



A Tradition of Stewardship
A Commitment to Service

CAL FIRE
NAPA COUNTY
FIRE DEPARTMENT

FIRE MARSHAL'S OFFICE
DEVELOPMENT GUIDELINES

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I. SERVICE AREA

CAL FIRE/Napa County Fire Department (NCFD) provides fire protection, emergency medical, rescue, and Fire Marshal services to the unincorporated areas of Napa County and the Town of Yountville.

II. APPLICABLE CODES AND STANDARDS

Title 24 California Fire Code with local amendments (CFC)
Title 14 Public Resources Code (Including: PRC 4290 & 4291)
Title 19 Health and Safety Code

Adopted Standards:

NFPA 13D, 13R-2013 Edition, Fire Sprinkler Systems for One & Multi-Family Dwellings
NFPA 1142-2012 Edition, Water Supplies, Suburban and Rural Fire Fighting
NFPA-22, 2013 Edition, Water Tanks for Private Fire Protection

III. PLAN SUBMITTAL

Plans shall be submitted to the Napa County Planning Building Environmental Services (PBES). PBES will forward all plans that require fire department review to our office. Approved plans will be sent to PBES for permit issuance. If changes are necessary a correction letter will be sent to the applicant with a detail of the requirements.

Separate Fire Submittals (Fire Sprinkler, Fire Alarms, Kitchen Hood Systems, Underground Fire Supply, Fire Pumps, etc.) require two sets of plans submitted to the PBES for intake. In order to expedite your plan review, please have the following information on your plans:

1. Site plan with the scale, north reference and key;
2. Total square footage of buildings with identification of use and if the development is new or existing;
3. APN and numerical address;
4. Required information reflecting applicable codes and regulations to submittal.

IV. ROADWAY/DRIVEWAY FIRE DEPARTMENT ACCESS

All Fire Department required access shall comply with the Napa County Road & Streets Standards. Refer to the Napa County Road & Street Standards for detailed information. The standards can be found online at the Napa County Planning, Building & Environmental Services – Engineering Division Forms & Documents. <http://www.countyofnapa.org/PBES/Engineering/>

V. FIRE PROTECTION WATER SYSTEMS

1. RESIDENTIAL WATER STORAGE & SUPPLY SYSTEMS

- a) Plans shall detail all components of the water storage system including water storage tank, piping size, type & routing, hydrants, and capacity dedicated to fire protection.
- b) Water storage required for fire protection (fire flow) shall be in addition to the domestic use. Swimming pools and ponds may be an acceptable use for fire protection storage when approved.
- c) Water storage to operate the sprinkler system shall be in addition to the amount required for fire flow.
- d) Fire flow water storage shall be a minimum of 2500 gallons for single family residences less than 6000 square feet. Contact the Napa County Fire Marshal's Office for fire flow storage requirements that apply to multi-family residential projects or residential structures over 6,000 square feet.
- e) The water storage shall be delivered by either a wet draft hydrant or a pressurized hydrant.
- f) Wet Draft Hydrant system piping shall be a minimum of 4" and shall be either C-907, CPVC (minimum Schedule 40) or ductile iron pipe. Pipe riser shall be ductile iron with a minimum 4 inch gate valve and 4½ inch national hose male outlet with cap. The wet draft hydrant outlet must be within 24 inches to 36 inches above finished grade.
- g) Wet Draft Hydrants shall be painted red and have 1 inch white letters posted on it to read: "**WET DRAFT**".
- h) If a Pressurized Hydrant system is utilized or required, piping shall be a minimum of 6" and shall be either C-900, C-907, ductile iron pipe or other approved NFPA material. A pressurized hydrant system will require one 4 ½ inch and two 2 ½ inch male National hose thread with metal cap. The pressurized hydrant outlet must be minimum 18 inches above finished grade.

- i) A pressurized system must have a minimum capability of delivering 200 GPM at 20 PSI and must be calculated and certified by a registered engineer.
- j) Pressurized hydrants shall be painted per NFPA 291 specifications. Hydrant body shall be painted Safety Chrome Yellow. Tops and caps should indicate the available GPM. Below 500 GPM shall be red, 500-999 GPM shall be orange, 1000-1499 GPM shall be green, and 1500 GPM or more shall be blue.
- k) Hydrants shall be located no closer than 40 feet and no further than 150 feet from the residence or building.
- l) The hydrant shall be located centered in a turnout area of a driveway and shall be within 5 feet to the edge of driveway. The fire hydrant turnout location shall be established in an area separate from the fire apparatus turn around. The fire hydrant turnout area is for fire apparatus to be parked during drafting operations and shall not interfere with the fire department access to and from the structure.
- m) A blue dot reflector shall be adjacent to all hydrants.
- n) Where required, hydrants shall have vehicle impact protection.
- o) Detail #3 of the Napa County Development Guidelines may be used as a guide.

EXCEPTION: If the proposed project is served by a community water system, no tank is required. The nearest hydrant shall be within 1,000 feet of the building and shall be shown on the building plans.

2. COMMERCIAL WATER STORAGE & SUPPLY SYSTEMS

An approved water supply capable of supplying the required fire flow shall be provided to all premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into the jurisdiction.

- a) **Community Water Systems:** Buildings served by a public or community water system shall provide fire flow calculations, certified by a State Licensed Civil Engineer, C-16 licensed contractor, or a registered engineer within their area of expertise, indicating compliance with CFC Appendix B. Projects served by municipal water supply shall have an approved water supply for fire protection be made available as soon as combustible material arrives on the site.
- b) **On- Site Water Systems:** Buildings not served by a public water system shall provide water storage and fire flow calculations certified by a State Licensed Civil Engineer, C-16 licensed contractor, or registered engineer indicating

compliance with the CFC.

c) Water Storage Facilities: Water storage facilities are tanks or commercial reservoirs. Open commercial reservoir systems may be proposed as a concept for review by the Fire Marshal prior to approval.

d) Fire Pumps: Projects that are not served by community water may require a fire pump to meet the required fire flow and/or the demand for fire sprinklers. Fire Pumps shall be UL listed and installed in accordance with NFPA 20. In the Local Response Area fire pumps may be either diesel driven or electric. In the State Responsibility Area fire pumps shall be diesel driven or electric with a backup diesel generator.

e) Fire Hydrants:

Fire hydrants shall be provided in accordance with the CFC Appendix C. Fire hydrant locations shall be shown on scaled civil drawings.

- i. All commercial fire hydrants shall have two 2 ½ -inch outlets with one 4 ½ -outlet and shall have male National Hose thread connections.
- ii. Hydrants shall be located within 250 feet from any portion of the exterior of the building as measured along approved vehicular access roads.
- iii. Hydrants shall be located a minimum of 40 feet from all buildings.
- iv. Blue reflective markers shall be installed to identify locations of all fire hydrants. Locate 12" from centerline of hydrant side of road and perpendicular to the hydrant.
- v. All hydrants shall be painted per NFPA 291 specifications. Hydrant body shall be painted Safety Chrome Yellow. Tops and caps should indicate the available GPM. Below 500 GPM shall be red, 500-999 GPM shall be orange, 1000-1499 GPM shall be green, and 1500 GPM or more shall be blue.
- vi. Fire hydrants clearance shall have be a minimum of 18 inches from the center of the 4 ½ -inch discharge to finished grade level and 36 inches horizontal in all directions.
- vii. The minimum main size of all fire hydrants shall be 6 inches in diameter. Piping shall be installed with C-900 class 200 piping or ductile iron or equivalent per current Standard NFPA 24 for the installation of Underground Fire Protection Mains.
- viii. Parking prohibited within 15' in either direction of hydrant and shall have approved red striping and/or signage.

f) Fire Department Connections & Post Indicator Valve (FDC & PIV)

- i. Each sprinkler system shall be provided with a sprinkler control valve to isolate the system from the water supply.
- ii. Valves provided for each sprinkler system shall be outside indicating. When there is more than one riser on the system, each riser shall have separate outside indicating valves.
- iii. The installation height of the PIV shall be 24"-36" above the adjacent grade to the PIV handle socket.
- iv. Wall PIVs and butterfly valves shall be readily accessible.
- v. Protection of the control valves is required when the control valves are subject to impact from vehicular traffic.
- vi. Working clearance for control valves shall be unobstructed 3-foot radius around the control valve.
- vii. All underground piping for fire protection shall be installed per NFPA 24.
- viii. FDC shall be located on the address side of the building, close to curb face, facing the street fully visible and recognizable from the street or nearest point of fire apparatus access roads. The FDC shall be located within 50 feet of an approved fire hydrant.
- ix. FDC shall not be installed where there is a possibility of injury to firefighters by falling objects.
- x. FDC shall be installed so that the centerlines of the inlets are located at a minimum height of 24".
- xi. FDC shall be installed on the system side of the double detector check valve.
- xii. FDC to sprinkler systems shall have contrasting letters at least 1" in height on a plate or fitting indicating the service for which the connection is intended. Example: "**FDC SPRINKLER AND STANDPIPE SERVING 2100 GRAND AVE.**"
- xiii. All Fire Protection valves shall have fire alarm tamper switches.

VI. DEFENSIBLE SPACE

Defensible Space is a perimeter that provides a buffer to stop or slow the spread of an encroaching wildland fire or prevent a structure fire from escaping into the adjacent wildland. Defensible Space is an area of reduced and/or modified fuel that will not readily transmit or carry fire and will provide firefighters with a safe working environment that allows them to protect buildings and structures from encroaching wildfires and minimizes the chance that a structure fire will escape to the surrounding wildland.

Public Resource Code 4291, the California Fire Code and the Napa County Fire Hazard Abatement Ordinance require 100 feet of defensible space around all structures and also require 10 feet of defensible space on each side of roads and driveways. The Napa County Defensible Space Guidelines were developed to provide a guideline of fuel modification to ensure compliance with the state and local requirements for defensible space. The guidelines can be found online at the Napa County Fire Marshal's Office webpage.

<http://www.countyofnapa.org/firedepartment/>

For new construction in the SRA, California Fire Code Section 4907 and the SRA Fire Safe Regulations (Title 14, Division 1.5, chapter 7, Subchapter 2, Section 1270) require:

- (a) All parcels 1 acre and larger shall provide a minimum 30 foot setback for buildings and accessory buildings from all property lines and/or the center of the road.
- (b) For parcels less than 1 acre, the local jurisdiction shall provide for the same practical effect.

Whenever the setback, as defined above, is less than 30 feet, the design professional is responsible for detailing how the building design will provide the same overall practical effect. The Fire Marshal or the Fire Marshal's designees will review the proposed design. Examples of methods that may be considered as providing the same overall practical effect are: increasing fire wall rating, designing fire exterior sprinklers and setback easements on adjacent parcels.

Structures built in fire hazard severity zones are required to comply with the ignition resistant construction requirements of the California Building Code, Part 2 Volume 1, Chapter 7A. Chapter 7A of the building code is enforced by the Napa County Building Department.

VII. FIRE SPRINKLER SYSTEMS

An automatic fire sprinkler system shall be installed in all new buildings or structures when the total floor area exceeds 3,600 square feet or throughout an entire building when an addition or expansion to the existing building exceeds

50% of the existing floor area and resulting floor area will exceed 3,600 square feet, or throughout an entire building which exceeds 3,600 square feet when repair or significant structural damage to the existing building (caused by flood, fire, or earthquake for example) requires rebuilding of 50% of the building structure

1. RESIDENTIAL AUTOMATIC FIRE SPRINKLER SYSTEMS

- a) Automatic fire sprinkler systems shall be installed in all new residential occupancies.
- b) Automatic fire sprinkler systems shall be designed and installed in compliance with the NFPA Standards.
- c) Plans for the residential sprinkler systems are a separate submittal and can be deferred until after the residential building permit has been issued provided the building plans identify that the structure will be protected by an automatic fire sprinkler system designed and installed in compliance with NFPA Standards under a separate permit.

2. COMMERCIAL AUTOMATIC FIRE SPRINKLER SYSTEM

- a) All fire sprinkler systems shall be designed and installed per NFPA 13 Standard. A minimum of two sets of drawings with hydraulic calculations, catalog cut sheets and owners information certificate shall be submitted.
- b) An automatic sprinkler system shall be installed in all garbage compartments, rubbish and linen chutes, linen rooms, incinerator compartments, dumb waiter shafts, and storage rooms in all occupancies except Group R, Division 3. An accessible indicating shut-off valve shall be installed.
- c) When serving 20 sprinklers or more, all water supply valves and water flow alarms shall be supervised by an approved central station service.
- d) All exterior alarms shall be UL listed and visible from the street/roadway fronting the building. Additional horn/strobe devices may be required to indicate multiple riser locations.
- e) No underground or aboveground piping shall be covered prior to a system rough-in/hydrostatic test at 200 P.S.I. for two hours.
- f) All underground piping shall be flushed and approved by the Fire Department prior to connection to overhead piping.

VIII. FIRE ALARM SYSTEMS

1. Fire alarm systems shall be provided to monitor automatic fire sprinkler systems and installed in accordance with the appropriate standards of the California Fire Code and NFPA 70 and 72.
2. All fire alarm systems shall be monitored by an approved central or proprietary service.
3. Approved audible and visual notification devices shall be connected to every automatic sprinkler system to alert occupants upon activation within separate occupancies. Visual alarm notification appliances shall be provided in public use areas and common use areas including restrooms, bathrooms, shower rooms, corridors, lobbies, meeting rooms and other occupied spaces described in the CFC and Napa County Code Amendments. All notification devices shall be installed by a C-10 licensed contractor. Building Permits cannot be issued until plans are submitted and approved by the fire department.

IX. HEATING VENTILATION & AIR CONDITIONING (HVAC)

1. Duct detectors shall be installed per NFPA.
2. Detectors that are installed in the air duct system in accordance with shall not be used as a substitute for open area protection.
3. Area smoke detectors within smoke compartments shall be permitted to be used to control the spread of smoke by initiating operation of doors, dampers, and other equipment.
4. Where the detection of smoke in the supply air system is required by other NFPA standards, a detector(s) listed for the air velocity present and that is located in the supply air duct downstream of both the fan and the filters shall be installed.
5. Detectors shall be listed for the purpose for which they are being used and installed in such a way as to obtain a representative sample of the airstreams. This installation shall be permitted by any of the following methods:
 - a) Rigid mounting within the duct.
 - b) Rigid mounting to the wall of the duct with the sensing element protruding into the duct
 - c) Installation outside the duct with rigidly mounted sampling tubes protruding into the duct.
 - d) Installation through the duct with projected light beam.
 - e) The location of all detectors in the duct systems shall be permanently and clearly identified and recorded.

X. FIRE EXTINGUISHERS

1. Portable fire extinguishers shall be located to be readily accessible. Its type, location and spacing throughout the facility shall be in accordance with the provisions of Title 19, Chapter 3 and CFC, Section 906.
2. Fire extinguishers (min.2A10BC) shall have State Fire Marshal's service tag. Mounted 3'-5' above finished floor, within minimum 75' feet of travel distance between each extinguisher and exits.
3. Commercial kitchens: Install K-extinguisher within 20' of cooking area.

XI. FIRE DEPARTMENT ACCESS

1. A secure key entry system shall be required for all commercial facilities and security gates in the Napa County.
2. The gate access Knox key switch is #3501 or #3502.
3. Knox cabinets are required to be mounted at the driveway entrance on the right hand side and shall be mounted 3 to 5 feet to the top of the box. Knox Cabinet #1308 with weather proof housing #1201.
4. Ordering from Knox Co can be done via the KNOX website @ www.knoxbox.com or calling, 800-552-5669, use the department code #PS-01-0176-03-82 or specify **CAL FIRE/NAPA CO FIRE.**

XII. FIRE LIFE SAFETY PLANS

Fire Safety, Evacuation & Lockdown Plans shall comply with the requirements of the current California Fire Code, Section 404. Fire Safety Plan - a written narrative and site plan shall be developed and submitted for fire department review that identifies the following items:

1. Procedures for reporting emergencies to the Fire Department.
2. Procedures for emergency notification, evacuation and/or relocation of all persons in the building under construction and on the site.
3. Procedures for hot work operations, management of hazardous materials and removal of combustible debris and maintenance of emergency access roads.
4. Floor plans identifying the locations of exits, exit stairs, exit routes and portable

fire extinguishers.

5. Site plans identifying the designated exterior assembly areas for each evacuation routes.
6. Site plans identifying required fire apparatus access roadways and on-site fire hydrants.
7. Location and marking of Entry site/gate into a gated construction site
8. The name(s) and contact phone numbers of persons responsible for compliance with the Fire Protection Plan.

XIII. COMMERCIAL KITCHEN HOOD AND DUCT SYSTEMS

1. All commercial type cooking equipment that produces grease laden vapors shall be equipped with an automatic fire extinguishing system. Systems shall comply with CFC, Section 904, NFPA Standards 17, 17A, and/or 96.
2. Commercial cooking equipment that produces grease laden vapors shall be provided with a Type I Hood, in accordance with the California Mechanical Code and an automatic fire extinguishing system that is listed and labeled for its intended use. CFC 904.11
3. Manual activation devices shall be located in an approved location. CFC 904.11
4. Fire extinguishers provided for the protection of cooking grease fires shall be of an approved type compatible with the automatic extinguishing agent. Sizing and distribution shall be in accordance with the latest edition of NFPA 10. Minimum (1) 2A10BC and one (1) 1½ gallon class K-extinguisher within 20' of cooking area.
5. Submit two sets of plans under a separate fire permit. Plans shall include the room layout, including exit doors, walls, etc. Include flow calculations and cut-sheets for all components.

XIV. SUBTERRANEAN CAVES

The use of subterranean space in natural or manmade caves shall be in accordance with CFC and the Napa County code amendments.

1. **TYPE OF CAVES:**
 - a) **TYPE 1 CAVES-** Are natural or manmade caves used solely for storage and/or processing of wine at a winery facility. Type 1 caves are **NOT** accessible by the public.

b) **TYPE 2 CAVES** - Are natural or manmade caves used solely for storage and/or processing of wine at a winery facility. Type 2 caves are accessible by the public on **guided tours only**. All Type 2 caves require a minimum of an approved manual fire alarm system. Public tours for the public shall be continuously guided by staff knowledgeable in the location of exits and the use of emergency notification devices.

c) **TYPE 3 CAVES** - Are natural or manmade caves used solely for storage and/or processing of wine at a winery facility. Type 3 caves are accessible by the public on **guided tours only** and contain assembly areas. Any cave with a wine library and/or bathrooms is considered a Type 3 cave. All Type 3 caves require an approved manual fire alarm system and fully sprinklered. Tours for the public shall be continuously guided by staff knowledgeable in the location of exits, fire extinguishers and the use of emergency notification devices.

2. CAVE FIRE ALARM SYSTEM:

A manual and automatic fire alarm shall be installed in all Type 2 and 3 caves and all caves if they contain any combustible material needed for use in processing or storage of wine, to service and maintain a restroom, wine laboratory or library. Fire alarm systems shall be designed and installed in compliance with NFPA 72 and shall be monitored by an approved central station, remote station or proprietary system.

3. CAVE FIRE DEPARTMENT ACCESS:

Fire apparatus access roads shall be provided to all cave portals, unless the cave exits into a structure and comply with Napa County Road & Street Standards.

4. CAVE WATER SUPPLY:

An approved water supply capable of supplying the required fire flow for fire protection shall be provided for all caves and fire flow calculations certified by a State Licensed Civil Engineer, C-16 licensed contractor, or registered engineer indicating compliance with Table B105.2 through Table 105.4 of the Napa County Code Amendments.*Separate submittal

5. CAVE EXITS:

- a) A minimum of two exits shall be provided for all type caves. The exits shall be located remotely from each other and arranged to minimize any possibility that either exit may be blocked by a fire or an emergency condition;
- b) Exit travel distance shall comply with the Building Code. In most instances a storage only cave may be have a travel distances of up to 300 feet unsprinklered or 400 feet sprinklered. Any cave used for assembling people must be sprinklered and maximum travel distance shall not exceed 250 feet;

- c) Exit and egress lighting shall be supplied whenever the cave is occupied. Exits shall be illuminated to a minimum intensity of not less than 1 foot-candle (10.76 lx) at floor level whenever the winery cave is occupied.
- d) Fixtures providing exit illumination shall be supplied from a dedicated circuit or source of power used only for exit illumination.
- e) The power supply for exit illumination may be provided by the premises' wiring system. In the event of its failure, illumination shall be automatically provided from an emergency system in Types 2 and 3 winery caves.
- f) Emergency systems shall be supplied from storage batteries or an on-site generator set, and the system shall be installed in accordance with the requirements of the California Electrical Code.
- g) Exit signs shall be installed at required exits and where otherwise necessary to clearly indicate the exits from assembly areas in Type 3 winery caves.

6. OTHER REQUIREMENTS:

- a) The area of winery caves shall not be limited if constructed entirely of noncombustible materials. Winery caves constructed with combustible materials shall be limited in area so that no point is more than 150 feet from an exit.
- b) The walls and ceilings of winery caves shall not contain hidden or concealed spaces.
- c) Portable fire extinguishers shall be located to be readily accessible. Its type, location and spacing throughout the facility shall be in accordance with the provisions of Title 19, Chapter 3 and California Fire Code Section 906.1. Other fire appliances shall be maintained at the site as required by the Fire Chief.
- d) Assembly areas of Type 3 winery caves shall be provided with exits as required by the California Building Code for Group A Occupancies.
- e) Seating arrangements. Seating arrangements in the assembly areas of Type 3 winery caves shall be in accordance with California Fire Code, Section 1028.9
- f) CFC 436.8.2 Standby personnel. Per the California Fire Code, Section 2404.20, when, in the opinion of the Fire Chief, it is essential for public safety, the owner, agent or lessee shall employ one or more qualified persons, as required and approved by the chief, to be on duty at such place. Such individuals shall be in uniform or otherwise easily identifiable. Standby personnel shall be subject to the Fire Chief's orders at all times when so employed and shall remain on duty during the times such places are open to the public or when such activity is being conducted;

- g) Before the start of any activity requiring standby personnel, such individuals shall:
 - i. Inspect the required fire appliances to ensure they are in the proper place and in good working order;
 - ii. Inspect all exits to verify accessibility and proper operation. While on duty, such individuals shall not be required or permitted to perform any duties other than those specified by the Fire Chief.
- h) Open-flame devices. The use of candles and other open-flame devices shall be in accordance with California Fire Code Section 308.1.7.

XV. EMERGENCY RESPONDER RADIO COVERAGE

1. Emergency responder radio coverage in new buildings shall comply with Section 510 of the current CFC.
2. All new buildings shall have approved radio coverage for emergency responders within the building based upon the existing coverage levels of the public safety communication systems of the jurisdiction at the exterior of the building.

XVI. INSPECTIONS

Please allow a minimum of 48 hours notice to schedule inspections. Contractor will insure all approved plans, forms, and permit cards necessary for the inspection are available at time of inspection. Failure to do so may require a re-inspection. Please note additional inspections, re-inspections or special site visits are not included in the permit fees and shall be charged at a per hour basis.

1. UNDERGROUND INSPECTION: (Water Supply, Storage Supply Lines and Fire Hydrant)

Inspection 1: Inspection of the underground fire line system shall include a visual inspection of all underground piping, thrust blocks, mechanical joints.

Inspection 2: A 200 psi pressure test to all fire lines.

Inspection 3: Flushing of the system shall be witnessed by the Napa County Fire Marshal's Office to ensure system is clear and free of debris before connecting to the fire sprinkler system. Contractor will provide (2) 2-1/2" hoses with burlap bags attached. Contractor will confirm all water supply pipe is free of debris prior to Fire Marshal inspection. Contractor will supply a safe anchoring system to hose lines while performing flush test. Contractor shall provide the NFPA 24 Underground Installation and Test Materials Certification upon final inspection.

2. FIRE SPRINKLER SYSTEM INSPECTION:

Inspection 1: Inspection of all welds prior to hanging of pipe. Contractor shall insure all pipe is laid out and ready for inspection. Contractor shall supply weld certificates for the specified welding technician.

Inspection 2: Prior to connecting to water supply, a hydrostatic pressure test of 200 psi for two hours, and verify that the system has been installed per the approved set of plans. A final acceptance test shall also be conducted. The installing contractor shall provide the NFPA 13 Aboveground Piping Material and Test Certification upon final inspection.

3. FIRE ALARM SYSTEM INSPECTION:

A functional test shall be conducted to ensure that the system has been installed in accordance with the approved plans. This inspection shall include phone line tests, smoke detectors, manual pull boxes, heat detectors, water flow and other functional tests as required by NFPA 72. Contractor shall provide the NFPA 72 Installation Certification upon completion of the functional test.

4. BUILDING FINAL INSPECTION:

Prior to final approval of the building permit a final inspection shall be conducted to ensure compliance with all applicable codes and standards. Inspections shall include but not be limited to fire department access roads, building exiting, fire hydrants, addressing, locations of fire extinguishers, location of Knox Box or storage cabinet, and the final sign off on all required fire protection systems, etc. The following checklist is to assist the contractor/developer/owner to insure all requirements are met **prior** to calling for a TCO (Temporary Certificate of Occupancy) or Final Inspection. Please be advised all fire life safety requirements will need to be met prior to granting a TCO or Final which is addressed on this Check List. A TCO is only good for 180 days maximum and all final requirements and inspections will need to be met.

5. FINAL OCCUPANCY CHECKLIST

The following are some of the most commonly overlooked items at a final inspection. Therefore, this is not an all-inclusive checklist. Additionally, some of these items may not apply to all projects. If you have questions, please contact your fire department inspector prior to final inspection;

- a) Copy of approved plans. This includes all submittals related to this project (civil, architectural, sprinklers, fire alarm, kitchen hood suppression system, rack storage, above ground tanks, gates...);
- b) Permit Inspection Cards with all required inspections signed off:
 - i. Underground flush – Hydrant/Riser/Lateral;
 - ii. Above Ground Hydro- Sprinkler System;

- iii. Fire Pump Acceptance;
 - iv. Fire Alarm;
 - v. Protection of commercial cooking operations;
 - vi. Special systems- High piled stock, Dust collection, LPG tank, above/underground storage tanks.
- c) Copies of Fire/Safety Inspection Reports for all inspections;
- d) Copy of Contractor's Material and Test Certificate for Aboveground and Underground Pipe;
- e) Fire extinguishers (min. 2A10BC) mounted and provided with State Fire Marshal's service tag. Mounted 3'-5' above finished floor, within 75' feet of travel distance between exits;
- f) KNOX Cabinet- Knox cabinets are required to be mounted at the driveway entrance on the right hand side and shall be mounted 3 to 5 feet to the top of the box. Cabinet shall have the following items:
- i. Two (2) master keys to all exterior doors labeled and separated on different labeled rings.
 - ii. Two (2) 11" x 17" laminated copies of the site plan. The site plan shall show the locations of the KNOX cabinet, PIV/FDC, Location and size of water storage tanks, location and size of LPG/aboveground fuel storage tanks, fire pump room, water main shut off valve, gas main shut off, fire hydrants, standpipes (wet or dry) generator location of fire sprinkler riser if applicable.
 - iii. Two (2) 11" x 17" laminated copies of the floor plans. The floor plan shall show the locations of the fire sprinkler riser with spare head box, fire alarm control panel, fire alarm enunciator panel, electrical rooms, Main electrical disconnect, photovoltaic disconnects, locations of flammable/combustible or hazardous liquids, solids, or gases with quantities. Mechanical rooms, boiler rooms, chiller rooms, etc. Emergency contact names and telephone numbers and the code to reset the system. Elevator machine rooms if applicable. Building more than one story shall provide floor plans for each floor.
 - iv. All items described above shall be shown in red. PDF file of the required site plans and floor plans shall be emailed to the Commercial Fire Inspector prior to building final. Key boxes, key switches, padlocks and cabinets can be purchased online @ www.knoxbox.com.

- v. Hazardous Materials Business Plan including Material Data Safety Sheets of all flammable/combustible or hazardous liquids, solids, or gases.
- vi. Emergency contact list for after hour incidents.
- g) All doors shall be hung and approved door hardware installed. All fire rated doors shall be provided with closures and smoke seals. All interior and exterior suite doors shall be labeled with suite numbers;
- h) For tenant improvements projects where the area of work is only a portion of the building, exiting from the location of the tenant improvement all the way to the exterior of the building will be evaluated for Fire Code compliance;
- i) Addressing on commercial buildings shall be a minimum of SIX inches in height and industrial buildings shall be a minimum of TWELVE inches in height with both on a contrasting background. Approved numbers or addresses shall be placed on all new and existing buildings in such a position as to be plainly visible and legible from the street or road fronting the property and visible from both directions of travel. On private common driveways install permanent addressing located at all intersections directing traffic to the property;
- j) Fire access lane “**NO PARKING – FIRE LANE**” signs shall be installed and/or fire lanes & curbs painted;
- k) For projects requiring fire stopping of rated assemblies, a copy of the UL or manufacturer’s fire stopping detail shall be provided to verify penetrations are correctly fire stopped;
- l) New hydrants shall be flushed prior to flush inspection by the fire department. Provide a hydrant wrench for flushing, clean burlap bags, minimum (2) 2 ½” hoses and appropriate anchoring to flush safely;
- m) Pressurized fire hydrant barrels shall be painted safety chrome yellow with tops and caps painted according to NFPA 24 **GPM: 0-499 RED, GPM: 500-999 ORANGE, GPM: 1000- 1499 GREEN, GPM: 1500 + LIGHT BLUE;**
- n) Provide blue reflective street marker for all hydrants;
- o) Provide approved traffic protection around all hydrants, FDCs, PIVs, utilities;
- p) Post indicator valves and fire department connections shall be painted red and have the address number(s) stenciled in white;
- q) Break away locks installed on PIV;

- r) Fire control rooms shall be labeled “**FIRE CONTROL ROOM**” and fire riser rooms shall be labeled “**FIRE RISER ROOM**” in minimum 1 inch letters with contrast background. Rooms with electrical main shut off labeled “**ELECTRICAL MAIN SHUT OFF INSIDE**”;
- s) For projects requiring exit and egress emergency illumination, verify emergency lights function. When signage is not accessible from floor level provide ladder;
- t) For assembly areas over 49 occupant load signs shall be posted;
- u) Mechanical Ventilation shut Down for HVAC units exceeding 2000 CFM;
- v) Elevators comply with fire requirements for re-call;
- w) Trash enclosures greater than 1.5 cubic yards not stored within 5 feet of combustible walls, openings or roof eave lines. Approved if sprinklered.

2. Fire Alarm Checklist

- a) Fire alarm contractor shall be present at final inspection and shall be prepared to test 100% of the new devices. A minimum of two people must be present to test the fire alarm system and radio communication must be provided. If portions of the building are occupied, notification of building occupants of fire alarm testing shall be the responsibility of the general contractor and shall be done in advance of the final inspection;
- b) Copy of fire alarm “Record of Completion”;
- c) Copy of the alarm pre-test results;
- d) Copy of the fire alarm monitoring contract;
- e) Include listed fire alarm document cabinet at FACP.

3. Fire Sprinkler Checklist

- a) For new buildings, a fire sprinkler main drain test shall be conducted to obtain baseline static and residual pressures;
- b) A copy of “Contractor’s Material and Test Certificate for above ground pipe” shall be provided;
- c) Spare heads box with spare heads of each type and sprinkler wrench. Locate box in fire riser room, alarm panel room, or fire pump room;

- d)** Hydraulic design placard on riser;
- e)** Documentation of current 5-year certification on fire sprinkler system;
- f)** Exterior water flow bell with 911 placards.

Table B105.2. Minimum Required Fire Flow, Flow Duration, and Storage Volume for Light Fire Hazard Occupancies including but not limited to Residential Occupancies, Churches, Colleges, Dormitories, Hospitals, Institutions, Museums, Office Buildings and Schools not served by a Public Water Supply.

| Fire Area Light Fire Hazard Occupancy | | | | Automatic Fire sprinkler Protection ² | | | |
|--|------------------------------|---------|-----------------------|--|-------------------------|---------------------|----------------------------|
| | | | | Non-sprinklered | | Sprinklered | |
| Type of Construction ³ | | | Fire Flow Duration | Fire Flow | Storage Volume | Fire Flow | Storage Volume |
| I FR, II FR, II-1hr, III-1hr | II-N, III-N, IV-HT, V-1hr | V-N | Minutes | Gpm ⁴ | Gallons ^{4, 5} | Gpm ^{4, 6} | Gallons ^{4, 5, 6} |
| 16,800 | 13,300 | 12,600 | 60 | 200 | 12,000 | 200 | 6,000 |
| 25,300 | 19,970 | 19,000 | 60 | 300 | 18,000 | 300 | 9,000 |
| 33,700 | 26,600 | 25,300 | 60 | 400 | 24,000 | 400 | 12,000 |
| 42,100 | 33,250 | 31,600 | 60 | 500 | 30,000 | 500 | 15,000 |
| 50,500 | 39,920 | 37,900 | 60 | 600 | 36,000 | 500 | 18,000 |
| 58,950 | 46,550 | 44,200 | 60 | 700 | 42,000 | 500 | 21,000 |
| 67,400 | 53,200 | 50,500 | 60 | 800 | 48,000 | 500 | 24,000 |
| 75,800 | 59,850 | 56,900 | 60 | 900 | 54,000 | 500 | 27,000 |
| 84,200 | 66,500 | 63,200 | 60 | 1,000 | 60,000 | 500 | 30,000 |
| 105,300 | 83,100 | 78,950 | 60 | 1,250 | 75,000 | 625 | 37,500 |
| 126,300 | 99,700 | 94,750 | 60 | 1,500 | 90,000 | 750 | 45,000 |
| 147,400 | 116,350 | 110,500 | 60 | 1,750 | 105,000 | 875 | 52,500 |
| 168,400 | 132,950 | 126,300 | 60 | 2,000 | 120,000 | 1,000 | 60,000 |
| 189,500 | 149,600 | 142,080 | 60 | 2,250 | 135,000 | 1,125 | 67,500 |
| 210,500 | 166,200 | 157,900 | 60 | 2,500 | 150,000 | 1,250 | 75,000 |
| 231,600 | 182,800 | 173,670 | 60 | 2,750 | 165,000 | 1,375 | 82,500 |
| 252,600+ | 199,450 | 189,500 | 60 | 3,000 | 180,000 | 1,500 | 90,000 |
| | 216,050 | 205,250 | 60 | 3,250 | 195,000 | 1,625 | 97,500 |
| | 232,700 | 221,050 | 60 | 3,500 | 210,000 | 1,750 | 105,000 |
| | 249,300 | 236,850 | 60 | 3,750 | 225,000 | 1,875 | 112,500 |
| | 265,900 | 252,600 | 60 | 4,000 | 240,000 | 2,000 | 120,000 |
| | 282,550 | 268,450 | 60 | 4,250 | 255,000 | 2,125 | 127,500 |
| | 299,200 | 284,200 | 60 | 4,500 | 270,000 | 2,250 | 135,000 |

- 1 Fire area in sq. ft. (less than or equal to), for fire hazard occupancy types see Section A-III-A.5.2.1.
- 2 Approved automatic sprinkler protection throughout building in accordance with standards NFPA 13 or NFPA 13-R.
- 3 Types of construction based upon the Building Code.
- 4 Add 10% to fire flow and storage volume if separation between buildings is less than 20 feet.
- 5 Fire flow storage volume use shall be limited and dedicated to fire protection, see Section 903.3.1.
- 6 Fire flow and storage volume in sprinklered buildings is in addition to the water demand for the sprinkler system and in-lieu of outside hose stream demand allowance.
(Ord. No. 1350, § 14, 11-23-2010, eff. 12-23-2010; Ord. No. 1388, § 30, 12-17-2013, eff. 1-16-2014; Ord. No. 1399, § 14, 3-24-2015)

Table B105.3. Minimum Required Fire Flow, Flow Duration, and Storage Volume for Moderate Fire Hazard Occupancies including but not limited to Asylums, Hotels, Prisons, Saw Mills, Gas Stations, Lumber Yards, Warehousing of normal combustibles, Wineries and Welding Shops not served by a Public Water Supply.

| Fire Area Moderate Fire Hazard Occupancy | | | | Automatic Fire sprinkler Protection ² | | | |
|---|------------------------------|---------|-----------------------|--|-------------------------|---------------------|----------------------------|
| | | | | Non-sprinklered | | Sprinklered | |
| Type of Construction ³ | | | Fire Flow Duration | Fire Flow | Storage Volume | Fire Flow | Storage Volume |
| I FR, II FR, II-1hr, III-1hr | II-N, III-N, IV-HT, V-1hr | V-N | Minutes | Gpm ⁴ | Gallons ^{4, 5} | Gpm ^{4, 6} | Gallons ^{4, 5, 6} |
| 11,200 | 8,850 | 8,400 | 60 | 200 | 12,000 | 200 | 6,000 |
| 16,850 | 13,300 | 12,650 | 60 | 300 | 18,000 | 300 | 9,000 |
| 22,450 | 17,750 | 16,850 | 60 | 400 | 24,000 | 400 | 12,000 |
| 28,050 | 22,150 | 21,050 | 60 | 500 | 30,000 | 500 | 15,000 |
| 33,700 | 26,600 | 25,250 | 60 | 600 | 36,000 | 500 | 18,000 |
| 39,300 | 31,040 | 29,480 | 60 | 700 | 42,000 | 500 | 21,000 |
| 44,900 | 35,450 | 33,700 | 60 | 800 | 48,000 | 500 | 24,000 |
| 50,500 | 39,900 | 37,900 | 60 | 900 | 54,000 | 500 | 27,000 |
| 56,150 | 44,300 | 42,100 | 60 | 1,000 | 60,000 | 500 | 30,000 |
| 70,150 | 55,400 | 52,650 | 60 | 1,250 | 75,000 | 625 | 37,500 |
| 84,200 | 66,500 | 63,150 | 60 | 1,500 | 90,000 | 750 | 45,000 |
| 98,250 | 77,550 | 73,700 | 60 | 1,750 | 105,000 | 875 | 52,500 |
| 112,300 | 88,650 | 84,200 | 60 | 2,000 | 120,000 | 1,000 | 60,000 |
| 126,300 | 99,740 | 94,750 | 60 | 2,250 | 135,000 | 1,125 | 67,500 |
| 140,350 | 110,800 | 105,250 | 60 | 2,500 | 150,000 | 1,250 | 75,000 |
| 154,400 | 121,900 | 115,800 | 60 | 2,750 | 165,000 | 1,375 | 82,500 |
| 168,400+ | 132,950 | 126,300 | 60 | 3,000 | 180,000 | 1,500 | 90,000 |
| | 144,050 | 136,850 | 60 | 3,250 | 195,000 | 1,625 | 97,500 |
| | 155,140 | 147,350 | 60 | 3,500 | 210,000 | 1,750 | 105,000 |
| | 166,200 | 157,900 | 60 | 3,750 | 225,000 | 1,875 | 112,500 |
| | 177,300 | 168,400 | 60 | 4,000 | 240,000 | 2,000 | 120,000 |
| | 188,350 | 178,950 | 60 | 4,250 | 255,000 | 2,125 | 127,500 |
| | 199,450 | 189,480 | 60 | 4,500 | 270,000 | 2,250 | 135,000 |

- 1 Fire area in sq. ft. (less than or equal to), for fire hazard occupancy types see Section A-III-A.5.2.1.
- 2 Approved automatic sprinkler protection throughout building in accordance with standards NFPA 13 or NFPA 13-R.
- 3 Types of construction based upon the Building Code.
- 4 Add 10% to fire flow and storage volume if separation between buildings is less than 20 feet.
- 5 Fire flow storage volume use shall be limited and dedicated to fire protection, see Section 903.3.1.
- 6 Fire flow and storage volume in sprinklered buildings is in addition to the water demand for the sprinkler system and in-lieu of outside hose stream demand allowance.
(Ord. No. 1350, § 14, 11-23-2010, eff. 12-23-2010; Ord. No. 1388, § 31, 12-17-2013, eff. 1-16-2014; Ord. No. 1399, § 15, 3-24-2015)

Table B105.4. Minimum Required Fire Flow, Flow Duration, and Storage Volume for High Fire Hazard Occupancies including but not limited to Aircraft Hangers, Chemical Works or Storage, Explosives Manufacturing, High Piled Combustible Storage, Flammable Liquids Storage, Paint Shops, Pesticide Manufacturing, Storage or Shipping, Warehouses of Combustible/Flammables and other occupancies involving processing, mixing, storage and dispensing flammable and or combustible liquids, not served by a Public Water Supply.

| Fire Area High Fire Hazard Occupancy ¹ | | | | Automatic Fire sprinkler Protection ² | | | |
|--|------------------------------|--------|-----------------------|--|-------------------------|---------------------|----------------------------|
| | | | | Non-sprinklered | | Sprinklered | |
| Type of Construction ³ | | | Fire Flow Duration | Fire Flow | Storage Volume | Fire Flow | Storage Volume |
| I FR, II FR, II-1hr, III-1hr | II-N, III-N, IV-HT, V-1hr | V-N | Minutes | Gpm ⁴ | Gallons ^{4, 5} | Gpm ^{4, 6} | Gallons ^{4, 5, 6} |
| 5,600 | 4,430 | 4,200 | 120 | 200 | 24,000 | 200 | 12,000 |
| 8,430 | 6,650 | 6,320 | 120 | 300 | 36,000 | 300 | 18,000 |
| 11,230 | 8,860 | 8,430 | 120 | 400 | 48,000 | 400 | 24,000 |
| 14,030 | 11,070 | 10,520 | 120 | 500 | 60,000 | 500 | 30,000 |
| 16,830 | 13,300 | 12,630 | 120 | 600 | 72,000 | 500 | 36,000 |
| 19,650 | 15,510 | 14,740 | 120 | 700 | 84,000 | 500 | 42,000 |
| 22,470 | 17,730 | 16,850 | 120 | 800 | 96,000 | 500 | 48,000 |
| 25,270 | 19,950 | 18,950 | 120 | 900 | 108,000 | 500 | 54,000 |
| 28,070 | 22,170 | 21,050 | 120 | 1,000 | 120,000 | 500 | 60,000 |
| 35,100 | 27,700 | 26,320 | 120 | 1,250 | 150,000 | 625 | 75,000 |
| 42,100 | 33,250 | 31,580 | 120 | 1,500 | 180,000 | 750 | 90,000 |
| 49,130 | 38,790 | 36,850 | 120 | 1,750 | 210,000 | 875 | 105,000 |
| 56,150 | 44,330 | 42,100 | 120 | 2,000 | 240,000 | 1,000 | 120,000 |
| 63,150 | 49,860 | 47,360 | 120 | 2,250 | 270,000 | 1,125 | 135,000 |
| 70,180 | 55,400 | 52,630 | 120 | 2,500 | 300,000 | 1,250 | 150,000 |
| 77,200 | 60,950 | 57,900 | 120 | 2,750 | 330,000 | 1,375 | 165,000 |
| 84,200+ | 66,480 | 63,150 | 120 | 3,000 | 360,000 | 1,500 | 180,000 |
| | 72,030 | 68,430 | 120 | 3,250 | 390,000 | 1,625 | 195,000 |
| | 77,570 | 73,690 | 120 | 3,500 | 420,000 | 1,750 | 210,000 |
| | 83,100 | 78,950 | 120 | 3,750 | 450,000 | 1,875 | 225,000 |
| | 88,650 | 84,200 | 120 | 4,000 | 480,000 | 2,000 | 240,000 |

- 1 Fire area in sq. ft. (less than or equal to), for fire hazard occupancy types see Section A-III-A.5.2.1.
 - 2 Approved automatic sprinkler protection throughout building in accordance with standards NFPA 13 or NFPA 13-R.
 - 3 Types of construction based upon the Building Code.
 - 4 Add 10% to fire flow and storage volume if separation between buildings is less than 20 feet.
 - 5 Fire flow storage volume use shall be limited and dedicated to fire protection, see Section 903.3.1.
 - 6 Fire flow and storage volume in sprinklered buildings is in addition to the water demand for the sprinkler system and in-lieu of outside hose stream demand allowance.
- (Ord. No. 1350, § 14, 11-23-2010, eff. 12-23-2010; Ord. No. 1388, § 32, 12-17-2013, eff. 1-16-2014; Ord. No. 1399, § 16, 3-24-2015)

END OF DOCUMENT
NAPA COUNTY FIRE MARSHAL'S OFFICE