in no inspection being conducted and a re-inspection fee shall be assessed if applicable.
- 5.7:** Fire alarm systems shall be installed to meet all the criteria set forth by NFPA 72, National Fire Alarm and Signaling Code, 2010 Edition and all other applicable NFPA standards, i.e. NFPA 70, National Electrical Code®, 2008 Edition, NFPA 101, Life Safety Code®, 2009 Edition, etc. It is incumbent upon the licensed contractor to provide a product to his client that meets all national standards, state statutes, and local ordinances. Said contractor shall contact the LFD should he have questions.
- 5.8:** Fire alarm systems shall also comply with all applicable criteria set forth by the Kansas Accessibility Code and the Americans with Disabilities Act.
- 5.9:** The licensed holder of record shall provide a letter of 100% pretest and compliance to all applicable local, state, and national codes to the fire inspector prior to any inspection.
- 5.10:** Each building within a complex of buildings shall be provided with an independent fire alarm system.
- 5.11:** The buildings shall be zoned by floor and each zone shall not exceed 15,000 sq. ft. Exceptions are water flow switches and HVAC duct detectors common to a floor area.
- 5.12:** Any fire alarm cable run underground or subject to damp and/or wet locations shall be listed for use in a wet location.
- 5.13:** Any fire alarm cable run between buildings shall be provided with surge protection as it leaves the building and where it enters the other building.
- 5.14:** Any fire alarm cable leaving the building to service or connect devices in the field shall have surge protection.
- 5.15:** Fire alarm systems shall be provided with a dedicated electrical circuit. Said circuit shall be identified at the electrical panel and at the fire alarm control panel. Said circuit shall have lockout protection.
- 5.16:** All wiring associated with fire alarm systems shall meet the criteria set forth by Article 760 of the National Electric Code.
- 5.17:** LFD requires that fire alarm control panels or fire alarm enunciator panels must be located within 6 ft. of the recognized main public entry. Each FACP or FACU shall be provided with a zone map located directly adjacent to its location.

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- 5.18:** Each fire alarm system shall be provided with a set of as built drawings. Said drawings shall show the location of all devices and each device shall be numbered for inspection, test, and repair logging.

- 5.19:** Each fire alarm system shall be provided with an inspection, test, and repair logbook. Each logbook shall contain a means to record such data as date of activity, type of activity, company performing activity, and results of activity. Each logbook shall contain as built drawings (where this is impractical a set of drawings shall be maintained on site) and a manufacturer’s installation manual.

- 5.20:** Doogie County Ordinance 99-03 (False Alarm Ordinance) requires any company or person installing, inspecting, or repairing a fire alarm system to provide a copy of the False Alarm Ordinance and NFPA 72, National Fire Alarm and Signaling Code, 2010 Edition, Chapter 7 to any owner not possessing them.

- 5.21:** Doogie County Ordinance 99-03 (False Alarm Ordinance) requires that all alarm systems having audio/voice notification be equipped to shut off such notification after 15 minutes of operation unless required by law to have a longer waiting period.

- 5.22:** Doogie County Ordinance 99-03 (False Alarm Ordinance) requires that the operator of every business having a fire alarm system provide signage containing working telephone numbers for at least 3 persons to notify in case of an emergency. Such signage shall be visible from the exterior of the business and be adjacent to the main entrance.

Comments *(Indicate specific item number cited.)*

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Section 6.0: Fire Pumps & Fire Pump Rooms

- 6.1:** Fire pump room sizes shall have the following minimum dimensions: electric driven pump rooms shall be 14 ft. by 14 ft.; engine driven pump rooms shall be 16 ft. by 16 ft.
- 6.2:** Fire pump rooms shall be located on an exterior wall of the building.
- 6.3:** Fire pump rooms shall be equipped with exterior doors providing at least a six-foot opening.
- 6.4:** Fire pump rooms shall be ventilated.
- 6.5:** Fire pump rooms shall be provided with a heater.
- 6.6:** Fire pump rooms shall be provided with emergency lighting.
- 6.7:** Fire pump rooms shall be posted with signage "NO STORAGE BY ORDER OF THE FIRE OFFICIAL".
- 6.8:** Fire pump rooms shall be provided with a 4A60BC-rated fire extinguisher.
- 6.9:** Fire pump room doors shall be labeled "FIRE PUMP ROOM".
- 6.10:** Fire pump room doors shall be secured from entry by unauthorized persons.
- 6.11:** Fire pump rooms shall be provided with a floor drain.
- 6.12:** Fire pump rooms shall be provided with automatic sprinkler protection.
- 6.13:** All high voltage wiring associated with the fire pump, jockey pump, and controllers shall be located within rigid, intermediate, or liquid tight conduit.
- 6.14:** Fire pump controller signals shall be supervised by the building fire alarm system.
- 6.15:** Fire pump acceptance test shall be conducted in the presence of a fire inspector.
- 6.16:** No acceptance test will be performed without the pump manufacturer's representative being present.
- 6.17:** The pump manufacturer's representative shall be prepared to present certification of pump alignment to the fire inspector prior to the acceptance test.
- 6.18:** The pump manufacturer's representative shall be prepared to present results of the acceptance test to the fire inspector upon completion of the test.
- 6.19:** Fire pump piping shall be hydrostatically tested in the presence of the fire inspector before an acceptance test is scheduled.
- 6.20:** Fire pump valves shall be supervised by the building fire alarm system.
- 6.21:** Locks and chains shall secure fire pump valves.
- 6.22:** Fire pump piping shall be painted with a rust inhibiting paint.

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Section 7.0: Means of Egress

- 7.1:** LFD uses criteria set forth by the NFPA 101, *Life Safety Code*®, 2009 Edition, to determine means of egress compliance.
- 7.2:** Exits shall comply with all applicable criteria set forth by Chapter 7 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.3:** Stairs, handrails, and guardrails shall comply with criteria set forth by Chapter 7 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.4:** Exit illumination shall comply with criteria set forth by Chapter 7 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.5:** Emergency lighting shall comply with criteria set forth by Chapter 7 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.6:** Exit signage and exit directional signage shall comply with criteria set forth by Chapter 7 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.7:** Exit corridors shall comply with criteria set forth by Chapters 7 & 8 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.8:** Exit discharge to a public way shall comply with criteria set forth by NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.9:** Doors located within means of egress shall be governed by criteria set forth by Chapter 7 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.10:** Locks, latches, panic, and fire exit hardware shall comply with criteria set forth by Chapter 7 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.11:** Controlled access doors shall comply with criteria set forth by Chapter 7 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.12:** Interior finishes within means of egress shall comply with criteria set forth by Chapter 8 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.13:** Rated assemblies (doors, windows, openings, etc.) located within the means of egress shall comply with criteria set forth by Chapter 8 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.14:** Required fire rated separation within the means of egress shall comply with criteria set forth by Chapters 7 & 8 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.15:** Exit capacity shall be determined by criteria set forth by Chapter 7 of NFPA 101, *Life Safety Code*®, 2009 Edition.
- 7.16:** Travel distance to exits shall comply with criteria set forth by Chapter 7 and the occupancy specific chapters of NFPA 101, *Life Safety Code*®, 2009 Edition.

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