



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
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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 of the information that is necessary for a complete review of your plans.

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.

Part. 3 **Applicable Codes**

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

- 2012 International Building Code with local amendments
- 2012 International Fire Code with local amendments
- Applicable NFA Standards as Adopted
- Nevada State Fire Marshal Regulations
- Life Safety Report, if Applicable

Part. 4 **Submittal Package**

Provide the following information at the time you submit your application for a fire alarm annunciator permit.

- A completed application form
- 1. Plan Reviewer's Name: _____
Date: _____
- 2. Project: _____
- 3. Address: _____
- 4. Fire Protection Contractor: _____
- 5. Contractor's Address: _____
- 6. Contractor's Phone #: _____
Fax #: _____
- 7. Contact Name: _____

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- 8. Date of Plan: _____
Last Revision: _____
Date of Revision _____
- 9. Sprinkler Head Legend Filled out, with total sprinkler head count:
- 10. NICET Level: I II III IV or P.E.
Name: _____
- 11. Henderson General Notes for Sprinkler Systems.
- 12. General Comments: _____
- 13. Readability – Piping Plan – Pipe Size _____
Dimensions: _____

Part. 5
Plan Contents
Site Plans

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 civil improvement plans. Rather, it is provided to give an overview of the basic plan contents needed for the review of 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 Paper Work Included
- Y- N- 11.3 North Direction Indicated (NFPA-13, 23.1.3)
- Y- N- 11.4 Scale of all Drawings Graphically Indicated (NFPA-13, 23.1.3)
- Y- N- 11.5 Fire Department Connection (FDC) Location is Accessible (NFPA-13, 23.1.3)
- Y- N- 11.6 FDC Located on the Building Wall (NFPA-13, 23.1.3)
- Y- N- 11.8 FDC Located toward the Fire Lane (NFPA-13, 23.1.3)
- Y- N- 11.9 Horn/Strobe Located above FDC (NFPA-13, 23.1.3)
- 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, 5.2)
Description: _____

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- 12.2 Ordinary Hazard: **1** **2** (NFPA-13, 5.3.1 & .2)
Description: _____
- 12.3 Extra Hazard: **1** **2** (NFPA-13, 5.4.1 & .2)
Description: _____
- 12.4 General Storage to 12 ft. Height (NFPA-13, 13.1)
Commodity Class: _____
- 12.5 General Storage Over 12 ft. Height (NFPA-13, 12.1)
Storage Height: _____
- Y- N- 12.6 Rack Storage, Storage Height: _____
In Rack Heads
- 12.7 Interior Hose Station Information (NFPA-13, 8.17.5):
- 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 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
- 12.11 Design Configuration: Pipe Schedule
 Hydraulic Calculations
- 12.12 System Area Limitations:
Light & Ordinary Hazard: _____
(NFPA-13, 8.2): 52,000 sq. ft. Max
Warehouse: (General & Rack Storage over 12 ft.) _____
(NFPA-13, 8.2): 40,000 sq. ft. Max
Extra Hazard: (calculated) _____
(NFPA-13, 8.2): 40,000 sq. ft. Max
Extra Hazard: (non-calculated) _____
(NFPA-13, 8.2): 25,000 sq. ft. Max
Dry System Capacity: _____
Anti-Freeze System Capacity: _____
- 12.13 System Design Criteria: Density: _____

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Remote Area Size: _____ sq. ft.

12.14 Remote Area Length 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, 11.2.3.2.5) _____ sq. ft.

12.16 Sloped Ceiling Exceeding 2" in 12", increased by 30%
(NFPA-13, 11.2.3.2.4) _____ sq. ft.

Y- N- 12.17 Quick Response Area Reduction Calculation Shown on Drawing
(if used) (NFPA-13, 11.2.3.2.3.1)

Y- N- 12.18 Extra Hazard High Temperature Area Reduction: (25%)
(NFPA-13, 11.2.3.2.6)

Other _____

Comments for Section 12: _____

Type of Construction **(Section 13)**

13.1 Type and Description of Obstructed Construction
(NFPA-13, A.3.7.1):
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: _____

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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, 11.2.3.1.4)

Y- N- 13.8 Draft Curtains

Y- N- Smoke/Heat Vents

Y- N- 13.9 Skylights/Glass Roofs

Y- N- Ceiling Elevation Defined

Y- N- 13.10 Ceiling Pockets
Total Volume _____

Y- N- 13.11 Hanger Details Provided
(NFPA-13, 23.1.3)

Y- N- Trapeze Hangers

Y- N- 13.12 Method of Attachment for Hangers Acceptable
(NFPA-13, Chapter 9)

Y- N- 13.13 Earthquake Bracing Details Provided
(NFPA-13, 23.1.3)

Y- N- Calculations Provided
(NFPA-13, 23.1.3)

Y- N- 13.14 Method of Attachment for Earthquake Bracing Acceptable
(NFPA-13, Figure 9.3.5.12.1)

Y- N- 13.15 Restraint of Branch Lines
(NFPA-13, Figure 9.3.6)

Other _____

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:
- 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, Table 8.6.2.2.1(c))
- High Piled Storage with Density Over .25:
(Max. 100 sq. ft.) _____ sq. ft. per head
(NFPA-13, Table 8.6.2.2.1(c))
- ESFR Sprinkler Heads: (Max. 100 sq. ft.): _____ sq. ft. per head
(NFPA-13, Table 8.12.2.2.1)
- 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.8.6.3.2.4(a,b,c,& d)):

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- 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, 8.6.4.1.1) _____

Sidewall Heads 4" to 6" (An Exception May Apply) _____

Obstructed Construction:

Spray Heads 1" to 6" Under Structural Member: (NFPA-13, 8.6.4.1.2) _____

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

- 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, 22.1.3)
- Y- N- Heater Zones
- Y- N- Attic Area's (212° F)(NFPA-13, Table 6.2.5.1)
- Y- N- Skylights (Plastic/Glass - 212° F) (NFPA-13, Table 6.2.5.1)
- 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, Figure A8.16.1.1)
- Y- N- 15.2 Single Dry Riser (NFPA-13, Figure 8.16.1.1)
- Y- N- 15.3 Single Pre-Action Riser (NFPA-13, Figure 8.16.1.1)
- Y- N- 15.4 Single Deluge Riser (NFPA-13, Figure 8.16.1.1)
- Y- N- 15.5 Dry/Pre-Action/Deluge Valve Trim Shown On the Drawings (NFPA-13, 22.1.3)
- Y- N- 15.6 Auxiliary System Off the Main System (NFPA-13, 7.1.3)
- Y- N- 15.7 Floor Control Stations (Multiple Story Building)

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- Y- N- 15.8 Multiple System Riser Valve Arrangement (*NFPA-13, Figure A8.16.1.1*)
- Y- N- 15.9 Required Relief Valve on Wet Systems (*NFPA-13, 7.1.2*)
- Y- N- 15.10 Water Pressure Gauges are Provided Above & Below the Main Check Valve (*NFPA-13, 7.1.1*)
- 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, 8.16.2.5*)
- Y- N- 15.13 Are Auxiliary Drains and Discharge for Trapped Sections of Piping Shown (*NFPA-13, 8.16.2.5*)
- 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, 8.16.1.1.2*)

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, 22.1.3*)
- Y- N- 16.3 Water Flow Used Matches Accepted Paperwork
- Y- N- 16.4 Water Flow Test is Current (Year Old Maximum)
- Y- N- 16.5 10 PSI Safety Factor (*Southern Nevada Amendments (SNA), 22.4.1.7*)
- 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, 22.1.3*)
- 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, 22.1.3*)
- Y- N- 16.13 Correct "C" Factor Used (*NFPA-13, 22.1.3*)
- Y- N- 16.14 Elevation Changes Match Drawings (*NFPA-13, 22.1.3*)
- Y- N- 16.15 Pipe ID'S Match Plans/Manufactures Cut Sheets

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- Y- N- 16.16 Fitting Count Match Drawing (*NFPA-13, 22.1.3*)
- Y- N- 16.17 Pipe Lengths Match Drawings (*NFPA-13, 22.1.3*)
- Y- N- 16.18 Fixed Pressure Loss Device (*NFPA-13, 22.1.3*)
- Y- N- 16.19 Maximum Velocity Shall Not Exceed 32 fps (*SNA, 22.4.1.6*)
- Y- N- 16.20 Grid System "Peaked" (*NFPA-13, 22.4.4.4*)
- Y- N- 16.21 Grid Flow Chart Provided (*NFPA-13, 22.3.5.6*)
- Y- N- 16.22 Fixed Flows Added at the Proper Location (*NFPA-13, 11.1.6*)

Other _____

COMMENTS FOR SECTION 16: _____

Part. 6

Other Information
