

# SANTA ROSA FIRE DEPARTMENT

## FIRE PREVENTION BUREAU

### PLAN REVIEW CHECKLIST

July 1, 2010



## PRIVATE FIRE MAIN, HYDRANT OR AUTOMATIC SPRINKLER SYSTEM UNDERGROUND INSTALLATIONS

Address:		Permit #:
Inspector:	Date:	Status:
Inspector:	Date:	Status:
A-Approved; AC-Approved w/comments; I-Incomplete; D-Denied		

This Checklist outlines general requirements. Information contained herein applies to typical instances and may not address all circumstances.

#### REFERENCES:

- City of Santa Rosa - Design and Construction Standards
- NFPA 24, 2007 Edition
- City of Santa Rosa Storm Water Ordinance:  
<http://ci.santa-rosa.ca.us/departments/utilities/stormwatercreeks/swpermit/Pages/ordinances.aspx>
- 2007 California Fire Code (CFC) Chapter 3, Chapter 9 (901.5), Appendices B and C

#### FILE REVIEW

- |    | Y                        | N                        |  |
|----|--------------------------|--------------------------|--|
| 1. | <input type="checkbox"/> | <input type="checkbox"/> | Permit fees entered in Permits Plus. 3 <sup>rd</sup> or greater checks require an hourly fee for the review. |
| 2. | <input type="checkbox"/> | <input type="checkbox"/> | Four (4) sets of scaled plans and specifications   |
| 3. | <input type="checkbox"/> | <input type="checkbox"/> | Contractor shall provide, or have on file, a current Contractor's License.                                   |
| 4. | <input type="checkbox"/> | <input type="checkbox"/> | Worker's Compensation Insurance certificate.   |
| 5. | <input type="checkbox"/> | <input type="checkbox"/> | Current Santa Rosa Business Tax Certificate.   |
| 6. | <input type="checkbox"/> | <input type="checkbox"/> | Name and address of project  |
| 7. | <input type="checkbox"/> | <input type="checkbox"/> | Contractor's name, address, and telephone number.  |

#### DESIGN PLANS SHOW THE FOLLOWING: (NFPA 24, Section 4.1)

- |     |                          |                          |  |
|-----|--------------------------|--------------------------|--|
| 8.  | <input type="checkbox"/> | <input type="checkbox"/> | The site plan shows pipe size and placement to the hydrants and the building from the point of connection at the city main or water supply source. |
| 9.  | <input type="checkbox"/> | <input type="checkbox"/> | Scale: a common scale shall be used, and plan information shall be legible.  |
| 10. | <input type="checkbox"/> | <input type="checkbox"/> | An equipment symbol legend is provided.  |

Plan Review Checklist  
Underground Fire Main

- |     | Y                        | N                        |   |
|-----|--------------------------|--------------------------|---|
| 11. | <input type="checkbox"/> | <input type="checkbox"/> | A current water flow test summary sheet and the results at 20 PSI residual from nearest public water supply is provided. Hydraulic calculations showing the available flow results for new system hydrants are provided. <i>NFPA 24, Section 5.1.2.</i>   |
| 12. | <input type="checkbox"/> | <input type="checkbox"/> | Size, type, and the location of the system shut-off and isolation valves are shown.   |
| 13. | <input type="checkbox"/> | <input type="checkbox"/> | Listing data sheets are provided for system components required by <i>NFPA 24</i> to be listed.   |
| 14. | <input type="checkbox"/> | <input type="checkbox"/> | If used, a thrust blocks size matrix with details or calculations is provided. Pipe system, thrust blocks, and fitting locations are detailed. <i>NFPA 24 Section 10.8.2</i>  |
| 15. | <input type="checkbox"/> | <input type="checkbox"/> | Method(s) of a restrained joint system is specified. If used, the rod size and number of rods is specified, apply Section 10.8.3 and Table 10.8.3.1.2.2. If used, the size of restraint straps for tees is specified, apply Table 10.8.3.2.3. If used, clamp and rod detail is specified (one pair of rods for each clamp) and the clamp size is specified. <i>NFPA 24 Section 10.8.3.1, and A-10.8.2</i> |

**VALVES**

- |     |                          |                          |   |
|-----|--------------------------|--------------------------|---|
| 16. | <input type="checkbox"/> | <input type="checkbox"/> | Connections to water supplies and supply pipes to sprinkler risers shall be controlled by valves meeting the requirements of <i>NFPA 24 Section 6.1.</i>  |
| 17. | <input type="checkbox"/> | <input type="checkbox"/> | At least one (1) indicating valve for each source of water supply is detailed. <i>NFPA 24 Section 6.2.</i>  |
| 18. | <input type="checkbox"/> | <input type="checkbox"/> | For more than one source of water supply, a check valve is at each connection and is detailed. <i>NFPA 24 Section 6.2.3</i>   |
| 19. | <input type="checkbox"/> | <input type="checkbox"/> | Control valves required by <i>NFPA 24 Section 6.2.3</i> are provided on each side of the check valve. <i>NFPA 24 Section 6.2.5</i>  |
| 20. | <input type="checkbox"/> | <input type="checkbox"/> | Control valves for connections to pressure or gravity tanks are in compliance with <i>NFPA 24 Sections 6.2.6 through 6.2.8.</i>   |
| 21. | <input type="checkbox"/> | <input type="checkbox"/> | All control valves are readily accessible and free of obstructions. <i>NFPA 24 Section 6.2.10</i>   |
| 22. | <input type="checkbox"/> | <input type="checkbox"/> | Water supply connections to the building shall be with a post indicating valve (PIV), except FDCs. Indicating valves are not required if authorized by the Santa Rosa Fire Department and are in compliance with <i>NFPA 24 Sections 6.1 and 6.4. NFPA 24 Section 6.3.1</i> |
| 23. | <input type="checkbox"/> | <input type="checkbox"/> | PIV installation and cross sectional elevation details are provided.  |
| 24. | <input type="checkbox"/> | <input type="checkbox"/> | PIVs are at least 40 feet from the building unless authorized by the Santa Rosa Fire Department, and top of the posts are 36 inches above grade ( <i>NFPA 24 Section 6.3.3.1</i> ) and are protected from mechanical damage. <i>NFPA Section 6.3.4.2 and CFC 31</i>         |
| 25. | <input type="checkbox"/> | <input type="checkbox"/> | Valves in pits, used in lieu of PIVs are detailed to show conformance with <i>NFPA 24 Section 6.4</i> , e.g. large enough for equipment placement, maintenance, inspection, and testing, and constructed to protect equipment from damage and accumulation of water.        |
| 26. | <input type="checkbox"/> | <input type="checkbox"/> | Sectional valves are provided to isolate the system for repair and maintenance and where a supply main is near or under a building foundation. <i>NFPA 24 Section 6.5</i>   |
| 27. | <input type="checkbox"/> | <input type="checkbox"/> | Each valve shall have identification signs indicating its function and what it controls, signage requirement and locations are noted on the plans. <i>NFPA 24 Section 6.6</i>   |

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- |     | Y                        | N                        |  |
|-----|--------------------------|--------------------------|--|
| 28. | <input type="checkbox"/> | <input type="checkbox"/> | Valves shall be supervised in accordance with <i>NFPA 24 Section 6.6.2</i> .               |
| 29. | <input type="checkbox"/> | <input type="checkbox"/> | Check valves are installed according to the listing data sheet. <i>NFPA 24 Section 6.7</i> |

**HYDRANTS**

- |     |                          |                          |   |
|-----|--------------------------|--------------------------|---|
| 30. | <input type="checkbox"/> | <input type="checkbox"/> | Hydrants are the type approved for the jurisdiction. <i>NFPA 24 Section 7.1.1.2</i>   |
| 31. | <input type="checkbox"/> | <input type="checkbox"/> | Hydrants shall have a minimum 6 inch connection to the main. <i>NFPA 24 Section 7.1.1</i>   |
| 32. | <input type="checkbox"/> | <input type="checkbox"/> | Hydrants are to be at least 40 feet from a building ( <i>NFPA Section 7.2.3</i> ), unless less distance is approved by the Santa Rosa Fire Department. <i>NFPA 24 Section 7.2</i> |
| 33. | <input type="checkbox"/> | <input type="checkbox"/> | Hydrant placing is in accordance with CFC Appendices B and C.   |
| 34. | <input type="checkbox"/> | <input type="checkbox"/> | A cross section hydrant installation detail is provided. <i>NFPA 24 Section 7.3.1</i>   |
| 35. | <input type="checkbox"/> | <input type="checkbox"/> | Hydrant, pipe connection, support, restraint methods and locations are detailed. <i>NFPA 24 Section 7.3</i>   |
| 36. | <input type="checkbox"/> | <input type="checkbox"/> | Center of hose outlet not less than 18 inches above grade. <i>NFPA 24 Section 7.3.3</i>   |
| 37. | <input type="checkbox"/> | <input type="checkbox"/> | The method of hydrant protection from mechanical damage by curbs, bollards, etc., is detailed. <i>NFPA 24 Section 7.3.5, and CFC 312</i>  |

**PIPING**

- |     |                          |                          |   |
|-----|--------------------------|--------------------------|---|
| 38. | <input type="checkbox"/> | <input type="checkbox"/> | Piping is not smaller than 6 inches when supplying a hydrant. <i>NFPA 24 Sections 5.2.1, and 13.1</i>   |
| 39. | <input type="checkbox"/> | <input type="checkbox"/> | Piping supplying a water-based fire protection system can have a diameter of less than 6 inches if it is designed in accordance with <i>NFPA 24 Sections 5.2.2, and 13.2</i> .  |
| 40. | <input type="checkbox"/> | <input type="checkbox"/> | The pipe is listed for fire protection service or complies with <i>NFPA 24 Table 10.1.1</i> , is designed to withstand a system working pressure of at least 150 PSI, and a listing data sheet is provided. ( <i>NFPA 24 Sections 10.1.1, 10.1.5</i> )              |
| 41. | <input type="checkbox"/> | <input type="checkbox"/> | The type and class of pipe material is specified. <i>NFPA 24 Section 10.1.4</i>   |
| 42. | <input type="checkbox"/> | <input type="checkbox"/> | The method of joining pipe sections is specified and in compliance with <i>NFPA 24 Section 10.3</i> and the fittings are pressure compatible with the pipe. ( <i>NFPA 24 Section 6.7</i> ) ( <i>NFPA 24 Section 10.2.5</i> )  |
| 43. | <input type="checkbox"/> | <input type="checkbox"/> | The top of the pipe is detailed to be at least one (1) foot below the area's frost line. <i>NFPA 24 Section 10.4.2</i>  |
| 44. | <input type="checkbox"/> | <input type="checkbox"/> | The depth of pipe for areas where frost is not a concern is detailed with the minimum depth being at 2.5 feet or 3 feet when the pipe is located under vehicle traffic areas, or 4 feet when the pipe is located under railroad tracks. <i>NFPA 24 Section 10.4</i> |
| 45. | <input type="checkbox"/> | <input type="checkbox"/> | Above-ground pipe which is subject to freezing is protected by a means capable of maintaining at least a temperature of 40 degrees Fahrenheit. <i>NFPA 24 Section 10.5.1 and 12.2</i>   |
| 46. | <input type="checkbox"/> | <input type="checkbox"/> | Pipe laid in waterways or streams are designed in accordance with <i>NFPA 24 Section 10.5.3</i> .   |

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- |     | Y                        | N                        |  |
|-----|--------------------------|--------------------------|--|
| 47. | <input type="checkbox"/> | <input type="checkbox"/> | Pipe does not run under a structure but it is allowed to enter the building adjacent the building foundation. <i>NFPA 24 Section 10.6.1 and 10.6.3</i>   |
| 48. | <input type="checkbox"/> | <input type="checkbox"/> | For pipe that is run under a structure, the means to protect the pipe are detailed and conform to <i>NFPA 24, Section 10.6.2.</i>  |
| 49. | <input type="checkbox"/> | <input type="checkbox"/> | The methods of restraining all tees, plugs, bends, reducers, valves, and hydrant branches are detailed and are designed in compliance with <i>NFPA 24 Section 10.8.2 and 10.8.3.</i> Pipe with fused, threaded, grooved, or welded joints do not need strained if they pass the hydrostatic test of <i>NFPA 24 Section 10.1.2.2</i> without shifting or leaking excessively. <i>NFPA 24 Section 10.8.1.2</i> |
| 50. | <input type="checkbox"/> | <input type="checkbox"/> | All bolted joint assemblies shall be coated for corrosion protection, the coating product and the application requirement is noted on the plan. <i>NFPA 24 Section 103.6.2, and 10.8.3.5</i>   |
| 51. | <input type="checkbox"/> | <input type="checkbox"/> | Backfill material for tamping around the pipe is specified. <i>NFPA 24 Section 10.9</i>  |
| 52. | <input type="checkbox"/> | <input type="checkbox"/> | The flushing and hydrostatic test requirements are on the plans as specified in <i>NFPA 24 Section 10.10.2.</i>  |
| 53. | <input type="checkbox"/> | <input type="checkbox"/> | The minimum flushing flow rate requirements are provided on the plan. <i>NFPA 24 Table 10.10.2.1.3</i>   |
| 54. | <input type="checkbox"/> | <input type="checkbox"/> | Above-ground piping is not located in hazardous areas unless the area is protected by an automatic sprinkler system. The location of the pipe is protected from damage or fire. <i>NFPA 24 Section 12.2.1</i>  |
| 55. | <input type="checkbox"/> | <input type="checkbox"/> | Above-ground pipe passing through areas subjecting it to freezing conditions protection is detailed and conform with <i>NFPA 24 Section 12.2.3.</i>  |
| 56. | <input type="checkbox"/> | <input type="checkbox"/> | Above-ground piping is protected against corrosive conditions. <i>NFPA 24 Section 12.2.4.</i>  |
| 57. | <input type="checkbox"/> | <input type="checkbox"/> | When above-ground piping is located and a seismic design area that requires bracing of piping, the piping shall be properly braced in accordance with <i>NFPA 13, and NFPA 24, Section 12.2.5.</i>   |
| 58. | <input type="checkbox"/> | <input type="checkbox"/> | If water supply piping connects to reservoirs, rivers, or lakes, the connections shall be designed in accordance with <i>NFPA 24, Section 5.8,</i> to avoid accumulations of mud or sediment.  |