



OFFICE OF THE FIRE MARSHAL

ZAYANTE FIRE PROTECTION DISTRICT

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R-3 PLAN REVIEW & INSPECTION CHECKLIST*

(For all new construction and/or for additions/remodels over 500 square feet)

FIRE DEPARTMENT ACCESS

REFERENCE

DIMENSIONS (T-14 1273; SC 7.92; 16.20; FPO 12)

The minimum vertical clearance is:

- 15' for all **new driveways** in State Responsibility Area (SRA) 1273.10
- 13' 6" for new roads & for new driveways in other areas 7.92.503.2.1

The minimum width is:

- 20' if inside the Urban Services Line (USL) or unsprinklered 7.92.503.2.1
- 12' for 2 or less habitable structures outside the USL 7.92.503.2.1
- 18' for 3+ sprinklered homes outside USL and for **new** roads in SRA or for 3+ 7.92.503.2.1
- 12' & paved w/ turnouts if not **new** road in SRA & 18' is "environmentally inadvisable" 7.92.503.2.1
- 10' for one-way roads in SRA (if serving no more than 10 houses) 1273.08

The minimum centerline radius is:

- 50' inside radius in SRA 1273.04
- 35' centerline radius in other areas 16.20.180(c)

The length of any dead-end access in SRA does not exceed allotment for parcel(s) served thereby 1273.09

(800' for < 1 acre; 1320' for 1-4.99; 2640' for 5-19.99; 5280' for 20+ acres)

CONSTRUCTION & GRADE (CFC 503; SC 7.92; 16.20; FPO 12; FPO 14; T-14 1273)

The access road has a 6" 95% compacted class 2 base w/ an 8" sub-base 503.2.3

The surface for the access road is:

- From 0-5% in grade is maintained to prevent erosion FPO 14
- Greater than 5% in grade is oil & screen FPO 14
- Greater than 15% is 2" of asphaltic concrete FPO 14

The grade does not exceed 15% for more than 200' every 235' &:

- It does not exceed 16% in SRA 1273.03
- It does not exceed 20% in other areas (w/ no more than 18% average) 16.20.180(d)

TURNAROUNDS (CFC 503; SC 16.20.180; FPO 15; T-14 1273)

A turnaround is within 150' from all portions of all structures:

- Non-SRA access has circular turnaround (12' entry & 36' radius) or T-style turnaround (16' entry, 86' span, 51' wide, & 20' radius) 503.2.5
- SRA access has minimum 40' centerline radius on approved turnaround & is within 50' for driveways over 300' long 16.20.180(k)

TURNOUTS (SC 7.92; FPO 13; T-14 1273)

Turnouts (12' wide & 35' long w/ 20' ease in & ease out) are present every:

- 500' for 12' access roads 7.92.503.2.1 & FPO 13
- 400' for driveways in SRA exceeding 800' in length 1273.06

BRIDGES (SC 7.92; FPO 13 & 16)

The bridge capacity meets the AASHTO HS-20 loading standards (25 tons+) 7.92.503.2.6

A copy of the recent certification (within last 10 years by a licensed engineer) is provided 7.92.503.2.6.2 &

Capacity signs are at both ends (signs will be 18" x 24", steel, white w/ black lettering that is 3-1/2" by 3/8" stroke minimum, with the weight limit posted above TONS) FPO 8 & FPO 13

The bridge meets road dimension requirements & has turnouts if it is less than 20' wide 7.92.503.2.6.1

GATES (CFC 503; T-14 1273)

There is horizontal clearance (no obstructions and 2' wider than access in SRA) 503.6 & 1273.11

There is 14' vertical clearance or 15' vertical for overhead gates

If secured, it has a master 175 lock w/ FD's code, an override switch, or break-away lock AHJ & 1273.11

It is located at least 35 feet from the primary road and does not create traffic obstruction 1273.11

RIGHT-OF-WAY AGREEMENT (GP 6.5.1)

Owner provided copy of road maintenance agreement for parcel served by right of way 6.5.1(m)

FIRE FLOW REQUIREMENTS (CFC 508; Appendix B; FPO 6; NFPA 1142; SC 7.92)	508.3 & B105.1
There is 20 PSI residual	Tbl. B105.1
There is adequate flow:	
<input type="checkbox"/> Urban sprinklered 0-3600 sf: 500 GPM for 2 hrs. (60,000 gals.)	Tbl. B105.1
<input type="checkbox"/> Urban sprinklered from 3601-4800 sf: 875 GPM for 2 hrs. (105,000 gals.)	Tbl. B105.1
<input type="checkbox"/> Urban sprinklered from 4801-6200 sf: 1000 GPM for 2 hrs. (120,000 gals.)	Tbl. B105.1
<input type="checkbox"/> New residential projects in the SRA: 10,000 gal. minimum	7.92.508.1
<input type="checkbox"/> Rural sprinklered: 4,000 gal. minimum at 1.6 x sf.	FPO 6
<input type="checkbox"/> Rural unsprinklered: 4,000 gal. minimum at 3.2 x sf.	FPO 7 formula
PUBLIC HYDRANT (CFC 508; Appendix C; FPO 5; FPO 6; FPO 17)	
The residence is within an area served by a state-regulated water purveyor	
Hydrants are located every 500 feet (450 if dead end)	508.5.1 & Tbl. B105.1
A hydrant is within 600' of the structure	508.5.1
A letter from the purveyor certifies that GPM/PSI was tested within last 5 years	FPO 5
The hydrant is safety yellow with _____ on top, indicating actual GPM	FPO 17
The hydrant is protected from vehicles (not subject to damage or guard posts installed)	508.5.6
The hydrant is flushed	508.5.2
PRIVATE WATER & HYDRANT (CFC 508; FPO 6; FPO 7 B-1; NFPA 13D; 22 & 24; T-14 1275)	508.2 & 508.5
Water Storage Tank (Permit Required)	
There is a 1"+ supply line to tank from reliable private H ₂ O source (well, spring, etc.)	NFPA 22 & FPO 6 A-1
There is an automatic filling device w/ control valve/shut-off	FPO 6
The tank vent is at least 1.5 x diameter of outlet (6" for 4")	FPO 6
The domestic supply line feeds from above the required fire flow amount	FPO 6
There is a 4" full-flow control valve near bottom of tank	FPO 6
The low-water cut-off does not activate > 6" above suction discharge pipe centerline	FPO 6
The pipe for all fire supply lines is galvanized	FPO 6
The threads on the tank outlet are National Standard Threads (NST)	FPO 6
Private Hydrant (Permit Required)	
<u>Underground:</u>	
The supply line from the tank is large enough to meet the required fire flow (4" or greater)	NFPA 24 & FPO 6 A-1
The supply line is at least 30" below grade (36" if pipe passes under road or is subject to heavy loads) and Schedule 40 or better	
The transition fittings are a minimum of 6" below grade and are Schedule 80 or better	FPO 6
The piping from the transition to the riser is galvanized & the below grade pipe is wrapped	FPO 6
There are concrete thrust blocks at directional changes	FPO 6
The piping passes a hydrostatic test at working pressure for 15 min.	FPO 6
The piping is flushed before backfill and then capped or attached to riser after the flush	FPO 6
A copy of underground test certificate is provided at the inspection	FPO 6
<u>Above ground:</u>	
The concrete pad is 24" x 24" x 4"	FPO 6 A-1
The riser is 4" galvanized steel w/ a pentagonal nut valve stem:	FPO 6
<input type="checkbox"/> 2-1/2" for pressure/gravity flow systems	FPO 6
<input type="checkbox"/> 4-1/2" for draft systems	1275.15 & AHJ
There is a male NST thread outlet with a cap:	FPO 6 A-1
The hydrant has proper markings:	FPO 17
<input type="checkbox"/> It is red with _____ on top, indicating actual GPM	FPO 17
<input type="checkbox"/> If it is a draft hydrant, there is a visible sign on the hydrant indicating "draft"	AHJ
The center of the outlet is 30-36" above grade and 6-8' from the road	NFPA 24 & FPO 6 A-1
The hydrant is at an approved location not less than 50' and not more than 150' from all buildings	FPO 6 A-1
The hydrant is protected from vehicles (not subject to damage or guard posts installed)	312.1 & 508.5.6
The location of the fire hydrant cannot make the driveway or roadway impassible to other traffic by the parking of fire apparatus using the hydrant.	FPO 7 B-1
The hydrant is flushed	508.5.3
Pressure Pump	
A pressure pump is required at the tank to:	FPO 6
<input type="checkbox"/> Provide sufficient fire flow (or draft capabilities) with 20 PSI residual	FPO 6
<input type="checkbox"/> Provide sufficient flow and pressure to residential fire sprinkler system	NFPA 13D
The pump manufacturer's guide is provided with the plan	FPO 6
The number of tanks meet GPM & PSI requirements per manufacturer's data	FPO 6
There is a 2" supply line from tank to pump	FPO 6
There is a pressure gauge, pressure relief valve, size check-valve, pressure switch between check-valve & gauge, and a full flow control valve after last pressure tank	FPO 6
A copy of the pump acceptance test certificate is provided at the inspection	FPO 6

SPRINKLER SYSTEMS

REFERENCE

PLAN SUBMITTAL (Permit Required) (CFC 903; SC 7.92; NFPA 13D; FPO 5)

The project is new construction or increases the total existing square footage by more than 50% (Exception: agricultural buildings < 2000 sq. ft & garages/sheds < 1000 sq. ft.)	7.92.903.2.1
There are 3 copies of the plans & calcs, and 1 copy of applicable cut-sheets	FPO 5; AHJ
Piping and heads are highlighted or in a contrasting color	AHJ
The ceiling slope percentages are indicated	AHJ
The plan shows all heat zones (WH, stove/range, laundry, FP, light fixtures, etc.)	AHJ
The plan indicates that all components (heads, piping, straps, valves, etc.) are UL listed	FPO 5 & 13D
The system was designed by a FPE, C-16 installer, or owner/builder (✓ cslb.ca.gov)	FPO 5 & 13D
There are no variations to plans or as-built plans are required prior to overhead rough inspection	FPO 5

UNDERGROUND PIPING (Permit Required) (Must be installed by the C-16 designer)

There is a minimum 2" (or as approved by AHJ) supply line to the riser dedicated to the sprinkler system	FPO 5
The supply line is at least 18" below grade and is Schedule 40 PVC or better	FPO 5
The transition fittings are a minimum of 6" below grade and are Schedule 80 or better	FPO 5
The piping from the transition to the riser is metallic & the below grade pipe is wrapped	FPO 5
There are concrete thrust blocks at directional changes	FPO 5
The piping passes a hydrostatic test at working pressure for 15 min.	FPO 5
The piping is flushed before backfill and then capped or attached to riser after the flush	FPO 5
A copy of underground test certificate is provided at the inspection	FPO 5

RISER & INSPECTOR TEST ASSEMBLY & ALARM

All exterior above grade piping is metallic	FPO 5
The riser is located on or adjacent to the garage	FPO 5
The riser has a labeled control valve below the domestic line or a shut-off at a single source water meter	FPO 5
There is a check valve above the domestic line (if there is no municipal detector on meter)	FPO 5
There is a flow switch above the domestic line	FPO 5
The pressure gauge is above the check valve	FPO 5
There is a main drain with a separate valve and signage	FPO 5
The inspector's test valve is piped from the most remote area	FPO 5
There is an accessible shut-off at ground level with an "inspector's test" sign	FPO 5
The pipe has a test head of the same size orifice used in the house	FPO 5
Discharging water through the test head does not damage the surrounding area	FPO 5
There is a 110-volt alarm, connected to a regularly "on" electric circuit, with a 6" bell	FPO 5
The alarm sounds within 90 seconds of the inspector's test valve flowing at least 10 GPM	NFPA 72 2-6

OVERHEAD PIPING AND SUPPORT

The connection from underground to overhead must be made by the sprinkler installer	FPO 5
The piping is at least 3/4" (copper, steel, CPVC, or other listed and approved material)	FPO 5 & NFPA 13D
The piping is secured by straps/supports every 6', and straps are within 6" of every head	FPO 5
The straps are properly attached (with screws)	FPO 5
The piping passes a hydrostatic test of at least 200 psi for 2 hours	FPO 5
A copy of aboveground test certificate is provided at the inspection	FPO 5

HEADS

Heads provide coverage in all habitable areas that do not fall within exceptions: (Exception: bathrooms < 55 sq. ft.; clothes, linen & pantry closets < 24 sq. ft. if least dimension is no more than 3 ft.; unheated foyers that are not the only egress; detached garages, carports under 1000 sq. ft.; and agricultural buildings)	FPO 5 & 13D 4-6
Head(s) protect accessible non-habitable storage areas (includes under staircases)	FPO 5
Heads have the proper temperature rating (intermediate heads are required in accessible attics & areas with higher temperatures)	13D 3-5.2
The heads are not too close to heat sources	13D 3-5.2.3
The heads are no closer than 8' together and no further than _____' apart (per cut sheet)	13D 4-1.4
The discharge from the heads will not be unduly affected by obstructions	13D 4-2.3
The heads and escutcheon plates have factory paint only	13D 3-5.4

CALCULATIONS OF WATER SUPPLY

The water supply (static, resid., & gpm) is verified by water district or private test affidavit	13D 8.4.4
There are calculations of the most demanding heads: <input type="checkbox"/> 1 & 2 heads or <input type="checkbox"/> 3 heads	13D 4-1.2.1
The water can supply the design area for 10 min. (7 min. for 2 heads in 1-story house that is less than 2000 sf.)	13D 4-1.3 & 13D 2-1
The density (discharge GPM ÷ sq. ft. covered) is .05 or greater & matches cut sheet	13D
The GPM, PSI, orifice size, k factor & coverage areas match those on the cut sheet(s)	13D
All friction loss, pipe diameter and elevation changes, and pipe length are accounted for	13D

SPARE HEADS & WRENCH

There is a 6-head box within vicinity of the riser that has a sprinkler head wrench & 3 spare heads of each type used (but only need 1 if only 1 of that type used)	FPO 5
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FIRE SAFETY INSIDE & OUT**REFERENCE****SMOKE DETECTORS** (CFC 907; SC 7.92; CBC 907)

All detectors are hardwired w/ battery back-up	907.2.10.2
All smoke detectors are interconnected	907.2.10.3
There is a detector in every bedroom & corridor	907.2.10.1.2
There is at least one detector on every floor	907.2.10.1.2
The detectors are properly mounted (4"-12" from ceiling, not too close to heat source)	
Detector alarm sounds within 20 seconds of smoke entering chamber	AHJ
The alarm sounds over ambient noise (at least 85 dba at 10') (visual notification is required in rooms with hearing impaired)	907.2.10.3

SECOND EGRESS (CBC 1004)

The project is one-story, or the 2 nd story has < 10 occupants, or the 3 rd floor is ≤ 500 sf	1004.2.3.2
There is a second egress off _____ floor(s)	ld. at ex.4

CHIMNEYS (CBC; PRC 4291)

There is an approved spark arrestor with a nonflammable ½" (or smaller) mesh screen	1109.7 & 4291(f)
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ROOFS (SC 12.10.070)

The building has the required fire resistive roofing material:

<input type="checkbox"/> Class A (in all extra-high fire hazard area)	
<input type="checkbox"/> Class B (in all other areas)	12.10.070m

ADDRESSING (CFC 901; FPO 17; T-14 1274)

The address numbers are visible from the road, traveling either direction	CFC 901.4.4
The address numbers are permanently affixed	FPO 17
The address numbers are 4" high by 1/2" wide on contrasting background	ld.
The sign or numbers are reflective or lit so address can be seen at night	ld.
The address is located at all driveway/road splits with directional signs as needed, and separate utility meters for separate dwellings are identified by address numbers at least 1" high and permanently affixed	AHJ
	AHJ, 1274, FPO 17

VEGETATION CLEARANCE (CFC 1103; PRC 4291; 7.92.5215)

All dried vegetation is cleared from around all structures	1103.2.4
<input type="checkbox"/> 100' clearance	4291(a)&(b)
The tree branches are clear 10' from a chimney outlet	ld.
Any dead/dying tree branches are clear 10' from the structure	4291(c)
The roof is clear of all combustible debris	4291(d)
All combustible debris under decks is cleared	4291(e)
Any combustible debris under decks is cleared	4291(a)
Any combustible vegetation near roadway is cleared 10' from roadway & limbed 6-8' from the ground (but see ornamental exceptions)	FPO 12 & 7.92.5215

LPG TANKS (Permit Required) (CFC Article 82)

The tank is properly oriented (ends are not pointing towards residence or egress route)	8204.3
There is proper distance from buildings, public ways, ignition sources & property lines	8204-A
<input type="checkbox"/> Less than 125 gallons: 5'	ld.
<input type="checkbox"/> 125-500 gallons: 10'	ld.
<input type="checkbox"/> 501-1200: 10' (but only if at least 25' from containers more than 125 gallons)	ld.
<input type="checkbox"/> 501-2000: 25' if it does not satisfy above criteria	ld.
Combustibles (weeds, grass, brush, trash, etc.) are cleared within 10' from the tank	8209
There is a no smoking sign posted/painted on/near the tank	8208, AHJ
The tank is protected from vehicles (not near an access route or guard posts are installed)	8210

References: California Fire and Building Codes (CFC & CBC), Santa Cruz County Code (SC), Public Resources Code (PRC), California Code of Regulations, Title 14 (T-14); Santa Cruz Fire Prevention Officers' Standards (FPO), Santa Cruz County General Plan (GP), National Fire Protection Association Standards (NFPA), Authority Having Jurisdiction Standards (AHJ)

* This checklist is not intended to be a comprehensive list of all potential requirements, nor is it intended to alleviate all parties' responsibilities to fully comply with all applicable laws for each project. It merely reflects the major areas encountered at the fire plan review and inspection stages for residential projects.