



## FIRE SAFETY ENGINEERING Checklist

### Fire Sprinkler Plan Review

**City of Henderson**  
**Development Services Center**  
**Fire Safety Engineering**  
240 Water Street, PO Box 95050  
Henderson, Nevada 89009-5050  
(702) 267-3630 phone  
[fireeplan@cityofhenderson.com](mailto:fireeplan@cityofhenderson.com)

This checklist is provided for the convenience of our customers. Complete and accurate plan submittals help speed the plan review process. Attention to the completeness and accuracy of information at the beginning of the process generally leads to fewer delays and requests for revisions by City staff. Please use the following information to assure that your application includes all the information that is necessary for a complete review of your plans. Refer to the City of Henderson [PDF Standards for Electronic Plan Submittals](#).

---

#### **Part. 1** **Applicant's Responsibility**

**Applicants are responsible for ensuring applications submitted are complete.** Incomplete applications will result in plans being rejected for acceptance or returned to the applicant during the review process. City service commitments will not apply to incomplete submissions.

---

#### **Part. 2** **Prerequisites**

**Plan Readability.** Easily read; legible; a readable typeface. Vivid contrast or difference in brightness between the light and dark areas of the drawing. Minimum 8-point font size for legibility of printed plan set.

**Consistent Design.** Typical symbols, abbreviations, and nomenclature used throughout the plans.  
**Project Specific.** Symbols, notes, details, and plan information shall be applicable to the project.

---

#### **Part. 3** **Applicable Codes**

**Plans shall meet the requirements of the currently adopted codes, ordinances, and regulations.**

- ☐ 2021 International Building Code with local amendments
- ☐ 2021 International Fire Code with local amendments
- ☐ Applicable NFPA Standards as Adopted
- ☐ Nevada State Fire Marshal Regulations
- ☐ Life Safety Report, if Applicable (reference this on the plans)

---

#### **Part. 4** **Submittal Package**

**Provide the following documents at the time you submit your application for a fire sprinkler system permit.** Each of these documents shall be uploaded as separate files to the DSC Online portal.

- ☐ A completed fire permit application (Note a separate application is required per system)
- ☐ Fire Sprinkler Supplemental sheet or Fee Estimator printed
- ☐ Plans (1 digital set)
- ☐ Product data submittal, including a cover sheet, index sheet listing products used by make and model number, manufacturer data sheets (highlighted or marked), listing information for all equipment, devices, materials, and maintenance instructions. (1 digital set)
- ☐ Hydraulic Calculations (1 digital set) includes all independent calculations

**Part. 5**  
**Plan Contents**

Plans must contain the following minimum content requirements. This list is not intended to be all inclusive of every detail required on a set of fire sprinkler plans. Rather, it is provided to give an overview of the basic plan contents needed for the review of plans.

**Cover Sheet**

- ☐ 1. Provide general project information including project name and street address
- ☐ 2. Provide Contractor's name, address, phone number, license numbers, license classification, and license limit
- ☐ 3. Written narrative providing scope, intent, and system description
- ☐ 4. Signature of the licensee (contractors Master or Qualified Employee)
- ☐ 5. Signature of the NICET Level II, III, or IV designer or Professional Engineer (Fire or Mechanical within area of expertise). For plans prepared by NICET designers, the designers printed name and certificate number shall follow the signature. Professional Engineers signatures must be digitally signed. (this shall appear on all sheets)
- ☐ 6. City of Henderson Fire Sprinkler General Notes (available at [Cityofhenderson.com](http://Cityofhenderson.com))
- ☐ 7. Date of Plan: \_\_\_\_\_  
Last Revision: \_\_\_\_\_  
Date of Revision \_\_\_\_\_
- ☐ 8. Sprinkler Head Legend Filled out, with total sprinkler head count: (per system)
- ☐ 9. General Comments: \_\_\_\_\_
- ☐ 10. Readability – Piping Plan – Pipe Size \_\_\_\_\_  
Dimensions: \_\_\_\_\_

**Site Plans**

**(Section 11)**

Instructions to Plans Reviewers: **Circle Answer or Fill in Blank or Draw Line through blank space if it is "Not Applicable":**

- Y-☐ N-☐ 11.1 Underground Fire Main Size: \_\_\_\_\_  
Located & Dimensioned
- Y-☐ N-☐ 11.2 Flow Test or Hydraulically Modeled Paperwork Included
- Y-☐ N-☐ 11.3 North Direction Indicated (NFPA-13, 27.1.3)
- Y-☐ N-☐ 11.4 Scale of all Drawings Graphically Indicated (NFPA-13, 27.1.3)
- Y-☐ N-☐ 11.5 Fire Department Connection (FDC) Location is Accessible (NFPA-13, 27.1.3)
- Y-☐ N-☐ 11.6 FDC Located on the Building Wall (NFPA-13, 27.1.3)
- Y-☐ N-☐ 11.8 FDC Located toward the Fire Lane (NFPA-13, 27.1.3)
- Y-☐ N-☐ 11.9 Horn/Strobe Located above FDC (NFPA-13, 27.1.3)

**Checklist**  
**Fire Sprinkler Plan Review**

- Y-☐ N-☐ 11.10 Post Indicator Valve Shown (No Closer to The Building Than 5 Feet)  
(NFPA-24, 6.3)
- ☐ Other \_\_\_\_\_
- ☐ Comments for Section 11: \_\_\_\_\_

**Hazard Classification**

**(Section 12)**

- ☐ 12.1 Light Hazard: \_\_\_\_\_ (NFPA-13, 4.3.2)  
Description: \_\_\_\_\_
- ☐ 12.2 Ordinary Hazard:      1      2      (NFPA-13, 4.3.3 & 4.3.4)  
Description: \_\_\_\_\_
- ☐ 12.3 Extra Hazard:      1      2      (NFPA-13, 4.3.5 & 4.3.6)  
Description: \_\_\_\_\_
- ☐ 12.4 General Storage to 12 ft. Height (NFPA-13, 20.6.2 – 20.6.6)  
Commodity Class: \_\_\_\_\_
- ☐ 12.5 General Storage Over 12 ft. Height (NFPA-13, 20.6.2 – 20.6.6)  
Storage Height: \_\_\_\_\_
- Y-☐ N-☐ 12.6 Rack Storage, Storage Height: \_\_\_\_\_  
In Rack Heads
- 12.7 Interior Hose Station Information (NFPA-13, 16.15):
- Y-☐ N-☐ Required
- Y-☐ N-☐ Supply from Overhead
- Y-☐ N-☐ Supply from Adjacent Overhead System
- Y-☐ N-☐ Supply is Separate Piping System
- ☐ 12.8 Applicable NFPA Standard:   ☐13   ☐13D   ☐13DE   ☐13R  
☐ Other: \_\_\_\_\_
- ☐ 12.9 Type of System:   ☐ Wet      ☐ Dry      ☐ Pre-Action  
                                 ☐ Combined Dry/Pre-Action      ☐ Antifreeze  
                                 ☐ Deluge      ☐ Foam      ☐ Foam/Water  
                                 ☐ Other: \_\_\_\_\_
- ☐ 12.10 System Configuration:   ☐ Tree      ☐ Looped Mains      ☐ Grid

**Checklist**  
**Fire Sprinkler Plan Review**

- ☐ 12.11 Design Configuration: ☐ Pipe Schedule  
☐ Hydraulic Calculations

- ☐ 12.12 System Area Limitations:  
Light & Ordinary Hazard: \_\_\_\_\_  
(NFPA-13, 4.5): 52,000 sq. ft. Max  
Warehouse: (General & Rack Storage over 12 ft.) \_\_\_\_\_  
(NFPA-13, 4.5): 40,000 sq. ft. Max  
Extra Hazard: (calculated) \_\_\_\_\_  
(NFPA-13, 4.5): 40,000 sq. ft. Max  
Extra Hazard: (non-calculated) \_\_\_\_\_  
(NFPA-13, 4.5): 25,000 sq. ft. Max  
Dry System Capacity: \_\_\_\_\_

Anti-Freeze System Capacity: \_\_\_\_\_

**(Modifications to Existing systems only)**

- ☐ 12.13 System Design Criteria: Density: \_\_\_\_\_  
Remote Area Size: \_\_\_\_\_ sq. ft.

- ☐ 12.14 Remote Area Size Determined By: \_\_\_\_\_  
(NFPA 13) (1.2 Remote Area Size) \_\_\_\_\_  
Other: \_\_\_\_\_

- ☐ 12.15 Dry System Remote Area Increased by 30%:  
Minimum 1950 sq. ft (NFPA-13, 19.3.3.2.5) \_\_\_\_\_ sq. ft.

- ☐ 12.16 Sloped Ceiling Exceeding 2" in 12", increased by 30%  
(NFPA-13, 19.3.3.2.4) \_\_\_\_\_ sq. ft.

- Y-☐ N-☐ 12.17 Quick Response Area Reduction Calculation Shown on Drawing  
(if used) (NFPA-13, 13.3.3.2.3.1)

- Y-☐ N-☐ 12.18 Extra Hazard High Temperature Area Reduction: (25%)  
(NFPA-13, 19.3.3.2.6)

☐ Other \_\_\_\_\_  
\_\_\_\_\_

☐ Comments for Section 12: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Type of Construction (Section 13)**

- ☐ 13.1 Type and Description of Obstructed Construction  
(NFPA-13, A.3.3.41.1):

Beam & Girder: (Spacing 3' to 7'-6" on center)

Size: \_\_\_\_\_ Spacing: \_\_\_\_\_

Composite Wood Joist: (Spacing Less Than 3')

Size: \_\_\_\_\_ Spacing: \_\_\_\_\_

Panel Construction: (Beams Spaced More Than 7'-6" On Center, not over 300 sq. ft.)

Beam Sizes: Sizes: \_\_\_\_\_ Spacing: \_\_\_\_\_

Wood Joist Construction

Size: \_\_\_\_\_ Spacing: \_\_\_\_\_

Concrete Twin "TT":

Size: \_\_\_\_\_ Spacing: \_\_\_\_\_

Other: \_\_\_\_\_

- ☐ 13.2 Type and Description of Unobstructed Construction  
(NFPA-13, A.3.7.2):

Bar Joist: Size: \_\_\_\_\_ Spacing: \_\_\_\_\_

Open Grid Ceilings: \_\_\_\_\_

Smooth Ceiling: \_\_\_\_\_

Standard Mill Construction: \_\_\_\_\_

Wood Truss Construction Size: \_\_\_\_\_ Spacing: \_\_\_\_\_

Other: \_\_\_\_\_

- ☐ 13.3 Roof Construction:

Combustible: \_\_\_\_\_ Non-Combustible: \_\_\_\_\_

- ☐ 13.4 Ceiling Construction:

Combustible: \_\_\_\_\_ Non-Combustible: \_\_\_\_\_

- ☐ 13.5 Attic Space Used as an Air Plenum: \_\_\_\_\_

Steel Fire Proofed: \_\_\_\_\_

- Y-**☐ **N-**☐ 13.6 All Combustible Concealed Spaces Protected

- Y-**☐ **N-**☐ 13.7 Remote Area Increased for Combustible Concealed Spaces Not Protected  
(NFPA-13, 19.3.3.1.5.1)

**Checklist**  
**Fire Sprinkler Plan Review**

Y- <input type="checkbox"/>	N- <input type="checkbox"/>	13.8	Draft Curtains
Y- <input type="checkbox"/>	N- <input type="checkbox"/>		Smoke/Heat Vents
Y- <input type="checkbox"/>	N- <input type="checkbox"/>	13.9	Skylights/Glass Roofs
Y- <input type="checkbox"/>	N- <input type="checkbox"/>		Ceiling Elevation Defined
Y- <input type="checkbox"/>	N- <input type="checkbox"/>	13.10	Ceiling Pockets Total Volume _____
Y- <input type="checkbox"/>	N- <input type="checkbox"/>	13.11	Hanger Details Provided (NFPA-13, 27.1.3)
Y- <input type="checkbox"/>	N- <input type="checkbox"/>		Trapeze Hangers
Y- <input type="checkbox"/>	N- <input type="checkbox"/>	13.12	Method of Attachment for Hangers Acceptable (NFPA-13, Chapter 17)
Y- <input type="checkbox"/>	N- <input type="checkbox"/>	13.13	Earthquake Bracing Details Provided (NFPA-13, 27.1.3)
Y- <input type="checkbox"/>	N- <input type="checkbox"/>		Calculations Provided (NFPA-13, 27.1.3)
Y- <input type="checkbox"/>	N- <input type="checkbox"/>	13.14	Method of Attachment for Earthquake Bracing Acceptable (NFPA-13, 18.5.12)
Y- <input type="checkbox"/>	N- <input type="checkbox"/>	13.15	Restraint of Branch Lines (NFPA-13, 18.6)
		<input type="checkbox"/>	Other _____ _____
		<input type="checkbox"/>	Comments for Section 13: _____ _____ _____

**Sprinkler Head Spacing (Section 14)**  
**and Information**

Y-☐

N-☐

**14.1 Material Submittals Included with The Plans**

Y-☐

N-☐

Complete:

Actual Head Spacing on Drawing: (If calculated area is less than the inferred maximum you must add a note to the maximum calculated spacing

Light Hazard: \_\_\_\_\_ sq. ft. per head

Ordinary Hazard: \_\_\_\_\_ sq. ft. per head

Extra Hazard Pipe Schedule: \_\_\_\_\_ sq. ft. per head

Extra Hazard Calculated: \_\_\_\_\_ sq. ft. per head

High Piled Storage with Density

Below .25: (Max. 130 sq. ft.): \_\_\_\_\_ sq. ft. per head  
(NFPA-13, 10.2.4.2.1 (b))

High Piled Storage with Density Over .25:

(Max. 100 sq. ft.) \_\_\_\_\_ sq. ft. per head  
(NFPA-13, 10.2.4.2.1 (c))

ESFR Sprinkler Heads: (Max. 100 sq. ft.): \_\_\_\_\_ sq. ft. per head  
(NFPA-13, 14.2.8.2.1)

Large Drop Sprinkler Head: \_\_\_\_\_ sq. ft. per head

Extended Coverage Upright  
or Pendent Head: \_\_\_\_\_ sq. ft. per head

Sidewall Sprinkler Head: \_\_\_\_\_ sq. ft. per head

Extended Sidewall Sprinkler Head: \_\_\_\_\_ sq. ft. per head

Extended Sidewall Sprinkler Head  
Distance Calculated to Throw \_\_\_\_\_ ft.

Y-☐

N-☐

Small Room Rule Properly Applied

(NFPA-13, A.10.2.5.2.3(a,b,c,d)):

☐

**14.3 Deflector Distance Below Roof or Ceiling: (Refer to listing or Manufacturer's Data Sheets Extended Coverage and Special Sprinklers, i.e., Large Drop, ESFR.)**

Unobstructed Construction:

Spray Heads 1" to 12" (An Exception

May Apply) (NFPA-13, 10.2.6.1.1) \_\_\_\_\_

Sidewall Heads 4" to 6" (An

Exception May Apply) \_\_\_\_\_

Obstructed Construction:

Spray Heads 1" to 6" Under Structural

Member: (NFPA-13, 10.2.6.1.2) \_\_\_\_\_

(Max. Of 22" Below Ceiling / Roof Deck.)

## Checklist Fire Sprinkler Plan Review

- 14.4 SPECIAL CONSIDERATIONS:
- Y-☐ N-☐ Min. 18" Clearance from Deflector to Top of Storage  
(Standard Head)
- Y-☐ N-☐ Min. Clearance from Deflector to Top of Storage  
(Special Head Listing)
- Y-☐ N-☐ Temperature Ratings Identified (NFPA-13, 7.2.4.1)
- Y-☐ N-☐ Heater Zones
- Y-☐ N-☐ Attic Area's (175° F min.) (NFPA-13, 7.2.4.1)
- Y-☐ N-☐ Skylights (Plastic/Glass - 175° F min.)  
(NFPA-13, 7.2.4.1)
- Y-☐ N-☐ Single Level of Sprinklers in Rack (½" 165° F)
- Y-☐ N-☐ Multiple Level of Sprinklers in Rack (½" 165° F)  
w/ Deflector Shield
- ☐ Other \_\_\_\_\_
- ☐ Comments for Section 14: \_\_\_\_\_

### Riser and Valve Arrangements (Section 15)

- Y-☐ N-☐ 15.1 Single Wet Riser (NFPA-13, A.16.9.3)
- Y-☐ N-☐ 15.2 Single Dry Riser (NFPA-13, A.16.9.3)
- Y-☐ N-☐ 15.3 Single Pre-Action Riser (NFPA-13, Figure A.16.9.3)
- Y-☐ N-☐ 15.4 Single Deluge Riser (NFPA-13, Figure A.16.9.3)
- Y-☐ N-☐ 15.5 Dry/Pre-Action/Deluge Valve Trim shown on the drawings  
(NFPA-13, 27.1.3)
- Y-☐ N-☐ 15.6 Auxiliary System Off the Main System (NFPA-13, 8.1.3)
- Y-☐ N-☐ 15.7 Floor Control Stations (Multiple Story Building)
- Y-☐ N-☐ 15.8 Multiple System Riser Valve Arrangement (NFPA-13, A.16.9.3)
- Y-☐ N-☐ 15.9 Required Relief Valve on Wet Systems (NFPA-13, 8.1.2)
- Y-☐ N-☐ 15.10 Water Pressure Gauges are Provided Above & Below the Main Check Valve  
(NFPA-13, 8.1.1)
- Y-☐ N-☐ 15.11 Is the Inspectors Test Located In/Around the Remote Area
- Y-☐ N-☐ 15.12 Auxiliary Drains Are Indicated on Secondary Mains of Gridded System  
(NFPA-13, 16.10.5)



**Checklist**  
**Fire Sprinkler Plan Review**

- Y-☐ N-☐ 15.13 Are Auxiliary Drains and Discharge for Trapped Sections of Piping Shown (*NFPA-13, 16.10.5*)
- Y-☐ N-☐ 15.14 Are Drum-Drip's Drains Shown for Dry System Auxiliary Drains
- Y-☐ N-☐ 15.15 Are All Control Valves Supervised (*NFPA-13, 16.9.3.3*)
- ☐ Other \_\_\_\_\_
- ☐ Comments for Section 15: \_\_\_\_\_

---

**Hydraulic Calculations (Section 16)**

- Y-☐ N-☐ 16.1 Area/Density Method
- Y-☐ N-☐ Room Design Method
- Y-☐ N-☐ 16.2 Cover Sheet Completely Filled Out (*NFPA-13, 27.1.3*)
- Y-☐ N-☐ 16.3 Water Flow Used Matches Accepted Paperwork
- Y-☐ N-☐ 16.4 Water Flow Test is Current (Six months Maximum)
- Y-☐ N-☐ 16.5 10 PSI Safety Factor (*CLV & COH Amendments 27.2.1.8*)
- Y-☐ N-☐ 16.6 Occupancy Classification Match Drawings
- Y-☐ N-☐ 16.7 Hose Allowance Added
- Y-☐ N-☐ Proper Location
- Y-☐ N-☐ 16.8 Sprinkler Head Matches Sprinkler Head Legend on Drawings
- Y-☐ N-☐ 16.9 Equivalent "K" Factors Calculations (*NFPA-13, 27.1.3*)
- Y-☐ N-☐ 16.10 Required Designed Minimum Flow from Remote Sprinkler
- Y-☐ N-☐ 16.11 Required Designed Minimum Pressure from Remote Sprinkler
- Y-☐ N-☐ 16.12 Node Points Flowing Match Remote Area (*NFPA-13, 27.1.3*)
- Y-☐ N-☐ 16.13 Correct "C" Factor Used (*NFPA-13, 27.1.3*)
- Y-☐ N-☐ 16.14 Elevation Changes Match Drawings (*NFPA-13, 27.1.3*)
- Y-☐ N-☐ 16.15 Pipe ID'S Match Plans/Manufactures Cut Sheets
- Y-☐ N-☐ 16.16 Fitting Counts Match Drawing (*NFPA-13, 27.1.3*)
- Y-☐ N-☐ 16.17 Pipe Lengths Match Drawings (*NFPA-13, 27.1.3*)
- Y-☐ N-☐ 16.18 Fixed Pressure Loss Device (*NFPA-13, 27.1.3*)
- Y-☐ N-☐ 16.19 Maximum Velocity Shall Not Exceed 32 fps (*CLV & COH Amendments 27.2.1.7*)

**Checklist**  
**Fire Sprinkler Plan Review**

- Y-☐    N-☐ 16.20 Grid System "Peaked" (*NFPA-13, 27.2.4.4*)
- Y-☐    N-☐ 16.21 Grid Flow Chart Provided (*NFPA-13, 17.4.5.6*)
- Y-☐    N-☐ 16.22 Fixed Flows Added at the Proper Location (*NFPA-13, 19.2.6*)
- ☐ Other \_\_\_\_\_
- \_\_\_\_\_
- ☐ COMMENTS FOR SECTION 16: \_\_\_\_\_
- \_\_\_\_\_
-