


Sprinkler Systems

- Read Notes
 - Hopefully all information is on the plan
 - Construction type,
 - Occupancy type –IBC & by room
 - AMMR's
- Determine the use
- Check the sectional
- Start at the Riser




Plan Review of Fire Protection Systems 1

1

Determine the use- Occupancy Type

- IFC (IBC) occupancy are determined by use
- NFPA 13 occupancy is secondary to hazard
- Occupancy type and size determines what protection measures are required
- Hazard classification determines the design density of the system




Plan Review of Fire Protection Systems 2

2

Determine the use- Hazard Type

- Light hazard
- Ordinary hazard (I, II)
- Extra hazard
- Special occupancy hazard
- What is a restaurant?
- May be different in different areas
- Must be calculated for each area
- May not have a partition separating areas

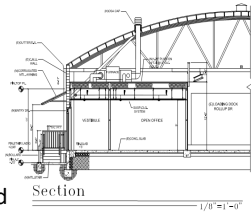


Plan Review of Fire Protection Systems 3

3

Sectional

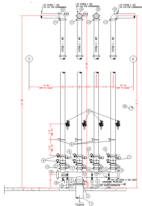
- May or may not be helpful
- Helps answer construction type
- High Pile Storage is another class
- Hopefully has scale
- Ask for more detail if needed



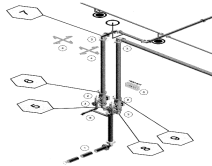
4

Start at the Riser

Good Detail



Bad Detail



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What to look for-Riser

- Location
 - Varies
 - Rated rooms- not always
 - Size of area
- IFC has more stringent requirements for locations. 901.4.6
- Transition piece from underground 13:24.1.6.1
- Size of supply
- Back flow preventor*
 - Matches spec sheet
 - Forward Flow- 13:8.17.4.5.1*
- Pipe stands- calculated 13:9.2.6*



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More on the riser

- Size and type of valves- 13:8.16.1.1.1
- FDC tie in location
- FDC signage-IFC 912.5
- Flexible Vics-13:9.3.2.3.1
- Bracing-13:9.3.5
- Penetrations- IFC 704
- Drains! 13:8.17.4.1
- Notification-IFC 903.4



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Follow the Mains

Most missed items

- Bracing locations
 - More on this later
- Air relief valve-13:8.16.6*
- Inspectors test (dry)-13:8.17.4.2.2
 - Separate from drain
- Elevations
- Hangers
 - Also more on this later

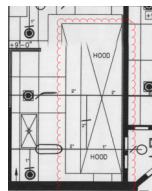


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End on the Branch Lines

Most common missed items

- End of line restraints
- Hangers
- Slope (dry)-Pitch 13:8.16.2.3.1
- Obstructions
 - Hoods
 - walls



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Where to find the Cp

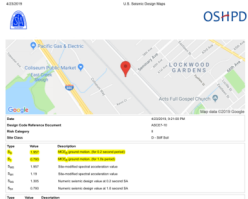


Table 4.3.3.3.3 - seismic coefficient table

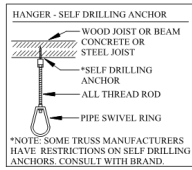
R _c	R _s	R _v	C _u
0.5	0.25	2.2	1.01
0.5	0.26	2.1	0.99
0.5	0.3	2.0	0.93
0.5	0.4	1.8	0.82
0.7	0.42	1.6	0.74
0.7	0.45	1.5	0.69
0.7	0.5	1.4	0.64
0.7	0.55	1.3	0.6
1.0	0.58	1.2	0.57
1.0	0.6	1.1	0.55
1.2	0.67	1.1	0.65
1.2	0.7	1.0	0.62
1.2	0.75	0.9	0.59
1.5	0.75	0.8	0.55
1.5	0.8	0.75	0.53
1.5	0.85	0.7	0.5
1.5	0.9	0.65	0.48
1.7	0.9	0.6	0.46
1.7	0.95	0.55	0.44
1.7	1.0	0.5	0.42
2.0	0.95	0.45	0.4
2.0	1.0	0.4	0.38
2.0	1.05	0.35	0.36



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Mistake #2 Not using proper attachments

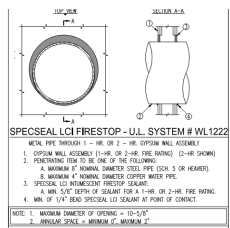
- Refer to hand out
- Wrong size rods
- Through bolts
- Lags
- 6" rule
- Wrong structure type
- Anchors
- Listed equipment



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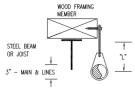
Mistake #3

- Location of 4 ways
- Penetrations through walls and floors
- Flexible Vics
- End of mains



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Hangers- What to look for



TYPICAL HANGER #02E
NO. SCALE

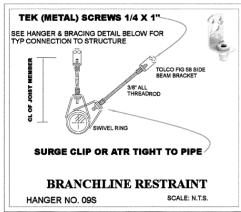
- 1 - 1/2" SUPER SHANK SCREW (SWS-20/25-30) (SWS-20 = 2" & SHALLOW PIPE) (SWS-25-30 = 4" PIPE) (SWS-30 = 6" & 8" PIPE)
- 1 - ALL SHANK ROD
- 1 - ADJUSTABLE HANGER RING

- Listed materials
 - All
- Size matches pipe
- Calculations
- Right detail for structure
- Correct locations
- CPVC hangers not used for steel
- Unistrut clamps are not listed!



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End of line restraints



- Not always required



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Questions Thus Far?



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